

# User Manual

## 7028-RC Series 1U Control Panels

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## Warnings

### Explanation of Safety Symbols



This symbol refers the user to important information contained in the accompanying literature.



This symbol indicates that hazardous voltages are present inside. No user serviceable parts inside. This system should only be serviced by trained personnel.

### Safety Warnings



Servicing instructions, where given, are for use by qualified personnel only. To reduce the risk of electric shock, do not perform any actions on this equipment other than contained in the operating instructions, unless you are qualified to do so. Refer all servicing to qualified personnel.



To reduce the risk of electric shock, do not expose this appliance to rain or moisture.

Always ensure that the unit is properly earthed and power connections correctly made.

The power circuit breakers or switches supplying power to the unit should be close to the unit and easily accessible.

### DC Supply Voltage

Before connecting the equipment, observe the safety warnings section and ensure that the power supply can provide the required current rating as stated on the rear of the equipment.



There are no serviceable items within this unit

## Safety Standards

This equipment complies with the following standards:



### **EN60950-1: 2006**

Safety of Information Technology Equipment Including Electrical Business Equipment.

### **UL1419 (3rd Edition) - UL File E193966**

Standard for Safety - Professional Video and Audio equipment

### **EMC Standards**

This unit conforms to the following standards:

#### **EN55103-1:2009 (Environment E4)**

Electromagnetic Compatibility, Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Part 1. Emission

#### **EN55103-2:2009 (Environment E2)**

Electromagnetic Compatibility, Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Part 2. Immunity

Federal Communications Commission Rules, 47 CFR: 2010, Part 15, Subpart B (Class A)

### **EMC Performance of Cables and Connectors**

Snell products are designed to meet or exceed the requirements of the appropriate European EMC standards. In order to achieve this performance in real installations it is essential to use cables and connectors with good EMC characteristics.

All signal connections (including remote control connections) shall be made with screened cables terminated in connectors having a metal shell. The cable screen shall have a large-area contact with the metal shell.

### **D-TYPE CONNECTORS**

D-type connectors shall have metal shells making good RF contact with the cable screen. Connectors having "dimples" which improve the contact between the plug and socket shells, are recommended.

### **ETHERNET**

This equipment is intended to be connected to an Ethernet network which is not routed outside of the building in which it is installed, i.e. designated Network Environment 0 as defined in IEC TR 62102.

In accordance with EN 60950-1 the Ethernet port is classified as SELV (Low voltage).

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# 1. Introduction

## 1.1 Description

These control panels are used for router control. There are two types of panel are available, LCD panels and LED panels, and both types may be configured and operated as XY panels (select a destination and a source), or BPX panels (single button press to make a crosspoint).

Each panel can be configured to run in RC Mode, or Legacy Mode.

**Important:** Only control panels models with a model number suffix of "RC" (for example: 7028100RC) have the option of the two operating modes.  
Models without the "RC" suffix run in Legacy Mode only.

### 1.1.1 RC Mode

RC Mode involves setting up the panel using the RollCall Protocol over Ethernet, where buttons can be customized according to the routing requirements.

When configured as an XY panel, the panel can be operated in traditional destination then source select mode or, at the same time, can also be used to select a source first followed by one or more destinations (Gang Take). The operating modes can be mixed simply by whether a source or a destination is selected first.

LCD control panels can be customized by assigning free text to buttons, either fixed, or according to the selections made. LED panels have space for button labels to be added to identify the buttons accordingly, once configured.

All panels (both LCD and LED type) have LED back-lit buttons that can be customized to any RGB color for a given button type.

### 1.1.2 Legacy Mode

Legacy Mode allows the panel to mimic older style Snell/Pro-Bel control panels. Switches on the rear of the panel determine which style the panel mimics.

## 1.2 Panel Types

### 1.2.1 LCD Panels Covered by this Manual

- 7028071-RC-SB with 15 Large LCD buttons + single rotary control switch



Fig 1. 7028071-RC Large Button LCD Button Panel

- 7028251RC - 39 LCD buttons + single rotary control switch



Fig 2. 7028251RC - 39 button LCD Control Panel



- 7028351RC - 21 LCD buttons + single rotary control switch



Fig 3. 7028351RC - 21 Button LCD Control Panel

## 1.2.2 LED Panels Covered by this Manual

- 7028000RC - High density panel with 78 LED buttons

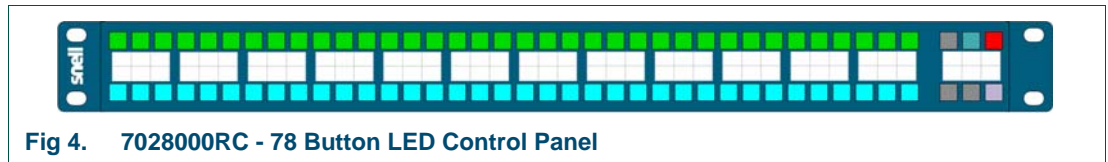


Fig 4. 7028000RC - 78 Button LED Control Panel

- 7028400RC - High density panel with 60 LED buttons

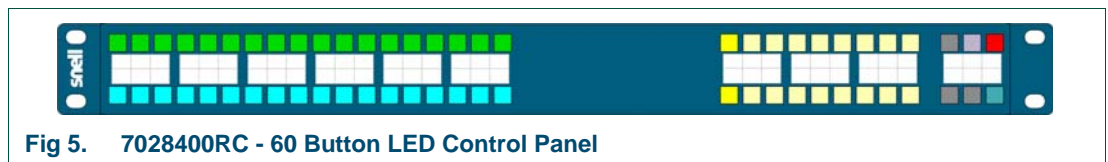


Fig 5. 7028400RC - 60 Button LED Control Panel

- 7028100RC - Standard density panel with 42 LED buttons

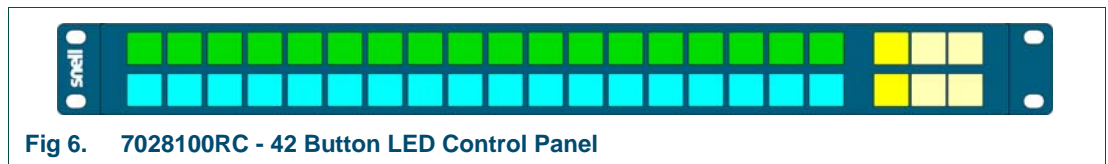


Fig 6. 7028100RC - 42 Button LED Control Panel

- 7028201RC - High density panel with 24 LED buttons

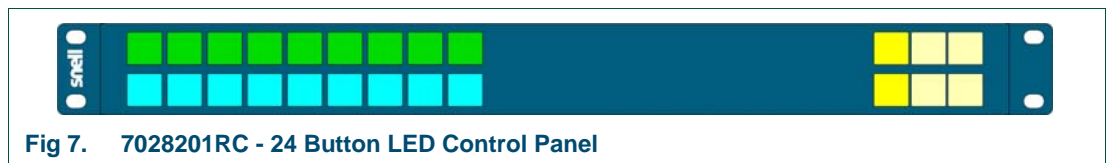


Fig 7. 7028201RC - 24 Button LED Control Panel

### 1.2.2.1 Panel Button Label Templates

Printable templates for the different LED panel types can be downloaded from the internet:

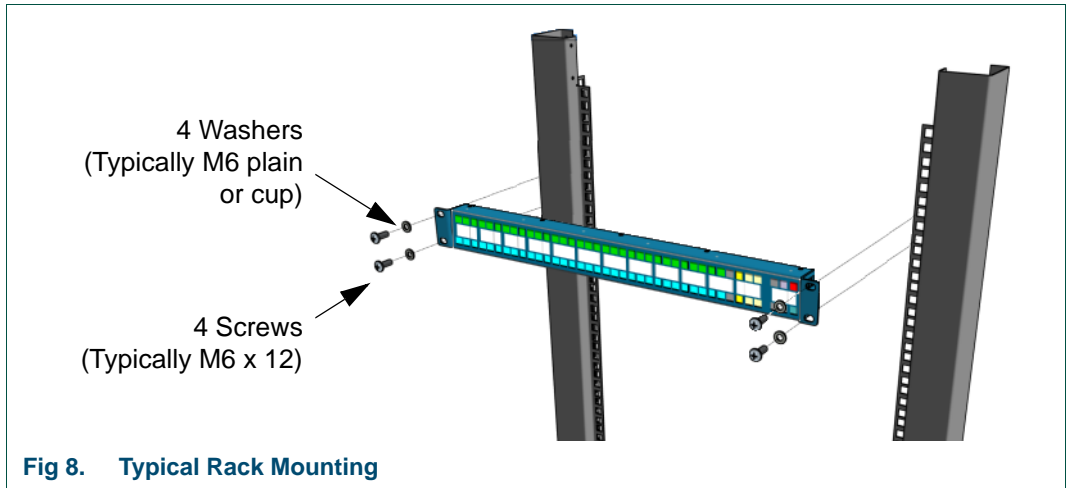
[www.snellgroup.com/products/control-and-monitoring/router/router-panels/](http://www.snellgroup.com/products/control-and-monitoring/router/router-panels/)

## 2. Installation

This chapter describes the system requirements and procedures for installing control panels. The requirement and procedures are the same for both LCD and LED panels.

### 2.1 Mounting

The control panels require a 1U of space within a rack system, or desk. When the panel is in position, use four M6 screws and washers to fasten it to the rack brackets, see Fig 8.

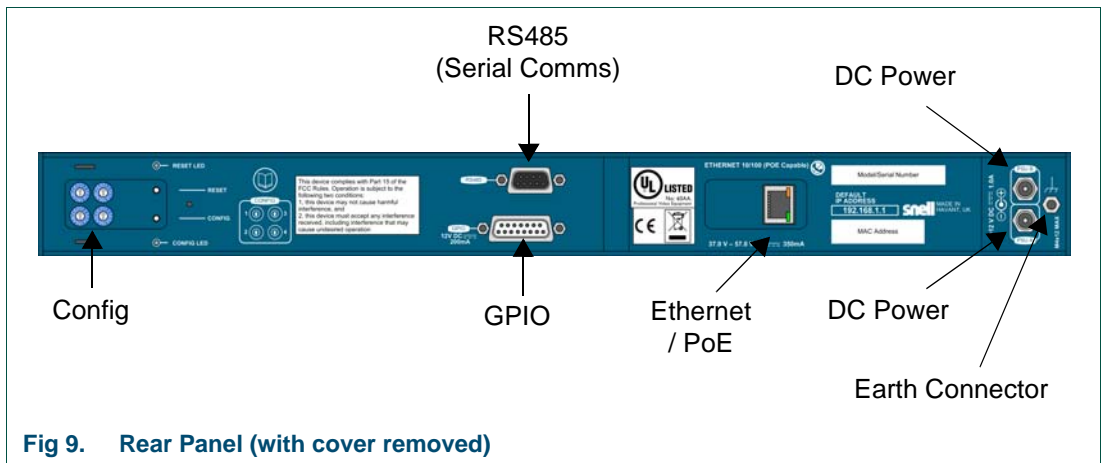


**Note:** When desk mounting, ensure the protective cover is in place over the configuration switches on the rear of the panel.

### 2.2 Connections

**Important:** Before connecting any cables ensure that the earth connector on the rear panel has been connected to a suitable ground, using an M4x12 (maximum) screw.

All connections are made to the rear panel. Details of the connectors on the rear panel are in the Technical Specification. See “Technical Specification” on page 110.



## 2.2.1 Comms

Connect a data cable either serial or Ethernet according to the desired operation mode of the control panel:

### 2.2.1.1 Ethernet

An Ethernet cable is required for RC Mode operation. Legacy Mode is also available over Ethernet.

Power over Ethernet (PoE) is available through this connector, if a power source is supplied from a compatible switch, or PoE injector.

### 2.2.1.2 RS485 Serial Comms

Legacy Mode only is available with this serial comms connector.

## 2.2.2 Power

The panel may be powered either by DC power, the Ethernet connector (PoE), or a combination of both. Dual redundancy is available either by connecting two separate power sources to the two DC PSU connectors, or by using a single DC supply, and PoE. In this instance the primary power source is PoE

### 2.2.2.1 DC Power

Connect a DC power supply to one, or both, PSU connectors on the rear panel.



To reduce the risk of electric shock, plug each power supply cord into separate branch circuits employing separate service grounds.



Fig 10. DC Power Sockets

#### Note:

If power is connected before connecting any valid comms (serial or Ethernet), the panel will run through a start-up sequence, then:

- LED - light all buttons in sequence (in Legacy mode). Light some white buttons to display the version of code (in RollCall mode).
- LCD - light up information buttons on the left of the panel (in Legacy and RollCall mode).

### 2.2.2.2 Ethernet

To power the panel via Ethernet cable, ensure that a compatible switch, or PoE injector, is used to provide the necessary power requirements. See "Ethernet" on page 112.

#### Note:

When using Power over Ethernet the brightness of the panel buttons is limited to a lower level than when using DC power.

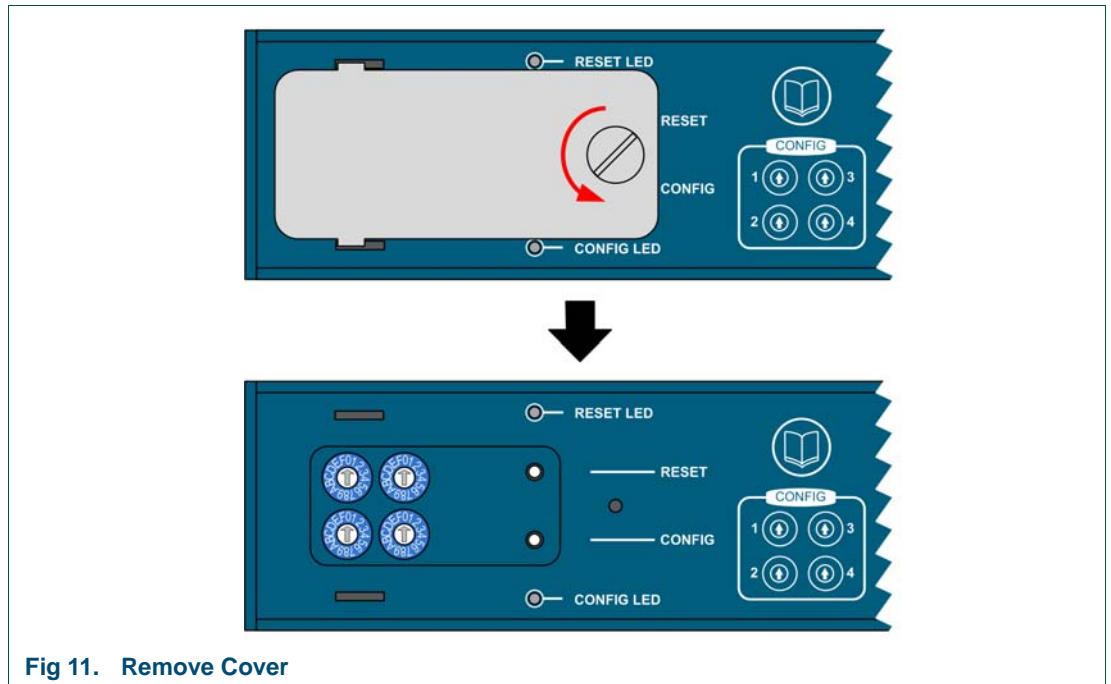
## 2.3 Configuration

Each panel is configured using the hex switches on the rear of the panel.

To access these hex switches, the protective cover must first be removed:

**Note:** The cover should be refitted after configuring.

1. Rotate the retaining knob counterclockwise until completely unscrewed.
2. Slide the cover to the right, and remove.



**Fig 11. Remove Cover**

To refit the cover (after configuration):

1. Line up the lugs with the apertures top and bottom. Slide the cover to the left.
2. Rotate the retaining knob clockwise until cover is closed.

## 2.4 Set the Control Panel IP and Router Connection

The panels are supplied with factory default settings of:

IP:	192.168.1.1
Subnet Mask:	255.255.255.0
Gateway:	0.0.0.0

Use a PC isolated from the main network (on the same subnet as the panel default) to connect to the Ethernet port on the panel.

1. Open a browser window.
2. Type the IP address of the panel in the address bar, and press **Return**.

The browser displays the RC Mode web page:

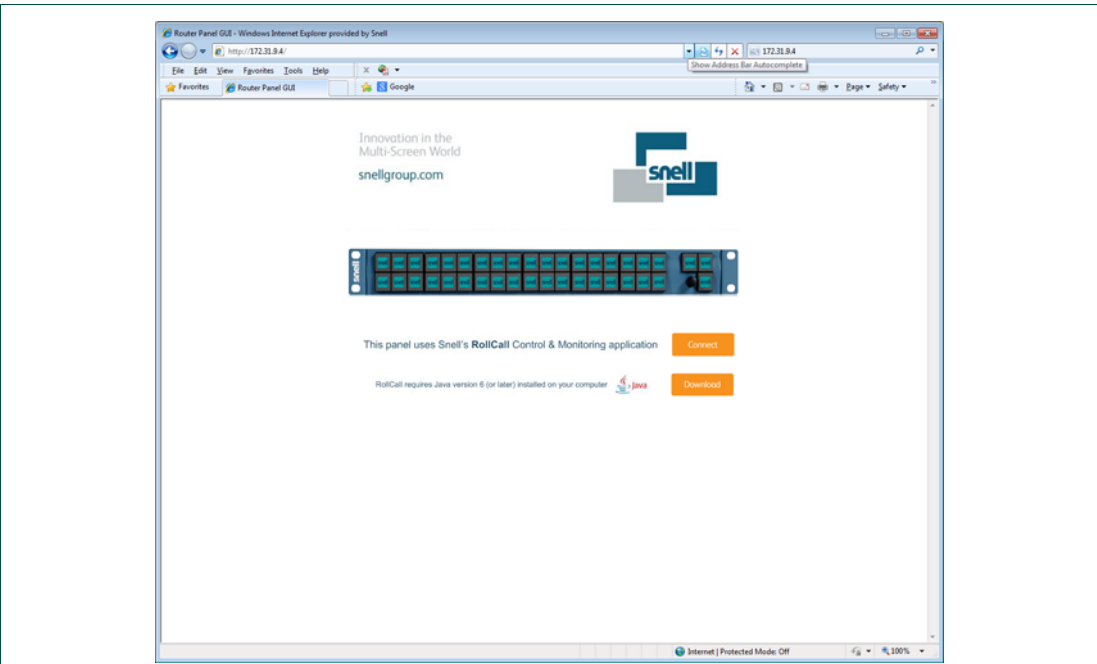


Fig 12. RC Mode Web Page

- 3. If Java has not been previously installed on the PC, click on the **Download** button.

This opens the Oracle website from where the latest version of Java may be downloaded and installed.

- 4. If Java is installed, click on the **Connect** button.

The RollCall application opens in a new browser window, and the control panel model number displays in the left-hand window of the application.

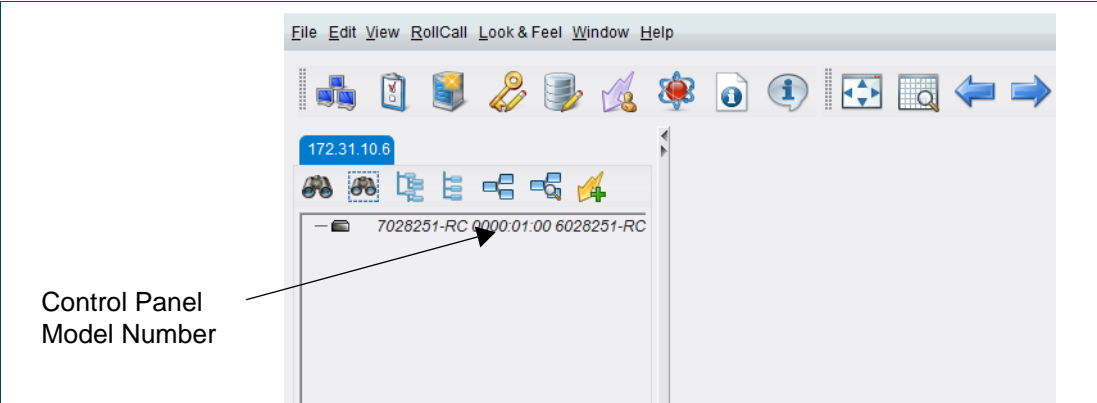


Fig 13. RollCall Application With Control Panel

- 5. Right-click on the panel name, and from the menu, select **Connect**.

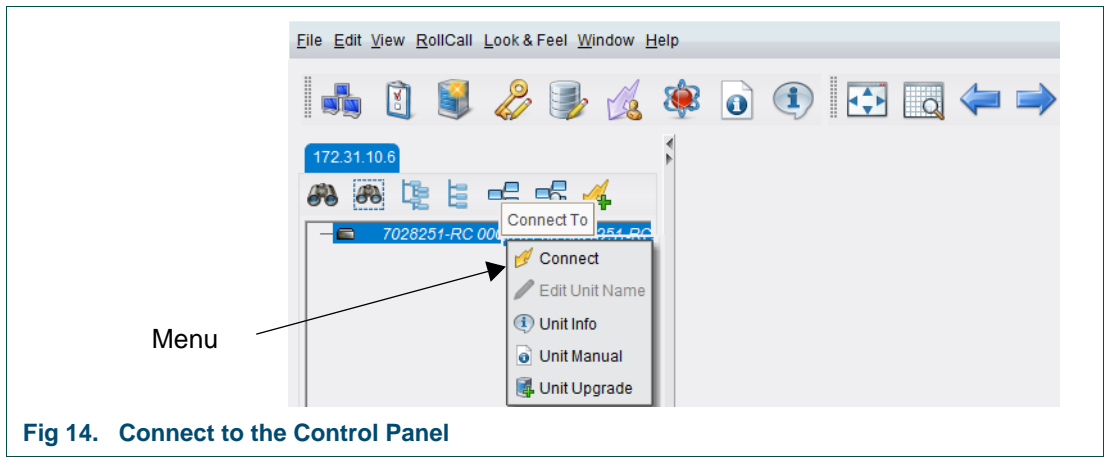


Fig 14. Connect to the Control Panel

The template opens in the right-hand window with the Setup page displayed.

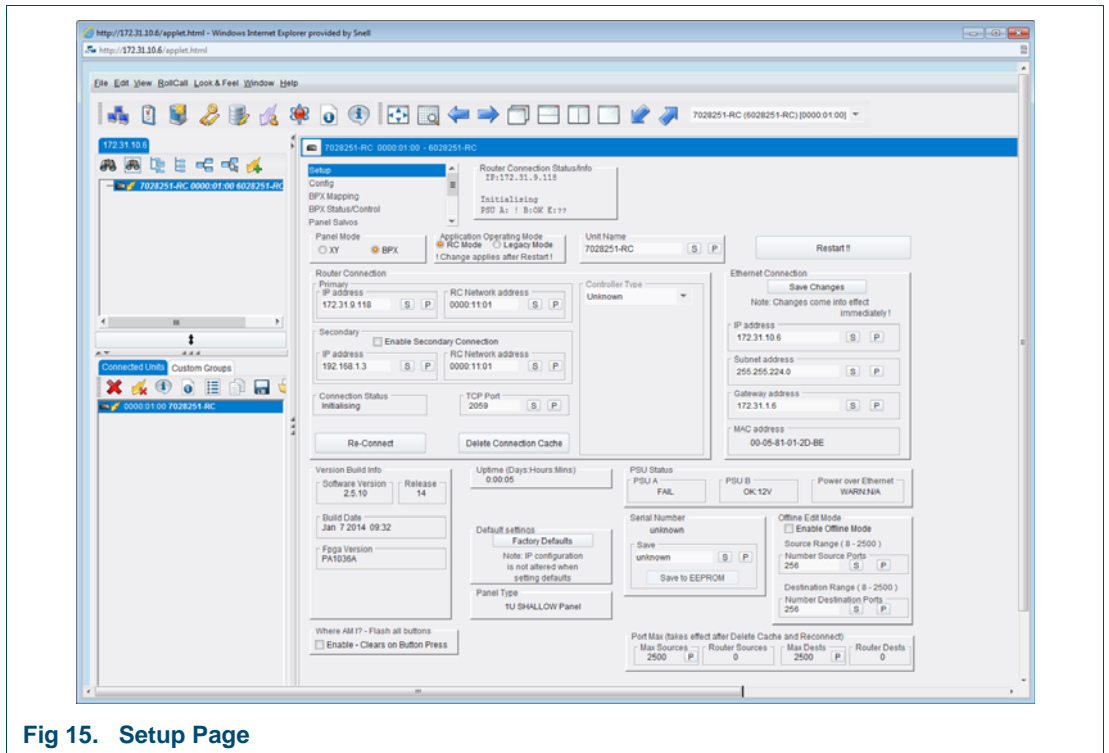
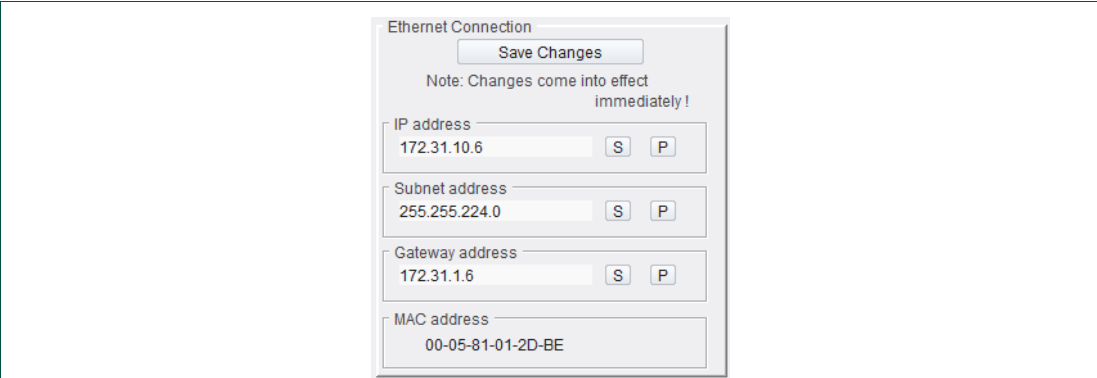


Fig 15. Setup Page

### 2.4.1 Set the Ethernet Connection

**Note:** The Ethernet connection, and router connection are set up as follows; or may be set directly in Legacy Mode, if that mode is desired. To set the connections in Legacy Mode, first set the operating mode. See “Switch to Legacy Mode” on page 16.

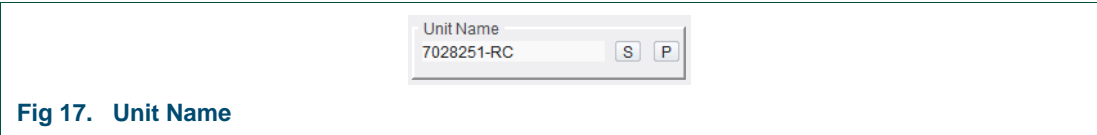
From the Setup page, set the Ethernet connection of the control panel.



**Fig 16. Ethernet Connection**

1. Enter the IP address of the control panel in the IP address field, and press the Enter key.
2. Enter the Subnet address of the network that the control panel is connecting to, and press the Enter key.
3. Enter the Gateway address of the network that the control panel is connecting to, and press the Enter key.
4. Click on the **Save Changes** button.

### 2.4.2 Change the Unit Name

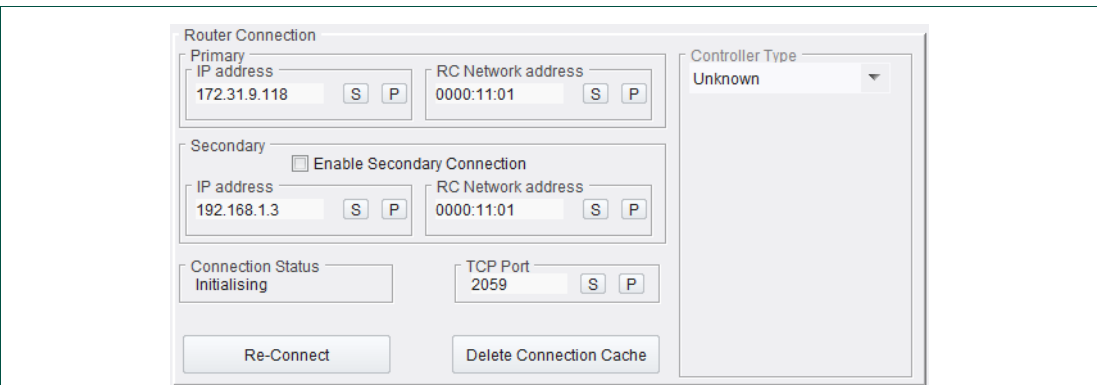


**Fig 17. Unit Name**

1. Click in the Unit Name field.
2. Delete the existing name.
3. Type a new name, and press the Enter key.

### 2.4.3 Set the Router Connection

To connect to a router, the IP address of the controller card is required. If the router uses dual redundant controllers, the IP address of both controller cards must be entered.



**Fig 18. Router Connection**

1. Enter the IP address of the router to connect to in the Primary IP address field, and press the Enter key.
2. If the Router has dual redundancy, check the Enable checkbox, enter the secondary IP address, and press the Enter key.

3. Click on the **Re-Connect** button.

There will be a short delay while the control panel initializes. The current status of the control panel displays in the Connection Status field. If the status does not display as **Connected:Active** after initializing, investigate the possible cause (except when using the Offline Edit Mode, when the status displays as **Connected:Offline**. See "Offline Edit Mode" on page 27.).

## 2.5 Set the Operating Mode

The RC Mode radio button is selected. This indicates the mode that the panel will power up into when restarted.

### 2.5.1 Switch to Legacy Mode

To switch the operating mode to Legacy Mode:

1. Click on the Legacy Mode radio button.
2. Click on the **Restart** button.

Legacy Mode does not use the RollCall application. See "Legacy Mode" on page 75.

### 2.5.2 Switch to RC Mode

See "Application Operating Mode" on page 83.

## 2.6 Panel Reset

### 2.6.1 Reboot the Panel

To reboot the panel without having to remove the power, for example, after performing a software update:

1. Press the **RESET** button.
2. The RESET LED lights and the panel resets.

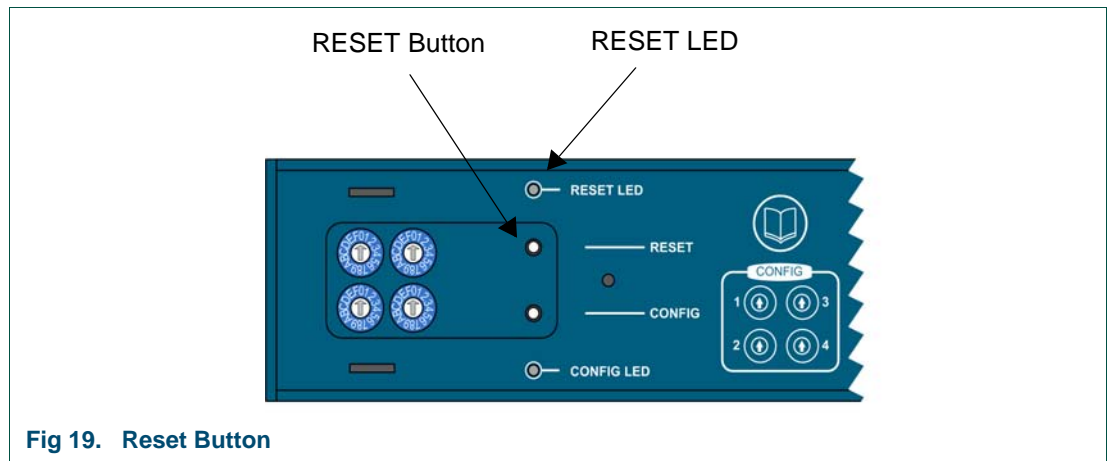


Fig 19. Reset Button



### 2.6.2 Restoring Factory Default IP Settings

1. Remove the panel from the main network.
2. On the rear of the panel, press and hold the **CONFIG** button until the adjacent CONFIG LED displays solid white.

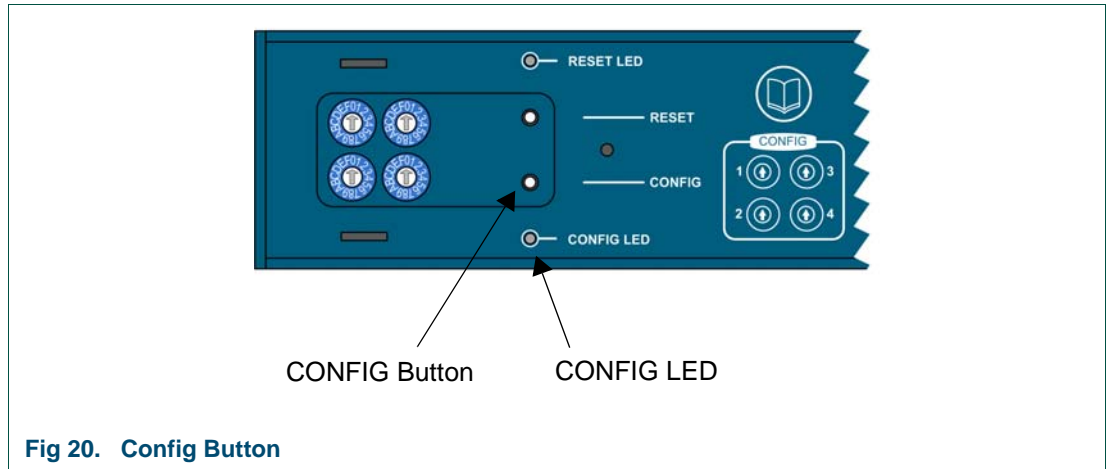


Fig 20. Config Button

3. Continue holding the button until it flashes white.
4. Release the button.

The panel resets and powers up with the default IP settings:

IP:	192.168.1.1
Subnet Mask:	255.255.255.0
Gateway:	0.0.0.0
Control System IP Port:	0.0.0.0

**Note:** The Router IP configuration is not altered when resetting the panel to the factory default settings. The current panel operating mode is unaffected by pressing this button.

### 2.7 Upgrade Panel Software

The panel software is upgraded through the RollCall application, regardless of whether it is operating in RC Mode or Legacy Mode. See “Upgrade Panel Software” on page 72.

## 3. RC Mode

### 3.1 General Operation

#### 3.1.1 Connecting to the Panel

After the initial connection, as described in the Installation chapter, to subsequently connect to the control panel:

1. Open a browser window.
2. Type the IP address of the panel in the address bar.

The RC Mode web page displays:

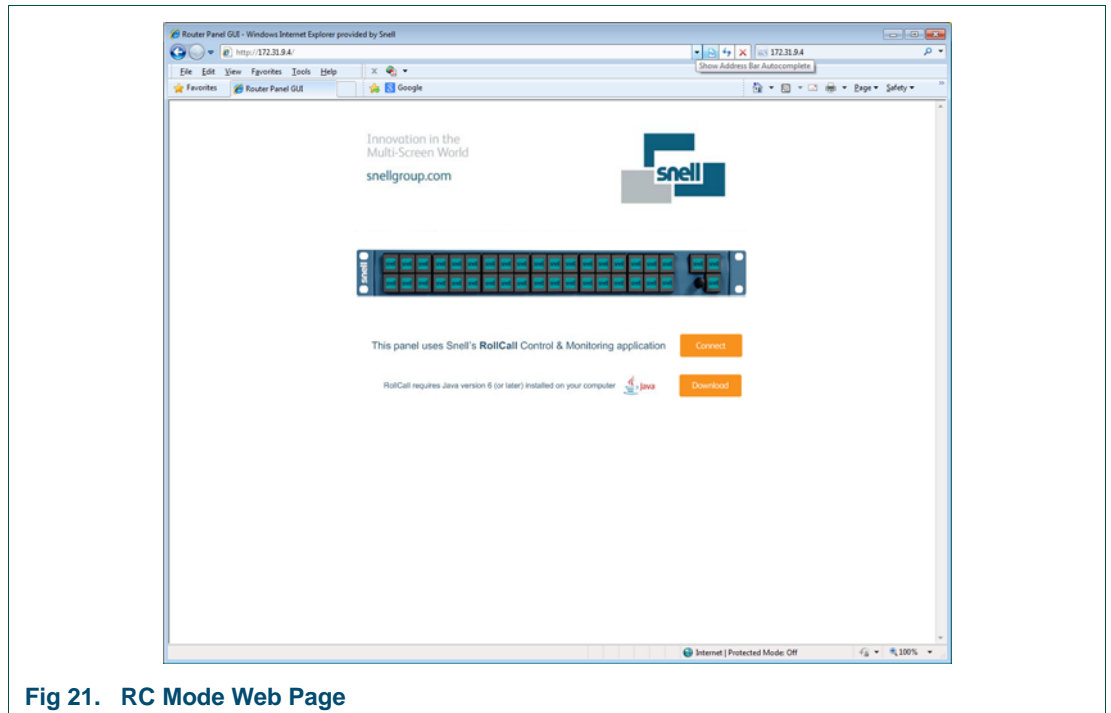



Fig 21. RC Mode Web Page

3. Click on the **Connect** button.

The RollCall application opens.

#### 3.1.2 RollCall Application

This RollCall application runs a template allowing for the configuration of a control panel. The main functionality of the application is described in this chapter.

For further help with more general use of the RollCall application, access the user manual by clicking the  button in the main toolbar at the top left of the display.

### 3.1.3 Navigating Pages in the Template

The control panel template displays in the main part of the screen of the RollCall application. The template has a number of pages, each of which can be selected from the drop-down list at the top left of the display area. Right-clicking anywhere on the pages opens the page view allowing quick access to any of the pages. The pages available in this template differ according to whether the panel is set to an XY or BPX panel.

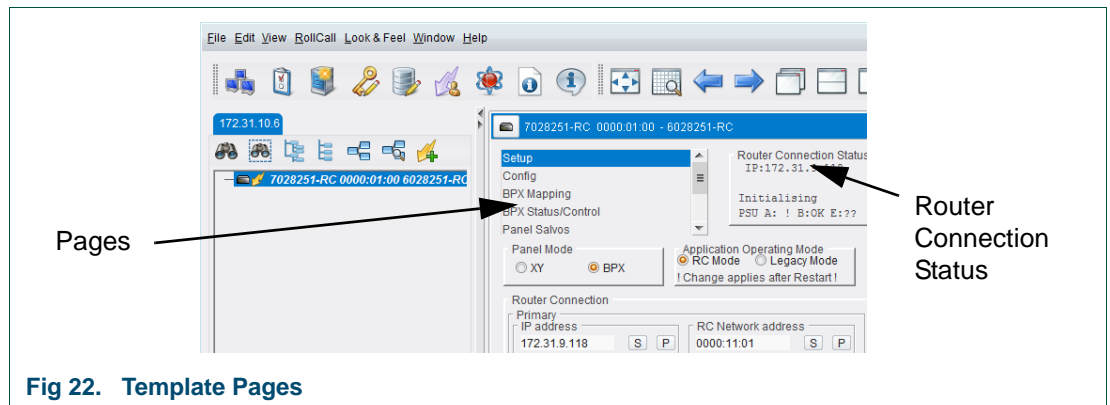


Fig 22. Template Pages

Next to the Pages display is a Router Connection Status area. This displays on each page giving information about the IP address(es) of the router controllers that the control panel is connected to, and the connection status of the control panel.

#### 3.1.3.1 XY Panel Template Pages

- **Setup** - Configure the control panel type, IP Address, and Router connections.
- **Config** - Determine the fixed button operation. Define fixed button text and formatting (LCD Panels only).
- **XY Mapping** - Define button types for each of the dynamic (source and destination) buttons, define the number of pages available, and means of accessing each page. Allocate specific sources and destinations to individual buttons on each page. It may be useful to group certain sources together on a page, and a different category on another page, and so on.
- **XY Status/Control** - View the status of each configured button, and control the panel using the on-screen buttons which work as if pressing the actual buttons (and rotary control, if applicable) on the panel.
- **Panel Salvos** - Create panel salvos and define buttons to initiate them.
- **GPIO** - Set up inputs and outputs, based either on crosspoints or salvos.
- **LED Colors XY** - Define the backlight color for the dynamic (source and destination) buttons.
- **LED Colors Other** - Define the backlight color for the fixed buttons (Take, Unlock, Protect, and Page Navigation).
- **IP Bridging** - Setup remote IP addresses and a bridge port, and display connection status information.


### 3.1.3.2 BPX Panel Template Pages


- **Setup** - Configure the control panel IP Address, and Router connections.
- **Config** - Determine the fixed button operation. Define fixed button text and formatting (LCD Panels only).
- **BPX Mapping** - Define the source and destination for each button, the color scheme required, and additional any text (LCD panels only).
- **BPX Status/Control** - View the status of each configured button, and control the panel using the on-screen buttons which work as if pressing the actual buttons (and rotary control, if applicable) on the panel.
- **Panel Salvos** - Create panel salvos and define buttons to initiate them.
- **GPIO** - Set up inputs and outputs, based either on crosspoints or salvos.
- **LED Colors BPX** - Define the backlight colors for the different BPX color schemes, allowing grouping of buttons.
- **LED Colors Other** - Define the backlight color for the fixed buttons (Take, Unlock, Protect, and Page Navigation).
- **IP Bridging** - Setup remote IP addresses and a bridge port, and display connection status information.

### 3.1.4 Setting Values

Many of the settings within the templates have values, either numerical, or textual.

Numerical values are set by using the associated slider to position the pointer at the value required. Alternatively, clicking on the existing value displayed to the right of the slider, opens that field for editing. The current value may be deleted, and a new value entered.

When setting a value in a field, the value, whether text or a number, must be set by pressing the Enter key, or clicking on the  button.

Clicking on an associated  button returns the value back to the factory default setting.

### 3.1.5 Save a Configuration

At any time the current configuration of the control panel may be saved. This is useful if a number of configurations are required for different tasks, or for copying a configuration to one or more other panels. The current configuration is also stored in NVRAM.

To save the current configuration:

1. Right-click on the control panel name in the Network Browser window.

The menu displays.

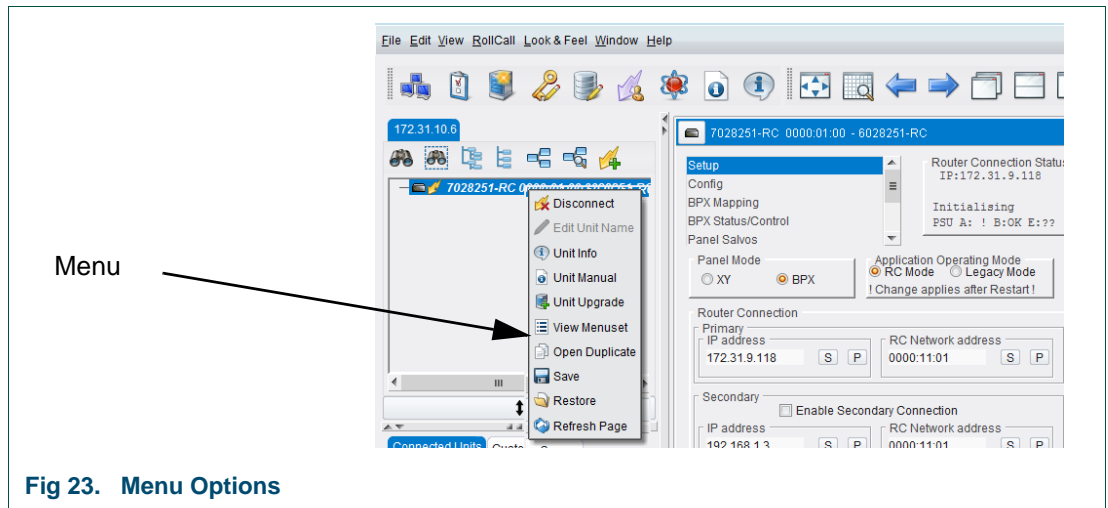


Fig 23. Menu Options

2. Click on **Save**.

A dialog box displays.

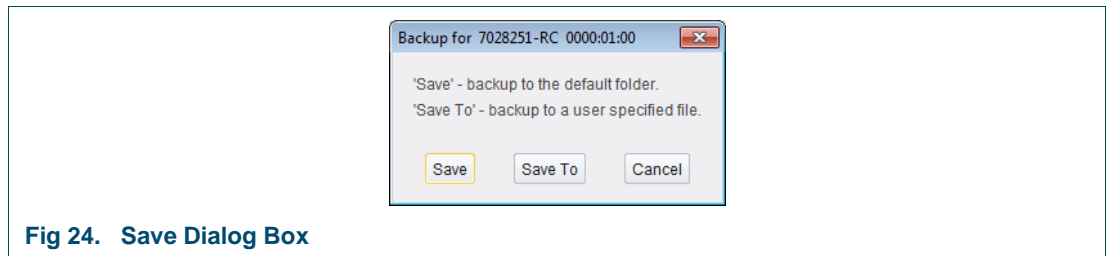


Fig 24. Save Dialog Box

3. Either, click on **Save** to store the configuration in the default folder, or, click on **Save To** to save to another folder.

**Note:** When connected directly to a panel, and not using IP proxy, use the **Save To** option. This allows unique names to be created rather than overwriting the default filename each time.

If a backup already exists in the selected folder a dialog box displays asking if the file can be overwritten.

**Note:** When multi-page configurations are saved, the panel cycles through the pages as each is saved in turn.

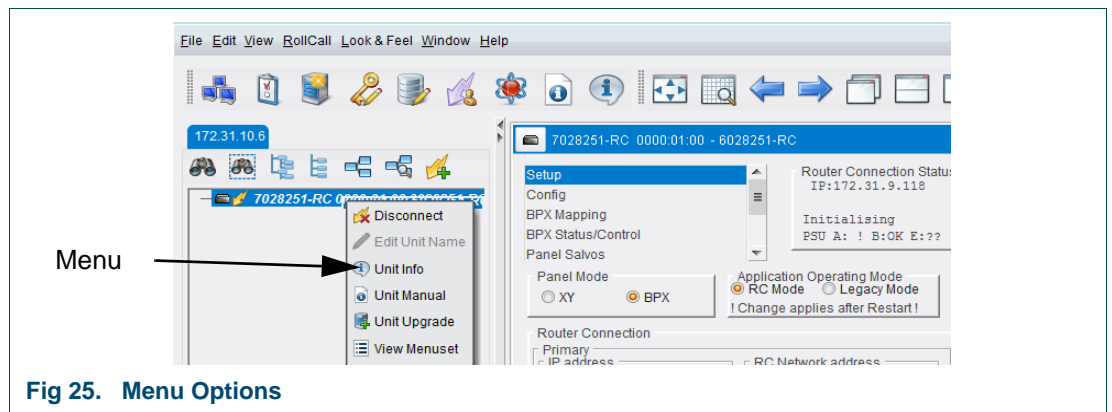
### 3.1.6 Restore a Configuration

A previously saved configuration can be restored to a control panel, for example, if different configurations are used for different tasks, or in the event of a failure, a new control panel can be installed, and the previously used configuration restored to the new panel.

To restore the current configuration:

1. Right-click on the control panel name in the Network Browser window.

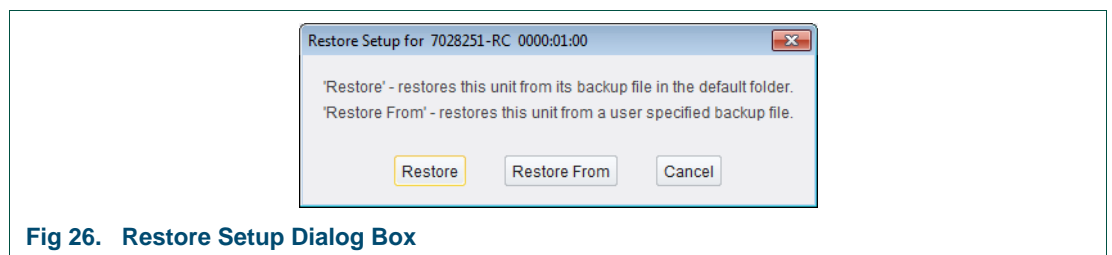
The menu displays.



**Fig 25. Menu Options**

2. Click on **Restore**.

A dialog box displays.



**Fig 26. Restore Setup Dialog Box**

3. Either, click on **Restore** to update the control panel with the configuration stored in the default folder, or, click on **Restore From** to bring in a restore file from another folder.

If a backup already exists in the selected folder a dialog box displays asking if the file can be overwritten.

**Note:** The restore can take several minutes. The control panel cannot be used while the restore is in progress.

**Note:** When multi-page configurations are restored, the panel cycles through the pages as each is restored in turn.

### 3.2 Setup

The Setup page displays information about the control panel, the IP address attributed to it, and its connection status.

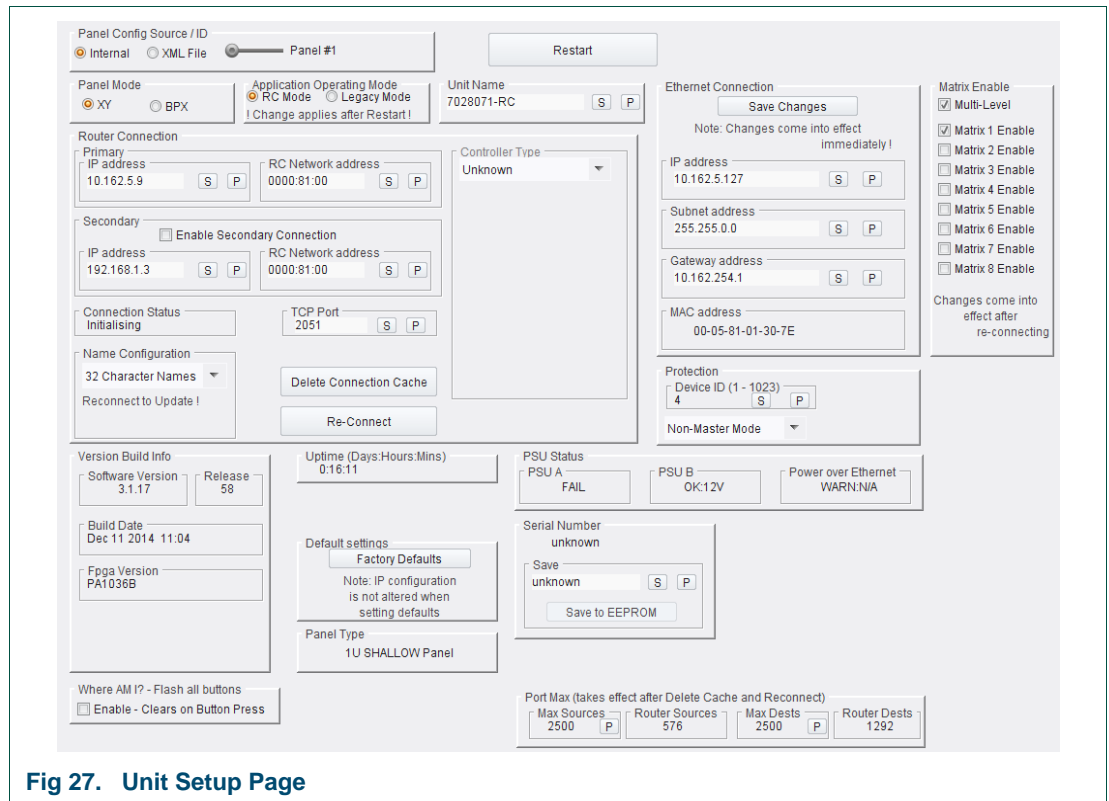


Fig 27. Unit Setup Page

The following information displays on this page:

- Panel type and operating mode
- The control panel name and IP connection
- Router IP connection data
- Software version information
- Power Status
- Serial number and up-time for the control panel
- Offline Edit Mode (for offline configuration of the control panel)

In addition, a **Restart** button is available for rebooting the control panel, and a **Factory Defaults** button to return the panel configuration to the default.

#### 3.2.1 Panel Mode

The panel may be operated in XY Mode or BPX mode:

- XY** In XY mode a destination and source are selected individually, with an optional Take operation.
- BPX** In BPX mode a single button press activates a crosspoint change.

To set the panel mode:

- Click on the appropriate radio button to select either an XY or BPX panel.

The selection of the panel mode defines the pages available for the rest of the configuration.

## 3.2.2 Operating Mode

The RC Mode radio button is selected. This indicates the mode that the panel will power up into when restarted.

### 3.2.2.1 Switch to Legacy Mode

To switch the operating mode to Legacy Mode:

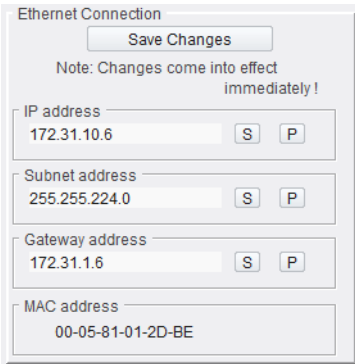
1. Click on the Legacy Mode radio button.
2. Click on the **Restart** button.
3. Refresh the original browser window and the Legacy Mode web page displays.

See the Legacy Mode chapter for details about operation in this mode.

## 3.2.3 Change the Unit Name

1. Click in the Unit Name field.
2. Delete the existing name.
3. Type a new name, and press the Enter key.

## 3.2.4 Ethernet Connection



**Fig 28. Ethernet Connection**

To set the Ethernet connection of the control panel, if not already done during installation:

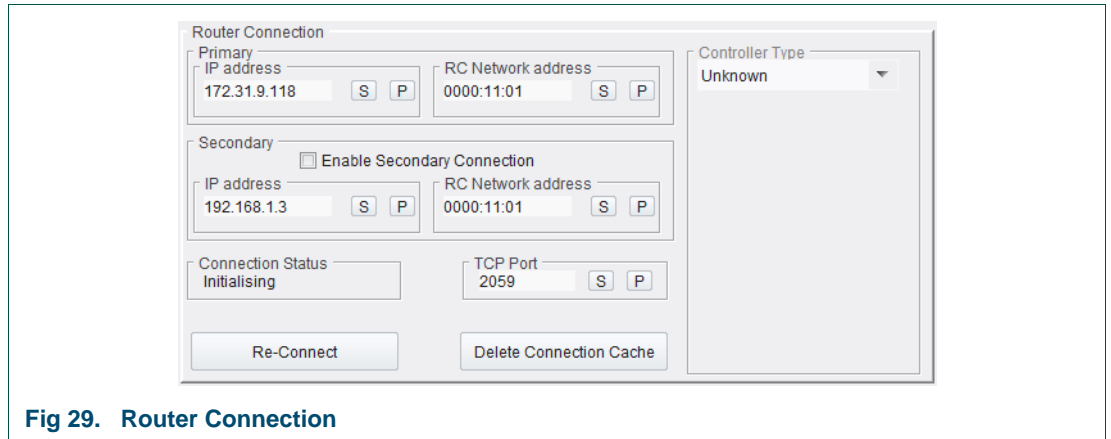
1. Enter the IP address of the control panel in the IP address field, and press the Enter key.
2. Enter the Subnet address of the network that the control panel is connecting to, and press the Enter key.
3. Enter the Gateway address of the network that the control panel is connecting to, and press the Enter key.
4. Click on the **Save Changes** button.

The IP address can be checked directly from the panel at any time by pressing any three consecutive buttons. See “Check IP Addresses” on page 27.



### 3.2.5 Router Connection

To connect to a router, the IP address of the controller card is required. If the router uses dual redundant controllers, the IP address of both controller cards must be entered.



**Fig 29. Router Connection**

1. Enter the IP address of the router to connect to in the Primary IP address field, and press the Enter key.
2. When configuring an IQ router, enter the RC Network address.

**Note:** When configuring a router using a 24xx controller, the default RC network address 0000:11:01 is automatically set.

On a router with a 24xx controller, the default RC Network address relates to level 1 on matrix 1 on the router.

To set the panel to control a different matrix or level, this address must be changed. The first four digits remain at 0000, the second two digits, (default 11) represent the matrix number, and the last two digits (default 01) represent the level.

Each of these sets of two digits can be set in increments of one from the default value to set different matrices or levels. For example 0000:11:02 equates to level 2 on matrix 1, and 0000:12:01 equates to level 1 on matrix 2.

3. If the Router has dual redundancy, check the Enable checkbox, enter the secondary IP address, and press the Enter key.
4. When configuring an IQ router, enter the RC Network address.
5. If no default is set, enter the TCP Port number. For an IQ router this is 2050. For a router with a 24xx controller this is 2051.

**Note:** Changing this port number to any other number sets the control panel offline.

6. Click on the **Re-Connect** button.

The **Delete Connection Cache** button is used to remove the connection information, comprising of the all the working names of the router, from memory.

There will be a short delay while the control panel initializes. The current status of the control panel displays in the Connection Status field. If the status does not display as **Connected:Active** after initializing, investigate the possible cause (except when using the Offline Edit Mode, when the status displays as **Connected:Offline**. See "Offline Edit Mode" on page 27.).

The IP address can be checked directly from the panel (LCD Panels only) at any time by pressing any three consecutive buttons. See "Check IP Addresses" on page 27.

### 3.2.6 Port Max

The Port Max function allows the number of sources and destinations to be restricted. This is particularly useful where audio ports are present in the router but not required for XY routing. In most cases audio ports are likely to be at higher numbers after the video ports. So, setting maximum port numbers for sources and destinations allows these audio ports to be ignored for this video router panel.

The number of physical router sources and destinations display in the Port Max section.

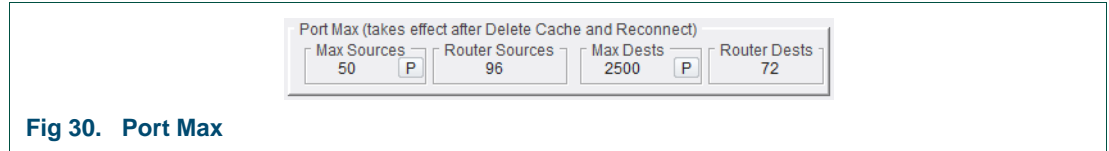


Fig 30. Port Max

To restrict the number of ports:

1. Edit the Max Sources field to enter the last video port number, and press the Enter key.
2. Repeat for the Max Dests field.
3. Click the **Delete Connection Cache** button in the Router Connection section.
4. Click the **Re-Connect** button.

**Note:** The changes to Max Ports do not take effect until after deleting the cache and re-connecting to the router.

To set a range that is non-contiguous, create a custom button map. See the RollCall Control Panel manual for details on how to create button maps.

### 3.2.7 Where am I?

When there are a number of control panels in a system, it is often useful to be able to identify which control panel is currently being used/configured. This feature makes all buttons on the control panel flash, thus indicating its position.

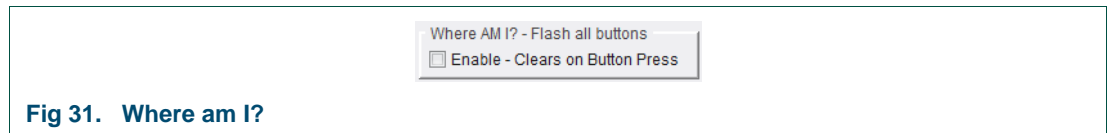


Fig 31. Where am I?

To make the buttons flash:

- Check the Enable check box.

To stop the flashing and return to normal operation, either:

- Press any button on the control panel, or
- Uncheck the Enable checkbox.

### 3.2.8 Default Settings

To reset the settings on the control panel to the factory default settings:

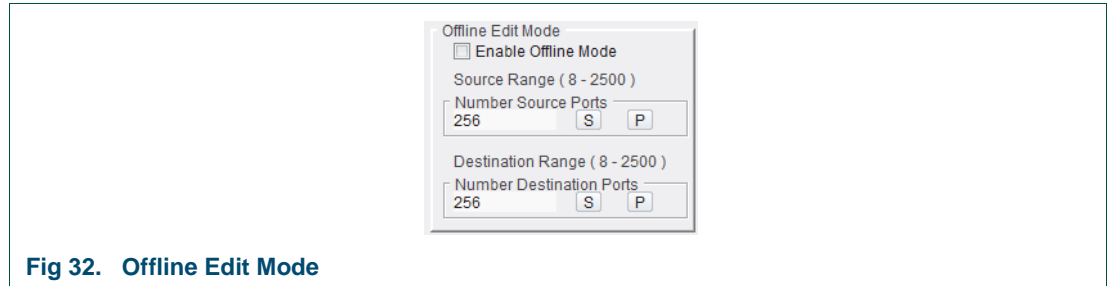
- Click on the **Factory Defaults** button.

**Note:** The Router IP configuration is not altered when resetting the panel to the factory default settings. The current panel operating mode is unaffected by pressing this button.

### 3.2.9 Offline Edit Mode

Offline Edit Mode is used to configure the control panel without having an active connection to a router. This allows the control panel to be completely set up before connecting to an active router. This mode can also be activated at any time when connected to a router to switch the panel offline while making changes to its configuration.

**Note:** Online operations such as setting routes, and protecting destinations, are not available in Offline mode.



To set Offline Edit Mode:

1. Enter the number of router input ports in the Number Source Ports field, and press the Enter key.
2. Enter the number of router output ports in the Number Destination Ports field, and press the Enter key.
3. Check the Enable Offline Mode checkbox.

The connection status of the panel displays as **Connected:Offline**.

**Note:** To edit the number of input and output ports, uncheck the Offline Edit Mode checkbox.

### 3.2.10 Check IP Addresses

When a panel is powered it temporarily displays the IP address of the panel itself and of the router connections that have been assigned. The unit then initializes and displays the buttons as they have been configured.

At any time these IP addresses may be displayed directly from the panel without having to cycle the power.

- Press three consecutive buttons on the panel, and the display changes to show the IP addresses in the same manner as at power up.

The display returns to normal after approximately five seconds.

### 3.2.11 Restart the Control Panel

To restart the control panel at any time:

- Click on the **Restart** button.

The panel will start to shutdown. The buttons will flash initially as the panel shuts down. Then, the normal startup sequence displays.

### 3.3 Config

The Config page is used for setting up button options, and in the case of LCD panels, the text format that displays on the buttons.

**Note:** The content of this configuration page differs according to the panel type.

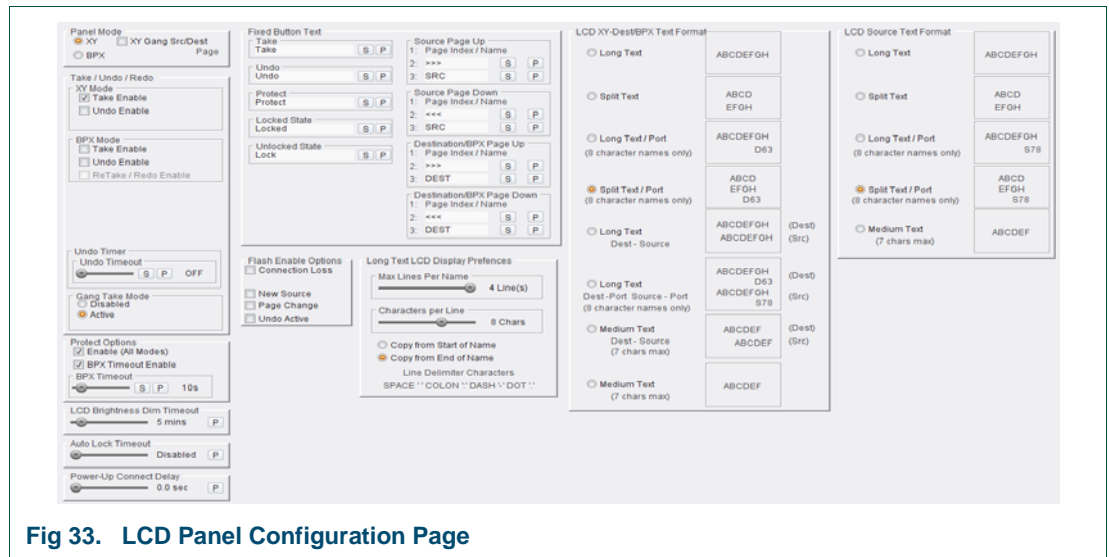


Fig 33. LCD Panel Configuration Page

#### 3.3.1 Panel Mode

The panel may be operated in XY Mode or BPX mode. The panel mode may also be switched from this page. This is the same operation as on the Setup page. See "Panel Mode" on page 23.

**XY** In XY mode a destination and source are selected individually, with an optional Take operation.

**BPX** In BPX mode a single button press activates a crosspoint change.

To set the panel mode:

- Click on the appropriate radio button to select either an XY or BPX panel.

The selection of the panel mode defines the pages available for the rest of the configuration.

##### 3.3.1.1 XY Gang Src/Dest Page

If required, page buttons for source and destination pages may be ganged together, so that both pages increment/decrement as one or other page is changed.

To gang together source and destination pages in XY mode:

- Check the XY Gang Src/Dest Page checkbox.

To allow source and destination pages to be selected independently:

- Uncheck the XY Gang Src/Dest Page checkbox.

### 3.3.2 Button Options

Button options include the enabling/disabling of Take, Undo, and Protect buttons, and the time-out options associated with each, and the enabling/disabling of Gang Take Mode.

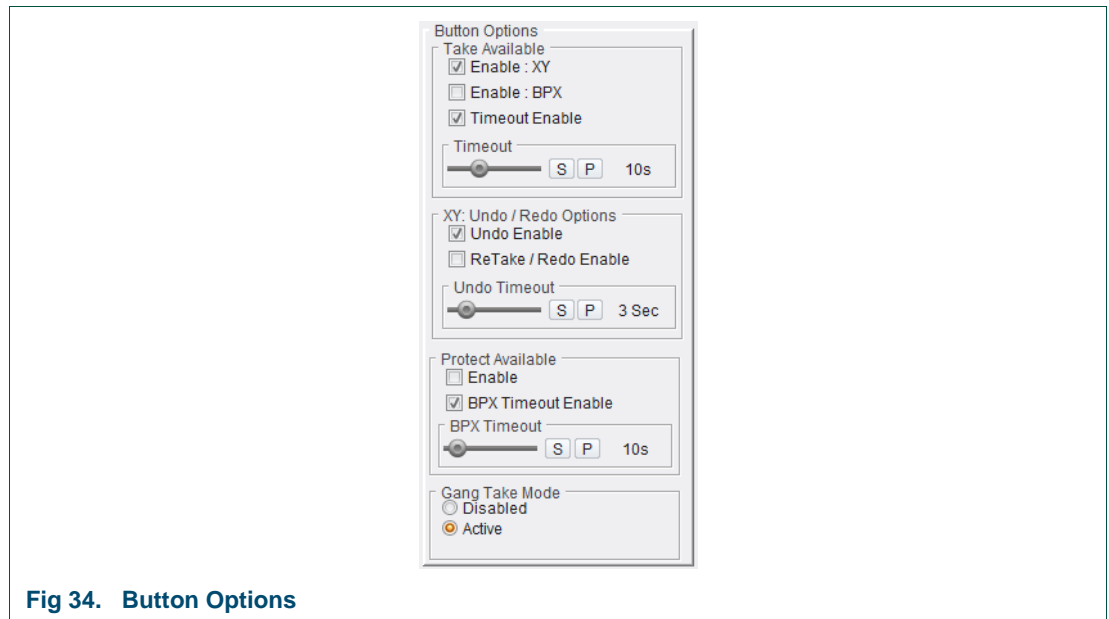


Fig 34. Button Options

#### 3.3.2.1 Take Available

Add a **Take** button to an XY or BPX panel.

**Enable : XY** Check the Enable : XY checkbox to display a **Take** button on an XY panel. This **Take** button flashes and is active when a new route is selected. Pressing the **Take** button confirms the new route.

If this checkbox is disabled, new routes are connected immediately on pressing the source button.

**Enable : BPX** Check the Enable : BPX checkbox to display a **Take** button on a BPX panel. This **Take** button flashes and is active when a new crosspoint is selected. Pressing the **Take** button confirms the new route.

If this checkbox is disabled, new routes are connected immediately on pressing the crosspoint button.

**Timeout Enable** Set the duration after which the **Take** button will timeout.

After the timeout the **Take** button stops flashing and reverts to being inactive. The route defaults back to the previous route.

#### 3.3.2.2 XY: Undo/ Redo Option (LCD panels only)

Add Undo and Redo Operations to an XY panel.

**Note:** Undo and Redo operations can only be added when a **Take** button is enabled on an XY panel.

<b>Undo Enable</b>	<p>Check the Undo Enable checkbox to enable a route to be “undone” after taking. After a Take operation, the <b>Take</b> button is temporarily renamed as <b>Undo</b> for the duration that is set on the Undo Timeout slider. When the button is flashing as <b>Undo</b>, the route may be reverted back to what it was before the Take operation by pressing this button.</p> <p>Once the Undo Timeout duration is reached the <b>Undo</b> button returns to displaying <b>Take</b>, and the taken route remains.</p> <p>If this checkbox is disabled, new routes are connected immediately on pressing the <b>Take</b> button. To undo a route in this case, it must be manually set and taken as any other route.</p>
<b>Retake / Redo Enable</b>	<p>Check the ReTake/Redo Enable check box to re-activate the Take operation after pressing the <b>Undo</b> button.</p> <p>The timeout for this operation is the same as for the normal <b>Take</b> button.</p> <p>If this checkbox is disabled, the existing source and destination remain, and no buttons are activated, after an Undo operation.</p>
<b>Undo Timeout</b>	<p>Set the duration after which the Undo button will timeout.</p> <p>After the timeout the Undo button returns to being a Take button, either active or inactive, according to whether the Retake / Redo Enable function is selected, or not.</p>

### 3.3.2.3 Protect Available

Add a **Protect** button to a panel.

<b>Enable</b>	<p>Check the Enable checkbox to display a <b>Protect</b> button on the panel. When pressed the <b>Protect</b> button flashes and is active. Subsequent presses of destination or crosspoint buttons protects</p> <p>If this checkbox is subsequently disabled, any previously protected destinations cannot be re-routed. To re-route check the Enable checkbox.</p>
<b>BPX Timeout Enable</b>	<p>Set the duration after which the <b>Protect</b> button will timeout, on a BPX panel.</p> <p>After the timeout the <b>Protect</b> button stops flashing and reverts to being inactive.</p>

### 3.3.2.4 Gang Take Mode

Gang Take Mode allows a source to be selected first, followed by a number of destinations for that source to be routed to simultaneously.

- Select the appropriate radio button to activate or disable Gang Take Mode.

**Note:** A Take button must be enabled to use Gang Take Mode.

### 3.3.3 LCD Brightness Dim Timeout (LCD panels only)

This feature automatically dims the brightness of the buttons after the defined period of inactivity.

To change the duration of the timeout period before the buttons dim:

- Move the slider to the set the timeout period in minutes.

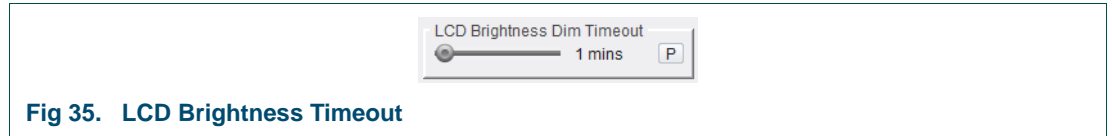


Fig 35. LCD Brightness Timeout

Moving the slider to the minimum value, disables the timeout, leaving the button brightness at the same level all of the time.

- Click the **P** button to return to the factory default setting.

### 3.3.4 Auto Lock Timeout

Auto Lock automatically sets the Lock/Unlock button to Locked after a defined period of inactivity. By default this feature is disabled.

To set the Auto Lock feature and define a timeout period before the button locks:

- Move the slider to the set the timeout period in minutes.

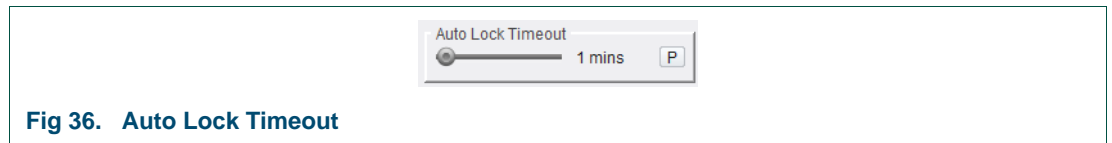


Fig 36. Auto Lock Timeout

- Click the **P** button to return to the factory default setting.

### 3.3.5 Flash Options

The following options, when selected, will cause certain buttons to flash when in a particular state.

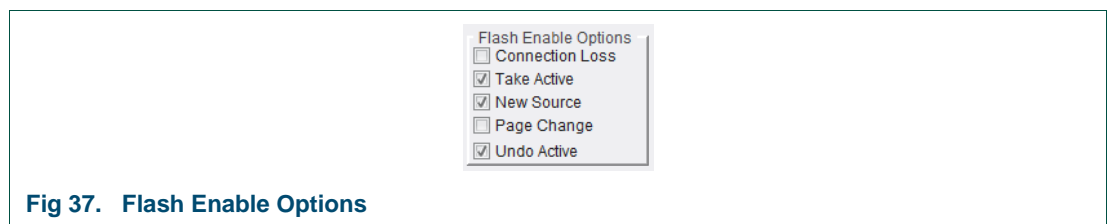


Fig 37. Flash Enable Options

<b>Connection Loss</b>	When a source or destination connection is lost, the relevant button flashes.
<b>Take Active</b>	On selecting a destination, and pressing a source button not already selected, will cause the <b>Take</b> button to flash indicating that a new route is selected, ready to take.
<b>New Source</b>	When pressing a new source button for an existing route, the source button flashes until the <b>Take</b> button is pressed.
<b>Page Change</b>	When navigating through pages of sources and destinations, this option causes a single flash on all buttons of the relevant page, as indication of which page has changed.
<b>Undo Active</b>	When the <b>Undo</b> button is active after a take operation, the button flashes for the duration that Undo is available for.

### 3.3.6 Fixed Button Text (LCD panels only)

This section is used to define the names of the fixed buttons on the panel (not the source and destinations buttons).

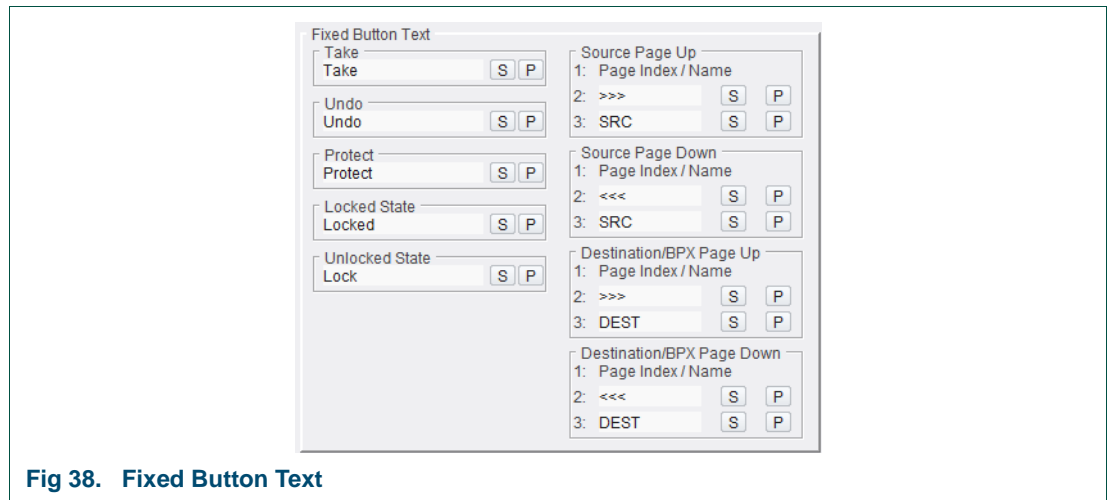


Fig 38. Fixed Button Text

Take, Undo, Protect, Locked State and Unlocked State buttons may contain up to three lines of text, each containing up to six characters. Each line must be delimited by a space " " .

Source and Destination Page Up and Page Down buttons have two lines of editable text by default. The top line is non-editable and is used to indicate the current page number [X]. For example, "[2] Up Dest" would indicate that page 2 of the destinations is currently displayed.

If required, the top line of text on the Source and Destination Page Up and Page Down buttons may be used to name a specific page. See "Source and Destination Configuration" on page 37.

To edit a text field:

1. Click in a text field.
2. Delete existing text and retype as required.
3. Press the Enter key, (or click on the **S** button for that particular field).

Repeat for each of the text fields as necessary.

To set a name back to the factory default name, click on the **P** button for that component.

### 3.3.7 Long Text Display Preferences

Long (up to 32 character) source and destination names are supported by the panels. The controls in this section are used to manipulate the names to suit the button display.

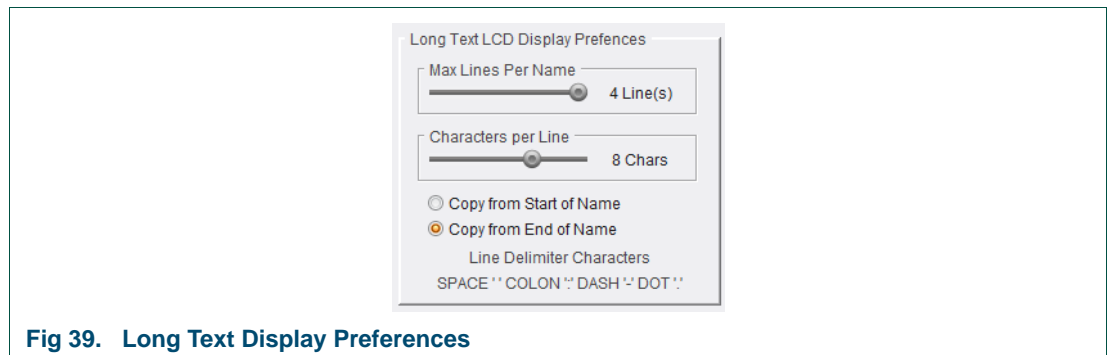


Fig 39. Long Text Display Preferences

- Use the sliding controls to set the maximum number of lines, and the number of characters per line that will display.



- Select the appropriate radio button to display the names starting from the beginning or the end of the name, whichever results in a better display of the name.

**Note:** Each line may be delimited by a space “ ”, a colon “:”, a dash “-”, or a dot “.”.

### 3.3.8 Text Format (LCD panels only)

- Select the radio buttons for text formatting according to the display requirements.

The following table shows examples of each display format:

Format	XY Destination/BPX	Source
Long Text		
Split Text		
Long Text / Port (8 character names only)		
Split Text / Port (8 character names only)		
Long Text Dest - Source		Not applicable
Long Text Dest - Port Source - Port (8 character names only)		Not applicable
Medium Text Dest - Port (7 chars max)		Not applicable
Medium Text (7 chars max)		

**Table 1. LCD Button Text Formats**

**Note:** When a destination is protected, a padlock symbol (🔒) automatically displays after the destination name. This can affect the display of destination names when using the larger text formats.

### 3.4 XY Mapping

#### 3.4.1 Map Buttons on an LCD Panel

**Note:** Ensure that the router has been configured with the desired port names before start the mapping process.

Before using a control panel to perform routing operations, careful consideration should be taken to set up the panel in the most efficient way for the number of sources and destinations, and how the buttons on the panel are going to be used.

Determining the mapping of the buttons defines what displays on each button when the source and destinations are setup in their respective pages, and how the individual pages are to be accessed.

**Note:** The following descriptions relate to a 39-button LCD control panel. The configuration of other LCD control panels is similar, only the number and layout of available buttons changes.

- Select the XY Mapping page.



Fig 40. LCD Control Panel - XY Mapping Page

#### 3.4.1.1 Button Configuration

Button Configuration defines which buttons are used to display the various aspects of each page.

**Note:** Ensure that the button focus is in the correct position before defining the buttons.

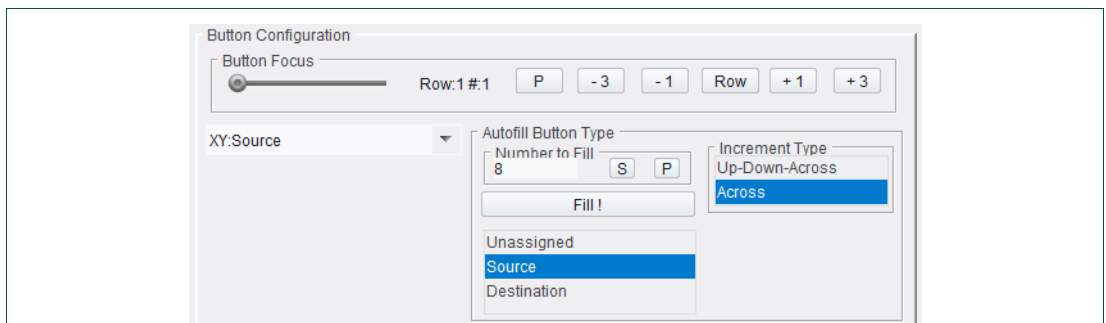


Fig 41. LCD Control Panel - Button Mapping Controls

1. Use the button navigation controls **P** **-3** **-1** **Row** **+1** **+3** to move the button focus (denoted by the text on a button being emboldened) between buttons and rows, or use the cursor keys, to position the button focus at the button to be defined.

- Determine the Increment Type (direction in which buttons are filled when added) by selecting Up-Down-Across or Across.

Source and destination buttons may be defined across the control panel, or running up-down-across. See an example of each in Fig 42.

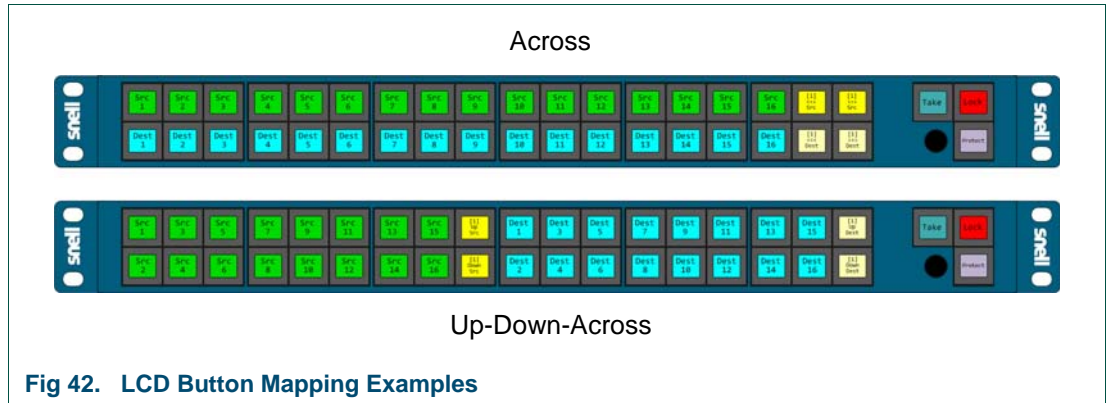


Fig 42. LCD Button Mapping Examples

- Select a button type from the Autofill Button Type:

- Unassigned** Set previously assigned button(s) to be blank and have no function.
- Source** Defines buttons starting from the button focus as source buttons according to the number of buttons to fill.
- Destination** Defines buttons starting from the button focus as destination buttons according to the number of buttons to fill.

- Determine the number of buttons to allocate to the selected button type, enter the value in the Number to Fill field, and press the Enter key.
- Click on the **Fill** button.

Buttons will be assigned and labelled according to the button type, and the number of buttons of that type.

Other button types, and individual buttons are defined by selecting a function from the drop-down list to define the current button at the button focus:

- Unassigned** Sets the current button to be blank and have no function.
- XY:Source** Defines a single button as a source button.
- XY:Destination** Defines a single button as starting a destination button.
- Page:Dest:Up** Defines a single button to navigate forwards through the pages of destinations.  
When on the last page, pressing this button navigates to the first page.
- Page:Dest:Down** Defines a single button to navigate backwards through the pages of destinations.  
When on the first page, pressing this button navigates to the last page.
- Paging:Dest** Defines a button as a Page Button for destination pages, which, when pressed, displays all destination pages allowing direct selection of an individual page of destinations.

<b>Page:Src:Up</b>	Defines a single button to navigate forwards through the pages of sources.  When on the last page, pressing this button navigates to the first page.
<b>Page:Src:Down</b>	Defines a single button to navigate backwards through the pages of sources.  When on the first page, pressing this button navigates to the last page.
<b>Paging:Src</b>	Defines a button as a Page Button for source pages, which, when pressed, displays all sources pages allowing direct selection of an individual page of sources.
<b>Text 1 -10</b>	Defines a button as one of the 10 fixed text buttons. See "Fixed Button Text" on page 36.

### 3.4.1.2 LCD XY Setup

<b>Default</b>	With this radio button selected the panel will automatically fill the buttons with a default configuration on power up. As soon as any changes are made to the configuration the state changes to Custom-Fixed mode.
<b>Custom-Fixed</b>	This mode allows for configuration of the buttons according to the required operation.

**Important:** Selecting Default after configuring a panel in Custom-Fixed mode will overwrite any page configuration. All page mapping is recalculated according to the number of active sources and destinations.

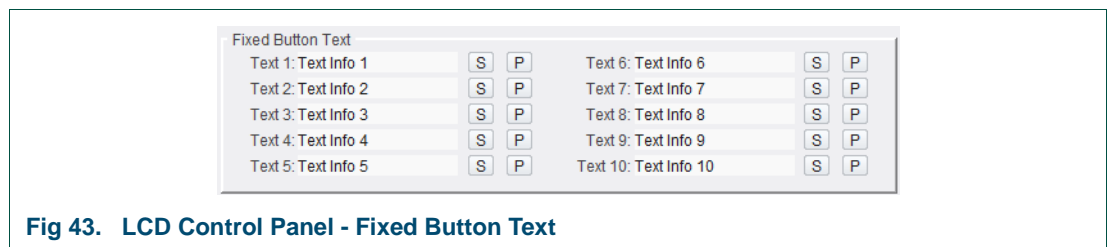
### 3.4.1.3 Fixed Button Text

Free text can be added to any buttons on an LCD panel that are not otherwise assigned to a particular function.

**Note:** Text may also be added to buttons that are assigned as source and destination buttons, but are left unused. See "Add Text to Unused Buttons" on page 40.

To add text to a button:

1. Type text into a free numbered field in the Fixed Button Text section, and press the Enter key.



**Fig 43. LCD Control Panel - Fixed Button Text**

2. Move the button focus to the button which the text is to be added.
3. From the drop-down list in the Fill section, select **Text n**, where n is the number according to which text field is required.

### 3.4.1.4 Source and Destination Configuration

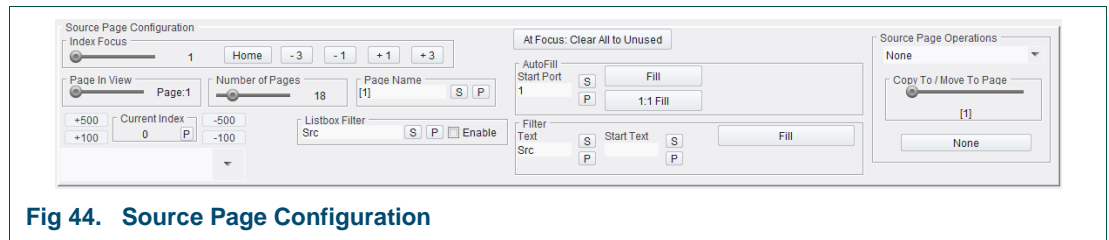
The Source and Destination Page Configuration sections are used to determine which buttons individual sources and destinations are to be allocated to. The buttons can either be set up singly, or grouped together by name.

Source and destination are both set up in the same way. The process that follows shows the configuration of the source pages, however, destination pages are set up in exactly the same manner but by moving the button focus to a destination button.

**Note:** The mapping of the control panel must be defined before setting up the source and destination pages.

- Move the button focus to a source button.

The Source Page Configuration section highlights:



**Fig 44. Source Page Configuration**

#### Number of Pages

Pages can be added or deleted at this stage by adjusting the Number Pages slider bar.

- Use the sliding control, or click on the current value and enter a new value, to define the number of pages available to allocate sources and destinations to.

#### Page in View

The Page in View slider bar, determines which page is currently in view. Any changes to the Indexing will affect the current page only.

To navigate to a different page:

- Use the sliding control, or click on the current value and enter a new value, to enter a page number to navigate to each page.
- If page navigation buttons have been previously configured on the panel, these can be used to navigate through the pages.

#### Page Name

A page name can be added in place of the default page number. This page name displays as the first line of the Page Change, or Page Up and Page Down buttons.

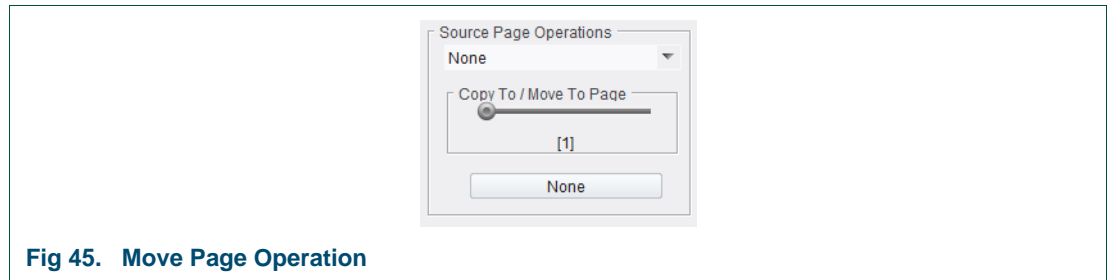
To edit the Page Name:

1. Click in the Page Name field.
2. Delete the existing number/name.

Type a new name, and press the Enter key.

### Edit Pages

Pages can be added, removed, copied, or the order of pages changed, at any time using the Page Operations features.

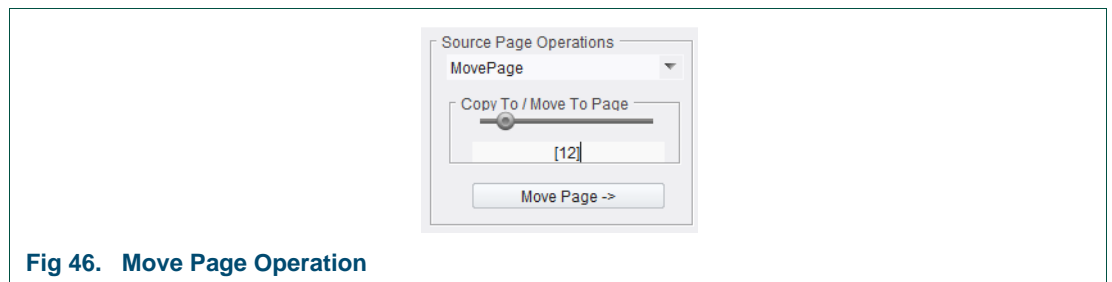


**Fig 45. Move Page Operation**

1. From the drop-down list, select the operation type:

- BlankPage** Sets all buttons on the current page to Unused.
- RemovePage** Removes the current page.  
**Note:** Performing this operation adds a blank page at the last page to maintain the correct Number of Pages.
- CopyPage** Copies the current page to the page number defined on the Copy To / Move To Page slider.  
**Note:** This will replace any buttons previously indexed on the page that is copied to.
- MovePage** Moves the current page to the page number defined on the Copy To / Move To Page slider.  
**Note:** This will replace any buttons previously indexed on the page that is moved to. The original page is set to a blank page.
- InsertBlankPage** Inserts a blank page before the current page.  
**Note:** It may be advisable to increase the number of pages before performing this operation, otherwise the last page will be removed.

2. If copying or moving a page, define the page number on which the operation is to take place with the Copy To / Move To Page slider.



**Fig 46. Move Page Operation**

3. Click the button at the bottom of the Page Operation section.

**Note:** The button displays the operation selected from the drop-down list as confirmation of what operation it will perform.

### Index Pages

The Index buttons displayed at the top of the page indicate the configuration of the buttons for the current page. The number of buttons displayed represents the numbers of sources (or destinations) per page as defined. From here, define which sources (or destinations) are allocated to each of the buttons on each page.



As the Index buttons are filled they update accordingly showing the sources (or destinations) selected for the current page of buttons.

- Use the index navigation controls      to move the index focus to the start position from where to apply sources to the Index buttons.
- Index buttons are defined by:
  - Using the drop-down list to define each Index button individually. The list contains up to 100 port names.

For large routers the contents of this list can be navigated using the +100, -100, +500, and -500 buttons to display the next or previous 100 or 500 ports on the router. Or, by entering a number in the Current Index field, the list displays the next 100 valid port names starting from the Index point. This list can also be filtered in conjunction with the Listbox Filter. See "Filter Port Names" on page 39.

To show port numbers in the drop-down list, check the Show Port Numbers checkbox.

- Using the Autofill functions to quickly allocate blocks of sources (or destinations). After setting up the first page additional buttons display allowing fast indexing of subsequent pages from the last assigned port. See the worked example on page 41.
- Filter sources (or destinations) to allocate a group of similar buttons. See "Filter Port Names" on page 39.
- Set Index buttons to unused either individually from the drop-down list, or from the current button onwards with the **At Focus: Clear All to Unused** button.

### Filter Port Names

To assist with grouping together buttons containing similar names, use the filtering functions.

To reduce the number of items in the drop-down Listbox, the list can be filtered:

1. Type text to filter by in the Listbox Filter text field, and press the Enter key.

**Note:** Filtering matches text from the start of the port name, and is case-sensitive.

2. Check the Enable checkbox.

The Listbox is filtered to include only the text items starting with the text in the filter text field.

To disable the Listbox Filter:

- Uncheck the Enable checkbox.

To add filtered names to the index buttons:

- The filter text box automatically matches the filter text entered in the Listbox Filter text field.

**Note:** To display port numbers in the drop-down list, check the Show Port Numbers checkbox.

- Click on the **Fill** button in the Filter section.

The Index buttons display the sources (or destinations) filtered according to the Listbox Filter, and populated according to the numerical order of the port numbers, continuing from Start Port number.

To further filter the Port names:

1. Type text into the Start Text field and press the Enter key.

**Note:** The text must include the text as in the Filter text field plus extra characters with which to further define the filtering. For example, if the filter text were "SRC", the Start text may be "SRC 2", to only include sources with the numbers starting with "2".

2. Click on the **Fill** button in the Filter section.

The Index buttons display the sources (or destinations) filtered according to the Start Text filter, and populated according to the numerical order of the port numbers, continuing from Start Port number.

### Add Text to Unused Buttons

Buttons on an LCD panel that remain unused, either because gaps have been left when using the **Fill 1:1** button, or at the end of the allocated source or destination ports, can have text displayed on the otherwise blank button. The text can occupy up to a maximum of 18 characters in three rows, delimited by spaces. It is recommended that the word length is limited to 6 characters to ensure that the words fit on the button. Any words longer than 6 characters are truncated.

**Note:** To change the background color of these buttons, edit the Text Buttons color on the LED Colors XY page. See "LED Colors XY" on page 57.

To add text to an Unused button:

1. Move the button focus to a button displaying "Unused".
2. Either:
  - Type text in the Unused Text field and press the Enter key,or
  - Click on the **Copy Page Name** button to add the current page name to the unused button.

**Note:** If the page has not been named, the page number displays.



### Worked Example:

- a For this example, position the button focus such that the top left button (number 1 on row 1) is highlighted.
- b Enter 16 in the Number to Fill field.
- c Select Across from the Implement Type section.
- d Select Source from the Autofill Button type.
- e Click on the **Fill** button.

The first 16 buttons display with **Source n** on the button.

The button focus will already be positioned over the next button in turn (number 17 on row 1, in this example).

- f Select Page:Src:Down from the drop-down list.
- g Move the focus to number 18 in row 1, and select Page:Src:Up from the drop-down list.
- h Move the button focus to the first button in row 2.
- i Select Destination from the Autofill Button type.
- j Click on the **Fill** button.

The first 16 buttons on the second row, display with **Dest n** in the button. When the panel is fully configured these button will display destination.

The button focus will already be positioned over the next button in turn (number 17 on row 2, in this example).

- k Select Page:Dest:Down from the drop-down list.
- l Move the focus to number 18 in row 1, and select Page:Dest:Up from the drop-down list.

The mapping in this example displays as in Fig 48. This figure also shows how this may be represented on the control panel itself once configuration is complete:

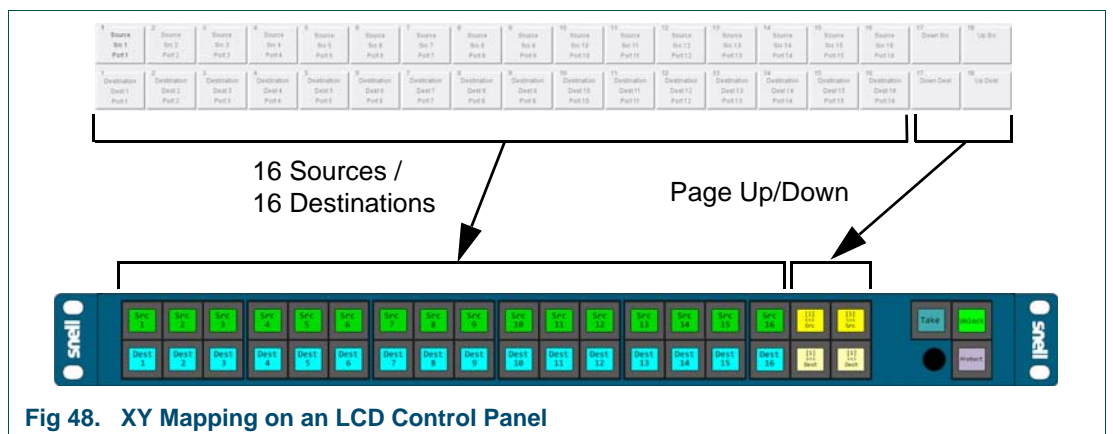


Fig 48. XY Mapping on an LCD Control Panel

- m In the Source Page Configuration section, set the Page in View to 1.
- n Position the Index Focus such that the top left index (number 1) is highlighted. Index buttons are filled in from this point forwards, within the confines of the current page.
- o In AutoFill, set the Start Port to 1.

p Click on the **Fill** button.

The Index buttons display the sources (or destinations) populated according to the numerical order of the port numbers.

**Note:** Clicking the **Fill 1:1** button instead of the **Fill** button populates the buttons in the same manner, but if there are unused ports, gaps will be left. This is useful if unused ports may be added later.

Using the **Fill** button ignores any gaps and populates the buttons continuously.

q Now, set page the Page in View to 2.

r Position the index focus such that the top left index (number 1) is highlighted. Index buttons are filled in from this point forwards, within the confines of the current page.

s Click on the **Fill from Last Assigned** button.

The Index buttons display the sources (or destinations) populated according to the numerical order of the port numbers, continuing from last port number on the previous page.

t Repeat the above sequences until all pages, or all sources (or destinations) have been allocated to Index buttons.

### 3.4.2 Map Buttons on an LED Panel

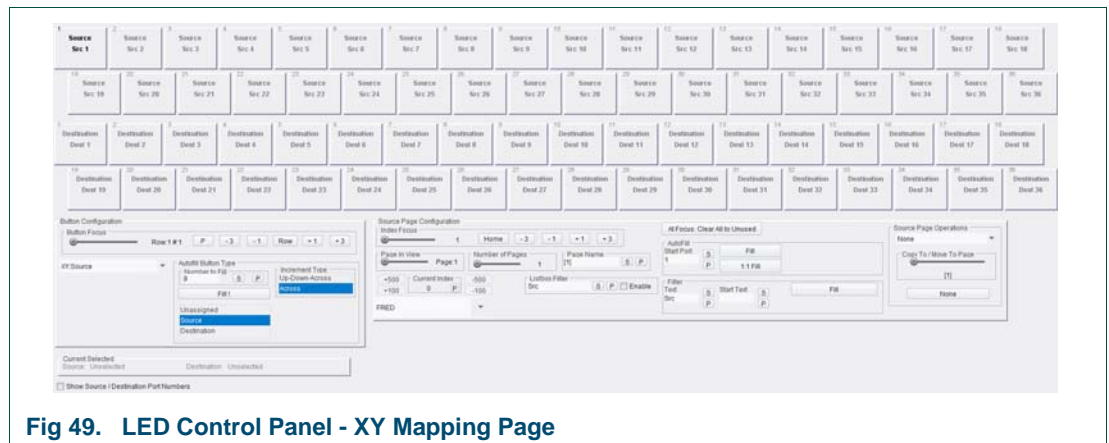
**Note:** Ensure that the router has been configured with the desired port names before start the mapping process.

Before using a control panel to perform routing operations, careful consideration should be taken to set up the panel in the most efficient way for the number of sources and destinations, and how the buttons on the panel are going to be used.

Determining the mapping of the buttons defines what displays on each button when the source and destinations are setup in their respective pages, and how the individual pages are to be accessed.

**Note:** The following descriptions relate to a 78-button LED control panel. The configuration of other LED control panels is similar, only the number and layout of available buttons changes.

- Select the XY Mapping page:



**Fig 49. LED Control Panel - XY Mapping Page**

### 3.4.2.1 Button Configuration

Button Configuration defines which buttons will be used to display the various aspects of each page.

The most important thing here is to ensure that the button focus is in the correct position before defining the buttons.

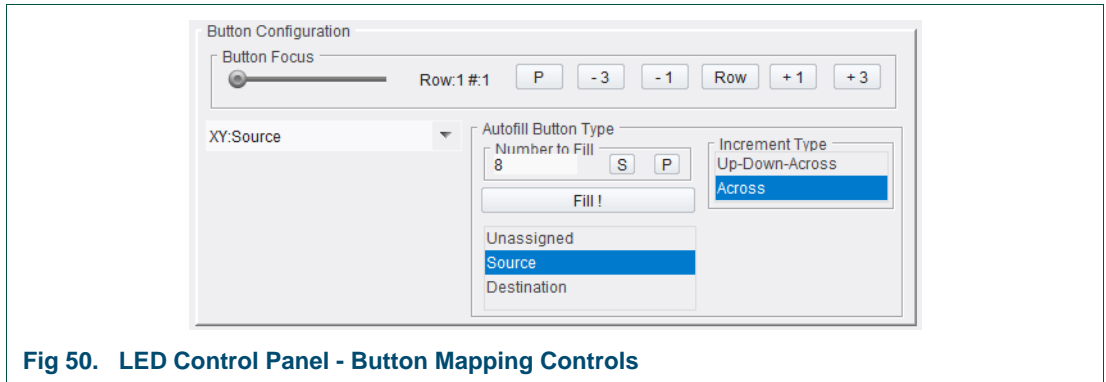


Fig 50. LED Control Panel - Button Mapping Controls

1. Use the button navigation controls       to move the button focus (denoted by the text on a button being emboldened) between buttons and rows, or use the cursor keys, to position the button focus at the button to be defined.
2. Determine the Fill Mode (direction in which buttons are filled when added) by selecting the Mode Across or Mode Up-Down radio button.

Source and destination buttons may be defined across the control panel, or running up and down. See an example of each in Fig 42.

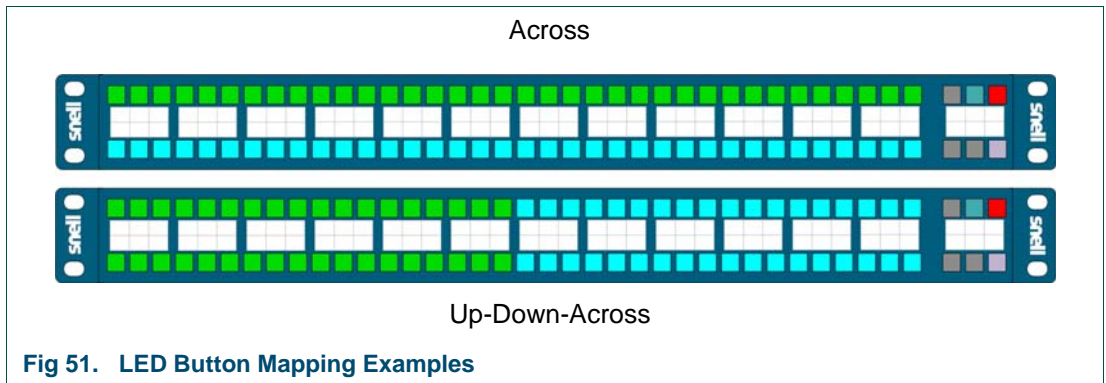


Fig 51. LED Button Mapping Examples

3. Select a button type from the Autofill Button Type:
  - Unassigned** Set previously assigned button(s) to be blank and have no function.
  - Source** Defines buttons starting from the button focus as source buttons according to the number of buttons to fill.
  - Destination** Defines buttons starting from the button focus as destination buttons according to the number of buttons to fill.
4. Click on the **Fill** button.

Buttons will be assigned and labelled according to the button type, and the number of buttons of that type.

- Other button types, and individual buttons are defined by selecting a function from the drop-down list to define the current button at the button focus:

**Unassigned** Sets the current button to be blank and have no function.

**XY:Source** Defines a single button as a source button.

**XY:Destination** Defines a single button as starting a destination button.

**DstPage #** Sets a page of destinations to a button. Pressing this button displays the destinations defined on page number #.

**Note:** the number of pages must be defined in the Destination Configuration before this can be selected.

**SrcPage #** Sets a page of sources to a button. Pressing this button displays the sources defined on page number #.

**Note:** the number of pages must be defined in the Sources Configuration before this can be selected.

### 3.4.2.2 Source and Destination Configuration

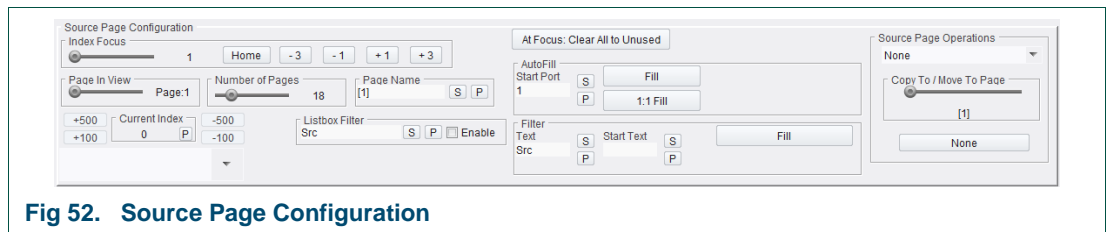
The Source and Destination Page Configuration sections are used to determine which buttons individual sources and destinations are to be allocated to. The buttons can either be set up singly, or grouped together by name.

Sources and destinations are both set up in the same way. The process that follows shows the configuration of the source pages, however, destination pages are set up in exactly the same manner but by moving the button focus to a destination button.

**Note:** The mapping of the control panel must be defined before setting up the source and destination pages.

- Move the button focus to a source button.

The Source Page Configuration section highlights:



**Fig 52. Source Page Configuration**

#### Number of Pages

Pages can be added or deleted at this stage by adjusting the Number Pages slider bar.

- Use the sliding control, or click on the current value and enter a new value, to define the number of pages available to allocate sources and destinations to.

#### Page in View

The Page in View slider bar, determines which page is currently in view. Any changes to the Indexing will affect the current page only.

To navigate to a different page:

- Use the sliding control, or click on the current value and enter a new value, to enter a page number to navigate to each page.
- If page navigation buttons have been previously configured on the panel, these can be used to navigate through the pages.

### Page Name

A page name can be added in place of the default page number. This page name displays as the first line of the Page Change, or Page Up and Page Down buttons.

To edit the Page Name:

1. Click in the Page Name field.
2. Delete the existing number/name.

Type a new name, and press the Enter key.

### Edit Pages

Pages can be added, removed, copied, or the order of pages changed, at any time using the Page Operations features.

1. From the drop-down list, select the operation type:

**BlankPage** Sets all buttons on the current page to Unused.

**RemovePage** Removes the current page.

**Note:** Performing this operation adds a blank page at the last page to maintain the correct Number of Pages.

**CopyPage** Copies the current page to the page number defined on the Copy To / Move To Page slider.

**Note:** This will replace any buttons previously indexed on the page that is copied to.

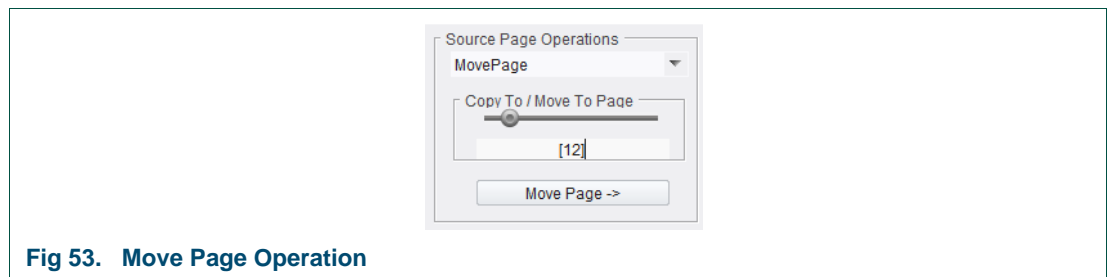
**MovePage** Moves the current page to the page number defined on the Copy To / Move To Page slider.

**Note:** This will replace any buttons previously indexed on the page that is moved to. The original page is set to a blank page.

**InsertBlankPage** Inserts a blank page before the current page.

**Note:** It may be advisable to increase the number of pages before performing this operation, otherwise the last page will be removed.

2. If copying or moving a page, define the page number on which the operation is to take place with the Copy To / Move To Page slider.



**Fig 53. Move Page Operation**

3. Click the button at the bottom of the Page Operation section.

**Note:** The button displays the operation selected from the drop-down list as confirmation of what operation it will perform.

### Indexing Pages

The Index buttons displayed at the top of the page indicate the configuration of the buttons for the current page. The number of buttons displayed represents the numbers of sources (or destinations) per page as defined. From here, define which sources (or destinations) are allocated to each of the buttons on each page.



Fig 54. Index Buttons

As the Index buttons are filled they update accordingly showing the sources (or destinations) selected for the current page of buttons.

- Use the index navigation controls      to move the index focus to the start position from where to apply sources to the Index buttons.
- Index buttons are defined by:
  - Using the drop-down list to define each Index button individually. The list contains up to 100 port names.

For large routers the contents of this list can be navigated using the +100, -100, +500, and -500 buttons to display the next or previous 100 or 500 ports on the router. Or, by entering a number in the Current Index field, the list displays the next 100 valid port names starting from the Index point.

This list can also be filtered in conjunction with the Listbox Filter. See “Filter Port Names” on page 46.

To show port numbers in the drop-down list, check the Show Port Numbers checkbox.

- Using the Autofill functions to quickly allocate blocks of sources (or destinations). After setting up the first page additional buttons display allowing fast indexing of subsequent pages from the last assigned port. See the following Worked Example.
- Filter sources (or destinations) to allocate a group of similar buttons. See “Filter Port Names” on page 46.
- Set Index buttons to unused either individually from the drop-down list, or from the current button onwards with the **At Focus: Clear All to Unused** button.

### Filter Port Names

To assist with grouping together buttons containing similar names, use the filtering functions.

To reduce the number of items in the drop-down Listbox, the list can be filtered:

1. Type text to filter by in the Listbox Filter text field, and press the Enter key.

**Note:** Filtering matches text from the start of the port name, and is case-sensitive.

2. Check the Enable checkbox.

The Listbox is filtered to include only the text items starting with the text in the filter text field.

To disable the Listbox Filter:

- Uncheck the Enable checkbox.

To add filtered names to the index buttons:

- The filter text box automatically matches the filter text entered in the Listbox Filter text field.

**Note:** To display port numbers in the drop-down list, check the Show Port Numbers checkbox.

- Click on the **Fill** button in the Filter section.

The Index buttons display the sources (or destinations) filtered according to the Listbox Filter, and populated according to the numerical order of the port numbers, continuing from Start Port number.

To further filter the Port names:

1. Type text into the Start Text field and press the Enter key.

**Note:** The text must include the text as in the Filter text field plus extra characters with which to further define the filtering. For example, if the filter text were "SRC", the Start text may be "SRC 2", to only include sources with the numbers starting with "2".

2. Click on the **Fill** button in the Filter section.

The Index buttons display the sources (or destinations) filtered according to the Start Text filter, and populated according to the numerical order of the port numbers, continuing from Start Port number.

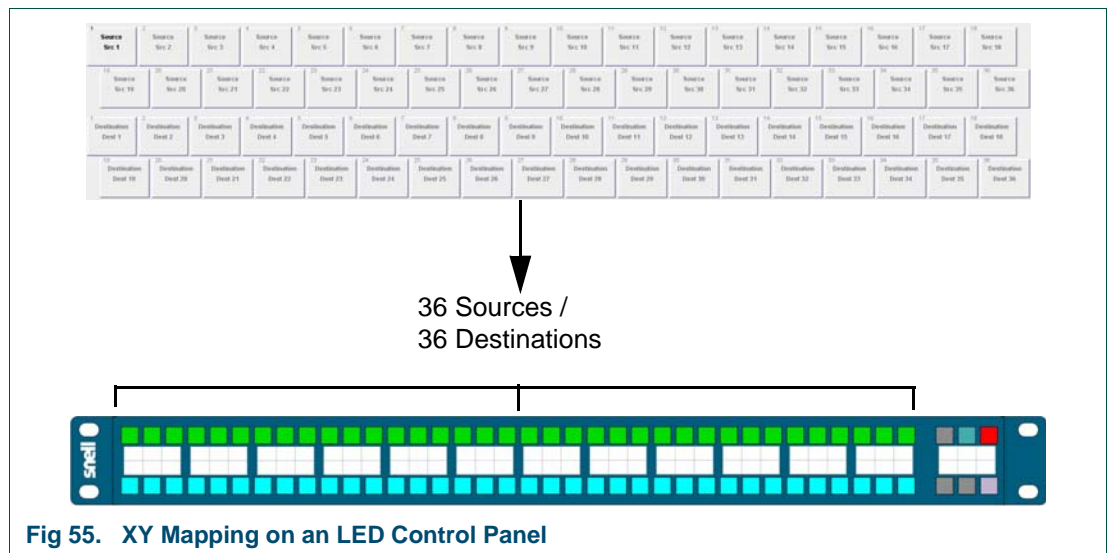
### Worked Example:

- a For this example, position the button focus such that the top left button (number 1 on row 1) is highlighted.
- b Enter 36 in the Number to Fill field.
- c Select Across from the Implement Type section.
- d Select Source from the Autofill Button type.
- e Click on the **Fill** button.
- f The first 36 buttons display with **Source n** on the button.
- g Move the button focus to the first button in row 2.
- h Select Destination from the Autofill Button type.
- i Click on the **Fill** button.

The first 36 buttons on the second row, display with **Dest n** in the button. When the panel is fully configured these button will display destination.

The mapping in this example would display as in the following figure. This figure also shows how this may be represented on the control panel itself once configuration is complete:





- j In the Source Page Configuration section, set the Page in View to 1.
- k Position the Index Focus such that the top left index (number 1) is highlighted. Index buttons are filled in from this point forwards, within the confines of the current page.
- l In AutoFill, set the Start Port to 1.
- m Click on the **Fill** button.

The Index buttons display the sources (or destinations) populated according to the numerical order of the port numbers.

**Note:**

Clicking the **Fill 1:1** button instead of the **Fill** button populates the buttons in the same manner, but if there are unused ports, gaps will be left. This is useful if unused ports may be added later.

Using the **Fill** button ignores any gaps and populates the buttons continuously.

- n Now, set page the Page in View to 2.
- o Position the Index Focus such that the top left index (number 1) is highlighted. Index buttons are filled in from this point forwards, within the confines of the current page.
- p Click on the **Fill from Last Assigned** button.

The Index buttons display the sources (or destinations) populated according to the numerical order of the port numbers, continuing from last port number on the previous page.

- q Repeat the above sequences until all pages, or all sources (or destinations) have been allocated to Index buttons.



### 3.5 XY Status/Control

The XY Status/Control page is used to view the status of each configured button, and to control the panel using the on-screen buttons. The buttons work as if pressing the actual buttons (and rotary control, if applicable) on the panel.



Fig 56. XY Status/Control

The Lock / Protect / Take section on the left indicates the status of these three buttons.

The Current Selected section indicates which source, destination, and preset is selected, or if none are selected.

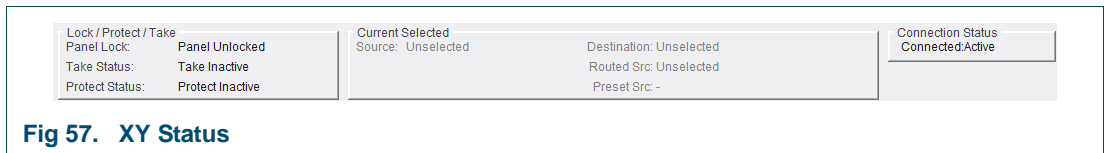


Fig 57. XY Status

The bottom part of the page shows how the individual buttons have been configured, and under each is a soft button which, when pressed, mirrors the action of pressing the same physical button on the control panel.

For example, the panel may be locked/unlocked, routes may be set or destinations protected, directly from this screen.

**Note:** When in Offline Mode operations such as setting routes and protecting destinations are not available.

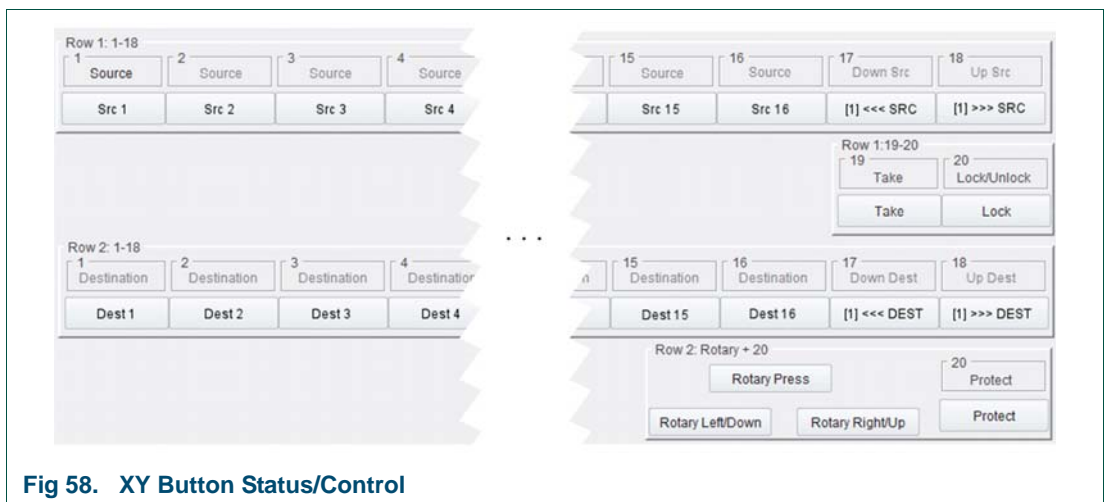


Fig 58. XY Button Status/Control

## 3.6 BPX Mapping

The setup on the BPX buttons are basically the same for both LCD and LED panels. The main differences being the selection of pages, and no text functionality on LED panels.

**Note:** Ensure that the router has been configured with the desired port names before start the mapping process.

### 3.6.1 Page Setup

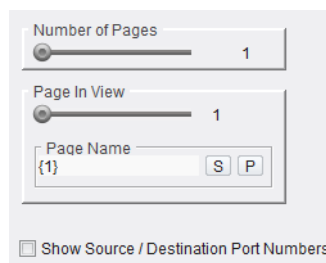
#### 3.6.1.1 Number of Pages

Pages can be added or deleted by adjusting the Number Pages slider bar.

- Use the sliding control, or click on the current value and enter a new value, to define the number of pages available.

#### 3.6.1.2 Page in View

The Page in View slider bar, determines which page is currently in view. Any changes to the Indexing will affect the current page only.



**Fig 59. Page Numbers**

To navigate to a different page:

- Use the sliding control, or click on the current value and enter a new value, to enter a page number to navigate to each page.
- If page navigation buttons have been previously configured on the panel, these can be used to navigate through the pages.

#### 3.6.1.3 Page Name

A page name can be added in place of the default page number. This page name displays as the first line of the Page Change, or Page Up and Page Down buttons.

To edit the Page Name:

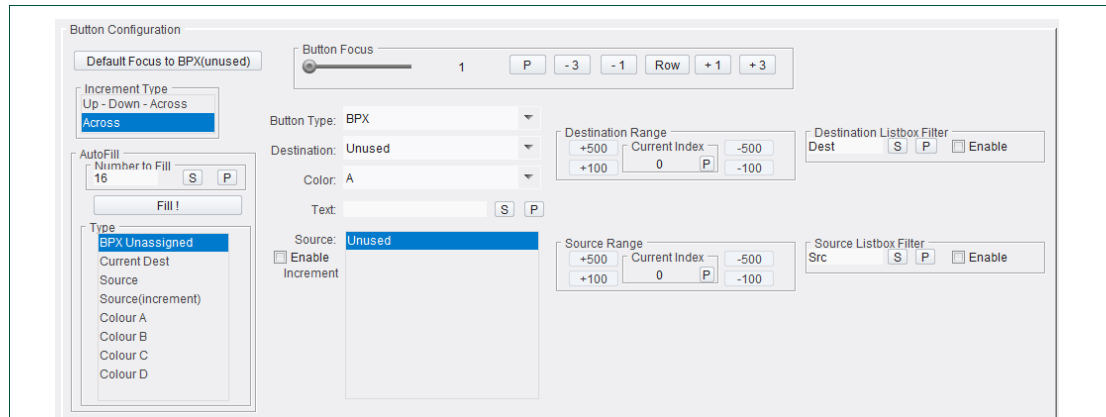
1. Click in the Page Name field.
2. Delete the existing number/name.

Type a new name, and press the Enter key.

### 3.6.2 Button Configuration

Button Configuration defines how the buttons will be used.

**Note:** Ensure that the button focus is in the correct position before defining the buttons.



**Fig 60. LED Control Panel - Button Mapping Controls**

1. Use the button navigation controls P -3 -1 Row +1 +3 to move the button focus (denoted by the text on a button being emboldened) between buttons and rows, or use the cursor keys, to position the button focus at the button to be defined.
2. Select a button type from the Button Type drop-down list.

- Unassigned**      A blank button with no function attributed to it.
- BPX**                A BPX (button per crosspoint) button, that, when a source and destination have been defined, sets an instant crosspoint when the button is pressed.

On an LCD panel the following button types are also available:

- Page Text**        A text button displayed on the current page only.
- Global Text**     A text button displayed regardless of page on display.
- Page Up**         A page navigation button to step to the next page.
- Page Down**     A page navigation button to step back to the previous page.
- Paging**          A page navigation button to display pages for further selection.

On an LED panel the following button types are also available:

- Page #**            A page selection button. The number of page selection buttons available is defined by how many pages have been set up.

3. Select a source from the BPX Source drop-down list.

This list contains up to 100 port names. For large routers the contents of this list can be navigated using the +100, -100, +500, and -500 buttons to display the next or previous 100 or 500 ports on the router. Or, by entering a number in the Current Index field, the list will start from that number.

This list can be filtered to allow a source to be found quickly. See "Filter Port Names" on page 53.

To show port numbers in the drop-down list, check the Show Port Numbers checkbox.

4. Select a destination from the BPX drop-down list.

This list contains up to 100 port names. For large routers the contents of this list can be navigated using the +100, -100, +500, and -500 buttons to display the next or previous 100 or 500 ports on the router. Or, by entering a number in the Current Index field, the list displays the next 100 valid port names starting from the Index point. This list can be filtered to allow a source to be found quickly. See "Filter Port Names" on page 53.

To show port numbers in the drop-down list, check the Show Port Numbers checkbox.

5. Optionally, on an LCD panel only, text may be added to the button. Type text into the BPX field and press the Enter key.

**Note:** Text added here replaces the text format as setup in the Config page.

6. Select a color scheme for the button, by selecting A, B, C, or D from the BPX color drop-down list.

Up to four colors can be defined to help denote clear grouping of certain crosspoints on the panel (split BPX operation). The colors are defined in the LED Colors BPX page. See "LED Colors BPX" on page 58.

### 3.6.2.1 Auto-Increment

To set a series of buttons in quick succession using the same destination:

**Note:** The destination must be set before the source for the auto-increment to work

1. Select the direction for the incrementing of the set buttons, either Up - Down, or Across the panel.
2. Select the destination to which the buttons are to be set.
3. Select a source.

The crosspoint is set. The button focus automatically moves to the next BPX button.

**Note:** If a button has been previously assigned to anything other than BPX, it is skipped when auto-incrementing.

Select another source.

The crosspoint is set, and the button focus automatically moves to the next BPX button.

Repeat as many times as required using the same destination.

### Worked Example

To set a single BPX button:

- a Move the button focus to the relevant button.
- b Select BPX from the Button Type drop-down list.
- c Select a source from the BPX Source drop-down list.
- d Select a destination from the BPX drop-down list.
- e Select a color scheme for the button, by selecting A, B, C, or D from the BPX color drop-down list.

#### 3.6.2.2 Full BPX Example on an LED Panel

In this example, all buttons are set to a single destination.

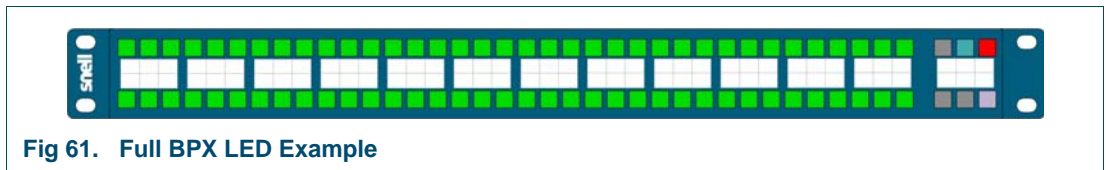


Fig 61. Full BPX LED Example

#### 3.6.2.3 Split BPX Example on an LED Panel

In this example, three destinations are used, each with a number of sources routed to them. By using different color schemes the panel can be visually split into the different destinations.

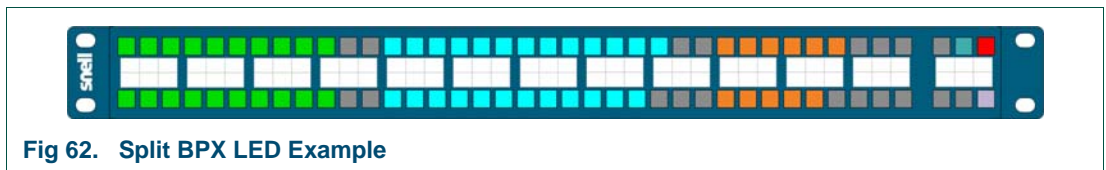


Fig 62. Split BPX LED Example

### 3.6.3 Filter Port Names

To assist with selecting a source or destination, use the relevant Listbox Filter.

To reduce the number of items in either the source or destination drop-down Listbox:

- 1. Type text to filter by in the Listbox Filter text field, and press the Enter key.

**Note:** Filtering matches text from the start of the port name, and is case-sensitive.

- 2. Check the Enable checkbox.

The Listbox is filtered to include only the text items starting with the text in the filter text field.

To disable the Listbox Filter:

- Uncheck the Enable checkbox.

**Note:** To display port numbers in the drop-down list, check the Show Port Numbers checkbox.

### 3.7 BPX Status/Control

The BPX Status/Control page is used to view the status of each configured button, and to control the panel using the on-screen buttons. The buttons work as if pressing the actual buttons (and rotary control, if applicable) on the panel.



Fig 63. BPX Status/Control

The Lock / Protect / Take section on the left indicates the status of these three buttons.

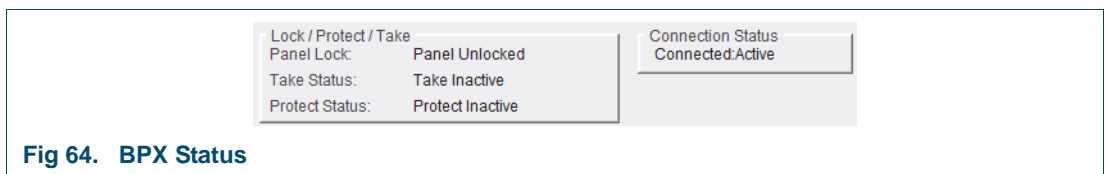


Fig 64. BPX Status

The bottom part of the page shows how the individual buttons have been configured, and under each is a soft button which, when pressed, mirrors the action of pressing the same physical button on the control panel.

For example, the panel may be locked/unlocked, crosspoints may be set or destinations protected, directly from this screen.

**Note:** When in Offline Mode operations such as setting crosspoints and protecting destinations are not available

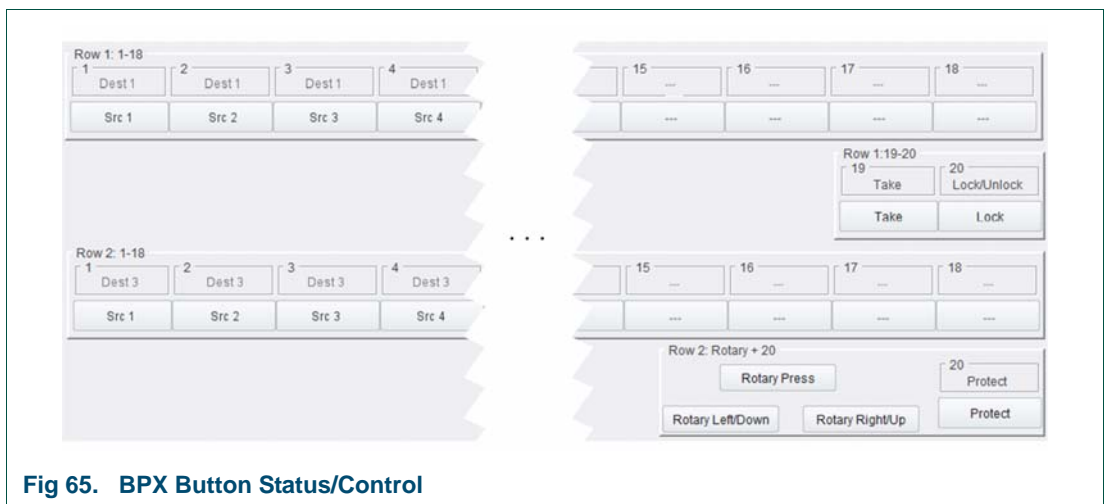


Fig 65. BPX Button Status/Control

### 3.8 Panel Salvos

Use Panel Salvos to return a router back to a known state, or as an alternative starting point with different settings.

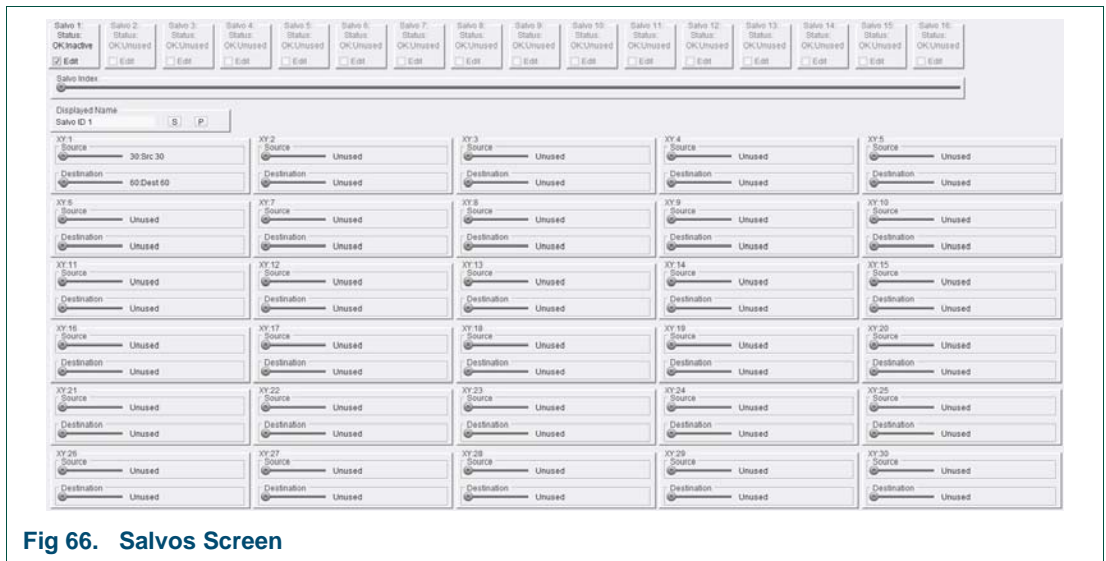


Fig 66. Salvos Screen

#### 3.8.1 Panel Salvo Status

Each panel salvo has a status indicated in the salvo box:

- OK:Unused                      Salvo has not been set up and is empty.
- OK:Inactive                    Salvo is set up correctly, but not currently active.
- OK:Active                      All configured salvo routes are true (tallied).
- WARN                            Some parameters in the salvo are incorrect, or incomplete.
- FAIL                             Salvo not accessible. Usually indicates a duplicate destination.

#### 3.8.2 Set up a Panel Salvo

To create a panel salvo:

1. Move the Salvo index slider to highlight the relevant Salvo number.
2. Check the Edit checkbox.
3. Edit the name for the panel salvo, and press the Enter key.
4. Using the sliders, set as many crosspoints as required in the XY numbered section.

#### 3.8.3 Add a Panel Salvo to a Button

Panel salvos are added to unused destination buttons in the XY Mapping or BPX Mapping pages.

1. Move the button focus to a destination button.
2. Select the relevant panel salvo from the drop-down list in the Destination page Configuration section.

### 3.9 GPIO

The functions of each inputs and outputs are defined on this page. Equipment connected through the GPIO connector may required supply references (+5V and Ground). Current limit stops any connected equipment overloading the panel supply.

**Note:** GPIO Input Salvos are edge triggered. Camera/Joystick Overrides are level triggered.

The pinouts for the GPIO connector are in the Technical Specification. See “GPIO” on page 111.

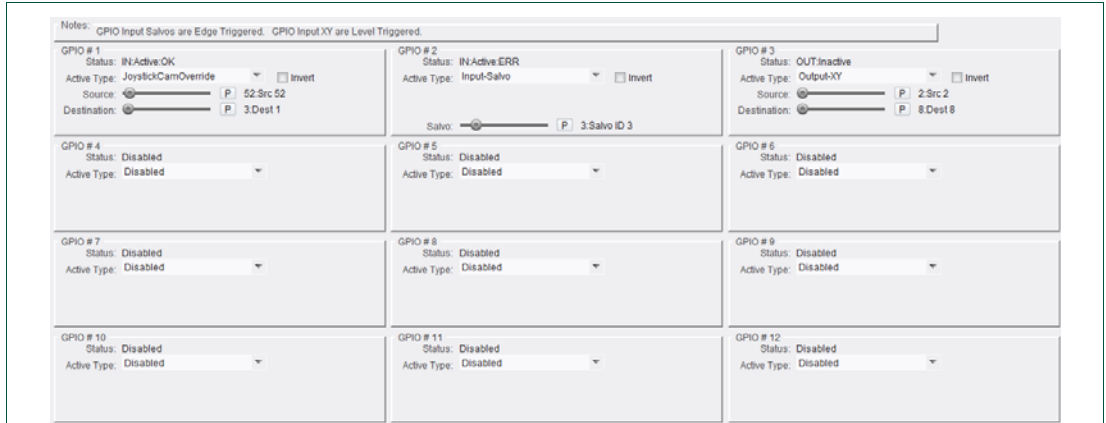


Fig 67. GPIO Screen

#### 3.9.1 Define the IO Functions

1. Select the Active Type from the drop-down list.

<b>Disabled</b>	No function defined
<b>JoystickCamOverride</b>	On receiving an input signal, a crosspoint is initiated
<b>Input-Salvo</b>	On receiving an input signal, a salvo is initiated
<b>Output-XY</b>	On a crosspoint being initiated, an output signal is sent
<b>Output-Salvo</b>	On a crosspoint being initiated, an output signal is sent

**Note:** GPIO ports 7-12 are input only.

2. Using the sliders set the relevant crosspoint or salvo to add as the function to the input/output, as selected.
3. If required, the active type may be inverted, by checking the Invert checkbox.



### 3.10 Customize Button Colors

#### 3.10.1 Button Colors

Buttons on the control panels have colors that can be customized to suit their application, or user preference. LCD panel buttons are backlit with LEDs, so the means of changing the colors is the same for both LCD and LED panels.

**Note:** When using Power over Ethernet some button selections have limited color options.

##### 3.10.1.1 LED Colors XY

On an XY panel colors can be customized for the following button types:

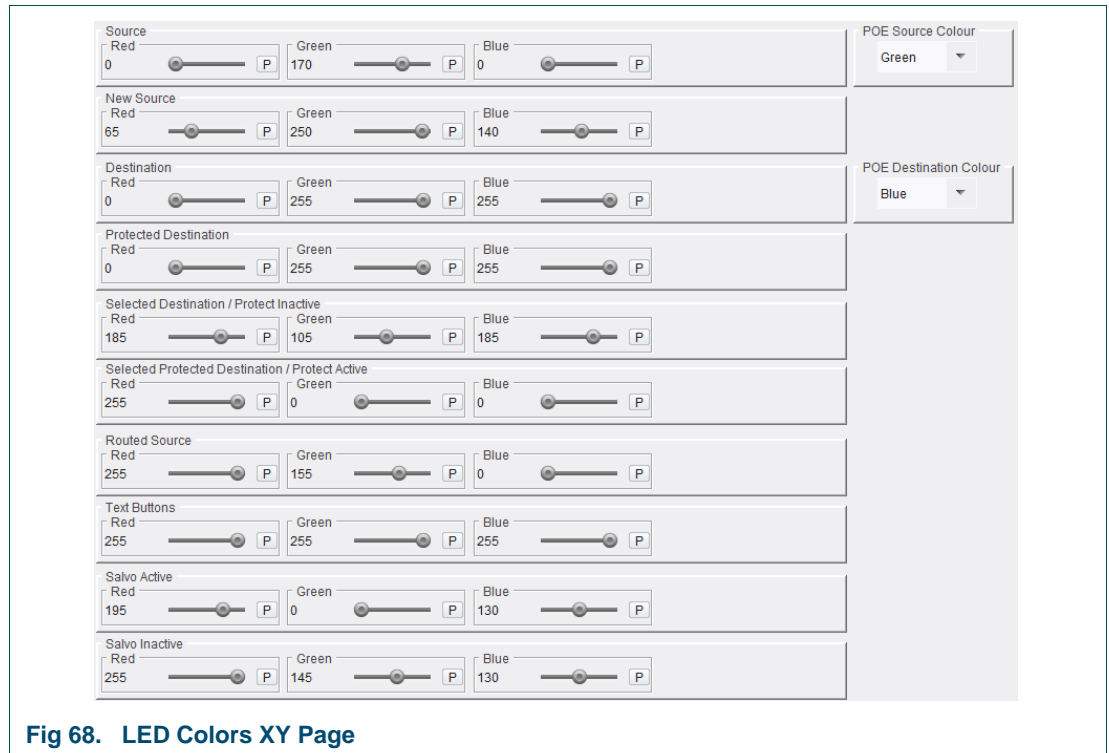


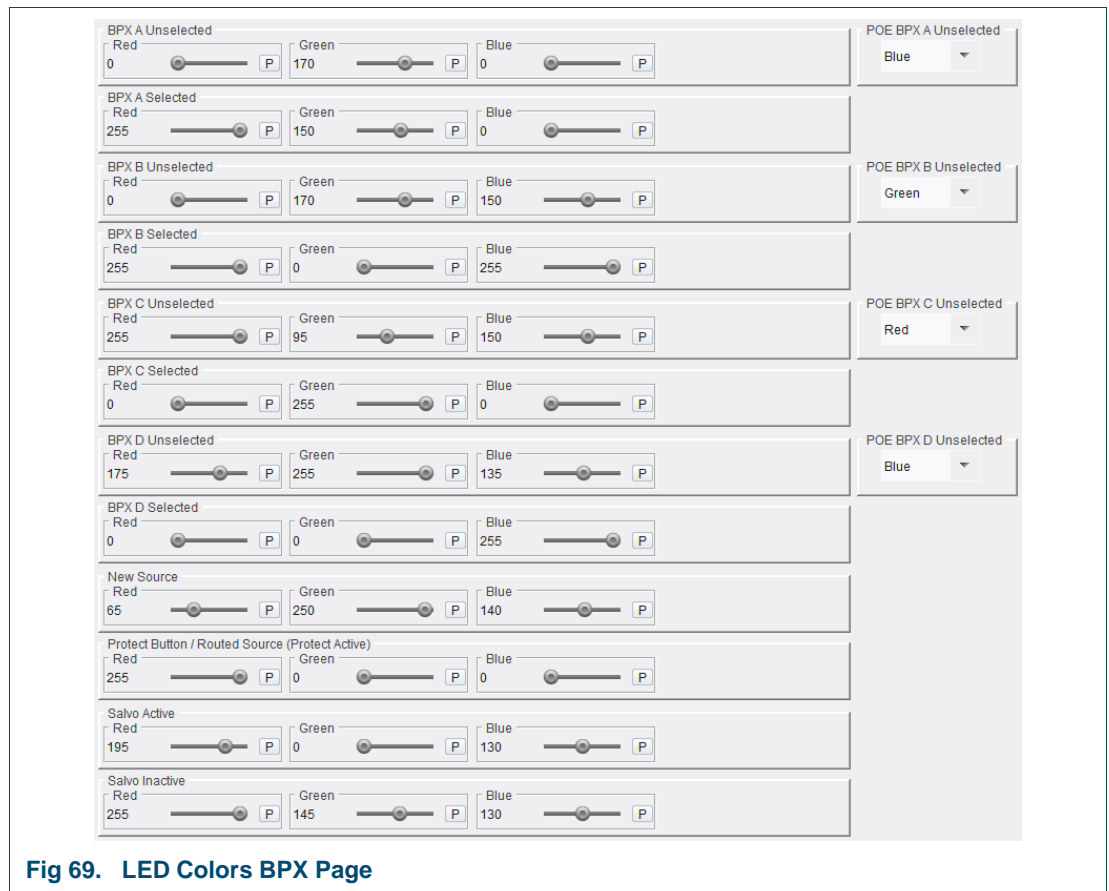
Fig 68. LED Colors XY Page

<b>Source</b> <sup>[1]</sup>	The source signal from an input port.
<b>New Source</b>	Indicates a change of source on a port.
<b>Destination</b> <sup>[1]</sup>	The destination signal on an output port.
<b>Protected Destination</b>	The route on this destination is protected. To make changes to the route the destination must first be unprotected.
<b>Selected Destination / Protect Inactive</b>	The currently selected destination.
<b>Selected Destination / Protect Active</b>	The currently selected destination, that has been protected.
<b>Routed Source</b>	The source has been routed to the currently selected destination.
<b>Text Buttons</b>	Unassigned buttons used to display free text.
<b>Salvo Active</b>	A salvo is currently active, or recently completed.
<b>Salvo Inactive</b>	An inactive or unassigned salvo button.

<sup>[1]</sup> Available colors are limited when using PoE. See “Color Selection When Using PoE” on page 60.

### 3.10.1.2 LED Colors BPX

On a BPX panel colors can be customized for the following button types:



**Fig 69. LED Colors BPX Page**

- BPX A Unselected** <sup>[1]</sup> Color scheme A for unselected crosspoint buttons.
- BPX A Selected** Color scheme A for selected crosspoint buttons.
- BPX B Unselected** <sup>[1]</sup> Color scheme B for unselected crosspoint buttons.
- BPX B Selected** Color scheme B for selected crosspoint buttons.
- BPX C Unselected** <sup>[1]</sup> Color scheme C for unselected crosspoint buttons.
- BPX C Selected** Color scheme C for selected crosspoint buttons.
- BPX D Unselected** <sup>[1]</sup> Color scheme D for unselected crosspoint buttons.
- BPX D Selected** Color scheme D for selected crosspoint buttons.
- New Source** Indicates a change of source on a port.
- Protect Button / Routed Source (Protect Active)** The panel is protected, and buttons cannot be pressed without first deactivating protect.
- Salvo Active** A salvo is currently active, or recently completed.
- Salvo Inactive** An inactive or unassigned salvo button.

<sup>[1]</sup> Available colors are limited when using PoE. See “Color Selection When Using PoE” on page 60.

### 3.10.1.3 LED Colors Other

On both an XY panel or a BPX panel, colors can be customized for the following button types:

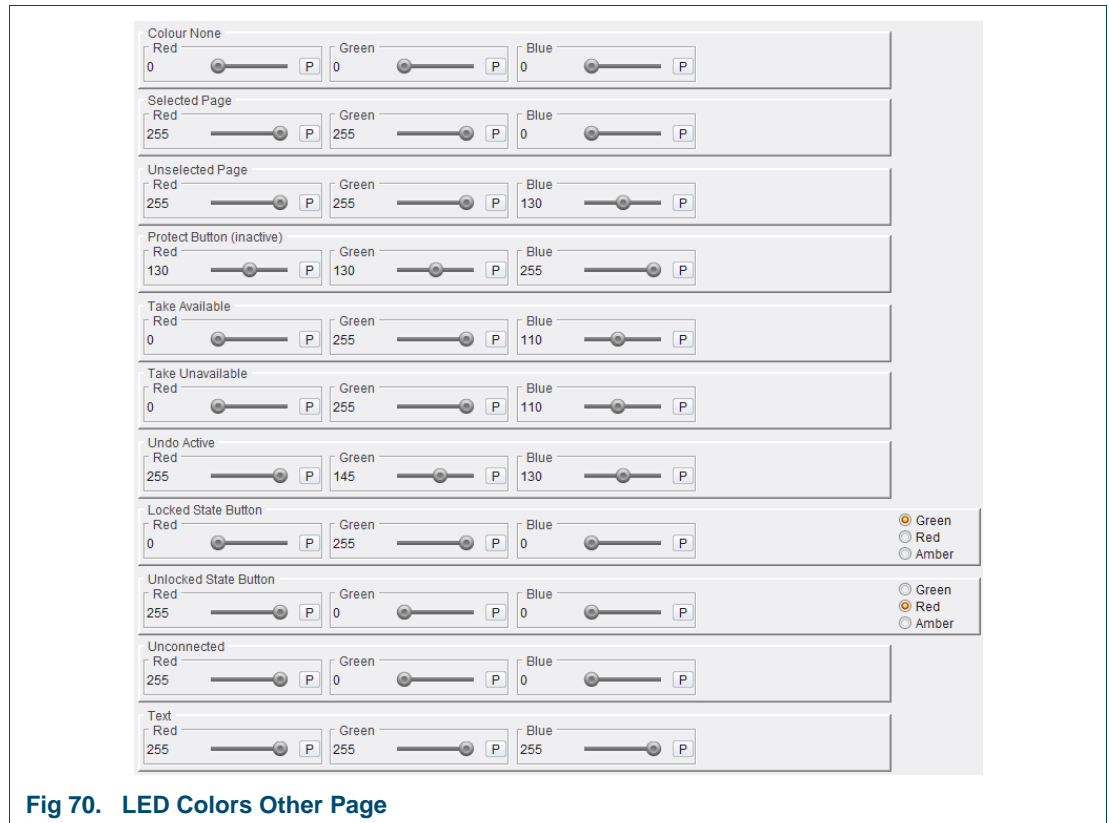


Fig 70. LED Colors Other Page

<b>Color None</b>	An unused button.
<b>Selected Page</b>	Currently selected page button (LCD panel only).
<b>Unselected Page</b>	Unselected page button (LCD panel only).
<b>Protect Buttons (inactive)</b>	The Protect button used for protecting destinations, and the destination buttons that are protected.
<b>Take Available</b>	The Take button, and the selected source button indicating that a route is pre-selected and ready to be taken.
<b>Take Unavailable</b>	The Take button, when no routes have been pre-selected.
<b>Undo Active</b>	For the duration that this button is lit, the previous route selected may be undone back to the previous state.
<b>Locked State Button</b>	The color of the Lock/Unlock button when the panel is locked.  There are three preset colors that can be used, by simply selecting one of the radio buttons on the right-hand side of this color setting.
<b>Unlocked State Button</b>	The color of the Lock/Unlock button when the panel is unlocked.  There are three preset colors that can be used, by simply selecting one of the radio buttons on the right-hand side of this color setting.
<b>Unconnected</b>	Unconnected color is the color of the buttons when the panel is not connected to the router
<b>Text</b>	Unused button text.

### 3.10.2 Change the Color of a Button

LED colors are defined using standard RGB values.

To change the color of a button:

- Move the sliders for each component and watch the color change dynamically with the movement of each slider.

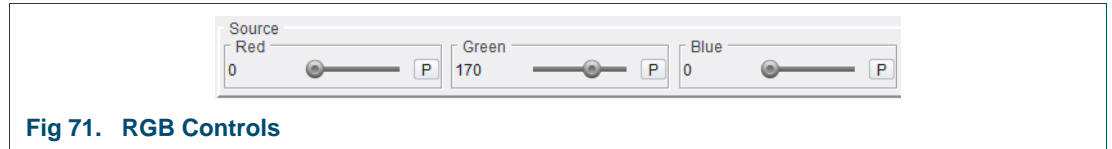


Fig 71. RGB Controls

- If a particular known RGB color is required, click on the numeric value of a color component, and type in the desired value of the color for that component.

To set a button color back to the factory default color:

- Click on the **P** (preset) button for each of the RGB components for that button.

To return all colors back to the factory default:

- Click the **Default All** button.

#### 3.10.2.1 Color Selection When Using PoE

Unselected source, destination and crosspoint buttons are limited to primary colors only when using PoE mode.

To change the color of a button when using PoE:

- Select Red, Green or Blue from the drop down list.

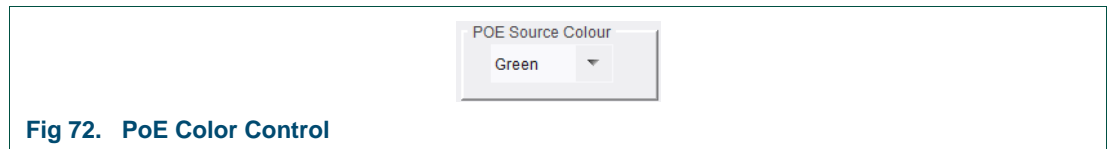


Fig 72. PoE Color Control

### 3.10.3 Change the Brightness of the Buttons

The global brightness control alters the brightness of all buttons.

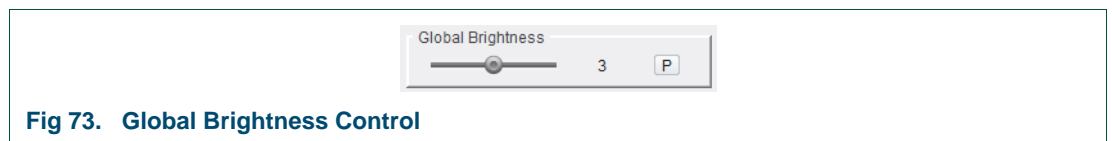


Fig 73. Global Brightness Control

- Move the slider for Global Brightness and watch the brightness of all buttons change dynamically with the movement of the slider.

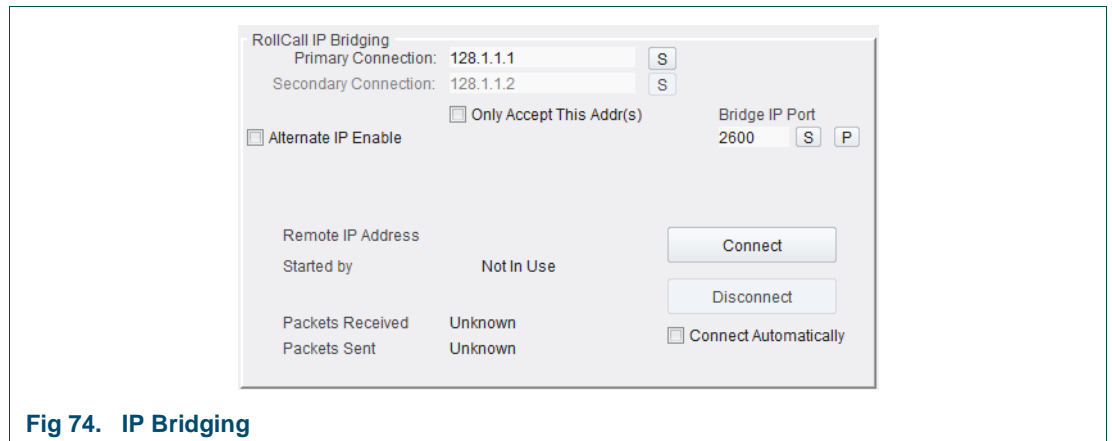
**Note:** The range of brightness values differ between LCD and LED panel types. For LCD panels the maximum brightness is 5, for LED panels the maximum brightness is 7.

To set the brightness back to the factory default color:

- Click on the **P** (preset) button.

### 3.11 IP Bridging

The IP Bridging page allows the setup of remote IP addresses and bridge port, and displays connection status information.



**Fig 74. IP Bridging**

The following setup controls are available:

- Primary Connection** The Primary IP Address of the remote RollNet IP Share unit.  
To change the IP Address, type a new address in the field, and press the Enter key.
- Secondary Connection** The Secondary IP Address of the remote RollNet IP Share unit.  
To change the IP Address, type a new address in the field, and press the Enter key.
- Bridge IP Port** The port number for the IP Bridge.
- Only Accept This Addr(s)** When this option is selected connections may only be made via the Remote IP Address specified.  
  
Connections can be made manually with the **Connect** and **Disconnect** buttons, or automatically if the **Connect Automatically** checkbox is selected.

The following status information can be obtained from this screen:

- Remote IP Address** This displays the IP address of the remote end of the IP Bridge (when connected).
- Started By** This shows the initiator of the bridge connection.
- Packets Received** This shows how many packets have been received on this IP connection.
- Packets Sent** This shows how many packets have been sent on this IP connection.

### 3.12 Panel Operation

**Note:** The control panels may also be operated remotely using the relevant XY or BPX Status/Control page.

#### 3.12.1 Panel Layouts

##### 3.12.1.1 LCD Panel Layout

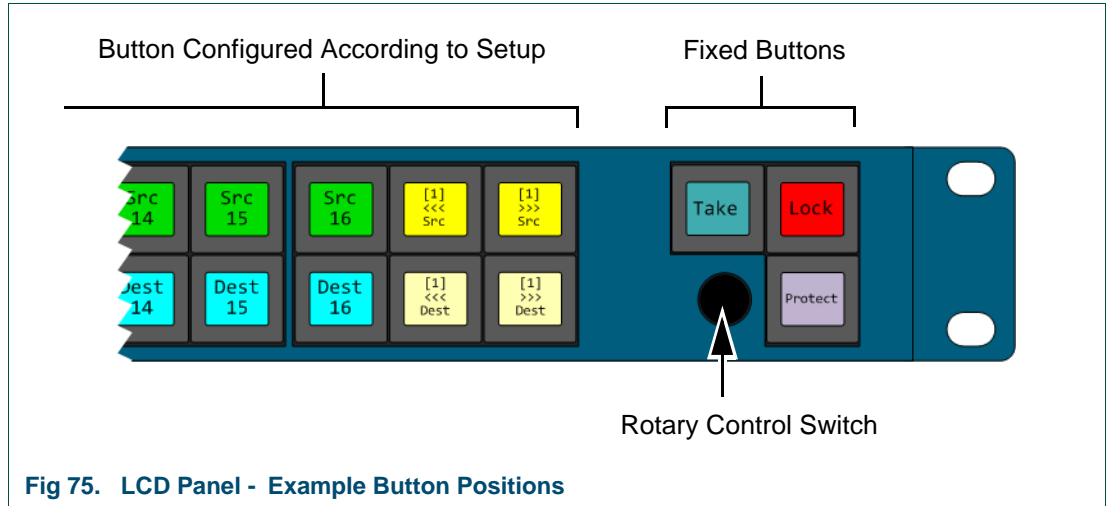


Fig 75. LCD Panel - Example Button Positions

The rotary control switch can perform the following actions:

- Rotate the knob to Page Up and Page Down
- Press to swap between source pages and destination pages

**Note:** If either, or both, of the **Take** and **Protect** buttons are not enabled in the Config page, they will not display.

##### 3.12.1.2 LED Panel Layout

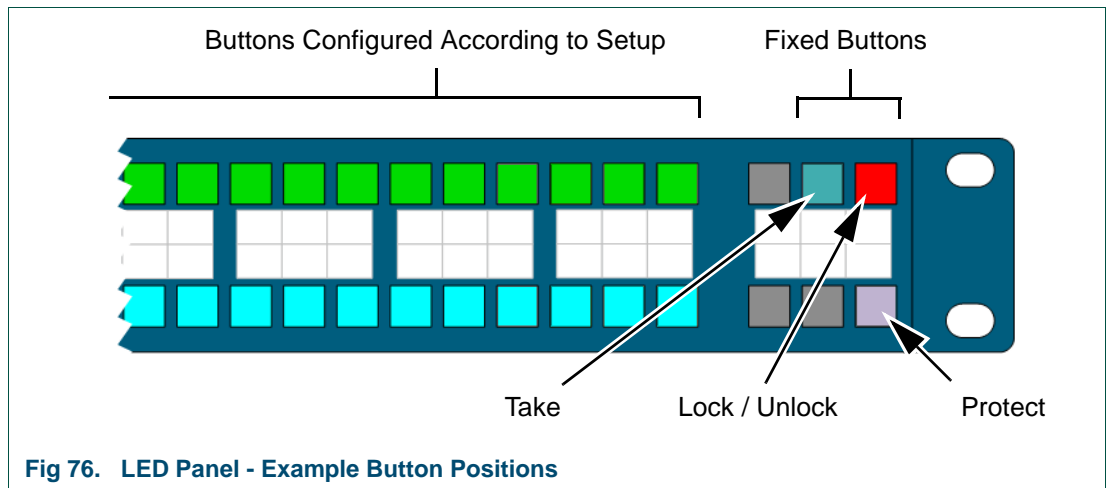


Fig 76. LED Panel - Example Button Positions

**Note:** If either, or both, of the **Take** and **Protect** buttons are not enabled in the Config page, they will not display.

### 3.12.2 Button Functions












The functionality of the main control panel buttons are similar for both LCD and LED panels.

**Note:** The following descriptions contain images of the buttons in their default button colors. If the button colors have been customized, the colors and text may be different, but the functionality remains the same.

#### 3.12.2.1 Fixed Buttons







Fixed buttons cannot be repositioned. However, the colors of the buttons may be changed. See “Customize Button Colors” on page 57.












With the exception of the Lock/Unlock button, the other buttons are optional, and must be enabled before use. See “Button Options” on page 29.

LCD	LED	Description
 	 	<p><b>Take unavailable</b> - Indicates that the <b>Take</b> button has been enabled, but that there are no pre-selected routes.</p> <p><b>Take available</b> - The <b>Take</b> button changes color, and flashes, to indicate that a route has been pre-selected, and that a Take operation must be performed to confirm the route.</p>
 	 	<p><b>Lock</b> - Used to prevent any accidental button presses on the panel. With the panel locked, it must first be unlocked before changes to routes can be made.</p> <p><b>Unlock</b> - This button indicates that the panel is locked. Pressing configured buttons results in no action; although buttons may still light displaying crosspoints. Press this button to unlock the panel in order to set or change routes.</p>
		<p><b>Protect</b> - Used to protect specific routes. If this button is enabled it can be used to protect a destination so that the route cannot be changed without first un-protecting it. A protected destination displays a padlock symbol  on the button (LCD panel only).</p>

#### 3.12.2.2 Configured Buttons









Configured buttons are those mapped with sources, destinations, or crosspoints, depending on the panel mode, and the way the panel has been configured.

LCD	LED	Description
		<p><b>Unlit</b> - Button is not configured.</p>
		<p><b>Source</b> - An input port in XY panel mode.</p>
		<p><b>Destination</b> - An output port in XY panel mode.</p>

		<b>Unselected Crosspoint</b> - In BPX panel mode, a route in default color scheme A, not yet taken.
		<b>Selected Source</b> - A source has been pre-selected for a Take, or Gang Take Mode enabled.
		<b>Selected Destination</b> - A destination has been selected in preparation for setting a route.
		<b>Protected Destination</b> - A protected destination has been selected in preparation for setting a route.
		<b>Selected Protected Destination</b> - A protected destination has been selected in preparation for setting a route.
	N/A	<b>Text Button</b> - An unused button that has free text added to it for information only.

### 3.12.2.3 Page Navigation Buttons (LCD panel)

Page Navigation buttons provide the means to quickly access sources or destinations sequentially, or more directly to sources and destinations that have been grouped together onto defined pages.



Unselected	Selected	Description
		<b>Page Change or Page Up/Down</b> - Either, a single button for displaying the next sequential block of sources or destinations, or when two buttons are setup this button becomes a Page Up button which, when used in conjunction with the associated Page Down button, gives forward and backward access.
		<b>Page Selection</b> - Press this button to display individual Page Buttons, allowing for direct selection of a page of sources or destinations.
		<b>Page Button</b> - Pressing one of these buttons displays the sources or destinations setup on this page.
		<b>Next Page</b> - Used with a Previous Page button. If, when pressing the Page Selection button, there are more Page buttons than fit on the panel display, this pair of buttons are used to navigate to next or previous pages of Page buttons.

**Note:** Navigation through Page buttons, and through sources or destinations can also be done using the rotary control switch.



### 3.12.2.4 Page Selection Buttons (LED panel)

Page Selection buttons provide the means to quickly access sources or destinations that have been grouped together onto defined pages.

LED	Description
	<b>Selected Page</b> - The current page displaying the sources, destinations, or crosspoints configured on that page.
	<b>Unselected Page</b> - A page that is configured with sources, destinations, or crosspoints, but is not selected.

### 3.12.3 XY Panel Operation

#### 3.12.3.1 Panel Navigation (LCD panel)

##### Using the Rotary Control Switch

The easiest way to navigate through the panel when only a small number of pages are configured is with the rotary control switch. The rotary control switch can be rotated in either direction, and pressed, giving different functions to each control type.

An advantage of using the rotary control switch is that less buttons are required for navigation, so more buttons are available for sources and destinations

- Rotate the rotary control clockwise to advance through sources, destinations, or pages (after pressing a Page Selection button).
- Rotate the rotary control counter-clockwise to move backwards through sources, destinations, or pages (after pressing a Page Selection button).
- Press the switch to toggle between sources and destinations.

##### Using the Page Navigation Buttons

To navigate sequentially through displayed source and destination buttons:

- Either, use the Page Change button to the next block of buttons available, or use the Page Up and Page Down buttons to display the next or previous block of buttons (see Sequential Destination Navigation in Fig 77.)

To navigate directly to a source or destination on a defined page:

1. Press a Page Selection button (either SRC or DEST accordingly).
2. The Page Up and Page Down buttons change to be Next Page / Previous Page buttons (see Direct Source Page Navigation in Fig 77.) Use these to navigate to the required page.
3. Press the relevant Page button, to then display the sources or destinations on that page.

**Note:** The page navigation buttons only display if they have been configured when setting up the panel.

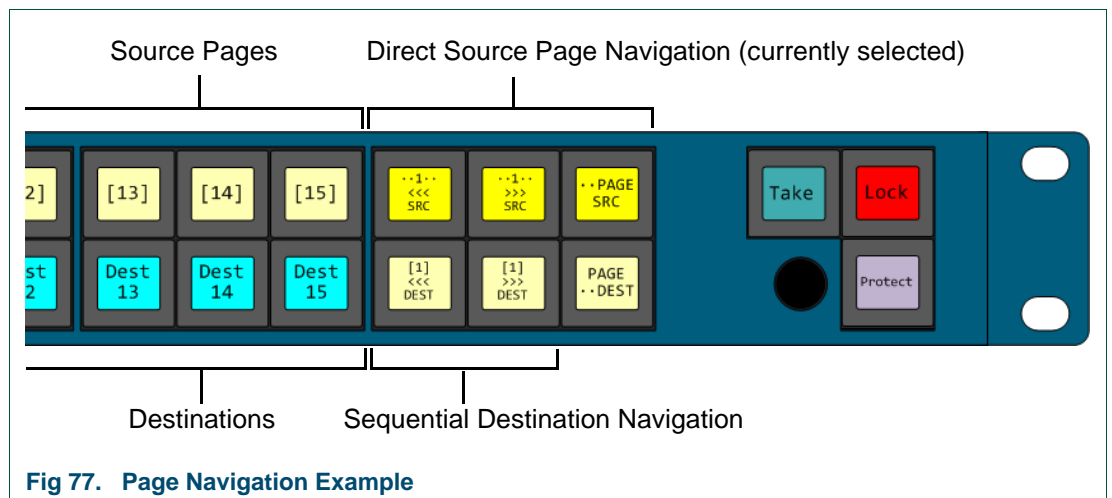


Fig 77. Page Navigation Example

### 3.12.3.2 Set a Route

1. Ensure that the control panel is unlocked before attempting to set a route. If it is locked, press the **Unlock** button.
2. Press a Destination button on the control panel to select that destination.
3. If the required source is not visible on the current page, press the relevant Source **Page Up** or **Page Down** button until the source is on the current page.

**Note:** Pressing the current Destination button deselects the destination and returns the panel the previous state without setting a route.

4. Press the Source button to select that source.

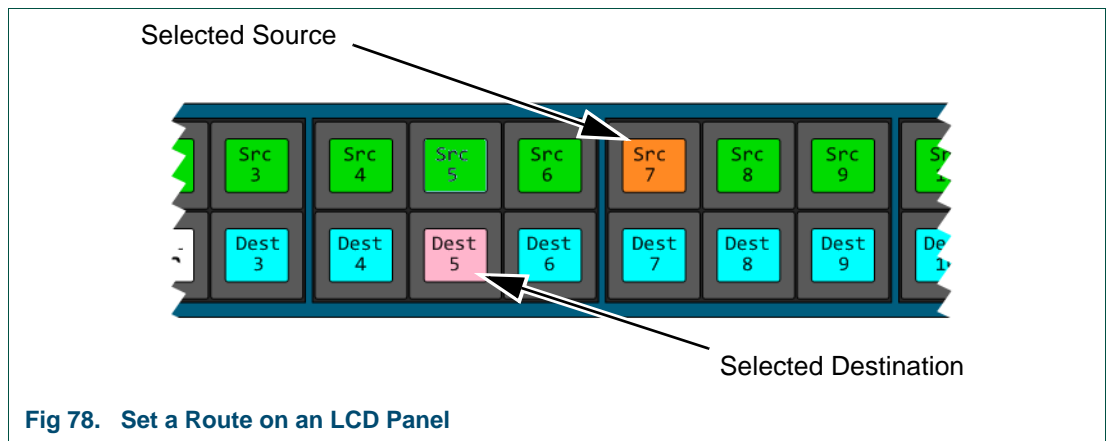


Fig 78. Set a Route on an LCD Panel

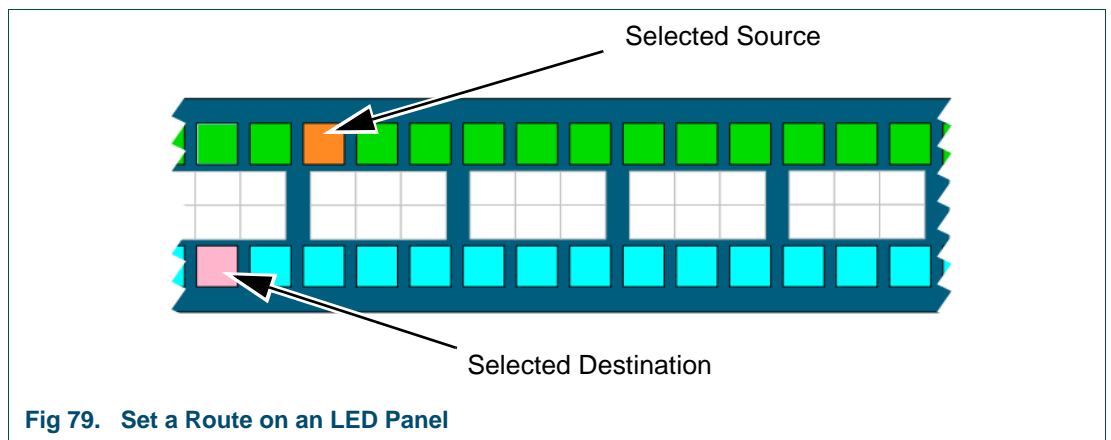



Fig 79. Set a Route on an LED Panel

If the **Take** button has not been enabled the route is automatically set upon selection of the source.

If the **Take** button is enabled, the source will be indicated, and may flash if this option has been set in the Config page.

5. If the **Take** button is enabled, press the **Take** button to complete the setting of the route.

### 3.12.3.3 Protect a Destination

1. Press the Destination button of the destination to protect.
2. Press the **Protect** button.
3. The Destination button changes color (and displays a padlock symbol  on an LCD panel).

### 3.12.3.4 Change a Route

1. Ensure that the control panel is unlocked before attempting to change a route. If it is locked, press the **Unlock** button.
2. Press a Destination button on the control panel to select that destination.

The current route is indicated.

3. If the destination has been protected, unprotect the destination before selecting a new source.
4. If the required source is not visible on the current page, press the relevant Source **Page Up** or **Page Down** button until the source is on the current page.

**Note:** Pressing the current Destination button deselects the destination and returns the panel the previous state without changing the route.

5. Press the Source button to select that new source.

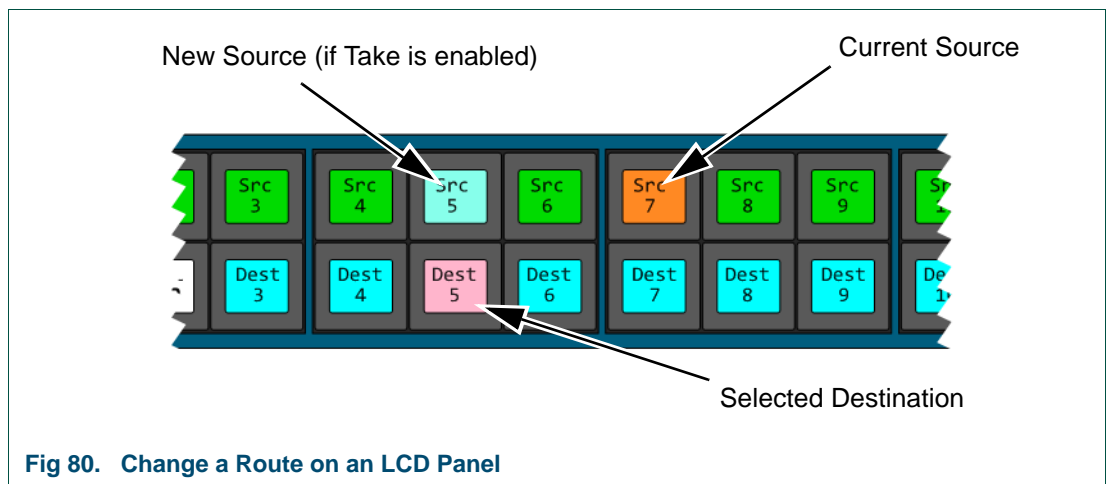


Fig 80. Change a Route on an LCD Panel

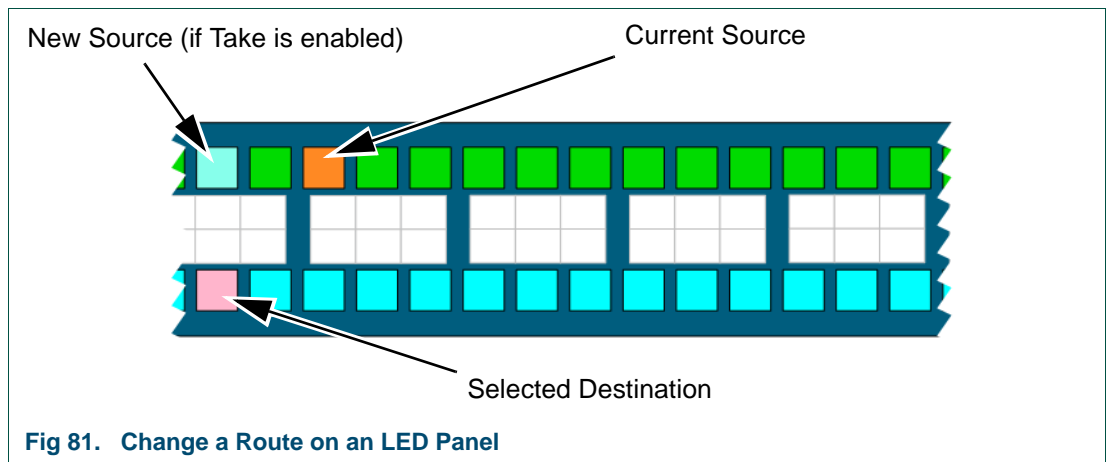


Fig 81. Change a Route on an LED Panel

If the **Take** button has not been enabled the route is automatically set upon selection of the source.

If the **Take** button is enabled, the new source will be indicated, and may flash if this option has been set in the Config page.

6. If the **Take** button is enabled, press the **Take** button to complete the changing of the route.

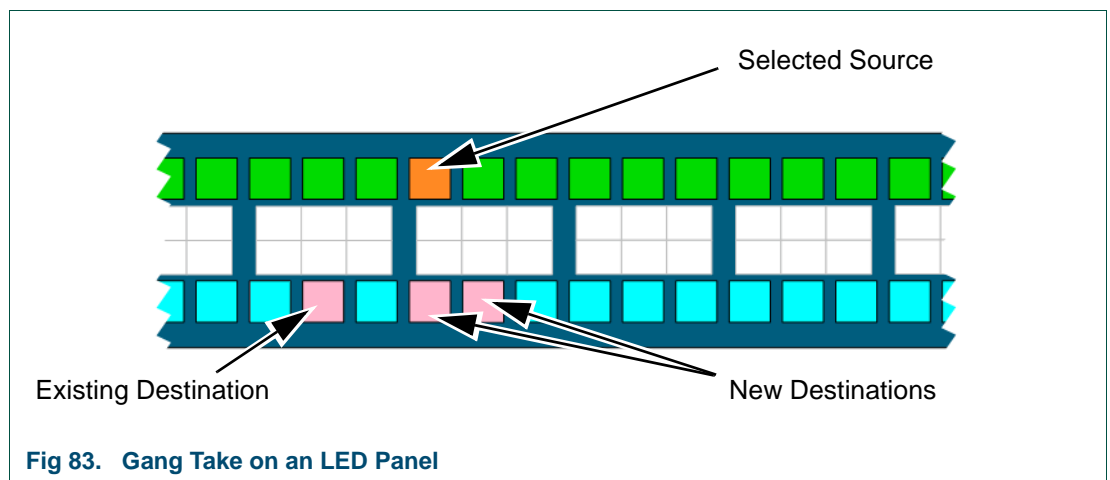
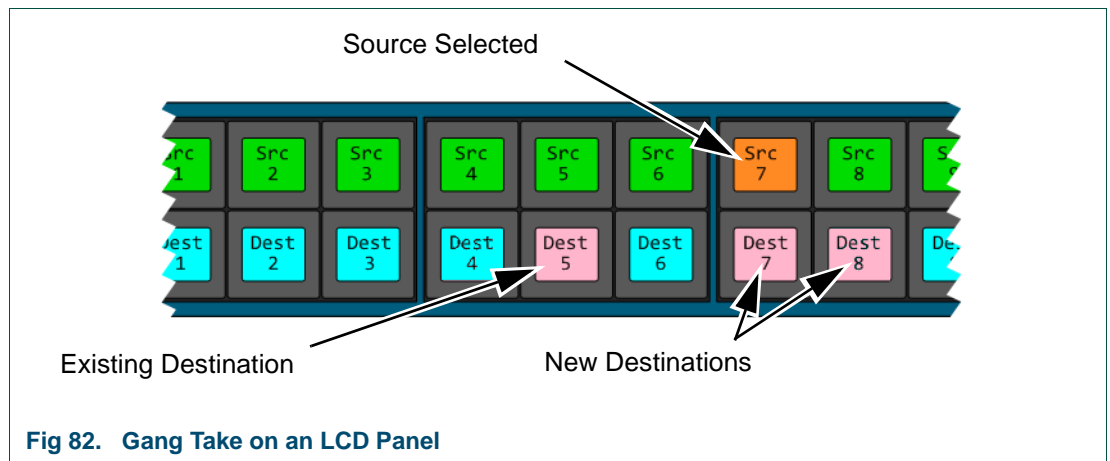
### 3.12.3.5 Gang Take

Gang Take is used to route a single source to a number of destinations at the same time.

1. Ensure that the control panel is unlocked before attempting to change a route. If it is locked, press the **Unlock** button.
2. Ensure that Gang Take Mode has been enabled in the Config page.
3. Ensure that no destinations are selected. Deselect any that are.
4. Press a source button on the control panel to select that source.

**Note:** Pressing the current Source button, or pressing a Source **Page Up** or **Page Down** button exits Gang Take Mode.

5. Select as many Destination buttons as required. If the required destinations are not on the current page use the Destination **Page Up** and **Page Down** to navigate to the right pages, and select the destinations.



If the **Take** button has not been enabled the routes are automatically set upon selection of the destinations.

6. If the **Take** button is enabled, press the **Take** button to complete the new routes.

### 3.12.4 BPX Panel Operation

#### 3.12.4.1 Page Navigation (LCD panel)

Set pages as a way to navigate to select groups of BPX buttons. For example, it may be useful to have a different page set for each destination.

#### Using the Rotary Control Switch

The easiest ways to navigate through the panel is with the rotary control switch. An advantage of using the rotary control switch is that less buttons are required for navigation, so more buttons are available for crosspoints.

- Rotate the rotary control clockwise to advance through crosspoints, or pages (after pressing a Page Selection button).
- Rotate the rotary control counter-clockwise to move backwards through crosspoints or pages (after pressing a Page Selection button).

#### Using the Page Navigation Buttons

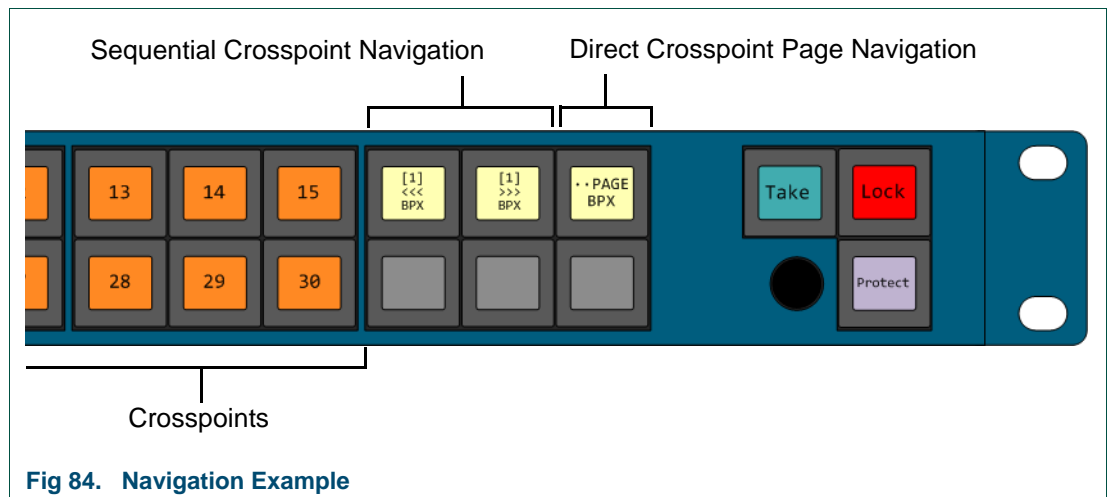
To navigate sequentially through displayed crosspoint buttons:

- Either, use the Page Change button to display the next block of buttons available, or use the Page Up and Page Down buttons to display the next or previous block of buttons (see Sequential Crosspoint Navigation in Fig 84.)

To navigate directly to a crosspoint on a defined page:

1. Press the Page Selection button.
2. The Page Up and Page Down buttons change to be Next Page / Previous Page buttons (see Direct Crosspoint Page Navigation in Fig 84.) Use these to navigate to the required page.
3. Press the Page button, to then display the crosspoints on that page.

**Note:** The page navigation buttons only display if they have been configured when setting up the panel.



### 3.12.4.2 Set a Route

1. Ensure that the control panel is unlocked before attempting to set a route. If it is locked, press the **Unlock** button.
2. Press a BPX button on the control panel to select that route.
3. If no **Take** button is enabled the route is set immediately. If Take is enabled, the route is pre-selected, press the **Take** button to complete the setting of the route.

**Note:** Before pressing the **Take** button, pressing the BPX button for a second time, deselects the route, and reverts to the previous route, if set.

### 3.12.4.3 Protect a Destination

1. Press the **Protect** button. The button flashes.
2. Press any BPX button which has the destination to protect. All buttons with that destination are protected, but only the selected button displays the Protected color.

**Note:** If the selected protected button is not the current page, all destinations will display with the Protected color.

### 3.12.4.4 Unprotect a Destination

1. Press the **Protect** button.
2. Press the selected button displaying the Protected color.


**Note:** If a protect has been made using a master panel, it is not possible to unprotect the destination. It must be unprotected from the master panel.

### 3.13 Upgrade Panel Software

The control panel software is upgraded through the RollCall application. Upgrade packages are supplied by Snell in the form of a .zip file.

**Note:** If the control panel is running in Legacy Mode, switch the operating mode to RC Mode to perform the upgrade.

#### 3.13.1 Import the Software Upgrade Package

1. Save the supplied upgrade package(s) to a folder on the PC that will be used to upgrade the control panel. Upgrade packages are supplied in a compressed file format (.zip) and they should not be extracted.
2. Click on the Import New Upgrades button (  ) in the main toolbar.

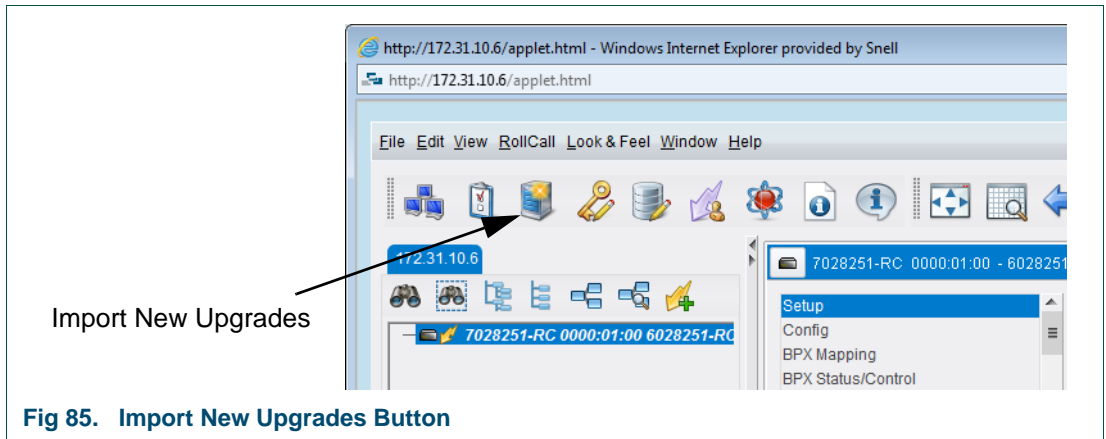


Fig 85. Import New Upgrades Button

The Upgrade Packages screen displays.

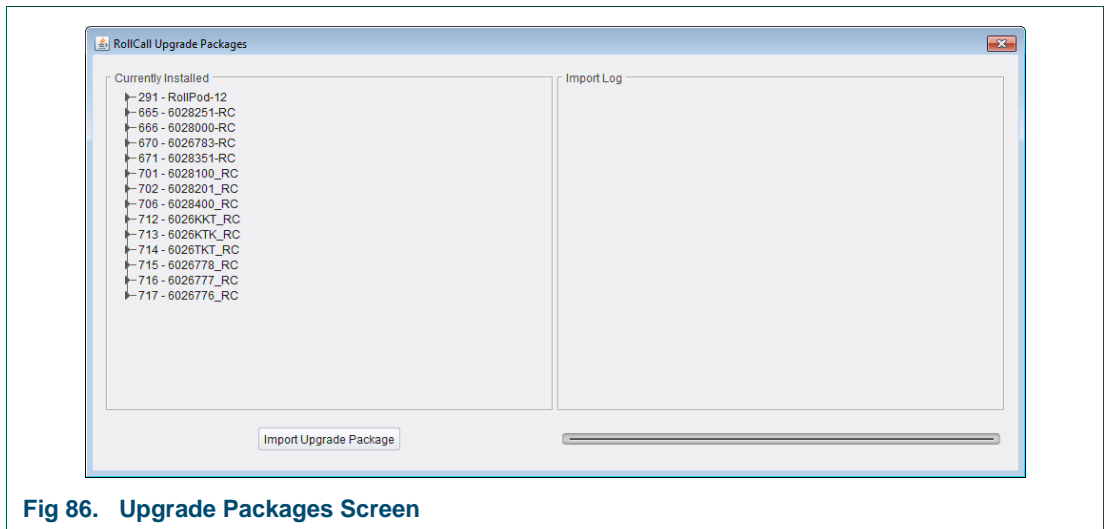


Fig 86. Upgrade Packages Screen

3. Click on the **Import Upgrade Package** button.



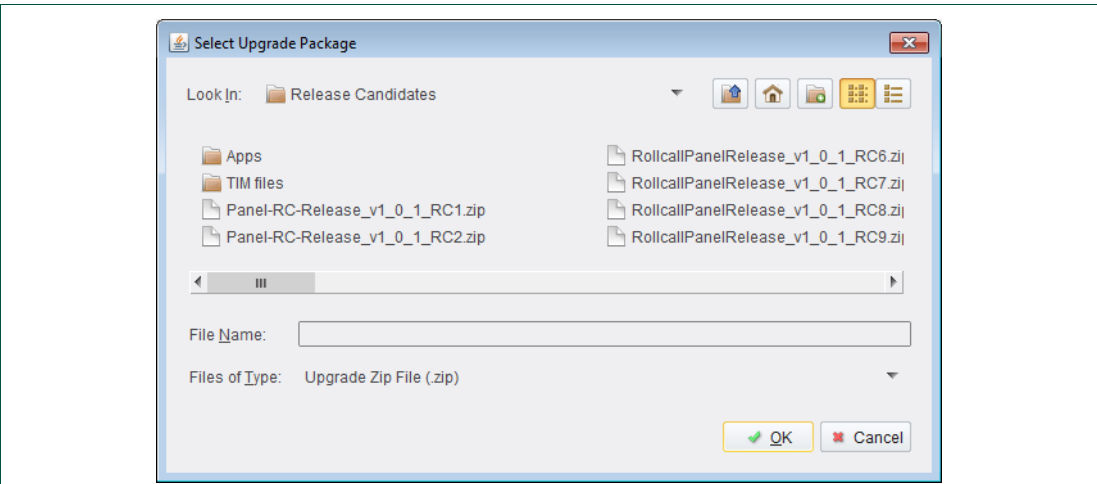


Fig 87. Select Upgrade Package Screen

4. Browse to the folder containing the upgrade package.
5. Select the upgrade package and click **OK**.
6. The upgrade package imports and the control panel can then be upgraded.

### 3.13.2 Upgrade the Control Panel Software

**Note:** It is advisable to save the panel configuration before upgrade the software. See “Save a Configuration” on page 20.

Ensure the software upgrade package has been imported before performing this upgrade. See “Import the Software Upgrade Package” on page 72.

**Note:** The control panel cannot be used while the performing this upgrade.

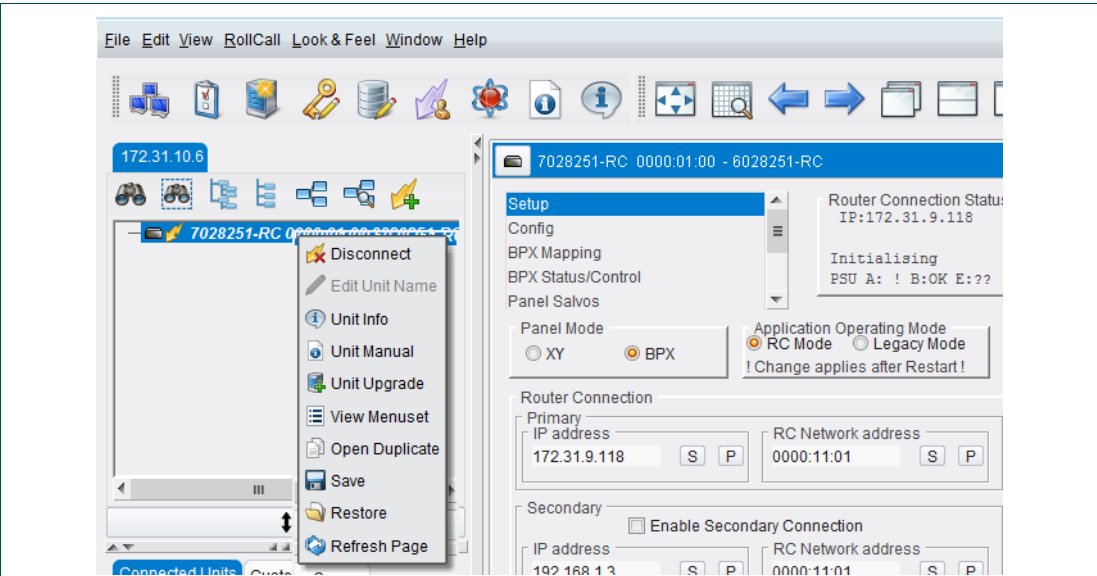
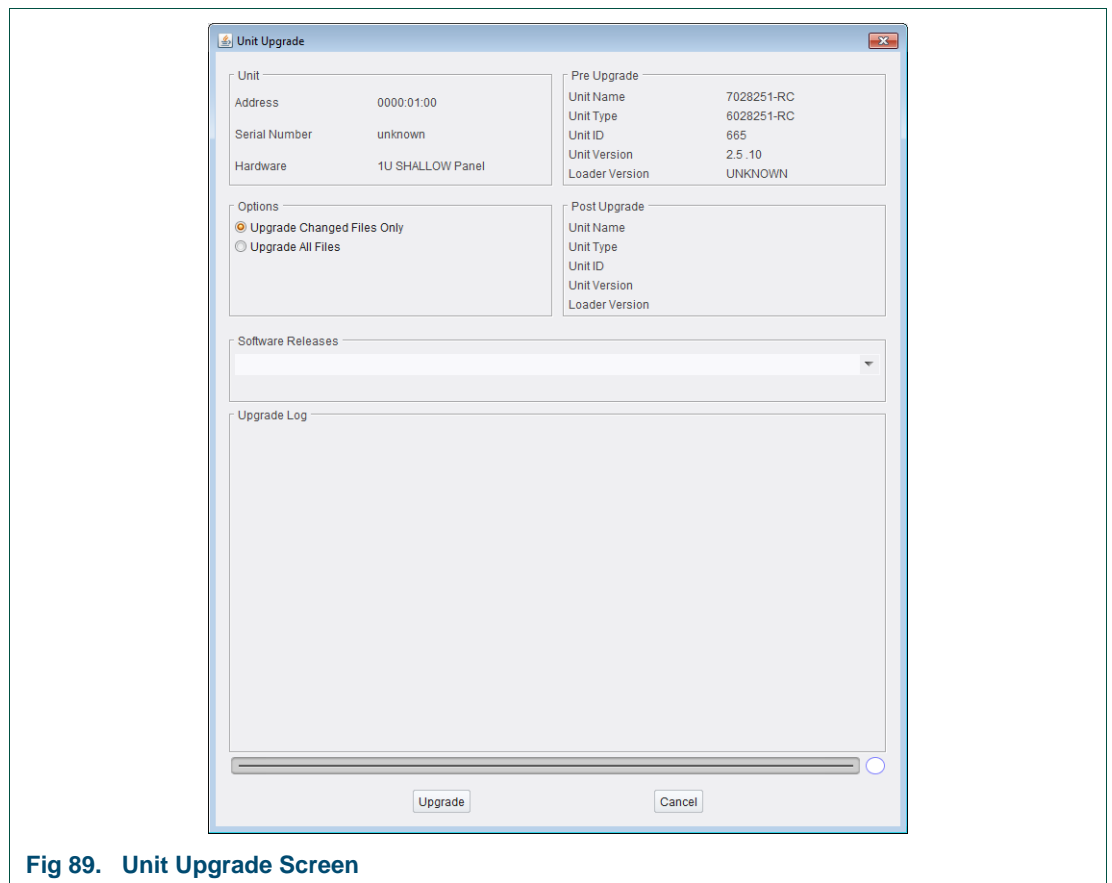


Fig 88. Menu

1. Right-click on the control panel name in the Network Browser window, and select **Unit Upgrade** from the menu.
2. The Unit Upgrade screen displays, showing the package number (pre-upgrade) that is running on the control panel.



**Fig 89. Unit Upgrade Screen**

3. Click on the Software Releases drop-down list and select the required upgrade package.
4. Leave the options set to Upgrade Changed Files Only, and click on the **Upgrade** button.
5. The control panel will now be upgraded. Follow the on screen prompts.  
Once the upgrade is complete the control panel is automatically restarted.
6. Confirm that the control panel is working correctly.

## 4. Legacy Mode

This chapter describes the modes of operation when panels are used in Legacy Mode (as a replacement for older panel types). Panels are compatible with Aurora, Nebula, Nucleus, or Centra control systems.

Please refer to the respective control system user manuals for configuration guidance.

### 4.1 Configuration

Each panel is configured using the Hex Switches on the rear of the panel.

- Hex Switch 1** Defines the panel's multi-drop address. An address is only necessary when panel communications are on the serial interface (RS485).
- Hex Switch 2** Sets the panel mode type. This must be used in conjunction with Hex Switch 4 to define the operating mode.
- Hex Switch 3** Sets the brightness of the panel buttons.
- Hex Switch 4** Sets the operating mode for panels. Used in conjunction with the panel mode type set with Hex Switch 2.

To access these Hex Switches, the protective cover must first be removed:

1. Rotate the retaining knob counterclockwise until completely unscrewed.
2. Slide the cover to the right, and remove.

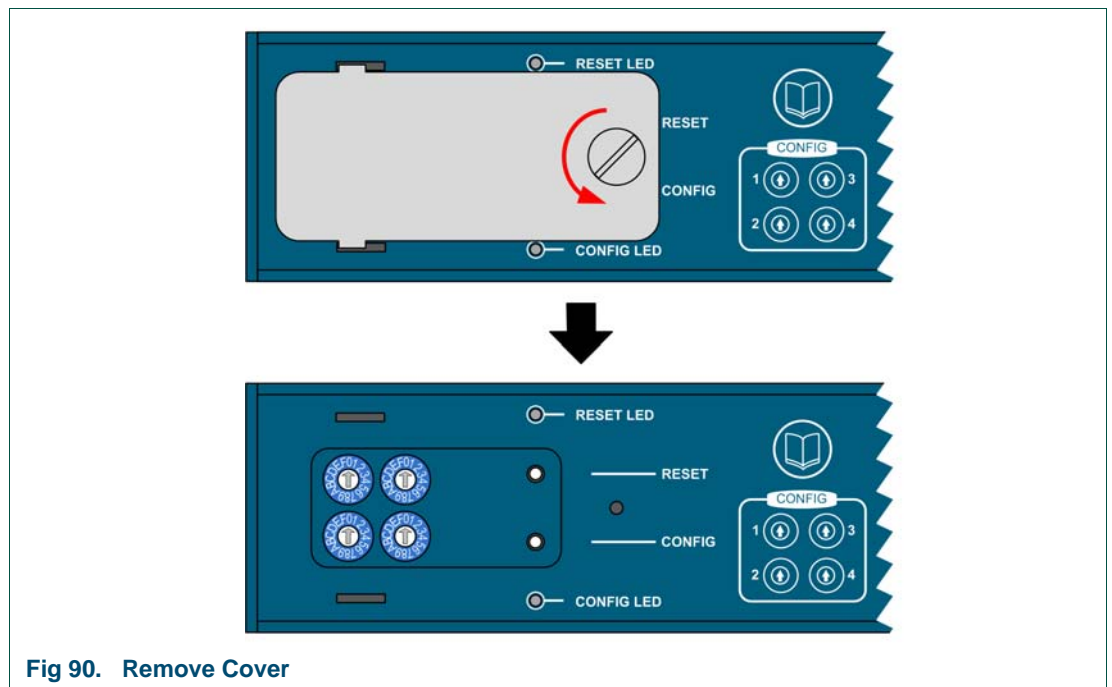


Fig 90. Remove Cover

To refit the cover (after configuration):

1. Line up the lugs with the apertures top and bottom. Slide the cover to the left.
2. Rotate the retaining knob clockwise until cover is closed.

### 4.1.1 Hex Switch 1 - Multi-drop Address

The multi-drop address is set using Hex Switch 1 on the rear panel.

**Note:** If the panel is running and the address is changed, the comms are broken.

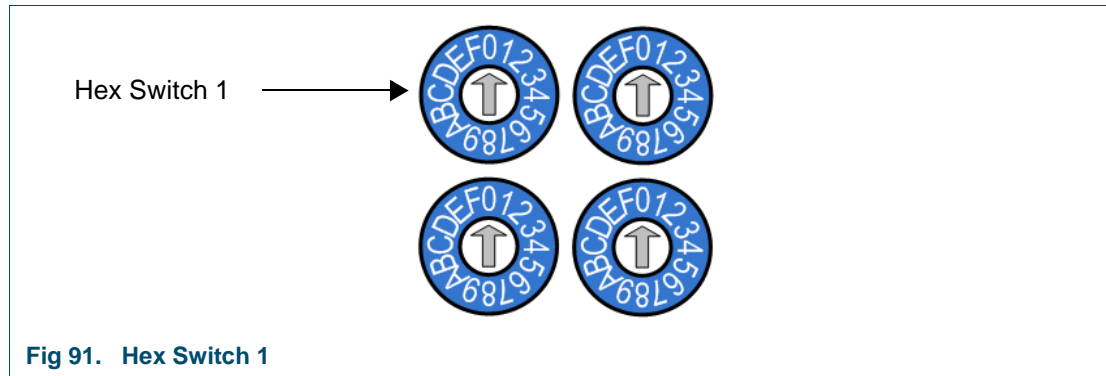


Fig 91. Hex Switch 1

- To set a multi-drop address, turn Hex Switch 1 to the appropriate value - see Table 2.

<b>Address</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>Switch Value</b>	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0

Table 2. Multi-drop Addresses

### 4.1.2 Hex Switch 2 - Panel Mode Types

Each panel is configured using a combination of Hex Switch 2 to set the panel mode type, and Hex switch 4 to define the operating mode (mode range, comms type, and override/mimic).

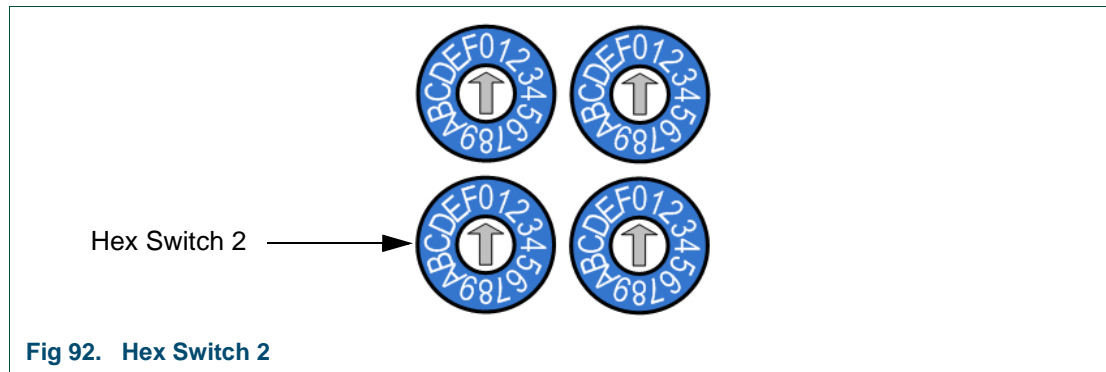


Fig 92. Hex Switch 2

#### 4.1.2.1 LCD Panel Mode Types

LCD panels can mimic a 6711 BPX panel, 6711 in Freeform mode, or a 6712 XY panel.

LCD panels are compatible with the Aurora control system.

**Note:** To use the rotary control switch with Aurora, version 1.23 or above of the Aurora software is required.

For details of each mode type, See “LCD Panel Modes” on page 85.

- To set the panel mode type, turn Hex Switch 2 to the appropriate value - see Table 3.

<b>LCD Panel</b>	39 button	39 button	21 button	21 button
<b>Mode Type No.</b>	6712 XY	6711 BPX/Freeform	6712 XY	6711 BPX/Freeform
<b>Switch Value</b>	1	2	3	4

**Table 3. LCD Panel Mode Type Settings**

- To set the operating mode, set Hex Switch 4. See “LCD Panel Operating Modes” on page 78.

**4.1.2.2 LED Panel Mode Types**

LED panels are compatible with any Aurora, Nebula, Nucleus, or Centra control system.

There is no support for TM, System 2 and Gemini modes or 6 level modes.

Setting control functions such as the number of levels and override operation is a function of the control system.

LED panels can be set to the following different mode types:

No.	Mode Type	No.	Mode Type
1	16 Way BPX	9	48 Way BPX
2	Dual 8 Split BPX	10	Dual 24 Split BPX
3	8x8 XY	11	24x24 XY
4	16x4 XY (no level buttons)	12	48x4 XY (no level buttons)
5	32 Way BPX	13	32x16 XY
6	Dual 16 Split BPX	14	Dual 16+16 BPX
7	16x16 XY	15	16x16 XY
8	32x4 XY (no level buttons)	16	24x12 XY
		17	User-defined

**Table 4. LED Panel Mode Types**

For details of each mode type, See “LED Panel Modes” on page 92.

- To set the panel mode type, turn Hex Switch 2 to the appropriate value - see Table 5.

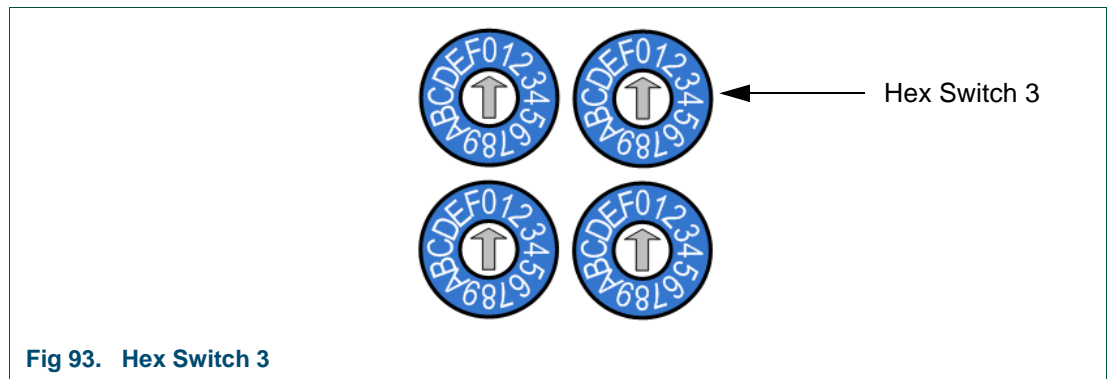
<b>Mode Type No.</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
<b>Switch Value</b>	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0

**Table 5. LED Panel Mode Type Settings**

- To set the operating mode, set Hex Switch 4. See “LED Panel Operating Modes” on page 79.

### 4.1.3 Hex Switch 3 - Button Brightness

The brightness of the buttons are defined using Hex Switch 3 on the rear of the panel.



Switch Value	Button Brightness
0	Minimum brightness
1...E [1]	Intermediate brightness according to the panel hardware
F	Maximum brightness

**Table 6. Button Brightness**

[1] On LED panels there are 16 level of brightness and each switch value gives a different brightness level. On LCD panels there are 8 levels of brightness and every second switch value gives a different brightness level.

**Note:** When using Power over Ethernet the brightness of the panel buttons is limited to a lower level than when using DC power.

### 4.1.4 Hex Switch 4 - Panel Operating Modes

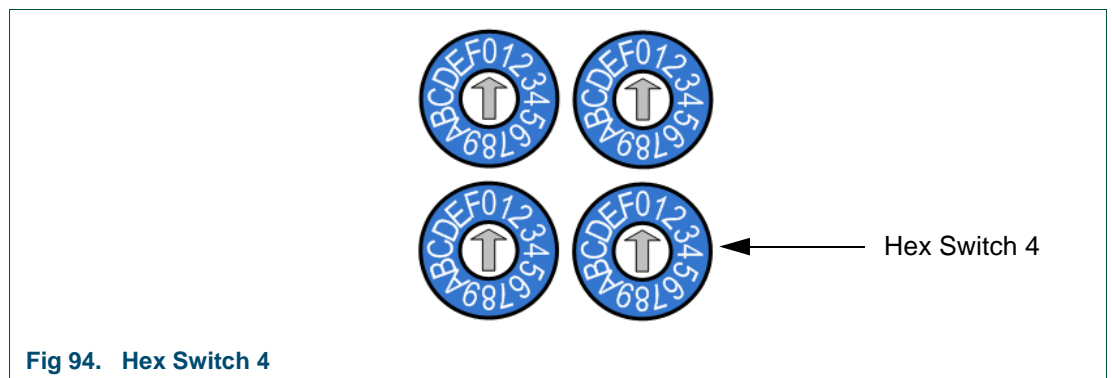
#### 4.1.4.1 LCD Panel Operating Modes

LCD panels are compatible with the Aurora control system.

**Note:** To use the rotary control switch with Aurora, version 1.23 or above of the Aurora software is required.

LCD panels can mimic a 6711 BPX panel, 6711 in Freeform mode, or a 6712 XY panel.

To set a panel to mimic one of these, set Hex Switch 4 on the rear of the panel, according to the panel mode required.



**Fig 94. Hex Switch 4**

<b>Operating Mode</b>		6711 BPX/ Freeform (RS485)	6712 XY (RS485)
<b>Switch Value</b>	<b>Override</b>	1	3
	<b>Mimic</b>	5	7

**Table 7. LCD Panel Operating Modes**

For details of each mode, See “LCD Panel Modes” on page 85.

**4.1.4.2 LED Panel Operating Modes**

On LED panels Hex Switch 4 is used to set the mode range, comms type, and override/mimic. Set the mode type using Hex Switch 2. See “LED Panel Mode Types” on page 77.

<b>Mode Type / Comms Type</b>		Modes 1-16 (RS485)	Mode 17 (RS485)
<b>Switch Value</b>	<b>Override</b>	0	1
	<b>Mimic</b>	4	5

**Table 8. LED Panel Operating Modes**

<b>Mode Type / Comms Type</b>		Modes 1-16 (Ethernet)	Mode 17 (Ethernet)
<b>Switch Value</b>	<b>Override</b>	8	9
	<b>Mimic</b>	C	d

**Table 9. LED Panel Operating Modes**

For details of each mode, See “LED Panel Modes” on page 92.

**4.1.5 GPIO**

The I/O provides access to the panel. The functions on each I/O are fixed by the user through the control software. Equipment connected through the GPIO may require supply references (+12 and GND). Current Limit stops any connected equipment overloading the panel supply.

In Legacy Mode these ports are inputs only.

The pinouts for this connector are in the Technical Specification. See “GPIO” on page 111.

**4.1.5.1 Modes**

Normal Joystick Override	<p>This mode provides the normal joystick override operation. When the input is grounded, the source/level assigned to that input is routed, and when released the previously routed source is restored.</p> <p>If more than one joystick override input is active, the lowest number joystick override has priority - number 1 has highest priority, number 12 has lowest priority.</p> <p>The effect of a state change is dependent on the controller systems.</p>
--------------------------	--

**Table 10. GPIO Modes**

Mimic	<p>In Mimic mode the 12 GPI 'Mimic' the first 12 buttons of the panel.</p> <p>If no source is currently selected, pulling GPI 1 to ground is the same as pressing the first button it selects source 1.</p> <p>If GPI 1 is released it has no further effect and source 1 remains selected.</p> <p>If GPI 1 is again pulled to ground this is the same as pressing the button again.</p>
-------	--

**Table 10. GPIO Modes**

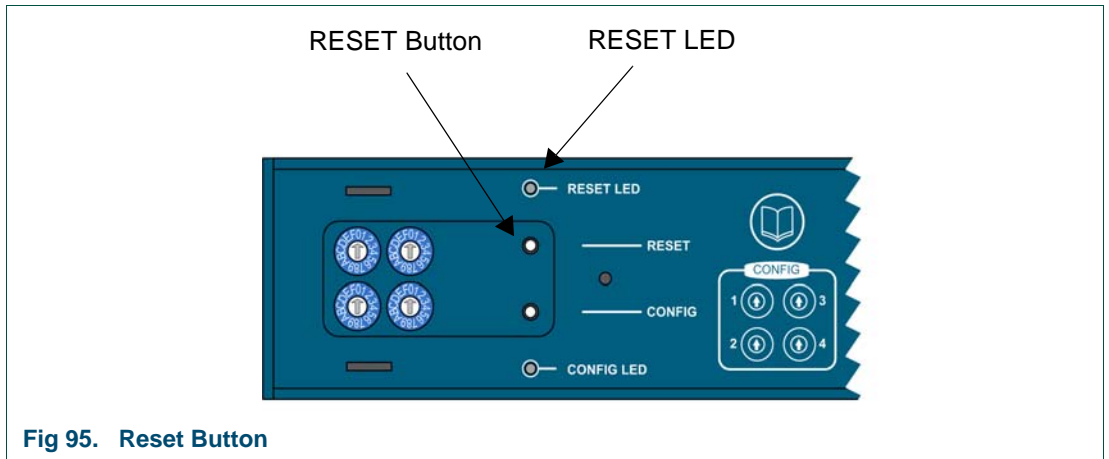


### 4.1.6 Panel Reset

#### 4.1.6.1 Reboot the Panel

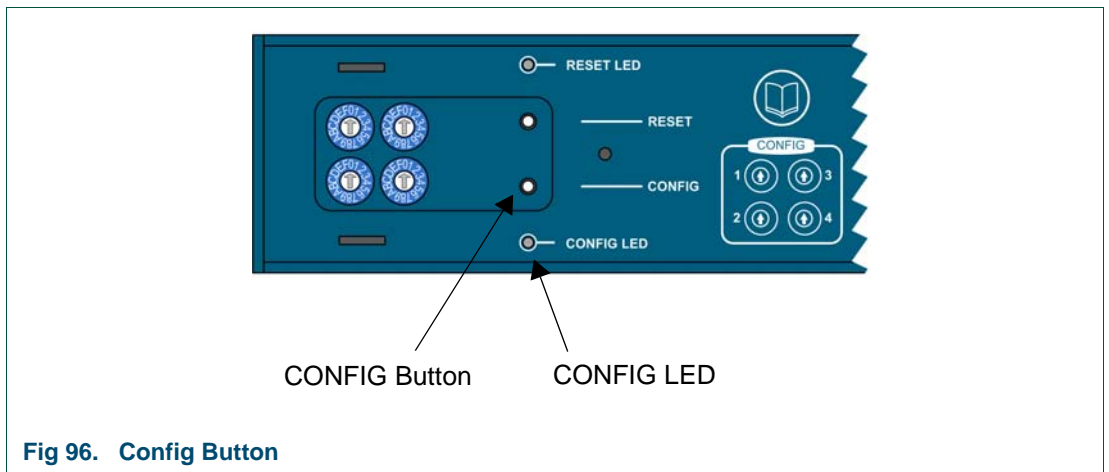
To reboot the panel without having to remove the power, for example, after performing a software update:

1. Press the **RESET** button.
2. The RESET LED lights and the panel resets.



#### 4.1.6.2 Restoring Factory Default IP Settings

1. Remove the panel from the main network.
2. On the rear of the panel, press and hold the **CONFIG** button until the adjacent CONFIG LED displays solid white.



3. Continue holding the button until it flashes white.
4. Release the button.

The panel resets and powers up with the default IP settings:

IP:	192.168.1.1
Subnet Mask:	255.255.255.0
Gateway:	0.0.0.0
Control System IP Port:	0.0.0.0

## 4.2 Set the Control Panel IP and Router Connection

If the factory default IP address was not changed using the RollCall application on installation, use a PC isolated from the main network (on the same subnet as the panel default) to connect to the Ethernet port on the panel.

1. Open a browser window.
2. Type the IP address of the panel in the address bar, and press **Return**.

The browser displays the Legacy Mode web page:

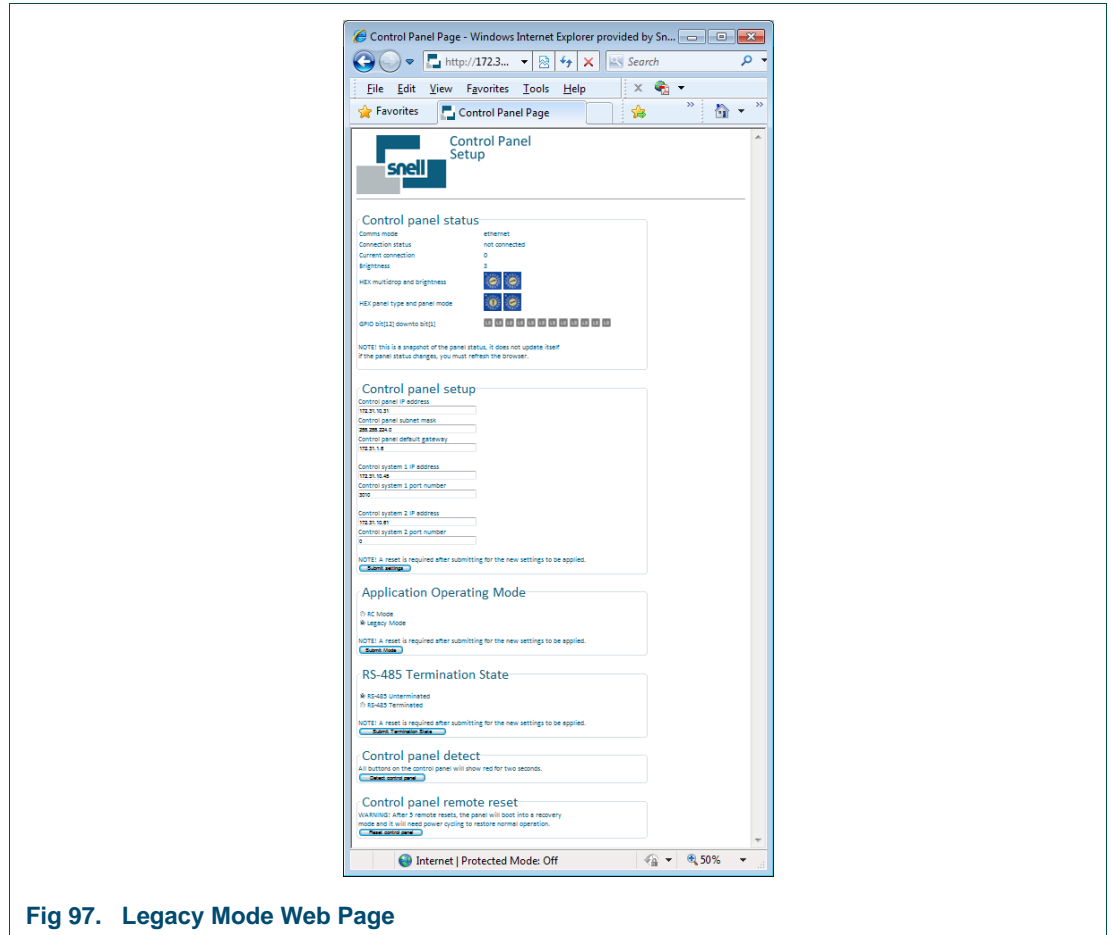


Fig 97. Legacy Mode Web Page

The top part of the page shows the Control Panel Status, and indicates the relevant positions of the switches on the rear panel.

**Note:** Any changes to the status and switches on the panel are only reflected after refreshing the page.

The central part indicates the Control Panel Setup including the IP address of the panel and the IP address of the router to which it is connected.

### 4.2.1 Control Panel Setup

To add (if not done in RollCall application at installation), or change, any of the control panel settings, or control system (router) settings:

1. Edit the details, as necessary.
2. Click on **Submit Settings**.  
A dialogue box displays, prompting a reset operation.
3. Click on the **Reset Control Panel** button.

## 4.2.2 Application Operating Mode

When the panel is connected via Ethernet, the panel can run in RC Mode, or Legacy Mode. The factory default is RC Mode.

The Application Operating Mode section of the browser display indicates the current mode, and is where the mode can be switched to RC Mode.

Whichever mode is selected becomes the default, and the control panel will power up in that mode when restarted.

### 4.2.2.1 Switch to RC Mode

To change the default mode to RC Mode:

1. Select the RC Mode radio button.
2. Click on the **Submit Mode** button.

A dialog box displays, prompting a reset operation.

3. Click on **Reset Control Panel** button.

The control panel resets.

4. Once the panel has rebooted, refresh the browser window.

The RC Mode web page displays:

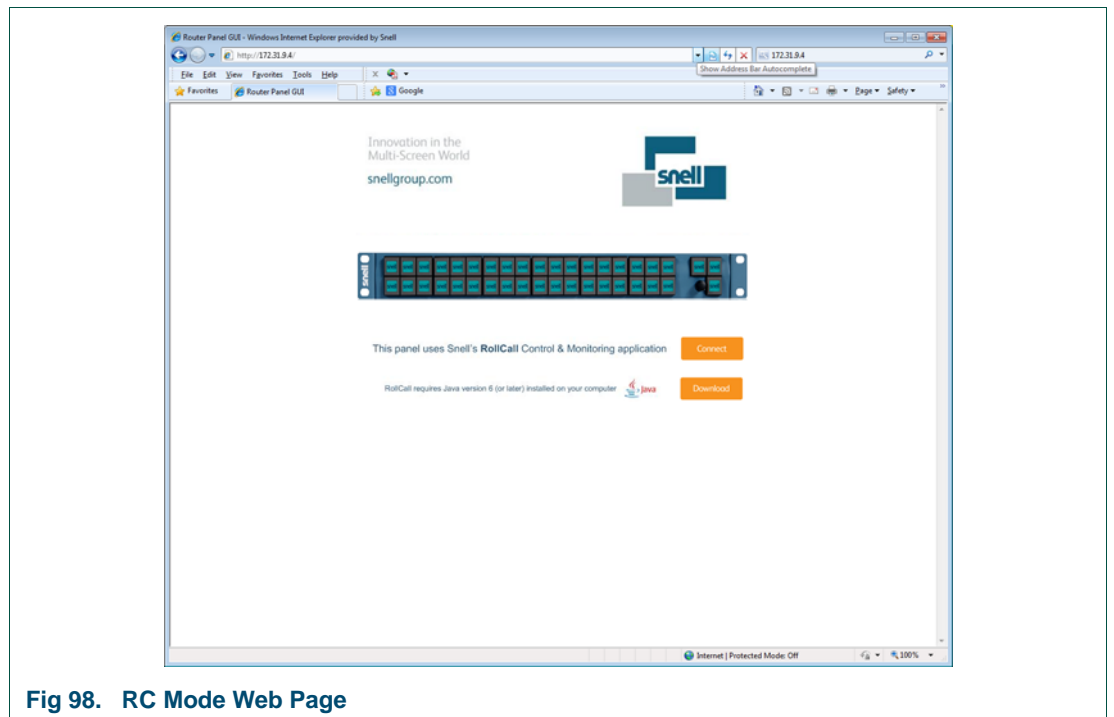


Fig 98. RC Mode Web Page

5. Click on the **Connect** button.

The RollCall application opens in a new browser window. See "RC Mode" on page 18.

### 4.2.3 RS485 Termination

The RS485 State indicates whether the RS485 port is terminated, or not. Termination is used for long cables, or the end of a multi-drop chain.

To terminate the port:

1. Select the RS-485 Terminated radio button.
2. Click on the **Submit Termination State** button.
3. Click on the **Reset Control Panel** Button.

### 4.2.4 Control Panel Detect

This section is used to test the connection to the panel.

- Click on the **Detect Control Panel** button.

The buttons display red for two seconds.

### 4.2.5 Control Panel Remote Reset

To reset the control panel:

- Click on the **Reset Control Panel** button.

## 4.3 LCD Panel Modes

LCD panels are compatible with the Aurora control system.

**Note:** To use the rotary control switch with Aurora, version 1.23 or above of the Aurora software is required.

LCD panels can mimic a 6711 BPX panel, 6711 in Freeform mode, or a 6712 XY panel.

**Note:** Panel mode and database configuration must match.  
Mismatch will not be flagged - buttons may still light and control router crosspoints.

**Note:** The control panel must be reset if the mode of operation is changed while the panel is powered on and connected to comms.

To configure the panel to the relevant operating mode, set hex switch 4. See “LCD Panel Operating Modes” on page 78.

### 4.3.1 LCD Text

Each panel can display text as either three lines of six characters, or one line of four characters. Table 11. lists the available character codes.

Value	Text Characters Assigned
0x20 to 0x7F	Standard ASCII character set
0x05	‘↑’ (up arrow)
0x10	‘..’ (dot dot)
0x11	‘+.’ (plus dot)
0x12	‘.+’ (dot plus)
0x13	‘++’ (plus plus)
0x14	‘.’ (dot space)
0x15	‘+’ (space plus)

**Table 11. Text Display**

### 4.3.2 6712 Mimic


As a 6712 mimic, the LCD panels have just one mode: Single mode, XY. The panels can be controlled via the Aurora control system.

The functions and colors for each button are defined in the controller database. For full details of the functions available, see the 6711/6712 user manual.


#### 4.3.2.1 Set Panel Mode

To set the panel mode, adjust the Hex Switches on the rear panel.

##### 39 Button Panel

<b>Panel Mode Type</b>	<b>Operating Mode</b>
Switch 2: 1 = 6712 XY	Switch 4: 3 = Override over RS485 7 = Mimic over RS485
	
<p><b>Fig 99. 6712 Mimic - Config Switch Settings for 39 Button Panel</b></p>	

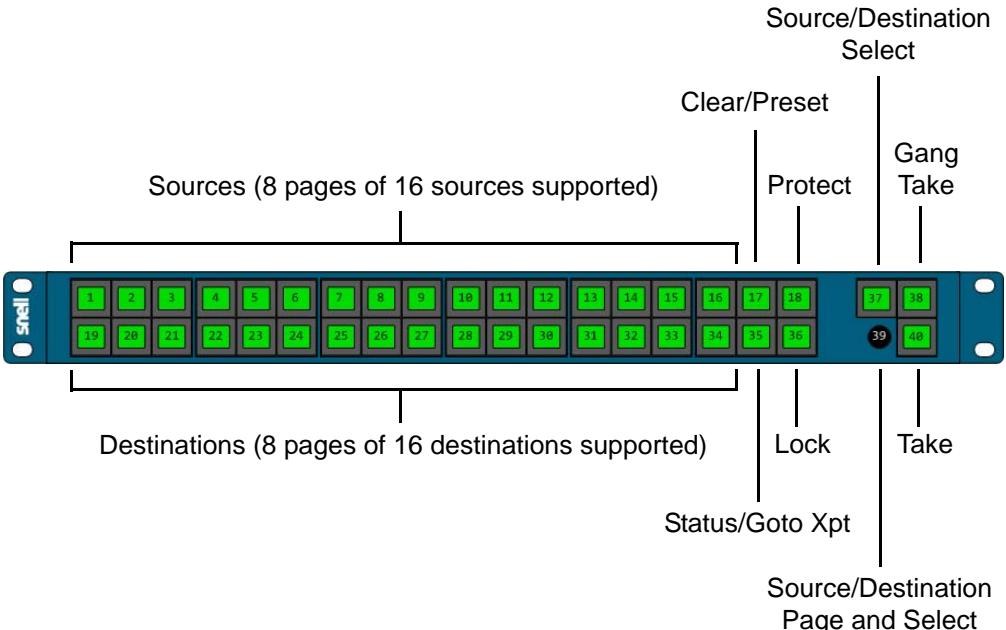
##### 21 Button Panel

<b>Panel Mode Type</b>	<b>Operating Mode</b>
Switch 2: 3 = 6712 XY	Switch 4: 3 = Override over RS485 7 = Mimic over RS485
	
<p><b>Fig 100. 6712 Mimic - Config Switch Settings for 21 Button Panel</b></p>	

#### 4.3.2.2 Button Functions

Examples of operations specific to these panels follow.

##### 39 Button Panel



The diagram shows a 39-button panel with the following labels and groupings:

- Sources (8 pages of 16 sources supported)**: A bracket above buttons 1 through 16.
- Destinations (8 pages of 16 destinations supported)**: A bracket below buttons 17 through 32.
- Clear/Presets**: Points to button 33.
- Protect**: Points to button 34.
- Lock**: Points to button 35.
- Status/Goto Xpt**: Points to button 36.
- Source/Destination Select**: Points to button 37.
- Gang Take**: Points to button 38.
- Take**: Points to button 39.
- Source/Destination Page and Select**: Points to button 40.

**Fig 101. 39 Button Panel Configured as 6712 XY**

21 Button Panel

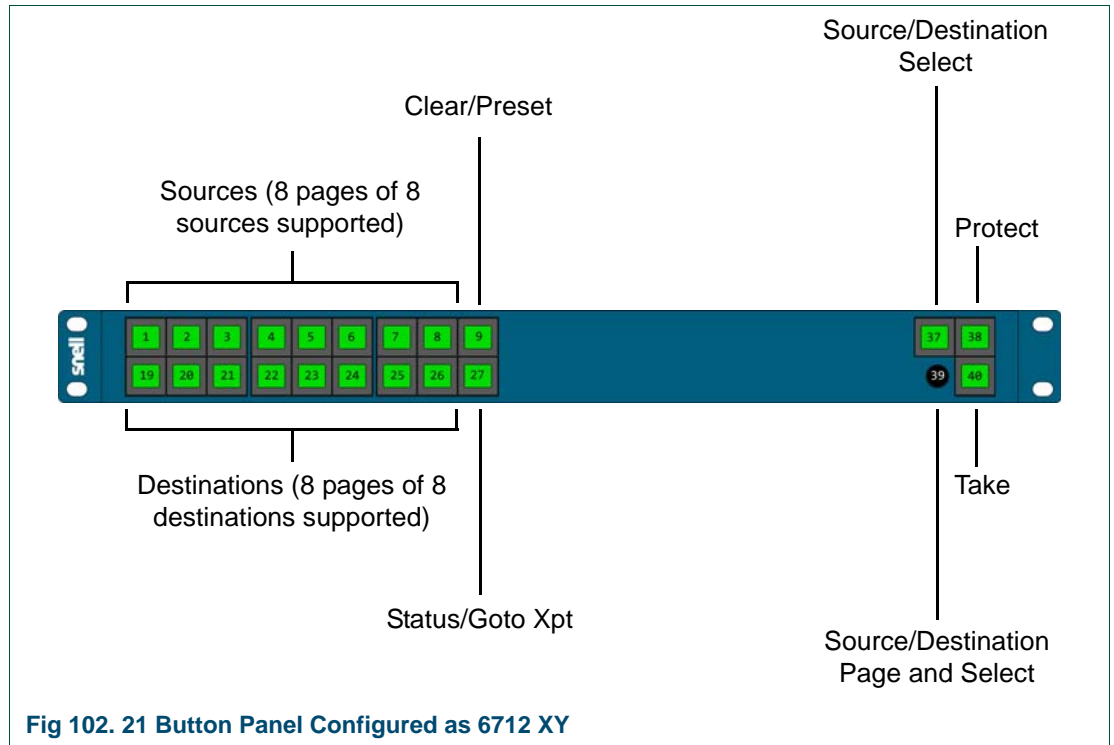


Fig 102. 21 Button Panel Configured as 6712 XY

4.3.2.3 6712 Summary Table

Button		Function	Button Colors [1]	
39 button panel	21 button panel		Color	Status
1-16	1-8	<b>Sources</b> Paged – up to 8 pages supported (39 button panel = 128 sources, 21 button panel = 64 sources)	Dark Green	Available Unselected
			Bright Green	Preset
			Dark Orange	In Use
19-34	19-26	<b>Destinations</b> Paged – up to 8 pages supported (39 button panel = 128 destinations, 21 button panel = 64 destinations)	Dark Green	Available Unselected
			Bright Green	Preset
			Dark Orange	In Use
			Dark Red	Unselected Protected
			Bright Red	Selected Protected
17	9	<b>Clear Preset</b> Once a source is preset (Bright Green) it can be cleared by pressing the Clear Preset button. The action reverts the panel to a 'safe' state and makes Take inactive until another source is preset.	Dark Green	Available

Table 12. 6712 Summary Table

Button		Function	Button Colors <sup>[1]</sup>	
39 button panel	21 button panel		Color	Status
18	38	<b>Protect</b> Protects the currently selected destination(s).	Dark Green	Available (Inactive)
			Bright Red	Protected (Active)
37	37	<b>Source/Destination Select</b> Toggles between selecting source and destination rows.  Text = "Source n" or "Dest n" based on Aurora data	Dark Green	Source Buttons Selected
			Blue	Destination Buttons Selected
38	N/A	<b>Gang Take</b>  When active multiple destinations may be selected. No changes made when destinations selected. If a new source is chosen and Take pressed the new source is sent to all the selected destinations.	Dark Green	Inactive
			Dark Orange	Active
				Selected destinations are Dark Orange with the most recent selection Bright Orange
35	27	<b>Status / Goto XPT</b>	As defined by Aurora	
36	N/A	<b>Lock</b>  Locks the panel preventing it from changing any crosspoints. Destinations can still show status.	Dark Orange (text = Panel Is Locked)	Active
			Dark Green	Inactive
39	39	<b>Source/Destination Select and Page Select</b>  Press - toggles between Source and Destination pages  Rotate clockwise - scrolls selected row up through pages.  Rotate counter-clockwise - scrolls selected row down through the pages.	N/A (rotary control switch)	Only available in controller software V1.23 and above
40	40	<b>Take</b>  Once source is preselected, Take becomes active.	Bright Green	Active (Take button displays name of preselected source)
			Dark Green	Inactive

Table 12. 6712 Summary Table

[1] All button colors are as defined by Aurora



### 4.3.3 6711 Mimic

LCD panels can mimic the 6711 and operate in BPX mode. The panels can be controlled via the Aurora control system.


The functions and colors for each button are defined in the controller database. For full details of the functions available, see the 6711/6712 user manual.

Examples of operations specific to these panels follow.

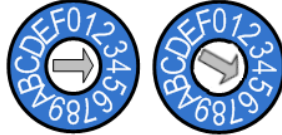
#### 4.3.3.1 Set Panel Mode

To set the panel mode, adjust the Hex Switches on the rear panel.

##### 39 Button Panel

<b>Panel Mode Type</b>	<b>Operating Mode</b>
Switch 2: 2 = 6711 BPX	Switch 4: 1 = Override over RS485 5= Mimic over RS485
	
<b>Fig 103. 6711 Mimic - Config Switch Settings for 39 Button Panel</b>	


##### 21 Button Panel

<b>Panel Mode Type</b>	<b>Operating Mode</b>
Switch 2: 4 = 6711 BPX	Switch 4: 1 = Override over RS485 5= Mimic over RS485
	
<b>Fig 104. 6711 Mimic - Config Switch Settings for 21 Button Panel</b>	

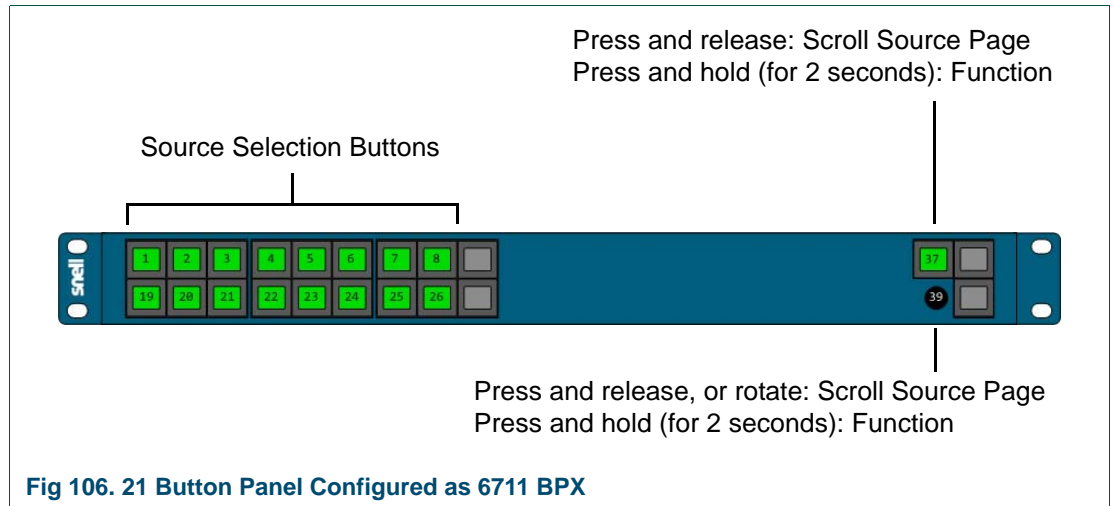
#### 4.3.3.2 Button Functions

Examples of operations specific to these panels follow:

##### 39 Button Panel

Press and release: Scroll Source Page Press and hold (for 2 seconds): Function
<b>Source Selection Buttons</b>

Press and release, or rotate: Scroll Source Page Press and hold (for 2 seconds): Function
<b>Fig 105. 39 Button Panel Configured as 6711 BPX</b>

**21 Button Panel**



**4.3.3.3 6711 Summary Table**

Button		Function	Button Colors [1]	
39 button panel	21 button panel		Color	Status
1-16	1-8 17-26	<b>Sources</b> Paged – up to 8 pages supported (39 button panel = 128 sources, 21 button panel = 64 sources)	Dark Green Dark Orange	Available Unselected In Use
37	37	<b>Source Page Select</b> Scroll Source Page  <b>Function</b> (Press and hold for 2 seconds)	Dark Green Bright Green Dark Green Bright Green	Available Unselected Paging active Available Unselected Function active
39	39	<b>Source Page Select</b> Rotate clockwise - scrolls up through source pages. Rotate counter-clockwise - scrolls down through source pages.  <b>Function</b> (Press and hold for 2 seconds)	N/A (rotary control switch) Dark Green Bright Green	Only available in controller software V1.23 and above Available Unselected Function active

**Table 13. 6711 Summary Table**

[1] All button colors are as defined by Aurora

### 4.3.4 6711 Mimic Freeform Mode

LCD panels can mimic the 6711 in Freeform mode. The panels can be controlled via the Aurora control system.

In this mode, any button can have any function, as defined in the controller database. When applied to the panels this restricts the number of buttons that can be controlled.

#### 4.3.4.1 Set Panel Mode

To set the panel mode, adjust the Hex Switches on the rear panel.

##### 39 Button Panel

<b>Panel Mode Type</b>	<b>Operating Mode</b>
Switch 2: 2 = 6711	Switch 4: 2 = Override over RS485 6 = Mimic over RS485
<p>Fig 107. 6711 Mimic - Config Switch Settings for 39 Button Panel</p>	

##### 21 Button Panel

<b>Panel Mode Type</b>	<b>Operating Mode</b>
Switch 2: 4 = 6711 BPX	Switch 4: 2 = Override over RS485 6 = Mimic over RS485
<p>Fig 108. 6711 Mimic - Config Switch Settings for 21 Button Panel</p>	

#### 4.3.4.2 Button Functions

In Freeform mode all button functions are defined in the controller database.

##### 39 Button Panel

Fig 109. 39 Button Panel Configured as 6711 in Freeform Mode

##### 21 Button Panel

Fig 110. 21 Button Panel Configured as 6711 in Freeform Mode

## 4.4 LED Panel Modes

### 4.4.1 General

The LED panels can be set to different legacy mode types. The mode types available are shown in Table 14.

No.	Mode	No.	Mode
1	16 Way BPX	9	48 Way BPX
2	Dual 8 Split BPX	10	Dual 24 Split BPX
3	8x8 XY	11	24x24 XY
4	16x4 XY (no level buttons)	12	48x4 XY (no level buttons)
5	32 Way BPX	13	32x16 XY
6	Dual 16 Split BPX	14	Dual 16+16 BPX
7	16x16 XY	15	16x16 XY
8	32x4 XY (no level buttons)	16	24x12 XY
		17	User-defined

**Table 14. LED Panel Mode Types**

**Note:**

Panel mode and database configuration must match.











Mismatch will not be flagged - buttons may still light and control router crosspoints.

**Note:**

The control panel must be reset if the mode of operation is changed while the panel is powered on and connected to comms.

#### 4.4.1.1 LED Panel Button Colors

The colors used for the LED panel buttons in legacy modes are:

	Inactive		Selected	
<b>Source</b>		Green		White
<b>Destination</b>		Cyan		White
<b>Level</b>		Unlit		White
<b>Lock</b>		Unlit		Red
<b>Protect</b>		Unlit		Red

**Table 15. LED Panel Button Colors**

**Note:**

If the panel is configured for an unsupported mode, there may be unexpected results. For example, some or all buttons light up.

### 4.4.2 Mode 1 - 16 Way BPX

#### 4.4.2.1 Button Layout

Supported Panels	Top Row	Bottom Row
72 button panel	Sources 1-8	Sources 9-16
60 button panel		
42 button panel		
24 button panel		

Table 16. Mode 1 - Supported Panels

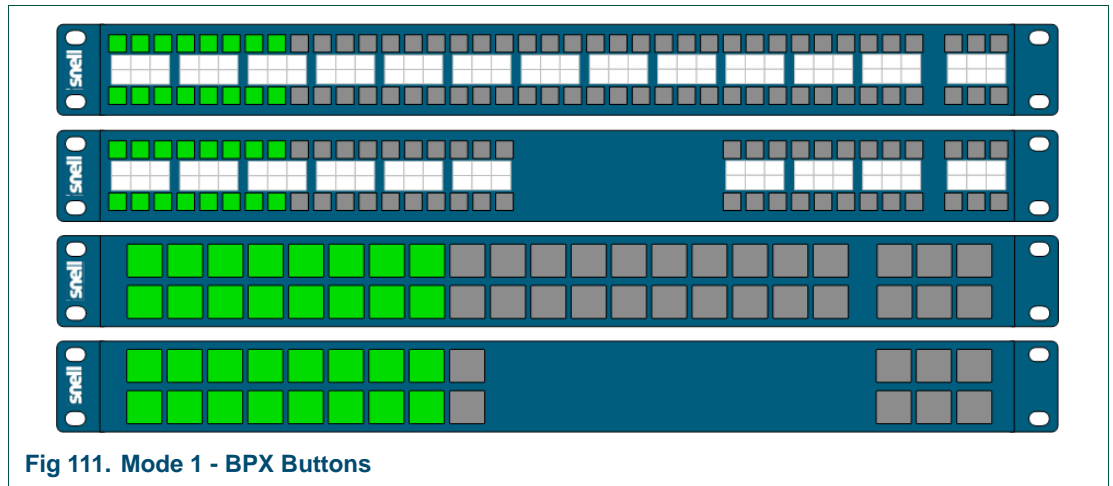


Fig 111. Mode 1 - BPX Buttons

#### 4.4.2.2 Level Buttons

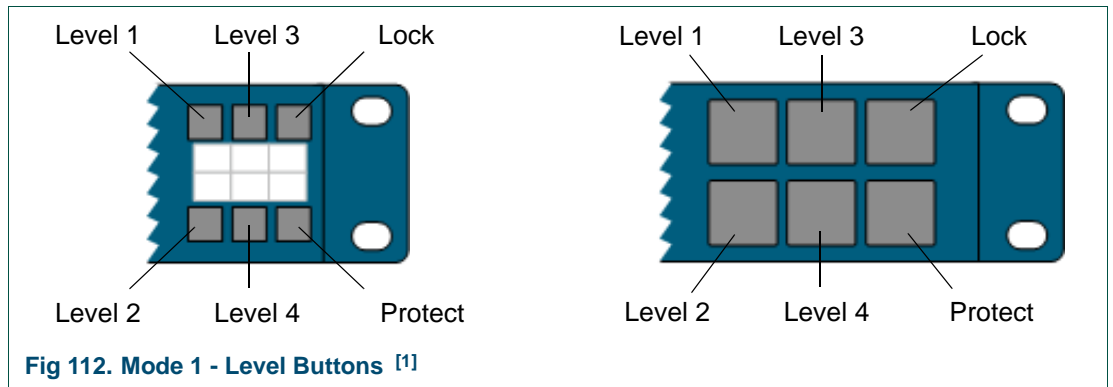


Fig 112. Mode 1 - Level Buttons [1]

[1] These buttons remain unlit until pressed (active).

#### 4.4.2.3 Configuration Settings

<p><b>Panel Mode Type</b></p> <p>Switch 2: 0 = Mode 1</p>	<p><b>Operating Mode</b></p> <p>Switch 4: 0 = Override over RS485                  4 = Mimic over RS485                  8 = Override over Ethernet                  C = Mimic over Ethernet</p>
---	--

Fig 113. Mode 1 - Config Switch Settings

### 4.4.3 Mode 2 - Dual 8-Split BPX

#### 4.4.3.1 Button Layout

Supported Panels	Top Row	Bottom Row
72 button panel	Sources 1-8 (Dest 1)	Sources 9-16 (Dest 2)
60 button panel		
42 button panel		
24 button panel		

Table 17. Mode 2 - Supported Panels

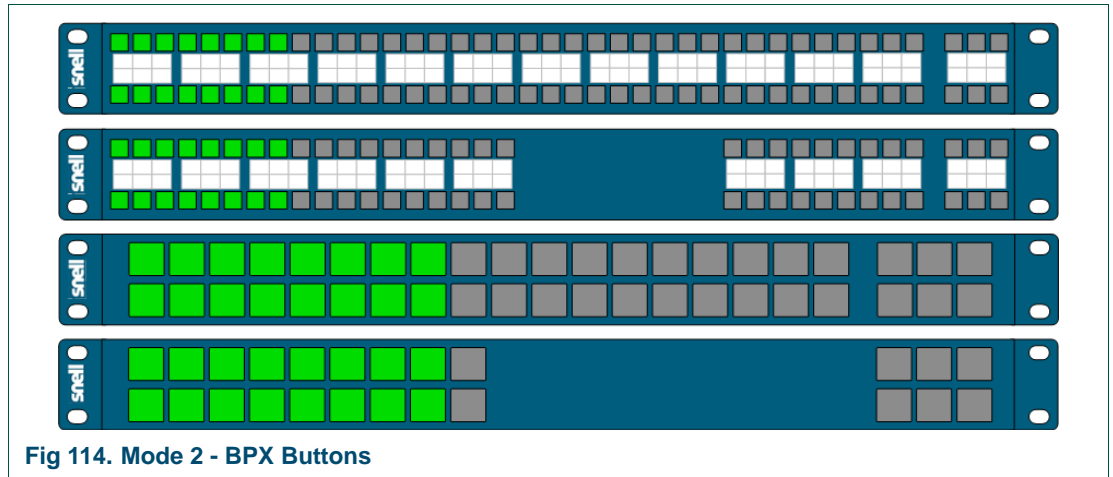


Fig 114. Mode 2 - BPX Buttons

#### 4.4.3.2 Level Buttons

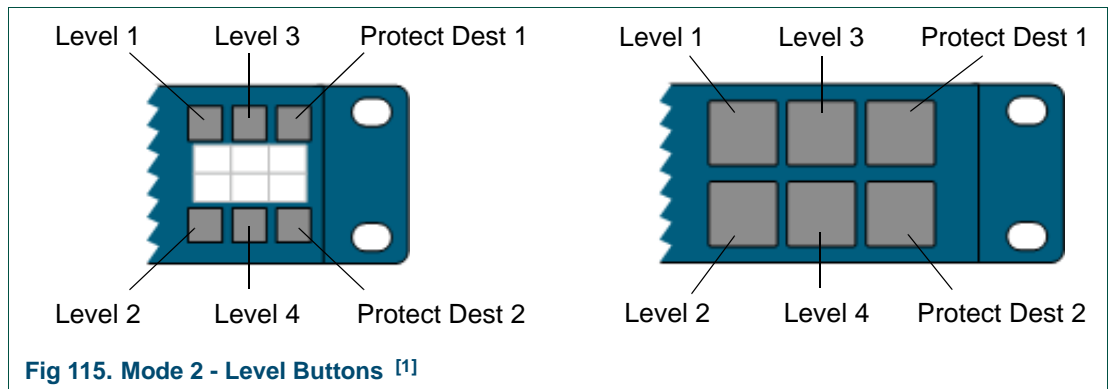


Fig 115. Mode 2 - Level Buttons [1]

[1] These buttons remain unlit until pressed (active).

#### 4.4.3.3 Configuration Settings

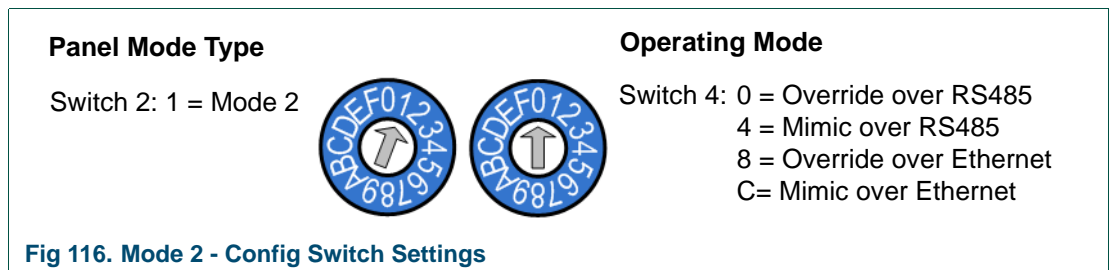


Fig 116. Mode 2 - Config Switch Settings

### 4.4.4 Mode 3 - Dual 8x8 XY

#### 4.4.4.1 Button Layout

Supported Panels	Top Row	Bottom Row
72 button panel	Sources 1-8	Destinations 1-8
60 button panel		
42 button panel		
24 button panel		

Table 18. Mode 3 - Supported Panels

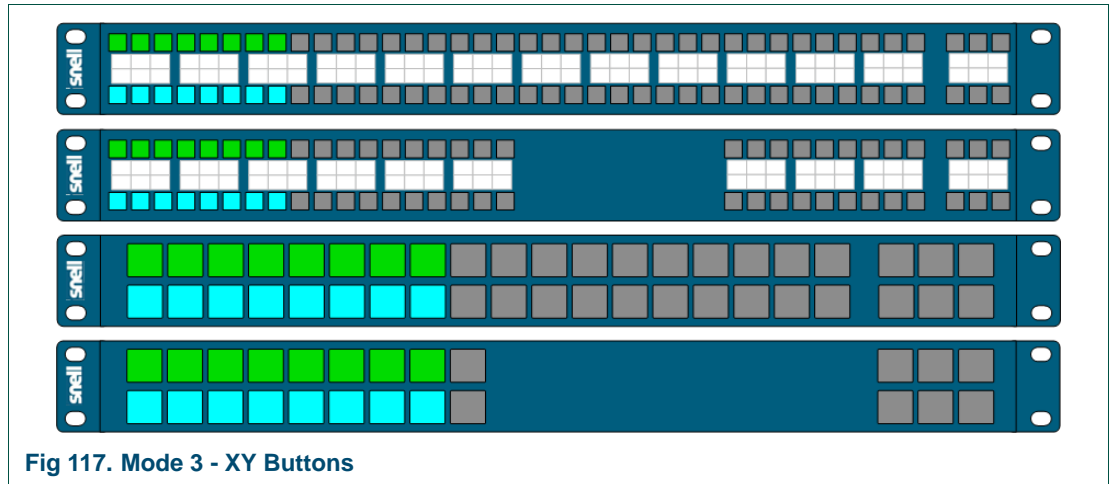


Fig 117. Mode 3 - XY Buttons

#### 4.4.4.2 Level Buttons

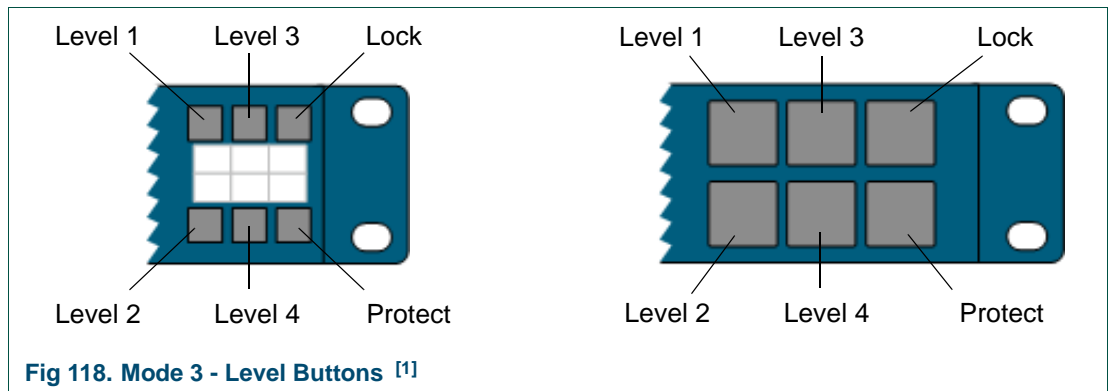


Fig 118. Mode 3 - Level Buttons [1]

[1] These buttons remain unlit until pressed (active).

#### 4.4.4.3 Configuration Settings

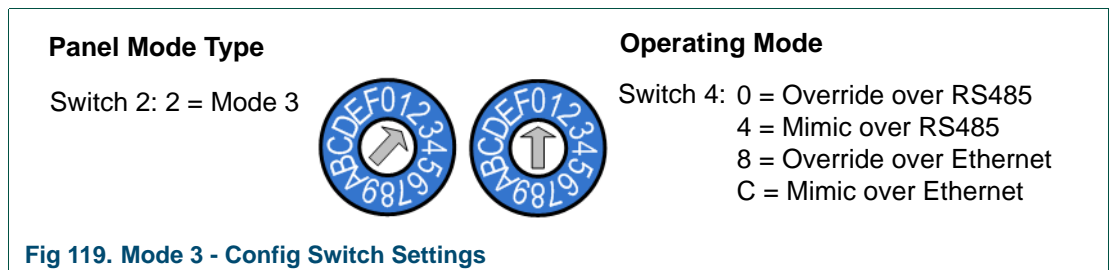


Fig 119. Mode 3 - Config Switch Settings

### 4.4.5 Mode 4 - 16x4 XY (no level buttons)

#### 4.4.5.1 Button Layout

Supported Panels	Top Row	Bottom Row
72 button panel	Sources 1-8	Sources 9-16
60 button panel		
42 button panel		
24 button panel		

Table 19. Mode 4 - Supported Panels

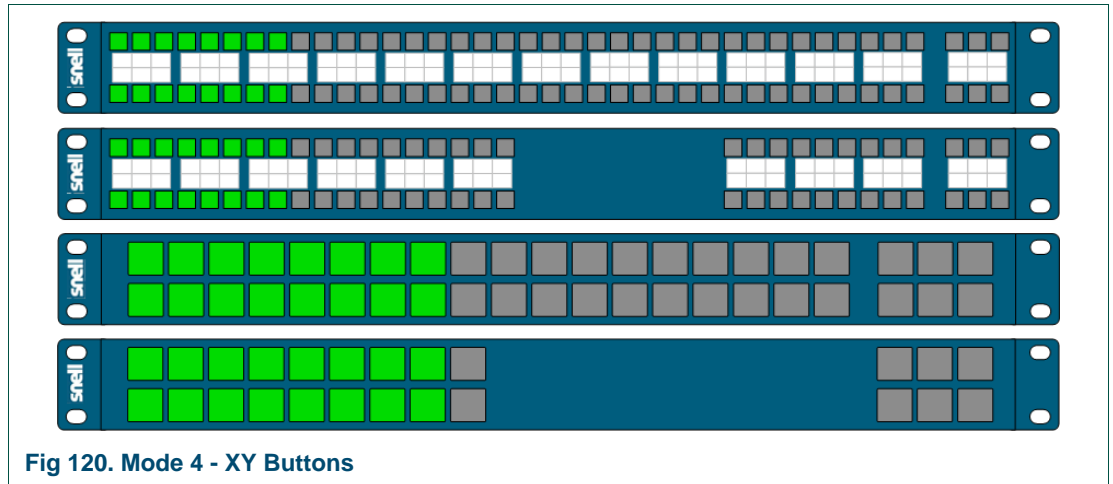


Fig 120. Mode 4 - XY Buttons

#### 4.4.5.2 Destination Buttons

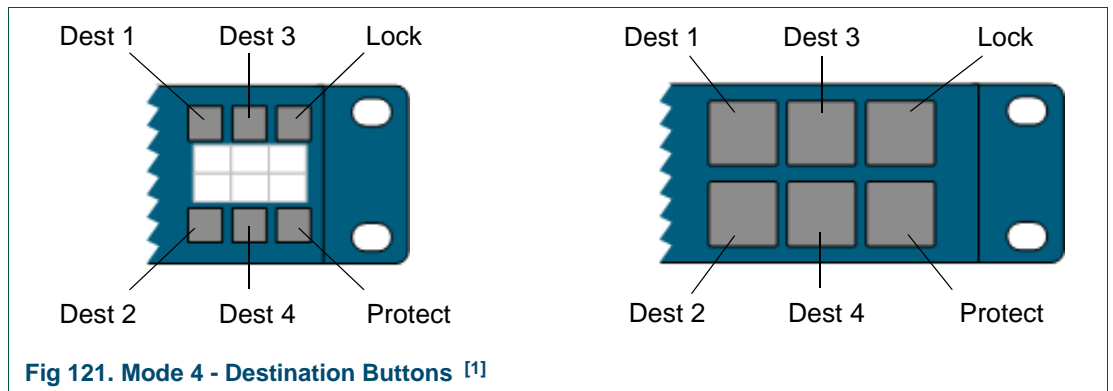


Fig 121. Mode 4 - Destination Buttons [1]

[1] These buttons remain unlit until pressed (active).

#### 4.4.5.3 Configuration Settings

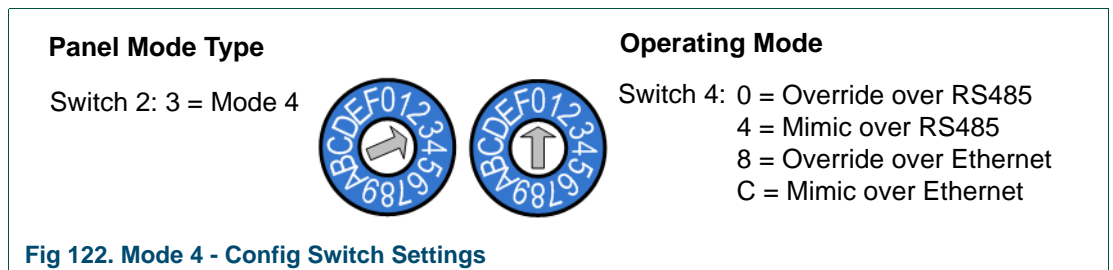


Fig 122. Mode 4 - Config Switch Settings



### 4.4.6 Mode 5 - 32 Way BPX

#### 4.4.6.1 Button Layout

Supported Panels	Top Row	Bottom Row
72 button panel	Sources 1-16	Sources 17-32
60 button panel		
42 button panel		
24 button panel	Mode 5 is not supported <sup>[1]</sup>	

Table 20. Mode 5 - Supported Panels

[1] If this mode is selected, all buttons on the panel light, but do not function according to this mode.

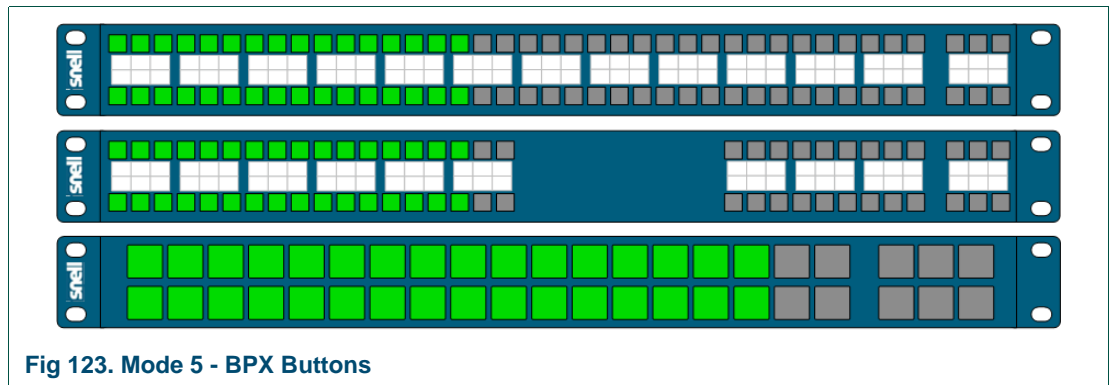


Fig 123. Mode 5 - BPX Buttons

#### 4.4.6.2 Level Buttons

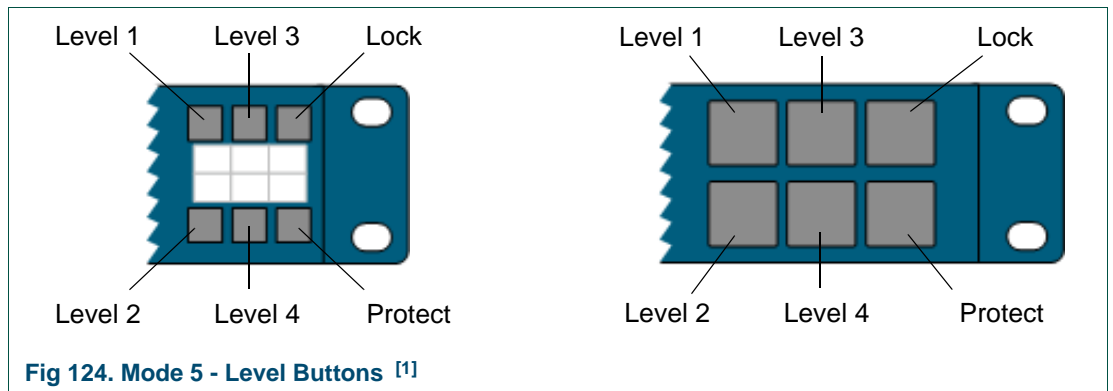


Fig 124. Mode 5 - Level Buttons <sup>[1]</sup>

[1] These buttons remain unlit until pressed (active).

#### 4.4.6.3 Configuration Settings

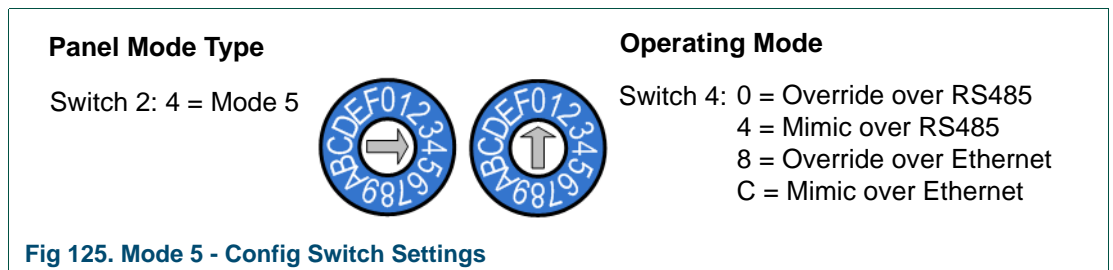


Fig 125. Mode 5 - Config Switch Settings

### 4.4.7 Mode 6 - Dual 16 Split BPX

#### 4.4.7.1 Button Layout

Supported Panels	Top Row	Bottom Row
72 button panel	Sources 1-16 (Dest 1)	Sources 1-16 (Dest 2)
60 button panel		
42 button panel		
24 button panel	Mode 6 is not supported <sup>[1]</sup>	

Table 21. Mode 6 - Supported Panels

[1] If this mode is selected, all buttons on the panel light, but do not function according to this mode.

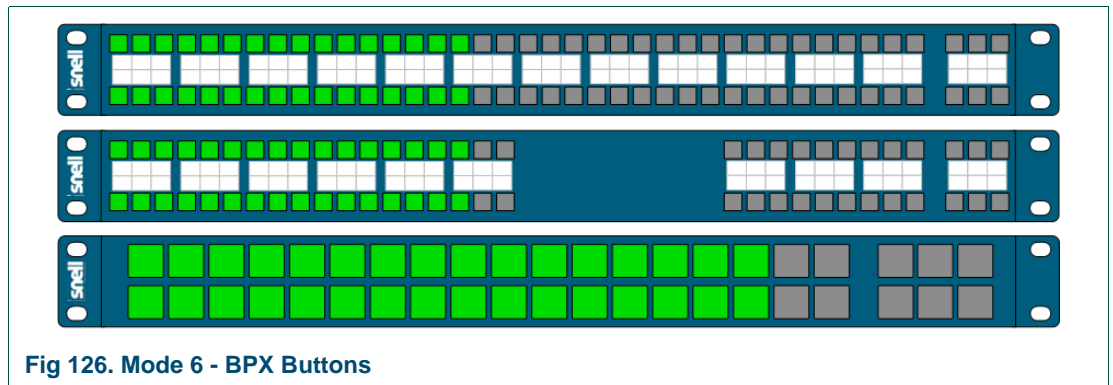


Fig 126. Mode 6 - BPX Buttons

#### 4.4.7.2 Level Buttons

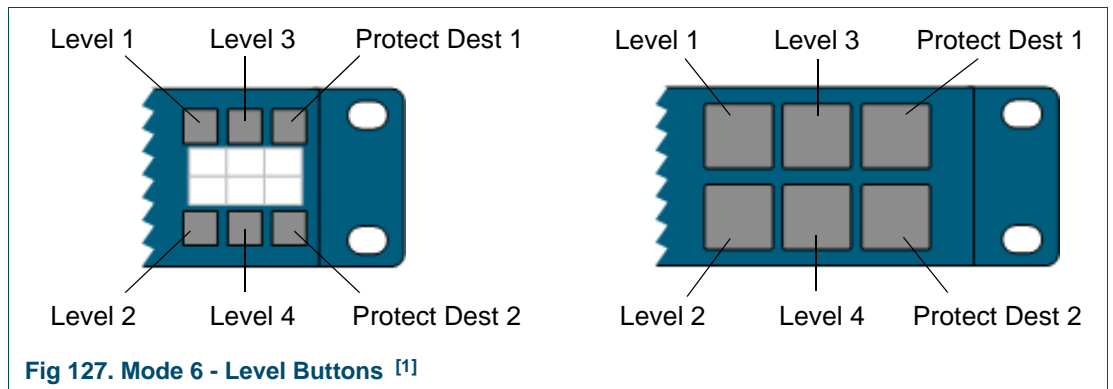


Fig 127. Mode 6 - Level Buttons <sup>[1]</sup>

[1] These buttons remain unlit until pressed (active).

#### 4.4.7.3 Configuration Settings

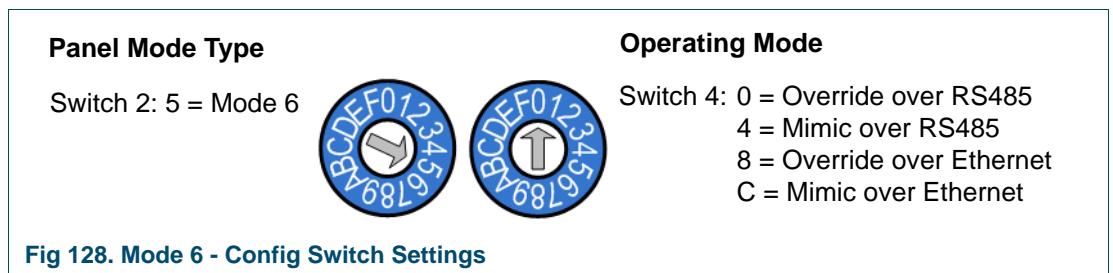


Fig 128. Mode 6 - Config Switch Settings

### 4.4.8 Mode 7 - Dual 16x16 XY

#### 4.4.8.1 Button Layout

Supported Panels	Top Row	Bottom Row
72 button panel	Sources 1-16	Destinations 1-16
60 button panel		
42 button panel		
24 button panel	Mode 7 is not supported <sup>[1]</sup>	

Table 22. Mode 7 - Supported Panels

<sup>[1]</sup> If this mode is selected, all buttons on the panel light, but do not function according to this mode.

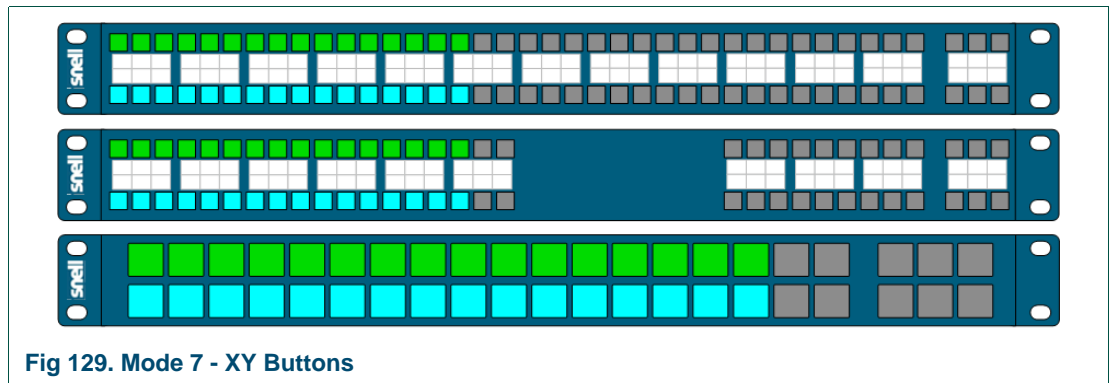


Fig 129. Mode 7 - XY Buttons

#### 4.4.8.2 Level Buttons

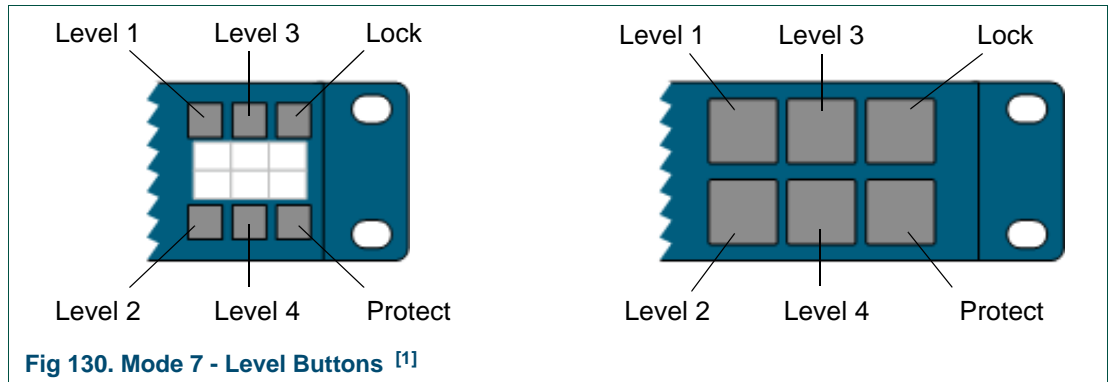


Fig 130. Mode 7 - Level Buttons <sup>[1]</sup>

<sup>[1]</sup> These buttons remain unlit until pressed (active).

#### 4.4.8.3 Configuration Settings

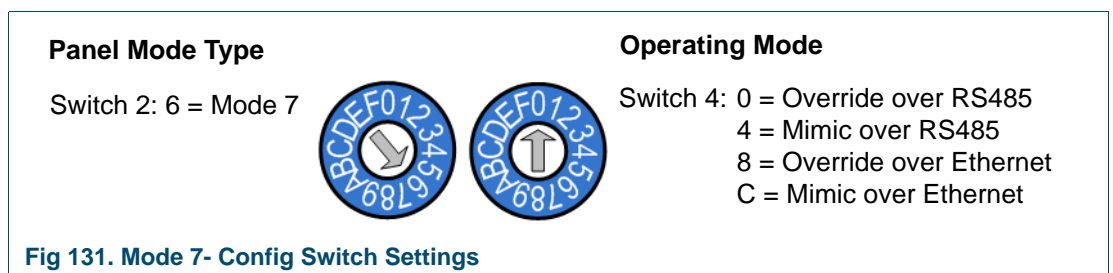


Fig 131. Mode 7- Config Switch Settings

### 4.4.9 Mode 8 - 32x4 XY (no level buttons)

#### 4.4.9.1 Button Layout

Supported Panels	Top Row	Bottom Row
72 button panel	Sources 1-16	Sources 17-32
60 button panel		
42 button panel		
24 button panel	Mode 8 is not supported <sup>[1]</sup>	

Table 23. Mode 8 - Supported Panels

<sup>[1]</sup> If this mode is selected, all buttons on the panel light, but do not function according to this mode.

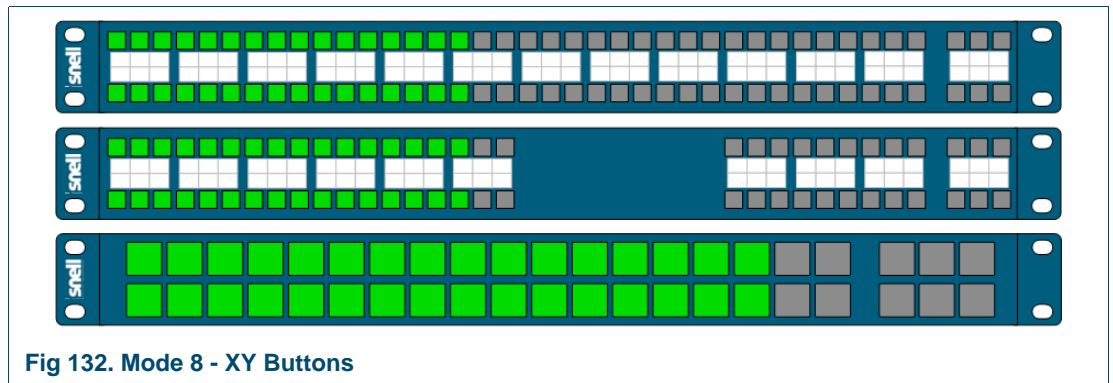


Fig 132. Mode 8 - XY Buttons

#### 4.4.9.2 Destination Buttons

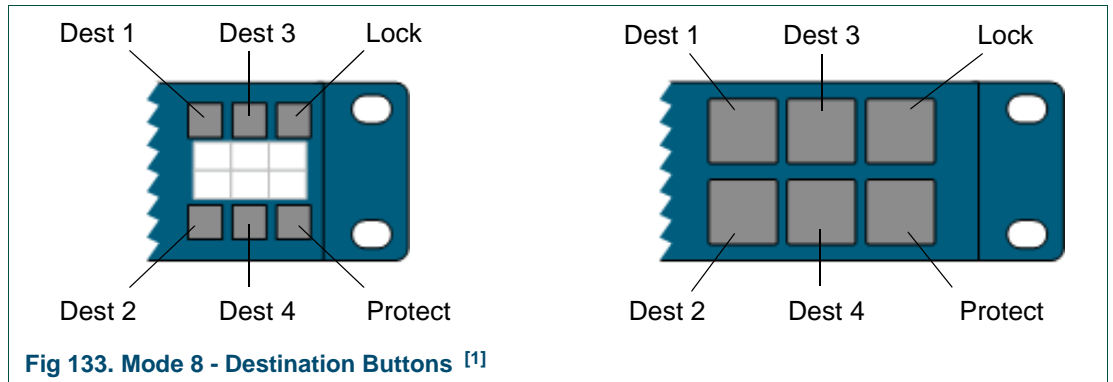


Fig 133. Mode 8 - Destination Buttons <sup>[1]</sup>

<sup>[1]</sup> These buttons remain unlit until pressed (active).

#### 4.4.9.3 Configuration Settings

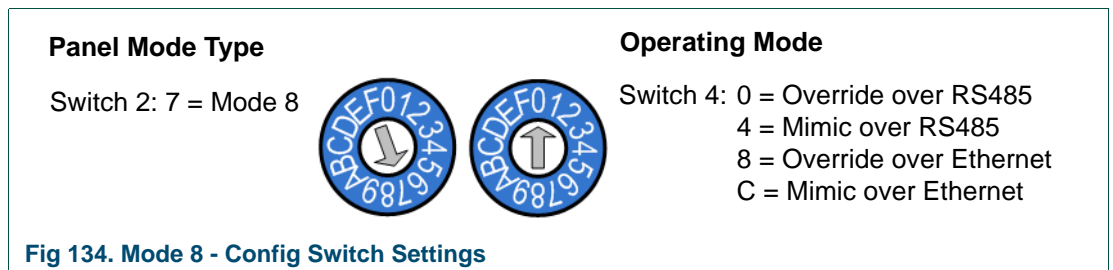


Fig 134. Mode 8 - Config Switch Settings

### 4.4.10 Mode 9 - 48 Way BPX

#### 4.4.10.1 Button Layout

Supported Panels	Top Row	Bottom Row
72 button panel	Sources 1-24	Sources 25-48
60 button panel	Mode 9 is not supported [1]	
42 button panel		
24 button panel		

Table 24. Mode 9 - Supported Panels

[1] If this mode is selected, all buttons on the panel light, but do not function according to this mode.

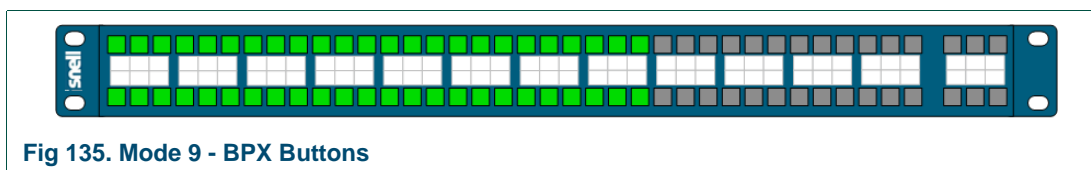


Fig 135. Mode 9 - BPX Buttons

#### 4.4.10.2 Level Buttons

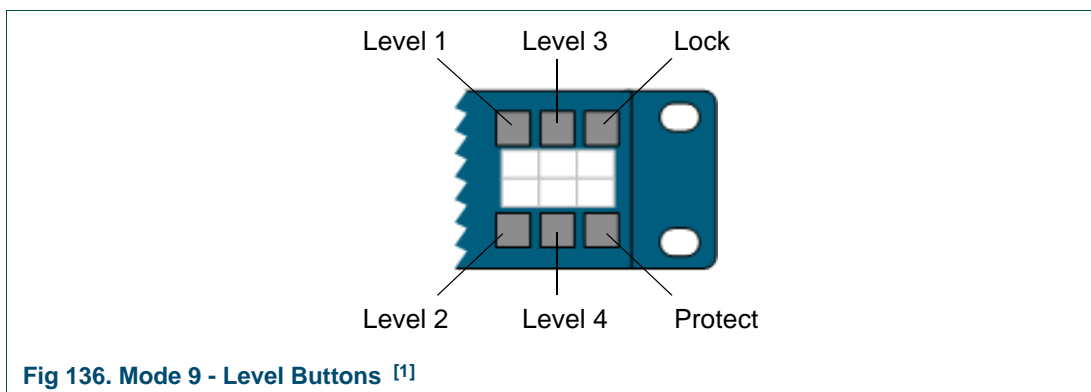


Fig 136. Mode 9 - Level Buttons [1]

[1] These buttons remain unlit until pressed (active).

#### 4.4.10.3 Configuration Settings

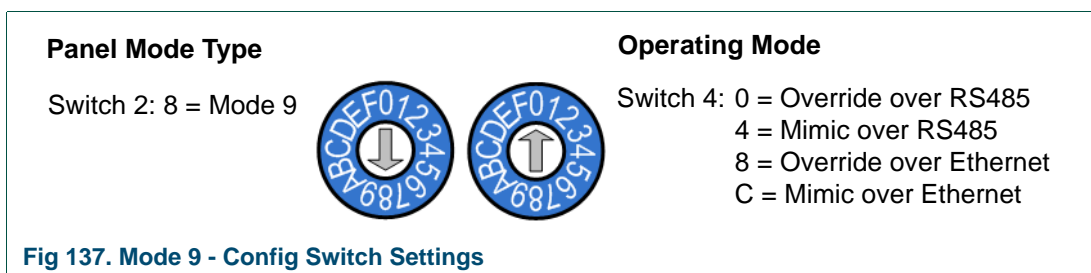


Fig 137. Mode 9 - Config Switch Settings

### 4.4.11 Mode 10 - Dual 24 Split BPX

#### 4.4.11.1 Button Layout

Supported Panels	Top Row	Bottom Row
72 button panel	Sources 1-24 (Dest 1)	Sources 1-24 (Dest 2)
60 button panel	Mode 10 is not supported <sup>[1]</sup>	
42 button panel		
24 button panel		

Table 25. Mode 10 - Supported Panels

<sup>[1]</sup> If this mode is selected, all buttons on the panel light, but do not function according to this mode.

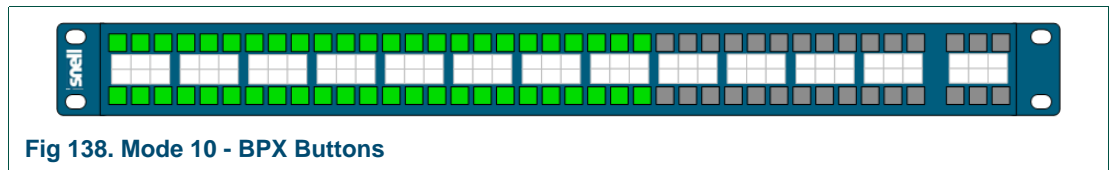


Fig 138. Mode 10 - BPX Buttons

#### 4.4.11.2 Level Buttons

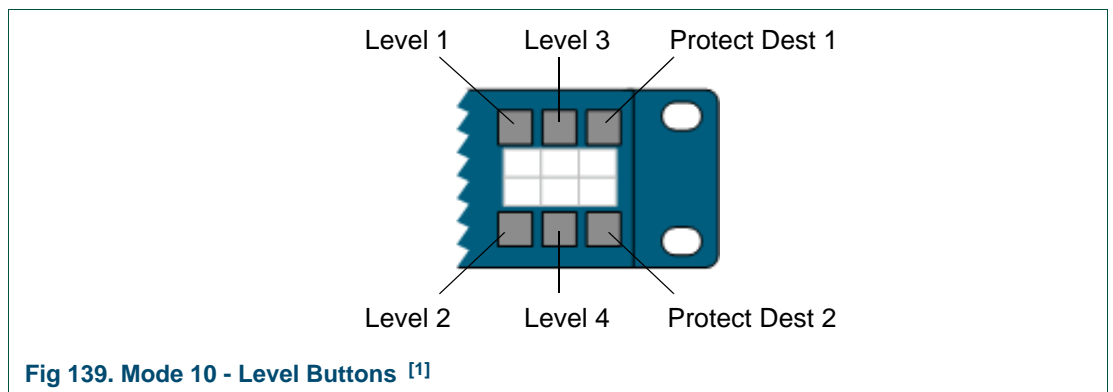


Fig 139. Mode 10 - Level Buttons <sup>[1]</sup>

<sup>[1]</sup> These buttons remain unlit until pressed (active).

#### 4.4.11.3 Configuration Settings

<p><b>Panel Mode Type</b></p> <p>Switch 2: 9 = Mode 10</p>		<p><b>Operating Mode</b></p> <p>Switch 4: 0 = Override over RS485                  4 = Mimic over RS485                  8 = Override over Ethernet                  C = Mimic over Ethernet</p>
--	--	--

Fig 140. Mode 10 - Config Switch Settings

### 4.4.12 Mode 11 - 24x24 XY

#### 4.4.12.1 Button Layout

Supported Panels	Top Row	Bottom Row
72 button panel	Sources 1-24	Destinations 1-24
60 button panel	Mode 11 is not supported <sup>[1]</sup>	
42 button panel		
24 button panel		

Table 26. Mode 11 - Supported Panels

<sup>[1]</sup> If this mode is selected, all buttons on the panel light, but do not function according to this mode.

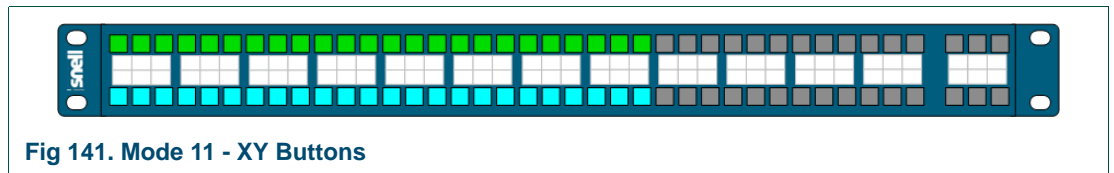


Fig 141. Mode 11 - XY Buttons

#### 4.4.12.2 Level Buttons

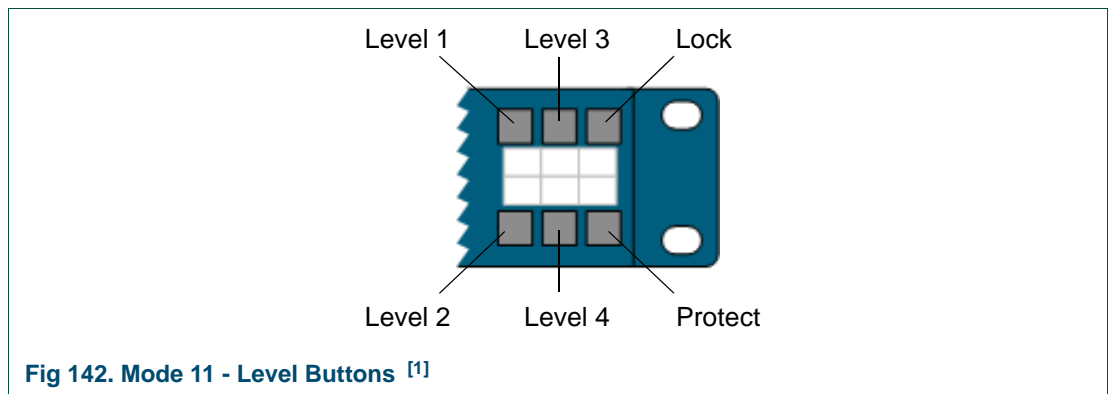


Fig 142. Mode 11 - Level Buttons <sup>[1]</sup>

<sup>[1]</sup> These buttons remain unlit until pressed (active).

#### 4.4.12.3 Configuration Settings

<p><b>Panel Mode Type</b></p> <p>Switch 2: A = Mode 11</p>		<p><b>Operating Mode</b></p> <p>Switch 4: 0 = Override over RS485                  4 = Mimic over RS485                  8 = Override over Ethernet                  C = Mimic over Ethernet</p>
--	--	--

Fig 143. Mode 11 - Config Switch Settings

### 4.4.13 Mode 12 - 48x4 XY (no level buttons)

#### 4.4.13.1 Button Layout

Supported Panels	Top Row	Bottom Row
72 button panel	Sources 1-24	Sources 25-48
60 button panel	Mode 12 is not supported <sup>[1]</sup>	
42 button panel		
24 button panel		

Table 27. Mode 12 - Supported Panels

<sup>[1]</sup> If this mode is selected, all buttons on the panel light, but do not function according to this mode.

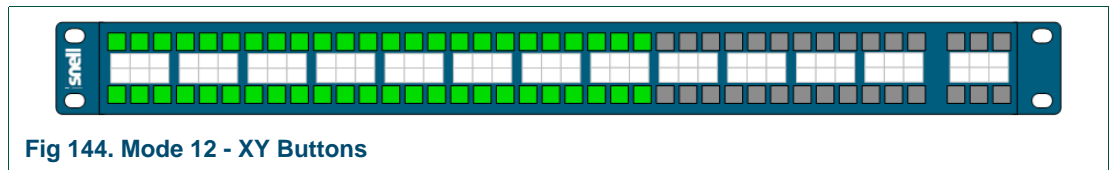


Fig 144. Mode 12 - XY Buttons

#### 4.4.13.2 Destination Buttons

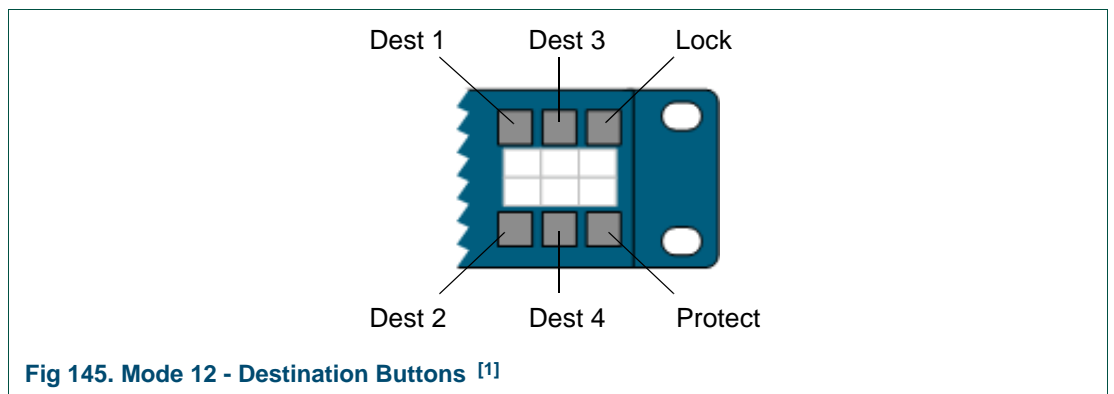


Fig 145. Mode 12 - Destination Buttons <sup>[1]</sup>

<sup>[1]</sup> These buttons remain unlit until pressed (active).

#### 4.4.13.3 Configuration Settings

<p><b>Panel Mode Type</b></p> <p>Switch 2: B = Mode 12</p>		<p><b>Operating Mode</b></p> <p>Switch 4: 0 = Override over RS485                  4 = Mimic over RS485                  8 = Override over Ethernet                  C = Mimic over Ethernet</p>
--	--	--

Fig 146. Mode 12 - Config Switch Settings



### 4.4.14 Mode 13 - 32x16 XY

#### 4.4.14.1 Button Layout

Supported Panels	Top Row	Bottom Row
72 button panel	Sources 1-16	Sources 17-32
60 button panel	Destinations 1-8	Destinations 9-16
42 button panel	Mode 13 is not supported [1]	
24 button panel		

Table 28. Mode 13 - Supported Panels

[1] If this mode is selected, all buttons on the panel light, but do not function according to this mode.

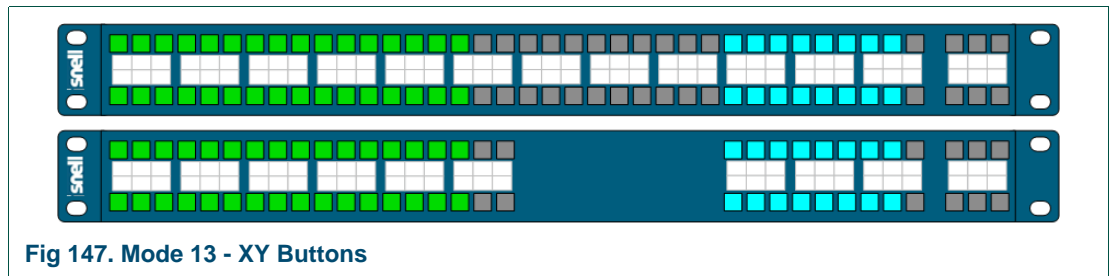


Fig 147. Mode 13 - XY Buttons

#### 4.4.14.2 Level Buttons

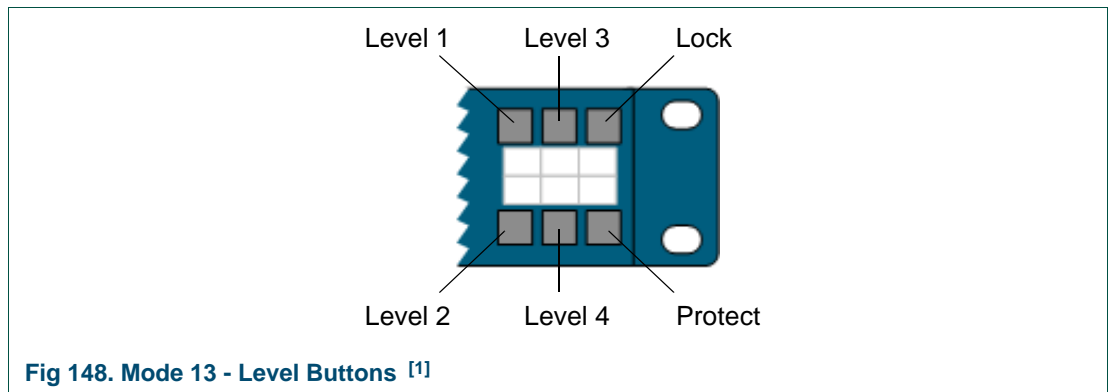


Fig 148. Mode 13 - Level Buttons [1]

[1] These buttons remain unlit until pressed (active).

#### 4.4.14.3 Configuration Settings

<p><b>Panel Mode Type</b></p> <p>Switch 2: C = Mode 13</p>	<p><b>Operating Mode</b></p> <p>Switch 4: 0 = Override over RS485                  4 = Mimic over RS485                  8 = Override over Ethernet                  C = Mimic over Ethernet</p>
--	--

Fig 149. Mode 13 - Config Switch Settings

### 4.4.15 Mode 14 - Dual 16+16 BPX

#### 4.4.15.1 Button Layout

Supported Panels	Top Row	Bottom Row
72 button panel	Sources 1-8 (Dest 1)	Sources 9-16 (Dest 2)
60 button panel	Sources 1-8 (Dest 2)	Sources 9-16 (Dest 2)
42 button panel	Mode 14 is not supported [1]	
24 button panel		

Table 29. Mode 14 - Supported Panels

[1] If this mode is selected, all buttons on the panel light, but do not function according to this mode.

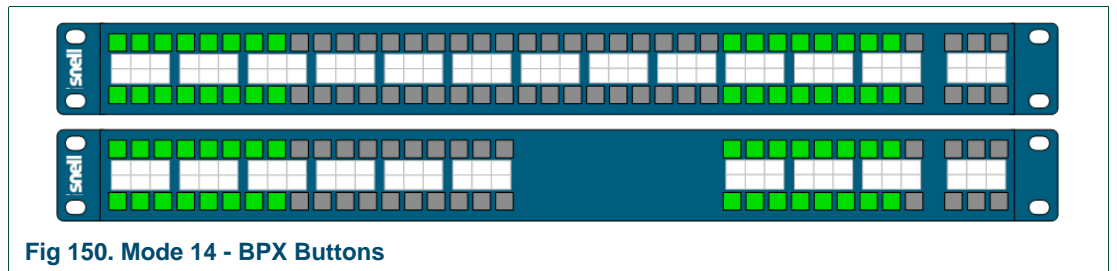


Fig 150. Mode 14 - BPX Buttons

#### 4.4.15.2 Level Buttons

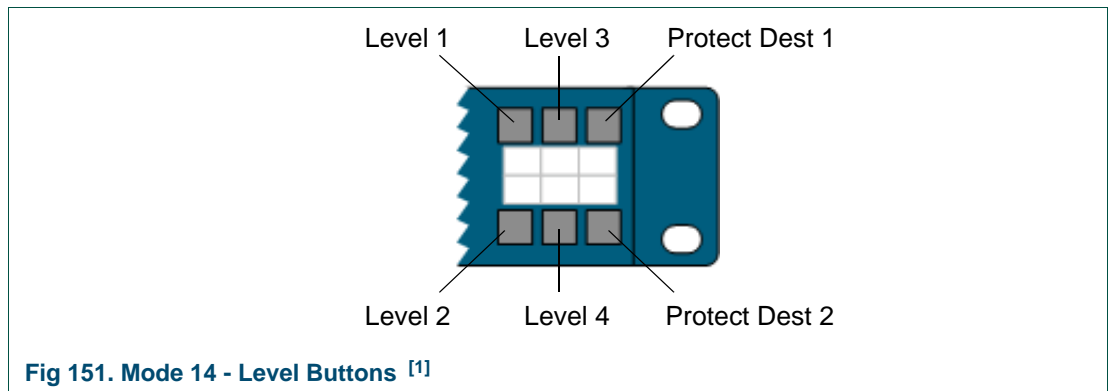


Fig 151. Mode 14 - Level Buttons [1]

[1] These buttons remain unlit until pressed (active).

#### 4.4.15.3 Configuration Settings

<p><b>Panel Mode Type</b></p> <p>Switch 2: D = Mode 14</p>	<p><b>Operating Mode</b></p> <p>Switch 4: 0 = Override over RS485                  4 = Mimic over RS485                  8 = Override over Ethernet                  C = Mimic over Ethernet</p>
--	--

Fig 152. Mode 14 - Config Switch Settings

### 4.4.16 Mode 15 - Dual 16x16 XY

#### 4.4.16.1 Button Layout

Supported Panels	Top Row	Bottom Row
72 button panel	Sources 1-8	Sources 9-16
60 button panel	Destinations 1-8	Destinations 9-16
42 button panel	Mode 15 is not supported [1]	
24 button panel		

Table 30. Mode 15 - Supported Panels

[1] If this mode is selected, all buttons on the panel light, but do not function according to this mode.

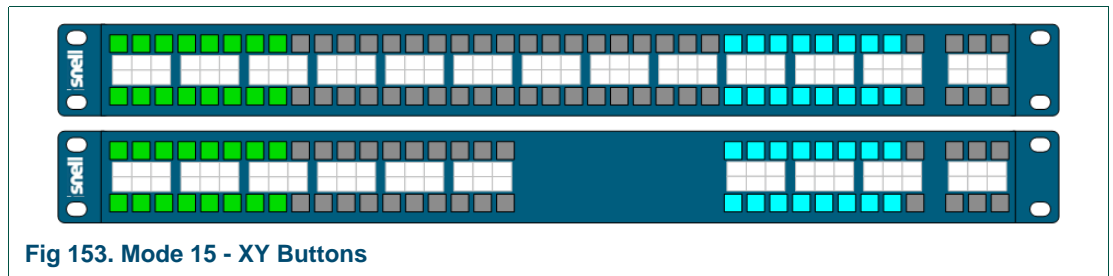


Fig 153. Mode 15 - XY Buttons

#### 4.4.16.2 Level Buttons

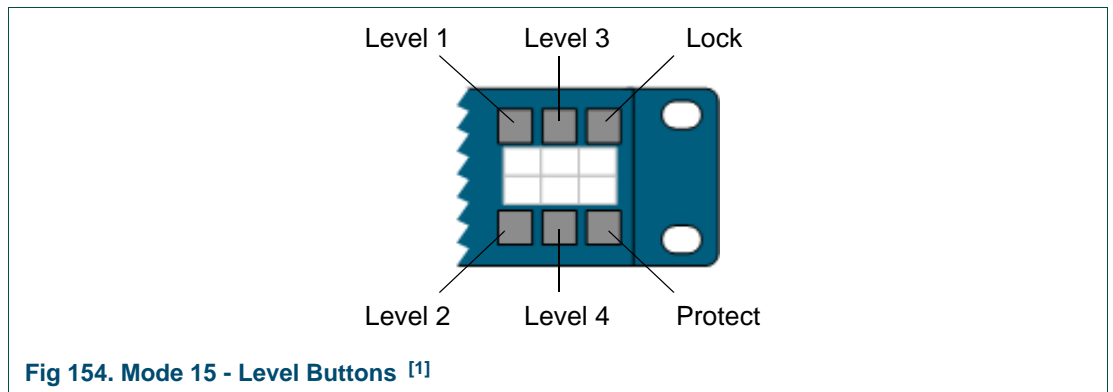


Fig 154. Mode 15 - Level Buttons [1]

[1] These buttons remain unlit until pressed (active).

#### 4.4.16.3 Configuration Settings

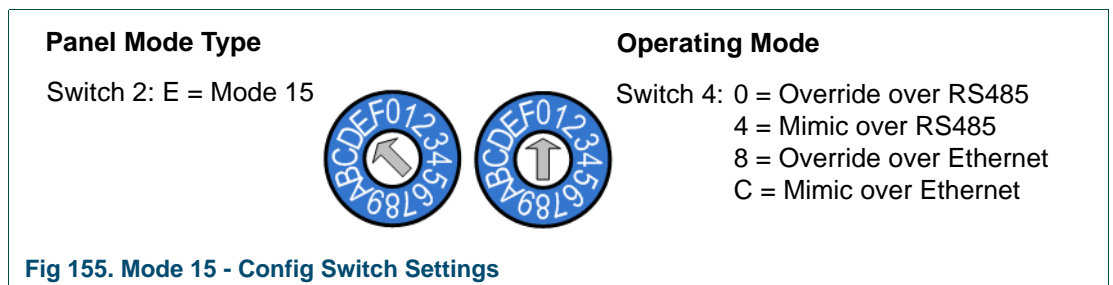


Fig 155. Mode 15 - Config Switch Settings

### 4.4.17 Mode 16 - 24x12 XY

#### 4.4.17.1 Button Layout

Supported Panels	Top Row	Bottom Row
72 button panel	Sources 1-12 Destinations 1-6	Sources 13-24 Destinations 7-12
60 button panel		
42 button panel	Mode 16 is not supported [1]	
24 button panel		

Table 31. Mode 16 - Supported Panels

[1] If this mode is selected, all buttons on the panel light, but do not function according to this mode.

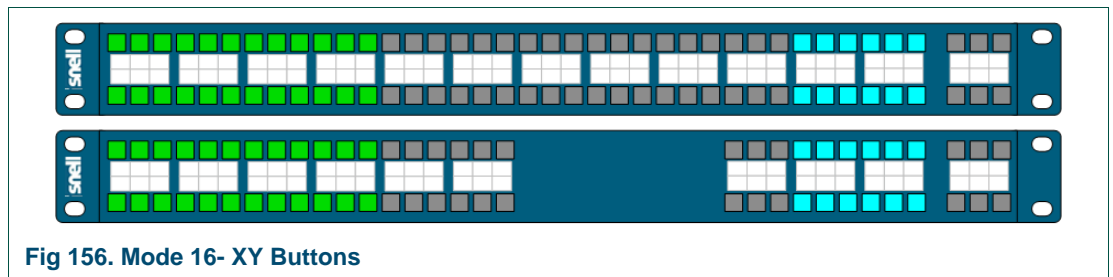


Fig 156. Mode 16- XY Buttons

#### 4.4.17.2 Level Buttons

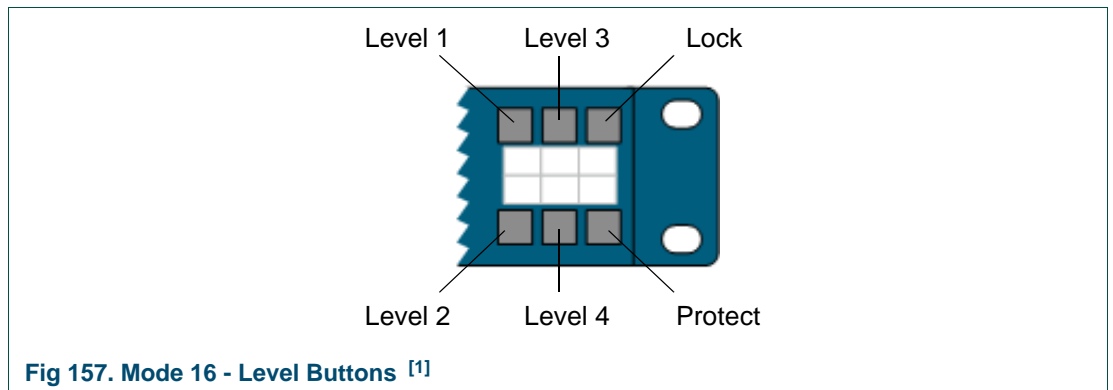


Fig 157. Mode 16 - Level Buttons [1]

[1] These buttons remain unlit until pressed (active).

#### 4.4.17.3 Configuration Settings

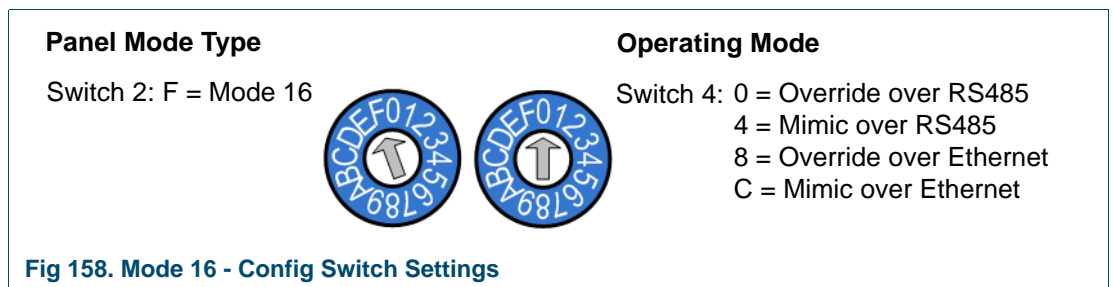


Fig 158. Mode 16 - Config Switch Settings

### 4.4.18 Mode 17 - User-defined

#### 4.4.18.1 Button Layout

This mode only works with Nucleus and Centra/2330 controllers.

Supported Panels	Top Row	Bottom Row
72 button panel	User-defined <sup>[1]</sup>	
60 button panel		
42 button panel		
24 button panel		

Table 32. Mode 17 - Supported Panels

<sup>[1]</sup> The definitions for the buttons in this mode are sourced from the relevant database.

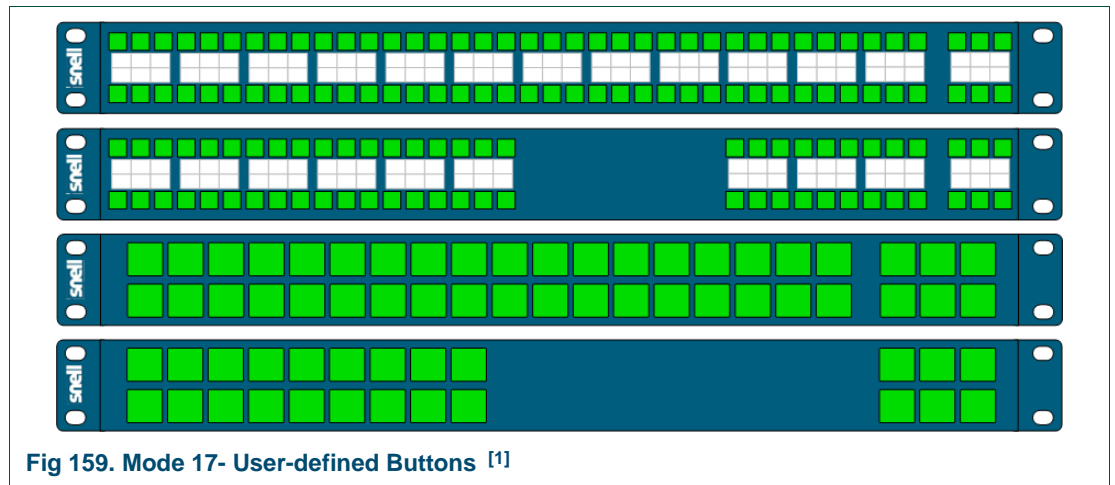


Fig 159. Mode 17- User-defined Buttons <sup>[1]</sup>

<sup>[1]</sup> Button colors in this mode may differ according to the software version on the panel.

#### 4.4.18.2 Configuration Settings

<p><b>Panel Mode Type</b></p> <p>Switch 2: 0 = Mode 17</p>		<p><b>Operating Mode</b></p> <p>Switch 4: 1 = Override over RS485                      5 = Mimic over RS485                      9 = Override over Ethernet                      D = Mimic over Ethernet</p>
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Fig 160. Mode 17 - Config Switch Settings

## Appendix A. Technical Specification

### A.1 Description

This section provides details of the physical characteristics of the panel, the environment in which is designed for use, and pinouts of the connectors on the rear panel.

### A.2 Unit Specification

<b>Physical</b>	
Mounting height	1RU
Dimensions	19 x 1.75 x 1.89 inches (480 x 44.45 x 48 mm)
Weight	1.68 lb (0.76 kg)
<b>Power</b>	
Connector	12V DC PSU (x 2 – dual redundant power supplies)
Voltage	PSU A: +12V DC, 1.0A PSU B: +12V DC, 1.0A  Ethernet: 37.0V - 57.0V, 350mA, PoE Type 1  GPIO: 12V DC, 200mA (output power)
<b>Environmental</b>	
Operating temp	0°C to 40°C
Maintained spec	0°C to 30°C
Storage temp	-20 to +80°C
Relative Humidity	5% to 95% non-condensing
<b>Compliance</b>	
EMC - Emissions	EN55103-1 (EU), FCC Part 15 (USA)
EMC - Immunity	EN55103-2 (EU)
Safety	EN60950 (EU), UL1419 (USA), UL File number E193966
Hazardous Material RoHS	Complies with EU Directive 2011/65/EU

**Table 33. Unit Specification**

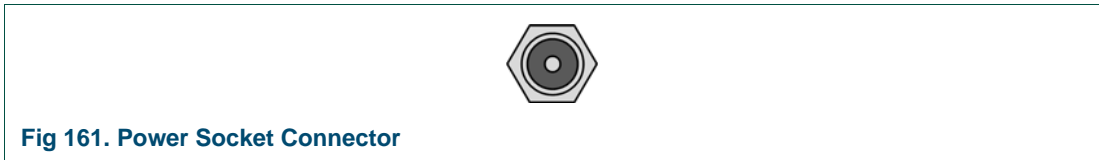
### A.3 Rear Panel Connectors

#### A.3.1 Power

The panel can be powered either by 12V DC power supply, or by Power over Ethernet (PoE). Dual redundancy may be achieved by using both DC connectors, or a single DC connector and a PoE source.

##### A.3.1.1 DC Connectors

Two 12V DC power connectors, with a centre positive polarity, that can be used individually, or together as a dual-redundant pair.



##### A.3.1.2 Ethernet Connector

Power over Ethernet is available via the Ethernet connector on the rear panel using standard CAT-5 cables connected to a compatible switch, or PoE injector.

See “Ethernet” on page 112.

#### A.3.2 RS485 (Serial Comms)

A 9-way D-type configured as an RS485 serial comms port.

Pin	Function	
	Controller	Device
1	GND	GND
2	Rx-	Tx-
3	Tx+	Rx+
4	GND	GND
5	N/C	N/C
6	GND	GND
7	Rx+	Tx+
8	Tx-	Rx-
9	GND	GND

**Table 34. RS485 Connector**

#### A.3.3 GPIO

A 15-way D-type connector providing 12-port I/O access to the panel.

Pin	Function	Pin	Function
1	GPIO1	9	GPIO9
2	GPIO2	10	GPIO10
3	GPIO3	11	GPIO11
4	GPIO4	12	GPIO12
5	GPIO5	13	+12 V 200mA (current limited)
6	GPIO6		
7	GPIO7	14	GND
8	GPIO8	15	GND

**Table 35. GPIO Connector**

### A.3.4 Ethernet

The panel has a single 10/100Base-T Ethernet Port with polarity detection, and can be used with Power over Ethernet when connected to a compatible switch or PoE injector.

The connector accepts a power range of 37.0V to 57.0V DC with a maximum current of 350mA (PoE Type 1), and can be used with cables conforming to IEEE 802.3af-2009 Standard - Alternative A or B.

**Note:** Do not connect a telephone cable to this Ethernet port.