Innovation in the
Multi-Screen World

User Manual

6028 Series 1U Control Panels

6028000 (6706), 6028400 (6707/6708), 6028100 (6705),
6028201 (6709), 6028251 (6711/6712), and 6028351 (6711/6712)

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1. Warnings

1.1 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.

1.2 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.

This equipment must be supplied from a power system providing a PROTECTIVE EARTH connection and having a neutral connection which can be reliably identified.

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

1.3 Mains Supply Voltage

Before connecting the equipment, observe the safety warnings section and ensure that the local mains supply is within the rating stated on the rear of the equipment.

The power supplies contain dangerous high voltages. There are no serviceable items.

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1.4 Safety Standards

This equipment complies with the following standards:

EN60950-1 2nd edition 2006

Safety of information Technology Equipment Including Electrical Business Equipment.

UL1419 (3rd Edition)

Standard for Safety - Professional Video and Audio equipment

EMC Standards

This unit conforms to the following standards:

EN55103-1:1996 (Environment E4)
Electromagnetic Compatibility, Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Part 1. Emission

EN55103-2:1996 (Environment E2)
Electromagnetic Compatibility, Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Part 2. Immunity

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.

COAXIAL CABLES

Coaxial cables connections (particularly serial digital video connections) shall be made with high-quality double-screened coaxial cables such as Belden 8281 or BBC type PSF1/2M.

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.

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2. Introduction

2.1 Description

The control panels are currently used as plug-in replacements for older panel types.

- LED panels are compatible with any Aurora, Nebula or Nucleus or Centra control system
- LCD panels work only with Aurora systems

Please refer to the respective control system handbooks for configuration guidance: Aurora, Nebula, or Centra Workbench for Nucleus/2450 and Centra/2330.

Table 1. describes the control panels, and indicates the panel type that each is used as a replacement for.

Model	Description	Panel Types
6028000	78-key High Density LED Panel - configurable as BPX or XY panel	6706
6028400	60-key High Density LED Panel - configurable as BPX or XY panel	6707/6708
6028100	42-key Standard Density LED Panel - configurable as BPX Panel	6705
6028201	24-key Standard Density LED Panel - configurable as BPX Panel	6709
6028251	39-key + single rotary encoder LCD Panel	6711/6712
6028351	21-key + single rotary encoder LCD Panel	6711/6712

Table 1. 1U Control Panel Models

2.2 LED Panels

2.2.1 High Density Panels

These panels operate with Aurora, Nebula, Nucleus and Centra device controllers:

6028000 - 78-key High Density Panel - configurable as BPX or XY panel.

Fig 1. 6028000

6028400 - 60-key High Density Panel - configurable as BPX or XY panel.

Fig 2. 6028400

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2.2.2 Standard Panels

These panels operate with Nebula, Aurora, Nucleus and Centra device controllers:

6028100 - 42-key Standard Density Panel - configurable as BPX Panel.

Fig 3. 6028100

6028201 - 24-key Standard Density Panel - configurable as BPX Panel.

Fig 4. 6028201

2.3 LCD Panels

LCD panels have a 64x32 pixel LCD on each key. Each panel has a rotary encoder. LCD panels are compatible with Aurora control systems.

6028251 - 39-key + single rotary encoder

Fig 5. 6028251

6028351 - 21-key + single rotary encoder

Fig 6. 6028351

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3. Installation

This chapter describes the system requirements and procedures for installing the control panels.

3.1 Rack Mounting

Each control panel requires a 1U space within a rack system. When the panel is in position, use four M6 screws and washers to fasten it to the rack system, see Fig 7.

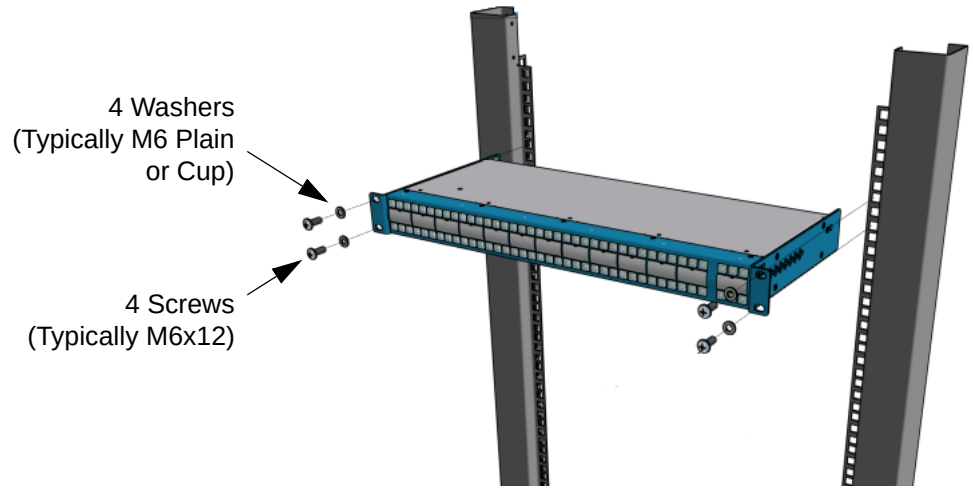

Fig 7. Rack Mounting

3.2 Rear Panel

All connections are made to the rear panel.

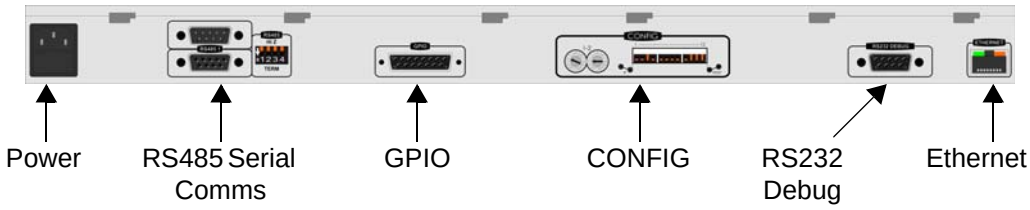

Fig 8. Rear Panel

3.3 Panel Configuration

Note: Configure the panel type before connecting to a power source.

The panel configuration is set using the DIP switches in the CONFIG section of the rear panel.

The DIP switches are used to set:

- LED Panel Modes
- LCD Panel Mimic Modes
- Communications

Note: Panel mode and database configuration must match.

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

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3.3.1 LED Panel Modes

The LED panels can be setup into different modes. Using the table, select switches 5-9 according to the panel mode required.

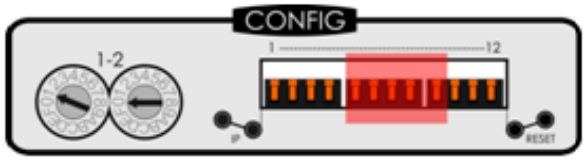

Fig 9. LED Panel Mode DIP Switches

No.	Mode	1	2	3	4	5	6	7	8	9	10	11	12
1	16 Way BPX	x	x	x	x	Up	Up	Up	Up	Up	x	x	x
2	Dual 8 Split BPX	x	x	x	x	Down	Up	Up	Up	Up	x	x	x
3	8x8 X-Y	x	x	x	x	Up	Down	Up	Up	Up	x	x	x
4	16x4 X-Y (no level keys)	x	x	x	x	Down	Down	Up	Up	Up	x	x	x
5	32 Way BPX	x	x	x	x	Up	Up	Down	Up	Up	x	x	x
6	Dual 16 Split BPX	x	x	x	x	Down	Up	Down	Up	Up	x	x	x
7	16x16 X-Y	x	x	x	x	Up	Down	Down	Up	Up	x	x	x
8	32x4 X-Y (no level keys)	x	x	x	x	Down	Down	Down	Up	Up	x	x	x
9	48 Way BPX	x	x	x	x	Up	Up	Up	Down	Up	x	x	x
10	Dual 24 Split BPX	x	x	x	x	Down	Up	Up	Down	Up	x	x	x
11	24x24 X-Y	x	x	x	x	Up	Down	Up	Down	Up	x	x	x
12	48x4 X-Y (no level keys)	x	x	x	x	Down	Down	Up	Down	Up	x	x	x
13	32x16 X-Y	x	x	x	x	Up	Up	Down	Down	Up	x	x	x
14	Dual 16+16 BPX	x	x	x	x	Down	Up	Down	Down	Up	x	x	x
15	16x16 X-Y	x	x	x	x	Up	Down	Down	Down	Up	x	x	x
16	24x12 X-Y	x	x	x	x	Down	Down	Down	Down	Up	x	x	x

x = Don't care

Table 2. LED Panel Mode Config Settings

3.3.2 LCD Panel Modes

The LCD panels mimic current Snell LCD panels.

MIMIC MODE
SWITCH 1
UP = 6711 Mimic (BPX or FREEFORM)
DOWN = 6712 Mimic (X-Y)

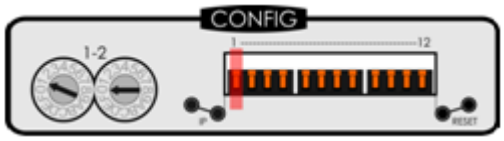

Fig 10. LCD Panel Mimic Type

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3.3.3 Communications

The panels support RS485 (serial) and Ethernet **(Nucleus controller only)** communication.

Select the communication required by setting DIP switch 10 on the rear panel.

COMMS SELECTION
SWITCH 10
UP=RS485
DOWN=Ethernet

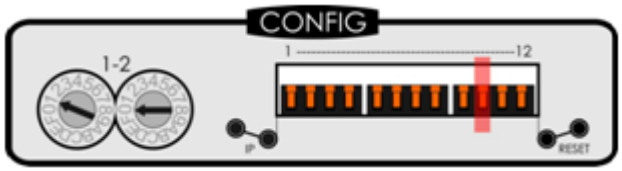

Fig 11. DIP Switch 10

When using RS485 serial comms you can terminate a long cable run or the end of a multi-drop chain. See “RS485 (Serial Comms)” on page 41.

Resetting the comms at any time, requires a reboot of the panel:

- Click on **Reset Control Panel** in the browser window
- Remove and replace the power lead
- Press the Reset button on the rear of the panel. See “Reboot the Panel” on page 39.

3.4 Power

Connect the single mains lead into the fused IEC connector. There is no redundancy.

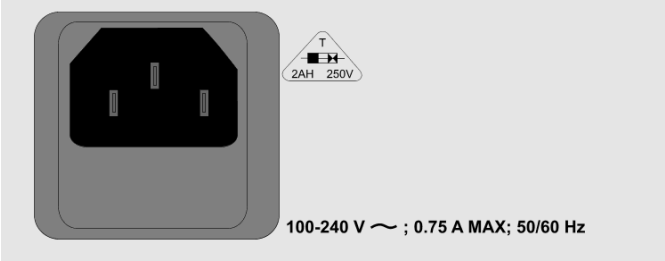

Fig 12. Power Socket

Note:

If you connect power before connecting any valid comms (serial or Ethernet) the panel will:

- LED - cycle through the keys lighting and extinguishing each in turn.
- LCD - light up the ten keys at the top left of the panel.

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3.5 Ethernet Connection Setup

The panels are supplied with default settings:

IP:	192.168.1.1
Subnet Mask:	255.255.255.0
Gateway:	0.0.0.0

To change the IP Address:

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

   The panel autodetects the type of cable connected.

2. Open a web browser and type the default IP address into the Address Bar of the browser.

3. Press **Return**.

4. The browser displays the Control Panel Setup screen.

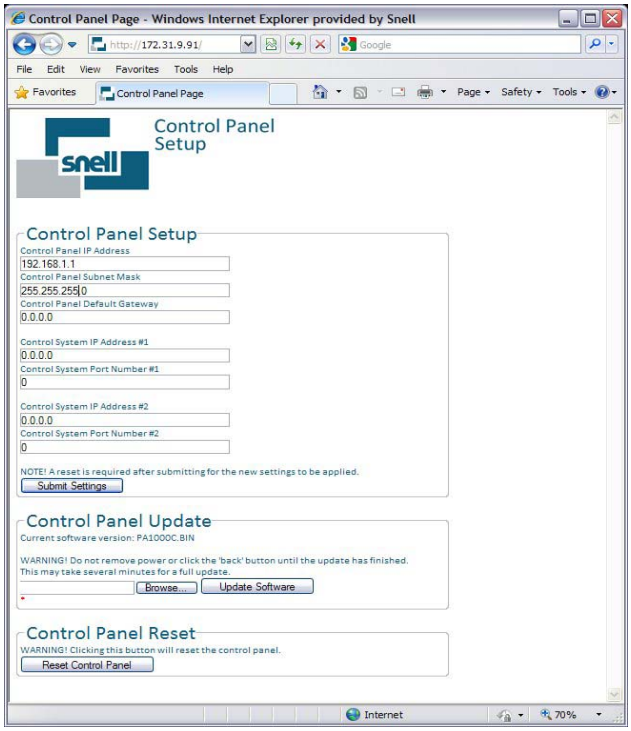

Fig 13. Web Interface

5. Type in the new Control Panel IP address, subnet mask, and gateway information.

6. Type in the and Nucleus controller IP addresses and port numbers. Controller port numbers must be greater than 1024 (excluding 3000).

7. Click the **Submit Settings** button.

8. Either, press and hold the **Reset** button on the rear panel, or cycle power to the panel.

Note: Enter the panel IP address into the Nucleus panel configuration for the system to work. See Nucleus documentation for details.

Note: Upon changing the subnet value, the browser will no longer work with the default PC settings, as it will be on a different subnet.

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4. LED Panel Operation

4.1 General

This chapter describes the modes of operation when used with any of the control systems referred to as legacy mode for complete compatibility with Nebula and Aurora.

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.

4.1.1 Panel Types

The panel types are:

6028000
72 BPX (High Density)

6028400
36x18 X-Y (High Density)

6028100
36 BPX (Standard Density)

6028201
18 BPX (Standard Density)

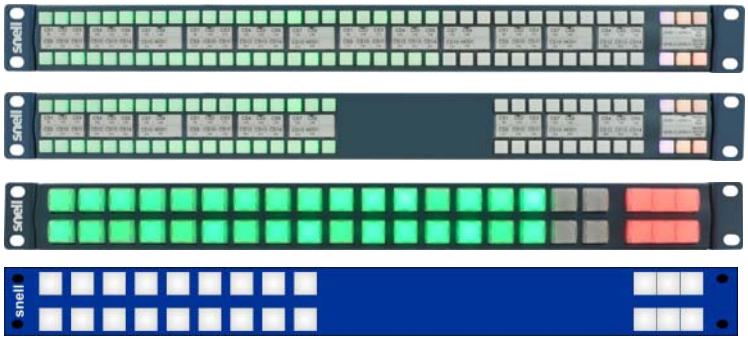

Fig 14. Panel Types

4.1.2 Panel Modes

	Mode		Mode		Mode		Mode
1	16 Way BPX	5	32 Way BPX	9	48 Way BPX	13	32 x 16 X-Y
2	Dual 8 Split BPX	6	Dual 16 Split BPX	10	Dual 24 Split BPX	14	Dual 16+16 BPX
3	8x8 X-Y	7	16x16 X-Y	11	24x24 X-Y	15	16x16 X-Y
4	16x4 X-Y (no level keys)	8	32x4 X-Y (no level keys)	12	48x4 X-Y (no level keys)	16	24x12 X-Y

Table 3. Modes

For details of each mode, see section 4.2.

Note: Panel mode and database configuration must match.

Mismatch will not be flagged - keys 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. See “Reboot the Panel” on page 39.

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4.1.3 Panel Key Colors

The colors used for the panel keys are:

	Inactive		Selected	
Source		Green		White
Destination		Cyan		White
Level		Yellow		White
Lock		Orange		Red
Protect		Orange		Red

Table 4. Key Colors

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4.2 Panel Modes

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

4.2.1 Mode 1 - 16 Way BPX

Panel	Top Row	Bottom Row
6028000	Sources 1-8	Sources 9-16
6028400		
6028100		
6028201		

Table 5. Mode 1 - 16 Way BPX

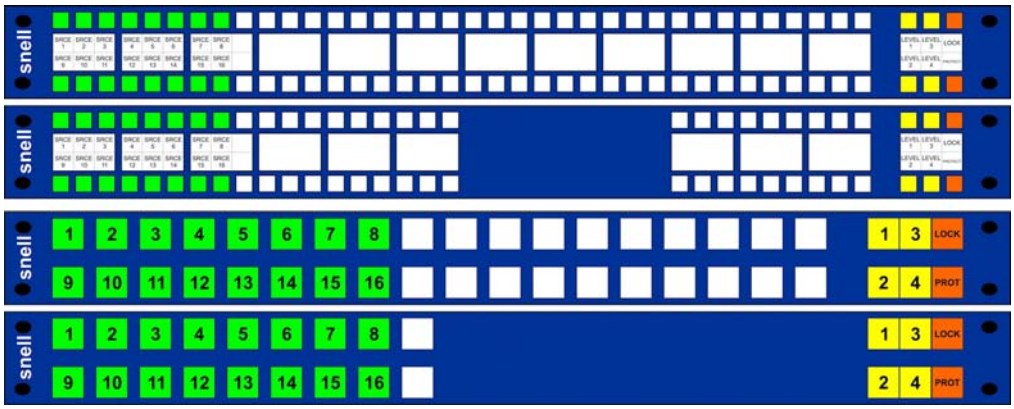


Fig 15. Mode 1 - 16 Way BPX

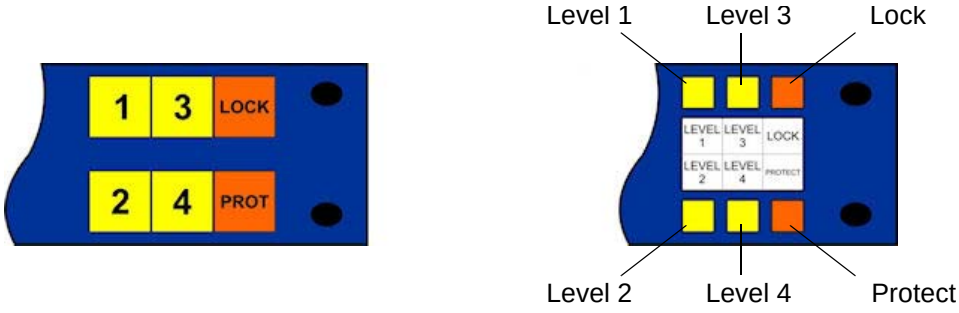
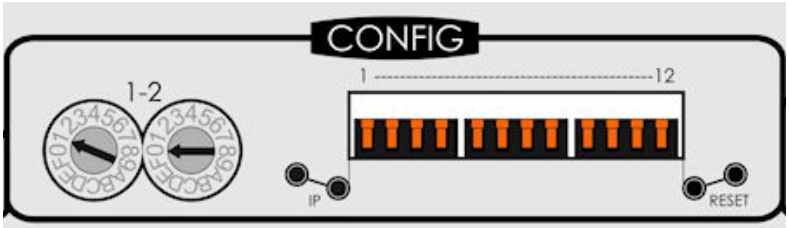


Fig 16. Mode 1 - Level Keys



1	2	3	4	5	6	7	8	9	10	11	12
x	x	x	x	Up	Up	Up	Up	Up	x	x	x

x = Don't Care

Fig 17. Mode 1 - Config DIP Switch Settings

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4.2.2 Mode 2 - Dual 8 Split BPX

Panel	Top Row	Bottom Row
6028000	Sources 1-8 (Dest 1)	Sources 9-16 (Dest 2)
6028400		
6028100		
6028201		

Table 6. Mode 2 - Dual 8 Split BPX

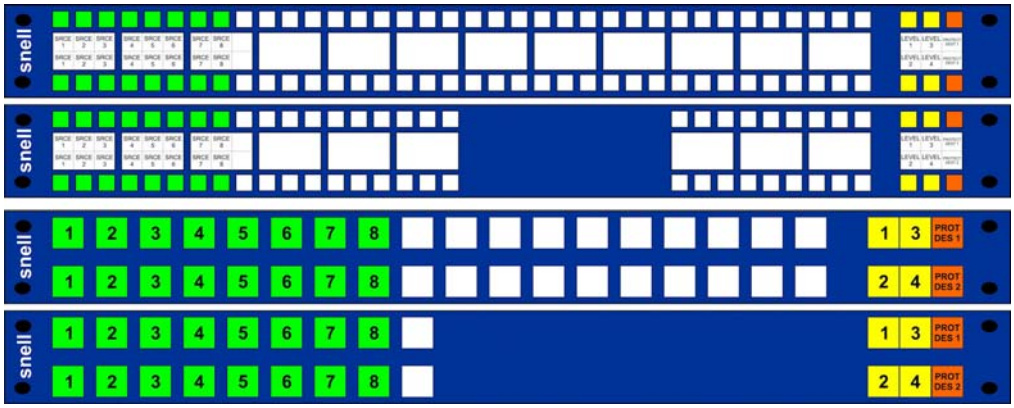


Fig 18. Mode 2 - Dual 8 Split BPX

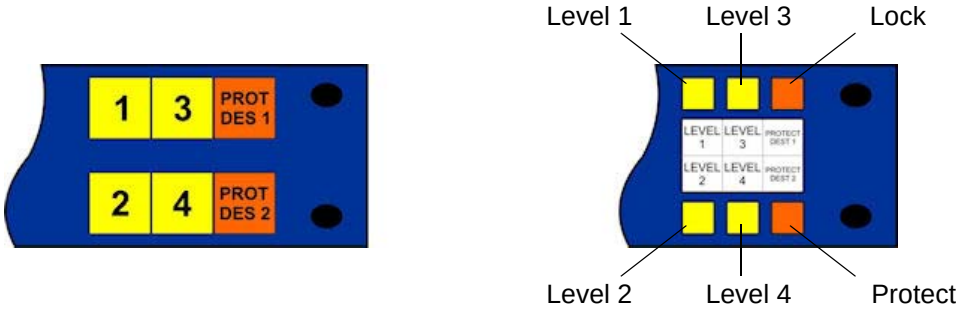
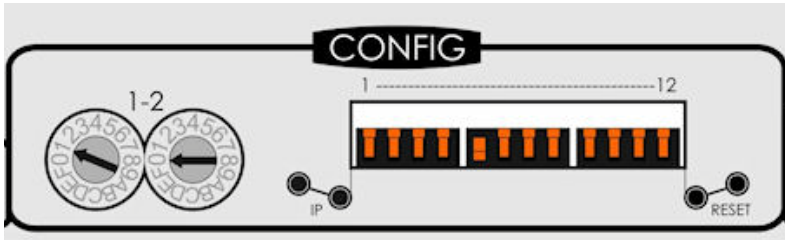


Fig 19. Mode 2 - Level Keys



1	2	3	4	5	6	7	8	9	10	11	12
x	x	x	x	Down	Up	Up	Up	Up	x	x	x

x = Don't Care

Fig 20. Mode 2 - Config DIP Switch Settings

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4.2.3 Mode 3 - 8x8 X-Y

Panel	Top Row	Bottom Row
6028000	Sources 1-8	Destinations 1-8
6028400		
6028100		
6028201		

Table 7. Mode 3 - 8x8 X-Y

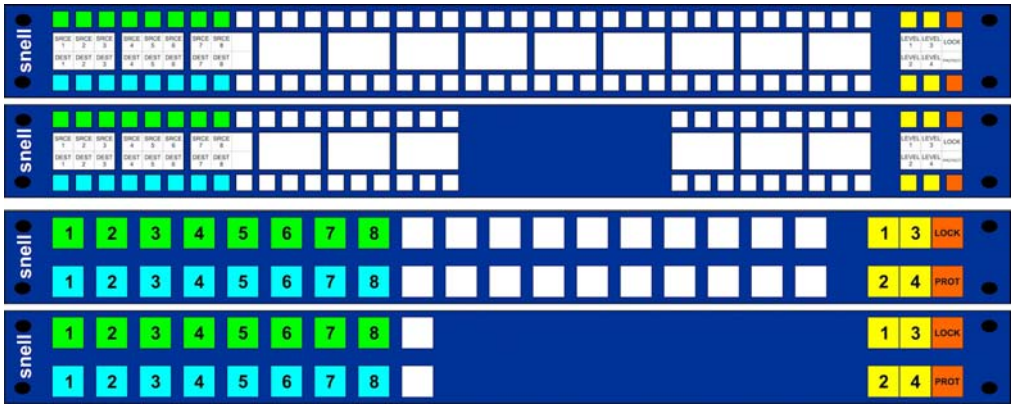


Fig 21. Mode 3 - 8x8 X-Y

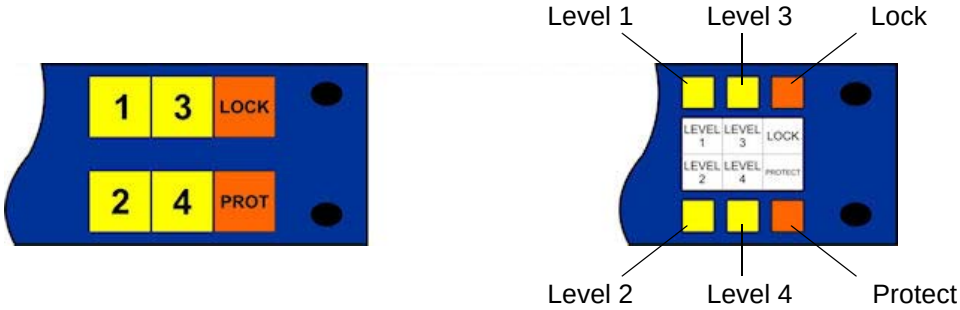
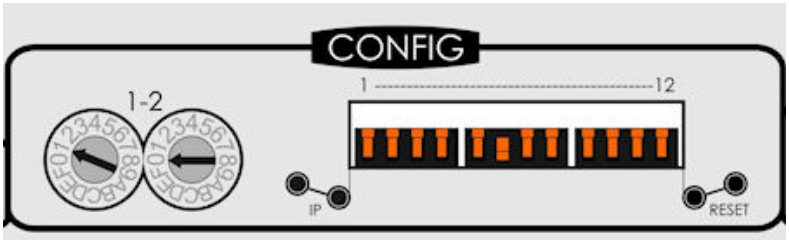


Fig 22. Mode 3 - Level Keys



1	2	3	4	5	6	7	8	9	10	11	12
x	x	x	x	Up	Down	Up	Up	Up	x	x	x

x = Don't Care

Fig 23. Mode 3 - Config DIP Switch Settings

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4.2.4 Mode 4 - 16x4 X-Y (no level keys)

Panel	Top Row	Bottom Row
6028000	Sources 1-8	Sources 9-16
6028400		
6028100		
6028201		

Table 8. Mode 4 - 16x4 X-Y (no level keys)

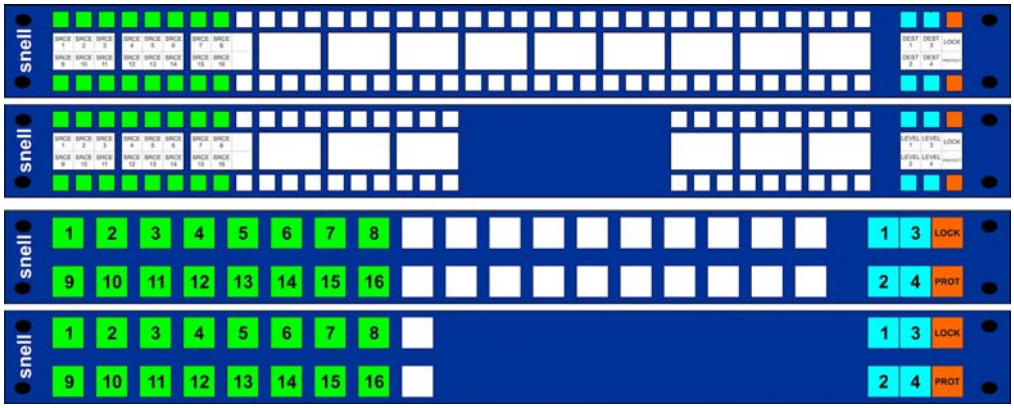


Fig 24. Mode 4 - 16x4 X-Y (no level keys)

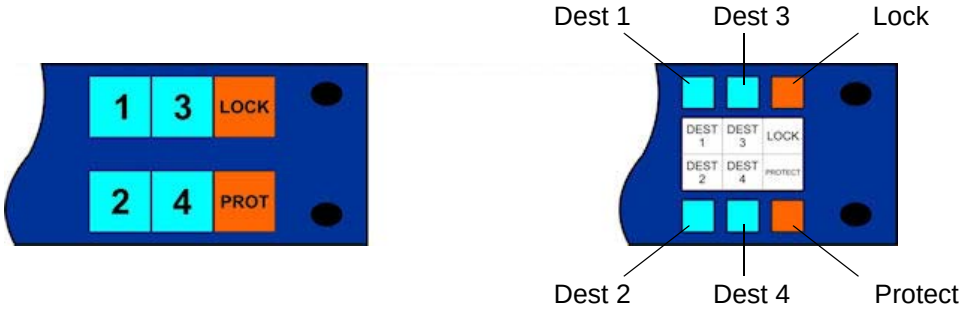
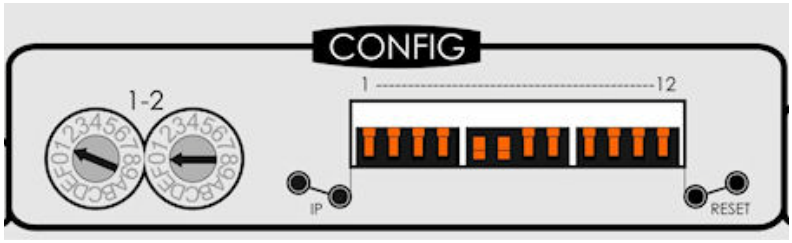


Fig 25. Mode 4 - Destination Keys



1	2	3	4	5	6	7	8	9	10	11	12
x	x	x	x	Down	Down	Up	Up	Up	x	x	x

x = Don't Care

Fig 26. Mode 4 - Config DIP Switch Settings

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4.2.5 Mode 5 - 32 Way BPX

Panel	Top Row	Bottom Row
6028000	Sources 1-16	Sources 17-32
6028400		
6028100		
6028201	Mode 5 is not supported (if selected, all keys illuminate)	

Table 9. Mode 5 - 32 Way BPX

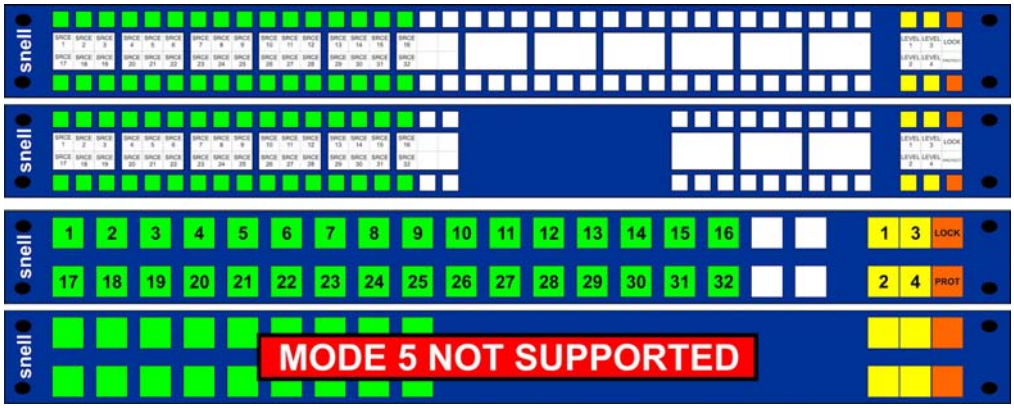


Fig 27. Mode 5 - 32 Way BPX

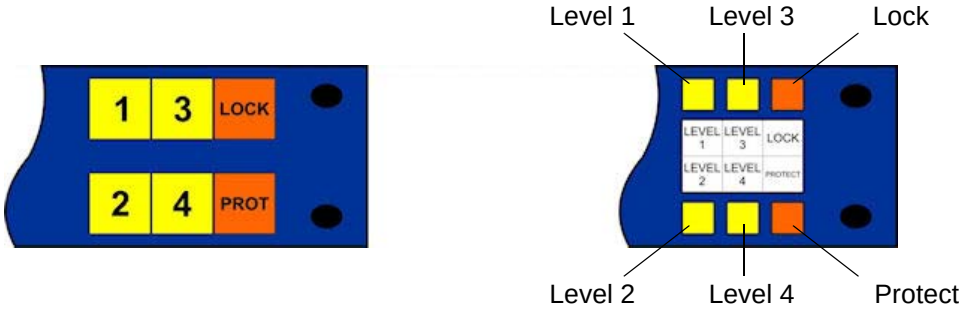
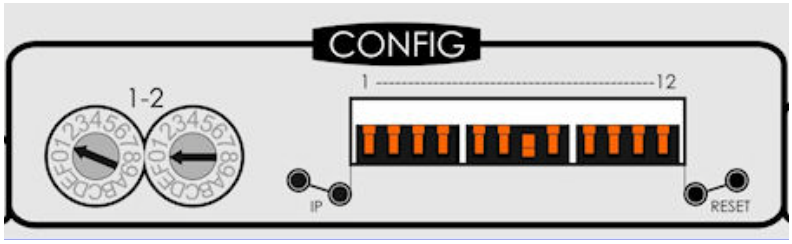


Fig 28. Mode 5 - Level Keys



1	2	3	4	5	6	7	8	9	10	11	12
x	x	x	x	Up	Up	Down	Up	Up	x	x	x

x = Don't Care

Fig 29. Mode 5 - Config DIP Switch Settings

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4.2.6 Mode 6 - Dual 16 Split BPX

Panel	Top Row	Bottom Row
6028000	Sources 1-16 (Dest 1)	Sources 1-16 (Dest 2)
6028400		
6028100		
6028201	Mode 6 is not supported (if selected, all keys illuminate)	

Table 10. Mode 6 - Dual 16 Split BPX

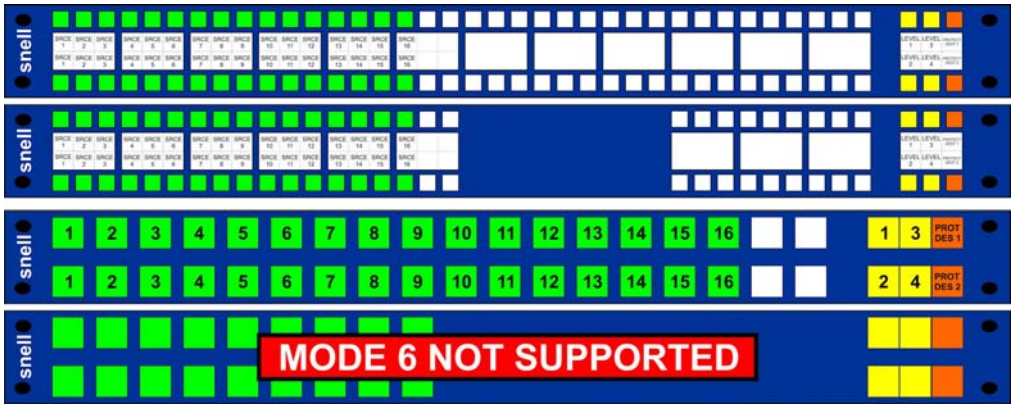


Fig 30. Mode 6 - Dual 16 Split BPX

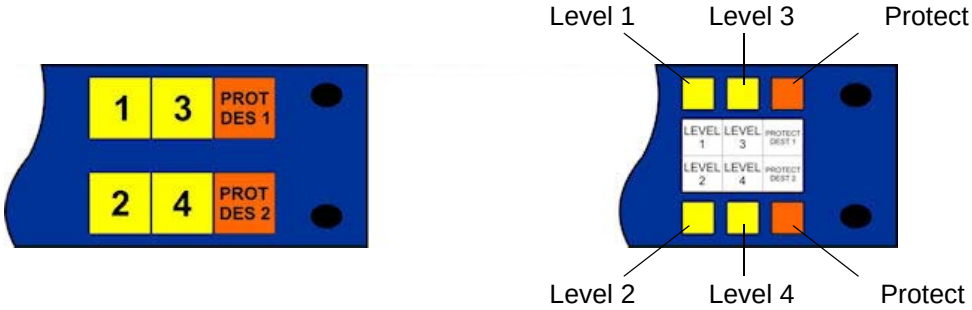
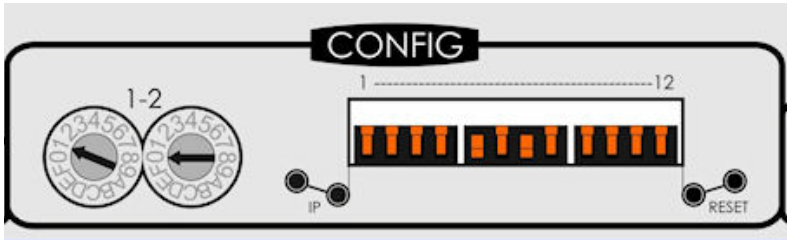


Fig 31. Mode 6 - Level Keys



1	2	3	4	5	6	7	8	9	10	11	12
x	x	x	x	Down	Up	Down	Up	Up	x	x	x

x = Don't Care

Fig 32. Mode 6 - Config DIP Switch Settings

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4.2.7 Mode 7 - 16x16 X-Y

Panel	Top Row	Bottom Row
6028000	Sources 1-16	Destinations 1-16
6028400		
6028100		
6028201	Mode 7 is not supported (if selected, all keys illuminate)	

Table 11. Mode 7 - 16x16 X-Y

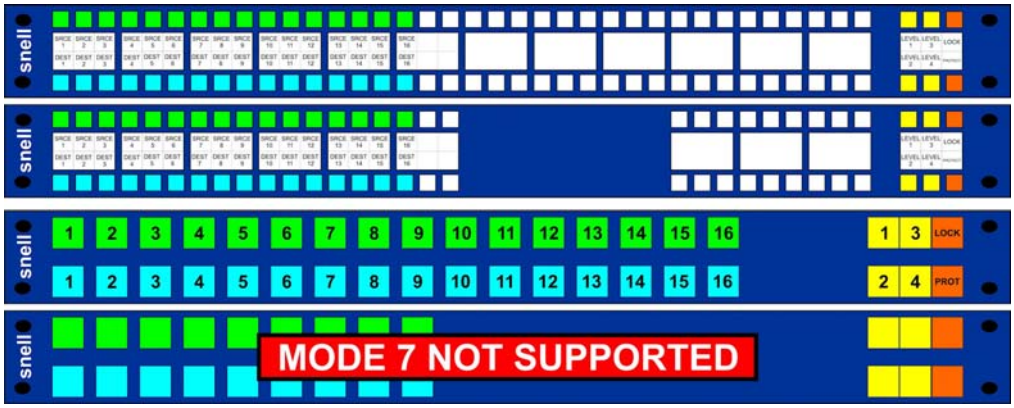


Fig 33. Mode 7 - 16x16 X-Y

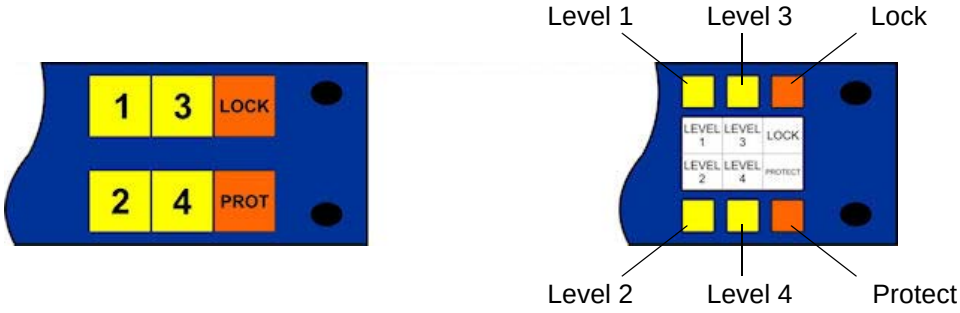
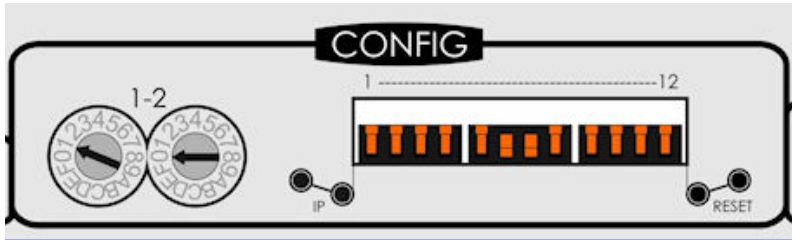


Fig 34. Mode 7- Level Keys



1	2	3	4	5	6	7	8	9	10	11	12
x	x	x	x	Up	Down	Down	Up	Up	x	x	x

x = Don't Care

Fig 35. Mode 7 - Config DIP Switch Settings

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4.2.8 Mode 8 - 32x4 X-Y (no level keys)

Panel	Top Row	Bottom Row
6028000	Sources 1-16	Sources 17-32
6028400		
6028100		
6028201	Mode 8 is not supported (if selected, all keys illuminate)	

Table 12. Mode 8 - 32x4 X-Y (no level keys)

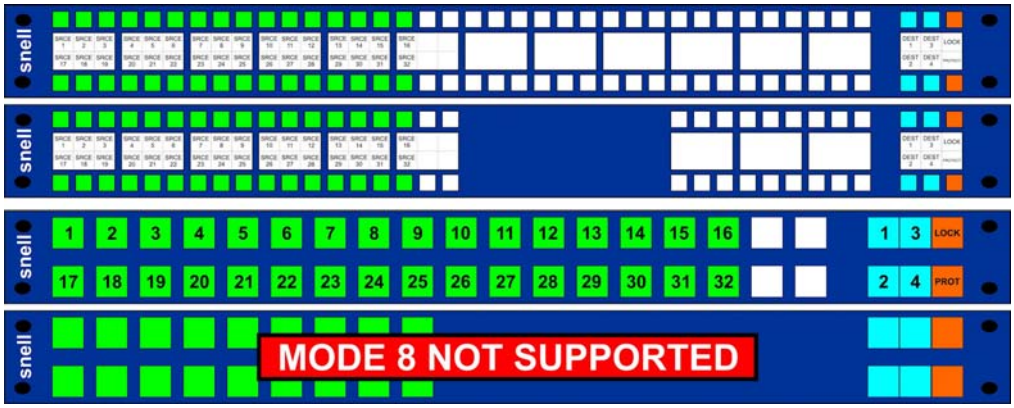


Fig 36. Mode 8 - 32x4 X-Y (no level keys)

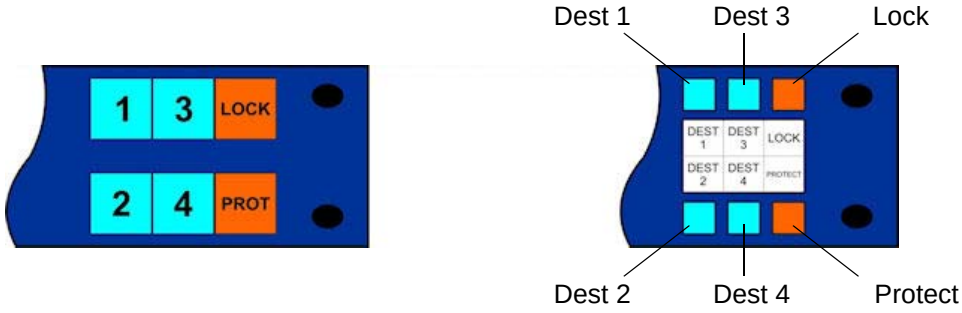
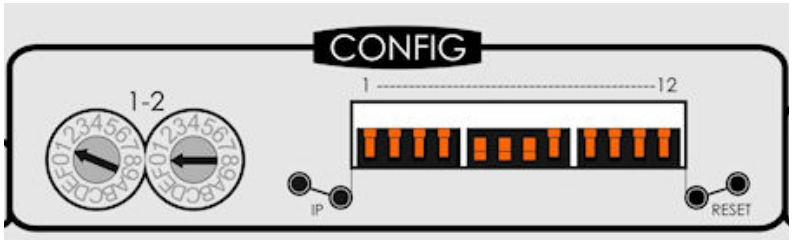


Fig 37. Mode 8 - Destination Keys



1	2	3	4	5	6	7	8	9	10	11	12
x	x	x	x	Down	Down	Down	Up	Up	x	x	x

x = Don't Care

Fig 38. Mode 8 - Config DIP Switch Settings

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4.2.9 Mode 9 - 48 Way BPX

Panel	Top Row	Bottom Row
6028000	Sources 1-24	Sources 25-48
6028400	Mode 9 is not supported (if selected, all keys illuminate)	
6028100		
6028201		

Table 13. Mode 9 - 48 Way BPX

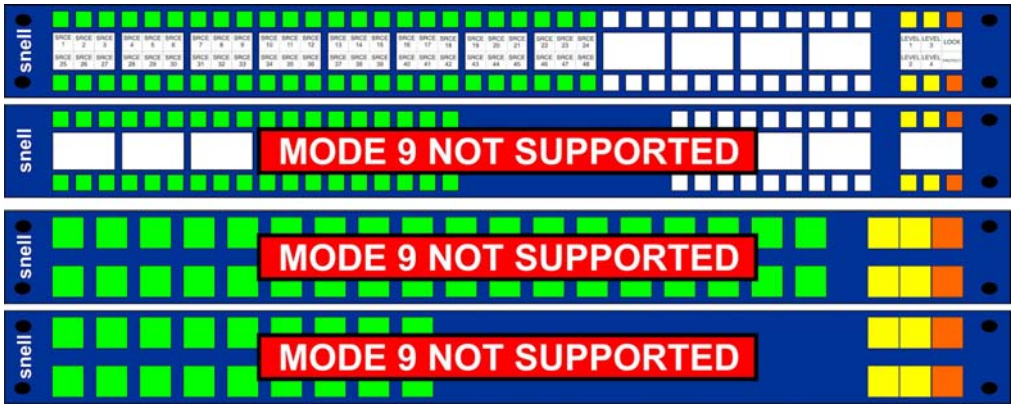


Fig 39. Mode 9 - 48 Way BPX

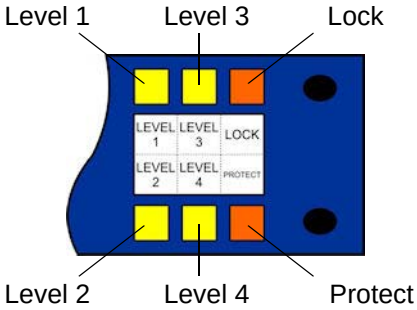
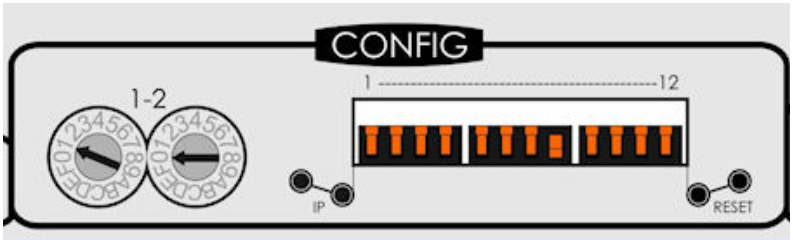


Fig 40. Mode 9 - Level Keys



1	2	3	4	5	6	7	8	9	10	11	12
x	x	x	x	Up	Up	Up	Down	Up	x	x	x

x = Don't Care

Fig 41. Mode 9 - Config DIP Switch Settings

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4.2.10 Mode 10 - Dual 24 Split BPX

Panel	Top Row	Bottom Row
6028000	Sources 1-24 (Dest 1)	Sources 25-48 (Dest 2)
6028400	Mode 10 is not supported (if selected, all keys illuminate)	
6028100		
6028201		

Table 14. Mode 10 - Dual 24 Split BPX

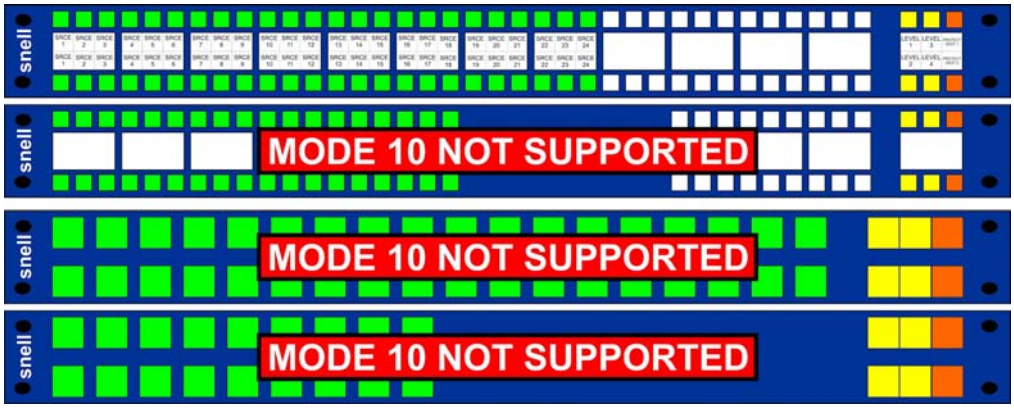


Fig 42. Mode 10 - Dual 24 Split BPX

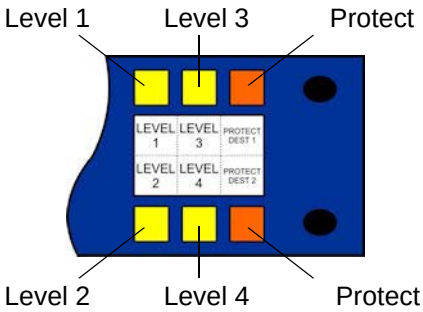
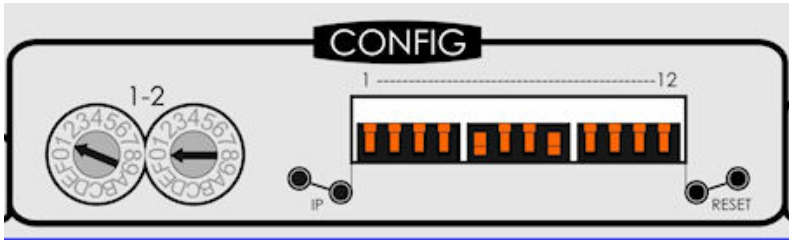


Fig 43. Mode 10 - Level Keys



1	2	3	4	5	6	7	8	9	10	11	12
x	x	x	x	Down	Up	Up	Down	Up	x	x	x

x = Don't Care

Fig 44. Mode 10 - Config DIP Switch Settings

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4.2.11 Mode 11 - 24x24 X-Y

Panel	Top Row	Bottom Row
6028000	Sources 1-24	Destinations 1-24
6028400	Mode 11 is not supported (if selected, all keys illuminate)	
6028100		
6028201		

Table 15. Mode 11 - 24x24 X-Y

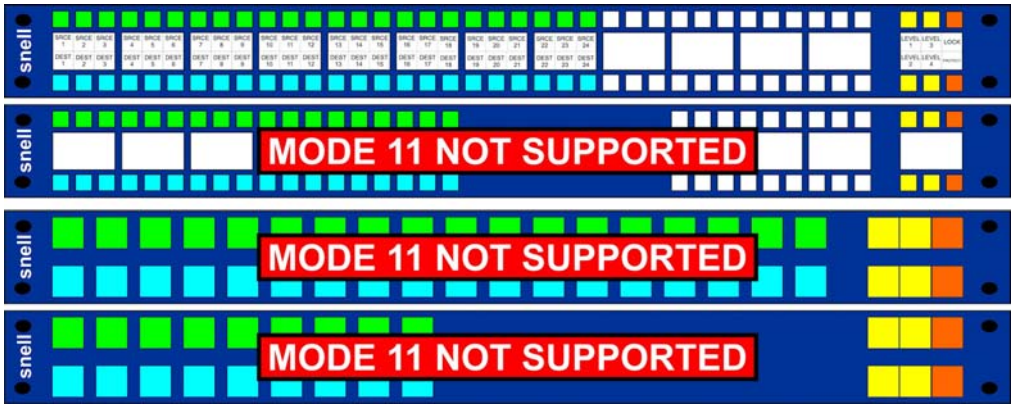


Fig 45. Mode 11 - 24x24 X-Y

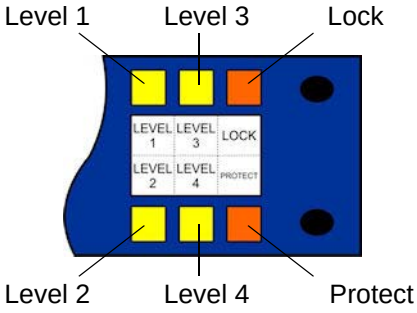
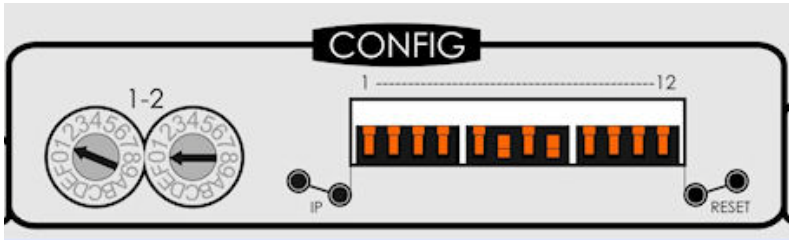


Fig 46. Mode 11 - Level Keys



1	2	3	4	5	6	7	8	9	10	11	12
x	x	x	x	Up	Down	Up	Down	Up	x	x	x

x = Don't Care

Fig 47. Mode 11 - Config DIP Switch Settings

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4.2.12 Mode 12 - 48x4 X-Y (no level keys)

Panel	Top Row	Bottom Row
6028000	Sources 1-24	Sources 25-48
6028400	Mode 12 is not supported (if selected, all keys illuminate)	
6028100		
6028201		

Table 16. Mode 12 - 48x4 X-Y (no level keys)

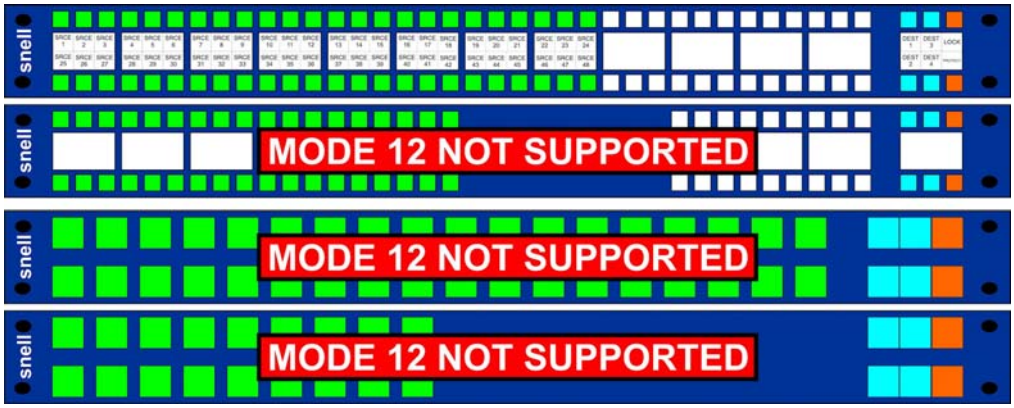


Fig 48. Mode 12 - 48x4 X-Y (no level keys)

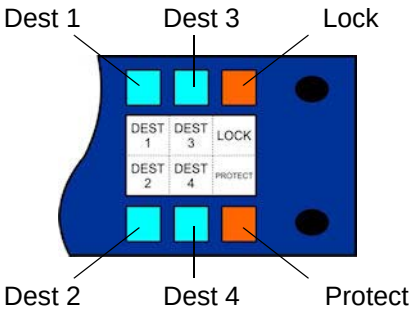
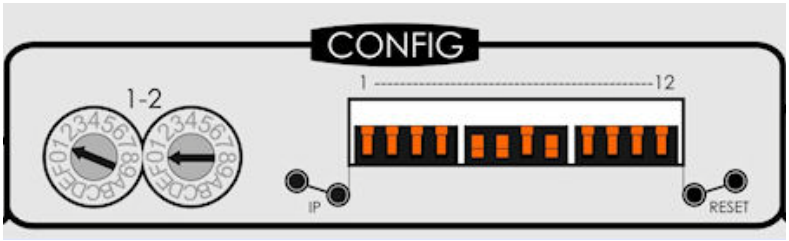


Fig 49. Mode 12 - Destination Keys



1	2	3	4	5	6	7	8	9	10	11	12
x	x	x	x	Down	Down	Up	Down	Up	x	x	x

x = Don't Care

Fig 50. Mode 12 - Config DIP Switch Settings

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4.2.13 Mode 13 - 32x16 X-Y

Panel	Top Row	Bottom Row
6028000	Sources 1-16 Destinations 1-8	Sources 17-32 Destinations 9-16
6028400		
6028100	Mode 13 is not supported (if selected, all keys illuminate)	
6028201		

Table 17. Mode 13 - 32x16 X-Y

Fig 51. Mode 13 - 32x16 X-Y (no level keys)

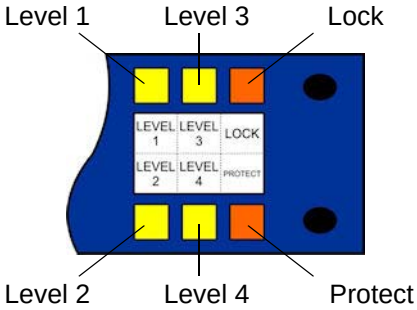
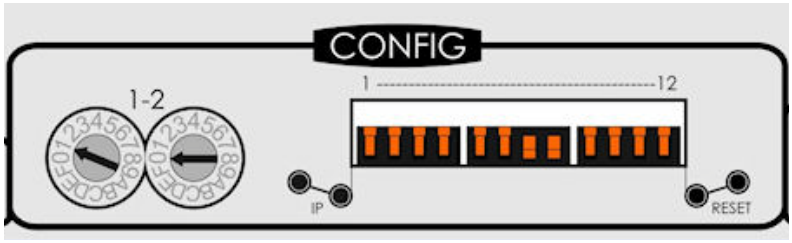


Fig 52. Mode 13 - Level Keys



1	2	3	4	5	6	7	8	9	10	11	12
x	x	x	x	Up	Up	Down	Down	Up	x	x	x

x = Don't Care

Fig 53. Mode 13 - Config DIP Switch Settings

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4.2.14 Mode 14 - Dual 16+16 BPX

Panel	Top Row	Bottom Row
6028000	Sources 1-8 (Dest 1) Sources 1-8 (Dest 2)	Sources 9-16 (Dest 1) Sources 9-16 (Dest 2)
6028400		
6028100	Mode 14 is not supported (if selected, all keys illuminate)	
6028201		

Table 18. Mode 14 - Dual 16+16 BPX

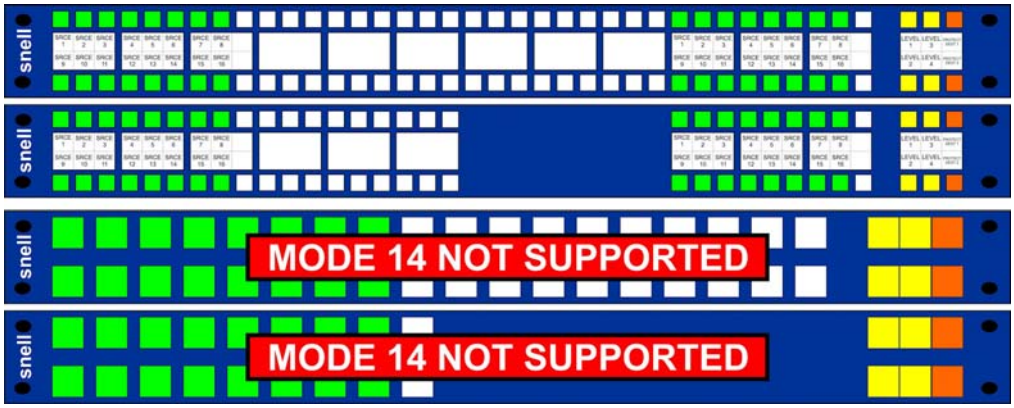


Fig 54. Mode 14 - Dual 16+16 BPX

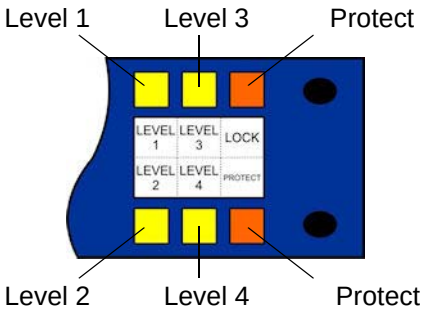
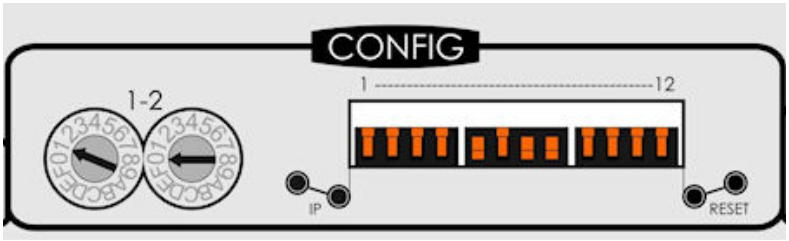


Fig 55. Mode 14 - Level Keys



1	2	3	4	5	6	7	8	9	10	11	12
x	x	x	x	Down	Up	Down	Down	Up	x	x	x

x = Don't Care

Fig 56. Mode 14 - Config DIP Switch Settings

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4.2.15 Mode 15 - Dual 16x16 X-Y

Panel	Top Row	Bottom Row
6028000	Sources 1-8 Destinations 1-8	Sources 9-16 Destinations 9-16
6028400		
6028100	Mode 15 is not supported (if selected, all keys illuminate)	
6028201		

Table 19. Mode 15 - Dual 16x16 X-Y

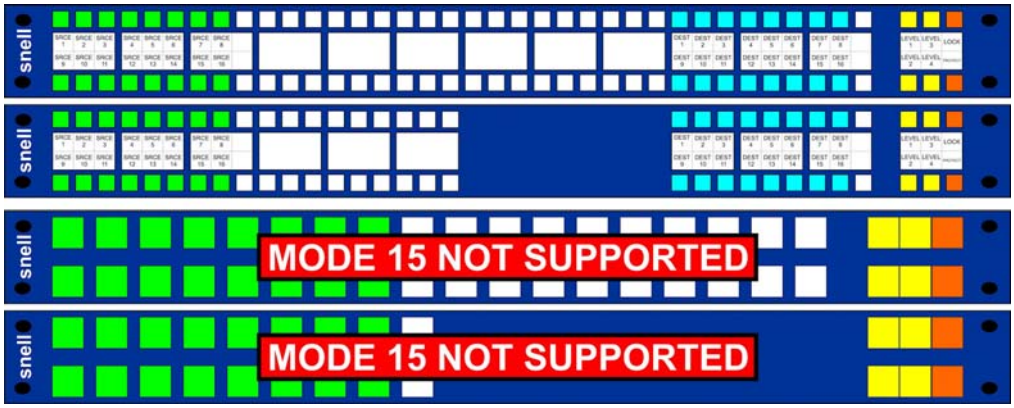


Fig 57. Mode 15 - Dual 16x16 X-Y

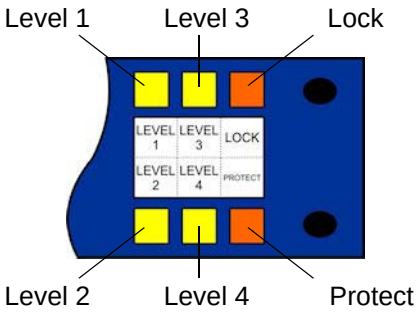
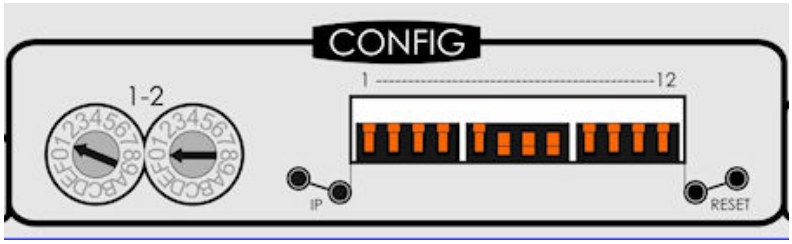


Fig 58. Mode 15 - Level Keys



1	2	3	4	5	6	7	8	9	10	11	12
x	x	x	x	Up	Down	Down	Down	Up	x	x	x

x = Don't Care

Fig 59. Mode 15 - Config DIP Switch Settings

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4.2.16 Mode 16 - 24x12 X-Y

Panel	Top Row	Bottom Row
6028000	Sources 1-12 Destinations 1-6	Sources 13-24 Destinations 7-12
6028400		
6028100	Mode 16 is not supported (if selected, all keys illuminate)	
6028201		

Table 20. Mode 16 - 24x12 X-Y

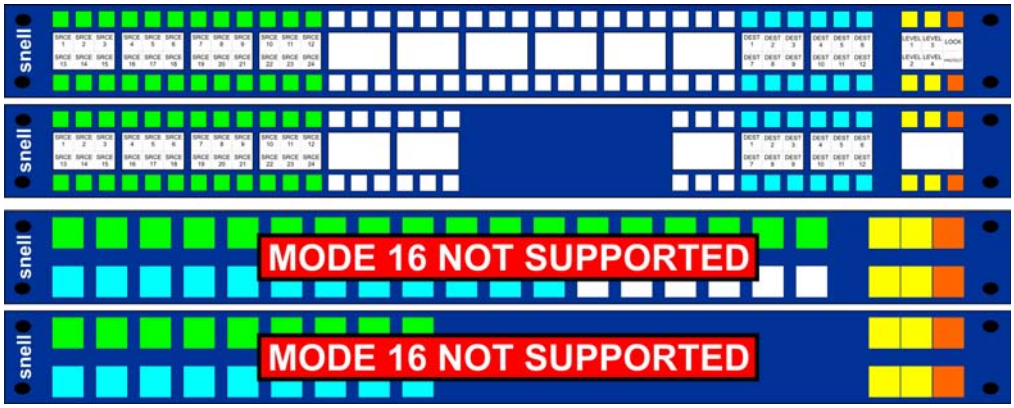


Fig 60. Mode 16 - 24x12 X-Y

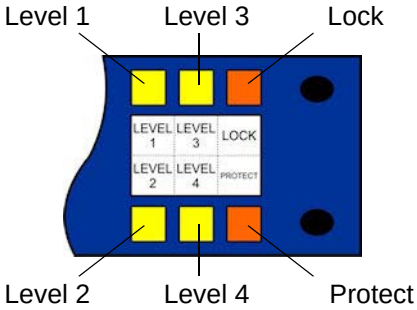
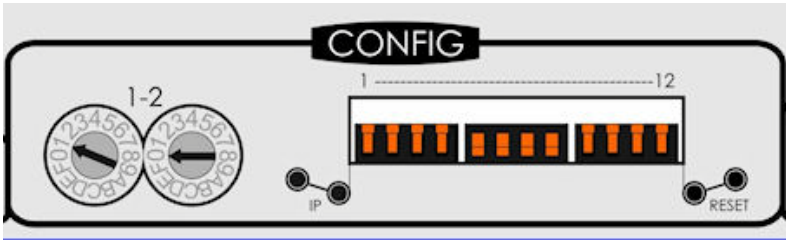


Fig 61. Mode 16 - Level Keys



1	2	3	4	5	6	7	8	9	10	11	12
x	x	x	x	Down	Down	Down	Down	Up	x	x	x

x = Don't Care

Fig 62. Mode 16 - Config DIP Switch Settings

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5. LCD Panel Operation

5.1 General

This section defines the operation of LCD panels in fixed mode connected to the Aurora controller. Most functionality is defined by the configuration in the Aurora controller. This document aims to define the differences and operations specific to these panels.

Note: To make use of the rotary encoders, version 1.23 or above of Aurora is required.

5.1.1 Panel Types

Fig 63. shows the LCD panel configurations and key numbering on each panel.

- 6028251 - 39 LCD Keys & 1 Rotary Encoder
- 6028351 - 21 LCD Keys & 1 Rotary Encoder

Fig 63. LCD Panel Types

5.1.2 Panel Modes

Both panels can mimic a 6711 BPX, Freeform Panel, and a 6712 XY panel.

Note: Panel mode and database configuration must match.

Mismatch will not be flagged - keys 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. See “Reboot the Panel” on page 39.

5.1.3 Text

Each panel can display text as either three lines of six characters, or one line of four characters. Table 21. lists the 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 +)

Table 21. Text Display

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5.2 6712 Mimic

The 6712 Panel has one mode: Single Mode; X-Y

For full details of the 6712 panel, please refer to the 6711/2 manual.

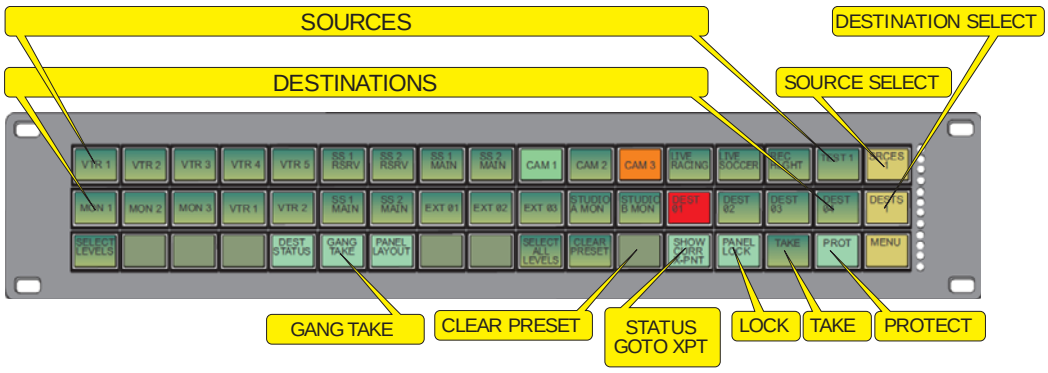

Fig 64. 6712 Panel

5.2.1 Key Functions

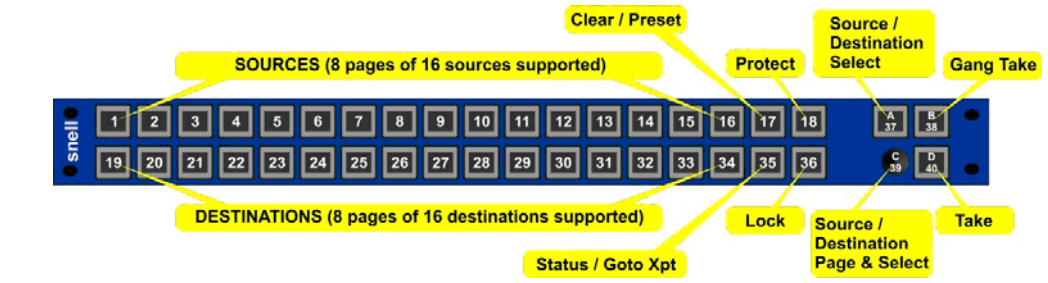

Fig 65. 6028251 configured as 6712 X-Y

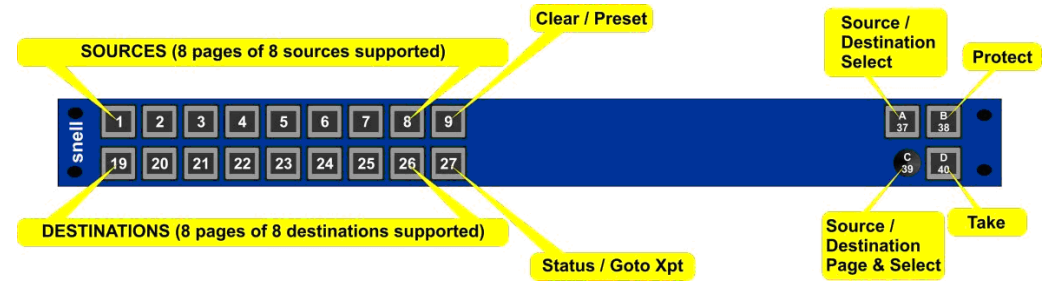

Fig 66. 6028351 configured as 6712 X-Y

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5.2.2 6712 Summary Table

Panel		Function	Colors
6028251	6028351		
1-16	1-8	Sources Paged – up to 8 pages supported (6756 (6028251) = 128 Sources) (6754 (6028351) = 64 Sources)	As defined by Aurora Available Unselected = Dark Green Preset = Bright Green In Use = Dark Orange
19-34	19-26	Destinations Paged – up to 8 pages supported (6756 (6028251) = 128 Destinations) (6754 (6028351) = 64 Destinations)	As defined by Aurora Available Unselected = Dark Green Preset = Bright Green In Use = Dark Orange Unselected Protected = Dark Red Selected Protected Destination = Bright Red
17	9	Clear Preset Once a source is preset (BRIGHT GREEN) it can be cleared by pressing the CLEAR PRESET SOURCE key. The action reverts the panel to a ‘safe’ state and makes TAKE inactive until another source is preset.	As defined by Aurora Available = Dark Green
18	38	Protect Protects the currently selected destination(s).	As defined by Aurora Available (not active) = Dark Green Protected (Active) = Bright Red (protected destination(s) also red – ref above
37	37	Source/Destination Select Toggles between selecting source and destination rows. Text displayed “Source n” or “Dest n” based on Aurora data	Source Keypad Selected = Dark Green Destination Keypad Selected = Blue
38	Not Available	Gang Take When active multiple destinations may be selected. No changes made when destinations selected. If a new source chosen and TAKE pressed the new source sent to all the selected destinations.	As defined by Aurora Inactive = Dark Green Active = Dark Orange (selected destinations are dark orange with the most recent selection Bright Orange (yellow)
35	27	Status / Goto XPT	As defined by Aurora

Table 22. 6712 Summary Table

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Panel		Function	Colors
6028251	6028351		
36	Not Available	Lock Locks the panel preventing it from changing any crosspoints. Destinations can still show status.	As defined by Aurora Active = Dark Orange (text= Panel Is Locked) Inactive = Dark Green
39	39	Source/Destination Select & Page Select New feature to Aurora – only available in controller software V1.23 and above Press Toggles between Source and Destination pages Turn Clockwise) scrolls selected row up through pages. (Counter-clockwise) scrolls selected row down through the pages.	N/A (rotary)
40	40	Take Once source is preselected, Take becomes active.	As defined by Aurora Active = Bright Green (TAKE key displays name of preselected source) Inactive = Up

Table 22. 6712 Summary Table

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5.3 6711 Mimic

5.3.1 BPX Mode

Both panels can mimic the 6711 panel and operate in BPX Mode.

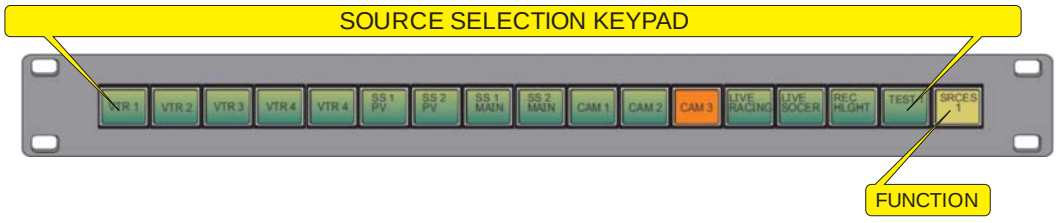

Fig 67. 6711 BPX Mode

5.3.2 6028251 configured as 6711 BPX

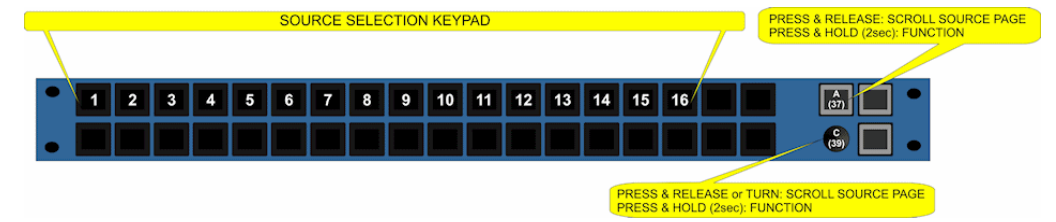

Fig 68. 6028251 configured as 6711 BPX

5.3.3 6028351 configured as 6711 BPX

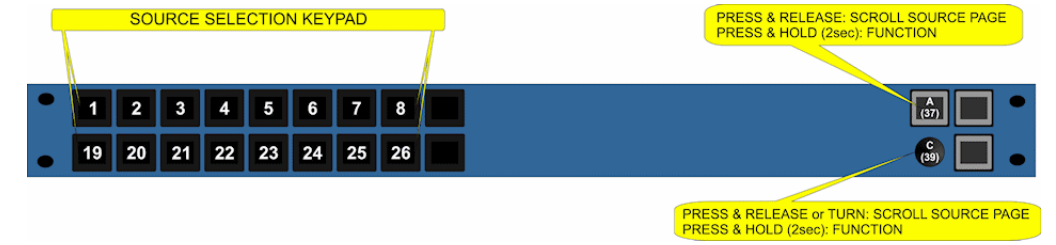

Fig 69. 6028351 configured as 6711 BPX

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5.4 Freeform Mode

Both panels can mimic the 6711 panel and operate in Freeform Mode. In Freeform mode, any key can have any function; as defined in Aurora. When applied to the panels this restricts the number of keys that can be controlled.

5.4.1 6711 Panel in Freeform Mode

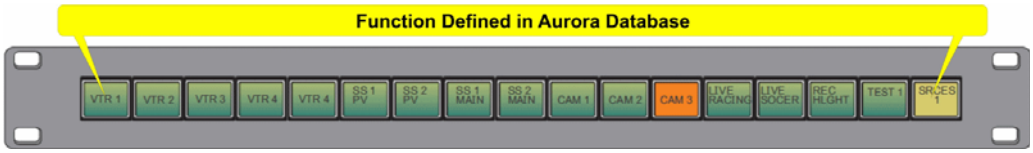

Fig 70. 6711 Panel in Freeform Mode

5.4.2 6028251 configured as 6711 Freeform

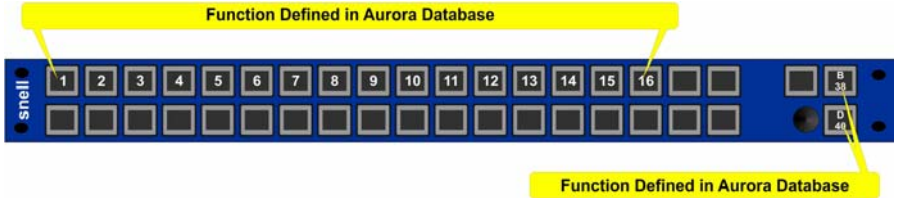

Fig 71. 6028251 configured as 6711 Freeform

5.4.3 6028351 configured as 6711 Freeform

Fig 72. 6028351 configured as 6711 Freeform

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6. Configuration

This chapter describes additional configuration of the panels.

- Hex Switches
- Serial (RS485) DIP Switches
- GPIO / Joystick Overrides
- Panel Reset
- Panel Software Update
- Panel Key Label Templates

6.1 Hex Switches

- 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 controls the brightness of the panel keys.

6.1.1 Hex Switch 1 - Multi-Drop Address

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

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

Table 23. Multi-drop Addresses and Switches

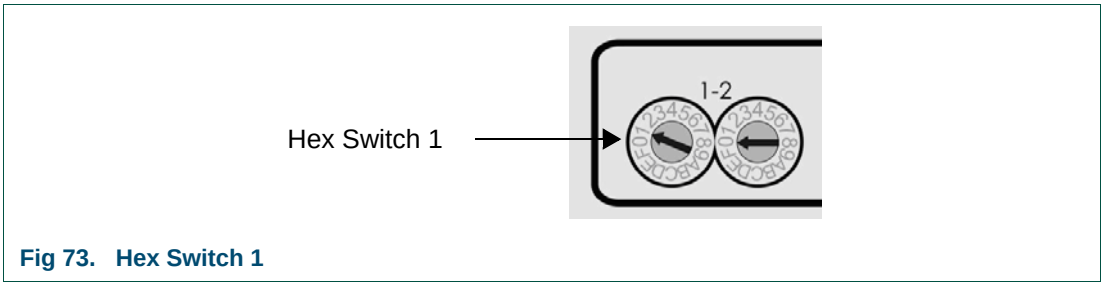

Fig 73. Hex Switch 1

6.1.2 Hex Switch 2 - Key Brightness

Switch Value	Key Brightness
0	Minimum brightness
1..6	Intermediate brightness according to the panel hardware
7	Maximum brightness
8..F	These switch settings have no specific values but, if set before power up, the panel will default to minimum brightness. Changing to one of these settings after power up retains the previous brightness setting used (0..7).

Table 24. Key Brightness

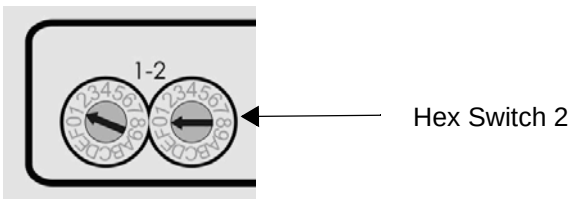

Fig 74. Hex Switch 2

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6.2 Serial (RS485) DIP Switches

The RS485 DIP switches provide termination in case of a long cable run, or if the panel is at the end of a multi-drop chain.

SWITCHES 1 & 2
UP = High Impedance
DOWN = Terminated

SWITCHES 3 & 4

NOT USED

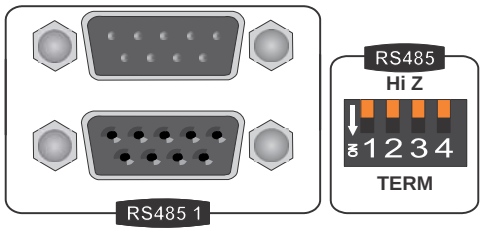

Fig 75. RS485 Setup

The pinouts for these connectors are in the Technical Specification. “RS485 (Serial Comms)” on page 41.

6.3 GPIO

The I/O provides opto-coupled I/O 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 (+5V & GND). Current Limit stops any connected equipment overloading the panel supply.

In the current configuration these ports are inputs only.

The pinouts for this connector are in the Technical Specification. See “GPIO” on page 42.

6.3.1 Joystick Overrides

When a control panel is in one of the BPX modes it includes a joystick override feature that allows the GPI to be used as inputs.

There are 2 forms of override:

Normal	In Normal mode (DIP switch 3 = UP) if the state of any of the 12 GPI changes - a message is passed back to the control system. The affect of a state change is dependent on the controller systems.
Mimic	In Mimic mode (DIP switch 3 = DOWN) the 12 GPI 'Mimic' the first 12 keys of the panel. If no source is currently selected, pulling GPI 1 to ground is the same as pressing the first key it selects source 1. If GPI 1 is released it has no further effect and source 1 remains selected. If GPI 1 is again pulled to ground this is the same as pressing the key again.

Table 25. Overrides

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6.4 Panel Reset

6.4.1 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 LED lights and the panel resets.

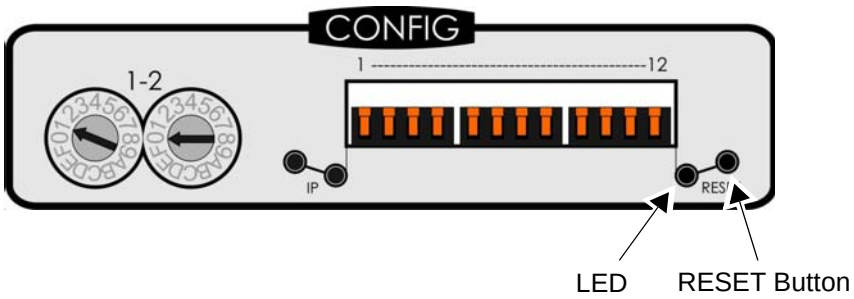

Fig 76. DIP Switches

6.4.2 Restoring Factory Default IP Settings

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

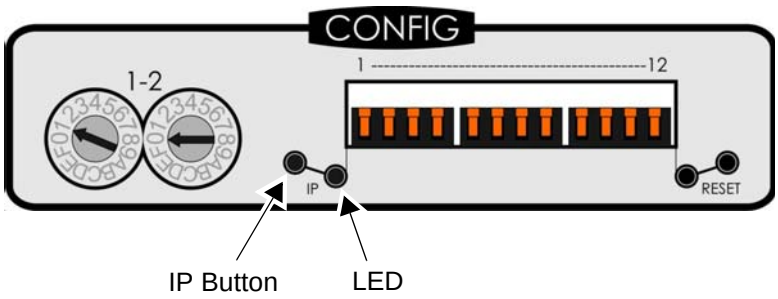

Fig 77. DIP Switches

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

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6.5 Panel Software Update

The software on the panels may be updated via the web interface. Updates, in the form of a .bin file, will be available on the Snell web site or from Customer Services.

Note: Do not power down the panel or click back in the browser during an update.

1. Store a copy of the .bin update file locally.
2. Connect to the panel using a web browser and type the panel's allocated IP address.

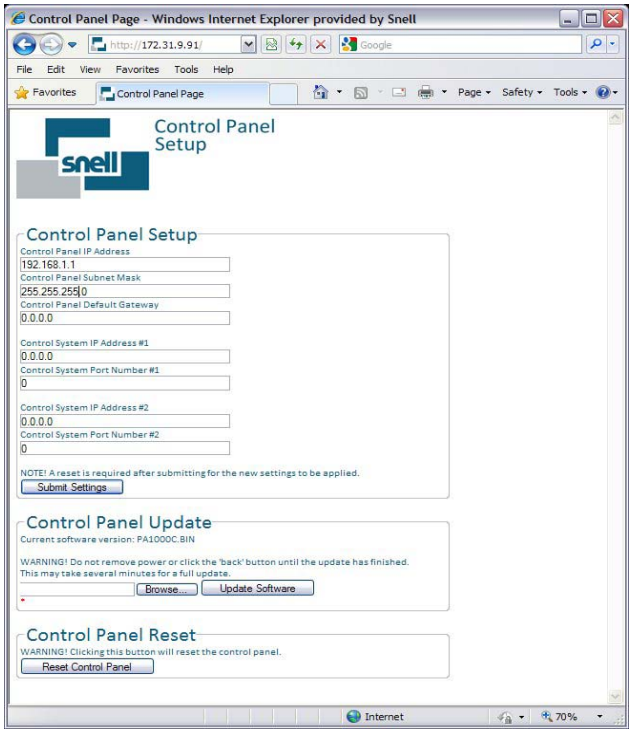

Fig 78. Software Update

3. In the Control Panel Update section, browse to the local location of the .bin file.
4. Click **Update Software**.

   A counter displays at the bottom of the Control Panel Update section. The update could take up to ten minutes.
5. Upon completion, a message indicating update success replaces the counter.

   If a message displays indicating a failure, repeat the update from the start. In the event of subsequent failure, contact Customer Services.
6. Reboot the panel using one of the following methods:
   - Click on **Reset Control Panel** in the browser window
   - Remove and replace the power lead
   - Press the Reset button on the rear of the panel. See “Reboot the Panel” on page 39.

6.6 Panel Key Label Templates

Printable templates for each of the LED panel types can be downloaded from the internet: www.snellgroup.com/support/customer-support/documentation/templates

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7. Technical Specification

7.1 Description

This section provides details of the pinouts of each connector on the rear panel.

7.2 Power

Fused IEC connector, supplied with a 2A quick blow fuse.

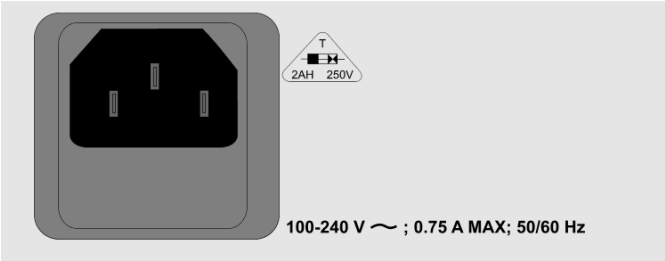

Fig 79. Power Socket

7.3 RS485 (Serial Comms)

Panel has a dual stacking 9-way D-type configured as an RS485 port. Either, or both, connectors may be used, as there is an internal loop-through to the other connector.

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

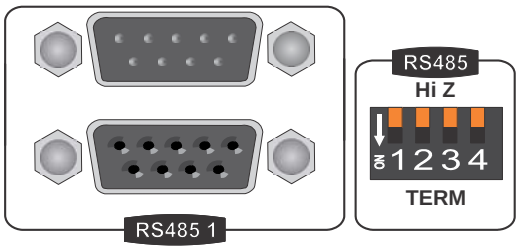

Table 26. RS485

DIP switches 1-2 terminate long cable or end of multi-drop chain. DIP switches 3-4 are not used.

Note: The panel can behave as a loop-through for serial comms whether it is powered or unpowered.

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7.4 GPIO

This 15-way D-type connector provides opto-coupled 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	+5 V 0.2 A (current limited)
6	GPIO6		
7	GPIO7	14	GND
8	GPIO8	15	GND

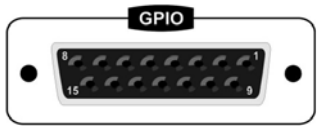

Table 27. RS485

7.5 RS232 Debug

This serial port can be used for fault diagnosis.

Pin	Function	Pin	Function
1	N/C	6	N/C
2	TX	7	N/C
3	RX	8	N/C
4	N/C	9	GND
5	GND		

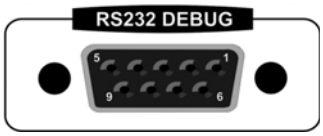

Table 28. RS232 Debug

Note: Do not connect to this serial port during normal operation.

7.6 Ethernet

The panel has a single 10/100Base-T Ethernet Port with standard pin out.

Pin	Function
1	TX+
2	TX-
3	RX+
4	N/C
5	N/C
6	RX-
7	N/C
8	N/C

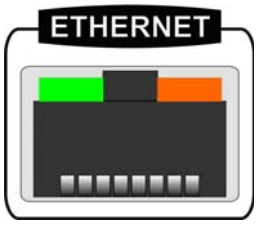

Table 29. Ethernet

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