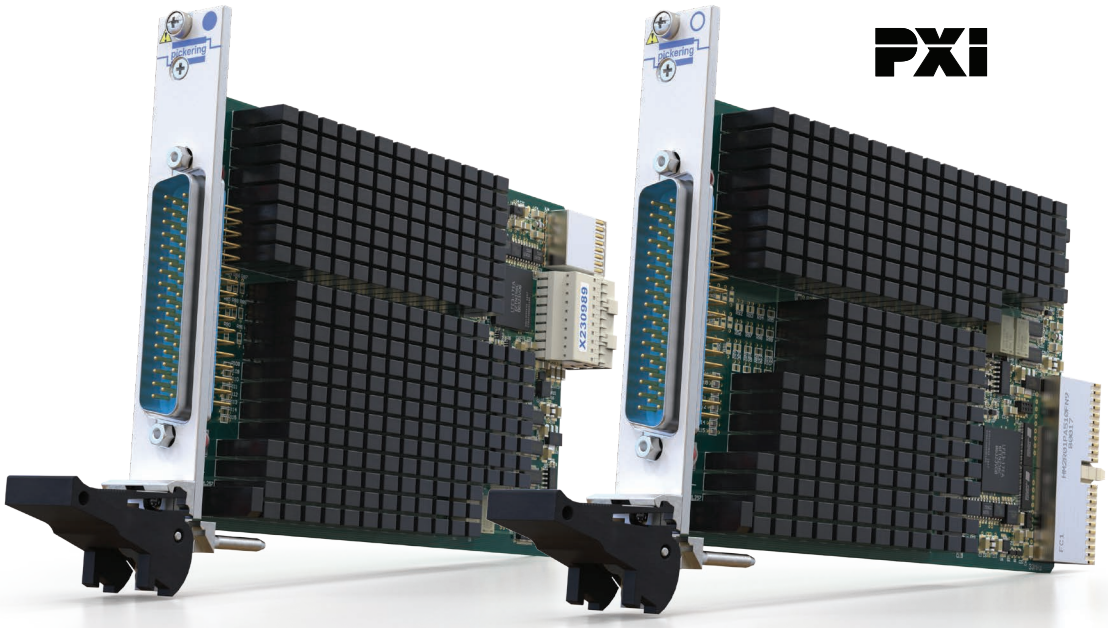
PXI/PXIe High Density Matrix Module



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FM38792

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All products manufactured by Pickering Interfaces are warranted against defective materials and workmanship for a period of three years, excluding programmable power supplies, from the date of delivery to the original purchaser. Any product found to be defective within this period will, at the discretion of Pickering Interfaces be repaired or replaced.

Products serviced and repaired outside of the warranty period are warranted for ninety days.

Extended warranty and service are available. Please contact Pickering Interfaces by phone, the website or via e-mail.

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Pickering Interfaces strives to fulfill all relevant environmental laws and regulations and reduce wastes and releases to the environment. Pickering Interfaces aims to design and operate products in a way that protects the environment and the health and safety of its employees, customers and the public. Pickering Interfaces endeavors to develop and manufacture products that can be produced, distributed, used and recycled, or disposed of, in a safe and environmentally friendly manner.

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Safety Symbols

The following safety symbols may be used on the product and throughout the product documentation.

Meaning/Description	Symbol
PROTECTIVE EARTH (GROUND) To identify any terminal which is intended for connection to an external conductor for protection against electric shock in case of a fault, or the terminal of a protective earth (ground) electrode.	
DANGEROUS VOLTAGE To indicate hazards arising from dangerous voltages.	
WARNING/CAUTION An appropriate safety instruction should be followed or caution to a potential hazard exists. Refer to the relevant instructions detailed within the product manual.	
HEAVY If this product is heavy reference should be made to the safety instructions for provisions of lifting and moving.	
STATIC SENSITIVE To indicate that static sensitive devices are present and handling precautions should be followed.	

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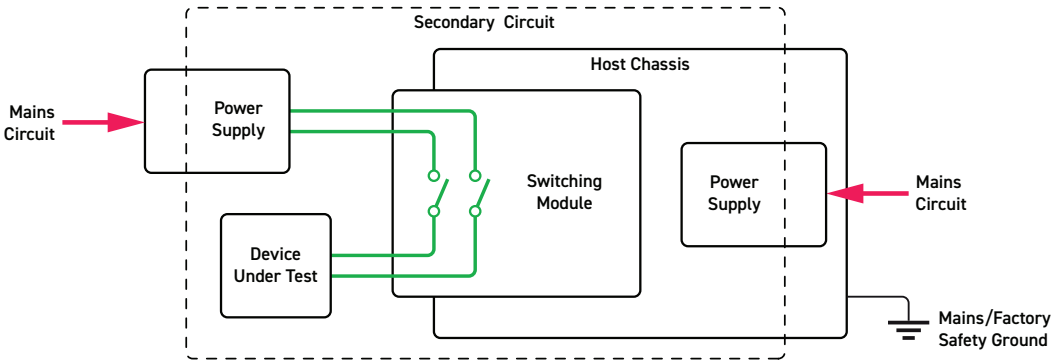
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Appendix A

Product Lifecycle Status A.1

WARNING - Hazardous Environments	Symbol
This product is not specifically designed for use in hazardous environments, for example in explosive atmospheres. If the product is to be used in hazardous environments we recommend that the user ensures suitable protective measures are taken.	

WARNING - Danger of Electric Shock	Symbol
This module may contain hazardous voltages. Before removing the module from the rack remove all supplies and disconnect user I/O signals. Unused slots in the PXI/PXIe/LXI chassis are populated with blanking plates to prevent access to user I/O signals that may be present. Blanking panels are available to order from Pickering in a variety of slot widths. If the product is not used in this manner for example by using an extender card then additional care must be taken to avoid contact with exposed signals. Not to be used in safety critical circuits, refer to the Pickering Interfaces' terms & conditions of sale. This module must not be used for the switching of Mains Circuits. For the switching of voltages up to the module's full specification, Secondary Circuit power supplies and the Device Under Test must be fully isolated from the Mains Circuit and the safety earth. The host chassis must be correctly installed and be connected to mains or factory safety ground, please refer to your chassis installation manual.  **Diagram Showing Separation Between The Mains Circuit and Secondary Circuit / DUT** For the purposes of this document, a Mains Circuit is an installation classified as Overvoltage Category II up to 300 V. Separation between the Secondary Circuit and Mains Circuit is achieved by a transformer in which the primary windings are separated from the secondary windings by reinforced insulation, double insulation, or a screen connected to the protective conductor terminal.	

CAUTION - Handling of Electrostatic-Sensitive Devices	Symbol
Certain semiconductor devices used in this equipment are liable to damage due to static voltage. Observe the following precautions when handling these devices in their unterminated state, or sub-assemblies containing these devices: • Persons removing sub-assemblies from equipment using these devices must be earthed by a wrist strap and a resistor at the point provided on the equipment. • Soldering irons used during the repair operations must be low voltage types with earthed tips and isolated from the mains voltage by a double insulated transformer. • Outer clothing worn must be unable to generate static charges. • Printed Circuit Boards (PCBs) fitted with these devices must be stored and transported in anti-static bags.	

CAUTION - Product Documentation	Symbol
Suitably qualified & trained users should ensure that the accompanying documentation is fully read and understood before attempting to install or operate the product.	

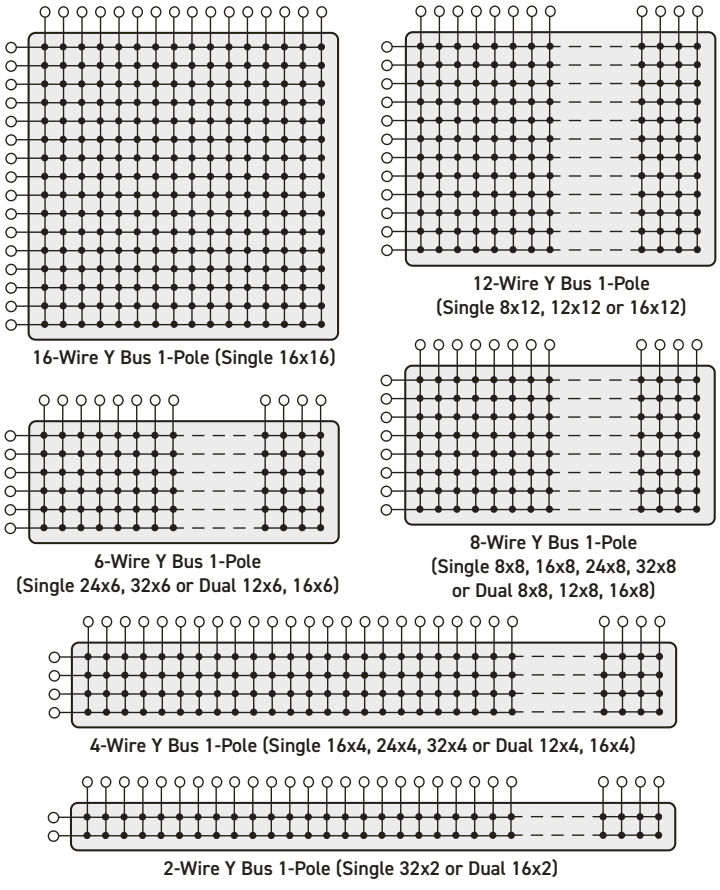
Safety Instructions

Safety Instructions
All cleaning and servicing requires the equipment to be isolated and disconnected from the power source and user I/O signals (refer to the Maintenance Section). • Appropriate manual handling procedures should be followed as dictated by the weight of the individual module or the combined weight of the modules & chassis. • Should a fault occur with the module or chassis, immediately isolate and disconnect the incoming power to the chassis and the user I/O signals. • Ensure the equipment is installed, operated and maintained by trained and authorised personnel. • For suitably equipped products in the event of an emergency press the red "emergency stop" button situated on the front of the unit.

Section 1 - Technical Specification

- Available as PXI or PXIe Modules
- High Density Reed Relay Matrix Module
- Low/Medium Density Options for Smaller Requirements
- 22 Different Matrix Configurations With up to 256 Crosspoints
- Uses High Reliability Pickering Ruthenium Reed Relays for Maximum Performance
- Fast Operating Speed of 500 µs
- Switch up to 150 V, 1 A with 15 W Max Power
- Relay Cycle Counting Included
- Drivers Supplied for Windows & Linux, Plus Support for Real-time Systems
- PXI Versions Supported by PXI or LXI Chassis
- Supported by ***BIRST*** ™ & ***eBIRST*** ™ Test Tools
- 3 Year Warranty





40/42-520A High Density Matrix Range Overview

The 40-520A (PXI) and 42-520A (PXIe) are high density reed relay matrices with 22 different configurations. Typical applications include signal routing in ATE and data acquisition systems. The user signal connection is via a robust 50-pin D-Type connector that is fully supported by the wide range of Pickering Interfaces cable and connector accessories.

Built-In Relay Self-Test - *BIRST*

The *BIRST* facility provides a quick and simple way of finding relay failures within the module. No test equipment is required, simply disconnect the UUT from the module's connector, launch the *BIRST* application and the tool will run a diagnostic test that will find all relays with faulty contacts. For more information go to: pickeringtest.com/birst

Supported by *eBIRST*

In addition to *BIRST*, these modules are also supported by our *eBIRST* test tools. These tools simplify switching system fault-finding by quickly testing the system and graphically identifying the faulty relay. For more information go to: pickeringtest.com/ebirst

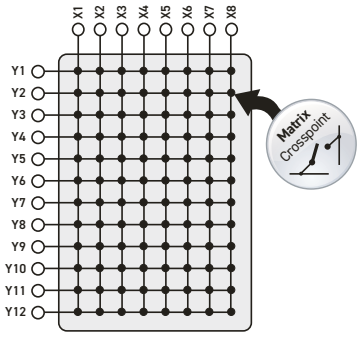
Updated Product Information

These products have been introduced as a “form & fit” update to the 40-520, the changes are to provide PXIe options, relay cycle counting and an updated bus interface which will require the use of an updated software driver. Otherwise, the electrical performance is very similar and the software and pinout are identical.

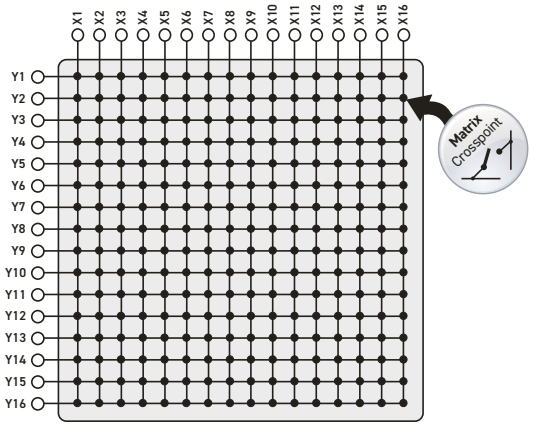
Relay Cycle Counting

To aid with module “health” monitoring all versions are provided with a relay cycle counting feature. The number of operations per contact are stored on the module and can be used to determine if a relay is approaching EOL. This information could allow system connections to be revised so that signals applied to heavily used contacts are swapped with lightly used contacts to prolong the working life of the relay(s).

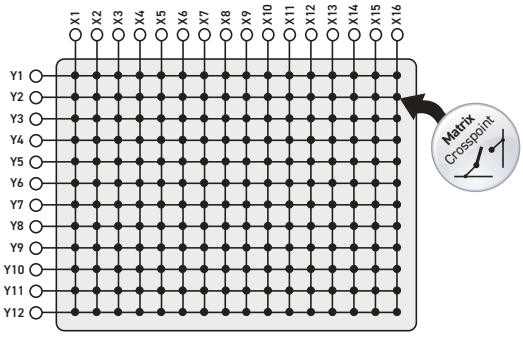
40/42-520A Matrix Range Schematic Diagrams



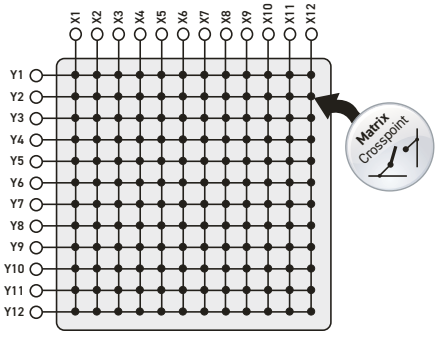
40/42-520A-103 Single 8x12 1-Pole Matrix



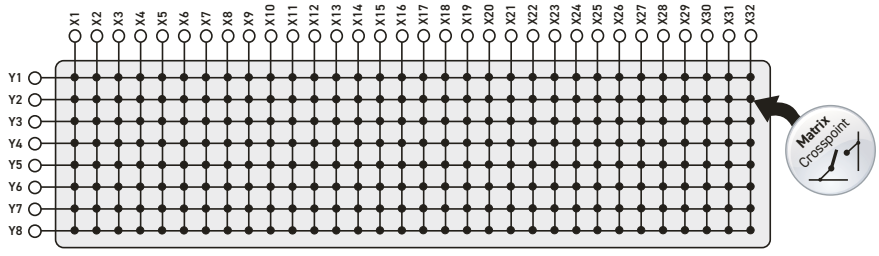
40/42-520A-001 Single 16x16 1-Pole Matrix



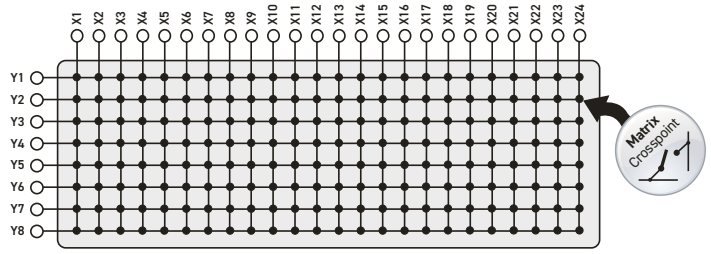
40/42-520A-101 Single 16x12 1-Pole Matrix



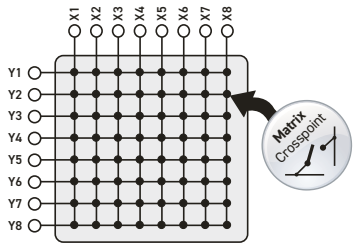
40/42-520A-102 Single 12x12 1-Pole Matrix



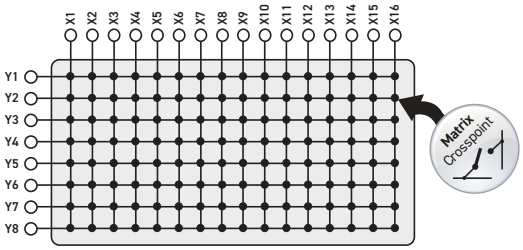
40/42-520A-201 Single 32x8 1-Pole Matrix



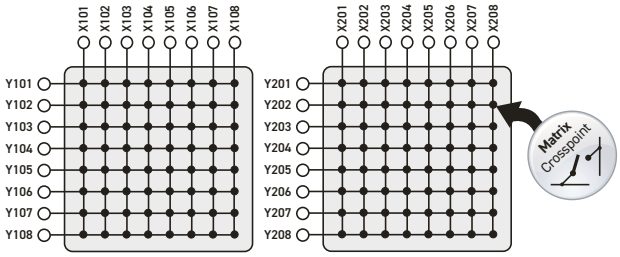
40/42-520A-202 Single 24x8 1-Pole Matrix



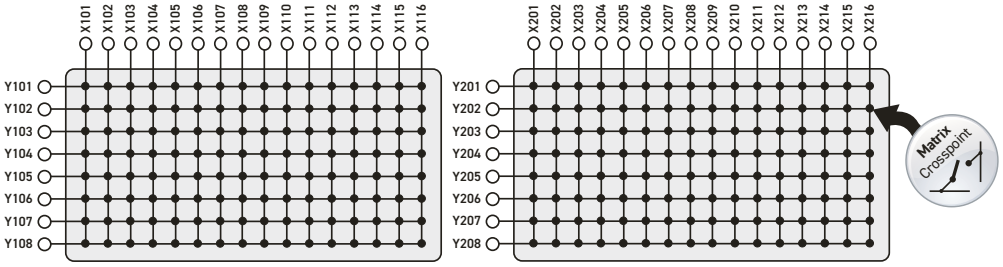
40/42-520A-204 Single 8x8 1-Pole Matrix



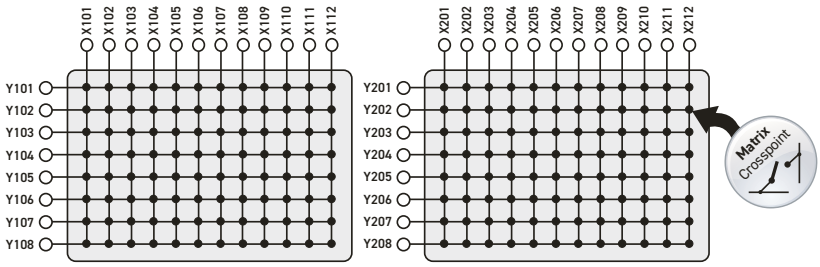
40/42-520A-203 Single 16x8 1-Pole Matrix



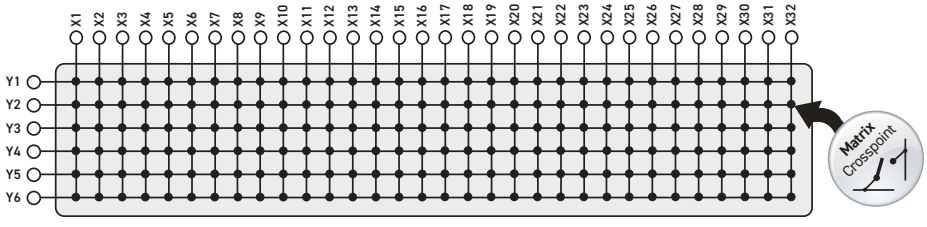
40/42-520A-207 Dual 8x8 1-Pole Matrix



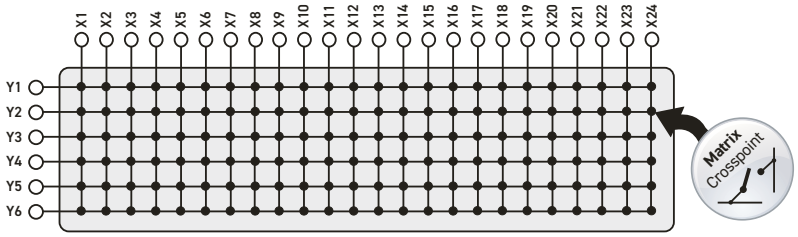
40/42-520A-205 Dual 16x8 1-Pole Matrix



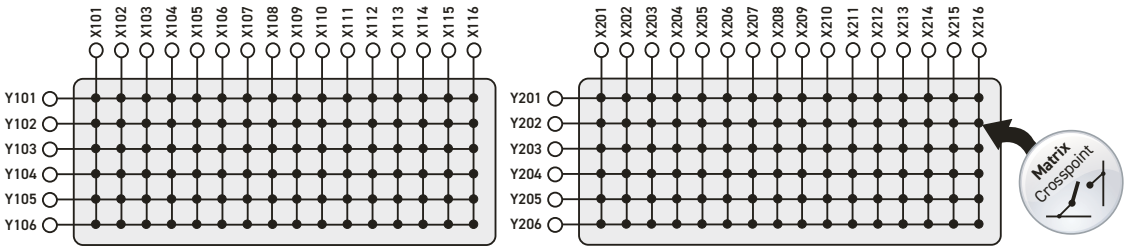
40/42-520A-206 Dual 12x8 1-Pole Matrix



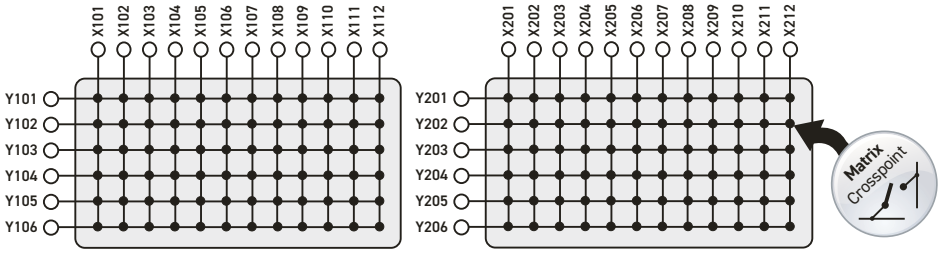
40/42-520A-301 Single 32x6 1-Pole Matrix



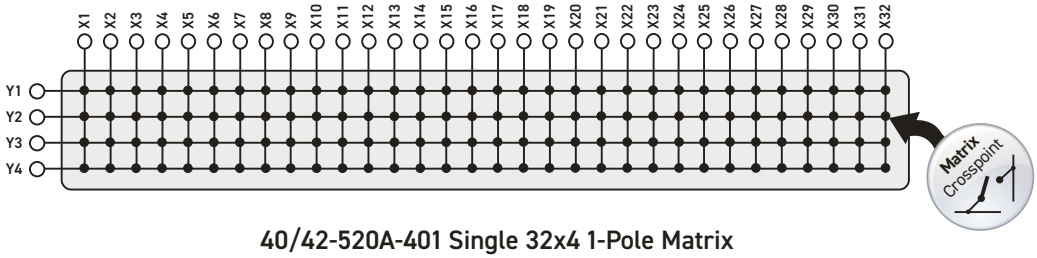
40/42-520A-302 Single 24x6 1-Pole Matrix



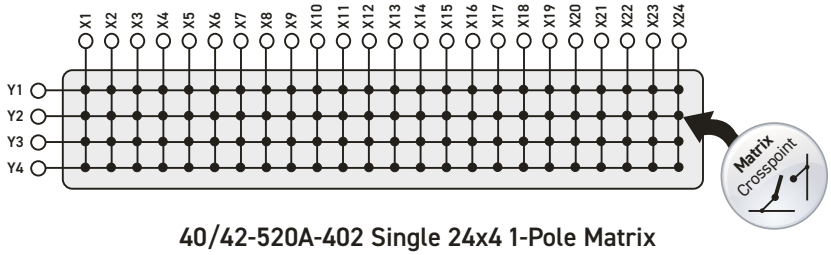
40/42-520A-303 Dual 16x6 1-Pole Matrix



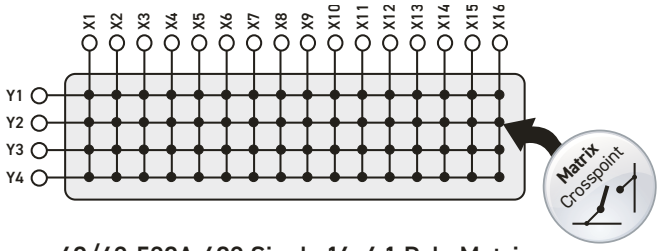
40/42-520A-304 Dual 12x6 1-Pole Matrix



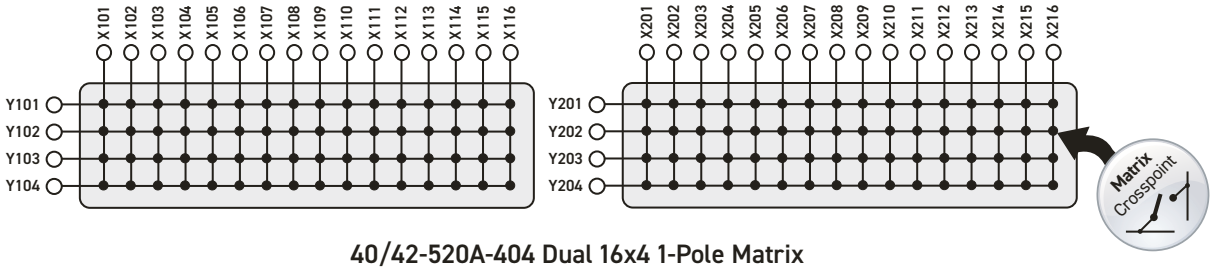
40/42-520A-401 Single 32x4 1-Pole Matrix



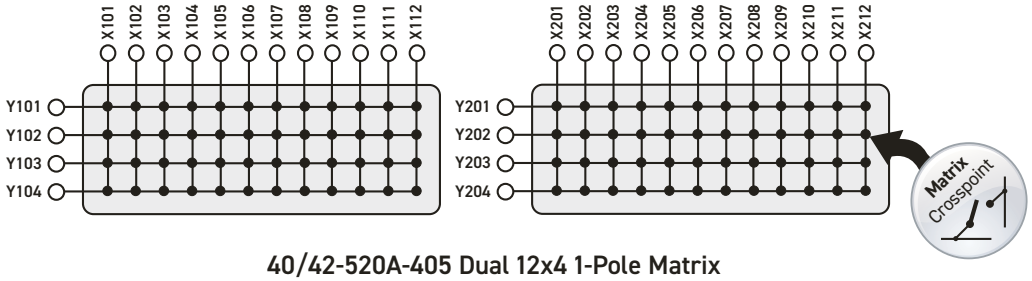
40/42-520A-402 Single 24x4 1-Pole Matrix



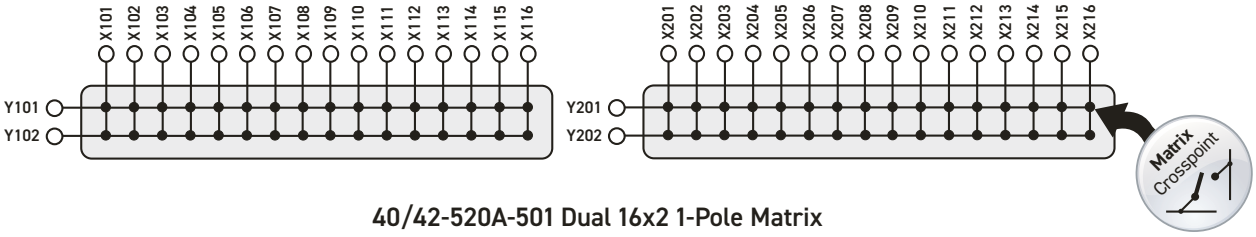
40/42-520A-403 Single 16x4 1-Pole Matrix



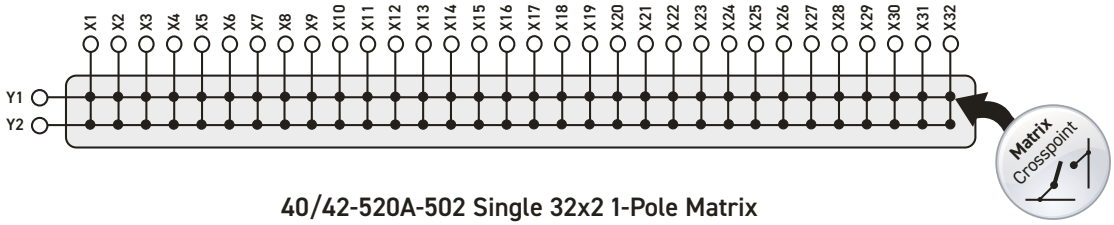
40/42-520A-404 Dual 16x4 1-Pole Matrix



40/42-520A-405 Dual 12x4 1-Pole Matrix



40/42-520A-501 Dual 16x2 1-Pole Matrix



40/42-520A-502 Single 32x2 1-Pole Matrix

Section 1 - Technical Specification

Relay Type

The 40/42-520A module is fitted with high quality ruthenium sputtered reed relays, these offer very long life with good low level switching performance and excellent contact resistance stability. A spare reed relay is built onto the circuit board to allow easy maintenance with minimum downtime.

All reed relays are manufactured by our sister company Pickering Electronics: pickeringrelay.com

Switching Specification

Switch Type:	Ruthenium Reed
Max Switch Voltage:	150 VDC/100 VAC*
Max Power: Max Switch Current: Max Carry Current:	15 W/15 VA 1 A 1.2 A
Initial On Path Resistance: Off Path Resistance: Thermal Offset:	<430 mΩ >10^9 Ω <100 µV
Operate Time:	0.5 ms (typical)
Expected Life, low power: Expected Life, full power:	1x10^9 operations >5x10^6 operations

* For full voltage rating, signal sources to be switched must be fully isolated from mains supply and safety earth.

Power Requirements - 40-520A

+3.3 V	+5 V	+12 V	-12 V
150 mA	2.5 A	35 mA	0

Power Requirements - 42-520A

+3.3 V	+12 V
400 mA	1.5 A

Mechanical Characteristics

40-520A - Single slot 3U PXI (CompactPCI card).
42-520A - Single slot 3U PXIe, compatible with PXIe hybrid slot.

Module weight: 350 g (maximum)
3D models for all versions in a variety of popular file formats are available on request.

RF Specification

Bandwidth (-3 dB):	20 MHz (typical)	
Bandwidth (VSWR 1.5:1):	9 MHz (typical)	
Crosstalk (typical):	10 kHz:	-70 dB
	100 kHz:	-70 dB
	1 MHz:	-40 dB
	10 MHz	-25 dB
	20 MHz	-20 dB
Isolation (typical):	10 kHz:	60 dB
	100 kHz:	60 dB
	1 MHz:	40 dB
	10 MHz:	20 dB
	20 MHz	15 dB

Connectors

40-520A - PXI bus via 32-bit P1/J1 backplane connector.
42-520A - PXIe bus via XJ3 and XJ4 backplane connectors.
Signals via front panel 50-pin D-Type male connector, for pin outs please refer to the operating manual.

PXI & CompactPCI Compliance - 40-520A

The module is compliant with the PXI Specification 2.2. Local Bus, Trigger Bus & Star Trigger are not implemented.
Uses a 33 MHz 32-bit backplane interface.

PXIe Compliance - 42-520A

The module is compliant with the PXIe Specification 1.0. Local Bus, Trigger Bus & Star Trigger are not implemented.

Safety & CE Compliance

All modules are fully CE compliant and meet applicable EU directives:
Low-voltage safety EN61010-1:2010,
EMC Immunity EN61326-1:2013,
Emissions EN55011:2009+A1:2010.

Operating/Storage Conditions

Operating Temperature:	0 °C to +55 °C
Humidity:	Up to 90 % non-condensing
Altitude:	5000 m
Storage/Transport Temperature:	-20 °C to +75 °C
Humidity:	Up to 90 % non-condensing
Altitude:	15000 m

Product Order Codes - PXI Versions

PXI Single 16x16 Matrix Module, 1-Pole	40-520A-001
PXI Single 16x12 Matrix Module, 1-Pole	40-520A-101
PXI Single 12x12 Matrix Module, 1-Pole	40-520A-102
PXI Single 8x12 Matrix Module, 1-Pole	40-520A-103
PXI Single 32x8 Matrix Module, 1-Pole	40-520A-201
PXI Single 24x8 Matrix Module, 1-Pole	40-520A-202
PXI Single 16x8 Matrix Module, 1-Pole	40-520A-203
PXI Single 8x8 Matrix Module, 1-Pole	40-520A-204
PXI Dual 16x8 Matrix Module, 1-Pole	40-520A-205
PXI Dual 12x8 Matrix Module, 1-Pole	40-520A-206
PXI Dual 8x8 Matrix Module, 1-Pole	40-520A-207
PXI Single 32x6 Matrix Module, 1-Pole	40-520A-301
PXI Single 24x6 Matrix Module, 1-Pole	40-520A-302
PXI Dual 16x6 Matrix Module, 1-Pole	40-520A-303
PXI Dual 12x6 Matrix Module, 1-Pole	40-520A-304
PXI Single 32x4 Matrix Module, 1-Pole	40-520A-401
PXI Single 24x4 Matrix Module, 1-Pole	40-520A-402
PXI Single 16x4 Matrix Module, 1-Pole	40-520A-403
PXI Dual 16x4 Matrix Module, 1-Pole	40-520A-404
PXI Dual 12x4 Matrix Module, 1-Pole	40-520A-405
PXI Dual 16x2 Matrix Module, 1-Pole	40-520A-501
PXI Single 32x2 Matrix Module, 1-Pole	40-520A-502

Product Order Codes - PXIe Versions

PXIe Single 16x16 Matrix Module, 1-Pole	42-520A-001
PXIe Single 16x12 Matrix Module, 1-Pole	42-520A-101
PXIe Single 12x12 Matrix Module, 1-Pole	42-520A-102
PXIe Single 8x12 Matrix Module, 1-Pole	42-520A-103
PXIe Single 32x8 Matrix Module, 1-Pole	42-520A-201
PXIe Single 24x8 Matrix Module, 1-Pole	42-520A-202
PXIe Single 16x8 Matrix Module, 1-Pole	42-520A-203
PXIe Single 8x8 Matrix Module, 1-Pole	42-520A-204
PXIe Dual 16x8 Matrix Module, 1-Pole	42-520A-205
PXIe Dual 12x8 Matrix Module, 1-Pole	42-520A-206
PXIe Dual 8x8 Matrix Module, 1-Pole	42-520A-207
PXIe Single 32x6 Matrix Module, 1-Pole	42-520A-301
PXIe Single 24x6 Matrix Module, 1-Pole	42-520A-302
PXIe Dual 16x6 Matrix Module, 1-Pole	42-520A-303
PXIe Dual 12x6 Matrix Module, 1-Pole	42-520A-304
PXIe Single 32x4 Matrix Module, 1-Pole	42-520A-401
PXIe Single 24x4 Matrix Module, 1-Pole	42-520A-402
PXIe Single 16x4 Matrix Module, 1-Pole	42-520A-403
PXIe Dual 16x4 Matrix Module, 1-Pole	42-520A-404
PXIe Dual 12x4 Matrix Module, 1-Pole	42-520A-405
PXIe Dual 16x2 Matrix Module, 1-Pole	42-520A-501
PXIe Single 32x2 Matrix Module, 1-Pole	42-520A-502

Product Customization

Pickering PXI and PXIe modules are designed and manufactured on our own flexible manufacturing lines, giving complete product control and enabling simple customization to meet very specific requirements.

Customization can include:

- Alternative reed relay types
- Mixture of reed relay types
- Alternative number of relays
- Different performance specifications

All customized products are given a unique part number, fully documented and may be ordered at any time in the future. Please contact your local sales office to discuss.



42-520A High Density Matrix Module in PXIe Format

Support Products

eBIRST Switching System Test Tool

This product is supported by the *eBIRST* test tools which simplify the identification of failed relays, the required *eBIRST* tools are below. For more information go to: pickeringtest.com/ebirst

Product	Test Tool	Adaptor
40/42-520A-xxx	93-005-001	Not Required

Spare Relay Kits

Kits of replacement relays are available for the majority of Pickering's PXI switching products, simplifying servicing and reducing down-time.

Product	Relay Kit
40/42-520A-xxx	91-100-097

For further assistance, please contact your local Pickering sales office.

Mating Connectors & Cabling

For connection accessories for the 40/42-520A module range please refer to the 90-005D 50-pin D-type Connector Accessories data sheet where a complete list and documentation can be found for accessories, or refer to the website.



Pickering can supply mating connectors and cable assemblies to enable easy integration of the 40/42-520A range of matrix modules

Functional Description

A functional block diagram is provided in Figure 2.1. The High Density Matrix Module is powered by +12 V, +5 V and +3.3 V supplies (PXI versions) or +12 V and +3.3 V (PXIe versions) via backplane connectors. The interface to the user test equipment is via the front panel mounted 50-pin male D-type connector, J2. The module comprises a PCB populated with up to 256 single pole reed relays in 22 different matrix configurations between 16x16 and 32x2 depending on the module type. The relays are energised via control signals from relay drivers U11 to U26 under control from the PCI interface and control logic. Bridge configuration data and module configuration is stored in EPROM devices

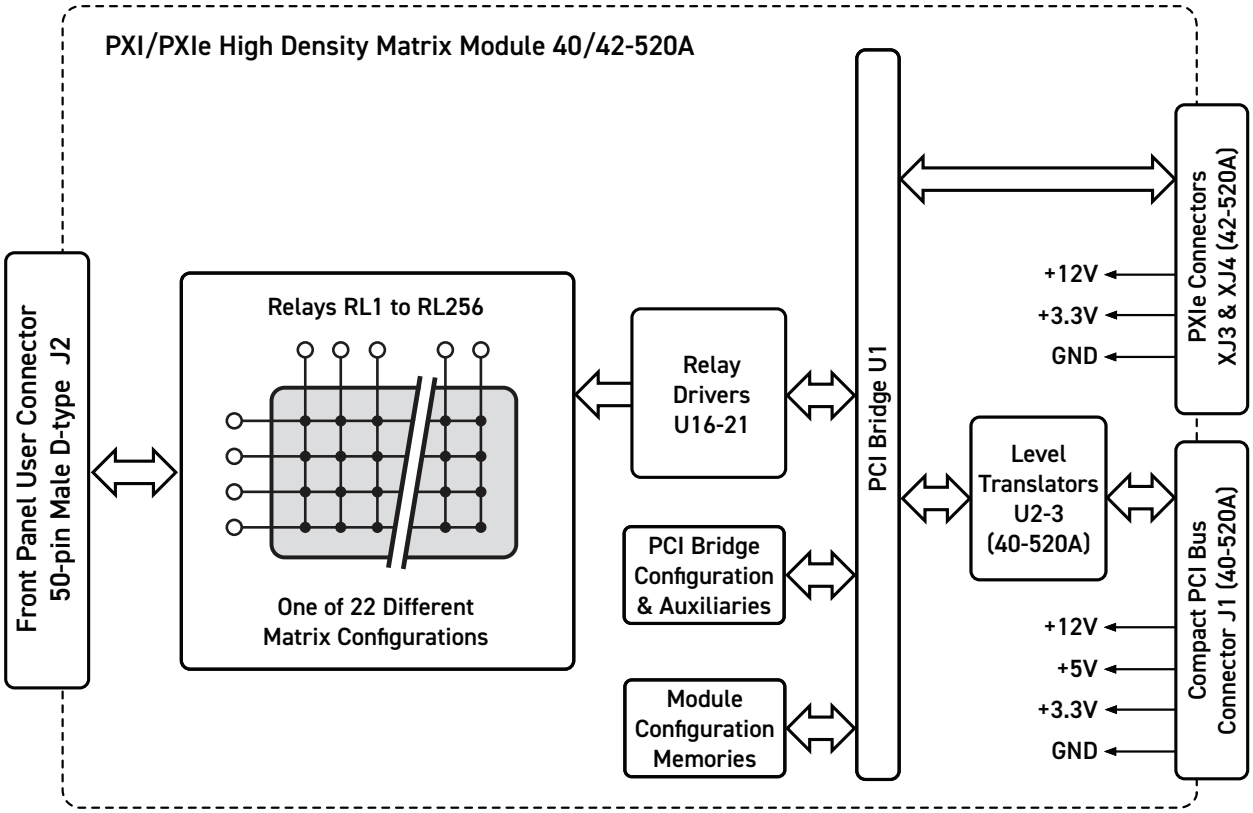


Figure 2.1 - High Density Matrix Module 40/42-520A: Functional Block Diagram

Section 3 - Installation

Refer to the Warnings and Cautions at the front of this manual

Modular products require installation in a suitable PXI/PXIe/LXI chassis. The module is designed for indoor use only.

Pre-operation Checks (Unpacking)

1. Check the module for transport damage and report any damage immediately to Pickering Interfaces. Do not attempt to install the product if any damage is evident.
2. Position the chassis relative to any other equipment the module(s) will connect with. Ensure the chassis is not connected to the electrical supply.
3. Ensure that the designated area for the chassis containing the module is of flat and solid construction to withstand and support the combined weight of the module(s) and chassis.

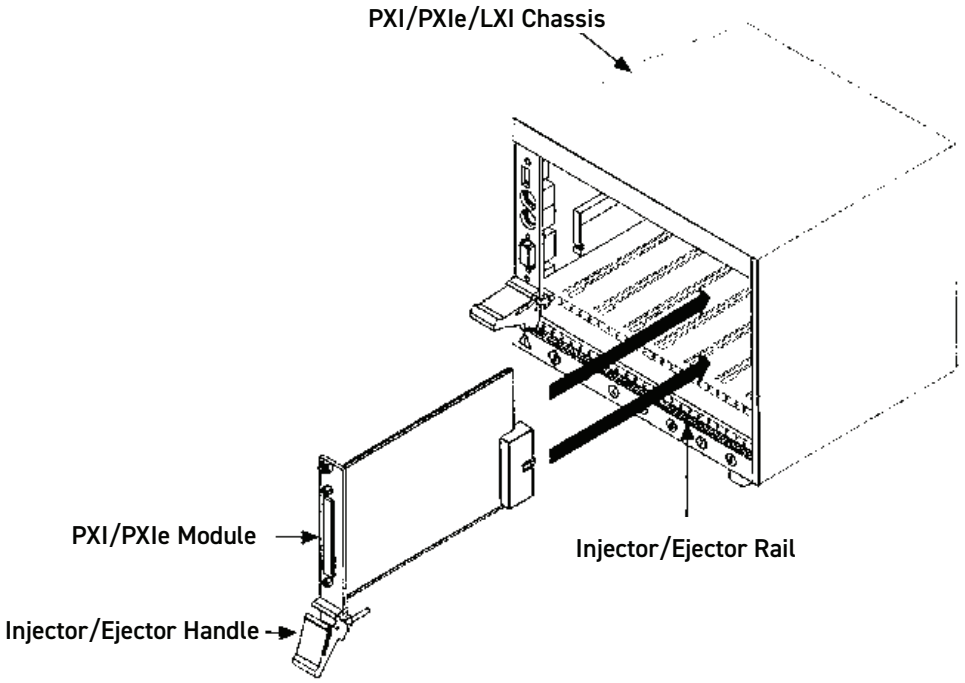


Figure 3.1 - Installing the Module into a PXI/PXIe/cPCI/LXI Chassis

Hardware Installation Electrical Connection (Chassis)

The chassis must be electrically installed in accordance with local regional electrical codes by a qualified engineer.

The chassis must be grounded.

Electrostatic discharge can damage the components on the module. To avoid such damage in handling the board refer to page vi.

Ensure that there is adequate ventilation.

The module should be installed in accordance with the following procedure:

1. Ensure that the system is turned OFF but still connected to mains so that it remains grounded.
2. Choose an appropriate slot in the rack.
3. Remove the blanking plate for the chosen slot.
4. Ensure that the injector/ejector handle is in its downward position. Align the module with the card guides on the top and bottom of the slot.
   Do not raise the injector/ejector handle whilst inserting the module as the module will not insert properly.
5. Hold the handle whilst slowly sliding the module into the card guides until the handle catches on the injector/ejector rail (refer to Figure 3.1).
6. Raise the injector/ejector handle until the module firmly seats into the backplane. The front panel of the module should be flush with the front panel of the chassis.
7. Secure the front panel of the module using both screws to the chassis front panel mounting rails.
8. In a system employing a remote control interface to connect an external controller to a PXI chassis or to link multiple chassis, power-up the system as follows:
   a. For a system comprising an external controller and one chassis, power up the chassis before powering up the external controller.
   b. For a system comprising more than one chassis, turn ON the last chassis in the system followed by the penultimate, etc, and finally turn ON the external controller or chassis containing the system controller.
9. For Pickering Interfaces modular LXI installation there is no requirement to use any particular power up sequence.

Software Installation

First install the appropriate Pickering PXI switch card drivers by running the installer program Setup.exe (provided in a compressed zip file), either from the CD-ROM supplied, or by downloading the latest version from our website: pickeringtest.com - the recommended method. Setup is accompanied by a ReadMe file containing additional installation information. A single installation covers all Pickering switching and simulation PCI, PXI and PXIe products.

When installation completes, the installed drivers' ReadMe file is offered for display. It can also be displayed later using a shortcut on the Programs>>Pickering menu.

If you are not a LabVIEW user you should choose the "full" version, and once that has been installed run the LabVIEW Runtime Engine installer via the shortcut on the Programs>>Pickering menu. In the absence of LabVIEW the Runtime Engine is required to support the Pickering Test Panels application.

Testing Operation

After installation of the hardware and Pickering PXI Driver software package start the General Soft Front Panel (GSFP) using the desktop icon or via the Start menu (***Start Menu-> Pickering Interfaces Ltd -> General Soft Front Panel***).



Figure 3.2 - General Soft Front Panel Icon

A selector panel will appear, listing all installed Pickering PCI, PXI/PXIe or LXI switch cards and resistor cards. Click on the card you wish to control, and a graphical control panel is presented allowing operation of the card. Panels can be opened simultaneously for all the installed cards.

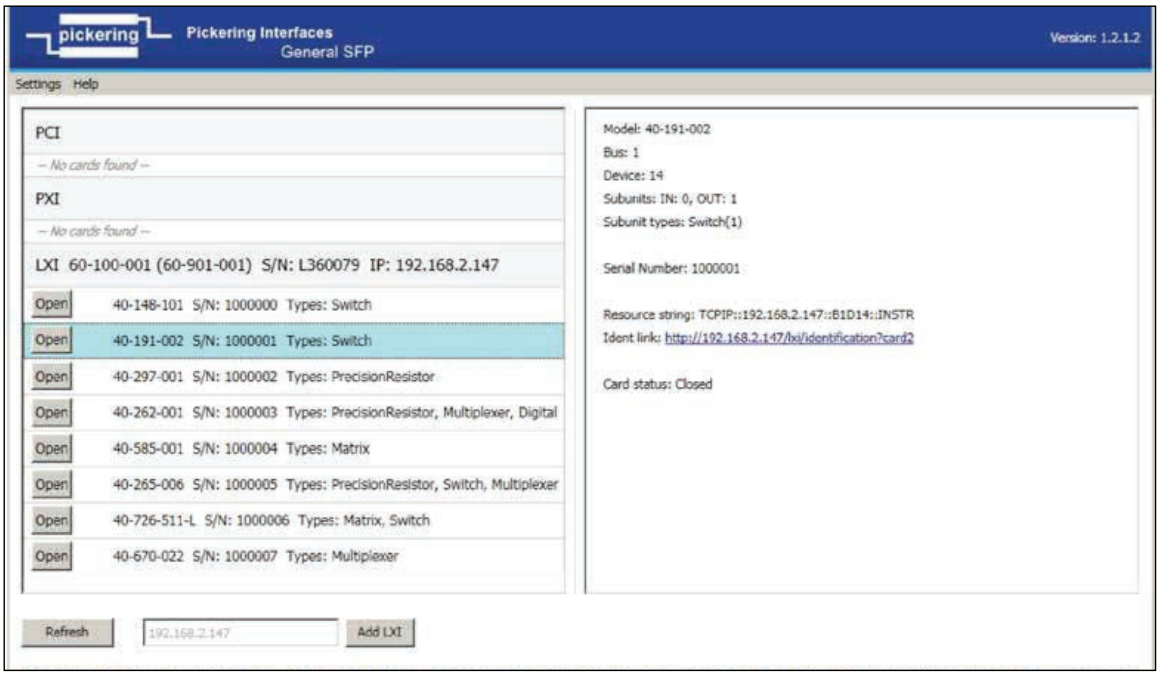


Figure 3.3 - General Soft Front Panel Selector

More details how to use the GSFP can be found in the manual, via menu ***Help\Manual***.

Section 4 - Programming

Programming options for Pickering Interfaces PXI/PXIe Modules

For information on the installation and use of drivers and the programming of Pickering's products in various software environments, please refer to the Software User Manual.

This is available as a download from:
pickeringtest.com/support/software-drivers-and-downloads

Also, it can be accessed from the DVD supplied with the product:
<DVD_DRIVE>\downloads\Documentation\Software-Manual.pdf

Relay Cycle Counting Feature Details

For information related to the relay cycle counting feature present on this product, please refer to the Relay Cycle Counting User Guide.

This is available as a download from:
pickeringtest.com/portal/web/256/content/private/manuals/Relay-Cycle-Counting-User-Guide.pdf

Also, it can be accessed from the DVD supplied with the product:
<DVD_DRIVE>\downloads\Documentation\Relay-Cycle-Counting-User-Guide.pdf

Module Architecture

The 40/42-520A is a range of 22 switching matrices with 8, 12, 16, 24 or 32 connections on the X-axis and 2, 4, 6, 8, 12, or 16 connections on the Y-axis, single and dual configurations are also available. Connections are made by operating the relays at the crosspoints between X and Y lines allowing single X-Y connections, or X-X connections using a Y line as a path. The matrix range is summarised in the diagram below:

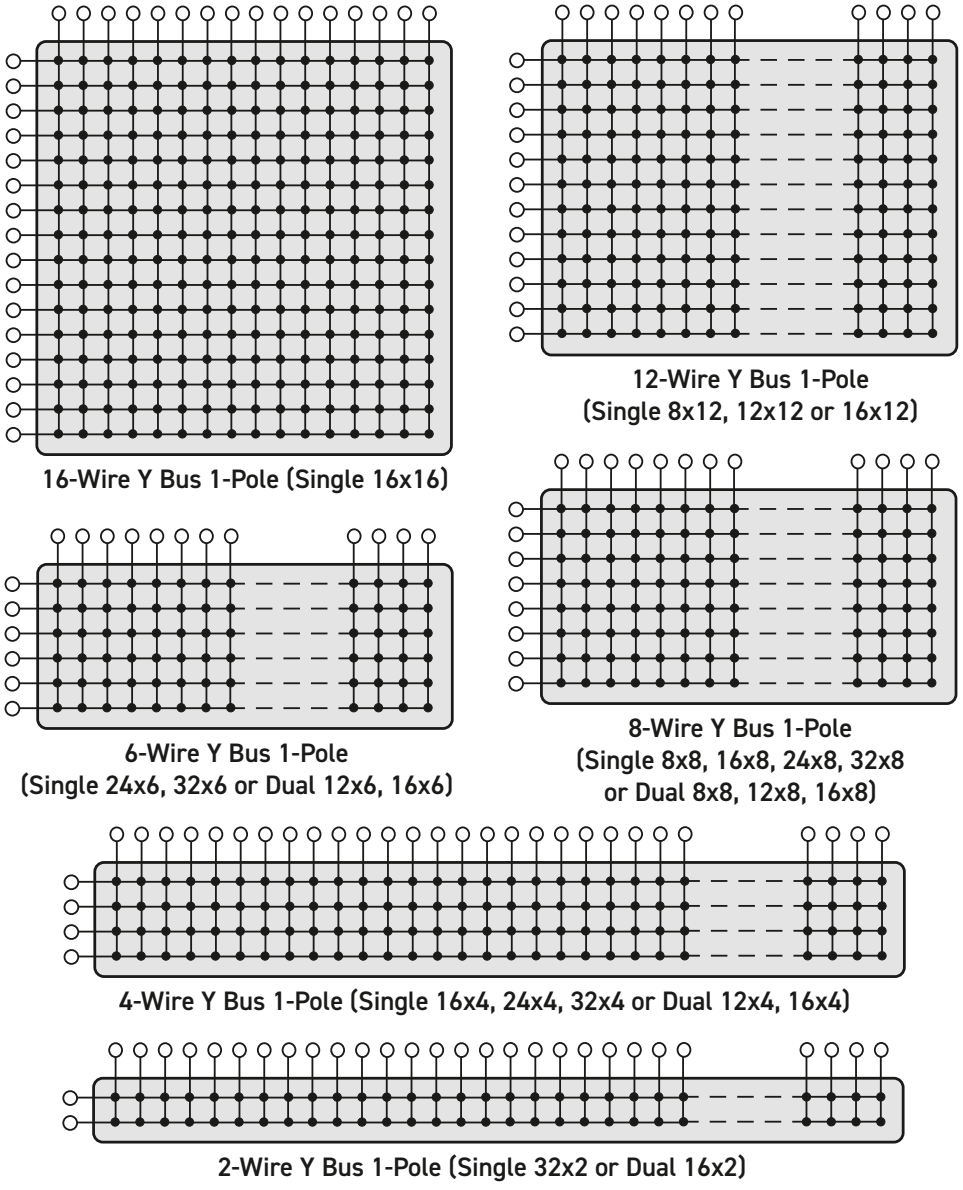


Figure 4.1 40/42-520A High Density Matrix Module Range

For single matrices, the entire matrix is treated as a single programming sub-unit designated as Sub-Unit 1, dual matrices are programmed as two separate Sub-Units, 1 and 2. The following page gives some simple examples using the provided drivers: the IVI driver, the Direct IO driver, and the IVI compliant driver.

Programming The Module

Using The IVI Driver, Direct I/O Driver or VISA Driver

This section provides some code fragments which show how to control the High Density Matrix using the IVI Driver, Direct I/O Driver or the VISA Driver.

Once the drivers are installed the manual "Sys40Prg.pdf" and driver help files which fully describes these functions can be found in the Pickering folder(s) or the Pickering entries on your Start Menu.

The card must be opened before use and closed after using the following function calls:

Direct I/O Driver - Open with `PIL_OpenCards` or `PIL_OpenSpecifiedCard` and close with `PIL_CloseCards` or `PIL_CloseSpecifiedCards` respectively.

VISA Driver - Open with `pipx40_init`, and close with, `pipx40_close`.

Setting a Matrix Crosspoint:

Using the IVI driver:

Note: the following example is for bank 1 of a dual matrix. Bank 1 is identified as A, bank 2 would be identified as B, and a single matrix would have no letter identifier.

```
pi40iv_Connect(vi, xA1, yA2);      //set crosspoint x1, y2 to on
pi40iv_Disonnect(vi, xA1, yA2);    //set crosspoint x1, y2 to off
```

Using the Pickering Direct I/O driver:

```
DWORD SubUnit = 1; //select bank 1 (dual matrix) or whole matrix (single matrix)
PIL_ClearSub(CardNo, SubUnit);     //clear all crosspoints to off state
PIL_OpCrosspoint(CardNo, SubUnit, 2, 1, 1);  //set crosspoint x1, y2 to on
PIL_OpCrosspoint(CardNo, SubUnit, 2, 1, 0);  //set crosspoint x1, y2 to off
```

Using the VISA driver:

```
ViUInt32 SubUnit = 1;              //select bank 1 (dual matrix) or whole matrix (single
matrix)
pipx40_clearSub(vi, SubUnit);      //clear all crosspoints off state
pipx40_setCrosspointState (vi, SubUnit, 2, 1, VI_ON); //set crosspoint x1, y2 on
pipx40_setCrosspointState (vi, SubUnit, 2, 1, VI_OFF);      //set crosspoint x1, y2 off
```

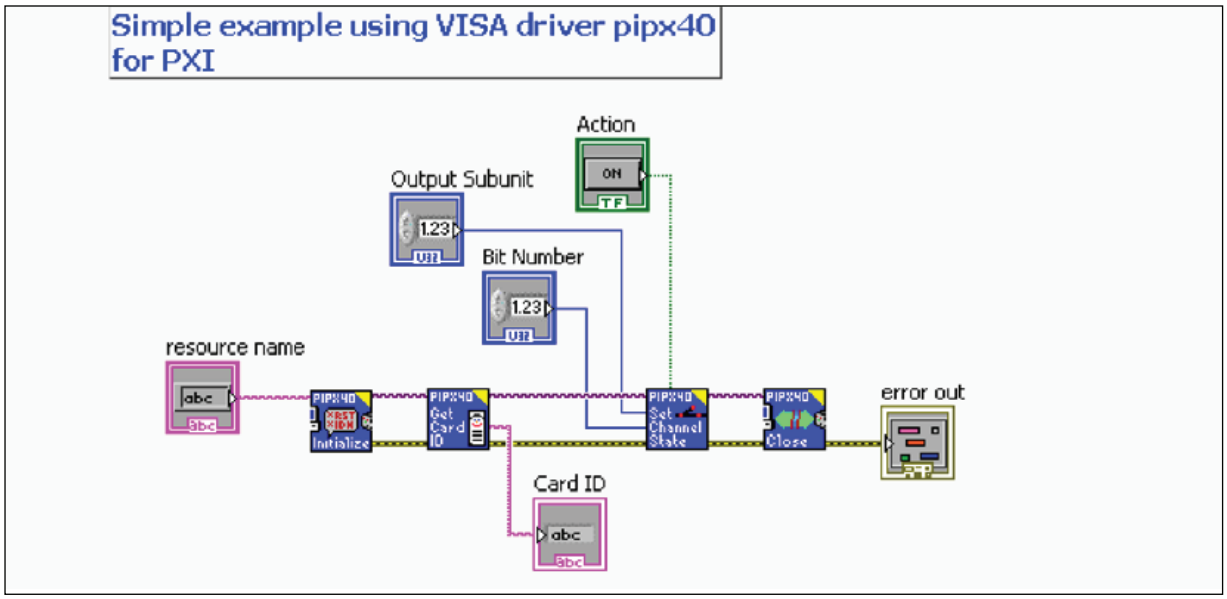
Using Pickering Drivers In LabVIEW

Most Pickering drivers include a LabVIEW wrapper to permit full operation of the Pickering product from the LabVIEW environment. These wrappers are normally installed to the current LabVIEW folder system during installation of the Pickering driver.

The process of controlling a Pickering product normally consists of the following steps:

1. Open a control session on the product.
2. Use functions in the library to operate the product.
3. Close the control session.

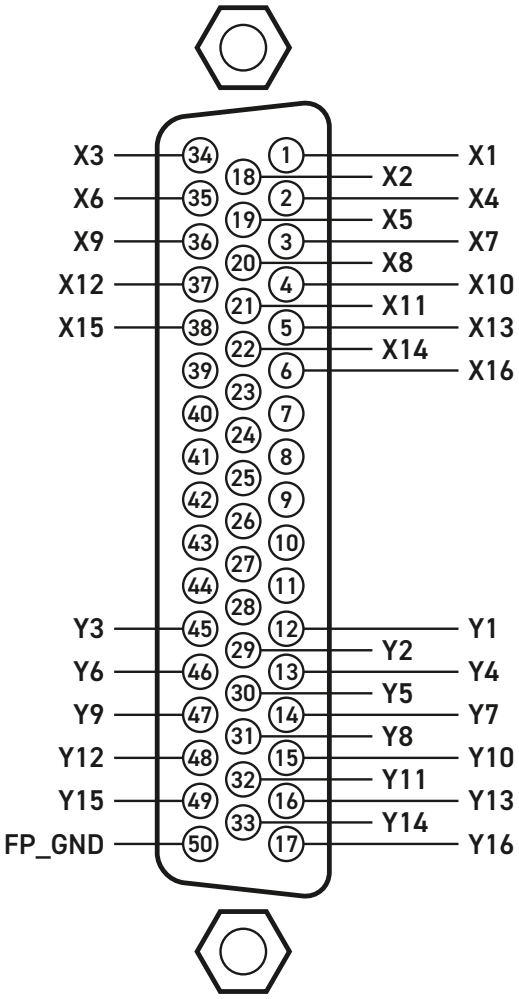
Following is a simple example of the use of the most common Pickering drivers:

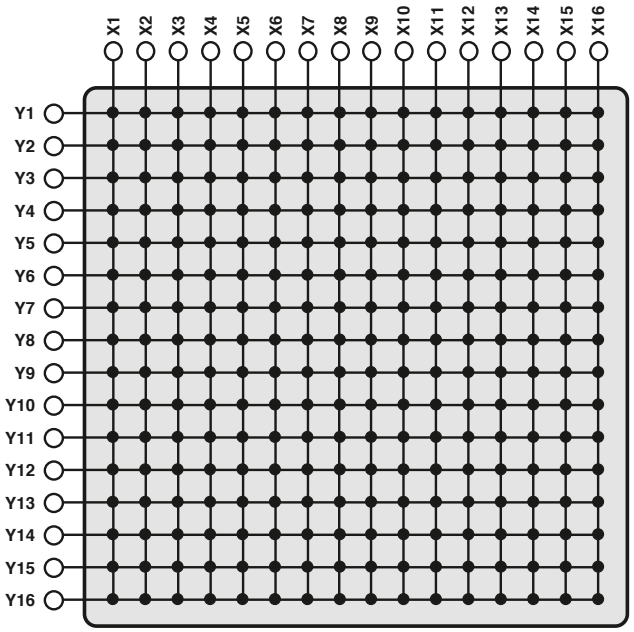


Example Use of Pickering Drivers in LabVIEW

To download LabVIEW examples, please go to:

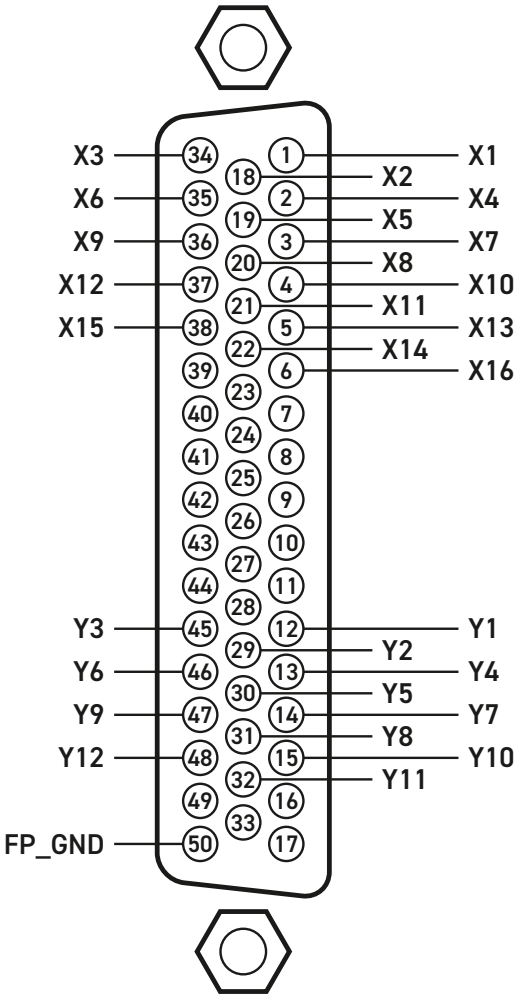
Using Pickering Drivers in LabVIEW

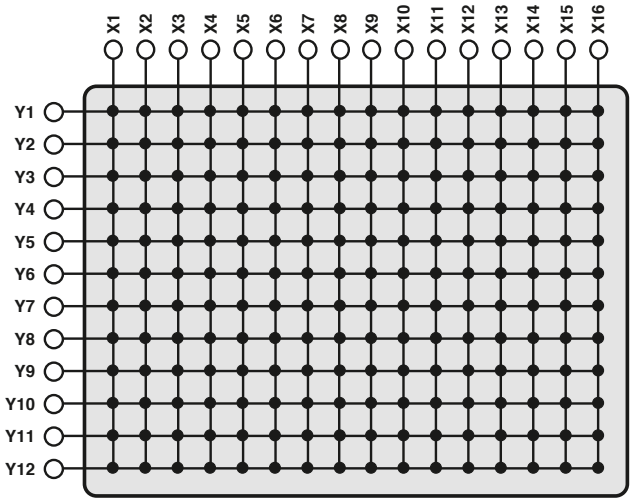




Single 16x16 Matrix

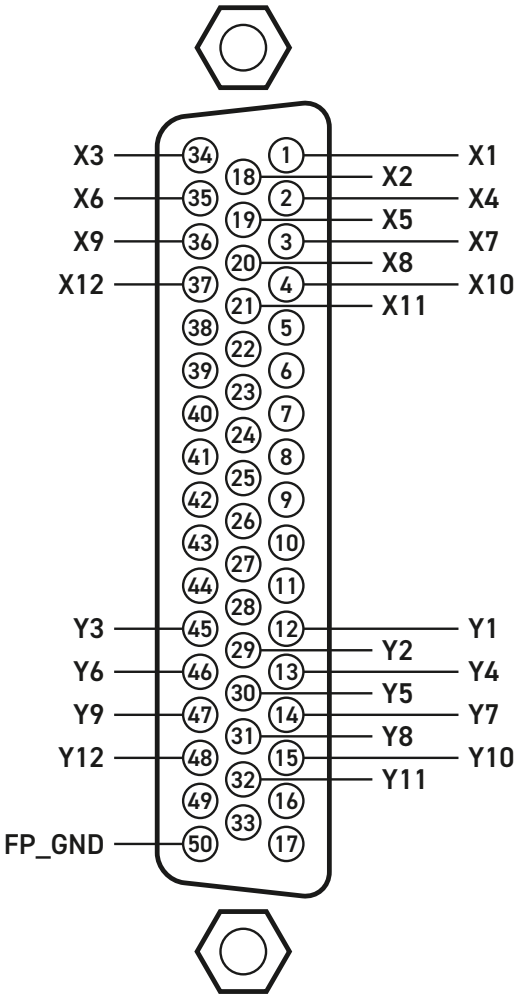
Figure 5.1 - 40/42-520A-001 Pinout
(50-pin Male D-Type Viewed From Front of Module)

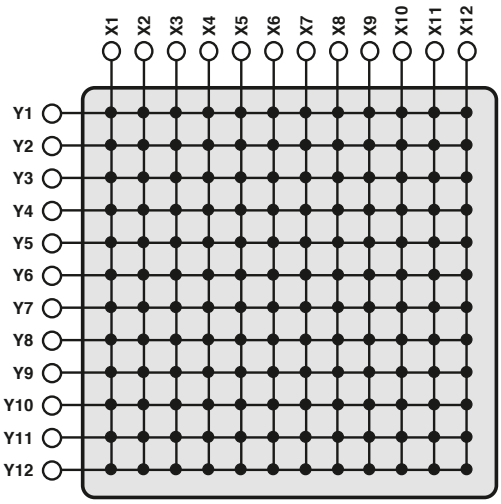




Single 16x12 Matrix

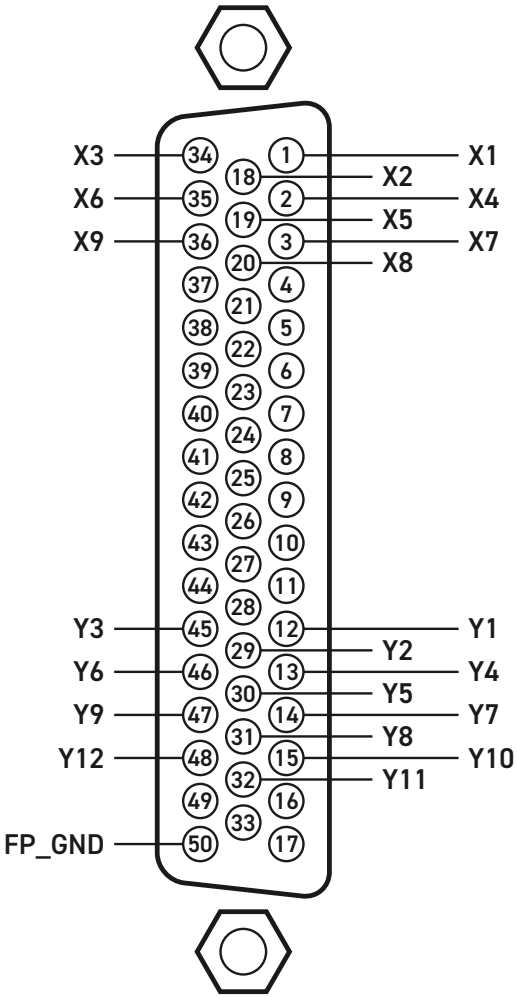
Figure 5.2 - 40/42-520A-101 Pinout
(50-pin Male D-Type Viewed From Front of Module)

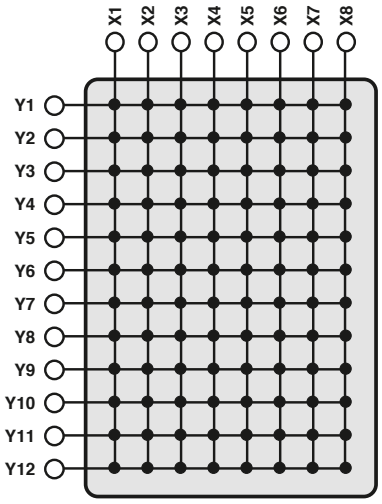




Single 12x12 Matrix

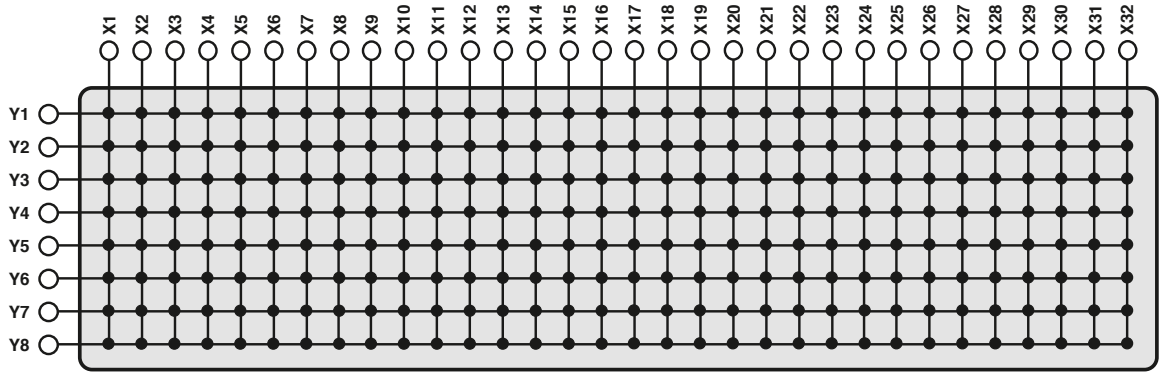
Figure 5.3 - 40/42-520A-102 Pinout
(50-pin Male D-Type Viewed From Front of Module)





Single 8x12 Matrix

Figure 5.4 - 40/42-520A-103 Pinout
(50-pin Male D-Type Viewed From Front of Module)



Single 32x8 Matrix

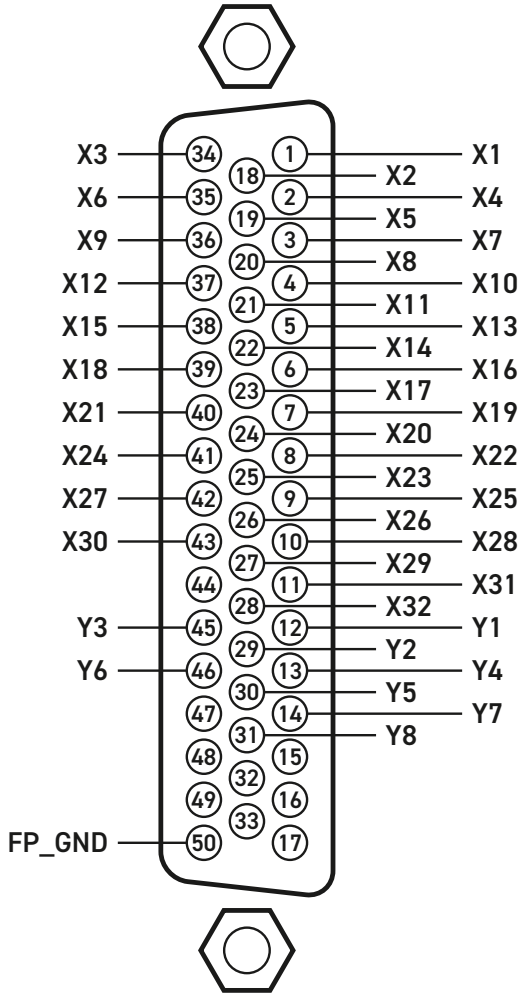
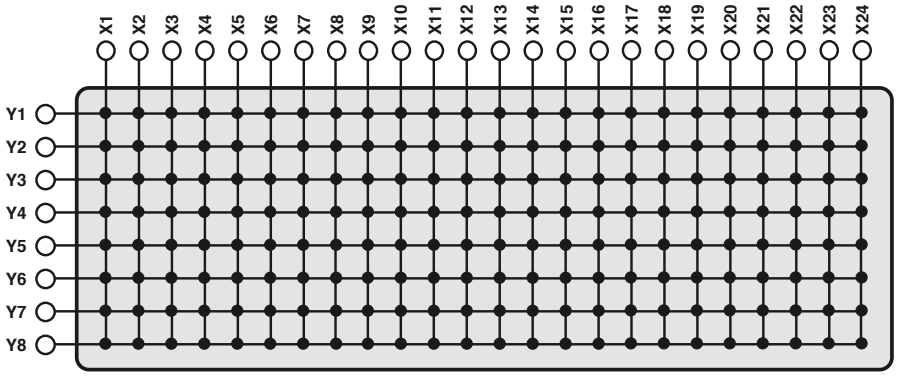


Figure 5.5 - 40/42-520A-201 Pinout
(50-pin Male D-Type Viewed From Front of Module)



Single 24x8 Matrix

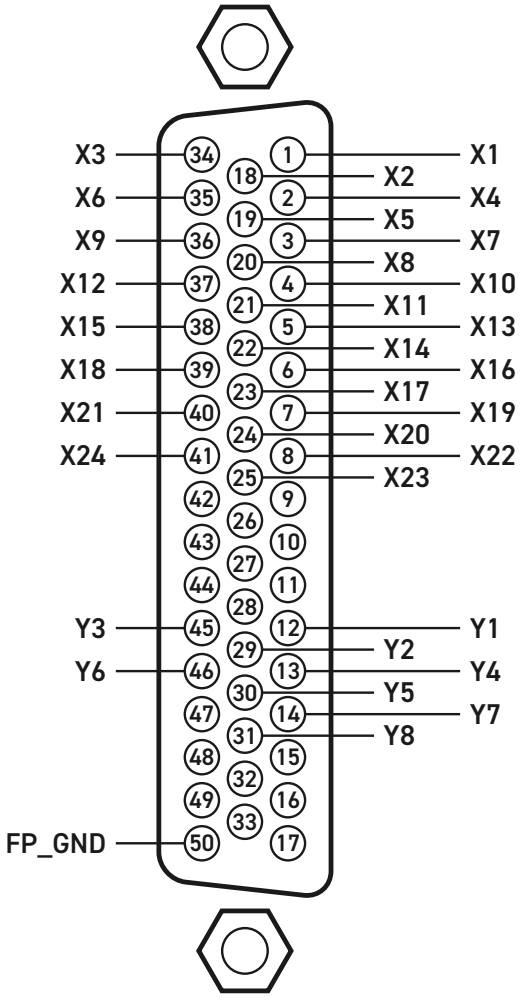
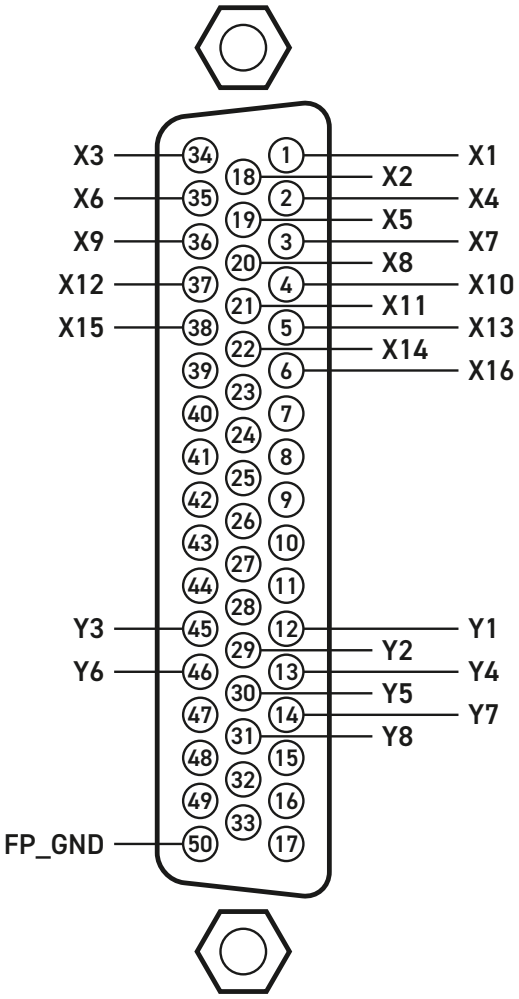
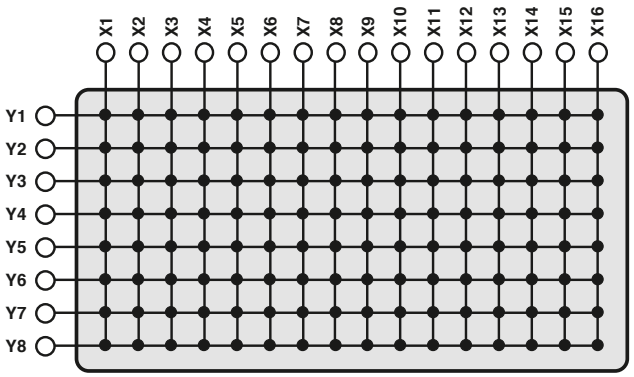


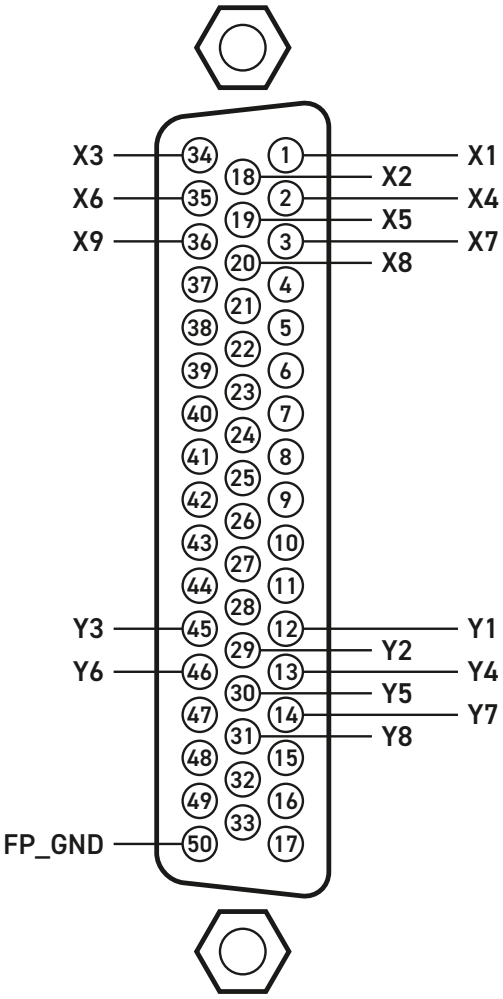
Figure 5.6 - 40/42-520A-202 Pinout
(50-pin Male D-Type Viewed From Front of Module)

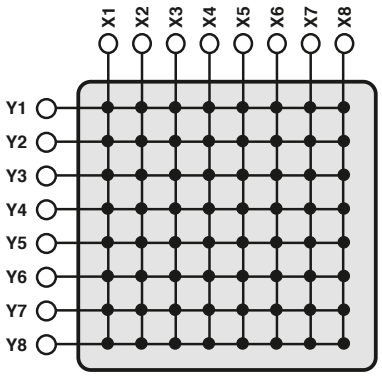




Single 16x8 Matrix

Figure 5.7 - 40/42-520A-203 Pinout
(50-pin Male D-Type Viewed From Front of Module)





Single 8x8 Matrix

Figure 5.8 - 40/42-520A-204 Pinout
(50-pin Male D-Type Viewed From Front of Module)

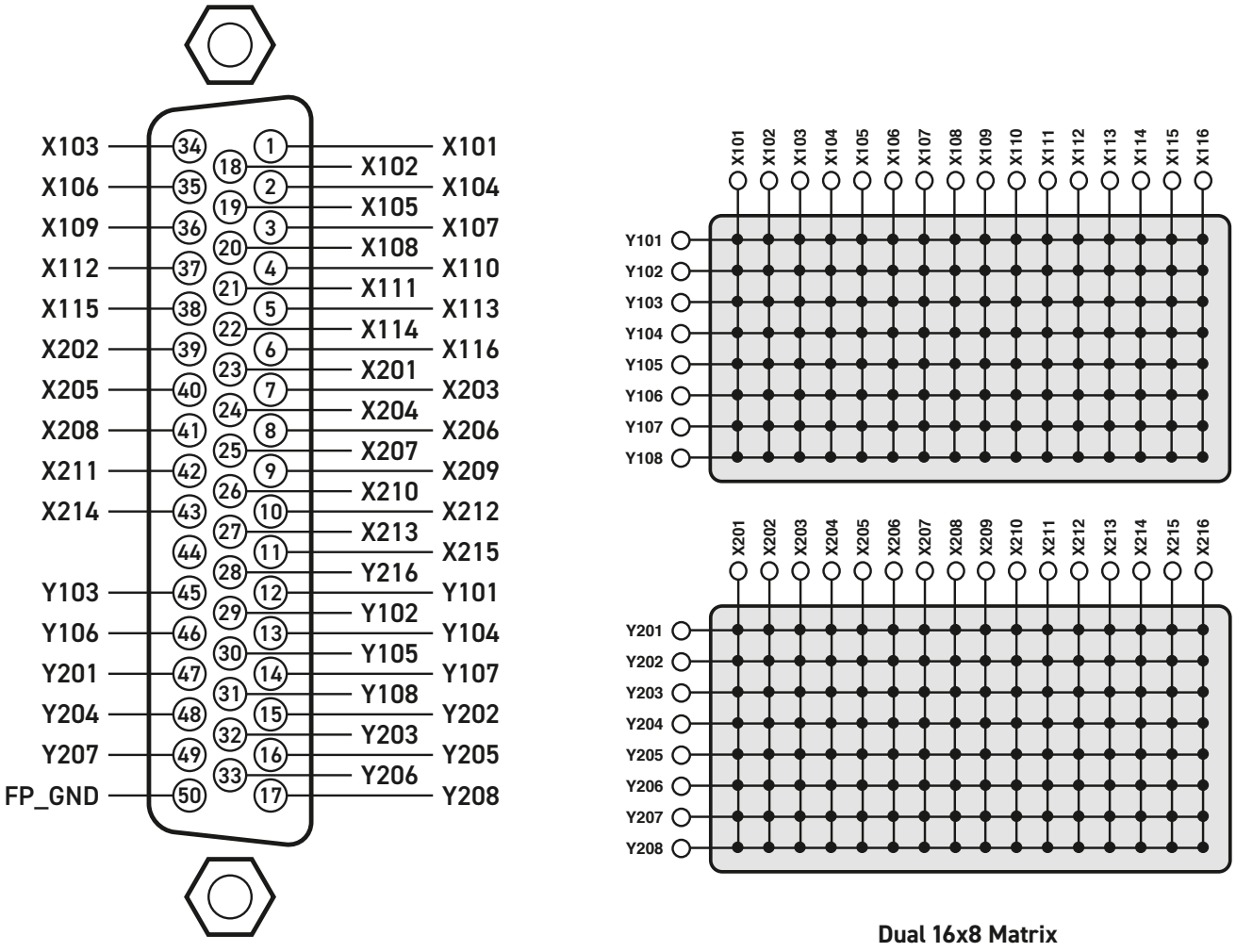
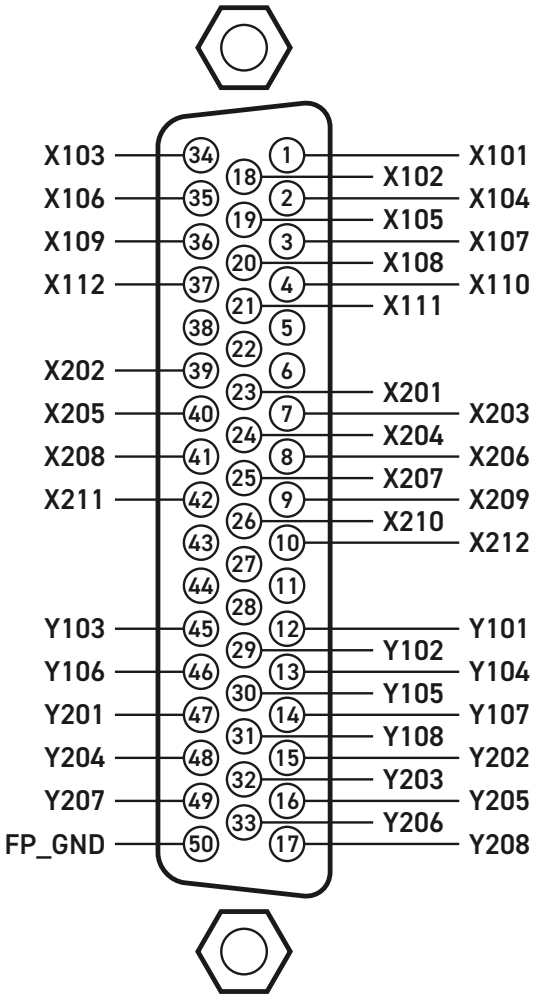
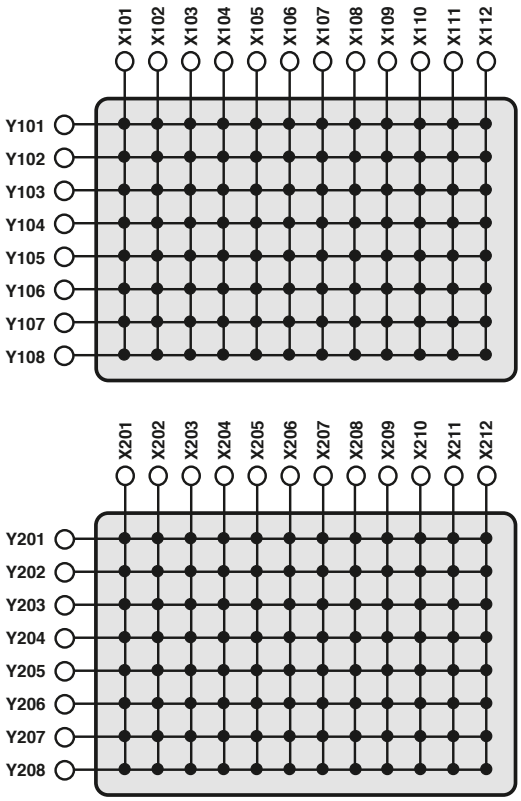


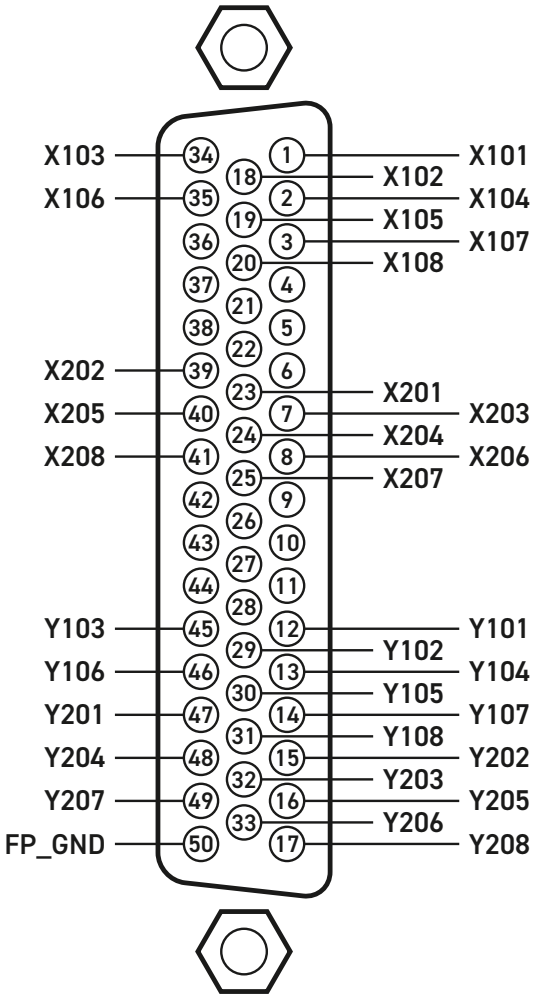
Figure 5.9 - 40/42-520A-205 Pinout
(50-pin Male D-Type Viewed From Front of Module)

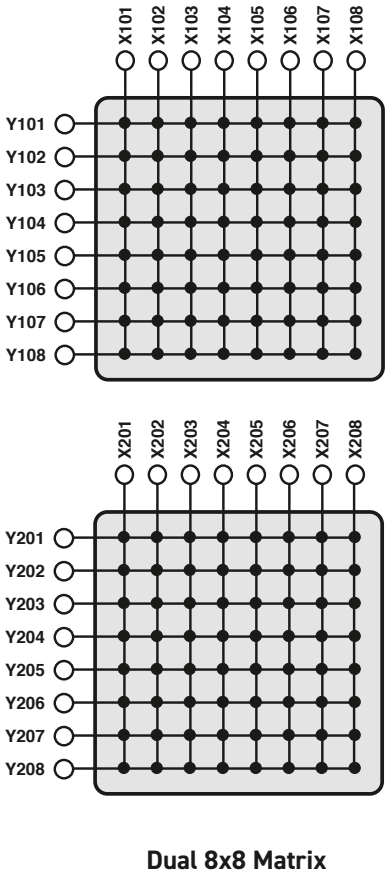




Dual 12x8 Matrix

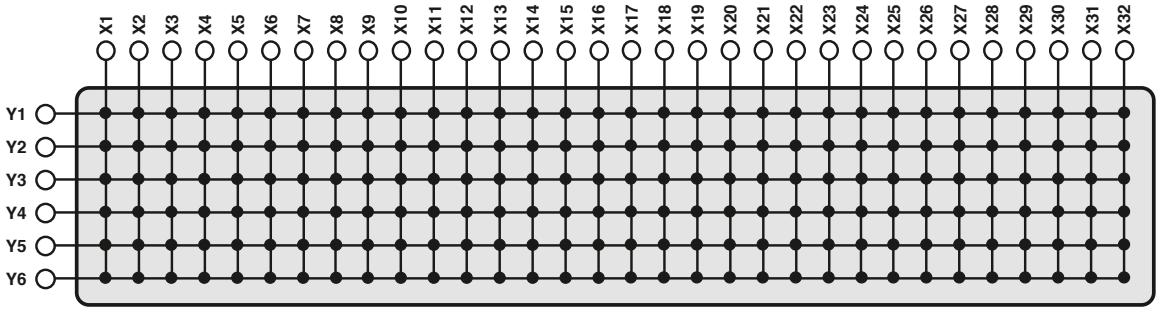
Figure 5.10 - 40/42-520A-206 Pinout
(50-pin Male D-Type Viewed From Front of Module)





Dual 8x8 Matrix

Figure 5.11 - 40/42-520A-207 Pinout
(50-pin Male D-Type Viewed From Front of Module)



Single 32x6 Matrix

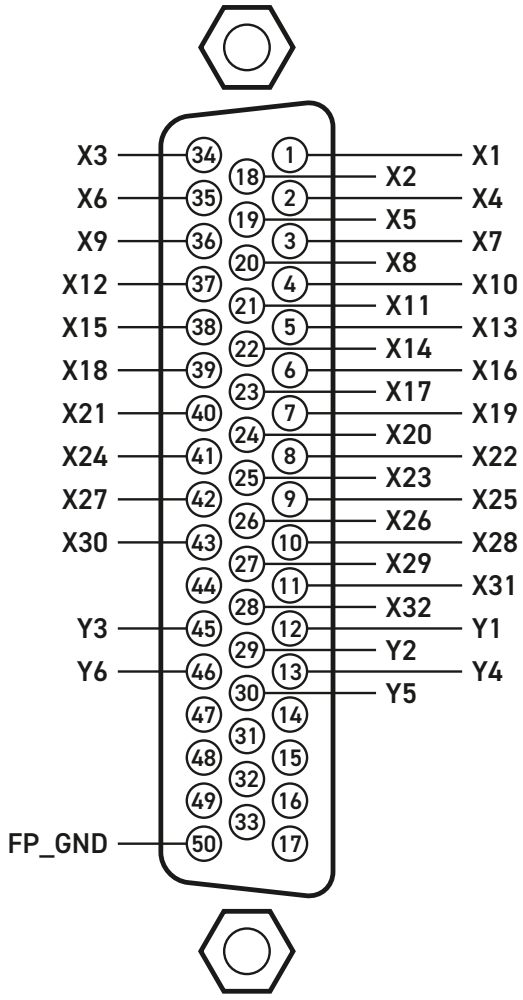
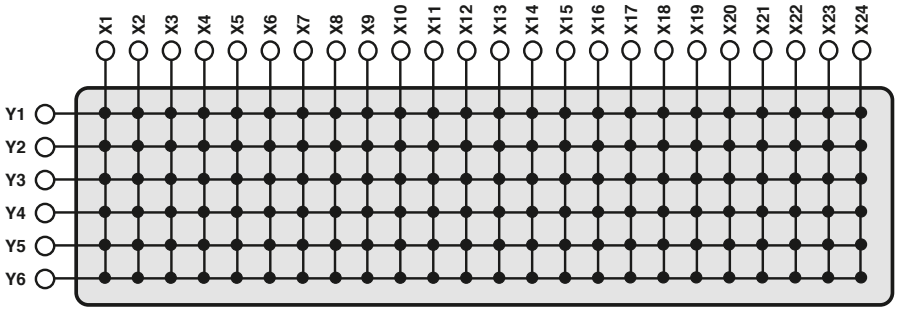


Figure 5.12 - 40/42-520A-301 Pinout
(50-pin Male D-Type Viewed From Front of Module)



Single 24x6 Matrix

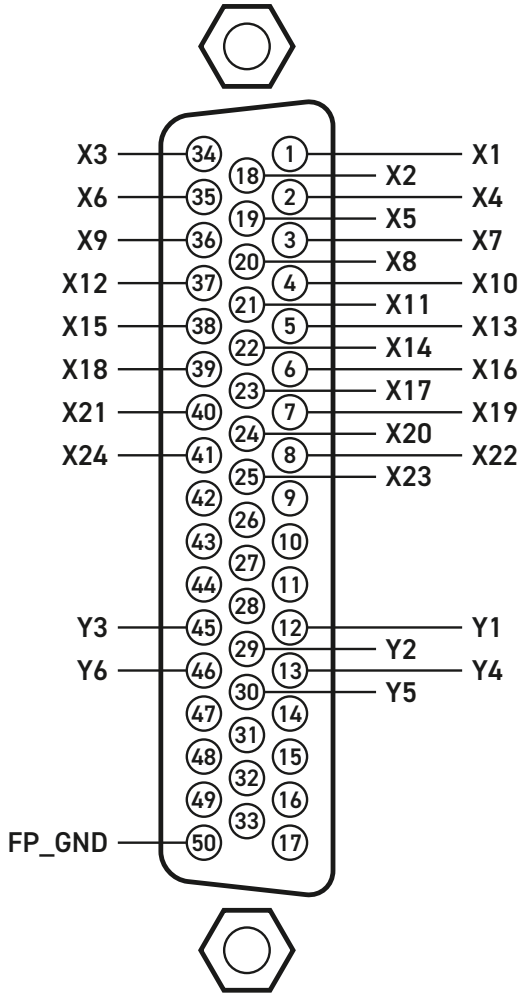
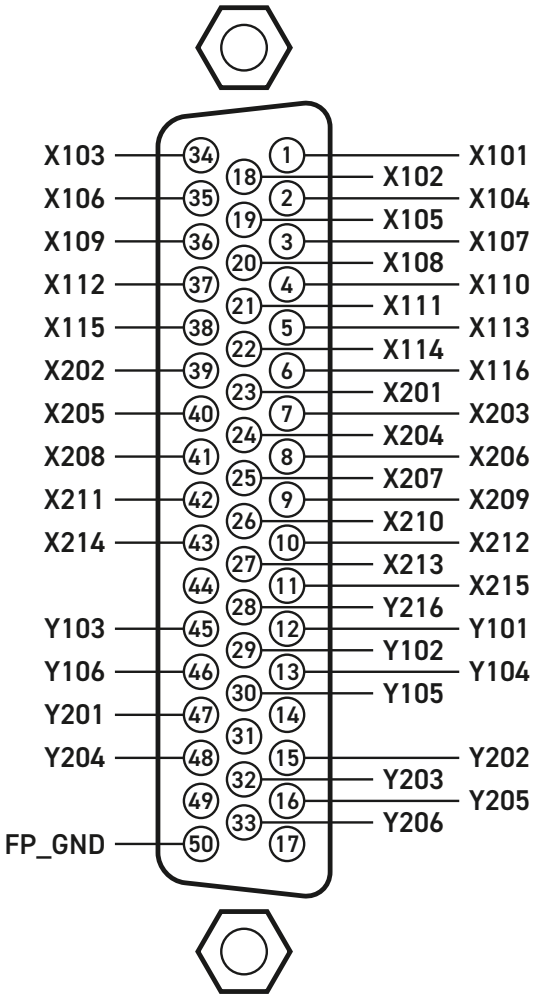
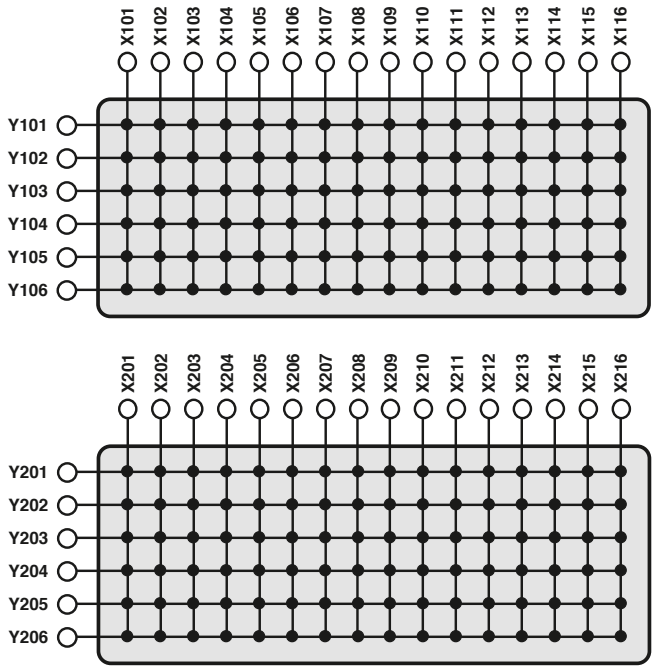


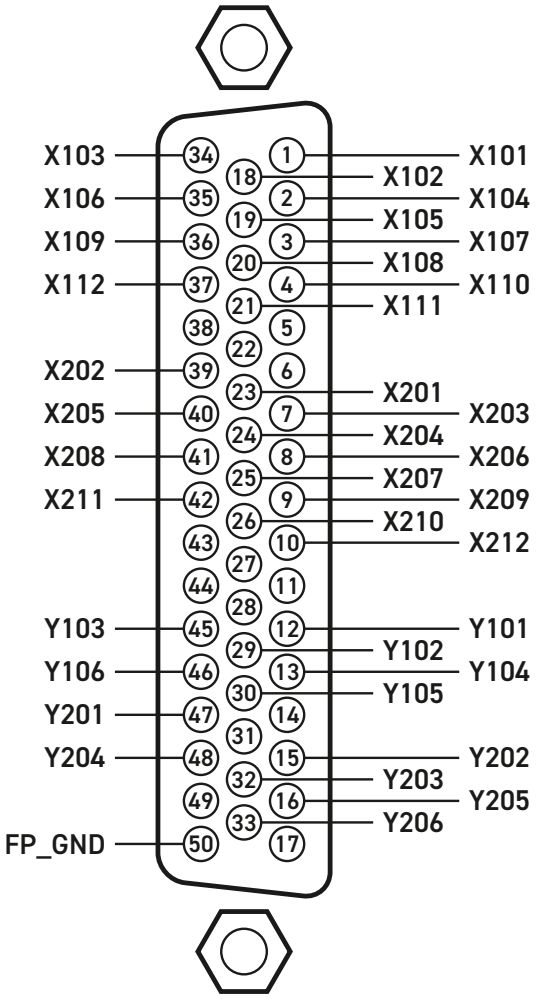
Figure 5.13 - 40/42-520A-302 Pinout
(50-pin Male D-Type Viewed From Front of Module)

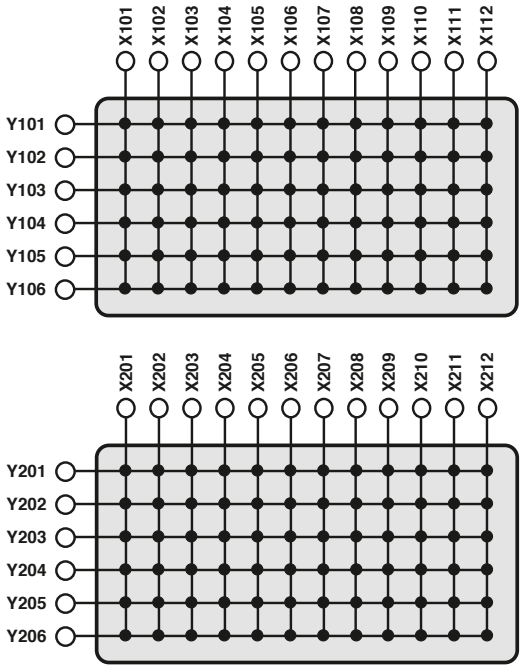




Dual 16x6 Matrix

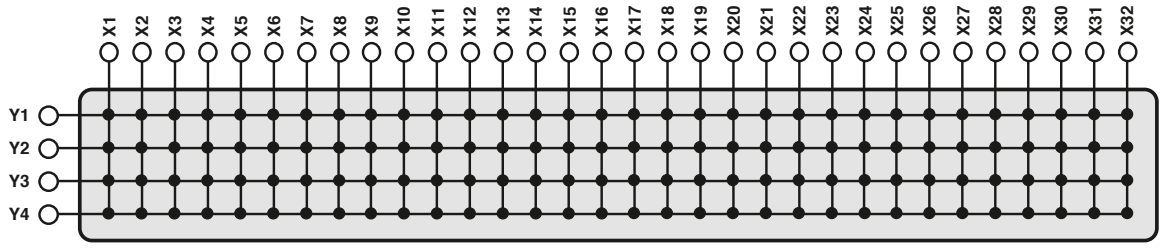
Figure 5.14 - 40/42-520A-303 Pinout
(50-pin Male D-Type Viewed From Front of Module)





Dual 12x6 Matrix

Figure 5.15 - 40/42-520A-304 Pinout
(50-pin Male D-Type Viewed From Front of Module)



Single 32x4 Matrix

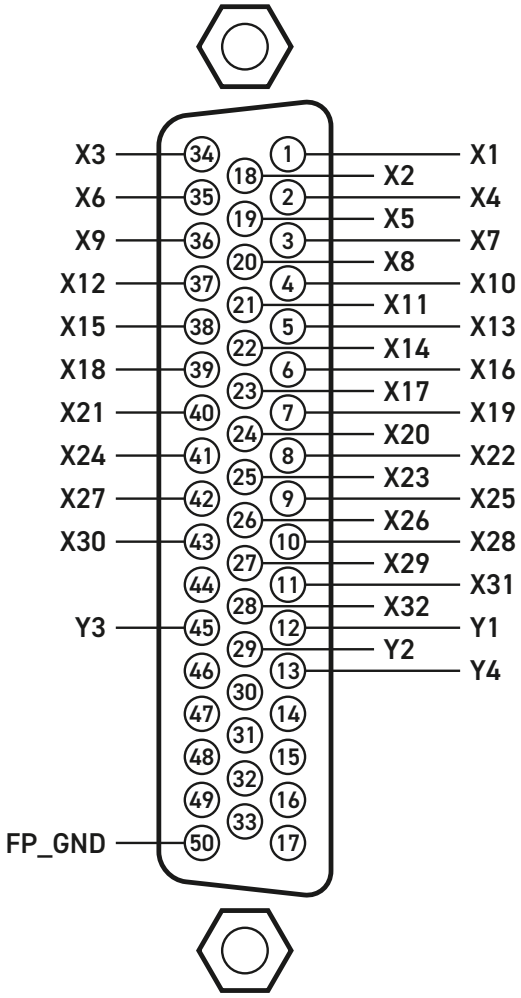
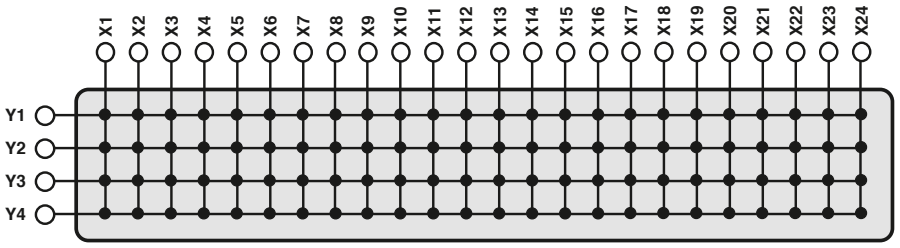


Figure 5.16 - 40/42-520A-401 Pinout
(50-pin Male D-Type Viewed From Front of Module)



Single 24x4 Matrix

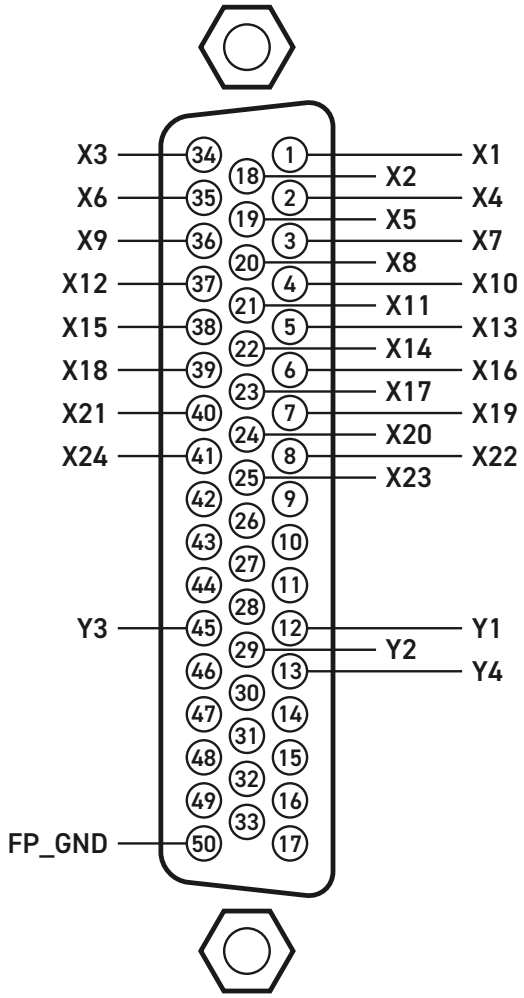
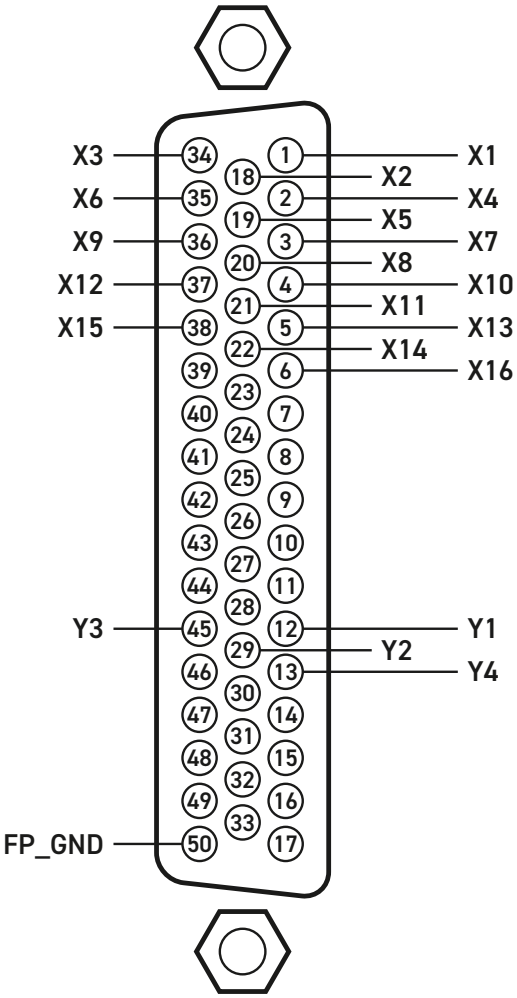
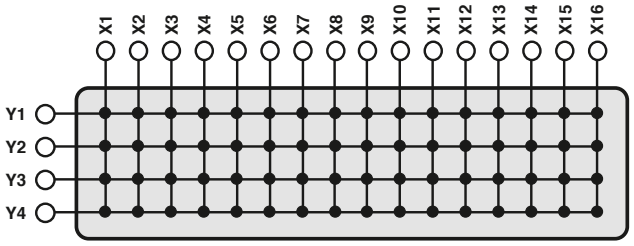


Figure 5.17 - 40/42-520A-402 Pinout
(50-pin Male D-Type Viewed From Front of Module)





Single 16x4 Matrix

Figure 5.18 - 40/42-520A-403 Pinout
(50-pin Male D-Type Viewed From Front of Module)

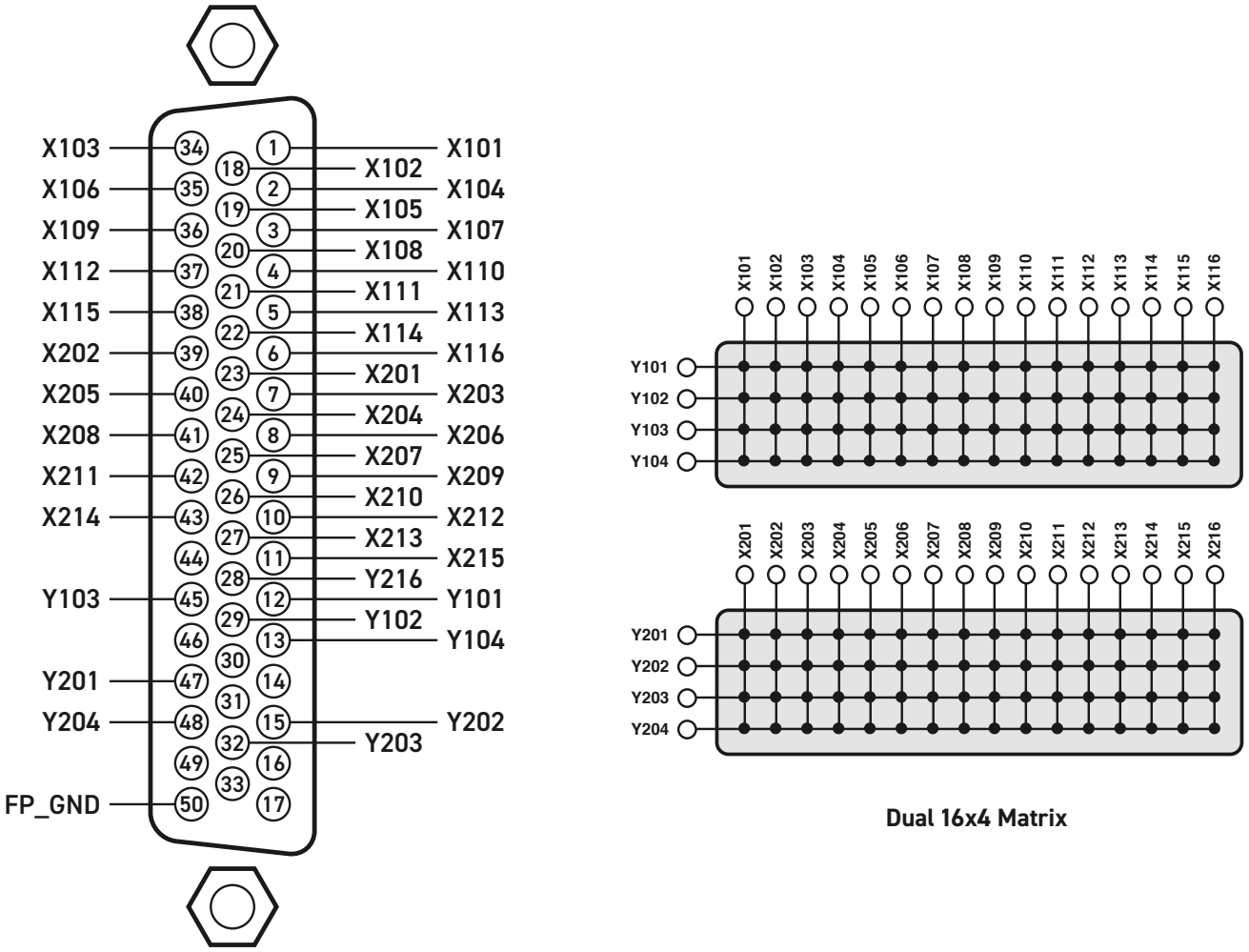
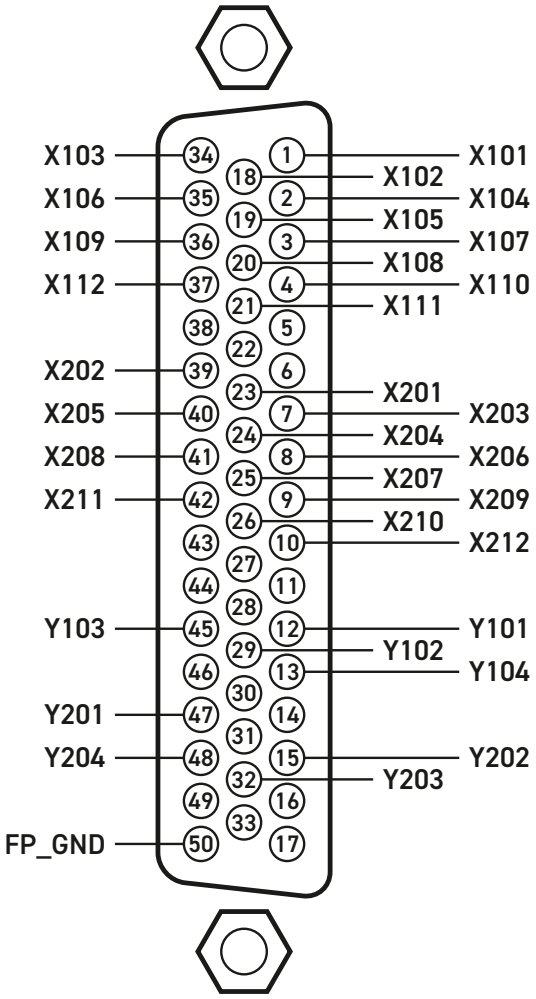
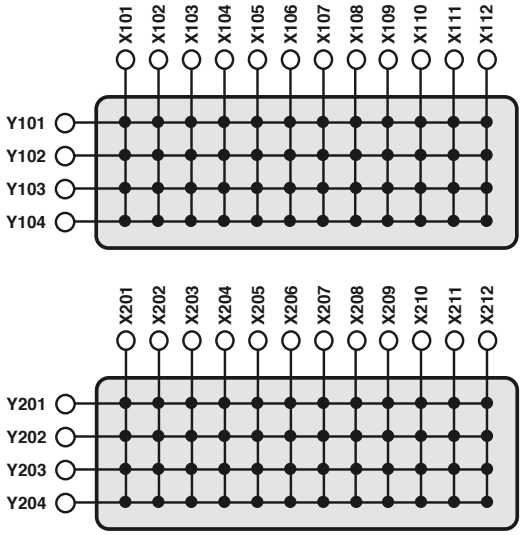


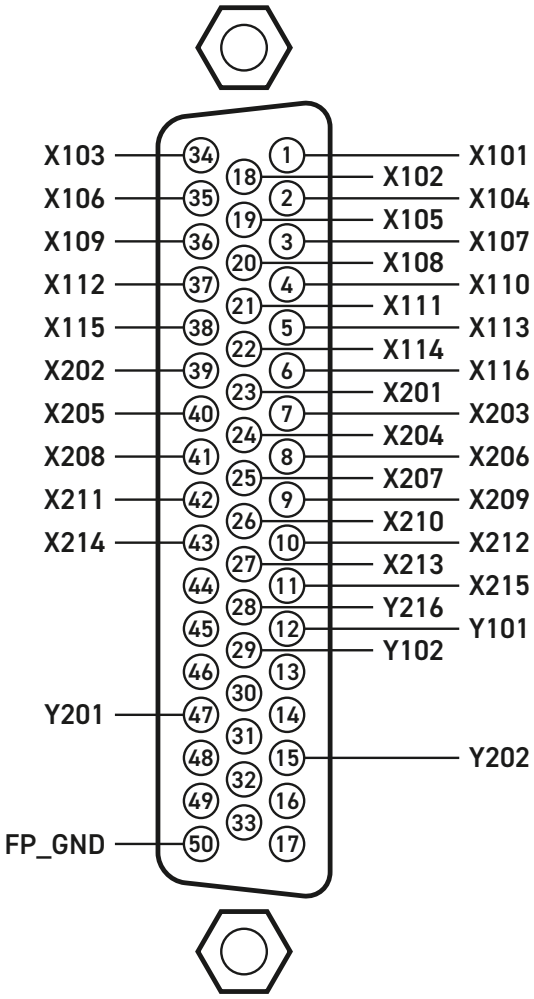
Figure 5.19 - 40/42-520A-404 Pinout
(50-pin Male D-Type Viewed From Front of Module)

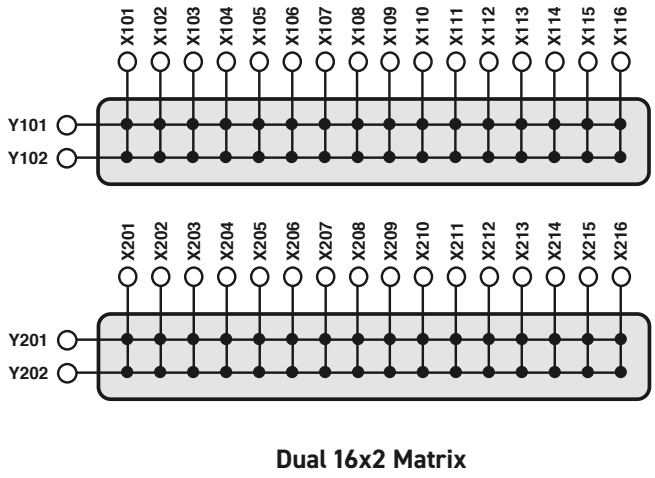




Dual 12x4 Matrix

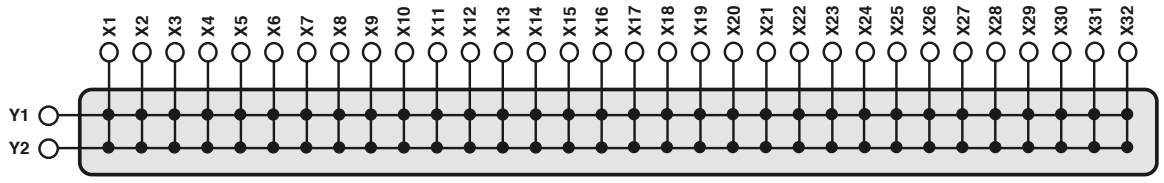
Figure 5.20 - 40/42-520A-405 Pinout
(50-pin Male D-Type Viewed From Front of Module)





Dual 16x2 Matrix

Figure 5.21 - 40/42-520A-501 Pinout
(50-pin Male D-Type Viewed From Front of Module)



Single 32x2 Matrix

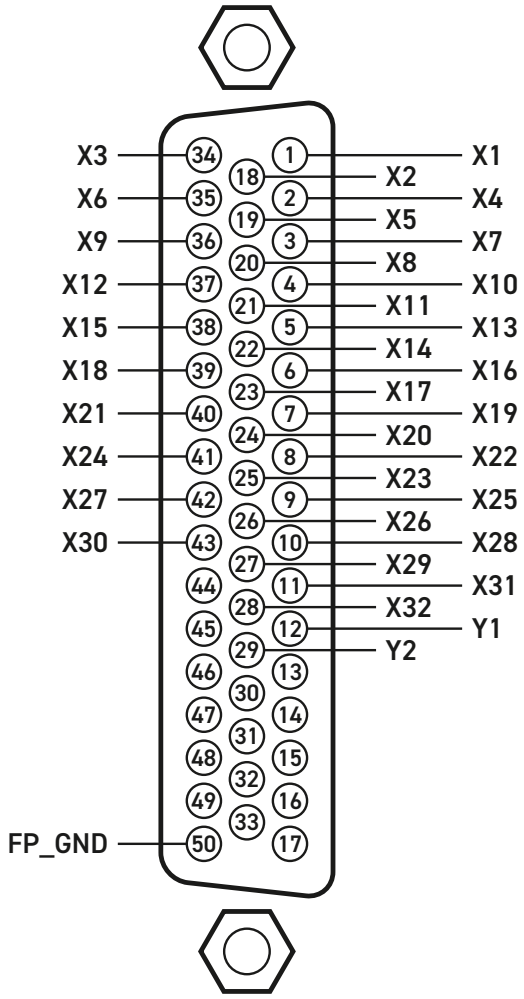


Figure 5.22 - 40/42-520A-502 Pinout
(50-pin Male D-Type Viewed From Front of Module)

Section 6 - Troubleshooting

Refer to the Warnings and Cautions at the front of this manual. 

Installation Problems

The Plug & Play functionality of Pickering switch cards generally ensures trouble-free installation.

If you do experience any installation problems you should first ensure that all cards are properly seated in their slots. Improperly mated cards may go undetected by the operating system, or may be detected as a card of an unknown type. They can also cause the computer to freeze at various stages in the boot sequence.

If your system employs a remote control interface you should check the integrity of all remote control interface links. When the system is powered up, and during Windows start-up, you should expect to see periodic activity on the remote control interface RX/TX (yellow) indicators, clearing to leave only the PWR/LNK (green) LEDs illuminated. The RX/TX indicators should show activity when you attempt to access a card.

Diagnostic Utility

The Pickering Diagnostic Utility (accessible through the Programs>>Pickering>>PXI Utilities menu) generates a diagnostic report of the system's PCI configuration, highlighting any potential configuration problems. Specific details of all installed Pickering switch cards are included. All the installed Pickering switch cards should be listed in the "Pilpxi information" section - if one or more cards is missing it may be possible to determine the reason by referring to the PCI configuration dump contained in the report, but interpretation of this information is far from straightforward, and the best course is to contact Pickering support: support@pickeringtest.com, if possible including a copy of the diagnostic report.

In the "VISA information" section, if VISA is not installed its absence will be reported. This does not affect operation using the Direct I/O driver, and is not a problem unless you wish to use VISA. VISA is a component of National Instruments LabWindows/CVI and LabVIEW, or is available as a standalone environment.

If VISA is present and is of a sufficiently recent version, the section "Pipx40 information" should present a listing similar to "Pilpxi information".

Please note that the Diagnostic Utility cannot access cards if they are currently opened by some other application, such as the Test Panels or Terminal Monitor.

Section 7 - Maintenance Information

Refer to the Warnings and Cautions at the front of this manual. 

Periodic Maintenance

This product and its corresponding chassis do not require any periodic maintenance.

General Cleaning

- Isolate the electrical power from the chassis and ensure that no user I/O signals are being applied.
- Wipe the product & chassis surfaces with a clean dry anti-static cloth only.

Software Update

For PXI modules operating in a PXI chassis, no module software updates are required. For the latest version of the driver please refer to our web site pickeringtest.com where links to our Software Download page will provide the latest version of the driver software for the various programming environments encountered.

For PXI modules which are supported in one of Pickering Interfaces' Modular LXI Chassis (such as the 60-102B and 60-103B) no module software update is required. If the module was introduced after the LXI chassis was manufactured the module may not be recognized, in this case the chassis firmware may need upgrading. This is a simple process which is described in the manual for the Modular LXI Chassis.

Switching System Test Tools

USING ***BIRST*** ™ (BUILT-IN RELAY SELF TEST)

The Pickering Interfaces ***BIRST*** (Built-In Relay Self Test) Tool provides a simple means of testing selected Pickering Interfaces switching products, including this model. The tool can be used to find relay faults or to provide confirmation that a product is operating correctly, either as part of the regular system calibration or because a system fault is suspected and the switch system needs to be eliminated from the fault finding procedure.

BIRST SOFTWARE

The application program for ***BIRST*** is supplied with the support disc included when the product is shipped. Alternatively the program can be downloaded from Pickering Interfaces web site: pickeringtest.info/downloads/BIRST/

Warning: The BIRST facility requires that the UUT is disconnected from the products front panel connector(s). Failure to disconnect could result in either misleading results or damage to the BIRST hardware within the product. Please refer to the documentation accompanying the application for detailed usage / operation details.

For further general information on ***BIRST*** visit: pickeringtest.com/birst

We recommend the use of ***eBIRST*** to provide a check of the correct operation of relays and to identify the location of any faulty relay. For more information visit: pickeringtest.com/ebirst

Relay Look-up Tables

The following pages provide a cross reference between the signal paths of the product and the physical relays on the PCB. The tables can be used in the fault finding process and should be used in conjunction with the corresponding PCB layout diagrams to identify the position of faulty relays. Users of ***eBIRST*** switching system test tools do not need to use this information to locate faulty relays.

TABLE 7.1 - 40/42-520A-001 Single 16x16 Matrix: Relay Numbering

X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.
1	1	RL1	5	1	RL33	9	1	RL65	13	1	RL97
1	2	RL2	5	2	RL34	9	2	RL66	13	2	RL98
1	3	RL3	5	3	RL35	9	3	RL67	13	3	RL99
1	4	RL4	5	4	RL36	9	4	RL68	13	4	RL100
1	5	RL5	5	5	RL37	9	5	RL69	13	5	RL101
1	6	RL6	5	6	RL38	9	6	RL70	13	6	RL102
1	7	RL7	5	7	RL39	9	7	RL71	13	7	RL103
1	8	RL8	5	8	RL40	9	8	RL72	13	8	RL104
1	9	RL129	5	9	RL161	9	9	RL193	13	9	RL225
1	10	RL130	5	10	RL162	9	10	RL194	13	10	RL226
1	11	RL131	5	11	RL163	9	11	RL195	13	11	RL227
1	12	RL132	5	12	RL164	9	12	RL196	13	12	RL228
1	13	RL133	5	13	RL165	9	13	RL197	13	13	RL229
1	14	RL134	5	14	RL166	9	14	RL198	13	14	RL230
1	15	RL135	5	15	RL167	9	15	RL199	13	15	RL231
1	16	RL136	5	16	RL168	9	16	RL200	13	16	RL232
2	1	RL9	6	1	RL41	10	1	RL73	14	1	RL105
2	2	RL10	6	2	RL42	10	2	RL74	14	2	RL106
2	3	RL11	6	3	RL43	10	3	RL75	14	3	RL107
2	4	RL12	6	4	RL44	10	4	RL76	14	4	RL108
2	5	RL13	6	5	RL45	10	5	RL77	14	5	RL109
2	6	RL14	6	6	RL46	10	6	RL78	14	6	RL110
2	7	RL15	6	7	RL47	10	7	RL79	14	7	RL111
2	8	RL16	6	8	RL48	10	8	RL80	14	8	RL112
2	9	RL137	6	9	RL169	10	9	RL201	14	9	RL233
2	10	RL138	6	10	RL170	10	10	RL202	14	10	RL234
2	11	RL139	6	11	RL171	10	11	RL203	14	11	RL235
2	12	RL140	6	12	RL172	10	12	RL204	14	12	RL236
2	13	RL141	6	13	RL173	10	13	RL205	14	13	RL237
2	14	RL142	6	14	RL174	10	14	RL206	14	14	RL238
2	15	RL143	6	15	RL175	10	15	RL207	14	15	RL239
2	16	RL144	6	16	RL176	10	16	RL208	14	16	RL240
3	1	RL17	7	1	RL49	11	1	RL81	15	1	RL113
3	2	RL18	7	2	RL50	11	2	RL82	15	2	RL114
3	3	RL19	7	3	RL51	11	3	RL83	15	3	RL115
3	4	RL20	7	4	RL52	11	4	RL84	15	4	RL116
3	5	RL21	7	5	RL53	11	5	RL85	15	5	RL117
3	6	RL22	7	6	RL54	11	6	RL86	15	6	RL118
3	7	RL23	7	7	RL55	11	7	RL87	15	7	RL119
3	8	RL24	7	8	RL56	11	8	RL88	15	8	RL120
3	9	RL145	7	9	RL177	11	9	RL209	15	9	RL241
3	10	RL146	7	10	RL178	11	10	RL210	15	10	RL242
3	11	RL147	7	11	RL179	11	11	RL211	15	11	RL243
3	12	RL148	7	12	RL180	11	12	RL212	15	12	RL244
3	13	RL149	7	13	RL181	11	13	RL213	15	13	RL245
3	14	RL150	7	14	RL182	11	14	RL214	15	14	RL246
3	15	RL151	7	15	RL183	11	15	RL215	15	15	RL247
3	16	RL152	7	16	RL184	11	16	RL216	15	16	RL248
4	1	RL25	8	1	RL57	12	1	RL89	16	1	RL121
4	2	RL26	8	2	RL58	12	2	RL90	16	2	RL122
4	3	RL27	8	3	RL59	12	3	RL91	16	3	RL123
4	4	RL28	8	4	RL60	12	4	RL92	16	4	RL124
4	5	RL29	8	5	RL61	12	5	RL93	16	5	RL125
4	6	RL30	8	6	RL62	12	6	RL94	16	6	RL126
4	7	RL31	8	7	RL63	12	7	RL95	16	7	RL127
4	8	RL32	8	8	RL64	12	8	RL96	16	8	RL128
4	9	RL153	8	9	RL185	12	9	RL217	16	9	RL249
4	10	RL154	8	10	RL186	12	10	RL218	16	10	RL250
4	11	RL155	8	11	RL187	12	11	RL219	16	11	RL251
4	12	RL156	8	12	RL188	12	12	RL220	16	12	RL252
4	13	RL157	8	13	RL189	12	13	RL221	16	13	RL253
4	14	RL158	8	14	RL190	12	14	RL222	16	14	RL254
4	15	RL159	8	15	RL191	12	15	RL223	16	15	RL255
4	16	RL160	8	16	RL192	12	16	RL224	16	16	RL256

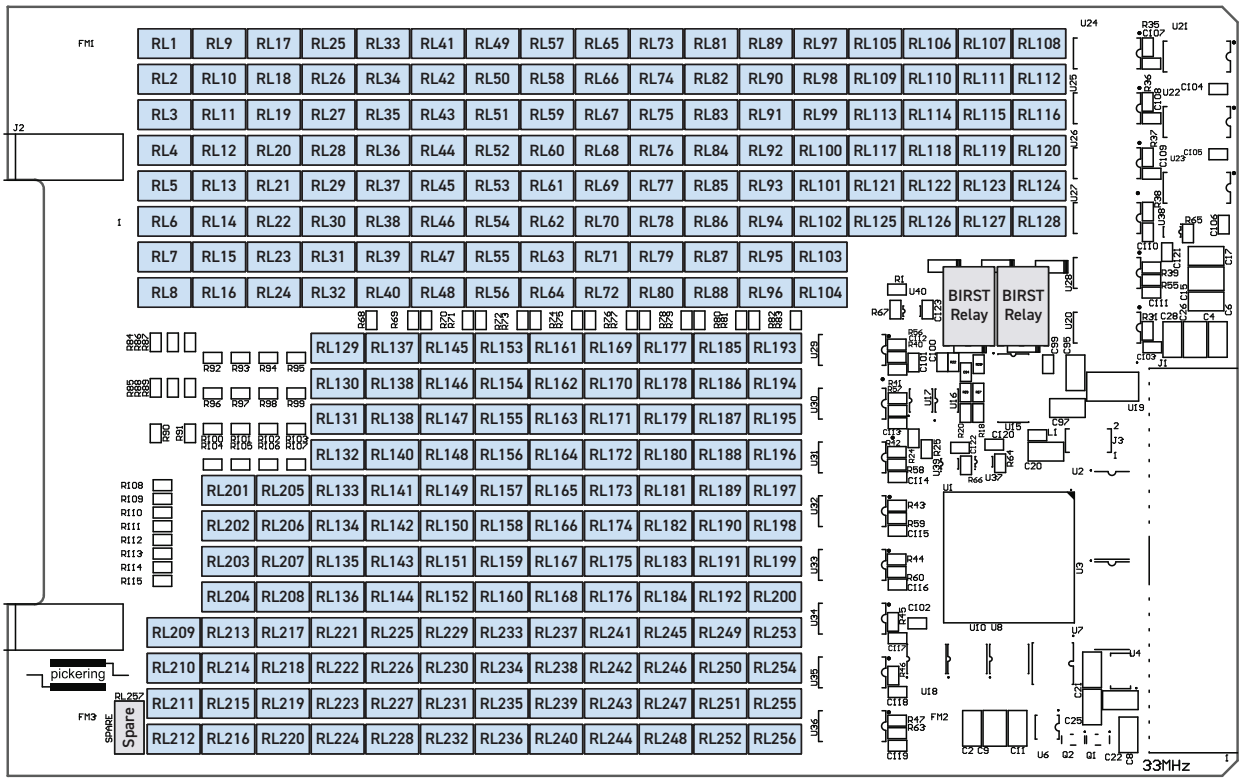


Figure 7.1 - 40-520A-001 Single 16x16 Matrix: Component Layout - PXI Version

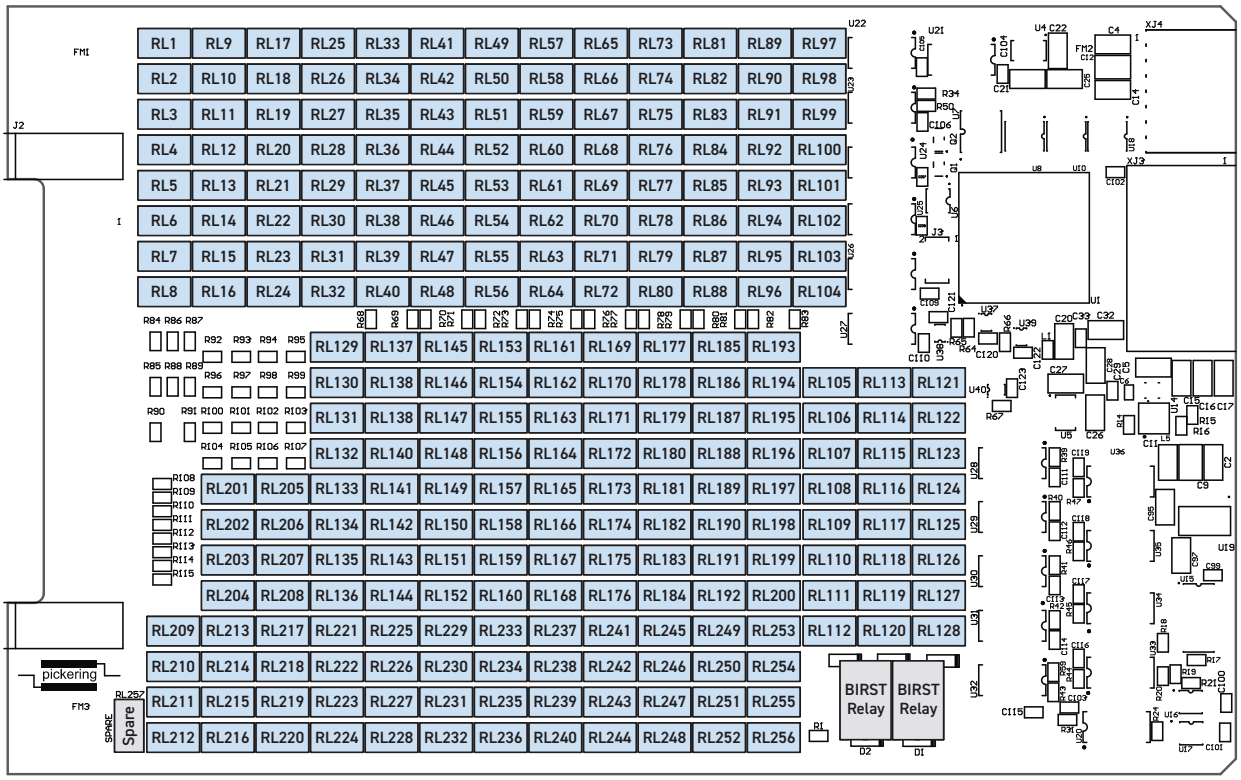


Figure 7.2 - 42-520A-001 Single 16x16 Matrix: Component Layout - PXIe Version

TABLE 7.2 - 40/42-520A-101 Single 16x12 Matrix: Relay Numbering

X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.
1	1	RL1	5	1	RL33	9	1	RL65	13	1	RL97
1	2	RL2	5	2	RL34	9	2	RL66	13	2	RL98
1	3	RL3	5	3	RL35	9	3	RL67	13	3	RL99
1	4	RL4	5	4	RL36	9	4	RL68	13	4	RL100
1	5	RL5	5	5	RL37	9	5	RL69	13	5	RL101
1	6	RL6	5	6	RL38	9	6	RL70	13	6	RL102
1	7	RL7	5	7	RL39	9	7	RL71	13	7	RL103
1	8	RL8	5	8	RL40	9	8	RL72	13	8	RL104
1	9	RL129	5	9	RL161	9	9	RL193	13	9	RL225
1	10	RL130	5	10	RL162	9	10	RL194	13	10	RL226
1	11	RL131	5	11	RL163	9	11	RL195	13	11	RL227
1	12	RL132	5	12	RL164	9	12	RL196	13	12	RL228
Not Fitted		RL133	Not Fitted		RL165	Not Fitted		RL197	Not Fitted		RL229
Not Fitted		RL134	Not Fitted		RL166	Not Fitted		RL198	Not Fitted		RL230
Not Fitted		RL135	Not Fitted		RL167	Not Fitted		RL199	Not Fitted		RL231
Not Fitted		RL136	Not Fitted		RL168	Not Fitted		RL200	Not Fitted		RL232
2	1	RL9	6	1	RL41	10	1	RL73	14	1	RL105
2	2	RL10	6	2	RL42	10	2	RL74	14	2	RL106
2	3	RL11	6	3	RL43	10	3	RL75	14	3	RL107
2	4	RL12	6	4	RL44	10	4	RL76	14	4	RL108
2	5	RL13	6	5	RL45	10	5	RL77	14	5	RL109
2	6	RL14	6	6	RL46	10	6	RL78	14	6	RL110
2	7	RL15	6	7	RL47	10	7	RL79	14	7	RL111
2	8	RL16	6	8	RL48	10	8	RL80	14	8	RL112
2	9	RL137	6	9	RL169	10	9	RL201	14	9	RL233
2	10	RL138	6	10	RL170	10	10	RL202	14	10	RL234
2	11	RL139	6	11	RL171	10	11	RL203	14	11	RL235
2	12	RL140	6	12	RL172	10	12	RL204	14	12	RL236
Not Fitted		RL141	Not Fitted		RL173	Not Fitted		RL205	Not Fitted		RL237
Not Fitted		RL142	Not Fitted		RL174	Not Fitted		RL206	Not Fitted		RL238
Not Fitted		RL143	Not Fitted		RL175	Not Fitted		RL207	Not Fitted		RL239
Not Fitted		RL144	Not Fitted		RL176	Not Fitted		RL208	Not Fitted		RL240
3	1	RL17	7	1	RL49	11	1	RL81	15	1	RL113
3	2	RL18	7	2	RL50	11	2	RL82	15	2	RL114
3	3	RL19	7	3	RL51	11	3	RL83	15	3	RL115
3	4	RL20	7	4	RL52	11	4	RL84	15	4	RL116
3	5	RL21	7	5	RL53	11	5	RL85	15	5	RL117
3	6	RL22	7	6	RL54	11	6	RL86	15	6	RL118
3	7	RL23	7	7	RL55	11	7	RL87	15	7	RL119
3	8	RL24	7	8	RL56	11	8	RL88	15	8	RL120
3	9	RL145	7	9	RL177	11	9	RL209	15	9	RL241
3	10	RL146	7	10	RL178	11	10	RL210	15	10	RL242
3	11	RL147	7	11	RL179	11	11	RL211	15	11	RL243
3	12	RL148	7	12	RL180	11	12	RL212	15	12	RL244
Not Fitted		RL149	Not Fitted		RL181	Not Fitted		RL213	Not Fitted		RL245
Not Fitted		RL150	Not Fitted		RL182	Not Fitted		RL214	Not Fitted		RL246
Not Fitted		RL151	Not Fitted		RL183	Not Fitted		RL215	Not Fitted		RL247
Not Fitted		RL152	Not Fitted		RL184	Not Fitted		RL216	Not Fitted		RL248
4	1	RL25	8	1	RL57	12	1	RL89	16	1	RL121
4	2	RL26	8	2	RL58	12	2	RL90	16	2	RL122
4	3	RL27	8	3	RL59	12	3	RL91	16	3	RL123
4	4	RL28	8	4	RL60	12	4	RL92	16	4	RL124
4	5	RL29	8	5	RL61	12	5	RL93	16	5	RL125
4	6	RL30	8	6	RL62	12	6	RL94	16	6	RL126
4	7	RL31	8	7	RL63	12	7	RL95	16	7	RL127
4	8	RL32	8	8	RL64	12	8	RL96	16	8	RL128
4	9	RL153	8	9	RL185	12	9	RL217	16	9	RL249
4	10	RL154	8	10	RL186	12	10	RL218	16	10	RL250
4	11	RL155	8	11	RL187	12	11	RL219	16	11	RL251
4	12	RL156	8	12	RL188	12	12	RL220	16	12	RL252
Not Fitted		RL157	Not Fitted		RL189	Not Fitted		RL221	Not Fitted		RL253
Not Fitted		RL158	Not Fitted		RL190	Not Fitted		RL222	Not Fitted		RL254
Not Fitted		RL159	Not Fitted		RL191	Not Fitted		RL223	Not Fitted		RL255
Not Fitted		RL160	Not Fitted		RL192	Not Fitted		RL224	Not Fitted		RL256

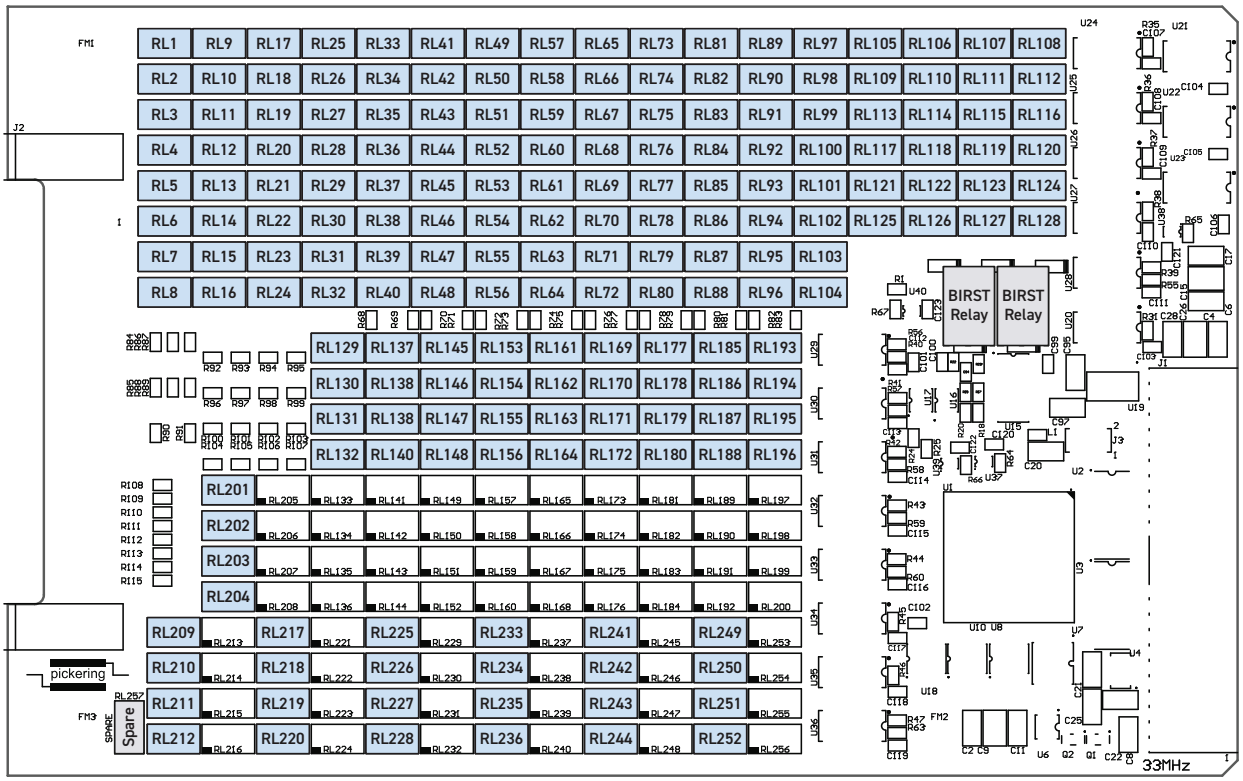


Figure 7.3 - 40-520A-101 Single 16x12 Matrix: Component Layout - PXI Version

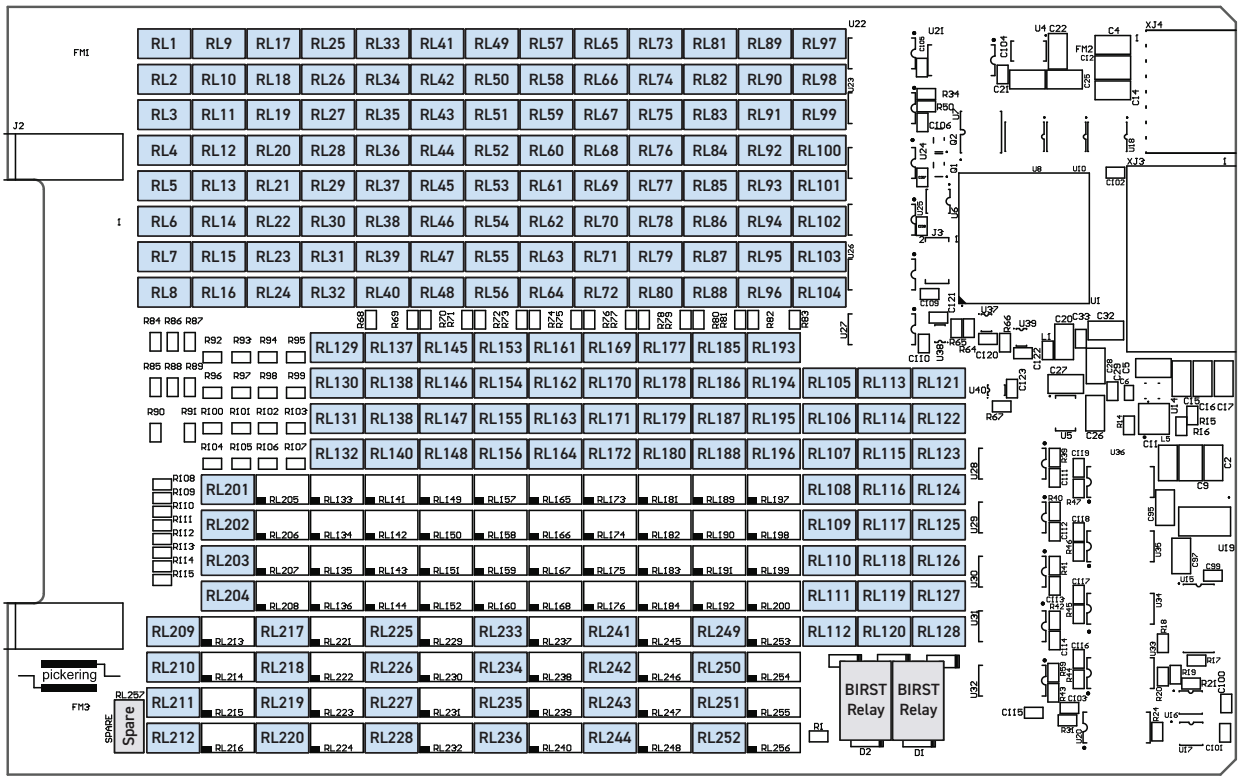


Figure 7.4 - 42-520A-101 Single 16x12 Matrix: Component Layout - PXIe Version

TABLE 7.3 - 40/42-520A-102 Single 12x12 Matrix: Relay Numbering

X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.
1	1	RL1	5	1	RL33	9	1	RL65	Not Fitted		RL97
1	2	RL2	5	2	RL34	9	2	RL66	Not Fitted		RL98
1	3	RL3	5	3	RL35	9	3	RL67	Not Fitted		RL99
1	4	RL4	5	4	RL36	9	4	RL68	Not Fitted		RL100
1	5	RL5	5	5	RL37	9	5	RL69	Not Fitted		RL101
1	6	RL6	5	6	RL38	9	6	RL70	Not Fitted		RL102
1	7	RL7	5	7	RL39	9	7	RL71	Not Fitted		RL103
1	8	RL8	5	8	RL40	9	8	RL72	Not Fitted		RL104
1	9	RL129	5	9	RL161	9	9	RL193	Not Fitted		RL225
1	10	RL130	5	10	RL162	9	10	RL194	Not Fitted		RL226
1	11	RL131	5	11	RL163	9	11	RL195	Not Fitted		RL227
1	12	RL132	5	12	RL164	9	12	RL196	Not Fitted		RL228
Not Fitted		RL133	Not Fitted		RL165	Not Fitted		RL197	Not Fitted		RL229
Not Fitted		RL134	Not Fitted		RL166	Not Fitted		RL198	Not Fitted		RL230
Not Fitted		RL135	Not Fitted		RL167	Not Fitted		RL199	Not Fitted		RL231
Not Fitted		RL136	Not Fitted		RL168	Not Fitted		RL200	Not Fitted		RL232
2	1	RL9	6	1	RL41	10	1	RL73	Not Fitted		RL105
2	2	RL10	6	2	RL42	10	2	RL74	Not Fitted		RL106
2	3	RL11	6	3	RL43	10	3	RL75	Not Fitted		RL107
2	4	RL12	6	4	RL44	10	4	RL76	Not Fitted		RL108
2	5	RL13	6	5	RL45	10	5	RL77	Not Fitted		RL109
2	6	RL14	6	6	RL46	10	6	RL78	Not Fitted		RL110
2	7	RL15	6	7	RL47	10	7	RL79	Not Fitted		RL111
2	8	RL16	6	8	RL48	10	8	RL80	Not Fitted		RL112
2	9	RL137	6	9	RL169	10	9	RL201	Not Fitted		RL233
2	10	RL138	6	10	RL170	10	10	RL202	Not Fitted		RL234
2	11	RL139	6	11	RL171	10	11	RL203	Not Fitted		RL235
2	12	RL140	6	12	RL172	10	12	RL204	Not Fitted		RL236
Not Fitted		RL141	Not Fitted		RL173	Not Fitted		RL205	Not Fitted		RL237
Not Fitted		RL142	Not Fitted		RL174	Not Fitted		RL206	Not Fitted		RL238
Not Fitted		RL143	Not Fitted		RL175	Not Fitted		RL207	Not Fitted		RL239
Not Fitted		RL144	Not Fitted		RL176	Not Fitted		RL208	Not Fitted		RL240
3	1	RL17	7	1	RL49	11	1	RL81	Not Fitted		RL113
3	2	RL18	7	2	RL50	11	2	RL82	Not Fitted		RL114
3	3	RL19	7	3	RL51	11	3	RL83	Not Fitted		RL115
3	4	RL20	7	4	RL52	11	4	RL84	Not Fitted		RL116
3	5	RL21	7	5	RL53	11	5	RL85	Not Fitted		RL117
3	6	RL22	7	6	RL54	11	6	RL86	Not Fitted		RL118
3	7	RL23	7	7	RL55	11	7	RL87	Not Fitted		RL119
3	8	RL24	7	8	RL56	11	8	RL88	Not Fitted		RL120
3	9	RL145	7	9	RL177	11	9	RL209	Not Fitted		RL241
3	10	RL146	7	10	RL178	11	10	RL210	Not Fitted		RL242
3	11	RL147	7	11	RL179	11	11	RL211	Not Fitted		RL243
3	12	RL148	7	12	RL180	11	12	RL212	Not Fitted		RL244
Not Fitted		RL149	Not Fitted		RL181	Not Fitted		RL213	Not Fitted		RL245
Not Fitted		RL150	Not Fitted		RL182	Not Fitted		RL214	Not Fitted		RL246
Not Fitted		RL151	Not Fitted		RL183	Not Fitted		RL215	Not Fitted		RL247
Not Fitted		RL152	Not Fitted		RL184	Not Fitted		RL216	Not Fitted		RL248
4	1	RL25	8	1	RL57	12	1	RL89	Not Fitted		RL121
4	2	RL26	8	2	RL58	12	2	RL90	Not Fitted		RL122
4	3	RL27	8	3	RL59	12	3	RL91	Not Fitted		RL123
4	4	RL28	8	4	RL60	12	4	RL92	Not Fitted		RL124
4	5	RL29	8	5	RL61	12	5	RL93	Not Fitted		RL125
4	6	RL30	8	6	RL62	12	6	RL94	Not Fitted		RL126
4	7	RL31	8	7	RL63	12	7	RL95	Not Fitted		RL127
4	8	RL32	8	8	RL64	12	8	RL96	Not Fitted		RL128
4	9	RL153	8	9	RL185	12	9	RL217	Not Fitted		RL249
4	10	RL154	8	10	RL186	12	10	RL218	Not Fitted		RL250
4	11	RL155	8	11	RL187	12	11	RL219	Not Fitted		RL251
4	12	RL156	8	12	RL188	12	12	RL220	Not Fitted		RL252
Not Fitted		RL157	Not Fitted		RL189	Not Fitted		RL221	Not Fitted		RL253
Not Fitted		RL158	Not Fitted		RL190	Not Fitted		RL222	Not Fitted		RL254
Not Fitted		RL159	Not Fitted		RL191	Not Fitted		RL223	Not Fitted		RL255
Not Fitted		RL160	Not Fitted		RL192	Not Fitted		RL224	Not Fitted		RL256

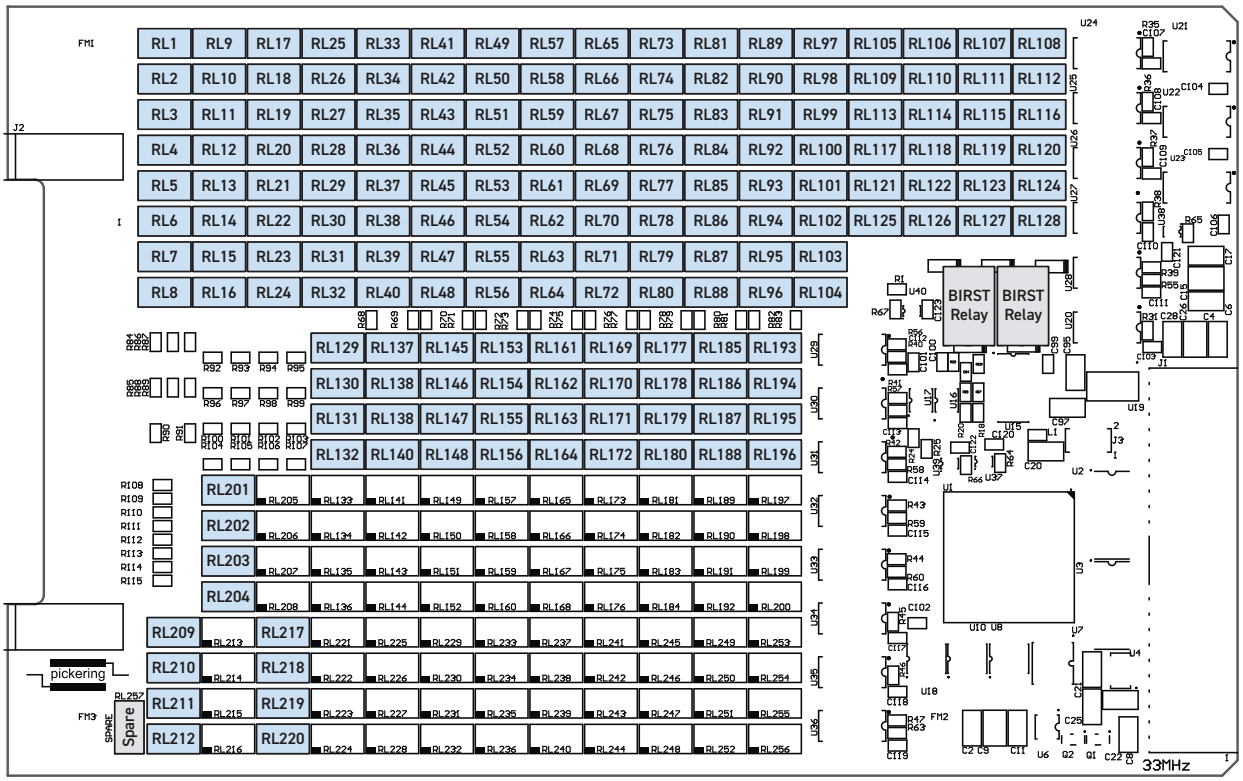


Figure 7.5 - 40-520A-102 Single 12x12 Matrix: Component Layout - PXI Version

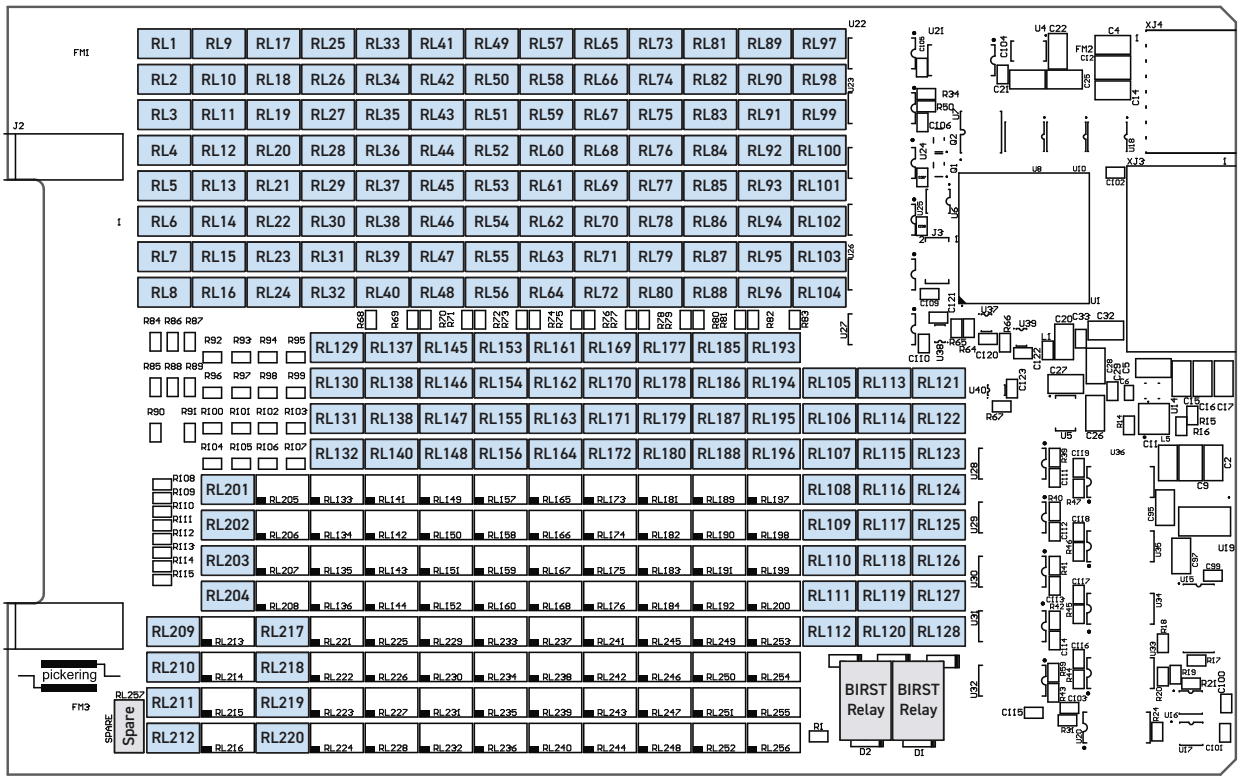


Figure 7.6 - 42-520A-102 Single 12x12 Matrix: Component Layout - PXIe Version

TABLE 7.4 - 40/42-520A-103 Single 8x12 Matrix Relay Numbering

X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.
1	1	RL1	5	1	RL33	Not Fitted		RL65	Not Fitted		RL97
1	2	RL2	5	2	RL34	Not Fitted		RL66	Not Fitted		RL98
1	3	RL3	5	3	RL35	Not Fitted		RL67	Not Fitted		RL99
1	4	RL4	5	4	RL36	Not Fitted		RL68	Not Fitted		RL100
1	5	RL5	5	5	RL37	Not Fitted		RL69	Not Fitted		RL101
1	6	RL6	5	6	RL38	Not Fitted		RL70	Not Fitted		RL102
1	7	RL7	5	7	RL39	Not Fitted		RL71	Not Fitted		RL103
1	8	RL8	5	8	RL40	Not Fitted		RL72	Not Fitted		RL104
1	9	RL129	5	9	RL161	Not Fitted		RL193	Not Fitted		RL225
1	10	RL130	5	10	RL162	Not Fitted		RL194	Not Fitted		RL226
1	11	RL131	5	11	RL163	Not Fitted		RL195	Not Fitted		RL227
1	12	RL132	5	12	RL164	Not Fitted		RL196	Not Fitted		RL228
Not Fitted		RL133	Not Fitted		RL165	Not Fitted		RL197	Not Fitted		RL229
Not Fitted		RL134	Not Fitted		RL166	Not Fitted		RL198	Not Fitted		RL230
Not Fitted		RL135	Not Fitted		RL167	Not Fitted		RL199	Not Fitted		RL231
Not Fitted		RL136	Not Fitted		RL168	Not Fitted		RL200	Not Fitted		RL232
2	1	RL9	6	1	RL41	Not Fitted		RL73	Not Fitted		RL105
2	2	RL10	6	2	RL42	Not Fitted		RL74	Not Fitted		RL106
2	3	RL11	6	3	RL43	Not Fitted		RL75	Not Fitted		RL107
2	4	RL12	6	4	RL44	Not Fitted		RL76	Not Fitted		RL108
2	5	RL13	6	5	RL45	Not Fitted		RL77	Not Fitted		RL109
2	6	RL14	6	6	RL46	Not Fitted		RL78	Not Fitted		RL110
2	7	RL15	6	7	RL47	Not Fitted		RL79	Not Fitted		RL111
2	8	RL16	6	8	RL48	Not Fitted		RL80	Not Fitted		RL112
2	9	RL137	6	9	RL169	Not Fitted		RL201	Not Fitted		RL233
2	10	RL138	6	10	RL170	Not Fitted		RL202	Not Fitted		RL234
2	11	RL139	6	11	RL171	Not Fitted		RL203	Not Fitted		RL235
2	12	RL140	6	12	RL172	Not Fitted		RL204	Not Fitted		RL236
Not Fitted		RL141	Not Fitted		RL173	Not Fitted		RL205	Not Fitted		RL237
Not Fitted		RL142	Not Fitted		RL174	Not Fitted		RL206	Not Fitted		RL238
Not Fitted		RL143	Not Fitted		RL175	Not Fitted		RL207	Not Fitted		RL239
Not Fitted		RL144	Not Fitted		RL176	Not Fitted		RL208	Not Fitted		RL240
3	1	RL17	7	1	RL49	Not Fitted		RL81	Not Fitted		RL113
3	2	RL18	7	2	RL50	Not Fitted		RL82	Not Fitted		RL114
3	3	RL19	7	3	RL51	Not Fitted		RL83	Not Fitted		RL115
3	4	RL20	7	4	RL52	Not Fitted		RL84	Not Fitted		RL116
3	5	RL21	7	5	RL53	Not Fitted		RL85	Not Fitted		RL117
3	6	RL22	7	6	RL54	Not Fitted		RL86	Not Fitted		RL118
3	7	RL23	7	7	RL55	Not Fitted		RL87	Not Fitted		RL119
3	8	RL24	7	8	RL56	Not Fitted		RL88	Not Fitted		RL120
3	9	RL145	7	9	RL177	Not Fitted		RL209	Not Fitted		RL241
3	10	RL146	7	10	RL178	Not Fitted		RL210	Not Fitted		RL242
3	11	RL147	7	11	RL179	Not Fitted		RL211	Not Fitted		RL243
3	12	RL148	7	12	RL180	Not Fitted		RL212	Not Fitted		RL244
Not Fitted		RL149	Not Fitted		RL181	Not Fitted		RL213	Not Fitted		RL245
Not Fitted		RL150	Not Fitted		RL182	Not Fitted		RL214	Not Fitted		RL246
Not Fitted		RL151	Not Fitted		RL183	Not Fitted		RL215	Not Fitted		RL247
Not Fitted		RL152	Not Fitted		RL184	Not Fitted		RL216	Not Fitted		RL248
4	1	RL25	8	1	RL57	Not Fitted		RL89	Not Fitted		RL121
4	2	RL26	8	2	RL58	Not Fitted		RL90	Not Fitted		RL122
4	3	RL27	8	3	RL59	Not Fitted		RL91	Not Fitted		RL123
4	4	RL28	8	4	RL60	Not Fitted		RL92	Not Fitted		RL124
4	5	RL29	8	5	RL61	Not Fitted		RL93	Not Fitted		RL125
4	6	RL30	8	6	RL62	Not Fitted		RL94	Not Fitted		RL126
4	7	RL31	8	7	RL63	Not Fitted		RL95	Not Fitted		RL127
4	8	RL32	8	8	RL64	Not Fitted		RL96	Not Fitted		RL128
4	9	RL153	8	9	RL185	Not Fitted		RL217	Not Fitted		RL249
4	10	RL154	8	10	RL186	Not Fitted		RL218	Not Fitted		RL250
4	11	RL155	8	11	RL187	Not Fitted		RL219	Not Fitted		RL251
4	12	RL156	8	12	RL188	Not Fitted		RL220	Not Fitted		RL252
Not Fitted		RL157	Not Fitted		RL189	Not Fitted		RL221	Not Fitted		RL253
Not Fitted		RL158	Not Fitted		RL190	Not Fitted		RL222	Not Fitted		RL254
Not Fitted		RL159	Not Fitted		RL191	Not Fitted		RL223	Not Fitted		RL255
Not Fitted		RL160	Not Fitted		RL192	Not Fitted		RL224	Not Fitted		RL256

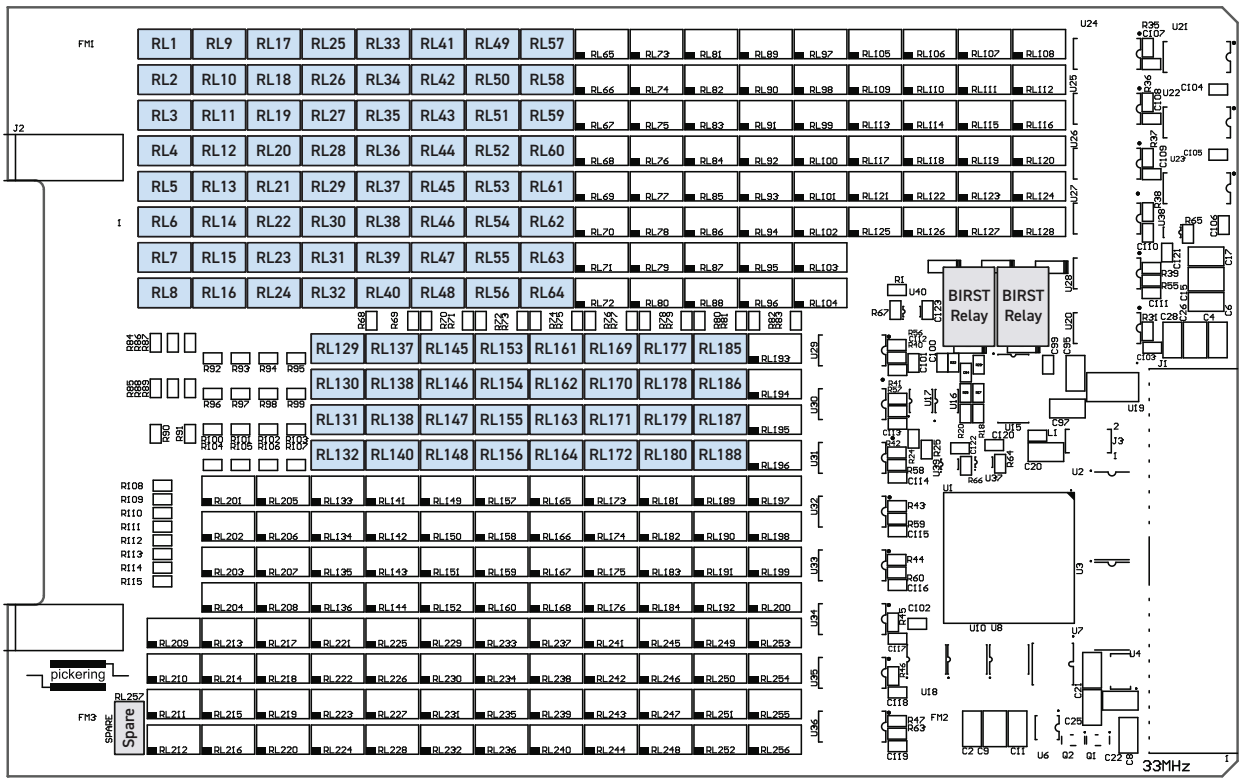


Figure 7.7 - 40-520A-103 Single 8x12 Matrix: Component Layout - PXI Version

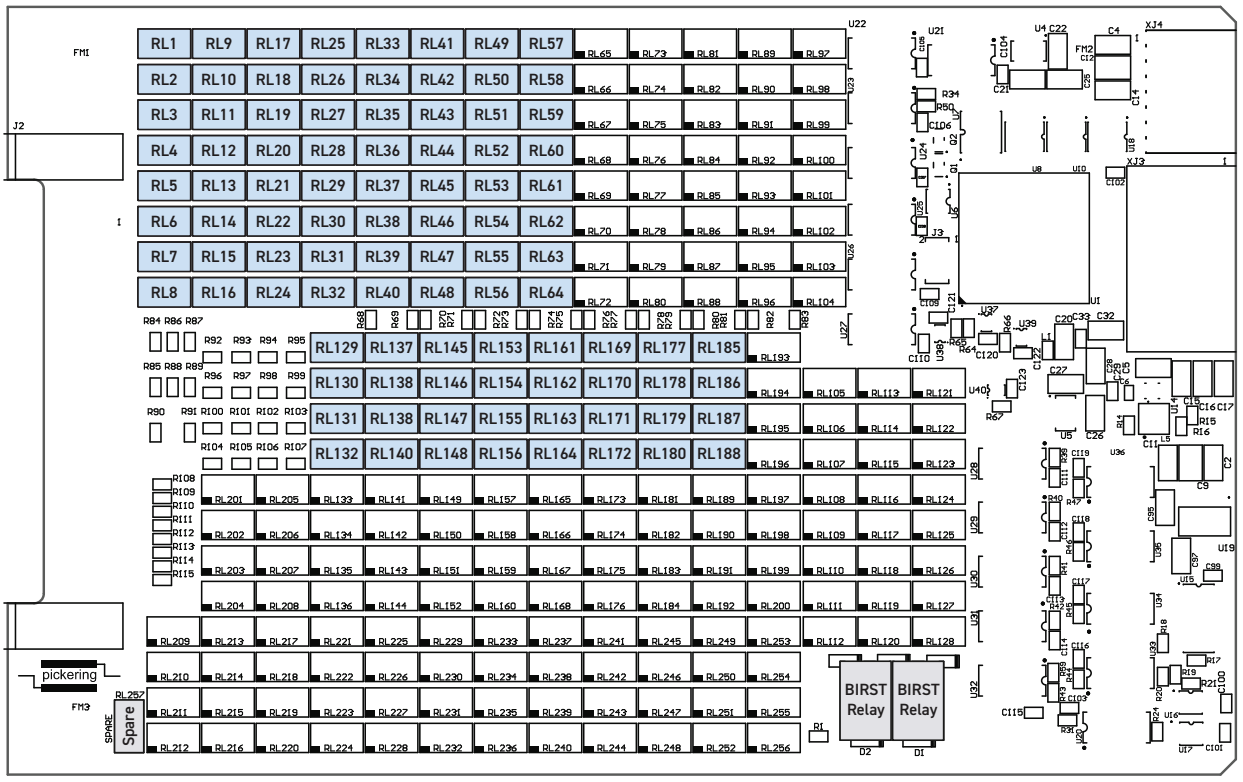


Figure 7.8 - 42-520A-103 Single 8x12 Matrix: Component Layout - PXIe Version

TABLE 7.5 - 40/42-520A-201 Single 32x8 Matrix: Relay Numbering

X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.
1	1	RL1	9	1	RL65	17	1	RL129	25	1	RL193
1	2	RL2	9	2	RL66	17	2	RL130	25	2	RL194
1	3	RL3	9	3	RL67	17	3	RL131	25	3	RL195
1	4	RL4	9	4	RL68	17	4	RL132	25	4	RL196
1	5	RL5	9	5	RL69	17	5	RL133	25	5	RL197
1	6	RL6	9	6	RL70	17	6	RL134	25	6	RL198
1	7	RL7	9	7	RL71	17	7	RL135	25	7	RL199
1	8	RL8	9	8	RL72	17	8	RL136	25	8	RL200
2	1	RL9	10	1	RL73	18	1	RL137	26	1	RL201
2	2	RL10	10	2	RL74	18	2	RL138	26	2	RL202
2	3	RL11	10	3	RL75	18	3	RL139	26	3	RL203
2	4	RL12	10	4	RL76	18	4	RL140	26	4	RL204
2	5	RL13	10	5	RL77	18	5	RL141	26	5	RL205
2	6	RL14	10	6	RL78	18	6	RL142	26	6	RL206
2	7	RL15	10	7	RL79	18	7	RL143	26	7	RL207
2	8	RL16	10	8	RL80	18	8	RL144	26	8	RL208
3	1	RL17	11	1	RL81	19	1	RL145	27	1	RL209
3	2	RL18	11	2	RL82	19	2	RL146	27	2	RL210
3	3	RL19	11	3	RL83	19	3	RL147	27	3	RL211
3	4	RL20	11	4	RL84	19	4	RL148	27	4	RL212
3	5	RL21	11	5	RL85	19	5	RL149	27	5	RL213
3	6	RL22	11	6	RL86	19	6	RL150	27	6	RL214
3	7	RL23	11	7	RL87	19	7	RL151	27	7	RL215
3	8	RL24	11	8	RL88	19	8	RL152	27	8	RL216
4	1	RL25	12	1	RL89	20	1	RL153	28	1	RL217
4	2	RL26	12	2	RL90	20	2	RL154	28	2	RL218
4	3	RL27	12	3	RL91	20	3	RL155	28	3	RL219
4	4	RL28	12	4	RL92	20	4	RL156	28	4	RL220
4	5	RL29	12	5	RL93	20	5	RL157	28	5	RL221
4	6	RL30	12	6	RL94	20	6	RL158	28	6	RL222
4	7	RL31	12	7	RL95	20	7	RL159	28	7	RL223
4	8	RL32	12	8	RL96	20	8	RL160	28	8	RL224
5	1	RL33	13	1	RL97	21	1	RL161	29	1	RL225
5	2	RL34	13	2	RL98	21	2	RL162	29	2	RL226
5	3	RL35	13	3	RL99	21	3	RL163	29	3	RL227
5	4	RL36	13	4	RL100	21	4	RL164	29	4	RL228
5	5	RL37	13	5	RL101	21	5	RL165	29	5	RL229
5	6	RL38	13	6	RL102	21	6	RL166	29	6	RL230
5	7	RL39	13	7	RL103	21	7	RL167	29	7	RL231
5	8	RL40	13	8	RL104	21	8	RL168	29	8	RL232
6	1	RL41	14	1	RL105	22	1	RL169	30	1	RL233
6	2	RL42	14	2	RL106	22	2	RL170	30	2	RL234
6	3	RL43	14	3	RL107	22	3	RL171	30	3	RL235
6	4	RL44	14	4	RL108	22	4	RL172	30	4	RL236
6	5	RL45	14	5	RL109	22	5	RL173	30	5	RL237
6	6	RL46	14	6	RL110	22	6	RL174	30	6	RL238
6	7	RL47	14	7	RL111	22	7	RL175	30	7	RL239
6	8	RL48	14	8	RL112	22	8	RL176	30	8	RL240
7	1	RL49	15	1	RL113	23	1	RL177	31	1	RL241
7	2	RL50	15	2	RL114	23	2	RL178	31	2	RL242
7	3	RL51	15	3	RL115	23	3	RL179	31	3	RL243
7	4	RL52	15	4	RL116	23	4	RL180	31	4	RL244
7	5	RL53	15	5	RL117	23	5	RL181	31	5	RL245
7	6	RL54	15	6	RL118	23	6	RL182	31	6	RL246
7	7	RL55	15	7	RL119	23	7	RL183	31	7	RL247
7	8	RL56	15	8	RL120	23	8	RL184	31	8	RL248
8	1	RL57	16	1	RL121	24	1	RL185	32	1	RL249
8	2	RL58	16	2	RL122	24	2	RL186	32	2	RL250
8	3	RL59	16	3	RL123	24	3	RL187	32	3	RL251
8	4	RL60	16	4	RL124	24	4	RL188	32	4	RL252
8	5	RL61	16	5	RL125	24	5	RL189	32	5	RL253
8	6	RL62	16	6	RL126	24	6	RL190	32	6	RL254
8	7	RL63	16	7	RL127	24	7	RL191	32	7	RL255
8	8	RL64	16	8	RL128	24	8	RL192	32	8	RL256

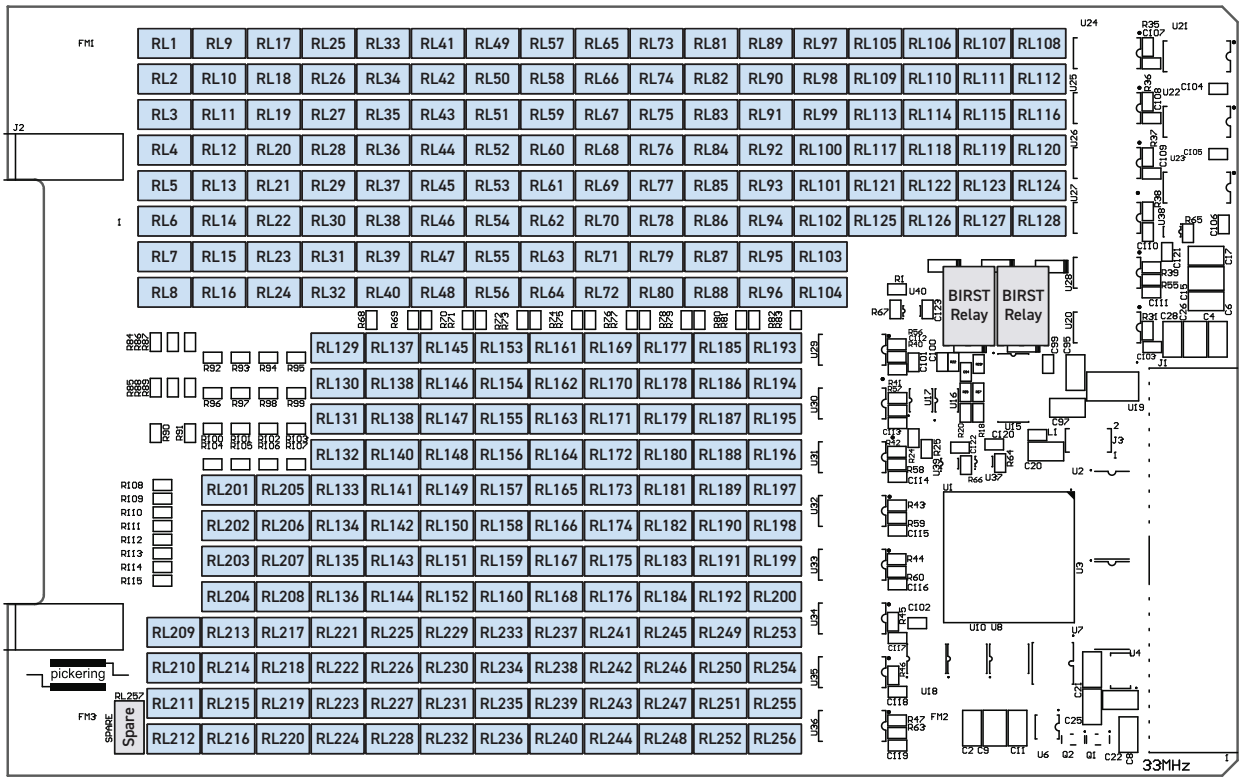


Figure 7.9 - 40-520A-201 Single 32x8 Matrix: Component Layout - PXI Version

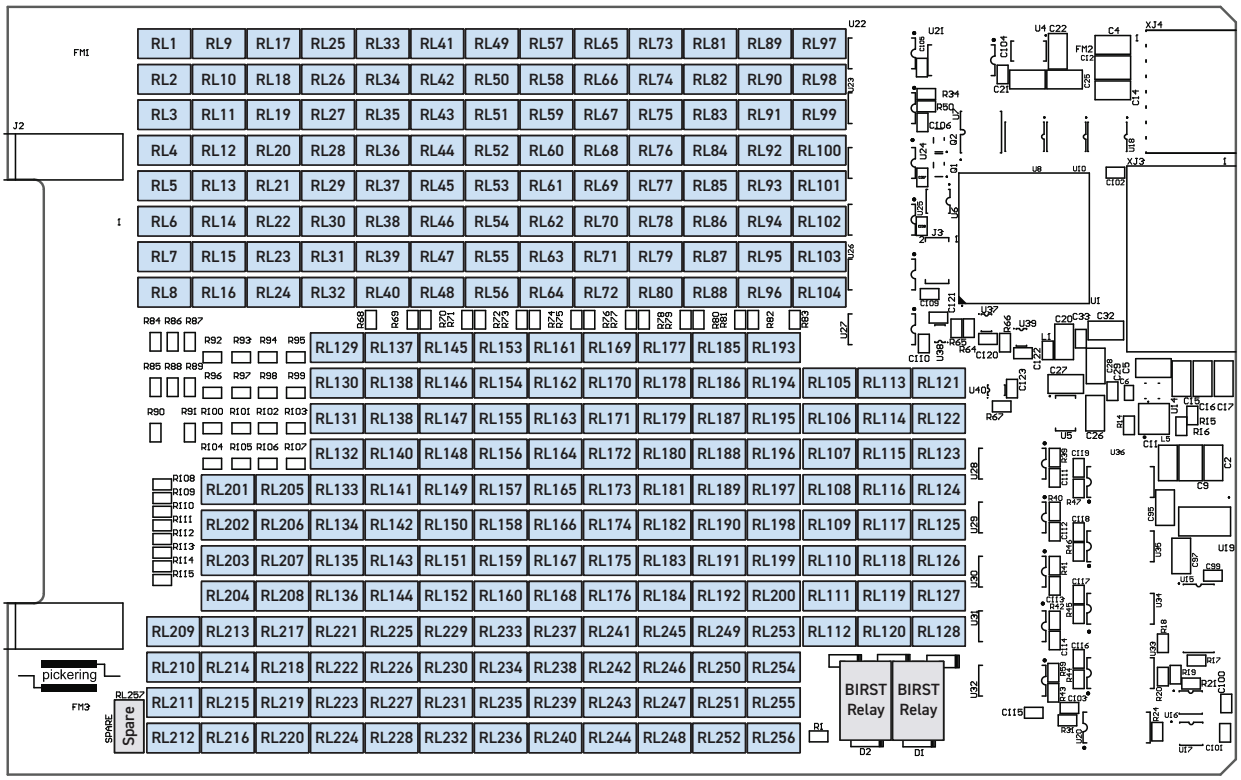


Figure 7.10 - 42-520A-201 Single 32x8 Matrix: Component Layout - PXIe Version

TABLE 7.6 - 40/42-520A-202 Single 24x8 Matrix: Relay Numbering

X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.
1	1	RL1	9	1	RL65	17	1	RL129	Not Fitted		RL193
1	2	RL2	9	2	RL66	17	2	RL130	Not Fitted		RL194
1	3	RL3	9	3	RL67	17	3	RL131	Not Fitted		RL195
1	4	RL4	9	4	RL68	17	4	RL132	Not Fitted		RL196
1	5	RL5	9	5	RL69	17	5	RL133	Not Fitted		RL197
1	6	RL6	9	6	RL70	17	6	RL134	Not Fitted		RL198
1	7	RL7	9	7	RL71	17	7	RL135	Not Fitted		RL199
1	8	RL8	9	8	RL72	17	8	RL136	Not Fitted		RL200
2	1	RL9	10	1	RL73	18	1	RL137	Not Fitted		RL201
2	2	RL10	10	2	RL74	18	2	RL138	Not Fitted		RL202
2	3	RL11	10	3	RL75	18	3	RL139	Not Fitted		RL203
2	4	RL12	10	4	RL76	18	4	RL140	Not Fitted		RL204
2	5	RL13	10	5	RL77	18	5	RL141	Not Fitted		RL205
2	6	RL14	10	6	RL78	18	6	RL142	Not Fitted		RL206
2	7	RL15	10	7	RL79	18	7	RL143	Not Fitted		RL207
2	8	RL16	10	8	RL80	18	8	RL144	Not Fitted		RL208
3	1	RL17	11	1	RL81	19	1	RL145	Not Fitted		RL209
3	2	RL18	11	2	RL82	19	2	RL146	Not Fitted		RL210
3	3	RL19	11	3	RL83	19	3	RL147	Not Fitted		RL211
3	4	RL20	11	4	RL84	19	4	RL148	Not Fitted		RL212
3	5	RL21	11	5	RL85	19	5	RL149	Not Fitted		RL213
3	6	RL22	11	6	RL86	19	6	RL150	Not Fitted		RL214
3	7	RL23	11	7	RL87	19	7	RL151	Not Fitted		RL215
3	8	RL24	11	8	RL88	19	8	RL152	Not Fitted		RL216
4	1	RL25	12	1	RL89	20	1	RL153	Not Fitted		RL217
4	2	RL26	12	2	RL90	20	2	RL154	Not Fitted		RL218
4	3	RL27	12	3	RL91	20	3	RL155	Not Fitted		RL219
4	4	RL28	12	4	RL92	20	4	RL156	Not Fitted		RL220
4	5	RL29	12	5	RL93	20	5	RL157	Not Fitted		RL221
4	6	RL30	12	6	RL94	20	6	RL158	Not Fitted		RL222
4	7	RL31	12	7	RL95	20	7	RL159	Not Fitted		RL223
4	8	RL32	12	8	RL96	20	8	RL160	Not Fitted		RL224
5	1	RL33	13	1	RL97	21	1	RL161	Not Fitted		RL225
5	2	RL34	13	2	RL98	21	2	RL162	Not Fitted		RL226
5	3	RL35	13	3	RL99	21	3	RL163	Not Fitted		RL227
5	4	RL36	13	4	RL100	21	4	RL164	Not Fitted		RL228
5	5	RL37	13	5	RL101	21	5	RL165	Not Fitted		RL229
5	6	RL38	13	6	RL102	21	6	RL166	Not Fitted		RL230
5	7	RL39	13	7	RL103	21	7	RL167	Not Fitted		RL231
5	8	RL40	13	8	RL104	21	8	RL168	Not Fitted		RL232
6	1	RL41	14	1	RL105	22	1	RL169	Not Fitted		RL233
6	2	RL42	14	2	RL106	22	2	RL170	Not Fitted		RL234
6	3	RL43	14	3	RL107	22	3	RL171	Not Fitted		RL235
6	4	RL44	14	4	RL108	22	4	RL172	Not Fitted		RL236
6	5	RL45	14	5	RL109	22	5	RL173	Not Fitted		RL237
6	6	RL46	14	6	RL110	22	6	RL174	Not Fitted		RL238
6	7	RL47	14	7	RL111	22	7	RL175	Not Fitted		RL239
6	8	RL48	14	8	RL112	22	8	RL176	Not Fitted		RL240
7	1	RL49	15	1	RL113	23	1	RL177	Not Fitted		RL241
7	2	RL50	15	2	RL114	23	2	RL178	Not Fitted		RL242
7	3	RL51	15	3	RL115	23	3	RL179	Not Fitted		RL243
7	4	RL52	15	4	RL116	23	4	RL180	Not Fitted		RL244
7	5	RL53	15	5	RL117	23	5	RL181	Not Fitted		RL245
7	6	RL54	15	6	RL118	23	6	RL182	Not Fitted		RL246
7	7	RL55	15	7	RL119	23	7	RL183	Not Fitted		RL247
7	8	RL56	15	8	RL120	23	8	RL184	Not Fitted		RL248
8	1	RL57	16	1	RL121	24	1	RL185	Not Fitted		RL249
8	2	RL58	16	2	RL122	24	2	RL186	Not Fitted		RL250
8	3	RL59	16	3	RL123	24	3	RL187	Not Fitted		RL251
8	4	RL60	16	4	RL124	24	4	RL188	Not Fitted		RL252
8	5	RL61	16	5	RL125	24	5	RL189	Not Fitted		RL253
8	6	RL62	16	6	RL126	24	6	RL190	Not Fitted		RL254
8	7	RL63	16	7	RL127	24	7	RL191	Not Fitted		RL255
8	8	RL64	16	8	RL128	24	8	RL192	Not Fitted		RL256

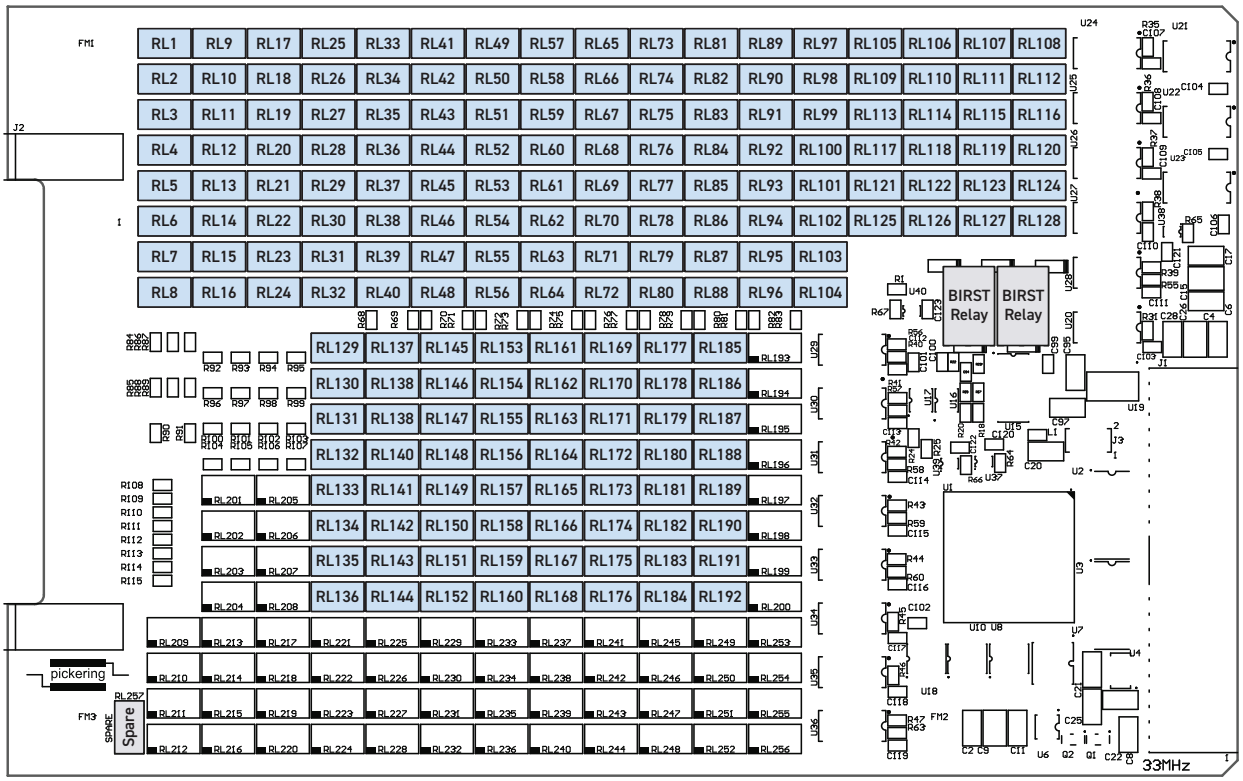


Figure 7.11 - 40-520A-202 Single 24x8 Matrix: Component Layout - PXI Version

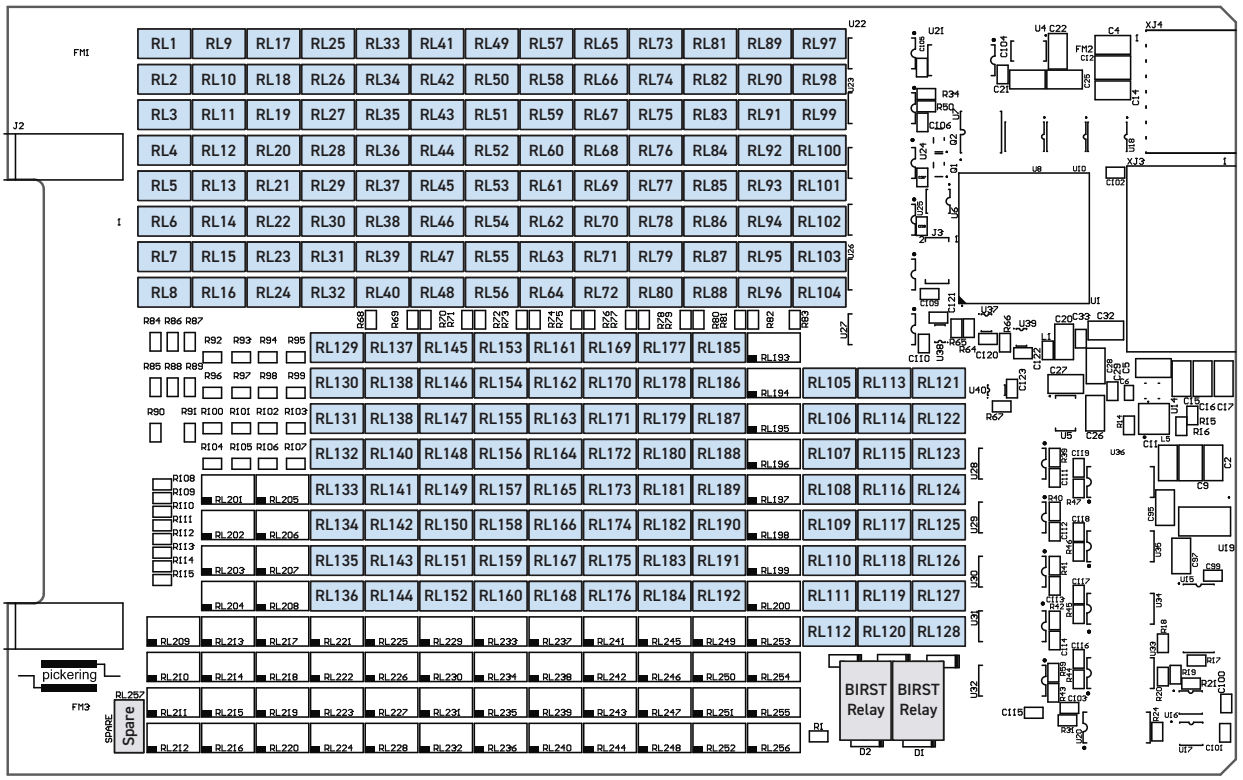


Figure 7.12 - 42-520A-202 Single 24x8 Matrix: Component Layout - PXIe Version

TABLE 7.7 - 40/42-520A-203 Single 16x8 Matrix: Relay Numbering

X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.
1	1	RL1	9	1	RL65	Not Fitted		RL129	Not Fitted		RL193
1	2	RL2	9	2	RL66	Not Fitted		RL130	Not Fitted		RL194
1	3	RL3	9	3	RL67	Not Fitted		RL131	Not Fitted		RL195
1	4	RL4	9	4	RL68	Not Fitted		RL132	Not Fitted		RL196
1	5	RL5	9	5	RL69	Not Fitted		RL133	Not Fitted		RL197
1	6	RL6	9	6	RL70	Not Fitted		RL134	Not Fitted		RL198
1	7	RL7	9	7	RL71	Not Fitted		RL135	Not Fitted		RL199
1	8	RL8	9	8	RL72	Not Fitted		RL136	Not Fitted		RL200
2	1	RL9	10	1	RL73	Not Fitted		RL137	Not Fitted		RL201
2	2	RL10	10	2	RL74	Not Fitted		RL138	Not Fitted		RL202
2	3	RL11	10	3	RL75	Not Fitted		RL139	Not Fitted		RL203
2	4	RL12	10	4	RL76	Not Fitted		RL140	Not Fitted		RL204
2	5	RL13	10	5	RL77	Not Fitted		RL141	Not Fitted		RL205
2	6	RL14	10	6	RL78	Not Fitted		RL142	Not Fitted		RL206
2	7	RL15	10	7	RL79	Not Fitted		RL143	Not Fitted		RL207
2	8	RL16	10	8	RL80	Not Fitted		RL144	Not Fitted		RL208
3	1	RL17	11	1	RL81	Not Fitted		RL145	Not Fitted		RL209
3	2	RL18	11	2	RL82	Not Fitted		RL146	Not Fitted		RL210
3	3	RL19	11	3	RL83	Not Fitted		RL147	Not Fitted		RL211
3	4	RL20	11	4	RL84	Not Fitted		RL148	Not Fitted		RL212
3	5	RL21	11	5	RL85	Not Fitted		RL149	Not Fitted		RL213
3	6	RL22	11	6	RL86	Not Fitted		RL150	Not Fitted		RL214
3	7	RL23	11	7	RL87	Not Fitted		RL151	Not Fitted		RL215
3	8	RL24	11	8	RL88	Not Fitted		RL152	Not Fitted		RL216
4	1	RL25	12	1	RL89	Not Fitted		RL153	Not Fitted		RL217
4	2	RL26	12	2	RL90	Not Fitted		RL154	Not Fitted		RL218
4	3	RL27	12	3	RL91	Not Fitted		RL155	Not Fitted		RL219
4	4	RL28	12	4	RL92	Not Fitted		RL156	Not Fitted		RL220
4	5	RL29	12	5	RL93	Not Fitted		RL157	Not Fitted		RL221
4	6	RL30	12	6	RL94	Not Fitted		RL158	Not Fitted		RL222
4	7	RL31	12	7	RL95	Not Fitted		RL159	Not Fitted		RL223
4	8	RL32	12	8	RL96	Not Fitted		RL160	Not Fitted		RL224
5	1	RL33	13	1	RL97	Not Fitted		RL161	Not Fitted		RL225
5	2	RL34	13	2	RL98	Not Fitted		RL162	Not Fitted		RL226
5	3	RL35	13	3	RL99	Not Fitted		RL163	Not Fitted		RL227
5	4	RL36	13	4	RL100	Not Fitted		RL164	Not Fitted		RL228
5	5	RL37	13	5	RL101	Not Fitted		RL165	Not Fitted		RL229
5	6	RL38	13	6	RL102	Not Fitted		RL166	Not Fitted		RL230
5	7	RL39	13	7	RL103	Not Fitted		RL167	Not Fitted		RL231
5	8	RL40	13	8	RL104	Not Fitted		RL168	Not Fitted		RL232
6	1	RL41	14	1	RL105	Not Fitted		RL169	Not Fitted		RL233
6	2	RL42	14	2	RL106	Not Fitted		RL170	Not Fitted		RL234
6	3	RL43	14	3	RL107	Not Fitted		RL171	Not Fitted		RL235
6	4	RL44	14	4	RL108	Not Fitted		RL172	Not Fitted		RL236
6	5	RL45	14	5	RL109	Not Fitted		RL173	Not Fitted		RL237
6	6	RL46	14	6	RL110	Not Fitted		RL174	Not Fitted		RL238
6	7	RL47	14	7	RL111	Not Fitted		RL175	Not Fitted		RL239
6	8	RL48	14	8	RL112	Not Fitted		RL176	Not Fitted		RL240
7	1	RL49	15	1	RL113	Not Fitted		RL177	Not Fitted		RL241
7	2	RL50	15	2	RL114	Not Fitted		RL178	Not Fitted		RL242
7	3	RL51	15	3	RL115	Not Fitted		RL179	Not Fitted		RL243
7	4	RL52	15	4	RL116	Not Fitted		RL180	Not Fitted		RL244
7	5	RL53	15	5	RL117	Not Fitted		RL181	Not Fitted		RL245
7	6	RL54	15	6	RL118	Not Fitted		RL182	Not Fitted		RL246
7	7	RL55	15	7	RL119	Not Fitted		RL183	Not Fitted		RL247
7	8	RL56	15	8	RL120	Not Fitted		RL184	Not Fitted		RL248
8	1	RL57	16	1	RL121	Not Fitted		RL185	Not Fitted		RL249
8	2	RL58	16	2	RL122	Not Fitted		RL186	Not Fitted		RL250
8	3	RL59	16	3	RL123	Not Fitted		RL187	Not Fitted		RL251
8	4	RL60	16	4	RL124	Not Fitted		RL188	Not Fitted		RL252
8	5	RL61	16	5	RL125	Not Fitted		RL189	Not Fitted		RL253
8	6	RL62	16	6	RL126	Not Fitted		RL190	Not Fitted		RL254
8	7	RL63	16	7	RL127	Not Fitted		RL191	Not Fitted		RL255
8	8	RL64	16	8	RL128	Not Fitted		RL192	Not Fitted		RL256

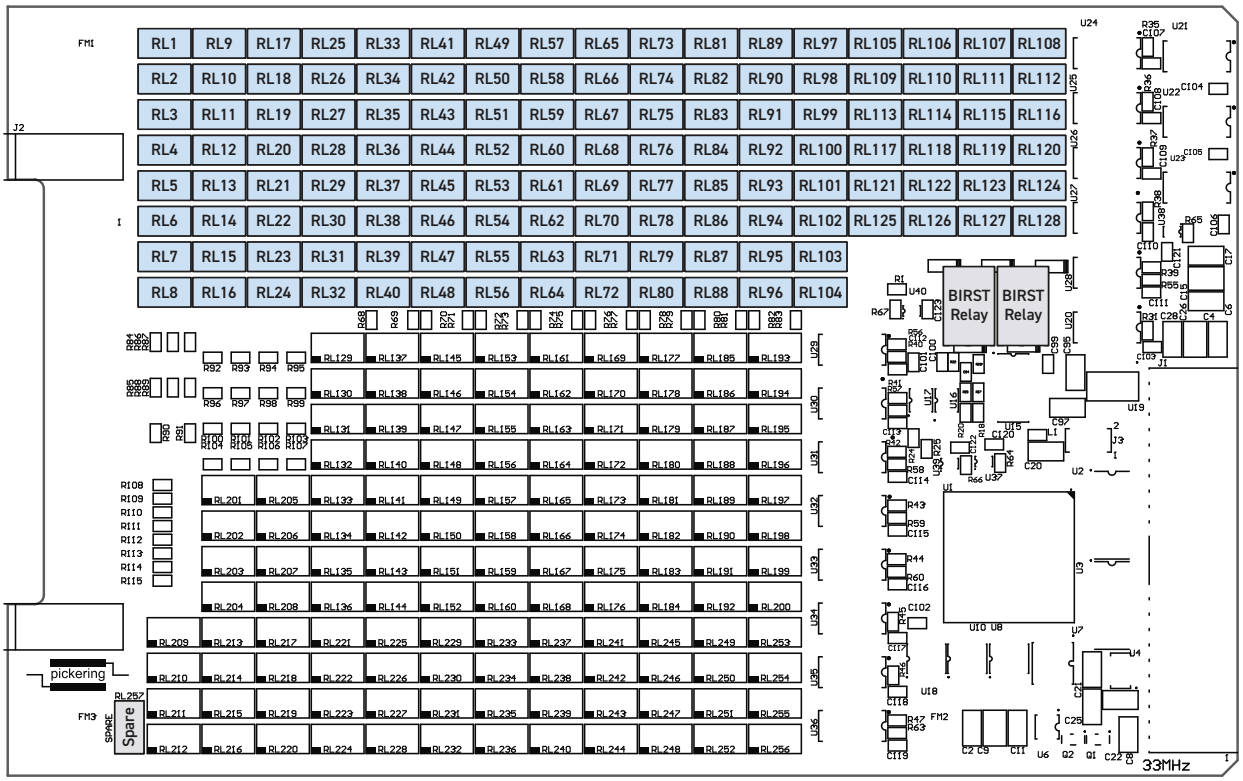


Figure 7.13 - 40-520A-203 Single 16x8 Matrix: Component Layout - PXI Version

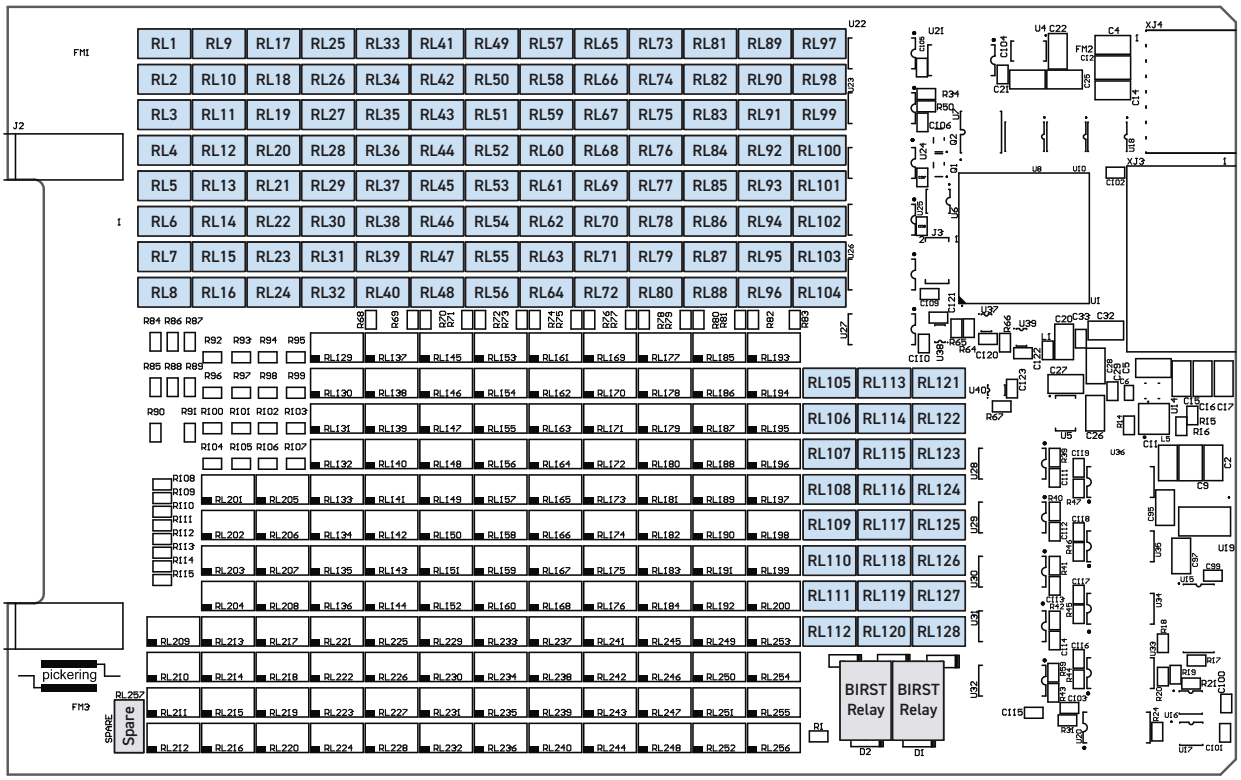


Figure 7.14 - 42-520A-203 Single 16x8 Matrix: Component Layout - PXIe Version

TABLE 7.8 - 40/42-520A-204 Single 8x8 Matrix: Relay Numbering

X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.
1	1	RL1	Not Fitted		RL65	Not Fitted		RL129	Not Fitted		RL193
1	2	RL2	Not Fitted		RL66	Not Fitted		RL130	Not Fitted		RL194
1	3	RL3	Not Fitted		RL67	Not Fitted		RL131	Not Fitted		RL195
1	4	RL4	Not Fitted		RL68	Not Fitted		RL132	Not Fitted		RL196
1	5	RL5	Not Fitted		RL69	Not Fitted		RL133	Not Fitted		RL197
1	6	RL6	Not Fitted		RL70	Not Fitted		RL134	Not Fitted		RL198
1	7	RL7	Not Fitted		RL71	Not Fitted		RL135	Not Fitted		RL199
1	8	RL8	Not Fitted		RL72	Not Fitted		RL136	Not Fitted		RL200
2	1	RL9	Not Fitted		RL73	Not Fitted		RL137	Not Fitted		RL201
2	2	RL10	Not Fitted		RL74	Not Fitted		RL138	Not Fitted		RL202
2	3	RL11	Not Fitted		RL75	Not Fitted		RL139	Not Fitted		RL203
2	4	RL12	Not Fitted		RL76	Not Fitted		RL140	Not Fitted		RL204
2	5	RL13	Not Fitted		RL77	Not Fitted		RL141	Not Fitted		RL205
2	6	RL14	Not Fitted		RL78	Not Fitted		RL142	Not Fitted		RL206
2	7	RL15	Not Fitted		RL79	Not Fitted		RL143	Not Fitted		RL207
2	8	RL16	Not Fitted		RL80	Not Fitted		RL144	Not Fitted		RL208
3	1	RL17	Not Fitted		RL81	Not Fitted		RL145	Not Fitted		RL209
3	2	RL18	Not Fitted		RL82	Not Fitted		RL146	Not Fitted		RL210
3	3	RL19	Not Fitted		RL83	Not Fitted		RL147	Not Fitted		RL211
3	4	RL20	Not Fitted		RL84	Not Fitted		RL148	Not Fitted		RL212
3	5	RL21	Not Fitted		RL85	Not Fitted		RL149	Not Fitted		RL213
3	6	RL22	Not Fitted		RL86	Not Fitted		RL150	Not Fitted		RL214
3	7	RL23	Not Fitted		RL87	Not Fitted		RL151	Not Fitted		RL215
3	8	RL24	Not Fitted		RL88	Not Fitted		RL152	Not Fitted		RL216
4	1	RL25	Not Fitted		RL89	Not Fitted		RL153	Not Fitted		RL217
4	2	RL26	Not Fitted		RL90	Not Fitted		RL154	Not Fitted		RL218
4	3	RL27	Not Fitted		RL91	Not Fitted		RL155	Not Fitted		RL219
4	4	RL28	Not Fitted		RL92	Not Fitted		RL156	Not Fitted		RL220
4	5	RL29	Not Fitted		RL93	Not Fitted		RL157	Not Fitted		RL221
4	6	RL30	Not Fitted		RL94	Not Fitted		RL158	Not Fitted		RL222
4	7	RL31	Not Fitted		RL95	Not Fitted		RL159	Not Fitted		RL223
4	8	RL32	Not Fitted		RL96	Not Fitted		RL160	Not Fitted		RL224
5	1	RL33	Not Fitted		RL97	Not Fitted		RL161	Not Fitted		RL225
5	2	RL34	Not Fitted		RL98	Not Fitted		RL162	Not Fitted		RL226
5	3	RL35	Not Fitted		RL99	Not Fitted		RL163	Not Fitted		RL227
5	4	RL36	Not Fitted		RL100	Not Fitted		RL164	Not Fitted		RL228
5	5	RL37	Not Fitted		RL101	Not Fitted		RL165	Not Fitted		RL229
5	6	RL38	Not Fitted		RL102	Not Fitted		RL166	Not Fitted		RL230
5	7	RL39	Not Fitted		RL103	Not Fitted		RL167	Not Fitted		RL231
5	8	RL40	Not Fitted		RL104	Not Fitted		RL168	Not Fitted		RL232
6	1	RL41	Not Fitted		RL105	Not Fitted		RL169	Not Fitted		RL233
6	2	RL42	Not Fitted		RL106	Not Fitted		RL170	Not Fitted		RL234
6	3	RL43	Not Fitted		RL107	Not Fitted		RL171	Not Fitted		RL235
6	4	RL44	Not Fitted		RL108	Not Fitted		RL172	Not Fitted		RL236
6	5	RL45	Not Fitted		RL109	Not Fitted		RL173	Not Fitted		RL237
6	6	RL46	Not Fitted		RL110	Not Fitted		RL174	Not Fitted		RL238
6	7	RL47	Not Fitted		RL111	Not Fitted		RL175	Not Fitted		RL239
6	8	RL48	Not Fitted		RL112	Not Fitted		RL176	Not Fitted		RL240
7	1	RL49	Not Fitted		RL113	Not Fitted		RL177	Not Fitted		RL241
7	2	RL50	Not Fitted		RL114	Not Fitted		RL178	Not Fitted		RL242
7	3	RL51	Not Fitted		RL115	Not Fitted		RL179	Not Fitted		RL243
7	4	RL52	Not Fitted		RL116	Not Fitted		RL180	Not Fitted		RL244
7	5	RL53	Not Fitted		RL117	Not Fitted		RL181	Not Fitted		RL245
7	6	RL54	Not Fitted		RL118	Not Fitted		RL182	Not Fitted		RL246
7	7	RL55	Not Fitted		RL119	Not Fitted		RL183	Not Fitted		RL247
7	8	RL56	Not Fitted		RL120	Not Fitted		RL184	Not Fitted		RL248
8	1	RL57	Not Fitted		RL121	Not Fitted		RL185	Not Fitted		RL249
8	2	RL58	Not Fitted		RL122	Not Fitted		RL186	Not Fitted		RL250
8	3	RL59	Not Fitted		RL123	Not Fitted		RL187	Not Fitted		RL251
8	4	RL60	Not Fitted		RL124	Not Fitted		RL188	Not Fitted		RL252
8	5	RL61	Not Fitted		RL125	Not Fitted		RL189	Not Fitted		RL253
8	6	RL62	Not Fitted		RL126	Not Fitted		RL190	Not Fitted		RL254
8	7	RL63	Not Fitted		RL127	Not Fitted		RL191	Not Fitted		RL255
8	8	RL64	Not Fitted		RL128	Not Fitted		RL192	Not Fitted		RL256

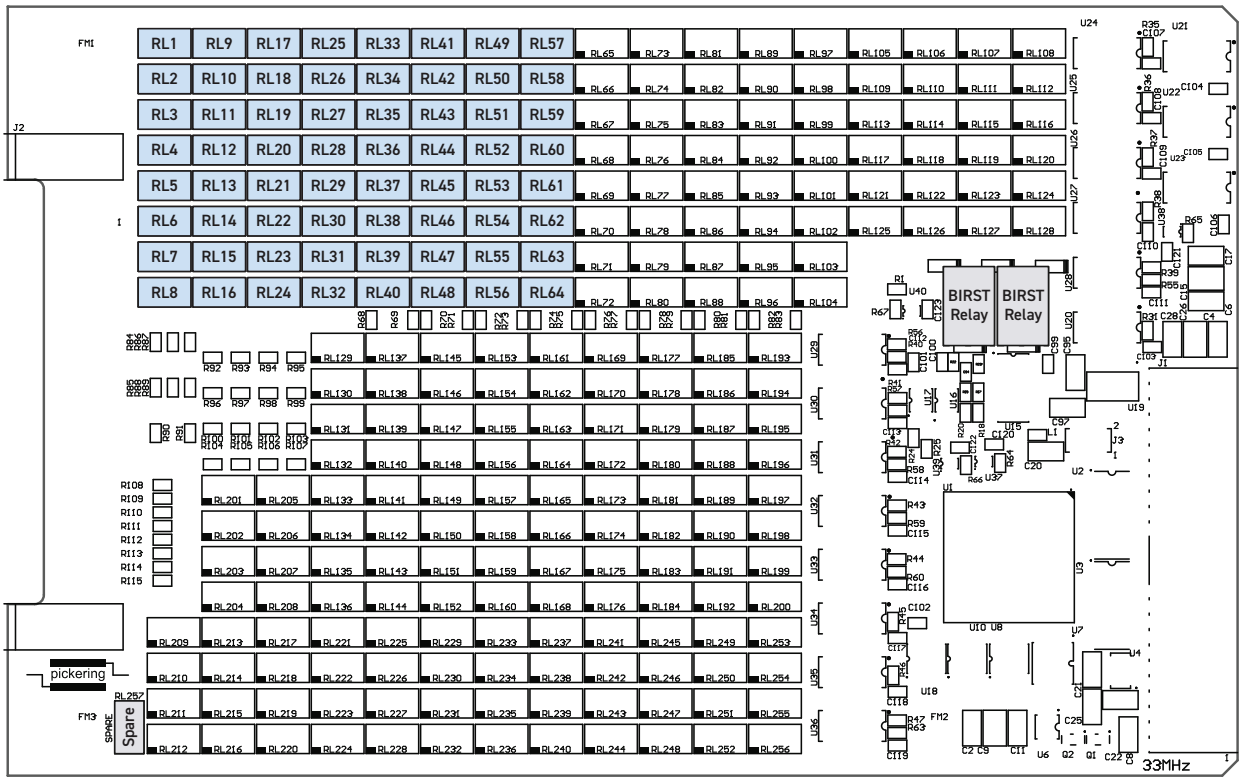


Figure 7.15 - 40-520A-204 Single 8x8 Matrix: Component Layout - PXI Version

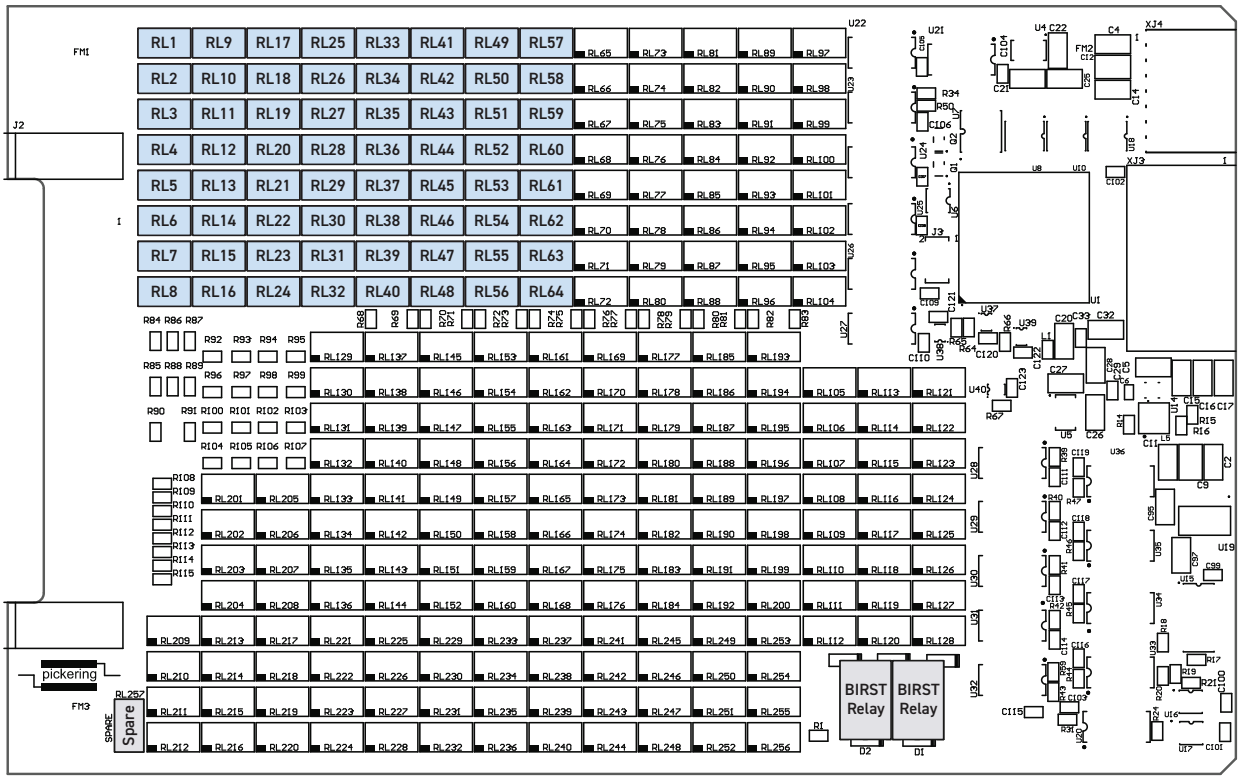


Figure 7.16 - 42-520A-204 Single 8x8 Matrix: Component Layout - PXIe Version

TABLE 7.9 - 40/42-520A-205 Dual 16x8 Matrix: Relay Numbering

X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.
101	101	RL1	109	101	RL65	201	201	RL129	209	201	RL193
101	102	RL2	109	102	RL66	201	202	RL130	209	202	RL194
101	103	RL3	109	103	RL67	201	203	RL131	209	203	RL195
101	104	RL4	109	104	RL68	201	204	RL132	209	204	RL196
101	105	RL5	109	105	RL69	201	205	RL133	209	205	RL197
101	106	RL6	109	106	RL70	201	206	RL134	209	206	RL198
101	107	RL7	109	107	RL71	201	207	RL135	209	207	RL199
101	108	RL8	109	108	RL72	201	208	RL136	209	208	RL200
102	101	RL9	110	101	RL73	202	201	RL137	210	201	RL201
102	102	RL10	110	102	RL74	202	202	RL138	210	202	RL202
102	103	RL11	110	103	RL75	202	203	RL139	210	203	RL203
102	104	RL12	110	104	RL76	202	204	RL140	210	204	RL204
102	105	RL13	110	105	RL77	202	205	RL141	210	205	RL205
102	106	RL14	110	106	RL78	202	206	RL142	210	206	RL206
102	107	RL15	110	107	RL79	202	207	RL143	210	207	RL207
102	108	RL16	110	108	RL80	202	208	RL144	210	208	RL208
103	101	RL17	111	101	RL81	203	201	RL145	211	201	RL209
103	102	RL18	111	102	RL82	203	202	RL146	211	202	RL210
103	103	RL19	111	103	RL83	203	203	RL147	211	203	RL211
103	104	RL20	111	104	RL84	203	204	RL148	211	204	RL212
103	105	RL21	111	105	RL85	203	205	RL149	211	205	RL213
103	106	RL22	111	106	RL86	203	206	RL150	211	206	RL214
103	107	RL23	111	107	RL87	203	207	RL151	211	207	RL215
103	108	RL24	111	108	RL88	203	208	RL152	211	208	RL216
104	101	RL25	112	101	RL89	204	201	RL153	212	201	RL217
104	102	RL26	112	102	RL90	204	202	RL154	212	202	RL218
104	103	RL27	112	103	RL91	204	203	RL155	212	203	RL219
104	104	RL28	112	104	RL92	204	204	RL156	212	204	RL220
104	105	RL29	112	105	RL93	204	205	RL157	212	205	RL221
104	106	RL30	112	106	RL94	204	206	RL158	212	206	RL222
104	107	RL31	112	107	RL95	204	207	RL159	212	207	RL223
104	108	RL32	112	108	RL96	204	208	RL160	212	208	RL224
105	101	RL33	113	101	RL97	205	201	RL161	213	201	RL225
105	102	RL34	113	102	RL98	205	202	RL162	213	202	RL226
105	103	RL35	113	103	RL99	205	203	RL163	213	203	RL227
105	104	RL36	113	104	RL100	205	204	RL164	213	204	RL228
105	105	RL37	113	105	RL101	205	205	RL165	213	205	RL229
105	106	RL38	113	106	RL102	205	206	RL166	213	206	RL230
105	107	RL39	113	107	RL103	205	207	RL167	213	207	RL231
105	108	RL40	113	108	RL104	205	208	RL168	213	208	RL232
106	101	RL41	114	101	RL105	206	201	RL169	214	201	RL233
106	102	RL42	114	102	RL106	206	202	RL170	214	202	RL234
106	103	RL43	114	103	RL107	206	203	RL171	214	203	RL235
106	104	RL44	114	104	RL108	206	204	RL172	214	204	RL236
106	105	RL45	114	105	RL109	206	205	RL173	214	205	RL237
106	106	RL46	114	106	RL110	206	206	RL174	214	206	RL238
106	107	RL47	114	107	RL111	206	207	RL175	214	207	RL239
106	108	RL48	114	108	RL112	206	208	RL176	214	208	RL240
107	101	RL49	115	101	RL113	207	201	RL177	215	201	RL241
107	102	RL50	115	102	RL114	207	202	RL178	215	202	RL242
107	103	RL51	115	103	RL115	207	203	RL179	215	203	RL243
107	104	RL52	115	104	RL116	207	204	RL180	215	204	RL244
107	105	RL53	115	105	RL117	207	205	RL181	215	205	RL245
107	106	RL54	115	106	RL118	207	206	RL182	215	206	RL246
107	107	RL55	115	107	RL119	207	207	RL183	215	207	RL247
107	108	RL56	115	108	RL120	207	208	RL184	215	208	RL248
108	101	RL57	116	101	RL121	208	201	RL185	216	201	RL249
108	102	RL58	116	102	RL122	208	202	RL186	216	202	RL250
108	103	RL59	116	103	RL123	208	203	RL187	216	203	RL251
108	104	RL60	116	104	RL124	208	204	RL188	216	204	RL252
108	105	RL61	116	105	RL125	208	205	RL189	216	205	RL253
108	106	RL62	116	106	RL126	208	206	RL190	216	206	RL254
108	107	RL63	116	107	RL127	208	207	RL191	216	207	RL255
108	108	RL64	116	108	RL128	208	208	RL192	216	208	RL256

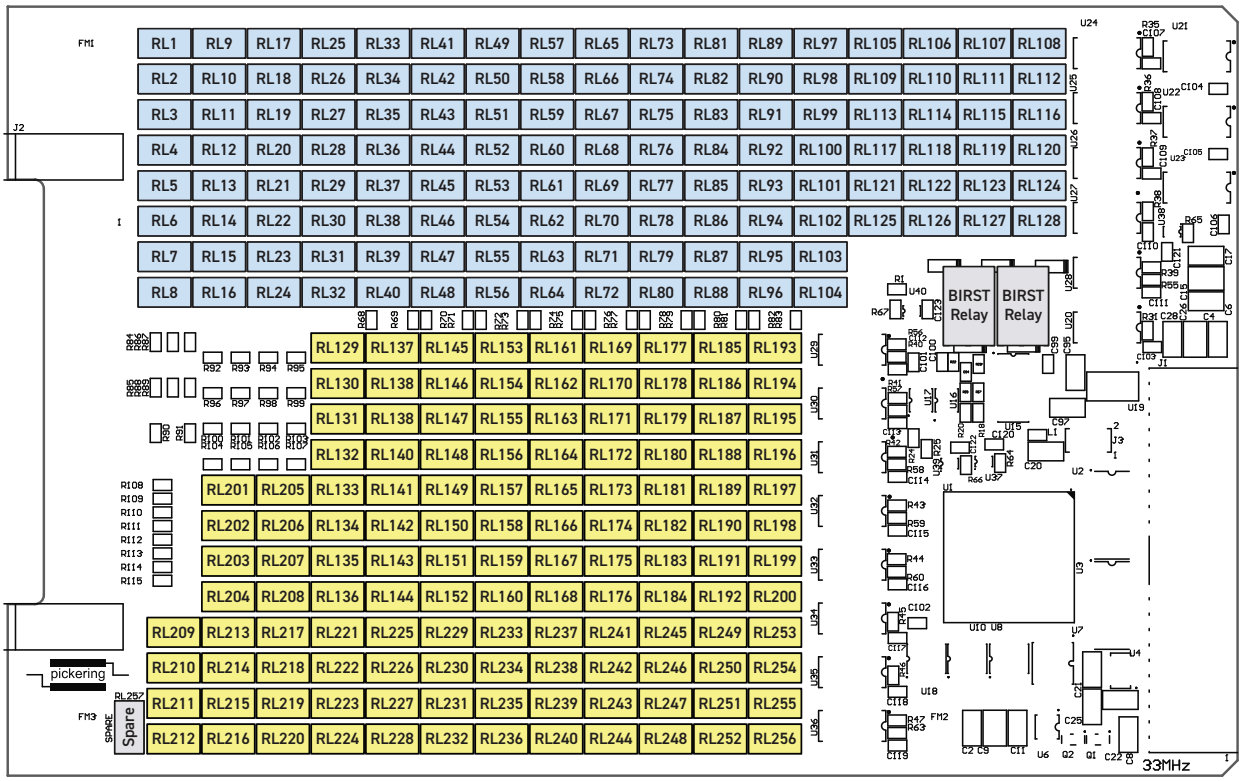


Figure 7.17 - 40-520A-205 Dual 16x8 Matrix: Component Layout - PXI Version

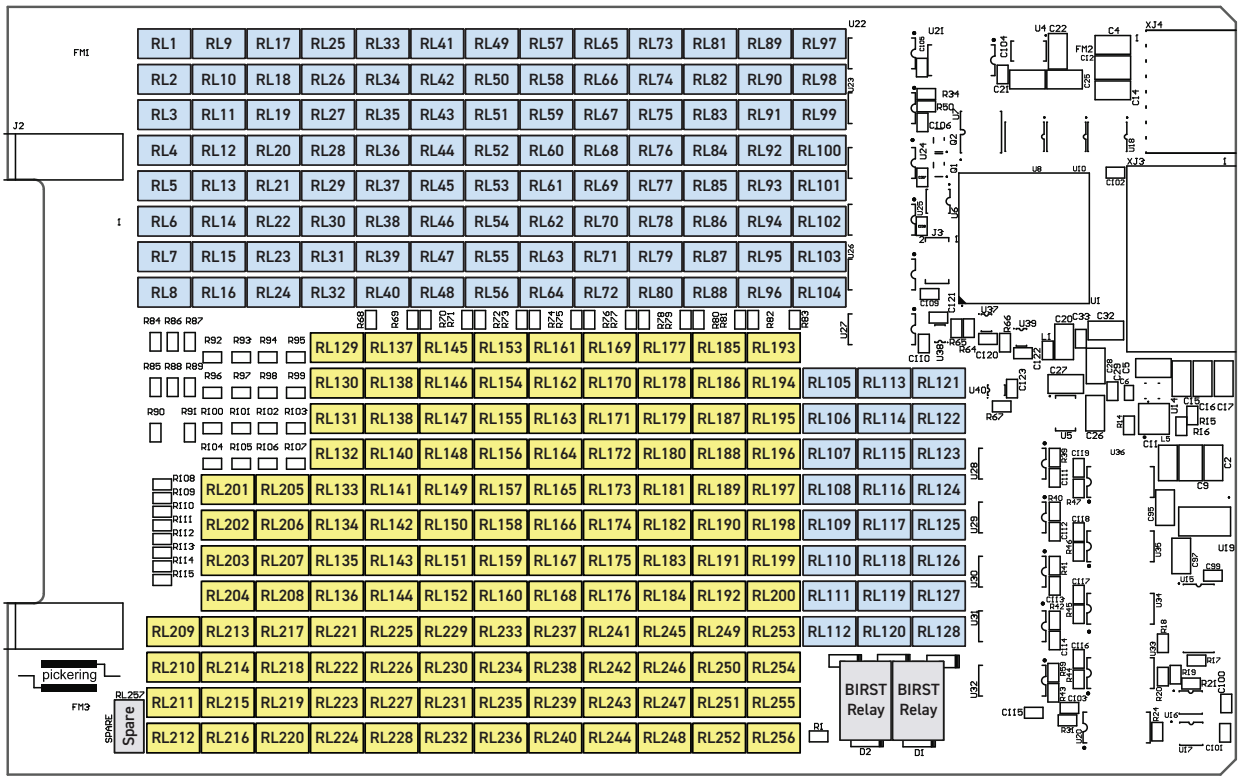


Figure 7.18 - 42-520A-205 Dual 16x8 Matrix: Component Layout - PXIe Version

TABLE 7.10 - 40/42-520A-206 Dual 12x8 Matrix: Relay Numbering

X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.
101	101	RL1	109	101	RL65	201	201	RL129	209	201	RL193
101	102	RL2	109	102	RL66	201	202	RL130	209	202	RL194
101	103	RL3	109	103	RL67	201	203	RL131	209	203	RL195
101	104	RL4	109	104	RL68	201	204	RL132	209	204	RL196
101	105	RL5	109	105	RL69	201	205	RL133	209	205	RL197
101	106	RL6	109	106	RL70	201	206	RL134	209	206	RL198
101	107	RL7	109	107	RL71	201	207	RL135	209	207	RL199
101	108	RL8	109	108	RL72	201	208	RL136	209	208	RL200
102	101	RL9	110	101	RL73	202	201	RL137	210	201	RL201
102	102	RL10	110	102	RL74	202	202	RL138	210	202	RL202
102	103	RL11	110	103	RL75	202	203	RL139	210	203	RL203
102	104	RL12	110	104	RL76	202	204	RL140	210	204	RL204
102	105	RL13	110	105	RL77	202	205	RL141	210	205	RL205
102	106	RL14	110	106	RL78	202	206	RL142	210	206	RL206
102	107	RL15	110	107	RL79	202	207	RL143	210	207	RL207
102	108	RL16	110	108	RL80	202	208	RL144	210	208	RL208
103	101	RL17	111	101	RL81	203	201	RL145	211	201	RL209
103	102	RL18	111	102	RL82	203	202	RL146	211	202	RL210
103	103	RL19	111	103	RL83	203	203	RL147	211	203	RL211
103	104	RL20	111	104	RL84	203	204	RL148	211	204	RL212
103	105	RL21	111	105	RL85	203	205	RL149	211	205	RL213
103	106	RL22	111	106	RL86	203	206	RL150	211	206	RL214
103	107	RL23	111	107	RL87	203	207	RL151	211	207	RL215
103	108	RL24	111	108	RL88	203	208	RL152	211	208	RL216
104	101	RL25	112	101	RL89	204	201	RL153	212	201	RL217
104	102	RL26	112	102	RL90	204	202	RL154	212	202	RL218
104	103	RL27	112	103	RL91	204	203	RL155	212	203	RL219
104	104	RL28	112	104	RL92	204	204	RL156	212	204	RL220
104	105	RL29	112	105	RL93	204	205	RL157	212	205	RL221
104	106	RL30	112	106	RL94	204	206	RL158	212	206	RL222
104	107	RL31	112	107	RL95	204	207	RL159	212	207	RL223
104	108	RL32	112	108	RL96	204	208	RL160	212	208	RL224
105	101	RL33	Not Fitted		RL97	205	201	RL161	Not Fitted		RL225
105	102	RL34	Not Fitted		RL98	205	202	RL162	Not Fitted		RL226
105	103	RL35	Not Fitted		RL99	205	203	RL163	Not Fitted		RL227
105	104	RL36	Not Fitted		RL100	205	204	RL164	Not Fitted		RL228
105	105	RL37	Not Fitted		RL101	205	205	RL165	Not Fitted		RL229
105	106	RL38	Not Fitted		RL102	205	206	RL166	Not Fitted		RL230
105	107	RL39	Not Fitted		RL103	205	207	RL167	Not Fitted		RL231
105	108	RL40	Not Fitted		RL104	205	208	RL168	Not Fitted		RL232
106	101	RL41	Not Fitted		RL105	206	201	RL169	Not Fitted		RL233
106	102	RL42	Not Fitted		RL106	206	202	RL170	Not Fitted		RL234
106	103	RL43	Not Fitted		RL107	206	203	RL171	Not Fitted		RL235
106	104	RL44	Not Fitted		RL108	206	204	RL172	Not Fitted		RL236
106	105	RL45	Not Fitted		RL109	206	205	RL173	Not Fitted		RL237
106	106	RL46	Not Fitted		RL110	206	206	RL174	Not Fitted		RL238
106	107	RL47	Not Fitted		RL111	206	207	RL175	Not Fitted		RL239
106	108	RL48	Not Fitted		RL112	206	208	RL176	Not Fitted		RL240
107	101	RL49	Not Fitted		RL113	207	201	RL177	Not Fitted		RL241
107	102	RL50	Not Fitted		RL114	207	202	RL178	Not Fitted		RL242
107	103	RL51	Not Fitted		RL115	207	203	RL179	Not Fitted		RL243
107	104	RL52	Not Fitted		RL116	207	204	RL180	Not Fitted		RL244
107	105	RL53	Not Fitted		RL117	207	205	RL181	Not Fitted		RL245
107	106	RL54	Not Fitted		RL118	207	206	RL182	Not Fitted		RL246
107	107	RL55	Not Fitted		RL119	207	207	RL183	Not Fitted		RL247
107	108	RL56	Not Fitted		RL120	207	208	RL184	Not Fitted		RL248
108	101	RL57	Not Fitted		RL121	208	201	RL185	Not Fitted		RL249
108	102	RL58	Not Fitted		RL122	208	202	RL186	Not Fitted		RL250
108	103	RL59	Not Fitted		RL123	208	203	RL187	Not Fitted		RL251
108	104	RL60	Not Fitted		RL124	208	204	RL188	Not Fitted		RL252
108	105	RL61	Not Fitted		RL125	208	205	RL189	Not Fitted		RL253
108	106	RL62	Not Fitted		RL126	208	206	RL190	Not Fitted		RL254
108	107	RL63	Not Fitted		RL127	208	207	RL191	Not Fitted		RL255
108	108	RL64	Not Fitted		RL128	208	208	RL192	Not Fitted		RL256

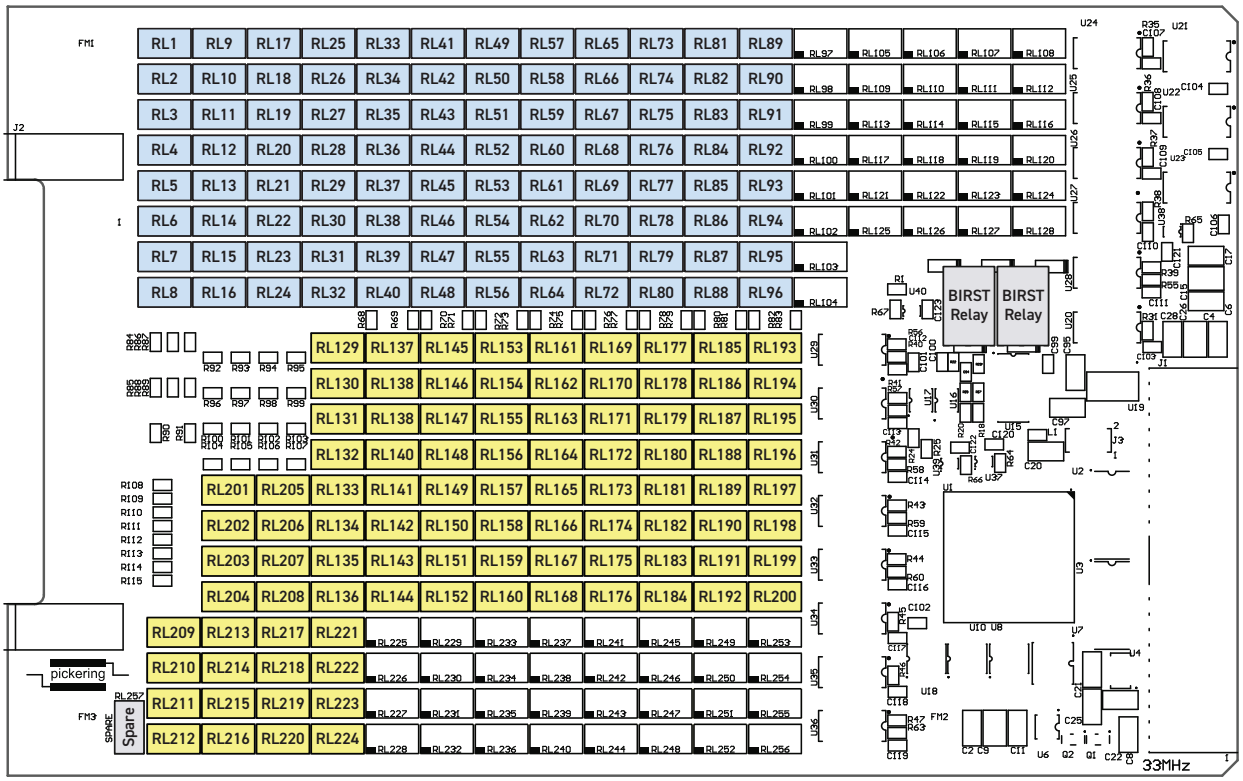


Figure 7.19 - 40-520A-206 Dual 12x8 Matrix: Component Layout - PXI Version

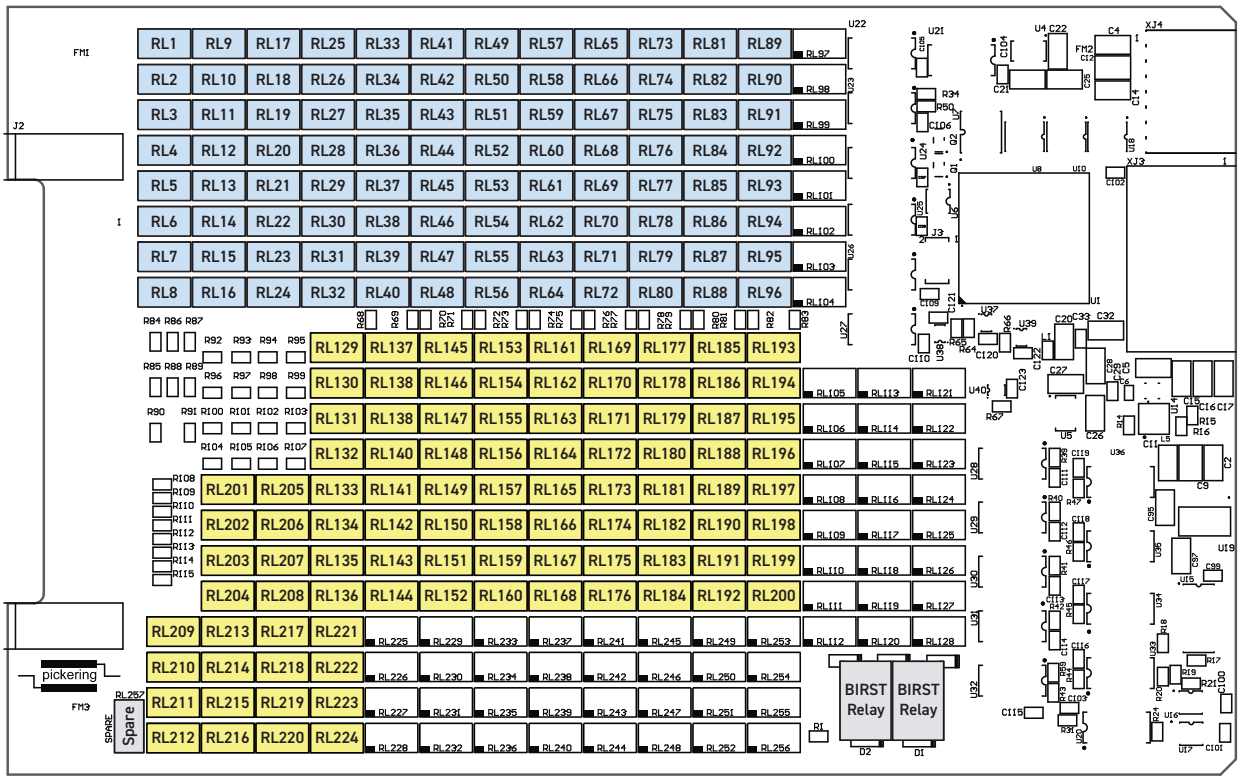


Figure 7.20 - 42-520A-206 Dual 12x8 Matrix: Component Layout - PXIe Version

TABLE 7.11 - 40/42-520A-207 Dual 8x8 Matrix: Relay Numbering

X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.
101	101	RL1	Not Fitted		RL65	201	201	RL129	Not Fitted		RL193
101	102	RL2	Not Fitted		RL66	201	202	RL130	Not Fitted		RL194
101	103	RL3	Not Fitted		RL67	201	203	RL131	Not Fitted		RL195
101	104	RL4	Not Fitted		RL68	201	204	RL132	Not Fitted		RL196
101	105	RL5	Not Fitted		RL69	201	205	RL133	Not Fitted		RL197
101	106	RL6	Not Fitted		RL70	201	206	RL134	Not Fitted		RL198
101	107	RL7	Not Fitted		RL71	201	207	RL135	Not Fitted		RL199
101	108	RL8	Not Fitted		RL72	201	208	RL136	Not Fitted		RL200
102	101	RL9	Not Fitted		RL73	202	201	RL137	Not Fitted		RL201
102	102	RL10	Not Fitted		RL74	202	202	RL138	Not Fitted		RL202
102	103	RL11	Not Fitted		RL75	202	203	RL139	Not Fitted		RL203
102	104	RL12	Not Fitted		RL76	202	204	RL140	Not Fitted		RL204
102	105	RL13	Not Fitted		RL77	202	205	RL141	Not Fitted		RL205
102	106	RL14	Not Fitted		RL78	202	206	RL142	Not Fitted		RL206
102	107	RL15	Not Fitted		RL79	202	207	RL143	Not Fitted		RL207
102	108	RL16	Not Fitted		RL80	202	208	RL144	Not Fitted		RL208
103	101	RL17	Not Fitted		RL81	203	201	RL145	Not Fitted		RL209
103	102	RL18	Not Fitted		RL82	203	202	RL146	Not Fitted		RL210
103	103	RL19	Not Fitted		RL83	203	203	RL147	Not Fitted		RL211
103	104	RL20	Not Fitted		RL84	203	204	RL148	Not Fitted		RL212
103	105	RL21	Not Fitted		RL85	203	205	RL149	Not Fitted		RL213
103	106	RL22	Not Fitted		RL86	203	206	RL150	Not Fitted		RL214
103	107	RL23	Not Fitted		RL87	203	207	RL151	Not Fitted		RL215
103	108	RL24	Not Fitted		RL88	203	208	RL152	Not Fitted		RL216
104	101	RL25	Not Fitted		RL89	204	201	RL153	Not Fitted		RL217
104	102	RL26	Not Fitted		RL90	204	202	RL154	Not Fitted		RL218
104	103	RL27	Not Fitted		RL91	204	203	RL155	Not Fitted		RL219
104	104	RL28	Not Fitted		RL92	204	204	RL156	Not Fitted		RL220
104	105	RL29	Not Fitted		RL93	204	205	RL157	Not Fitted		RL221
104	106	RL30	Not Fitted		RL94	204	206	RL158	Not Fitted		RL222
104	107	RL31	Not Fitted		RL95	204	207	RL159	Not Fitted		RL223
104	108	RL32	Not Fitted		RL96	204	208	RL160	Not Fitted		RL224
105	101	RL33	Not Fitted		RL97	205	201	RL161	Not Fitted		RL225
105	102	RL34	Not Fitted		RL98	205	202	RL162	Not Fitted		RL226
105	103	RL35	Not Fitted		RL99	205	203	RL163	Not Fitted		RL227
105	104	RL36	Not Fitted		RL100	205	204	RL164	Not Fitted		RL228
105	105	RL37	Not Fitted		RL101	205	205	RL165	Not Fitted		RL229
105	106	RL38	Not Fitted		RL102	205	206	RL166	Not Fitted		RL230
105	107	RL39	Not Fitted		RL103	205	207	RL167	Not Fitted		RL231
105	108	RL40	Not Fitted		RL104	205	208	RL168	Not Fitted		RL232
106	101	RL41	Not Fitted		RL105	206	201	RL169	Not Fitted		RL233
106	102	RL42	Not Fitted		RL106	206	202	RL170	Not Fitted		RL234
106	103	RL43	Not Fitted		RL107	206	203	RL171	Not Fitted		RL235
106	104	RL44	Not Fitted		RL108	206	204	RL172	Not Fitted		RL236
106	105	RL45	Not Fitted		RL109	206	205	RL173	Not Fitted		RL237
106	106	RL46	Not Fitted		RL110	206	206	RL174	Not Fitted		RL238
106	107	RL47	Not Fitted		RL111	206	207	RL175	Not Fitted		RL239
106	108	RL48	Not Fitted		RL112	206	208	RL176	Not Fitted		RL240
107	101	RL49	Not Fitted		RL113	207	201	RL177	Not Fitted		RL241
107	102	RL50	Not Fitted		RL114	207	202	RL178	Not Fitted		RL242
107	103	RL51	Not Fitted		RL115	207	203	RL179	Not Fitted		RL243
107	104	RL52	Not Fitted		RL116	207	204	RL180	Not Fitted		RL244
107	105	RL53	Not Fitted		RL117	207	205	RL181	Not Fitted		RL245
107	106	RL54	Not Fitted		RL118	207	206	RL182	Not Fitted		RL246
107	107	RL55	Not Fitted		RL119	207	207	RL183	Not Fitted		RL247
107	108	RL56	Not Fitted		RL120	207	208	RL184	Not Fitted		RL248
108	101	RL57	Not Fitted		RL121	208	201	RL185	Not Fitted		RL249
108	102	RL58	Not Fitted		RL122	208	202	RL186	Not Fitted		RL250
108	103	RL59	Not Fitted		RL123	208	203	RL187	Not Fitted		RL251
108	104	RL60	Not Fitted		RL124	208	204	RL188	Not Fitted		RL252
108	105	RL61	Not Fitted		RL125	208	205	RL189	Not Fitted		RL253
108	106	RL62	Not Fitted		RL126	208	206	RL190	Not Fitted		RL254
108	107	RL63	Not Fitted		RL127	208	207	RL191	Not Fitted		RL255
108	108	RL64	Not Fitted		RL128	208	208	RL192	Not Fitted		RL256

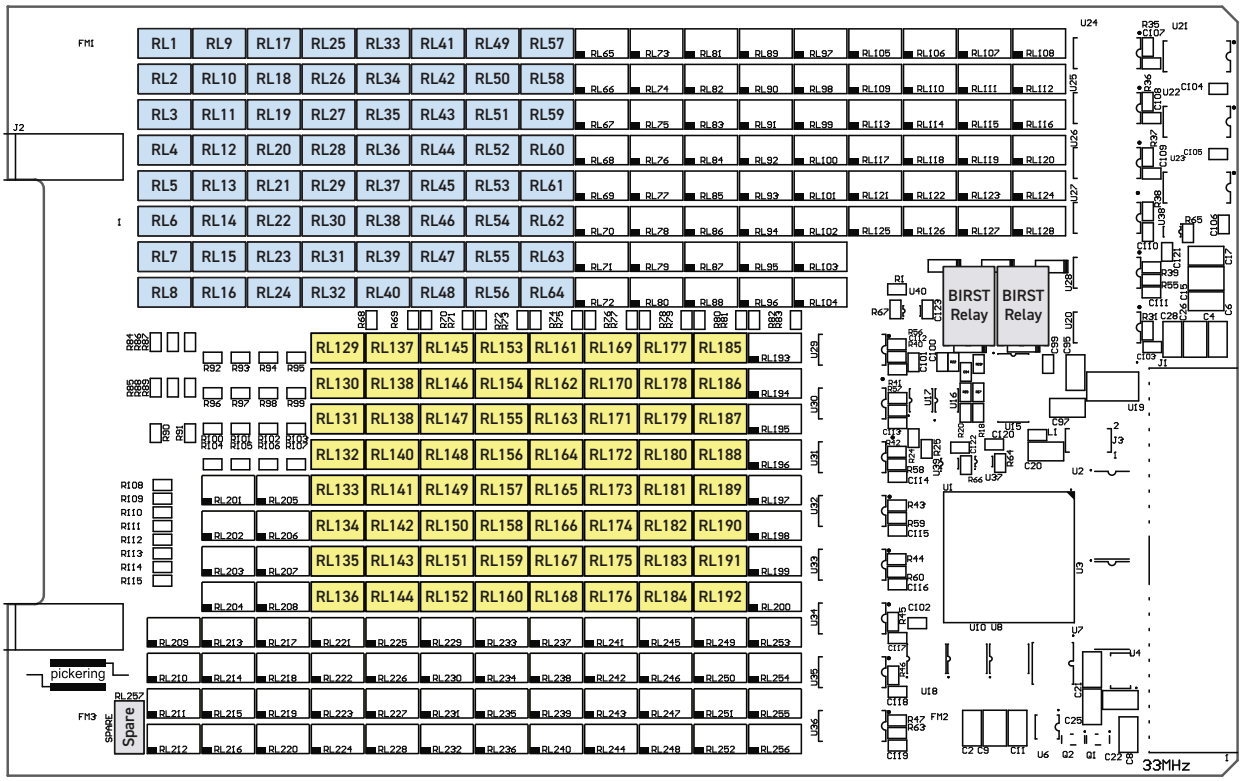


Figure 7.21 - 40-520A-207 Dual 8x8 Matrix: Component Layout - PXI Version

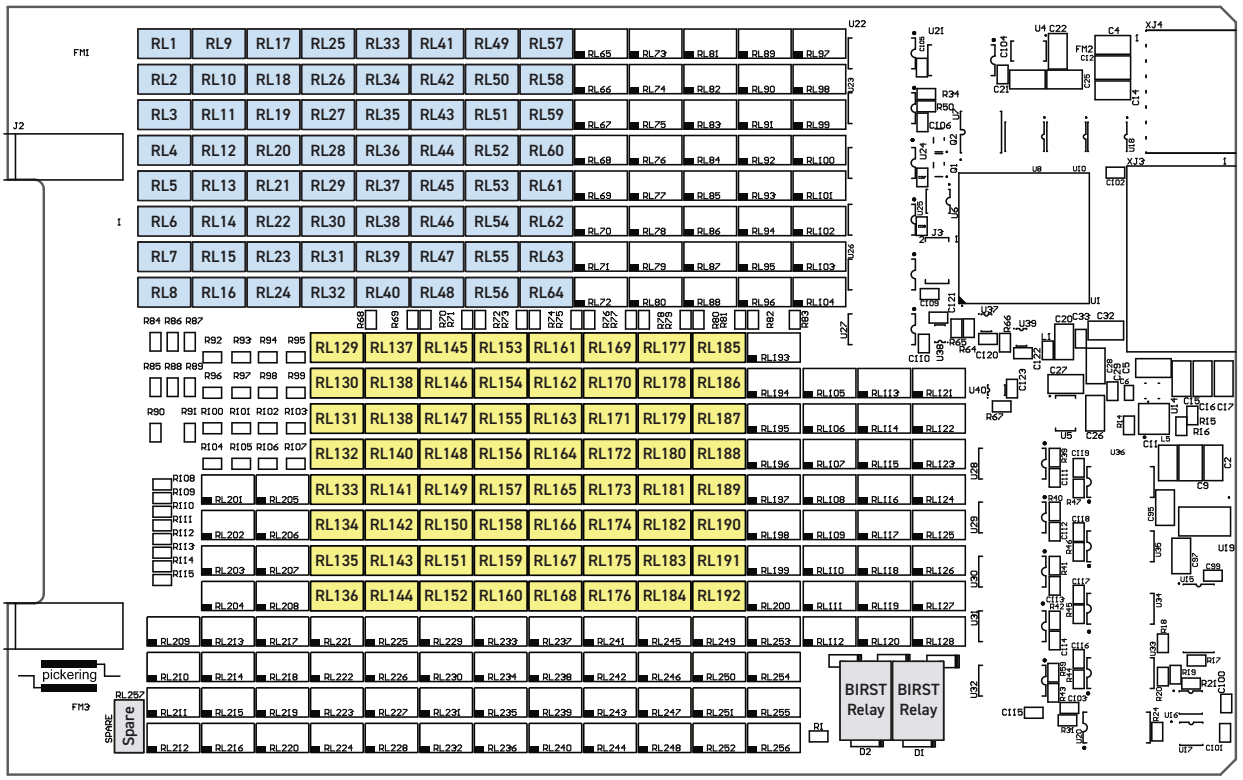


Figure 7.22 - 42-520A-207 Dual 8x8 Matrix: Component Layout - PXIe Version

TABLE 7.12 - 40/42-520A-301 Single 32x6 Matrix: Relay Numbering

X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.
1	1	RL1	9	1	RL65	17	1	RL129	25	1	RL193
1	2	RL2	9	2	RL66	17	2	RL130	25	2	RL194
1	3	RL3	9	3	RL67	17	3	RL131	25	3	RL195
1	4	RL4	9	4	RL68	17	4	RL132	25	4	RL196
1	5	RL5	9	5	RL69	17	5	RL133	25	5	RL197
1	6	RL6	9	6	RL70	17	6	RL134	25	6	RL198
Not Fitted		RL7	Not Fitted		RL71	Not Fitted		RL135	Not Fitted		RL199
Not Fitted		RL8	Not Fitted		RL72	Not Fitted		RL136	Not Fitted		RL200
2	1	RL9	10	1	RL73	18	1	RL137	26	1	RL201
2	2	RL10	10	2	RL74	18	2	RL138	26	2	RL202
2	3	RL11	10	3	RL75	18	3	RL139	26	3	RL203
2	4	RL12	10	4	RL76	18	4	RL140	26	4	RL204
2	5	RL13	10	5	RL77	18	5	RL141	26	5	RL205
2	6	RL14	10	6	RL78	18	6	RL142	26	6	RL206
Not Fitted		RL15	Not Fitted		RL79	Not Fitted		RL143	Not Fitted		RL207
Not Fitted		RL16	Not Fitted		RL80	Not Fitted		RL144	Not Fitted		RL208
3	1	RL17	11	1	RL81	19	1	RL145	27	1	RL209
3	2	RL18	11	2	RL82	19	2	RL146	27	2	RL210
3	3	RL19	11	3	RL83	19	3	RL147	27	3	RL211
3	4	RL20	11	4	RL84	19	4	RL148	27	4	RL212
3	5	RL21	11	5	RL85	19	5	RL149	27	5	RL213
3	6	RL22	11	6	RL86	19	6	RL150	27	6	RL214
Not Fitted		RL23	Not Fitted		RL87	Not Fitted		RL151	Not Fitted		RL215
Not Fitted		RL24	Not Fitted		RL88	Not Fitted		RL152	Not Fitted		RL216
4	1	RL25	12	1	RL89	20	1	RL153	28	1	RL217
4	2	RL26	12	2	RL90	20	2	RL154	28	2	RL218
4	3	RL27	12	3	RL91	20	3	RL155	28	3	RL219
4	4	RL28	12	4	RL92	20	4	RL156	28	4	RL220
4	5	RL29	12	5	RL93	20	5	RL157	28	5	RL221
4	6	RL30	12	6	RL94	20	6	RL158	28	6	RL222
Not Fitted		RL31	Not Fitted		RL95	Not Fitted		RL159	Not Fitted		RL223
Not Fitted		RL32	Not Fitted		RL96	Not Fitted		RL160	Not Fitted		RL224
5	1	RL33	13	1	RL97	21	1	RL161	29	1	RL225
5	2	RL34	13	2	RL98	21	2	RL162	29	2	RL226
5	3	RL35	13	3	RL99	21	3	RL163	29	3	RL227
5	4	RL36	13	4	RL100	21	4	RL164	29	4	RL228
5	5	RL37	13	5	RL101	21	5	RL165	29	5	RL229
5	6	RL38	13	6	RL102	21	6	RL166	29	6	RL230
Not Fitted		RL39	Not Fitted		RL103	Not Fitted		RL167	Not Fitted		RL231
Not Fitted		RL40	Not Fitted		RL104	Not Fitted		RL168	Not Fitted		RL232
6	1	RL41	14	1	RL105	22	1	RL169	30	1	RL233
6	2	RL42	14	2	RL106	22	2	RL170	30	2	RL234
6	3	RL43	14	3	RL107	22	3	RL171	30	3	RL235
6	4	RL44	14	4	RL108	22	4	RL172	30	4	RL236
6	5	RL45	14	5	RL109	22	5	RL173	30	5	RL237
6	6	RL46	14	6	RL110	22	6	RL174	30	6	RL238
Not Fitted		RL47	Not Fitted		RL111	Not Fitted		RL175	Not Fitted		RL239
Not Fitted		RL48	Not Fitted		RL112	Not Fitted		RL176	Not Fitted		RL240
7	1	RL49	15	1	RL113	23	1	RL177	31	1	RL241
7	2	RL50	15	2	RL114	23	2	RL178	31	2	RL242
7	3	RL51	15	3	RL115	23	3	RL179	31	3	RL243
7	4	RL52	15	4	RL116	23	4	RL180	31	4	RL244
7	5	RL53	15	5	RL117	23	5	RL181	31	5	RL245
7	6	RL54	15	6	RL118	23	6	RL182	31	6	RL246
Not Fitted		RL55	Not Fitted		RL119	Not Fitted		RL183	Not Fitted		RL247
Not Fitted		RL56	Not Fitted		RL120	Not Fitted		RL184	Not Fitted		RL248
8	1	RL57	16	1	RL121	24	1	RL185	32	1	RL249
8	2	RL58	16	2	RL122	24	2	RL186	32	2	RL250
8	3	RL59	16	3	RL123	24	3	RL187	32	3	RL251
8	4	RL60	16	4	RL124	24	4	RL188	32	4	RL252
8	5	RL61	16	5	RL125	24	5	RL189	32	5	RL253
8	6	RL62	16	6	RL126	24	6	RL190	32	6	RL254
Not Fitted		RL63	Not Fitted		RL127	Not Fitted		RL191	Not Fitted		RL255
Not Fitted		RL64	Not Fitted		RL128	Not Fitted		RL192	Not Fitted		RL256

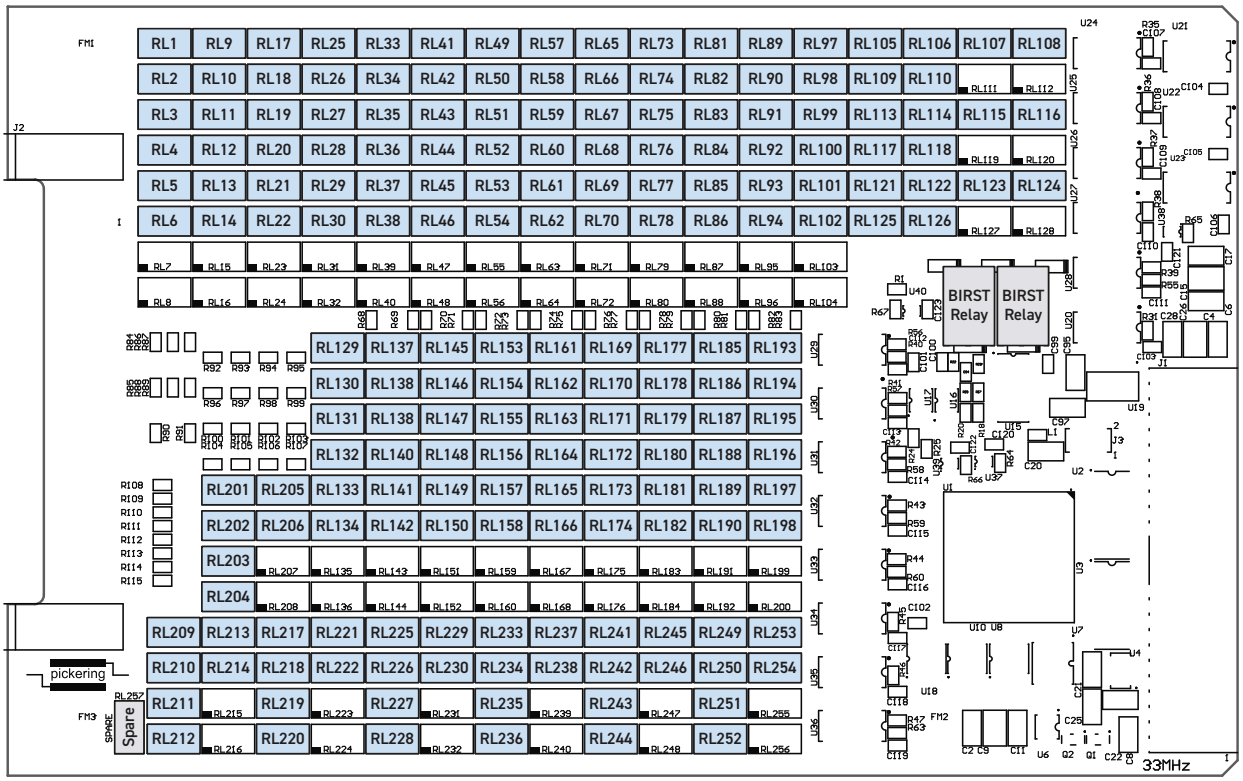


Figure 7.23 - 40-520A-301 Single 32x6 Matrix: Component Layout - PXI Version

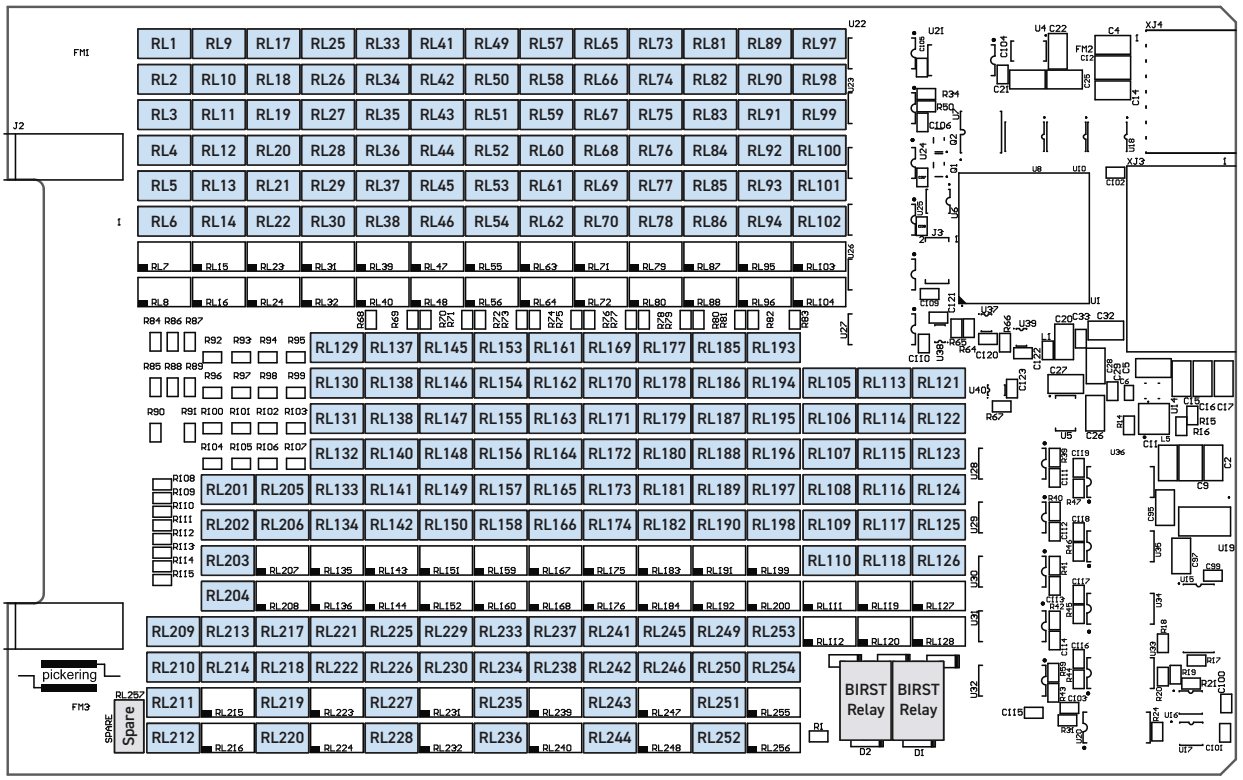


Figure 7.24 - 42-520A-301 Single 32x6 Matrix: Component Layout - PXIe Version

TABLE 7.13 - 40/42-520A-302 Single 24x6 Matrix: Relay Numbering

X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.
1	1	RL1	9	1	RL65	17	1	RL129	Not Fitted		RL193
1	2	RL2	9	2	RL66	17	2	RL130	Not Fitted		RL194
1	3	RL3	9	3	RL67	17	3	RL131	Not Fitted		RL195
1	4	RL4	9	4	RL68	17	4	RL132	Not Fitted		RL196
1	5	RL5	9	5	RL69	17	5	RL133	Not Fitted		RL197
1	6	RL6	9	6	RL70	17	6	RL134	Not Fitted		RL198
Not Fitted		RL7	Not Fitted		RL71	Not Fitted		RL135	Not Fitted		RL199
Not Fitted		RL8	Not Fitted		RL72	Not Fitted		RL136	Not Fitted		RL200
2	1	RL9	10	1	RL73	18	1	RL137	Not Fitted		RL201
2	2	RL10	10	2	RL74	18	2	RL138	Not Fitted		RL202
2	3	RL11	10	3	RL75	18	3	RL139	Not Fitted		RL203
2	4	RL12	10	4	RL76	18	4	RL140	Not Fitted		RL204
2	5	RL13	10	5	RL77	18	5	RL141	Not Fitted		RL205
2	6	RL14	10	6	RL78	18	6	RL142	Not Fitted		RL206
Not Fitted		RL15	Not Fitted		RL79	Not Fitted		RL143	Not Fitted		RL207
Not Fitted		RL16	Not Fitted		RL80	Not Fitted		RL144	Not Fitted		RL208
3	1	RL17	11	1	RL81	19	1	RL145	Not Fitted		RL209
3	2	RL18	11	2	RL82	19	2	RL146	Not Fitted		RL210
3	3	RL19	11	3	RL83	19	3	RL147	Not Fitted		RL211
3	4	RL20	11	4	RL84	19	4	RL148	Not Fitted		RL212
3	5	RL21	11	5	RL85	19	5	RL149	Not Fitted		RL213
3	6	RL22	11	6	RL86	19	6	RL150	Not Fitted		RL214
Not Fitted		RL23	Not Fitted		RL87	Not Fitted		RL151	Not Fitted		RL215
Not Fitted		RL24	Not Fitted		RL88	Not Fitted		RL152	Not Fitted		RL216
4	1	RL25	12	1	RL89	20	1	RL153	Not Fitted		RL217
4	2	RL26	12	2	RL90	20	2	RL154	Not Fitted		RL218
4	3	RL27	12	3	RL91	20	3	RL155	Not Fitted		RL219
4	4	RL28	12	4	RL92	20	4	RL156	Not Fitted		RL220
4	5	RL29	12	5	RL93	20	5	RL157	Not Fitted		RL221
4	6	RL30	12	6	RL94	20	6	RL158	Not Fitted		RL222
Not Fitted		RL31	Not Fitted		RL95	Not Fitted		RL159	Not Fitted		RL223
Not Fitted		RL32	Not Fitted		RL96	Not Fitted		RL160	Not Fitted		RL224
5	1	RL33	13	1	RL97	21	1	RL161	Not Fitted		RL225
5	2	RL34	13	2	RL98	21	2	RL162	Not Fitted		RL226
5	3	RL35	13	3	RL99	21	3	RL163	Not Fitted		RL227
5	4	RL36	13	4	RL100	21	4	RL164	Not Fitted		RL228
5	5	RL37	13	5	RL101	21	5	RL165	Not Fitted		RL229
5	6	RL38	13	6	RL102	21	6	RL166	Not Fitted		RL230
Not Fitted		RL39	Not Fitted		RL103	Not Fitted		RL167	Not Fitted		RL231
Not Fitted		RL40	Not Fitted		RL104	Not Fitted		RL168	Not Fitted		RL232
6	1	RL41	14	1	RL105	22	1	RL169	Not Fitted		RL233
6	2	RL42	14	2	RL106	22	2	RL170	Not Fitted		RL234
6	3	RL43	14	3	RL107	22	3	RL171	Not Fitted		RL235
6	4	RL44	14	4	RL108	22	4	RL172	Not Fitted		RL236
6	5	RL45	14	5	RL109	22	5	RL173	Not Fitted		RL237
6	6	RL46	14	6	RL110	22	6	RL174	Not Fitted		RL238
Not Fitted		RL47	Not Fitted		RL111	Not Fitted		RL175	Not Fitted		RL239
Not Fitted		RL48	Not Fitted		RL112	Not Fitted		RL176	Not Fitted		RL240
7	1	RL49	15	1	RL113	23	1	RL177	Not Fitted		RL241
7	2	RL50	15	2	RL114	23	2	RL178	Not Fitted		RL242
7	3	RL51	15	3	RL115	23	3	RL179	Not Fitted		RL243
7	4	RL52	15	4	RL116	23	4	RL180	Not Fitted		RL244
7	5	RL53	15	5	RL117	23	5	RL181	Not Fitted		RL245
7	6	RL54	15	6	RL118	23	6	RL182	Not Fitted		RL246
Not Fitted		RL55	Not Fitted		RL119	Not Fitted		RL183	Not Fitted		RL247
Not Fitted		RL56	Not Fitted		RL120	Not Fitted		RL184	Not Fitted		RL248
8	1	RL57	16	1	RL121	24	1	RL185	Not Fitted		RL249
8	2	RL58	16	2	RL122	24	2	RL186	Not Fitted		RL250
8	3	RL59	16	3	RL123	24	3	RL187	Not Fitted		RL251
8	4	RL60	16	4	RL124	24	4	RL188	Not Fitted		RL252
8	5	RL61	16	5	RL125	24	5	RL189	Not Fitted		RL253
8	6	RL62	16	6	RL126	24	6	RL190	Not Fitted		RL254
Not Fitted		RL63	Not Fitted		RL127	Not Fitted		RL191	Not Fitted		RL255
Not Fitted		RL64	Not Fitted		RL128	Not Fitted		RL192	Not Fitted		RL256

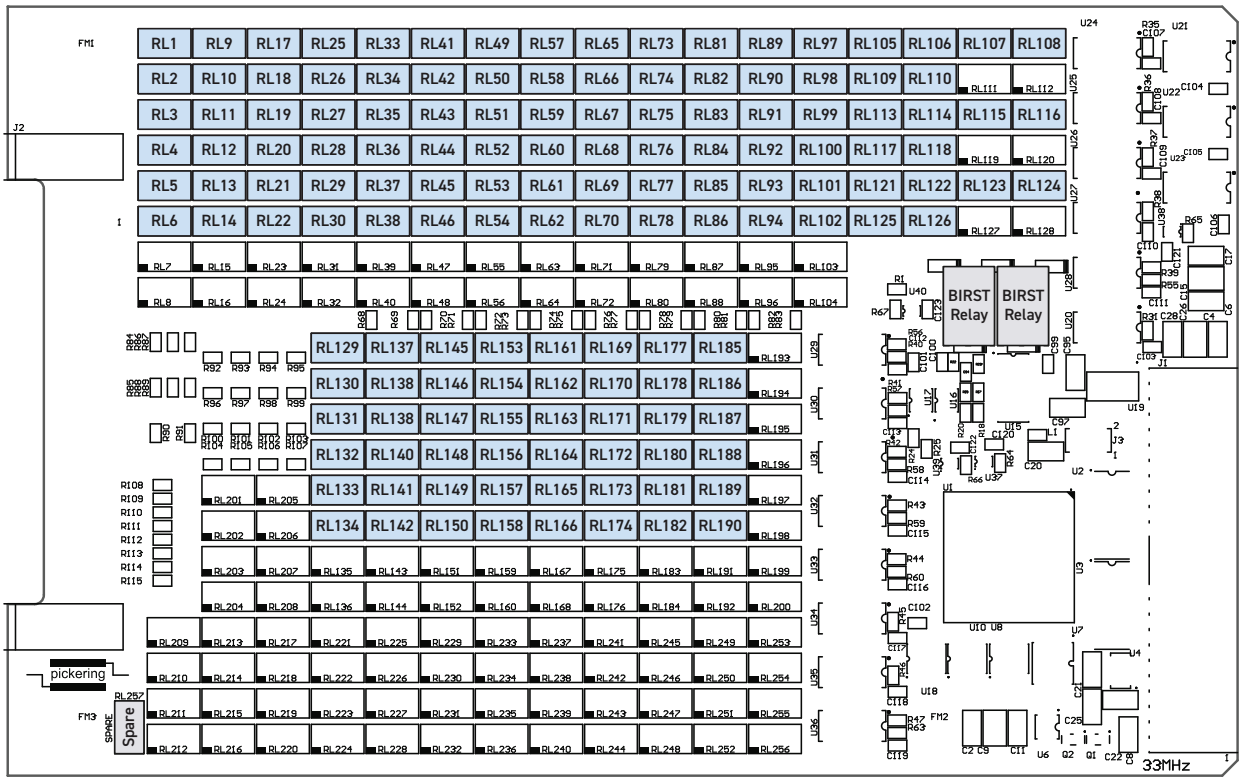


Figure 7.25 - 40-520A-302 Single 24x6 Matrix: Component Layout - PXI Version

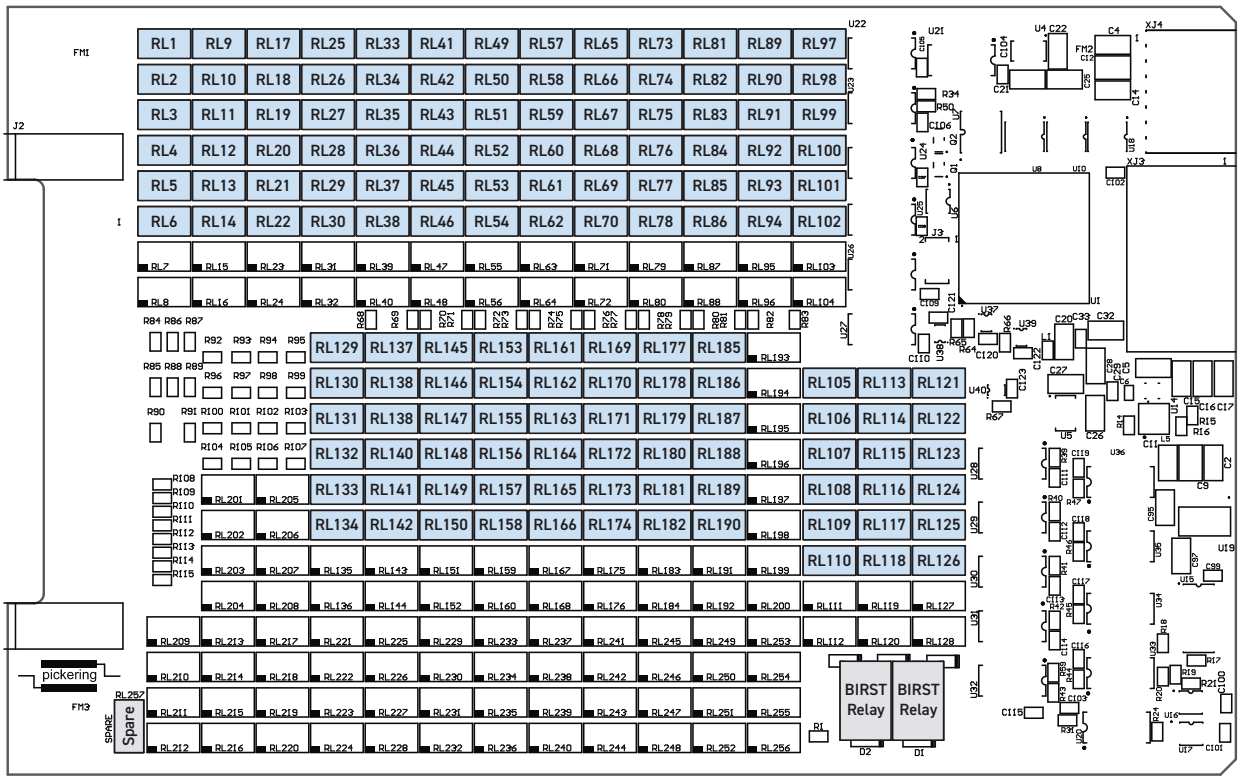


Figure 7.26 - 42-520A-302 Single 24x6 Matrix: Component Layout - PXIe Version

TABLE 7.14 - 40/42-520A-303 Dual 16x6 Matrix: Relay Numbering

X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.
101	101	RL1	109	101	RL65	201	201	RL129	209	201	RL193
101	102	RL2	109	102	RL66	201	202	RL130	209	202	RL194
101	103	RL3	109	103	RL67	201	203	RL131	209	203	RL195
101	104	RL4	109	104	RL68	201	204	RL132	209	204	RL196
101	105	RL5	109	105	RL69	201	205	RL133	209	205	RL197
101	106	RL6	109	106	RL70	201	206	RL134	209	206	RL198
Not Fitted		RL7	Not Fitted		RL71	Not Fitted		RL135	Not Fitted		RL199
Not Fitted		RL8	Not Fitted		RL72	Not Fitted		RL136	Not Fitted		RL200
102	101	RL9	110	101	RL73	202	201	RL137	210	201	RL201
102	102	RL10	110	102	RL74	202	202	RL138	210	202	RL202
102	103	RL11	110	103	RL75	202	203	RL139	210	203	RL203
102	104	RL12	110	104	RL76	202	204	RL140	210	204	RL204
102	105	RL13	110	105	RL77	202	205	RL141	210	205	RL205
102	106	RL14	110	106	RL78	202	206	RL142	210	206	RL206
Not Fitted		RL15	Not Fitted		RL79	Not Fitted		RL143	Not Fitted		RL207
Not Fitted		RL16	Not Fitted		RL80	Not Fitted		RL144	Not Fitted		RL208
103	101	RL17	111	101	RL81	203	201	RL145	211	201	RL209
103	102	RL18	111	102	RL82	203	202	RL146	211	202	RL210
103	103	RL19	111	103	RL83	203	203	RL147	211	203	RL211
103	104	RL20	111	104	RL84	203	204	RL148	211	204	RL212
103	105	RL21	111	105	RL85	203	205	RL149	211	205	RL213
103	106	RL22	111	106	RL86	203	206	RL150	211	206	RL214
Not Fitted		RL23	Not Fitted		RL87	Not Fitted		RL151	Not Fitted		RL215
Not Fitted		RL24	Not Fitted		RL88	Not Fitted		RL152	Not Fitted		RL216
104	101	RL25	112	101	RL89	204	201	RL153	212	201	RL217
104	102	RL26	112	102	RL90	204	202	RL154	212	202	RL218
104	103	RL27	112	103	RL91	204	203	RL155	212	203	RL219
104	104	RL28	112	104	RL92	204	204	RL156	212	204	RL220
104	105	RL29	112	105	RL93	204	205	RL157	212	205	RL221
104	106	RL30	112	106	RL94	204	206	RL158	212	206	RL222
Not Fitted		RL31	Not Fitted		RL95	Not Fitted		RL159	Not Fitted		RL223
Not Fitted		RL32	Not Fitted		RL96	Not Fitted		RL160	Not Fitted		RL224
105	101	RL33	113	101	RL97	205	201	RL161	213	201	RL225
105	102	RL34	113	102	RL98	205	202	RL162	213	202	RL226
105	103	RL35	113	103	RL99	205	203	RL163	213	203	RL227
105	104	RL36	113	104	RL100	205	204	RL164	213	204	RL228
105	105	RL37	113	105	RL101	205	205	RL165	213	205	RL229
105	106	RL38	113	106	RL102	205	206	RL166	213	206	RL230
Not Fitted		RL39	Not Fitted		RL103	Not Fitted		RL167	Not Fitted		RL231
Not Fitted		RL40	Not Fitted		RL104	Not Fitted		RL168	Not Fitted		RL232
106	101	RL41	114	101	RL105	206	201	RL169	214	201	RL233
106	102	RL42	114	102	RL106	206	202	RL170	214	202	RL234
106	103	RL43	114	103	RL107	206	203	RL171	214	203	RL235
106	104	RL44	114	104	RL108	206	204	RL172	214	204	RL236
106	105	RL45	114	105	RL109	206	205	RL173	214	205	RL237
106	106	RL46	114	106	RL110	206	206	RL174	214	206	RL238
Not Fitted		RL47	Not Fitted		RL111	Not Fitted		RL175	Not Fitted		RL239
Not Fitted		RL48	Not Fitted		RL112	Not Fitted		RL176	Not Fitted		RL240
107	101	RL49	115	101	RL113	207	201	RL177	215	201	RL241
107	102	RL50	115	102	RL114	207	202	RL178	215	202	RL242
107	103	RL51	115	103	RL115	207	203	RL179	215	203	RL243
107	104	RL52	115	104	RL116	207	204	RL180	215	204	RL244
107	105	RL53	115	105	RL117	207	205	RL181	215	205	RL245
107	106	RL54	115	106	RL118	207	206	RL182	215	206	RL246
Not Fitted		RL55	Not Fitted		RL119	Not Fitted		RL183	Not Fitted		RL247
Not Fitted		RL56	Not Fitted		RL120	Not Fitted		RL184	Not Fitted		RL248
108	101	RL57	116	101	RL121	208	201	RL185	216	201	RL249
108	102	RL58	116	102	RL122	208	202	RL186	216	202	RL250
108	103	RL59	116	103	RL123	208	203	RL187	216	203	RL251
108	104	RL60	116	104	RL124	208	204	RL188	216	204	RL252
108	105	RL61	116	105	RL125	208	205	RL189	216	205	RL253
108	106	RL62	116	106	RL126	208	206	RL190	216	206	RL254
Not Fitted		RL63	Not Fitted		RL127	Not Fitted		RL191	Not Fitted		RL255
Not Fitted		RL64	Not Fitted		RL128	Not Fitted		RL192	Not Fitted		RL256

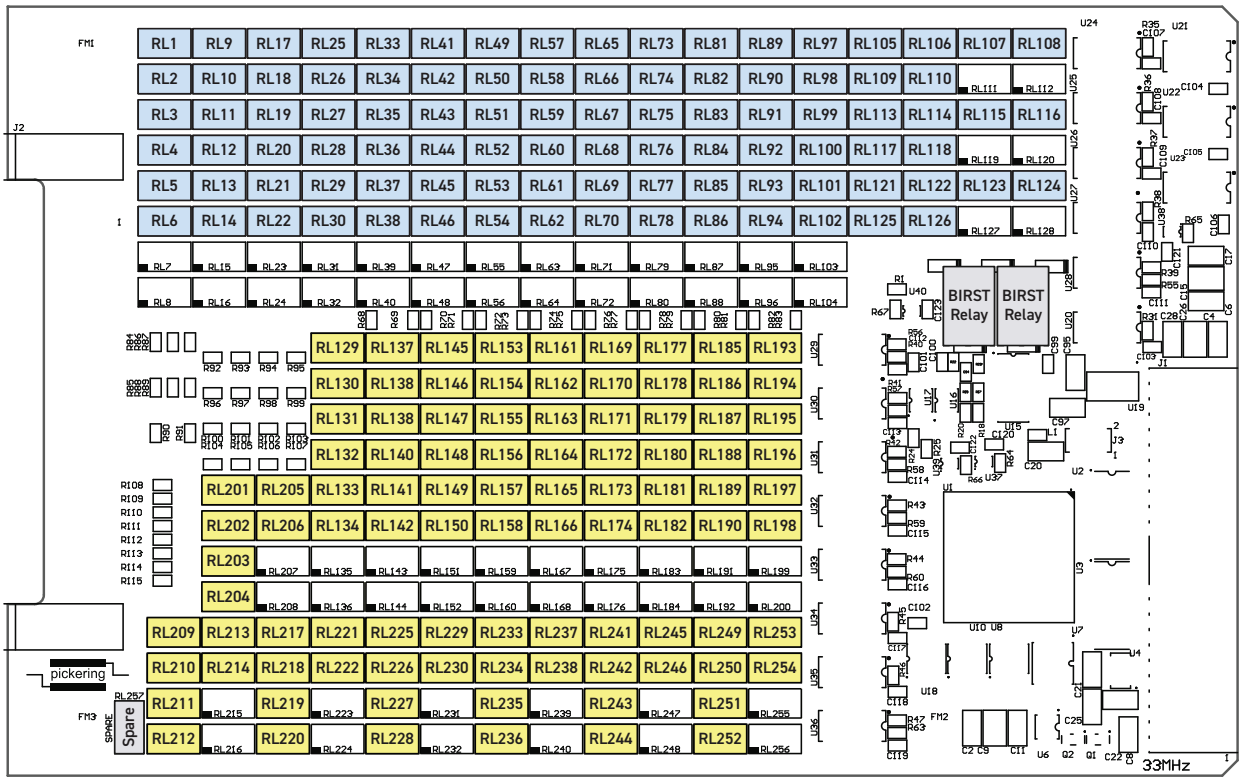


Figure 7.27 - 40-520A-303 Dual 16x6 Matrix: Component Layout - PXI Version

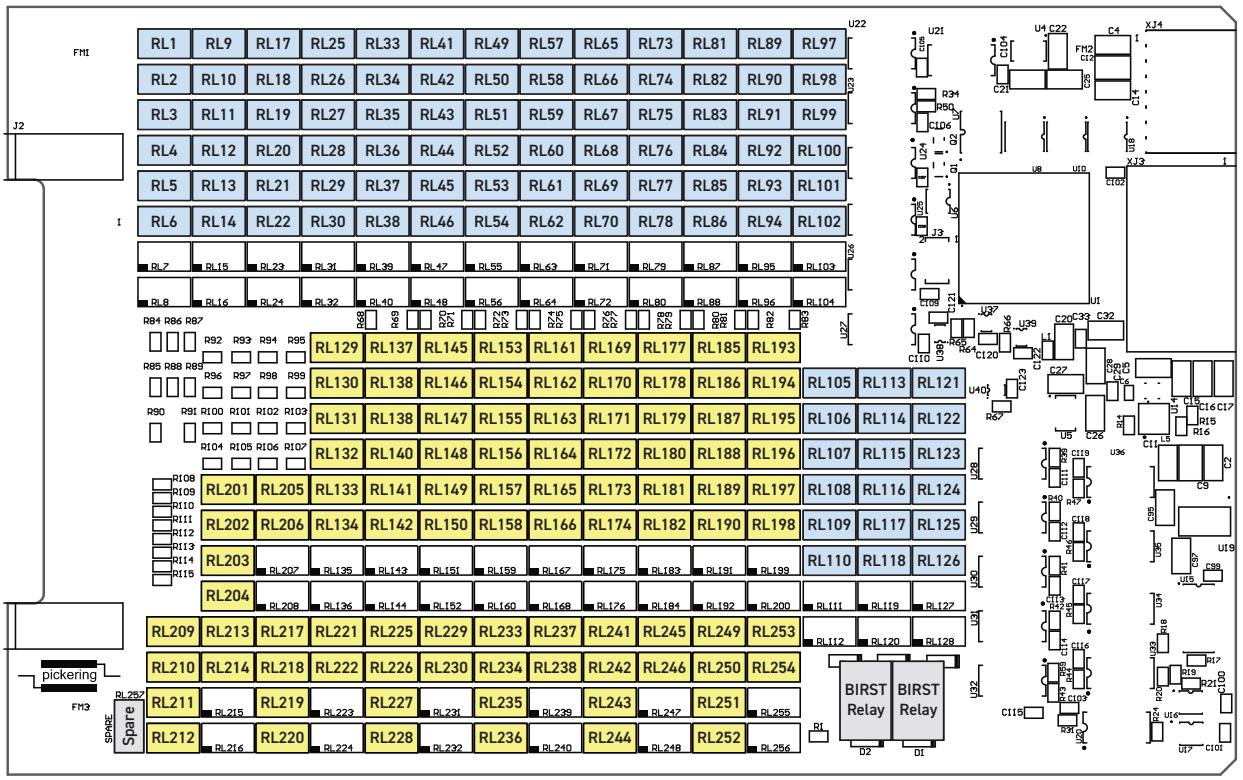


Figure 7.28 - 42-520A-303 Dual 16x6 Matrix: Component Layout - PXIe Version

TABLE 7.15 - 40/42-520A-304 Dual 12x6 Matrix: Relay Numbering

X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.
101	101	RL1	109	101	RL65	201	201	RL129	209	201	RL193
101	102	RL2	109	102	RL66	201	202	RL130	209	202	RL194
101	103	RL3	109	103	RL67	201	203	RL131	209	203	RL195
101	104	RL4	109	104	RL68	201	204	RL132	209	204	RL196
101	105	RL5	109	105	RL69	201	205	RL133	209	205	RL197
101	106	RL6	109	106	RL70	201	206	RL134	209	206	RL198
Not Fitted		RL7	Not Fitted		RL71	Not Fitted		RL135	Not Fitted		RL199
Not Fitted		RL8	Not Fitted		RL72	Not Fitted		RL136	Not Fitted		RL200
102	101	RL9	110	101	RL73	202	201	RL137	210	201	RL201
102	102	RL10	110	102	RL74	202	202	RL138	210	202	RL202
102	103	RL11	110	103	RL75	202	203	RL139	210	203	RL203
102	104	RL12	110	104	RL76	202	204	RL140	210	204	RL204
102	105	RL13	110	105	RL77	202	205	RL141	210	205	RL205
102	106	RL14	110	106	RL78	202	206	RL142	210	206	RL206
Not Fitted		RL15	Not Fitted		RL79	Not Fitted		RL143	Not Fitted		RL207
Not Fitted		RL16	Not Fitted		RL80	Not Fitted		RL144	Not Fitted		RL208
103	101	RL17	111	101	RL81	203	201	RL145	211	201	RL209
103	102	RL18	111	102	RL82	203	202	RL146	211	202	RL210
103	103	RL19	111	103	RL83	203	203	RL147	211	203	RL211
103	104	RL20	111	104	RL84	203	204	RL148	211	204	RL212
103	105	RL21	111	105	RL85	203	205	RL149	211	205	RL213
103	106	RL22	111	106	RL86	203	206	RL150	211	206	RL214
Not Fitted		RL23	Not Fitted		RL87	Not Fitted		RL151	Not Fitted		RL215
Not Fitted		RL24	Not Fitted		RL88	Not Fitted		RL152	Not Fitted		RL216
104	101	RL25	112	101	RL89	204	201	RL153	212	201	RL217
104	102	RL26	112	102	RL90	204	202	RL154	212	202	RL218
104	103	RL27	112	103	RL91	204	203	RL155	212	203	RL219
104	104	RL28	112	104	RL92	204	204	RL156	212	204	RL220
104	105	RL29	112	105	RL93	204	205	RL157	212	205	RL221
104	106	RL30	112	106	RL94	204	206	RL158	212	206	RL222
Not Fitted		RL31	Not Fitted		RL95	Not Fitted		RL159	Not Fitted		RL223
Not Fitted		RL32	Not Fitted		RL96	Not Fitted		RL160	Not Fitted		RL224
105	101	RL33	Not Fitted		RL97	205	201	RL161	Not Fitted		RL225
105	102	RL34	Not Fitted		RL98	205	202	RL162	Not Fitted		RL226
105	103	RL35	Not Fitted		RL99	205	203	RL163	Not Fitted		RL227
105	104	RL36	Not Fitted		RL100	205	204	RL164	Not Fitted		RL228
105	105	RL37	Not Fitted		RL101	205	205	RL165	Not Fitted		RL229
105	106	RL38	Not Fitted		RL102	205	206	RL166	Not Fitted		RL230
Not Fitted		RL39	Not Fitted		RL103	Not Fitted		RL167	Not Fitted		RL231
Not Fitted		RL40	Not Fitted		RL104	Not Fitted		RL168	Not Fitted		RL232
106	101	RL41	Not Fitted		RL105	206	201	RL169	Not Fitted		RL233
106	102	RL42	Not Fitted		RL106	206	202	RL170	Not Fitted		RL234
106	103	RL43	Not Fitted		RL107	206	203	RL171	Not Fitted		RL235
106	104	RL44	Not Fitted		RL108	206	204	RL172	Not Fitted		RL236
106	105	RL45	Not Fitted		RL109	206	205	RL173	Not Fitted		RL237
106	106	RL46	Not Fitted		RL110	206	206	RL174	Not Fitted		RL238
Not Fitted		RL47	Not Fitted		RL111	Not Fitted		RL175	Not Fitted		RL239
Not Fitted		RL48	Not Fitted		RL112	Not Fitted		RL176	Not Fitted		RL240
107	101	RL49	Not Fitted		RL113	207	201	RL177	Not Fitted		RL241
107	102	RL50	Not Fitted		RL114	207	202	RL178	Not Fitted		RL242
107	103	RL51	Not Fitted		RL115	207	203	RL179	Not Fitted		RL243
107	104	RL52	Not Fitted		RL116	207	204	RL180	Not Fitted		RL244
107	105	RL53	Not Fitted		RL117	207	205	RL181	Not Fitted		RL245
107	106	RL54	Not Fitted		RL118	207	206	RL182	Not Fitted		RL246
Not Fitted		RL55	Not Fitted		RL119	Not Fitted		RL183	Not Fitted		RL247
Not Fitted		RL56	Not Fitted		RL120	Not Fitted		RL184	Not Fitted		RL248
108	101	RL57	Not Fitted		RL121	208	201	RL185	Not Fitted		RL249
108	102	RL58	Not Fitted		RL122	208	202	RL186	Not Fitted		RL250
108	103	RL59	Not Fitted		RL123	208	203	RL187	Not Fitted		RL251
108	104	RL60	Not Fitted		RL124	208	204	RL188	Not Fitted		RL252
108	105	RL61	Not Fitted		RL125	208	205	RL189	Not Fitted		RL253
108	106	RL62	Not Fitted		RL126	208	206	RL190	Not Fitted		RL254
Not Fitted		RL63	Not Fitted		RL127	Not Fitted		RL191	Not Fitted		RL255
Not Fitted		RL64	Not Fitted		RL128	Not Fitted		RL192	Not Fitted		RL256

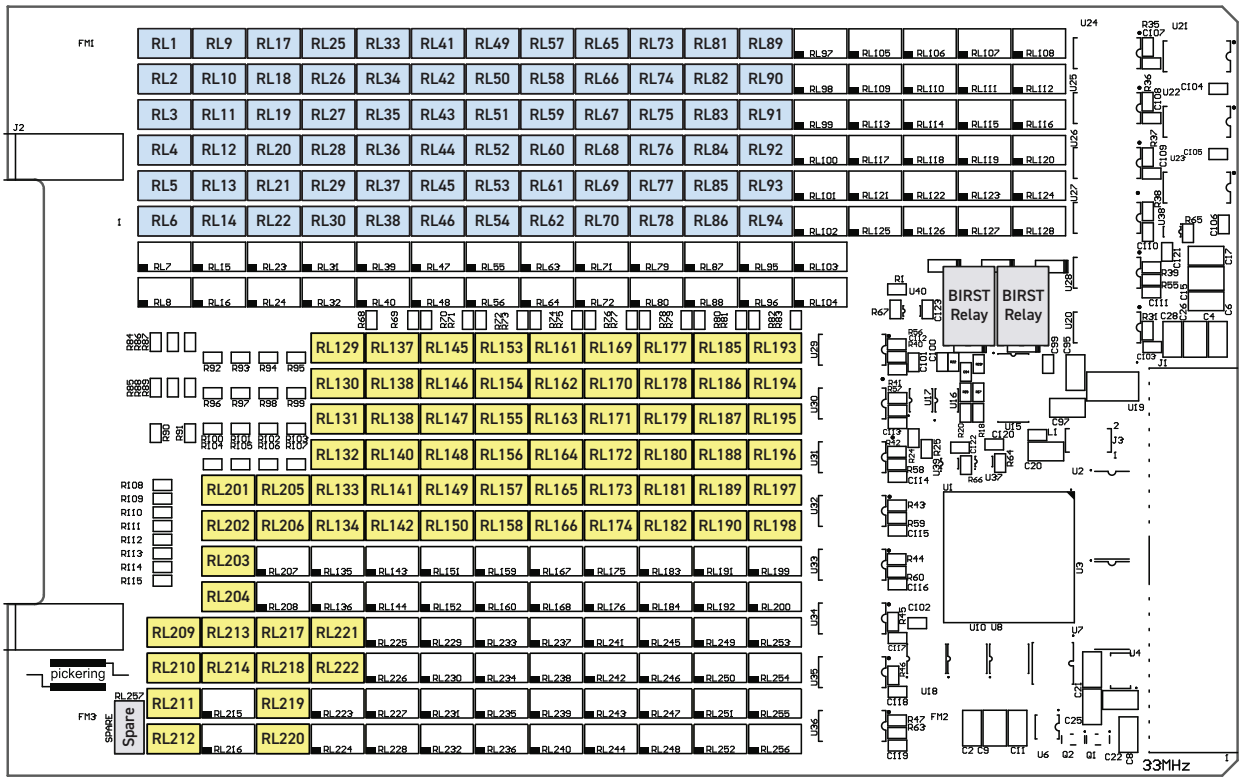


Figure 7.29 - 40-520A-304 Dual 12x6 Matrix: Component Layout - PXI Version

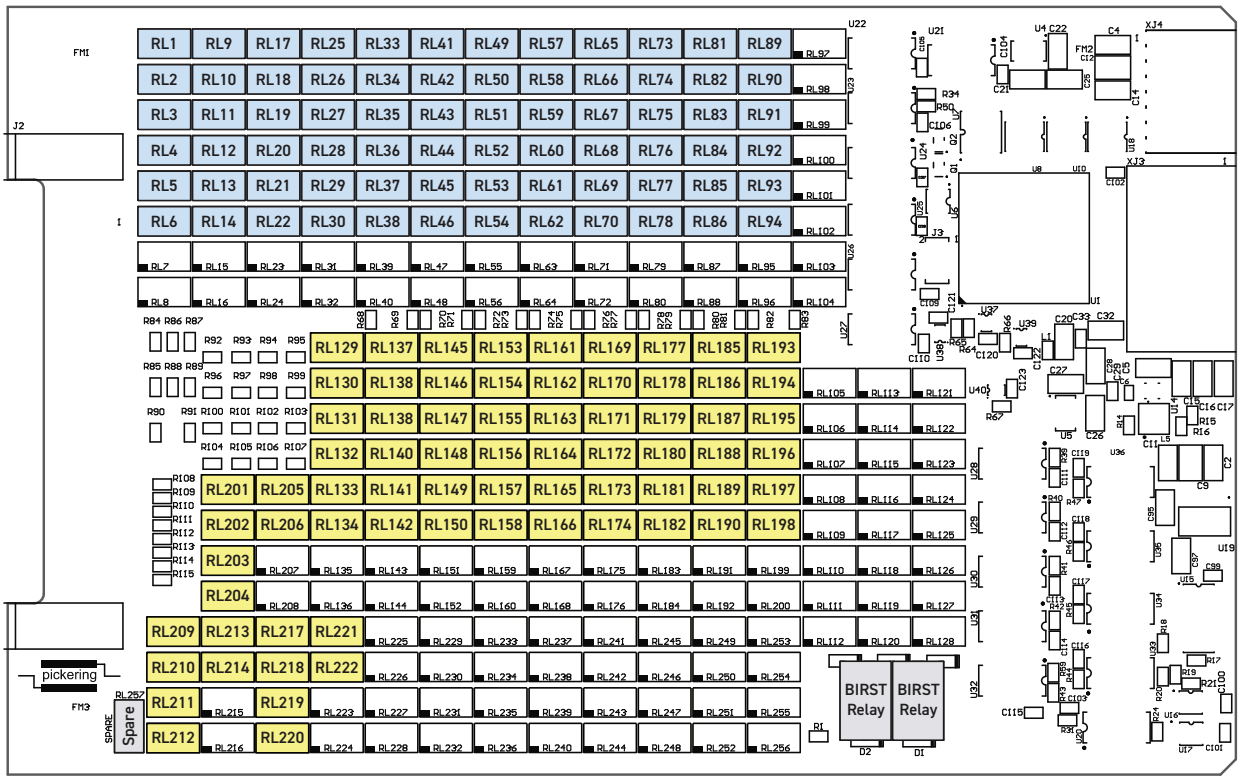


Figure 7.30 - 42-520A-304 Dual 12x6 Matrix: Component Layout - PXIe Version

TABLE 7.16 - 40/42-520A-401 Single 32x4 Matrix: Relay Numbering

X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.
1	1	RL1	9	1	RL65	17	1	RL129	25	1	RL193
1	2	RL2	9	2	RL66	17	2	RL130	25	2	RL194
1	3	RL3	9	3	RL67	17	3	RL131	25	3	RL195
1	4	RL4	9	4	RL68	17	4	RL132	25	4	RL196
Not Fitted		RL5	Not Fitted		RL69	Not Fitted		RL133	Not Fitted		RL197
Not Fitted		RL6	Not Fitted		RL70	Not Fitted		RL134	Not Fitted		RL198
Not Fitted		RL7	Not Fitted		RL71	Not Fitted		RL135	Not Fitted		RL199
Not Fitted		RL8	Not Fitted		RL72	Not Fitted		RL136	Not Fitted		RL200
2	1	RL9	10	1	RL73	18	1	RL137	26	1	RL201
2	2	RL10	10	2	RL74	18	2	RL138	26	2	RL202
2	3	RL11	10	3	RL75	18	3	RL139	26	3	RL203
2	4	RL12	10	4	RL76	18	4	RL140	26	4	RL204
Not Fitted		RL13	Not Fitted		RL77	Not Fitted		RL141	Not Fitted		RL205
Not Fitted		RL14	Not Fitted		RL78	Not Fitted		RL142	Not Fitted		RL206
Not Fitted		RL15	Not Fitted		RL79	Not Fitted		RL143	Not Fitted		RL207
Not Fitted		RL16	Not Fitted		RL80	Not Fitted		RL144	Not Fitted		RL208
3	1	RL17	11	1	RL81	19	1	RL145	27	1	RL209
3	2	RL18	11	2	RL82	19	2	RL146	27	2	RL210
3	3	RL19	11	3	RL83	19	3	RL147	27	3	RL211
3	4	RL20	11	4	RL84	19	4	RL148	27	4	RL212
Not Fitted		RL21	Not Fitted		RL85	Not Fitted		RL149	Not Fitted		RL213
Not Fitted		RL22	Not Fitted		RL86	Not Fitted		RL150	Not Fitted		RL214
Not Fitted		RL23	Not Fitted		RL87	Not Fitted		RL151	Not Fitted		RL215
Not Fitted		RL24	Not Fitted		RL88	Not Fitted		RL152	Not Fitted		RL216
4	1	RL25	12	1	RL89	20	1	RL153	28	1	RL217
4	2	RL26	12	2	RL90	20	2	RL154	28	2	RL218
4	3	RL27	12	3	RL91	20	3	RL155	28	3	RL219
4	4	RL28	12	4	RL92	20	4	RL156	28	4	RL220
Not Fitted		RL29	Not Fitted		RL93	Not Fitted		RL157	Not Fitted		RL221
Not Fitted		RL30	Not Fitted		RL94	Not Fitted		RL158	Not Fitted		RL222
Not Fitted		RL31	Not Fitted		RL95	Not Fitted		RL159	Not Fitted		RL223
Not Fitted		RL32	Not Fitted		RL96	Not Fitted		RL160	Not Fitted		RL224
5	1	RL33	13	1	RL97	21	1	RL161	29	1	RL225
5	2	RL34	13	2	RL98	21	2	RL162	29	2	RL226
5	3	RL35	13	3	RL99	21	3	RL163	29	3	RL227
5	4	RL36	13	4	RL100	21	4	RL164	29	4	RL228
Not Fitted		RL37	Not Fitted		RL101	Not Fitted		RL165	Not Fitted		RL229
Not Fitted		RL38	Not Fitted		RL102	Not Fitted		RL166	Not Fitted		RL230
Not Fitted		RL39	Not Fitted		RL103	Not Fitted		RL167	Not Fitted		RL231
Not Fitted		RL40	Not Fitted		RL104	Not Fitted		RL168	Not Fitted		RL232
6	1	RL41	14	1	RL105	22	1	RL169	30	1	RL233
6	2	RL42	14	2	RL106	22	2	RL170	30	2	RL234
6	3	RL43	14	3	RL107	22	3	RL171	30	3	RL235
6	4	RL44	14	4	RL108	22	4	RL172	30	4	RL236
Not Fitted		RL45	Not Fitted		RL109	Not Fitted		RL173	Not Fitted		RL237
Not Fitted		RL46	Not Fitted		RL110	Not Fitted		RL174	Not Fitted		RL238
Not Fitted		RL47	Not Fitted		RL111	Not Fitted		RL175	Not Fitted		RL239
Not Fitted		RL48	Not Fitted		RL112	Not Fitted		RL176	Not Fitted		RL240
7	1	RL49	15	1	RL113	23	1	RL177	31	1	RL241
7	2	RL50	15	2	RL114	23	2	RL178	31	2	RL242
7	3	RL51	15	3	RL115	23	3	RL179	31	3	RL243
7	4	RL52	15	4	RL116	23	4	RL180	31	4	RL244
Not Fitted		RL53	Not Fitted		RL117	Not Fitted		RL181	Not Fitted		RL245
Not Fitted		RL54	Not Fitted		RL118	Not Fitted		RL182	Not Fitted		RL246
Not Fitted		RL55	Not Fitted		RL119	Not Fitted		RL183	Not Fitted		RL247
Not Fitted		RL56	Not Fitted		RL120	Not Fitted		RL184	Not Fitted		RL248
8	1	RL57	16	1	RL121	24	1	RL185	32	1	RL249
8	2	RL58	16	2	RL122	24	2	RL186	32	2	RL250
8	3	RL59	16	3	RL123	24	3	RL187	32	3	RL251
8	4	RL60	16	4	RL124	24	4	RL188	32	4	RL252
Not Fitted		RL61	Not Fitted		RL125	Not Fitted		RL189	Not Fitted		RL253
Not Fitted		RL62	Not Fitted		RL126	Not Fitted		RL190	Not Fitted		RL254
Not Fitted		RL63	Not Fitted		RL127	Not Fitted		RL191	Not Fitted		RL255
Not Fitted		RL64	Not Fitted		RL128	Not Fitted		RL192	Not Fitted		RL256

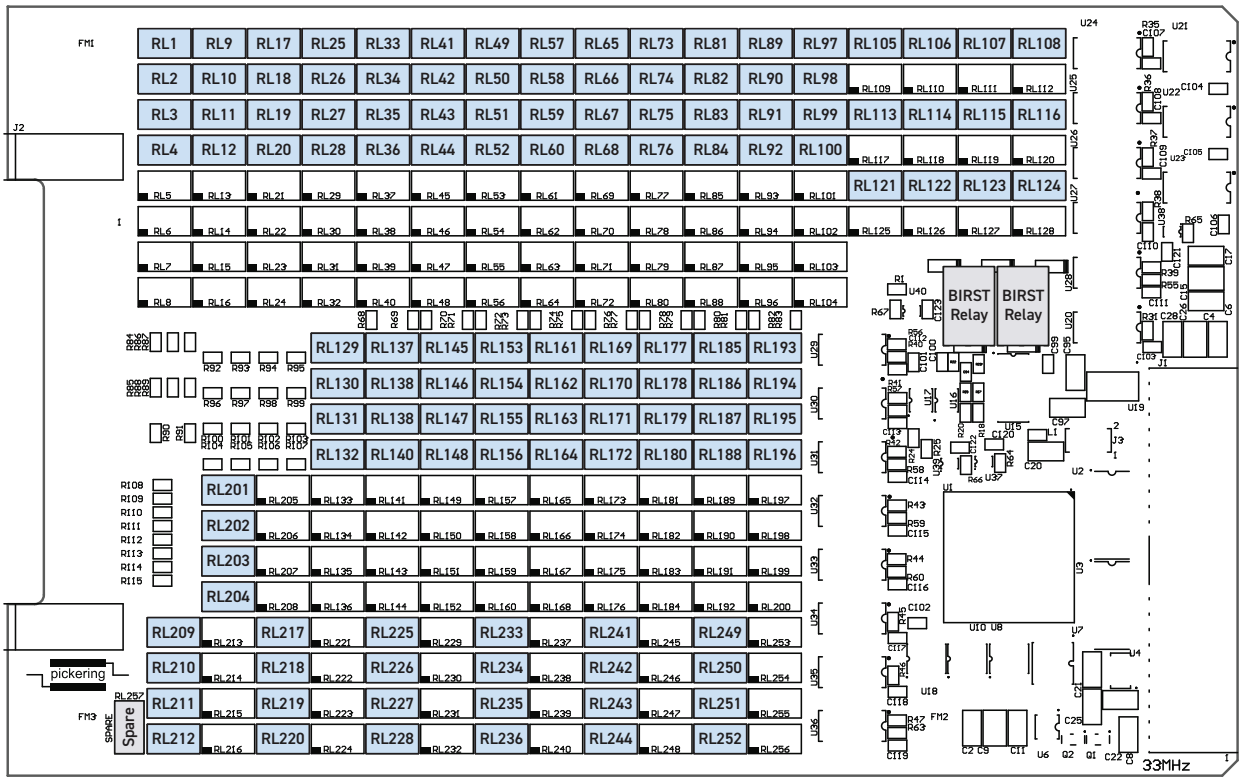


Figure 7.31 - 40-520A-401 Single 32x4 Matrix: Component Layout - PXI Version

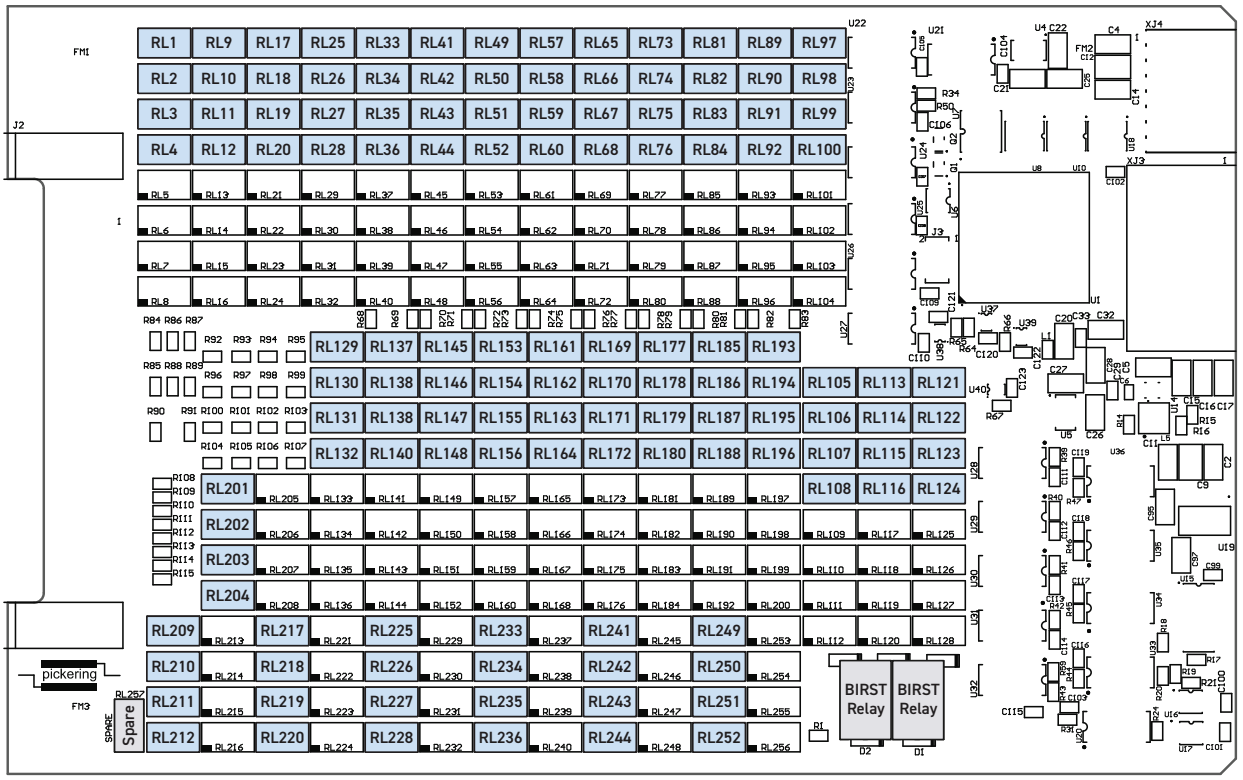


Figure 7.32 - 42-520A-401 Single 32x4 Matrix: Component Layout - PXIe Version

TABLE 7.17 - 40/42-520A-402 Single 24x4 Matrix: Relay Numbering

X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.
1	1	RL1	9	1	RL65	17	1	RL129	Not Fitted		RL193
1	2	RL2	9	2	RL66	17	2	RL130	Not Fitted		RL194
1	3	RL3	9	3	RL67	17	3	RL131	Not Fitted		RL195
1	4	RL4	9	4	RL68	17	4	RL132	Not Fitted		RL196
Not Fitted		RL5	Not Fitted		RL69	Not Fitted		RL133	Not Fitted		RL197
Not Fitted		RL6	Not Fitted		RL70	Not Fitted		RL134	Not Fitted		RL198
Not Fitted		RL7	Not Fitted		RL71	Not Fitted		RL135	Not Fitted		RL199
Not Fitted		RL8	Not Fitted		RL72	Not Fitted		RL136	Not Fitted		RL200
2	1	RL9	10	1	RL73	18	1	RL137	Not Fitted		RL201
2	2	RL10	10	2	RL74	18	2	RL138	Not Fitted		RL202
2	3	RL11	10	3	RL75	18	3	RL139	Not Fitted		RL203
2	4	RL12	10	4	RL76	18	4	RL140	Not Fitted		RL204
Not Fitted		RL13	Not Fitted		RL77	Not Fitted		RL141	Not Fitted		RL205
Not Fitted		RL14	Not Fitted		RL78	Not Fitted		RL142	Not Fitted		RL206
Not Fitted		RL15	Not Fitted		RL79	Not Fitted		RL143	Not Fitted		RL207
Not Fitted		RL16	Not Fitted		RL80	Not Fitted		RL144	Not Fitted		RL208
3	1	RL17	11	1	RL81	19	1	RL145	Not Fitted		RL209
3	2	RL18	11	2	RL82	19	2	RL146	Not Fitted		RL210
3	3	RL19	11	3	RL83	19	3	RL147	Not Fitted		RL211
3	4	RL20	11	4	RL84	19	4	RL148	Not Fitted		RL212
Not Fitted		RL21	Not Fitted		RL85	Not Fitted		RL149	Not Fitted		RL213
Not Fitted		RL22	Not Fitted		RL86	Not Fitted		RL150	Not Fitted		RL214
Not Fitted		RL23	Not Fitted		RL87	Not Fitted		RL151	Not Fitted		RL215
Not Fitted		RL24	Not Fitted		RL88	Not Fitted		RL152	Not Fitted		RL216
4	1	RL25	12	1	RL89	20	1	RL153	Not Fitted		RL217
4	2	RL26	12	2	RL90	20	2	RL154	Not Fitted		RL218
4	3	RL27	12	3	RL91	20	3	RL155	Not Fitted		RL219
4	4	RL28	12	4	RL92	20	4	RL156	Not Fitted		RL220
Not Fitted		RL29	Not Fitted		RL93	Not Fitted		RL157	Not Fitted		RL221
Not Fitted		RL30	Not Fitted		RL94	Not Fitted		RL158	Not Fitted		RL222
Not Fitted		RL31	Not Fitted		RL95	Not Fitted		RL159	Not Fitted		RL223
Not Fitted		RL32	Not Fitted		RL96	Not Fitted		RL160	Not Fitted		RL224
5	1	RL33	13	1	RL97	21	1	RL161	Not Fitted		RL225
5	2	RL34	13	2	RL98	21	2	RL162	Not Fitted		RL226
5	3	RL35	13	3	RL99	21	3	RL163	Not Fitted		RL227
5	4	RL36	13	4	RL100	21	4	RL164	Not Fitted		RL228
Not Fitted		RL37	Not Fitted		RL101	Not Fitted		RL165	Not Fitted		RL229
Not Fitted		RL38	Not Fitted		RL102	Not Fitted		RL166	Not Fitted		RL230
Not Fitted		RL39	Not Fitted		RL103	Not Fitted		RL167	Not Fitted		RL231
Not Fitted		RL40	Not Fitted		RL104	Not Fitted		RL168	Not Fitted		RL232
6	1	RL41	14	1	RL105	22	1	RL169	Not Fitted		RL233
6	2	RL42	14	2	RL106	22	2	RL170	Not Fitted		RL234
6	3	RL43	14	3	RL107	22	3	RL171	Not Fitted		RL235
6	4	RL44	14	4	RL108	22	4	RL172	Not Fitted		RL236
Not Fitted		RL45	Not Fitted		RL109	Not Fitted		RL173	Not Fitted		RL237
Not Fitted		RL46	Not Fitted		RL110	Not Fitted		RL174	Not Fitted		RL238
Not Fitted		RL47	Not Fitted		RL111	Not Fitted		RL175	Not Fitted		RL239
Not Fitted		RL48	Not Fitted		RL112	Not Fitted		RL176	Not Fitted		RL240
7	1	RL49	15	1	RL113	23	1	RL177	Not Fitted		RL241
7	2	RL50	15	2	RL114	23	2	RL178	Not Fitted		RL242
7	3	RL51	15	3	RL115	23	3	RL179	Not Fitted		RL243
7	4	RL52	15	4	RL116	23	4	RL180	Not Fitted		RL244
Not Fitted		RL53	Not Fitted		RL117	Not Fitted		RL181	Not Fitted		RL245
Not Fitted		RL54	Not Fitted		RL118	Not Fitted		RL182	Not Fitted		RL246
Not Fitted		RL55	Not Fitted		RL119	Not Fitted		RL183	Not Fitted		RL247
Not Fitted		RL56	Not Fitted		RL120	Not Fitted		RL184	Not Fitted		RL248
8	1	RL57	16	1	RL121	24	1	RL185	Not Fitted		RL249
8	2	RL58	16	2	RL122	24	2	RL186	Not Fitted		RL250
8	3	RL59	16	3	RL123	24	3	RL187	Not Fitted		RL251
8	4	RL60	16	4	RL124	24	4	RL188	Not Fitted		RL252
Not Fitted		RL61	Not Fitted		RL125	Not Fitted		RL189	Not Fitted		RL253
Not Fitted		RL62	Not Fitted		RL126	Not Fitted		RL190	Not Fitted		RL254
Not Fitted		RL63	Not Fitted		RL127	Not Fitted		RL191	Not Fitted		RL255
Not Fitted		RL64	Not Fitted		RL128	Not Fitted		RL192	Not Fitted		RL256

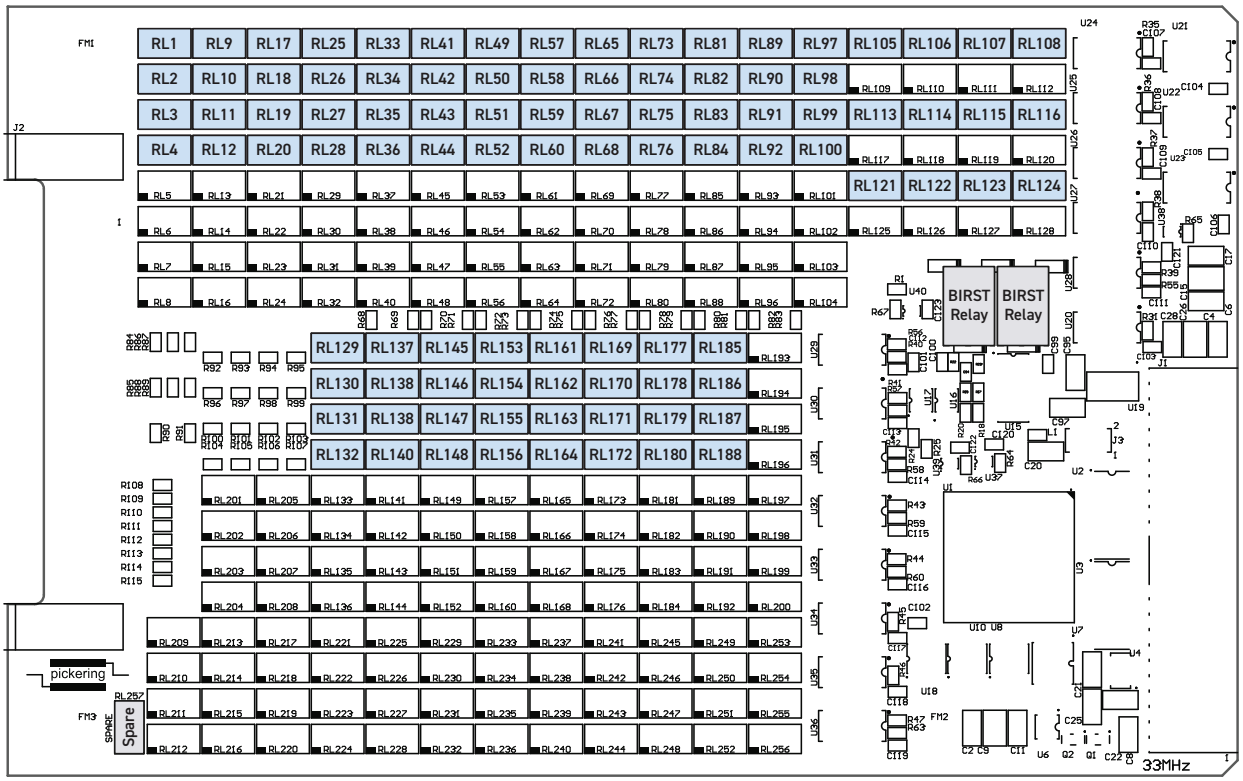


Figure 7.33 - 40-520A-402 Single 24x4 Matrix: Component Layout - PXI Version

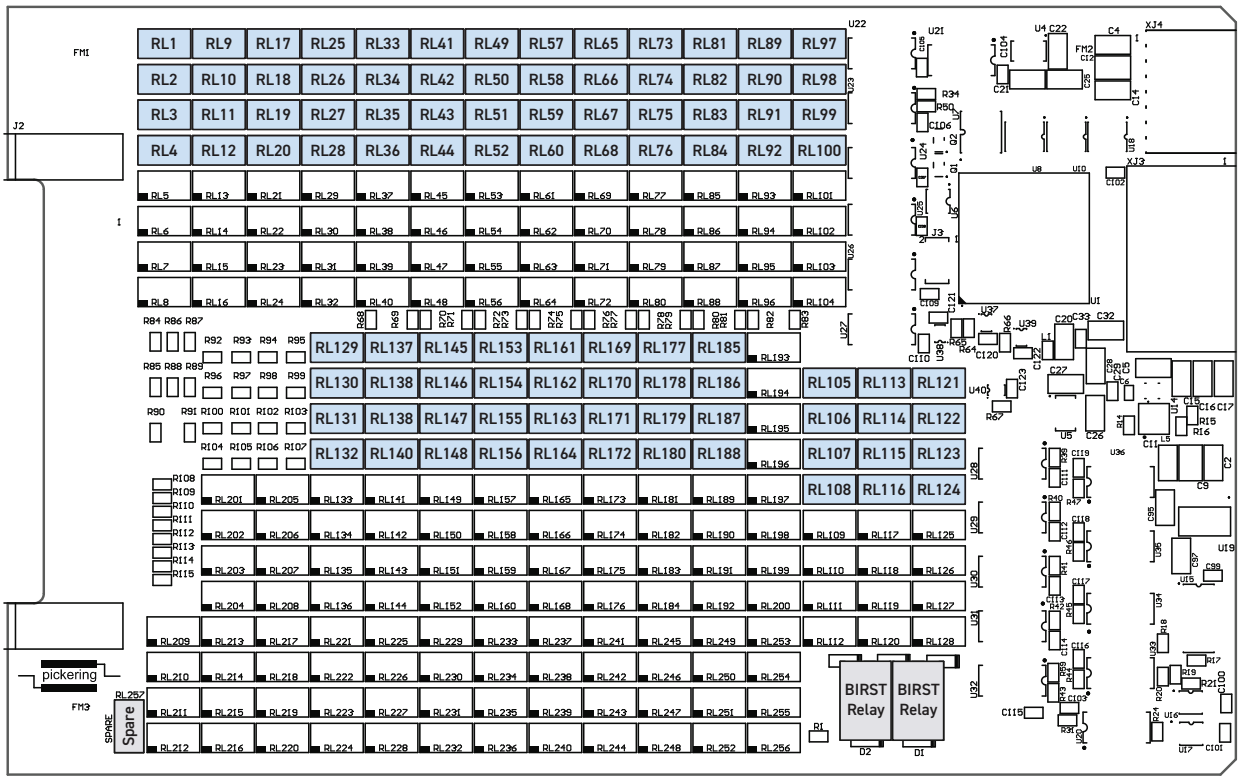


Figure 7.34 - 42-520A-402 Single 24x4 Matrix: Component Layout - PXIe Version

TABLE 7.18 - 40/42-520A-403 Single 16x4 Matrix: Relay Numbering

X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.
1	1	RL1	9	1	RL65	Not Fitted		RL129	Not Fitted		RL193
1	2	RL2	9	2	RL66	Not Fitted		RL130	Not Fitted		RL194
1	3	RL3	9	3	RL67	Not Fitted		RL131	Not Fitted		RL195
1	4	RL4	9	4	RL68	Not Fitted		RL132	Not Fitted		RL196
Not Fitted		RL5	Not Fitted		RL69	Not Fitted		RL133	Not Fitted		RL197
Not Fitted		RL6	Not Fitted		RL70	Not Fitted		RL134	Not Fitted		RL198
Not Fitted		RL7	Not Fitted		RL71	Not Fitted		RL135	Not Fitted		RL199
Not Fitted		RL8	Not Fitted		RL72	Not Fitted		RL136	Not Fitted		RL200
2	1	RL9	10	1	RL73	Not Fitted		RL137	Not Fitted		RL201
2	2	RL10	10	2	RL74	Not Fitted		RL138	Not Fitted		RL202
2	3	RL11	10	3	RL75	Not Fitted		RL139	Not Fitted		RL203
2	4	RL12	10	4	RL76	Not Fitted		RL140	Not Fitted		RL204
Not Fitted		RL13	Not Fitted		RL77	Not Fitted		RL141	Not Fitted		RL205
Not Fitted		RL14	Not Fitted		RL78	Not Fitted		RL142	Not Fitted		RL206
Not Fitted		RL15	Not Fitted		RL79	Not Fitted		RL143	Not Fitted		RL207
Not Fitted		RL16	Not Fitted		RL80	Not Fitted		RL144	Not Fitted		RL208
3	1	RL17	11	1	RL81	Not Fitted		RL145	Not Fitted		RL209
3	2	RL18	11	2	RL82	Not Fitted		RL146	Not Fitted		RL210
3	3	RL19	11	3	RL83	Not Fitted		RL147	Not Fitted		RL211
3	4	RL20	11	4	RL84	Not Fitted		RL148	Not Fitted		RL212
Not Fitted		RL21	Not Fitted		RL85	Not Fitted		RL149	Not Fitted		RL213
Not Fitted		RL22	Not Fitted		RL86	Not Fitted		RL150	Not Fitted		RL214
Not Fitted		RL23	Not Fitted		RL87	Not Fitted		RL151	Not Fitted		RL215
Not Fitted		RL24	Not Fitted		RL88	Not Fitted		RL152	Not Fitted		RL216
4	1	RL25	12	1	RL89	Not Fitted		RL153	Not Fitted		RL217
4	2	RL26	12	2	RL90	Not Fitted		RL154	Not Fitted		RL218
4	3	RL27	12	3	RL91	Not Fitted		RL155	Not Fitted		RL219
4	4	RL28	12	4	RL92	Not Fitted		RL156	Not Fitted		RL220
Not Fitted		RL29	Not Fitted		RL93	Not Fitted		RL157	Not Fitted		RL221
Not Fitted		RL30	Not Fitted		RL94	Not Fitted		RL158	Not Fitted		RL222
Not Fitted		RL31	Not Fitted		RL95	Not Fitted		RL159	Not Fitted		RL223
Not Fitted		RL32	Not Fitted		RL96	Not Fitted		RL160	Not Fitted		RL224
5	1	RL33	13	1	RL97	Not Fitted		RL161	Not Fitted		RL225
5	2	RL34	13	2	RL98	Not Fitted		RL162	Not Fitted		RL226
5	3	RL35	13	3	RL99	Not Fitted		RL163	Not Fitted		RL227
5	4	RL36	13	4	RL100	Not Fitted		RL164	Not Fitted		RL228
Not Fitted		RL37	Not Fitted		RL101	Not Fitted		RL165	Not Fitted		RL229
Not Fitted		RL38	Not Fitted		RL102	Not Fitted		RL166	Not Fitted		RL230
Not Fitted		RL39	Not Fitted		RL103	Not Fitted		RL167	Not Fitted		RL231
Not Fitted		RL40	Not Fitted		RL104	Not Fitted		RL168	Not Fitted		RL232
6	1	RL41	14	1	RL105	Not Fitted		RL169	Not Fitted		RL233
6	2	RL42	14	2	RL106	Not Fitted		RL170	Not Fitted		RL234
6	3	RL43	14	3	RL107	Not Fitted		RL171	Not Fitted		RL235
6	4	RL44	14	4	RL108	Not Fitted		RL172	Not Fitted		RL236
Not Fitted		RL45	Not Fitted		RL109	Not Fitted		RL173	Not Fitted		RL237
Not Fitted		RL46	Not Fitted		RL110	Not Fitted		RL174	Not Fitted		RL238
Not Fitted		RL47	Not Fitted		RL111	Not Fitted		RL175	Not Fitted		RL239
Not Fitted		RL48	Not Fitted		RL112	Not Fitted		RL176	Not Fitted		RL240
7	1	RL49	15	1	RL113	Not Fitted		RL177	Not Fitted		RL241
7	2	RL50	15	2	RL114	Not Fitted		RL178	Not Fitted		RL242
7	3	RL51	15	3	RL115	Not Fitted		RL179	Not Fitted		RL243
7	4	RL52	15	4	RL116	Not Fitted		RL180	Not Fitted		RL244
Not Fitted		RL53	Not Fitted		RL117	Not Fitted		RL181	Not Fitted		RL245
Not Fitted		RL54	Not Fitted		RL118	Not Fitted		RL182	Not Fitted		RL246
Not Fitted		RL55	Not Fitted		RL119	Not Fitted		RL183	Not Fitted		RL247
Not Fitted		RL56	Not Fitted		RL120	Not Fitted		RL184	Not Fitted		RL248
8	1	RL57	16	1	RL121	Not Fitted		RL185	Not Fitted		RL249
8	2	RL58	16	2	RL122	Not Fitted		RL186	Not Fitted		RL250
8	3	RL59	16	3	RL123	Not Fitted		RL187	Not Fitted		RL251
8	4	RL60	16	4	RL124	Not Fitted		RL188	Not Fitted		RL252
Not Fitted		RL61	Not Fitted		RL125	Not Fitted		RL189	Not Fitted		RL253
Not Fitted		RL62	Not Fitted		RL126	Not Fitted		RL190	Not Fitted		RL254
Not Fitted		RL63	Not Fitted		RL127	Not Fitted		RL191	Not Fitted		RL255
Not Fitted		RL64	Not Fitted		RL128	Not Fitted		RL192	Not Fitted		RL256

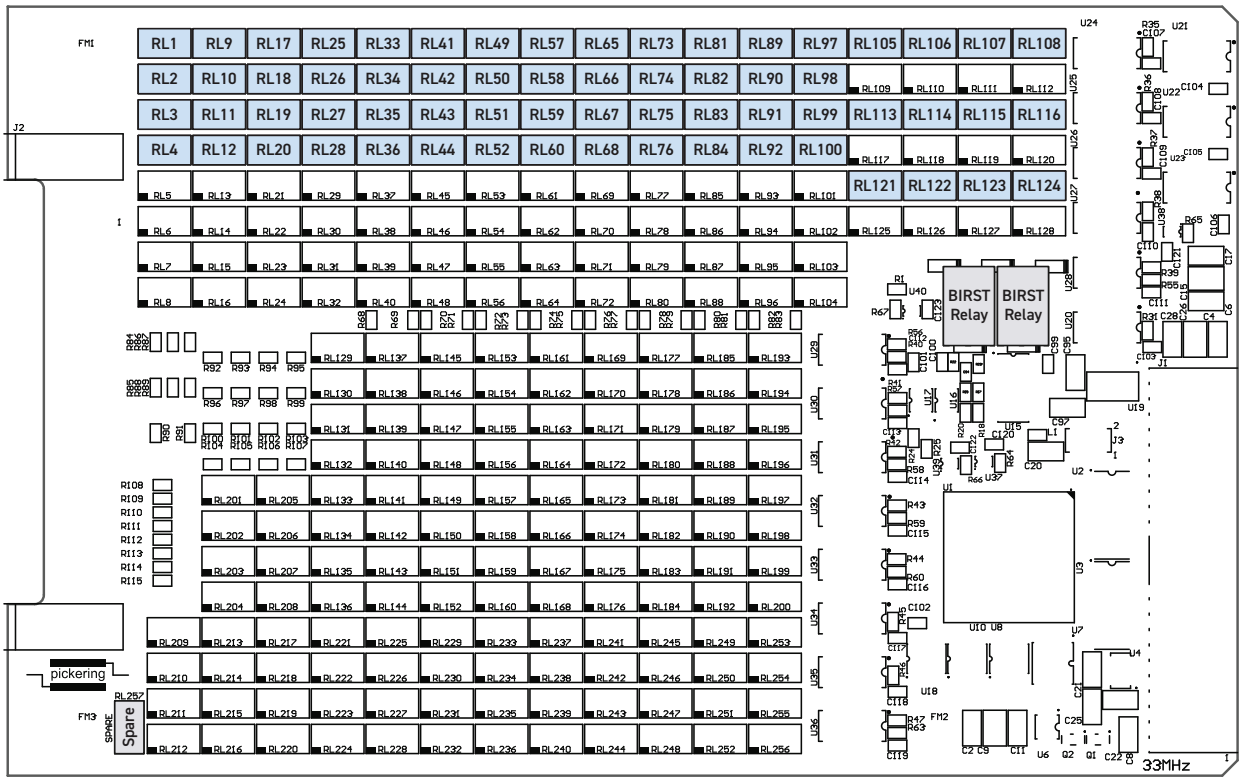


Figure 7.35 - 40-520A-403 Single 16x4 Matrix: Component Layout - PXI Version

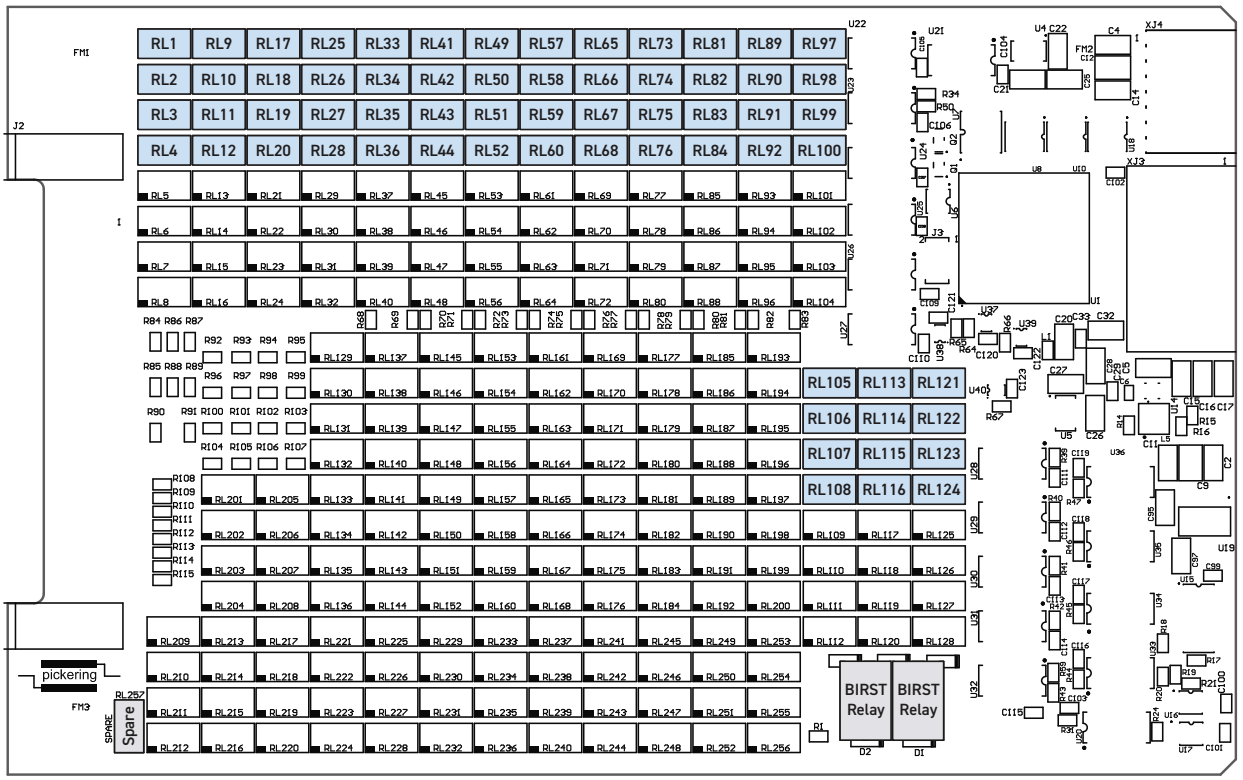


Figure 7.36 - 42-520A-403 Single 16x4 Matrix: Component Layout - PXIe Version

TABLE 7.19 - 40/42-520A-404 Dual 16x4 Matrix: Relay Numbering

X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.
101	101	RL1	109	101	RL65	201	201	RL129	209	201	RL193
101	102	RL2	109	102	RL66	201	202	RL130	209	202	RL194
101	103	RL3	109	103	RL67	201	203	RL131	209	203	RL195
101	104	RL4	109	104	RL68	201	204	RL132	209	204	RL196
Not Fitted		RL5	Not Fitted		RL69	Not Fitted		RL133	Not Fitted		RL197
Not Fitted		RL6	Not Fitted		RL70	Not Fitted		RL134	Not Fitted		RL198
Not Fitted		RL7	Not Fitted		RL71	Not Fitted		RL135	Not Fitted		RL199
Not Fitted		RL8	Not Fitted		RL72	Not Fitted		RL136	Not Fitted		RL200
102	101	RL9	110	101	RL73	202	201	RL137	210	201	RL201
102	102	RL10	110	102	RL74	202	202	RL138	210	202	RL202
102	103	RL11	110	103	RL75	202	203	RL139	210	203	RL203
102	104	RL12	110	104	RL76	202	204	RL140	210	204	RL204
Not Fitted		RL13	Not Fitted		RL77	Not Fitted		RL141	Not Fitted		RL205
Not Fitted		RL14	Not Fitted		RL78	Not Fitted		RL142	Not Fitted		RL206
Not Fitted		RL15	Not Fitted		RL79	Not Fitted		RL143	Not Fitted		RL207
Not Fitted		RL16	Not Fitted		RL80	Not Fitted		RL144	Not Fitted		RL208
103	101	RL17	111	101	RL81	203	201	RL145	211	201	RL209
103	102	RL18	111	102	RL82	203	202	RL146	211	202	RL210
103	103	RL19	111	103	RL83	203	203	RL147	211	203	RL211
103	104	RL20	111	104	RL84	203	204	RL148	211	204	RL212
Not Fitted		RL21	Not Fitted		RL85	Not Fitted		RL149	Not Fitted		RL213
Not Fitted		RL22	Not Fitted		RL86	Not Fitted		RL150	Not Fitted		RL214
Not Fitted		RL23	Not Fitted		RL87	Not Fitted		RL151	Not Fitted		RL215
Not Fitted		RL24	Not Fitted		RL88	Not Fitted		RL152	Not Fitted		RL216
104	101	RL25	112	101	RL89	204	201	RL153	212	201	RL217
104	102	RL26	112	102	RL90	204	202	RL154	212	202	RL218
104	103	RL27	112	103	RL91	204	203	RL155	212	203	RL219
104	104	RL28	112	104	RL92	204	204	RL156	212	204	RL220
Not Fitted		RL29	Not Fitted		RL93	Not Fitted		RL157	Not Fitted		RL221
Not Fitted		RL30	Not Fitted		RL94	Not Fitted		RL158	Not Fitted		RL222
Not Fitted		RL31	Not Fitted		RL95	Not Fitted		RL159	Not Fitted		RL223
Not Fitted		RL32	Not Fitted		RL96	Not Fitted		RL160	Not Fitted		RL224
105	101	RL33	113	101	RL97	205	201	RL161	213	201	RL225
105	102	RL34	113	102	RL98	205	202	RL162	213	202	RL226
105	103	RL35	113	103	RL99	205	203	RL163	213	203	RL227
105	104	RL36	113	104	RL100	205	204	RL164	213	204	RL228
Not Fitted		RL37	Not Fitted		RL101	Not Fitted		RL165	Not Fitted		RL229
Not Fitted		RL38	Not Fitted		RL102	Not Fitted		RL166	Not Fitted		RL230
Not Fitted		RL39	Not Fitted		RL103	Not Fitted		RL167	Not Fitted		RL231
Not Fitted		RL40	Not Fitted		RL104	Not Fitted		RL168	Not Fitted		RL232
106	101	RL41	114	101	RL105	206	201	RL169	214	201	RL233
106	102	RL42	114	102	RL106	206	202	RL170	214	202	RL234
106	103	RL43	114	103	RL107	206	203	RL171	214	203	RL235
106	104	RL44	114	104	RL108	206	204	RL172	214	204	RL236
Not Fitted		RL45	Not Fitted		RL109	Not Fitted		RL173	Not Fitted		RL237
Not Fitted		RL46	Not Fitted		RL110	Not Fitted		RL174	Not Fitted		RL238
Not Fitted		RL47	Not Fitted		RL111	Not Fitted		RL175	Not Fitted		RL239
Not Fitted		RL48	Not Fitted		RL112	Not Fitted		RL176	Not Fitted		RL240
107	101	RL49	115	101	RL113	207	201	RL177	215	201	RL241
107	102	RL50	115	102	RL114	207	202	RL178	215	202	RL242
107	103	RL51	115	103	RL115	207	203	RL179	215	203	RL243
107	104	RL52	115	104	RL116	207	204	RL180	215	204	RL244
Not Fitted		RL53	Not Fitted		RL117	Not Fitted		RL181	Not Fitted		RL245
Not Fitted		RL54	Not Fitted		RL118	Not Fitted		RL182	Not Fitted		RL246
Not Fitted		RL55	Not Fitted		RL119	Not Fitted		RL183	Not Fitted		RL247
Not Fitted		RL56	Not Fitted		RL120	Not Fitted		RL184	Not Fitted		RL248
108	101	RL57	116	101	RL121	208	201	RL185	216	201	RL249
108	102	RL58	116	102	RL122	208	202	RL186	216	202	RL250
108	103	RL59	116	103	RL123	208	203	RL187	216	203	RL251
108	104	RL60	116	104	RL124	208	204	RL188	216	204	RL252
Not Fitted		RL61	Not Fitted		RL125	Not Fitted		RL189	Not Fitted		RL253
Not Fitted		RL62	Not Fitted		RL126	Not Fitted		RL190	Not Fitted		RL254
Not Fitted		RL63	Not Fitted		RL127	Not Fitted		RL191	Not Fitted		RL255
Not Fitted		RL64	Not Fitted		RL128	Not Fitted		RL192	Not Fitted		RL256

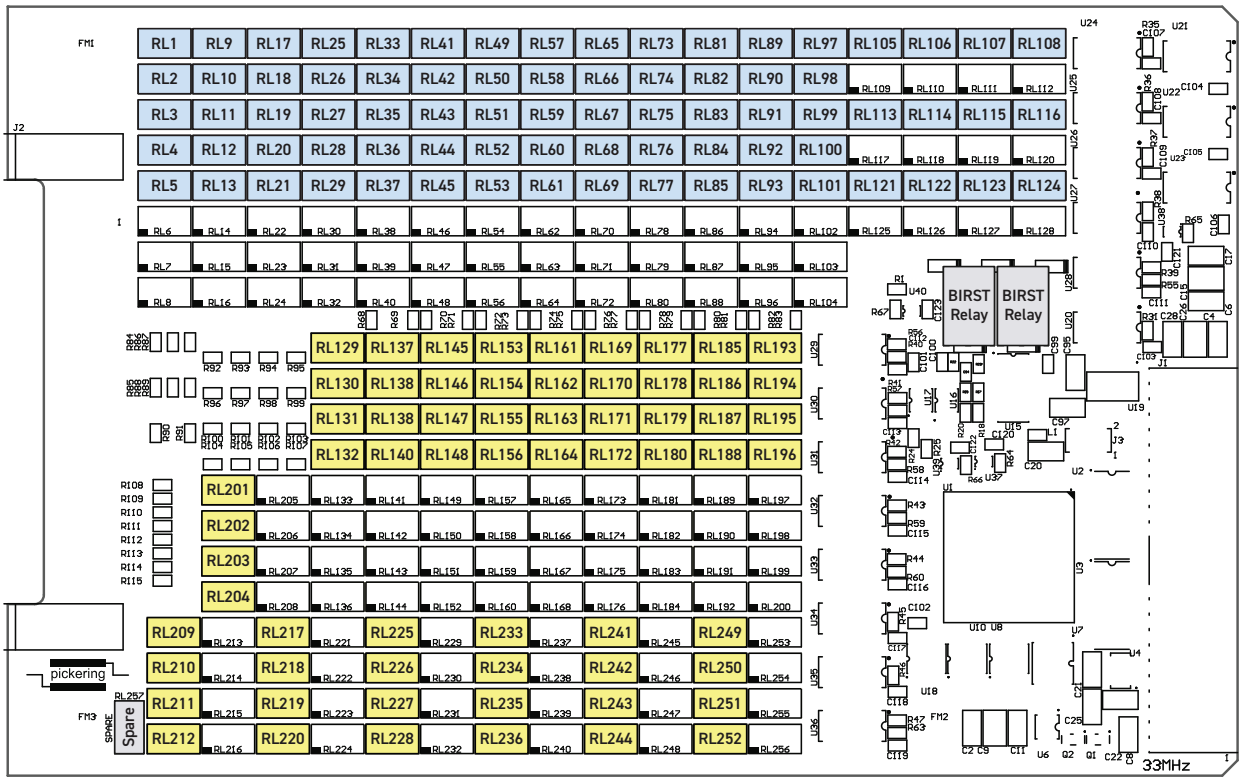


Figure 7.37 - 40-520A-404 Dual 16x4 Matrix: Component Layout - PXI Version

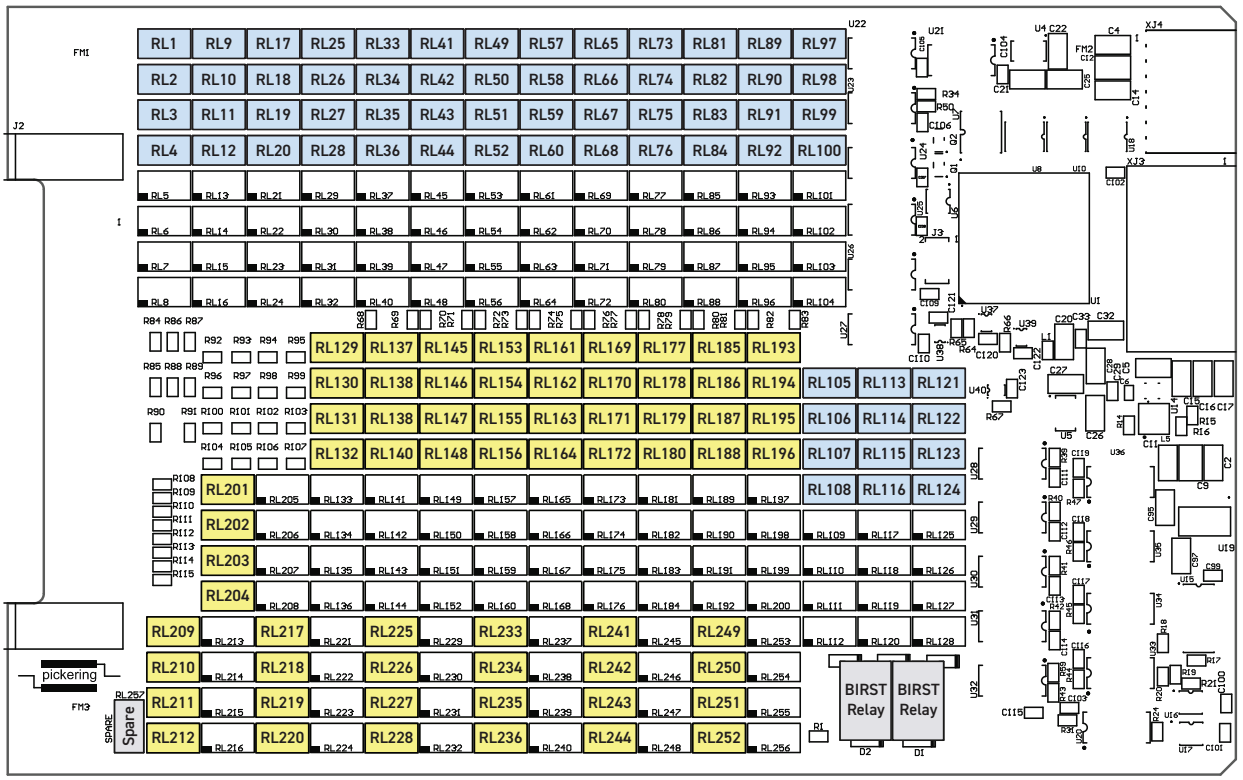


Figure 7.38 - 42-520A-404 Dual 16x4 Matrix: Component Layout - PXIe Version

TABLE 7.20 - 40/42-520A-405 Dual 12x4 Matrix: Relay Numbering

X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.
101	101	RL1	109	101	RL65	201	201	RL129	209	201	RL193
101	102	RL2	109	102	RL66	201	202	RL130	209	202	RL194
101	103	RL3	109	103	RL67	201	203	RL131	209	203	RL195
101	104	RL4	109	104	RL68	201	204	RL132	209	204	RL196
Not Fitted		RL5	Not Fitted		RL69	Not Fitted		RL133	Not Fitted		RL197
Not Fitted		RL6	Not Fitted		RL70	Not Fitted		RL134	Not Fitted		RL198
Not Fitted		RL7	Not Fitted		RL71	Not Fitted		RL135	Not Fitted		RL199
Not Fitted		RL8	Not Fitted		RL72	Not Fitted		RL136	Not Fitted		RL200
102	101	RL9	110	101	RL73	202	201	RL137	210	201	RL201
102	102	RL10	110	102	RL74	202	202	RL138	210	202	RL202
102	103	RL11	110	103	RL75	202	203	RL139	210	203	RL203
102	104	RL12	110	104	RL76	202	204	RL140	210	204	RL204
Not Fitted		RL13	Not Fitted		RL77	Not Fitted		RL141	Not Fitted		RL205
Not Fitted		RL14	Not Fitted		RL78	Not Fitted		RL142	Not Fitted		RL206
Not Fitted		RL15	Not Fitted		RL79	Not Fitted		RL143	Not Fitted		RL207
Not Fitted		RL16	Not Fitted		RL80	Not Fitted		RL144	Not Fitted		RL208
103	101	RL17	111	101	RL81	203	201	RL145	211	201	RL209
103	102	RL18	111	102	RL82	203	202	RL146	211	202	RL210
103	103	RL19	111	103	RL83	203	203	RL147	211	203	RL211
103	104	RL20	111	104	RL84	203	204	RL148	211	204	RL212
Not Fitted		RL21	Not Fitted		RL85	Not Fitted		RL149	Not Fitted		RL213
Not Fitted		RL22	Not Fitted		RL86	Not Fitted		RL150	Not Fitted		RL214
Not Fitted		RL23	Not Fitted		RL87	Not Fitted		RL151	Not Fitted		RL215
Not Fitted		RL24	Not Fitted		RL88	Not Fitted		RL152	Not Fitted		RL216
104	101	RL25	112	101	RL89	204	201	RL153	212	201	RL217
104	102	RL26	112	102	RL90	204	202	RL154	212	202	RL218
104	103	RL27	112	103	RL91	204	203	RL155	212	203	RL219
104	104	RL28	112	104	RL92	204	204	RL156	212	204	RL220
Not Fitted		RL29	Not Fitted		RL93	Not Fitted		RL157	Not Fitted		RL221
Not Fitted		RL30	Not Fitted		RL94	Not Fitted		RL158	Not Fitted		RL222
Not Fitted		RL31	Not Fitted		RL95	Not Fitted		RL159	Not Fitted		RL223
Not Fitted		RL32	Not Fitted		RL96	Not Fitted		RL160	Not Fitted		RL224
105	101	RL33	Not Fitted		RL97	205	201	RL161	Not Fitted		RL225
105	102	RL34	Not Fitted		RL98	205	202	RL162	Not Fitted		RL226
105	103	RL35	Not Fitted		RL99	205	203	RL163	Not Fitted		RL227
105	104	RL36	Not Fitted		RL100	205	204	RL164	Not Fitted		RL228
Not Fitted		RL37	Not Fitted		RL101	Not Fitted		RL165	Not Fitted		RL229
Not Fitted		RL38	Not Fitted		RL102	Not Fitted		RL166	Not Fitted		RL230
Not Fitted		RL39	Not Fitted		RL103	Not Fitted		RL167	Not Fitted		RL231
Not Fitted		RL40	Not Fitted		RL104	Not Fitted		RL168	Not Fitted		RL232
106	101	RL41	Not Fitted		RL105	206	201	RL169	Not Fitted		RL233
106	102	RL42	Not Fitted		RL106	206	202	RL170	Not Fitted		RL234
106	103	RL43	Not Fitted		RL107	206	203	RL171	Not Fitted		RL235
106	104	RL44	Not Fitted		RL108	206	204	RL172	Not Fitted		RL236
Not Fitted		RL45	Not Fitted		RL109	Not Fitted		RL173	Not Fitted		RL237
Not Fitted		RL46	Not Fitted		RL110	Not Fitted		RL174	Not Fitted		RL238
Not Fitted		RL47	Not Fitted		RL111	Not Fitted		RL175	Not Fitted		RL239
Not Fitted		RL48	Not Fitted		RL112	Not Fitted		RL176	Not Fitted		RL240
107	101	RL49	Not Fitted		RL113	207	201	RL177	Not Fitted		RL241
107	102	RL50	Not Fitted		RL114	207	202	RL178	Not Fitted		RL242
107	103	RL51	Not Fitted		RL115	207	203	RL179	Not Fitted		RL243
107	104	RL52	Not Fitted		RL116	207	204	RL180	Not Fitted		RL244
Not Fitted		RL53	Not Fitted		RL117	Not Fitted		RL181	Not Fitted		RL245
Not Fitted		RL54	Not Fitted		RL118	Not Fitted		RL182	Not Fitted		RL246
Not Fitted		RL55	Not Fitted		RL119	Not Fitted		RL183	Not Fitted		RL247
Not Fitted		RL56	Not Fitted		RL120	Not Fitted		RL184	Not Fitted		RL248
108	101	RL57	Not Fitted		RL121	208	201	RL185	Not Fitted		RL249
108	102	RL58	Not Fitted		RL122	208	202	RL186	Not Fitted		RL250
108	103	RL59	Not Fitted		RL123	208	203	RL187	Not Fitted		RL251
108	104	RL60	Not Fitted		RL124	208	204	RL188	Not Fitted		RL252
Not Fitted		RL61	Not Fitted		RL125	Not Fitted		RL189	Not Fitted		RL253
Not Fitted		RL62	Not Fitted		RL126	Not Fitted		RL190	Not Fitted		RL254
Not Fitted		RL63	Not Fitted		RL127	Not Fitted		RL191	Not Fitted		RL255
Not Fitted		RL64	Not Fitted		RL128	Not Fitted		RL192	Not Fitted		RL256

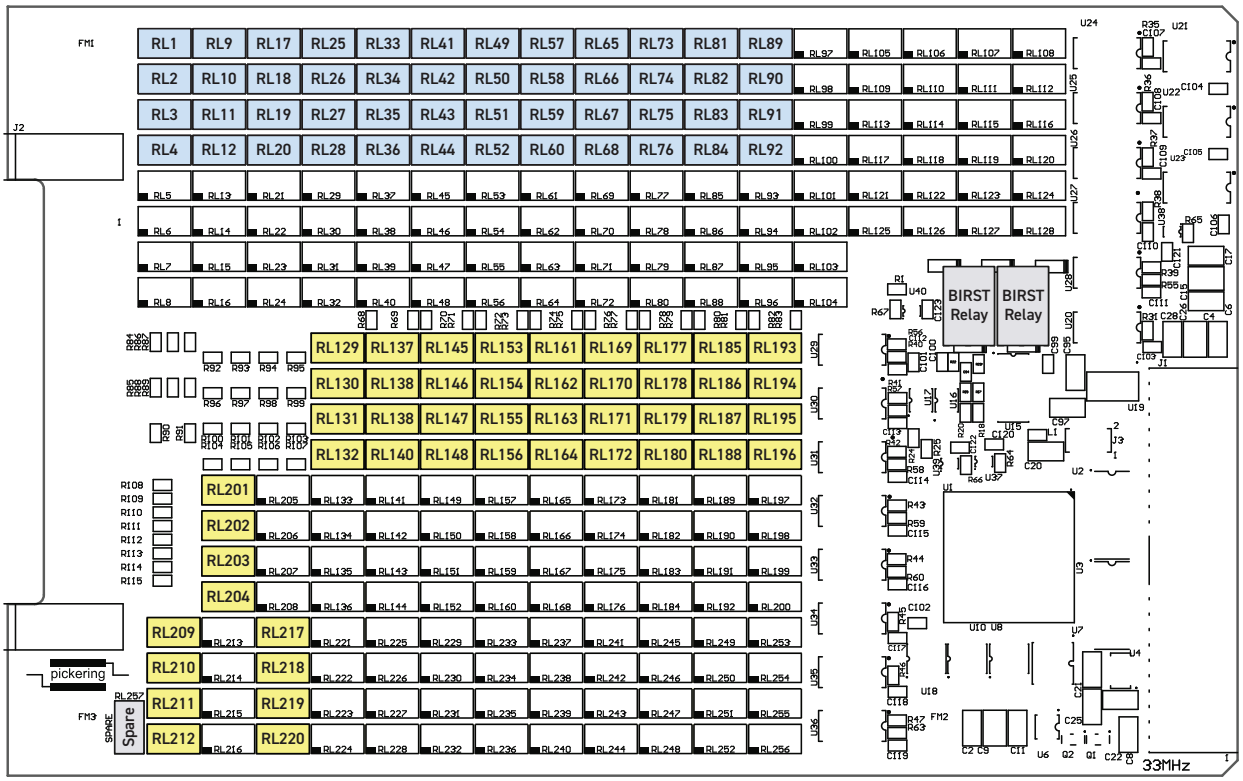


Figure 7.39 - 40-520A-405 Dual 12x4 Matrix: Component Layout - PXI Version

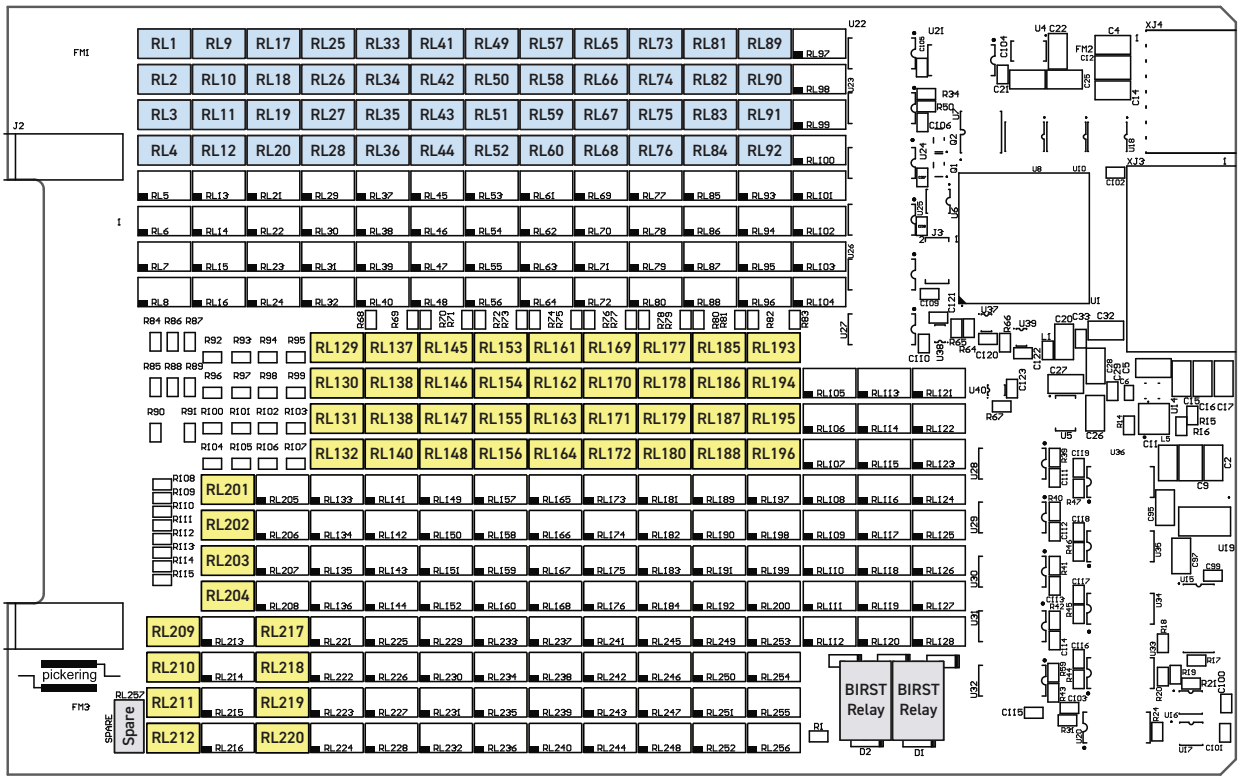


Figure 7.40 - 42-520A-405 Dual 12x4 Matrix: Component Layout - PXIe Version

TABLE 7.21 - 40/42-520A-501 Dual 16x2 Matrix: Relay Numbering

X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.
101	101	RL1	109	101	RL65	201	201	RL129	209	201	RL193
101	102	RL2	109	102	RL66	201	202	RL130	209	202	RL194
Not Fitted		RL3	Not Fitted		RL67	Not Fitted		RL131	Not Fitted		RL195
Not Fitted		RL4	Not Fitted		RL68	Not Fitted		RL132	Not Fitted		RL196
Not Fitted		RL5	Not Fitted		RL69	Not Fitted		RL133	Not Fitted		RL197
Not Fitted		RL6	Not Fitted		RL70	Not Fitted		RL134	Not Fitted		RL198
Not Fitted		RL7	Not Fitted		RL71	Not Fitted		RL135	Not Fitted		RL199
Not Fitted		RL8	Not Fitted		RL72	Not Fitted		RL136	Not Fitted		RL200
102	101	RL9	110	101	RL73	202	201	RL137	210	201	RL201
102	102	RL10	110	102	RL74	202	202	RL138	210	202	RL202
Not Fitted		RL11	Not Fitted		RL75	Not Fitted		RL139	Not Fitted		RL203
Not Fitted		RL12	Not Fitted		RL76	Not Fitted		RL140	Not Fitted		RL204
Not Fitted		RL13	Not Fitted		RL77	Not Fitted		RL141	Not Fitted		RL205
Not Fitted		RL14	Not Fitted		RL78	Not Fitted		RL142	Not Fitted		RL206
Not Fitted		RL15	Not Fitted		RL79	Not Fitted		RL143	Not Fitted		RL207
Not Fitted		RL16	Not Fitted		RL80	Not Fitted		RL144	Not Fitted		RL208
103	101	RL17	111	101	RL81	203	201	RL145	211	201	RL209
103	102	RL18	111	102	RL82	203	202	RL146	211	202	RL210
Not Fitted		RL19	Not Fitted		RL83	Not Fitted		RL147	Not Fitted		RL211
Not Fitted		RL20	Not Fitted		RL84	Not Fitted		RL148	Not Fitted		RL212
Not Fitted		RL21	Not Fitted		RL85	Not Fitted		RL149	Not Fitted		RL213
Not Fitted		RL22	Not Fitted		RL86	Not Fitted		RL150	Not Fitted		RL214
Not Fitted		RL23	Not Fitted		RL87	Not Fitted		RL151	Not Fitted		RL215
Not Fitted		RL24	Not Fitted		RL88	Not Fitted		RL152	Not Fitted		RL216
104	101	RL25	112	101	RL89	204	201	RL153	212	201	RL217
104	102	RL26	112	102	RL90	204	202	RL154	212	202	RL218
Not Fitted		RL27	Not Fitted		RL91	Not Fitted		RL155	Not Fitted		RL219
Not Fitted		RL28	Not Fitted		RL92	Not Fitted		RL156	Not Fitted		RL220
Not Fitted		RL29	Not Fitted		RL93	Not Fitted		RL157	Not Fitted		RL221
Not Fitted		RL30	Not Fitted		RL94	Not Fitted		RL158	Not Fitted		RL222
Not Fitted		RL31	Not Fitted		RL95	Not Fitted		RL159	Not Fitted		RL223
Not Fitted		RL32	Not Fitted		RL96	Not Fitted		RL160	Not Fitted		RL224
105	101	RL33	113	101	RL97	205	201	RL161	213	201	RL225
105	102	RL34	113	102	RL98	205	202	RL162	213	202	RL226
Not Fitted		RL35	Not Fitted		RL99	Not Fitted		RL163	Not Fitted		RL227
Not Fitted		RL36	Not Fitted		RL100	Not Fitted		RL164	Not Fitted		RL228
Not Fitted		RL37	Not Fitted		RL101	Not Fitted		RL165	Not Fitted		RL229
Not Fitted		RL38	Not Fitted		RL102	Not Fitted		RL166	Not Fitted		RL230
Not Fitted		RL39	Not Fitted		RL103	Not Fitted		RL167	Not Fitted		RL231
Not Fitted		RL40	Not Fitted		RL104	Not Fitted		RL168	Not Fitted		RL232
106	101	RL41	114	101	RL105	206	201	RL169	214	201	RL233
106	102	RL42	114	102	RL106	206	202	RL170	214	202	RL234
Not Fitted		RL43	Not Fitted		RL107	Not Fitted		RL171	Not Fitted		RL235
Not Fitted		RL44	Not Fitted		RL108	Not Fitted		RL172	Not Fitted		RL236
Not Fitted		RL45	Not Fitted		RL109	Not Fitted		RL173	Not Fitted		RL237
Not Fitted		RL46	Not Fitted		RL110	Not Fitted		RL174	Not Fitted		RL238
Not Fitted		RL47	Not Fitted		RL111	Not Fitted		RL175	Not Fitted		RL239
Not Fitted		RL48	Not Fitted		RL112	Not Fitted		RL176	Not Fitted		RL240
107	101	RL49	115	101	RL113	207	201	RL177	215	201	RL241
107	102	RL50	115	102	RL114	207	202	RL178	215	202	RL242
Not Fitted		RL51	Not Fitted		RL115	Not Fitted		RL179	Not Fitted		RL243
Not Fitted		RL52	Not Fitted		RL116	Not Fitted		RL180	Not Fitted		RL244
Not Fitted		RL53	Not Fitted		RL117	Not Fitted		RL181	Not Fitted		RL245
Not Fitted		RL54	Not Fitted		RL118	Not Fitted		RL182	Not Fitted		RL246
Not Fitted		RL55	Not Fitted		RL119	Not Fitted		RL183	Not Fitted		RL247
Not Fitted		RL56	Not Fitted		RL120	Not Fitted		RL184	Not Fitted		RL248
108	101	RL57	116	101	RL121	208	201	RL185	216	201	RL249
108	102	RL58	116	102	RL122	208	202	RL186	216	202	RL250
Not Fitted		RL59	Not Fitted		RL123	Not Fitted		RL187	Not Fitted		RL251
Not Fitted		RL60	Not Fitted		RL124	Not Fitted		RL188	Not Fitted		RL252
Not Fitted		RL61	Not Fitted		RL125	Not Fitted		RL189	Not Fitted		RL253
Not Fitted		RL62	Not Fitted		RL126	Not Fitted		RL190	Not Fitted		RL254
Not Fitted		RL63	Not Fitted		RL127	Not Fitted		RL191	Not Fitted		RL255
Not Fitted		RL64	Not Fitted		RL128	Not Fitted		RL192	Not Fitted		RL256

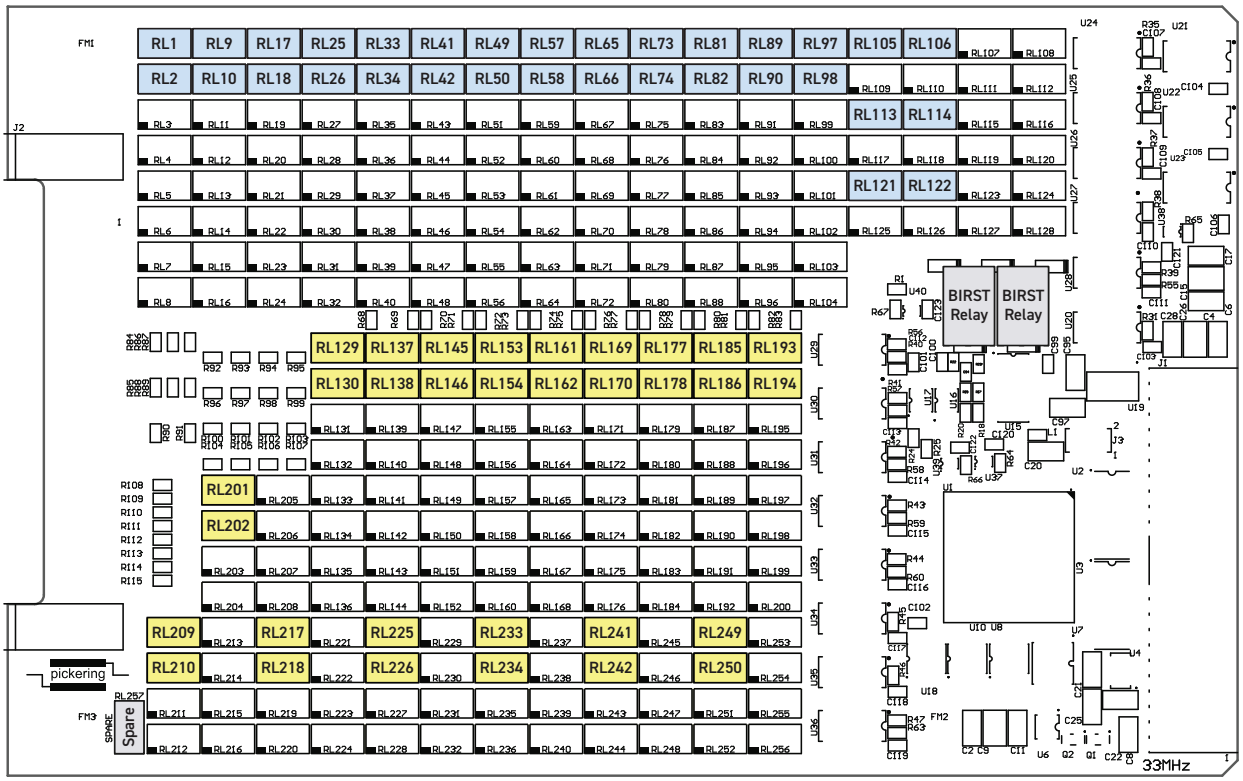


Figure 7.41 - 40-520A-501 Dual 16x2 Matrix: Component Layout - PXI Version

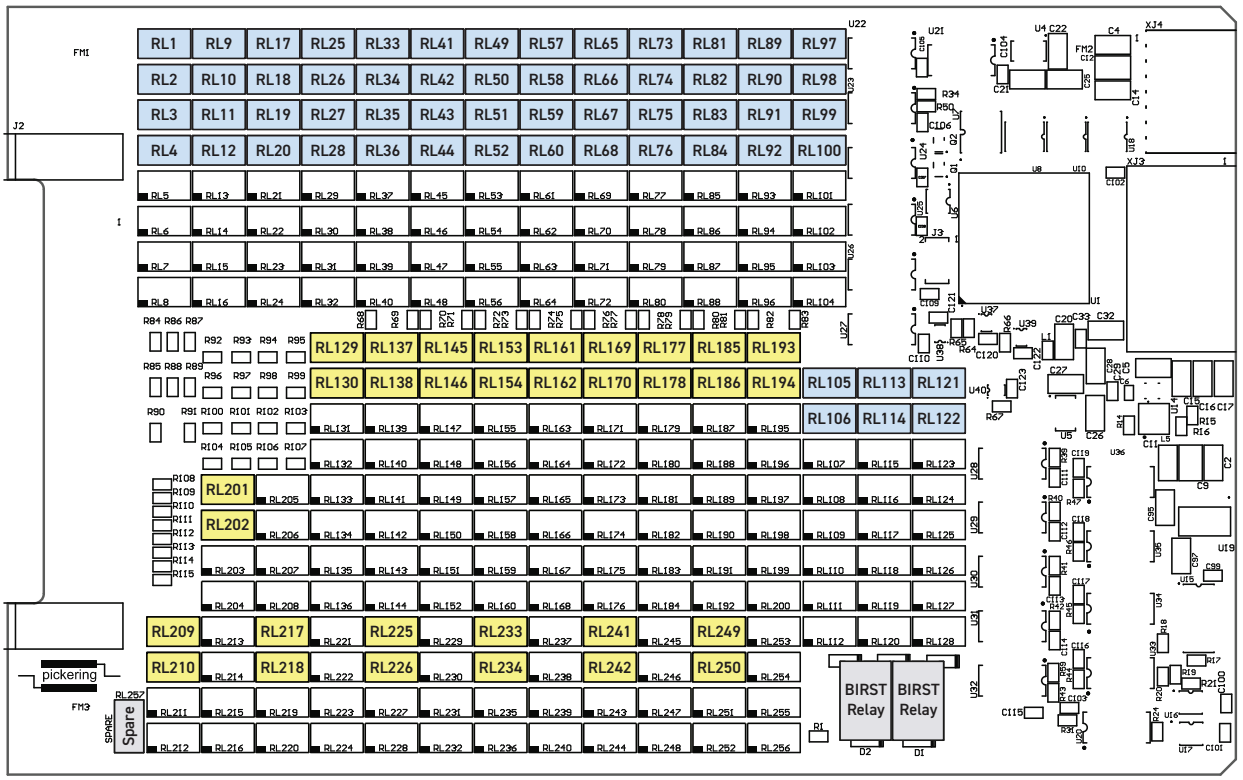


Figure 7.42 - 42-520A-501 Dual 16x2 Matrix: Component Layout - PXIe Version

TABLE 7.22 - 40/42-520A-502 Single 32x2 Matrix: Relay Numbering

X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.	X	Y	Relay No.
1	1	RL1	9	1	RL65	17	1	RL129	25	1	RL193
1	2	RL2	9	2	RL66	17	2	RL130	25	2	RL194
Not Fitted		RL3	Not Fitted		RL67	Not Fitted		RL131	Not Fitted		RL195
Not Fitted		RL4	Not Fitted		RL68	Not Fitted		RL132	Not Fitted		RL196
Not Fitted		RL5	Not Fitted		RL69	Not Fitted		RL133	Not Fitted		RL197
Not Fitted		RL6	Not Fitted		RL70	Not Fitted		RL134	Not Fitted		RL198
Not Fitted		RL7	Not Fitted		RL71	Not Fitted		RL135	Not Fitted		RL199
Not Fitted		RL8	Not Fitted		RL72	Not Fitted		RL136	Not Fitted		RL200
2	1	RL9	10	1	RL73	18	1	RL137	26	1	RL201
2	2	RL10	10	2	RL74	18	2	RL138	26	2	RL202
Not Fitted		RL11	Not Fitted		RL75	Not Fitted		RL139	Not Fitted		RL203
Not Fitted		RL12	Not Fitted		RL76	Not Fitted		RL140	Not Fitted		RL204
Not Fitted		RL13	Not Fitted		RL77	Not Fitted		RL141	Not Fitted		RL205
Not Fitted		RL14	Not Fitted		RL78	Not Fitted		RL142	Not Fitted		RL206
Not Fitted		RL15	Not Fitted		RL79	Not Fitted		RL143	Not Fitted		RL207
Not Fitted		RL16	Not Fitted		RL80	Not Fitted		RL144	Not Fitted		RL208
3	1	RL17	11	1	RL81	19	1	RL145	27	1	RL209
3	2	RL18	11	2	RL82	19	2	RL146	27	2	RL210
Not Fitted		RL19	Not Fitted		RL83	Not Fitted		RL147	Not Fitted		RL211
Not Fitted		RL20	Not Fitted		RL84	Not Fitted		RL148	Not Fitted		RL212
Not Fitted		RL21	Not Fitted		RL85	Not Fitted		RL149	Not Fitted		RL213
Not Fitted		RL22	Not Fitted		RL86	Not Fitted		RL150	Not Fitted		RL214
Not Fitted		RL23	Not Fitted		RL87	Not Fitted		RL151	Not Fitted		RL215
Not Fitted		RL24	Not Fitted		RL88	Not Fitted		RL152	Not Fitted		RL216
4	1	RL25	12	1	RL89	20	1	RL153	28	1	RL217
4	2	RL26	12	2	RL90	20	2	RL154	28	2	RL218
Not Fitted		RL27	Not Fitted		RL91	Not Fitted		RL155	Not Fitted		RL219
Not Fitted		RL28	Not Fitted		RL92	Not Fitted		RL156	Not Fitted		RL220
Not Fitted		RL29	Not Fitted		RL93	Not Fitted		RL157	Not Fitted		RL221
Not Fitted		RL30	Not Fitted		RL94	Not Fitted		RL158	Not Fitted		RL222
Not Fitted		RL31	Not Fitted		RL95	Not Fitted		RL159	Not Fitted		RL223
Not Fitted		RL32	Not Fitted		RL96	Not Fitted		RL160	Not Fitted		RL224
5	1	RL33	13	1	RL97	21	1	RL161	29	1	RL225
5	2	RL34	13	2	RL98	21	2	RL162	29	2	RL226
Not Fitted		RL35	Not Fitted		RL99	Not Fitted		RL163	Not Fitted		RL227
Not Fitted		RL36	Not Fitted		RL100	Not Fitted		RL164	Not Fitted		RL228
Not Fitted		RL37	Not Fitted		RL101	Not Fitted		RL165	Not Fitted		RL229
Not Fitted		RL38	Not Fitted		RL102	Not Fitted		RL166	Not Fitted		RL230
Not Fitted		RL39	Not Fitted		RL103	Not Fitted		RL167	Not Fitted		RL231
Not Fitted		RL40	Not Fitted		RL104	Not Fitted		RL168	Not Fitted		RL232
6	1	RL41	14	1	RL105	22	1	RL169	30	1	RL233
6	2	RL42	14	2	RL106	22	2	RL170	30	2	RL234
Not Fitted		RL43	Not Fitted		RL107	Not Fitted		RL171	Not Fitted		RL235
Not Fitted		RL44	Not Fitted		RL108	Not Fitted		RL172	Not Fitted		RL236
Not Fitted		RL45	Not Fitted		RL109	Not Fitted		RL173	Not Fitted		RL237
Not Fitted		RL46	Not Fitted		RL110	Not Fitted		RL174	Not Fitted		RL238
Not Fitted		RL47	Not Fitted		RL111	Not Fitted		RL175	Not Fitted		RL239
Not Fitted		RL48	Not Fitted		RL112	Not Fitted		RL176	Not Fitted		RL240
7	1	RL49	15	1	RL113	23	1	RL177	31	1	RL241
7	2	RL50	15	2	RL114	23	2	RL178	31	2	RL242
Not Fitted		RL51	Not Fitted		RL115	Not Fitted		RL179	Not Fitted		RL243
Not Fitted		RL52	Not Fitted		RL116	Not Fitted		RL180	Not Fitted		RL244
Not Fitted		RL53	Not Fitted		RL117	Not Fitted		RL181	Not Fitted		RL245
Not Fitted		RL54	Not Fitted		RL118	Not Fitted		RL182	Not Fitted		RL246
Not Fitted		RL55	Not Fitted		RL119	Not Fitted		RL183	Not Fitted		RL247
Not Fitted		RL56	Not Fitted		RL120	Not Fitted		RL184	Not Fitted		RL248
8	1	RL57	16	1	RL121	24	1	RL185	32	1	RL249
8	2	RL58	16	2	RL122	24	2	RL186	32	2	RL250
Not Fitted		RL59	Not Fitted		RL123	Not Fitted		RL187	Not Fitted		RL251
Not Fitted		RL60	Not Fitted		RL124	Not Fitted		RL188	Not Fitted		RL252
Not Fitted		RL61	Not Fitted		RL125	Not Fitted		RL189	Not Fitted		RL253
Not Fitted		RL62	Not Fitted		RL126	Not Fitted		RL190	Not Fitted		RL254
Not Fitted		RL63	Not Fitted		RL127	Not Fitted		RL191	Not Fitted		RL255
Not Fitted		RL64	Not Fitted		RL128	Not Fitted		RL192	Not Fitted		RL256

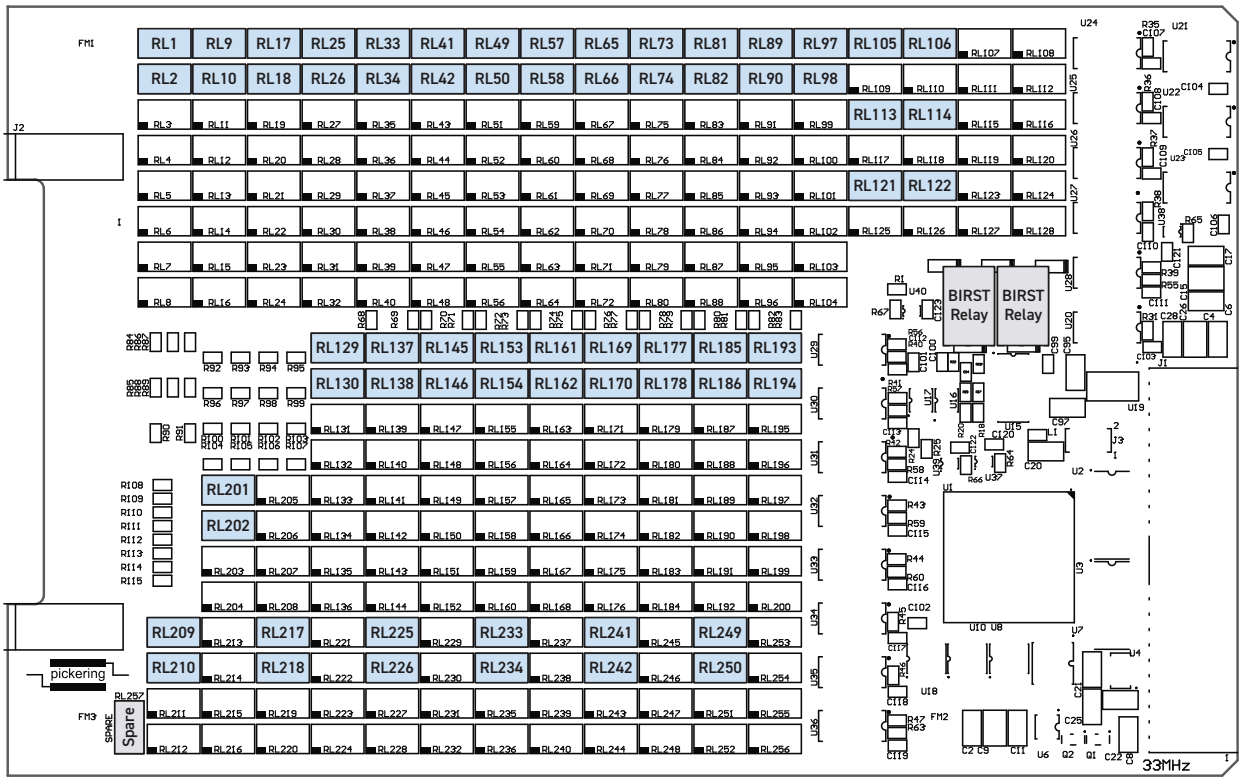


Figure 7.43 - 40-520A-502 Single 32x2 Matrix: Component Layout - PXI Version

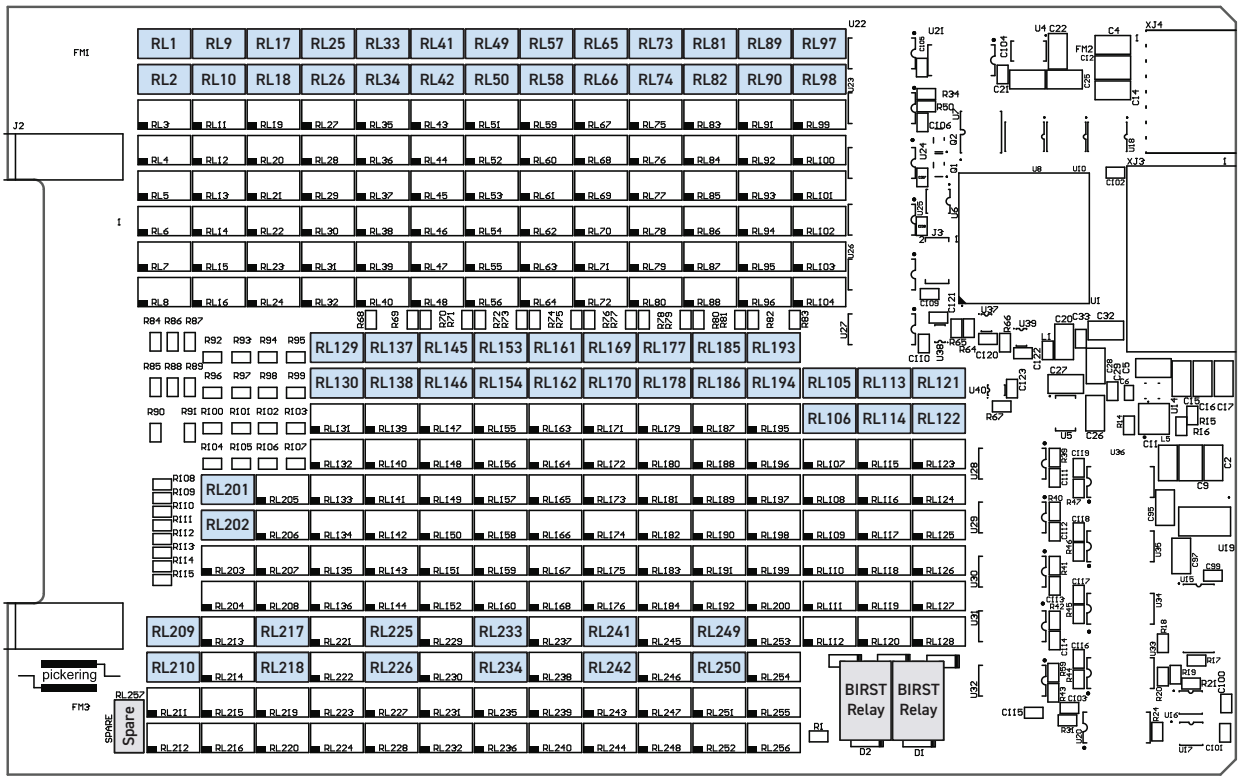


Figure 7.44 - 42-520A-502 Single 32x2 Matrix: Component Layout - PXIe Version

appendix A

Product Lifecycle Status

Product Number:	40-520
Introduced:	Jan 2017
Product Change Notification (If applicable):	Not applicable
Status:	Available for existing users only, NRND
Compatibility, forward:	40-520A
Compatibility, backward:	Not applicable, original version
Last Time Buy Date:	Nov 2026
Form, fit, function to previous version:	Not applicable, original version
Details of update from previous version:	Not applicable, original version

Product Number:	40-520A / 42-520A
Introduced:	2026
Product Change Notification (If applicable):	PCN0015-26
Status:	Active
Compatibility, forward:	Not applicable, latest version
Compatibility, backward:	40-520
Last Time Buy Date:	Not applicable
Form, fit, function to previous version:	Yes / No, driver update required
Details of update from previous version:	Backplane control interface replaced. Added PXIe options (42-520A-xxx) and relay cycle counting feature.