
PXI-2532B

Features

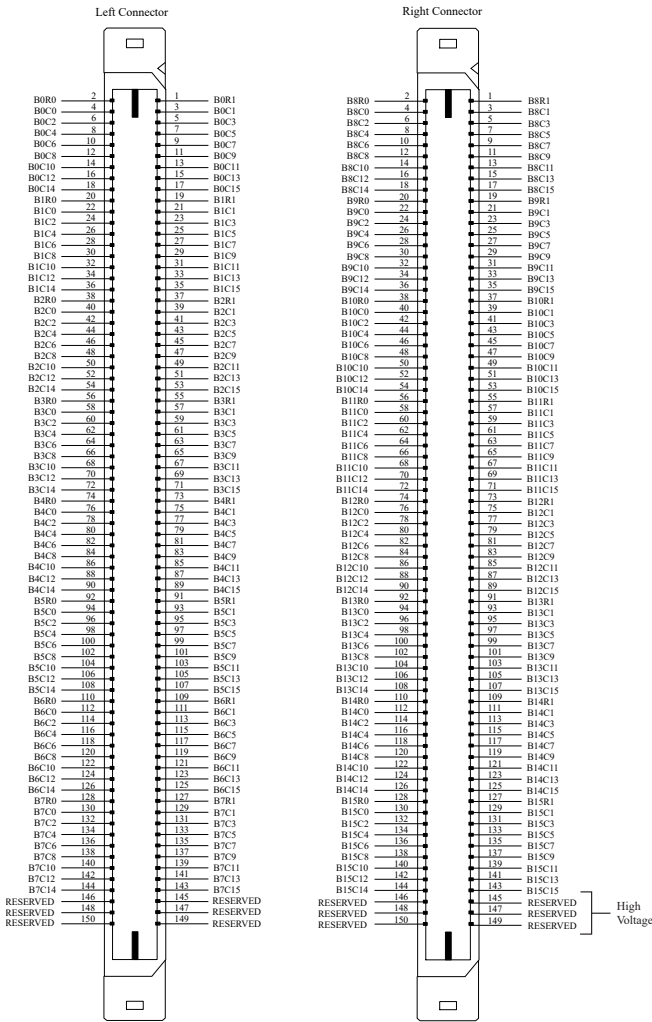
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PXI-2532B Pinout



PXI-2532B Topology

Matrix Configurations

The module can be used in the following matrix configurations:

- 1-wire 4x128
- 1-wire 8x64
- 1-wire 16x32
- 1-wire dual 4x64
- 1-wire dual 8x32
- 1-wire dual 16x16
- 1-wire quad 4x32
- 1-wire 16-bank 2x16
- 2-wire 4x64
- 2-wire 8x32
- 2-wire 16x16
- 2-wire dual 4x32

Each configuration supports immediate and scanning operation modes.

Relay Names

The relay names listed are for the native 1-wire sixteen 2x16 matrix topology.

Bank 1 Relays	Bank 2 Relays	...	Bank 15 Relays
B0R0C0...kB0R0C15	B1R0C0...kB1R0C15	...	B15R0C0...B15R0C15
B0R1C0...kB0R1C15	B1R1C0...kB1R1C15	...	B15R1C0...B15R1C15

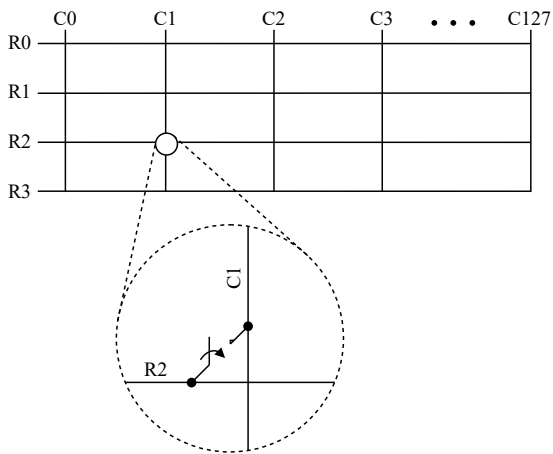
1-Wire 4x128 Topology

Module software name: 2532/1-Wire 4x128 Matrix

(NISWITCH_TOPOLOGY_2532_1_WIRE_4X128_MATRIX)

Hardware Diagram

The NI TB-2640B terminal block creates a 1-wire 4×128 matrix topology with the module.



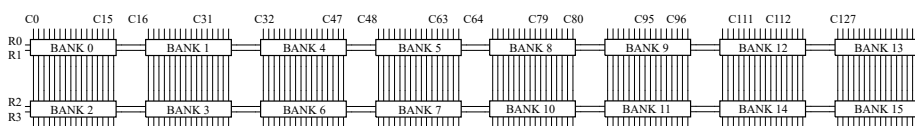
Making a Connection

Both the scanning command, `r2->c1;`, and the immediate operation, `niSwitch Connect Channels VI` or the `niSwitch_Connect` function with parameters `r2` and `c1`, result in the following connection:

- signal connected to R2 is routed to C1

Terminal Block Connections

The NI TB-2640B terminal block connects banks of the module to create the 1-wire 4×128 matrix topology.



Column Pin Connections

The following table refers to the J13 connector on the NI TB-2640B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	C127	Pin 9	C119	Pin 17	C111	Pin 25	C103
Pin 2	C126	Pin 10	C118	Pin 18	C110	Pin 26	C102
Pin 3	C125	Pin 11	C117	Pin 19	C109	Pin 27	C101
Pin 4	C124	Pin 12	C116	Pin 20	C108	Pin 28	C100
Pin 5	C123	Pin 13	C115	Pin 21	C107	Pin 29	C99
Pin 6	C122	Pin 14	C114	Pin 22	C106	Pin 30	C98
Pin 7	C121	Pin 15	C113	Pin 23	C105	Pin 31	C97
Pin 8	C120	Pin 16	C112	Pin 24	C104	Pin 32	C96

The following table refers to the J12 connector on the NI TB-2640B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	C95	Pin 9	C87	Pin 17	C79	Pin 25	C71
Pin 2	C94	Pin 10	C86	Pin 18	C78	Pin 26	C70
Pin 3	C93	Pin 11	C85	Pin 19	C77	Pin 27	C69
Pin 4	C92	Pin 12	C84	Pin 20	C76	Pin 28	C68
Pin 5	C91	Pin 13	C83	Pin 21	C75	Pin 29	C67
Pin 6	C90	Pin 14	C82	Pin 22	C74	Pin 30	C66
Pin 7	C89	Pin 15	C81	Pin 23	C73	Pin 31	C65
Pin 8	C88	Pin 16	C80	Pin 24	C72	Pin 32	C64

The following table refers to the J3 connector on the NI TB-2640B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	C0	Pin 9	C8	Pin 17	C16	Pin 25	C24

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 2	C1	Pin 10	C9	Pin 18	C17	Pin 26	C25
Pin 3	C2	Pin 11	C10	Pin 19	C18	Pin 27	C26
Pin 4	C3	Pin 12	C11	Pin 20	C19	Pin 28	C27
Pin 5	C4	Pin 13	C12	Pin 21	C20	Pin 29	C28
Pin 6	C5	Pin 14	C13	Pin 22	C21	Pin 30	C29
Pin 7	C6	Pin 15	C14	Pin 23	C22	Pin 31	C30
Pin 8	C7	Pin 16	C15	Pin 24	C23	Pin 32	C31

The following table refers to the J2 connector on the NI TB-2640B.

Test	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	C32	Pin 9	C40	Pin 17	C48	Pin 25	C56
Pin 2	C33	Pin 10	C41	Pin 18	C49	Pin 26	C57
Pin 3	C34	Pin 11	C42	Pin 19	C50	Pin 27	C58
Pin 4	C35	Pin 12	C43	Pin 20	C51	Pin 28	C59
Pin 5	C36	Pin 13	C44	Pin 21	C52	Pin 29	C60
Pin 6	C37	Pin 14	C45	Pin 22	C53	Pin 30	C61
Pin 7	C38	Pin 15	C46	Pin 23	C54	Pin 31	C62
Pin 8	C39	Pin 16	C47	Pin 24	C55	Pin 32	C63

Row Pin Connections

The NI TB-2640B provides two ribbon cable headers for row connection. Use one cable header to connect to your application. Use the other cable header for column expansion.

The following table lists the pin assignments for row connection.

Pin Number	Row
1	RO

Pin Number	Row
2	R1
3	R2
4	R3
5–16	—

Row Protection Bypass Header

Each row signal is isolated from the reed relays through a 100 Ω resistor. To bypass this resistor, install a jumper on the appropriate pins of the header indicated in the table below. The following table lists the appropriate jumper position for bypassing the resistor on each row signal.

Bypassed Row	NI TB-2640B	
	Header	Pins Connected
R0	J14	1-2
R1	J14	3-4
R2	J14	5-6
R3	J14	7-8

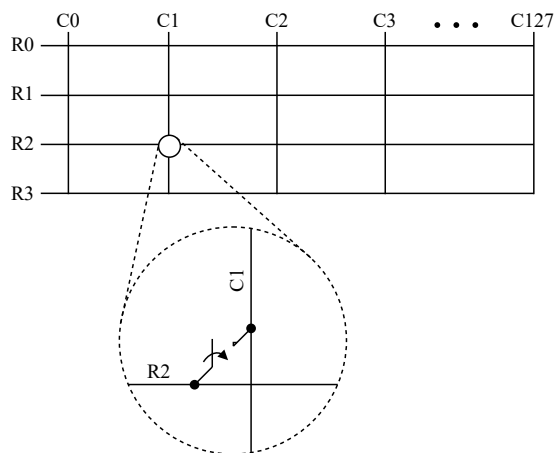
1-Wire 8×64 Matrix

Software name: 2532/1-Wire 8x64 Matrix
(NISWITCH_TOPOLOGY_2532_1_WIRE_8X64_MATRIX)

Module software name: 2532/1-Wire 8x64 Matrix
(NISWITCH_TOPOLOGY_2532_1_WIRE_8X64_MATRIX)

Hardware Diagram

The NI TB-2641B terminal block creates a 1-wire 8×64 matrix topology with the module.



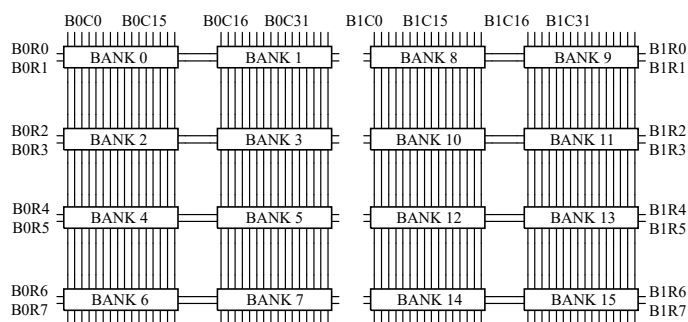
Making a Connection

Both the scanning command, `r2->c1;`, and the immediate operation, `niSwitch Connect Channels VI` or the `niSwitch_Connect` function with parameters `r2` and `c1`, result in the following connection:

- signal connected to R2 is routed to C1

Terminal Block Connections

The NI TB-2641B terminal block connects the banks of the module to create the 1-wire dual 8×32 matrix topology.



Column Pin Connections

The following table refers to the J3 connector on the NI TB-2641B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	C0	Pin 9	C8	Pin 17	C16	Pin 25	C24
Pin 2	C1	Pin 10	C9	Pin 18	C17	Pin 26	C25
Pin 3	C2	Pin 11	C10	Pin 19	C18	Pin 27	C26
Pin 4	C3	Pin 12	C11	Pin 20	C19	Pin 28	C27
Pin 5	C4	Pin 13	C12	Pin 21	C20	Pin 29	C28
Pin 6	C5	Pin 14	C13	Pin 22	C21	Pin 30	C29
Pin 7	C6	Pin 15	C14	Pin 23	C22	Pin 31	C30
Pin 8	C7	Pin 16	C15	Pin 24	C23	Pin 32	C31

The following table refers to the J2 connector on the NI TB-2641B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	C32	Pin 9	C40	Pin 17	C48	Pin 25	C56
Pin 2	C33	Pin 10	C41	Pin 18	C49	Pin 26	C57
Pin 3	C34	Pin 11	C42	Pin 19	C50	Pin 27	C58
Pin 4	C35	Pin 12	C43	Pin 20	C51	Pin 28	C59
Pin 5	C36	Pin 13	C44	Pin 21	C52	Pin 29	C60
Pin 6	C37	Pin 14	C45	Pin 22	C53	Pin 30	C61
Pin 7	C38	Pin 15	C46	Pin 23	C54	Pin 31	C62
Pin 8	C39	Pin 16	C47	Pin 24	C55	Pin 32	C63

Row Pin Connections

The NI TB-2641B provides two ribbon cable headers for row connection. Use one cable header to connect to your application. Use the other cable header for column expansion.

The following table lists the pin assignments for row connection.

Pin Number	Row
1	R0
2	R1
3	R2
4	R3
5	R4
6	R5
7	R6
8	R7
9-16	—

Row Protection Bypass Header

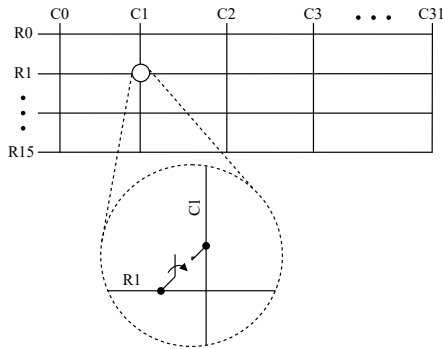
Each row signal is isolated from the reed relays through a 100 Ω resistor. To bypass this resistor, install a jumper on the appropriate pins of the header indicated in the table below. The following table lists the appropriate jumper position for bypassing the resistor on each row signal.

Bypassed Row	NI TB-2641B	
	Header	Pins Connected
R0	J14	1-2
R1	J14	3-4
R2	J14	5-6
R3	J14	7-8
R4	J14	9-10
R5	J14	11-12
R6	J14	13-14
R7	J14	15-16

1-Wire 16×32 Matrix

Software name: 2532/1-Wire 16x32 Matrix
(NISWITCH_TOPOLOGY_2532_1_WIRE_16X32_MATRIX)

Hardware Diagram



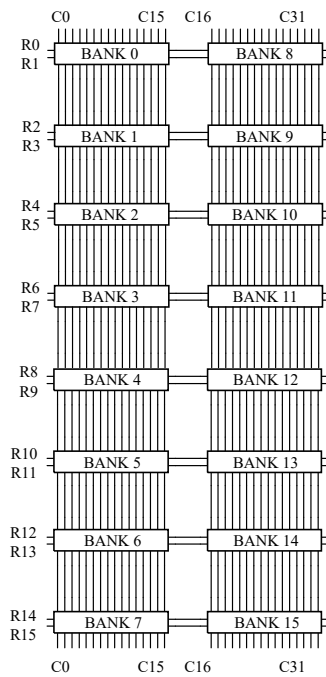
Making a Connection

Both the scanning command, `r1->c1;`, and the immediate operation, `niSwitch Connect Channels VI` or the `niSwitch_Connect` function with parameters `r2` and `c1`, result in the following connection:

- signal connected to R1 is routed to C1

Terminal Block Connections

The NI TB-2642B terminal block connects the banks of the module to create the 1-wire dual 16x32 matrix topology.



Column Pin Connections

The following table refers to the J13 connector on the NI TB-2642B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	C0	Pin 9	C8	Pin 17	C16	Pin 25	C24
Pin 2	C1	Pin 10	C9	Pin 18	C17	Pin 26	C25
Pin 3	C2	Pin 11	C10	Pin 19	C18	Pin 27	C26
Pin 4	C3	Pin 12	C11	Pin 20	C19	Pin 28	C27
Pin 5	C4	Pin 13	C12	Pin 21	C20	Pin 29	C28
Pin 6	C5	Pin 14	C13	Pin 22	C21	Pin 30	C29
Pin 7	C6	Pin 15	C14	Pin 23	C22	Pin 31	C30
Pin 8	C7	Pin 16	C15	Pin 24	C23	Pin 32	C31

Row Pin Connections

The NI TB-2642B provides two ribbon cable headers for row connection. Use one cable header to connect to your application. Use the other cable header for column

expansion.

The following table lists the pin assignments for row connection.

Pin Number	Row
1	R0
2	R1
3	R2
4	R3
5	R4
6	R5
7	R6
8	R7
9	R8
10	R9
11	R10
12	R11
13	R12
14	R13
15	R14
16	R15

Row Protection Bypass Header

Each row signal is isolated from the reed relays through a 100 Ω resistor. To bypass this resistor, install a jumper on the appropriate pins of the header indicated in the table below. The following table lists the appropriate jumper position for bypassing the resistor on each row signal.

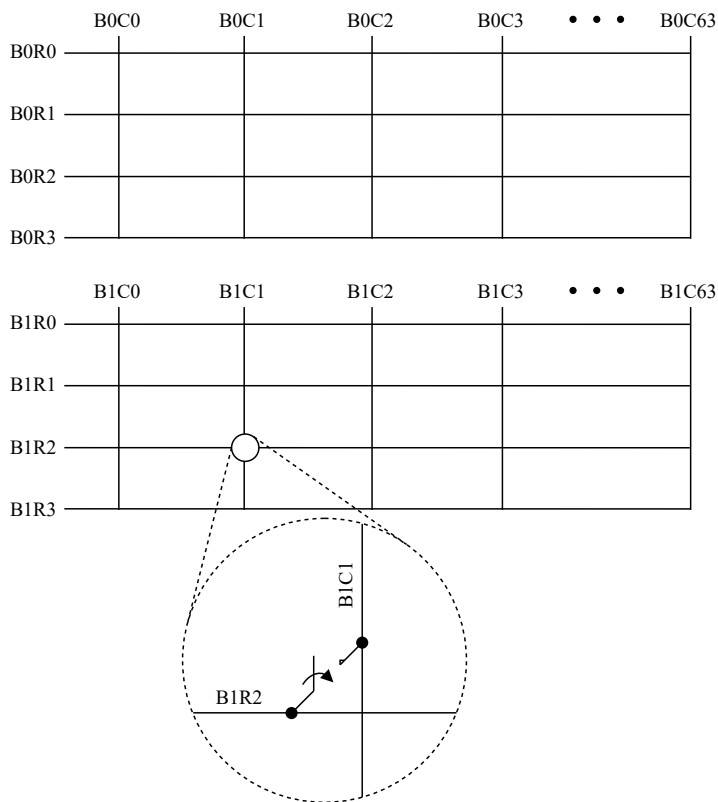
Bypassed Row	NI TB-2641B	
	Header	Pins Connected
R0	J14	1-2
R1	J14	5-6
R2	J14	9-10
R3	J14	13-14
R4	J15	1-2
R5	J15	5-6
R6	J15	9-10
R7	J15	13-14
R8	J16	1-2
R89	J16	5-6
R10	J16	9-10
R11	J16	13-14
R12	J17	1-2
R13	J17	5-6
R14	J17	9-10
R15	J17	13-14

1-Wire Dual 4×64 Matrix

Software name: 2532/1-Wire Dual 4x64 Matrix
(NISWITCH_TOPOLOGY_2532_1_WIRE_DUAL_4X64_MATRIX)

Hardware Diagram

The NI TB-2643B terminal block creates a 1-wire dual 4×64 matrix topology with the module.



Making a Connection

For bank 0, both the scanning command, `b0r2->b0c1;`, and the immediate operation, `niSwitch Connect Channels VI` or the `niSwitch_Connect` function with parameters `b0r2` and `b0c1`, result in the following connection:

- signal connected to B0R2 is routed to B0C1

For bank 1, both the scanning command, `b1r2->b1c1;`, and the immediate operation, `niSwitch Connect Channels VI` or the `niSwitch_Connect` function with parameters `b0r2` and `b0c1`, result in the following connection:

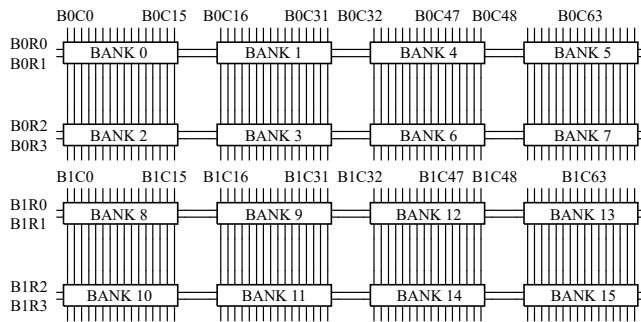
- signal connected to B1R2 is routed to B1C1



Note While you can, for example, connect B0R1 to B0C0, you cannot connect B0R1 directly to B1C1 in this topology.

Terminal Block Connections

The NI TB-2643B terminal block connects banks of the module to create the 1-wire dual 4×64 matrix topology.



Column Pin Connections

The following table refers to the J13 connector on the NI TB-2643B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	B1C63	Pin 9	B1C59	Pin 17	B1C55	Pin 25	B1C51
Pin 2	B0C63	Pin 10	B0C59	Pin 18	B0C55	Pin 26	B0C51
Pin 3	B1C62	Pin 11	B1C58	Pin 19	B1C54	Pin 27	B1C50
Pin 4	B0C62	Pin 12	B0C58	Pin 20	B0C54	Pin 28	B0C50
Pin 5	B1C61	Pin 13	B1C57	Pin 21	B1C53	Pin 29	B1C49
Pin 6	B0C61	Pin 14	B0C57	Pin 22	B0C53	Pin 30	B0C49
Pin 7	B1C60	Pin 15	B1C56	Pin 23	B1C52	Pin 31	B1C48
Pin 8	B0C60	Pin 16	B0C56	Pin 24	B0C52	Pin 32	B0C48

The following table refers to the J12 connector on the NI TB-2643B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	B1C47	Pin 9	B1C43	Pin 17	B1C39	Pin 25	B1C35
Pin 2	B0C47	Pin 9	B0C43	Pin 18	B0C39	Pin 26	B0C35

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 3	B1C46	Pin 11	B1C42	Pin 19	B1C38	Pin 27	B1C34
Pin 4	B0C46	Pin 12	B0C42	Pin 20	B0C38	Pin 28	B0C34
Pin 5	B1C45	Pin 13	B1C41	Pin 21	B1C37	Pin 29	B1C33
Pin 6	B0C45	Pin 14	B0C41	Pin 22	B0C37	Pin 30	B0C33
Pin 7	B1C44	Pin 15	B1C40	Pin 23	B1C36	Pin 31	B1C32
Pin 8	B0C44	Pin 16	B0C40	Pin 24	B0C36	Pin 32	B0C32

The following table refers to the J3 connector on the NI TB-2643B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	B1C0	Pin 9	B1C4	Pin 17	B0C8	Pin 25	B0C12
Pin 2	B1C0	Pin 10	B1C4	Pin 18	B1C8	Pin 26	B1C12
Pin 3	B0C1	Pin 11	B0C5	Pin 19	B0C9	Pin 27	B0C13
Pin 4	B1C1	Pin 12	B1C5	Pin 20	B1C9	Pin 28	B1C13
Pin 5	B0C2	Pin 13	B0C6	Pin 21	B0C10	Pin 29	B0C14
Pin 6	B1C2	Pin 14	B1C6	Pin 22	B1C10	Pin 30	B1C14
Pin 7	B0C3	Pin 15	B0C7	Pin 23	B0C11	Pin 31	B0C15
Pin 8	B1C3	Pin 16	B1C7	Pin 24	B1C11	Pin 32	B1C15

The following table refers to the J2 connector on the NI TB-2643B.

Test	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	B0C16	Pin 9	B0C20	Pin 17	B0C24	Pin 25	B0C28
Pin 2	B1C16	Pin 10	B1C20	Pin 18	B1C24	Pin 26	B1C28
Pin 3	B0C17	Pin 11	B0C21	Pin 19	B0C25	Pin 27	B0C29
Pin 4	B1C17	Pin 12	B1C21	Pin 20	B1C25	Pin 28	B1C29
Pin 5	B0C18	Pin 13	B0C22	Pin 21	B0C26	Pin 29	B0C30
Pin 6	B1C18	Pin 14	B1C22	Pin 22	B1C26	Pin 30	B1C30

Test	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 7	B0C19	Pin 15	B0C23	Pin 23	B0C27	Pin 31	B0C31
Pin 8	B1C19	Pin 16	B1C23	Pin 24	B1C27	Pin 32	B1C31

Row Pin Connections

The NI TB-2643B provides two ribbon cable headers for row connection. Use one cable header to connect to your application. Use the other cable header for column expansion.

The following table lists the pin assignments for row connection.

Pin Number	Row
1	B0R0
2	B1R0
3	B0R1
4	B1R1
5	B0R2
6	B1R2
7	B0R3
8	B1R3
9–16	—

Row Protection Bypass Header

Each row signal is isolated from the reed relays through a 100 Ω resistor. To bypass this resistor, install a jumper on the appropriate pins of the header indicated in the table below. The following table lists the appropriate jumper position for bypassing the resistor on each row signal.

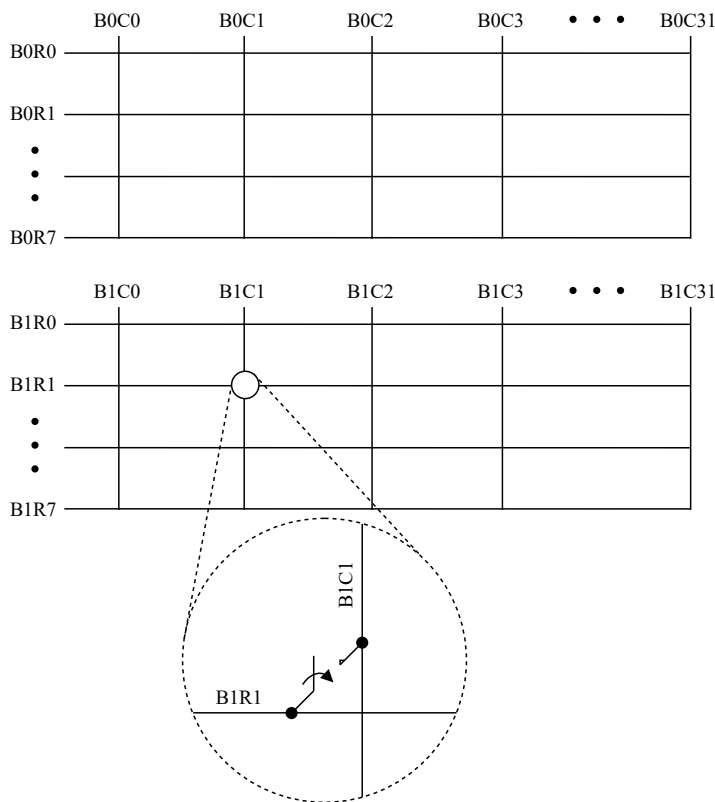
Bypassed Row	NI TB-2643B	
	Header	Pins Connected
B0R0	J14	1-2
B1R0	J14	3-4
B0R1	J14	5-6
B1R1	J14	7-8
B0R2	J14	9-10
B1R2	J14	11-12
B0R3	J14	13-14
B1R3	J14	15-16

1-Wire Dual 8×32 Matrix

Software name: 2532/1-Wire Dual 8x32 Matrix
(NISWITCH_TOPOLOGY_2532_1_WIRE_DUAL_8X32_MATRIX)

Hardware Diagram

The NI TB-2644B terminal block creates a 1-wire dual 8×32 matrix topology with the module.



Making a Connection

For bank 0, both the scanning command, `b0r1->b0c1;`, and the immediate operation, `niSwitch Connect Channels VI` or the `niSwitch_Connect` function with parameters `b0r1` and `b0c1`, result in the following connection:

- signal connected to B0R1 is routed to B0C1

For bank 1, both the scanning command, `b1r1->b1c1;`, and the immediate operation, `niSwitch Connect Channels VI` or the `niSwitch_Connect` function with parameters `b1r1` and `b1c1`, result in the following connection:

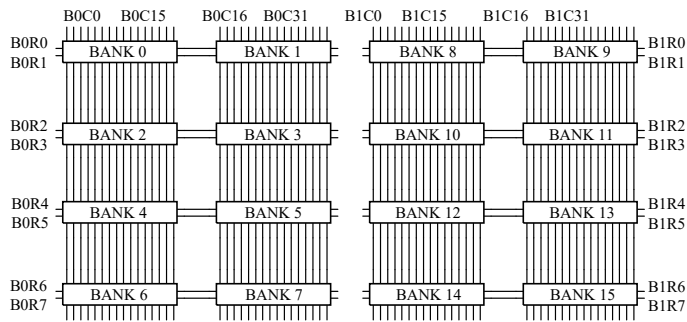
- signal connected to B1R1 is routed to B1C1



Note While you can, for example, connect B0R1 to B0C0, you cannot connect B0R1 directly to B1C1 in this topology.

Terminal Block Connections

The NI TB-2644B terminal block connects banks of the module to create the 1-wire dual 8×32 matrix topology.



Column Pin Connections

The following table refers to the J3 connector on the NI TB-2644B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	B0C0	Pin 9	B0C4	Pin 17	B0C8	Pin 25	B0C12
Pin 2	B1C0	Pin 10	B1C4	Pin 18	B1C8	Pin 26	B1C12
Pin 3	B0C1	Pin 11	B0C5	Pin 19	B0C9	Pin 27	B0C13
Pin 4	B1C1	Pin 12	B1C5	Pin 20	B1C9	Pin 28	B1C13
Pin 5	B0C2	Pin 13	B0C6	Pin 21	B0C10	Pin 29	B0C14
Pin 6	B1C2	Pin 14	B1C6	Pin 22	B1C10	Pin 30	B1C14
Pin 7	B0C3	Pin 15	B0C7	Pin 23	B0C11	Pin 31	B0C15
Pin 8	B1C3	Pin 16	B1C7	Pin 24	B1C11	Pin 32	B1C15

The following table refers to the J2 connector on the NI TB-2644B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	B0C16	Pin 9	B0C20	Pin 17	B0C24	Pin 25	B0C28

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 2	B1C16	Pin 10	B1C20	Pin 18	B1C24	Pin 26	B1C28
Pin 3	B0C17	Pin 11	B0C21	Pin 19	B0C25	Pin 27	B0C29
Pin 4	B1C17	Pin 12	B1C21	Pin 20	B1C25	Pin 28	B1C29
Pin 5	B0C18	Pin 13	B0C22	Pin 21	B0C26	Pin 29	B0C30
Pin 6	B1C18	Pin 14	B1C22	Pin 22	B1C26	Pin 30	B1C30
Pin 7	B0C19	Pin 15	B0C23	Pin 23	B0C27	Pin 31	B0C31
Pin 8	B1C19	Pin 16	B1C23	Pin 24	B1C27	Pin 32	B1C31

Row Pin Connections

The NI TB-2644B provides two ribbon cable headers for row connection. Use one cable header to connect to your application. Use the other cable header for column expansion.

The following table lists the pin assignments for row connection.

Pin Number	Row
1	B0R0
2	B1R0
3	B0R1
4	B1R1
5	B0R2
6	B1R2
7	B0R3
8	B1R3
9	B0R4
10	B1R4
11	B0R5
12	B1R5

Pin Number	Row
13	B0R6
14	B1R6
15	B0R7
16	B1R7

Row Protection Bypass Header

Each row signal is isolated from the reed relays through a 100 Ω resistor. To bypass this resistor, install a jumper on the appropriate pins of the header indicated in the table below. The following table lists the appropriate jumper position for bypassing the resistor on each row signal.

Bypassed Row	NI TB-2644B	
	Header	Pins Connected
B0R0	J14	1-2
B1R0	J14	3-4
B0R1	J14	5-6
B1R1	J14	7-8
B0R2	J14	9-10
B1R2	J14	11-12
B0R3	J14	13-14
B1R3	J14	15-16
B0R4	J15	1-2
B1R4	J15	3-4
B0R5	J15	5-6
B1R5	J15	7-8
B0R6	J15	9-10
B1R6	J15	11-12
B0R7	J15	13-14

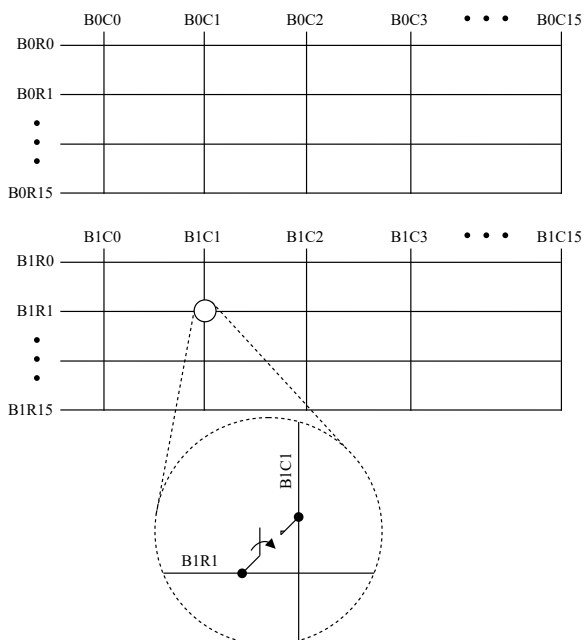
Bypassed Row	NI TB-2644B	
	Header	Pins Connected
B1R7	J15	15-16

1-Wire Dual 16×16 Matrix

Software name: 2532/1-Wire Dual 16x16 Matrix
(NISWITCH_TOPOLOGY_2532_1_WIRE_DUAL_16X16_MATRIX)

Hardware Diagram

The NI TB-2645B terminal block creates a 1-wire dual 16×16 matrix topology with the module.



Making a Connection

For bank 0, both the scanning command, `b0r1->b0c1;`, and the immediate operation, `niSwitch Connect Channels VI` or the `niSwitch_Connect` function with parameters `b0r1` and `b0c1`, result in the following connection:

- signal connected to B0R1 is routed to B0C1

For bank 1, both the scanning command, `b1r1->b1c1;`, and the immediate operation, `niSwitch Connect Channels VI` or the `niSwitch_Connect` function with parameters `b1r1` and `b1c1`, result in the following connection:

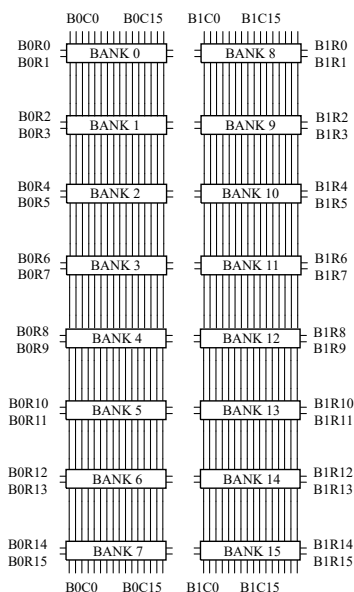
- signal connected to B1R1 is routed to B1C1



Note While you can, for example, connect B0R1 to B0C0, you cannot connect B0R1 directly to B1C1 in this topology.

Terminal Block Connections

The NI TB-2645B terminal block connects banks of the module to create the 1-wire dual 16×16 matrix topology.



Column Pin Connections

The following table refers to the J3 connector on the NI TB-2645B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	B0C0	Pin 9	B0C4	Pin 17	B0C8	Pin 25	B0C12
Pin 2	B1C0	Pin 10	B1C4	Pin 18	B1C8	Pin 26	B1C12
Pin 3	B0C1	Pin 11	B0C5	Pin 19	B0C9	Pin 27	B0C13
Pin 4	B1C1	Pin 12	B1C5	Pin 20	B1C9	Pin 28	B1C13
Pin 5	B0C2	Pin 13	B0C6	Pin 21	B0C10	Pin 29	B0C14
Pin 6	B1C2	Pin 14	B1C6	Pin 22	B1C10	Pin 30	B1C14
Pin 7	B0C3	Pin 15	B0C7	Pin 23	B0C11	Pin 31	B0C15
Pin 8	B1C3	Pin 16	B1C7	Pin 24	B1C11	Pin 32	B1C15



Note The column connection board J2 connector on the NI TB-2645 is not used in this configuration.

Row Pin Connections

The NI TB-2645B provides two ribbon cable headers for row connection. Use one cable header to connect to your application. Use the other cable header for column expansion.

The following table lists the pin assignments for row connection.

The following table refers to the J4 and J5 connectors on the NI TB-2645B.

Pin Number	Row
1	B0R0
2	B1R0
3	B0R1
4	B1R1
5	B0R2
6	B1R2
7	B0R3

Pin Number	Row
8	B1R3
9	B0R4
10	B1R4
11	B0R5
12	B1R5
13	B0R6
14	B1R6
15	B0R7
16	B1R7

The following table refers to the J6 and J7 connectors on the NI TB-2645B.

Pin Number	Row
1	B0R8
2	B1R8
3	B0R9
4	B1R9
5	B0R10
6	B1R10
7	B0R11
8	B1R11
9	B0R12
10	B1R12
11	B0R13
12	B1R13
13	B0R14
14	B1R14
15	B0R15

Pin Number	Row
16	B1R15

Row Protection Bypass Header

Each row signal is isolated from the reed relays through a 100 Ω resistor. To bypass this resistor, install a jumper on the appropriate pins of the header indicated in the table below. The following table lists the appropriate jumper position for bypassing the resistor on each row signal.

Bypassed Row	NI TB-2645B	
	Header	Pins Connected
B0R0	J14	1-2
B1R0	J14	3-4
B0R1	J14	5-6
B1R1	J14	7-8
B0R2	J14	9-10
B1R2	J14	11-12
B0R3	J14	13-14
B1R3	J14	15-16
B0R4	J15	1-2
B1R4	J15	3-4
B0R5	J15	5-6
B1R5	J15	7-8
B0R6	J15	9-10
B1R6	J15	11-12
B0R7	J15	13-14
B1R7	J15	15-16
B0R8	J16	1-2
B1R8	J16	3-4

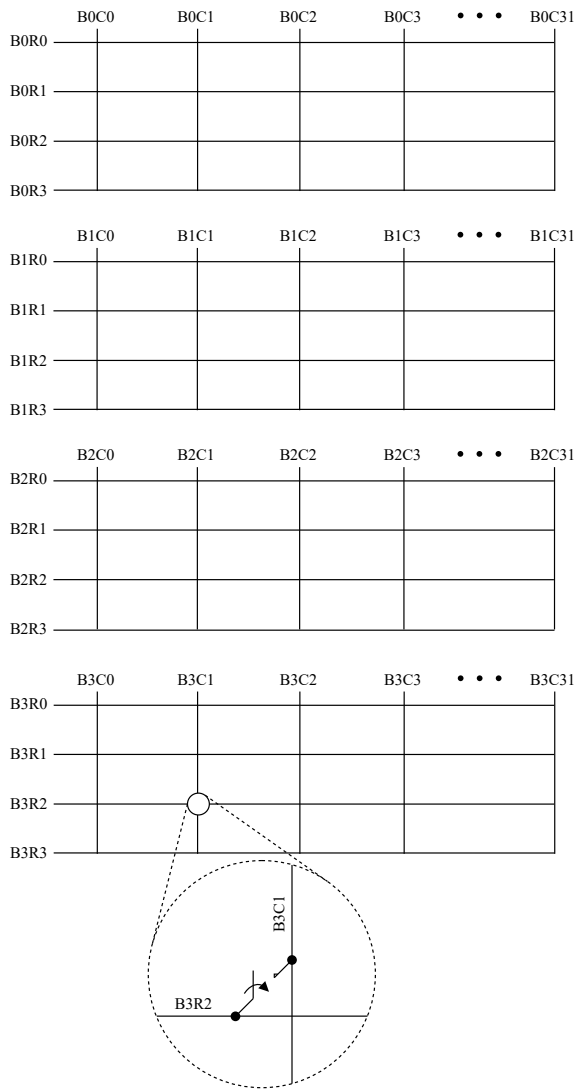
Bypassed Row	NI TB-2645B	
	Header	Pins Connected
B0R9	J16	5-6
B1R9	J16	7-8
B0R10	J16	9-10
B1R10	J16	11-12
B0R11	J16	13-14
B1R11	J16	15-16
B0R12	J17	1-2
B1R12	J17	3-4
B0R13	J17	5-6
B1R13	J17	7-8
B0R14	J17	9-10
B1R14	J17	11-12
B0R15	J17	13-14
B1R15	J17	15-16

1-Wire Quad 4×32 Matrix

Software name: 2532/1-Wire Quad 4x32 Matrix
(NISWITCH_TOPOLOGY_2532_1_WIRE_QUAD_4X32_MATRIX)

Hardware Diagram

The NI TB-2646B terminal block creates a 1-wire quad 4×32 matrix topology with the module.



Making a Connection

Both the scanning command, `b0r2->b0c1;`, and the immediate operation, `niSwitch Connect Channels VI` or the `niSwitch_Connect` function with parameters `b0r2` and `b0c1`, result in the following connection:

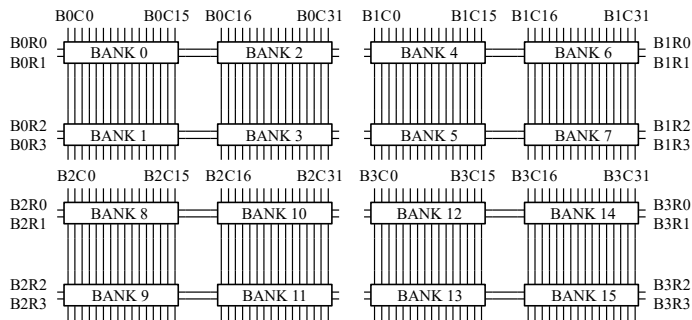
- signal connected to B0R2 is routed to B0C1



Note While you can, for example, connect B0R1 to B0C0, you cannot connect B0R1 directly to B1C1 in this topology.

Terminal Block Connections

The NI TB-2646B terminal block connects banks of the module to create the 1-wire quad 4×32 matrix topology.



Column Pin Connections

The following table refers to the J13 connector on the NI TB-2646B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	B3C31	Pin 9	B3C27	Pin 17	B3C23	Pin 25	B3C19
Pin 2	B1C31	Pin 10	B1C27	Pin 18	B1C23	Pin 26	B1C19
Pin 3	B3C30	Pin 11	B3C26	Pin 19	B3C22	Pin 27	B3C18
Pin 4	B1C30	Pin 12	B1C26	Pin 20	B1C22	Pin 28	B1C18
Pin 5	B3C29	Pin 13	B3C25	Pin 21	B3C21	Pin 29	B3C17
Pin 6	B1C29	Pin 14	B1C25	Pin 22	B1C21	Pin 30	B1C17
Pin 7	B3C28	Pin 15	B3C24	Pin 23	B3C20	Pin 31	B3C16
Pin 8	B1C28	Pin 16	B1C24	Pin 24	B1C20	Pin 32	B1C16

The following table refers to the J12 connector on the NI TB-2646B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	B3C15	Pin 9	B3C11	Pin 17	B3C7	Pin 25	B3C3
Pin 2	B1C15	Pin 10	B1C11	Pin 18	B1C7	Pin 26	B1C3

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 3	B3C14	Pin 11	B3C10	Pin 19	B3C6	Pin 27	B3C2
Pin 4	B1C14	Pin 12	B1C10	Pin 20	B1C6	Pin 28	B1C2
Pin 5	B3C13	Pin 13	B3C9	Pin 21	B3C5	Pin 29	B3C1
Pin 6	B1C13	Pin 14	B1C9	Pin 22	B1C5	Pin 30	B1C1
Pin 7	B3C12	Pin 15	B3C8	Pin 23	B3C4	Pin 31	B3C0
Pin 8	B1C12	Pin 16	B1C8	Pin 24	B1C4	Pin 32	B1C0

The following table refers to the J3 connector on the NI TB-2646B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	B0C0	Pin 9	B0C4	Pin 17	B0C8	Pin 25	B0C12
Pin 2	B2C0	Pin 10	B2C4	Pin 18	B2C8	Pin 26	B2C12
Pin 3	B0C1	Pin 11	B0C5	Pin 19	B0C9	Pin 27	B0C13
Pin 4	B2C1	Pin 12	B2C5	Pin 20	B2C9	Pin 28	B2C13
Pin 5	B0C2	Pin 13	B0C6	Pin 21	B0C10	Pin 29	B0C14
Pin 6	B2C2	Pin 14	B2C6	Pin 22	B2C10	Pin 30	B2C14
Pin 7	B0C3	Pin 15	B0C7	Pin 23	B0C11	Pin 31	B0C15
Pin 8	B2C3	Pin 16	B2C7	Pin 24	B2C11	Pin 32	B2C15

The following table refers to the J2 connector on the NI TB-2646B.

Test	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	B0C16	Pin 9	B0C20	Pin 17	B0C24	Pin 25	B0C28
Pin 2	B2C16	Pin 10	B2C20	Pin 18	B2C24	Pin 26	B2C28
Pin 3	B0C17	Pin 11	B0C21	Pin 19	B0C25	Pin 27	B0C29
Pin 4	B2C17	Pin 12	B2C21	Pin 20	B2C25	Pin 28	B2C29
Pin 5	B0C18	Pin 13	B0C22	Pin 21	B0C26	Pin 29	B0C30
Pin 6	B2C18	Pin 14	B2C22	Pin 22	B2C26	Pin 30	B2C30

Test	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 7	B0C19	Pin 15	B0C23	Pin 23	B0C27	Pin 31	B0C31
Pin 8	B2C19	Pin 16	B2C23	Pin 24	B2C27	Pin 32	B2C31

Row Pin Connections

The NI TB-2646B provides two ribbon cable headers for row connection. Use one cable header to connect to your application. Use the other cable header for column expansion.

The following table refers to the J9 connector on the NI TB-2646B.

Pin Number	Row
1	B1R0
2	B3R0
3	B1R1
4	B3R1
5	B1R2
6	B3R2
7	B1R3
8	B3R3
9	B0R0
10	B2R0
11	B0R1
12	B2R1
13	B0R2
14	B2R2
15	B0R3
16	B2R3

The following table refers to the J4 connector on the NI TB-2646B.

Pin Number	Row
1	B0R0
2	B2R0
3	B0R1
4	B2R1
5	B0R2
6	B2R2
7	B0R3
8	B2R3
9	B1R0
10	B3R0
11	B1R1
12	B3R1
13	B1R2
14	B3R2
15	B1R3
16	B3R3

Row Protection Bypass Header

Each row signal is isolated from the reed relays through a 100 Ω resistor. To bypass this resistor, install a jumper on the appropriate pins of the header indicated in the table below. The following table lists the appropriate jumper position for bypassing the resistor on each row signal.

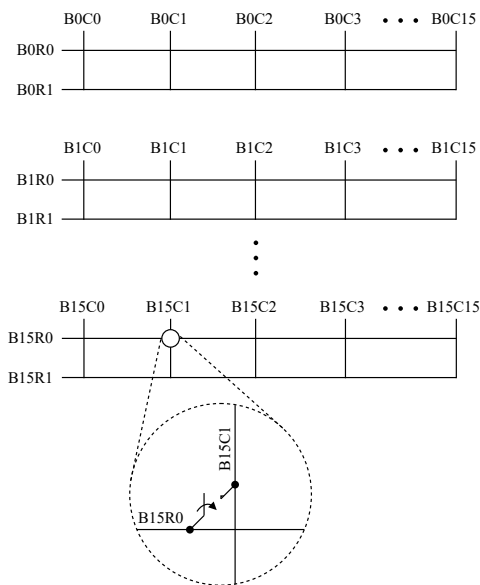
Bypassed Row	NI TB-2646B	
	Header	Pins Connected
B0R0	J14	1-2

Bypassed Row	NI TB-2646B	
	Header	Pins Connected
B2R0	J14	3-4
B0R1	J14	5-6
B2R1	J14	7-8
B0R2	J14	1-2
B2R2	J14	3-4
B0R3	J14	5-6
B2R3	J14	7-8
B1R0	J15	1-2
B3R0	J15	3-4
B1R1	J15	5-6
B3R1	J15	7-8
B1R2	J15	1-2
B3R2	J15	3-4
B1R3	J15	5-6
B3R3	J15	7-8

1-Wire Sixteen 2×16 Matrix

Software name: 2532/1-Wire Sixteen 2x16 Matrix
(NISWITCH_TOPOLOGY_2532_1_WIRE_SIXTEEN_2X16_MATRIX)

Hardware Diagram



Making a Connection

Both the scanning command, `b15r0->b15c1;`, and the immediate operation, `niSwitch Connect Channels VI` or the `niSwitch_Connect` function with parameters `b15r0` and `b15c1`, result in the following connection:

- signal connected to B15R0 is routed to B15C1



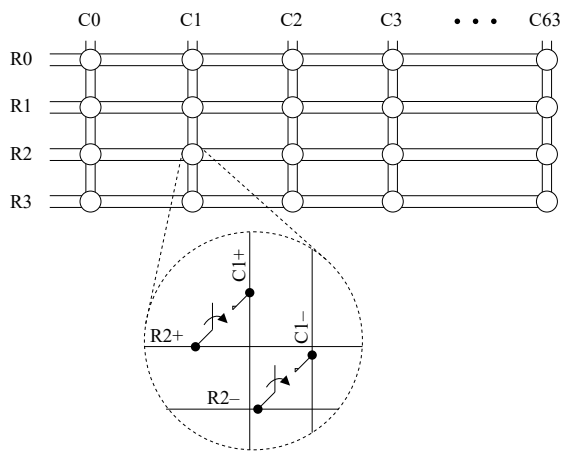
Note While you can, for example, connect B0R1 to B0C0, you cannot connect B0R1 directly to B1C1 in this topology.

2-Wire 4x64 Matrix

Software name: 2532/2-Wire 4x64 Matrix
(NISWITCH_TOPOLOGY_2532_2_WIRE_4X64_MATRIX)

Hardware Diagram

The NI TB-2643B terminal block creates a 2-wire 4x64 matrix topology with the module.



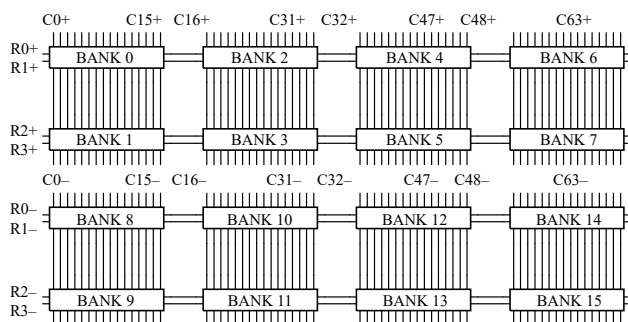
Making a Connection

Both the scanning command, `r2->c1;`, and the immediate operation, `niSwitch Connect Channels VI` or the `niSwitch_Connect` function with parameters `r2` and `c1`, result in the following connection:

- signal connected to R2+ is routed to C1+
- signal connected to R2- is routed to C1-

Terminal Block Connections

The NI TB-2643B terminal block connects banks of the module to create the 2-wire 4×64 matrix topology.



Column Pin Connections

The following table refers to the J13 connector on the NI TB-2643B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	C63–	Pin 9	C59–	Pin 17	C55–	Pin 25	C51–
Pin 2	C63+	Pin 10	C59+	Pin 18	C55+	Pin 26	C51+
Pin 3	C62–	Pin 11	C58–	Pin 19	C54–	Pin 27	C50–
Pin 4	C62+	Pin 12	C58+	Pin 20	C54+	Pin 28	C50+
Pin 5	C61–	Pin 13	C57–	Pin 21	C53–	Pin 29	C49–
Pin 6	C61+	Pin 14	C57+	Pin 22	C53+	Pin 30	C49+
Pin 7	C60–	Pin 15	C56–	Pin 23	C52–	Pin 31	C48–
Pin 8	C60+	Pin 16	C56+	Pin 24	C52+	Pin 32	C48+

The following table refers to the J12 connector on the NI TB-2643B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	C47–	Pin 9	C43–	Pin 17	C39–	Pin 25	C35–
Pin 2	C47+	Pin 10	C43+	Pin 18	C39+	Pin 26	C35+
Pin 3	C46–	Pin 11	C42–	Pin 19	C38–	Pin 27	C34–
Pin 4	C46+	Pin 12	C42+	Pin 20	C38+	Pin 28	C34+
Pin 5	C45–	Pin 13	C41–	Pin 21	C37–	Pin 29	C33–
Pin 6	C45+	Pin 14	C41+	Pin 22	C37+	Pin 30	C33+
Pin 7	C44–	Pin 15	C40–	Pin 23	C36–	Pin 31	C32–
Pin 8	C44+	Pin 16	C40+	Pin 24	C36+	Pin 32	C32+

The following table refers to the J3 connector on the NI TB-2643B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	C0+	Pin 9	C4+	Pin 17	C8+	Pin 25	C12+
Pin 2	C0–	Pin 10	C4–	Pin 18	C8–	Pin 26	C12–
Pin 3	C1+	Pin 11	C5+	Pin 19	C9+	Pin 27	C13+
Pin 4	C1–	Pin 12	C5–	Pin 20	C9–	Pin 28	C13–

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 5	C2+	Pin 13	C6+	Pin 21	C10+	Pin 29	C14+
Pin 6	C2–	Pin 14	C6–	Pin 22	C10–	Pin 30	C14–
Pin 7	C3+	Pin 15	C7+	Pin 23	C11+	Pin 31	C15+
Pin 8	C3–	Pin 16	C7–	Pin 24	C11–	Pin 32	C15–

The following table refers to the J2 connector on the NI TB-2643B.

Test	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	C16+	Pin 9	C20+	Pin 17	C24+	Pin 25	C28+
Pin 2	C16–	Pin 10	C20–	Pin 18	C24–	Pin 26	C28–
Pin 3	C17+	Pin 11	C21+	Pin 19	C25+	Pin 27	C29+
Pin 4	C17–	Pin 12	C21–	Pin 20	C25–	Pin 28	C29–
Pin 5	C18+	Pin 13	C22+	Pin 21	C26+	Pin 29	C30+
Pin 6	C18–	Pin 14	C22–	Pin 22	C26–	Pin 30	C30–
Pin 7	C19+	Pin 15	C23+	Pin 23	C27+	Pin 31	C31+
Pin 8	C19–	Pin 16	C23–	Pin 24	C27–	Pin 32	C31–

Row Pin Connections

The NI TB-2643B provides two ribbon cable headers for row connection. Use one cable header to connect to your application. Use the other cable header for column expansion.

The following table lists the pin assignments for row connection.

Pin Number	Row
1	RO+
2	RO–
3	R1+
4	R1–

Pin Number	Row
5	R2+
6	R2–
7	R3+
8	R3–
9–16	—

Row Protection Bypass Header

Each row signal is isolated from the reed relays through a 100 Ω resistor. To bypass this resistor, install a jumper on the appropriate pins of the header indicated in the table below. The following table lists the appropriate jumper position for bypassing the resistor on each row signal.

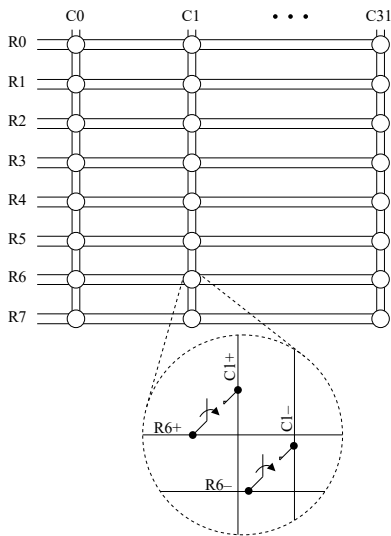
Bypassed Row	NI TB-2643B	
	Header	Pins Connected
R0+	J14	1-2
R0–	J14	3-4
R1+	J14	5-6
R1–	J14	7-8
R2+	J14	9-10
R2–	J14	11-12
R3+	J14	13-14
R3–	J14	15-16

2-Wire 8×32 Matrix

Software name: 2532/2-Wire 8x32 Matrix
(NISWITCH_TOPOLOGY_2532_2_WIRE_8X32_MATRIX)

Hardware Diagram

The NI TB-2644B terminal block creates a 1-wire 8×32 matrix topology with the module.



Making a Connection

Both the scanning command, `r6->c1;`, and the immediate operation, `niSwitch Connect Channels VI` or the `niSwitch_Connect` function with parameters `r6` and `c1`, result in the following connection:

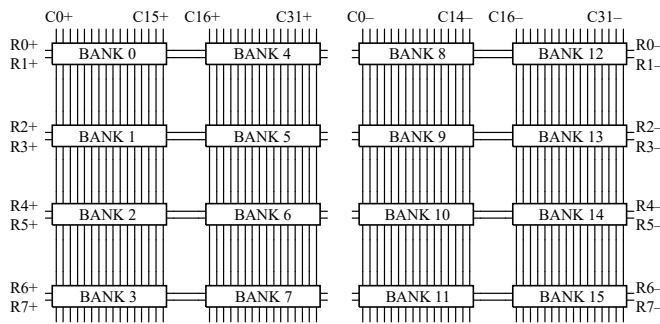
- signal connected to R6+ is routed to C1+
- signal connected to R6- is routed to C1-



Note While you can, for example, connect B0R1 to B0C0, you cannot connect B0R1 directly to B1C1 in this topology.

Terminal Block Connections

The NI TB-2644B terminal block connects banks of the module to create the 1-wire 8×32 matrix topology.



Column Pin Connections

The following table refers to the J3 connector on the NI TB-2644B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	C0+	Pin 9	C4+	Pin 17	C8+	Pin 25	C12+
Pin 2	C0-	Pin 10	C4-	Pin 18	C8-	Pin 26	C12-
Pin 3	C1+	Pin 11	C5+	Pin 19	C9+	Pin 27	C13+
Pin 4	C1-	Pin 12	C5-	Pin 20	C9-	Pin 28	C13-
Pin 5	C2+	Pin 13	C6+	Pin 21	C10+	Pin 29	C14+
Pin 6	C2-	Pin 14	C6-	Pin 22	C10-	Pin 30	C14-
Pin 7	C3+	Pin 15	C7+	Pin 23	C11+	Pin 31	C15+
Pin 8	C3-	Pin 16	C7-	Pin 24	C11-	Pin 32	C15-

The following table refers to the J2 connector on the NI TB-2644B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	C16+	Pin 9	C20+	Pin 17	C24+	Pin 25	C28+
Pin 2	C16-	Pin 10	C20-	Pin 18	C24-	Pin 26	C28-
Pin 3	C17+	Pin 11	C21+	Pin 19	C25+	Pin 27	C29+
Pin 4	C17-	Pin 12	C21-	Pin 20	C25-	Pin 28	C29-
Pin 5	C18+	Pin 13	C22+	Pin 21	C26+	Pin 29	C30+
Pin 6	C18-	Pin 14	C22-	Pin 22	C26-	Pin 30	C30-

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 7	C19+	Pin 15	C23+	Pin 23	C27+	Pin 31	C31+
Pin 8	C19–	Pin 16	C23–	Pin 24	C27–	Pin 32	C31–

Row Pin Connections

The NI TB-2644B provides two ribbon cable headers for row connection. Use one cable header to connect to your application. Use the other cable header for column expansion.

The following table lists the pin assignments for row connection.

Pin Number	Row
1	R0+
2	R0–
3	R1+
4	R1–
5	R2+
6	R2–
7	R3+
8	R3–
9	R4+
10	R4–
11	R5+
12	R5–
13	R6+
14	R6–
15	R7+
16	R7–

Row Protection Bypass Header

Each row signal is isolated from the reed relays through a 100 Ω resistor. To bypass this resistor, install a jumper on the appropriate pins of the header indicated in the table below. The following table lists the appropriate jumper position for bypassing the resistor on each row signal.

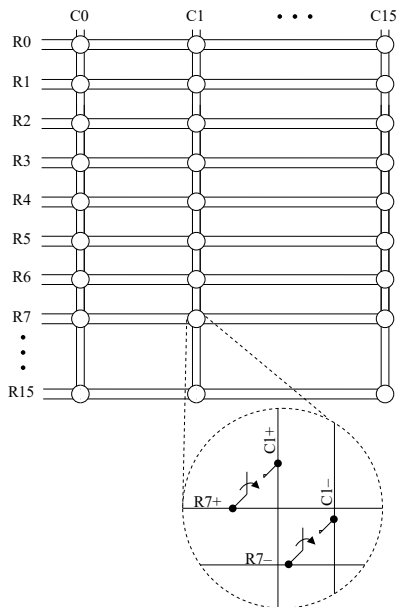
Bypassed Row	NI TB-2644B	
	Header	Pins Connected
R0+	J14	1-2
R0-	J14	3-4
R1+	J14	5-6
R1-	J14	7-8
R2+	J14	9-10
R2-	J14	11-12
R3+	J14	13-14
R3-	J14	15-16
R4+	J15	1-2
R4-	J15	3-4
R5+	J15	5-6
R5-	J15	7-8
R6+	J15	9-10
R6-	J15	11-12
R7+	J15	13-14
R7-	J15	15-16

2-Wire 16×16 Matrix

Software name: 2532/2-Wire 16x16 Matrix
(NISWITCH_TOPOLOGY_2532_2_WIRE_16X16_MATRIX)

Hardware Diagram

The NI TB-2645B terminal block creates a 2-Wire 16×16 matrix topology with the module.



Making a Connection

For bank 0, both the scanning command, `r6->c1;`, and the immediate operation, `niSwitch Connect Channels VI` or the `niSwitch_Connect` function with parameters `r6` and `c1`, result in the following connection:

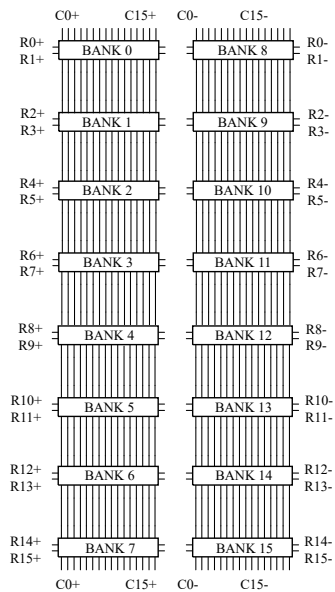
- signal connected to R6+ is routed to C1+
- signal connected to R6- is routed to C1-



Note While you can, for example, connect B0R1 to B0C0, you cannot connect B0R1 directly to B1C1 in this topology.

Terminal Block Connections

The NI TB-2645B terminal block connects banks of the module to create the 2-Wire 16×16 matrix topology.



Column Pin Connections

The following table refers to the J3 connector on the NI TB-2645B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	C0+	Pin 9	C4+	Pin 17	C8+	Pin 25	C12+
Pin 2	C0-	Pin 10	C4-	Pin 18	C8-	Pin 26	C12-
Pin 3	C1+	Pin 11	C5+	Pin 19	C9+	Pin 27	C13+
Pin 4	C1-	Pin 12	C5-	Pin 20	C9-	Pin 28	C13-
Pin 5	C2+	Pin 13	C6+	Pin 21	C10+	Pin 29	C14+
Pin 6	C2-	Pin 14	C6-	Pin 22	C10-	Pin 30	C14-
Pin 7	C3+	Pin 15	C7+	Pin 23	C11+	Pin 31	C15+
Pin 8	C3-	Pin 16	C7-	Pin 24	C11-	Pin 32	C15-



Note The column connection board J2 connector on the NI TB-2645 is not used in this configuration.

Row Pin Connections

The NI TB-2645B provides two ribbon cable headers for row connection. Use one cable header to connect to your application. Use the other cable header for column expansion.

The following table lists the pin assignments for row connection.

The following table refers to the J4 and J5 connectors on the NI TB-2645B.

Pin Number	Row
1	R0+
2	R0–
3	R1+
4	R1–
5	R2+
6	R2–
7	R3+
8	R3–
9	R4+
10	R4–
11	R5+
12	R5–
13	R6+
14	R6–
15	R7+
16	R7–

The following table refers to the J6 and J7 connectors on the NI TB-2645B.

Pin Number	Row
1	R8+
2	R8–
3	R9+
4	R9–
5	R10+
6	R10–
7	R11+
8	R11–
9	R12+
10	R12–
11	R13+
12	R13–
13	R14+
14	R14–
15	R15+
16	R15–

Row Protection Bypass Header

Each row signal is isolated from the reed relays through a 100 Ω resistor. To bypass this resistor, install a jumper on the appropriate pins of the header indicated in the table below. The following table lists the appropriate jumper position for bypassing the resistor on each row signal.

Bypassed Row	NI TB-2645B	
	Header	Pins Connected
R0+	J14	1-2
R0–	J14	3-4
R1+	J14	5-6

Bypassed Row	NI TB-2645B	
	Header	Pins Connected
R1-	J14	7-8
R2+	J14	9-10
R2-	J14	11-12
R3+	J14	13-14
R3-	J14	15-16
R4+	J15	1-2
R4-	J15	3-4
R5+	J15	5-6
R5-	J15	7-8
R6+	J15	9-10
R6-	J15	11-12
R7+	J15	13-14
R7-	J15	15-16
R8+	J16	1-2
R8-	J16	3-4
R9+	J16	5-6
R9-	J16	7-8
R10+	J16	9-10
R10-	J16	11-12
R11+	J16	13-14
R11-	J16	15-16
R12+	J17	1-2
R12-	J17	3-4
R13+	J17	5-6
R13-	J17	7-8
R14+	J17	9-10

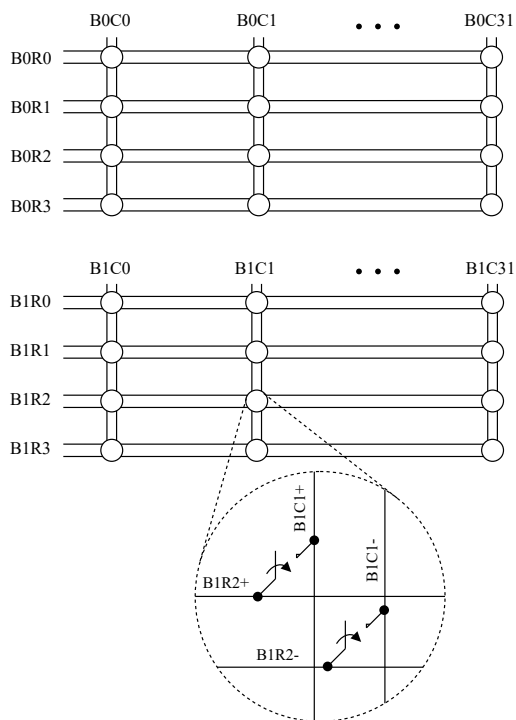
Bypassed Row	NI TB-2645B	
	Header	Pins Connected
R14-	J17	11-12
R15+	J17	13-14
R15-	J17	15-16

2-Wire Dual 4×32 Matrix

Software name: 2532/2-Wire Dual 4x32 Matrix
(NISWITCH_TOPOLOGY_2532_2_WIRE_DUAL_4X32_MATRIX)

Hardware Diagram

The NI TB-2646B terminal block creates a 2-wire dual 4×32 matrix topology with the module.



Making a Connection

For bank 0, both the scanning command, `b0r2->b0c1;`, and the immediate operation, `niSwitch Connect Channels VI` or the `niSwitch_Connect` function with parameters `b0r2` and `b0c1`, result in the following connection:

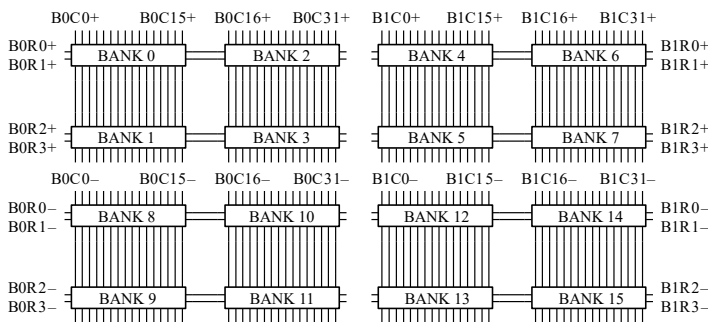
- signal connected to B0R2+ is routed to B0C1+
- signal connected to B0R2- is routed to B0C1-



Note While you can, for example, connect B0R1 to B0C0, you cannot connect B0R1 directly to B1C1 in this topology.

Terminal Block Connections

The NI TB-2646B terminal block connects banks of the module to create the 2-wire dual 4×32 matrix topology.



Column Pin Connections

The following table refers to the J13 connector on the NI TB-2646B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	B1C31-	Pin 9	B1C27-	Pin 17	B1C23-	Pin 25	B1C19-
Pin 2	B1C31+	Pin 10	B1C27+	Pin 18	B1C23+	Pin 26	B1C19+
Pin 3	B1C30-	Pin 11	B1C26-	Pin 19	B1C22-	Pin 27	B1C18-
Pin 4	B1C30+	Pin 12	B1C26+	Pin 20	B1C22+	Pin 28	B1C18+

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 5	B1C29–	Pin 13	B1C25–	Pin 21	B1C21–	Pin 29	B1C17–
Pin 6	B1C29+	Pin 14	B1C25+	Pin 22	B1C21+	Pin 30	B1C17+
Pin 7	B1C28–	Pin 15	B1C24–	Pin 23	B1C20–	Pin 31	B1C16–
Pin 8	B1C28+	Pin 16	B1C24+	Pin 24	B1C20+	Pin 32	B1C16+

The following table refers to the J12 connector on the NI TB-2646B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	B1C15–	Pin 9	B1C11–	Pin 17	B1C7–	Pin 25	B1C3–
Pin 2	B1C15+	Pin 10	B1C11+	Pin 18	B1C7+	Pin 26	B1C3+
Pin 3	B1C14–	Pin 11	B1C10–	Pin 19	B1C6–	Pin 27	B1C2–
Pin 4	B1C14+	Pin 12	B1C10+	Pin 20	B1C6+	Pin 28	B1C2+
Pin 5	B1C13–	Pin 13	B1C9–	Pin 21	B1C5–	Pin 29	B1C1–
Pin 6	B1C13+	Pin 14	B1C9+	Pin 22	B1C5+	Pin 30	B1C1+
Pin 7	B1C12–	Pin 15	B1C8–	Pin 23	B1C4–	Pin 31	B1C0–
Pin 8	B1C12+	Pin 16	B1C8+	Pin 24	B1C4+	Pin 32	B1C0+

The following table refers to the J3 connector on the NI TB-2646B.

Pin Number	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	B0C0+	Pin 9	B0C4	Pin 17	B0C8	Pin 25	B0C12
Pin 2	B0C0–	Pin 10	B0C4–	Pin 18	B0C8–	Pin 26	B0C12–
Pin 3	B0C1+	Pin 11	B0C5+	Pin 19	B0C9+	Pin 27	B0C13+
Pin 4	B0C1–	Pin 12	B0C5–	Pin 20	B0C9–	Pin 28	B0C13–
Pin 5	B0C2+	Pin 13	B0C6+	Pin 21	B0C10+	Pin 29	B0C14+
Pin 6	B0C2–	Pin 14	B0C6–	Pin 22	B0C10–	Pin 30	B0C14–
Pin 7	B0C3+	Pin 15	B0C7+	Pin 23	B0C11+	Pin 31	B0C15+
Pin 8	B0C3–	Pin 16	B0C7–	Pin 24	B0C11–	Pin 32	B0C15–

The following table refers to the J2 connector on the NI TB-2646B.

Test	Column	Pin Number	Column	Pin Number	Column	Pin Number	Column
Pin 1	B0C16+	Pin 9	B0C20+	Pin 17	B0C24+	Pin 25	B0C28+
Pin 2	B0C16–	Pin 10	B0C20–	Pin 18	B0C24–	Pin 26	B0C28–
Pin 3	B0C17+	Pin 11	B0C21+	Pin 19	B0C25+	Pin 27	B0C29+
Pin 4	B0C17–	Pin 12	B0C21–	Pin 20	B0C25–	Pin 28	B0C29–
Pin 5	B0C18+	Pin 13	B0C22+	Pin 21	B0C26+	Pin 29	B0C30+
Pin 6	B0C18–	Pin 14	B0C22–	Pin 22	B0C26–	Pin 30	B0C30–
Pin 7	B0C19+	Pin 15	B0C23+	Pin 23	B0C27+	Pin 31	B0C31+
Pin 8	B0C19–	Pin 16	B0C23–	Pin 24	B0C27–	Pin 32	B0C31–

Row Pin Connections

The NI TB-2646B provides two ribbon cable headers for row connection. Use one cable header to connect to your application. Use the other cable header for column expansion.

The following table refers to the J9 connector on the NI TB-2646B.

Pin Number	Row
1	B1R0+
2	B1R0–
3	B1R1+
4	B1R1–
5	B1R2+
6	B1R2–
7	B1R3+
8	B1R3–
9	B0R0+

Pin Number	Row
10	B0R0–
11	B0R1+
12	B0R1–
13	B0R2+
14	B0R2–
15	B0R3+
16	B0R3–

The following table refers to the J4 connector on the NI TB-2646B.

Pin Number	Row
1	B0R0+
2	B0R0–
3	B0R1+
4	B0R1–
5	B0R2+
6	B0R2–
7	B0R3+
8	B0R3–
9	B1R0+
10	B1R0–
11	B1R1+
12	B1R1–
13	B1R2+
14	B1R2–
15	B1R3+
16	B1R3–

Row Protection Bypass Header

Each row signal is isolated from the reed relays through a 100 Ω resistor. To bypass this resistor, install a jumper on the appropriate pins of the header indicated in the table below. The following table lists the appropriate jumper position for bypassing the resistor on each row signal.

Bypassed Row	NI TB-2646B	
	Header	Pins Connected
B0R0+	J14	1-2
B0R0-	J14	3-4
B0R1+	J14	5-6
B0R1-	J14	7-8
B0R2+	J14	9-10
B0R2-	J14	11-12
B0R3+	J14	13-14
B0R3-	J14	15-16
B1R0+	J15	1-2
B1R0-	J15	3-4
B1R1+	J15	5-6
B1R1-	J15	7-8
B1R2+	J15	9-10
B1R2-	J15	11-12
B1R3+	J15	13-14
B1R3-	J15	15-16

Matrix Expansion

You can expand the matrices of the NI PXI/PXIe-2532/2532B (NI 2532/2532B) by increasing the number of columns in the matrix.

To expand the number of columns, use the terminal block row connection headers to connect the rows on adjacent terminal blocks. The following table lists the available terminal blocks and matrix configurations that support column expansion.

Terminal Block	Configuration (Row × Column)
NI TB-2642B	1-wire 4×128
NI TB-2642B	1-wire 16×32
NI TB-2643B	1-wire Dual 4×64
NI TB-2643B	2-wire 4×64
NI TB-2644B	1-wire Dual 8×32
NI TB-2644B	2-wire 8×32
NI TB-2645B	1-wire Dual 16×16
NI TB-2645B	2-wire 16×16
NI TB-2646B	1-wire Quad 4×32
NI TB-2646B	2-wire Dual 4×32
NI TB-2641B	1-wire 8×64

Most terminal blocks feature row connection headers that enable you to join rows on two adjacent terminal blocks to expand the number of columns in a matrix. These terminal blocks include two row connection header sets with identical pinouts. The NI TB-2646B includes two row connection header sets with differing pinouts. Refer to the NI Switches Help and the NI TB-2646B Installation Instructions for row connection header pinouts.

Expand the Columns using a TB-2640B/2641B/2642B/2643B/2644B/2645B

The column expansion procedure is the same for all of the terminal block modules with two identical row connection headers. This includes the NI TB-2640B/2641B/2642B/2643B/2644B/2645B.



Note The NI TB-2645B requires two row ribbon cables for matrix expansion.

1. Connect one end of the ribbon cable to either row connection header on one of the terminal blocks.
2. Connect the other end of the ribbon cable to either row connection header on the other terminal block.

Use the appropriate row ribbon cable header as specified in the following table.

Terminal Block Module	Row Connection Header 1	Row Connection Header 2
NI TB-2640	J2	J3
NI TB-2642B	J8	J9
NI TB-2643B	J4	J5
NI TB-2644B	J4	J5
NI TB-2645B	Cable 1 - J4	Cable 1 - J5
	Cable 2 - J6	Cable 2 - J7
NI TB-2641B	J4	J5



Note For the NI TB-2645B, do not connect a row ribbon cable from a Cable 1 header to a Cable 2 header.

Expand the Columns using a TB-2646B

The NI TB-2646B has a second row connection header with a modified pinout that is not identical to the first row connection header. Column expansion can only be achieved by connecting a row ribbon cable from the row connection header of one terminal block to the same row connection header of an adjacent terminal block. Refer to the NI TB-2646B Installation Instructions for row connection header pinouts.

1. Connect one end of the ribbon cable to either row connection header on one of the terminal blocks.
2. Connect the other end of the ribbon cable to either row connection header on the

other terminal block.

Use the appropriate row ribbon cable header as specified in the following table.

Terminal Block Module	Row Connection Header 1	Row Connection Header 2
NI TB-2646B	J4	J9

PXI-2532B Relay Replacement

The module uses reed relays.

Refer to the following table for information about ordering replacement relays.

Relay Manufacturer	Part
Meder	CRR05-1A

Disassemble the Module

1. Ground yourself using a grounding strap or a ground connected to your PXI chassis.



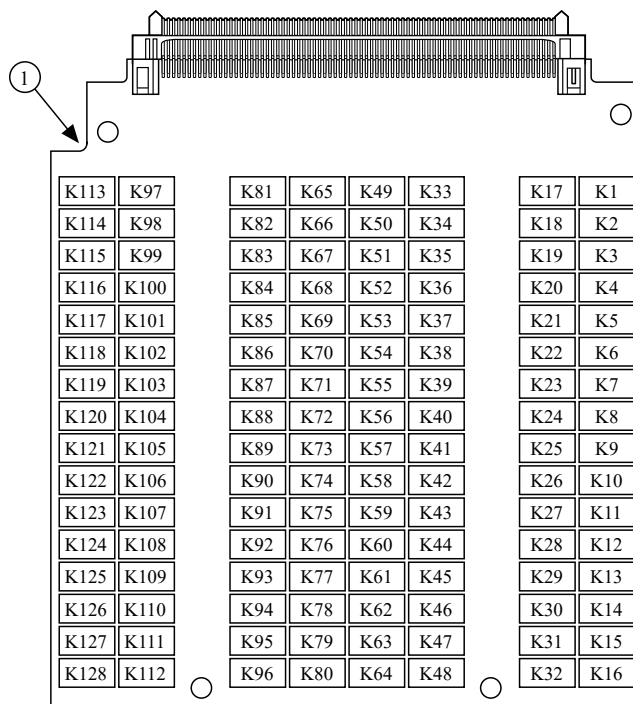
Note Properly grounding yourself prevents damage to your module from electrostatic discharge.

2. Locate the relay you want to replace.
 - a. Determine the relay name for the relay using the Bank Connection Diagram for your topology.
 - b. Match the relay name to its corresponding reference designator and locate the relay using the following figures and tables.



Note The reference designator locations for the top and bottom mezzanine boards are identical. Relays are located on both sides of each mezzanine board.

The following figure illustrates relay locations on the side of each mezzanine board that has a notch in the top left corner.



The following figure illustrates relay locations on the side of each mezzanine board that has a notch in the top right corner.

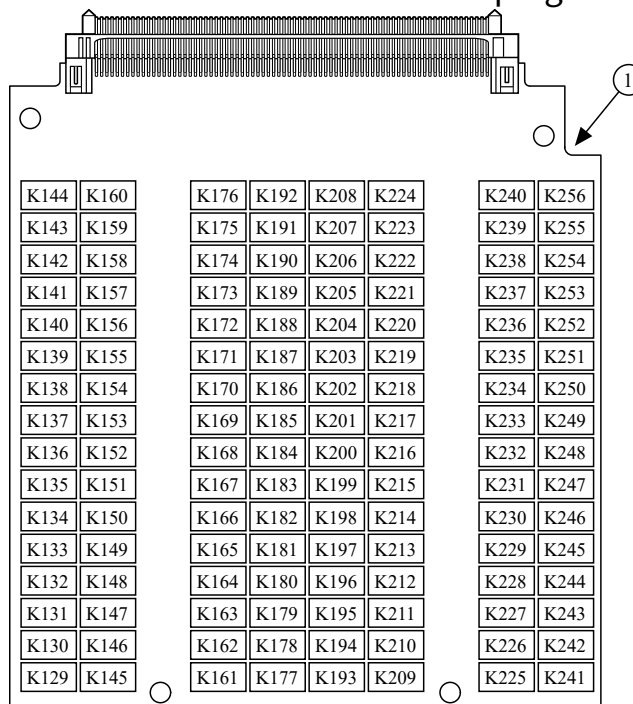


Table 1. Top Mezzanine Board Relay Locations

Relay Name	Reference Designator	Relay Name	Reference Designator	Relay Name	Reference Designator	Relay Name	Reference Designator
B8R0C0	K144	B10R0C0	K176	B12R0C0	K193	B14R0C0	K225
B8R0C1	K143	B10R0C1	K175	B12R0C1	K194	B14R0C1	K226
B8R0C2	K142	B10R0C2	K174	B12R0C2	K195	B14R0C2	K227
B8R0C3	K141	B10R0C3	K173	B12R0C3	K196	B14R0C3	K228
B8R0C4	K140	B10R0C4	K172	B12R0C4	K197	B14R0C4	K229
B8R0C5	K139	B10R0C5	K171	B12R0C5	K198	B14R0C5	K230
B8R0C6	K138	B10R0C6	K170	B12R0C6	K199	B14R0C6	K231
B8R0C7	K137	B10R0C7	K169	B12R0C7	K200	B14R0C7	K232
B8R0C8	K136	B10R0C8	K168	B12R0C8	K201	B14R0C8	K233
B8R0C9	K135	B10R0C9	K167	B12R0C9	K202	B14R0C9	K234
B8R0C10	K134	B10R0C10	K166	B12R0C10	K203	B14R0C10	K235
B8R0C11	K133	B10R0C11	K165	B12R0C11	K204	B14R0C11	K236
B8R0C12	K132	B10R0C12	K164	B12R0C12	K205	B14R0C12	K237
B8R0C13	K131	B10R0C13	K163	B12R0C13	K206	B14R0C13	K238
B8R0C14	K130	B10R0C14	K162	B12R0C14	K207	B14R0C14	K239
B8R0C15	K129	B10R0C15	K161	B12R0C15	K208	B14R0C15	K240
B8R1C0	K1	B10R1C0	K33	B12R1C0	K80	B14R1C0	K112
B8R1C1	K2	B10R1C1	K34	B12R1C1	K79	B14R1C1	K111
B8R1C2	K3	B10R1C2	K35	B12R1C2	K78	B14R1C2	K110
B8R1C3	K4	B10R1C3	K36	B12R1C3	K77	B14R1C3	K109
B8R1C4	K5	B10R1C4	K37	B12R1C4	K76	B14R1C4	K108
B8R1C5	K6	B10R1C5	K38	B12R1C5	K75	B14R1C5	K107
B8R1C6	K7	B10R1C6	K39	B12R1C6	K74	B14R1C6	K106
B8R1C7	K8	B10R1C7	K40	B12R1C7	K73	B14R1C7	K105
B8R1C8	K9	B10R1C8	K41	B12R1C8	K72	B14R1C8	K104
B8R1C9	K10	B10R1C9	K42	B12R1C9	K71	B14R1C9	K103

Relay Name	Reference Designator	Relay Name	Reference Designator	Relay Name	Reference Designator	Relay Name	Reference Designator
B8R1C10	K11	B10R1C10	K43	B12R1C10	K70	B14R1C10	K102
B8R1C11	K12	B10R1C11	K44	B12R1C11	K69	B14R1C11	K101
B8R1C12	K13	B10R1C12	K45	B12R1C12	K68	B14R1C12	K100
B8R1C13	K14	B10R1C13	K46	B12R1C13	K67	B14R1C13	K99
B8R1C14	K15	B10R1C14	K47	B12R1C14	K66	B14R1C14	K98
B8R1C15	K16	B10R1C15	K48	B12R1C15	K65	B14R1C15	K97
B9R0C0	K160	B11R0C0	K192	B13R0C0	K209	B15R0C0	K241
B9R0C1	K159	B11R0C1	K191	B13R0C1	K210	B15R0C1	K242
B9R0C2	K158	B11R0C2	K190	B13R0C2	K211	B15R0C2	K243
B9R0C3	K157	B11R0C3	K189	B13R0C3	K212	B15R0C3	K244
B9R0C4	K156	B11R0C4	K188	B13R0C4	K213	B15R0C4	K245
B9R0C5	K155	B11R0C5	K187	B13R0C5	K214	B15R0C5	K246
B9R0C6	K154	B11R0C6	K186	B13R0C6	K215	B15R0C6	K247
B9R0C7	K153	B11R0C7	K185	B13R0C7	K216	B15R0C7	K248
B9R0C8	K152	B11R0C8	K184	B13R0C8	K217	B15R0C8	K249
B9R0C9	K151	B11R0C9	K183	B13R0C9	K218	B15R0C9	K250
B9R0C10	K150	B11R0C10	K182	B13R0C10	K219	B15R0C10	K251
B9R0C11	K149	B11R0C11	K181	B13R0C11	K220	B15R0C11	K252
B9R0C12	K148	B11R0C12	K180	B13R0C12	K221	B15R0C012	K253
B9R0C13	K147	B11R0C13	K179	B13R0C13	K222	B15R0C13	K254
B9R0C14	K146	B11R0C14	K178	B13R0C14	K223	B15R0C14	K255
B9R0C15	K145	B11R0C15	K177	B13R0C15	K224	B15R0C15	K256
B9R1C0	K17	B11R1C0	K49	B13R1C0	K96	B15R1C0	K128
B9R1C1	K18	B11R1C1	K50	B13R1C1	K95	B15R1C1	K127
B9R1C2	K19	B11R1C2	K51	B13R1C2	K94	B15R1C2	K126
B9R1C3	K20	B11R1C3	K52	B13R1C3	K93	B15R1C3	K125

Relay Name	Reference Designator	Relay Name	Reference Designator	Relay Name	Reference Designator	Relay Name	Reference Designator
B9R1C4	K21	B11R1C4	K53	B13R1C4	K92	B15R1C4	K124
B9R1C5	K22	B11R1C5	K54	B13R1C5	K91	B15R1C5	K123
B9R1C6	K23	B11R1C6	K55	B13R1C6	K90	B15R1C6	K122
B9R1C7	K24	B11R1C7	K56	B13R1C7	K89	B15R1C7	K121
B9R1C8	K25	B11R1C8	K57	B13R1C8	K88	B15R1C8	K120
B9R1C9	K26	B11R1C9	K58	B13R1C9	K87	B15R1C9	K119
B9R1C10	K27	B11R1C10	K59	B13R1C10	K86	B15R1C10	K118
B9R1C11	K28	B11R1C11	K60	B13R1C11	K85	B15R1C11	K117
B9R1C12	K29	B11R1C12	K61	B13R1C12	K84	B15R1C12	K116
B9R1C13	K30	B11R1C13	K62	B13R1C13	K83	B15R1C13	K115
B9R1C14	K31	B11R1C14	K63	B13R1C14	K82	B15R1C14	K114
B9R1C15	K32	B11R1C15	K64	B13R1C15	K81	B15R1C15	K113

Table 2. Bottom Mezzanine Board Relay Locations

Relay Name	Reference Designator	Relay Name	Reference Designator	Relay Name	Reference Designator	Relay Name	Reference Designator
B0R0C0	K144	B2R0C0	K176	B4R0C0	K193	B6R0C0	K225
B0R0C1	K143	B2R0C1	K175	B4R0C1	K194	B6R0C1	K226
B0R0C2	K142	B2R0C2	K174	B4R0C2	K195	B6R0C2	K227
B0R0C3	K141	B2R0C3	K173	B4R0C3	K196	B6R0C3	K228
B0R0C4	K140	B2R0C4	K172	B4R0C4	K197	B6R0C4	K229
B0R0C5	K139	B2R0C5	K171	B4R0C5	K198	B6R0C5	K230
B0R0C6	K138	B2R0C6	K170	B4R0C6	K199	B6R0C6	K231
B0R0C7	K137	B2R0C7	K169	B4R0C7	K200	B6R0C7	K232
B0R0C8	K136	B2R0C8	K168	B4R0C8	K201	B6R0C8	K233
B0R0C9	K135	B2R0C9	K167	B4R0C9	K202	B6R0C9	K234
B0R0C10	K134	B2R0C10	K166	B4R0C10	K203	B6R0C10	K235

Relay Name	Reference Designator	Relay Name	Reference Designator	Relay Name	Reference Designator	Relay Name	Reference Designator
B0R0C11	K133	B2R0C11	K165	B4R0C11	K204	B6R0C11	K236
B0R0C12	K132	B2R0C12	K164	B4R0C12	K205	B6R0C12	K237
B0R0C13	K131	B2R0C13	K163	B4R0C13	K206	B6R0C13	K238
B0R0C14	K130	B2R0C14	K162	B4R0C14	K207	B6R0C14	K239
B0R0C15	K129	B2R0C15	K161	B4R0C15	K208	B6R0C15	K240
B0R1C0	K1	B2R1C0	K33	B4R1C0	K80	B6R1C0	K112
B0R1C1	K2	B2R1C1	K34	B4R1C1	K79	B6R1C1	K111
B0R1C2	K3	B2R1C2	K35	B4R1C2	K78	B6R1C3	K110
B0R1C3	K4	B2R1C3	K36	B4R1C3	K77	B6R1C3	K109
B0R1C4	K5	B2R1C4	K37	B4R1C4	K76	B6R1C4	K108
B0R1C5	K6	B2R1C5	K38	B4R1C5	K75	B6R1C5	K107
B0R1C6	K7	B2R1C6	K39	B4R1C6	K74	B6R1C6	K106
B0R1C7	K8	B2R1C7	K40	B4R1C7	K73	B6R1C7	K105
B0R1C8	K9	B2R1C8	K41	B4R1C8	K72	B6R1C8	K104
B0R1C9	K10	B2R1C9	K42	B4R1C9	K71	B6R1C9	K103
B0R1C10	K11	B2R1C10	K43	B4R1C10	K70	B6R1C10	K102
B0R1C11	K12	B2R1C11	K44	B4R1C11	K69	B6R1C11	K101
B0R1C12	K13	B2R1C12	K45	B4R1C12	K68	B6R1C12	K100
B0R1C13	K14	B2R1C13	K46	B4R1C13	K67	B6R1C13	K99
B0R1C14	K15	B2R1C14	K47	B4R1C14	K66	B6R1C14	K98
B0R1C15	K16	B2R1C15	K48	B4R1C15	K65	B6R1C15	K97
B1R0C0	K160	B3R0C0	K192	B5R0C0	K209	B7R0C0	K241
B1R0C1	K159	B3R0C1	K191	B5R0C1	K210	B7R0C1	K242
B1R0C2	K158	B3R0C2	K190	B5R0C2	K211	B7R0C2	K243
B1R0C3	K157	B3R0C3	K189	B5R0C3	K212	B7R0C3	K244
B1R0C4	K156	B3R0C4	K188	B5R0C4	K213	B7R0C4	K245

Relay Name	Reference Designator	Relay Name	Reference Designator	Relay Name	Reference Designator	Relay Name	Reference Designator
B1R0C5	K155	B3R0C5	K187	B5R0C5	K214	B7R0C5	K246
B1R0C6	K154	B3R0C6	K186	B5R0C6	K215	B7R0C6	K247
B1R0C7	K153	B3R0C7	K185	B5R0C7	K216	B7R0C7	K248
B1R0C8	K152	B3R0C8	K184	B5R0C8	K217	B7R0C8	K249
B1R0C9	K151	B3R0C9	K183	B5R0C9	K218	B7R0C9	K250
B1R0C10	K150	B3R0C10	K182	B5R0C10	K219	B7R0C10	K251
B1R0C11	K149	B3R0C11	K181	B5R0C11	K220	B7R0C11	K252
B1R0C12	K148	B3R0C12	K180	B5R0C12	K221	B7R0C12	K253
B1R0C13	K147	B3R0C13	K179	B5R0C13	K222	B7R0C13	K254
B1R0C14	K146	B3R0C14	K178	B5R0C14	K223	B7R0C14	K255
B1R0C15	K145	B3R0C15	K177	B5R0C15	K224	B7R0C15	K256
B1R1C0	K17	B3R1C0	K49	B5R1C0	K96	B7R1C0	K128
B1R1C1	K18	B3R1C1	K50	B5R1C1	K95	B7R1C1	K127
B1R1C2	K19	B3R1C2	K51	B5R1C2	K94	B7R1C2	K126
B1R1C3	K20	B3R1C3	K52	B5R1C3	K93	B7R1C3	K125
B1R1C4	K21	B3R1C4	K53	B5R1C4	K92	B7R1C4	K124
B1R1C5	K22	B3R1C5	K54	B5R1C5	K91	B7R1C5	K123
B1R1C6	K23	B3R1C6	K55	B5R1C6	K90	B7R1C6	K122
B1R1C7	K24	B3R1C7	K56	B5R1C7	K89	B7R1C7	K121
B1R1C8	K25	B3R1C8	K57	B5R1C8	K88	B7R1C8	K120
B1R1C9	K26	B3R1C9	K58	B5R1C9	K87	B7R1C9	K119
B1R1C10	K27	B3R1C10	K59	B5R1C10	K86	B7R1C10	K118
B1R1C11	K28	B3R1C11	K60	B5R1C11	K85	B7R1C11	K117
B1R1C12	K29	B3R1C12	K61	B5R1C12	K84	B7R1C12	K116
B1R1C13	K30	B3R1C13	K62	B5R1C13	K83	B7R1C13	K115
B1R1C14	K31	B3R1C14	K63	B5R1C14	K82	B7R1C14	K114

Relay Name	Reference Designator	Relay Name	Reference Designator	Relay Name	Reference Designator	Relay Name	Reference Designator
B1R1C15	K32	B3R1C15	K64	B5R1C15	K81	B7R1C15	K113

- c. Use the reference designator to locate the relay on the mezzanine board.



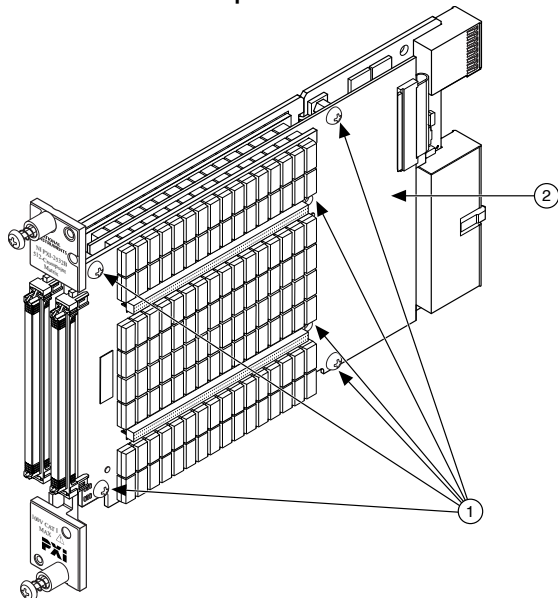
Note Reference designators are printed on the mezzanine boards.

3. Disassemble the module. Refer to ***Disconnecting the Top Mezzanine Board*** if the relay you want to replace is located on the top mezzanine board. Refer to ***Disconnecting the Bottom Mezzanine Board*** if the relay you want to replace is located on the bottom mezzanine board. Refer to both procedures if you want to replace relays on both boards.

Disconnecting the Top Mezzanine Board

Complete the following steps to disconnect the top mezzanine board from the driver board.

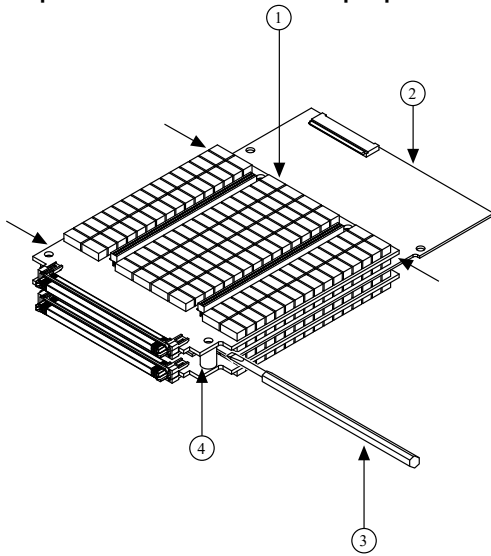
1. Remove the top mezzanine board screws.



1 Mezzanine Board Screws

2 Driver Board

2. Use a plastic screwdriver to gently pry the top mezzanine board from the driver board, prying a little at each corner for an even distribution of pressure until the top mezzanine board pops loose. Retain the spacers from between the boards.



1 Top Mezzanine Board

2 Driver Board

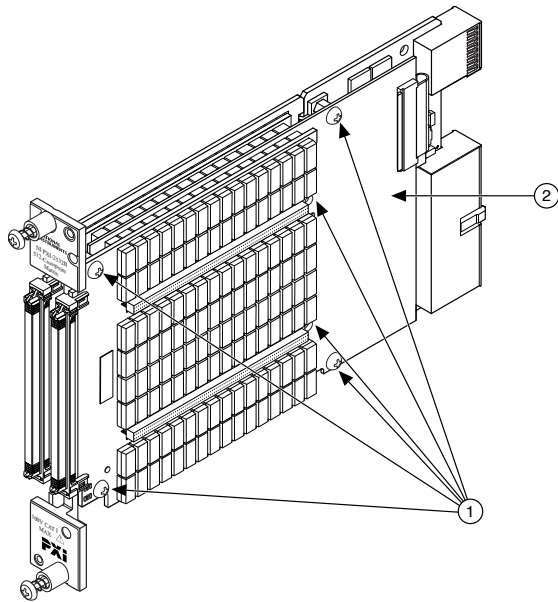
3 Plastic Screwdriver

4 Spacer

Disconnecting the Bottom Mezzanine Board

Complete the following steps to disconnect the bottom mezzanine board from the driver board.

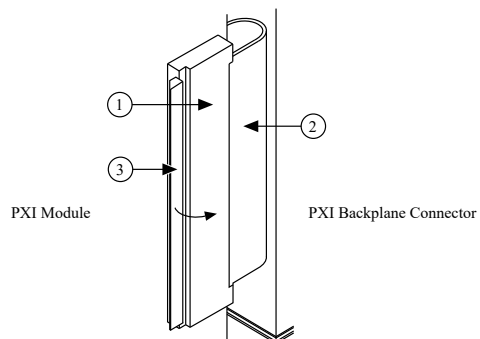
1. Remove the mezzanine board screws.



1 Mezzanine Board Screws

2 Driver Board

2. Disconnect the PCB interconnect cable by lifting the PCB cable latch on the J2 connector.

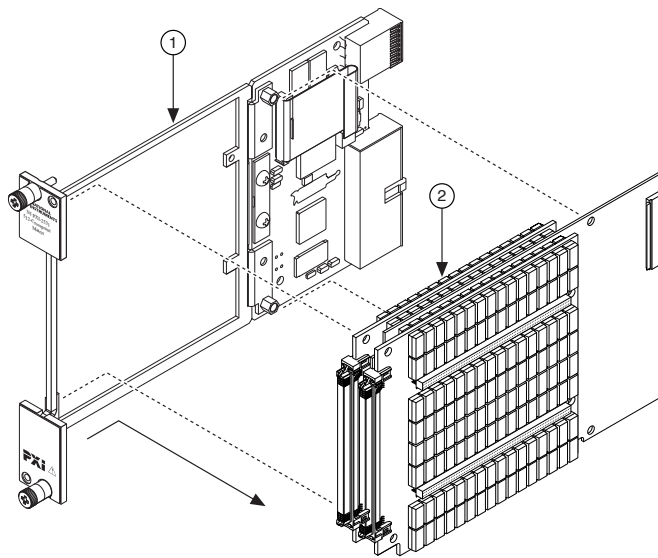


1 J2 Connector

3 PCB Cable Latch

2 PCB Interconnect Cable

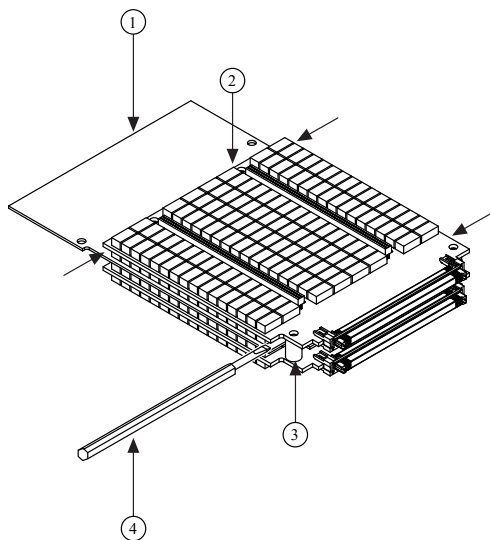
3. Separate the daughterboard assembly from the CMI bracket.



1 CMI Bracket

2 Daughterboard Assembly

4. Use a plastic screwdriver to gently pry the bottom mezzanine board from the driver board, prying a little at each corner for an even distribution of pressure until the bottom mezzanine board pops loose. Retain the spacers from between the boards.



1 Driver Board

3 Spacer

2 Bottom Mezzanine Board

4 Plastic Screwdriver

Replace the Relay

The PXI-2532B uses lead-free assemblies.



Note NI recommends using lead-free solder for relay replacement on lead-free assemblies.



Note If a lead-free assembly is reworked with lead solder, label the assembly to indicate this condition. This rework can prevent the same unit from being reworked later on a lead-free solder station, because it could contaminate the station.

Make sure you have the following items:

- Hot air rework station with hot air gun set to 371 °C (700 °F) for lead-free solder rework
 - Temperature-regulated soldering iron set to 371 °C (700 °F) for lead-free solder rework
 - 96.5/3.0/0.5 Tin/Silver/Copper solder (flux core) for lead-free solder rework
 - Fine tweezers
1. Apply heat with the hot air gun for 30 to 45 seconds in a circular motion around the relay, keeping the hot air gun 0.75 to 1 inch (1.91 to 2.54 cm) above the daughterboard.
 2. Gently lift the relay with tweezers to remove it from the PCB. If the relay does not lift easily, apply hot air in a circular motion around the relay two to three times and gently try to lift the relay again. Repeat until the solder reflows and the relay lifts easily.
 3. Use the soldering iron to tin the leads of the new relay.
 4. Use the soldering iron to create a uniform distribution of solder on the pads of the daughterboard PCB.
 5. Use the hot air gun to heat the PCB and the relay leads.
 6. Hold the new relay in place on the board with the tweezers while using the hot air gun to apply heat in a circular motion until the solder reflows.

Reassemble the Module



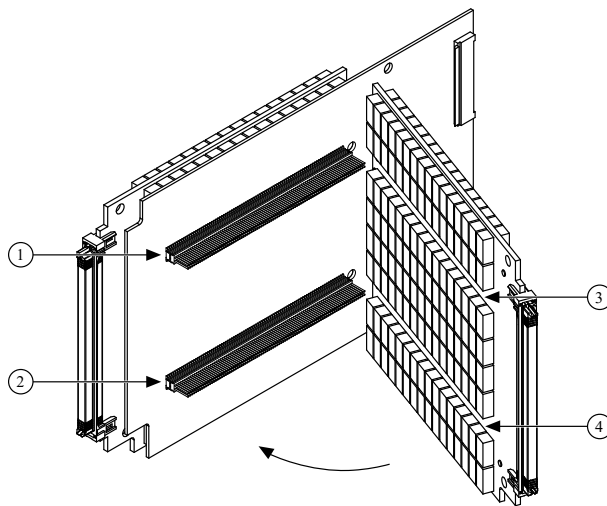
Note In NI-SWITCH 3.1 or later, you can use the Switch Soft Front Panel to reset the relay count after you have replaced a failed relay. Refer to the **Switch Soft Front Panel Help** for more information

Reconnecting the Top Mezzanine Board

1. Align pin holes 179 and 180 on the J4 and J5 connectors of the top mezzanine board with pins 179 and 180 of the J3 and J4 connectors on the driver board. Gently fold the mezzanine board over onto the driver board as shown in the following figure. Leave approximately 6 mm of clearance between the mezzanine board and the driver board. Do not press the boards together.



Note Ensure the black surface mount J2 and J3 connectors on the mezzanine board face away from the driver board, and the notch in the corner of the mezzanine board faces the bottom front of the module.



1 Driver Board J4 Connector

2 Driver Board J3 Connector

3 Mezzanine Board J4 Connector

4 Mezzanine Board J5 Connector

2. Replace the spacers between the driver board and top mezzanine board.
3. Secure the top mezzanine board to the driver board using the screws from step 1.

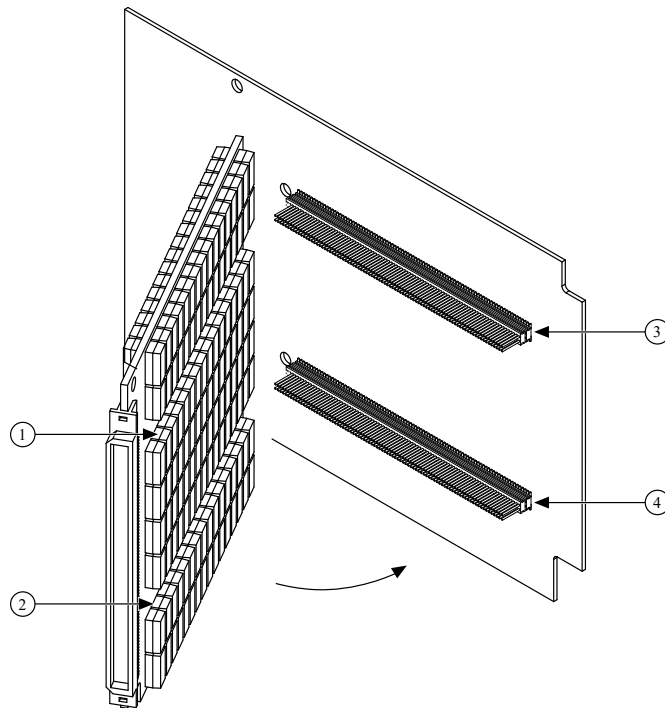
Reconnecting the Bottom Mezzanine Board

1. Align pin holes 179 and 180 on the J2 and J3 connectors of the bottom mezzanine

board with pins 179 and 180 of the J5 and J6 connectors on the driver board. Gently fold the mezzanine board over onto the driver board as shown in the following figure. Leave approximately 6 mm of clearance between the mezzanine board and the driver board. Do not press the boards together.



Note Ensure the black surface mount J4 and J5 connectors on the mezzanine board face away from the driver board, and the notch in the corner of the mezzanine board faces the bottom front of the module.



1 Mezzanine Board J2 Connector

2 Mezzanine Board J3 Connector

3 Driver Board J5 Connector

4 Driver Board J6 Connector

2. Connect the PCB interconnect cable to the J2 connector on the bottom mezzanine board.
3. Reconnect the daughterboard to the CMI bracket.
4. Replace the spacers between the driver board and bottom mezzanine board.
5. Secure the daughterboard assembly to the CMI bracket using the screws from step 2.