# PXIe-2524 Features

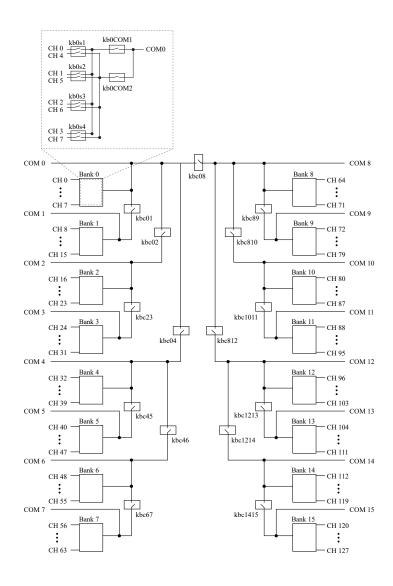


# **Contents**

PXIe-2524 Overview	2	2
rxie-2324 Overview	J	)

## PXIe-2524 Overview

## PXIe-2524 Hardware Diagram



## PXIe-2524 Pinout

				C32	CH1	
CH0 COM0	400	B32		D32	CH2	CH3
CH4	A32	B31		C31 E32	CH5	СПЗ
(C) (A)	A31	ВЗТ		D31 E31	CH6	CH7
CH8 —	7101	B30		C30	—(CH9)	<u> </u>
COM1	A30			D30 E30	(CH10)	CH11
CH12		B29		C29	CH13	
	A29			D29 E29	CH14	CH15
CH16		B28		C28	CH17	
COM2	A28			D28 E28	CH18	CH19
CH20		B27		C27 D27	CH21 CH22	
	A27		09990	E27		CH23
CH24		B26		C26 D26	CH25 CH26	
COM3	A26			E26		CH27
CH28	_	B25		C25 D25	CH29 CH30	
	A25		09990	E25	CUIDO	CH31
CH32		B24		C24 D24	CH33 CH34	0110-
COM4	A24	Dee	0000	C23 E24	CH37	CH35
CH36 )—	A23	B23		D23 E23	CH38	CH39
CH40	MZS	B22		C22	CH41	СПЗЭ
COM5	A22	DZZ		D22 E22	CH42	CH43
CH44		B21		C21	(CH45)	ريسي
	A21			D21 E21	CH46	CH47
CH48		B20		C20	CH49 CH50	
COM6	A20			D20 E20	CHSU	CH51
CH52		B19		C19 D19	CH53 CH54	
<u> </u>	A19		<u> </u>	E19		CH55
CH56		B18		C18 D18	CH57 CH58	
(COM7)	A18		<u> </u>	E18		CH59
CH60		B17		C17 D17	CH61 CH62	
	A17	[B:0]	09990-	C16 E17	CH65	CH63
CH64 COM8	440	B16		D16	CH66	01107
CH68	A16	B15		C15 E16	CH69	CH67
	A15	БІЗ		D15 E15	CH70	CH71
CH72	7110	B14		C14	(CH73)	<u> </u>
COM9	A14			D14 E14	CH74	CH75
(CH76)		B13		C13	CH77 CH78	
	A13			D13 E13	CH78	CH79
CH80		B12		C12 D12	CH81 CH82	
COM10	A12		-09990-	E12		CH83
CH84		B11		C11 D11	CH85 CH86	
	A11		-0992-	E11	— CH89	(CH87)
CH88		B10		C10 D10	CH90	
COM11	A10		-00000	C9 E10	—(CH93)	CH91
CH92 )—	A9	B9		D9 E9	CH94	CH95
CH96	A9	B8		C8	(CH97)	СПЭЗ
(COM12)	A8	ВО		D8 E8	(CH98)	CH99
(CH100)	710	B7		C7	CH101	01.00
	A7			D7 E7	(CH102)	CH103
CH104)		B6		C6 D6	CH105 CH106	
COM13	A6		-09990-	E6		CH107
CH108		B5		C5 D5	CH109 CH110	
	A5			E5		CH111
CH112		B4		C4 D4	CH113 CH114	
(COM14)	A4		0999	C3 E4	—CH117	CH115
(CH116)	40	B3		D3	CH117 CH118	Olisto
(CH120)—	A3	B2		C2 E3	(CH121)	CH119
(COM15)	A2 -	UE		D2 E2	CH122	CH123
(CH124)—	,	B1		C1	—(CH125)	3120)
( <del>-</del> )	A1			D1 E1	(CH126)	CH127
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**Table 1.** Signal Descriptions

Signal	Description	
СНх	Signal connection	
COMx	Routing destination for corresponding signal connections	
_	No connection	

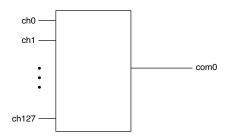
## PXIe-2524 Topology

The following table lists the topologies supported by the module. Each topology supports immediate operation modes.

Topology	Software Name
1-wire 128x1 Multiplexer	2524/1-Wire 128x1 Mux(NISWITCH_TOPOLOGY_2524_1_WIRE_128X1_MUX)
1-wire Dual 64x1 Multiplexer	2524/1-Wire Dual 64x1 Mux(NISWITCH_TOPOLOGY_2524_1_WIRE_DUAL_64X1_MUX)
1-wire Quad 32x1 Multiplexer	2524/1-Wire Quad 32x1 Mux(NISWITCH_TOPOLOGY_2524_1_WIRE_QUAD_32X1_MUX)
1-wire Octal 16x1 Multiplexer	2524/1-Wire Octal 16x1 Mux(NISWITCH_TOPOLOGY_2524_1_WIRE_OCTAL_16X1_MUX)
1-wire Sixteen 8x1 Multiplexer	2524/1-Wire Sixteen 8x1 Mux(NISWITCH_TOPOLOGY_2524_1_WIRE_SIXTEEN_8X1_MUX)

## 1-Wire 128×1 Multiplexer Topology

## 1-Wire 128×1 Multiplexer



All channels route to com0. You can control the channels using the niSwitch Connect Channels VI or the niSwitch\_Connect function.

For example, to connect channel 1 to com0, call niSwitch Connect (vi, "ch1", "com0"). To disconnect channel 1 from com0, call niSwitch\_Disconnect(vi, "ch1", "com0").

Table 2. Channel Pairing and Relay Assignments

1-Wire 128×1 Channel Name		Relay Name
CH0	CH4	kb0s1
CH1	CH5	kb0s2
CH2	CH6	kb0s3
CH3	CH7	kb0s4
CH8	CH12	kb1s1
CH9	CH13	kb1s2
CH10	CH14	kb1s3
CH11	CH15	kb1s4
CH16	CH20	kb2s1
CH17	CH21	kb2s2
CH18	CH22	kb2s3
CH19	CH23	kb2s4
CH24	CH28	kb3s1
CH25	CH29	kb3s2
CH26	CH30	kb3s3
CH27	CH31	kb3s4
CH32	CH36	kb4s1
CH33	CH37	kb4s2

1-Wire 128×1 Channel Name		Relay Name
CH34	CH38	kb4s3
CH35	CH39	kb4s4
CH40	CH44	kb5s1
CH41	CH45	kb5s2
CH42	CH46	kb5s3
CH43	CH47	kb5s4
CH48	CH52	kb6s1
CH49	CH53	kb6s2
CH50	CH54	kb6s3
CH51	CH55	kb6s4
CH56	CH60	kb7s1
CH57	CH61	kb7s2
CH58	CH62	kb7s3
CH59	CH63	kb7s4
CH64	CH68	kb8s1
CH65	CH69	kb8s2
CH66	CH70	kb8s3
CH67	CH71	kb8s4
CH72	CH76	kb9s1
CH73	CH77	kb9s2
CH74	CH78	kb9s3
CH75	CH79	kb9s4
CH80	CH84	kb10s1
CH81	CH85	kb10s2
CH82	CH86	kb10s3
CH83	CH87	kb10s4
CH88	CH92	kb11s1

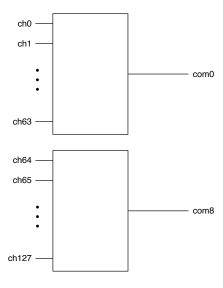
1-Wire 128×1 Channel Name		Relay Name
CH89	CH93	kb11s2
CH90	CH94	kb11s3
CH91	CH95	kb11s4
CH96	CH100	kb12s1
CH97	CH101	kb12s2
CH98	CH102	kb12s3
CH99	CH103	kb12s4
CH104	CH108	kb13s1
CH105	CH109	kb13s2
CH106	CH110	kb13s3
CH107	CH111	kb13s4
CH112	CH116	kb14s1
CH113	CH117	kb14s2
CH114	CH118	kb14s3
CH115	CH119	kb14s4
CH120	CH124	kb15s1
CH121	CH125	kb15s2
CH122	CH126	kb15s3
CH123	CH127	kb15s4
CH123	CH127	kb15s4
		kb0com1
COM 0		kb0com2
		kbc01
		kb1com1
		kb1com2
		kb1com2
		kbc02

1-Wire 128×1 Channel Name	Relay Name
	kb2com1
	kb2com2
	kbc23
	kb3com1
	kb3com2
	kbc04
	kb4com1
	kb4com2
	kbc45
	kb5com1
	kb5com2
	kbc46
	kb6com1
	kb6com2
	kbc67
	kb7com1
	kb7com2
	kbc08
	kb8com1
	kb8com2
	kbc89
	kb9com1
	kb9com2
	kbc810
	kb10com1
	kb10com2
	kbc1011

1-Wire 128×1 Channel Name	Relay Name
	kb11com1
	kb11com2
	kbc812
	kb12com1
	kb12com2
	kbc1213
	kb13com1
	kb13com2
	kbc1214
	kb14com1
	kb14com2
	kbc1415
	kb15com1
	kb15com2

## 1-Wire Dual 64×1 Multiplexer Topology

## 1-Wire Dual 64×1 Multiplexer



All channels route to com0. You can control the channels using the niSwitch Connect Channels VI or the niSwitch\_Connect function.

For example, to connect channel 1 to com0, call niSwitch\_Connect(vi, "ch1", "com0"). To disconnect channel 1 from com0, call niSwitch Disconnect(vi, "ch1", "com0").

Table 3. Channel Pairing and Relay Assignments

1-Wire Dual 64×1 Channel Name		Relay Name
CH0	CH4	kb0s1
CH0	CH4	kb0s1
CH1	CH5	kb0s2
CH2	CH6	kb0s3
CH3	CH7	kb0s4
CH8	CH12	kb1s1
CH9	CH13	kb1s2
CH10	CH14	kb1s3
CH11	CH15	kb1s4
CH16	CH20	kb2s1
CH17	CH21	kb2s2
CH18	CH22	kb2s3
CH19	CH23	kb2s4
CH24	CH28	kb3s1
CH25	CH29	kb3s2
CH26	CH30	kb3s3
CH27	CH31	kb3s4
CH32	CH36	kb4s1
CH33	CH37	kb4s2

1-Wire Dual 64×	1 Channel Name	Relay Name
CH34	CH38	kb4s3
CH35	CH39	kb4s4
CH40	CH44	kb5s1
CH41	CH45	kb5s2
CH42	CH46	kb5s3
CH43	CH47	kb5s4
CH48	CH52	kb6s1
CH49	CH53	kb6s2
CH50	CH54	kb6s3
CH51	CH55	kb6s4
CH56	CH60	kb7s1
CH57	CH61	kb7s2
CH58	CH62	kb7s3
CH59	CH63	kb7s4
CH64	CH68	kb8s1
CH65	CH69	kb8s2
CH66	CH70	kb8s3
CH67	CH71	kb8s4
CH72	CH76	kb9s1
CH73	CH77	kb9s2
CH74	CH78	kb9s3
CH75	CH79	kb9s4
CH80	CH84	kb10s1
CH81	CH85	kb10s2
CH82	CH86	kb10s3
CH83	CH87	kb10s4
CH88	CH92	kb11s1

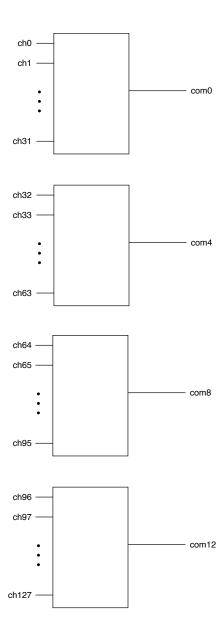
1-Wire Dual 64×1 Channel Name		Relay Name
CH89	CH93	kb11s2
CH90	CH94	kb11s3
CH91	CH95	kb11s4
CH96	CH100	kb12s1
CH97	CH101	kb12s2
CH98	CH102	kb12s3
CH99	CH103	kb12s4
CH104	CH108	kb13s1
CH105	CH109	kb13s2
CH106	CH110	kb13s3
CH107	CH111	kb13s4
CH112	CH116	kb14s1
CH113	CH117	kb14s2
CH114	CH118	kb14s3
CH115	CH119	kb14s4
CH120	CH124	kb15s1
CH121	CH125	kb15s2
CH122	CH126	kb15s3
CH123	CH127	kb15s4
CH123	CH127	kb15s4
		kb0com1
	kb0com2	
	kbc01	
COM 0		kb1com1
		kb1com2
		kbc02
		kb2com1

1-Wire Dual 64×1 Channel Name	Relay Name
	kb2com2
	kbc23
	kb3com1
	kb3com2
	kbc04
	kb4com1
	kb4com2
	kbc45
	kb5com1
	kb5com2
	kbc46
	kb6com1
	kb6com2
	kbc67
	kb7com1
	kb7com2
	kb8com1
	kb8com2
	kbc89
	kb9com1
	kb9com2
COM 8	kbc810
	kb10com1
	kb10com2
	kbc1011
	kb11com1
	kb11com2

1-Wire Dual 64×1 Channel Name	Relay Name
	kbc812
	kb12com1
	kb12com2
	kbc1213
	kb13com1
	kb13com2
	kbc1214
	kb14com1
	kb14com2
	kbc1415
	kb15com1
	kb15com2

## 1-Wire Quad 32×1 Multiplexer Topology

## 1-Wire Quad 32×1 Multiplexer



All channels route to com0. You can control the channels using the niSwitch Connect Channels VI or the niSwitch Connect function.

```
For example, to connect channel 1 to com0, call niSwitch Connect (vi,
"ch1", "com0"). To disconnect channel 1 from com0, call
niSwitch Disconnect(vi, "ch1", "com0").
```

Table 4. Channel Pairing and Relay Assignments

1-Wire Quad 32	<1 Channel Name	Relay Name
CH0	CH4	kb0s1
CH0	CH4	kb0s1
CH1	CH5	kb0s2
CH2	CH6	kb0s3
CH3	CH7	kb0s4
CH8	CH12	kb1s1
CH9	CH13	kb1s2
CH10	CH14	kb1s3
CH11	CH15	kb1s4
CH16	CH20	kb2s1
CH17	CH21	kb2s2
CH18	CH22	kb2s3
CH19	CH23	kb2s4
CH24	CH28	kb3s1
CH25	CH29	kb3s2
CH26	CH30	kb3s3
CH27	CH31	kb3s4
CH32	CH36	kb4s1
CH33	CH37	kb4s2
CH34	CH38	kb4s3
CH35	CH39	kb4s4
CH40	CH44	kb5s1
CH41	CH45	kb5s2
CH42	CH46	kb5s3
CH43	CH47	kb5s4
CH48	CH52	kb6s1

1-Wire Quad 32	×1 Channel Name	Relay Name
CH49	CH53	kb6s2
CH50	CH54	kb6s3
CH51	CH55	kb6s4
CH56	CH60	kb7s1
CH57	CH61	kb7s2
CH58	CH62	kb7s3
CH59	CH63	kb7s4
CH64	CH68	kb8s1
CH65	CH69	kb8s2
CH66	CH70	kb8s3
CH67	CH71	kb8s4
CH72	CH76	kb9s1
CH73	CH77	kb9s2
CH74	CH78	kb9s3
CH75	CH79	kb9s4
CH80	CH84	kb10s1
CH81	CH85	kb10s2
CH82	CH86	kb10s3
CH83	CH87	kb10s4
CH88	CH92	kb11s1
CH89	CH93	kb11s2
CH90	CH94	kb11s3
CH91	CH95	kb11s4
CH96	CH100	kb12s1
CH97	CH101	kb12s2
CH98	CH102	kb12s3
CH99	CH103	kb12s4

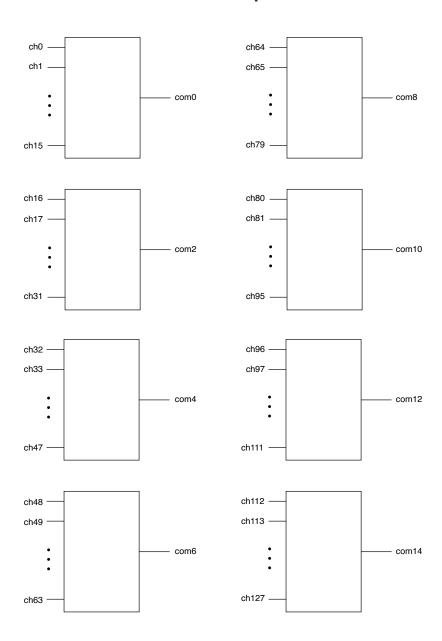
1-Wire Quad 32>	1 Channel Name	Relay Name
CH104	CH108	kb13s1
CH105	CH109	kb13s2
CH106	CH110	kb13s3
CH107	CH111	kb13s4
CH112	CH116	kb14s1
CH113	CH117	kb14s2
CH114	CH118	kb14s3
CH115	CH119	kb14s4
CH120	CH124	kb15s1
CH121	CH125	kb15s2
CH122	CH126	kb15s3
CH123	CH127	kb15s4
CH123	CH127	kb15s4
		kb0com1
		kb0com2
		kbc01
		kb1com1
		kb1com2
CO	M 0	kbc02
		kb2com1
		kb2com2
		kbc23
		kb3com1
		kb3com2
		kb4com1
COM 4		kb4com2
		kbc45

1-Wire Quad 32×1 Channel Name	Relay Name
	kb5com1
	kb5com2
	kbc46
	kb6com1
	kb6com2
	kbc67
	kb7com1
	kb7com2
	kb8com1
	kb8com2
	kbc89
	kb9com1
	kb9com2
COM 8	kbc810
	kb10com1
	kb10com2
	kbc1011
	kb11com1
	kb11com2
	kb12com1
	kb12com2
	kbc1213
	kb13com1
COM 12	kb13com2
	kbc1214
	kb14com1
	kb14com2

1-Wire Quad 32×1 Channel Name	Relay Name
	kbc1415
	kb15com1
	kb15com2

## 1-Wire Octal 16×1 Multiplexer Topology

## 1-Wire Octal 16×1 Multiplexer



All channels route to com0. You can control the channels using the niSwitch Connect Channels VI or the niSwitch Connect function.

For example, to connect channel 1 to com0, call niSwitch Connect (vi, "ch1", "com0"). To disconnect channel 1 from com0, call niSwitch Disconnect(vi, "ch1", "com0").

Table 5. Channel Pairing and Relay Assignments

1-Wire Octal 16×1 Channel Name		Relay Name
CH0	CH4	kb0s1
CH0	CH4	kb0s1
CH1	CH5	kb0s2
CH2	CH6	kb0s3
CH3	CH7	kb0s4
CH8	CH12	kb1s1
CH9	CH13	kb1s2
CH10	CH14	kb1s3
CH11	CH15	kb1s4
CH16	CH20	kb2s1
CH17	CH21	kb2s2
CH18	CH22	kb2s3
CH19	CH23	kb2s4
CH24	CH28	kb3s1
CH25	CH29	kb3s2
CH26	CH30	kb3s3
CH27	CH31	kb3s4
CH32	CH36	kb4s1
CH33	CH37	kb4s2

1-Wire Octal 16>	1 Channel Name	Relay Name
CH34	CH38	kb4s3
CH35	CH39	kb4s4
CH40	CH44	kb5s1
CH41	CH45	kb5s2
CH42	CH46	kb5s3
CH43	CH47	kb5s4
CH48	CH52	kb6s1
CH49	CH53	kb6s2
CH50	CH54	kb6s3
CH51	CH55	kb6s4
CH56	CH60	kb7s1
CH57	CH61	kb7s2
CH58	CH62	kb7s3
CH59	CH63	kb7s4
CH64	CH68	kb8s1
CH65	CH69	kb8s2
CH66	CH70	kb8s3
CH67	CH71	kb8s4
CH72	CH76	kb9s1
CH73	CH77	kb9s2
CH74	CH78	kb9s3
CH75	CH79	kb9s4
CH80	CH84	kb10s1
CH81	CH85	kb10s2
CH82	CH86	kb10s3
CH83	CH87	kb10s4
CH88	CH92	kb11s1

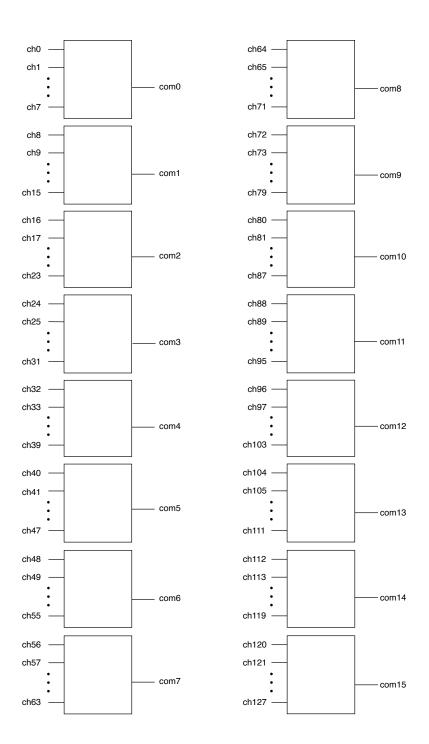
1-Wire Octal 16×	1 Channel Name	Relay Name
CH89	CH93	kb11s2
CH90	CH94	kb11s3
CH91	CH95	kb11s4
CH96	CH100	kb12s1
CH97	CH101	kb12s2
CH98	CH102	kb12s3
CH99	CH103	kb12s4
CH104	CH108	kb13s1
CH105	CH109	kb13s2
CH106	CH110	kb13s3
CH107	CH111	kb13s4
CH112	CH116	kb14s1
CH113	CH117	kb14s2
CH114	CH118	kb14s3
CH115	CH119	kb14s4
CH120	CH124	kb15s1
CH121	CH125	kb15s2
CH122	CH126	kb15s3
CH123	CH127	kb15s4
CH123	CH127	kb15s4
		kb0com1
		kb0com2
COM 0		kbc01
		kb1com1
		kb1com2
CO	M 2	kb2com1
CO	COM 2	

1-Wire Octal 16×1 Channel Name	Relay Name
	kbc23
	kb3com1
	kb3com2
	kb4com1
	kb4com2
COM 4	kbc45
	kb5com1
	kb5com2
	kb6com1
	kb6com2
COM 6	kbc67
	kb7com1
	kb7com2
	kb8com1
	kb8com2
COM 8	kbc89
	kb9com1
	kb9com2
	kb10com1
	kb10com2
COM 10	kbc1011
	kb11com1
	kb11com2
	kb12com1
COM 12	kb12com2
	kbc1213
	kb13com1

1-Wire Octal 16×1 Channel Name	Relay Name
	kb13com2
	kb14com1
COM 14	kb14com2
	kbc1415
	kb15com1
	kb15com2

## 1-Wire Sixteen 8×1 Multiplexer Topology

## 1-Wire Sixteen 8×1 Multiplexer



all channels in a given bank route to the corresponding com. You can control the channels using the niSwitch Connect Channels VI or the niSwitch\_Connect function.

For example, to connect channel 1 to com0, call niSwitch\_Connect(vi,

"ch1", "com0"). To disconnect channel 1 from com0, call niSwitch\_Disconnect(vi, "ch1", "com0").

Table 6. Channel Pairing and Relay Assignments

1-Wire Sixteen 8>	<1 Channel Name	Relay Name
CH0	CH4	kb0s1
CH0	CH4	kb0s1
CH1	CH5	kb0s2
CH2	CH6	kb0s3
CH3	CH7	kb0s4
CH8	CH12	kb1s1
CH9	CH13	kb1s2
CH10	CH14	kb1s3
CH11	CH15	kb1s4
CH16	CH20	kb2s1
CH17	CH21	kb2s2
CH18	CH22	kb2s3
CH19	CH23	kb2s4
CH24	CH28	kb3s1
CH25	CH29	kb3s2
CH26	CH30	kb3s3
CH27	CH31	kb3s4
CH32	CH36	kb4s1
CH33	CH37	kb4s2
CH34	CH38	kb4s3
CH35	CH39	kb4s4
CH40	CH44	kb5s1
CH41	CH45	kb5s2
CH42	CH46	kb5s3

1-Wire Sixteen 8	Relay Name	
CH43	CH47	kb5s4
CH48	CH52	kb6s1
CH49	CH53	kb6s2
CH50	CH54	kb6s3
CH51	CH55	kb6s4
CH56	CH60	kb7s1
CH57	CH61	kb7s2
CH58	CH62	kb7s3
CH59	CH63	kb7s4
CH64	CH68	kb8s1
CH65	CH69	kb8s2
CH66	CH70	kb8s3
CH67	CH71	kb8s4
CH72	CH76	kb9s1
CH73	CH77	kb9s2
CH74	CH78	kb9s3
CH75	CH79	kb9s4
CH80	CH84	kb10s1
CH81	CH85	kb10s2
CH82	CH86	kb10s3
CH83	CH87	kb10s4
CH88	CH92	kb11s1
CH89	CH93	kb11s2
CH90	CH94	kb11s3
CH91	CH95	kb11s4
CH96	CH100	kb12s1
CH97	CH101	kb12s2

1-Wire Sixteen 8>	Relay Name			
CH98	CH98 CH102			
CH99	CH103	kb12s4		
CH104	CH108	kb13s1		
CH105	CH109	kb13s2		
CH106	CH110	kb13s3		
CH107	CH111	kb13s4		
CH112	CH116	kb14s1		
CH113	CH117	kb14s2		
CH114	CH118	kb14s3		
CH115	CH119	kb14s4		
CH120	CH124	kb15s1		
CH121	CH125	kb15s2		
CH122	CH126	kb15s3		
CH123	CH127	kb15s4		
CH123	CH127	kb15s4		
60	M O	kb0com1		
CO	M 0	kb0com2		
60	M 1	kb0com1		
CO	M 1	kb1com2		
60	W 2	kb2com1		
CO	M 2	kb2com2		
СО	kb3com2			
	kb4com1			
СО	kb4com2			
00	kb5com1			
СО	kb5com2			

1-Wire Sixteen 8×1 Channel Name	Relay Name
COM 6	kb6com1
COIVI 6	kb6com2
COM 7	kb7com1
COM 7	kb7com2
COMO	kb8com1
COM 8	kb8com2
COMO	kb9com1
COM 9	kb9com2
COM 10	kb10com1
COM 10	kb10com2
COM 11	kb11com1
COM 11	kb10com2
2011.2	kb12com1
COM 12	kb12com2
201112	kb13com1
COM 13	kb13com1
60111	kb14com1
COM 14	kb14com2
601115	kb15com1
COM 15	kb15com2

# **PXI-2524 Relay Replacement**

The module uses electromechanical armature relays.

Replacement Relay	Part Number
Тусо	1462043-6
National Instruments (10 relays, Tyco)	782461-10

Complete the following steps to locate, remove, and replace a failed relay.

#### Locate the Relay

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



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

2. Locate the relay you want to replace. Refer to the following figure and table for relay locations.

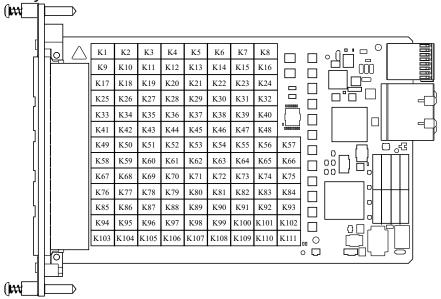


Table 7. Relay Locations

Relay	Reference	Relay	Reference	Relay	Reference	Relay	Reference	Relay	Reference
Name	Designator	Name	Designator	Name	Designator	Name	Designator	Name	Designator
kb0s1	K1	kb4s1	K33	kb8s1	K58	kb12s1	K85	kbc01	K12
kb0s2	K3	kb4s2	K33	kb8s2	K60	kb12s2	K87	kbc23	K19
kb0s3	K5	kb4s3	K37	kb8s3	K62	kb12s3	K89	kbc45	K23
kb0s4	K7	kb4s4	K39	kb8s4	K64	kb12s4	K91	kbc67	K66
kb0com1	K9	kb4com1	K41	kb8com1	K67	kb12com1	K95	kbc89	K93
kb0com2	K10	kb4com2	K42	kb8com2	K68	kb12com2	K94	kbc1011	K84
kb1s1	K2	kb5s1	K34	kb9s1	K59	kb13s1	K86	kbc1213	K111
kb1s2	K4	kb5s2	K36	kb9s2	K61	kb13s2	K88	kbc1415	K102
kb1s3	K6	kb5s3	K38	kb9s3	K63	kb13s3	K90	kbc02	K11

Relay	Reference	Relay	Reference	Relay	Reference	Relay	Reference	Relay	Reference
Name	Designator	Name	Designator	Name	Designator	Name	Designator	Name	Designator
kb1s4	K8	kb5s4	K40	kb9s4	K65	kb13s4	K92	kbc46	K75
kb1com1	K13	kb5com1	K43	kb9com1	K69	kb13com1	K96	kbc810	K16
kb1com2	K14	kb5com2	K44	kb9com2	K70	kb13com2	K97	kbc1214	K15
kb2s1	K25	kb6s1	K49	kb10s1	K76	kb14s1	K103	kbc04	K20
kb2s2	K27	kb6s2	K51	kb10s2	K78	kb14s2	K105	kbc812	K57
kb2s3	K29	kb6s3	K53	kb10s3	K80	kb14s3	K107	kbc08	K24
kb2s4	K31	kb6s4	K55	kb10s4	K82	kb14s4	K109		
kb2com1	K18	kb6com1	K46	kb10com1	K72	kb14com1	K99		
kb2com2	K17	kb6com2	K45	kb10com2	K71	kb14com2	K98		
kb3s1	K26	kb7s1	K50	kb11s1	K77	kb15s1	K104		
kb3s2	K28	kb7s2	K52	kb11s2	K79	kb15s2	K106		
kb3s3	K30	kb7s3	K54	kb11s3	K81	kb15s3	K108		
kb3s4	K32	kb7s4	K56	kb11s4	K83	kb15s4	K110		
kb3com1	K22	kb7com1	K48	kb11com1	K74	kb15com1	K100		
kb3com2	K21	kb7com2	K47	kb11com2	K73	kb15com2	K101		

3. Locate the assembly and serial number labels on the board with the relay you want to replace. White labels indicate the board was assembled using lead solder (Sn 63 Pb 37). Green labels indicate the board was assembled using lead-free solder (Sn 96.5 Ag 3.0 Cu 0.5). Lead-free assemblies have assembly numbers ending in L.

#### Replace the Relay



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



**Note** Do not rework lead assemblies using a lead-free work station. Lead solder from the unit could contaminate the station.



**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 that you have the following items:

- Temperature-regulated soldering iron set to 316 °C (600 °F) for lead solder rework or 371 °C (700 °F) for lead-free solder rework
- 63/37 Tin/Lead solder (flux core) for lead solder rework
- 96.5/3.0/0.5 Tin/Silver/Copper solder (flux core) for lead-free solder rework
- Solder wick
- Fine pick
- Isopropyl alcohol
- Cotton swabs

#### Complete the following steps to replace a relay:

- 1. Locate the assembly and serial number labels on the board with the relay you want to replace. White labels indicate the board was assembled using lead solder (Sn 63 Pb 37). Green labels indicate the board was assembled using lead-free solder (Sn 96.5 Ag 3.0 Cu 0.5). Lead-free assemblies have assembly numbers ending in L.
- 2. Replace the relay as you would any other through-hole part. Trim the replaced relay to no more than 0.41 mm (0.016 inch) from the PCB.



Note You can use the Switch Soft Front Panel to reset the relay count after you have replaced a failed relay.