NOTE TO USERS

NI 78xxR and NI 78xx Pinout Labels for the SCB-68

Reconfigurable I/O R Series Modules/Devices Using the 68-Pin Shielded Connector Block

If you are using an NI 78xxR and NI 78xx (formerly referred to as R Series) reconfigurable I/O device or module with the SCB-68, you can print and attach a connector-specific pinout label to the cover of the connector block for easy connection reference. This document provides labels for the following models:
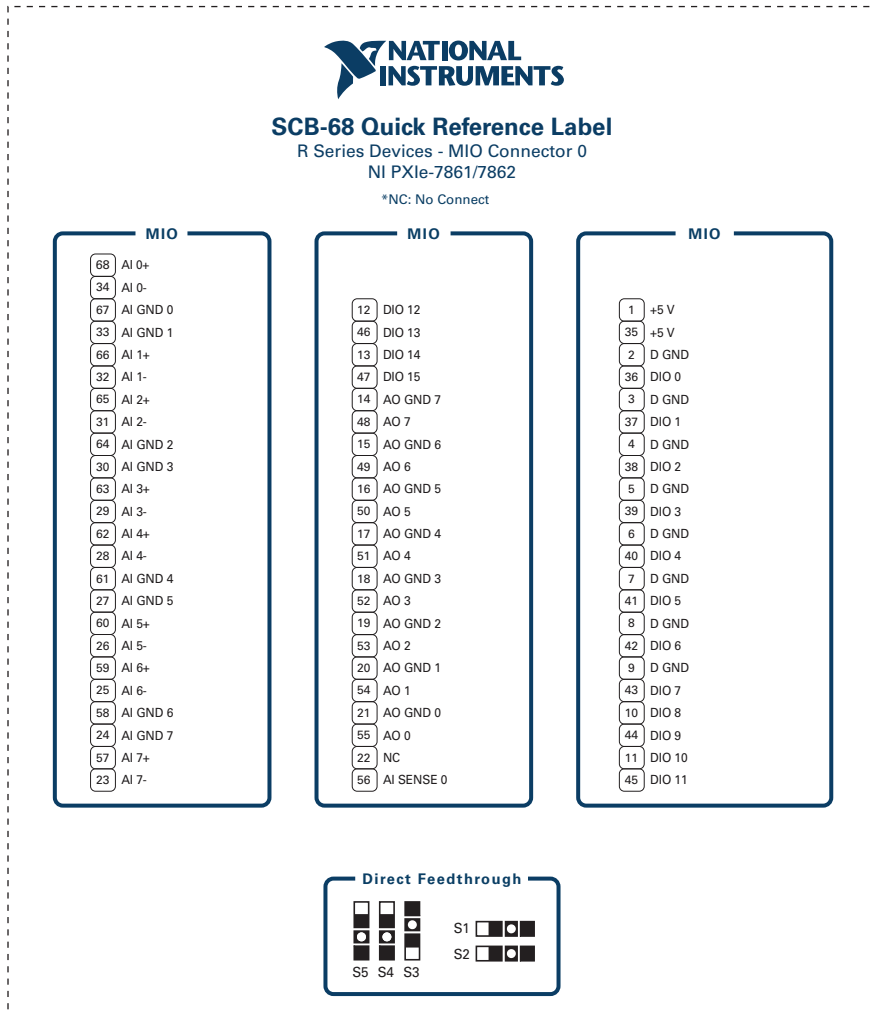
- NI PCI-7811R
- NI PCI-7813R
- NI PCI-7830R
- NI PCI-7831R
- NI PCI-7833R
- NI PCIe-7841R
- NI PCIe-7842R
- NI PCIe-7846
- NI PCIe-7856
- NI PCIe-7857
- NI PCIe-7858
- NI PCIe-7851R
- NI PCIe-7852R
- NI PXI-7811R
- NI PXI-7813R
- NI PXI-7830R
- NI PXI-7831R
- NI PXI-7833R
- NI PXI-7841R
- NI PXI-7842R

- NI PXI-7851R
- NI PXI-7852R
- NI PXI-7853R
- NI PXI-7854R
- NI PXIe-7846R
- NI PXIe-7847R
- NI PXIe-7856R
- NI PXIe-7857R
- NI PXIe-7858R
- NI PXIe-7861
- NI PXIe-7862
- NI PXIe-7865
- NI PXIe-7866
- NI PXIe-7867R
- NI PXIe-7868R
- NI USB-7845R
- NI USB-7846R
- NI USB-7855R
- NI USB-7856R

Note To find the appropriate cable for your device, go to `ni.com/info` and enter Info Code `scb68acables`.

NATIONAL INSTRUMENTS™

Use the following label if you are connecting the SCB-68 to the MIO Connector 0 on NI PXIe-7861/7862 models.

Figure 1. MIO Connector 0 for NI PXIe-7861/7862

NATIONAL INSTRUMENTS

SCB-68 Quick Reference Label
R Series Devices - MIO Connector 0
NI PXIe-7861/7862
*NC: No Connect

MIO		MIO		MIO	
68	AI 0+				
34	AI 0-				
67	AI GND 0	12	DIO 12	1	+5 V
33	AI GND 1	46	DIO 13	35	+5 V
66	AI 1+	13	DIO 14	2	D GND
32	AI 1-	47	DIO 15	36	DIO 0
65	AI 2+	14	AO GND 7	3	D GND
31	AI 2-	48	AO 7	37	DIO 1
64	AI GND 2	15	AO GND 6	4	D GND
30	AI GND 3	49	AO 6	38	DIO 2
63	AI 3+	16	AO GND 5	5	D GND
29	AI 3-	50	AO 5	39	DIO 3
62	AI 4+	17	AO GND 4	6	D GND
28	AI 4-	51	AO 4	40	DIO 4
61	AI GND 4	18	AO GND 3	7	D GND
27	AI GND 5	52	AO 3	41	DIO 5
60	AI 5+	19	AO GND 2	8	D GND
26	AI 5-	53	AO 2	42	DIO 6
59	AI 6+	20	AO GND 1	9	D GND
25	AI 6-	54	AO 1	43	DIO 7
58	AI GND 6	21	AO GND 0	10	DIO 8
24	AI GND 7	55	AO 0	44	DIO 9
57	AI 7+	22	NC	11	DIO 10
23	AI 7-	56	AI SENSE 0	45	DIO 11

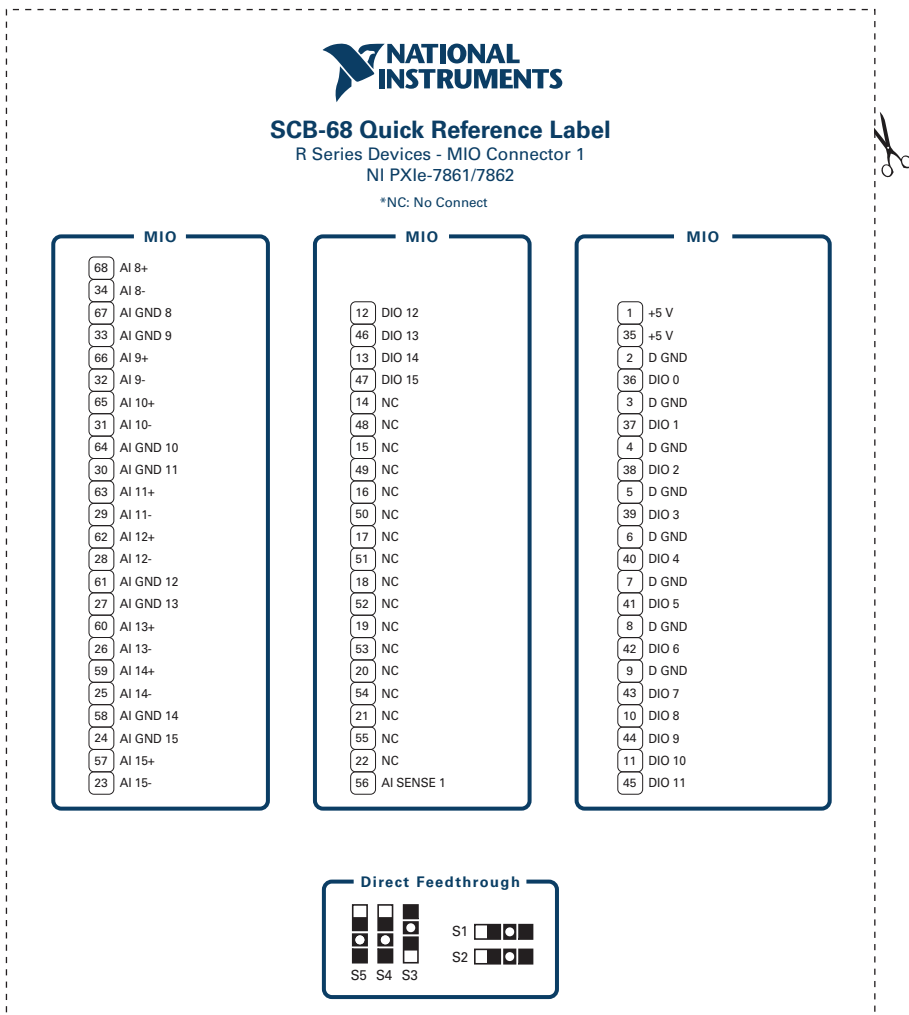**Direct Feedthrough**

S1
S2
S5 S4 S3

Use the following label if you are connecting the SCB-68 to the MIO Connector 1 on NI PXIe-7861/7862 models.

Figure 2. MIO Connector 1 for NI PXIe-7861/7862

SCB-68 Quick Reference Label
R Series Devices - MIO Connector 1
NI PXIe-7861/7862

*NC: No Connect

MIO

68	AI 8+
34	AI 8-
67	AI GND 8
33	AI GND 9
66	AI 9+
32	AI 9-
65	AI 10+
31	AI 10-
64	AI GND 10
30	AI GND 11
63	AI 11+
29	AI 11-
62	AI 12+
28	AI 12-
61	AI GND 12
27	AI GND 13
60	AI 13+
26	AI 13-
59	AI 14+
25	AI 14-
58	AI GND 14
24	AI GND 15
57	AI 15+
23	AI 15-

MIO

12	DIO 12
46	DIO 13
13	DIO 14
47	DIO 15
14	NC
48	NC
15	NC
49	NC
16	NC
50	NC
17	NC
51	NC
18	NC
52	NC
19	NC
53	NC
20	NC
54	NC
21	NC
55	NC
22	NC
56	AI SENSE 1

MIO

1	+5 V
35	+5 V
2	D GND
36	DIO 0
3	D GND
37	DIO 1
4	D GND
38	DIO 2
5	D GND
39	DIO 3
6	D GND
40	DIO 4
7	D GND
41	DIO 5
8	D GND
42	DIO 6
9	D GND
43	DIO 7
10	DIO 8
44	DIO 9
11	DIO 10
45	DIO 11

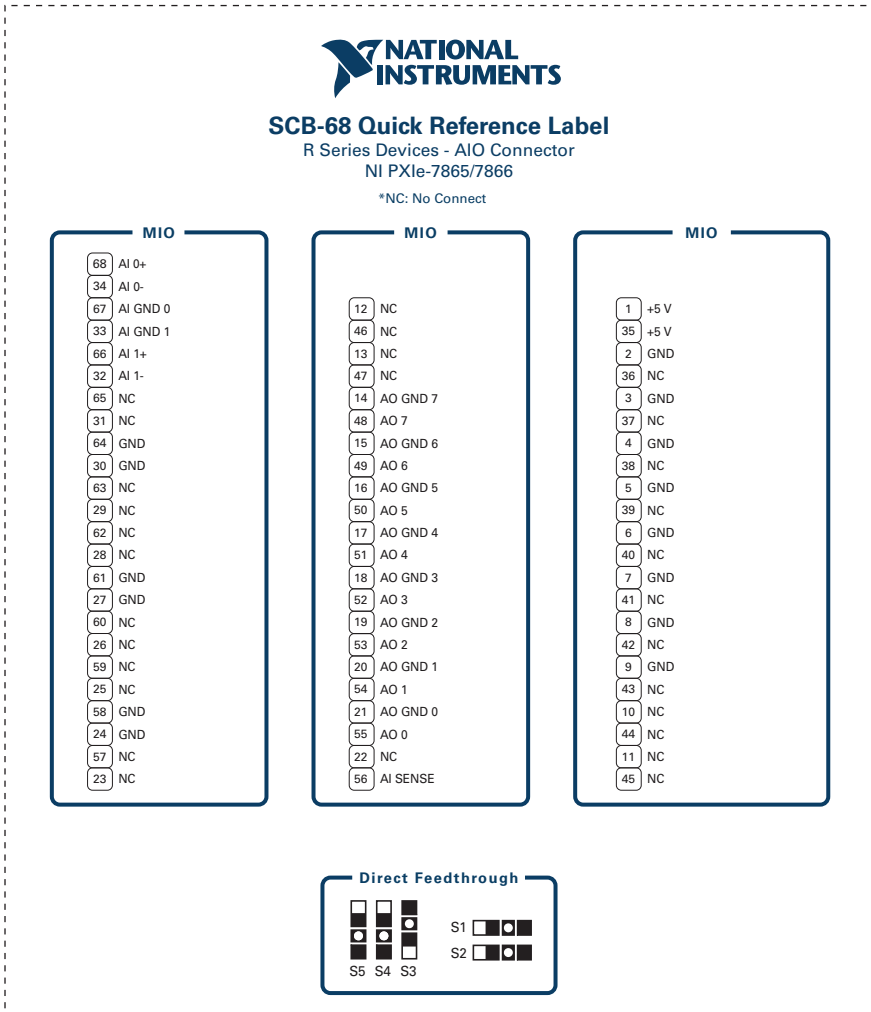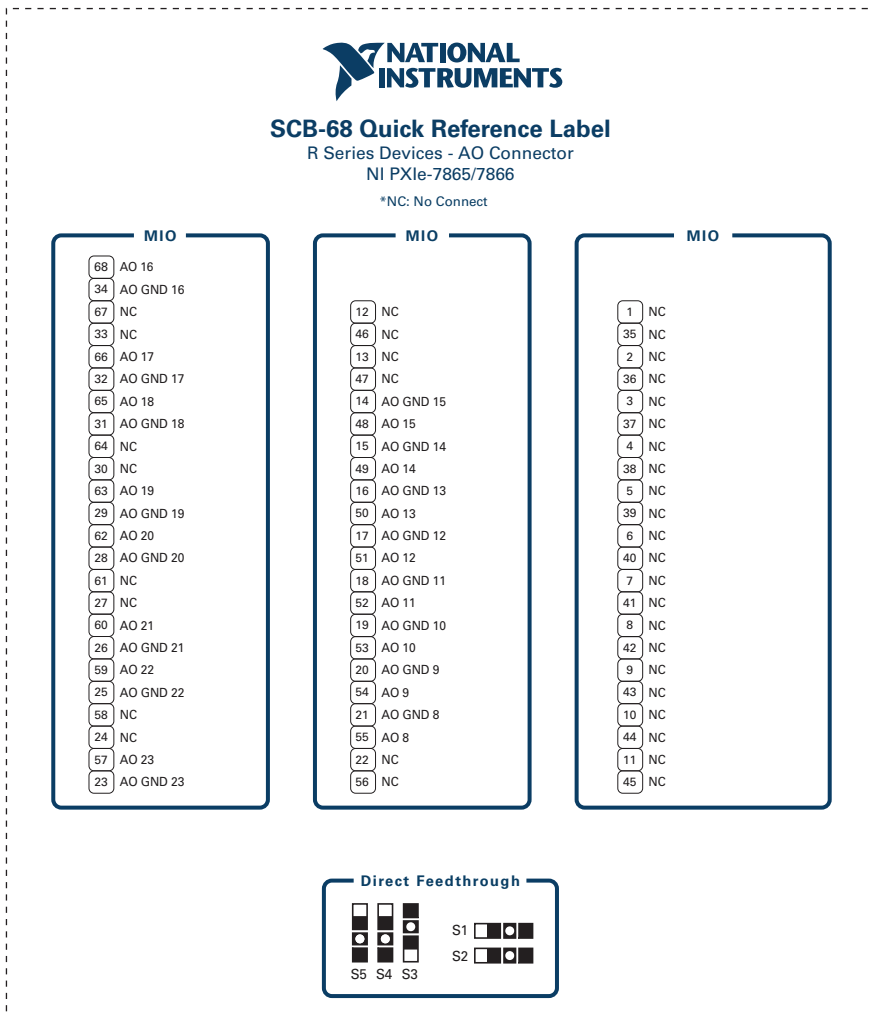**Direct Feedthrough**

S5 S4 S3

S1

S2

Use the following label if you are connecting the SCB-68 to the AIO Connector on NI PXIe-7865/7866 models.

Figure 3. AIO Connector for NI PXIe-7865/7866

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SCB-68 Quick Reference Label
R Series Devices - AIO Connector
NI PXIe-7865/7866

*NC: No Connect

MIO		MIO		MIO	
68	AI 0+				
34	AI 0-				
67	AI GND 0	12	NC	1	+5 V
33	AI GND 1	46	NC	35	+5 V
66	AI 1+	13	NC	2	GND
32	AI 1-	47	NC	36	NC
65	NC	14	AO GND 7	3	GND
31	NC	48	AO 7	37	NC
64	GND	15	AO GND 6	4	GND
30	GND	49	AO 6	38	NC
63	NC	16	AO GND 5	5	GND
29	NC	50	AO 5	39	NC
62	NC	17	AO GND 4	6	GND
28	NC	51	AO 4	40	NC
61	GND	18	AO GND 3	7	GND
27	GND	52	AO 3	41	NC
60	NC	19	AO GND 2	8	GND
26	NC	53	AO 2	42	NC
59	NC	20	AO GND 1	9	GND
25	NC	54	AO 1	43	NC
58	GND	21	AO GND 0	10	NC
24	GND	55	AO 0	44	NC
57	NC	22	NC	11	NC
23	NC	56	AI SENSE	45	NC

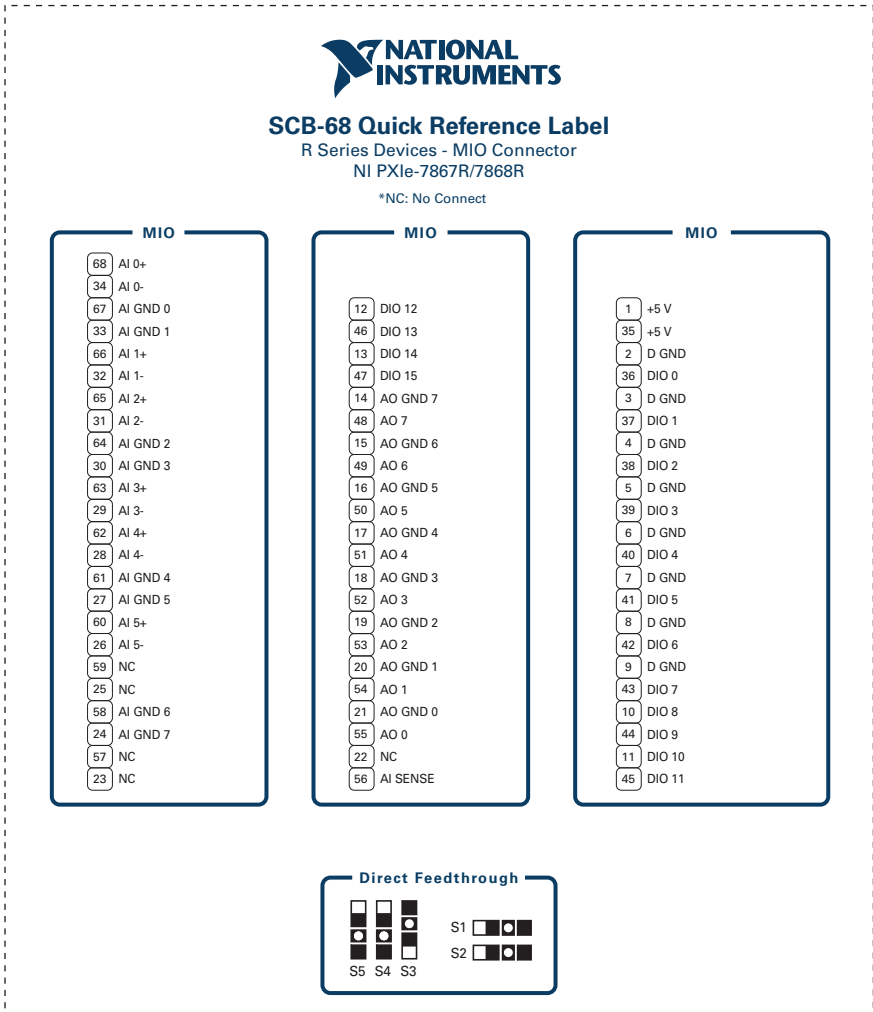**Direct Feedthrough**

S1
S2
S5 S4 S3

Use the following label if you are connecting the SCB-68 to the AO Connector on
NI PXIe-7865/7866 models.

Figure 4. AO Connector for NI PXIe-7865/7866

NATIONAL INSTRUMENTS

SCB-68 Quick Reference Label
R Series Devices - AO Connector
NI PXIe-7865/7866
*NC: No Connect

MIO	
68	AO 16
34	AO GND 16
67	NC
33	NC
66	AO 17
32	AO GND 17
65	AO 18
31	AO GND 18
64	NC
30	NC
63	AO 19
29	AO GND 19
62	AO 20
28	AO GND 20
61	NC
27	NC
60	AO 21
26	AO GND 21
59	AO 22
25	AO GND 22
58	NC
24	NC
57	AO 23
23	AO GND 23

MIO	
12	NC
46	NC
13	NC
47	NC
14	AO GND 15
48	AO 15
15	AO GND 14
49	AO 14
16	AO GND 13
50	AO 13
17	AO GND 12
51	AO 12
18	AO GND 11
52	AO 11
19	AO GND 10
53	AO 10
20	AO GND 9
54	AO 9
21	AO GND 8
55	AO 8
22	NC
56	NC

MIO	
1	NC
35	NC
2	NC
36	NC
3	NC
37	NC
4	NC
38	NC
5	NC
39	NC
6	NC
40	NC
7	NC
41	NC
8	NC
42	NC
9	NC
43	NC
10	NC
44	NC
11	NC
45	NC

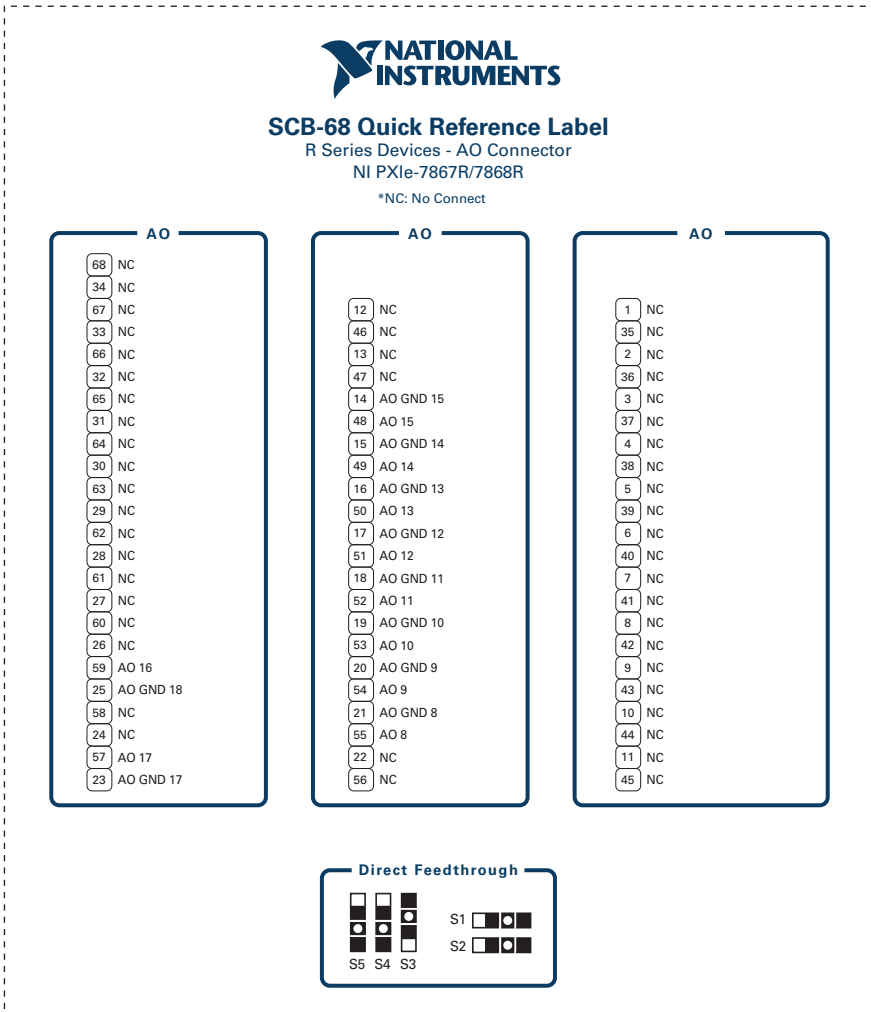**Direct Feedthrough**

S5 S4 S3

S1
S2

Use the following label if you are connecting the SCB-68 to the MIO connector on NI PXIe-7867R/7868R models.
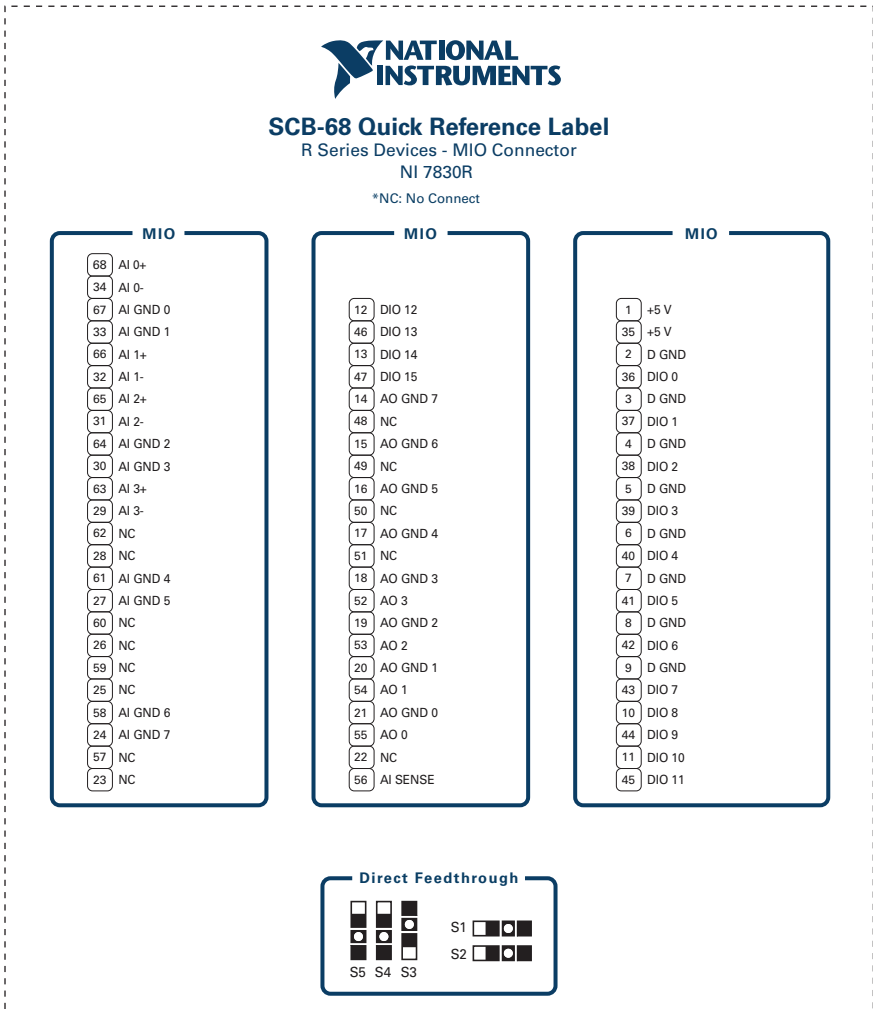
Figure 5. MIO Connector for NI PXIe-7867R/7868R

Use the following label if you are connecting the SCB-68 to the AO connector on NI PXIe-7867R/7868R models.
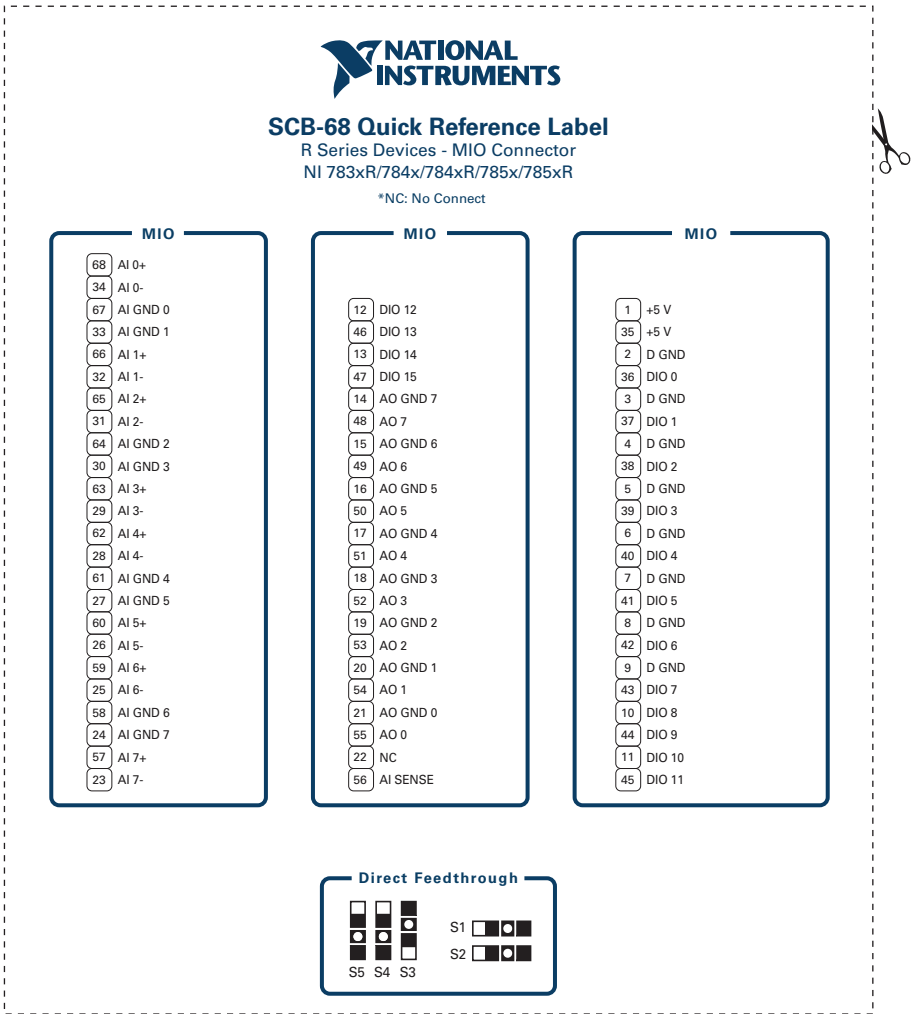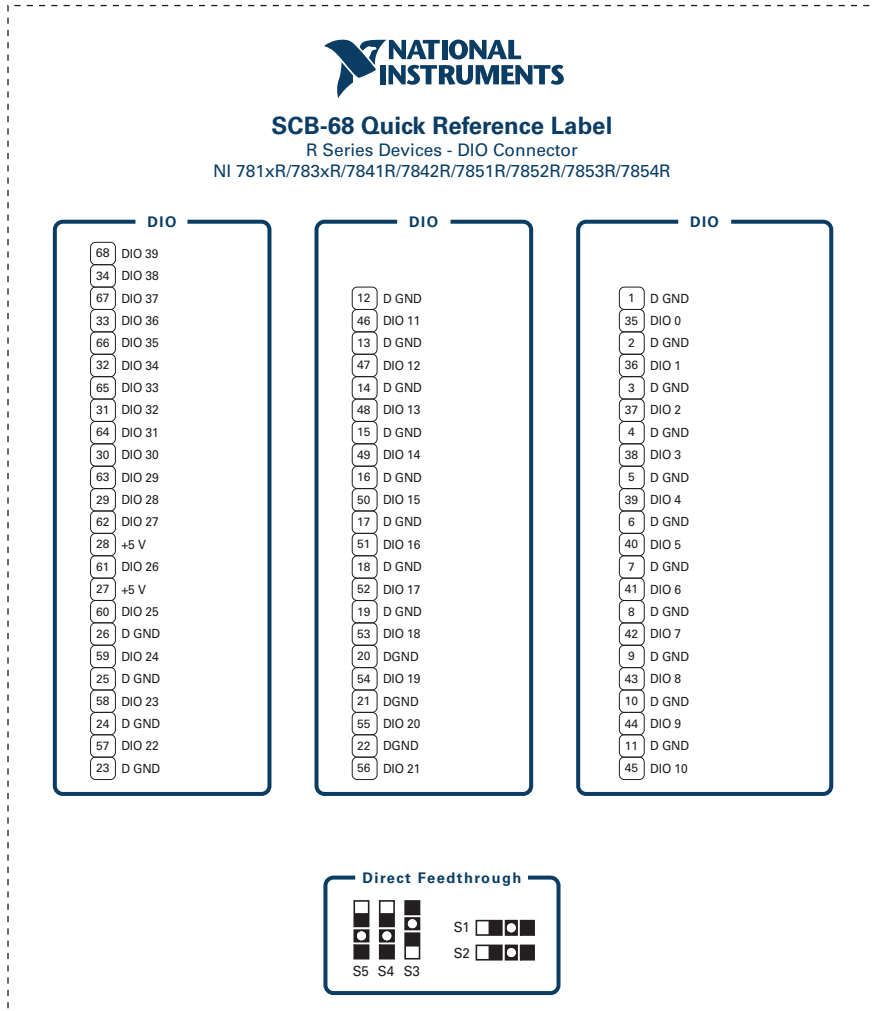
Figure 6. AO Connector for NI PXIe-7867R/7868R

NATIONAL INSTRUMENTS

SCB-68 Quick Reference Label
R Series Devices - AO Connector
NI PXIe-7867R/7868R
*NC: No Connect

AO

68	NC
34	NC
67	NC
33	NC
66	NC
32	NC
65	NC
31	NC
64	NC
30	NC
63	NC
29	NC
62	NC
28	NC
61	NC
27	NC
60	NC
26	NC
59	AO 16
25	AO GND 18
58	NC
24	NC
57	AO 17
23	AO GND 17

AO

12	NC
46	NC
13	NC
47	NC
14	AO GND 15
48	AO 15
15	AO GND 14
49	AO 14
16	AO GND 13
50	AO 13
17	AO GND 12
51	AO 12
18	AO GND 11
52	AO 11
19	AO GND 10
53	AO 10
20	AO GND 9
54	AO 9
21	AO GND 8
55	AO 8
22	NC
56	NC

AO

1	NC
35	NC
2	NC
36	NC
3	NC
37	NC
4	NC
38	NC
5	NC
39	NC
6	NC
40	NC
7	NC
41	NC
8	NC
42	NC
9	NC
43	NC
10	NC
44	NC
11	NC
45	NC

Direct Feedthrough

S5 S4 S3
S1
S2

Use the following label if you are connecting the SCB-68 to the MIO connector on NI 7830R models.

Figure 7. MIO Connector for NI 7830R

NATIONAL INSTRUMENTS

SCB-68 Quick Reference Label
R Series Devices - MIO Connector
NI 7830R
*NC: No Connect

MIO

68	AI 0+
34	AI 0-
67	AI GND 0
33	AI GND 1
66	AI 1+
32	AI 1-
65	AI 2+
31	AI 2-
64	AI GND 2
30	AI GND 3
63	AI 3+
29	AI 3-
62	NC
28	NC
61	AI GND 4
27	AI GND 5
60	NC
26	NC
59	NC
25	NC
58	AI GND 6
24	AI GND 7
57	NC
23	NC

MIO

12	DIO 12
46	DIO 13
13	DIO 14
47	DIO 15
14	AO GND 7
48	NC
15	AO GND 6
49	NC
16	AO GND 5
50	NC
17	AO GND 4
51	NC
18	AO GND 3
52	AO 3
19	AO GND 2
53	AO 2
20	AO GND 1
54	AO 1
21	AO GND 0
55	AO 0
22	NC
56	AI SENSE

MIO

1	+5 V
35	+5 V
2	D GND
36	DIO 0
3	D GND
37	DIO 1
4	D GND
38	DIO 2
5	D GND
39	DIO 3
6	D GND
40	DIO 4
7	D GND
41	DIO 5
8	D GND
42	DIO 6
9	D GND
43	DIO 7
10	DIO 8
44	DIO 9
11	DIO 10
45	DIO 11

Direct Feedthrough

S5 S4 S3

S1
S2

Use the following label if you are connecting the SCB-68 to the MIO connector on NI 783xR/784x/784xR/785x/785xR models.

Figure 8. MIO Connector for 783xR/784x/784xR/785x/785xR

NATIONAL INSTRUMENTS

SCB-68 Quick Reference Label
R Series Devices - MIO Connector
NI 783xR/784x/784xR/785x/785xR

*NC: No Connect

MIO		MIO		MIO	
68	AI 0+				
34	AI 0-				
67	AI GND 0	12	DIO 12	1	+5 V
33	AI GND 1	46	DIO 13	35	+5 V
66	AI 1+	13	DIO 14	2	D GND
32	AI 1-	47	DIO 15	36	DIO 0
65	AI 2+	14	AO GND 7	3	D GND
31	AI 2-	48	AO 7	37	DIO 1
64	AI GND 2	15	AO GND 6	4	D GND
30	AI GND 3	49	AO 6	38	DIO 2
63	AI 3+	16	AO GND 5	5	D GND
29	AI 3-	50	AO 5	39	DIO 3
62	AI 4+	17	AO GND 4	6	D GND
28	AI 4-	51	AO 4	40	DIO 4
61	AI GND 4	18	AO GND 3	7	D GND
27	AI GND 5	52	AO 3	41	DIO 5
60	AI 5+	19	AO GND 2	8	D GND
26	AI 5-	53	AO 2	42	DIO 6
59	AI 6+	20	AO GND 1	9	D GND
25	AI 6-	54	AO 1	43	DIO 7
58	AI GND 6	21	AO GND 0	10	DIO 8
24	AI GND 7	55	AO 0	44	DIO 9
57	AI 7+	22	NC	11	DIO 10
23	AI 7-	56	AI SENSE	45	DIO 11

Direct Feedthrough

S5 S4 S3
S1
S2

📝 **Note** To connect to the MIO connector on NI 7830R models, instead use the label in Figure 7.

Use the following label if you are connecting the SCB-68 to the DIO connector on
NI 781xR/783xR/7841R/7842R/7851R/7852R/7853R/7854R models.

Figure 9. DIO Connector for NI 781xR/783xR/7841R/7842R/7851R/7852R/7853R/7854R

> **Note** To connect to the DIO connector on the following models, instead use the
> SCB-68 HSDIO Shielded Connector Block.

- NI PXIe-7846R/7847R/7856R/7857R/7858R/7865/7866/7867R/7868R
- NI PCIe-7846/7856/7857/7858
- NI USB-7845R/7846R/7855R/7856R