

# SCXI-1356 SHIELDED CABLE

This guide describes how to install the SCXI-1356 shielded cable between a 96-pin VXI-MIO Series module and two SCXI modules.

## Introduction

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With the SCXI-1356 shielded cable, you can make a low-noise, long-distance connection between a VXI-MIO Series module and two SCXI modules. The cable is available in lengths of 1, 2, 5, and 10 m. The cable is Y-shaped, with a 96-pin male connector at one end and two 68-pin female connectors at the other end. One branch of the cable is labeled *MIO-16*, and the other branch is labeled *ACH16-ACH63*.

The cable's 96-pin connector attaches to a VXI-MIO-64E-1 or VXI-MIO-64XE-10 module. The 68-pin connector on the MIO-16 branch of the cable attaches to an SCXI-1349 adapter board. The 68-pin connector on the ACH16-ACH63 branch of the cable attaches to an AI-48/DIO-24 adapter board. The SCXI-1349 and AI-48/DIO-24 adapter boards attach to a variety of SCXI modules. Both of these adapter boards have breakout connectors for connecting to other SCXI accessories, such as the SCXI-1180 and the SCXI-1351.

## What You Need to Get Started

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To install your SCXI-1356 shielded cable, you need the following:

- SCXI-1356 shielded cable (type SH96-6868)
- Lockwashers
- Jackscrews
- SCXI-1349 adapter board (several surface-mount parts and the number 182677 are visible on the underside of the board)

- AI-48/DIO-24 adapter board (labeled *AI-48/DIO-24* on the underside of the board)
- Two SCXI modules
- SCXI chassis
- Your VXIbus chassis
- One of the following modules:
  - VXI-MIO-64E-1
  - VXI-MIO-64XE-10
- Four small screws (included in this kit)
- SCXI-1356 Shielded Cable Installation Guide*
- Small Phillips-head screwdriver
- Small flathead screwdriver
- 3/16 in. nutdriver

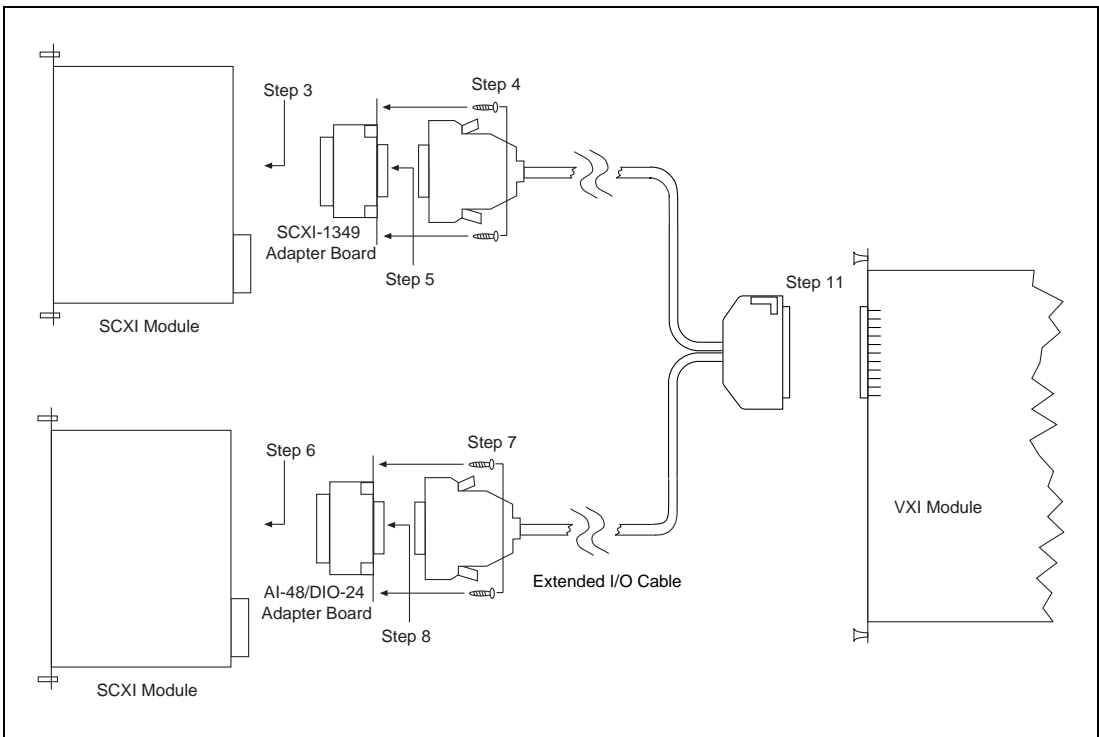
## Installation

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Perform the following steps to install the SCXI-1356 cable. Figure 1 illustrates the installation procedure.

1. Turn off the power to your VXIbus chassis and SCXI chassis.
2. Install your SCXI modules in the SCXI chassis, following the instructions in your module user manuals.
3. Plug the socket connector of the SCXI-1349 adapter board into the rear signal connector of the SCXI module that will pass analog signals to the VXI-MIO Series module.
4. Thread two of the screws through the rear panel of the SCXI-1349 adapter board and into the threaded strips in the rear of the SCXI chassis. This secures the adapter board.
5. Connect the MIO-16 branch of the cable to the 68-pin connector of the SCXI-1349 adapter board.
6. Plug the socket connector of the AI-48/DIO-24 adapter board into the rear signal connector of the SCXI module or feedthrough panel to which you plan to connect the ACH16–ACH63 signals of your VXI-MIO Series module.

7. Thread the other two screws through the rear panel of the AI-48/DIO-24 adapter board and into the threaded strips in the rear of the SCXI chassis. This secures the adapter board.
8. Connect the ACH16–ACH63 branch of the cable to the 68-pin connector of the AI-48/DIO-24 adapter board.
9. Install the long jackscrews and lockwashers on the connector as shown in Figure 2.
10. Verify that the two backshell mounting ears are in the position shown in Figure 2. If they are not, remove the mounting ears and install them in the correct position.
11. Connect the backshell assembly to your VXI module front connector and secure the backshell by tightening both M2.5 mounting screws.



**Figure 1.** SCXI-1356 Installation Procedure

Figure 2 illustrates the finished installation.

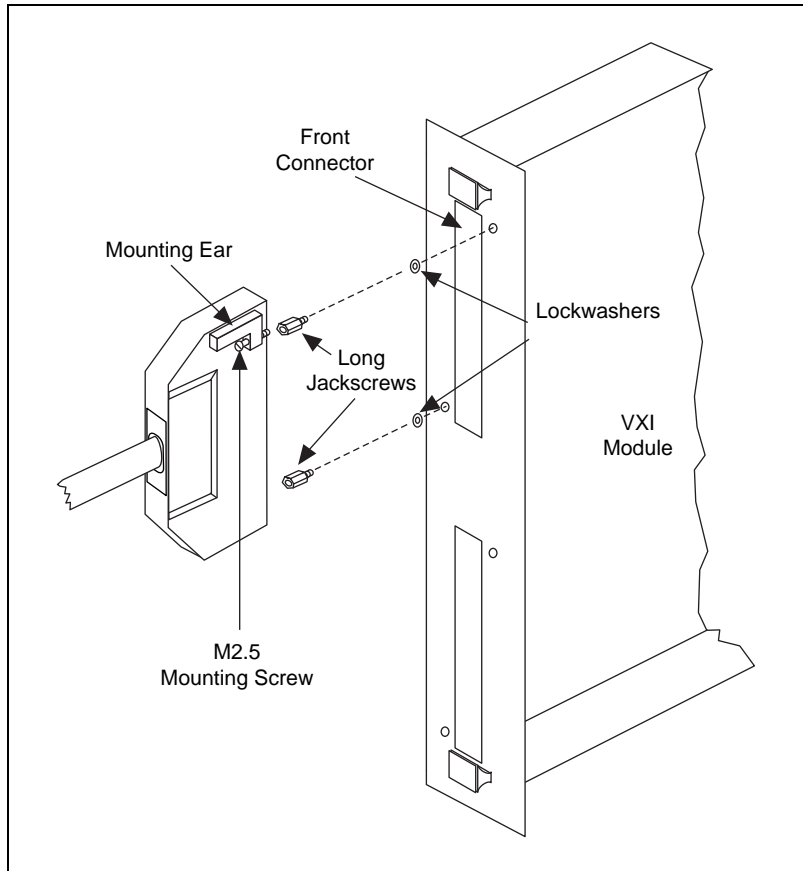


Figure 2. VXI Installation

## Connections and Pin Assignments

The VXI-MIO Series module you are using determines which SCXI modules you can use with the SCXI-1356 cable.

### Using the SCXI-1356 with a VXI-MIO Series Module

The MIO-16 branch of the cable brings the MIO-16 portion of the VXI-MIO Series pinout to the SCXI-1349 adapter board. The ACH16-ACH63 branch of the cable brings the remainder of the VXI-MIO Series pinout to the AI-48/DIO-24 adapter board.

You can connect the MIO-16 branch of the cable, via the SCXI-1349 adapter board, to the following SCXI modules: SCXI-1100, SCXI-1102, SCXI-1120, SCXI-1121, SCXI-1122, SCXI-1124, SCXI-1140, SCXI-1141, SCXI-1160, SCXI-1161, SCXI-1162, SCXI-1162R, SCXI-1163, SCXI-1163HV, SCXI-1180, or SCXI-1181.

You can connect the ACH16–ACH63 branch of the cable via the AI-48/DIO-24 adapter board to the SCXI-1180 feedthrough panel or SCXI-1181 breadboard module.

Table 1 lists the pin assignments for connections between the VXI-MIO Series module and the MIO-16 branch of the cable.

**Table 1.** Cable Connections for the MIO-16 Branch

Signal Names	Connector Pin Numbers		
	96-Pin	50-Pin	68-Pin
AIGND	B17	1, 2	24, 27, 29, 32, 56, 59, 64, 67
ACH0	A23	3	68
ACH8	C22	4	34
ACH1	B22	5	33
ACH9	A22	6	66
ACH2	C21	7	65
ACH10	B21	8	31
ACH3	A21	9	30
ACH11	C20	10	63
ACH4	A20	11	28
ACH12	C19	12	61
ACH5	B19	13	60
ACH13	A19	14	26
ACH6	C18	15	25
ACH14	B18	16	58
ACH7	A18	17	57
ACH15	C17	18	23
AISENSE <sup>1</sup>	B20	19	62
DAC0OUT	A24	20	22
DAC1OUT	C23	21	21
EXTREF <sup>2</sup>	B23	22	20
AOGND	B24	23	54, 55
DGND	B27	24, 33	4, 7, 9, 12, 13, 15, 18, 35, 36, 39, 44, 50, 53
DIO0	C24	25	

**Table 1.** Cable Connections for the MIO-16 Branch (Continued)

Signal Names	Connector Pin Numbers		
	96-Pin	50-Pin	68-Pin
DIO4	A25	26	19
DIO1	B25	27	17
DIO5	C25	28	51
DIO2	A26	29	49
DIO6	B26	30	16
DIO3	C26	31	47
DIO7	A27	32	48
+5V	A28	34, 35	8, 14
SCANCLK	C27	36	46
EXTSTROBE*	B28	37	45
PFI0/TRIG1	C28	38	11
PFI1/TRIG2	A29	39	10
PFI2/CONVERT*	B29	40	43
PFI3/GPCTR1_SOURCE	C29	41	42
PFI4/GPCTR1_GATE	A30	42	41
GPCTR1_OUT	B30	43	40
PFI5/UPDATE*	C30	44	6
PFI6/WFTRIG	A31	45	5
PFI7/STARTSCAN	B31	46	38
PFI8/GPCTR0_SOURCE	C31	47	37
PFI9/GPCTR0_GATE	A32	48	3
GPCTR0_OUT	B32	49	2
FREQ_OUT	C32	50	1

<sup>1</sup> SENSE for ACH0–ACH15  
<sup>2</sup> This pin is not connected on the VXI-MIO-64XE-10

Table 2 lists the pin designations for connections between the VXI-MIO Series module and the ACH16 –ACH63 cable.

**Table 2.** Cable Connections for the ACH16–ACH63 Branch

Signal Names	Connector Pin Numbers		
	96-Pin	50-Pin	68-Pin
ACH16	A17	1	68
ACH24	C16	2	34
ACH17	B16	3	33
ACH25	A16	4	67
ACH18	C15	5	32
ACH26	B15	6	66
ACH19	A15	7	65
ACH27	C14	8	31
ACH20	B14	9	30
ACH28	A14	10	64
ACH21	C13	11	29
ACH29	B13	12	63
ACH22	A13	13	62
ACH30	C12	14	28
ACH23	B12	15	27
ACH31	A12	16	61
ACH32	C11	17	26
ACH40	B11	18	60
ACH33	A11	19	59
ACH41	C10	20	25
ACH34	B10	21	24
ACH42	A10	22	58
ACH35	C9	23	23
ACH43	B9	24	57
AISENSE2*	A9	25	56
AIGND	B17	26	22
ACH36	C8	27	55
ACH44	B8	28	21
ACH37	A8	29	20
ACH45	C7	30	54
ACH38	B7	31	19
ACH46	A7	32	53
ACH39	C6	33	52
ACH47	B6	34	18

**Table 2.** Cable Connections for the ACH16–ACH63 Branch (Continued)

Signal Names	Connector Pin Numbers		
	96-Pin	50-Pin	68-Pin
ACH48	A6	35	17
ACH56	C5	36	51
ACH49	B5	37	16
ACH57	A5	38	50
ACH50	C4	39	49
ACH58	B4	40	15
ACH51	A4	41	14
ACH59	C3	42	48
ACH52	B3	43	13
ACH60	A3	44	47
ACH53	C2	45	46
ACH61	B2	46	12
ACH54	A2	47	11
ACH62	C1	48	45
ACH55	B1	49	10
ACH63	A1	50	44

\* SENSE for ACH16–ACH63

Pins 1 through 9 and pins 35 through 43 on the 68-pin connector are not connected.



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