
SCXI-1353 Shielded Cable

This guide describes how to install the SCXI-1353 shielded cable between a 100-pin AT-MIO E Series board and two SCXI modules.

Introduction

With the SCXI-1353 shielded cable, you can make a low-noise, long-distance connection between an AT-MIO E Series board and two SCXI modules. The cable is available in lengths of 1, 2, 5, and 10 m. The cable is Y-shaped, with a 100-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*, the other branch is labeled *EXTENDED I/O*.

The cable's 100-pin connector attaches to an AT-MIO-64E-3 or AT-MIO-16DE-10 board. 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 EXTENDED I/O 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 these adapter boards have breakout connectors that provide for connections to other SCXI accessories, such as the SCXI-1180 and the SCXI-1351.

What You Need to Get Started

In order to install your SCXI-1353 shielded cable, you need the following:

- SCXI-1353 shielded cable (type SH1006868 cable; included in this kit)
- SCXI-1349 adapter board (included in this kit; several surface-mount parts and the number 182677 are visible on the underside of the board)
- AI-48/DIO-24 adapter board (included in this kit; labeled *AI-48/DIO-24* on the underside of the board)
- Two SCXI modules
- SCXI chassis
- Your computer
- One of the following boards:
 - AT-MIO-64E-3
 - AT-MIO-16DE-10

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- Four small screws (included in this kit)
- Two cable tie wraps (included in this kit)
- SCXI-1353 Shielded Cable Installation Guide* (included in this kit)
- Small Phillips-head screwdriver
- Small flathead screwdriver

Installation Procedure

Perform the following steps to install the SCXI-1353 cable. Figure 1 illustrates the installation procedure.

1. Turn off the power to your computer and the 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 AT-MIO E Series board.
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 end of the cable labeled *MIO-16* 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 pins 51–100 of your AT-MIO E Series board
7. Thread two of the 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 end of the cable labeled *EXTENDED I/O* to the 68-pin connector of the AI-48/DIO-24 adapter board.
9. Connect the 100-pin end of the cable to the *I/O* connector of the AT-MIO E Series board.
10. Secure the cable to a fixed object with the tie wraps to relieve the strain on the cable. Strain relief is desirable because the SCXI-1353 shielded cable has a long stiff backshell that can exert leverage on the AT-MIO E Series board connector.

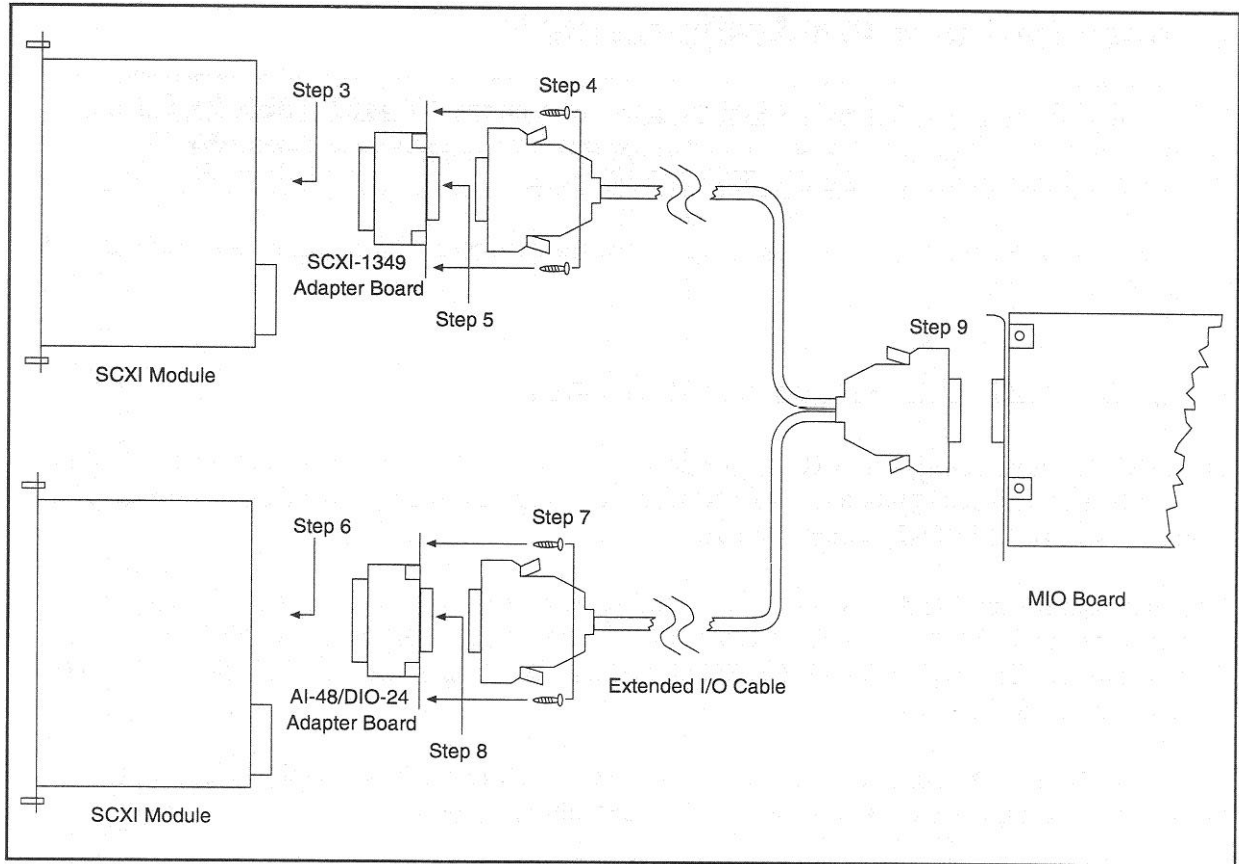


Figure 1. SCXI-1353 Installation Procedure

Figure 2 illustrates the finished installation.

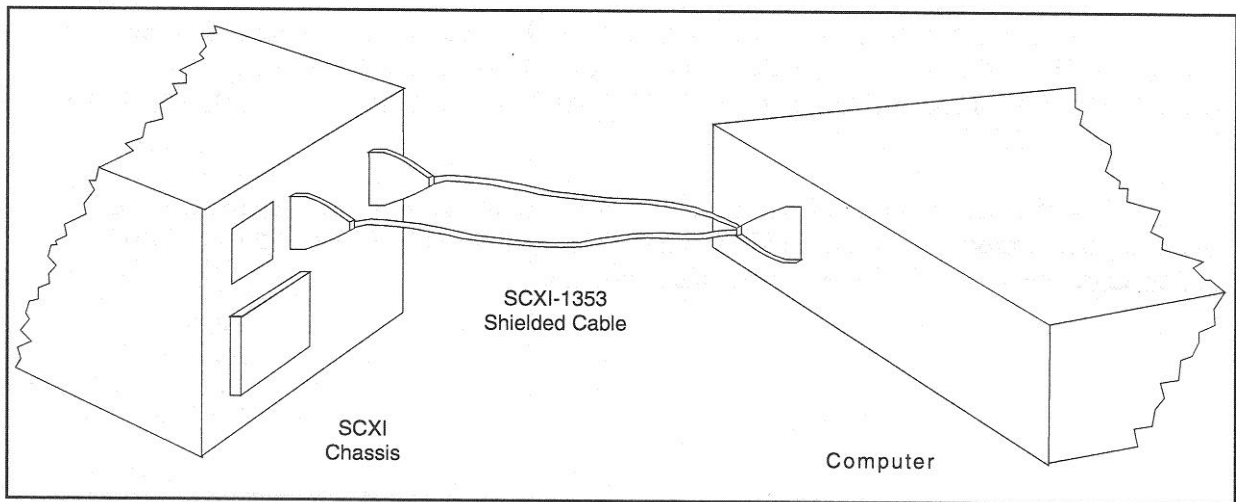


Figure 2. Finished Installation

Connections and Pin Assignments

Table 1 lists the pin assignments for connections between the AT-MIO E Series board and the MIO-16 cable. Table 2 lists the pin designations for connections between the AT-MIO E Series board and the EXTENDED I/O cable.

The AT-MIO E Series board you are using determines which SCXI modules you can use with the SCXI-1353 cable.

Using the SCXI-1353 with an AT-MIO-64E-3

The MIO-16 cable brings the MIO-16 portion of the AT-MIO-64E-3 pinout to the SCXI-1349 adapter board. The cable labeled EXTENDED I/O brings the remainder of the AT-MIO-64E-3 pinout to the AI-48/DIO-24 adapter board.

You can connect the MIO-16 cable, via the SCXI-1349 adapter board, to the following SCXI modules: SCXI-1100, 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.

The EXTENDED I/O cable can be connected, via the AI-48/DIO-24 adapter board, to the SCXI-1180 feedthrough panel or SCXI-1181 breadboard module.

Using the SCXI-1353 with an AT-MIO-16DE-10

The MIO-16 cable brings the MIO-16 portion of the AT-MIO-16DE-10 pinout to the SCXI-1349 adapter board. The cable labeled EXTENDED I/O brings the remainder of the AT-MIO-16DE-10 pinout to the AI-48/DIO-24 adapter board.

You can connect the MIO-16 cable, via the SCXI-1349 adapter board, to the following SCXI modules: SCXI-1100, 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.

The EXTENDED I/O cable can be connected via the AI-48/DIO-24 adapter board to the following SCXI modules: SCXI-1162, SCXI-1162R, SCXI-1163, SCXI-1163HV, SCXI-1180 feedthrough panel, or SCXI-1181 breadboard module.

Table 1. MIO-16 Cable Connections

Signal Names	Connector Pin Numbers		
	100-Pin	50-Pin	68-Pin
AIGND	1, 2	1, 2	24, 27, 29, 32, 56, 59, 64, 67
ACH0	3	3	68
ACH8	4	4	34
ACH1	5	5	33
ACH9	6	6	66
ACH2	7	7	65
ACH10	8	8	31
ACH3	9	9	30
ACH11	10	10	63
ACH4	11	11	28
ACH12	12	12	61
ACH5	13	13	60
ACH13	14	14	26
ACH6	15	15	25
ACH14	16	16	58
ACH7	17	17	57
ACH15	18	18	23
AISENSE	19	19	62
DAC0OUT	20	20	22
DAC1OUT	21	21	21
EXTREF	22	22	20
AOGND	23	23	54, 55
DGND	24, 33	24, 33	4, 7, 9, 12, 13, 15, 18, 35, 36, 39, 44, 50, 53
DIO0	25	25	52
DIO4	26	26	19
DIO1	27	27	17
DIO5	28	28	51
DIO2	29	29	49
DIO6	30	30	16
DIO3	31	31	47
DIO7	32	32	48
+5V	34, 35	34, 35	8, 14
SCANCLK	36	36	46
EXTSTROBE*	37	37	45
PFI0/TRIG1	38	38	11
PFI1/TRIG2	39	39	10
PFI2/CONVERT*	40	40	43
PFI3/GPCTR1_SOURCE	41	41	42
PFI4/GPCTR1_GATE	42	42	41
GPCTR1_OUT	43	43	40
PFI5/UPDATE*	44	44	6
PFI6/WFTRIG	45	45	5
PFI7/STARTSCAN	46	46	38
PFI8/GPCTR0_SOURCE	47	47	37
PFI9/GPCTR0_GATE	48	48	3
GPCTR0_OUT	49	49	2
FREQ_OUT	50	50	1

Table 2. EXTENDED I/O Cable Connections

Signal Names		Connector Pin Numbers		
AT-MIO-64E-3	AT-MIO-16DE-10	100-Pin	50-Pin	68-Pin
ACH16	PC7	51	1	68
ACH24	GND	52	2	34
ACH17	PC6	53	3	33
ACH25	GND	54	4	67
ACH18	PC5	55	5	32
ACH26	GND	56	6	66
ACH19	PC4	57	7	65
ACH27	GND	58	8	31
ACH20	PC3	59	9	30
ACH28	GND	60	10	64
ACH21	PC2	61	11	29
ACH29	GND	62	12	63
ACH22	PC1	63	13	62
ACH30	GND	64	14	28
ACH23	PC0	65	15	27
ACH31	GND	66	16	61
ACH32	PB7	67	17	26
ACH40	GND	68	18	60
ACH33	PB6	69	19	59
ACH41	GND	70	20	25
ACH34	PB5	71	21	24
ACH42	GND	72	22	58
ACH35	PB4	73	23	23
ACH43	GND	74	24	57
AISENSE2	PB3	75	25	56
AIGND	GND	76	26	22
ACH36	PB2	77	27	55
ACH44	GND	78	28	21
ACH37	PB1	79	29	20
ACH45	GND	80	30	54
ACH38	PB0	81	31	19
ACH46	GND	82	32	53
ACH39	PA7	83	33	52
ACH47	GND	84	34	18
ACH48	PA6	85	35	17
ACH56	GND	86	36	51
ACH49	PA5	87	37	16
ACH57	GND	88	38	50
ACH50	PA4	89	39	49
ACH58	GND	90	40	15
ACH51	PA3	91	41	14
ACH59	GND	92	42	48
ACH52	PA2	93	43	13
ACH60	GND	94	44	47
ACH53	PA1	95	45	46
ACH61	GND	96	46	12
ACH54	PA0	97	47	11
ACH62	GND	98	48	45
ACH55	+5V	99	49	10
ACH63	GND	100	50	44

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



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