SCXI-1350 Multichassis Adapter Installation Guide

Part Number 371179A-01

This guide describes how to connect a multichassis SCXI system using the SCXI-1350 multichassis adapter. In addition to the SCXI-1350 kits, you will need SCXI chassis, SCXI modules, a computer, a data acquisition board, cables, and a small flathead screwdriver.

Introduction

With the SCXI-1350 multichassis adapter and ribbon cables, you can connect a multichassis SCXI system to your data acquisition board. The following table shows which SCXI modules and data acquisition boards can be connected with the SCXI-1350 multichassis adapter.

Module	Data Aquisition Board												
	AT-MIO-16	AT-MIO-16D	AT-MIO-16F-5	AT-MIO-16X	AT-MIO-64F-5	MC-DIO-24	MC-MIO-16	NB-DIO-24	NB-DIO-96	NB-MIO-16	NB-MIO-16X	PC-DIO-24	PC-DIO-96
SCXI-1100	√	√	√	√	√		√			√	√		
SCXI-1120	√	√	√	√	√		√			√	√		
SCXI-1121	√	√	√	√	√		√			√	√		
SCXI-1140	√	√	√	√	√		√			√	√		
SCXI-1160	√	√	√	√	√	√	√	√	√	√	√	√	√
SCXI-1161	√	√	√	√	√	√	√	√	√	√	√	√	√
SCXI-1162	√	√	√	√	√	√	√	√	√	√	√	√	√
SCXI-1163	√	√	√	√	√	√	√	√	√	√	√	√	√

You can connect the SCXI-1181 breadboard module and the SCXI-1180 feedthrough panel to any data acquisition board with a 50-pin or 100-pin ribbon cable.

The SCXI-1350 multichassis adapter consists of a male rear connector, a female module connector, and a male chassis extender connector. You use a ribbon cable to connect the rear connector to the data acquisition board or a preceding chassis. The module connector plugs into the rear signal connector of an SCXI module. Another ribbon cable connects the chassis extender connector to the multichassis adapter in the next chassis.

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What Your Kit Should Contain

The contents of the SCXI-1350 multichassis adapter kit are as follows:

Kit Name and Part Number	Component	Part Number
SCXI-1350 (776575-50)	Multichassis adapter Two small screws *SCXI-1350 Cable Assembly Installation Guide*	181750-01 742413-01 320615-01

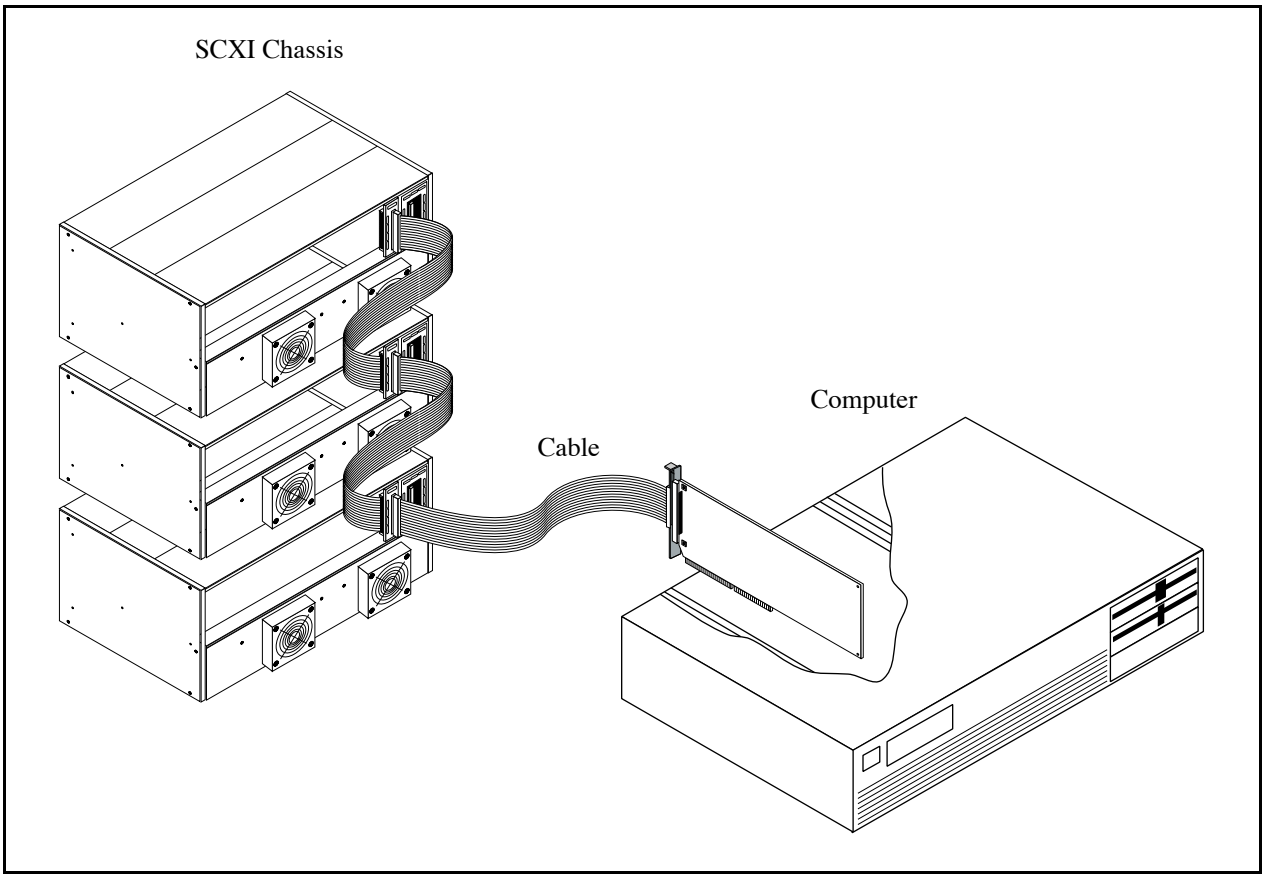
If your kit is missing any of the components, contact National Instruments.

Installation Procedure

To cable a multichassis SCXI system to a data acquisition board, you need a 0.5 m NB1 ribbon cable between each SCXI chassis, and a 0.5 m or 1 m ribbon cable to connect the data acquisition board to the first chassis. The following table shows which cable you can use with which data acquisiton board:

Data Acquisition Board	Cable
AT-MIO-16	NB1
AT-MIO-16D	NB5
AT-MIO-16F-5	NB1
AT-MIO-16X	NB1
AT-MIO-64F-5	NB5
MC-DIO-24	NB1
MC-MIO-16	NB1
NB-DIO-24	NB1
NB-DIO-96	NB6
NB-MIO-16	NB1
NB-MIO-16X	NB1
PC-DIO-24	NB1
PC-DIO-96	NB5

For example, to connect a three-chassis system with an AT-MIO-16 data acquisiton board, you need three NB1 cables and three SCXI-1350 multichassis adapters. The finished installation of this system would look like the following figure.



Completed Cable Installation

Perform the following steps to install the SCXI-1350 cable:

1. Turn off the power to your computer and the SCXI chassis.
2. Install your SCXI modules in the SCXI chassis according to the instructions in your module user manual.

   Note: You cannot use SCXI-1000 chassis in a multichassis system.
3. Install your data acquisition board in a slot in your computer according to the instructions in your data acquisition board user manual.
4. If you are connecting an NB5 or NB6 cable, connect the 100-pin connector of the cable to the I/O connector of your data acquisition board. If you are connecting an NB1 cable, connect one end of the cable to the I/O connector of your data acquisition board.
5. Plug the unattached end of the cable or the 50-pin connector that contains positions 1 through 50 of the NB5 or NB6 cable into the connector with the latches at the rear of the SCXI-1350 multichassis adapter, as shown in the previous illustration.
6. Connect another NB1 ribbon cable to the chassis extender connector that is in the middle of the SCXI-1350.

7. Plug the SCXI-1350 into the back of one of the SCXI modules in the first chassis so that the connector at the rear of the module mates with the front connector on the SCXI-1350 multichassis adapter.

8. Screw the rear panel to the threaded strips in the rear of the chassis.

9. Connect the other end of the NB1 cable to the rear connector of the next SCXI-1350 multichassis adapter.

10. Repeat steps 6 through 9 until you have connected all the chassis. You do not need to connect anything to the middle connector of the SCXI-1350 multichassis adapter in the last chassis.

SCXI-1350 Multichassis Pin Translations

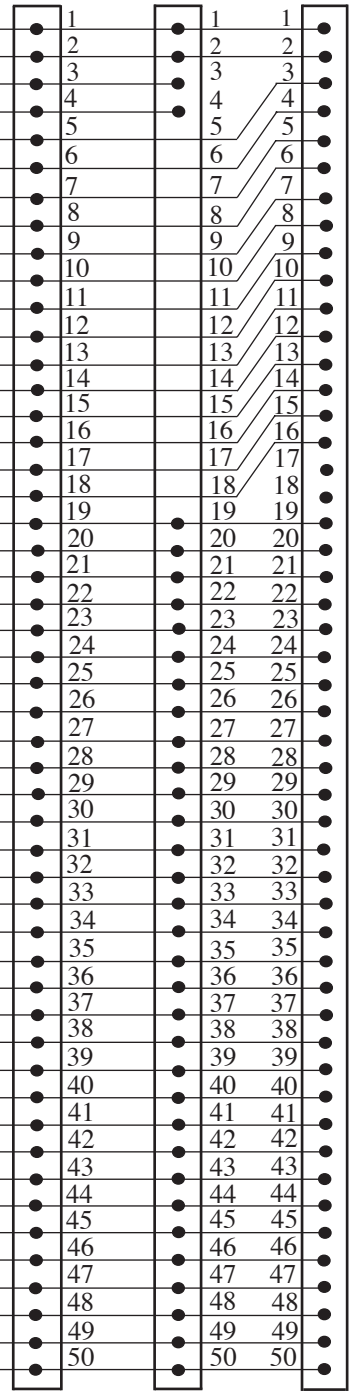
The following table lists the pin connections that the SCXI-1350 multichassis adapter makes.

Notes: When you are cabling a system that has an MIO data acquisition board, the multichassis adapters connect analog channel 0 of the MIO board to the analog output of the first chassis. Analog channel 1 of the MIO board is connected to the analog output of the second chassis, analog channel 2 is connected to the analog output of the third chassis, and so on.

When you are cabling a system that has a DIO data acquisition board, the DIO board can control all of the chassis, but some of the extra DIO board lines will be scrambled according to the pin translation table.

SCXI-1350 Multichassis Pin Translations

AT-MIO-16	DIO-24	DIO-96	Rear Connector	Module Connector	Extender Connector
AIGND	PC7	APC7	1	1	1
AIGND	GND	BPC7	2	2	2
ACH0	PC6	APC6	3	3	3
ACH8	GND	BPC6	4	4	4
ACH1	PC5	APC5	5	5	5
ACH9	GND	BPC5	6	6	6
ACH2	PC4	APC4	7	7	7
ACH10	GND	BPC4	8	8	8
ACH3	PC3	APC3	9	9	9
ACH11	GND	BPC3	10	10	10
ACH4	PC2	APC2	11	11	11
ACH12	GND	BPC2	12	12	12
ACH5	PC1	APC1	13	13	13
ACH13	GND	BPC1	14	14	14
ACH6	PC0	APC0	15	15	15
ACH14	GND	BPC0	16	16	16
ACH7	PB7	APB7	17	17	17
ACH15	GND	BPB7	18	18	18
AISENSE	PB6	APB6	19	19	19
DAC0OUT	GND	BPB6	20	20	20
DAC1OUT	PB5	APB5	21	21	21
EXTREF	GND	BPB5	22	22	22
AOGND	PB4	APB4	23	23	23
DIGGND	GND	BPB4	24	24	24
ADIO0	PB3	APB3	25	25	25
BDIO0	GND	BPB3	26	26	26
ADIO1	PB2	APB2	27	27	27
BDIO1	GND	BPB2	28	28	28
ADIO2	PB1	APB1	29	29	29
BDIO2	GND	BPB1	30	30	30
ADIO3	PB0	APB0	31	31	31
BDIO3	GND	BPB0	32	32	32
DIGGND	PA7	APA7	33	33	33
+5 V	GND	BPA7	34	34	34
+5 V	PA6	APA6	35	35	35
SCANCLK	GND	BPA6	36	36	36
EXTSTROBE*	PA5	APA5	37	37	37
STARTTRIG*	GND	BPA5	38	38	38
STOPTRIG	PA4	APA4	39	39	39
EXTCONV*	GND	BPA4	40	40	40
SOURCE1	PA3	APA3	41	41	41
GATE1	GND	BPA3	42	42	42
OUT1	PA2	APA2	43	43	43
SOURCE2	GND	BPA2	44	44	44
GATE2	PA1	APA1	45	45	45
OUT2	GND	BPA1	46	46	46
SOURCE5	PA0	APA0	47	47	47
GATE5	GND	BPA0	48	48	48
OUT5	+5 V	+5 V	49	49	49
FOUT	GND	GND	50	50	50



Note: Several of the pins on other MIO boards may have slightly different names.