

SCXI™-1351 ONE-SLOT CABLE EXTENDER

This guide describes how to install the National Instruments SCXI-1351 one-slot cable extender in an SCXI system.

The SCXI-1351 extends the pinout from a 100- or 50-pin digital I/O (DIO) data acquisition (DAQ) device to one or more SCXI modules. The SCXI-1351 is intended for use with the SCXI-1181 module for custom signal conditioning, but you can use it with some other SCXI modules.

What You Need To Get Started

To set up and use the SCXI-1351, you need the following items:

- Computer
- One or more SCXI-1351 one-slot cable extenders
- One or more SCXI modules
- SCXI chassis
- 100- or 50-pin DIO DAQ device
- One of the following:
 - NB5, NB6, or R1005050 cable for a 100-pin DIO device
 - NB1 or R5050 cable for a 50-pin DIO device
- SCXI-1351 One-Slot Cable Extender Installation Guide*
- Small flathead screwdriver
- Two small screws

Conventions

The following conventions are used in this guide:

» The » symbol leads you through nested menu items and dialog box options to a final action. The sequence **File»Page Setup»Options** directs you to pull down the **File** menu, select the **Page Setup** item, and select **Options** from the last dialog box.



This icon denotes a note, which alerts you to important information.

italic

Italic text denotes variables, emphasis, a cross reference, or an introduction to a key concept. This font also denotes text that is a placeholder for a word or value that you must supply.

monospace

Text in this font denotes text or characters that you should enter from the keyboard, sections of code, programming examples, and syntax examples. This font is also used for the proper names of disk drives, paths, directories, programs, subprograms, subroutines, device names, functions, operations, variables, filenames and extensions, and code excerpts.

Safety Information

The following section contains important safety information that you *must* follow when installing and using the product.

Do *not* operate the product in a manner not specified in this document. Misuse of the product can result in a hazard. You can compromise the safety protection built into the product if the product is damaged in any way. If the product is damaged, return it to NI for repair.

Do *not* substitute parts or modify the product except as described in this document. Use the product only with the chassis, modules, accessories, and cables specified in the installation instructions. You *must* have all covers and filler panels installed during operation of the product.

Do *not* operate the product in an explosive atmosphere or where there may be flammable gases or fumes. Operate the product only at or below the pollution degree stated in the *Specifications* section. Pollution is foreign matter in a solid, liquid, or gaseous state that can reduce dielectric strength or surface resistivity. The following is a description of pollution degrees:

- Pollution degree 1 means no pollution or only dry, nonconductive pollution occurs. The pollution has no influence.
- Pollution degree 2 means that only nonconductive pollution occurs in most cases. Occasionally, however, a temporary conductivity caused by condensation must be expected.

- Pollution degree 3 means that conductive pollution occurs, or dry, nonconductive pollution occurs that becomes conductive due to condensation.

Clean the product with a soft nonmetallic brush. Make sure that the product is completely dry and free from contaminants before returning it to service.

You *must* insulate signal connections for the maximum voltage for which the product is rated. Do *not* exceed the maximum ratings for the product. Remove power from signal lines before connecting them to or disconnecting them from the product.

Operate this product only at or below the installation category stated in the *Specifications* section.

The installation category for this device, installation category I, is for measurements performed on circuits not directly connected to MAINS¹. This category is a signal level such as voltages on a printed wire board (PWB) on the secondary of an isolation transformer.

Examples of installation category I are measurements on circuits not derived from MAINS and specially protected (internal) MAINS-derived circuits.

¹ MAINS is defined as the electricity supply system to which the equipment concerned is designed to be connected either for powering the equipment or for measurement purposes.

Connecting the SCXI-1351

The SCXI-1351 consists of a mounting bracket with a short 50-pin ribbon cable, a mounting bracket connector, a female rear connector, and a male breakout connector. Figure 1 shows the SCXI-1351 with the cable extended and the SCXI-1351 with the cable folded into place and ready for installation.

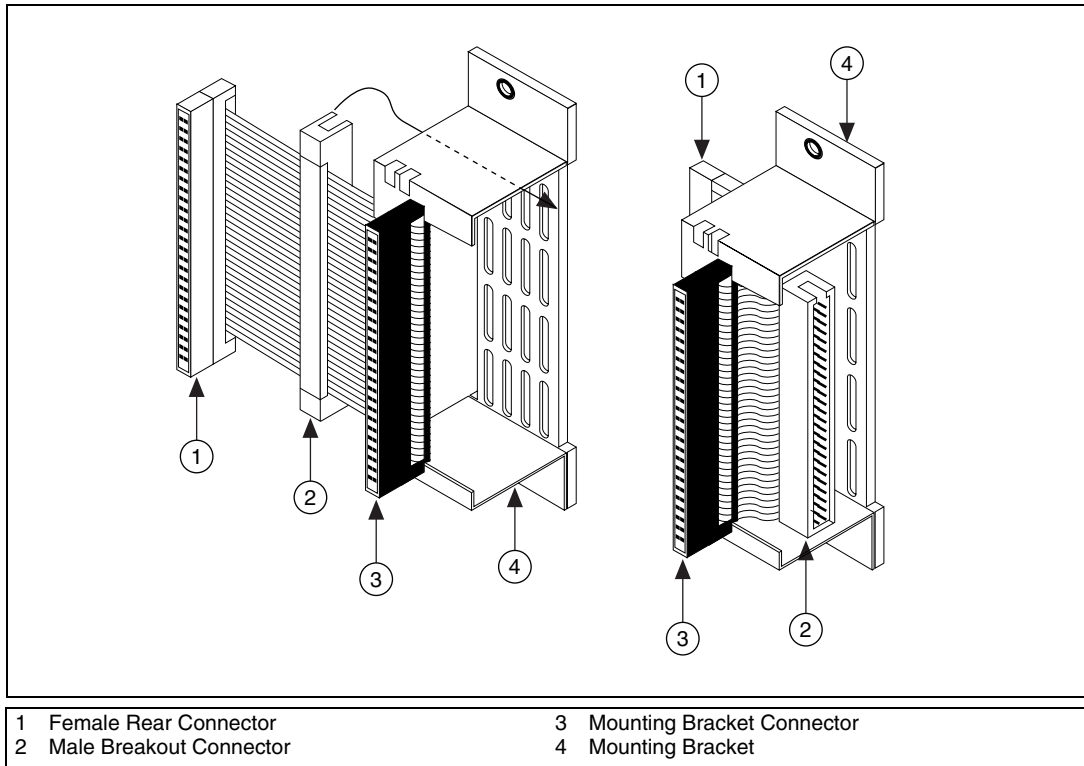


Figure 1. SCXI-1351 Extended and Folded Views

Choosing Cable Connectors

The type of DIO device, SCXI module, and the operation mode you use determine which cable connector you should use to connect the SCXI-1351 to the DIO device. The NB5, NB6, and R1005050 cables have a 100-pin connector at one end and two 50-pin connectors at the other end. One 50-pin connector is labeled *Positions 1–50*, and the other is labeled *Positions 51–100*. The NB1 and R5050 cables have two 50-pin connectors. Table 1 shows which cable connector you should use to connect to the SCXI-1351.

Table 1. Cabling Options

Module Type	SCXI Module	100-Pin	50-Pin
Relay	SCXI-1160	Positions 1–50	Positions 1–50
	SCXI-1161	Positions 1–50	Positions 1–50
	SCXI-1163R	Positions 1–50	Positions 1–50
DIO	SCXI-1162	Serial mode: positions 1–50; Parallel mode: either	Positions 1–50
	SCXI-1163	Serial mode: positions 1–50; Parallel mode: either	Positions 1–50
Breadboard	SCXI-1181	Either	Positions 1–50



Note If the module that you are using is not listed in this table, please refer to the NI Web site at ni.com/support for technical support.

Installing the SCXI-1351 One-Slot Cable Extender

The SCXI-1351 installation procedures differ depending on the type of DIO device, SCXI modules, and operation mode you use. Refer to Figure 2 for the basic installation procedure. Specific installation procedures follow Figure 2.

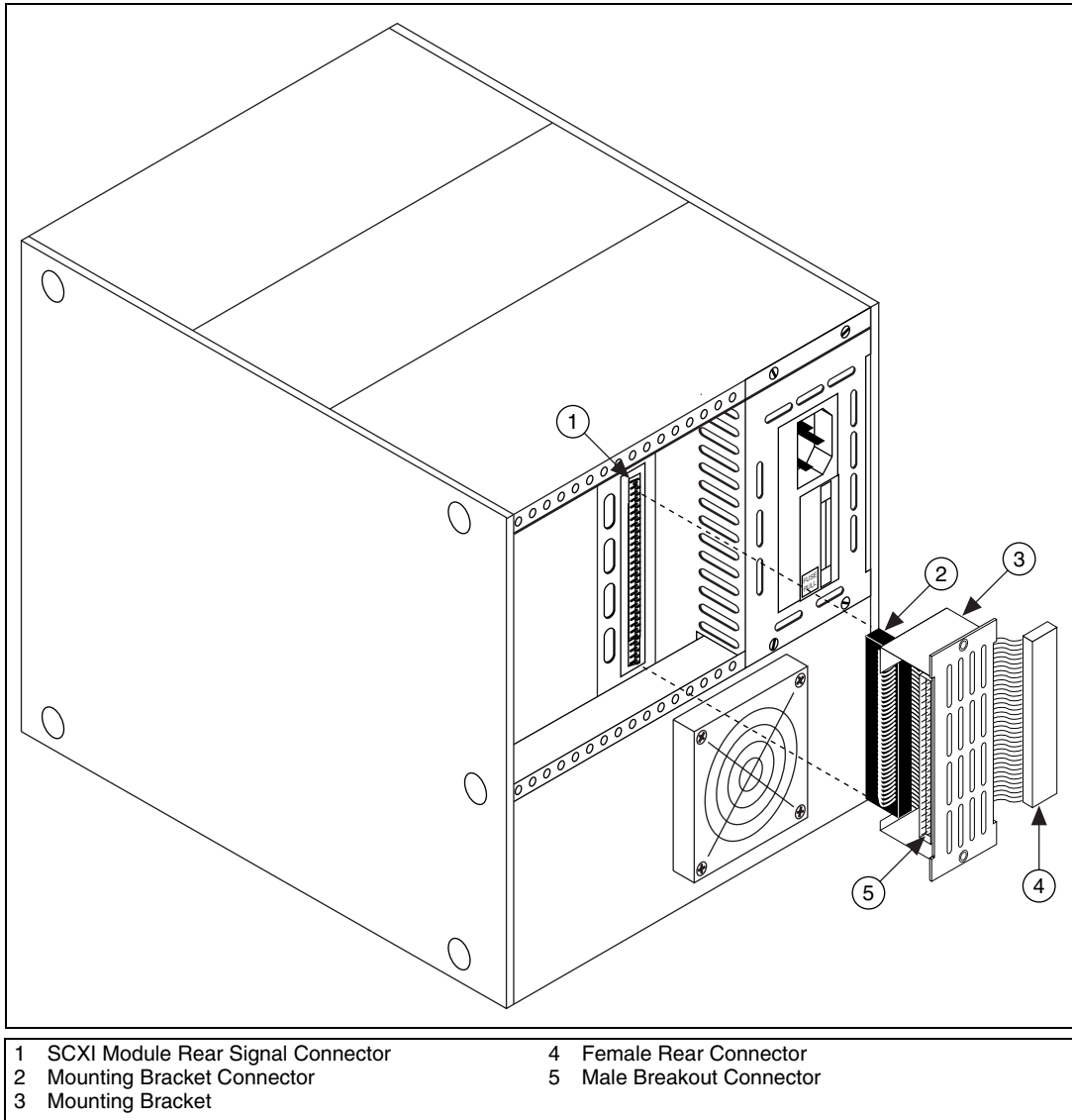


Figure 2. SCXI-1351 Installation

Installing the SCXI-1351 with a 100-Pin DIO Device in Serial Mode

Perform the following steps to install the SCXI-1351 with a 100-pin DIO device in serial mode:

1. Power off the computer and SCXI chassis.
2. Install the SCXI module, following the instructions in the module user manual.
3. Connect the male breakout connector of the SCXI-1351 to the appropriate 50-pin cable connector.
4. Plug the mounting bracket connector of the SCXI-1351 into the module rear signal connector. Make sure the alignment tab on the bracket enters the upper device guide of the chassis.
5. Screw the mounting bracket to the threaded strips in the rear of the chassis to secure the SCXI-1351 in place.
6. Connect the 100-pin cable connector to the DIO device.



Note Leave the female rear connector without a connection.

Installing the SCXI-1351 with a 100-Pin DIO Device in Parallel Mode

Perform the following steps to install the SCXI-1351 with a 100-pin DIO device in parallel mode:

1. Power off the computer and SCXI chassis.
2. Install the two SCXI modules, following the instructions in the module user manual.
3. Connect the male breakout connector of the SCXI-1351 to a 50-pin cable connector. Connect the male breakout connector of another SCXI-1351 to the other 50-pin cable connector.
4. Plug the mounting bracket connector of each SCXI-1351 into the rear signal connector of each module. Make sure the alignment tab on the brackets enter the upper device guide of the chassis.
5. Screw the mounting brackets to the threaded strips in the rear of the chassis to secure the SCXI-1351 one-slot cable extenders in place.
6. Connect the 100-pin cable connector to the DIO device.



Note Leave the female rear connector without a connection.

Installing the SCXI-1351 with a 50-Pin DIO Device

Perform the following steps to install the SCXI-1351 with a 50-pin device:

1. Power off the computer and SCXI chassis.
2. Install the SCXI module, following the instructions in the module user manual.
3. Connect the male breakout connector of the SCXI-1351 to a 50-pin cable connector.
4. Plug the mounting bracket connector of the SCXI-1351 into the module rear signal connector. Make sure the alignment tab on the bracket enters the upper device guide of the chassis.
5. Screw the mounting bracket to the threaded strips in the rear of the chassis to secure the SCXI-1351 in place.
6. Connect the other 50-pin connector of the cable to the DIO device.



Note Leave the female rear connector without a connection.

Installing the SCXI-1351 with Multiple SCXI-1181 Modules

Perform the following steps to install the SCXI-1351 with multiple SCXI-1181 modules. Refer to Figure 3 for an illustration of this installation procedure.

1. Power off the computer and SCXI chassis.
2. With the front of the chassis facing you, install the SCXI-1181 modules in adjacent slots starting on the right, following the instructions in the module user manual.
3. Connect the male breakout connector of the SCXI-1351 to a 50-pin cable connector.
4. If you have more than one SCXI-1351, connect the female rear connector of the SCXI-1351 to the male breakout connector of the next SCXI-1351. Repeat this step for each SCXI-1351 you want to install.
5. With the rear of the chassis facing you, plug the mounting bracket connectors of the SCXI-1351 one-slot cable extenders into the rear signal connectors of the modules, starting with the left-most module. Make sure the alignment tab on the bracket enters the upper device guide of the chassis.
6. Screw the mounting brackets to the threaded strips in the rear of the chassis to secure the SCXI-1351 one-slot cable extenders in place.

7. Connect the female rear connector of the last SCXI-1351 to the rear signal connector of the right-most module.
8. If you have a 100-pin DIO device, connect the 100-pin cable connector to the device. If you have a 50-pin DIO device, connect the remaining 50-pin cable connector to the device.

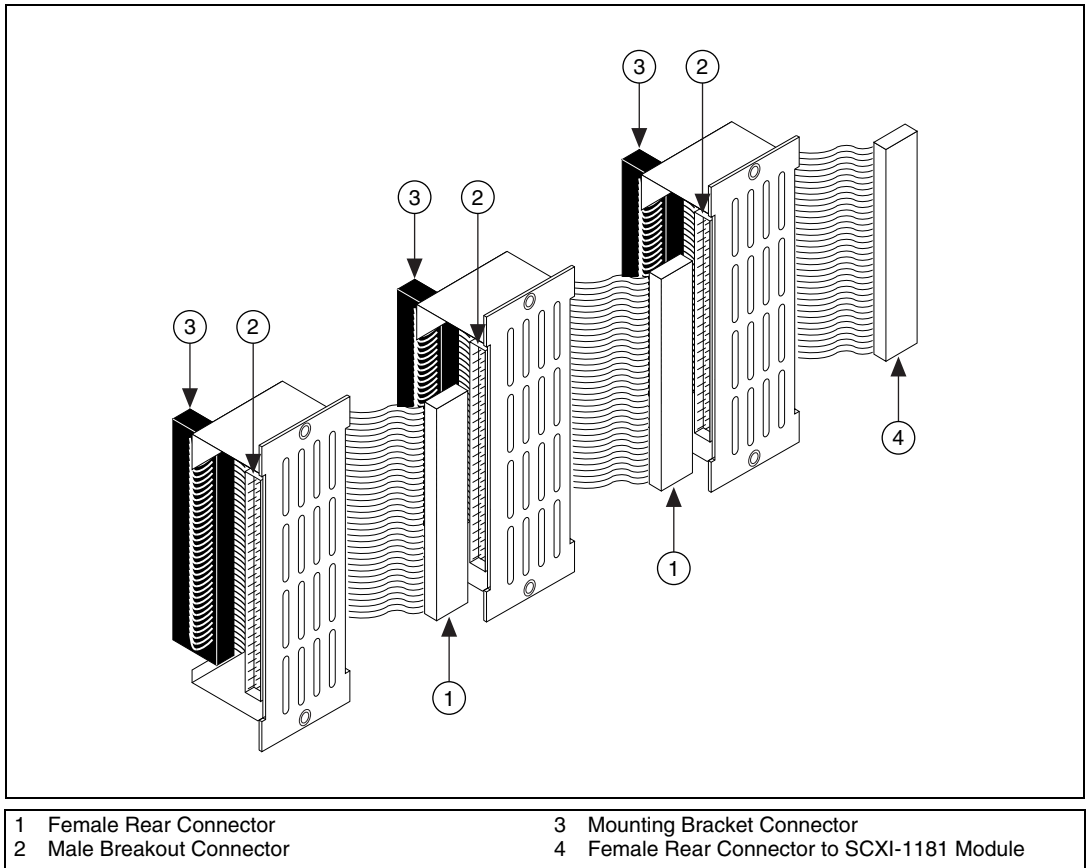


Figure 3. Multiple SCXI-1351 Connection

Specifications

Maximum Working Voltage

Maximum working voltage refers to the signal voltage plus the common-mode voltage.

Channel-to-earth30 VAC, ± 30 VDC,
installation category I

Channel-to-channel.....30 VAC, ± 30 VDC,
installation category I

Environmental

Operating temperature0 to 50 °C

Storage temperature-20 to 70 °C

Humidity10 to 90% RH, noncondensing

Maximum altitude.....2000 meters

Pollution degree (indoor use only)2

Safety

The SCXI-1351 meets the requirements of the following standards for safety and electrical equipment for measurement, control, and laboratory use:

- EN 61010-1:1993/A2:1995, IEC 61010-1:1990/A2:1995
- UL 3111-1:1994
- CAN/CSA c22.2 no. 1010.1:1992/A2:1997

Technical Support Resources

NI Web Support

NI Web support is your first stop for help in solving installation, configuration, and application problems and questions. Online problem-solving and diagnostic resources include frequently asked questions, knowledge bases, product-specific troubleshooting wizards, manuals, drivers, software updates, and more. Web support is available through the Technical Support section of ni.com.

Worldwide Support

NI has offices located around the world to help address your support needs. You can access our branch office Web sites from the Worldwide Offices section of ni.com. Branch office Web sites provide up-to-date contact information, support phone numbers, e-mail addresses, and current events.

If you have searched the technical support resources on our Web site and still cannot find the answers you need, contact your local office or NI corporate. For telephone support in the United States, dial 512 795 8248. For telephone support outside the United States, contact your local branch office:

Australia 03 9879 5166, Austria 0662 45 79 90 0, Belgium 02 757 00 20,
Brazil 011 3262 3599, Canada (Calgary) 403 274 9391,
Canada (Montreal) 514 288 5722, Canada (Ottawa) 613 233 5949,
Canada (Québec) 514 694 8521, Canada (Toronto) 905 785 0085,
China (Shanghai) 021 6555 7838, China (ShenZhen) 0755 3904939,
Czech Republic 02 2423 5774, Denmark 45 76 26 00, Finland 09 725 725 11,
France 01 48 14 24 24, Germany 089 741 31 30, Greece 30 1 42 96 427,
Hong Kong 2645 3186, India 91 80 535 5406, Israel 03 6393737, Italy 02 413091,
Japan 03 5472 2970, Korea 02 3451 3400, Malaysia 603 9596711,
Mexico 001 800 010 0793, Netherlands 0348 433466, New Zealand 09 914 0488,
Norway 32 27 73 00, Poland 0 22 3390 150, Portugal 351 210 311 210,
Russia 095 238 7139, Singapore 2265886, Slovenia 386 3 425 4200,
South Africa 11 805 8197, Spain 91 640 0085, Sweden 08 587 895 00,
Switzerland 056 200 51 51, Taiwan 02 2528 7227,
United Kingdom 01635 523545