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SCXI-1141

SCXI-1352 Module-Cascading Cable Assembly

This guide describes how to cascade an SCXI-1141 module after one SCXI-1120 or two SCXI-1121 modules using the SCXI-1352 module-cascading cable assembly.

Introduction

With the SCXI-1352 module-cascading cable assembly, you can cascade the SCXI-1141 filter module with the SCXI-1120 or SCXI-1121 isolation modules, providing both isolation and programmable filtering of field signals.

The SCXI-1352 kit contains two cables; one cable (type R1650) has a 16-pin connector on one end and a 50-pin connector on the other end, whereas the other cable (type R165050) has a 16-pin connector on one end and two 50-pin connectors on the other end. The 16-pin connectors connect to the 16-pin connector inside of the SCXI-1141 module, and the 50-pin connectors connect to the 50-pin rear signal connectors of the SCXI-1120 or SCXI-1121 modules.

In the cascaded-module configuration, input signals are connected to the SCXI-1120 or SCXI-1121 module. The SCXI-1120 or SCXI-1121 is configured for parallel mode, and outputs the conditioned signals on its 50-pin rear signal connector. The R1650 or R165050 connects to this 50-pin connector, and feeds the signals back to the input of the SCXI-1141 programmable lowpass filter module.

What You Need To Get Started

- ☐ Appropriate SCXI modules:
 - One SCXI-1141
 - Either one SCXI-1120 or two SCXI 1121s
- ☐ R1650 16-pin to single 50-pin ribbon cable
- ☐ R165050 16-pin to dual 50-pin ribbon cable
- ☐ SCXI chassis
- ☐ *SCXI-1352 Module-Cascading Cable Assembly Installation Guide*
- ☐ Small Philips-head screwdriver and flathead screwdriver

Choosing the Appropriate Cable

The R1650 cable routes the eight output channels from an SCXI-1120 to the eight input channels of an SCXI-1141. The R165050 cable routes the four output channels from one SCXI-1121 and the four output channels from another SCXI-1121 to the eight input channels of the SCXI-1141. The two cable types are shown in Figure 1.

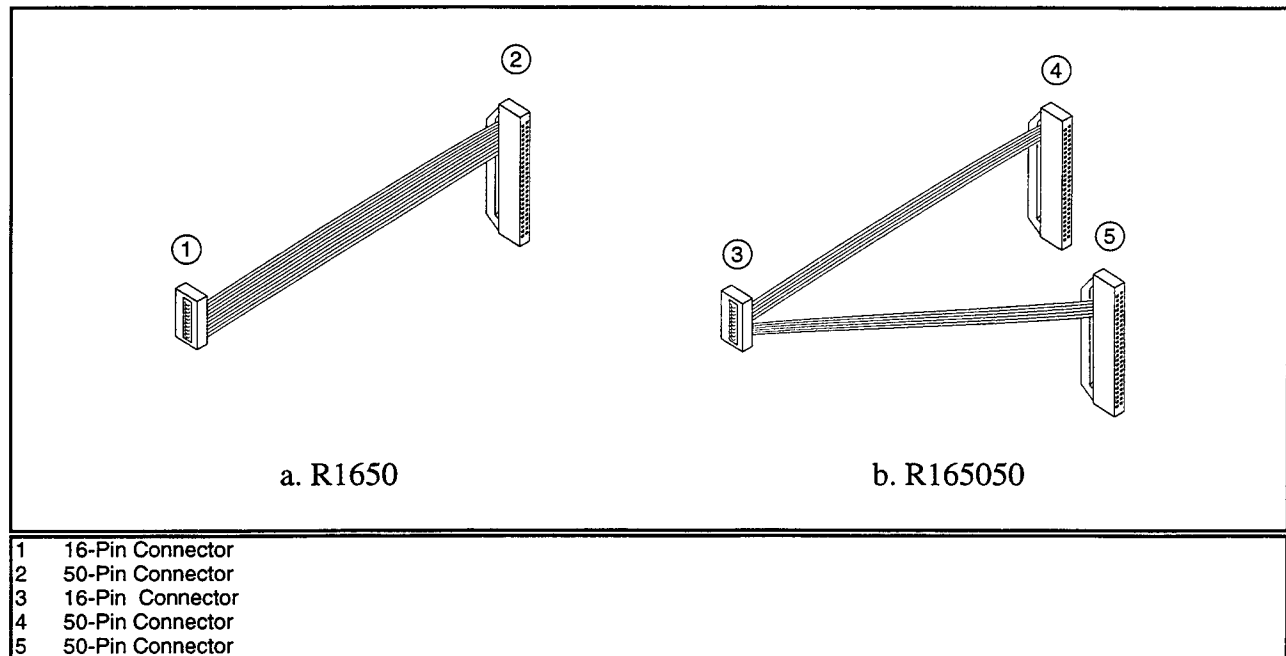


Figure 1. The R1650 and R165050 Cables

Installation

To install the SCXI-1352 module-cascading cables, perform the following steps:

1. Install the appropriate cable into the SCXI-1141.
 - a. Unscrew the top cover's grounding screw (item 3 in Figure 2) from the rear panel of the SCXI-1141 module.
 - b. Remove the top cover of the module by placing a screwdriver in the groove at the bottom of the module and gently twisting the screwdriver until the cover pops up, as shown in Figure 2a.
 - c. Place the 16-pin end of the SCXI-1352 cable assembly on the 16-pin connector (J1) at the front of the SCXI-1141 module, as shown in Figure 2b.
 - d. With the cable in the notch at the rear of the SCXI-1141 module, replace the top cover and the grounding screw.

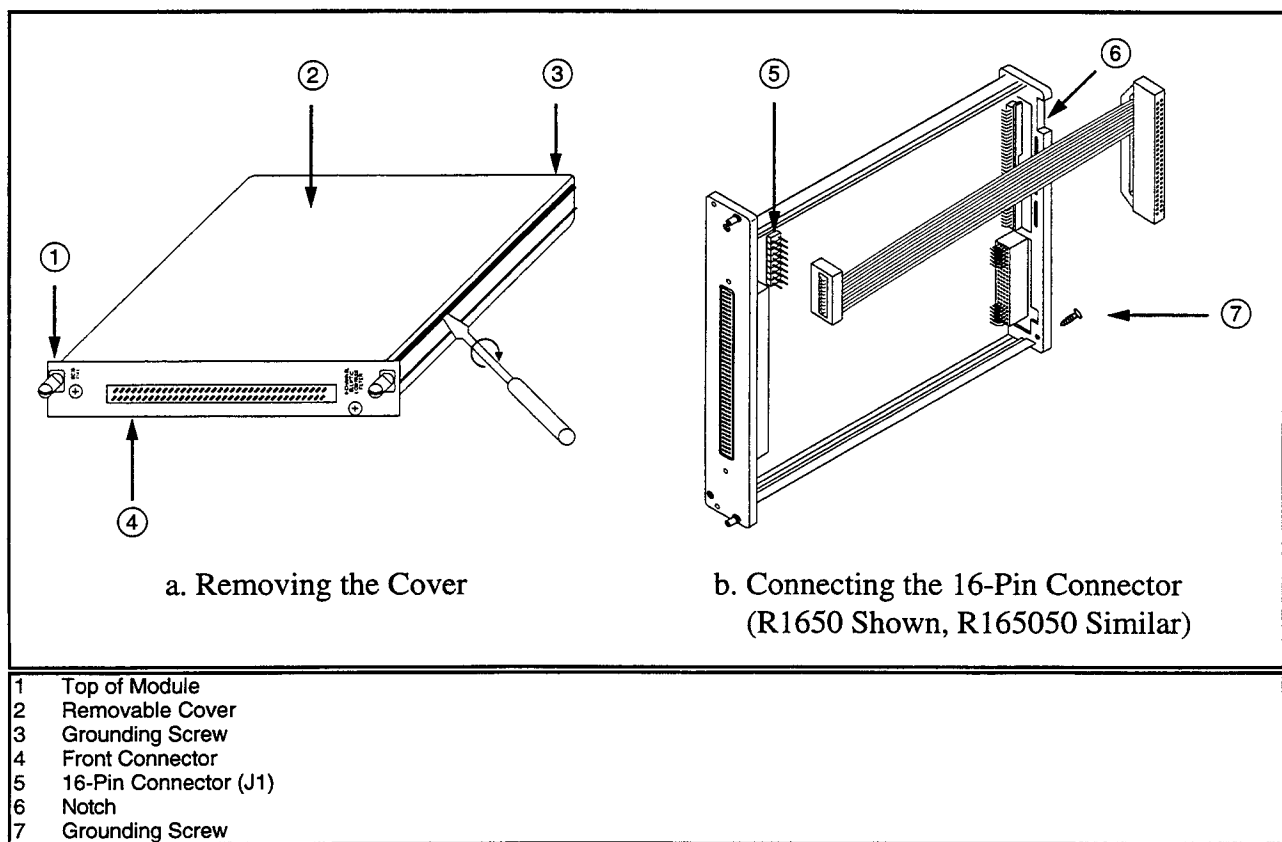


Figure 2. Installing a Cable into the SCXI-1141

2. Install the SCXI-1141 and the SCXI-1120 (or two SCXI-1121s) into the chassis. The SCXI-1141 must be in the slot immediately to the left of the SCXI-1120 or SCXI-1121s, as shown in Figure 3a.

Note: *The SCXI-1120 or SCXI-1121 module should be configured with gains that will keep their output signals within the input range of the SCXI-1141. For example, if your input signal range is ± 1 mV, and the SCXI-112x module is at the default gain setting of 1000, then its output signal will be ± 1 V. This signal is still within the ± 5 V input range of the SCXI-1141. SCXI-1120 and SCXI-1121 gains are set using hardware jumpers. If you need to change your gain jumpers, do so before going on to the next step. Detailed instructions for setting these jumpers are in Chapter 2 of your module user manual.*

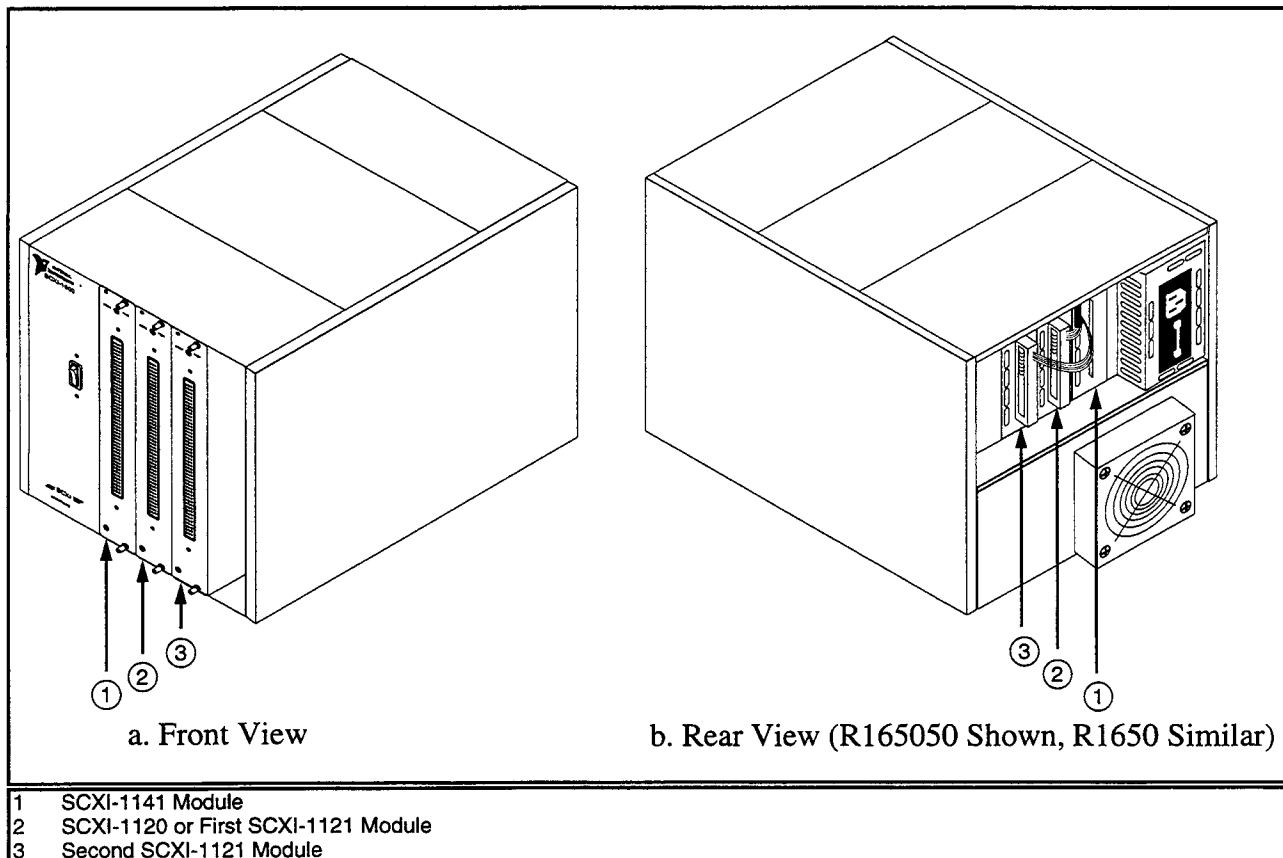


Figure 3. SCXI Modules Installed in the SCXI Chassis

3. Connect the free end or ends of the SCXI-1352 cable to the SCXI-1120 or SCXI-1121 rear signal connector.
 - If you are using the R1650 cable, plug the 50-pin connector into the rear signal connector of the SCXI-1120 to the right of the SCXI-1141.
 - If you are using the R165050 connector, plug the 50-pin connector of the shorter half of the cable to the SCXI-1121 at the immediate right of the SCXI-1141, and plug the 50-pin connector of the longer half of the cable to the SCXI-1121 at the far right of the SCXI-1141, as shown in Figure 3b.
4. Install any other cable assemblies that you want to use with the SCXI-1141, referring to the appropriate installation guide(s). This may include direct connection to your data acquisition (DAQ) board.

Using Cascaded SCXI Modules

After installing the SCXI-1352 and the SCXI modules, connect your field signals to the SCXI-1120 or SCXI-1121 inputs. No additional connections need to be made (or should be made) to the SCXI-1141 analog inputs, since the SCXI-1352 brings the outputs of the SCXI-1120 or SCXI-1121s directly to the SCXI-1141 inputs. However, the digital inputs and outputs of the SCXI-1141 front signal connector may be used if desired.

Software Configuration

1. Configure the SCXI-1141 module normally using WDAQCONF or DAQCONF (refer to Chapter 1 of the *NI-DAQ User Manual for PC Compatibles*).
2. Configure the slots containing the SCXI-112x modules as empty slots. For example, if you have a chassis configuration similar to Figure 3, with an SCXI-1141 in slot 1, an SCXI-1121 in slot 2, and an SCXI-1121 in slot 3, then your software configuration should contain these modules:

Slot 1 = SCXI-1141
Slot 2 = Empty
Slot 3 = Empty

Acquiring Data

Read data directly from the SCXI-1141. If your SCXI-1141 is in slot 1, then all software calls will acquire data from module 1. Do not try to acquire data from the slots containing the SCXI-112x modules, as this will return an error.