

SCXI Chassis Controller/Adapter Kits

NI 1357, NI 1358

- 4 or 12-slot high-voltage backplane assembly
- USB or DMM/switch controller connectivity
- Includes NI 1359 communication adapter
- Creates a high-voltage analog backplane across the SCXI chassis for signal routing or matrix expansion

NI 1359

- SCXI chassis communication adapter
- USB or DMM/switch controller connectivity
- For modules containing a 10-pin rear connector

SCXI-1362

- SCXI chassis communication adapter
- DMM/switch controller connectivity
- For modules containing a 50-pin rear connector

Operating Systems

- Windows 2000/NT/XP

Measurement Services Software (included)

- NI-SWITCH
- NI-DAQmx

Compliance

- UL
- CE



Overview

The National Instruments 1357, 1358, 1359 and SCXI-1362 communication adapters and high-voltage backplane assemblies provide several options for communication with and expansion of the functionality of your SCXI switch chassis. The NI 1359 and SCXI-1362 communication adapters provide the interface to your chassis through a USB port, digital multimeter (DMM), or NI 4021 switch controller. The NI 1357 and NI 1358 high-voltage backplane assemblies include the NI 1359 for communication and add a 4 or 12-slot backplane across the SCXI chassis for signal routing or matrix expansion between SCXI switch modules. Taking advantage of the USB connectivity on these adapters gives you a true plug-and-play switching option with your SCXI system.

Communication Adapters

To communicate with an SCXI switch module, an interface adapter is required on the back of the SCXI chassis. With the NI 1359, you can communicate with all SCXI modules containing a 10-pin rear connector, while the SCXI-1362 provides connectivity to all modules containing a 50-pin rear connector. See Table 1 for more information on applicable modules. Both the NI 1359 and SCXI-1362 provide options for connecting to a DMM such as an NI 407x or an NI 4021 switch controller, but the NI 1359 also offers USB connectivity for simple plug-and-play connectivity to a switch chassis.

Note: If other signal conditioning modules (such as the SCXI-1102 thermocouple input module) are present in an SCXI chassis, it is

Rear Connector	Switch Module	SCXI Switch Controllers				
		NI 4021	NI 4060	NI 407x	USB	E or M Series
10-pin	SCXI-1127	SCXI-1357 kit or	SCXI-1357 kit or	SCXI-1357 kit or	USB-1357 kit or USB-1358 kit or USB-1359 kit	Indirect Control ²
	SCXI-1128	SCXI-1358 kit or	SCXI-1358 kit or	SCXI-1358 kit or		
	SCXI-1129	SCXI-1359 kit or	SCXI-1359 kit	SCXI-1359 kit		
	SCXI-1130	All other Modules	Not supported ¹			
50-pin	SCXI-1160 ³	SCXI-1362 kit	SCXI-1362 kit	SCXI-1362 kit	Indirect Control ⁴	SH6868-EP and SCXI-1349
	SCXI-1161 ³					
	SCXI-1163R					
	SCXI-1190					
	SCXI-1191					
	SCXI-1192					

¹An NI 4060 can control only the SCXI-1127/1128/1129/1160/1161/1163R/1190/1191/1192 switch modules configured under traditional NI-DAQ devices in MAX.

²An E Series DAQ device can control these switches when cabled to another SCXI module in the same chassis. The cabled SCXI module can be an SCXI signal conditioning device or another SCXI switch module. Alternatively, you can install the E Series DAQ device in the rightmost PXI slot of a PXI-1010 or PXI-1011 chassis.

³To use this module with the listed controllers, set jumpers W2, W3, and W4 on the switch module to MIO. Refer to the *NI SCXI-1160/1161 Jumpers Note to Users* or the *NI Switches Help*.

⁴A USB device can control these switches when cabled to a 10-pin rear connector SCXI switch module in the same chassis. USB switch controllers cannot be used with PXI-1011 or PXI-1052 chassis.

Table 1. SCXI Switch Controllers

possible to control SCXI switch modules in the same chassis using the E Series, M Series, or USB device that is communicating with the signal conditioning module. However, the controlling connection must be made directly to the signal conditioning module – NOT to the switch module.

High-Voltage Backplane Assemblies

In addition to simple communication, many switch systems use two or more SCXI modules working together in a large multiplexer or matrix configuration. Expansion of the multiplexer COMs or matrix rows can be achieved through the use of the high-voltage analog backplane (HVAB). The NI 1357 and NI 1358 high-voltage

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backplane assemblies include the NI 1359 for communication and add a 4 or 12-slot backplane, respectively, across the SCXI chassis that can handle routing signals up to 300 V between modules. Modules that can take advantage of the HVAB include the NI SCXI-1127/1128/1129 and NI SCXI-1175.

Control/Expansion Cables

Each NI 135x and SCXI-1362 kit comes with a control cable. For the SCXI-13xx designations, the cable will be an SH9MD-AUX cable, available in 1 or 2 m lengths. For the USB-13xx designations, the cable will be a standard 1 m USB cable.

Additional cables are available for use when setting up multichassis systems. In addition to the SH9MD-AUX or USB cable needed to connect to another chassis, an HV8-HV8 cable will also be needed to interconnect separate high-voltage backplane assemblies. In this configuration, several multiplexer or matrix signals can be passed from one chassis to another through a single cable.

You can also easily connect signals from the HVAB to the banana jack inputs of a DMM using an HV8-BAN4 cable. This cable connects to the NI 135x assemblies through its 8-pin connector and separates the signals into four banana jack connectors that plug directly into a DMM. You can set up a high-channel-count datalogging system without having to make external DMM connections to each individual multiplexer.

Software

All National Instruments communication adapters are shipped with NI-SWITCH, an IVI-compliant driver offering complete functionality for all switch modules, and NI-DAQmx, a complete measurement services software for hardware configuration and control. Use the NI-SWITCH Soft Front Panel for simple relay operations or debugging switch code/execution.

Ordering Information

USB Communication Options

NI USB-1357	776576-571
NI USB-1358	776576-581
NI USB-1359	776576-591
Includes standard USB cable (1 m).	

DMM or NI 4021 Communication Options

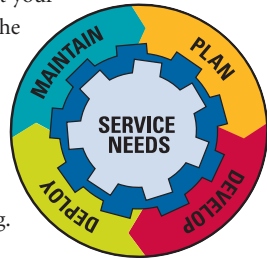
NI SCXI-1357 (1 m)	776575-571
NI SCXI-1357 (2 m)	776575-572
NI SCXI-1358 (1 m)	776575-581
NI SCXI-1358 (2 m)	776575-582
NI SCXI-1359 (1 m)	776575-591
NI SCXI-1359 (2 m)	776575-592
NI SCXI-1362 (1 m)	776575-621
NI SCXI-1362 (2 m)	776575-622
Includes SH9MD-AUX cable of specified length to connect to DMM or NI 4021.	

Accessories

SH9MD-AUX cable (1 m)	185258-01
SH9MD-AUX cable (2 m)	185258-02
HV8-HV8 multichassis cable (1 m)	185437-01
HV8-HV8 multichassis cable (2 m)	185437-02
HV8-BAN4 DMM cable (0.18 m)	185444-0R18
HV8-BAN4 DMM cable (1 m)	185444-01
HV8-BAN4 DMM cable (2 m)	185444-02

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