PXI Relay Modules

PXI-2520, PXI-2521, PXI-2522, PXI-2523, PXI-2564, PXI-2565, PXI-2566, PXI-2568, PXI-2569, PXIe-2569, PXI-2570, PXI-2571, and PXI-2586

- **Software:** Includes interactive soft front panel, API support for LabVIEW and text-based languages, shipping examples, and detailed help files

- SPST, SPDT, DPST, and DPDT options
- Up to 100 relays
- Up to 300 V or 12 A

Built for Automated Test and Measurement

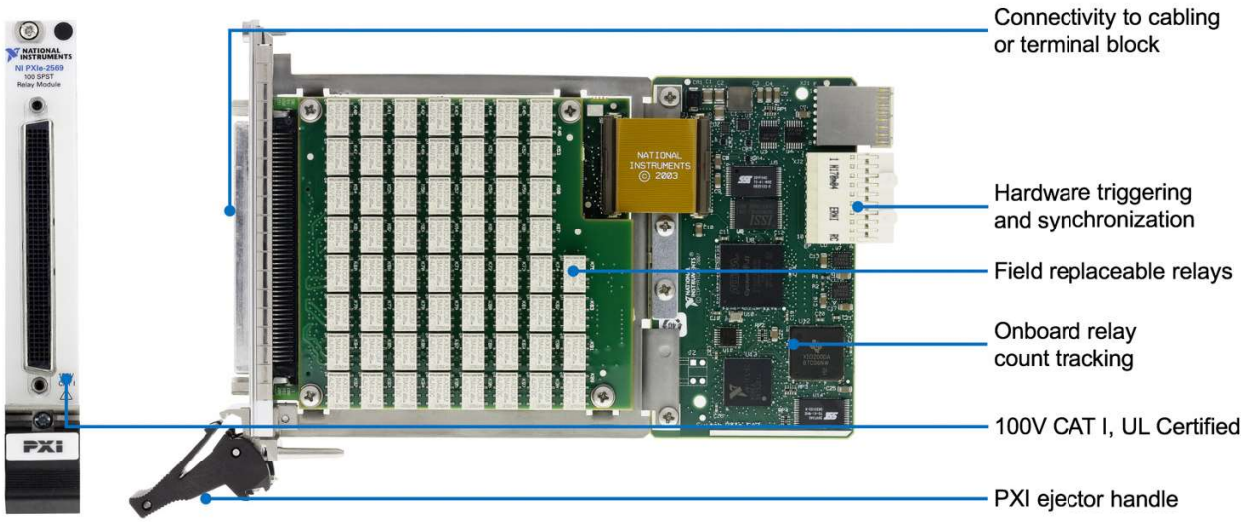
PXI Relay Modules consist of multiple, independent, electromechanical armature relays and come in a variety of configurations, such as single-pole single-throw (SPST), single-pole double-throw (SPDT), and double-pole double-throw (DPDT) relays. PXI Relay Modules are ideal for high-channel-count applications that need to connect measurement or signal generation instruments to various test points on devices or units under test (DUTs or UUTs).

Additionally, NI switch modules offer advanced features, such as hardware triggering, onboard relay count tracking, and a wide variety of reconfigurable models, providing you the option to modify the topology of the switch based on your needs. These advanced features offer a smarter way to tackle difficult applications in industries ranging from consumer electronics to aerospace and defense.

Table 3. NI offers a variety of PXI Relay Modules, varying in relay configuration, channel density, relay type, and voltage/current rating, allowing you to pick the model that best fits your needs.

	Number of Relays	Relay Configuration	Maximum Voltage	Maximum Current	Maximum Bandwidth	Relay Type
PXI-2520	80	SPST, non-latching	150 V	2 A	35 MHz	EMR
PXI-2521	40	DPST, non-latching	150 V	2 A	30 MHz	EMR
PXI-2522	53	SPDT, non-latching	100 V	2 A	51 MHz	EMR
PXI-2523	26	DPDT, non-latching	100 V	2 A	70 MHz	EMR
PXI-2564	16 8	SPST, non-latching DPST, non-latching	150 V	5 A	30 MHz	EMR
PXI-2565	16	SPST, non-latching	125 VDC 250 VAC	7 A	10 MHz	EMR
PXI-2566	16 8	SPDT, non-latching DPDT, non-latching	150 VDC 125 VAC	5 A	10 MHz	EMR
PXI-2568	31 15	SPST, latching (form A) DPST, latching (form A)	150 V	2 A	40 MHz	EMR
PXI-2569 and PXIe-2569	100 50	SPST, latching (form A) DPST, latching (form A)	100 V	1 A	20 MHz	EMR
PXI-2570	40	SPDT, latching (form C)	100 V	1 A	40 MHz	EMR
PXI-2571	66	SPDT, latching (form C)	100 V	1 A	35 MHz	EMR
PXI-2586	10	SPST	300 V	12 A	20 MHz	EMR

Detailed View of PXIe-2569 Relay Module



Key Features

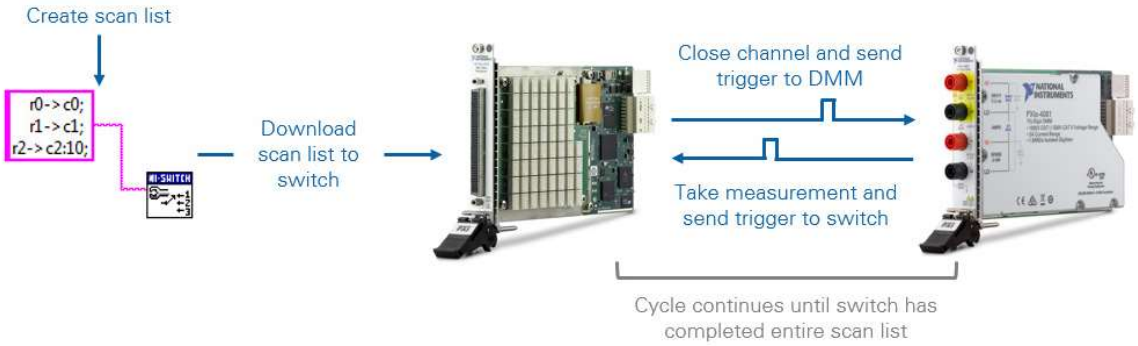
Reconfigurable Topologies

As referenced in Table 1, some PXI Relay Modules can be reconfigured to achieve multiple topologies within a single device, allowing you to pick the topology that best suits your application. For example, the PXIe-2569 can be reconfigured in software, without any additional hardware, allowing you to reshape the topology into either 100 SPST relays or 50 DPST relays.

Figure 4. The PXI/PXIe-2569 is one example of a PXI Relay Module that can be reconfigured into either 100 SPST relays or 50 DPST relays.

Synchronization and Integration

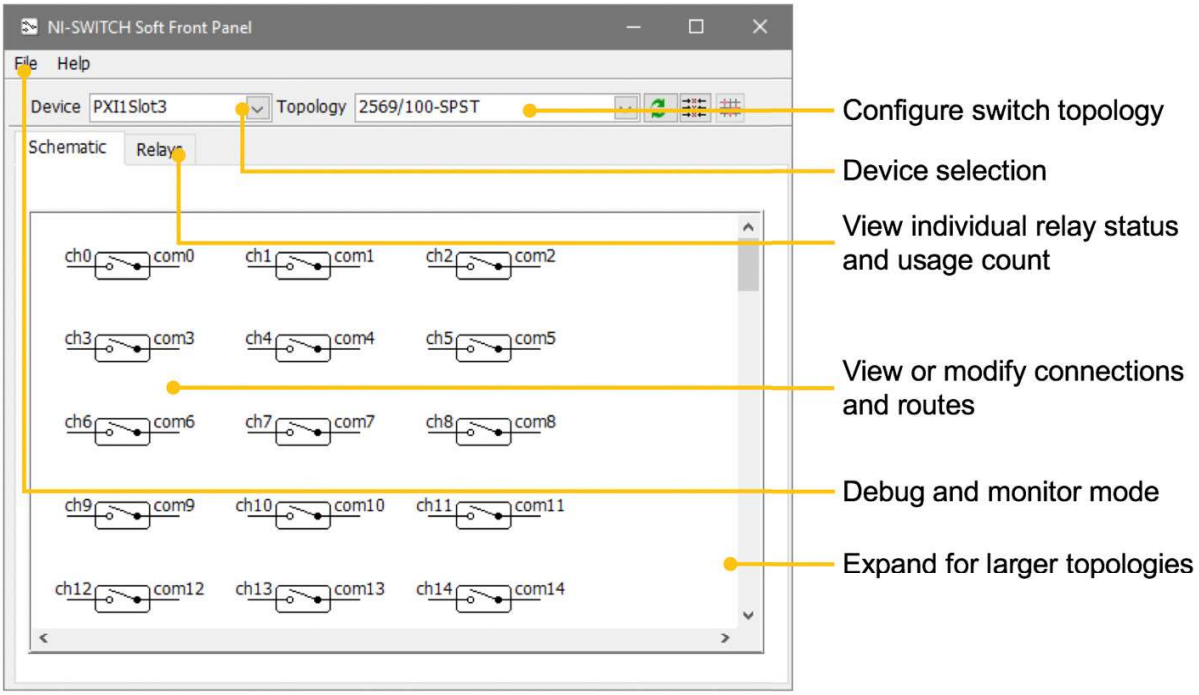
NI switches use the inherent timing and synchronization capabilities of the PXI platform to communicate with other instruments within the PXI chassis[1]. You can store a list of switch connections in memory onboard the switch module and then use the integrated hardware scanning and triggering engine to advance the switch sequence and rapidly communicate with any PXI instrument that can send and receive digital triggers, such as DMM or oscilloscope. This advanced switching method removes the software overhead and reduces the bus latency associated with traditional software-controlled switching operations for faster test execution with more repeatable timing.



[1]Triggering is available on most NI switches. To check if this feature is supported by a switch module, reference the “Trigger Characteristics” section of the product specification document.

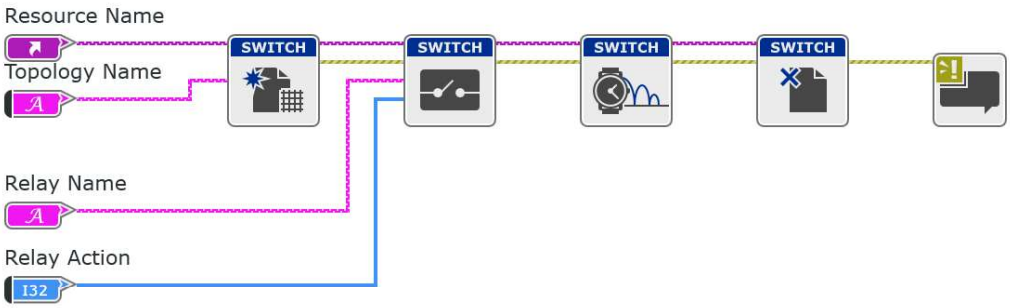
NI-SWITCH Soft Front Panel

The NI-SWITCH driver software includes an interactive soft front panel for full out-of-the-box functionality. This interactive soft front panel allows you to configure the switch topology and change switch connections with a simple click. In addition, you can use the **Debug Driver Session** mode to monitor and debug the switch during automated measurement. For example, you can monitor which signal paths are active, which individual relays are open/closed, and how many times each relay has been used.



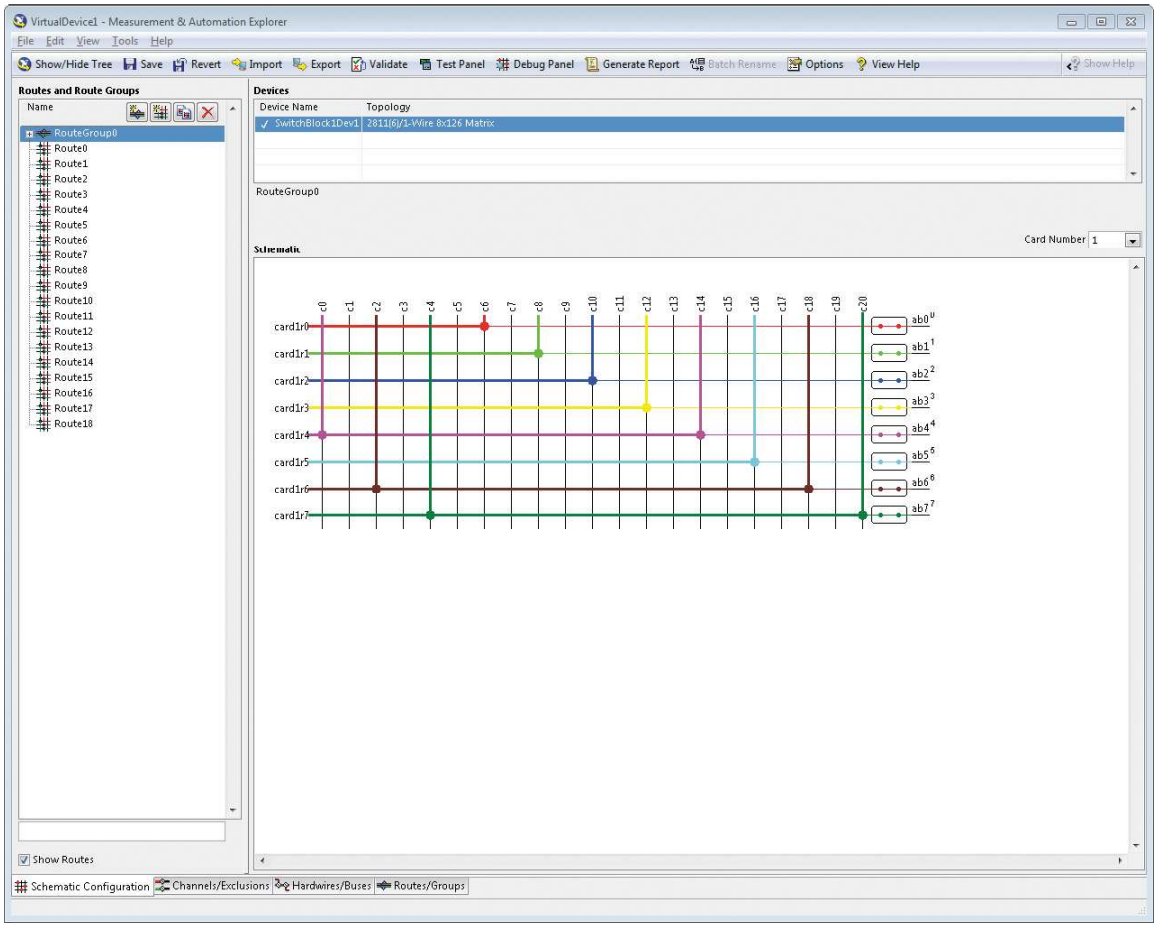
NI-SWITCH Application Programming Interface (API)

In addition to the soft front panel, the NI-SWITCH driver includes a best-in-class API that works with a variety of development options such as LabVIEW, C, C#, and others. The driver also provides access to help files, documentation, and dozens of ready-to-run shipping examples you can use as a starting point for your application.



Switch Executive Application Software

While the NI-SWITCH driver provides all the low-level functionality required to program switch actions, Switch Executive is application software for intelligent switch management and routing that accelerates development and simplifies maintenance of complex switch systems. The point-and-click graphical configuration and automatic routing capabilities make it easy to design your switch system. Using intuitive channel aliases and route names keeps your system documented for future modifications. Save time and increase test code reuse by integrating your system with TestStand, LabVIEW, LabWindows™ /CVI, and Measurement Studio.



- Graphically configure routes and route groups
- Develop reusable switching code and integrate it into NI TestStand or NI LabVIEW
- Automatically route signals between switch endpoints
- Scale switch configuration using Microsoft Excel
- Maintain switch configuration using route validation, reporting and debugging features