

NOTE TO USERS

NI PXI-2570 Documentation

The NI PXI-2570 documentation was not included in the release of the NI-DAQ 7.1 software included in this kit. In particular, the *NI Switches Help* does *not* contain device specific information about the NI PXI-2570. This document contains the NI PXI-2570 documentation.

To update the documentation to include information about the NI PXI-2570, complete the following steps after installing NI-DAQ 7.1 and NI-SWITCH 2.1.

1. Visit ni.com/manuals.
2. Search for *NI Switches Help*.
3. Select the latest edition of the *NI Switches Help*.
4. Download the .zip file containing the *NI Switches Help*.
5. Extract the contents of the .zip file to <Program Files>\IVI\Drivers\niSwitch\Documentation\.
6. (Optional) LabVIEW Users—extract the contents of the .zip file to <LabVIEW X.X>\help\.
7. Search for NI PXI-2570 Specifications at ni.com/manuals.
8. Select the latest edition of the *NI PXI-2570 Specifications*.
9. Download the .pdf file of the *NI PXI-2570 Specifications*.
10. Rename the .pdf file as NI PXI-2570 Specifications.pdf.
11. Copy the .pdf file to <Program Files>\IVI\Drivers\niSwitch\Documentation\.

NI PXI-2570

The NI PXI-2570 is a 40-channel general-purpose relay module for the PXI platform designed for switching and controlling low-level and power signals. The NI PXI-2570 is composed of 40 armature latching SPDT relays.



Note For certain applications, you may need to increase the default settling time. Refer to the *Including Additional Settling Time* topic of the *NI Switches Help* for more information about increasing the default settling time.

Operation Modes

The following table lists the supported topology of the NI PXI-2570 and possible operation modes

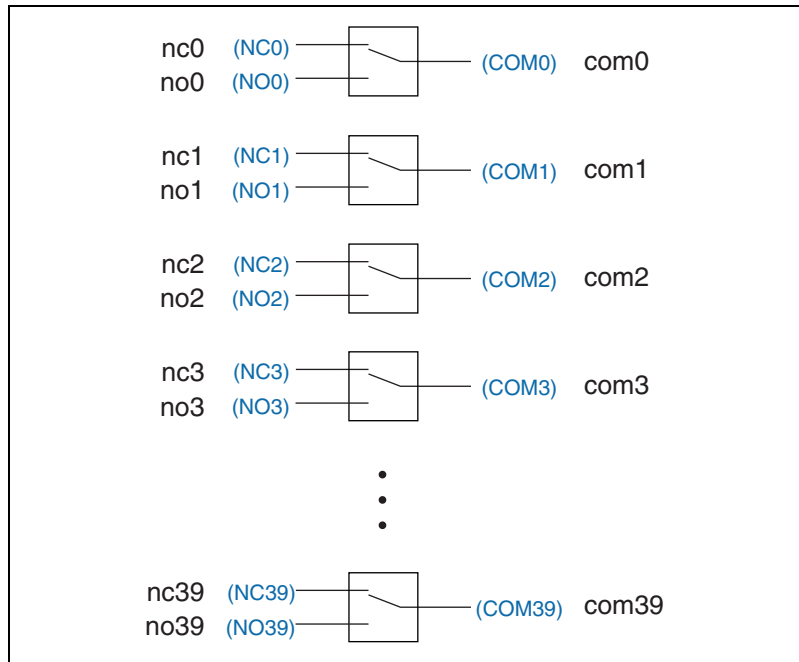
Topology	Software Name	Immediate	Scanning
40-SPDT	2570/40-SPDT (NISWITCH_TOPOLOGY_2570_40_SPDT)	Yes	Yes

Hardware Diagram

Refer to Figure 1, *NI PXI-2570 Power-On State*, in the *NI PXI-2570 Specifications* for a hardware diagram.

40-SPDT Topology

The following figure represents the NI PXI-2570 in the 40-SPDT topology. Hardware names are listed in parenthesis; software names are listed in black text.



You can control the channels using the `niSwitch_Connect` function or `niSwitch Connect Channels VI`.

To connect the NO terminal to the COM terminal of that channel, disconnect the NC terminal from the COM of that channel.

For example, to connect NO2 to COM2, use the following code:

```
niSwitch_Disconnect(vi, "NC2", "COM2")  
niSwitch_Connect(vi, "NO2", "COM2")
```



Note To connect NO to COM, you do *not* need to disconnect NC from COM after the module has been reset or a call to `niSwitch_DisconnectAll` has been made.

`niSwitch_Disconnect(vi, "NC2", "COM2")` does *not* activate the relay until `niSwitch_Connect(vi, "NO2", "COM2")` is executed.

When scanning the NI PXI-2570, a typical scan list entry could be `nc2->com2;`. This entry routes the signal connected to NC2 to COM2.

Pinout

Figure 2, *NI PXI-2570 Front Panel Pinout*, of the *NI PXI-2570 Specifications* identifies the pins for the NI PXI-2570 in the 40-SPDT topology.

NI PXI-2570 Triggering

This module can recognize trigger pulse widths less than 150 ns by disabling digital filtering.

Trigger Input

The following table lists valid trigger inputs for the NI PXI-2570. The Software column is showing possible values for LabVIEW and LabWindows™/CVI™ respectively.

Trigger Input	Software	Hardware
Immediate	Immediate/NISWITCH_VAL_IMMEDIATE	N/A
TTL0	TTL0/NISWITCH_VAL_TTL0	PXI Trigger Line 0
TTL1	TTL1/NISWITCH_VAL_TTL1	PXI Trigger Line 1
TTL2	TTL2/NISWITCH_VAL_TTL2	PXI Trigger Line 2
TTL3	TTL3/NISWITCH_VAL_TTL3	PXI Trigger Line 3

Trigger Input	Software	Hardware
TTL4	TTL4/NISWITCH_VAL_TTL4	PXI Trigger Line 4
TTL5	TTL5/NISWITCH_VAL_TTL5	PXI Trigger Line 5
TTL6	TTL6/NISWITCH_VAL_TTL6	PXI Trigger Line 6
TTL7	TTL7/NISWITCH_VAL_TTL7	PXI Trigger Line 7
Software Trigger	niSwitch Send Software Trigger niSwitch_SendSoftwareTrigger	N/A

Scan Advanced Output

The following table lists valid scan advanced outputs for the NI PXI-2570. The Software column is showing possible values for LabVIEW and LabWindows™/CVI™ respectively.

Scan Advanced Output	Software	Hardware
None	None/NISWITCH_VAL_NONE	N/A
TTL0	TTL0/NISWITCH_VAL_TTL0	PXI Trigger Line 0
TTL1	TTL1/NISWITCH_VAL_TTL1	PXI Trigger Line 1
TTL2	TTL2/NISWITCH_VAL_TTL2	PXI Trigger Line 2
TTL3	TTL3/NISWITCH_VAL_TTL3	PXI Trigger Line 3
TTL4	TTL4/NISWITCH_VAL_TTL4	PXI Trigger Line 4
TTL5	TTL5/NISWITCH_VAL_TTL5	PXI Trigger Line 5
TTL6	TTL6/NISWITCH_VAL_TTL6	PXI Trigger Line 6
TTL7	TTL7/NISWITCH_VAL_TTL7	PXI Trigger Line 7
Software Trigger	niSwitch Send Software Trigger niSwitch_SendSoftwareTrigger	N/A

Refer to niSwitch Configure Scan Trigger or niSwitch_ConfigureScanTrigger for descriptions and values.

