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Find the *National Instruments PXI-2535* at our website: *Click HERE*

# 544-Crosspoint FET Matrix

## NI PXI-2535, NI PXI-2536 *NEW!*

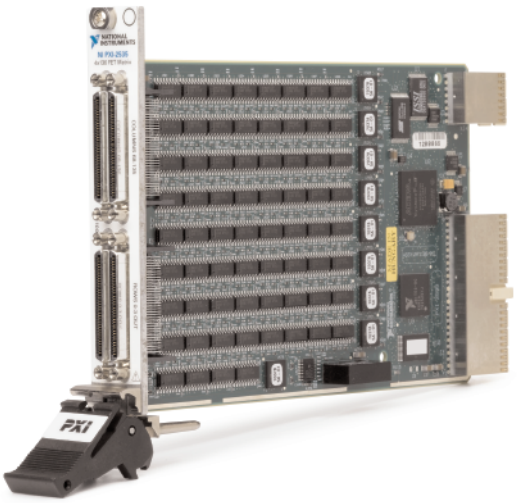
- PXI-2535: 4x136 (1-wire)
- PXI-2536: 8x68 (1-wire)
- Switch capacity
  - ±12 VDC/8 VAC
  - 100 mA switching/carry
- 50,000 crosspoints/s
- Unlimited mechanical lifetime
- 32,000-step scan list for deterministic scanning
- Fully software programmable
- Onboard relay count tracking
- Multiple-module synchronization with hardware trigger

**Operating Systems**
- Windows Vista/XP/2000

**Recommended Software**
- NI Switch Executive
- NI TestStand
- LabVIEW
- LabVIEW Real-Time
- LabWindows™/CVI

**Other Compatible Software**
- Microsoft Visual Basic
- C/C++

**Driver Software (included)**
- NI-SWITCH



## Overview

The National Instruments PXI-2535 and PXI-2536 high-density FET switch matrix modules feature 544 crosspoints in a compact, single-slot, 3U PXI form factor. The NI PXI-2535 is configured as a 4x136 one-wire matrix and the NI PXI-2536 is configured as an 8x68 one-wire matrix. Because the modules use field effect transistor (FET) switch technology, they offer unique benefits such as unlimited mechanical lifetime, unlimited simultaneous crosspoint connections, and switching speeds as high as 50,000 crosspoints per second. These features make the new FET switches ideal for routing low-power DC signals when validating and testing mass produced devices such as semiconductor chips. Use the PXI-2535 and PXI-2536 with the NI PXI-4110 programmable power supply and the NI PXI-4071 7½-digit FlexDMM to build high-density automated test systems up to ±12 VDC/8 VAC.

## Benefits of FET Switches

1. **Faster switching speeds:** Because FET switches do not have moving parts, they are able to switch between 'ON' and 'OFF' states very quickly. FET switches have much faster switching speeds than armature and reed relays. The PXI-2535 and PXI-2536 can switch up to 50,000 crosspoints per second.
2. **Increased lifetime:** FET switches do not have moving parts. They therefore have infinite mechanical lifetime.
3. **Low power consumption:** FET switches require very little power to switch between states. The power the PXI backplane supplies is enough to simultaneously close all relays on the PXI-2535 and PXI-2536.

## Software

All National Instruments switch modules for PXI are shipped with NI-SWITCH, an IVI-compliant driver that offers complete functionality for all switch modules. When programming high-channel-count switch modules such as the PXI-2535 and PXI-2536, you can use switch management software such as NI Switch Executive to simplify programming. With NI Switch Executive, you gain increased development productivity by interactively configuring and naming switch modules, external connections, and signal routes. You also increase test code reuse and system performance with switch programming in conjunction with NI TestStand test management software, the NI LabVIEW and LabWindows/CVI development environments, and NI Measurement Studio for Microsoft Visual Basic 6.0.

## Ordering Information

| | |
|---|---|
| NI PXI-2535 | 778572-35 |
| NI PXI-2536 | 778572-36 |

**Accessories**

| | |
|---|---|
| NI SCH68-68 VHDCI to D-Sub cable | 191945-01 |
| NI TBX-68 I/O connector block | 777141-01 |
| NI Switch Executive Development System | 778546-01 |
| NI Switch Executive Deployment Engine | 778548-00 |

***BUY NOW!***

For complete product specifications, pricing, and accessory information, call 800 813 3693 (U.S.) or go to **ni.com/switches**.

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# Specifications

All specifications are subject to change without notice.
Visit **ni.com/manuals** for the most current specifications.

### Topologies

| | |
|---|---|
| PXI-2535 | 1-wire 4x136 matrix |
| PXI-2536 | 1-wire 8x68 matrix |

## Input Characteristics

All input characteristics are DC, $AC_{rms}$, or a combination unless otherwise specified. Typical values are representative of an average unit operating at room temperature (25 °C ± 3 °C) unless otherwise specified.

| | |
|---|---|
| Maximum switching voltage | ±12 VDC, 8 VAC (channel-to-ground) |
| Maximum switching current | 100 mA |
| Maximum switching power | 1.2 W (per channel, resistive) |
| DC isolation resistance | |
| (between open terminals) | >1 GΩ typical at 23 °C<br>>334 MΩ, typical at 55 °C |
| Current leakage between column and ground | |
| (closed path) | 10 nA, typical (12 VDC applied at 25 °C) |
| Offset voltage | 10 µV, typical |
| Overvoltage protection | |
| Powered on | ±36 VDC |
| Powered off | ±40 VDC |
| Total path resistance (row-to-column) | |
| Typical | 9 Ω |
| Maximum | 14 Ω |

## Dynamic Characteristics

| | |
|---|---|
| FET operate time | |
| Typical | 12 µs |
| Maximum | 16 µs |
| Maximum scan rate | 50,000 crosspoints/s |
| Simultaneous drive limit | 544 switches |
| Expected relay life | Unlimited, when operated within specified limits |

## Physical Characteristics

| | |
|---|---|
| Relay type | FET switch |
| I/O connectors | Four 68-pin receptacle VHDCI |
| Dimensions | 3U, single slot PXI |
| Weight | 159 g (5.6 oz) |

## Environment

| | |
|---|---|
| Operating temperature | 0 to 55 °C |
| Storage temperature | -20 to 70 °C |
| Relative humidity | 5 to 85%, noncondensing |
| Pollution degree | 2 |

Approved at altitudes up to 2,000 m.

## Compliance and Certifications

### Safety

This product is designed to meet the requirements of the following standards of safety for electrical equipment for measurement, control, and laboratory use:

- IEC 61010-1, EN 61010-1
- UL 61010-1, CSA 61010-1

**Note:** For UL and other safety certifications, refer to the product label or visit **ni.com/certification**, search by model number or product line, and click the appropriate link in the Certification column.

## Electromagnetic Compatibility

This product is designed to meet the requirements of the following standards of EMC for electrical equipment for measurement, control, and laboratory use:

- EN 61326 EMC requirements; Minimum Immunity
- EN 55011 Emissions; Group 1, Class A
- CE, C-Tick, ICES, and FCC Part 15 Emissions; Class A

**Note:** For EMC compliance, operate this device according to product documentation.

### CE Compliance

This product meets the essential requirements of applicable European Directives, as amended for CE marking, as follows:

- 2006/95/EC; Low-Voltage Directive (safety)
- 2004/108/EC; Electromagnetic Compatibility Directive (EMC)

**Note:** Refer to the Declaration of Conformity (DoC) for this product for any additional regulatory compliance information. To obtain the DoC for this product, visit **ni.com/certification**, search by model number or product line, and click the appropriate link in the Certification column.

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We also offer service programs that provide automatic upgrades to your application development environment and higher levels of technical support. Visit **ni.com/ssp**.

## Hardware Services

### NI Factory Installation Services

NI Factory Installation Services (FIS) is the fastest and easiest way to use your PXI or PXI/SCXI combination systems right out of the box. Trained NI technicians install the software and hardware and configure the system to your specifications. NI extends the standard warranty by one year on hardware components (controllers, chassis, modules) purchased with FIS. To use FIS, simply configure your system online with **ni.com/pxiadvisor**.

### Calibration Services

NI recognizes the need to maintain properly calibrated devices for high-accuracy measurements. We provide manual calibration procedures, services to recalibrate your products, and automated calibration software specifically designed for use by metrology laboratories. Visit **ni.com/calibration**.

### Repair and Extended Warranty

NI provides complete repair services for our products. Express repair and advance replacement services are also available. We offer extended warranties to help you meet project life-cycle requirements. Visit **ni.com/services**.

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351548A-01 2007-9358-101-D

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