

NI PXI-2503 Specifications

24-Channel Relay Multiplexer/Matrix

This document lists specifications for the NI PXI-2503 multiplexer/matrix module. All specifications are subject to change without notice. Visit ni.com/manuals for the most current specifications.

Configurations.....	48 × 1, 1-wire multiplexer
	24 × 1, 2-wire multiplexer
	Dual 12 × 1, 2-wire multiplexers
	Quad 6 × 1, 2-wire multiplexers
	12 × 1, 4-wire multiplexer
	4 × 6, 2-wire matrix

Input Characteristics

All input characteristics are DC, AC_{rms} , or a combination, unless otherwise specified.

Maximum switching voltage..... 30 VAC, 60 VDC
(channel-to-channel and channel-to-ground)

Maximum switching current 1 A
(per channel)

Maximum carry current 1 A
(per channel)

Maximum switching power 30 W
(per channel)

DC path resistance
 Initial.....<1 Ω
 End of life>2 Ω

Path resistance is a combination of relay contact resistance and trace resistance. Contact resistance typically remains low for the life of a relay. At the end of relay life, the contact resistance rapidly rises above 1.0 Ω .

Thermal EMF (differential).....<2 μ V

RF Performance Characteristics

Typical bandwidth \geq 10 MHz
 (50 Ω termination)

Typical channel-to-channel isolation
 (50 Ω termination)

10 kHz>100 dB
 100 kHz>80 dB
 1 MHz.....>55 dB
 10 MHz.....>30 dB

Dynamic Characteristics

Scan rate200 cycles/s, typical

Relay operate time (at 20 $^{\circ}$ C)3 ms typical, 5 ms maximum

Release time (at 20 $^{\circ}$ C).....1.5 ms typical, 5 ms maximum

Expected relay life

Mechanical50,000,000 cycles
 Electrical.....2,000,000 cycles
 (maximum load)

Trigger Characteristics

Input trigger	
Sources	PXI trigger lines 0–7, Front panel
Minimum pulse width	
PXI trigger lines.....	70 ns
Front panel.....	500 ns
Output trigger	
Destinations	PXI trigger lines 0–7, Front panel
Pulse width.....	1 μ s

Physical Characteristics

Relay type	Electromechanical, nonlatching
I/O connector.....	68-pin male SCSI
Power requirement	
+5 VDC.....	370 mA typical, 700 mA maximum
Contact material	Gold-clad silver alloy
Dimensions (W \times H \times D).....	2.0 cm \times 10.0 cm \times 16.3 cm (0.8 in. \times 3.9 in. \times 6.4 in.)
Weight.....	250 g (9 oz)

Environment

Operating temperature.....	0 °C to 50 °C
Storage temperature	–20 °C to 70 °C
Relative humidity	5% to 85% noncondensing
Pollution Degree	2
Approved at altitudes up to	2,000 m
Indoor use only	

Accessories

Visit ni.com for more information about the following accessories.

Table 1. Accessories Available for the NI PXI-2503

Accessory	Part Number
NI TB-2605 terminal block (48 × 1, 1-wire multiplexer) (24 × 1, 2-wire multiplexer) (12 × 1, 4-wire multiplexer)	777878-01
NI TB-2606 terminal block (4 × 6, 2-wire matrix)	777879-01
TBX-68S terminal block with cold-junction sensor	777716-01
CB-68LB screw terminal block	777145-01
1 m SH68-68S shielded cable	185262-01
2 m SH68-68S shielded cable	185262-02
5 m SH68-68S shielded cable	185262-05

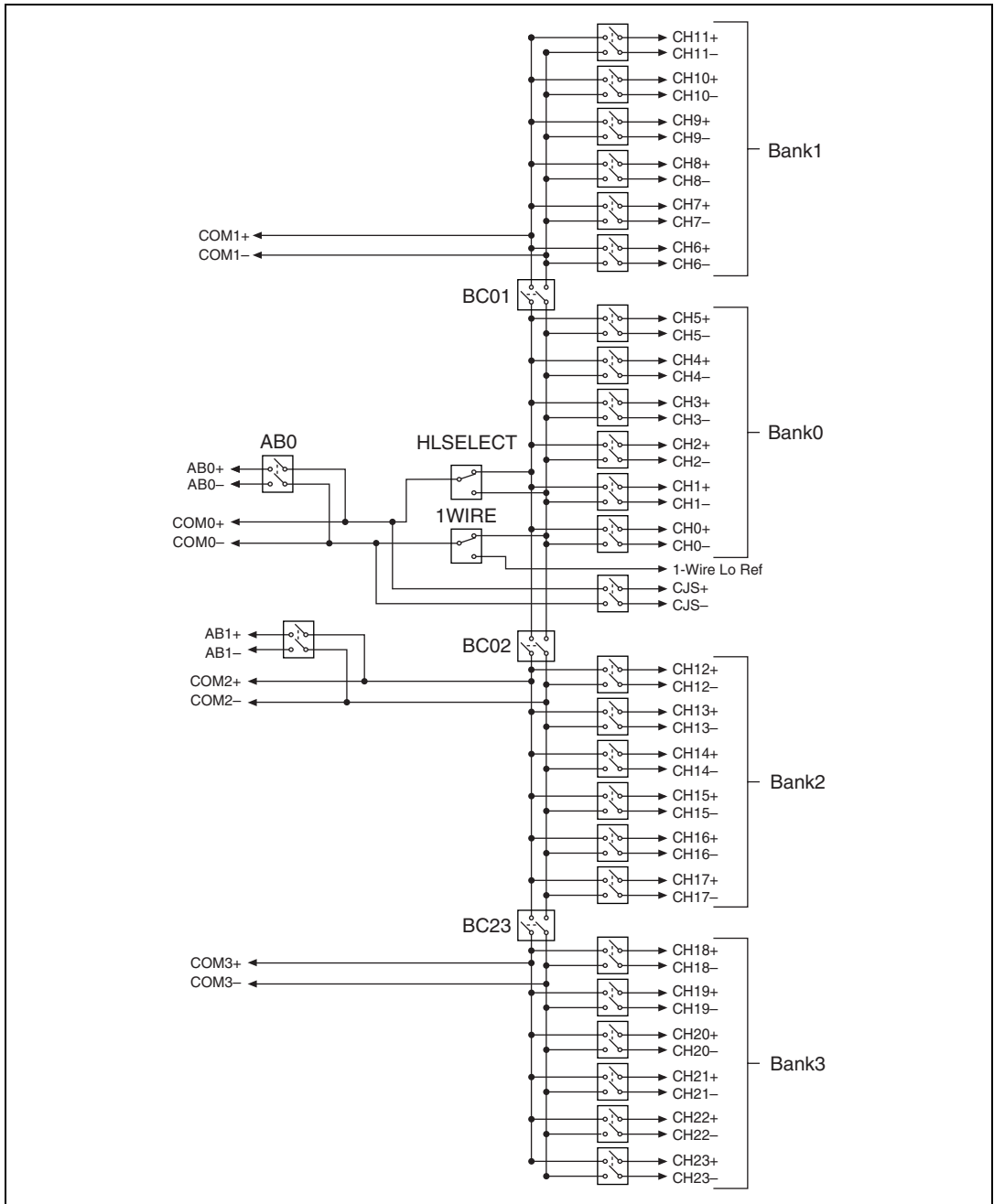


Figure 1. NI PXI-2503 Hardware Diagram

Compliance and Certifications

Safety

This product meets the requirements of the following standards for safety and electrical equipment for measurement, control, and laboratory use:

- IEC 61010-1, EN 61010-1
- UL 3111-1, UL 61010B-1
- CAN/CSA C22.2 No. 1010.1



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

Electromagnetic Compatibility

EmissionsEN 55011 Class A at 10 m
FCC Part 15A above 1 GHz

ImmunityEN 61326:1997 + A2:2001,
Table 1

EMC/EMICE, C-Tick, and FCC Part 15
(Class A) Compliant



Note For EMC compliance, you *must* operate this device with shielded cabling.

CE Compliance

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

Low-Voltage Directive (safety).....73/23/EEC

Electromagnetic Compatibility
Directive (EMC)89/336/EEC



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/hardref.nsf, search by model number or product line, and click the appropriate link in the Certification column.

National Instruments™, NI™, and ni.com™ are trademarks of National Instruments Corporation. Product and company names mentioned herein are trademarks or trade names of their respective companies. For patents covering National Instruments products, refer to the appropriate location: **Help» Patents** in your software, the `patents.txt` file on your CD, or ni.com/patents.

© 2003 National Instruments Corp. All rights reserved.



323533B-01

Dec03