

Specifications for the NI PXI-2503

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..... 48x1 1-wire multiplexer
24x1 2-wire multiplexer
Dual 12x1 2-wire multiplexers
Quad 6x1 2-wire multiplexers
12x1 4-wire multiplexer
4x6 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)

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DC path resistance
Initial.....<0.1 Ω
End of life>1 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 rises rapidly 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

Maximum scan rate200 cycles/s

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 and STAR,
Front panel

Minimum pulse width

PXI trigger lines and STAR..... 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, non-latching

I/O connector..... 68-pin male SCSI

Contact material Gold-clad silver alloy

Dimensions (W \times H \times D)..... 3 cm \times 10 cm \times 16 cm
(0.8 in. \times 3.9 in. \times 6.3 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

Accessories

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

Table 1. Accessories Available for the NI PXI-2501

Accessory	Part Number
NI TB-2605 terminal block (48x1 1-wire multiplexer) (24x1 2-wire multiplexer) (12x1 4-wire multiplexer)	777878-01
NI TB-2606 terminal block (4x6 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

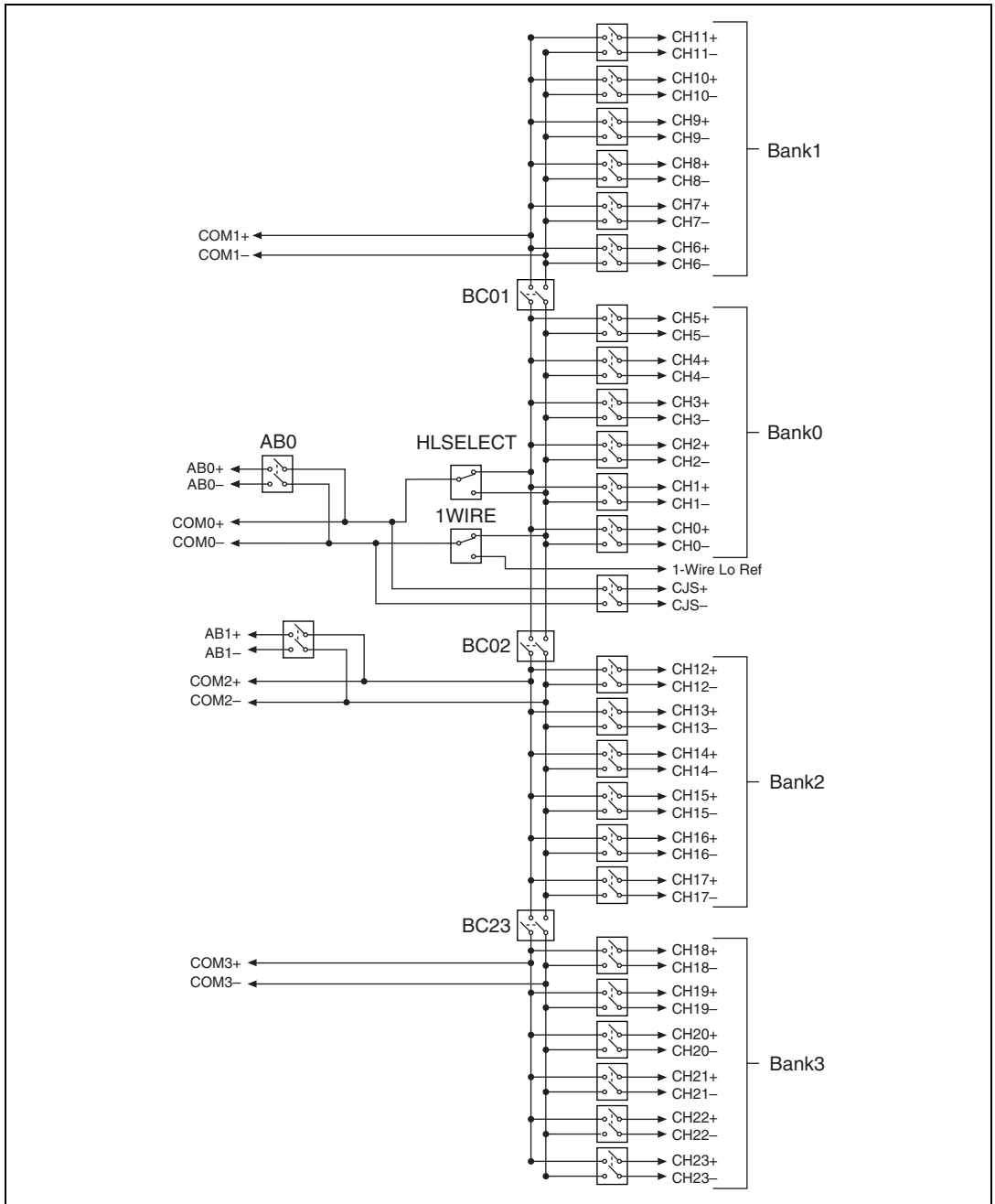


Figure 1. NI PXI-2503

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 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 to ni.com.

Electromagnetic Compatibility

Emissions	EN 55011 Class A at 10 m FCC Part 15A above 1 GHz
Immunity	EN 61326:1997 + A2:2001, Table 1
EMC/EMI	CE, 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, click **Declarations of Conformity Information** at ni.com/hardref.nsf/.