NI PXI-2530 Specifications

128-Channel Reed Relay Multiplexer/Matrix

This document lists specifications for the NI PXI-2530 multiplexer/matrix module. All specifications are subject to change without notice. Visit `ni.com/manuals` for the most current specifications.

Configurations..... 128 × 1, 1-wire multiplexer
64 × 1, 2-wire multiplexer
32 × 1, 4-wire multiplexer
4 × 32, 1-wire matrix
8 × 16, 1-wire matrix
4 × 16, 2-wire matrix

Note The NI PXI-2530 has eight interconnected banks of 16 × 1, 1-wire multiplexers. These multiplexers can be used in any combination with the independent topology.

Input Characteristics

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

Maximum switching voltage..... 60 VDC, 30 VAC_{rms}, CAT I
(channel-to-channel and channel-to-ground)

Maximum current..... 0.4 A
(per terminal or internal path)

Maximum switching power ..... 10 W
(per channel, resistive)

NATIONAL INSTRUMENTS

Typical DC path resistance
(channel-to-common)

Initial.....<2 Ω

End of life.....≥3 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 may rise rapidly above 1 Ω.

Typical thermal EMF.....<50 µV
(1-wire configuration, channel-to-common)

RF Performance Characteristics

Typical bandwidth
(50 Ω system, 1-wire configuration referenced to 1WREF)

16 × 1.....>15 MHz

128 × 1.....>3 MHz

Typical channel-to-channel isolation
(50 Ω system, 1-wire configuration referenced to 1WREF)

200 kHz .....>60 dB

1 MHz.....>40 dB

Dynamic Characteristics

Maximum scan rate .....900 channels/s

Simultaneous drive limit.....64 relays

Typical relay life

Mechanical .....1,000,000,000 cycles

Electrical (resistive)

10 V, 100 mA.....100,000,000 cycles

25 V, 400 mA.....5,000,000 cycles

60 V, 160 mA.....1,000,000 cycles

Note Reed relays are highly susceptible to damage from in-rush currents. Switching capacitive loads without resistive or inductive protection may weld the relay contacts in less than 1,000,000 cycles.

Trigger Characteristics

Input trigger

- Sources ..... PXI trigger lines 0–7, Front panel
- Minimum pulse width ..... 150 ns
- Front panel input voltage
  - Minimum ..... –0.5 V
  - V_{IL} maximum ..... +0.7 V
  - V_{IH} minimum ..... +2.0 V
  - Nominal ..... +3.3 V
  - Maximum ..... +5.5 V

Note The NI PXI-2530 can recognize trigger pulse widths that are less than 150 ns by disabling digital filtering. For information about disabling digital filtering, refer to the *NI Switches Help*.

Output trigger

- Destinations ..... PXI trigger lines 0–7, Front panel
- Pulse width ..... Programmable (1 µs to 62 µs)
- Front panel nominal voltage ..... +3.3 V TTL, 8 mA

Physical Characteristics

- Relay types ..... Reed
- Contact material ..... Rhodium
- Front panel connector ..... 176-pin docking station plug
- Dimensions (W × H × D) ..... Single PXI slot, 3U
  2.0 cm × 10.0 cm × 17.5 cm
  (0.8 in. × 3.9 in. × 6.9 in.)
- Weight ..... 400 g
  (14 oz)

Environment

Operating temperature .....0 °C to 55 °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-2530

Accessory	Part Number
NI TB-2630 Terminal Block (multiplexer)	778733-01
NI TB-2631 Terminal Block (4 × 32, 1-wire matrix, 4 × 16, 2-wire matrix)	778734-01
NI TB-2632 Terminal Block (8 × 16, 1-wire matrix)	778735-01

Caution You *must* install mating connectors according to local safety codes and standards and according to the specifications provided by the connector manufacturer. You are responsible for verifying safety compliance of third-party connectors and their usage according to the relevant standard(s), including UL and CSA in North America and IEC and VDE in Europe.

Table 2. Third-Party Accessories for the NI PXI-2530

Accessory	Manufacturer	Manufacturer Part Number
Mating front panel connector, right-angle	Molex	52755-1760

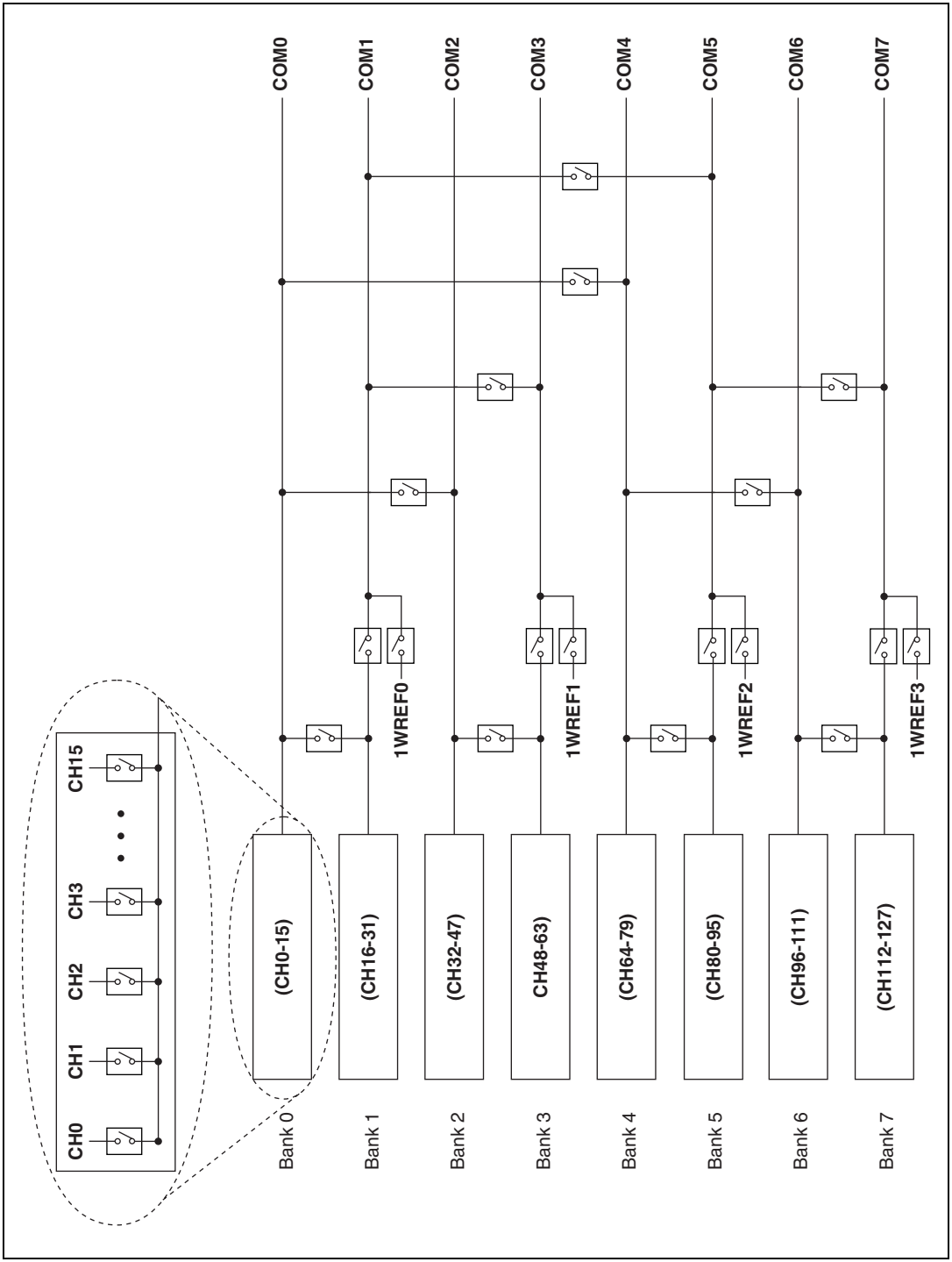

Figure 1. NI PXI-2530 Power-On State (All Relays Open)

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

Electromagnetic Compatibility

Emissions.....EN 55011 Class A at 10 m
FCC Part 15A above 1 GHz

Immunity .....EN 61326:1997 + A2:2001, Table 1

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

323467C-01 Feb04