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Specifications for the NI PXI-2591

4 GHz 4x1 50 Ω Multiplexer

This document lists specifications for the NI PXI-2591 multiplexer module. All specifications are subject to change without notice. Visit `ni.com/manuals` for the most current specifications.

Configuration ..... 4x1 multiplexer

RF Performance Characteristics

Characteristic impedance (Z_0)..... 50 Ω nominal

Insertion loss

≤2.5 GHz..... <0.6 dB

≤4 GHz..... <0.9 dB

VSWR

≤2.5 GHz..... <1.3

≤4 GHz..... <1.5

Channel-to-channel isolation

≤2.5 GHz..... >60 dB

≤4 GHz..... >55 dB

Input Characteristics

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

Maximum switching voltage..... 30 V
(channel-to-channel and channel-to-ground)

Maximum switching current ..... 0.33 A

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Maximum carry current .....0.33 A

Maximum switching power .....10 W

Note National Instruments recommends against switching active RF signals. As a relay actuates, the channel is momentarily unterminated. Some RF sources can be damaged by reflections if their outputs are not properly terminated. Consult your RF source documentation for more information.

Maximum RF carry power .....10 W

DC path resistance

Initial.....<0.2 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.

Dynamic Characteristics

Relay operate time (at 20 °C) .....15 ms

Release time (at 20 °C).....15 ms

Expected relay life

Mechanical .....5,000,000 cycles

Electrical.....100,000 cycles (maximum load)

Trigger Characteristics

Input trigger

Sources .....PXI trigger lines 0–7 and STAR

Minimum pulse width.....70 ns

Output trigger

Destinations.....PXI trigger lines 0–7

Pulse width .....1 µs

Physical Characteristics

Relay type ..... Electromechanical, non-latching

I/O connectors ..... 5 SMA jacks

Contact material ..... Gold

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

Weight ..... 225 g
(8 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

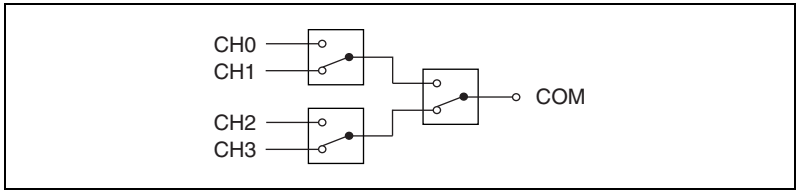

Figure 1. NI PXI-2591 Power-On State

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/`.

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