PXI-2798

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Contents

PXI-2798 Specifications

This document lists specifications for the PXI-2798 (PXI-2798) relay module. All specifications are subject to change without notice. Visit ni.com/manuals for the most current specifications.

About These Specifications

Specifications characterize the warranted performance of the instrument under the stated operating conditions.

Typical Specifications are specifications met by the majority of the instrument under the stated operating conditions and are tested at 23 °C ambient temperature. Typical specifications are not warranted. The following specifications are typical at 23 °C unless otherwise specified.

All voltages are specified in DC, AC_{pk}, or a combination unless otherwise specified.

Topology	Dual transfer

Refer to the **NI Switches Help** at ni.com/manuals for detailed topology information.

Caution The protection provided by the PXI-2798 can be impaired if it is used in a manner not described in this document.

Input Characteristics

Maximum voltage (cold-switching only)	30 V_{rms}

Caution Do not switch 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. Refer to your RF source documentation for more information.

Maximum carry current (per channel)	0.6 A_{rms}
Maximum RF carry power (50 Ω load)	18 W

Note The switching power is limited by the maximum switching current and the maximum voltage. Channel to common switching power must not exceed 18 W.

Note National Instruments recommends against switching RF signals below -35 dBm with this device.

RF Performance Characteristics

Characteristic impedance (Z_0)	50 Ω nominal

Insertion loss

≤6 GHz	<0.3 dB
≤12.4 GHz	<0.4 dB
≤18 GHz	<0.5 dB
≤26.5 GHz	<0.7 dB
≤40 GHz	<0.8 dB

Voltage standing wave ratio (VSWR)

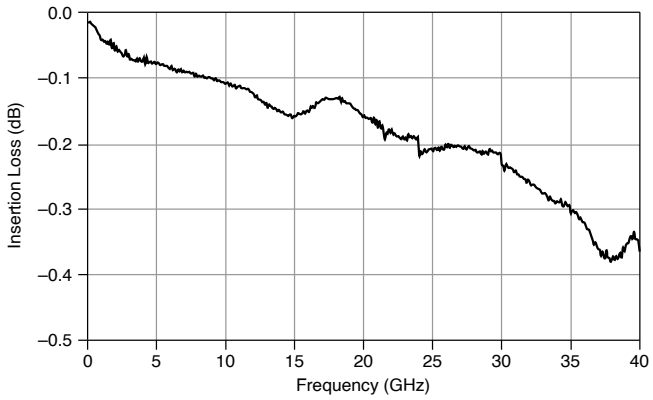
≤6 GHz	<1.3
≤12.4 GHz	<1.4
≤18 GHz	<1.5
≤26.5 GHz	<1.7
≤40 GHz	<1.9

Open channel isolation	
≤6 GHz	>70 dB
≤12.4 GHz	>60 dB
≤18 GHz	>60 dB
≤26.5 GHz	>55 dB
≤40 GHz	>50 dB

RF carry power	
≤26.5 GHz	18 W
≤40 GHz	10 W

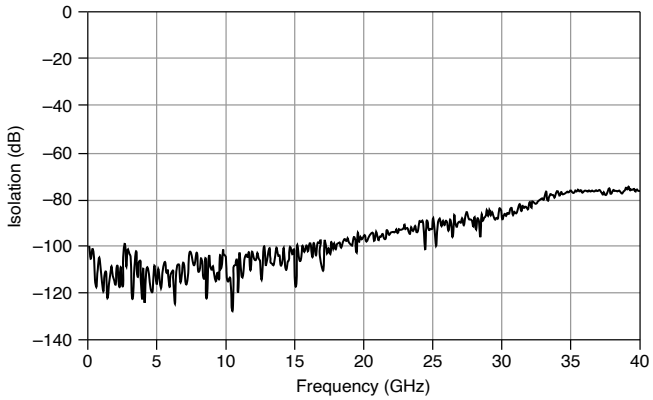
Refer to the following figure for the typical insertion loss of the PXI-2798.

Figure 1. Typical Insertion Loss



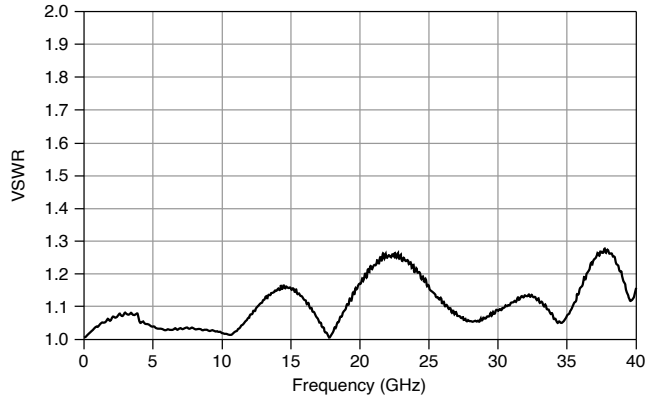
Refer to the following figure for the typical isolation of the PXI-2798.

Figure 2. Typical Isolation



Refer to the following figure for the typical VSWR of the PXI-2798.

Figure 3. Typical VSWR



Dynamic Characteristics

Relay operate/release time	15 ms

Note Certain applications may require additional time for proper settling. Refer to the **NI Switches Help** at ni.com/manuals for more information about including additional settling time.

Recommended cycle speed	5 channels/s
Expected mechanical relay life	2.5×10^6 cycles
Insertion loss repeatability	<0.03 dB (typical)

Trigger Characteristics

Input trigger

Sources	PXI trigger lines <0...7>
Minimum pulse width	150 ns

Note The PXI-2798 can recognize trigger pulse widths less than 150 ns if you disable digital filtering. Refer to the **NI Switches Help** at ni.com/manuals for information about disabling digital filtering.

Output trigger

Destinations	PXI trigger lines <0...7>

Pulse width	Programmable (1 µs to 62 µs)

Physical Characteristics

Relay manufacturer/PN	Radiall/R578 series
Relay type	Electromechanical, latching
Contact material	Beryllium copper, gold-plated
I/O connector	8 SMA 2.9 jacks
SMA torque	0.8 N · m to 1.1 N · m (7 in. · lbs to 10 in. · lbs)
PXI power requirement	2.5 W at 3.3 V 1 W at 5 V 4 W at 12 V
Dimensions (L × W × H)	3U, two slots, PXI/cPCI module 21.6 cm × 4.1 cm × 13.0 cm (8.5 in. × 1.6 in. × 5.1 in.)
Weight	279 g (9.75 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
Maximum altitude	2,000 m

Indoor use only.

Shock and Vibration

Operational Shock	30 g peak, half-sine, 11 ms pulse (Tested in accordance with IEC 60068-2-27. Test profile developed in accordance with MIL-PRF-28800F.)

Random Vibration

Operating	5 Hz to 500 Hz, 0.3 g_{rms}
Nonoperating	5 Hz to 500 Hz, 2.4 g_{rms} (Tested in accordance with IEC 60068-2-64. Nonoperating test profile exceeds the requirements of MIL-PRF-28800F, Class 3.)

Compliance and Certifications

Safety

This product is designed to meet the requirements of the following electrical equipment safety standards 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 the Online Product Certification section.

Electromagnetic Compatibility

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

- EN 61326-1 (IEC 61326-1): Class A emissions; Basic immunity
- EN 55011 (CISPR 11): Group 1, Class A emissions
- AS/NZS CISPR 11: Group 1, Class A emissions
- FCC 47 CFR Part 15B: Class A emissions
- ICES-001: Class A emissions

Note In the United States (per FCC 47 CFR), Class A equipment is intended for use in commercial, light-industrial, and heavy-industrial locations. In Europe, Canada, Australia, and New Zealand (per CISPR 11), Class A equipment is intended for use only in heavy-industrial locations.

Note Group 1 equipment (per CISPR 11) is any industrial, scientific, or medical equipment that does not intentionally generate radio frequency energy for the treatment of material or inspection/analysis purposes.

Note For EMC declarations, certifications, and additional information, refer to the Online Product Certification section.

CE Compliance CE

This product meets the essential requirements of applicable European Directives, as follows:

- 2014/35/EU; Low-Voltage Directive (safety)
- 2014/30/EU; Electromagnetic Compatibility Directive (EMC)

Online Product Certification

Refer to the product Declaration of Conformity (DoC) for additional regulatory compliance information. To obtain product certifications and 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.

Environmental Management

NI is committed to designing and manufacturing products in an environmentally responsible manner. NI recognizes that eliminating certain hazardous substances from our products is beneficial to the environment and to NI customers.

For additional environmental information, refer to the **Minimize Our Environmental Impact** web page at ni.com/environment. This page contains the environmental regulations and directives with which NI complies, as well as other environmental information not included in this document.

Waste Electrical and Electronic Equipment (WEEE)

> **EU Customers** At the end of the product life cycle, all NI products must be disposed of according to local laws and regulations. For more information about how to recycle NI products in your region, visit ni.com/environment/weee.

电子信息产品污染控制管理办法（中国 RoHS）

> **中国客户** National Instruments 符合中国电子信息产品中限制使用某些有害物质指令(RoHS)。关于 National Instruments 中国 RoHS 合规性信息，请登录 ni.com/environment/rohs_china。(For information about China RoHS compliance, go to ni.com/environment/rohs_china.)