NI SCXI™-1195 Specifications

5 GHz Quad 4 x 1 Multiplexer

This document lists specifications for the NI SCXI-1195 multiplexer module. All specifications are subject to change without notice. Visit `ni.com/manuals` for the most current specifications.

Configuration ..... Quad 4 × 1 multiplexer

Input Characteristics

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

Maximum switching voltage ..... 30 V

Maximum switching current ..... 0.5 A
(per channel)

Maximum carry current ..... 0.5 A
(per channel)

Maximum RF 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. Refer to your RF source documentation for more information.

DC path resistance

Initial ..... <0.25 Ω

End-of-life ..... ≥1.0 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.

RF Performance Characteristics

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

Values in parentheses are typical.

Insertion loss

≤1 GHz.....<0.7 dB (<0.4 dB)

≤3 GHz.....<1.7 dB (<1.0 dB)

≤5 GHz.....<2.8 dB (<2.0 dB)

Voltage standing wave ratio (VSWR)

≤1 GHz.....<1.25 (<1.1)

≤3 GHz.....<1.50 (<1.3)

≤5 GHz.....<1.85 (<1.5)

Isolation

≤1 GHz.....>70 dB (>78 dB)

≤3 GHz.....>55 dB (>69 dB)

≤5 GHz.....>30 dB (>38 dB)

Typical bank-to-bank crosstalk

≤3 GHz.....< –90 dB

≤5 GHz.....< –60 dB

Typical channel-to-channel skew....<1 ps

Typical propagation delay.....700 ps

Typical rise time (10% to 90%) .....65 ps

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Refer to Figures 1, 2, and 3 for typical insertion loss, typical VSWR, and typical isolation, respectively.

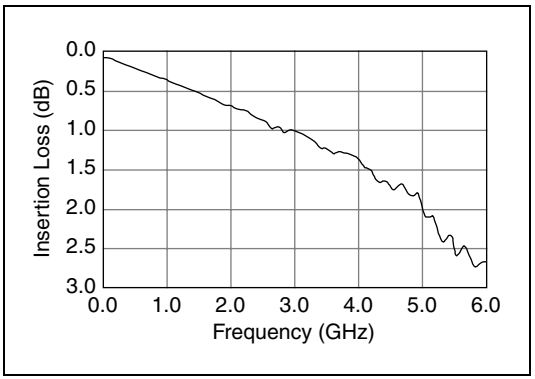

Figure 1. Typical Insertion Loss

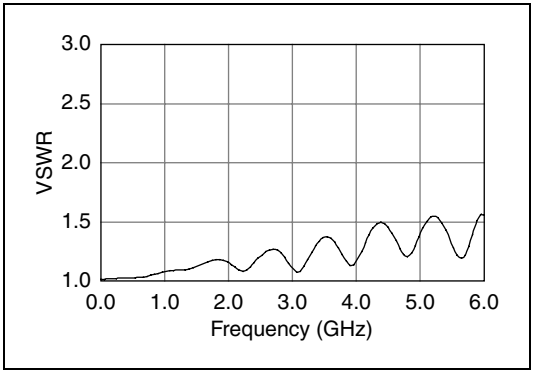

Figure 2. Typical VSWR

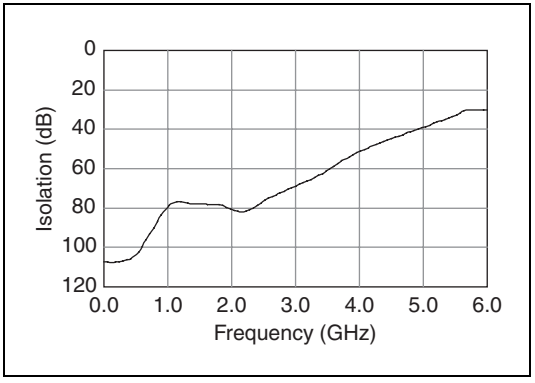

Figure 3. Typical Isolation

Module Load Derating

Caution When operating the SCXI-1195 at ambient temperatures >30 °C, a load derating may apply to the total power the module can handle.

Note Total power is the sum of the signal power levels in each bank of the module. For example, passing a 10 W signal through each bank would equate to a total power of 40 W.

Caution Refer to the derating chart in Figure 4 to determine the maximum total power your SCXI-1195 can handle. If the SCXI-1195 is operated at power levels above those listed in the derating chart, permanent damage may occur.

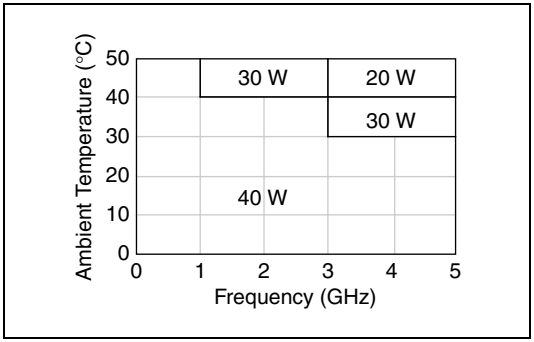

Figure 4. Total Allowed Power (W)

Dynamic Characteristics

Maximum scan rate ..... 45 channels/s

Maximum relay operate time ..... 10.4 ms

Expected relay life

Mechanical ..... 1×10^6 cycles

Electrical ..... 3×10^5 cycles
(30 V, 10 mA, DC resistive)

Trigger Characteristics

Input trigger

Sources ..... SCXI trigger lines 0–7, rear connector

Minimum pulse width ..... 150 ns

Output trigger

Destinations ..... SCXI trigger lines 0–7, rear connector

Pulse width ..... Programmable (1 µs to 62 µs)

Physical Characteristics

Relay type ..... Electromechanical, latching

I/O connectors ..... 20 SMA jacks

SCXI DC power requirement

+5 VDC ..... 50 mA

+18.5 VDC to +25 VDC ..... 120 mA

–18.5 VDC to –25 VDC ..... 110 mA

Dimensions (L × W× H) ..... 19.8 × 3.0 × 17.3 cm (7.8 × 1.2 × 6.8 in.)

Weight ..... 737 g (1 lb 10 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. NI Accessories for the NI SCXI-1195

Connectors	Length	Part Number
SMA 100, SMA male to SMA male flexible cable	0.15 m	763443-01
	0.45 m	763444-01
SMA 50 Ohm termination plug	—	778353-01
Torque wrench for SMA connectors	—	187106-01

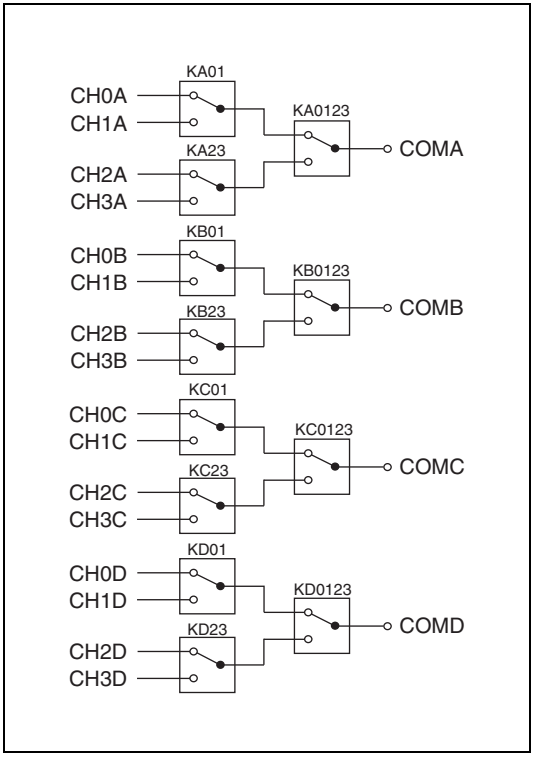

Figure 5. NI SCXI-1195 Power-On State

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 61010-1, CSA 61010-1

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

Electromagnetic Compatibility

This product is designed to meet the requirements of the following standards of EMC for electrical equipment for measurement, control, and laboratory use:

- EN 61326 EMC requirements; Minimum Immunity
- EN 55011 Emissions; Group 1, Class A
- CE, C-Tick, ICES, and FCC Part 15 Emissions; Class A

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

Caution Device relays might change state momentarily during electrostatic discharge.

Caution In the presence of 1 kV electrical fast transients on AC MAINs, switches can be set to an unknown state; in the absence of transient phenomena, switches will operate normally again.

CE Compliance

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

- 73/23/EEC; Low-Voltage Directive (safety)
- 89/336/EEC; Electromagnetic Compatibility Directive (EMC)

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

Waste Electrical and Electronic Equipment (WEEE)

EU Customers At the end of their life cycle, all products *must* be sent to a WEEE recycling center. For more information about WEEE recycling centers and National Instruments WEEE initiatives, visit `ni.com/environment/weee.htm`.

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