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Specifications for the NI SCXI™-1192

18 GHz 8-SPDT 50 Ω Relay Module

This document lists specifications for the NI SCXI-1192 relay module. All specifications are subject to change without notice. Visit `ni.com/manuals` for the most current specifications.

Configuration ..... 8-channel SPDT

RF Performance Characteristics

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

Insertion loss

- ≤4 GHz..... <0.2 dB
- ≤8 GHz..... <0.3 dB
- ≤12.4 GHz..... <0.4 dB
- ≤18 GHz..... <0.5 dB

VSWR

- ≤1 GHz..... <1.10
- ≤4 GHz..... <1.15
- ≤8 GHz..... <1.25
- ≤12.4 GHz..... <1.35
- ≤18 GHz..... <1.50

Open channel isolation

- ≤1 GHz..... >85 dB
- ≤4 GHz..... >80 dB
- ≤8 GHz..... >70 dB
- ≤12.4 GHz..... >65 dB
- ≤18 GHz..... >60 dB

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NATIONAL INSTRUMENTS

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 carry current .....2 A
(per channel)

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 .....120 W up to 3 GHz
(per channel) 80 W up to 8 GHz
60 W up to 12.4 GHz
50 W up to 18 GHz

The input power for each channel should not exceed the preceding specifications. When carrying active signals on multiple channels, refer to Table 1 for adjusted maximum input power.

Table 1. Maximum Carry Power Per Channel (No Switching)

Active Channels	1 GHz to 3 GHz	3 GHz to 8 GHz	8 GHz to 12.4 GHz	12.4 GHz to 18 GHz
1	120 W	80 W	60 W	50 W
2	60 W	40 W	30 W	25 W
4	30 W	20 W	15 W	12.5 W
8	15 W	10 W	7.5 W	6.25 W

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.

Dynamic Characteristics

Maximum cycle speed ..... 2 cycles/s

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

Expected relay life

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

Electrical ..... 5,000,000 cycles
(5 W, 3 GHz, 50 Ω, VSWR maximum 1.2)

Physical Characteristics

Relay type ..... Electromechanical, latching

I/O connectors ..... 24 SMA jacks

Contact material ..... Gold plate

Dimensions (W × H × D)..... 3.0 cm × 17.3 cm × 19.6 cm
(1.2 in. × 6.7 in. × 7.6 in.)

Weight..... 1090 g
(2 lb 7 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

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`.

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/`.

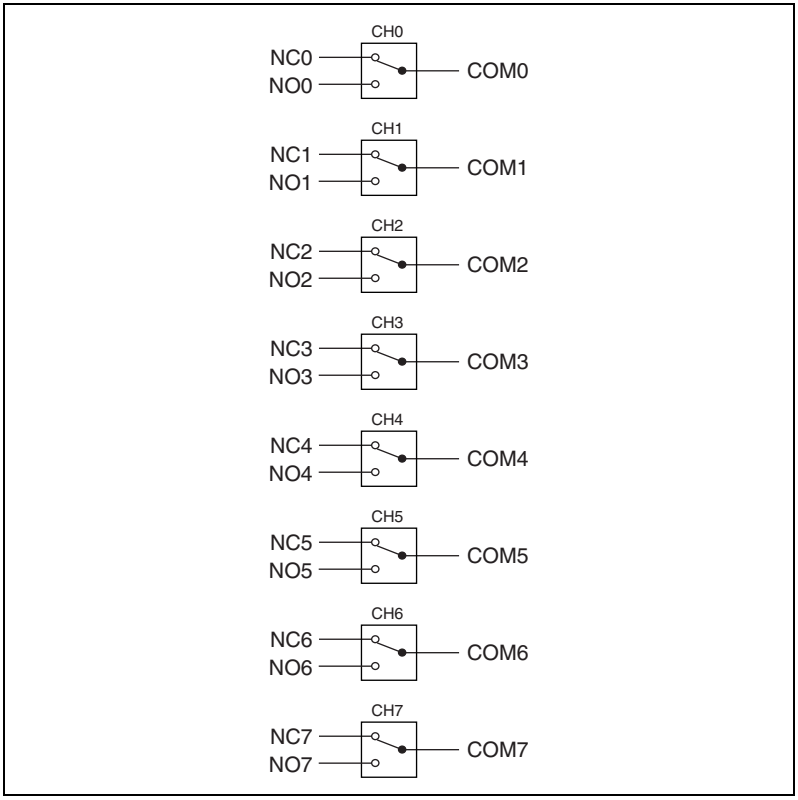


Figure 1. NI SCXI-1192 8-SPDT

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