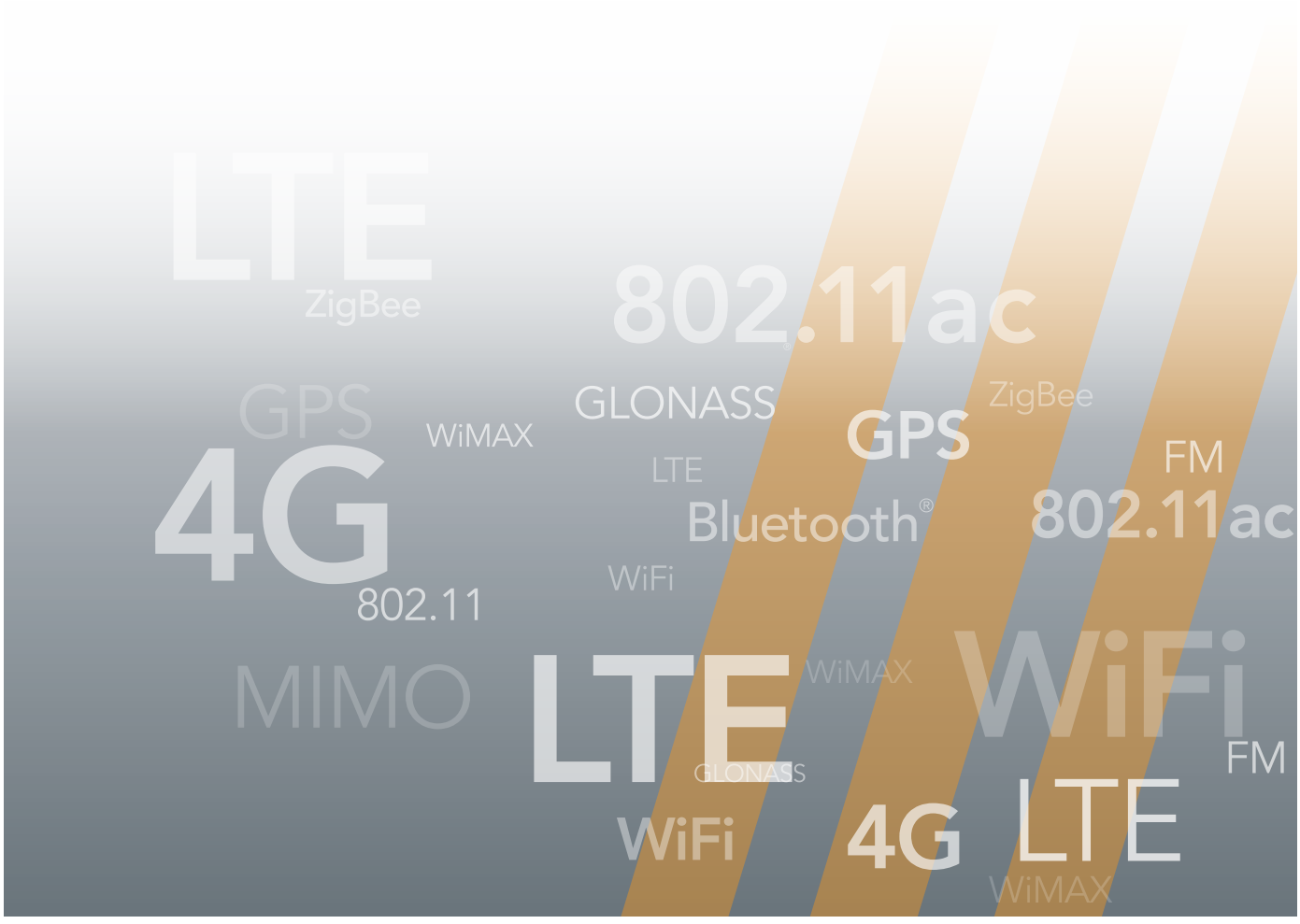
47524
Quad SPDT RF Switch

TECHNICAL SPECIFICATIONS

z47524 PXI
Quad SPDT RF Changeover Switch Module



LITEPOINT

Overview

The z47524 PXI RF switching module has a bank of four individual high performance RF changeover switches (50Ω, SMA, bi-directional) with very low insertion loss, suitable for handling signals up to 2.5 GHz. Applications include aerial switching, routing high frequency signals into oscilloscopes and analyzers.

The z47524 is fitted with high reliability RF Relays, these offer long life with good low level switching performance. Spare RF Relays are built onto the circuit board to facilitate easy maintenance with minimum downtime.

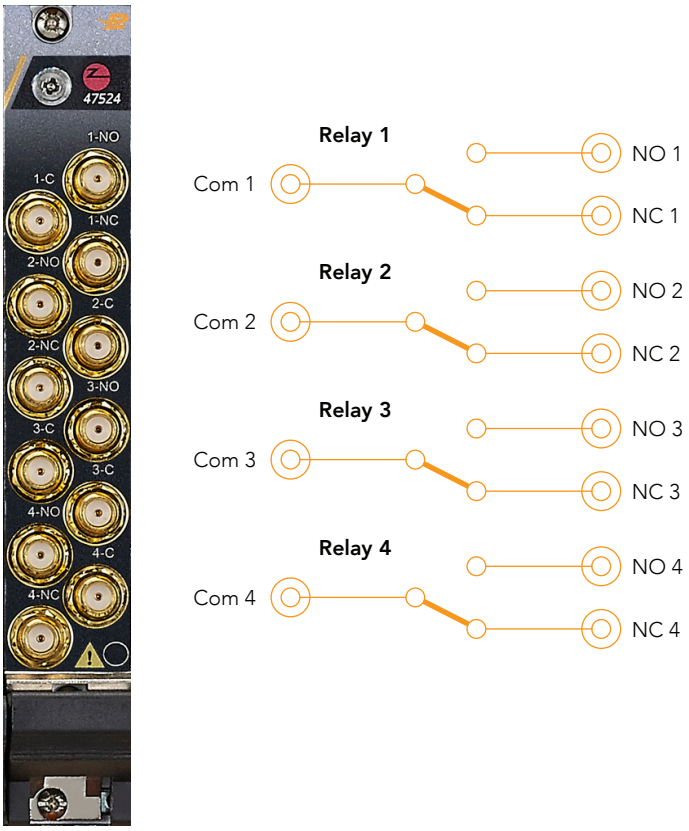


Figure 1: Front Panel and Switching Diagram of z47524 PXI Module

Switch Specifications

Item	Specification
Maximum Switching Power	10 W
Maximum Switching Voltage	30 VDC
Maximum Switching Current	0.5 A
Nominal Switching Capacity	0.01 A @ 24 VDC 10W @ 1.2 GHz
Initial On Path Resistance	< 200 mΩ
Off Path Resistance	> 100 MΩ
Thermal Offset	< 20 µV
Expected Life, Mechanical	> 1,000,000 operations
Expected Life, Electrical	> 300,000 operations, 10 mA @ 24 VDC > 300,000 operations, 10 W @ 2.6 GHz
Switching Time	10 ms
Rise Time	< 0.2 ns

RF Specifications

Item	Specification
Bandwidth	DC to 2.5 GHz
Maximum Switching Power	10 W
Isolation (typical)	> 27 dB, DC to 1 GHz > 17 dB, 1 GHz to 2.5 GHz
Crosstalk (typical)	< -46 dB, DC to 1 GHz < -32 dB, 1 GHz to 2.5 GHz
Insertion Loss (typical)	< 1.5 dB, DC to 1 GHz < 3 dB, 1 GHz to 2.5 GHz
VSWR	< 1.7:1

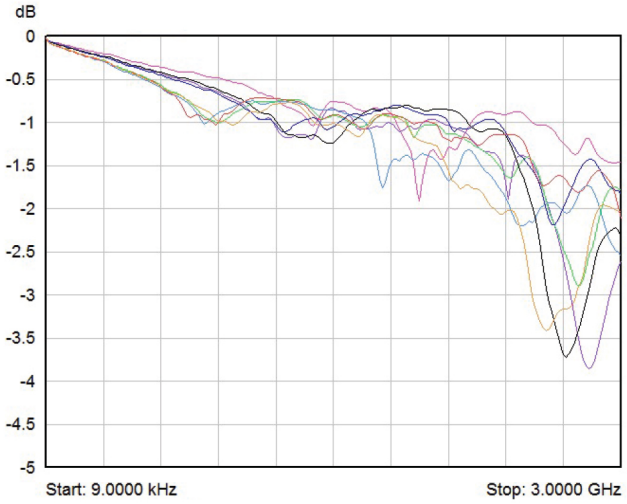


Figure 2: Typical Insertion Loss for all NO and NC inputs

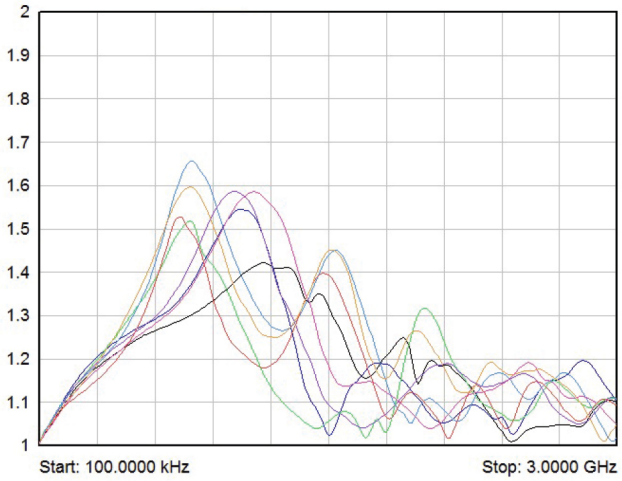


Figure 3: Typical VSWR for all NO and NC inputs

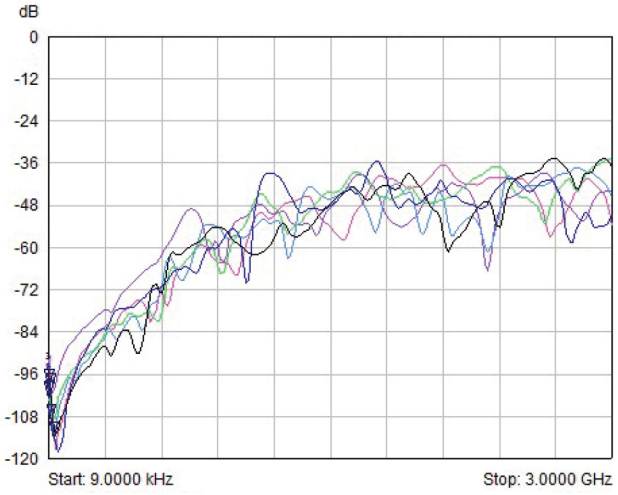


Figure 4: Typical Crosstalk between neighbor channels

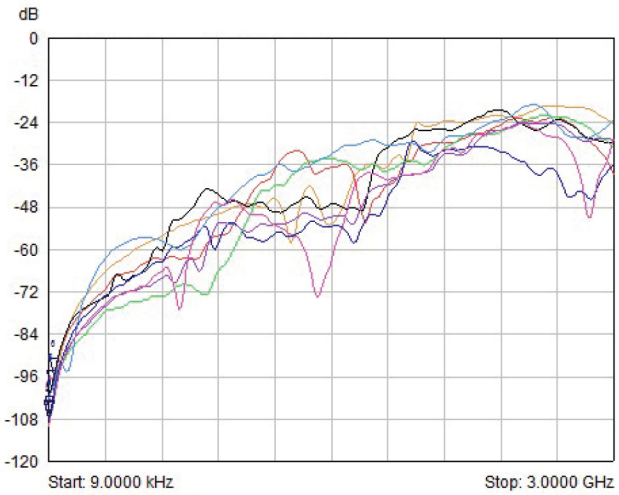


Figure 5: Typical Isolation for all NO and NC inputs

DC Power Supplies

Item	Typical	Maximum
+3.3 V PXI Current	0 A	0 A
+5 V PXI Current	240 mA	320 mA
+12 V PXI Current	0 A	0 A
-12 V PXI Current	0 A	0 A
Total PXI Power & Cooling	1.2 W	1.6 W

PXIe Interface

Item	Specification
PXI Slot Compatibility	PXI Slot and PXI Hybrid Slot Compatible
PCI Interface	33 MHz, 32-bit Interface
PXI Timing & Triggering Signals	PXI_TRIG[0:7], PXI_STAR not implemented

Physical & Environmental

Size & Weight

Item	Specification
Physical Size	Single-Wide 3U PXI Instrument 8.25" x 0.79" x 5.25" (L x W x H) 20.96 cm x 2.01 cm x 13.34 cm (L x W x H)
Weight	240 g

Temperature Range

Item	Specification
Operating	0°C to +55°C ambient
Storage	-20°C to +75°C

Relative Humidity

Item	Specification
Operating or Storage	up to 90% non-condensing

Terminology

Numeric Prefixes

When referring to numeric values, this document will use SI (International System of Units) and IEC (International Electrotechnical Commission) standard prefixes. Prefix definitions are in the following table.

Prefix	Multiplier
n (nano)	1/(1000x1000x1000)
µ (micro)	1/(1000x1000)
m (milli)	1/1000
k/K (kilo)	1000
M (Mega)	1000x1000
G (Giga)	1000x1000x1000
Ki (Kibi)	1024
Mi (Mebi)	1024x1024
Gi (Gibi)	1024x1024x1024

Differential Outputs

Single-Ended is used to refer to the output on either the + or – output pin

Differential is used to refer to the output between the + and- output pins

Vd indicates Volts differential

Vppd indicates Volts peak-to-peak differential

Safety

This product is designed to meet the requirements of the following standard of safety for electrical equipment for measurement, control and laboratory use: EN 61010-1

Electromagnetic Compatibility

CE Marking EN 61326-1:1997 with A1:1998 and A2:2001 Compliant

FCC Part 15 (Class A) Compliant

Emissions

EN 55011	Radiated Emissions, ISM Group 1, Class A, distance 10 m, emissions < 1 GHz
EN 55011	Conducted Emissions, Class A, emissions < 30 MHz Immunity
EN 61000-4-2	Electrostatic Discharge (ESD), 4 kV by Contact, 8 kV by Air
EN 61000-4-3	RF Radiated Susceptibility, 10 V/m
EN 61000-4-4	Electrical Fast Transient Burst (EFTB), 2 kV AC Power Lines
EN 61000-4-5	Surge
EN 61000-4-6	Conducted Immunity
EN 61000-4-8	Power Frequency Magnetic Field, 30 A/m
EN 61000-4-11	Voltage Dips and Interrupts

CE Compliance

This product meets the necessary requirements of applicable European Directives for CE Marking as follows:

73/23/EEC Low Voltage Directive (Safety)
89/336/EEC Electromagnetic Compatibility Directive (EMC)

See Declaration of Conformity for this product for additional regulatory compliance information.

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