

z488xx
RF Switches/Multiplexers
PXI



Port Descriptions

z488xx includes the z48801 Dual Single Pole Double Throw (SPDT), z48821 Single 4:1 Multiplexer and z48822 Dual 4:1 Multiplexer module options.



Label	Type	Description
1,2,3,4	SMA	RF1 to RF4 Multiplexer Input/Output Channels
C1	SMA	RF COM port for corresponding RF1 to RF4 channels
C2	SMA	RF COM port for corresponding RF1 to RF4 channels

z48801 Electrical Specifications

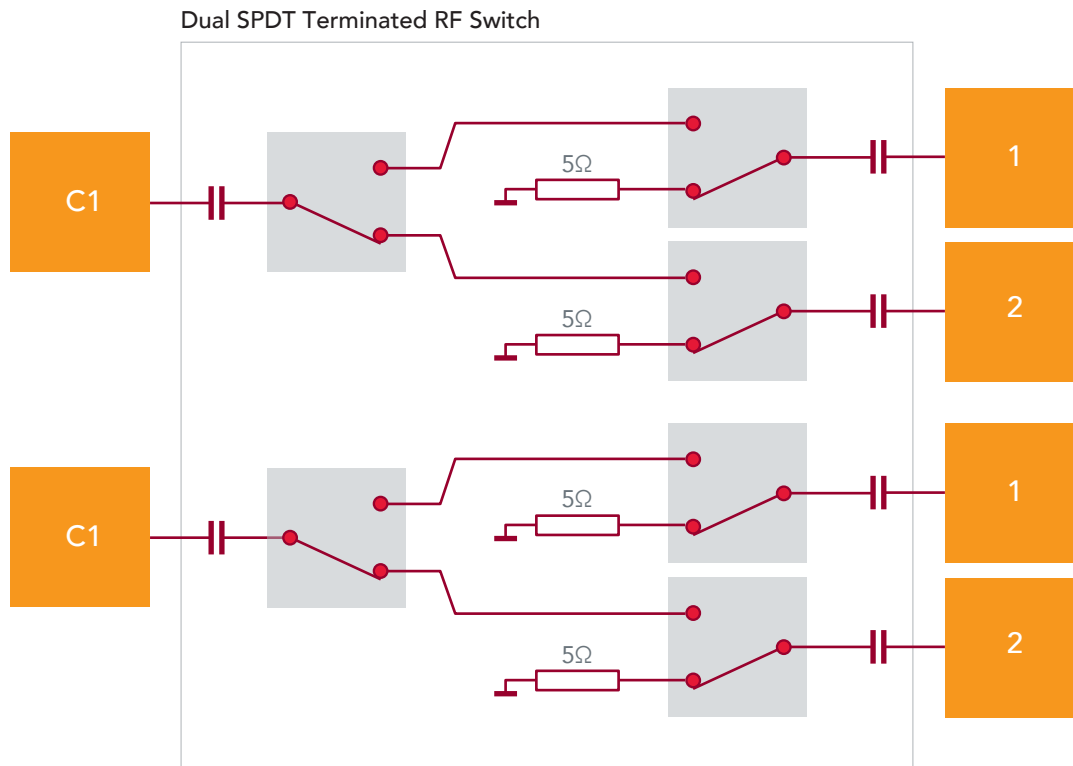


Figure 1: z48801 Block Diagram

z48801 Input/Output

Specification	Value
Input Impedance	50 Ω (AC coupled)
Frequency Range	10 MHz to 6 GHz (usable to 7 GHz)
Input VSWR Thru path: to 3 GHz to 6 GHz Internal termination: to 6 GHz	$\leq 1.35:1$ typical $\leq 1.4:1$ typical $\leq 1.4:1$
Insertion loss @ 10 MHz to 3 GHz to 6 GHz	<2 dB typical <2.5 dB typical <3 dB typical
Isolation to 3 GHz to 6 GHz	>85 dB typical >75 dB typical

Crosstalk bank to bank to 3 GHz to 6 GHz	<-85 dB typical <-65 dB typical
Maximum RF power	+30 dBm (hot or cold switching)
Maximum DC voltage	16 V (AC coupled)
Switching life	Indefinite when used within ratings
Operate time	50 μ s
RF switching time	10 μ s typical rise and fall time

Typical Characteristics

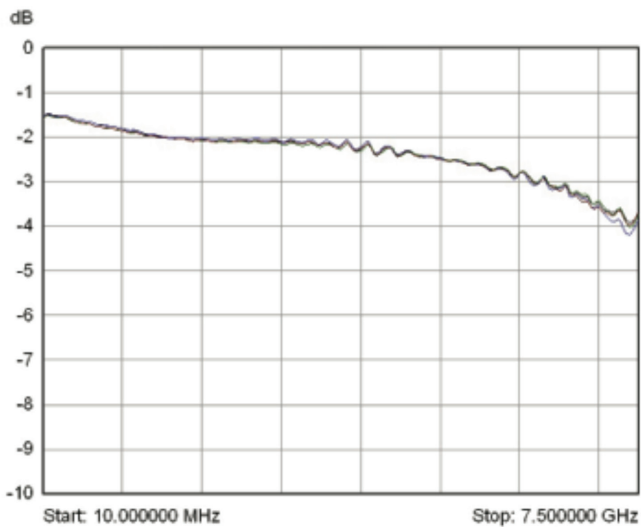


Figure 2: z48801 insertion loss all paths up to 6 GHz

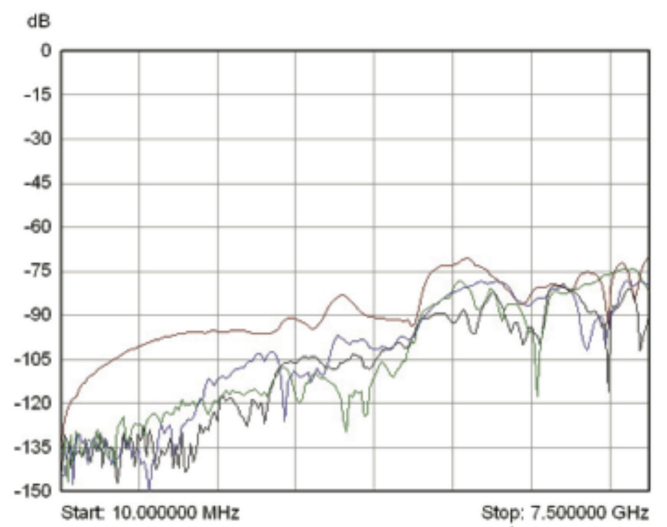


Figure 3: z48801 Crosstalk between banks all paths up to 7.5 GHz

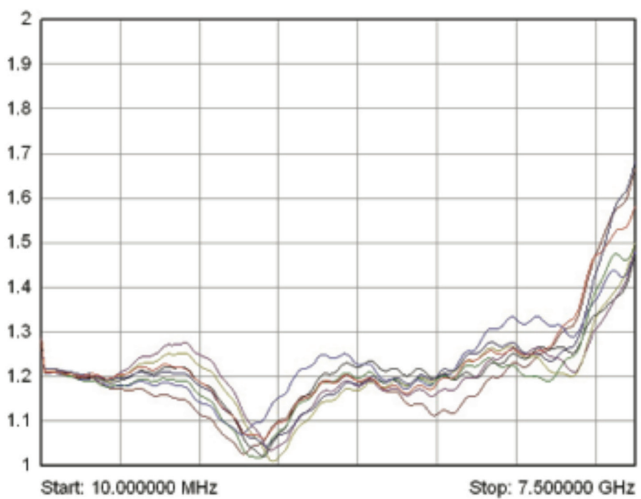


Figure 4: z48801 VSWR Channel to COM all paths up to 7.5 GHz

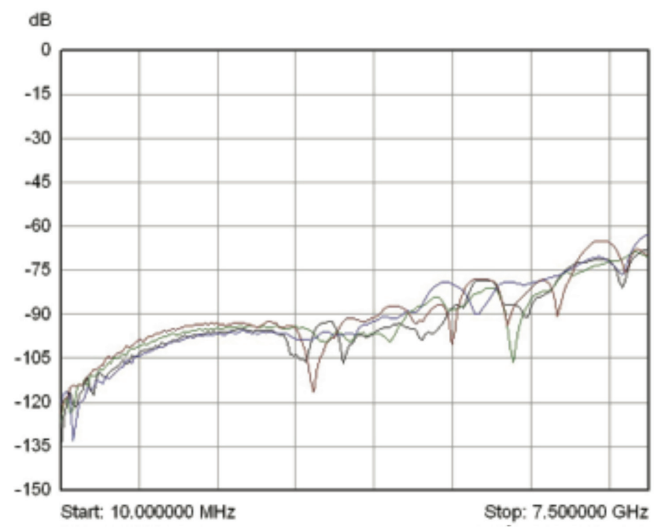


Figure 5: z48801 Max isolation each channel distant path selected up to 7.5 GHz

z48821 Electrical Specifications

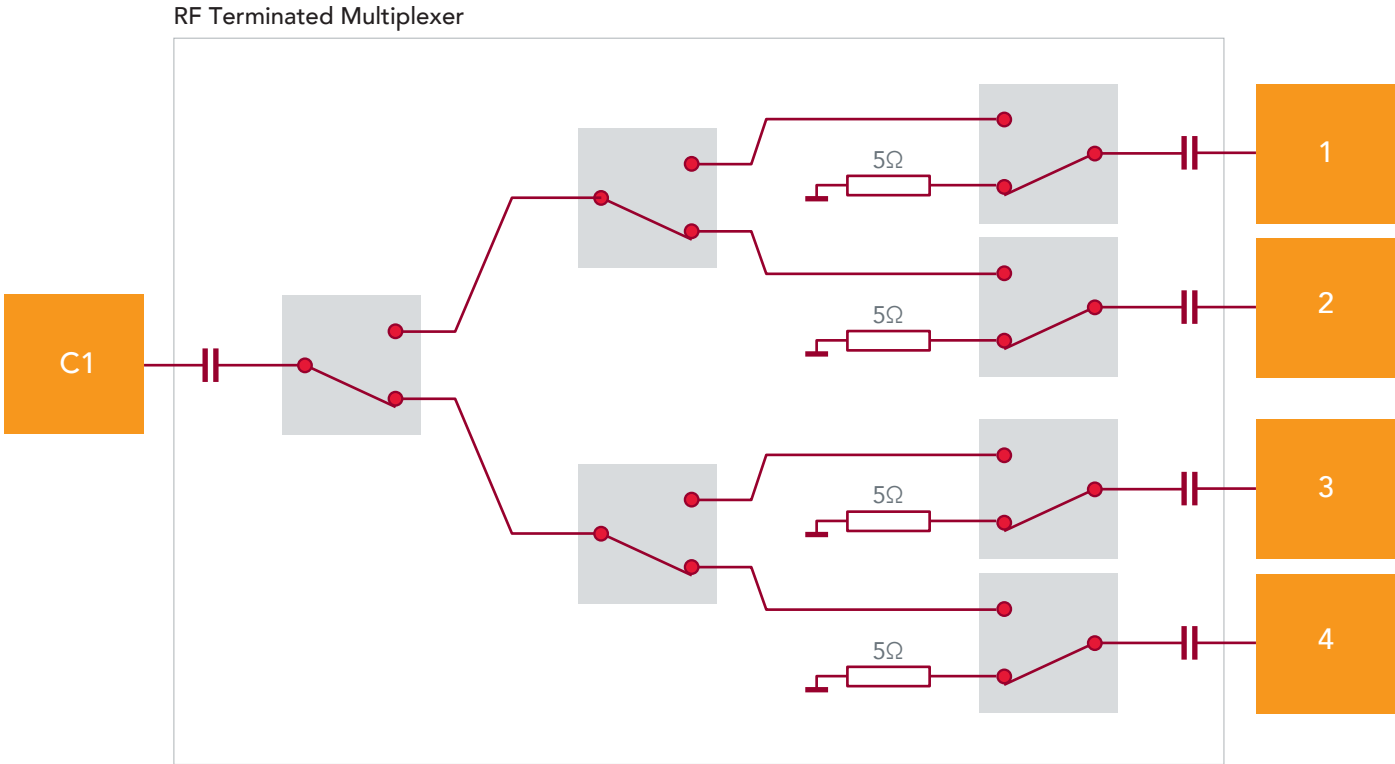


Figure 6: z48821 Block Diagram

z48822 Electrical Specifications

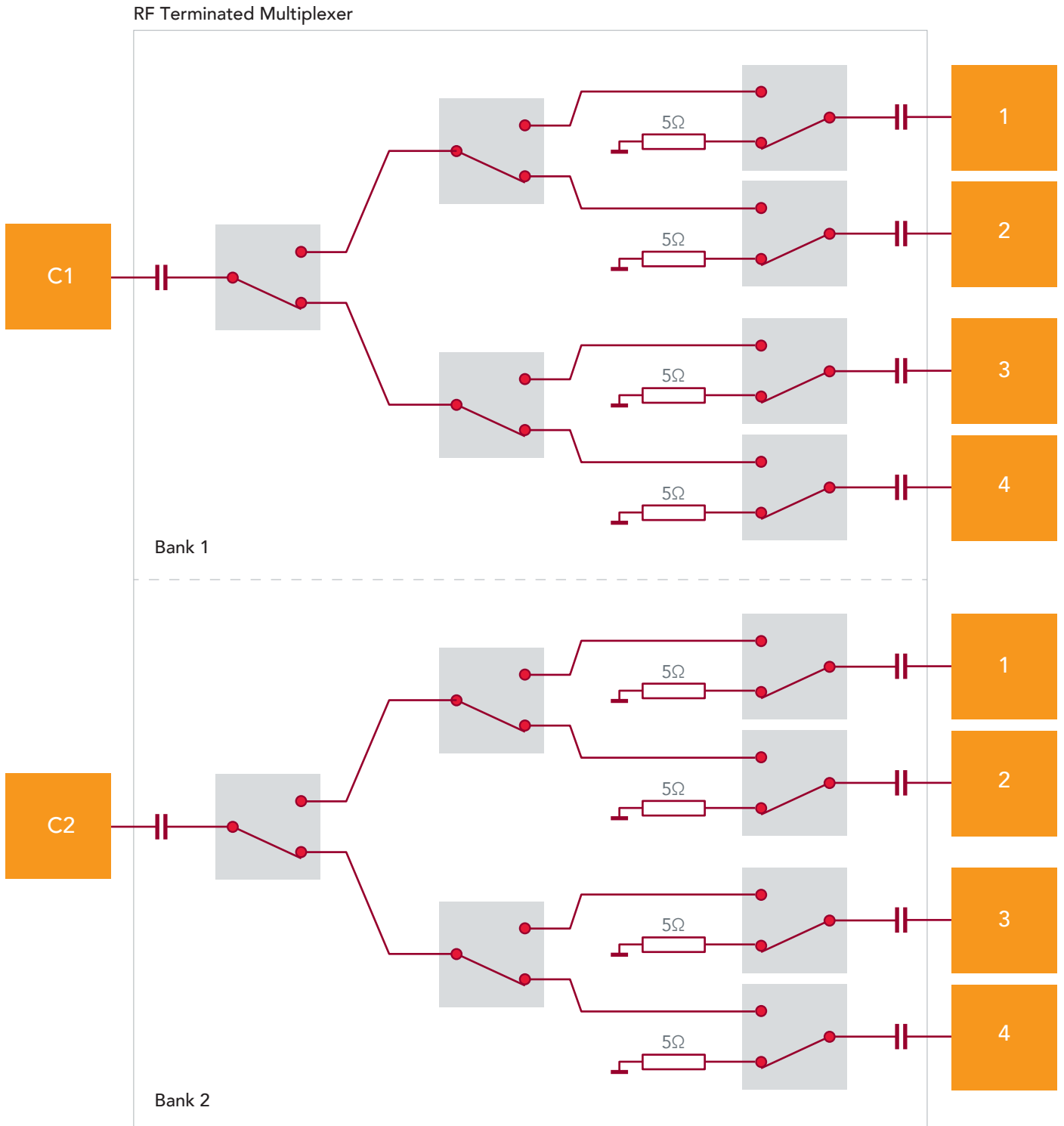


Figure 7: z48822 Block Diagram

z48821 & z48822 Input/Output

Specification	Value
Input Impedance	50 Ω (AC coupled)
Frequency Range	10 MHz to 6 GHz
Input VSWR Channel to COM: to 6 GHz COM to channel: to 3 GHz to 6 GHz Internal termination: to 6 GHz	$\leq 1.3:1$ $\leq 1.4:1$ $\leq 1.45:1$ $\leq 1.25:1$
Insertion loss @ 10 MHz to 3 GHz to 6 GHz	<3.5 dB typical <3.5 dB typical <4.5 dB typical
Isolation to 3 GHz to 6 GHz	>85 dB typical >65 dB typical
Crosstalk bank to bank to 3 GHz to 6 GHz	<-80 dB typical <-60 dB typical
Maximum RF power	+30 dBm (hot or cold switching)
Maximum DC voltage	16 V (AC coupled)
Switching life	Indefinite when used within ratings
Operate time	50 μ s
RF switching time	10 μ s typical rise and fall time

Typical Characteristics

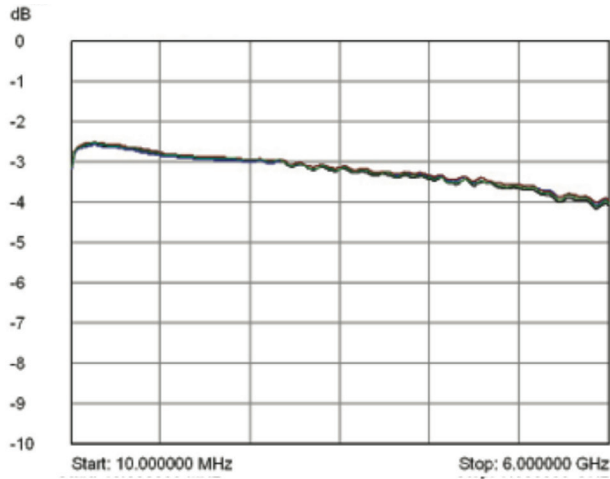


Figure 8: z48821/z48822 insertion loss all paths up to 6 GHz

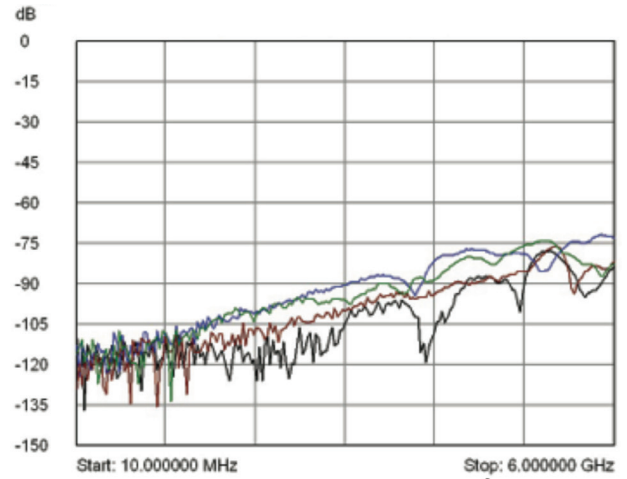


Figure 9: z48821/z48822 Max isolation each channel distant path selected up to 6 GHz

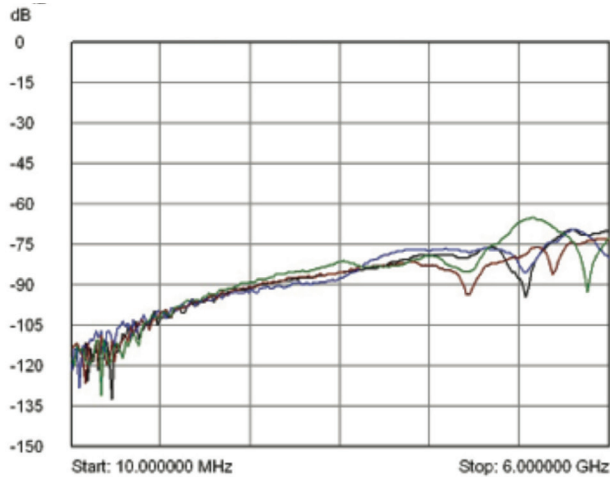


Figure 10: z48821/z48822 Adjacent channel crosstalk all paths up to 6 GHz

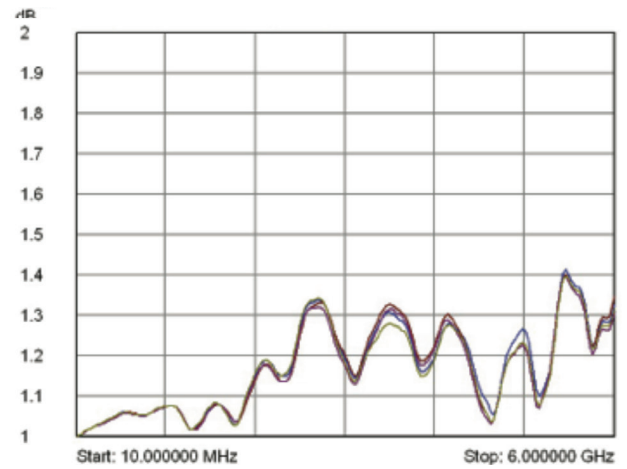


Figure 11: z48821/z48822 VSWR COM to channel all paths up to 6 GHz

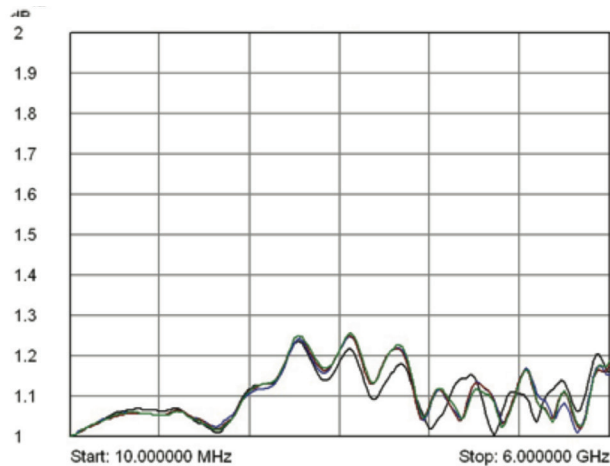


Figure 12: z48821/z48822 VSWR Channel to COM all paths up to 6 GHz

Power & Cooling

Power Supplies

Voltage	Maximum Current
+3.3 VDC	0.03 A
+5 VDC	0.10 A
+12 VDC	0.00 A
-12 VDC	0.00 A

Power Supplies

Voltage	Maximum Current
Total Cooling & Power Consumption	0.6 W

Physical & Environmental

Size & Weight

Specification	Value
Physical size	
z48801 Dual SPDT	1 slot 3U PXI Instrument
z48821 Single 4:1 Multiplexer	1 slot 3U PXI Instrument
z48822 Dual 4:1 Multiplexer	2 slot 3U PXI Instrument

Temperature Range

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

Relative Humidity

Specification	Value
Operating	up to 90%, non-condensing
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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