

Agilent 44478A/B Dual 1x4 RF Multiplexer Module (1.3GHz, 50 Ohm)

Data Sheet

- Switching up to 1 A, 24 W or 24 VA
- Insertion loss less than 1.9dB at 1.3GHz

The 44478A/B multiplexer module is an ideal choice for broadband switching of high-frequency or fast pulse signals. Dual 1-to-4 multiplexers provide bi-directional switching of signals from DC to 1.3 GHz. High channel isolation (>55 dB at 1 GHz) assures quality dynamic-range measurements using spectrum, network, or distortion analyzers.

Each 1-to-4 multiplexer consists of seven relays in a “tree” structure, which provides high isolation and low VSWR (voltage standing wave ratio). All the connectors on the module’s edge are female BNC for ease of wiring. Off-channels can be terminated in resistors to maintain proper operation of DUT circuitry. Simply plug a 50/75Ω SMB-type resistive termination onto the on-board male SMB connectors provided for each channel.

Specifications

Input Characteristics

Maximum Scan Rate:	43 Chans./sec
Maximum Voltage:	42 V, DC + AC peak
Maximum Current:	1 A
Maximum Power: (Per channel)	24 W, 24 VA or 44 dBm
Characteristic Impedance:	
44478A:	50 Ω
44478B:	75 Ω

DC Performance

Thermal Offset:	<6 μV (<2 μV, Typ.)
Initial Closed Channel Resistance:	<1 Ω
Insulation Resistance (between terminals): <(25 °C, 40% RH)	>10 ¹⁰ Ω

Capacitance:

Center-Center:	<0.006 pF
Center-Shield:	<60 pF
Rise Time:	<300 psec
Signal Delay:	<3 nsec

AC Performance

Insertion Loss

Temperature / Humidity	Frequency	Insertion Loss
≤(40 °C, 95% RH)	10 MHz	<0.3 dB
	100 MHz	<0.7 dB
	500 MHz	<1.5 dB
	1.3 GHz	<3.0 dB
≤(25 °C, 40% RH)	10 MHz	<0.2 dB
	100 MHz	<0.5 dB
	500 MHz	<1.1 dB
	1.3 GHz	<1.9 dB

Crosstalk

Configuration	Frequency	Crosstalk
Channel-Channel, Channel-Common	10 MHz	<-90 dB
	100 MHz	<-80 dB
	500 MHz	<-65 dB
	1.3 GHz	<-55 dB

Group-Group, Module-Module

Group-Group, Module-Module	10 MHz	<-90 dB
	100 MHz	<-80 dB
	500 MHz	<-70 dB
	1.3 GHz	<-60 dB

VSWR	Frequency	VSWR
VSWR	10 MHz	<1.20
	100 MHz	<1.25
	500 MHz	<1.35
	1.3 GHz	<1.55

