

RMAT-1001 | 30dB Toggle Switch Step Attenuator

DC to 500MHz | 2W | 1.5:1 | 0 - 30dB

0 to 30dB Toggle Switch Step Attenuator designed for laboratory measurements and general testing purposes. Equipped with 2 x BNC-F, BNC-F/BNC-M, 2 x SMA-F or SMA-F/SMA-M connectors, there are 4 variants to choose from. This RF attenuator is manufactured to precisely meet the RF industry requirements, with quality connectors and toggle switches. Minimum attenuation is 0dB, maximum attenuation is 30dB in 6 steps. Maximum VSWR is 1.5:1 @ 450MHz/9dB selected attenuation (4+3+2dB). Maximum rated power is 2W.

■ Features:

- D.C. to 500MHz
- 30dB attenuation range
- 1/2/3/4/10/10dB steps
- equipped with SMA / BNC connectors
- max. power 2W (CW)

■ Typical applications:

- laboratory test applications
- prototyping and characterisation
- precision measurements
- instrumentation

■ Electrical Specifications:

@ TA = +25°C



Parameter	Testing conditions	Min.	Typ.	Max.	Units
Frequency Range	-	D.C.	-	500	MHz
Impedance	nominal		50		Ω
Attenuation Range	1/2/3/4/10/10 steps	0	-	30	dB
Insertion Loss	D.C. to 500MHz @ 0dB ATT	0.2	0.4	0.7	dB
	D.C. to 50MHz @ 10dB ATT	-	± 0.3	-	dB
Attenuation Accuracy	50MHz to 150MHz @ 10dB ATT	-	± 0.3	-	dB
	150MHz to 500MHz @ 10dB ATT	-	± 0.4	-	dB
VSWR	D.C. to 50MHz	-	1.02 : 1	-	
	50MHz to 150MHz	-	1.04 : 1	-	
	150MHz to 500MHz	-	1.2 : 1	-	
Return Loss	D.C. to 50MHz	35	41	47	dB
	50MHz to 150MHz	31	34	35	dB
	150MHz to 500MHz	19	22	24	dB

Note 1: Electrical specifications and performance data contained herein are based on roWaves Technologies applicable test performance criteria and measurement methods. Note 2: This document and the information contained herein is provided for evaluation purposes only and is subject to change without notice.

Typical Performance

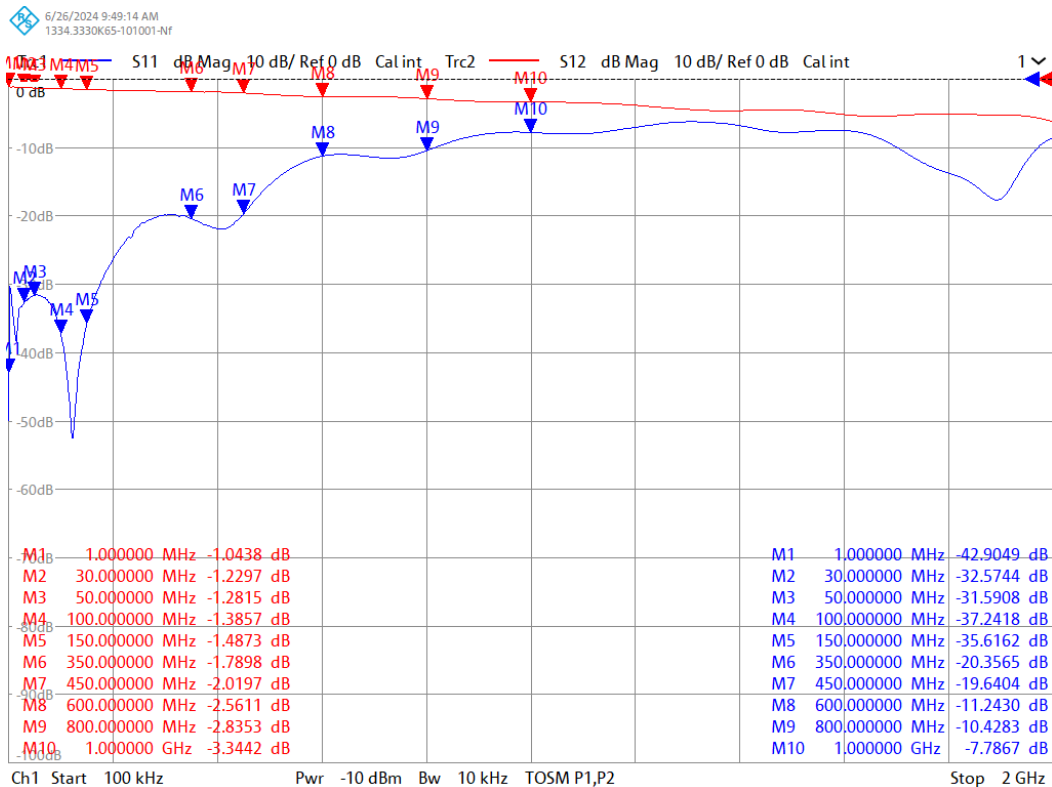


Fig. - S21(insertion loss) and S11(return loss) for 1db attenuation (2GHz span)

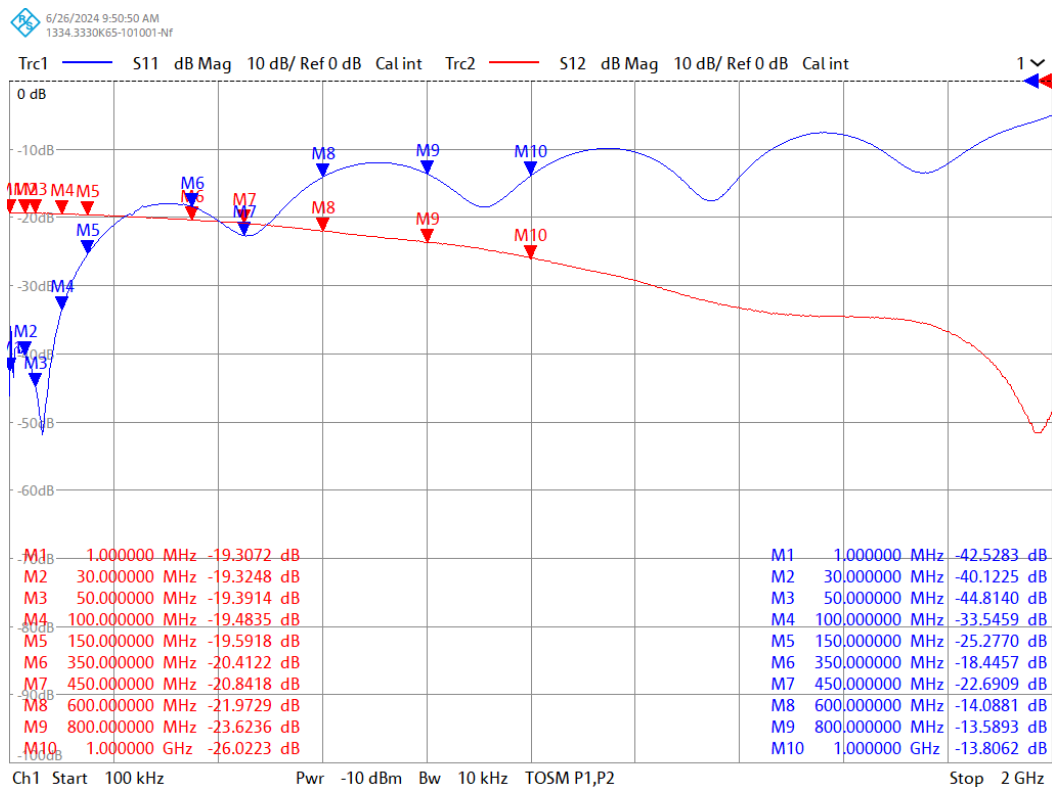


Fig.2 - S21(insertion loss) and S11(return loss) for 20db attenuation (2GHz span)

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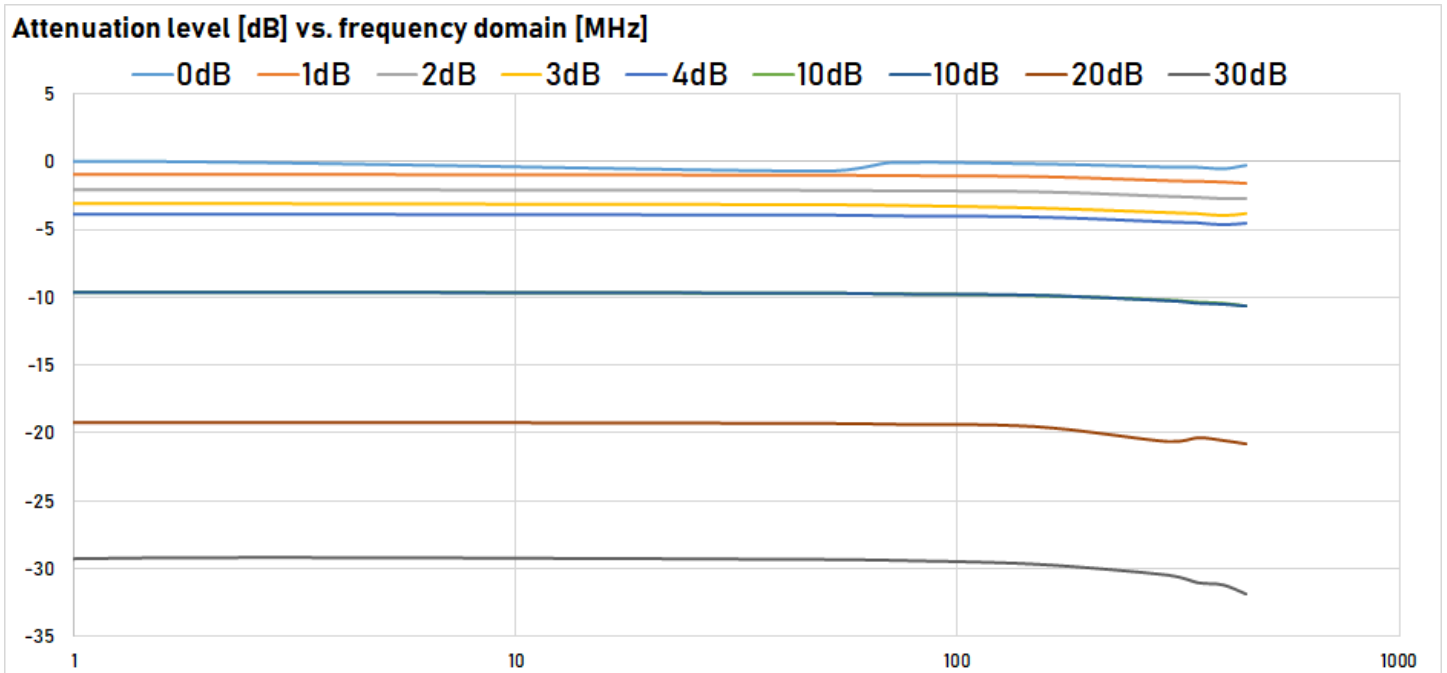
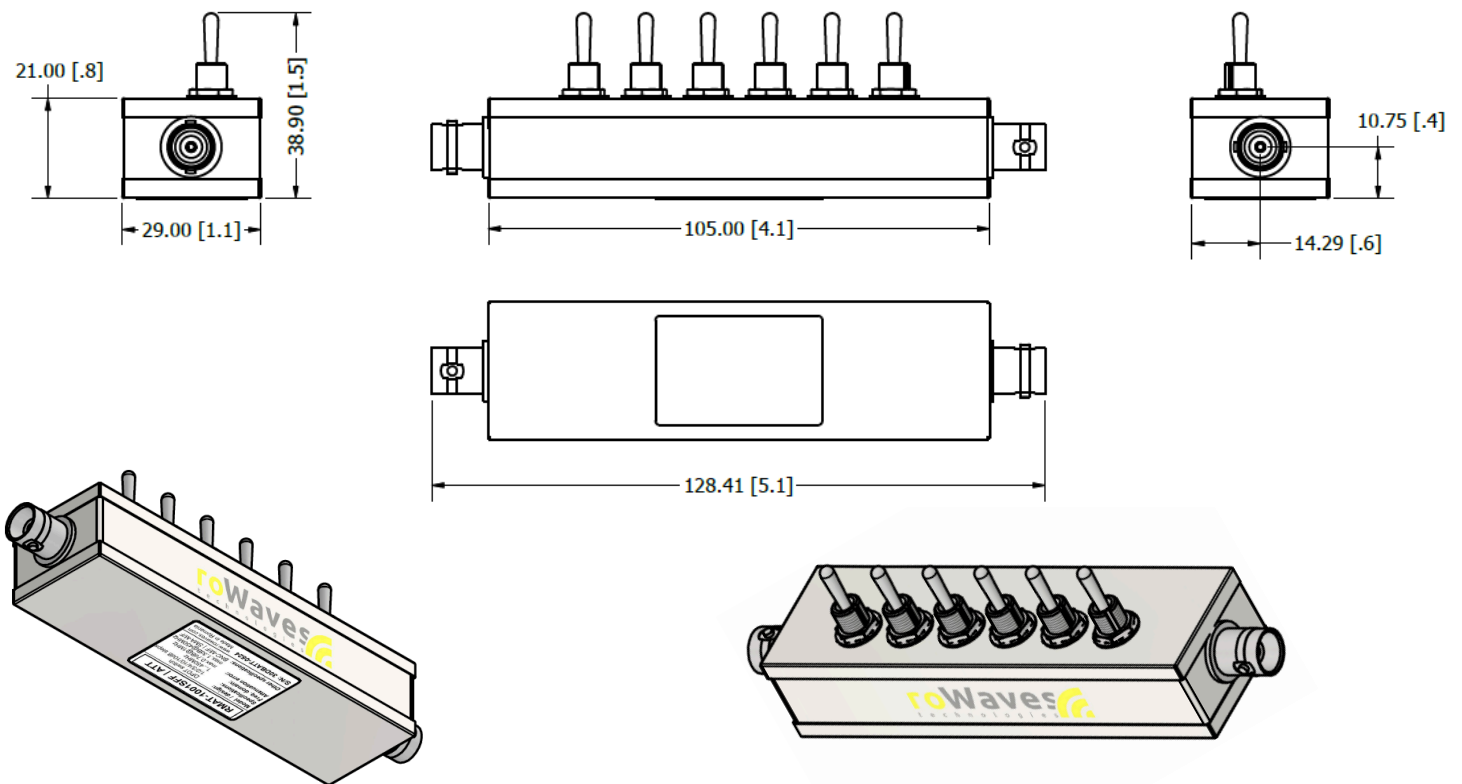


Fig.3 - Computed attenuation level vs. frequency domain

■ **Outline drawing:**



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■ Mechanical specifications:

Parameter	Value	Unit	Comments
Length	132 / 5.2 ± 0.5mm	mm / in	with BNC-Female/Male connectors
Width	29 / 1.1 ± 0.5mm	mm / in	
Height	38.9 / 1.54 ± 0.5mm	mm / in	with toggle switches
Weight	130g / 0.3	g / lbs	with connectors

■ Connectors

Description	Connector 1	Connector 2
RMAT-1001BMF	50Ω BNC-Male, straight, flanged	50Ω BNC-Female, straight, flanged
RMAT-1001BFF	50Ω BNC-Female, straight, flanged	50Ω BNC-Female, straight, flanged
RMAT-1001SMF	50Ω SMA-Male, straight, flanged	50Ω SMA-Female, straight, flanged
RMAT-1001SFF	50Ω SMA-Female, straight, flanged	50Ω SMA-Female, straight, flanged

■ Ordering Information

Model	Description
RMAT-1001BMF	connector 1: BNC-male connector 2: BNC-female
RMAT-1001BFF	connector 1: BNC-female connector 2: BNC-female
RMAT-1001SMF	connector 1: SMA-male connector 2: SMA-female
RMAT-1001SFF	connector 1: SMA-female connector 2: SMA-female

■ Change History | DS-02

date	change	comment
11 Nov 2024	initial release	1st revision available
12 Nov 2024	updated att. vs. freq. plot updated insertion loss values updated rounded values in electrical specs table	1.1 release available

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