



Absorptive Digital Control Attenuator 0.1-30GHz



Features

- Ultra Wide Band Operation 0.1-30GHz
- 0.5dB LSB Steps to 127.5dB
- Single Positive Control Line Per Bit
- Customization available upon request



Electrical Specifications, TA = +25° C, With Vdd = +5V, Vss = -5V & VCTL = 0/ +5V

Description	PN: RFDAT0030G8A									
	Absorptive Digital Attenuator									
Parameters	Min	Typ.	Max	Min	Typ.	Max	Min	Typ.	Max	Units
Frequency Range	0.1-18			18-26.5			26.5-30			GHz
Insertion Loss		20	21		24	25		26	27	dB
Insertion Loss Temperature Coefficient		0.003			0.003			0.003		dB/°C
Attenuation Flatness: (Referenced to Insertion Loss)			±2			±2			±3	dB
Input VSWR(All Atten. States)			2.2			2.5			2.5	ratio
Output VSWR (All Atten. States)			2.2			2.5			2.5	ratio
Input Power for 0.1 dB Compression		25			25			25		dBm
IM3		40			43			43		dBm
Switching Speed			1000			1000			1000	ns
Weight	100									g
Impedance	50									Ω
Biasing(+5V/-5V)	50/50									mA
Input /Output Connector	2.92mm-Female (Standard)									
Control PIN	MICRO-D15									
Finishing	Gold Plating									
Material	Aluminum									
Seal	Hermetically Sealed (optional)									

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Absolute Maximum Ratings

Biassing	+6V/-6V
TTL Control Voltage	(0~0.8)V/(2~5)V
RF Input power	+25dBm
Operating Temperature(°C)	-45 ~ +85
Storage Temperature(°C)	-50 ~ +125

Ordering Information

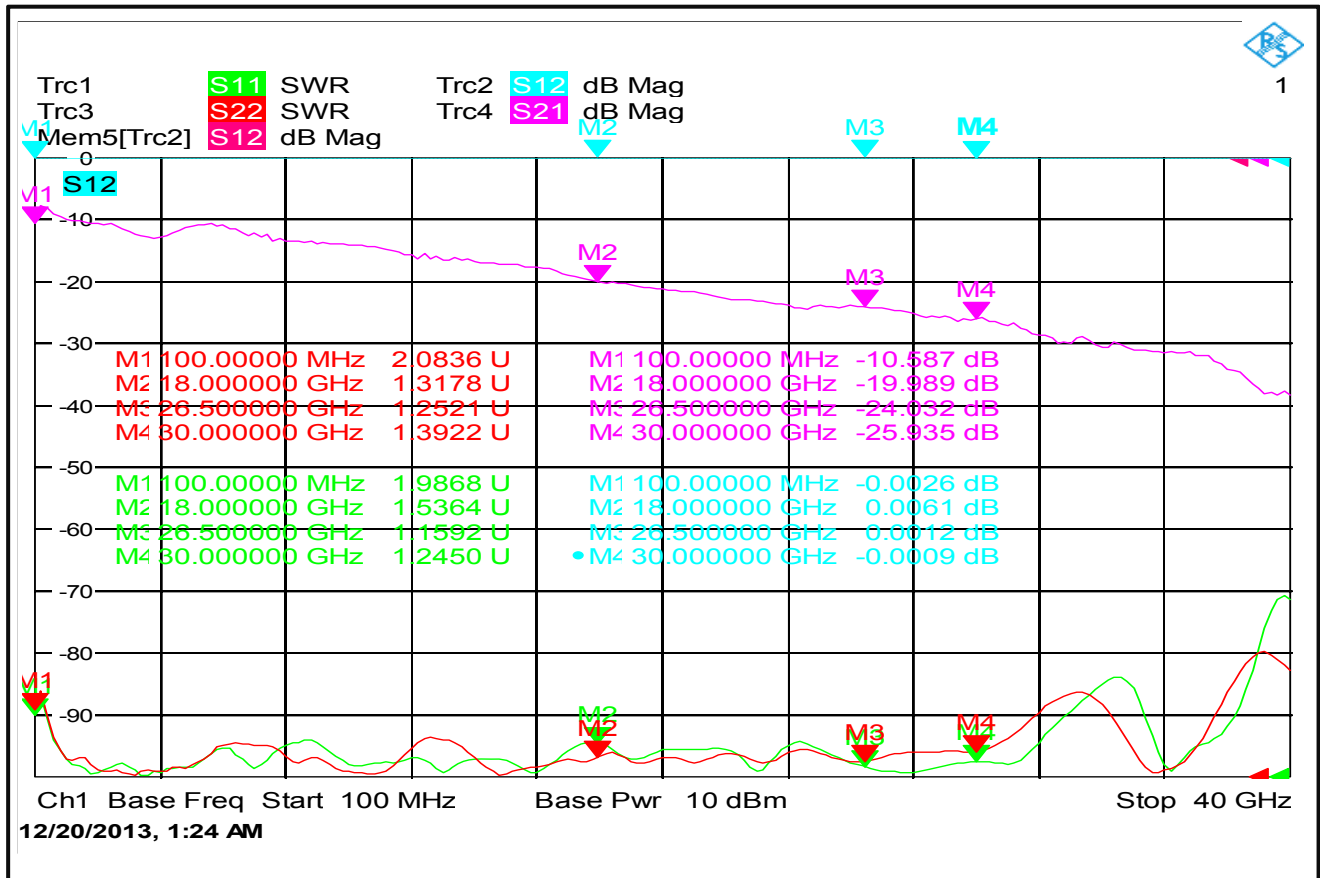
Part No	ECCN	Description
RFDAT0030G8A	EAR99	0.1-30GHz Digital Control Attenuator

Environment specifications

Operational Temperature (°C)	-45 ~ +85
Storage Temperature (°C)	-50 ~ +125
Altitude	30,000 ft. (Epoxy Seal Controlled environment) 60,000 ft 1.0psi min (Hermetically Seal Un-controlled environment) (Optional)
Vibration	25g rms (15 degree 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35c, 95%RH at 40°C
Shock	20G for 11msc half sin wave,3 axis both directions

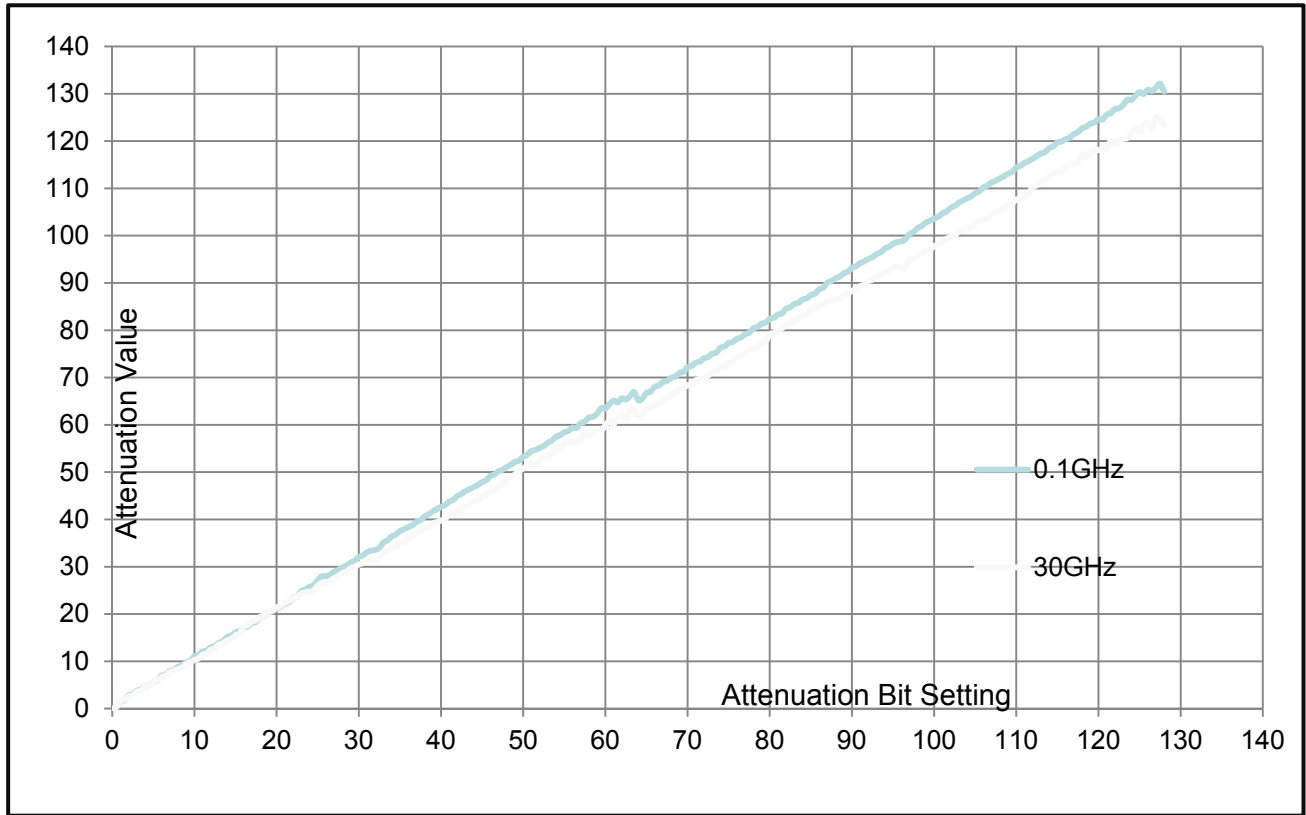
performance plots

Insertion Loss and VSWR

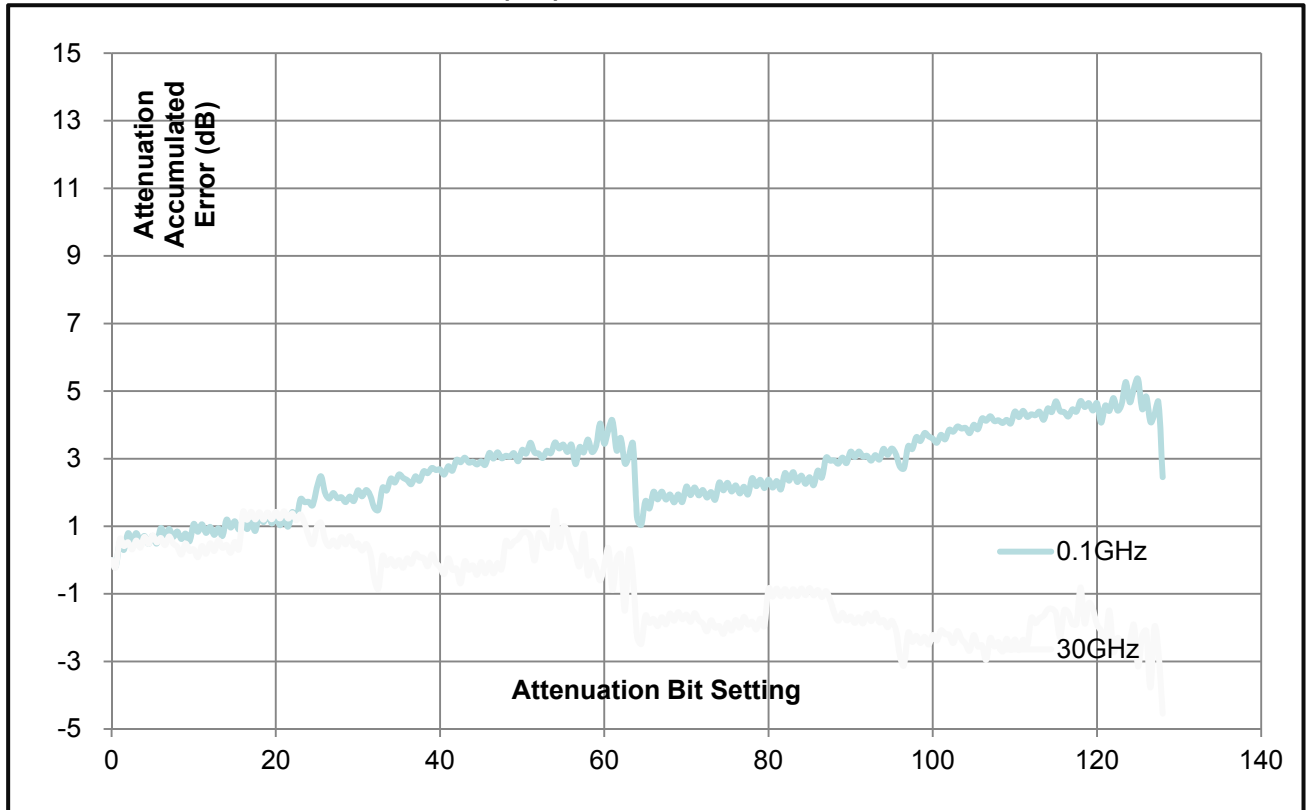




Attenuation Range Linearity

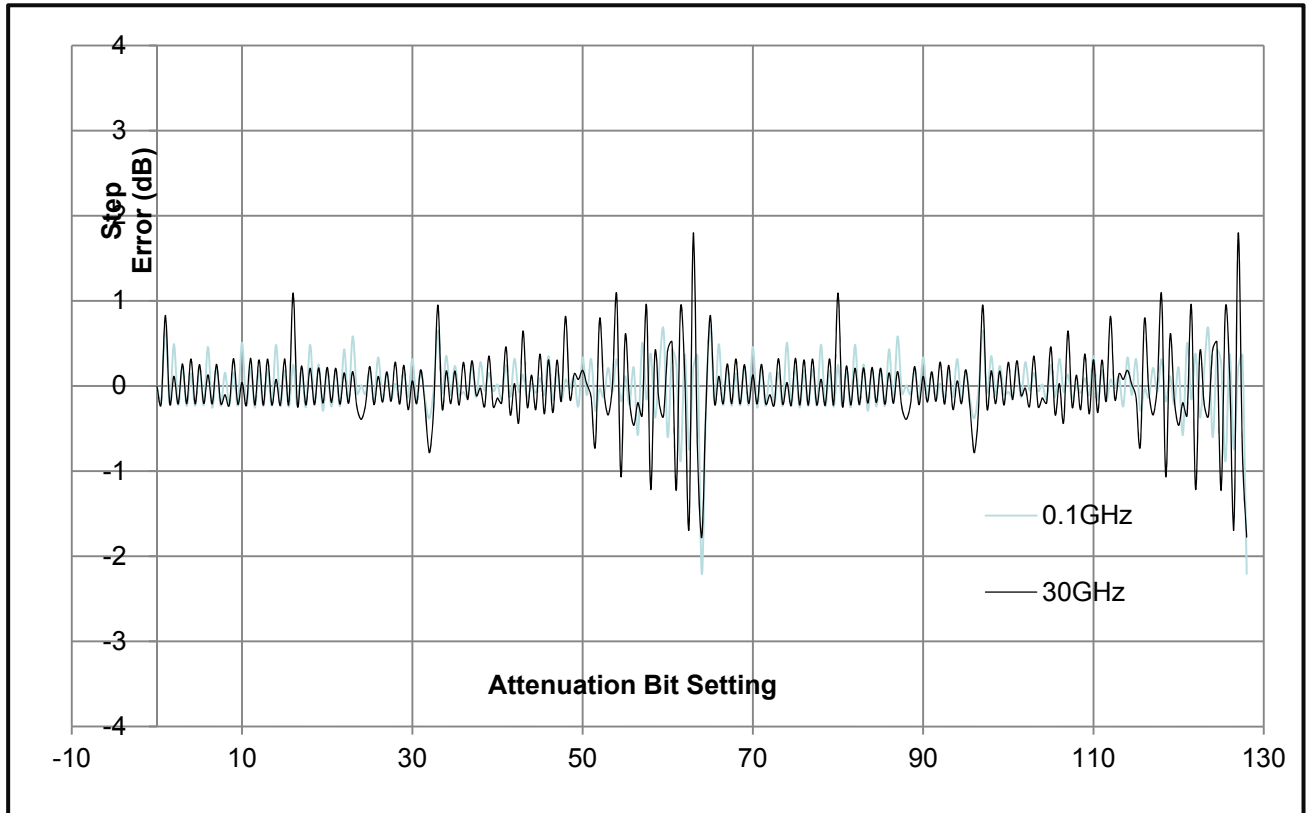


Accumulated Attenuation Error (dB)

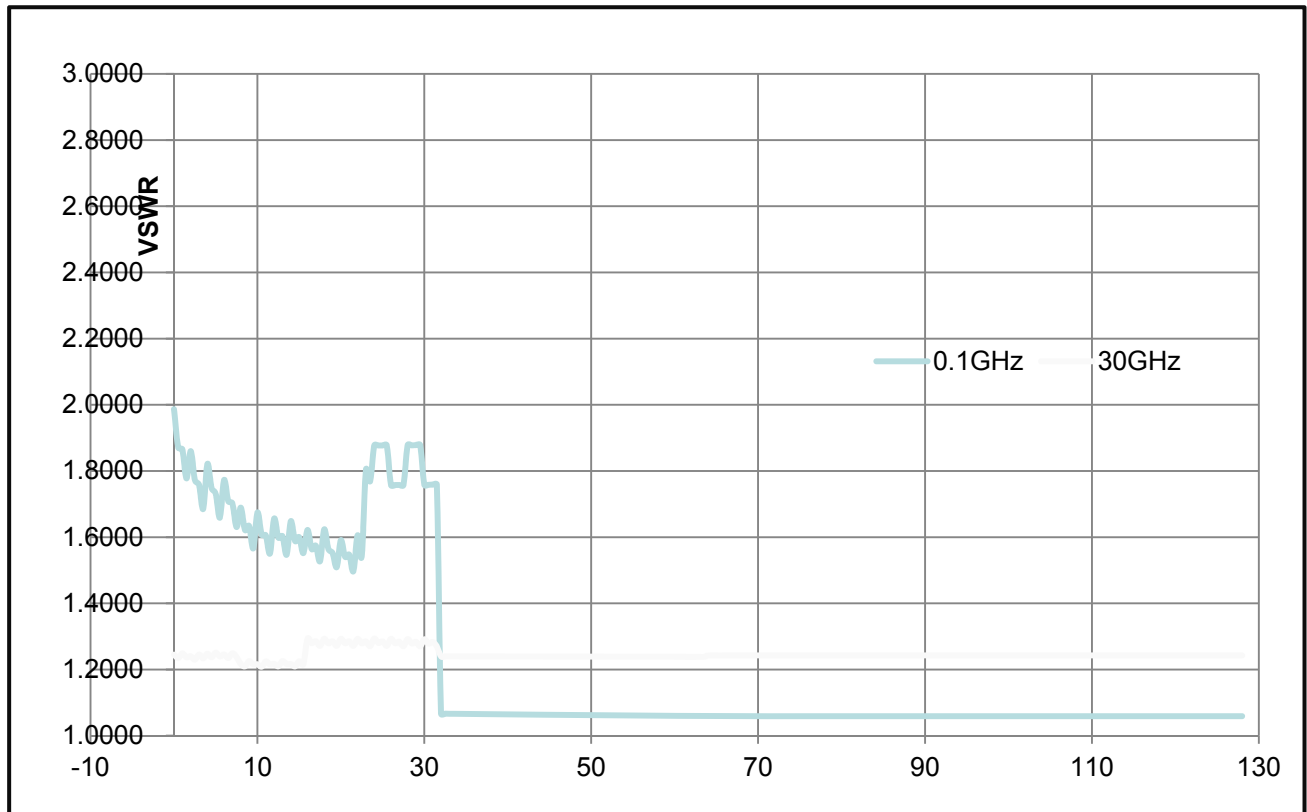




Attenuation Step Error Per Bit (dB)



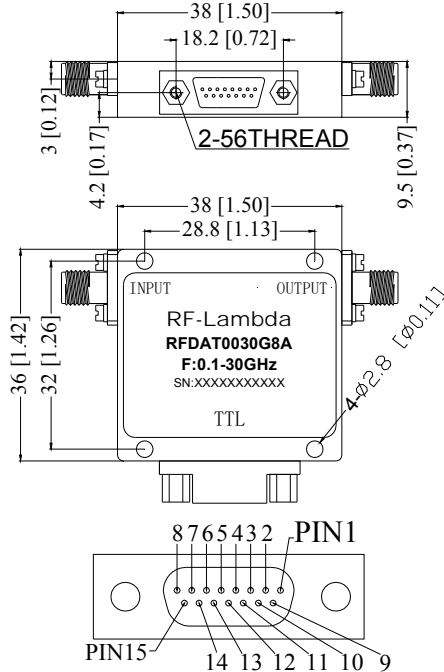
VSWR vs. Attenuation





Outline Drawing:

All Dimensions in mm (inches)



1 +5V 2 GND 3 -5V 4 C1 5 C2 6 C3 7 C4 8 C5 9 C6 10 C7 11 C8 12 GND 13 GND 14 GND 15 GND

MICRO-D15

Truth Table

Control Voltage Input								Attenuation state
C8	C7	C6	C5	C4	C3	C2	C1	
1	1	1	1	1	1	1	1	Reference IL
1	1	1	1	1	1	1	0	0.5dB
1	1	1	1	1	1	0	1	1dB
1	1	1	1	1	0	1	1	2dB
1	1	1	1	0	1	1	1	4dB
1	1	1	0	1	1	1	1	8dB
1	1	0	1	1	1	1	1	16dB
1	0	1	1	1	1	1	1	32dB
0	1	1	1	1	1	1	1	64dB
0	0	0	0	0	0	0	0	127.5dB

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