

## Manual / Program Controllable Step Attenuator 11dB Range 1dB Step DC-18GHz



### Product Description

RKT1G18B11A is a manual / programmable controllable step attenuator with a frequency range of DC to 18GHz.

The max average power of this attenuator is 1W. The attenuation range is 11dB with a step size of 1dB.

The working temperature of this product is between - 20°C and + 70°C.

### Features

- Manual / Program Controllable Step Attenuator
- Attenuation Range 11dB.
- Attenuation Step 1dB.
- Adjustable during operation.
- Higher power is available upon request.

### Typical Applications

- Wireless Infrastructure
- Military and Aerospace Applications
- Test Instrumentation
- Radar Systems
- 5G Wireless Communications
- Microwave Radio Systems
- TR Modules
- Research and Development
- Cellular Base Stations

### Electrical Specifications (T<sub>A</sub>=+25°C)

Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	DC		8	8		12.4	12.4		18	GHz
Attenuation Range		11			11			11		dB
Attenuation Accuracy	11dB	±0.8			±0.8			±1.0		dB
	50dB	±1.6			±2.1			±2.1		dB
	90dB	±3.2			±3.2			±3.6		dB
	110dB	±4.0			±4.5			±4.5		dB
Attenuation Step		1			1			1		dB
VSWR			1.5			1.6			1.75	:1
Insertion Loss					0.6dB+0.09dB/GHz					dB
Power Handling					1W (100W Peak with 10µS Pulse Width)					Watts
*Operational Power					24					V
*Control Voltage					3.3~5V (Pulse width 5ms~1S)					V
*Control Current					100					mA
*Source Current					1					A
*Switching speed					<20					ms
Repeatation Error					0.05					dB
Life type Cycle					10 <sup>6</sup>					times
Impedance					50					Ohms
Weight	Manual				0.51 Max(3 cells)	0.783 Max (4 cells)				lbs
	Programmable				0.62 Max(3 cells)	0.93 Max (4 cells)				lbs
Connectors										SMA- Female/N-Female

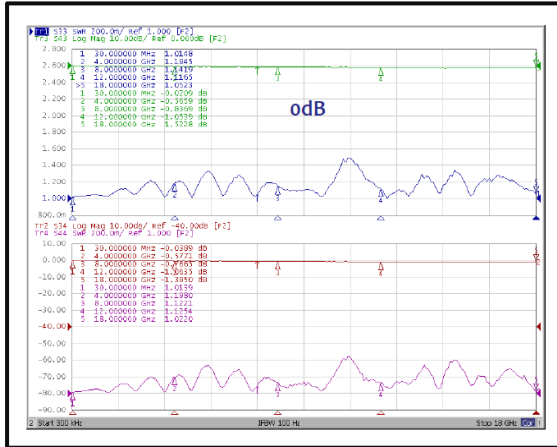
\* Note: Only apply for program controllable model.

**Environmental Specifications and Test Standards**

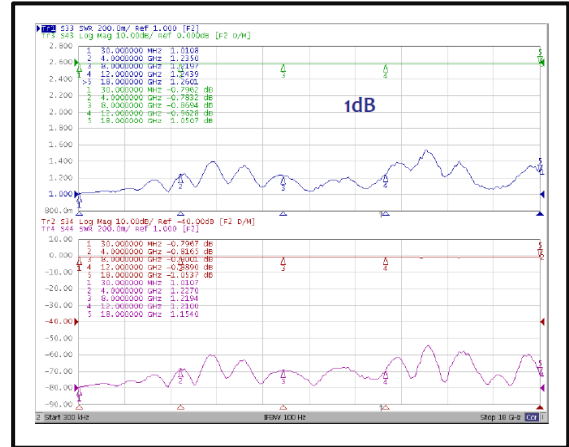
Parameter	Description
Operational Temperature	-20°C to +70°C (Case Temperature)
Storage Temperature	-55°C to +85°C
Thermal Shock	-20°C → +70°C (5 Cycles / 10 hours)
**Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
High Temperature Burn In	Temperature +70°C for 72 Hours
Shock	1. Weight >20g, 50g half sine wave for 11ms, Speed variation 3.44m/s 2. Weight <=20g, 100g Half sine wave for 6ms, Speed variation 3.75m/s 3. Total 18 times (6 directions, 3 repetitions per direction).
Altitude	Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)
Hermetically Sealed (Optional)	MIL-STD-883 (For Hermetically Sealed Units)

Typical Performance Plots

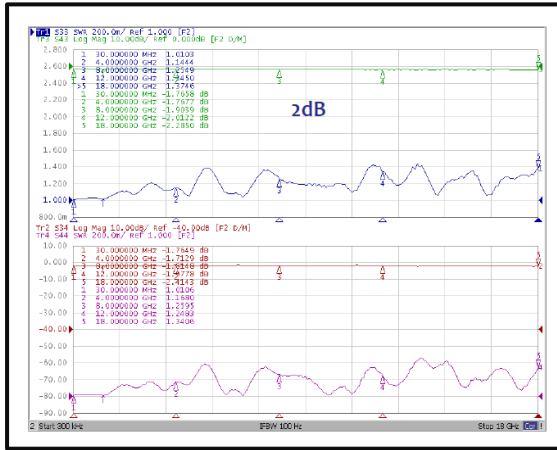
Insertion Loss & VSWR@0dB



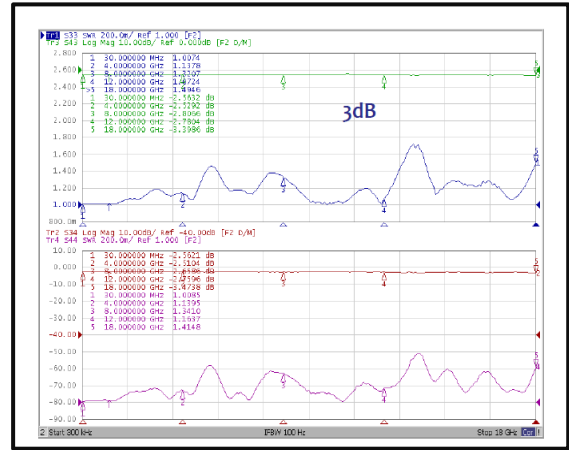
Insertion Loss & VSWR@1dB



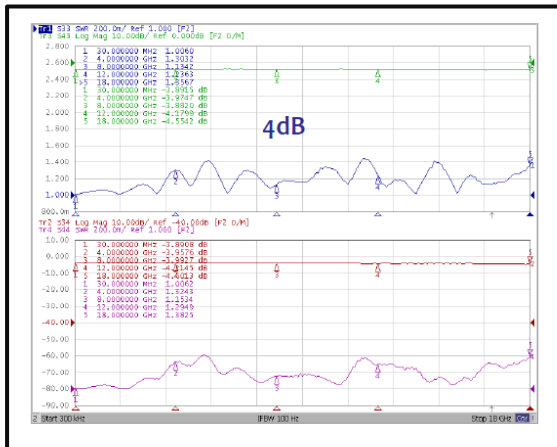
Insertion Loss & VSWR@2dB



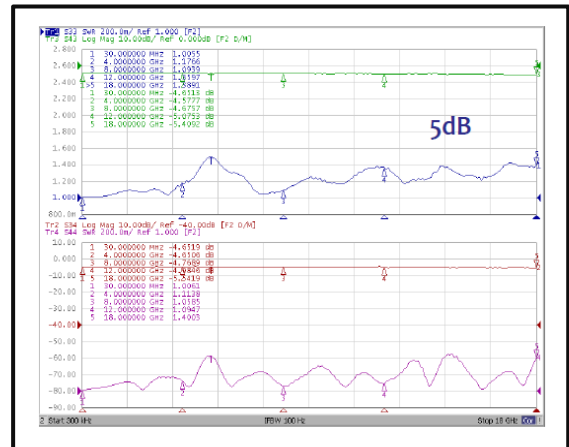
Insertion Loss & VSWR@3dB



Insertion Loss & VSWR@4dB

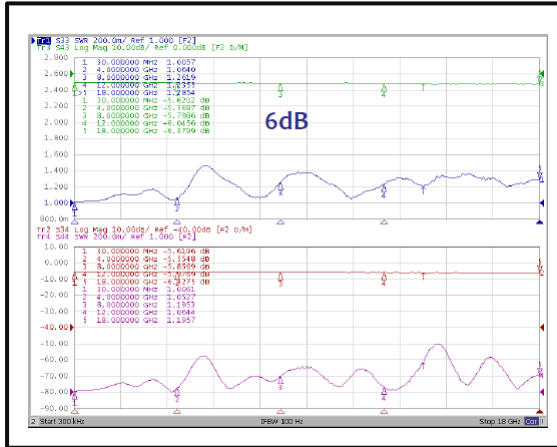


Insertion Loss & VSWR@5dB

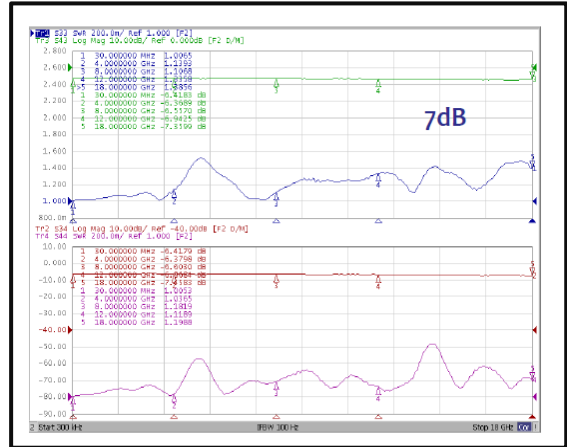


Typical Performance Plots

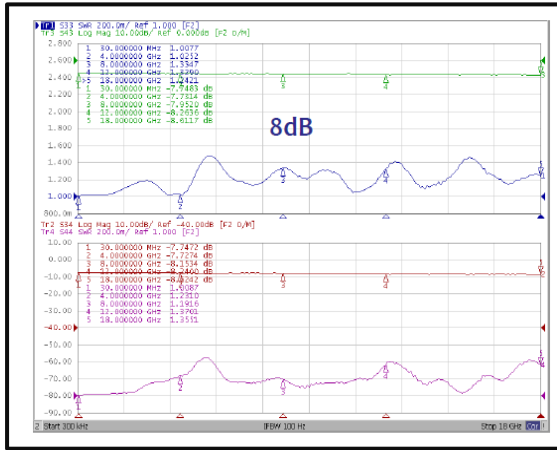
Insertion Loss & VSWR@6dB



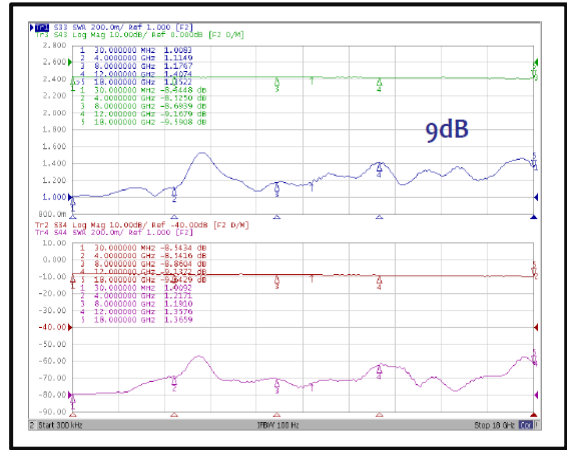
Insertion Loss & VSWR@7dB



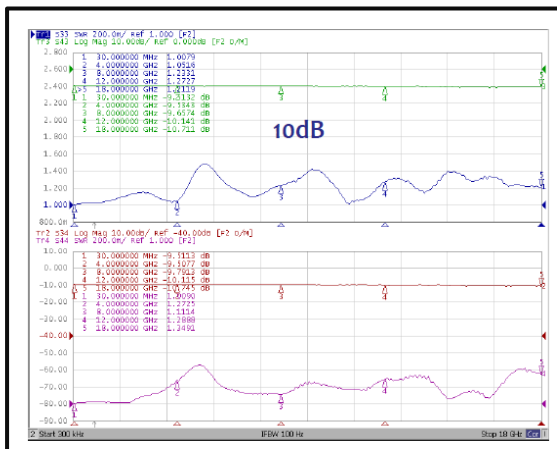
Insertion Loss & VSWR@8dB



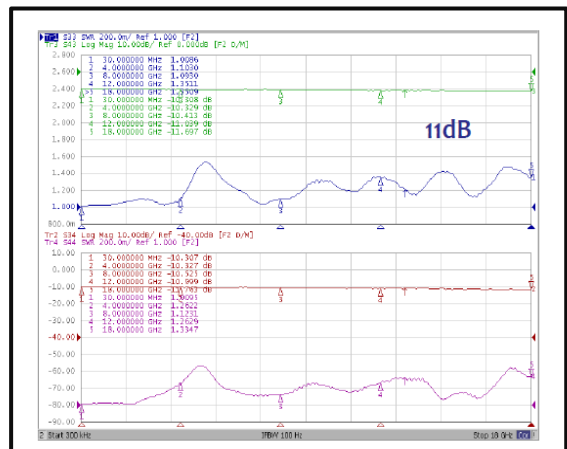
Insertion Loss & VSWR@9dB



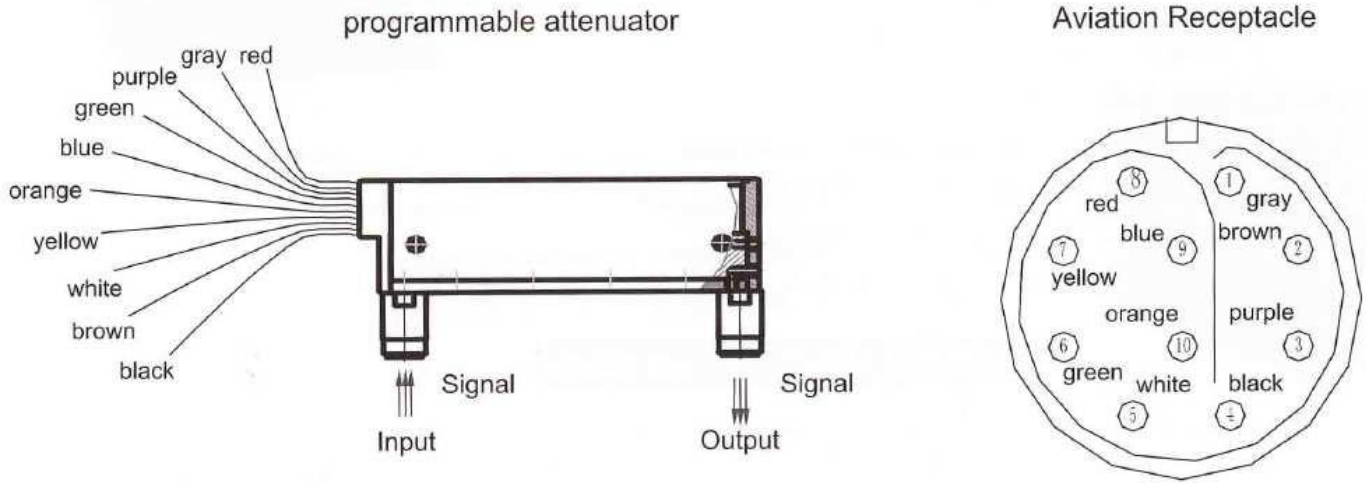
Insertion Loss & VSWR@10dB



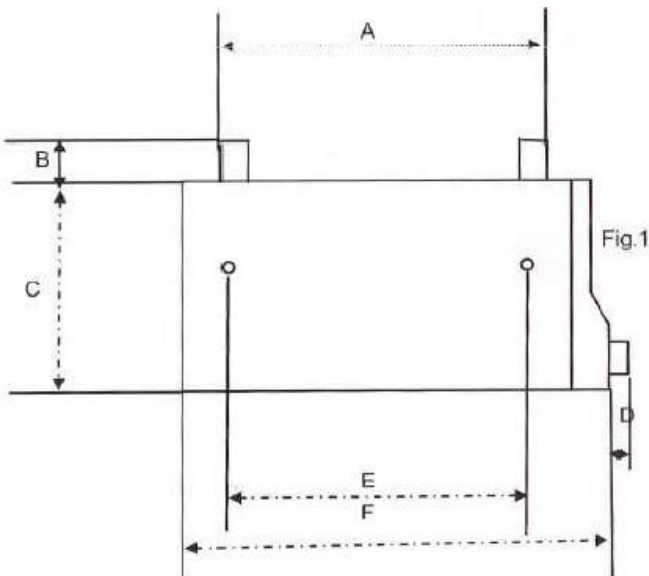
Insertion Loss & VSWR@11dB



**Outline Drawing**



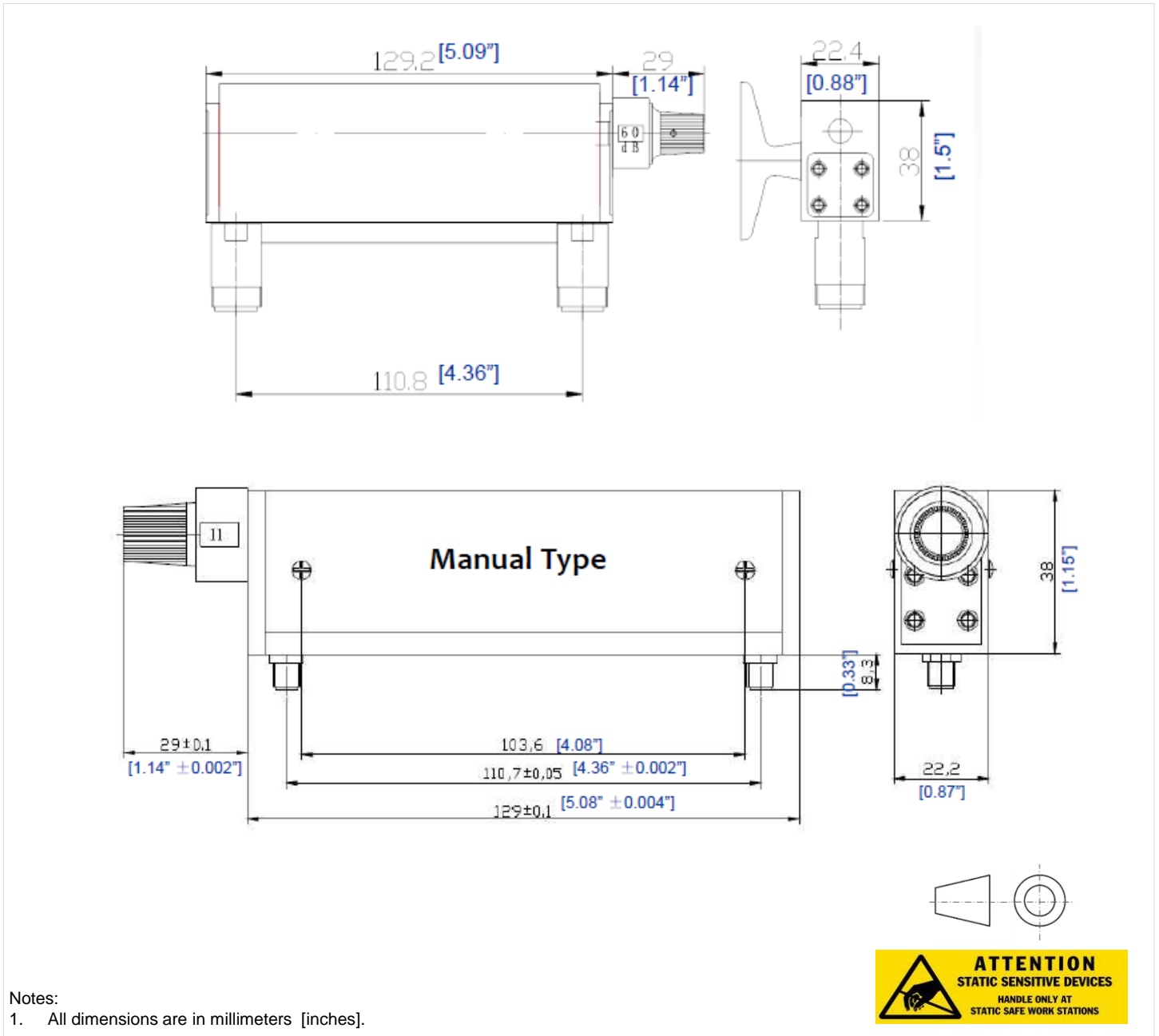
Attenuation	10 (dB)	40/20 (dB) ✖	20 (dB)	40/20 (dB) ✖
	1 (dB)	4 (dB)	2 (dB)	4 (dB)
Status				
Attenuation (NC)	Grey	Purple	Green	Blue
Through (NO)	Brown	White	Yellow	Orange



(mm / inch)	A	B	C	D	E	F
Manual 3 cells	83.5 3.29	8.3 0.33	38 1.496	29.2 1.15	76.1 2.996	108.3 4.26
Manual 4 cells	111.4 4.39	8.3 0.33	38 1.496	29.2 1.15	103.4 4.07	135.8 5.35
Programmable 3 cells	83.5 3.29	8.3 0.33	44.6 1.74	6 0.24	76.1 2.996	108.3 4.26
Programmable 4 cells	111.4 4.39	8.3 0.33	44.6 1.74	6 0.24	103.4 4.07	135.8 5.35

Notes:  
1. All dimensions are in millimeters [inches].

**Outline Drawing**



**Additional Information**

Documentation	Webpage
ESD Policy	<a href="https://rflambda.com/pdf/rflambda_esd_control.pdf">https://rflambda.com/pdf/rflambda_esd_control.pdf</a>
Connector Torque Specifications	<a href="https://www.rflambda.com/pdf/Torque_Specifications.pdf">https://www.rflambda.com/pdf/Torque_Specifications.pdf</a>
Random Vibration Test Standard	<a href="https://www.rflambda.com/pdf/rflambda_random_vibration_MIL-STD-202G.pdf">https://www.rflambda.com/pdf/rflambda_random_vibration_MIL-STD-202G.pdf</a>

**Ordering Information**

Part Number	Modification	Description
RKT1G18B11A	Connectors SMA- Female/N-Female	DC-18GHz Manual / Program Controllable Step Attenuator

**Important Notice**

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