

Coaxial 50W 20dB Dual Directional Coupler 1GHz-18GHz



Product Description

RFDDC1G18G20N is a coaxial dual directional coupler with a frequency range of 1 to 18GHz.

The power of this directional coupler is 50W. The insertion loss is 1.0dB with a typical directivity of 12dB.

The working temperature of this product is between - 40°C and + 85°C.

Features

- High power handling up to 50W
- Wide band operation
- High Directivity within operational band
- Low Insertion Loss
- High peak to average handling capability
- Stable performance over temperature

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, TA = +25°C

Parameter		Min	Typ	Max	Units
Frequency Range		1		18	GHz
Nominal Coupling		19	20	21	dB
Frequency Sensitivity			±0.7	±1.0	dB
Directivity		10	12		dB
Insertion Loss (Excl. Coupling)				0.9	dB
Insertion Loss (true)			0.7	1.0	dB
VSWR Primary			1.4	1.6	: 1
VSWR Secondary			1.4	1.6	: 1
Power Rating	Average		50		W
	Peak		500 (10% Duty Cycle, 1 us Pulse Width)		W
Weight			0.45 Max.		lbs
Impedance			50		Ω
Input / Output Connectors			N-Female(Input) – N-Female(Output)		
Package			Epoxy Sealed (Standard)		
			Hermetically Sealed (Optional)		

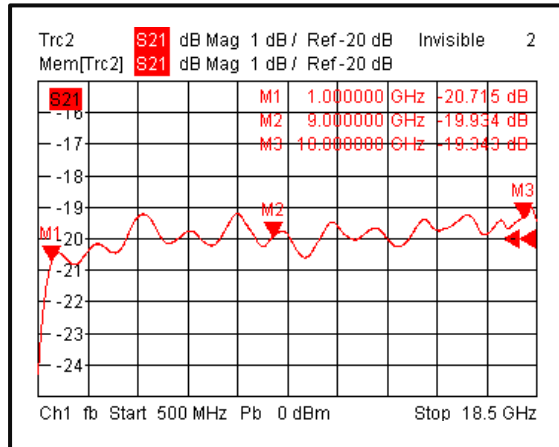
Environmental Specifications and Test Standards

Parameter	Description
Operational Temperature	-40°C to +85°C (Case Temperature)
Storage Temperature	-50°C to +105°C
Thermal Shock	-40°C → +85°C (5 Cycles / 10 hours)
*Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
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)

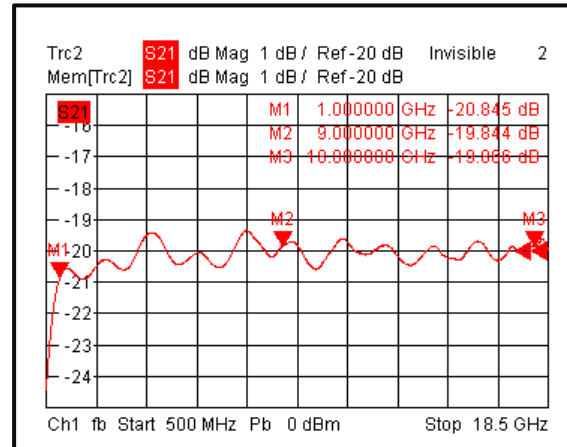
*For vibration testing details please see additional information section.

Typical Performance Plots

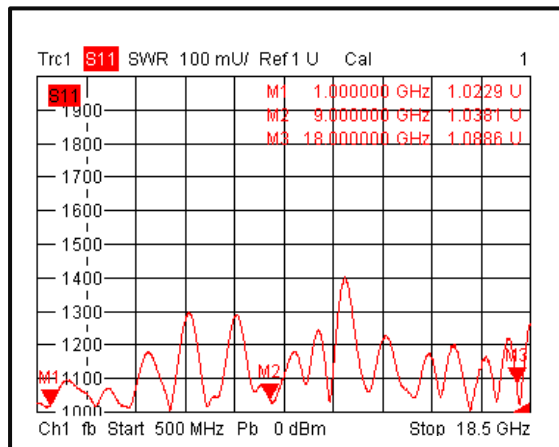
Nominal Coupling 1



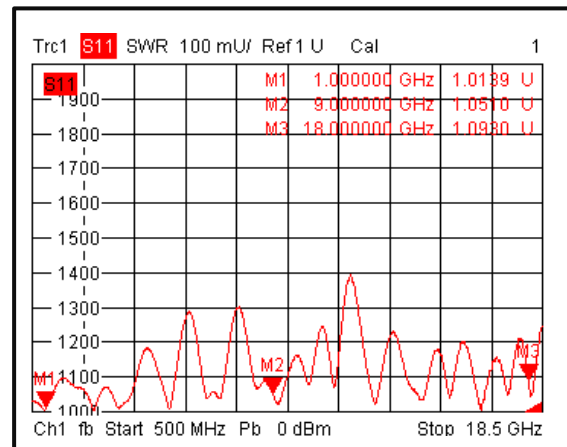
Nominal Coupling 2



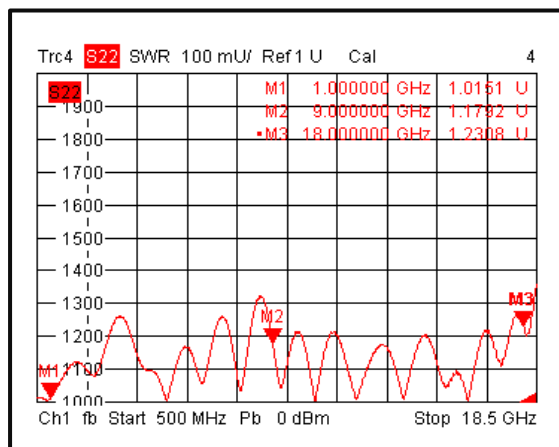
Primary VSWR 1



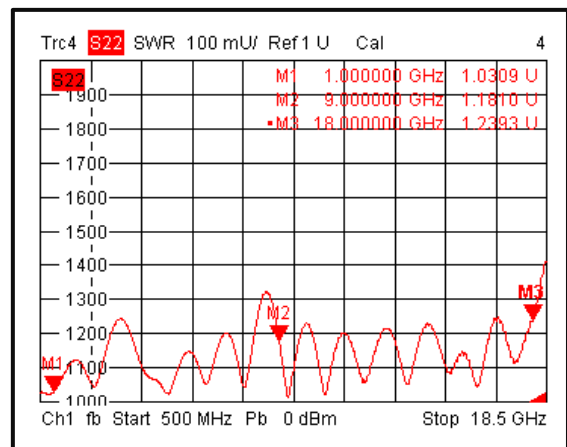
Primary VSWR 2



Secondary VSWR 1

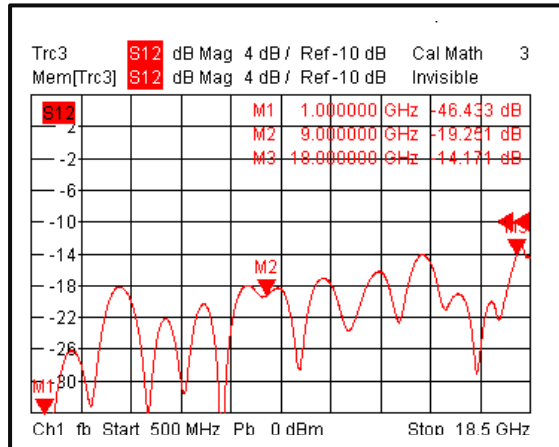


Secondary VSWR 2

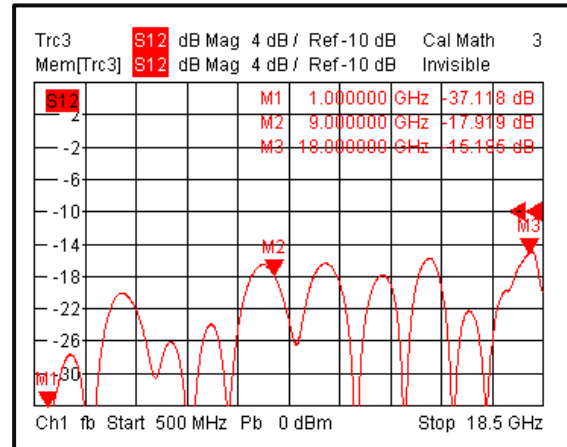


Typical Performance Plots

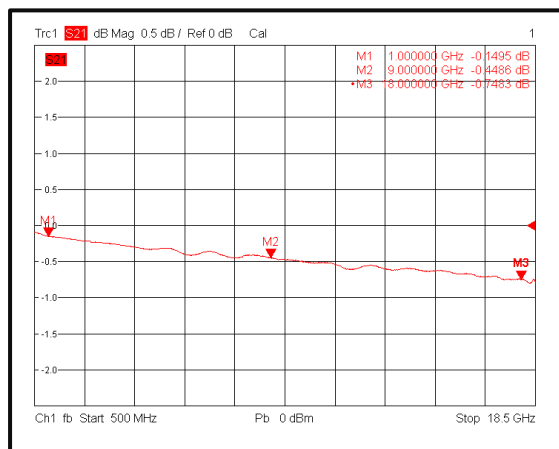
Directivity 1



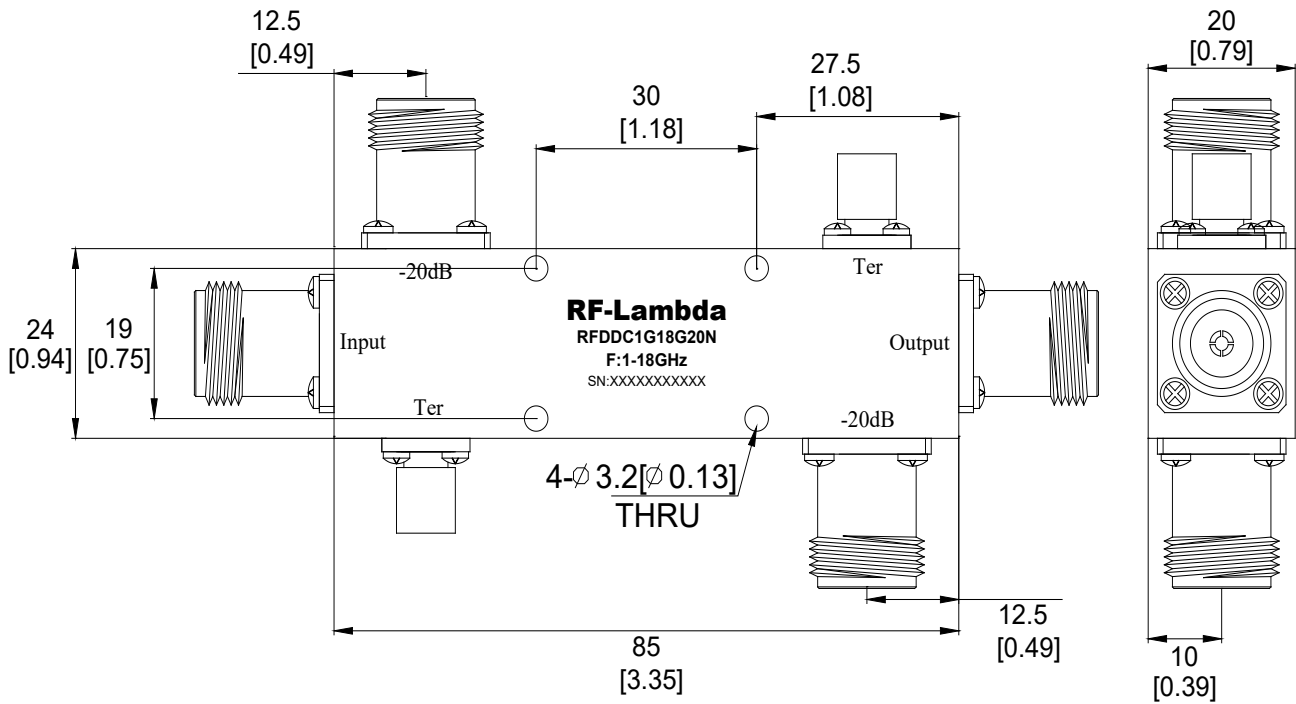
Directivity 2



Insertion Loss

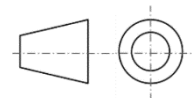


Outline Drawing



Notes:

1. Package Material: Aluminum
2. Finish: Blue Painted
3. All dimensions are in millimeters [inches].
4. Outline Tolerances ± 0.5 [0.02], Mounting Hole Tolerances ± 0.2 [0.008] unless otherwise specified.



Additional Information

Documentation

Connector Torque Specifications

https://www.rflambda.com/pdf/Torque_Specifications.pdf

Random Vibration Test Standard

https://www.rflambda.com/pdf/rflambda_random_vibration_MIL-STD-202G.pdf

Webpage

Ordering Information

Part Number	Modification	Description
RFDDC1G18G20N	Input connector N-Female and Output connector N-Female	1-18GHz Dual Directional Coupler

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