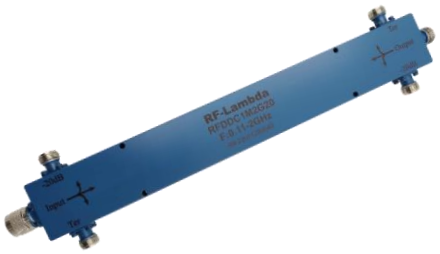
# Coaxial 500W 20dB Dual Directional Coupler 0.11GHz-2GHz



## Product Description

RFDDC1M2G20 is a coaxial dual directional coupler with a frequency range of 0.11 to 2GHz.

The power handling for this dual directional coupler is 500W. The Insertion Loss is 0.8dB with a typical directivity of 22dB.

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

## Features

- Power handling up to 500W
- Wide band operation
- High directivity within operational band
- Low Insertion Loss

## 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 | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|---|---|
| Frequency Range | | 0.11 | | 0.4 | 0.4 | | 2 | GHz |
| Nominal Coupling | | 20 | 22 | 23.5 | 18.5 | 20 | 21.5 | dB |
| Frequency Sensitivity | | | ±0.7 | ±1 | | ±0.7 | ±1 | dB |
| Directivity | | 20 | 22 | | 20 | 22 | | dB |
| Insertion Loss (Excl. Coupling) | | | | 0.5 | | | 0.8 | dB |
| Insertion Loss (true) | | | 0.3 | 0.5 | | 0.7 | 0.8 | dB |
| VSWR Primary | | | 1.15 | 1.25 | | 1.15 | 1.25 | : 1 |
| VSWR Secondary | | | 1.15 | 1.25 | | 1.15 | 1.25 | : 1 |
| Power Rating | Average | 500 | | | | | | W |
| | Peak | 5 (1% Duty Cycle, 1 us Pulse Width) | | | | | | KW |
| Weight | | 3 Max. | | | | | | lbs |
| Impedance | | 50 | | | | | | Ω |
| Input / Output Connectors | | N-Male(Input) – N-Female(Output) | | | | | | |
| Package | | Epoxy Sealed (Standard) | | | | | | |
| | | Hermetically Sealed (Optional) | | | | | | |



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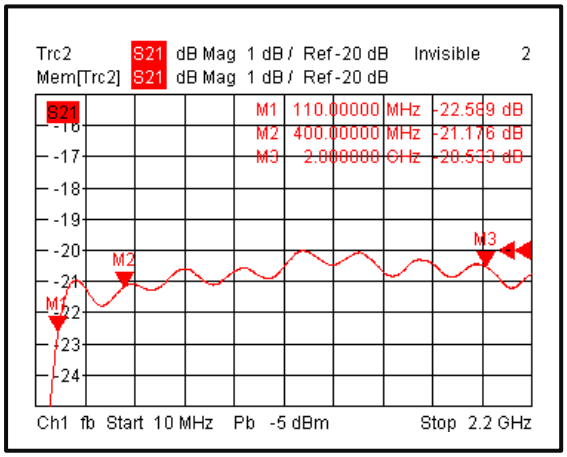
## Environmental Specifications and Test Standards

| Parameter | Description |
|---|---|
| Operational Temperature | -40ºC to +85ºC<br>(Case Temperature) |
| Storage Temperature | -50ºC to +105ºC |
| Thermal Shock | -40ºC → +85ºC<br>(5 Cycles / 10 hours) |
| **Random Vibration | MIL-STD-202G<br>Table 214-I, Test Condition Letter C<br>1.5 Hours Per Axis |
| Shock | 1. Weight >20g, 50g half sine wave for 11ms, Speed variation 3.44m/s<br>2. Weight <=20g, 100g Half sine wave for 6ms, Speed variation 3.75m/s<br>3. Total 18 times (6 directions, 3 repetitions per direction). |
| Altitude | Standard: 30,000 Ft (Epoxy Sealed Controlled Environment)<br>Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min) |
| Hermetically Sealed<br>(Optional) | MIL-STD-883 (For Hermetically Sealed Units) |

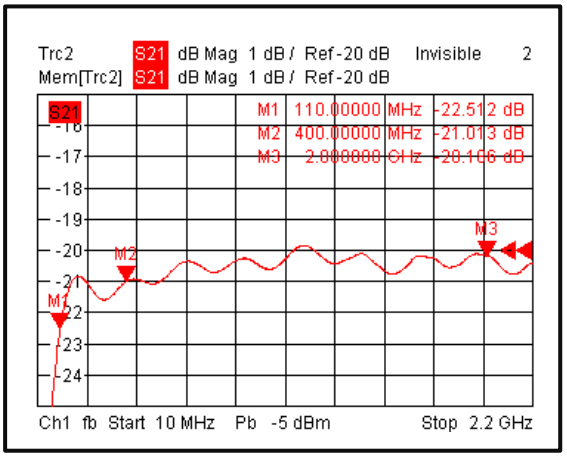
**For vibration testing details please see additional information section.

## Typical Performance Plots

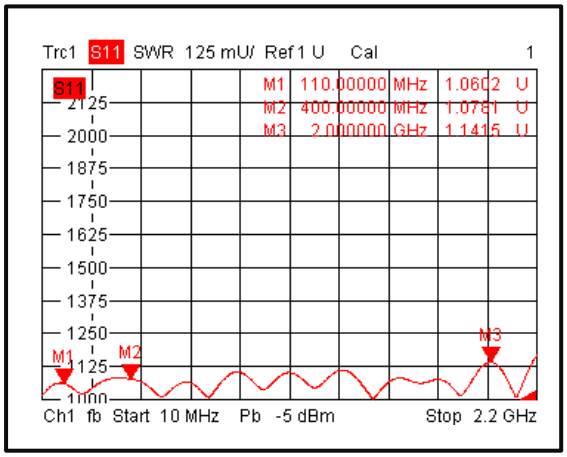
### Nominal Coupling 1



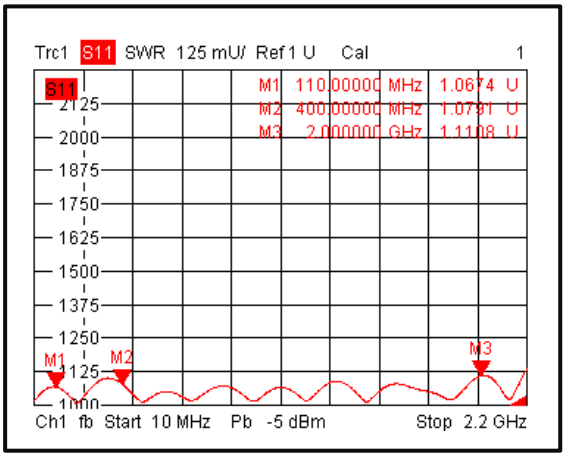

### Nominal Coupling 2



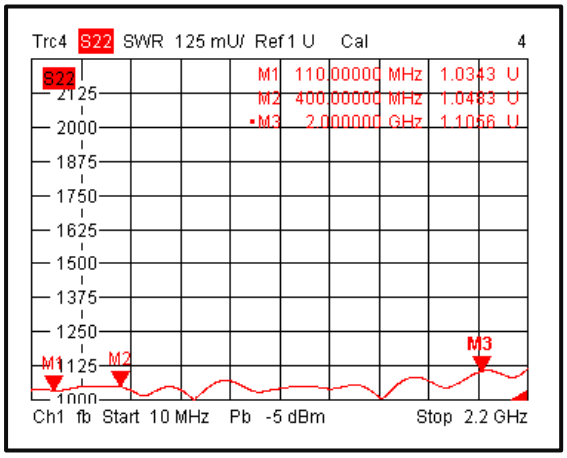

### Primary VSWR 1



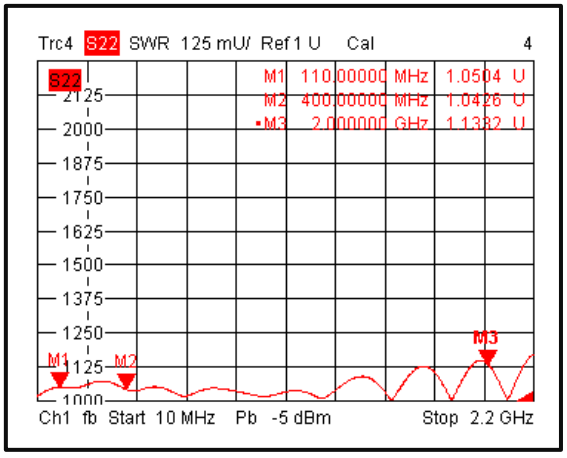

### Primary VSWR 2




### Secondary VSWR 1

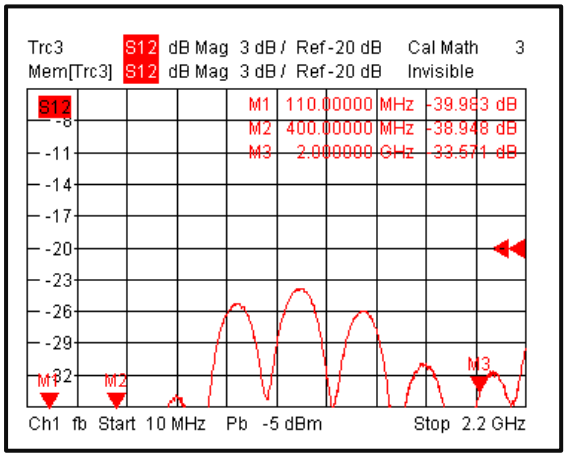



### Secondary VSWR 2

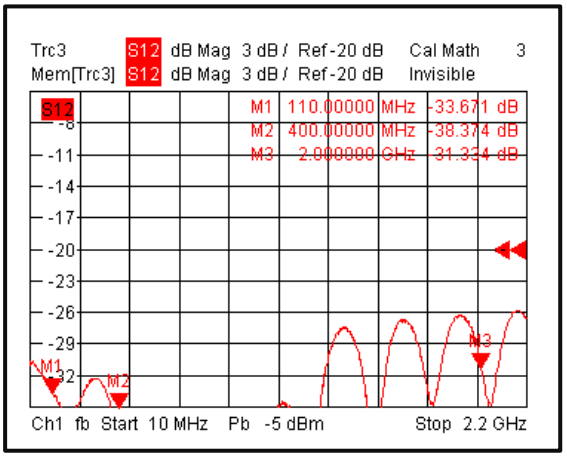


## Typical Performance Plots

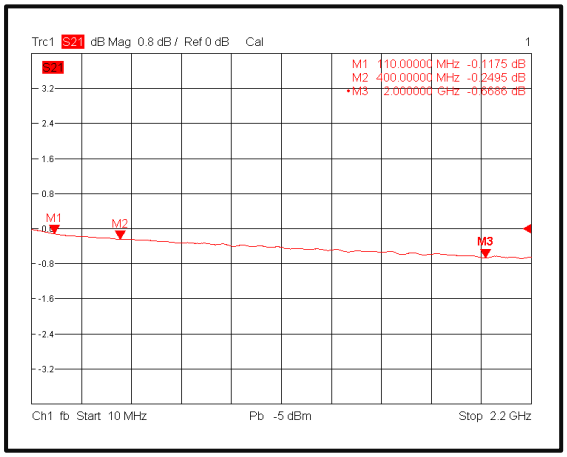
### Directivity 1



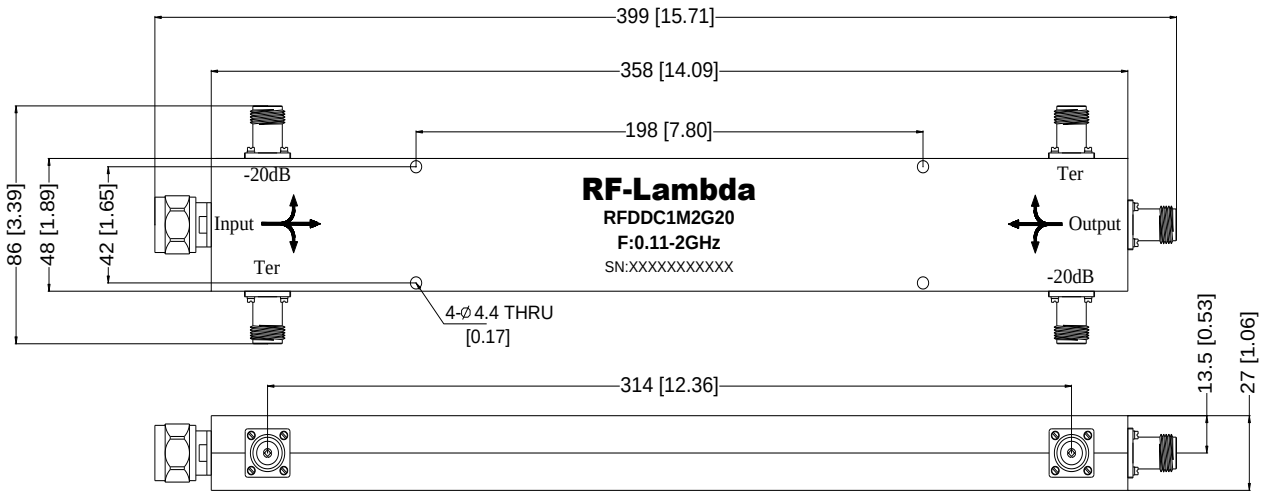

### Directivity 2



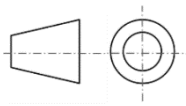

### Insertion Loss



## Outline Drawing




Notes:
1. Package Material: Aluminum
2. Finish: Blue Paint
3. All dimensions are in millimeters [inches].
4. Outline Tolerances ±0.5 [0.02], Mounting Hole Tolerances ±0.2 [0.008] unless otherwise specified.
5. Standard torque wrench must be used to secure RF connectors.



### Additional Information

| Documentation | Webpage |
|---|---|
| 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 |

## Ordering Information

| Part Number | Modification | Description |
|---|---|---|
| RFDDC1M2G20 | Standard | 0.11GHz-2GHz Dual Directional Coupler |

## Important Notice





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