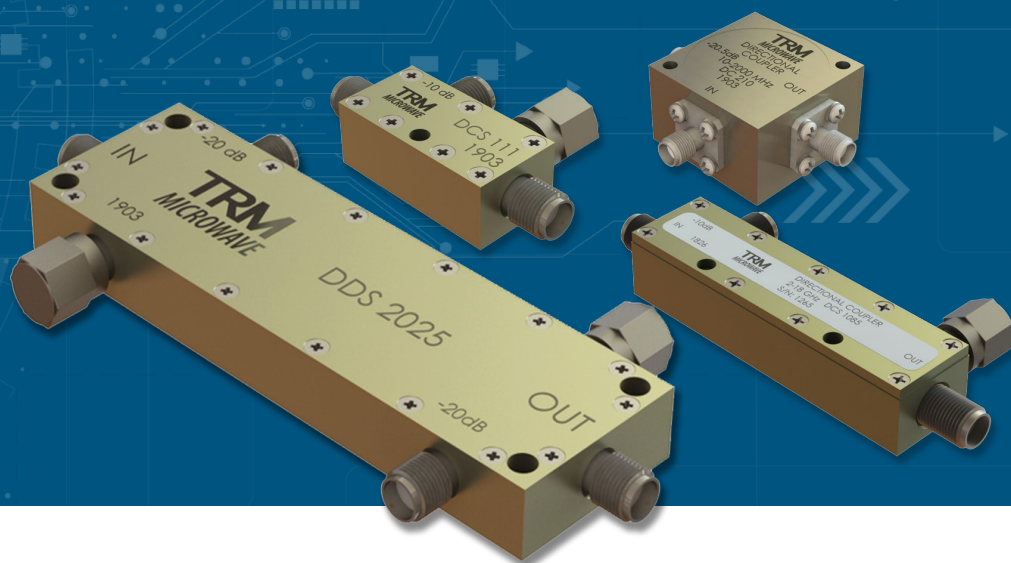


- High-Mix/Low Volume
- HF through Ku Band
- Multi-Media Expertise

DIRECTIONAL COUPLERS

RF/MW COMPONENTS



TRM offers directional couplers in three, four port, and dual directional configurations. These are realized by using Stripline, Lumped Element, and Airline technology.

TRM uses these circuit technologies individually or in combination, allowing us to provide an optimal solution for octave and multi-octave frequency coverage from 100 KHz to 26.5 GHz.

We also offer a complete range of narrow band units designed to dependably satisfy the requirements of application specific market segments. Available component packages include Flatpack, Surface Mount, and Connectorized configurations.

OPERATIONAL DESCRIPTION

A Directional Coupler is typically used to sample a signal from a transmission line. The mainline or thru path carries the signal to be sampled from the input to the output. The coupled port only samples the energy from the thru path in the forward direction (input to the output), while not sampling energy in the reverse direction (output to input). Directional Couplers are designed as four port devices, often the fourth port is internally terminated. Dual Directional couplers have two directional couplers integrated into the same package, Bi-Directional couplers are four port devices without the fourth port terminated, they have similar functionality as a Dual Directional Coupler.



Use any standard model as a starting point to build a custom component to your exact specifications.

Directional Couplers Selection Guide

Part Number	Frequency Range (MHz)	Insertion Loss (db)	VSWR1 Thru	VSWR2 Coupled	Input Power (Watts)	Nominal Coupling (db)	Coupling Variation (db)	Directivity (db)
Broadband								
DC2002	3 - 100	0.5	1.30:1	1.15:1	1	20	0.5	25
DC210	10 - 2000	1.25	1.20:1	1.20:1	1.5	20.5	0.4	15
DC3002	.1 - 32	0.35	1.30:1	1.50:1	2	30	0.5	25
Minature Flat Pack Couplers								
DC1035	5 - 1000	1	1.50:1	1.50:1	1	10	0.5	20
DC133	10 - 500	1	1.50:1	1.50:1	1	10.8	0.5	20
DC2035	5 - 1000	0.75	1.50:1	1.50:1	1	20	0.5	20
Part Number	Frequency Range (MHz)	Insertion Loss (db) Max	VSWR Max	Nominal Coupling (db)	Coupling Flatness (db)	Directivity Min (db)	Power CW (KW)	Power Peak (KW)
High Power Dual Directional								
6008646	1.5 - 30	0.05	1.05:1	60	± 50	25	6	6
1961-C40-R	13 - 14	0.05	1.05:1	40 ± 0.10	± 50	35	14	50
Part Number	Frequency Range (GHz)	Insertion Loss (db)	VSWR1 Thru	VSWR2 Coupled	Input Power (Watts)	Nominal Coupling (db)	Coupling Variation (db)	Directivity (db)
Dual Directional								
DDS1025	1-4	0.4	1.15:1	1.15:1	50	10	1	25
DDS2025	1-4	0.4	1.30:1	1.30:1	50	20	1	20
DDS202	.225 - .400	0.25	1.30:1	1.30:1	50	20	0.8	25
DDS203	.250 - .500	0.25	1.30:1	1.30:1	50	20	1	25
Multi-Octave								
DCS1020	1.5-12.5	1	1.30:1	1.30:1	50	10	0.75	15
DCS1022	.5 - 2	1	1.30:1	1.30:1	50	10	0.5	20
DCS1023	2 - 8	0.6	1.30:1	1.30:1	50	10	0.5	20
DCS1028	.5 - 8	1.5	1.40:1	1.50:1	50	10	1	12
DCS1070	.5 - 4	1.5	1.50:1	1.50:1	50	10	1	15
DCS1085	2-18	1	1.40:1	1.40:1	50	10	0.5	15
DCS146	1.0 - 8.0	0.6	1.30:1	1.30:1	50	10	0.5	10
DCS2020	1 - 12.4	1	1.25:1	1.30:1	50	20	0.75	12
DCS2022	.5 - 2	1	1.30:1	1.30:1	50	20	0.5	20
DCS2023	2-8	0.5	1.30:1	1.30:1	50	20	0.5	20
DCS2085	2-18	1	1.40:1	1.40:1	50	20	0.5	15
DCS2098	.5 - 2	0.75	1.50:1	1.50:1	50	20	0.5	20

PARAMETER DEFINITIONS

Coupling: The relative signal attenuation between an input port and its corresponding coupled port.

Coupling Loss: The remainder of the input power left after accounting for coupled power and power transmitted to the isolated port.

Main Line Loss: The total insertion loss in the main line as measured in a matched system.

The main line loss includes coupling losses, reflection losses and dissipation losses.

Coupling Tolerance: The tolerance of the average value of coupling in dB about the average value over the frequency range.

Coupling Variation: The peak-to-peak variation of coupling in dB about the average value over the frequency range.

Directivity: The ratio of the power (in dB measured at the coupled port when a signal is applied in the forward direction (input to output) versus the reverse direction (output to input)).

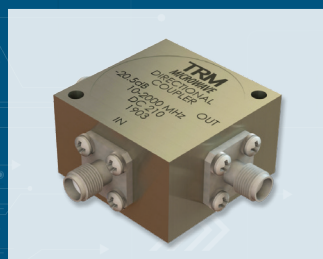
VSWR: Voltage Standing Wave Ratio is a measure of the deviation of impedance from the characteristic impedance of the power divider.



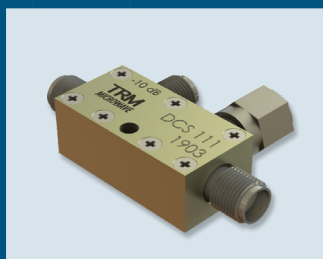
Use any standard model as a starting point to build a custom component to your exact specifications.

Part Number	Frequency Range (GHz)	Insertion Loss (db)	VSWR1 Thru	VSWR2 Coupled	Input Power (Watts)	Nominal Coupling (db)	Coupling Variation (db)	Directivity (db)
Octave Band								
DCS101	.125 - .250	0.1	1.10:1	1.10:1	50	10	0.75	25
DCS102	.225 - .400	0.1	1.10:1	1.10:1	50	10	0.5	25
DCS104	.5 - 1	0.2	1.15:1	1.15:1	50	10	0.75	25
DCS105	1-2	0.2	1.15:1	1.15:1	50	10	0.75	24
DCS106	2-4	0.2	1.20:1	1.20:1	50	10	0.75	22
DCS108	4-8	0.25	1.25:1	1.25:1	50	10	0.75	18
DCS111	7-18	0.6	1.45:1	1.50:1	50	10	0.6	12
DCS201	.125 - .250	0.1	1.10:1	1.10:1	50	20	1	25
DCS202	.225 - .400	0.16	1.10:1	1.10:1	50	20	1	25
DCS204	.5 - 1	0.2	1.15:1	1.15:1	50	20	1	25
DCS205	1-2	0.2	1.15:1	1.15:1	50	20	1	24
DCS206	2-4	0.2	1.20:1	1.20:1	50	20	1	22
DCS208	4-8	0.25	1.25:1	1.25:1	50	20	1	18
DCS211	7-18	0.6	1.45:1	1.50:1	50	20	0.7	14
DCS301	.125 - .250	0.1	1.10:1	1.10:1	50	30	1	25
DCS302	.225 - .400	0.1	1.10:1	1.10:1	50	30	0.8	25
DCS304	.5 - 1	0.2	1.15:1	1.15:1	50	30	1	25
DCS305	1-2	0.2	1.15:1	1.15:1	50	30	1	24
DCS306	2-4	0.2	1.20:1	1.20:1	50	30	1	22
DCS308	4-8	0.25	1.25:1	1.25:1	50	30	1	18
DCS311	7-18	0.6	1.45:1	1.50:1	50	30	0.7	14
DCS601	.125 - .250	0.1	1.10:1	1.10:1	50	6	0.5	25
DCS602	.225 - .400	0.1	1.10:1	1.10:1	50	6	0.5	25
DCS604	.5 - 1	0.2	1.15:1	1.15:1	50	6	0.7	25
DCS605	1-2	0.2	1.15:1	1.15:1	50	6	0.7	24
DCS606	2-4	0.2	1.20:1	1.20:1	50	6	0.7	22
DCS608	4-8	0.25	1.25:1	1.25:1	50	6	0.7	18
DCS611	7-18	0.6	1.45:1	1.50:1	50	6	0.6	12
DCS622	.5 - 2	1	1.30:1	1.30:1	50	6	0.5	20
DCS685	2-18	1	1.40:1	1.40:1	50	6	0.5	15

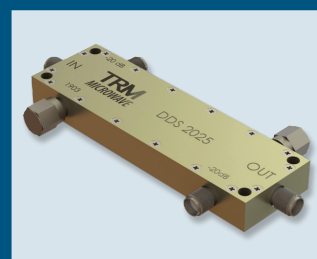
COMPLETING YOUR IDEAS



DCS210 - Broadband



DCS111 - Octave Band



DDS2025 - Dual Directional



WHO WE ARE

About TRM Microwave

TRM is a global leader in the design and manufacture of custom high-reliability RF and microwave components, integrated assemblies and subsystems solutions for space, defense and commercial markets. Utilizing the best combination of core technologies including Ferrite, Coaxial, Microstrip, Stripline, Airline and Airstrip™, TRM offers custom and standard power dividers, directional couplers, hybrids, beamformers, baluns, switched combiners, image reject mixers, phase comparators and space qualified components. TRM's base of proven products provides the building blocks required to supply higher level integrated assemblies.

Founded in 1970, TRM Microwave is located in Bedford, NH and its products are promoted through a dedicated, experienced and knowledgeable team of independent field sales representatives throughout the US and international markets.

CONTACT INFORMATION

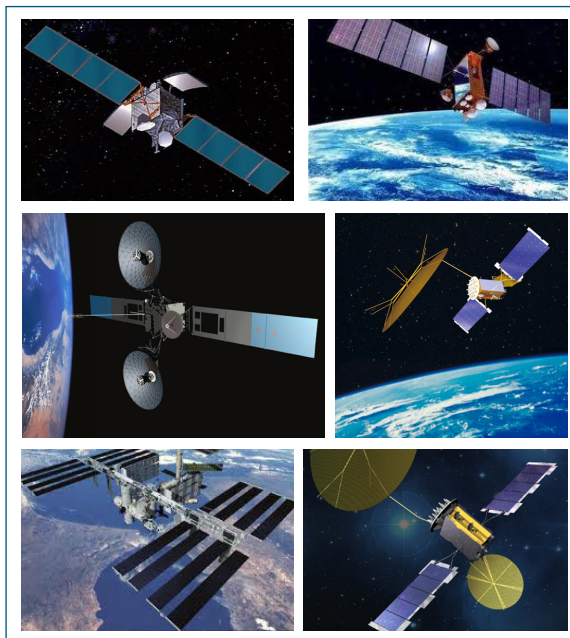
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TRM will customize component screening levels to meet your specific space qual requirements.



Ground



Airborne



Shipboard



Space



Radar / Commercial

Est. 1970

TRM Microwave is proud to be a Woman-Owned Small Business. We are AS9100D/ISO9001:2015 certified and an ITAR registered, compliant facility.

