

# Directional Couplers

Avantel's range of Directional Couplers cover the frequency range of HF through 8 GHz with coupling coefficient varying from 10dB to 40dB. Directional Couplers are basically 4 port devices with the fourth port terminated in a matched load either internally or externally. They separate and sample signals based on the direction of signal propagation.

A system engineer uses these to unequally split the signal flowing in the main line. They are widely used in precision microwave systems Instrumentation and measuring systems.

Directional Couplers may be classified as narrow band and broad band couplers. Narrow band directional couplers are of single section design and are a quarter wavelength long. Wide band couplers contain multiple quarter wave length sections.

Wide band couplers can be further divided into two kinds, one is the symmetric type, which has an odd number of sections and is used where phase characteristics also are important. The second is the asymmetrical type, which gives wideband width than the symmetrical type for the same number of sections. Thus asymmetrical couplers are used where coupler length is more important than the phase.

Directional couplers handling power levels upto 1KW are available in the frequency range of 2 MHz to 1 GHz and are developed using round rod construction.

## Applications

Directional couplers find wide applications in RF /Microwave networks, systems and in microwave measurements. They perform variety of signal processing functions such as:

Power splitting & sampling from signal sources for level control and monitoring

Separation of incident and reflected signals in network analysers for reflection measurement etc.

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### Avantel Limited

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## Specifications

Model No.	Frequency Range (MHz)	Coupling (dB)	Insertion Loss (MAX) dB	VSWR (MAX)	Directivity (MIN) dB
ADC 023-XX	2-30	20 ± 1	0.2	1.3:1	20
		30 ± 1	0.2	1.3:1	20
		40 ± 1	0.2	1.3:1	20
ADC 100-XX	20-100	20 ± 1	0.2	1.3:1	20
		30 ± 1	0.3	1.3:1	20
		40 ± 1	0.3	1.3:1	20
ADC 500-XX	100-500	20 ± 1	0.2	1.3:1	20
		30 ± 1	0.2	1.3:1	20
		40 ± 1	0.2	1.3:1	20
ADC 800-XX	500-800	20 ± 1	0.2	1.3:1	20
		30 ± 1	0.2	1.3:1	20
		40 ± 1	0.2	1.3:1	20
ADC 051-XX	500-1000	10 ± 1	0.15	1.10:1	18
		20 ± 1	0.15	1.10:1	20
		30 ± 1	0.15	1.10:1	22
ADC 102-XX	1000-2000	10 ± 1	0.20	1.15:1	18
		20 ± 1	0.20	1.15:1	20
		30 ± 1	0.20	1.15:1	22
ADC 204-XX	2000-4000	10 ± 1	0.25	1.20:1	18
		20 ± 1	0.25	1.20:1	20
		30 ± 1	0.25	1.20:1	22
ADC 265-XX	2600-5200	10 ± 1	0.25	1.20:1	18
		20 ± 1	0.25	1.20:1	20
		30 ± 1	0.25	1.20:1	22
ADC 408-XX	4000-8000	10 ± 1	0.30	1.25:1	18
		20 ± 1	0.30	1.25:1	20
		30 ± 1	0.30	1.25:1	22

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