

# BDC 0.1 ... 6 GHz

## Directional Coupler (ISO 11452-9)

### STANDARD MODELS

Model Line Connector(s)	Part Number	Frequency Range	Coupling dB	Power Pmin W	Insertion Loss max dB	Directivity min dB	VSWR max Main Line	Main Coupling Connectors
BDC 0160-40/500	0.1 ... 6 GHz				0	2 HU, 430 mm	0	N-f
	144 ... 146 MHz	55 ±3	0 / 0 ±0	0 / 0				
	400 ... 450 MHz	46 ±3	0 / 0 ±0	0 / 0				
	0.7 ... 6 GHz	40 ±2	0 / 0 ±0	0 / 0				

S: Single directional coupler

Special Dual Directional Coupler according to Automotive ISO 11452-9  
Road vehicles - Component test methods for electrical disturbances - Part 9: Portable transmitters  
142 MHz ... 6 GHz at standardized sub-bands  
-> Attention: Below 700 MHz there is no continuously usable frequency range with defined coupling attenuation!

### OPTIONS

X) custom frequency range and custom coupling attenuation upon request

Notice:

Under normal operating conditions all Directional Couplers do not need to be mounted to a heatsink. However, if the units permanently run into high mismatch conditions at full rated power, the circuits will heat up significantly. In this case, we would recommend the units be mounted to a suitable heatsink or metal surface, capable to maintain a baseplate temperature of +60°C max.

# Dual Directional Coupler according to ISO 11452-9

ISO 11452-9 Road vehicles – Component test methods for electrical disturbances from narrowband radiated electromagnetic energy – Part 9: Portable transmitters

## 4. Applicable Frequency Range

142 MHz ... 6 GHz at standardized sub-bands

### 6.2.2 Dual Directional Coupler – Required Performance

- Coupling factor: >20 dB (40 dB recommended)
- Mainline port VSWR: <1.3
- Coupling port VSWR: <1.5
- Transmission Loss: <0.5 dB
- Directivity: >18 dB

The coupling factor (20 ... 40 dB) must be selected for measure forward and reflected power with relation to the sensitivity of the measurement equipment (see 6.2.3 for details).

**Table A.1 – Standardized Frequency Ranges**

Service Designation	Frequency band MHz	Power W
2 m	142 ... 174	10 (RMS)
70 cm	410 ... 470	10 (RMS)
	380 ... 390	
	410 ... 420	
TETRA/ TETRAPOL	450 ... 470	10 (Peak)
	806 ... 825	
	870 ... 876	
AMPS/GSM850	824 ... 849	10 (Peak)
GSM900	876 ... 915	26 or 2 (Peak)
	893 ... 898	
PDC	925 ... 958	0.8 (Peak)
	1429 ... 1453	
PCS	1710 ... 1785	
GSM1800/1900	1850 ... 1910	1 (Peak)
IMT-2000	1885 ... 2025	CW - 1 (RMS) / PM - 1 (Peak)
Bluetooth/WLAN	2400 ... 2500	0.5 (Peak)
IEEE 802.11a	5725 ... 5850	1 (Peak)

Model	Frequency Range X)	Coupling X) dB	Power P <sub>min</sub> W	Insertion Loss max dB	Directivity min dB	VSWR max Main Line	Main Line Connector 1), 2)	Coupling Line Connector 3)	Part Number
<a href="#">BDC 0160-30/500</a>	100 ... 6000 MHz		500	0.2	20	1.30:1	N-f/N-f	SMA-f	10023650
	142 ... 146 MHz	45 ±3.0							
	400 ... 470 MHz	36 ±3.0							
	700 ... 6000 MHz	30 ±2.0							
<a href="#">BDC 0160-40/500</a>	100 ... 6000 MHz		500	0.2	20	1.30:1	N-f/N-f	SMA-f	10023651
	142 ... 146 MHz	55 ±3.0							
	400 ... 470 MHz	46 ±3.0							
	700 ... 6000 MHz	40 ±2.0							
<a href="#">BDC 0160-50/500</a>	100 ... 6000 MHz		500	0.2	20	1.30:1	N-f/N-f	N-f	10024257
	142 ... 146 MHz	65 ±3.0							
	400 ... 470 MHz	56 ±3.0							
	700 ... 6000 MHz	50 ±2.0							

# Test Data BDC 0160-40/500 100 MHz ... 6 GHz :: SN 2230781

