

SCHWARZBECK MESS - ELEKTRONIK

An der Klinge 29 D-69250 Schönau Tel.: 06228/1001 Fax.: (49)6228/1003

Mikrowellen Bikonus-Breitband-Antenne SBA 9119 *Microwave Biconical Broadband Antenna SBA 9119*



Technische Daten:

Linear polarisierte Mikrowellen-Bikonus-Breitbandantenne	
Frequenzbereich nominell:	1 - 6 GHz
Frequenzbereich nutzbar:	0.5 - 6.5 GHz
Anschluß: Buchse	50 Ω N
Befestigungsrohr:	LH=560mm, d=22 mm
Rastring:	LR=190mm
Elementlänge gesamt:	LE = 50 mm
Elementdurchmesser:	D = 28 mm
Isotropgewinn:	typ. -10....+2 dBi (1 - 6 GHz)
Antennenwandlungsmaß:	32 ... 48 dB/m
SWR typ.:	1.5-5 (1.3 - 6 GHz)
Balun (verlustarm):	1:1
Inversionssymmetrie:	typ. < 0.5 dB (1 - 6 GHz)
Kreuzpolarisation:	< - 20 dB
Max. Eingangsleistung:	20 W
Halbwertsbreite E-Ebene:	84° - 45°
Gewicht:	400 g

Specifications:

<i>Linear polarised microwave biconical broadband antenna</i>	
<i>Nominal Frequency range:</i>	
<i>Useable Frequency range:</i>	
<i>Connector: female</i>	
<i>Mounting tube:</i>	
<i>Index Ring:</i>	
<i>Element length total:</i>	
<i>Element diameter:</i>	
<i>Isotropic gain:</i>	
<i>Antenna Factor:</i>	
<i>SWR typ.:</i>	
<i>Balun (low loss):</i>	
<i>Inversion Symmetry:</i>	
<i>Cross Polarisation Rejection:</i>	
<i>Max. Input Power:</i>	
<i>Half-Power Beamwidth (E-plane):</i>	
<i>Weight:</i>	

Beschreibung

Die SBA 9119 hat zwei Haupteinsatzbereiche: Passive Feldsonde für Immunitätsprüfungen nach EN 61000-4-3 zur frequenzselektiven Messung der Feldstärke und Kontrolle des Bereichs homogener Feldstärke (Uniform Area). Eine weitere Anwendung der SBA 9119 ist die Qualifizierung von Absorberräumen nach der Site-VSWR-Methode gemäß CISPR 16-1-4. In Verbindung mit der SBA 9112 kann der Frequenzbereich von 1-18 GHz mit hervorragender Antennenqualifikation bearbeitet werden. Mit gewissen Einschränkungen (höheres Wandlungsmaß und VSWR, reduzierte Symmetrie) läßt sich die SBA 9119 sogar ab 0.5 GHz verwenden. Die Eignung von Messplätzen oberhalb 1 GHz kann mit den üblichen, gerichteten Antennen (Log.-Per. oder Hornantennen) nur unzureichend beurteilt werden, da diese Gewinnantennen aufgrund ihres gebündelten Richtdiagramms die Eigenschaften des Messplatzes "ausblenden".

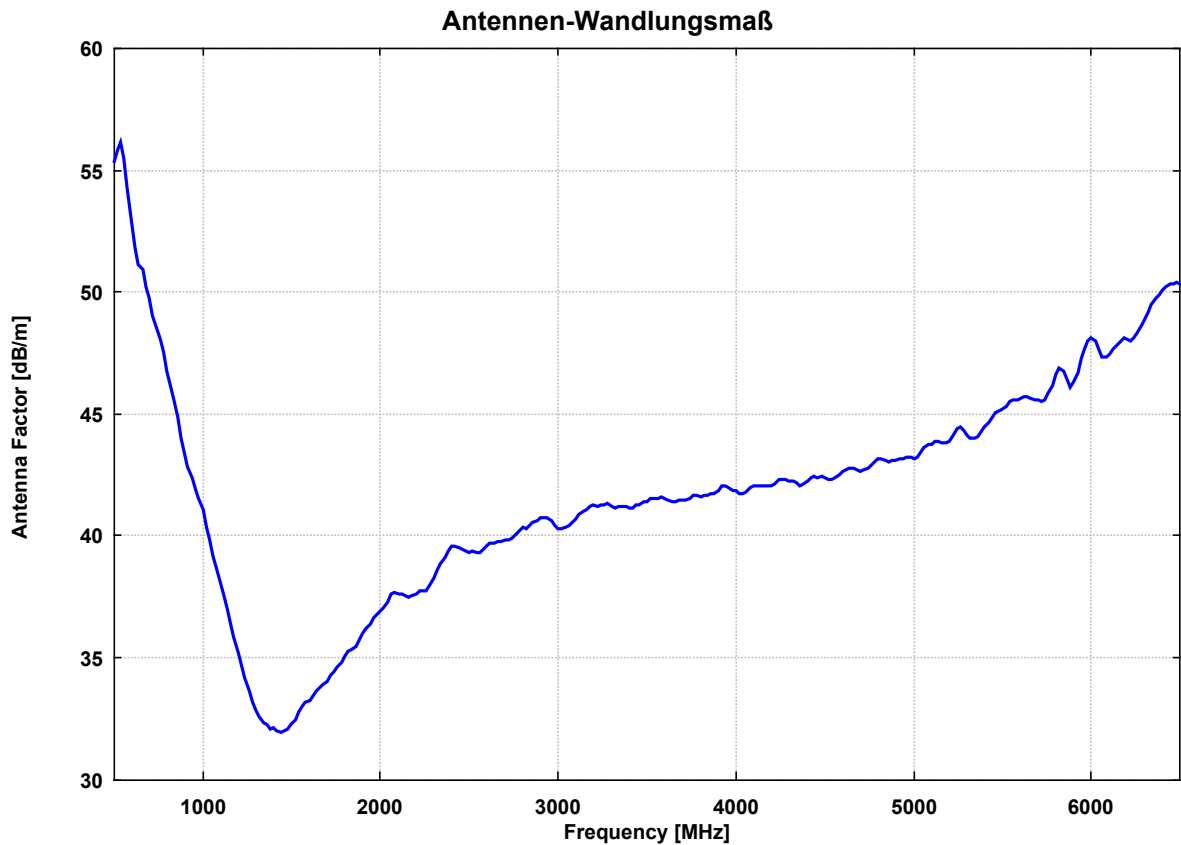
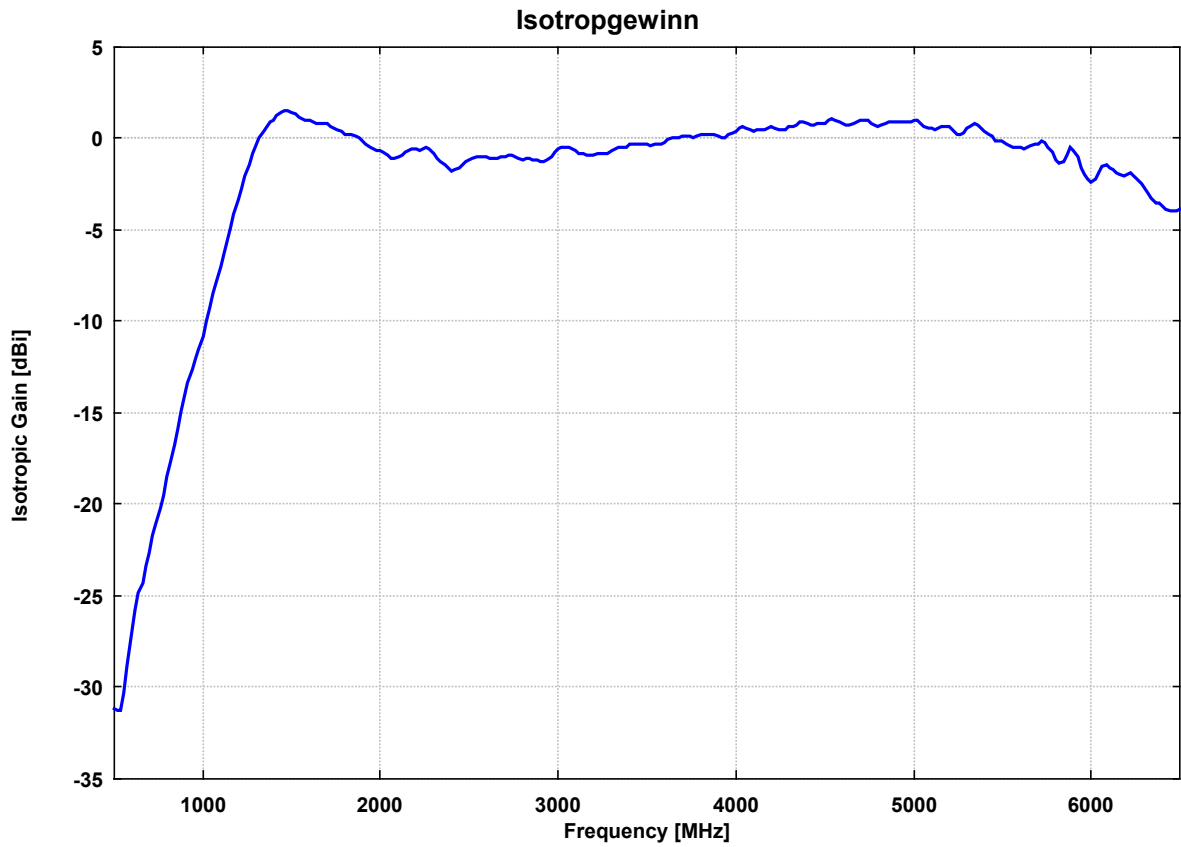
Description

The SBA 9119 has two main applications: A passive field probe for frequency selective measurements of the generated field according to EN 61000-4-3, including the measurement of the uniform area. A further application is the validation of fully anechoic rooms for measurements above 1 GHz according the Site-VSWR-method, described in CISPR 16-1-4. In conjunction with the SBA 9112 a frequency range from 1 to 18 GHz can be covered with excellent antenna performance. Accepting some limitations (i.e. Antenna Factor and VSWR increase, symmetry reduction) the SBA 9119 can be used from 0.5 GHz on. The validation of test sites with commonly used Microwave antennas (e.g. Log.-Per. or Horn Antennas) leads to insufficient results, since these directive gain antennas with concentrated directional pattern do not take the test site characteristics into account.

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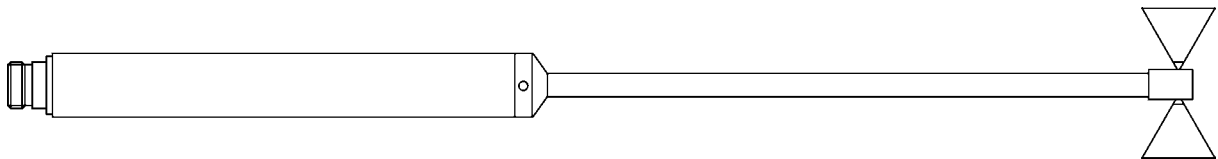
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Anwendung

Die häufigsten Anwendungen der Mikrowellen-Bikonusantenne sind die Qualifizierung von Messplätzen, die (frequenzselektive) Messung von Feldstärken, sowie die Erzeugung definierter Feldstärken (z.B. ERP oder EIRP). Durch die große Bandbreite entfällt im Vergleich zum Halbwellendipol der zeitraubende Elementwechsel, Messungen können sehr komfortabel im Wobbelverfahren durchgeführt werden. Aufgrund des dipolähnlichen Richtdiagramms, des festen Phasenzentrums und der hohen Belastbarkeit kann die SBA 9119 in vielen Anwendungen abgestimmte Halbwellendipole ersetzen. Für Emissionsmessungen an Prüflingen ist die SBA 9119 nicht vorgesehen, da bei den sehr niedrigen Emissionsgrenzwerten ein möglichst geringer Antennenfaktor (Horn- oder Log.-Per. Antenne) erwünscht ist. Die SBA 9119 eignet sich z.B. auch ideal als (hochlineare) Breitband-Nahfeldsonde aufgrund der geringen Abmessungen.

Application

The typical applications of the microwave biconical Antenna are the evaluation of test sites, the (frequency selective) fieldstrength measurement and the generation of defined fieldstrength (e.g. ERP or EIRP). Thanks to the wide bandwidth there is no need for a time consuming change of the antenna elements as required when operating with tuned half-wave dipoles. The biconical elements allow a continuous sweep over the complete frequency range. Because of the dipole-like directional pattern, the fixed phase center and the high power handling capability the SBA 9119 may replace tuned half-wave dipoles in many applications. The SBA 9119 is not intended for emission testing with very low limits, horn and Log.-Per. Antennas are better matched for this purpose because of their better antenna factor. A typical application of the SBA 9119 is the use as a (highly linear) broadband nearfield probe thanks to its small dimensions.



Frequency MHz	Gain(Isotr.) dBi	Ant.-Factor dB/m
500.00	-31.20	55.40
520.00	-31.28	55.82
540.00	-31.29	56.16
560.00	-30.34	55.53
580.00	-28.84	54.32
600.00	-27.03	52.81
620.00	-25.77	51.84
640.00	-24.81	51.15
660.00	-24.35	50.96
680.00	-23.34	50.21
700.00	-22.65	49.77
720.00	-21.72	49.08
740.00	-21.06	48.67
760.00	-20.25	48.08
780.00	-19.49	47.55
800.00	-18.50	46.79
820.00	-17.75	46.25
840.00	-16.78	45.48
860.00	-15.92	44.83
880.00	-14.94	44.05
900.00	-14.11	43.42
920.00	-13.37	42.86
940.00	-12.67	42.36
960.00	-12.08	41.94
980.00	-11.49	41.53

Frequency MHz	Gain(Isotr.) dBi	Ant.-Factor dB/m
1000.00	-10.84	41.06
1020.00	-9.98	40.37
1040.00	-9.27	39.83
1060.00	-8.46	39.19
1080.00	-7.84	38.73
1100.00	-6.97	38.02
1120.00	-6.32	37.53
1140.00	-5.64	37.00
1160.00	-4.96	36.47
1180.00	-4.17	35.83
1200.00	-3.39	35.19
1220.00	-2.74	34.69
1240.00	-2.03	34.12
1260.00	-1.39	33.62
1280.00	-0.79	33.15
1300.00	-0.35	32.85
1320.00	0.01	32.62
1340.00	0.44	32.32
1360.00	0.65	32.24
1380.00	0.93	32.08
1400.00	1.04	32.10
1420.00	1.30	31.97
1440.00	1.44	31.95
1460.00	1.53	31.98
1480.00	1.54	32.08

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Frequency MHz	Gain(Isotr.) dBi	Ant.-Factor dB/m
1500.00	1.46	32.28
1520.00	1.36	32.49
1540.00	1.16	32.81
1560.00	1.07	33.01
1580.00	1.01	33.19
1600.00	1.04	33.27
1620.00	0.95	33.46
1640.00	0.87	33.64
1660.00	0.86	33.77
1680.00	0.83	33.90
1700.00	0.80	34.03
1720.00	0.64	34.29
1740.00	0.59	34.44
1760.00	0.52	34.61
1780.00	0.42	34.81
1800.00	0.27	35.06
1820.00	0.18	35.24
1840.00	0.20	35.31
1860.00	0.12	35.49
1880.00	-0.00	35.71
1900.00	-0.17	35.97
1920.00	-0.31	36.20
1940.00	-0.42	36.40
1960.00	-0.58	36.64
1980.00	-0.60	36.75
2000.00	-0.63	36.88
2020.00	-0.73	37.05
2040.00	-0.90	37.31
2060.00	-1.10	37.60
2080.00	-1.12	37.70
2100.00	-0.98	37.65
2120.00	-0.86	37.61
2140.00	-0.70	37.53
2160.00	-0.59	37.50
2180.00	-0.52	37.51
2200.00	-0.57	37.64
2220.00	-0.63	37.77
2240.00	-0.54	37.76
2260.00	-0.45	37.75
2280.00	-0.56	37.94
2300.00	-0.81	38.27
2320.00	-1.06	38.59
2340.00	-1.26	38.86
2360.00	-1.46	39.14
2380.00	-1.64	39.40
2400.00	-1.72	39.55
2420.00	-1.66	39.55
2440.00	-1.57	39.53
2460.00	-1.42	39.46
2480.00	-1.29	39.40
2500.00	-1.17	39.35
2520.00	-1.11	39.36
2540.00	-1.03	39.34
2560.00	-0.96	39.34
2580.00	-0.96	39.41

Frequency MHz	Gain(Isotr.) dBi	Ant.-Factor dB/m
2600.00	-1.02	39.54
2620.00	-1.10	39.69
2640.00	-1.07	39.73
2660.00	-1.04	39.75
2680.00	-0.97	39.75
2700.00	-1.02	39.86
2720.00	-0.95	39.86
2740.00	-0.95	39.93
2760.00	-1.03	40.07
2780.00	-1.09	40.19
2800.00	-1.16	40.33
2820.00	-1.07	40.30
2840.00	-1.11	40.40
2860.00	-1.20	40.55
2880.00	-1.20	40.61
2900.00	-1.25	40.72
2920.00	-1.22	40.75
2940.00	-1.18	40.77
2960.00	-0.99	40.63
2980.00	-0.72	40.42
3000.00	-0.55	40.31
3020.00	-0.50	40.32
3040.00	-0.50	40.38
3060.00	-0.47	40.40
3080.00	-0.55	40.54
3100.00	-0.65	40.70
3120.00	-0.80	40.90
3140.00	-0.83	40.99
3160.00	-0.89	41.10
3180.00	-0.95	41.21
3200.00	-0.95	41.28
3220.00	-0.84	41.21
3240.00	-0.83	41.26
3260.00	-0.77	41.25
3280.00	-0.78	41.32
3300.00	-0.62	41.21
3320.00	-0.52	41.16
3340.00	-0.51	41.21
3360.00	-0.49	41.23
3380.00	-0.42	41.21
3400.00	-0.29	41.14
3420.00	-0.26	41.16
3440.00	-0.33	41.28
3460.00	-0.25	41.25
3480.00	-0.33	41.38
3500.00	-0.32	41.42
3520.00	-0.40	41.56
3540.00	-0.33	41.53
3560.00	-0.27	41.52
3580.00	-0.27	41.57
3600.00	-0.18	41.53
3620.00	-0.07	41.47
3640.00	0.06	41.38
3660.00	0.07	41.42
3680.00	0.09	41.45

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3700.00	0.14	41.44
3720.00	0.16	41.47
3740.00	0.14	41.54
3760.00	0.06	41.66
3780.00	0.13	41.64
3800.00	0.19	41.62
3820.00	0.22	41.65
3840.00	0.25	41.65
3860.00	0.24	41.71
3880.00	0.26	41.74
3900.00	0.15	41.89
3920.00	0.04	42.04
3940.00	0.09	42.04
3960.00	0.21	41.97
3980.00	0.36	41.85
4000.00	0.43	41.83
4020.00	0.58	41.72
4040.00	0.63	41.72
4060.00	0.61	41.78
4080.00	0.46	41.97
4100.00	0.41	42.07
4120.00	0.45	42.07
4140.00	0.47	42.09
4160.00	0.54	42.06
4180.00	0.61	42.03
4200.00	0.65	42.04
4220.00	0.60	42.12
4240.00	0.48	42.29
4260.00	0.48	42.33
4280.00	0.54	42.31
4300.00	0.62	42.27
4320.00	0.68	42.25
4340.00	0.78	42.19
4360.00	0.93	42.08
4380.00	0.93	42.12
4400.00	0.84	42.25
4420.00	0.73	42.40
4440.00	0.75	42.42
4460.00	0.81	42.40
4480.00	0.81	42.43
4500.00	0.88	42.41
4520.00	0.98	42.35
4540.00	1.06	42.30
4560.00	1.03	42.37
4580.00	0.91	42.53
4600.00	0.85	42.62
4620.00	0.78	42.73
4640.00	0.77	42.78
4660.00	0.81	42.77
4680.00	0.89	42.74
4700.00	1.00	42.66
4720.00	0.98	42.72
4740.00	0.96	42.78
4760.00	0.84	42.93
4780.00	0.74	43.06

Frequency MHz	Gain(Isotr.) dBi	Ant.-Factor dB/m
4800.00	0.67	43.17
4820.00	0.72	43.16
4840.00	0.81	43.11
4860.00	0.89	43.06
4880.00	0.90	43.08
4900.00	0.93	43.10
4920.00	0.91	43.15
4940.00	0.91	43.18
4960.00	0.91	43.22
4980.00	0.95	43.21
5000.00	1.03	43.17
5020.00	0.99	43.24
5040.00	0.84	43.42
5060.00	0.66	43.64
5080.00	0.57	43.76
5100.00	0.61	43.76
5120.00	0.54	43.86
5140.00	0.57	43.87
5160.00	0.63	43.84
5180.00	0.70	43.81
5200.00	0.66	43.88
5220.00	0.47	44.10
5240.00	0.22	44.39
5260.00	0.20	44.44
5280.00	0.30	44.37
5300.00	0.59	44.11
5320.00	0.70	44.04
5340.00	0.80	43.98
5360.00	0.72	44.08
5380.00	0.59	44.24
5400.00	0.41	44.46
5420.00	0.23	44.67
5440.00	0.10	44.84
5460.00	-0.10	45.06
5480.00	-0.13	45.13
5500.00	-0.16	45.18
5520.00	-0.29	45.35
5540.00	-0.40	45.49
5560.00	-0.48	45.60
5580.00	-0.42	45.58
5600.00	-0.47	45.66
5620.00	-0.52	45.74
5640.00	-0.44	45.69
5660.00	-0.38	45.65
5680.00	-0.28	45.58
5700.00	-0.25	45.58
5720.00	-0.14	45.51
5740.00	-0.18	45.58
5760.00	-0.42	45.85
5780.00	-0.73	46.19
5800.00	-1.14	46.62
5820.00	-1.35	46.87
5840.00	-1.22	46.77
5860.00	-0.87	46.45
5880.00	-0.50	46.11



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Frequency MHz	Gain(Isotr.) dBi	Ant.-Factor dB/m
5900.00	-0.67	46.30
5920.00	-1.03	46.69
5940.00	-1.57	47.27
5960.00	-1.94	47.67
5980.00	-2.24	47.99
6000.00	-2.36	48.14
6020.00	-2.18	47.99
6040.00	-1.83	47.67
6060.00	-1.49	47.36
6080.00	-1.47	47.37
6100.00	-1.57	47.50
6120.00	-1.69	47.65
6140.00	-1.82	47.80
6160.00	-1.93	47.94
6180.00	-2.06	48.10
6200.00	-1.99	48.06

Frequency MHz	Gain(Isotr.) dBi	Ant.-Factor dB/m
6220.00	-1.90	47.99
6240.00	-2.00	48.13
6260.00	-2.20	48.35
6280.00	-2.49	48.67
6300.00	-2.68	48.88
6320.00	-2.98	49.21
6340.00	-3.24	49.50
6360.00	-3.47	49.76
6380.00	-3.54	49.86
6400.00	-3.73	50.07
6420.00	-3.82	50.19
6440.00	-3.92	50.32
6460.00	-3.96	50.38
6480.00	-3.95	50.41
6500.00	-3.90	50.38

