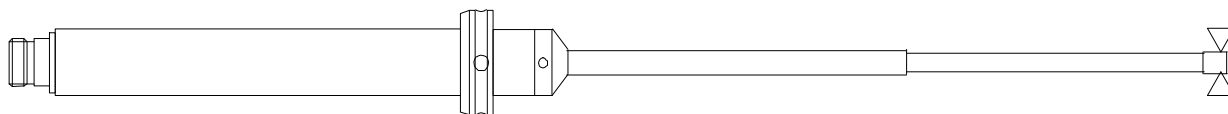


SCHWARZBECK MESS - ELEKTRONIK

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

Mikrowellen Bikonus-Breitband-Antenne SBA 9112 *Microwave Biconical Broadband Antenna SBA 9112*



Technische Daten:

| | |
|--|---------------------------------------|
| Linear polarisierte Mikrowellen-Bikonus-Breitbandantenne | |
| Frequenzbereich nominell: | 3 - 18 GHz |
| Frequenzbereich nutzbar: | 1 - 18 GHz |
| Anschluß: Buchse | 50 W N |
| Befestigungsrohr: | $L_H=560\text{mm}$, $d=22\text{ mm}$ |
| Rastring: | $L_R=190\text{mm}$ |
| Elementlänge gesamt: | $L_E=20\text{ mm}$ |
| Elementdurchmesser: | $D = 9\text{ mm}$ |
| Isotropgewinn: | typ. -4...+3 dBi (3.5 - 18 GHz) |
| Antennenwandlungsmaß: | 43 ... 53 dB/m |
| SWR typ.: | 1.5-5 (4 - 18 GHz) |
| Balun (verlustarm): | 1:1 |
| Inversionssymmetrie: | typ. < 0.5 dB (3 - 18 GHz) |
| Kreuzpolarisation: | < - 20 dB |
| Max. Eingangsleistung: | 10 W |
| Halbwertsbreite E-Ebene: | 84° - 45° |
| Gewicht: | 420 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 9112 wurde entwickelt, weil oberhalb von 3 GHz weltweit keinerlei kalibrierte Breitbandantennen mit Rundstrahl- bzw. Dipolcharakteristik verfügbar waren. In Verbindung mit der SBA 9113 kann nun der Frequenzbereich von 0.5-18 GHz mit hervorragender Antennenqualifikation bearbeitet werden. Mit gewissen Einschränkungen (höheres Wandlungsmaß und VSWR, reduzierte Symmetrie) läßt sich die SBA 9112 sogar ab 1 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 9112 was designed because of the worldwide unavailability of omnidirectional or dipole-like broadband antennas operating above 3 GHz. In combination with the SBA 9113 a frequency range from 0.5 to 18 GHz can be covered with excellent antenna performance. Accepting some limitations (i.e. Antenna Factor and VSWR increase, symmetry reduction) the SBA 9112 can be used from 1 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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Mikrowellen Bikonus-Breitband-Antenne SBA 9112 Microwave Biconical Broadband Antenna SBA 9112

Anwendung

Die häufigsten Anwendungen der Mikrowellen-Bikonusanterenne 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 9112 in vielen Anwendungen abgestimmte Halbwellendipole ersetzen. Für Emissionsmessungen an Prüflingen ist die SBA 9112 nicht vorgesehen, da bei den sehr niedrigen Emissionsgrenzwerten ein möglichst geringer Antennenfaktor (Horn- oder Log.-Per. Antenne) erwünscht ist. Die SBA 9112 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 9112 may replace tuned half-wave dipoles in many applications. The SBA 9112 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 9112 is the use as a (highly linear) broadband nearfield probe thanks to its small dimensions.

| Frequency MHz | Distance m | Wavelength m | Attenuation dB | Gain(Isotr.) dBi | Gain(Dipole) dBd | Ant.-Factor dB/m |
|------------------|---------------|-----------------|-------------------|---------------------|---------------------|---------------------|
| 1000.00 | 0.50 | 0.300 | 107.85 | -40.72 | -42.87 | 70.94 |
| 1100.00 | 0.50 | 0.273 | 106.11 | -39.43 | -41.58 | 70.48 |
| 1200.00 | 0.50 | 0.250 | 104.67 | -38.33 | -40.48 | 70.14 |
| 1300.00 | 0.50 | 0.231 | 102.06 | -36.68 | -38.83 | 69.18 |
| 1400.00 | 0.50 | 0.214 | 98.68 | -34.67 | -36.82 | 67.81 |
| 1500.00 | 0.50 | 0.200 | 95.22 | -32.64 | -34.79 | 66.38 |
| 1600.00 | 0.50 | 0.188 | 91.51 | -30.50 | -32.65 | 64.80 |
| 1700.00 | 0.50 | 0.176 | 88.62 | -28.79 | -30.95 | 63.62 |
| 1800.00 | 0.50 | 0.167 | 85.83 | -27.15 | -29.30 | 62.48 |
| 1900.00 | 0.50 | 0.158 | 83.07 | -25.54 | -27.69 | 61.33 |
| 2000.00 | 0.50 | 0.150 | 80.54 | -24.05 | -26.20 | 60.29 |
| 2100.00 | 0.50 | 0.143 | 77.87 | -22.50 | -24.65 | 59.17 |
| 2200.00 | 0.50 | 0.136 | 75.52 | -21.13 | -23.28 | 58.20 |
| 2300.00 | 0.50 | 0.130 | 73.77 | -20.06 | -22.21 | 57.51 |
| 2400.00 | 0.50 | 0.125 | 71.46 | -18.72 | -20.87 | 56.54 |
| 2500.00 | 0.50 | 0.120 | 69.39 | -17.51 | -19.66 | 55.69 |
| 2600.00 | 0.50 | 0.115 | 67.02 | -16.15 | -18.30 | 54.67 |
| 2700.00 | 0.50 | 0.111 | 64.44 | -14.69 | -16.84 | 53.54 |
| 2800.00 | 0.50 | 0.107 | 62.11 | -13.37 | -15.52 | 52.54 |
| 2900.00 | 0.50 | 0.103 | 59.81 | -12.07 | -14.22 | 51.54 |
| 3000.00 | 0.50 | 0.100 | 57.19 | -10.61 | -12.76 | 50.38 |
| 3100.00 | 0.50 | 0.097 | 55.10 | -9.43 | -11.58 | 49.47 |
| 3200.00 | 0.50 | 0.094 | 52.71 | -8.09 | -10.24 | 48.41 |
| 3300.00 | 0.50 | 0.091 | 50.14 | -6.67 | -8.82 | 47.26 |
| 3400.00 | 0.50 | 0.088 | 47.77 | -5.36 | -7.51 | 46.21 |
| MHz | m | m | dB | dBi | dBd | dB/m |

SCHWARZBECK MESS - ELEKTRONIK

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Mikrowellen Bikonus-Breitband-Antenne SBA 9112 *Microwave Biconical Broadband Antenna SBA 9112*

| Frequency MHz | Distance m | Wavelength m | Attenuation dB | Gain(Isotr.) dBi | Gain(Dipole) dBd | Ant.-Factor dB/m |
|------------------|---------------|-----------------|-------------------|---------------------|---------------------|---------------------|
| 3500.00 | 0.50 | 0.086 | 46.45 | -4.58 | -6.73 | 45.68 |
| 3600.00 | 0.50 | 0.083 | 44.21 | -3.33 | -5.48 | 44.68 |
| 3700.00 | 0.50 | 0.081 | 42.70 | -2.46 | -4.61 | 44.04 |
| 3800.00 | 0.50 | 0.079 | 41.87 | -1.93 | -4.08 | 43.74 |
| 3900.00 | 0.50 | 0.077 | 41.10 | -1.43 | -3.58 | 43.47 |
| 4000.00 | 0.50 | 0.075 | 40.73 | -1.13 | -3.28 | 43.39 |
| 4100.00 | 0.50 | 0.073 | 40.86 | -1.09 | -3.24 | 43.57 |
| 4200.00 | 0.50 | 0.071 | 40.52 | -0.82 | -2.97 | 43.50 |
| 4300.00 | 0.50 | 0.070 | 40.62 | -0.77 | -2.92 | 43.65 |
| 4400.00 | 0.50 | 0.068 | 41.43 | -1.07 | -3.22 | 44.16 |
| 4500.00 | 0.50 | 0.067 | 41.85 | -1.18 | -3.33 | 44.47 |
| 4600.00 | 0.50 | 0.065 | 42.38 | -1.35 | -3.50 | 44.83 |
| 4700.00 | 0.50 | 0.064 | 43.52 | -1.83 | -3.98 | 45.49 |
| 4800.00 | 0.50 | 0.063 | 44.43 | -2.19 | -4.34 | 46.04 |
| 4900.00 | 0.50 | 0.061 | 44.75 | -2.26 | -4.41 | 46.29 |
| 5000.00 | 0.50 | 0.060 | 45.35 | -2.47 | -4.63 | 46.67 |
| 5100.00 | 0.50 | 0.059 | 45.55 | -2.49 | -4.64 | 46.86 |
| 5200.00 | 0.50 | 0.058 | 46.00 | -2.63 | -4.78 | 47.17 |
| 5300.00 | 0.50 | 0.057 | 46.45 | -2.77 | -4.92 | 47.47 |
| 5400.00 | 0.50 | 0.056 | 46.83 | -2.88 | -5.03 | 47.75 |
| 5500.00 | 0.50 | 0.055 | 47.10 | -2.93 | -5.08 | 47.96 |
| 5600.00 | 0.50 | 0.054 | 47.76 | -3.19 | -5.34 | 48.37 |
| 5700.00 | 0.50 | 0.053 | 47.94 | -3.20 | -5.35 | 48.54 |
| 5800.00 | 0.50 | 0.052 | 48.04 | -3.18 | -5.33 | 48.67 |
| 5900.00 | 0.50 | 0.051 | 48.47 | -3.32 | -5.47 | 48.95 |
| 6000.00 | 0.50 | 0.050 | 48.81 | -3.42 | -5.57 | 49.20 |
| 6100.00 | 0.50 | 0.049 | 48.94 | -3.41 | -5.56 | 49.33 |
| 6200.00 | 0.50 | 0.048 | 49.33 | -3.53 | -5.68 | 49.60 |
| 6300.00 | 0.50 | 0.048 | 49.30 | -3.45 | -5.60 | 49.65 |
| 6400.00 | 0.50 | 0.047 | 49.18 | -3.32 | -5.47 | 49.66 |
| 6500.00 | 0.50 | 0.046 | 49.24 | -3.28 | -5.43 | 49.76 |
| 6600.00 | 0.50 | 0.045 | 49.17 | -3.18 | -5.33 | 49.79 |
| 6700.00 | 0.50 | 0.045 | 49.70 | -3.38 | -5.53 | 50.12 |
| 6800.00 | 0.50 | 0.044 | 50.10 | -3.51 | -5.67 | 50.38 |
| 6900.00 | 0.50 | 0.043 | 49.92 | -3.36 | -5.51 | 50.36 |
| 7000.00 | 0.50 | 0.043 | 49.76 | -3.22 | -5.37 | 50.34 |
| 7100.00 | 0.50 | 0.042 | 49.91 | -3.23 | -5.38 | 50.48 |
| 7200.00 | 0.50 | 0.042 | 49.83 | -3.13 | -5.28 | 50.50 |
| 7300.00 | 0.50 | 0.041 | 50.26 | -3.29 | -5.44 | 50.77 |
| 7400.00 | 0.50 | 0.041 | 49.63 | -2.91 | -5.06 | 50.52 |
| 7500.00 | 0.50 | 0.040 | 49.72 | -2.90 | -5.05 | 50.62 |
| 7600.00 | 0.50 | 0.039 | 49.82 | -2.89 | -5.04 | 50.73 |
| 7700.00 | 0.50 | 0.039 | 50.36 | -3.10 | -5.25 | 51.05 |
| 7800.00 | 0.50 | 0.038 | 49.78 | -2.76 | -4.91 | 50.82 |
| 7900.00 | 0.50 | 0.038 | 49.50 | -2.56 | -4.71 | 50.73 |
| 8000.00 | 0.50 | 0.038 | 49.97 | -2.75 | -4.90 | 51.03 |
| 8100.00 | 0.50 | 0.037 | 50.35 | -2.88 | -5.03 | 51.27 |
| 8200.00 | 0.50 | 0.037 | 49.89 | -2.59 | -4.74 | 51.09 |
| 8300.00 | 0.50 | 0.036 | 49.95 | -2.57 | -4.72 | 51.17 |
| 8400.00 | 0.50 | 0.036 | 49.04 | -2.07 | -4.22 | 50.77 |
| 8500.00 | 0.50 | 0.035 | 49.10 | -2.05 | -4.20 | 50.86 |
| MHz | m | m | dB | dBi | dBd | dB/m |

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Mikrowellen Bikonus-Breitband-Antenne SBA 9112 Microwave Biconical Broadband Antenna SBA 9112

| Frequency MHz | Distance m | Wavelength m | Attenuation dB | Gain(Isotr.) dBi | Gain(Dipole) dBd | Ant.-Factor dB/m |
|------------------|---------------|-----------------|-------------------|---------------------|---------------------|---------------------|
| 8600.00 | 0.50 | 0.035 | 49.38 | -2.13 | -4.28 | 51.04 |
| 8700.00 | 0.50 | 0.034 | 49.26 | -2.02 | -4.17 | 51.03 |
| 8800.00 | 0.50 | 0.034 | 48.85 | -1.77 | -3.92 | 50.88 |
| 8900.00 | 0.50 | 0.034 | 49.63 | -2.11 | -4.26 | 51.32 |
| 9000.00 | 0.50 | 0.033 | 49.06 | -1.78 | -3.93 | 51.08 |
| 9100.00 | 0.50 | 0.033 | 49.02 | -1.71 | -3.86 | 51.11 |
| 9200.00 | 0.50 | 0.033 | 48.59 | -1.45 | -3.60 | 50.94 |
| 9300.00 | 0.50 | 0.032 | 48.22 | -1.21 | -3.36 | 50.80 |
| 9400.00 | 0.50 | 0.032 | 47.91 | -1.02 | -3.17 | 50.70 |
| 9500.00 | 0.50 | 0.032 | 48.18 | -1.10 | -3.25 | 50.88 |
| 9600.00 | 0.50 | 0.031 | 47.86 | -0.89 | -3.05 | 50.76 |
| 9700.00 | 0.50 | 0.031 | 47.64 | -0.74 | -2.89 | 50.70 |
| 9800.00 | 0.50 | 0.031 | 47.57 | -0.66 | -2.81 | 50.71 |
| 9900.00 | 0.50 | 0.030 | 47.63 | -0.65 | -2.80 | 50.78 |
| 10000.00 | 0.50 | 0.030 | 46.93 | -0.25 | -2.41 | 50.47 |
| 10100.00 | 0.50 | 0.030 | 47.15 | -0.32 | -2.47 | 50.63 |
| 10200.00 | 0.50 | 0.029 | 47.09 | -0.25 | -2.40 | 50.64 |
| 10300.00 | 0.50 | 0.029 | 47.07 | -0.20 | -2.35 | 50.67 |
| 10400.00 | 0.50 | 0.029 | 47.60 | -0.42 | -2.57 | 50.98 |
| 10500.00 | 0.50 | 0.029 | 47.60 | -0.38 | -2.53 | 51.02 |
| 10600.00 | 0.50 | 0.028 | 46.99 | -0.03 | -2.18 | 50.76 |
| 10700.00 | 0.50 | 0.028 | 46.92 | 0.04 | -2.11 | 50.77 |
| 10800.00 | 0.50 | 0.028 | 46.89 | 0.10 | -2.05 | 50.79 |
| 10900.00 | 0.50 | 0.028 | 47.09 | 0.04 | -2.11 | 50.93 |
| 11000.00 | 0.50 | 0.027 | 47.49 | -0.12 | -2.27 | 51.17 |
| 11100.00 | 0.50 | 0.027 | 47.21 | 0.06 | -2.09 | 51.07 |
| 11200.00 | 0.50 | 0.027 | 46.29 | 0.56 | -1.59 | 50.64 |
| 11300.00 | 0.50 | 0.027 | 46.25 | 0.62 | -1.53 | 50.66 |
| 11400.00 | 0.50 | 0.026 | 46.32 | 0.62 | -1.53 | 50.74 |
| 11500.00 | 0.50 | 0.026 | 46.39 | 0.62 | -1.53 | 50.81 |
| 11600.00 | 0.50 | 0.026 | 46.48 | 0.61 | -1.54 | 50.90 |
| 11700.00 | 0.50 | 0.026 | 46.07 | 0.86 | -1.29 | 50.73 |
| 11800.00 | 0.50 | 0.025 | 46.14 | 0.86 | -1.29 | 50.80 |
| 11900.00 | 0.50 | 0.025 | 46.34 | 0.80 | -1.35 | 50.93 |
| 12000.00 | 0.50 | 0.025 | 46.05 | 0.98 | -1.17 | 50.82 |
| 12100.00 | 0.50 | 0.025 | 45.70 | 1.19 | -0.96 | 50.69 |
| 12200.00 | 0.50 | 0.025 | 45.86 | 1.15 | -1.00 | 50.80 |
| 12300.00 | 0.50 | 0.024 | 45.79 | 1.21 | -0.94 | 50.80 |
| 12400.00 | 0.50 | 0.024 | 45.90 | 1.19 | -0.96 | 50.89 |
| 12500.00 | 0.50 | 0.024 | 45.61 | 1.38 | -0.78 | 50.78 |
| 12600.00 | 0.50 | 0.024 | 45.36 | 1.53 | -0.62 | 50.69 |
| 12700.00 | 0.50 | 0.024 | 45.26 | 1.62 | -0.53 | 50.68 |
| 12800.00 | 0.50 | 0.023 | 45.20 | 1.68 | -0.47 | 50.68 |
| 12900.00 | 0.50 | 0.023 | 44.68 | 1.98 | -0.17 | 50.45 |
| 13000.00 | 0.50 | 0.023 | 44.61 | 2.05 | -0.11 | 50.45 |
| 13100.00 | 0.50 | 0.023 | 44.77 | 2.00 | -0.15 | 50.57 |
| 13200.00 | 0.50 | 0.023 | 44.86 | 1.98 | -0.17 | 50.65 |
| 13300.00 | 0.50 | 0.023 | 44.59 | 2.15 | 0.00 | 50.55 |
| 13400.00 | 0.50 | 0.022 | 44.44 | 2.26 | 0.11 | 50.50 |
| 13500.00 | 0.50 | 0.022 | 44.24 | 2.39 | 0.24 | 50.43 |
| 13600.00 | 0.50 | 0.022 | 44.41 | 2.34 | 0.19 | 50.55 |
| MHz | m | m | dB | dBi | dBd | dB/m |

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Mikrowellen Bikonus-Breitband-Antenne SBA 9112 Microwave Biconical Broadband Antenna SBA 9112

| Frequency MHz | Distance m | Wavelength m | Attenuation dB | Gain(Isotr.) dBi | Gain(Dipole) dBd | Ant.-Factor dB/m |
|------------------|---------------|-----------------|-------------------|---------------------|---------------------|---------------------|
| 13700.00 | 0.50 | 0.022 | 44.59 | 2.28 | 0.13 | 50.67 |
| 13800.00 | 0.50 | 0.022 | 44.33 | 2.45 | 0.29 | 50.57 |
| 13900.00 | 0.50 | 0.022 | 44.29 | 2.50 | 0.35 | 50.58 |
| 14000.00 | 0.50 | 0.021 | 44.97 | 2.19 | 0.04 | 50.95 |
| 14100.00 | 0.50 | 0.021 | 44.91 | 2.25 | 0.10 | 50.96 |
| 14200.00 | 0.50 | 0.021 | 44.67 | 2.40 | 0.25 | 50.87 |
| 14300.00 | 0.50 | 0.021 | 44.57 | 2.48 | 0.33 | 50.85 |
| 14400.00 | 0.50 | 0.021 | 44.47 | 2.56 | 0.41 | 50.83 |
| 14500.00 | 0.50 | 0.021 | 44.35 | 2.65 | 0.50 | 50.80 |
| 14600.00 | 0.50 | 0.021 | 44.48 | 2.61 | 0.46 | 50.90 |
| 14700.00 | 0.50 | 0.020 | 44.32 | 2.72 | 0.57 | 50.84 |
| 14800.00 | 0.50 | 0.020 | 44.23 | 2.80 | 0.65 | 50.83 |
| 14900.00 | 0.50 | 0.020 | 43.94 | 2.97 | 0.82 | 50.71 |
| 15000.00 | 0.50 | 0.020 | 43.82 | 3.06 | 0.91 | 50.68 |
| 15100.00 | 0.50 | 0.020 | 44.11 | 2.95 | 0.80 | 50.85 |
| 15200.00 | 0.50 | 0.020 | 44.57 | 2.75 | 0.59 | 51.11 |
| 15300.00 | 0.50 | 0.020 | 44.77 | 2.67 | 0.52 | 51.24 |
| 15400.00 | 0.50 | 0.019 | 44.42 | 2.87 | 0.72 | 51.10 |
| 15500.00 | 0.50 | 0.019 | 44.73 | 2.75 | 0.60 | 51.28 |
| 15600.00 | 0.50 | 0.019 | 45.06 | 2.61 | 0.46 | 51.47 |
| 15700.00 | 0.50 | 0.019 | 44.73 | 2.81 | 0.65 | 51.33 |
| 15800.00 | 0.50 | 0.019 | 44.67 | 2.86 | 0.71 | 51.33 |
| 15900.00 | 0.50 | 0.019 | 44.37 | 3.04 | 0.89 | 51.21 |
| 16000.00 | 0.50 | 0.019 | 44.21 | 3.14 | 0.99 | 51.16 |
| 16100.00 | 0.50 | 0.019 | 44.54 | 3.01 | 0.86 | 51.35 |
| 16200.00 | 0.50 | 0.019 | 44.71 | 2.95 | 0.80 | 51.46 |
| 16300.00 | 0.50 | 0.018 | 44.49 | 3.09 | 0.93 | 51.38 |
| 16400.00 | 0.50 | 0.018 | 44.13 | 3.29 | 1.14 | 51.22 |
| 16500.00 | 0.50 | 0.018 | 43.99 | 3.39 | 1.24 | 51.18 |
| 16600.00 | 0.50 | 0.018 | 43.92 | 3.45 | 1.30 | 51.17 |
| 16700.00 | 0.50 | 0.018 | 44.11 | 3.38 | 1.23 | 51.29 |
| 16800.00 | 0.50 | 0.018 | 44.34 | 3.29 | 1.14 | 51.43 |
| 16900.00 | 0.50 | 0.018 | 44.25 | 3.36 | 1.21 | 51.41 |
| 17000.00 | 0.50 | 0.018 | 44.38 | 3.32 | 1.17 | 51.51 |
| 17100.00 | 0.50 | 0.018 | 44.30 | 3.39 | 1.24 | 51.49 |
| 17200.00 | 0.50 | 0.017 | 44.01 | 3.56 | 1.41 | 51.37 |
| 17300.00 | 0.50 | 0.017 | 44.59 | 3.30 | 1.15 | 51.68 |
| 17400.00 | 0.50 | 0.017 | 44.66 | 3.29 | 1.14 | 51.74 |
| 17500.00 | 0.50 | 0.017 | 44.97 | 3.16 | 1.00 | 51.93 |
| 17600.00 | 0.50 | 0.017 | 44.50 | 3.42 | 1.27 | 51.71 |
| 17700.00 | 0.50 | 0.017 | 44.43 | 3.48 | 1.33 | 51.70 |
| 17800.00 | 0.50 | 0.017 | 44.86 | 3.29 | 1.14 | 51.94 |
| 17900.00 | 0.50 | 0.017 | 45.13 | 3.17 | 1.02 | 52.10 |
| 18000.00 | 0.50 | 0.017 | 45.09 | 3.22 | 1.07 | 52.11 |
| 18100.00 | 0.50 | 0.017 | 45.50 | 3.04 | 0.89 | 52.33 |
| 18200.00 | 0.50 | 0.016 | 45.41 | 3.11 | 0.96 | 52.31 |
| 18300.00 | 0.50 | 0.016 | 46.23 | 2.72 | 0.57 | 52.75 |
| 18400.00 | 0.50 | 0.016 | 46.60 | 2.56 | 0.41 | 52.96 |
| 18500.00 | 0.50 | 0.016 | 46.84 | 2.46 | 0.31 | 53.10 |
| MHz | m | m | dB | dBi | dBd | dB/m |

SCHWARZBECK MESS - ELEKTRONIK

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

Mikrowellen Bikonus-Breitband-Antenne SBA 9112

Microwave Biconical Broadband Antenna SBA 9112

