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

Anforderungen an das Richtdiagramm gem. CISPR 16-1-4

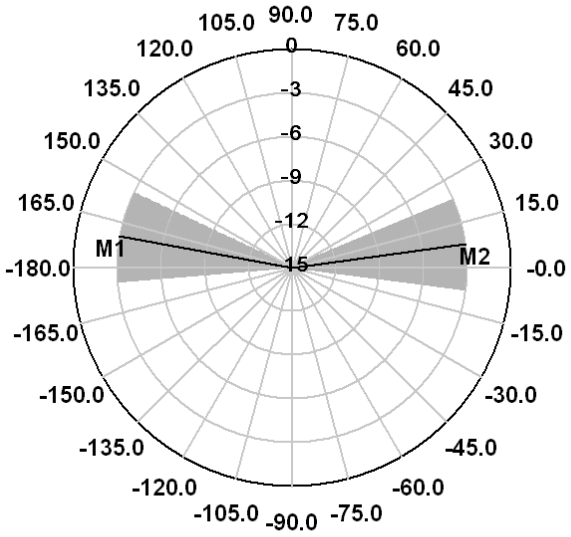
In CISPR 16-1-4 werden Anforderungen an die Richtdiagramme der Breitband-Bikonusantennen gestellt, die zur Beurteilung des Messplatzes über 1 GHz verwendet werden. Dabei kommen zwei unterschiedliche Verfahren zur Anwendung: In der E-Ebene werden wie allgemein üblich normierte Richtdiagramme verwendet (d.h. das Maximum des Richtdiagramms entspricht 0 dB, alle anderen Werte sind negativ). Im Gegensatz hierzu wird in der H-Ebene eine Mittelwertbildung über einen Winkelbereich vorgenommen. Der so gewonnene Mittelwert dient als Bezugswert 0 dB, wobei das Richtdiagramm nun positve und negative Werte annehmen kann.

Für die E-Ebene sind sogenannte "verbotene Bereiche" definiert, die eine maximale Ablage von +/- 15° von der geometrischen Hauptstrahlrichtung (0° bzw. 180°) der Antenne haben dürfen. Das 8-förmige Richtdiagramm darf die verbotenen Bereiche M1 und M2 nicht schneiden. Die SBA 9112 erfüllt sämtliche Anforderungen aus CISPR 16-1-4 sowohl für die E-Ebene als auch die H-Ebene ohne Einschränkung.

Pattern Requirements acc. to CISPR 16-1-4

CISPR 16-1-4 describes detailed pattern requirements for the biconical broadband antennas, which are used for test site evaluation above 1 GHz. Two different methods have to be applied: In the E-plane pattern the normalized directional pattern is used, i.e. the maximum pattern value is the 0 dB reference, all other values are negative. The situation for the H-plane pattern is different: An average value over an angular range must be determined, which acts as the 0 dB reference. The resulting H-plane pattern contains both, positive and negative numbers.

There are so called "forbidden areas" defined for the E-plane, which may have a maximum deviation of +/- 15° from the boresight direction (0° or 180°). The 8-shaped pattern must not intersect the forbidden areas M1 and M2. The SBA 9112 is fully compliant to the CISPR 16-1-4 requirements for both E- and H-plane without any restrictions.



E-plane "Forbidden Area"

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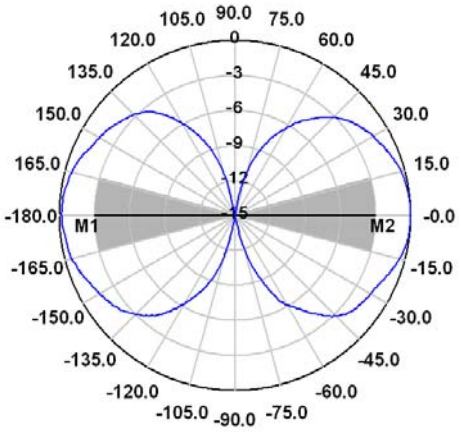
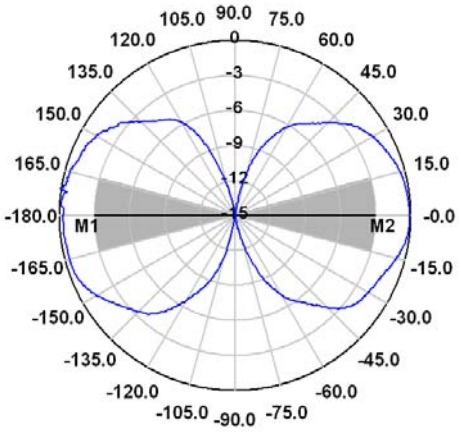
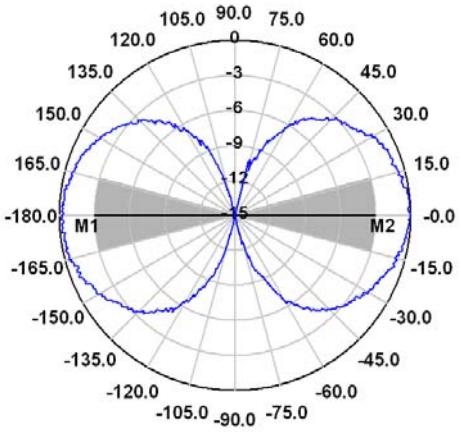


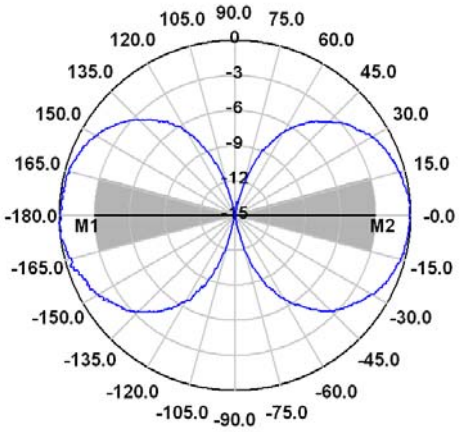
E-Ebene / E-Plane 1 GHz



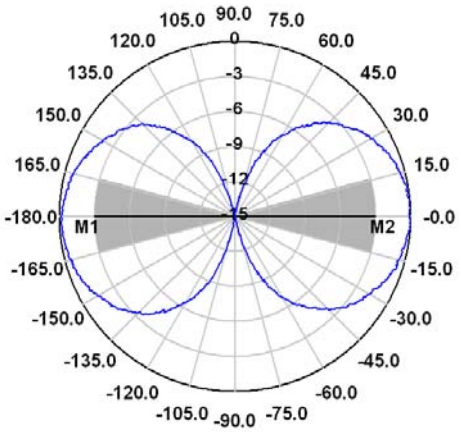
E-Ebene / E-Plane 2 GHz



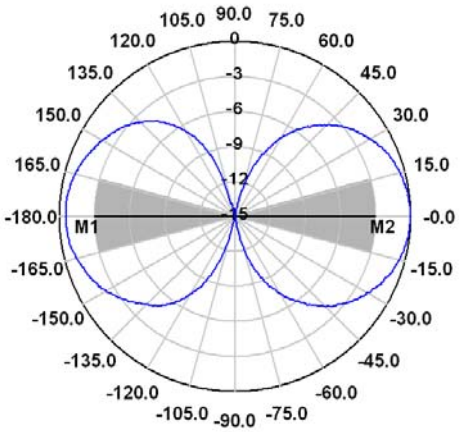
E-Ebene / E-Plane 3 GHz



E-Ebene / E-Plane 4 GHz



E-Ebene / E-Plane 5 GHz



E-Ebene / E-Plane 6 GHz

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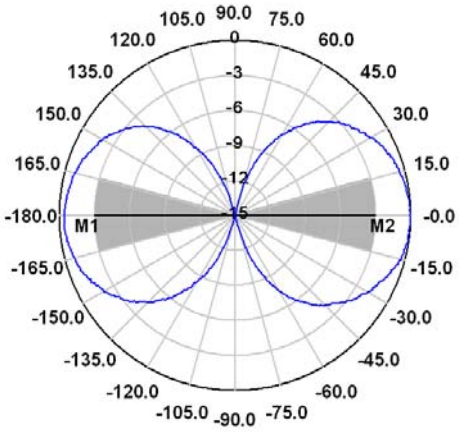
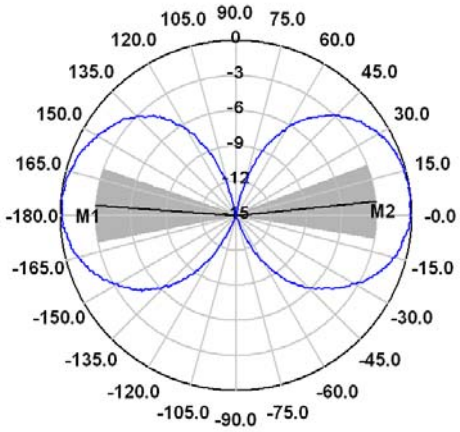
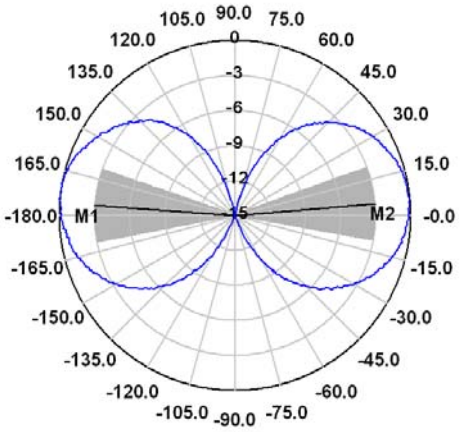


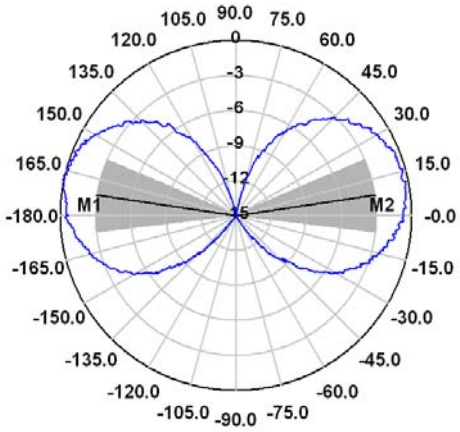
E-Ebene / E-Plane 7 GHz



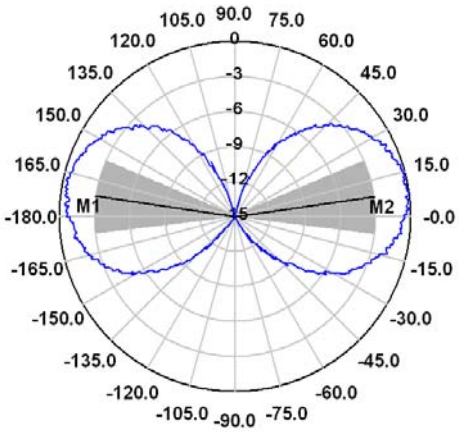
E-Ebene / E-Plane 8 GHz



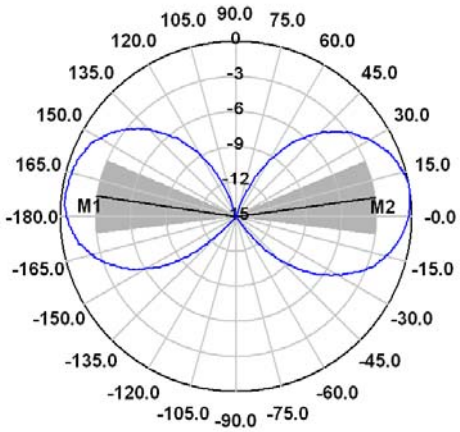
E-Ebene / E-Plane 9 GHz



E-Ebene / E-Plane 10 GHz



E-Ebene / E-Plane 11 GHz



E-Ebene / E-Plane 12 GHz

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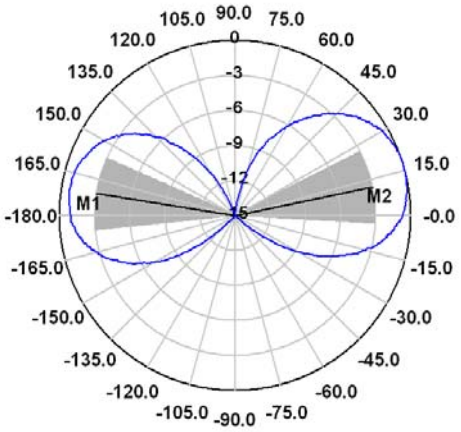
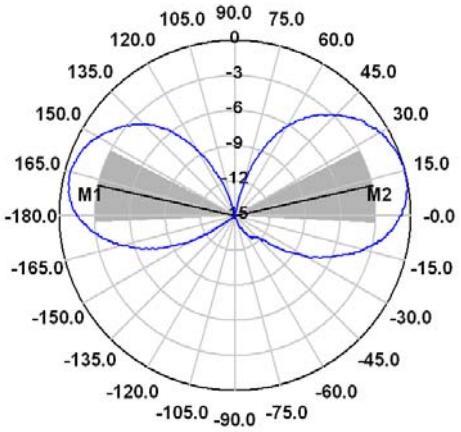
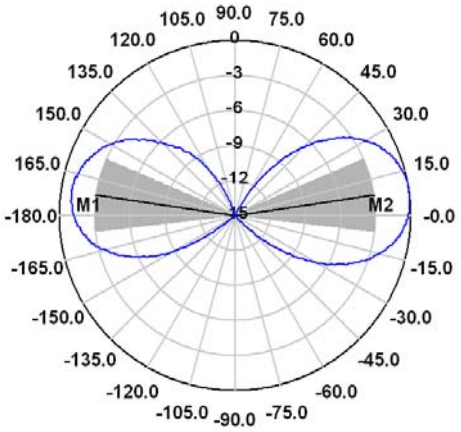


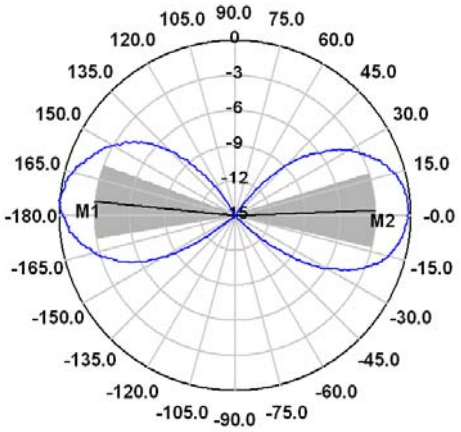
E-Ebene / E-Plane 13 GHz



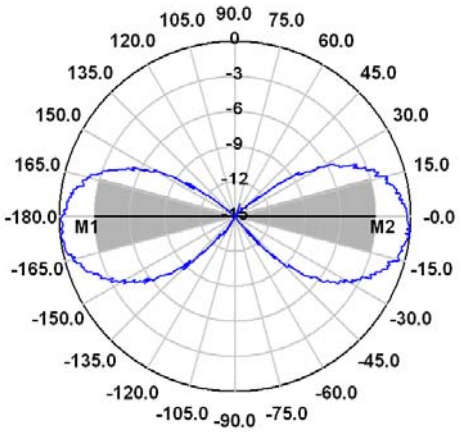
E-Ebene / E-Plane 14 GHz



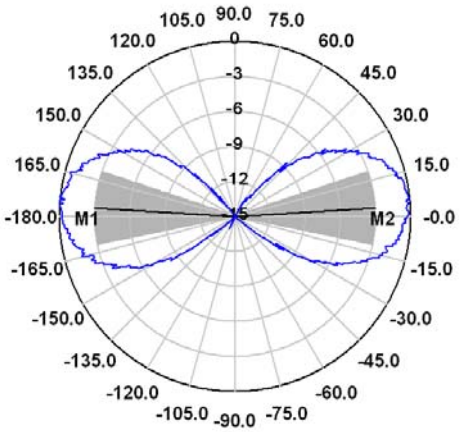
E-Ebene / E-Plane 15 GHz



E-Ebene / E-Plane 16 GHz



E-Ebene / E-Plane 17 GHz



E-Ebene / E-Plane 18 GHz

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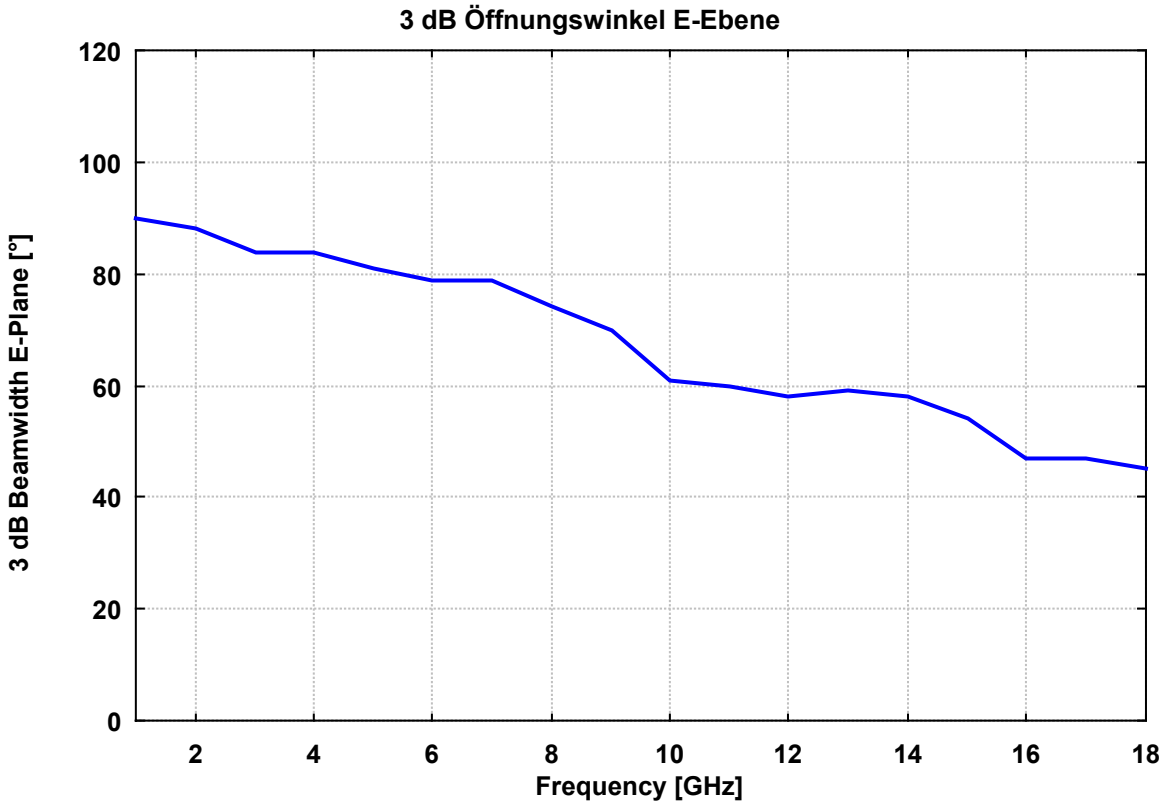

Frequenz	Halbwertsbreite (- 3 dB)
Frequency	*Half-Power Beamwidth*
[GHz]	[°]
1	90
2	88
3	84
4	84
5	81
6	79
7	79
8	74
9	70
10	61
11	60
12	58
13	59
14	58
15	54
16	47
17	47
18	45