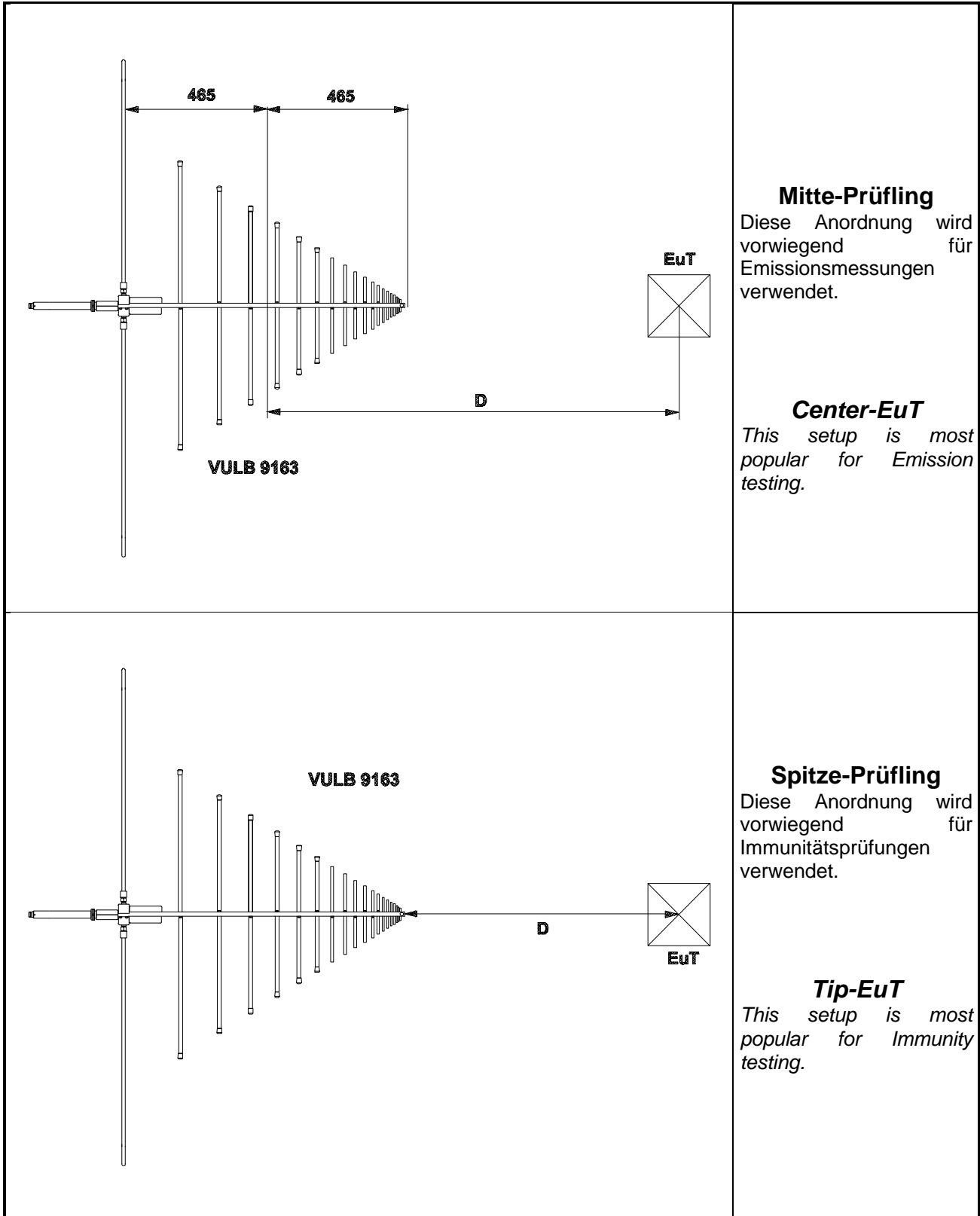


SCHWARZBECK MESS - ELEKTRONIK

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

VULB 9163 Korrektur für kurze Messentfernung (Skizze der Bezugspunkte) Correction for short Measuring Distance (Sketch of Reference Points)



SCHWARZBECK MESS - ELEKTRONIK

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

VULB 9163 Kalibrierdaten (Fernfeld und 1, 3, 10 m Spitze-Prüfling)

VULB 9163 Calibration Data (Farfield and 1, 3, 10 m Tip-EuT)

| Frequency | Gain(Iso.) | Ant.-Fact k | gi (10 m) | k (10m) | gi (3m) | k (3m) | gi (1m) | k (1m) |
|-----------------------------------|---|---|--|---------|---------|--------|---------|--------|
| Frequenz | Gewinn | Ant.Faktor | gi (10 m) | k (10m) | gi (3m) | k (3m) | gi (1m) | k (1m) |
| MHz | dB | dB/m | dB | dB/m | dB | dB/m | dB | dB/m |
| 25.0 | -14.66 | 12.84 | -15.43 | 13.61 | -17.01 | 15.18 | -20.37 | 18.55 |
| 27.0 | -12.50 | 11.35 | -13.27 | 12.12 | -14.85 | 13.69 | -18.21 | 17.06 |
| 30.0 | -11.32 | 11.08 | -12.09 | 11.85 | -13.67 | 13.43 | -17.03 | 16.79 |
| 35.0 | -9.95 | 11.05 | -10.72 | 11.82 | -12.30 | 13.40 | -15.66 | 16.76 |
| 40.0 | -10.07 | 12.33 | -10.84 | 13.10 | -12.42 | 14.68 | -15.78 | 18.04 |
| 45.0 | -9.01 | 12.29 | -9.78 | 13.07 | -11.36 | 14.64 | -14.72 | 18.01 |
| 50.0 | -7.80 | 12.00 | -8.57 | 12.77 | -10.15 | 14.34 | -13.51 | 17.71 |
| 55.0 | -6.74 | 11.76 | -7.51 | 12.54 | -9.09 | 14.11 | -12.45 | 17.48 |
| 60.0 | -5.66 | 11.44 | -6.43 | 12.22 | -8.01 | 13.79 | -11.37 | 17.15 |
| 65.0 | -2.98 | 9.46 | -3.75 | 10.23 | -5.33 | 11.80 | -8.69 | 15.17 |
| 70.0 | -0.28 | 7.41 | -1.05 | 8.17 | -2.63 | 9.75 | -5.99 | 13.11 |
| 75.0 | 1.17 | 6.55 | 0.40 | 7.32 | -1.18 | 8.90 | -4.54 | 12.26 |
| 80.0 | 0.99 | 7.29 | 0.22 | 8.06 | -1.36 | 9.64 | -4.72 | 13.00 |
| 85.0 | -0.25 | 9.05 | -1.02 | 9.83 | -2.60 | 11.40 | -5.96 | 14.77 |
| 90.0 | -1.34 | 10.64 | -2.11 | 11.42 | -3.69 | 12.99 | -7.05 | 16.36 |
| 95.0 | -1.81 | 11.58 | -2.58 | 12.36 | -4.16 | 13.93 | -7.52 | 17.30 |
| 100.0 | -1.69 | 11.91 | -2.46 | 12.68 | -4.04 | 14.26 | -7.40 | 17.62 |
| 110.0 | 0.05 | 11.00 | -0.72 | 11.77 | -2.30 | 13.34 | -5.66 | 16.71 |
| 120.0 | 2.58 | 9.23 | 1.81 | 10.00 | 0.23 | 11.57 | -3.13 | 14.93 |
| 130.0 | 4.64 | 7.86 | 3.92 | 8.58 | 2.45 | 10.05 | -0.75 | 13.25 |
| 140.0 | 5.86 | 7.28 | 5.20 | 7.95 | 3.82 | 9.32 | 0.78 | 12.36 |
| 150.0 | 6.26 | 7.48 | 5.64 | 8.11 | 4.33 | 9.41 | 1.42 | 12.32 |
| 160.0 | 6.27 | 8.03 | 5.69 | 8.62 | 4.46 | 9.84 | 1.69 | 12.62 |
| 170.0 | 6.39 | 8.44 | 5.84 | 8.99 | 4.67 | 10.15 | 2.01 | 12.81 |
| 180.0 | 6.08 | 9.25 | 5.56 | 9.77 | 4.45 | 10.88 | 1.89 | 13.44 |
| 190.0 | 5.58 | 10.21 | 5.09 | 10.71 | 4.03 | 11.76 | 1.58 | 14.22 |
| 200.0 | 5.93 | 10.32 | 5.46 | 10.78 | 4.46 | 11.78 | 2.10 | 14.15 |
| 220.0 | 5.98 | 11.09 | 5.55 | 11.52 | 4.63 | 12.44 | 2.43 | 14.64 |
| 240.0 | 5.72 | 12.10 | 5.33 | 12.49 | 4.48 | 13.34 | 2.43 | 15.39 |
| 260.0 | 6.35 | 12.17 | 5.99 | 12.53 | 5.20 | 13.32 | 3.27 | 15.25 |
| 280.0 | 6.29 | 12.87 | 5.95 | 13.21 | 5.22 | 13.95 | 3.40 | 15.76 |
| 300.0 | 6.42 | 13.34 | 6.10 | 13.66 | 5.41 | 14.35 | 3.69 | 16.08 |
| 320.0 | 6.64 | 13.69 | 6.35 | 13.98 | 5.69 | 14.63 | 4.07 | 16.26 |
| 340.0 | 6.31 | 14.54 | 6.03 | 14.82 | 5.42 | 15.43 | 3.87 | 16.98 |
| 360.0 | 6.44 | 14.91 | 6.18 | 15.17 | 5.60 | 15.75 | 4.13 | 17.22 |
| 380.0 | 6.70 | 15.11 | 6.45 | 15.36 | 5.90 | 15.92 | 4.49 | 17.33 |
| 400.0 | 6.63 | 15.63 | 6.39 | 15.87 | 5.87 | 16.39 | 4.52 | 17.74 |
| 420.0 | 6.60 | 16.08 | 6.38 | 16.31 | 5.88 | 16.81 | 4.59 | 18.09 |
| 440.0 | 6.88 | 16.21 | 6.67 | 16.42 | 6.18 | 16.90 | 4.94 | 18.15 |
| 460.0 | 7.19 | 16.28 | 6.99 | 16.49 | 6.53 | 16.94 | 5.36 | 18.12 |
| 480.0 | 7.05 | 16.80 | 6.86 | 16.99 | 6.42 | 17.42 | 5.29 | 18.56 |
| 500.0 | 6.88 | 17.32 | 6.69 | 17.51 | 6.27 | 17.93 | 5.15 | 19.05 |
| 600.0 | 6.47 | 19.31 | 6.32 | 19.47 | 5.96 | 19.82 | 5.03 | 20.75 |
| 700.0 | 7.36 | 19.76 | 7.23 | 19.90 | 6.92 | 20.20 | 6.11 | 21.01 |
| 800.0 | 7.21 | 21.07 | 7.09 | 21.19 | 6.83 | 21.45 | 6.11 | 22.17 |
| 900.0 | 7.15 | 22.16 | 7.05 | 22.26 | 6.81 | 22.50 | 6.17 | 23.14 |
| 1000.0 | 7.37 | 22.85 | 7.28 | 22.94 | 7.07 | 23.15 | 6.50 | 23.72 |
| Bezugs- punkt: | Strahlung s -zone: | Strahlung s -zone: | Spitze der Log. - Per. Struktur | | | | | |
| Reference Point: | Radiating Zone: | Radiating Zone: | Tip of Log. - Per. Structure | | | | | |

SCHWARZBECK MESS - ELEKTRONIK

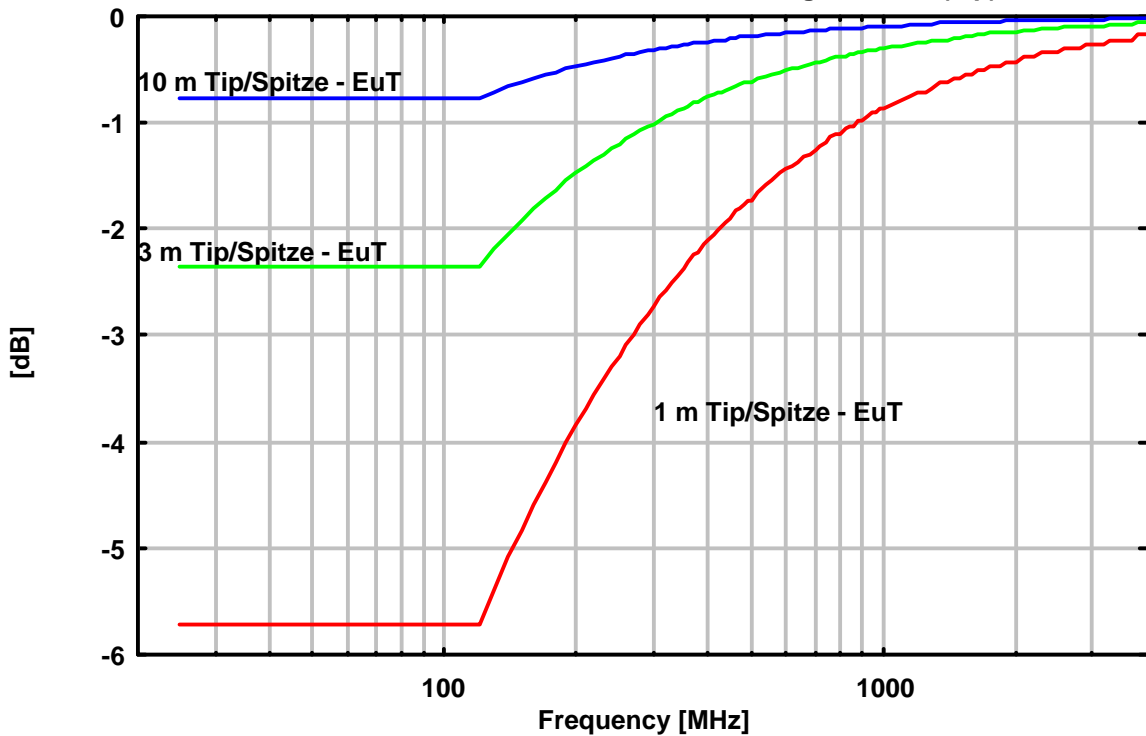
An der Klinge 29 D-69250 Schönau Tel.: 06228/1001 Fax.: (49)6228/1003

VULB 9163 Kalibrierdaten (Fernfeld und 1, 3, 10 m Spitze-Prüfling)

VULB 9163 Calibration Data (Farfield and 1, 3, 10 m Tip-EuT)

| Frequency | Gain(Iso.) | Ant.-Fact k | gi (10 m) | k (10m) | gi (3m) | k (3m) | gi (1m) | k (1m) |
|-------------------------|------------------------|------------------------|--|---------|---------|--------|---------|--------|
| Frequenz | Gewinn | Ant.Faktor | gi (10 m) | k (10m) | gi (3m) | k (3m) | gi (1m) | k (1m) |
| MHz | dBi | dB/m | dBi | dB/m | dBi | dB/m | dBi | dB/m |
| 1000.0 | 7.37 | 22.85 | 7.28 | 22.94 | 7.07 | 23.15 | 6.50 | 23.72 |
| 1100.0 | 6.87 | 24.17 | 6.79 | 24.26 | 6.60 | 24.45 | 6.08 | 24.97 |
| 1200.0 | 7.42 | 24.38 | 7.35 | 24.46 | 7.18 | 24.63 | 6.71 | 25.09 |
| 1300.0 | 6.63 | 25.87 | 6.56 | 25.94 | 6.40 | 26.10 | 5.96 | 26.54 |
| 1400.0 | 7.63 | 25.51 | 7.57 | 25.58 | 7.42 | 25.73 | 7.00 | 26.14 |
| 1500.0 | 7.06 | 26.68 | 7.00 | 26.74 | 6.86 | 26.88 | 6.47 | 27.27 |
| 1600.0 | 7.08 | 27.23 | 7.02 | 27.28 | 6.89 | 27.41 | 6.53 | 27.77 |
| 1700.0 | 7.51 | 27.32 | 7.46 | 27.37 | 7.34 | 27.49 | 7.00 | 27.83 |
| 1800.0 | 6.54 | 28.78 | 6.49 | 28.83 | 6.38 | 28.94 | 6.07 | 29.25 |
| 1900.0 | 6.48 | 29.32 | 6.44 | 29.36 | 6.34 | 29.46 | 6.06 | 29.74 |
| 2000.0 | 7.50 | 28.74 | 7.46 | 28.78 | 7.36 | 28.88 | 7.08 | 29.16 |
| 2200.0 | 6.22 | 30.84 | 6.18 | 30.89 | 6.09 | 30.98 | 5.84 | 31.23 |
| 2400.0 | 5.26 | 32.56 | 5.23 | 32.60 | 5.14 | 32.68 | 4.92 | 32.90 |
| 2600.0 | 5.24 | 33.28 | 5.21 | 33.31 | 5.14 | 33.38 | 4.94 | 33.58 |
| 2800.0 | 5.37 | 33.79 | 5.34 | 33.82 | 5.27 | 33.89 | 5.07 | 34.09 |
| 3000.0 | 5.71 | 34.05 | 5.68 | 34.08 | 5.62 | 34.14 | 5.45 | 34.31 |
| 3500.0 | 4.44 | 36.66 | 4.42 | 36.68 | 4.37 | 36.73 | 4.23 | 36.88 |
| 4000.0 | 4.81 | 37.45 | 4.79 | 37.47 | 4.75 | 37.51 | 4.64 | 37.62 |
| Bezugspunkt: | Strahlung s | Strahlung s | Spitze der Log. - Per. Struktur | | | | | |
| | -zone: | -zone: | | | | | | |
| Reference Point: | Radiating Zone: | Radiating Zone: | Tip of Log. - Per. Structure | | | | | |

VULB 9163 Korrektur für kurze Messentfernung (Bezugspunkt: Spitze)
 VULB 9163 Correction for short Measuring Distance (Tip)



SCHWARZBECK MESS - ELEKTRONIK

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

VULB 9163 Kalibrierdaten (Fernfeld und 1, 3, 10 m Mitte-Prüfling)

VULB 9163 Calibration Data (Farfield and 1, 3, 10 m Center-EuT)

| Frequency | Gain(Iso.) | Ant.-Fact k | gi (10 m) | k (10m) | gi (3m) | k (3m) | gi (1m) | k (1m) |
|-----------------------------------|------------------------------------|------------------------------------|--|---------|---------|--------|---------|--------|
| Frequenz | Gewinn | Ant.Faktor | gi (10 m) | k (10m) | gi (3m) | k (3m) | gi (1m) | k (1m) |
| MHz | dBi | dB/m | dBi | dB/m | dBi | dB/m | dBi | dB/m |
| 25.0 | -14.66 | 12.84 | -15.05 | 13.23 | -15.91 | 14.09 | -17.98 | 16.16 |
| 27.0 | -12.50 | 11.35 | -12.89 | 11.74 | -13.75 | 12.60 | -15.82 | 14.66 |
| 30.0 | -11.32 | 11.08 | -11.71 | 11.48 | -12.57 | 12.33 | -14.64 | 14.40 |
| 35.0 | -9.95 | 11.05 | -10.34 | 11.45 | -11.20 | 12.30 | -13.27 | 14.37 |
| 40.0 | -10.07 | 12.33 | -10.46 | 12.73 | -11.32 | 13.58 | -13.39 | 15.65 |
| 45.0 | -9.01 | 12.29 | -9.40 | 12.69 | -10.26 | 13.55 | -12.33 | 15.61 |
| 50.0 | -7.80 | 12.00 | -8.19 | 12.39 | -9.05 | 13.25 | -11.12 | 15.32 |
| 55.0 | -6.74 | 11.76 | -7.13 | 12.16 | -7.99 | 13.02 | -10.06 | 15.08 |
| 60.0 | -5.66 | 11.44 | -6.05 | 11.84 | -6.91 | 12.69 | -8.98 | 14.76 |
| 65.0 | -2.98 | 9.46 | -3.37 | 9.85 | -4.23 | 10.71 | -6.30 | 12.78 |
| 70.0 | -0.28 | 7.41 | -0.67 | 7.80 | -1.53 | 8.65 | -3.60 | 10.72 |
| 75.0 | 1.17 | 6.55 | 0.78 | 6.95 | -0.08 | 7.80 | -2.15 | 9.87 |
| 80.0 | 0.99 | 7.29 | 0.60 | 7.69 | -0.26 | 8.54 | -2.33 | 10.61 |
| 85.0 | -0.25 | 9.05 | -0.64 | 9.45 | -1.50 | 10.31 | -3.57 | 12.38 |
| 90.0 | -1.34 | 10.64 | -1.73 | 11.04 | -2.59 | 11.90 | -4.66 | 13.96 |
| 95.0 | -1.81 | 11.58 | -2.20 | 11.98 | -3.06 | 12.84 | -5.13 | 14.90 |
| 100.0 | -1.69 | 11.91 | -2.08 | 12.30 | -2.94 | 13.16 | -5.01 | 15.23 |
| 110.0 | 0.05 | 11.00 | -0.34 | 11.39 | -1.20 | 12.25 | -3.27 | 14.31 |
| 120.0 | 2.58 | 9.23 | 2.19 | 9.62 | 1.33 | 10.48 | -0.74 | 12.54 |
| 130.0 | 4.64 | 7.86 | 4.30 | 8.20 | 3.57 | 8.93 | 1.75 | 10.75 |
| 140.0 | 5.86 | 7.28 | 5.58 | 7.56 | 4.95 | 8.19 | 3.38 | 9.76 |
| 150.0 | 6.26 | 7.48 | 6.02 | 7.72 | 5.48 | 8.26 | 4.12 | 9.63 |
| 160.0 | 6.27 | 8.03 | 6.07 | 8.23 | 5.63 | 8.67 | 4.47 | 9.83 |
| 170.0 | 6.39 | 8.44 | 6.23 | 8.60 | 5.86 | 8.97 | 4.88 | 9.95 |
| 180.0 | 6.08 | 9.25 | 5.95 | 9.38 | 5.64 | 9.68 | 4.83 | 10.50 |
| 190.0 | 5.58 | 10.21 | 5.48 | 10.32 | 5.24 | 10.56 | 4.60 | 11.20 |
| 200.0 | 5.93 | 10.32 | 5.85 | 10.39 | 5.67 | 10.57 | 5.18 | 11.06 |
| 220.0 | 5.98 | 11.09 | 5.95 | 11.12 | 5.86 | 11.20 | 5.64 | 11.43 |
| 240.0 | 5.72 | 12.10 | 5.72 | 12.10 | 5.73 | 12.09 | 5.76 | 12.06 |
| 260.0 | 6.35 | 12.17 | 6.38 | 12.13 | 6.47 | 12.05 | 6.70 | 11.81 |
| 280.0 | 6.29 | 12.87 | 6.35 | 12.81 | 6.50 | 12.67 | 6.92 | 12.24 |
| 300.0 | 6.42 | 13.34 | 6.50 | 13.26 | 6.70 | 13.06 | 7.29 | 12.48 |
| 320.0 | 6.64 | 13.69 | 6.74 | 13.58 | 6.99 | 13.33 | 7.75 | 12.57 |
| 340.0 | 6.31 | 14.54 | 6.43 | 14.42 | 6.73 | 14.12 | 7.62 | 13.23 |
| 360.0 | 6.44 | 14.91 | 6.58 | 14.77 | 6.92 | 14.43 | 7.95 | 13.39 |
| 380.0 | 6.70 | 15.11 | 6.85 | 14.96 | 7.22 | 14.59 | 8.37 | 13.44 |
| 400.0 | 6.63 | 15.63 | 6.80 | 15.46 | 7.20 | 15.06 | 8.46 | 13.80 |
| 420.0 | 6.60 | 16.08 | 6.78 | 15.91 | 7.21 | 15.47 | 8.59 | 14.09 |
| 440.0 | 6.88 | 16.21 | 7.07 | 16.02 | 7.53 | 15.56 | 8.98 | 14.11 |
| 460.0 | 7.19 | 16.28 | 7.39 | 16.08 | 7.88 | 15.59 | 9.46 | 14.01 |
| 480.0 | 7.05 | 16.80 | 7.26 | 16.58 | 7.77 | 16.07 | 9.43 | 14.41 |
| 500.0 | 6.88 | 17.32 | 7.10 | 17.10 | 7.62 | 16.58 | 9.32 | 14.88 |
| 600.0 | 6.47 | 19.31 | 6.72 | 19.06 | 7.34 | 18.45 | 9.38 | 16.40 |
| 700.0 | 7.36 | 19.76 | 7.63 | 19.49 | 8.31 | 18.81 | 10.58 | 16.54 |
| 800.0 | 7.21 | 21.07 | 7.50 | 20.78 | 8.22 | 20.06 | 10.69 | 17.59 |
| 900.0 | 7.15 | 22.16 | 7.45 | 21.85 | 8.21 | 21.09 | 10.83 | 18.48 |
| 1000.0 | 7.37 | 22.85 | 7.69 | 22.53 | 8.48 | 21.74 | 11.25 | 18.97 |
| Bezugs- punkt: | Strahlungs -zone: | Strahlungs -zone: | Mitte der Log. - Per. Struktur | | | | | |
| Reference Point: | Radiating Zone: | Radiating Zone: | Center of Log. - Per. Structure | | | | | |

SCHWARZBECK MESS - ELEKTRONIK

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

VULB 9163 Kalibrierdaten (Fernfeld und 1, 3, 10 m Mitte-Prüfling)

VULB 9163 Calibration Data (Farfield and 1, 3, 10 m Center-EuT)

| Frequency | Gain(Iso.) | Ant.-Fact k | gi (10 m) | k (10m) | gi (3m) | k (3m) | gi (1m) | k (1m) |
|-----------------------------------|------------------------------------|------------------------------------|--|---------|---------|--------|---------|--------|
| Frequenz | Gewinn | Ant.Faktor | gi (10 m) | k (10m) | gi (3m) | k (3m) | gi (1m) | k (1m) |
| MHz | dBi | dB/m | dBi | dB/m | dBi | dB/m | dBi | dB/m |
| 1000.0 | 7.37 | 22.85 | 7.69 | 22.53 | 8.48 | 21.74 | 11.25 | 18.97 |
| 1100.0 | 6.87 | 24.17 | 7.20 | 23.85 | 8.01 | 23.03 | 10.88 | 20.16 |
| 1200.0 | 7.42 | 24.38 | 7.76 | 24.05 | 8.60 | 23.21 | 11.57 | 20.23 |
| 1300.0 | 6.63 | 25.87 | 6.97 | 25.53 | 7.82 | 24.68 | 10.85 | 21.65 |
| 1400.0 | 7.63 | 25.51 | 7.98 | 25.17 | 8.84 | 24.30 | 11.92 | 21.22 |
| 1500.0 | 7.06 | 26.68 | 7.41 | 26.33 | 8.29 | 25.46 | 11.42 | 22.32 |
| 1600.0 | 7.08 | 27.23 | 7.43 | 26.87 | 8.32 | 25.98 | 11.52 | 22.79 |
| 1700.0 | 7.51 | 27.32 | 7.87 | 26.96 | 8.77 | 26.06 | 12.02 | 22.81 |
| 1800.0 | 6.54 | 28.78 | 6.90 | 28.42 | 7.82 | 27.51 | 11.12 | 24.20 |
| 1900.0 | 6.48 | 29.32 | 6.85 | 28.95 | 7.77 | 28.02 | 11.14 | 24.66 |
| 2000.0 | 7.50 | 28.74 | 7.87 | 28.37 | 8.79 | 27.45 | 12.16 | 24.08 |
| 2200.0 | 6.22 | 30.84 | 6.59 | 30.48 | 7.53 | 29.54 | 10.95 | 26.12 |
| 2400.0 | 5.26 | 32.56 | 5.64 | 32.19 | 6.59 | 31.24 | 10.07 | 27.76 |
| 2600.0 | 5.24 | 33.28 | 5.62 | 32.90 | 6.58 | 31.94 | 10.12 | 28.40 |
| 2800.0 | 5.37 | 33.79 | 5.75 | 33.41 | 6.71 | 32.45 | 10.25 | 28.91 |
| 3000.0 | 5.71 | 34.05 | 6.10 | 33.67 | 7.07 | 32.69 | 10.67 | 29.09 |
| 3500.0 | 4.44 | 36.66 | 4.83 | 36.27 | 5.82 | 35.28 | 9.48 | 31.63 |
| 4000.0 | 4.81 | 37.45 | 5.21 | 37.06 | 6.20 | 36.06 | 9.92 | 32.34 |
| Bezugs- punkt: | Strahlungs -zone: | Strahlungs -zone: | Mitte der Log. - Per. Struktur | | | | | |
| Reference Point: | Radiating Zone: | Radiating Zone: | Center of Log. - Per. Structure | | | | | |

VULB 9163 Korrektur für kurze Messentfernung (Bezugspunkt: Mitte)
VULB 9163 Correction for short Measuring Distance (Center)

