

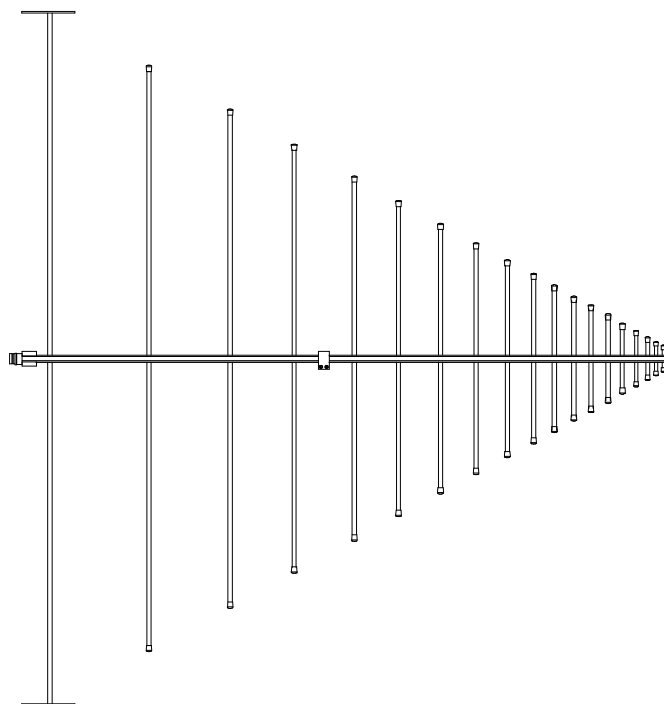
# SCHWARZBECK MESS - ELEKTRONIK

An der Klinge 29 D-69250 Schönau Tel.: (+49)6228/1001  
Fax.: (+49)6228/1003 E-mail: office@schwarzbeck.de

## VULP 9118 D

**Kalibrierte Logarithmisch-Periodische Messantenne**  
*Calibrated Logarithmic-Periodic Test-Antenna*

**95 MHz ... 1.5 GHz**  
**(80 MHz ... 1.8 GHz)**



**Handbuch**  
*Manual*

# SCHWARZBECK MESS - ELEKTRONIK

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

## Logarithmisch Periodische Breitband Antenne VULP 9118 D

### *Logarithmic Periodic Broadband Antenna VULP 9118 D*

95 MHz - 1.5 GHz, 1 kW

Frequency	Distance	Wavelength	Attenuation	Gain(Isotr.)	Gain(Dipole)	Ant.-Factor
Frequenz	Abstand	Wellenlänge	Dämpfung	Isotropgewinn	Gewinn über Dipol	Ant.-Wandlungsmaß
MHz	m	m	dB	dBi	dBd	dB/m
65.00	5.00	4.62	18.62	2.03	-0.12	4.45
70.00	5.00	4.29	17.77	2.78	0.63	4.35
75.00	5.00	4.00	19.51	2.21	0.06	5.51
80.00	5.00	3.75	19.76	2.36	0.21	5.92
85.00	5.00	3.53	18.41	3.30	1.15	5.51
90.00	5.00	3.33	16.69	4.41	2.26	4.90
95.00	4.84	3.16	15.53	5.08	2.93	4.69
100.00	4.69	3.00	14.56	5.66	3.50	4.56
110.00	4.44	2.73	13.78	6.22	4.07	4.83
120.00	4.23	2.50	14.21	6.17	4.02	5.63
130.00	4.05	2.31	14.25	6.31	4.16	6.19
140.00	3.90	2.14	14.19	6.50	4.35	6.64
150.00	3.77	2.00	14.35	6.57	4.42	7.17
160.00	3.65	1.88	14.35	6.72	4.57	7.59
170.00	3.55	1.76	14.23	6.91	4.76	7.92
180.00	3.46	1.67	14.44	6.95	4.80	8.38
190.00	3.38	1.58	14.65	6.97	4.82	8.82
200.00	3.31	1.50	15.04	6.91	4.76	9.33
220.00	3.18	1.36	15.81	6.77	4.62	10.30
240.00	3.08	1.25	16.10	6.85	4.70	10.97
260.00	2.99	1.15	16.52	6.86	4.71	11.65
280.00	2.91	1.07	17.20	6.73	4.58	12.43
300.00	2.85	1.00	17.64	6.71	4.56	13.05
325.00	2.78	0.92	18.42	6.56	4.41	13.90
350.00	2.71	0.86	18.37	6.81	4.66	14.29
375.00	2.66	0.80	18.94	6.74	4.59	14.96
400.00	2.62	0.75	19.59	6.62	4.47	15.64
425.00	2.57	0.71	19.98	6.62	4.47	16.16
450.00	2.54	0.67	20.13	6.73	4.58	16.55
475.00	2.51	0.63	20.18	6.89	4.74	16.87
500.00	2.48	0.60	20.93	6.68	4.53	17.52
550.00	2.43	0.55	21.66	6.65	4.50	18.38
600.00	2.38	0.50	22.34	6.61	4.46	19.18
650.00	2.35	0.46	22.49	6.81	4.66	19.67
700.00	2.32	0.43	23.70	6.48	4.33	20.65
750.00	2.29	0.40	23.61	6.77	4.62	20.95
800.00	2.27	0.38	24.86	6.38	4.23	21.90
850.00	2.25	0.35	24.96	6.55	4.40	22.25
900.00	2.23	0.33	25.53	6.48	4.33	22.82
950.00	2.21	0.32	26.55	6.18	4.03	23.60
1000.00	2.20	0.30	26.20	6.55	4.40	23.67
Frequency	Distance	Wavelength	Attenuation	Gain(Isotr.)	Gain(Dipole)	Ant.-Factor
Frequenz	Abstand	Wellenlänge	Dämpfung	Isotropgewinn	Gewinn über Dipol	Ant.-Wandlungsmaß
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

## Logarithmisch Periodische Breitband Antenne VULP 9118 D *Logarithmic Periodic Broadband Antenna VULP 9118 D* 95 MHz - 1.5 GHz, 1 kW

Frequency	Distance	Wavelength	Attenuation	Gain(Isotr.)	Gain(Dipole)	Ant.-Factor
Frequenz	Abstand	Wellenlänge	Dämpfung	Isotrop-gewinn	Gewinn über Dipol	Ant.-Wandlungsmaß
MHz	m	m	dB	dBi	dBd	dB/m
1000.00	2.20	0.30	26.20	6.55	4.40	23.67
1050.00	2.19	0.29	26.66	6.50	4.35	24.14
1100.00	2.17	0.27	27.56	6.23	4.08	24.82
1150.00	2.16	0.26	28.46	5.95	3.80	25.48
1200.00	2.15	0.25	28.34	6.18	4.02	25.63
1250.00	2.14	0.24	28.70	6.15	4.00	26.01
1300.00	2.14	0.23	29.40	5.96	3.81	26.54
1350.00	2.13	0.22	30.88	5.36	3.21	27.46
1400.00	2.12	0.21	31.25	5.32	3.17	27.82
1450.00	2.11	0.21	31.00	5.59	3.43	27.86
1500.00	2.11	0.20	31.36	5.54	3.39	28.20
1550.00	2.10	0.19	32.78	4.96	2.81	29.06
1600.00	2.10	0.19	35.16	3.90	1.75	30.40
1650.00	2.09	0.18	36.62	3.29	1.14	31.28
1700.00	2.09	0.18	37.87	2.79	0.63	32.04
1750.00	2.08	0.17	37.28	3.20	1.05	31.88
1800.00	2.08	0.17	35.77	4.07	1.91	31.26
1850.00	2.07	0.16	35.58	4.27	2.12	31.30
1900.00	2.07	0.16	36.99	3.67	1.52	32.13
1950.00	2.07	0.15	39.44	2.55	0.40	33.47
2000.00	2.06	0.15	42.52	1.11	-1.04	35.13

Kalibrierung mit Endscheiben am hintersten Element. Die Endscheiben sind als Erweiterung des nutzbaren Frequenzbereichs gedacht. Sie haben nur Einfluss unterhalb von 80 MHz

*Calibration with End Discs at the rear element. The End Discs are used as frequency range extension between 65 and 80 MHz. Their influence in the nominal frequency range is negligible.*

Messunsicherheit:

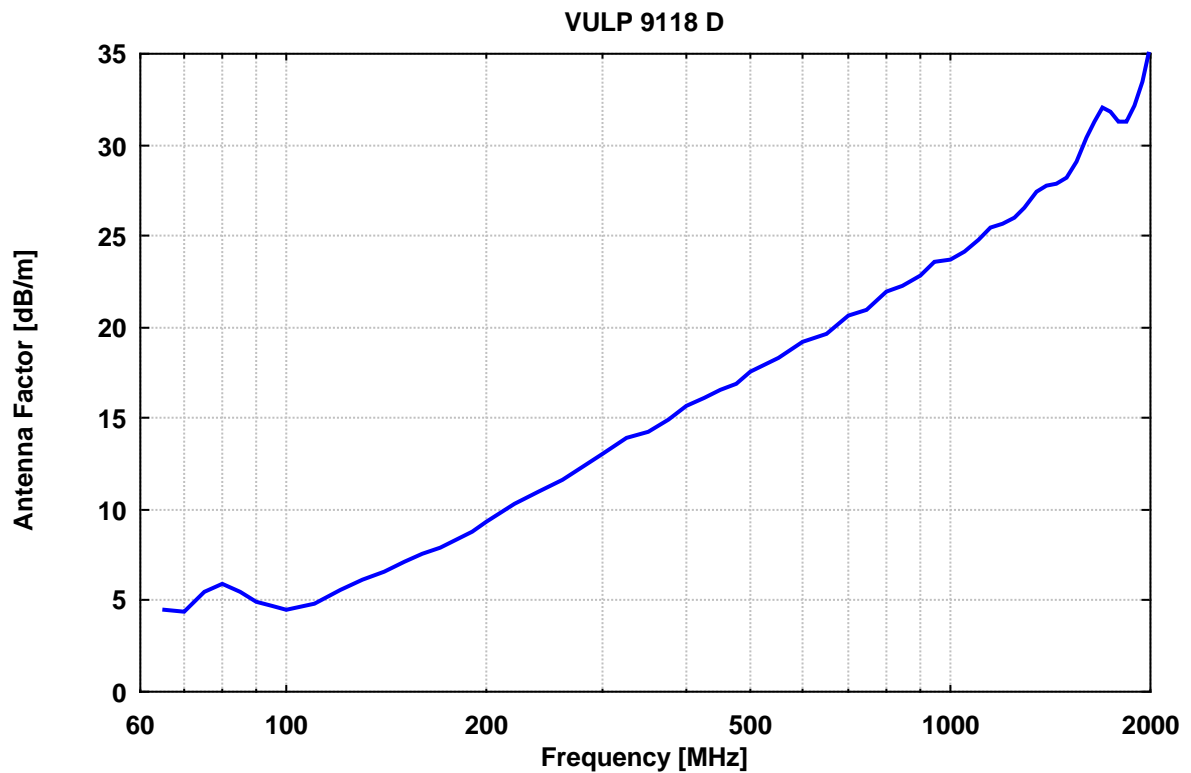
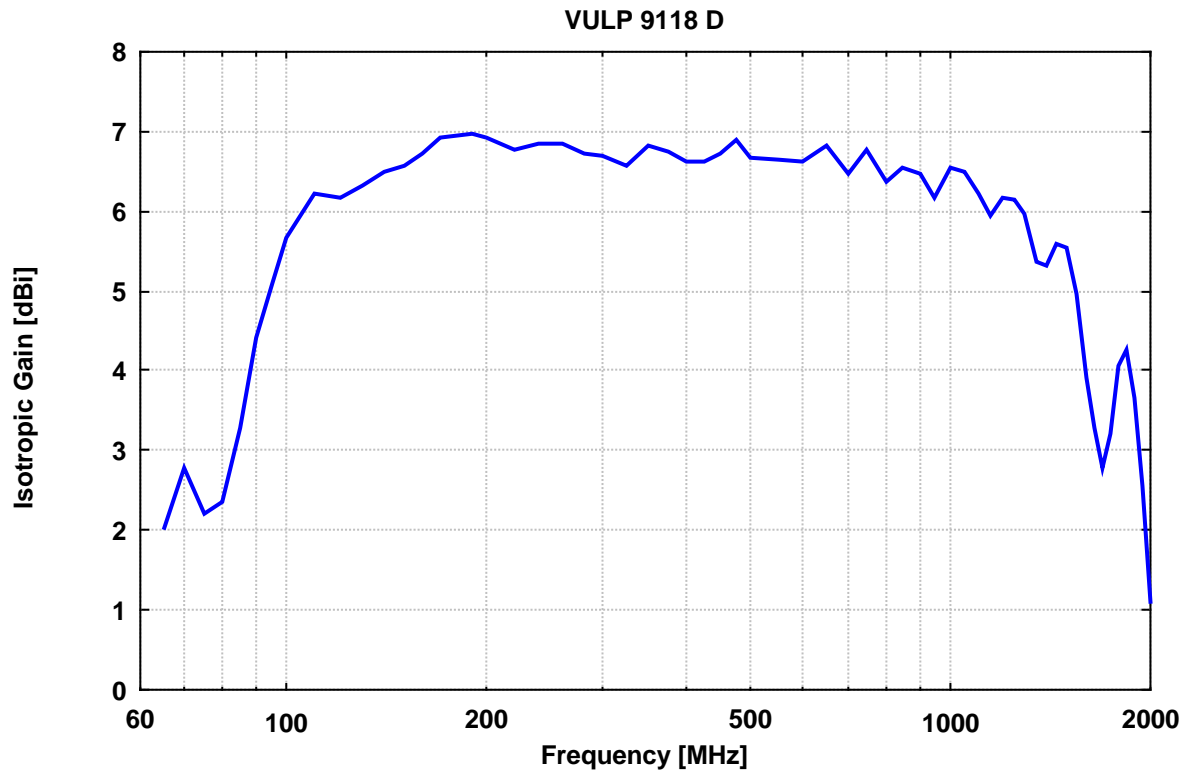
+/- 0.7 dB

*Measurement Uncertainty:*

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**Logarithmisch Periodische Breitband Antenne VULP 9118 D**  
*Logarithmic Periodic Broadband Antenna VULP 9118 D*  
95 MHz - 1.5 GHz, 1 kW



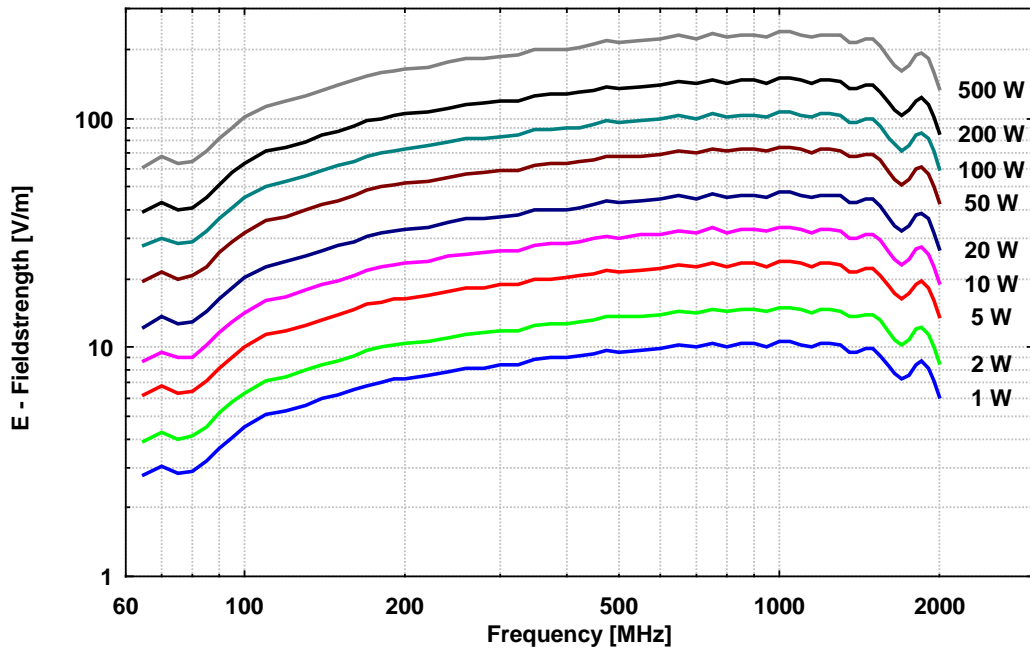
# SCHWARZBECK MESS - ELEKTRONIK

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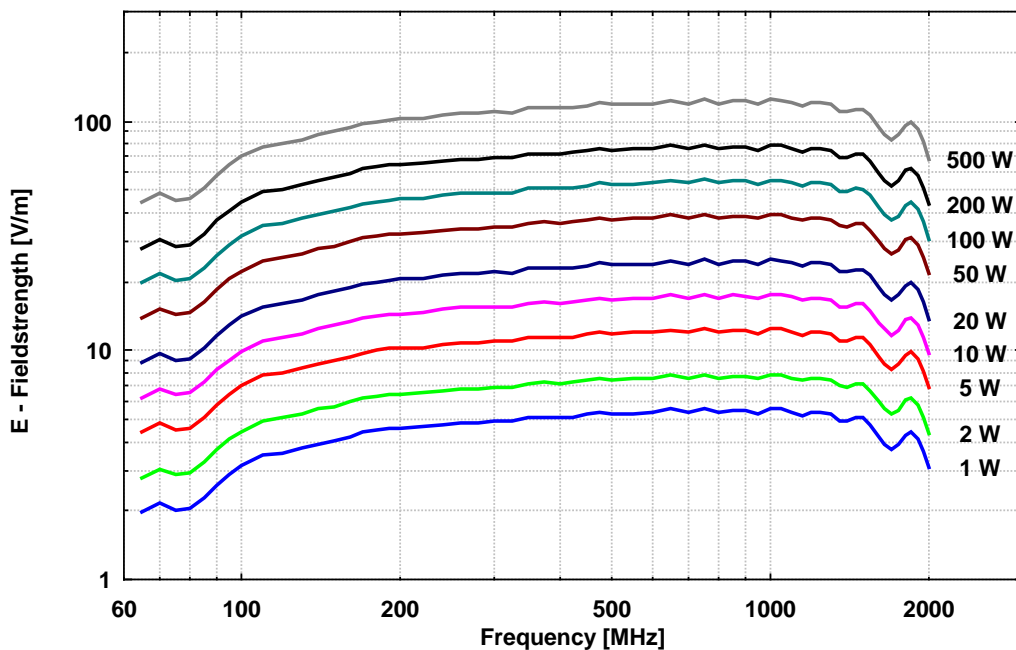
## Logarithmisch Periodische Breitbandantenne VULP 9118 D (mit Endscheiben) *Logarithmic Periodic Broadband Antenna VULP 9118 D (with End Discs)* 95 - 1500 (2000) MHz, 1 kW

Erzeugte Elektrische Feldstärke vor der Antennenspitze  
unmoduliert, Eingangsleistung an N-Buchse, Reflexionsfreie Umgebung  
*Generated Electrical Fieldstrength in front of Antenna Tip*  
no modulation, Input Power at N-Connector, Anechoic Environmental Conditions

VULP 9118 D, End Discs, 1 m Tip-EuT



VULP 9118 D, End Discs, 2 m Tip-EuT

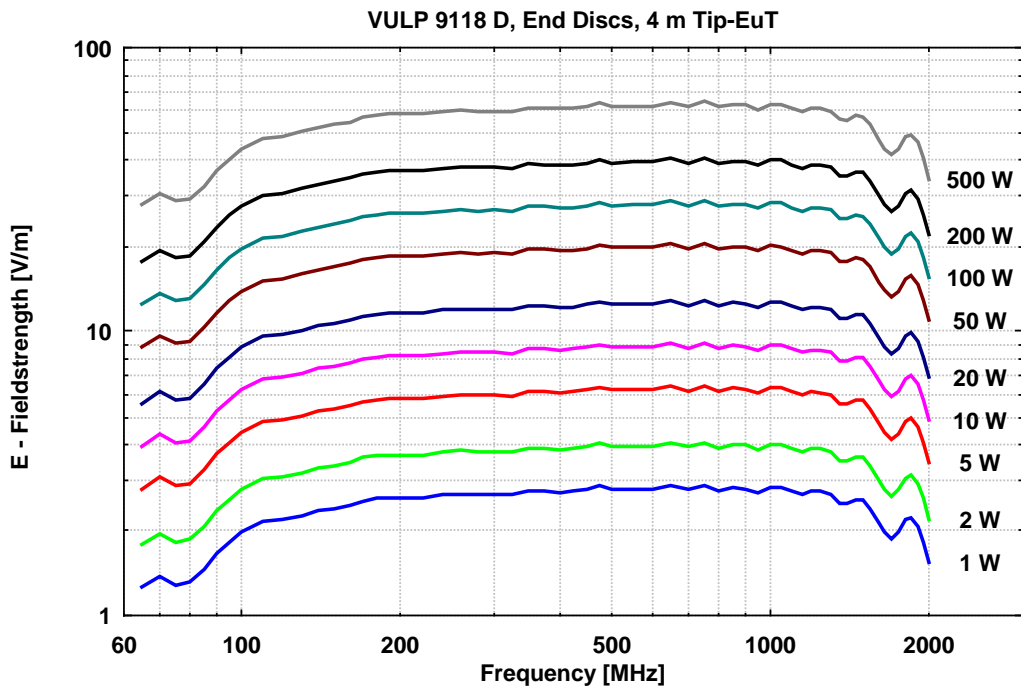
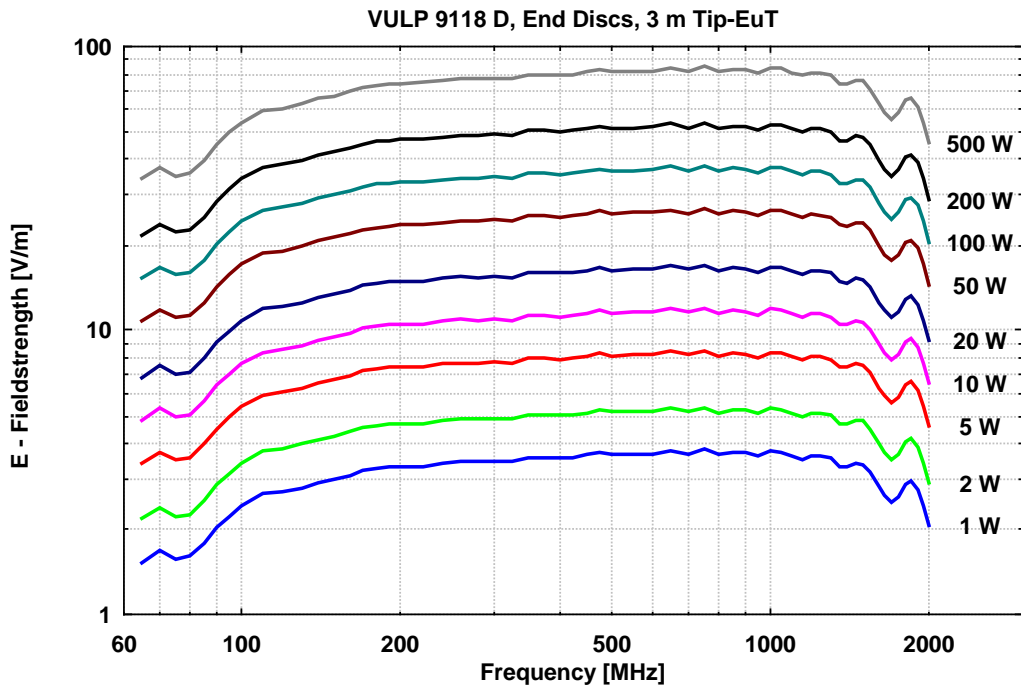


# SCHWARZBECK MESS - ELEKTRONIK

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

## Logarithmisch Periodische Breitbandantenne VULP 9118 D (mit Endscheiben) *Logarithmic Periodic Broadband Antenna VULP 9118 D (with End Discs)* 95 - 1500 (2000) MHz, 1 kW

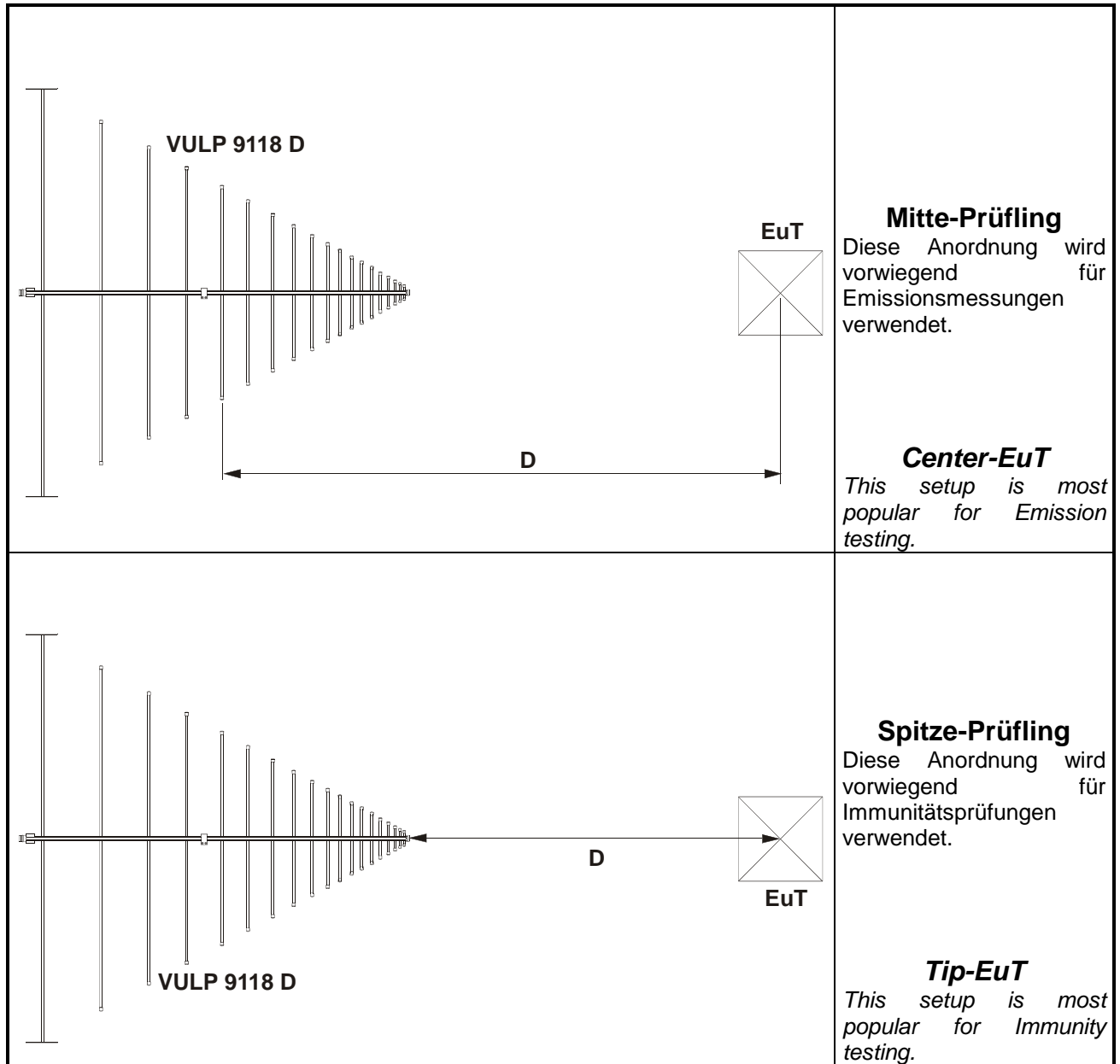
Erzeugte Elektrische Feldstärke vor der Antennenspitze  
unmoduliert, Eingangsleistung an N-Buchse, Reflexionsfreie Umgebung  
*Generated Electrical Fieldstrength in front of Antenna Tip*  
no modulation, Input Power at N-Connector, Anechoic Environmental Conditions



# SCHWARZBECK MESS - ELEKTRONIK

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

## VULP 9118 D Korrektur für kurze Messentfernung (Skizze der Bezugspunkte) Correction for short Measuring Distance (Sketch of Reference Points)



# SCHWARZBECK MESS - ELEKTRONIK

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## VULP 9118 D Kalibrierdaten (Fernfeld und 1, 3, 10 m Spitze-Prüfling) VULP 9118 D 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
65.0	2.03	4.45	0.82	5.66	-1.49	7.97	-5.93	12.41
70.0	2.78	4.35	1.57	5.56	-0.74	7.86	-5.18	12.30
75.0	2.21	5.51	1.00	6.73	-1.31	9.03	-5.75	13.47
80.0	2.36	5.92	1.15	7.14	-1.16	9.44	-5.60	13.88
85.0	3.30	5.51	2.09	6.72	-0.22	9.03	-4.66	13.47
90.0	4.41	4.90	3.20	6.11	0.89	8.42	-3.55	12.85
95.0	5.08	4.69	3.93	5.85	1.71	8.06	-2.60	12.37
100.0	5.66	4.56	4.56	5.66	2.44	7.78	-1.74	11.96
110.0	6.22	4.83	5.22	5.83	3.26	7.79	-0.71	11.75
120.0	6.17	5.63	5.25	6.55	3.43	8.38	-0.34	12.14
130.0	6.31	6.19	5.46	7.04	3.76	8.74	0.18	12.32
140.0	6.50	6.64	5.71	7.43	4.11	9.03	0.70	12.44
150.0	6.57	7.17	5.83	7.91	4.32	9.42	1.06	12.68
160.0	6.72	7.59	6.03	8.27	4.61	9.69	1.49	12.81
170.0	6.91	7.92	6.26	8.57	4.91	9.91	1.93	12.90
180.0	6.95	8.38	6.34	8.99	5.06	10.27	2.19	13.14
190.0	6.97	8.82	6.39	9.40	5.17	10.62	2.41	13.38
200.0	6.91	9.33	6.36	9.88	5.19	11.05	2.53	13.71
220.0	6.77	10.30	6.27	10.80	5.21	11.86	2.74	14.33
240.0	6.85	10.97	6.39	11.43	5.41	12.41	3.10	14.72
260.0	6.86	11.65	6.44	12.08	5.53	12.99	3.37	15.15
280.0	6.73	12.43	6.34	12.82	5.50	13.66	3.47	15.69
300.0	6.71	13.05	6.35	13.41	5.56	14.20	3.63	16.13
325.0	6.56	13.90	6.23	14.23	5.50	14.96	3.70	16.76
350.0	6.81	14.29	6.51	14.59	5.84	15.26	4.17	16.93
375.0	6.74	14.96	6.46	15.24	5.83	15.87	4.26	17.44
400.0	6.62	15.64	6.35	15.91	5.77	16.50	4.27	17.99
425.0	6.62	16.16	6.38	16.41	5.83	16.96	4.44	18.35
450.0	6.73	16.55	6.50	16.79	5.98	17.30	4.65	18.63
475.0	6.89	16.87	6.67	17.08	6.18	17.57	4.92	18.84
500.0	6.68	17.52	6.47	17.73	6.01	18.19	4.81	19.39
550.0	6.65	18.38	6.47	18.56	6.05	18.98	4.96	20.07
600.0	6.61	19.18	6.45	19.34	6.08	19.71	5.10	20.68
650.0	6.81	19.67	6.66	19.82	6.32	20.16	5.41	21.07
700.0	6.48	20.65	6.34	20.78	6.03	21.09	5.19	21.93
750.0	6.77	20.95	6.64	21.08	6.36	21.36	5.59	22.13
800.0	6.38	21.90	6.26	22.02	6.00	22.28	5.28	23.00
850.0	6.55	22.25	6.44	22.37	6.20	22.61	5.53	23.28
900.0	6.48	22.82	6.38	22.92	6.15	23.15	5.53	23.77
950.0	6.18	23.60	6.09	23.69	5.88	23.89	5.31	24.46
1000.0	6.55	23.67	6.46	23.76	6.27	23.95	5.72	24.50
<b>Bezugs-</b> <b>punkt:</b>	<b>Strahl-</b> <b>ungszone</b>	<b>Strahl-</b> <b>ungszone</b>	<b>Spitze der Log. - Per. Struktur</b>					
<b>Reference</b> <b>Point:</b>	<b>Radiating</b> <b>Zone</b>	<b>Radiating</b> <b>Zone</b>	<b>Tip of Log. - Per. Structure</b>					



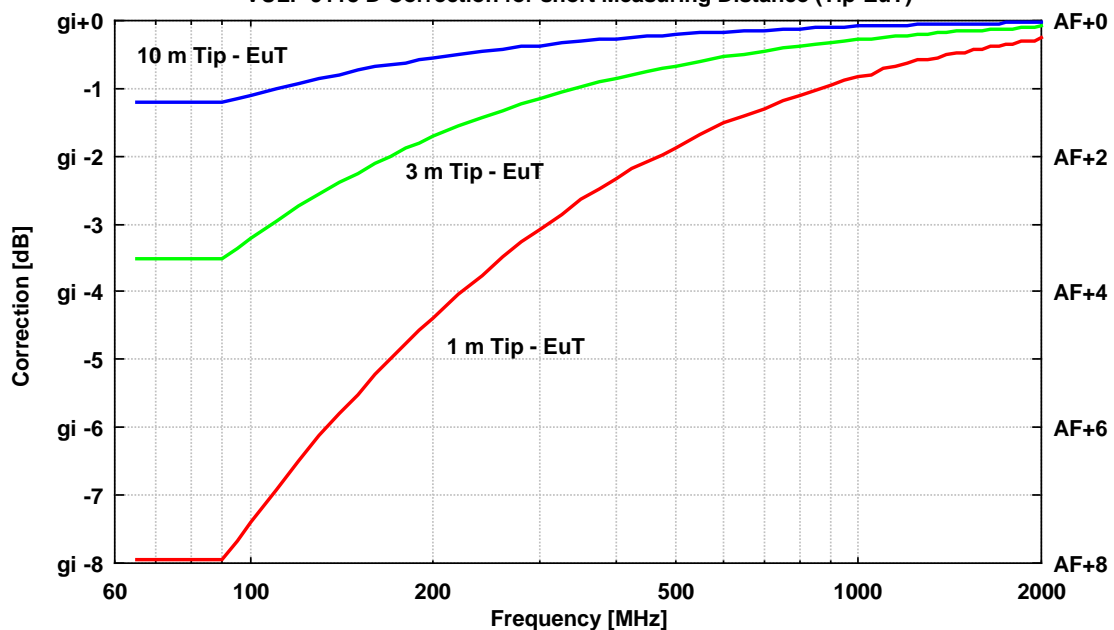
# SCHWARZBECK MESS - ELEKTRONIK

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

## VULP 9118 D Kalibrierdaten (Fernfeld und 1, 3, 10 m Spitze-Prüfling) VULP 9118 D 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	6.55	23.67	6.46	23.76	6.27	23.95	5.72	24.50
1050.0	6.50	24.14	6.42	24.23	6.23	24.41	5.71	24.93
1100.0	6.23	24.82	6.16	24.89	5.99	25.06	5.52	25.53
1150.0	5.95	25.48	5.88	25.55	5.72	25.71	5.28	26.15
1200.0	6.18	25.63	6.12	25.69	5.97	25.84	5.55	26.25
1250.0	6.15	26.01	6.09	26.07	5.95	26.21	5.56	26.60
1300.0	5.96	26.54	5.90	26.60	5.76	26.74	5.37	27.13
1350.0	5.36	27.46	5.30	27.52	5.17	27.65	4.81	28.01
1400.0	5.32	27.82	5.27	27.87	5.15	27.99	4.81	28.33
1450.0	5.59	27.86	5.54	27.91	5.43	28.02	5.12	28.32
1500.0	5.54	28.20	5.49	28.25	5.38	28.36	5.07	28.67
1550.0	4.96	29.06	4.92	29.11	4.82	29.21	4.54	29.49
1600.0	3.90	30.40	3.86	30.45	3.76	30.55	3.48	30.83
1650.0	3.29	31.28	3.25	31.32	3.16	31.41	2.91	31.66
1700.0	2.79	32.04	2.75	32.08	2.66	32.17	2.41	32.42
1750.0	3.20	31.88	3.17	31.92	3.08	32.00	2.86	32.22
1800.0	4.07	31.26	4.04	31.29	3.95	31.37	3.73	31.60
1850.0	4.27	31.30	4.24	31.32	4.17	31.39	3.97	31.59
1900.0	3.67	32.13	3.64	32.16	3.57	32.23	3.37	32.42
1950.0	2.55	33.47	2.52	33.50	2.45	33.57	2.25	33.77
2000.0	1.11	35.13	1.08	35.16	1.02	35.22	0.85	35.39
<b>Bezugs-</b> <b>punkt:</b>	<b>Strahl-</b> <b>ungszone</b>	<b>Strahl-</b> <b>ungszone</b>	<b>Spitze der Log. - Per. Struktur</b>					
<b>Reference</b> <b>Point:</b>	<b>Radiating</b> <b>Zone</b>	<b>Radiating</b> <b>Zone</b>	<b>Tip of Log. - Per. Structure</b>					

VULP 9118 D Korrektur für kurze Messentfernung (Bezugspunkt: Spitze)  
VULP 9118 D Correction for short Measuring Distance (Tip-EuT)



# SCHWARZBECK MESS - ELEKTRONIK

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

## VULP 9118 D Kalibrierdaten (Fernfeld und 3, 10 m Mitte-Prüfling)

### VULP 9118 D Calibration Data (Farfield and 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
65.0	2.03	4.45	1.40	5.08	0.09	6.39	-2.83	9.31
70.0	2.78	4.35	2.15	4.97	0.84	6.28	-2.08	9.20
75.0	2.21	5.51	1.58	6.14	0.27	7.45	-2.65	10.37
80.0	2.36	5.92	1.73	6.55	0.42	7.86	-2.50	10.78
85.0	3.30	5.51	2.67	6.14	1.36	7.45	-1.56	10.37
90.0	4.41	4.90	3.78	5.52	2.47	6.83	-0.45	9.76
95.0	5.08	4.69	4.52	5.26	3.33	6.45	0.63	9.15
100.0	5.66	4.56	5.16	5.06	4.09	6.13	1.60	8.62
110.0	6.22	4.83	5.82	5.23	4.96	6.09	2.87	8.17
120.0	6.17	5.63	5.86	5.95	5.17	6.63	3.47	8.34
130.0	6.31	6.19	6.07	6.42	5.55	6.95	4.20	8.30
140.0	6.50	6.64	6.33	6.81	5.94	7.20	4.92	8.23
150.0	6.57	7.17	6.45	7.29	6.19	7.55	5.47	8.27
160.0	6.72	7.59	6.66	7.65	6.51	7.80	6.09	8.21
170.0	6.91	7.92	6.89	7.94	6.84	7.99	6.70	8.13
180.0	6.95	8.38	6.97	8.36	7.01	8.32	7.13	8.20
190.0	6.97	8.82	7.02	8.77	7.15	8.65	7.51	8.29
200.0	6.91	9.33	6.99	9.25	7.19	9.05	7.78	8.46
220.0	6.77	10.30	6.91	10.16	7.25	9.82	8.28	8.78
240.0	6.85	10.97	7.03	10.79	7.48	10.34	8.90	8.93
260.0	6.86	11.65	7.08	11.44	7.63	10.89	9.42	9.10
280.0	6.73	12.43	6.99	12.17	7.63	11.53	9.77	9.40
300.0	6.71	13.05	7.00	12.77	7.71	12.06	10.12	9.64
325.0	6.56	13.90	6.88	13.58	7.67	12.79	10.44	10.02
350.0	6.81	14.29	7.16	13.94	8.04	13.07	11.17	9.93
375.0	6.74	14.96	7.11	14.59	8.05	13.65	11.47	10.23
400.0	6.62	15.64	7.01	15.25	8.00	14.26	11.66	10.60
425.0	6.62	16.16	7.03	15.75	8.08	14.70	12.05	10.73
450.0	6.73	16.55	7.16	16.13	8.24	15.04	12.41	10.87
475.0	6.89	16.87	7.33	16.42	8.46	15.30	12.82	10.93
500.0	6.68	17.52	7.13	17.06	8.30	15.90	12.88	11.32
550.0	6.65	18.38	7.13	17.90	8.36	16.67	13.30	11.73
600.0	6.61	19.18	7.11	18.67	8.40	17.38	13.74	12.04
650.0	6.81	19.67	7.32	19.15	8.66	17.82	14.24	12.24
700.0	6.48	20.65	7.01	20.11	8.38	18.74	14.22	12.90
750.0	6.77	20.95	7.31	20.41	8.73	18.99	14.84	12.88
800.0	6.38	21.90	6.93	21.35	8.37	19.91	14.67	13.61
850.0	6.55	22.25	7.11	21.70	8.58	20.23	15.07	13.74
900.0	6.48	22.82	7.05	22.26	8.55	20.76	15.23	14.07
950.0	6.18	23.60	6.76	23.02	8.28	21.49	15.18	14.60
1000.0	6.55	23.67	7.13	23.09	8.67	21.55	15.67	14.55
<b>Bezugs-</b> <b>punkt:</b>	<b>Strahl-</b> <b>ungszone</b>	<b>Strahl-</b> <b>ungszone</b>	<b>Mitte der Log. - Per. Struktur</b>					
<b>Reference</b> <b>Point:</b>	<b>Radiating</b> <b>Zone</b>	<b>Radiating</b> <b>Zone</b>	<b>Center of Log. - Per. Structure</b>					

# SCHWARZBECK MESS - ELEKTRONIK

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

## VULP 9118 D Kalibrierdaten (Fernfeld und 3, 10 m Mitte-Prüfling) VULP 9118 D Calibration Data (Farfield and 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	6.55	23.67	7.13	23.09	8.67	21.55	15.67	14.55
1050.0	6.50	24.14	7.09	23.56	8.64	22.00	15.74	14.90
1100.0	6.23	24.82	6.83	24.22	8.41	22.64	15.73	15.32
1150.0	5.95	25.48	6.55	24.88	8.15	23.29	15.58	15.85
1200.0	6.18	25.63	6.79	25.02	8.39	23.41	15.94	15.86
1250.0	6.15	26.01	6.76	25.40	8.38	23.78	16.05	16.11
1300.0	5.96	26.54	6.57	25.93	8.19	24.31	15.86	16.64
1350.0	5.36	27.46	5.98	26.85	7.61	25.22	15.39	17.43
1400.0	5.32	27.82	5.94	27.20	7.59	25.55	15.49	17.65
1450.0	5.59	27.86	6.22	27.23	7.88	25.57	15.90	17.54
1500.0	5.54	28.20	6.17	27.58	7.83	25.91	15.85	17.89
1550.0	4.96	29.06	5.59	28.44	7.27	26.76	15.42	18.61
1600.0	3.90	30.40	4.53	29.77	6.21	28.09	14.36	19.94
1650.0	3.29	31.28	3.93	30.64	5.62	28.95	13.89	20.68
1700.0	2.79	32.04	3.43	31.40	5.12	29.71	13.39	21.44
1750.0	3.20	31.88	3.84	31.24	5.55	29.54	13.95	21.13
1800.0	4.07	31.26	4.71	30.62	6.42	28.91	14.82	20.50
1850.0	4.27	31.30	4.91	30.65	6.63	28.93	15.17	20.39
1900.0	3.67	32.13	4.31	31.48	6.03	29.76	14.57	21.22
1950.0	2.55	33.47	3.19	32.83	4.91	31.11	13.45	22.57
2000.0	1.11	35.13	1.76	34.48	3.49	32.75	12.17	24.07
<b>Bezugspunkt:</b>	<b>Strahlungszone</b>	<b>Strahlungszone</b>	<b>Mitte der Log. - Per. Struktur</b>					
<b>Reference Point:</b>	<b>Radiating Zone</b>	<b>Radiating Zone</b>	<b>Center of Log. - Per. Structure</b>					

### VULP 9118 D Korrektur für kurze Messentfernung (Bezugspunkt: Mitte) VULP 9118 D Correction for short Measuring Distance (Center-EuT)

