



## Gewinn und Antennenfaktor für kurze Messentfernung *Gain and Antenna Factor for short Measuring Distances*

Frequency	Gain(Iso.) Farfield	Ant.-Fact k Farfield	gi (10 m) Tip	k (10m) Tip	gi (3m) Tip	k (3m) Tip	gi (1m) Tip	k (1m) Tip
MHz	dBi	dB/m	dBi	dB/m	dBi	dB/m	dBi	dB/m
60.0	-0.81	6.59	-2.14	7.93	-4.64	10.42	-9.31	15.09
65.0	2.15	4.33	0.82	5.66	-1.68	8.15	-6.35	12.83
70.0	4.17	2.95	2.84	4.29	0.34	6.78	-4.33	11.45
75.0	6.12	1.60	4.79	2.94	2.29	5.43	-2.38	10.10
80.0	7.06	1.23	5.73	2.56	3.23	5.05	-1.44	9.72
85.0	7.06	1.75	5.80	3.01	3.42	5.39	-1.10	9.91
90.0	6.90	2.41	5.71	3.60	3.44	5.87	-0.95	10.26
95.0	7.82	1.96	6.69	3.08	4.51	5.26	0.25	9.52
100.0	8.27	1.95	7.19	3.03	5.10	5.12	0.96	9.26
105.0	8.22	2.42	7.19	3.45	5.18	5.46	1.16	9.49
110.0	8.40	2.65	7.42	3.63	5.49	5.56	1.57	9.48
115.0	8.77	2.67	7.83	3.60	5.97	5.46	2.16	9.27
120.0	8.92	2.88	8.02	3.78	6.23	5.58	2.52	9.29
125.0	8.62	3.54	7.76	4.40	6.02	6.13	2.41	9.75
130.0	8.78	3.72	7.95	4.55	6.27	6.23	2.74	9.76
135.0	9.05	3.78	8.25	4.58	6.63	6.20	3.18	9.64
140.0	9.19	3.95	8.42	4.72	6.84	6.30	3.48	9.66
145.0	9.02	4.42	8.28	5.17	6.75	6.70	3.47	9.98
150.0	8.79	4.95	8.07	5.67	6.59	7.15	3.38	10.37
155.0	8.83	5.20	8.13	5.89	6.70	7.33	3.56	10.47
160.0	8.95	5.36	8.28	6.02	6.89	7.42	3.82	10.48
165.0	9.04	5.53	8.39	6.18	7.03	7.54	4.03	10.54
170.0	8.89	5.93	8.26	6.57	6.94	7.89	4.00	10.82
175.0	8.67	6.41	8.05	7.03	6.77	8.31	3.88	11.20
180.0	8.73	6.60	8.13	7.19	6.88	8.44	4.07	11.26
185.0	8.80	6.76	8.22	7.34	7.00	8.56	4.24	11.32
190.0	8.99	6.80	8.43	7.37	7.24	8.56	4.54	11.26
195.0	9.05	6.97	8.50	7.52	7.33	8.69	4.67	11.35
200.0	8.94	7.30	8.41	7.84	7.27	8.97	4.67	11.57
210.0	8.83	7.84	8.32	8.34	7.23	9.43	4.72	11.94
220.0	8.94	8.13	8.45	8.61	7.42	9.65	4.99	12.07
230.0	8.98	8.48	8.52	8.94	7.53	9.92	5.20	12.25
240.0	8.78	9.05	8.34	9.48	7.39	10.43	5.14	12.68
250.0	9.07	9.11	8.65	9.53	7.73	10.45	5.55	12.63
260.0	9.27	9.25	8.86	9.66	7.98	10.54	5.86	12.65
270.0	9.04	9.81	8.65	10.20	7.80	11.05	5.75	13.09
280.0	8.88	10.28	8.51	10.66	7.69	11.47	5.71	13.45
290.0	8.88	10.59	8.52	10.95	7.73	11.74	5.80	13.66
300.0	9.09	10.67	8.74	11.02	7.98	11.79	6.11	13.66
320.0	9.16	11.17	8.84	11.49	8.12	12.20	6.36	13.96
340.0	8.94	11.91	8.64	12.21	7.97	12.88	6.30	14.55
360.0	9.22	12.12	8.93	12.41	8.30	13.05	6.71	14.64
380.0	8.97	12.84	8.70	13.12	8.10	13.71	6.59	15.22
400.0	8.82	13.44	8.57	13.69	8.01	14.26	6.57	15.69
420.0	9.16	13.53	8.92	13.76	8.38	14.30	7.02	15.67
440.0	8.90	14.19	8.67	14.42	8.16	14.92	6.86	16.23
460.0	8.84	14.64	8.63	14.85	8.14	15.33	6.90	16.57
480.0	8.98	14.86	8.77	15.07	8.31	15.53	7.11	16.73
500.0	9.22	14.98	9.03	15.17	8.59	15.61	7.46	16.74
520.0	8.97	15.57	8.79	15.75	8.37	16.17	7.28	17.26
540.0	8.89	15.98	8.71	16.15	8.32	16.55	7.27	17.60
560.0	9.08	16.11	8.91	16.27	8.53	16.65	7.53	17.65
580.0	9.35	16.14	9.19	16.30	8.82	16.67	7.84	17.65
600.0	9.11	16.67	8.96	16.83	8.60	17.18	7.67	18.11
620.0	8.93	17.14	8.78	17.29	8.44	17.63	7.53	18.54
640.0	8.95	17.39	8.81	17.54	8.48	17.86	7.62	18.72

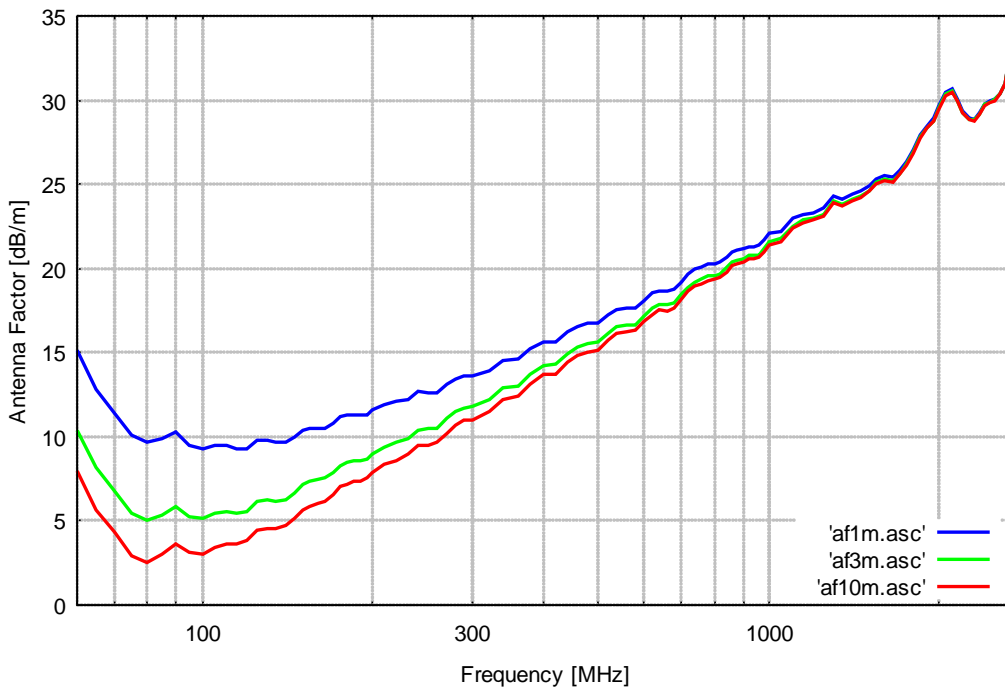
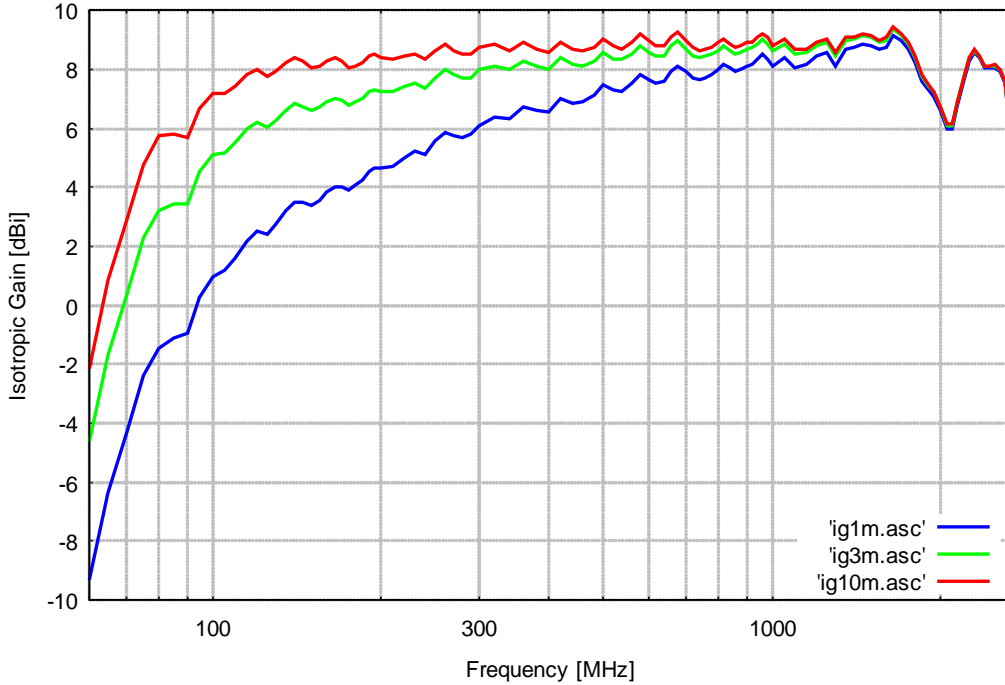


Frequency	Gain(Iso.) Farfield	Ant.-Fact k Farfield	gi (10 m) Tip	k (10m) Tip	gi (3m) Tip	k (3m) Tip	gi (1m) Tip	k (1m) Tip
MHz	dBi	dB/m	dBi	dB/m	dBi	dB/m	dBi	dB/m
660.0	9.24	17.37	9.10	17.51	8.79	17.82	7.95	18.66
680.0	9.39	17.48	9.26	17.61	8.95	17.92	8.14	18.73
700.0	9.13	17.99	9.00	18.12	8.71	18.42	7.92	19.21
720.0	8.86	18.51	8.73	18.63	8.45	18.92	7.68	19.68
740.0	8.78	18.83	8.66	18.95	8.38	19.22	7.64	19.96
760.0	8.83	19.00	8.71	19.12	8.45	19.39	7.73	20.11
780.0	8.86	19.20	8.75	19.31	8.49	19.57	7.80	20.26
800.0	9.01	19.27	8.90	19.38	8.66	19.63	7.99	20.29
820.0	9.14	19.36	9.04	19.46	8.80	19.70	8.16	20.34
840.0	8.99	19.71	8.89	19.81	8.66	20.04	8.04	20.66
860.0	8.85	20.06	8.75	20.15	8.54	20.37	7.94	20.97
880.0	8.89	20.22	8.79	20.31	8.58	20.53	7.98	21.13
900.0	8.99	20.31	8.90	20.41	8.69	20.61	8.12	21.18
920.0	9.02	20.48	8.93	20.56	8.74	20.76	8.19	21.30
940.0	9.17	20.51	9.08	20.60	8.89	20.80	8.34	21.34
960.0	9.30	20.57	9.22	20.65	9.03	20.84	8.51	21.35
980.0	9.16	20.88	9.08	20.97	8.89	21.16	8.37	21.67
1000.0	8.88	21.34	8.80	21.42	8.62	21.60	8.13	22.09
1050.0	9.12	21.53	9.05	21.60	8.88	21.77	8.41	22.23
1100.0	8.74	22.31	8.67	22.38	8.51	22.54	8.07	22.98
1150.0	8.76	22.67	8.70	22.73	8.56	22.87	8.17	23.26
1200.0	8.99	22.82	8.93	22.87	8.80	23.00	8.44	23.36
1250.0	9.10	23.06	9.04	23.11	8.91	23.24	8.55	23.61
1300.0	8.64	23.86	8.59	23.91	8.47	24.03	8.13	24.36
1350.0	9.15	23.67	9.10	23.72	8.99	23.83	8.68	24.14
1400.0	9.16	23.98	9.12	24.03	9.02	24.13	8.74	24.41
1450.0	9.27	24.18	9.23	24.22	9.13	24.32	8.85	24.60
1500.0	9.20	24.54	9.16	24.58	9.07	24.67	8.82	24.92
1550.0	9.03	24.99	9.00	25.03	8.91	25.11	8.69	25.34
1600.0	9.11	25.19	9.08	25.23	8.99	25.31	8.77	25.53
1650.0	9.47	25.10	9.44	25.13	9.37	25.20	9.17	25.40
1700.0	9.25	25.57	9.22	25.61	9.15	25.68	8.95	25.88
1750.0	8.95	26.13	8.92	26.16	8.86	26.22	8.69	26.39
1800.0	8.48	26.85	8.45	26.87	8.39	26.93	8.22	27.10
1850.0	7.83	27.74	7.81	27.76	7.76	27.81	7.62	27.95
1900.0	7.50	28.29	7.48	28.32	7.43	28.37	7.29	28.51
1950.0	7.29	28.73	7.27	28.75	7.22	28.80	7.08	28.95
2000.0	6.77	29.47	6.75	29.49	6.71	29.53	6.60	29.64
2050.0	6.16	30.30	6.14	30.31	6.10	30.35	5.99	30.47
2100.0	6.16	30.50	6.14	30.52	6.10	30.56	5.99	30.68
2150.0	6.92	29.95	6.91	29.96	6.88	29.99	6.79	30.08
2200.0	7.79	29.28	7.78	29.29	7.75	29.32	7.66	29.41
2250.0	8.42	28.84	8.41	28.86	8.38	28.89	8.29	28.97
2300.0	8.68	28.78	8.67	28.79	8.64	28.82	8.55	28.90
2350.0	8.47	29.17	8.46	29.18	8.44	29.20	8.38	29.26
2400.0	8.12	29.70	8.11	29.71	8.09	29.73	8.03	29.79
2450.0	8.15	29.86	8.14	29.86	8.12	29.88	8.06	29.94
2500.0	8.17	30.01	8.16	30.02	8.14	30.04	8.08	30.10
2550.0	8.00	30.35	8.00	30.36	7.99	30.37	7.96	30.39
2600.0	7.58	30.94	7.58	30.94	7.57	30.95	7.54	30.98
2650.0	6.48	32.21	6.48	32.21	6.47	32.22	6.44	32.25
2700.0	5.06	33.79	5.06	33.79	5.05	33.80	5.02	33.83





**Bezugspunkt: Spitze**  
**Reference Point: Tip**





Frequency	Gain(Iso.) Farfield	Ant.-Fact k Farfield	gi (10 m) Center	k (10m) Center	gi (3m) Center	k (3m) Center
MHz	dBi	dB/m	dBi	dB/m	dBi	dB/m
60.0	-0.81	6.59	-1.48	7.26	-2.86	8.65
65.0	2.15	4.33	1.48	5.00	0.10	6.38
70.0	4.17	2.95	3.50	3.62	2.12	5.01
75.0	6.12	1.60	5.45	2.27	4.07	3.65
80.0	7.06	1.23	6.39	1.89	5.01	3.28
85.0	7.06	1.75	6.47	2.34	5.24	3.57
90.0	6.90	2.41	6.39	2.92	5.29	4.01
95.0	7.82	1.96	7.37	2.40	6.41	3.37
100.0	8.27	1.95	7.88	2.34	7.03	3.19
105.0	8.22	2.42	7.88	2.76	7.15	3.50
110.0	8.40	2.65	8.11	2.93	7.48	3.57
115.0	8.77	2.67	8.53	2.90	7.99	3.44
120.0	8.92	2.88	8.72	3.08	8.28	3.53
125.0	8.62	3.54	8.46	3.70	8.10	4.06
130.0	8.78	3.72	8.65	3.84	8.37	4.13
135.0	9.05	3.78	8.96	3.87	8.75	4.08
140.0	9.19	3.95	9.13	4.01	8.99	4.15
145.0	9.02	4.42	8.99	4.46	8.92	4.53
150.0	8.79	4.95	8.79	4.96	8.78	4.97
155.0	8.83	5.20	8.85	5.17	8.90	5.12
160.0	8.95	5.36	9.00	5.30	9.11	5.19
165.0	9.04	5.53	9.11	5.46	9.27	5.29
170.0	8.89	5.93	8.98	5.85	9.20	5.63
175.0	8.67	6.41	8.78	6.30	9.04	6.04
180.0	8.73	6.60	8.86	6.46	9.18	6.15
185.0	8.80	6.76	8.95	6.61	9.31	6.26
190.0	8.99	6.80	9.16	6.64	9.56	6.24
195.0	9.05	6.97	9.23	6.79	9.66	6.36
200.0	8.94	7.30	9.14	7.10	9.62	6.62
210.0	8.83	7.84	9.05	7.61	9.60	7.06
220.0	8.94	8.13	9.19	7.88	9.81	7.26
230.0	8.98	8.48	9.26	8.20	9.94	7.51
240.0	8.78	9.05	9.08	8.74	9.82	8.00
250.0	9.07	9.11	9.39	8.79	10.18	8.00
260.0	9.27	9.25	9.61	8.91	10.45	8.07
270.0	9.04	9.81	9.39	9.45	10.28	8.56
280.0	8.88	10.28	9.25	9.91	10.19	8.97
290.0	8.88	10.59	9.27	10.20	10.24	9.23
300.0	9.09	10.67	9.49	10.27	10.50	9.26
320.0	9.16	11.17	9.59	10.74	10.67	9.65
340.0	8.94	11.91	9.39	11.46	10.54	10.31
360.0	9.22	12.12	9.69	11.66	10.89	10.46
380.0	8.97	12.84	9.46	12.36	10.71	11.10
400.0	8.82	13.44	9.33	12.94	10.63	11.63
420.0	9.16	13.53	9.68	13.01	11.03	11.66
440.0	8.90	14.19	9.43	13.66	10.82	12.27
460.0	8.84	14.64	9.39	14.09	10.81	12.66
480.0	8.98	14.86	9.54	14.31	10.99	12.85
500.0	9.22	14.98	9.79	14.41	11.29	12.91
520.0	8.97	15.57	9.55	14.99	11.07	13.47
540.0	8.89	15.98	9.48	15.39	11.03	13.84
560.0	9.08	16.11	9.68	15.51	11.26	13.93
580.0	9.35	16.14	9.95	15.54	11.55	13.94
600.0	9.11	16.67	9.72	16.06	11.34	14.44
620.0	8.93	17.14	9.55	16.52	11.18	14.89
640.0	8.95	17.39	9.58	16.77	11.24	15.10
660.0	9.24	17.37	9.87	16.74	11.55	15.06
680.0	9.39	17.48	10.03	16.85	11.72	15.15
700.0	9.13	17.99	9.77	17.35	11.48	15.65



Frequency	Gain(Iso.) Farfield	Ant.-Fact k Farfield	gi (10 m) Center	k (10m) Center	gi (3m) Center	k (3m) Center
MHz	dBi	dB/m	dBi	dB/m	dBi	dB/m
720.0	8.86	18.51	9.50	17.86	11.22	16.14
740.0	8.78	18.83	9.43	18.18	11.16	16.44
760.0	8.83	19.00	9.48	18.35	11.23	16.60
780.0	8.86	19.20	9.52	18.54	11.28	16.78
800.0	9.01	19.27	9.67	18.61	11.45	16.83
820.0	9.14	19.36	9.81	18.69	11.60	16.90
840.0	8.99	19.71	9.66	19.04	11.47	17.24
860.0	8.85	20.06	9.53	19.38	11.35	17.56
880.0	8.89	20.22	9.57	19.54	11.39	17.72
900.0	8.99	20.31	9.67	19.63	11.51	17.80
920.0	9.02	20.48	9.71	19.79	11.56	17.94
940.0	9.17	20.51	9.86	19.83	11.71	17.98
960.0	9.30	20.57	9.99	19.87	11.86	18.01
980.0	9.16	20.88	9.85	20.19	11.72	18.33
1000.0	8.88	21.34	9.58	20.64	11.46	18.76
1050.0	9.12	21.53	9.82	20.82	11.72	18.93
1100.0	8.74	22.31	9.45	21.60	11.36	19.69
1150.0	8.76	22.67	9.47	21.96	11.41	20.02
1200.0	8.99	22.82	9.71	22.09	11.66	20.14
1250.0	9.10	23.06	9.82	22.34	11.77	20.38
1300.0	8.64	23.86	9.36	23.13	11.33	21.16
1350.0	9.15	23.67	9.88	22.95	11.86	20.96
1400.0	9.16	23.98	9.89	23.25	11.89	21.25
1450.0	9.27	24.18	10.00	23.44	12.00	21.44
1500.0	9.20	24.54	9.94	23.80	11.95	21.79
1550.0	9.03	24.99	9.77	24.25	11.80	22.22
1600.0	9.11	25.19	9.85	24.45	11.88	22.42
1650.0	9.47	25.10	10.22	24.35	12.26	22.31
1700.0	9.25	25.57	10.00	24.83	12.04	22.79
1750.0	8.95	26.13	9.70	25.38	11.76	23.32
1800.0	8.48	26.85	9.23	26.09	11.29	24.03
1850.0	7.83	27.74	8.59	26.98	10.66	24.90
1900.0	7.50	28.29	8.26	27.54	10.33	25.46
1950.0	7.29	28.73	8.05	27.97	10.12	25.90
2000.0	6.77	29.47	7.53	28.71	9.62	26.62
2050.0	6.16	30.30	6.92	29.53	9.01	27.44
2100.0	6.16	30.50	6.92	29.74	9.01	27.65
2150.0	6.92	29.95	7.69	29.18	9.79	27.08
2200.0	7.79	29.28	8.56	28.51	10.66	26.40
2250.0	8.42	28.84	9.19	28.08	11.29	25.97
2300.0	8.68	28.78	9.45	28.01	11.55	25.90
2350.0	8.47	29.17	9.24	28.40	11.36	26.28
2400.0	8.12	29.70	8.89	28.93	11.01	26.81
2450.0	8.15	29.86	8.92	29.08	11.04	26.96
2500.0	8.17	30.01	8.94	29.24	11.06	27.12
2550.0	8.00	30.35	8.78	29.57	10.91	27.44
2600.0	7.58	30.94	8.36	30.16	10.49	28.03
2650.0	6.48	32.21	7.26	31.43	9.39	29.29
2700.0	5.06	33.79	5.84	33.01	7.97	30.87





Bezugspunkt: Mitte  
Reference Point: Center

