

# SCHWARZBECK MESS - ELEKTRONIK

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

## SGA 2450 Gewinn-Normal SGA 2450 Standard Gain Antenna

### Beschreibung

Die Gewinn-Normale SGA bestehen aus einem quadratischen Reflektor der Kantenlänge  $\lambda$ . Im Abstand von  $\lambda/4$  vor dem Reflektor sind jeweils 2 Halbwellendipole angebracht. Der Isotropgewinn beträgt etwa 9.8 dBi bei der Dimensionierungsfrequenz. Die Dimensionierungsfrequenz kann zwischen 430 MHz und 2.8 GHz angegeben werden. Der 3 dB-Öffnungswinkel beträgt etwa 60°. Die Normale werden eingesetzt, wenn eine Referenzantenne mit exakt bekanntem Gewinn bei guter Richtwirkung und guter Rückdämpfung benötigt wird. Nach EIA/TIA-329-B werden diese Antennen auch 'Transfer-Standard-Antennen' oder EIA-Referenzantennen genannt.

### Description

The Gain Standard Antenna consists of a square-shaped reflector with dimensions  $\lambda \times \lambda$ . Two half-wave dipoles are mounted  $\lambda/4$  in front of the reflector plate. The gain is 9.8 dBi at the antennas' design frequency. The design frequency may be specified from 430 MHz to 2.8 GHz. The half power beamwidth is approx. 60°. The standard gain antenna is used for applications which require a high gain with good directivity and good front to back ratio. According to EIA/TIA-329-B these antennas are called 'transfer standard antennas or 'EIA reference antennas'.



Dimensionierungsfrequenz:	2.45 GHz
Nutzbarer Frequenzbereich:	2 - 3.2 GHz
Abmessungen: (B x H x T)	$\lambda \times \lambda \times \lambda/4$
Wellenlänge $\lambda$ [m]:	$300/f$ [MHz] $\approx 0.122$ m
Bandbreite: ( $g_i > 6$ dBi)	$\approx 1.6 : 1$
Befestigungsrohr (L x d):	288 x 22 mm
Anschluß (Buchse):	N
Nominelle Impedanz:	50 $\Omega$

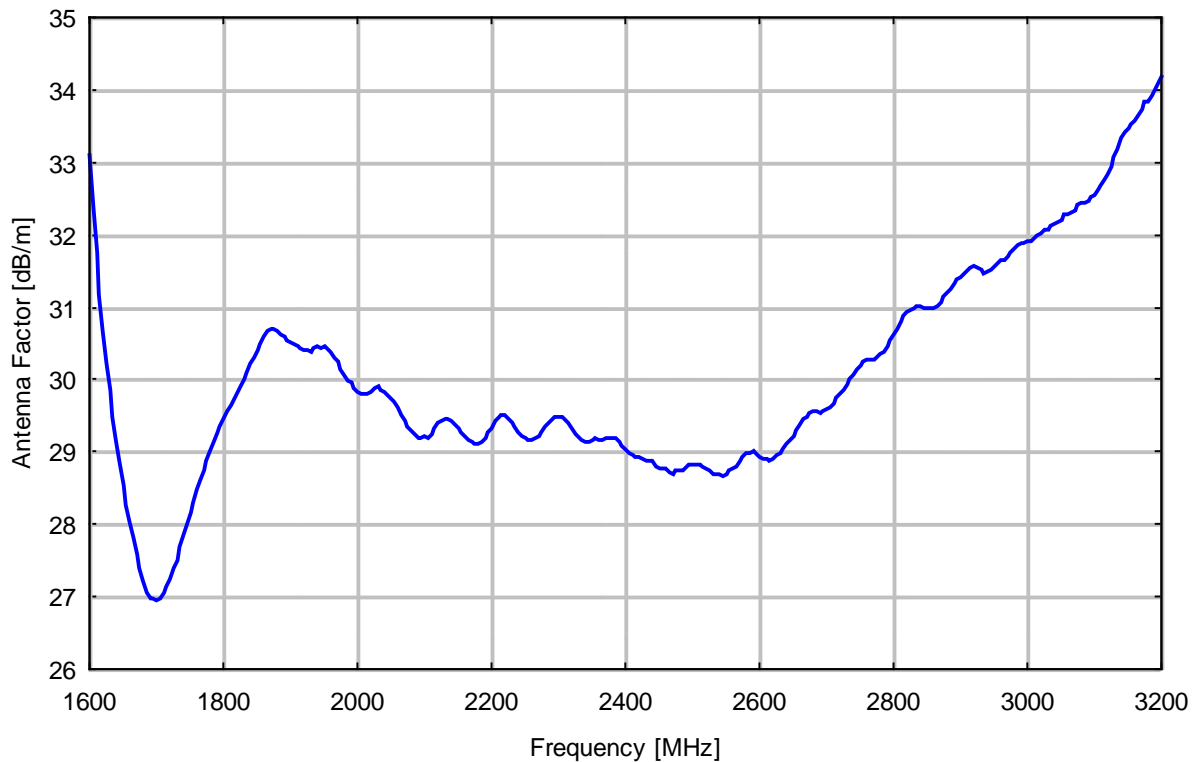
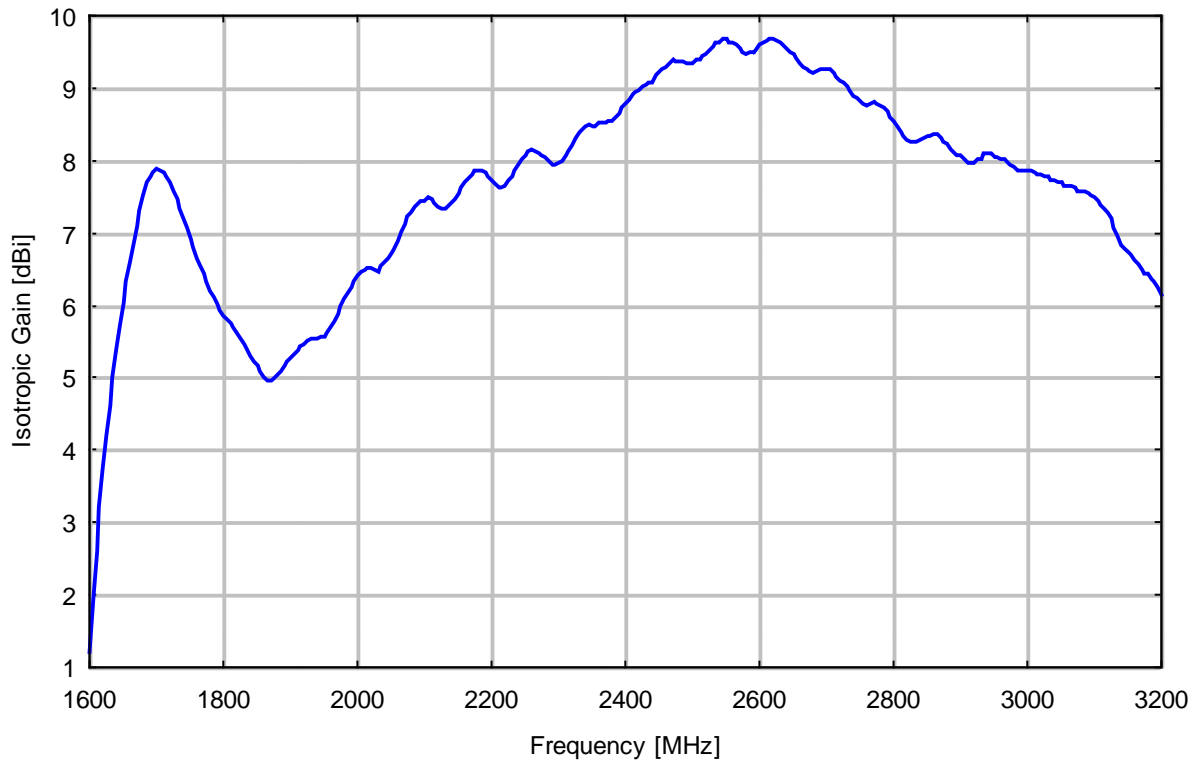
*Design frequency:  
Useable frequency range:  
Dimensions (W x H x D):*

*Wavelength  $\lambda$  [m]:  
Bandwidth ( $g_i > 6$  dBi):  
Mounting Tube (L x d):  
Connector (female):  
Nominal Impedance:*

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Frequency	Isotropic gain	Antenna factor
[MHz]	[dBi]	[dB/m]
1600.00	1.21	33.09
1605.00	1.94	32.39
1610.00	2.60	31.76
1615.00	3.22	31.16
1620.00	3.74	30.67
1625.00	4.21	30.23
1630.00	4.61	29.85
1635.00	5.02	29.47
1640.00	5.39	29.13
1645.00	5.73	28.81
1650.00	6.03	28.54
1655.00	6.34	28.26
1660.00	6.58	28.04
1665.00	6.83	27.82
1670.00	7.09	27.58
1675.00	7.31	27.39
1680.00	7.52	27.21
1685.00	7.69	27.06
1690.00	7.79	26.99
1695.00	7.84	26.96
1700.00	7.88	26.95
1705.00	7.87	26.98
1710.00	7.83	27.05
1715.00	7.77	27.14
1720.00	7.69	27.24
1725.00	7.57	27.39
1730.00	7.47	27.51
1735.00	7.33	27.68
1740.00	7.19	27.84
1745.00	7.06	28.00
1750.00	6.92	28.16
1755.00	6.80	28.31
1760.00	6.66	28.47
1765.00	6.55	28.60
1770.00	6.43	28.75
1775.00	6.32	28.88
1780.00	6.21	29.02
1785.00	6.11	29.14
1790.00	6.01	29.27
1795.00	5.94	29.36
1800.00	5.86	29.47
1805.00	5.79	29.56
1810.00	5.74	29.63
1815.00	5.70	29.70
1820.00	5.63	29.79
1825.00	5.55	29.90
1830.00	5.47	30.00
1835.00	5.40	30.09
1840.00	5.29	30.23
1845.00	5.23	30.31

Frequency	Isotropic gain	Antenna factor
[MHz]	[dBi]	[dB/m]
1850.00	5.16	30.40
1855.00	5.09	30.50
1860.00	5.01	30.60
1865.00	4.97	30.66
1870.00	4.96	30.70
1875.00	4.98	30.70
1880.00	5.03	30.67
1885.00	5.10	30.63
1890.00	5.17	30.58
1895.00	5.23	30.54
1900.00	5.27	30.53
1905.00	5.33	30.49
1910.00	5.39	30.45
1915.00	5.43	30.43
1920.00	5.47	30.42
1925.00	5.51	30.40
1930.00	5.54	30.39
1935.00	5.53	30.42
1940.00	5.53	30.45
1945.00	5.56	30.44
1950.00	5.57	30.45
1955.00	5.61	30.43
1960.00	5.69	30.38
1965.00	5.78	30.31
1970.00	5.87	30.24
1975.00	5.98	30.15
1980.00	6.09	30.06
1985.00	6.18	30.00
1990.00	6.25	29.95
1995.00	6.34	29.88
2000.00	6.41	29.83
2005.00	6.47	29.79
2010.00	6.49	29.79
2015.00	6.51	29.80
2020.00	6.51	29.82
2025.00	6.48	29.87
2030.00	6.47	29.90
2035.00	6.53	29.86
2040.00	6.60	29.81
2045.00	6.66	29.77
2050.00	6.73	29.73
2055.00	6.78	29.70
2060.00	6.89	29.61
2065.00	7.01	29.51
2070.00	7.12	29.42
2075.00	7.22	29.34
2080.00	7.29	29.29
2085.00	7.36	29.24
2090.00	7.42	29.20
2095.00	7.45	29.19

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Frequency	Isotropic gain	Antenna factor
[MHz]	[dBi]	[dB/m]
2100.00	7.45	29.21
2105.00	7.48	29.21
2110.00	7.46	29.25
2115.00	7.40	29.33
2120.00	7.35	29.40
2125.00	7.33	29.44
2130.00	7.34	29.45
2135.00	7.35	29.46
2140.00	7.40	29.43
2145.00	7.47	29.38
2150.00	7.54	29.33
2155.00	7.63	29.26
2160.00	7.69	29.22
2165.00	7.76	29.17
2170.00	7.82	29.13
2175.00	7.86	29.11
2180.00	7.87	29.12
2185.00	7.86	29.15
2190.00	7.84	29.19
2195.00	7.78	29.27
2200.00	7.74	29.33
2205.00	7.67	29.42
2210.00	7.63	29.48
2215.00	7.62	29.51
2220.00	7.65	29.50
2225.00	7.72	29.45
2230.00	7.78	29.41
2235.00	7.86	29.35
2240.00	7.95	29.27
2245.00	8.03	29.21
2250.00	8.06	29.20
2255.00	8.13	29.15
2260.00	8.14	29.16
2265.00	8.13	29.19
2270.00	8.11	29.23
2275.00	8.08	29.28
2280.00	8.04	29.34
2285.00	7.99	29.41
2290.00	7.95	29.47
2295.00	7.95	29.49
2300.00	7.96	29.49
2305.00	7.99	29.48
2310.00	8.06	29.43
2315.00	8.12	29.39
2320.00	8.21	29.32
2325.00	8.30	29.25
2330.00	8.38	29.19
2335.00	8.41	29.18
2340.00	8.46	29.14
2345.00	8.49	29.13
2350.00	8.48	29.16

Frequency	Isotropic gain	Antenna factor
[MHz]	[dBi]	[dB/m]
2355.00	8.48	29.18
2360.00	8.51	29.17
2365.00	8.52	29.18
2370.00	8.52	29.19
2375.00	8.54	29.19
2380.00	8.56	29.19
2385.00	8.59	29.18
2390.00	8.66	29.13
2395.00	8.73	29.08
2400.00	8.79	29.03
2405.00	8.85	28.99
2410.00	8.91	28.95
2415.00	8.95	28.93
2420.00	8.96	28.94
2425.00	9.01	28.90
2430.00	9.05	28.88
2435.00	9.08	28.87
2440.00	9.08	28.89
2445.00	9.19	28.80
2450.00	9.24	28.76
2455.00	9.25	28.77
2460.00	9.28	28.76
2465.00	9.35	28.71
2470.00	9.38	28.69
2475.00	9.36	28.73
2480.00	9.37	28.74
2485.00	9.37	28.76
2490.00	9.35	28.79
2495.00	9.33	28.83
2500.00	9.35	28.83
2505.00	9.38	28.82
2510.00	9.39	28.82
2515.00	9.44	28.79
2520.00	9.47	28.78
2525.00	9.52	28.75
2530.00	9.58	28.70
2535.00	9.62	28.68
2540.00	9.63	28.69
2545.00	9.67	28.66
2550.00	9.67	28.68
2555.00	9.63	28.74
2560.00	9.62	28.76
2565.00	9.60	28.80
2570.00	9.54	28.88
2575.00	9.51	28.93
2580.00	9.48	28.97
2585.00	9.49	28.98
2590.00	9.49	29.00
2595.00	9.53	28.97
2600.00	9.59	28.93
2605.00	9.63	28.91

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Frequency	Isotropic gain	Antenna factor
[MHz]	[dBi]	[dB/m]
2610.00	9.66	28.89
2615.00	9.69	28.88
2620.00	9.68	28.91
2625.00	9.66	28.94
2630.00	9.63	28.99
2635.00	9.61	29.03
2640.00	9.55	29.10
2645.00	9.51	29.16
2650.00	9.46	29.22
2655.00	9.41	29.29
2660.00	9.33	29.39
2665.00	9.29	29.44
2670.00	9.26	29.49
2675.00	9.23	29.54
2680.00	9.22	29.56
2685.00	9.23	29.57
2690.00	9.27	29.55
2695.00	9.26	29.57
2700.00	9.26	29.59
2705.00	9.25	29.61
2710.00	9.21	29.67
2715.00	9.16	29.74
2720.00	9.11	29.80
2725.00	9.07	29.86
2730.00	9.01	29.93
2735.00	8.96	30.00
2740.00	8.90	30.08
2745.00	8.86	30.13
2750.00	8.82	30.19
2755.00	8.78	30.24
2760.00	8.76	30.28
2765.00	8.78	30.27
2770.00	8.80	30.27
2775.00	8.78	30.31
2780.00	8.76	30.34
2785.00	8.73	30.39
2790.00	8.68	30.45
2795.00	8.60	30.55
2800.00	8.54	30.62
2805.00	8.47	30.71
2810.00	8.40	30.79
2815.00	8.34	30.87
2820.00	8.29	30.93
2825.00	8.27	30.97
2830.00	8.27	30.99
2835.00	8.27	31.00
2840.00	8.28	31.01
2845.00	8.31	30.99
2850.00	8.34	30.98
2855.00	8.34	30.99
2860.00	8.36	30.99

Frequency	Isotropic gain	Antenna factor
[MHz]	[dBi]	[dB/m]
2865.00	8.36	31.00
2870.00	8.32	31.06
2875.00	8.26	31.13
2880.00	8.22	31.19
2885.00	8.16	31.26
2890.00	8.11	31.33
2895.00	8.08	31.37
2900.00	8.06	31.41
2905.00	8.02	31.46
2910.00	7.97	31.53
2915.00	7.96	31.55
2920.00	7.97	31.56
2925.00	8.01	31.53
2930.00	8.03	31.53
2935.00	8.10	31.47
2940.00	8.10	31.49
2945.00	8.09	31.51
2950.00	8.05	31.57
2955.00	8.04	31.59
2960.00	8.01	31.64
2965.00	8.01	31.65
2970.00	7.97	31.71
2975.00	7.93	31.76
2980.00	7.91	31.79
2985.00	7.86	31.86
2990.00	7.86	31.87
2995.00	7.87	31.88
3000.00	7.86	31.90
3005.00	7.86	31.92
3010.00	7.84	31.95
3015.00	7.81	32.00
3020.00	7.80	32.02
3025.00	7.77	32.06
3030.00	7.77	32.08
3035.00	7.73	32.13
3040.00	7.73	32.15
3045.00	7.71	32.18
3050.00	7.71	32.20
3055.00	7.64	32.28
3060.00	7.65	32.28
3065.00	7.64	32.31
3070.00	7.63	32.33
3075.00	7.57	32.41
3080.00	7.56	32.43
3085.00	7.57	32.44
3090.00	7.55	32.47
3095.00	7.52	32.51
3100.00	7.49	32.56
3105.00	7.43	32.63
3110.00	7.39	32.69
3115.00	7.33	32.76

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[MHz]	[dBi]	[dB/m]
3120.00	7.28	32.82
3125.00	7.19	32.93
3130.00	7.07	33.06
3135.00	6.97	33.17
3140.00	6.83	33.33
3145.00	6.77	33.40
3150.00	6.73	33.46
3155.00	6.69	33.51
3160.00	6.63	33.58
3165.00	6.57	33.66

Frequency	Isotropic gain	Antenna factor
[MHz]	[dBi]	[dB/m]
3170.00	6.50	33.74
3175.00	6.43	33.82
3180.00	6.44	33.83
3185.00	6.36	33.92
3190.00	6.32	33.98
3195.00	6.24	34.07
3200.00	6.15	34.17

