

All radiated spurious measurements started at a measurement distance of 1 meter which is in the far field.

Above 40 GHz, no signals were measured at the 1 meter distance.

The antenna was moved in closer to try and measure any signals coming from the EUT including taking the antenna and moving it in all orientations around the EUT to find the angle with the maximum signal level. The antenna was then put at the distance specified in the test report to record the final data.

All measurements were corrected to 1 meter measurement distance.

wavelength calculator

$$\text{Freq} = C/\lambda$$

$$\lambda = C/\text{Freq}$$

C = velocity factor 299,792,458 meters per second

Freq = cycles per second

Rayleigh (far-field) distance

$$R_m = 2D^2 / \lambda$$

D = the largest dimension of the antenna aperture in meters

λ = the free-space wavelength in meters at the frequency of measurement

Antenna Far Field calculations are shown in the following 2 tables for the 50 – 75 GHz and 75 – 110 GHz standard gain horn antennas.

Asset # i00456, i00477 (50 - 75 GHz Horn antenna)						
Frequency	Frequency	speed of light	wavelength	Antenna Aperture		Rayleigh (far-field) distance
GHz	Hz	m/sec	m	in	m	m
50	50000000000	299792458	0.005995849	1.438	0.036525273	0.45
51	51000000000	299792458	0.005878283	1.438	0.036525273	0.45
52	52000000000	299792458	0.00576524	1.438	0.036525273	0.46
53	53000000000	299792458	0.005656461	1.438	0.036525273	0.47
54	54000000000	299792458	0.005551712	1.438	0.036525273	0.48
55	55000000000	299792458	0.005450772	1.438	0.036525273	0.49
56	56000000000	299792458	0.005353437	1.438	0.036525273	0.50
57	57000000000	299792458	0.005259517	1.438	0.036525273	0.51
58	58000000000	299792458	0.005168835	1.438	0.036525273	0.52
59	59000000000	299792458	0.005081228	1.438	0.036525273	0.53
60	60000000000	299792458	0.004996541	1.438	0.036525273	0.53
61	61000000000	299792458	0.00491463	1.438	0.036525273	0.54
62	62000000000	299792458	0.004835362	1.438	0.036525273	0.55
63	63000000000	299792458	0.00475861	1.438	0.036525273	0.56
64	64000000000	299792458	0.004684257	1.438	0.036525273	0.57
65	65000000000	299792458	0.004612192	1.438	0.036525273	0.58
66	66000000000	299792458	0.00454231	1.438	0.036525273	0.59
67	67000000000	299792458	0.004474514	1.438	0.036525273	0.60
68	68000000000	299792458	0.004408713	1.438	0.036525273	0.61
69	69000000000	299792458	0.004344818	1.438	0.036525273	0.61
70	70000000000	299792458	0.004282749	1.438	0.036525273	0.62
71	71000000000	299792458	0.004222429	1.438	0.036525273	0.63
72	72000000000	299792458	0.004163784	1.438	0.036525273	0.64
73	73000000000	299792458	0.004106746	1.438	0.036525273	0.65
74	74000000000	299792458	0.004051249	1.438	0.036525273	0.66
75	75000000000	299792458	0.003997233	1.438	0.036525273	0.67

Asset # i00476 (75 - 110 GHz Horn antenna)						
Frequency	Frequency	speed of light	wavelength	Antenna Aperture		Rayleigh (far-field) distance
GHz	Hz	m/sec	m	in	m	m
75	75000000000	299792458	0.003997233	0.98	0.02489205	0.31
76	76000000000	299792458	0.003944638	0.98	0.02489205	0.31
77	77000000000	299792458	0.003893409	0.98	0.02489205	0.32
78	78000000000	299792458	0.003843493	0.98	0.02489205	0.32
79	79000000000	299792458	0.003794841	0.98	0.02489205	0.33
80	80000000000	299792458	0.003747406	0.98	0.02489205	0.33
81	81000000000	299792458	0.003701141	0.98	0.02489205	0.33
82	82000000000	299792458	0.003656006	0.98	0.02489205	0.34
83	83000000000	299792458	0.003611957	0.98	0.02489205	0.34
84	84000000000	299792458	0.003568958	0.98	0.02489205	0.35
85	85000000000	299792458	0.00352697	0.98	0.02489205	0.35
86	86000000000	299792458	0.003485959	0.98	0.02489205	0.36
87	87000000000	299792458	0.00344589	0.98	0.02489205	0.36
88	88000000000	299792458	0.003406732	0.98	0.02489205	0.36
89	89000000000	299792458	0.003368455	0.98	0.02489205	0.37
90	90000000000	299792458	0.003331027	0.98	0.02489205	0.37
91	91000000000	299792458	0.003294423	0.98	0.02489205	0.38
92	92000000000	299792458	0.003258614	0.98	0.02489205	0.38
93	93000000000	299792458	0.003223575	0.98	0.02489205	0.38
94	94000000000	299792458	0.003189281	0.98	0.02489205	0.39
95	95000000000	299792458	0.00315571	0.98	0.02489205	0.39
96	96000000000	299792458	0.003122838	0.98	0.02489205	0.40
97	97000000000	299792458	0.003090644	0.98	0.02489205	0.40
98	98000000000	299792458	0.003059107	0.98	0.02489205	0.41
99	99000000000	299792458	0.003028207	0.98	0.02489205	0.41
100	1E+11	299792458	0.002997925	0.98	0.02489205	0.41
101	1.01E+11	299792458	0.002968242	0.98	0.02489205	0.42
102	1.02E+11	299792458	0.002939142	0.98	0.02489205	0.42
103	1.03E+11	299792458	0.002910606	0.98	0.02489205	0.43
104	1.04E+11	299792458	0.00288262	0.98	0.02489205	0.43
105	1.05E+11	299792458	0.002855166	0.98	0.02489205	0.43
106	1.06E+11	299792458	0.002828231	0.98	0.02489205	0.44
107	1.07E+11	299792458	0.002801799	0.98	0.02489205	0.44
108	1.08E+11	299792458	0.002775856	0.98	0.02489205	0.45
109	1.09E+11	299792458	0.00275039	0.98	0.02489205	0.45
110	1.1E+11	299792458	0.002725386	0.98	0.02489205	0.45