

Measured 30 GHz band antenna performance data for the 1.2-meter antennas

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Azimuth LHCP, -180° to +180° @ 1.0° increment

27.60 GHz Antenna Pattern in Co-pol Az LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-179.0	-27.1	0.0	-27.1
-178.0	-19.2	0.0	-19.2
-177.0	-25.7	0.0	-25.7
-176.0	-22.9	0.0	-22.9
-175.0	-31.9	0.0	-31.9
-174.0	-28.8	0.0	-28.8
-173.0	-32.6	0.0	-32.6
-172.0	-34.4	0.0	-34.4
-171.0	-32.1	0.0	-32.1
-170.0	-33.9	0.0	-33.9
-169.0	-37.3	0.0	-37.3
-168.0	-31.1	0.0	-31.1
-167.0	-33.4	0.0	-33.4
-166.0	-34.3	0.0	-34.3
-165.0	-31.1	0.0	-31.1
-164.0	-45.0	0.0	-45.0
-163.0	-36.6	0.0	-36.6
-162.0	-31.9	0.0	-31.9
-161.0	-30.6	0.0	-30.6
-160.0	-46.8	0.0	-46.8
-159.0	-28.9	0.0	-28.9
-158.0	-34.1	0.0	-34.1
-157.0	-32.1	0.0	-32.1
-156.0	-24.2	0.0	-24.2
-155.0	-28.2	0.0	-28.2
-154.0	-28.8	0.0	-28.8
-153.0	-32.7	0.0	-32.7
-152.0	-37.3	0.0	-37.3
-151.0	-26.6	0.0	-26.6
-150.0	-36.2	0.0	-36.2
-149.0	-36.3	0.0	-36.3
-148.0	-28.2	0.0	-28.2
-147.0	-34.0	0.0	-34.0
-146.0	-27.5	0.0	-27.5
-145.0	-31.5	0.0	-31.5
-144.0	-40.0	0.0	-40.0
-143.0	-31.5	0.0	-31.5
-142.0	-43.5	0.0	-43.5
-141.0	-25.7	0.0	-25.7
-140.0	-26.3	0.0	-26.3
-139.0	-25.3	0.0	-25.3
-138.0	-27.3	0.0	-27.3
-137.0	-29.8	0.0	-29.8
-136.0	-28.5	0.0	-28.5
-135.0	-30.8	0.0	-30.8
-134.0	-34.5	0.0	-34.5
-133.0	-22.2	0.0	-22.2
-132.0	-25.1	0.0	-25.1
-131.0	-29.0	0.0	-29.0
-130.0	-20.7	0.0	-20.7
-129.0	-21.5	0.0	-21.5
-128.0	-27.1	0.0	-27.1
-127.0	-34.1	0.0	-34.1
-126.0	-34.1	0.0	-34.1
-125.0	-26.0	0.0	-26.0
-124.0	-25.5	0.0	-25.5
-123.0	-31.3	0.0	-31.3
-122.0	-28.8	0.0	-28.8
-121.0	-24.0	0.0	-24.0
-120.0	-28.5	0.0	-28.5

27.60 GHz Antenna Pattern in Co-pol Az LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	47.4		
1.0	19.6		
2.0	6.9	21.5	-14.6
3.0	10.8	17.1	-6.3
4.0	8.3	13.9	-5.6
5.0	0.9	11.5	-10.6
6.0	-4.2	9.5	-13.8
7.0	-1.9	7.9	-9.8
8.0	-1.1	8.0	-9.1
9.0	-17.4	8.0	-25.4
10.0	-13.6	7.0	-20.6
11.0	-8.0	6.0	-13.9
12.0	-9.8	5.0	-14.8
13.0	-11.7	4.2	-15.9
14.0	-9.0	3.3	-12.4
15.0	-13.8	2.6	-16.4
16.0	-19.1	1.9	-21.0
17.0	-13.6	1.2	-14.9
18.0	-12.9	0.6	-13.5
19.0	-14.6	0.0	-14.6
20.0	-15.9	-0.5	-15.4
21.0	-15.0	-1.1	-13.9
22.0	-23.0	-1.6	-21.5
23.0	-8.5	-2.0	-6.5
24.0	-13.0	-2.5	-10.5
25.0	-9.5	-2.9	-6.5
26.0	-12.4	-3.4	-9.0
27.0	-12.3	-3.8	-8.6
28.0	-10.4	-4.2	-6.3
29.0	-8.3	-4.6	-3.7
30.0	-11.5	-4.9	-6.5
31.0	-20.1	-5.3	-14.8
32.0	-16.2	-5.6	-10.6
33.0	-14.5	-6.0	-8.5
34.0	-15.6	-6.3	-9.3
35.0	-25.9	-6.6	-19.3
36.0	-23.3	-6.9	-16.4
37.0	-15.3	-7.2	-8.1
38.0	-21.3	-7.5	-13.8
39.0	-38.3	-7.8	-30.5
40.0	-23.5	-8.1	-15.4
41.0	-16.5	-8.3	-8.1
42.0	-11.7	-8.6	-3.2
43.0	-12.5	-8.8	-3.6
44.0	-16.2	-9.1	-7.1
45.0	-17.3	-9.3	-7.9
46.0	-13.6	-9.6	-4.0
47.0	-15.0	-9.8	-5.2
48.0	-13.8	-10.0	-3.8
49.0	-14.7	-10.0	-4.7
50.0	-18.9	-10.0	-8.9
51.0	-20.1	-10.0	-10.1
52.0	-24.9	-10.0	-14.9
53.0	-18.5	-10.0	-8.5
54.0	-19.0	-10.0	-9.0
55.0	-13.2	-10.0	-3.2
56.0	-15.6	-10.0	-5.6
57.0	-16.3	-10.0	-6.3
58.0	-19.0	-10.0	-9.0
59.0	-22.4	-10.0	-12.4

Orbit Communication Systems Ltd.
AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
Co-pol Azimuth LHCP, -180° to +180° @ 1.0° increment

-119.0	-37.9	0.0	-37.9	60.0	-17.1	-10.0	-7.1
-118.0	-23.1	0.0	-23.1	61.0	-13.7	-10.0	-3.7
-117.0	-20.7	0.0	-20.7	62.0	-15.4	-10.0	-5.4
-116.0	-22.4	0.0	-22.4	63.0	-26.9	-10.0	-16.9
-115.0	-20.6	0.0	-20.6	64.0	-32.0	-10.0	-22.0
-114.0	-22.3	0.0	-22.3	65.0	-13.6	-10.0	-3.6
-113.0	-22.8	0.0	-22.8	66.0	-13.3	-10.0	-3.3
-112.0	-22.0	0.0	-22.0	67.0	-18.7	-10.0	-8.7
-111.0	-17.7	0.0	-17.7	68.0	-27.7	-10.0	-17.7
-110.0	-16.6	0.0	-16.6	69.0	-14.1	-10.0	-4.1
-109.0	-14.7	0.0	-14.7	70.0	-17.1	-10.0	-7.1
-108.0	-13.3	0.0	-13.3	71.0	-18.8	-10.0	-8.8
-107.0	-12.9	0.0	-12.9	72.0	-18.4	-10.0	-8.4
-106.0	-11.1	0.0	-11.1	73.0	-23.6	-10.0	-13.6
-105.0	-9.0	0.0	-9.0	74.0	-17.0	-10.0	-7.0
-104.0	-8.1	0.0	-8.1	75.0	-16.4	-10.0	-6.4
-103.0	-7.4	0.0	-7.4	76.0	-19.3	-10.0	-9.3
-102.0	-7.5	0.0	-7.5	77.0	-30.8	-10.0	-20.8
-101.0	-8.7	0.0	-8.7	78.0	-18.7	-10.0	-8.7
-100.0	-10.5	0.0	-10.5	79.0	-15.9	-10.0	-5.9
-99.0	-10.2	0.0	-10.2	80.0	-22.9	-10.0	-12.9
-98.0	-7.9	0.0	-7.9	81.0	-24.8	-10.0	-14.8
-97.0	-7.1	0.0	-7.1	82.0	-24.7	-10.0	-14.7
-96.0	-10.1	0.0	-10.1	83.0	-23.3	-10.0	-13.3
-95.0	-10.6	0.0	-10.6	84.0	-23.0	-10.0	-13.0
-94.0	-7.5	0.0	-7.5	85.0	-20.5	-10.0	-10.5
-93.0	-8.2	0.0	-8.2	86.0	-21.8	0.0	-21.8
-92.0	-12.2	0.0	-12.2	87.0	-20.0	0.0	-20.0
-91.0	-7.8	0.0	-7.8	88.0	-24.9	0.0	-24.9
-90.0	-9.3	0.0	-9.3	89.0	-27.0	0.0	-27.0
-89.0	-13.6	0.0	-13.6	90.0	-22.9	0.0	-22.9
-88.0	-12.8	0.0	-12.8	91.0	-21.2	0.0	-21.2
-87.0	-19.0	0.0	-19.0	92.0	-26.4	0.0	-26.4
-86.0	-14.9	0.0	-14.9	93.0	-21.0	0.0	-21.0
-85.0	-20.3	-10.0	-10.3	94.0	-23.3	0.0	-23.3
-84.0	-27.1	-10.0	-17.1	95.0	-20.2	0.0	-20.2
-83.0	-16.9	-10.0	-6.9	96.0	-25.1	0.0	-25.1
-82.0	-15.0	-10.0	-5.0	97.0	-27.4	0.0	-27.4
-81.0	-24.8	-10.0	-14.8	98.0	-16.0	0.0	-16.0
-80.0	-44.7	-10.0	-34.7	99.0	-22.5	0.0	-22.5
-79.0	-26.9	-10.0	-16.9	100.0	-21.1	0.0	-21.1
-78.0	-15.9	-10.0	-5.9	101.0	-23.7	0.0	-23.7
-77.0	-31.4	-10.0	-21.4	102.0	-20.9	0.0	-20.9
-76.0	-29.2	-10.0	-19.2	103.0	-22.6	0.0	-22.6
-75.0	-19.5	-10.0	-9.5	104.0	-22.6	0.0	-22.6
-74.0	-15.8	-10.0	-5.8	105.0	-22.1	0.0	-22.1
-73.0	-22.7	-10.0	-12.7	106.0	-24.5	0.0	-24.5
-72.0	-15.3	-10.0	-5.3	107.0	-20.8	0.0	-20.8
-71.0	-17.6	-10.0	-7.6	108.0	-32.2	0.0	-32.2
-70.0	-29.7	-10.0	-19.7	109.0	-23.3	0.0	-23.3
-69.0	-23.0	-10.0	-13.0	110.0	-28.0	0.0	-28.0
-68.0	-17.8	-10.0	-7.8	111.0	-19.5	0.0	-19.5
-67.0	-19.1	-10.0	-9.1	112.0	-23.2	0.0	-23.2
-66.0	-20.3	-10.0	-10.3	113.0	-24.9	0.0	-24.9
-65.0	-28.2	-10.0	-18.2	114.0	-24.9	0.0	-24.9
-64.0	-17.5	-10.0	-7.5	115.0	-21.2	0.0	-21.2
-63.0	-18.1	-10.0	-8.1	116.0	-23.3	0.0	-23.3
-62.0	-14.1	-10.0	-4.1	117.0	-20.5	0.0	-20.5
-61.0	-26.2	-10.0	-16.2	118.0	-24.3	0.0	-24.3
-60.0	-14.9	-10.0	-4.9	119.0	-23.4	0.0	-23.4
-59.0	-33.3	-10.0	-23.3	120.0	-20.1	0.0	-20.1
-58.0	-36.3	-10.0	-26.3	121.0	-21.4	0.0	-21.4
-57.0	-18.8	-10.0	-8.8	122.0	-18.6	0.0	-18.6

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Azimuth LHCP, -180° to +180° @ 1.0° increment

-56.0	-17.6	-10.0	-7.6
-55.0	-17.7	-10.0	-7.7
-54.0	-22.2	-10.0	-12.2
-53.0	-20.6	-10.0	-10.6
-52.0	-18.8	-10.0	-8.8
-51.0	-17.4	-10.0	-7.4
-50.0	-21.1	-10.0	-11.1
-49.0	-13.5	-10.0	-3.5
-48.0	-12.1	-10.0	-2.1
-47.0	-13.3	-9.8	-3.5
-46.0	-11.4	-9.6	-1.8
-45.0	-12.0	-9.3	-2.7
-44.0	-12.7	-9.1	-3.6
-43.0	-13.6	-8.8	-4.8
-42.0	-13.4	-8.6	-4.9
-41.0	-11.0	-8.3	-2.6
-40.0	-10.8	-8.1	-2.7
-39.0	-16.0	-7.8	-8.2
-38.0	-14.2	-7.5	-6.7
-37.0	-15.1	-7.2	-7.8
-36.0	-11.7	-6.9	-4.8
-35.0	-12.6	-6.6	-6.0
-34.0	-11.1	-6.3	-4.8
-33.0	-19.3	-6.0	-13.4
-32.0	-14.5	-5.6	-8.9
-31.0	-12.7	-5.3	-7.4
-30.0	-16.0	-4.9	-11.0
-29.0	-23.3	-4.6	-18.7
-28.0	-13.7	-4.2	-9.5
-27.0	-9.7	-3.8	-5.9
-26.0	-16.0	-3.4	-12.6
-25.0	-12.8	-2.9	-9.8
-24.0	-12.8	-2.5	-10.3
-23.0	-14.9	-2.0	-12.8
-22.0	-11.2	-1.6	-9.6
-21.0	-6.0	-1.1	-5.0
-20.0	-32.1	-0.5	-31.6
-19.0	-7.5	0.0	-7.5
-18.0	-9.1	0.6	-9.7
-17.0	-6.2	1.2	-7.5
-16.0	-3.4	1.9	-5.3
-15.0	-2.2	2.6	-4.8
-14.0	-6.1	3.3	-9.5
-13.0	-3.8	4.2	-8.0
-12.0	-12.5	5.0	-17.5
-11.0	-9.4	6.0	-15.4
-10.0	-6.1	7.0	-13.1
-9.0	-8.6	8.0	-16.6
-8.0	-9.2	8.0	-17.2
-7.0	0.4	7.9	-7.5
-6.0	-7.2	9.5	-16.8
-5.0	3.3	11.5	-8.2
-4.0	3.2	13.9	-10.7
-3.0	7.3	17.1	-9.8
-2.0	16.4	21.5	-5.1
-1.0	18.0		
0.0	47.4		

123.0	-22.8	0.0	-22.8
124.0	-20.1	0.0	-20.1
125.0	-26.0	0.0	-26.0
126.0	-34.3	0.0	-34.3
127.0	-27.0	0.0	-27.0
128.0	-35.6	0.0	-35.6
129.0	-28.1	0.0	-28.1
130.0	-22.7	0.0	-22.7
131.0	-30.0	0.0	-30.0
132.0	-21.3	0.0	-21.3
133.0	-25.2	0.0	-25.2
134.0	-24.5	0.0	-24.5
135.0	-19.2	0.0	-19.2
136.0	-19.4	0.0	-19.4
137.0	-24.8	0.0	-24.8
138.0	-22.7	0.0	-22.7
139.0	-17.7	0.0	-17.7
140.0	-21.4	0.0	-21.4
141.0	-35.3	0.0	-35.3
142.0	-27.9	0.0	-27.9
143.0	-22.5	0.0	-22.5
144.0	-27.3	0.0	-27.3
145.0	-19.0	0.0	-19.0
146.0	-21.9	0.0	-21.9
147.0	-20.8	0.0	-20.8
148.0	-30.2	0.0	-30.2
149.0	-36.2	0.0	-36.2
150.0	-27.3	0.0	-27.3
151.0	-26.6	0.0	-26.6
152.0	-34.5	0.0	-34.5
153.0	-28.0	0.0	-28.0
154.0	-27.8	0.0	-27.8
155.0	-22.5	0.0	-22.5
156.0	-24.5	0.0	-24.5
157.0	-25.2	0.0	-25.2
158.0	-32.8	0.0	-32.8
159.0	-30.1	0.0	-30.1
160.0	-38.4	0.0	-38.4
161.0	-25.6	0.0	-25.6
162.0	-39.5	0.0	-39.5
163.0	-21.8	0.0	-21.8
164.0	-21.2	0.0	-21.2
165.0	-24.2	0.0	-24.2
166.0	-21.7	0.0	-21.7
167.0	-30.2	0.0	-30.2
168.0	-22.9	0.0	-22.9
169.0	-29.9	0.0	-29.9
170.0	-40.0	0.0	-40.0
171.0	-21.0	0.0	-21.0
172.0	-21.7	0.0	-21.7
173.0	-22.2	0.0	-22.2
174.0	-22.2	0.0	-22.2
175.0	-26.1	0.0	-26.1
176.0	-23.4	0.0	-23.4
177.0	-34.5	0.0	-34.5
178.0	-25.3	0.0	-25.3
179.0	-20.4	0.0	-20.4

Orbit Communication Systems Ltd.
 AL AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Azimuth LHCP, -10° to +10° @ 0.1° increment

27.60 GHz Antenna Pattern in Co-pol Az LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-10.0	-6.1	7.0	-13.1
-9.9	-5.7	7.1	-12.8
-9.8	-7.2	7.2	-14.4
-9.7	-11.4	7.3	-18.7
-9.6	-17.0	7.4	-24.5
-9.5	-8.9	7.6	-16.4
-9.4	-5.0	7.7	-12.7
-9.3	-3.1	7.8	-10.9
-9.2	-3.1	8.0	-11.1
-9.1	-4.9	8.0	-12.9
-9.0	-8.6	8.0	-16.6
-8.9	-18.1	8.0	-26.1
-8.8	-12.3	8.0	-20.3
-8.7	-7.4	8.0	-15.4
-8.6	-4.9	8.0	-12.9
-8.5	-5.1	8.0	-13.1
-8.4	-6.5	8.0	-14.5
-8.3	-11.2	8.0	-19.2
-8.2	-20.6	8.0	-28.6
-8.1	-13.9	8.0	-21.9
-8.0	-9.2	8.0	-17.2
-7.9	-7.4	8.0	-15.4
-7.8	-8.1	8.0	-16.1
-7.7	-11.3	8.0	-19.3
-7.6	-14.7	8.0	-22.7
-7.5	-6.6	8.0	-14.6
-7.4	-1.6	8.0	-9.6
-7.3	1.0	8.0	-7.0
-7.2	2.0	8.0	-6.0
-7.1	1.8	8.0	-6.2
-7.0	0.4	7.9	-7.5
-6.9	-3.5	8.0	-11.5
-6.8	-16.1	8.2	-24.3
-6.7	-9.8	8.3	-18.2
-6.6	-1.9	8.5	-10.4
-6.5	0.5	8.7	-8.2
-6.4	1.0	8.8	-7.9
-6.3	-0.5	9.0	-9.5
-6.2	-2.9	9.2	-12.0
-6.1	-7.3	9.4	-16.6
-6.0	-7.2	9.5	-16.8
-5.9	-4.4	9.7	-14.2
-5.8	-3.3	9.9	-13.2
-5.7	-3.5	10.1	-13.6
-5.6	-4.1	10.3	-14.4
-5.5	-2.9	10.5	-13.4
-5.4	-1.3	10.7	-12.0
-5.3	0.5	10.9	-10.4
-5.2	1.9	11.1	-9.2
-5.1	2.9	11.3	-8.4
-5.0	3.3	11.5	-8.2
-4.9	2.6	11.7	-9.1
-4.8	0.6	12.0	-11.3
-4.7	-4.2	12.2	-16.4
-4.6	-11.7	12.4	-24.2
-4.5	-2.9	12.7	-15.5
-4.4	1.6	12.9	-11.3
-4.3	3.2	13.2	-9.9
-4.2	3.3	13.4	-10.1
-4.1	2.8	13.7	-10.8

27.60 GHz Antenna Pattern in Co-pol Az LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	47.4		
0.1	47.2		
0.2	46.6		
0.3	45.4		
0.4	43.8		
0.5	41.6		
0.6	38.9		
0.7	35.6		
0.8	31.5		
0.9	26.4		
1.0	19.6		
1.1	9.1		
1.2	12.7		
1.3	17.3		
1.4	19.2		
1.5	19.5	24.6	-5.1
1.6	18.5	23.9	-5.4
1.7	16.5	23.2	-6.7
1.8	13.7	22.6	-8.9
1.9	10.4	22.0	-11.6
2.0	6.9	21.5	-14.6
2.1	4.1	20.9	-16.9
2.2	4.8	20.4	-15.7
2.3	8.3	20.0	-11.7
2.4	11.0	19.5	-8.5
2.5	12.0	19.1	-7.1
2.6	12.0	18.6	-6.6
2.7	11.2	18.2	-7.0
2.8	11.2	17.8	-6.6
2.9	10.8	17.4	-6.6
3.0	10.8	17.1	-6.3
3.1	10.5	16.7	-6.2
3.2	9.5	16.4	-6.9
3.3	7.6	16.0	-8.5
3.4	5.8	15.7	-10.0
3.5	5.3	15.4	-10.1
3.6	6.7	15.1	-8.4
3.7	8.0	14.8	-6.8
3.8	8.8	14.5	-5.7
3.9	8.9	14.2	-5.3
4.0	8.3	13.9	-5.6
4.1	6.7	13.7	-7.0
4.2	4.8	13.4	-8.6
4.3	2.8	13.2	-10.4
4.4	1.4	12.9	-11.6
4.5	0.7	12.7	-12.0
4.6	-1.1	12.4	-13.5
4.7	-5.6	12.2	-17.8
4.8	-15.4	12.0	-27.4
4.9	-2.7	11.7	-14.5
5.0	0.9	11.5	-10.6
5.1	1.6	11.3	-9.8
5.2	1.5	11.1	-9.6
5.3	-0.1	10.9	-11.0
5.4	-2.1	10.7	-12.8
5.5	-1.4	10.5	-11.9
5.6	-1.6	10.3	-11.9
5.7	-2.8	10.1	-12.9
5.8	-7.0	9.9	-16.9
5.9	-13.4	9.7	-23.2

Orbit Communication Systems Ltd.
 AL AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Azimuth LHCP, -10° to +10° @ 0.1° increment

-4.0	3.2	13.9	-10.7
-3.9	5.2	14.2	-9.0
-3.8	7.6	14.5	-6.9
-3.7	9.4	14.8	-5.4
-3.6	10.6	15.1	-4.5
-3.5	11.4	15.4	-4.0
-3.4	11.8	15.7	-3.9
-3.3	11.6	16.0	-4.5
-3.2	10.7	16.4	-5.7
-3.1	8.8	16.7	-7.9
-3.0	7.3	17.1	-9.8
-2.9	8.5	17.4	-8.9
-2.8	11.1	17.8	-6.7
-2.7	13.0	18.2	-5.3
-2.6	14.0	18.6	-4.6
-2.5	14.8	19.1	-4.2
-2.4	15.9	19.5	-3.6
-2.3	17.0	20.0	-2.9
-2.2	17.9	20.4	-2.5
-2.1	17.9	20.9	-3.1
-2.0	16.4	21.5	-5.1
-1.9	12.6	22.0	-9.5
-1.8	4.6	22.6	-18.0
-1.7	10.9	23.2	-12.4
-1.6	16.0	23.9	-7.9
-1.5	17.9	24.6	-6.7
-1.4	17.9		
-1.3	16.9		
-1.2	16.5		
-1.1	17.2		
-1.0	18.0		
-0.9	21.7		
-0.8	27.9		
-0.7	33.2		
-0.6	37.5		
-0.5	40.8		
-0.4	43.3		
-0.3	45.1		
-0.2	46.4		
-0.1	47.1		
0.0	47.4		

6.0	-4.2	9.5	-13.8
6.1	-0.3	9.4	-9.7
6.2	1.8	9.2	-7.4
6.3	1.5	9.0	-7.5
6.4	-0.6	8.8	-9.5
6.5	-5.4	8.7	-14.1
6.6	-14.9	8.5	-23.4
6.7	-8.3	8.3	-16.6
6.8	-3.8	8.2	-11.9
6.9	-1.8	8.0	-9.9
7.0	-1.9	7.9	-9.8
7.1	-2.3	8.0	-10.3
7.2	-3.6	8.0	-11.6
7.3	-5.9	8.0	-13.9
7.4	-10.3	8.0	-18.3
7.5	-14.4	8.0	-22.4
7.6	-9.5	8.0	-17.5
7.7	-4.5	8.0	-12.5
7.8	-2.0	8.0	-10.0
7.9	-1.2	8.0	-9.2
8.0	-1.1	8.0	-9.1
8.1	-3.3	8.0	-11.3
8.2	-7.0	8.0	-15.0
8.3	-14.1	8.0	-22.1
8.4	-8.6	8.0	-16.6
8.5	-3.0	8.0	-11.0
8.6	-0.9	8.0	-8.9
8.7	-1.6	8.0	-9.6
8.8	-3.1	8.0	-11.1
8.9	-8.0	8.0	-16.0
9.0	-17.4	8.0	-25.4
9.1	-10.8	8.0	-18.8
9.2	-6.8	8.0	-14.8
9.3	-5.3	7.8	-13.1
9.4	-6.8	7.7	-14.4
9.5	-11.3	7.6	-18.8
9.6	-13.3	7.4	-20.8
9.7	-8.4	7.3	-15.7
9.8	-7.4	7.2	-14.6
9.9	-8.5	7.1	-15.7
10.0	-13.6	7.0	-20.6

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Elevation LHCP, -30° to +30° @ 0.5° increment

27.60 GHz Antenna Pattern in Co-pol EI LHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	dB
-30.0	-13.5	-4.9	-8.5
-29.5	-13.8	-4.7	-9.1
-29.0	-10.0	-4.6	-5.4
-28.5	-12.3	-4.4	-8.0
-28.0	-16.4	-4.2	-12.3
-27.5	-14.3	-4.0	-10.3
-27.0	-15.9	-3.8	-12.1
-26.5	-14.0	-3.6	-10.4
-26.0	-10.8	-3.4	-7.4
-25.5	-8.9	-3.2	-5.7
-25.0	-8.9	-2.9	-6.0
-24.5	-10.4	-2.7	-7.7
-24.0	-9.1	-2.5	-6.6
-23.5	-12.9	-2.3	-10.6
-23.0	-9.7	-2.0	-7.6
-22.5	-8.1	-1.8	-6.3
-22.0	-11.6	-1.6	-10.0
-21.5	-11.6	-1.3	-10.3
-21.0	-8.5	-1.1	-7.4
-20.5	-8.9	-0.8	-8.1
-20.0	-11.4	-0.5	-10.9
-19.5	-11.6	-0.3	-11.3
-19.0	-12.1	0.0	-12.1
-18.5	-8.0	0.3	-8.3
-18.0	-7.2	0.6	-7.8
-17.5	-8.9	0.9	-9.8
-17.0	-14.2	1.2	-15.4
-16.5	-23.0	1.6	-24.6
-16.0	-12.5	1.9	-14.4
-15.5	-11.1	2.2	-13.4
-15.0	-13.6	2.6	-16.2
-14.5	-12.0	3.0	-14.9
-14.0	-6.5	3.3	-9.8
-13.5	-6.4	3.7	-10.2
-13.0	-10.9	4.2	-15.1
-12.5	-23.4	4.6	-28.0
-12.0	-12.5	5.0	-17.5
-11.5	-28.5	5.5	-34.0
-11.0	-5.8	6.0	-11.8
-10.5	-7.3	6.5	-13.8
-10.0	-11.1	7.0	-18.1
-9.5	-9.5	7.6	-17.0
-9.0	-14.1	8.1	-22.2
-8.5	-5.8	8.8	-14.5
-8.0	-6.5	9.4	-15.9
-7.5	-8.3	10.1	-18.5
-7.0	-3.8	10.9	-14.6
-6.5	-14.9	11.7	-26.6
-6.0	-3.6	12.5	-16.1
-5.5	-7.4	13.5	-20.9
-5.0	1.6	14.5	-12.9
-4.5	2.1	15.7	-13.6
-4.0	5.9	16.9	-11.0
-3.5	-0.6	18.4	-19.0
-3.0	11.0	20.1	-9.1
-2.5	12.4		
-2.0	10.7		
-1.5	20.5		
-1.0	21.7		
-0.5	41.3		
0.0	47.4		

27.60 GHz Antenna Pattern in Co-pol EI LHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	dB
0.0	47.4		
0.5	39.9		
1.0	19.6		
1.5	16.9		
2.0	17.7		
2.5	15.6		
3.0	6.8	20.1	-13.3
3.5	7.7	18.4	-10.7
4.0	5.7	16.9	-11.2
4.5	-3.0	15.7	-18.6
5.0	-0.8	14.5	-15.4
5.5	-6.4	13.5	-19.9
6.0	-7.5	12.5	-20.0
6.5	0.2	11.7	-11.5
7.0	1.0	10.9	-9.8
7.5	-6.4	10.1	-16.5
8.0	-6.3	9.4	-15.7
8.5	-5.9	8.8	-14.7
9.0	-4.2	8.1	-12.4
9.5	-9.9	7.6	-17.5
10.0	-10.3	7.0	-17.3
10.5	-2.1	6.5	-8.6
11.0	-19.9	6.0	-25.8
11.5	-1.1	5.5	-6.5
12.0	-1.2	5.0	-6.2
12.5	-6.7	4.6	-11.3
13.0	-4.3	4.2	-8.5
13.5	-3.8	3.7	-7.5
14.0	-20.3	3.3	-23.7
14.5	-3.7	3.0	-6.7
15.0	-3.2	2.6	-5.7
15.5	-2.2	2.2	-4.5
16.0	-5.3	1.9	-7.2
16.5	0.1	1.6	-1.5
17.0	-8.0	1.2	-9.2
17.5	-7.2	0.9	-8.1
18.0	-6.8	0.6	-7.5
18.5	-7.2	0.3	-7.5
19.0	-17.1	0.0	-17.1
19.5	-4.3	-0.3	-4.1
20.0	-12.4	-0.5	-11.9
20.5	-5.9	-0.8	-5.2
21.0	-3.5	-1.1	-2.5
21.5	-8.0	-1.3	-6.6
22.0	-11.0	-1.6	-9.4
22.5	-3.2	-1.8	-1.4
23.0	-8.3	-2.0	-6.2
23.5	-7.2	-2.3	-4.9
24.0	-8.5	-2.5	-6.0
24.5	-6.9	-2.7	-4.1
25.0	-7.7	-2.9	-4.7
25.5	-4.6	-3.2	-1.4
26.0	-5.7	-3.4	-2.3
26.5	-6.9	-3.6	-3.3
27.0	-5.8	-3.8	-2.0
27.5	-9.8	-4.0	-5.8
28.0	-15.0	-4.2	-10.8
28.5	-8.8	-4.4	-4.4
29.0	-14.9	-4.6	-10.3
29.5	-14.4	-4.7	-9.6
30.0	-6.6	-4.9	-1.6

Orbit Communication Systems Ltd.
AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
Co-pol Elevation LHCP, -10° to +10° @ 0.1° increment

27.60 GHz Antenna Pattern in Co-pol EI LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-10.0	-11.1	7.0	-18.1
-9.9	-9.0	7.1	-16.1
-9.8	-10.1	7.2	-17.4
-9.7	-14.0	7.3	-21.4
-9.6	-16.5	7.4	-23.9
-9.5	-9.5	7.6	-17.0
-9.4	-5.3	7.7	-12.9
-9.3	-5.5	7.8	-13.3
-9.2	-7.5	7.9	-15.4
-9.1	-11.9	8.0	-19.9
-9.0	-14.1	8.1	-22.2
-8.9	-7.3	8.3	-15.5
-8.8	-4.0	8.4	-12.4
-8.7	-3.3	8.5	-11.8
-8.6	-3.9	8.6	-12.5
-8.5	-5.8	8.8	-14.5
-8.4	-8.6	8.9	-17.5
-8.3	-17.6	9.0	-26.6
-8.2	-15.9	9.2	-25.0
-8.1	-9.9	9.3	-19.2
-8.0	-6.5	9.4	-15.9
-7.9	-4.7	9.6	-14.2
-7.8	-4.5	9.7	-14.2
-7.7	-6.1	9.8	-15.9
-7.6	-7.5	10.0	-17.4
-7.5	-8.3	10.1	-18.5
-7.4	-7.2	10.3	-17.5
-7.3	-6.8	10.4	-17.2
-7.2	-7.7	10.6	-18.3
-7.1	-7.1	10.7	-17.8
-7.0	-3.8	10.9	-14.6
-6.9	-1.1	11.0	-12.1
-6.8	-0.1	11.2	-11.3
-6.7	-1.0	11.3	-12.3
-6.6	-4.7	11.5	-16.2
-6.5	-14.9	11.7	-26.6
-6.4	-5.5	11.8	-17.3
-6.3	-0.5	12.0	-12.5
-6.2	1.0	12.2	-11.2
-6.1	0.4	12.4	-11.9
-6.0	-3.6	12.5	-16.1
-5.9	-17.3	12.7	-30.1
-5.8	-8.1	12.9	-21.0
-5.7	-3.0	13.1	-16.1
-5.6	-2.7	13.3	-16.0
-5.5	-7.4	13.5	-20.9
-5.4	-20.5	13.7	-34.2
-5.3	-3.2	13.9	-17.1
-5.2	1.6	14.1	-12.5
-5.1	2.8	14.3	-11.5
-5.0	1.6	14.5	-12.9
-4.9	-3.2	14.7	-18.0
-4.8	-27.5	15.0	-42.5
-4.7	-4.0	15.2	-19.2
-4.6	1.2	15.4	-14.3
-4.5	2.1	15.7	-13.6
-4.4	0.8	15.9	-15.1
-4.3	-0.3	16.2	-16.5
-4.2	1.9	16.4	-14.5
-4.1	4.6	16.7	-12.1

27.60 GHz Antenna Pattern in Co-pol EI LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	47.4		
0.1	47.1		
0.2	46.2		
0.3	44.8		
0.4	42.7		
0.5	39.9		
0.6	36.2		
0.7	31.2		
0.8	25.2		
0.9	20.5		
1.0	19.6		
1.1	18.4		
1.2	16.4		
1.3	16.3		
1.4	17.3		
1.5	16.9		
1.6	14.5		
1.7	10.5		
1.8	12.3		
1.9	16.0		
2.0	17.7		
2.1	18.0		
2.2	17.3		
2.3	16.2		
2.4	15.6		
2.5	15.6		
2.6	15.5		
2.7	14.3		
2.8	12.1		
2.9	9.0		
3.0	6.8	20.1	-13.3
3.1	7.1	19.7	-12.6
3.2	8.3	19.4	-11.1
3.3	8.5	19.0	-10.6
3.4	8.4	18.7	-10.4
3.5	7.7	18.4	-10.7
3.6	7.0	18.1	-11.1
3.7	5.3	17.8	-12.5
3.8	4.3	17.5	-13.2
3.9	4.4	17.2	-12.9
4.0	5.7	16.9	-11.2
4.1	7.0	16.7	-9.7
4.2	7.3	16.4	-9.2
4.3	5.9	16.2	-10.2
4.4	3.1	15.9	-12.8
4.5	-3.0	15.7	-18.6
4.6	-15.9	15.4	-31.3
4.7	-5.2	15.2	-20.4
4.8	-2.1	15.0	-17.0
4.9	-0.8	14.7	-15.5
5.0	-0.8	14.5	-15.4
5.1	-0.7	14.3	-15.0
5.2	-0.9	14.1	-15.0
5.3	-1.6	13.9	-15.5
5.4	-3.5	13.7	-17.2
5.5	-6.4	13.5	-19.9
5.6	-7.5	13.3	-20.8
5.7	-5.7	13.1	-18.8
5.8	-5.7	12.9	-18.6
5.9	-7.7	12.7	-20.4

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Elevation LHCP, -10° to +10° @ 0.1° increment

-4.0	5.9	16.9	-11.0
-3.9	6.0	17.2	-11.2
-3.8	5.0	17.5	-12.5
-3.7	3.4	17.8	-14.4
-3.6	0.9	18.1	-17.2
-3.5	-0.6	18.4	-19.0
-3.4	2.0	18.7	-16.7
-3.3	5.9	19.0	-13.1
-3.2	9.0	19.4	-10.4
-3.1	10.6	19.7	-9.1
-3.0	11.0	20.1	-9.1
-2.9	10.1		
-2.8	8.7		
-2.7	8.9		
-2.6	10.8		
-2.5	12.4		
-2.4	12.8		
-2.3	12.1		
-2.2	10.6		
-2.1	10.0		
-2.0	10.7		
-1.9	11.7		
-1.8	13.7		
-1.7	16.5		
-1.6	19.0		
-1.5	20.5		
-1.4	20.8		
-1.3	19.4		
-1.2	15.6		
-1.1	11.6		
-1.0	21.7		
-0.9	26.8		
-0.8	31.2		
-0.7	35.1		
-0.6	38.5		
-0.5	41.3		
-0.4	43.6		
-0.3	45.4		
-0.2	46.5		
-0.1	47.2		
0.0	47.4		

6.0	-7.5	12.5	-20.0
6.1	-3.5	12.4	-15.8
6.2	0.4	12.2	-11.8
6.3	2.1	12.0	-9.9
6.4	2.1	11.8	-9.8
6.5	0.2	11.7	-11.5
6.6	-4.4	11.5	-15.9
6.7	-15.8	11.3	-27.1
6.8	-5.6	11.2	-16.8
6.9	-1.4	11.0	-12.4
7.0	1.0	10.9	-9.8
7.1	1.5	10.7	-9.3
7.2	0.9	10.6	-9.7
7.3	-0.6	10.4	-11.0
7.4	-2.7	10.3	-13.0
7.5	-6.4	10.1	-16.5
7.6	-14.6	10.0	-24.6
7.7	-21.6	9.8	-31.5
7.8	-9.7	9.7	-19.4
7.9	-6.6	9.6	-16.2
8.0	-6.3	9.4	-15.7
8.1	-7.7	9.3	-16.9
8.2	-11.8	9.2	-20.9
8.3	-12.0	9.0	-21.0
8.4	-8.6	8.9	-17.5
8.5	-5.9	8.8	-14.7
8.6	-6.4	8.6	-15.1
8.7	-10.1	8.5	-18.6
8.8	-25.1	8.4	-33.5
8.9	-10.3	8.3	-18.6
9.0	-4.2	8.1	-12.4
9.1	-1.9	8.0	-9.9
9.2	-1.3	7.9	-9.2
9.3	-2.0	7.8	-9.8
9.4	-5.1	7.7	-12.8
9.5	-9.9	7.6	-17.5
9.6	-12.3	7.4	-19.7
9.7	-8.0	7.3	-15.3
9.8	-7.1	7.2	-14.3
9.9	-7.6	7.1	-14.7
10.0	-10.3	7.0	-17.3

Orbit Communication Systems Ltd.
AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
X-pol Azimuth LHCP, -10° to +10° @ 0.1° increment

27.60 GHz Antenna Pattern in X-pol Az LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-10.0	-9.4	-2.0	-7.4
-9.9	-15.1	-2.0	-13.1
-9.8	-19.7	-2.0	-17.7
-9.7	-13.1	-2.0	-11.1
-9.6	-11.0	-2.0	-9.0
-9.5	-9.8	-2.0	-7.8
-9.4	-10.4	-2.0	-8.4
-9.3	-11.8	-2.0	-9.8
-9.2	-11.4	-2.0	-9.4
-9.1	-8.7	-2.0	-6.7
-9.0	-6.7	-2.0	-4.7
-8.9	-5.9	-2.0	-3.9
-8.8	-6.6	-2.0	-4.6
-8.7	-8.1	-2.0	-6.1
-8.6	-11.9	-2.0	-9.9
-8.5	-17.5	-2.0	-15.5
-8.4	-21.3	-2.0	-19.3
-8.3	-15.5	-2.0	-13.5
-8.2	-13.3	-2.0	-11.3
-8.1	-9.5	-2.0	-7.5
-8.0	-8.7	-2.0	-6.7
-7.9	-8.7	-2.0	-6.7
-7.8	-8.5	-2.0	-6.5
-7.7	-9.3	-2.0	-7.3
-7.6	-10.0	-2.0	-8.0
-7.5	-10.6	-2.0	-8.6
-7.4	-12.6	-2.0	-10.6
-7.3	-15.1	-2.0	-13.1
-7.2	-12.9	-2.0	-10.9
-7.1	-8.7	-2.0	-6.7
-7.0	-5.5	-2.1	-3.3
-6.9	-4.2	-2.0	-2.2
-6.8	-3.3	-1.8	-1.4
-6.7	-4.0	-1.7	-2.3
-6.6	-7.1	-1.5	-5.6
-6.5	-13.5	-1.3	-12.2
-6.4	-18.6	-1.2	-17.5
-6.3	-10.5	-1.0	-9.5
-6.2	-7.6	-0.8	-6.8
-6.1	-7.5	-0.6	-6.9
-6.0	-9.4	-0.5	-9.0
-5.9	-10.9	-0.3	-10.6
-5.8	-7.6	-0.1	-7.5
-5.7	-4.6	0.1	-4.7
-5.6	-3.0	0.3	-3.3
-5.5	-2.9	0.5	-3.4
-5.4	-4.3	0.7	-4.9
-5.3	-7.1	0.9	-8.0
-5.2	-10.9	1.1	-12.0
-5.1	-17.8	1.3	-19.2
-5.0	-15.7	1.5	-17.2
-4.9	-7.3	1.7	-9.0
-4.8	-2.7	2.0	-4.6
-4.7	-0.2	2.2	-2.3
-4.6	1.2	2.4	-1.3
-4.5	0.6	2.7	-2.1
-4.4	-1.8	2.9	-4.7
-4.3	-7.3	3.2	-10.4
-4.2	-20.0	3.4	-23.4
-4.1	-7.8	3.7	-11.5

27.60 GHz Antenna Pattern in X-pol Az LHCP

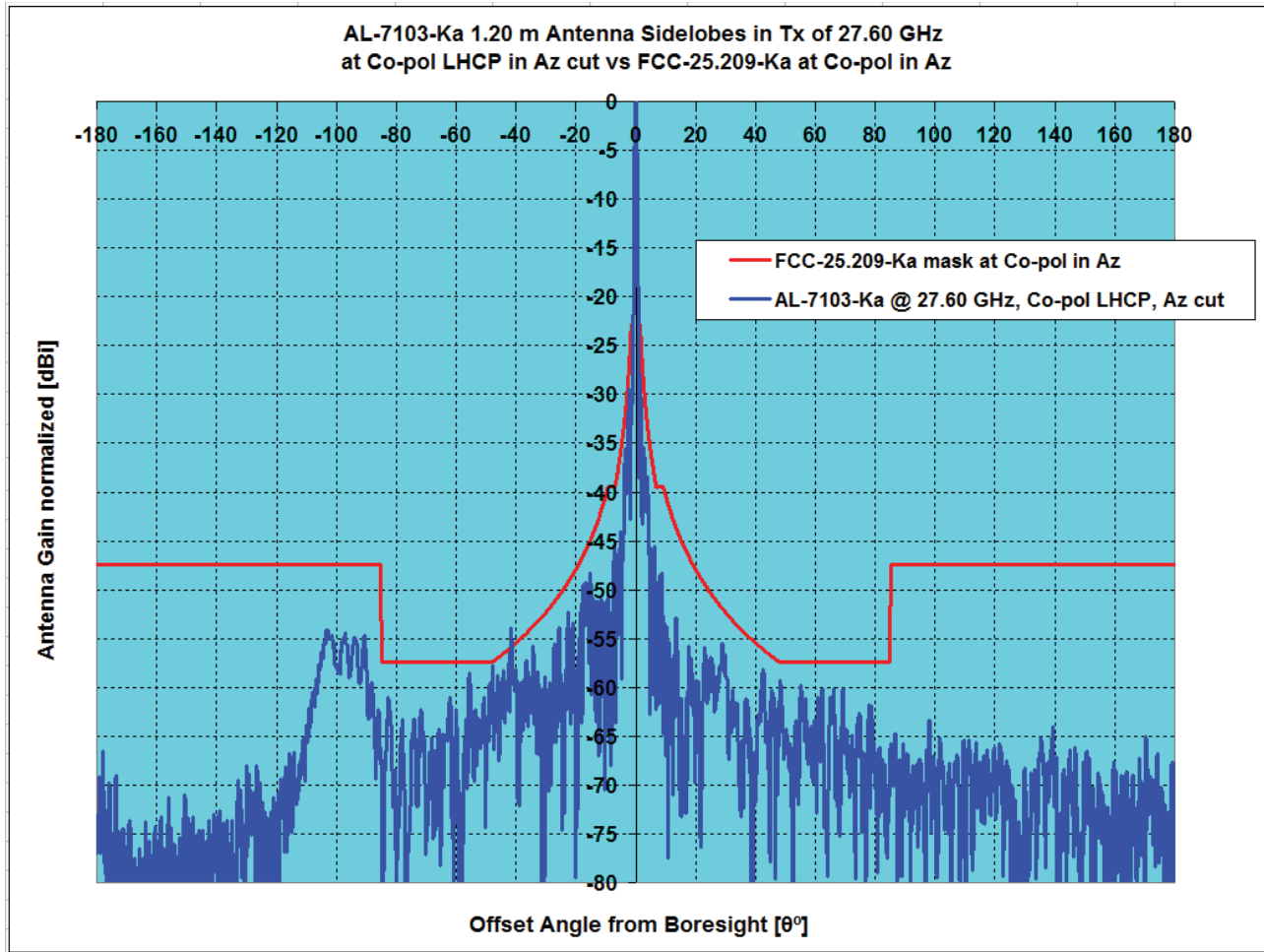
Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	14.4		
0.1	22.5		
0.2	26.2		
0.3	27.9		
0.4	28.3		
0.5	27.8		
0.6	26.3		
0.7	23.9		
0.8	20.5		
0.9	16.4		
1.0	13.1		
1.1	11.5		
1.2	8.9		
1.3	3.5		
1.4	-11.8		
1.5	2.9		
1.6	6.3		
1.7	6.4		
1.8	3.9	12.6	-8.7
1.9	-2.0	12.0	-14.0
2.0	-3.1	11.5	-14.5
2.1	0.4	10.9	-10.6
2.2	1.1	10.4	-9.3
2.3	-2.5	10.0	-12.5
2.4	-12.2	9.5	-21.7
2.5	-6.2	9.1	-15.2
2.6	0.9	8.6	-7.7
2.7	3.5	8.2	-4.7
2.8	3.4	7.8	-4.4
2.9	0.6	7.4	-6.9
3.0	-5.1	7.1	-12.2
3.1	-15.1	6.7	-21.8
3.2	-7.5	6.4	-13.8
3.3	-5.0	6.0	-11.0
3.4	-4.6	5.7	-10.3
3.5	-5.4	5.4	-10.8
3.6	-6.9	5.1	-12.0
3.7	-8.8	4.8	-13.6
3.8	-11.9	4.5	-16.4
3.9	-43.0	4.2	-47.2
4.0	-9.3	3.9	-13.3
4.1	-5.2	3.7	-8.9
4.2	-2.6	3.4	-6.0
4.3	-3.1	3.2	-6.2
4.4	-6.7	2.9	-9.6
4.5	-13.7	2.7	-16.3
4.6	-13.5	2.4	-15.9
4.7	-6.6	2.2	-8.8
4.8	-5.4	2.0	-7.4
4.9	-6.9	1.7	-8.7
5.0	-12.4	1.5	-13.9
5.1	-10.1	1.3	-11.5
5.2	-5.1	1.1	-6.2
5.3	-3.5	0.9	-4.4
5.4	-4.2	0.7	-4.9
5.5	-7.4	0.5	-7.9
5.6	-17.9	0.3	-18.1
5.7	-11.9	0.1	-12.0
5.8	-5.0	-0.1	-4.9
5.9	-3.2	-0.3	-2.9

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 X-pol Azimuth LHCP, -10° to +10° @ 0.1° increment

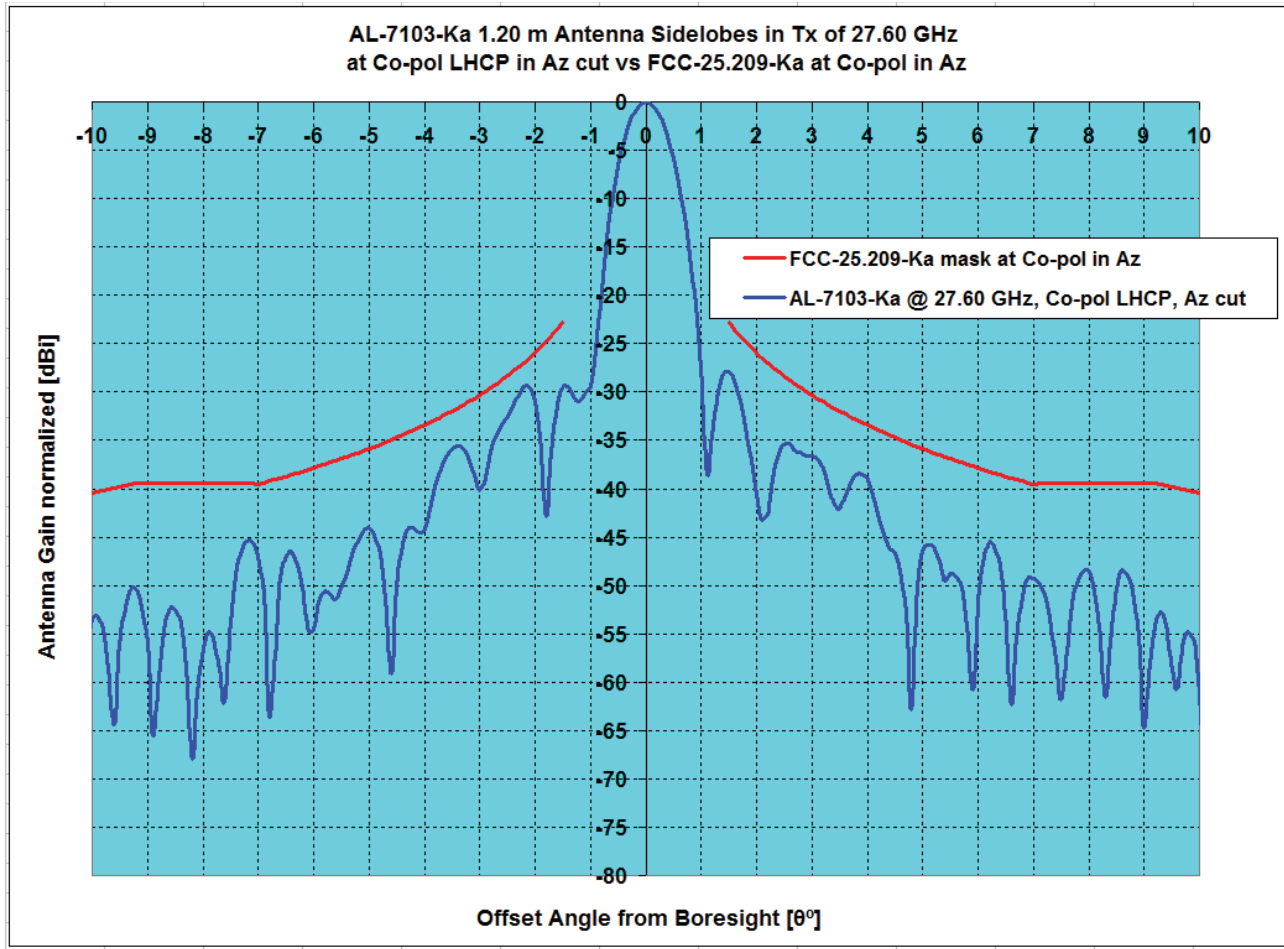
-4.0	-3.3	3.9	-7.3
-3.9	-2.6	4.2	-6.8
-3.8	-3.4	4.5	-7.9
-3.7	-2.9	4.8	-7.7
-3.6	-1.5	5.1	-6.6
-3.5	-0.3	5.4	-5.7
-3.4	-1.1	5.7	-6.8
-3.3	-4.6	6.0	-10.6
-3.2	-8.3	6.4	-14.7
-3.1	-1.1	6.7	-7.8
-3.0	2.4	7.1	-4.6
-2.9	3.8	7.4	-3.7
-2.8	2.3	7.8	-5.5
-2.7	-3.8	8.2	-12.1
-2.6	-7.5	8.6	-16.1
-2.5	3.0	9.1	-6.1
-2.4	6.6	9.5	-2.9
-2.3	7.1	10.0	-2.8
-2.2	4.8	10.4	-5.7
-2.1	-4.5	10.9	-15.4
-2.0	1.4	11.5	-10.0
-1.9	8.8	12.0	-3.2
-1.8	11.8	12.6	-0.9
-1.7	12.2		
-1.6	10.3		
-1.5	3.6		
-1.4	2.4		
-1.3	11.3		
-1.2	14.9		
-1.1	16.7		
-1.0	17.8		
-0.9	19.8		
-0.8	22.6		
-0.7	25.1		
-0.6	26.8		
-0.5	27.7		
-0.4	27.7		
-0.3	26.4		
-0.2	23.3		
-0.1	16.2		
0.0	14.4		

6.0	-3.8	-0.5	-3.3
6.1	-6.6	-0.6	-6.0
6.2	-11.8	-0.8	-10.9
6.3	-12.4	-1.0	-11.5
6.4	-7.9	-1.2	-6.8
6.5	-6.7	-1.3	-5.4
6.6	-7.2	-1.5	-5.7
6.7	-9.0	-1.7	-7.4
6.8	-12.3	-1.8	-10.5
6.9	-15.2	-2.0	-13.2
7.0	-19.9	-2.1	-17.7
7.1	-29.7	-2.0	-27.7
7.2	-23.1	-2.0	-21.1
7.3	-14.2	-2.0	-12.2
7.4	-10.5	-2.0	-8.5
7.5	-10.1	-2.0	-8.1
7.6	-9.8	-2.0	-7.8
7.7	-12.1	-2.0	-10.1
7.8	-16.0	-2.0	-14.0
7.9	-27.4	-2.0	-25.4
8.0	-22.6	-2.0	-20.6
8.1	-13.3	-2.0	-11.3
8.2	-11.1	-2.0	-9.1
8.3	-9.2	-2.0	-7.2
8.4	-9.0	-2.0	-7.0
8.5	-11.7	-2.0	-9.7
8.6	-14.8	-2.0	-12.8
8.7	-14.0	-2.0	-12.0
8.8	-11.7	-2.0	-9.7
8.9	-9.7	-2.0	-7.7
9.0	-9.1	-2.0	-7.1
9.1	-10.9	-2.0	-8.9
9.2	-14.6	-2.0	-12.6
9.3	-21.6	-2.0	-19.6
9.4	-16.7	-2.0	-14.7
9.5	-14.3	-2.0	-12.3
9.6	-12.9	-2.0	-10.9
9.7	-17.6	-2.0	-15.6
9.8	-24.7	-2.0	-22.7
9.9	-20.4	-2.0	-18.4
10.0	-16.8	-2.0	-14.8

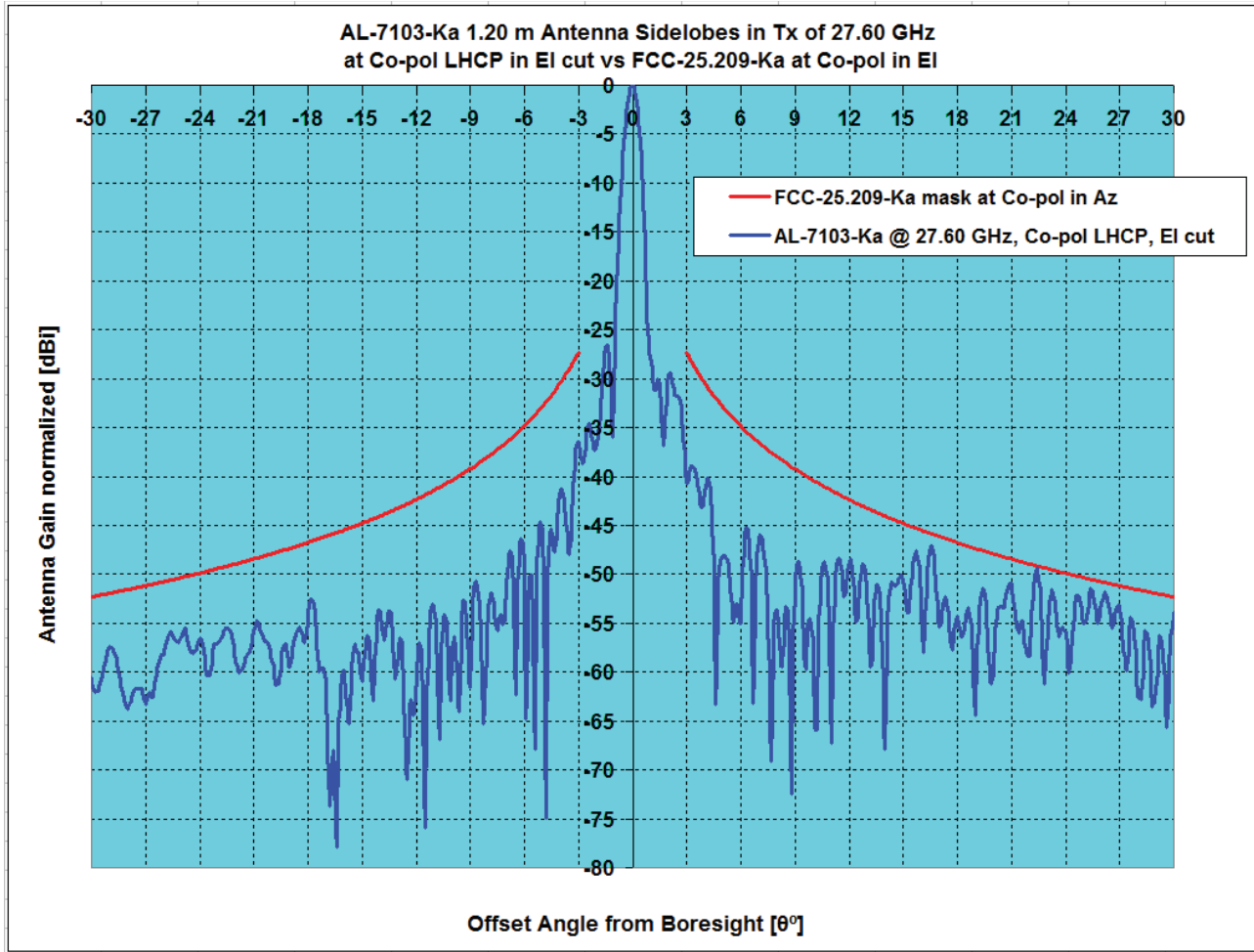
Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern, Co-pol, Azimuth LHCP



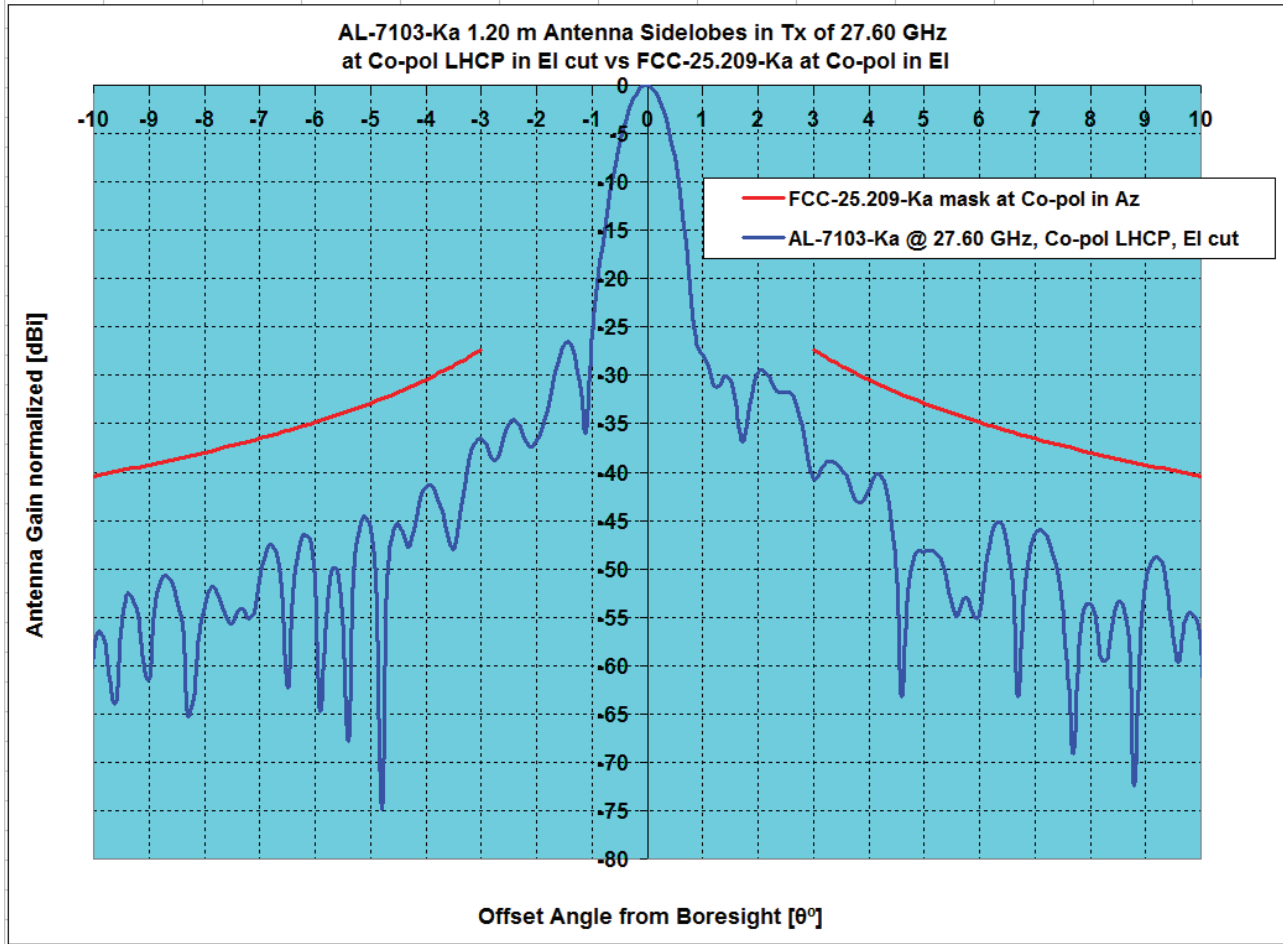
Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
				1.5°≤θ≤7°	7°≤θ≤180°	1.5°≤θ≤7°	7°≤θ≤180°
Pattern Rule vs Antenna System	Type	GHz	dBi				
FCC-25.209-Ka, Co-pol Az, vs AL-7103-Ka	Az , LHCP	27.60	47.40	-2.53	2.02	0.00%	0.14%



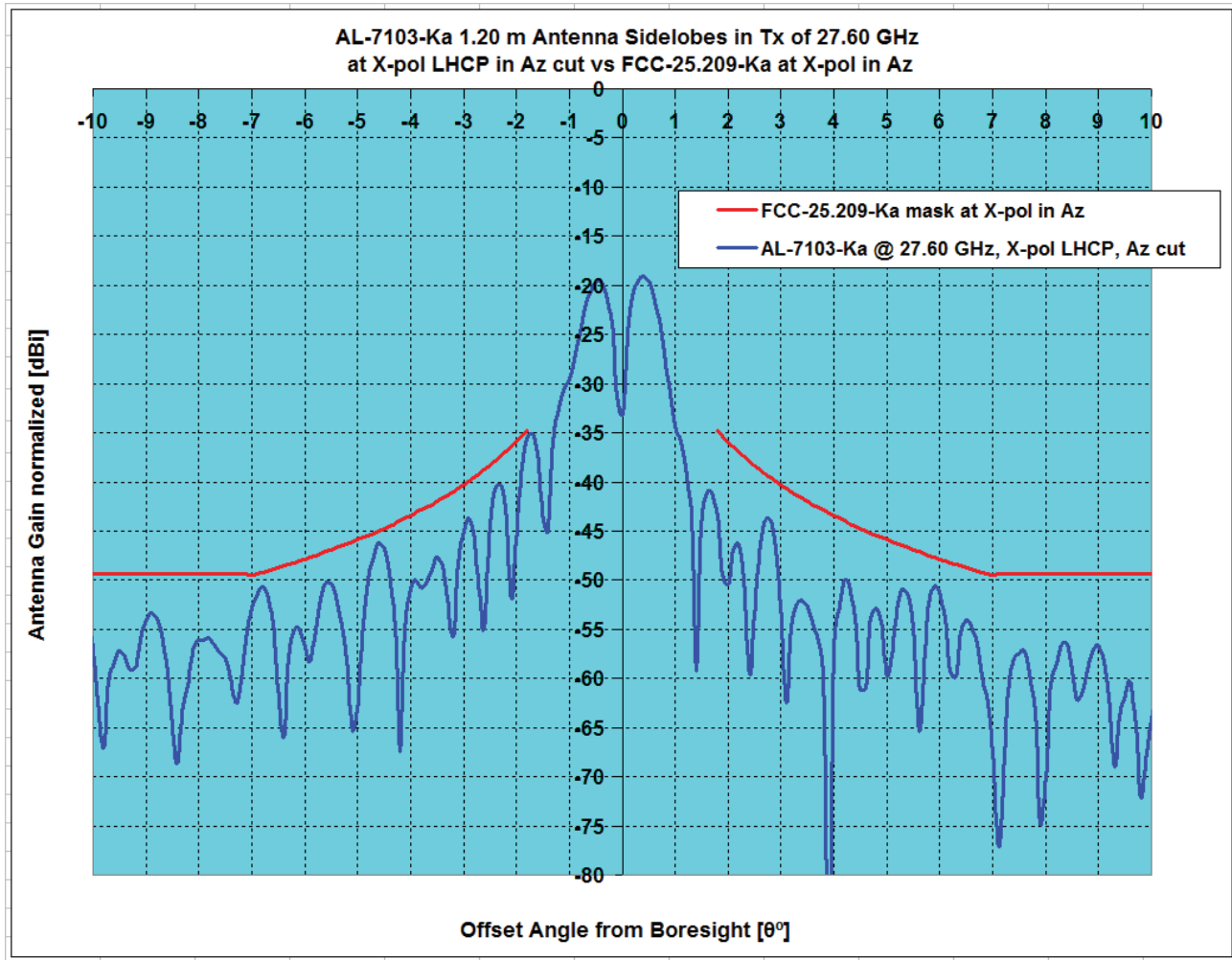
Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
				1.5°≤θ≤7°	7°≤θ≤180°	1.5°≤θ≤7°	7°≤θ≤180°
Pattern Rule vs Antenna System	Type	GHz	dBi				
FCC-25.209-Ka, Co-pol Az, vs AL-7103-Ka	Az , LHCP	27.60	47.40	-2.53	2.02	0.00%	0.14%



Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
				3°≤θ≤7°	7°≤θ≤30°	3°≤θ≤7°	7°≤θ≤30°
Pattern Rule vs Antenna System	Type	GHz	dBi				
FCC-25.209-Ka, Co-pol EI, vs AL-7103-Ka	EI, LHCP	27.60	47.40	-9.11	-0.19	0.00%	0.00%



Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
				3°≤θ≤7°	7°≤θ≤30°	3°≤θ≤7°	7°≤θ≤30°
Pattern Rule vs Antenna System	Type	GHz	dBi				
FCC-25.209-Ka, Co-pol EI, vs AL-7103-Ka	EI, LHCP	27.60	47.40	-9.11	-0.19	0.00%	0.00%



Description	Plane, CirP Type	Frequency GHz	Ant. Gain dBi	Peak Excursions dB		Over Mask %	
				1.8°≤θ≤7°	1.8°≤θ≤9.2°	1.8°≤θ≤7°	1.8°≤θ≤9.2°
FCC-25.209-Ka, X-pol Az, vs AL-7103-Ka	Az , LHCP	27.60	47.40	-0.86	-0.86	0.00%	0.00%

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Azimuth RHCP, -180° to +180° @ 1.0° increment

27.60 GHz Antenna Pattern in Co-pol Az RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-179.0	-29.1	0.0	-29.1
-178.0	-29.4	0.0	-29.4
-177.0	-23.9	0.0	-23.9
-176.0	-31.5	0.0	-31.5
-175.0	-30.9	0.0	-30.9
-174.0	-27.9	0.0	-27.9
-173.0	-35.8	0.0	-35.8
-172.0	-27.8	0.0	-27.8
-171.0	-37.8	0.0	-37.8
-170.0	-29.7	0.0	-29.7
-169.0	-27.2	0.0	-27.2
-168.0	-31.6	0.0	-31.6
-167.0	-42.9	0.0	-42.9
-166.0	-32.3	0.0	-32.3
-165.0	-26.0	0.0	-26.0
-164.0	-39.5	0.0	-39.5
-163.0	-38.1	0.0	-38.1
-162.0	-31.0	0.0	-31.0
-161.0	-31.4	0.0	-31.4
-160.0	-28.0	0.0	-28.0
-159.0	-33.1	0.0	-33.1
-158.0	-32.3	0.0	-32.3
-157.0	-25.0	0.0	-25.0
-156.0	-31.3	0.0	-31.3
-155.0	-39.0	0.0	-39.0
-154.0	-23.3	0.0	-23.3
-153.0	-34.3	0.0	-34.3
-152.0	-32.9	0.0	-32.9
-151.0	-35.2	0.0	-35.2
-150.0	-28.9	0.0	-28.9
-149.0	-33.7	0.0	-33.7
-148.0	-38.8	0.0	-38.8
-147.0	-28.5	0.0	-28.5
-146.0	-33.4	0.0	-33.4
-145.0	-30.4	0.0	-30.4
-144.0	-27.6	0.0	-27.6
-143.0	-28.9	0.0	-28.9
-142.0	-33.7	0.0	-33.7
-141.0	-29.4	0.0	-29.4
-140.0	-34.2	0.0	-34.2
-139.0	-34.9	0.0	-34.9
-138.0	-34.2	0.0	-34.2
-137.0	-28.8	0.0	-28.8
-136.0	-30.3	0.0	-30.3
-135.0	-35.5	0.0	-35.5
-134.0	-37.7	0.0	-37.7
-133.0	-29.7	0.0	-29.7
-132.0	-28.1	0.0	-28.1
-131.0	-39.4	0.0	-39.4
-130.0	-27.4	0.0	-27.4
-129.0	-33.2	0.0	-33.2
-128.0	-27.7	0.0	-27.7
-127.0	-28.0	0.0	-28.0
-126.0	-37.8	0.0	-37.8
-125.0	-30.0	0.0	-30.0
-124.0	-38.9	0.0	-38.9
-123.0	-37.9	0.0	-37.9
-122.0	-31.7	0.0	-31.7
-121.0	-29.6	0.0	-29.6
-120.0	-47.9	0.0	-47.9

27.60 GHz Antenna Pattern in Co-pol Az RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	47.2		
1.0	22.2		
2.0	9.4	21.5	-12.1
3.0	10.6	17.1	-6.5
4.0	8.5	13.9	-5.5
5.0	1.4	11.5	-10.1
6.0	-4.6	9.5	-14.1
7.0	-6.6	7.9	-14.4
8.0	-4.6	8.0	-12.6
9.0	-7.6	8.0	-15.6
10.0	-10.2	7.0	-17.2
11.0	-7.8	6.0	-13.8
12.0	-8.6	5.0	-13.6
13.0	-8.0	4.2	-12.1
14.0	-6.8	3.3	-10.1
15.0	-40.4	2.6	-43.0
16.0	-17.7	1.9	-19.6
17.0	-10.3	1.2	-11.6
18.0	-9.4	0.6	-10.1
19.0	-10.5	0.0	-10.5
20.0	-11.1	-0.5	-10.6
21.0	-7.8	-1.1	-6.7
22.0	-12.1	-1.6	-10.5
23.0	-9.8	-2.0	-7.8
24.0	-7.8	-2.5	-5.3
25.0	-8.1	-2.9	-5.2
26.0	-9.6	-3.4	-6.2
27.0	-8.4	-3.8	-4.6
28.0	-12.2	-4.2	-8.0
29.0	-9.9	-4.6	-5.4
30.0	-9.6	-4.9	-4.7
31.0	-18.3	-5.3	-13.0
32.0	-18.9	-5.6	-13.3
33.0	-20.1	-6.0	-14.1
34.0	-17.6	-6.3	-11.3
35.0	-14.9	-6.6	-8.3
36.0	-17.8	-6.9	-10.9
37.0	-22.5	-7.2	-15.3
38.0	-32.0	-7.5	-24.5
39.0	-23.5	-7.8	-15.8
40.0	-18.0	-8.1	-10.0
41.0	-16.5	-8.3	-8.2
42.0	-15.0	-8.6	-6.4
43.0	-23.5	-8.8	-14.7
44.0	-20.7	-9.1	-11.6
45.0	-19.7	-9.3	-10.4
46.0	-21.9	-9.6	-12.3
47.0	-13.5	-9.8	-3.7
48.0	-16.0	-10.0	-6.0
49.0	-35.9	-10.0	-25.9
50.0	-22.2	-10.0	-12.2
51.0	-29.4	-10.0	-19.4
52.0	-30.1	-10.0	-20.1
53.0	-19.7	-10.0	-9.7
54.0	-21.2	-10.0	-11.2
55.0	-25.1	-10.0	-15.1
56.0	-19.2	-10.0	-9.2
57.0	-25.1	-10.0	-15.1
58.0	-42.1	-10.0	-32.1
59.0	-26.1	-10.0	-16.1

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Azimuth RHCP, -180° to +180° @ 1.0° increment

-119.0	-30.2	0.0	-30.2	60.0	-15.8	-10.0	-5.8
-118.0	-22.4	0.0	-22.4	61.0	-18.2	-10.0	-8.2
-117.0	-29.3	0.0	-29.3	62.0	-29.2	-10.0	-19.2
-116.0	-28.5	0.0	-28.5	63.0	-26.1	-10.0	-16.1
-115.0	-32.0	0.0	-32.0	64.0	-33.7	-10.0	-23.7
-114.0	-32.5	0.0	-32.5	65.0	-15.5	-10.0	-5.5
-113.0	-31.1	0.0	-31.1	66.0	-22.5	-10.0	-12.5
-112.0	-34.5	0.0	-34.5	67.0	-20.0	-10.0	-10.0
-111.0	-28.0	0.0	-28.0	68.0	-20.1	-10.0	-10.1
-110.0	-34.3	0.0	-34.3	69.0	-23.9	-10.0	-13.9
-109.0	-29.5	0.0	-29.5	70.0	-23.7	-10.0	-13.7
-108.0	-24.0	0.0	-24.0	71.0	-20.5	-10.0	-10.5
-107.0	-22.8	0.0	-22.8	72.0	-32.1	-10.0	-22.1
-106.0	-19.5	0.0	-19.5	73.0	-18.3	-10.0	-8.3
-105.0	-16.6	0.0	-16.6	74.0	-18.3	-10.0	-8.3
-104.0	-16.2	0.0	-16.2	75.0	-18.0	-10.0	-8.0
-103.0	-14.7	0.0	-14.7	76.0	-22.2	-10.0	-12.2
-102.0	-14.7	0.0	-14.7	77.0	-16.0	-10.0	-6.0
-101.0	-15.4	0.0	-15.4	78.0	-15.4	-10.0	-5.4
-100.0	-17.1	0.0	-17.1	79.0	-22.9	-10.0	-12.9
-99.0	-14.4	0.0	-14.4	80.0	-24.1	-10.0	-14.1
-98.0	-13.9	0.0	-13.9	81.0	-28.9	-10.0	-18.9
-97.0	-15.3	0.0	-15.3	82.0	-20.2	-10.0	-10.2
-96.0	-17.1	0.0	-17.1	83.0	-23.2	-10.0	-13.2
-95.0	-19.9	0.0	-19.9	84.0	-31.8	-10.0	-21.8
-94.0	-26.9	0.0	-26.9	85.0	-30.9	-10.0	-20.9
-93.0	-18.8	0.0	-18.8	86.0	-26.7	0.0	-26.7
-92.0	-23.2	0.0	-23.2	87.0	-18.9	0.0	-18.9
-91.0	-20.4	0.0	-20.4	88.0	-21.1	0.0	-21.1
-90.0	-18.2	0.0	-18.2	89.0	-27.1	0.0	-27.1
-89.0	-21.8	0.0	-21.8	90.0	-28.2	0.0	-28.2
-88.0	-22.0	0.0	-22.0	91.0	-20.7	0.0	-20.7
-87.0	-24.4	0.0	-24.4	92.0	-23.8	0.0	-23.8
-86.0	-22.0	0.0	-22.0	93.0	-26.6	0.0	-26.6
-85.0	-18.9	-10.0	-8.9	94.0	-24.4	0.0	-24.4
-84.0	-19.1	-10.0	-9.1	95.0	-30.8	0.0	-30.8
-83.0	-22.6	-10.0	-12.6	96.0	-28.5	0.0	-28.5
-82.0	-20.9	-10.0	-10.9	97.0	-25.7	0.0	-25.7
-81.0	-16.3	-10.0	-6.3	98.0	-25.9	0.0	-25.9
-80.0	-16.7	-10.0	-6.7	99.0	-22.8	0.0	-22.8
-79.0	-17.1	-10.0	-7.1	100.0	-35.1	0.0	-35.1
-78.0	-15.1	-10.0	-5.1	101.0	-23.0	0.0	-23.0
-77.0	-17.9	-10.0	-7.9	102.0	-32.6	0.0	-32.6
-76.0	-23.5	-10.0	-13.5	103.0	-24.5	0.0	-24.5
-75.0	-20.9	-10.0	-10.9	104.0	-28.7	0.0	-28.7
-74.0	-14.1	-10.0	-4.1	105.0	-34.5	0.0	-34.5
-73.0	-28.0	-10.0	-18.0	106.0	-22.1	0.0	-22.1
-72.0	-16.9	-10.0	-6.9	107.0	-31.9	0.0	-31.9
-71.0	-34.7	-10.0	-24.7	108.0	-25.9	0.0	-25.9
-70.0	-26.2	-10.0	-16.2	109.0	-25.1	0.0	-25.1
-69.0	-20.7	-10.0	-10.7	110.0	-35.4	0.0	-35.4
-68.0	-16.8	-10.0	-6.8	111.0	-26.2	0.0	-26.2
-67.0	-18.5	-10.0	-8.5	112.0	-26.4	0.0	-26.4
-66.0	-20.3	-10.0	-10.3	113.0	-26.1	0.0	-26.1
-65.0	-31.2	-10.0	-21.2	114.0	-28.4	0.0	-28.4
-64.0	-23.1	-10.0	-13.1	115.0	-24.4	0.0	-24.4
-63.0	-15.8	-10.0	-5.8	116.0	-26.3	0.0	-26.3
-62.0	-13.6	-10.0	-3.6	117.0	-30.8	0.0	-30.8
-61.0	-17.7	-10.0	-7.7	118.0	-24.7	0.0	-24.7
-60.0	-20.7	-10.0	-10.7	119.0	-21.4	0.0	-21.4
-59.0	-26.8	-10.0	-16.8	120.0	-24.8	0.0	-24.8
-58.0	-18.8	-10.0	-8.8	121.0	-20.8	0.0	-20.8
-57.0	-18.3	-10.0	-8.3	122.0	-32.8	0.0	-32.8

Orbit Communication Systems Ltd.
AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
Co-pol Azimuth RHCP, -180° to +180° @ 1.0° increment

-56.0	-17.6	-10.0	-7.6
-55.0	-15.3	-10.0	-5.3
-54.0	-17.2	-10.0	-7.2
-53.0	-17.1	-10.0	-7.1
-52.0	-14.4	-10.0	-4.4
-51.0	-18.8	-10.0	-8.8
-50.0	-23.6	-10.0	-13.6
-49.0	-20.7	-10.0	-10.7
-48.0	-15.5	-10.0	-5.4
-47.0	-20.5	-9.8	-10.7
-46.0	-13.1	-9.6	-3.6
-45.0	-17.6	-9.3	-8.2
-44.0	-14.2	-9.1	-5.1
-43.0	-11.5	-8.8	-2.7
-42.0	-12.1	-8.6	-3.5
-41.0	-12.2	-8.3	-3.9
-40.0	-13.7	-8.1	-5.7
-39.0	-9.1	-7.8	-1.3
-38.0	-6.6	-7.5	0.9
-37.0	-12.5	-7.2	-5.3
-36.0	-14.4	-6.9	-7.5
-35.0	-13.1	-6.6	-6.5
-34.0	-6.5	-6.3	-0.2
-33.0	-13.4	-6.0	-7.5
-32.0	-10.4	-5.6	-4.7
-31.0	-8.4	-5.3	-3.1
-30.0	-14.0	-4.9	-9.1
-29.0	-17.6	-4.6	-13.0
-28.0	-8.3	-4.2	-4.1
-27.0	-7.7	-3.8	-3.9
-26.0	-9.6	-3.4	-6.2
-25.0	-8.9	-2.9	-6.0
-24.0	-13.2	-2.5	-10.7
-23.0	-13.0	-2.0	-11.0
-22.0	-7.2	-1.6	-5.6
-21.0	-5.0	-1.1	-3.9
-20.0	-26.6	-0.5	-26.1
-19.0	-6.5	0.0	-6.5
-18.0	-11.3	0.6	-11.9
-17.0	-8.3	1.2	-9.5
-16.0	-2.4	1.9	-4.3
-15.0	-5.5	2.6	-8.1
-14.0	-20.5	3.3	-23.8
-13.0	-2.3	4.2	-6.5
-12.0	-6.4	5.0	-11.4
-11.0	-19.1	6.0	-25.1
-10.0	-4.3	7.0	-11.3
-9.0	-8.3	8.0	-16.3
-8.0	-7.2	8.0	-15.2
-7.0	-0.4	7.9	-8.2
-6.0	-12.0	9.5	-21.6
-5.0	3.4	11.5	-8.1
-4.0	2.4	13.9	-11.5
-3.0	8.3	17.1	-8.8
-2.0	17.1	21.5	-4.3
-1.0	18.1		
0.0	47.2		

123.0	-23.2	0.0	-23.2
124.0	-37.6	0.0	-37.6
125.0	-22.9	0.0	-22.9
126.0	-22.8	0.0	-22.8
127.0	-36.4	0.0	-36.4
128.0	-24.7	0.0	-24.7
129.0	-31.0	0.0	-31.0
130.0	-25.9	0.0	-25.9
131.0	-30.4	0.0	-30.4
132.0	-25.5	0.0	-25.5
133.0	-23.8	0.0	-23.8
134.0	-23.0	0.0	-23.0
135.0	-20.7	0.0	-20.7
136.0	-38.7	0.0	-38.7
137.0	-22.9	0.0	-22.9
138.0	-21.0	0.0	-21.0
139.0	-26.3	0.0	-26.3
140.0	-24.0	0.0	-24.0
141.0	-22.1	0.0	-22.1
142.0	-26.4	0.0	-26.4
143.0	-25.5	0.0	-25.5
144.0	-31.8	0.0	-31.8
145.0	-26.3	0.0	-26.3
146.0	-21.2	0.0	-21.2
147.0	-23.4	0.0	-23.4
148.0	-36.2	0.0	-36.2
149.0	-33.2	0.0	-33.2
150.0	-30.6	0.0	-30.6
151.0	-29.0	0.0	-29.0
152.0	-24.4	0.0	-24.4
153.0	-24.1	0.0	-24.1
154.0	-27.7	0.0	-27.7
155.0	-22.1	0.0	-22.1
156.0	-28.2	0.0	-28.2
157.0	-24.4	0.0	-24.4
158.0	-21.8	0.0	-21.8
159.0	-23.4	0.0	-23.4
160.0	-25.7	0.0	-25.7
161.0	-37.5	0.0	-37.5
162.0	-23.4	0.0	-23.4
163.0	-22.9	0.0	-22.9
164.0	-25.5	0.0	-25.5
165.0	-26.2	0.0	-26.2
166.0	-23.0	0.0	-23.0
167.0	-24.1	0.0	-24.1
168.0	-21.6	0.0	-21.6
169.0	-28.4	0.0	-28.4
170.0	-34.9	0.0	-34.9
171.0	-19.2	0.0	-19.2
172.0	-23.3	0.0	-23.3
173.0	-27.0	0.0	-27.0
174.0	-20.9	0.0	-20.9
175.0	-39.1	0.0	-39.1
176.0	-27.1	0.0	-27.1
177.0	-34.1	0.0	-34.1
178.0	-27.0	0.0	-27.0
179.0	-27.0	0.0	-27.0

Orbit Communication Systems Ltd.
AL AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
Co-pol Azimuth RHCP, -10° to +10° @ 0.1° increment

27.60 GHz Antenna Pattern in Co-pol Az RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-10.0	-4.3	7.0	-11.3
-9.9	-4.4	7.1	-11.5
-9.8	-5.8	7.2	-13.0
-9.7	-9.9	7.3	-17.2
-9.6	-10.9	7.4	-18.3
-9.5	-6.5	7.6	-14.0
-9.4	-2.7	7.7	-10.4
-9.3	-1.3	7.8	-9.0
-9.2	-1.8	8.0	-9.8
-9.1	-3.1	8.0	-11.1
-9.0	-8.3	8.0	-16.3
-8.9	-35.6	8.0	-43.6
-8.8	-9.6	8.0	-17.6
-8.7	-4.1	8.0	-12.1
-8.6	-2.6	8.0	-10.6
-8.5	-2.8	8.0	-10.8
-8.4	-5.1	8.0	-13.1
-8.3	-10.2	8.0	-18.2
-8.2	-27.6	8.0	-35.6
-8.1	-13.2	8.0	-21.2
-8.0	-7.2	8.0	-15.2
-7.9	-5.2	8.0	-13.2
-7.8	-4.2	8.0	-12.2
-7.7	-5.0	8.0	-13.0
-7.6	-7.0	8.0	-15.0
-7.5	-8.5	8.0	-16.5
-7.4	-5.6	8.0	-13.6
-7.3	-2.4	8.0	-10.4
-7.2	0.0	8.0	-8.0
-7.1	0.4	8.0	-7.6
-7.0	-0.4	7.9	-8.2
-6.9	-3.4	8.0	-11.5
-6.8	-12.7	8.2	-20.9
-6.7	-9.7	8.3	-18.1
-6.6	-1.7	8.5	-10.2
-6.5	1.4	8.7	-7.3
-6.4	2.4	8.8	-6.5
-6.3	1.8	9.0	-7.2
-6.2	-0.4	9.2	-9.6
-6.1	-4.6	9.4	-14.0
-6.0	-12.0	9.5	-21.6
-5.9	-19.8	9.7	-29.6
-5.8	-23.0	9.9	-32.9
-5.7	-17.3	10.1	-27.4
-5.6	-6.1	10.3	-16.4
-5.5	-0.4	10.5	-10.9
-5.4	1.8	10.7	-8.9
-5.3	3.1	10.9	-7.8
-5.2	3.6	11.1	-7.5
-5.1	3.5	11.3	-7.8
-5.0	3.4	11.5	-8.1
-4.9	3.4	11.7	-8.3
-4.8	2.7	12.0	-9.3
-4.7	0.4	12.2	-11.8
-4.6	-4.7	12.4	-17.1
-4.5	-4.5	12.7	-17.2
-4.4	0.8	12.9	-12.1
-4.3	3.3	13.2	-9.9
-4.2	4.0	13.4	-9.4
-4.1	3.2	13.7	-10.5

27.60 GHz Antenna Pattern in Co-pol Az RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	47.2		
0.1	47.0		
0.2	46.4		
0.3	45.2		
0.4	43.6		
0.5	41.3		
0.6	38.5		
0.7	35.2		
0.8	31.5		
0.9	27.2		
1.0	22.2		
1.1	15.1		
1.2	9.3		
1.3	16.1		
1.4	18.8		
1.5	19.2	24.6	-5.4
1.6	18.1	23.9	-5.8
1.7	15.9	23.2	-7.3
1.8	13.1	22.6	-9.6
1.9	11.0	22.0	-11.1
2.0	9.4	21.5	-12.1
2.1	8.5	20.9	-12.5
2.2	9.0	20.4	-11.4
2.3	11.3	20.0	-8.6
2.4	13.1	19.5	-6.4
2.5	13.8	19.1	-5.3
2.6	13.1	18.6	-5.5
2.7	11.6	18.2	-6.6
2.8	10.1	17.8	-7.7
2.9	9.8	17.4	-7.6
3.0	10.6	17.1	-6.5
3.1	10.5	16.7	-6.3
3.2	9.0	16.4	-7.4
3.3	6.6	16.0	-9.4
3.4	4.1	15.7	-11.6
3.5	3.0	15.4	-12.4
3.6	4.5	15.1	-10.5
3.7	6.3	14.8	-8.5
3.8	7.8	14.5	-6.7
3.9	8.6	14.2	-5.7
4.0	8.5	13.9	-5.5
4.1	7.2	13.7	-6.5
4.2	4.8	13.4	-8.6
4.3	1.8	13.2	-11.3
4.4	0.9	12.9	-12.0
4.5	1.4	12.7	-11.3
4.6	1.0	12.4	-11.4
4.7	-2.0	12.2	-14.2
4.8	-11.1	12.0	-23.1
4.9	-3.8	11.7	-15.6
5.0	1.4	11.5	-10.1
5.1	2.6	11.3	-8.7
5.2	2.0	11.1	-9.1
5.3	-0.9	10.9	-11.7
5.4	-5.7	10.7	-16.4
5.5	-5.2	10.5	-15.7
5.6	-1.6	10.3	-11.9
5.7	-1.8	10.1	-11.9
5.8	-5.1	9.9	-15.0
5.9	-18.6	9.7	-28.3

Orbit Communication Systems Ltd.
 AL AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Azimuth RHCP, -10° to +10° @ 0.1° increment

-4.0	2.4	13.9	-11.5
-3.9	3.9	14.2	-10.3
-3.8	6.6	14.5	-7.9
-3.7	8.7	14.8	-6.1
-3.6	9.8	15.1	-5.3
-3.5	10.3	15.4	-5.1
-3.4	10.7	15.7	-5.0
-3.3	10.8	16.0	-5.2
-3.2	10.7	16.4	-5.7
-3.1	9.6	16.7	-7.1
-3.0	8.3	17.1	-8.8
-2.9	8.7	17.4	-8.8
-2.8	11.3	17.8	-6.6
-2.7	13.3	18.2	-4.9
-2.6	14.3	18.6	-4.3
-2.5	14.6	19.1	-4.4
-2.4	14.9	19.5	-4.6
-2.3	15.8	20.0	-4.2
-2.2	17.0	20.4	-3.4
-2.1	17.7	20.9	-3.3
-2.0	17.1	21.5	-4.3
-1.9	14.7	22.0	-7.3
-1.8	9.2	22.6	-13.4
-1.7	10.0	23.2	-13.3
-1.6	15.4	23.9	-8.5
-1.5	17.7	24.6	-6.9
-1.4	17.8		
-1.3	16.2		
-1.2	14.9		
-1.1	16.6		
-1.0	18.1		
-0.9	19.8		
-0.8	25.3		
-0.7	31.4		
-0.6	36.2		
-0.5	39.9		
-0.4	42.6		
-0.3	44.6		
-0.2	46.0		
-0.1	46.9		
0.0	47.2		

6.0	-4.6	9.5	-14.1
6.1	0.1	9.4	-9.3
6.2	2.0	9.2	-7.2
6.3	1.5	9.0	-7.5
6.4	-1.1	8.8	-10.0
6.5	-7.1	8.7	-15.8
6.6	-21.3	8.5	-29.9
6.7	-10.0	8.3	-18.3
6.8	-8.2	8.2	-16.4
6.9	-7.4	8.0	-15.5
7.0	-6.6	7.9	-14.4
7.1	-4.4	8.0	-12.4
7.2	-3.7	8.0	-11.7
7.3	-5.3	8.0	-13.3
7.4	-11.7	8.0	-19.7
7.5	-13.9	8.0	-21.9
7.6	-6.9	8.0	-14.9
7.7	-3.7	8.0	-11.7
7.8	-2.8	8.0	-10.8
7.9	-3.0	8.0	-11.0
8.0	-4.6	8.0	-12.6
8.1	-6.3	8.0	-14.3
8.2	-8.9	8.0	-16.9
8.3	-11.5	8.0	-19.5
8.4	-25.6	8.0	-33.6
8.5	-11.8	8.0	-19.8
8.6	-5.2	8.0	-13.2
8.7	-2.7	8.0	-10.7
8.8	-1.9	8.0	-9.9
8.9	-3.5	8.0	-11.5
9.0	-7.6	8.0	-15.6
9.1	-15.7	8.0	-23.7
9.2	-10.5	8.0	-18.5
9.3	-6.0	7.8	-13.7
9.4	-5.5	7.7	-13.1
9.5	-7.3	7.6	-14.9
9.6	-13.1	7.4	-20.6
9.7	-13.9	7.3	-21.2
9.8	-9.0	7.2	-16.2
9.9	-7.8	7.1	-14.9
10.0	-10.2	7.0	-17.2

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Elevation RHCP, -30° to +30° @ 0.5° increment

27.60 GHz Antenna Pattern in Co-pol EI RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-30.0	-12.7	-4.9	-7.8
-29.5	-11.0	-4.7	-6.3
-29.0	-10.4	-4.6	-5.9
-28.5	-9.9	-4.4	-5.6
-28.0	-10.8	-4.2	-6.7
-27.5	-13.0	-4.0	-9.0
-27.0	-14.4	-3.8	-10.6
-26.5	-13.3	-3.6	-9.7
-26.0	-11.4	-3.4	-8.0
-25.5	-10.2	-3.2	-7.1
-25.0	-10.1	-2.9	-7.1
-24.5	-13.6	-2.7	-10.9
-24.0	-12.9	-2.5	-10.4
-23.5	-12.7	-2.3	-10.4
-23.0	-12.6	-2.0	-10.5
-22.5	-16.8	-1.8	-15.0
-22.0	-27.6	-1.6	-26.0
-21.5	-17.6	-1.3	-16.3
-21.0	-12.5	-1.1	-11.4
-20.5	-12.8	-0.8	-12.0
-20.0	-17.4	-0.5	-16.9
-19.5	-14.3	-0.3	-14.1
-19.0	-13.3	0.0	-13.3
-18.5	-8.3	0.3	-8.6
-18.0	-10.4	0.6	-11.0
-17.5	-11.7	0.9	-12.7
-17.0	-14.5	1.2	-15.7
-16.5	-19.8	1.6	-21.4
-16.0	-23.1	1.9	-25.0
-15.5	-15.0	2.2	-17.3
-15.0	-16.2	2.6	-18.8
-14.5	-17.3	3.0	-20.3
-14.0	-10.0	3.3	-13.4
-13.5	-7.3	3.7	-11.1
-13.0	-10.8	4.2	-14.9
-12.5	-23.5	4.6	-28.1
-12.0	-10.7	5.0	-15.7
-11.5	-17.5	5.5	-23.0
-11.0	-8.0	6.0	-14.0
-10.5	-8.6	6.5	-15.1
-10.0	-11.3	7.0	-18.3
-9.5	-9.4	7.6	-17.0
-9.0	-16.4	8.1	-24.6
-8.5	-2.7	8.8	-11.5
-8.0	-3.2	9.4	-12.7
-7.5	-10.5	10.1	-20.6
-7.0	-2.7	10.9	-13.6
-6.5	-7.8	11.7	-19.5
-6.0	-4.4	12.5	-17.0
-5.5	-4.9	13.5	-18.4
-5.0	-1.5	14.5	-16.0
-4.5	0.8	15.7	-14.8
-4.0	4.9	16.9	-12.1
-3.5	2.4	18.4	-16.0
-3.0	10.6	20.1	-9.5
-2.5	10.9		
-2.0	10.0		
-1.5	20.2		
-1.0	19.4		
-0.5	41.4		
0.0	47.2		

27.60 GHz Antenna Pattern in Co-pol EI RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	47.2		
0.5	40.3		
1.0	18.1		
1.5	16.3		
2.0	17.0		
2.5	15.5		
3.0	5.9	20.1	-14.1
3.5	8.3	18.4	-10.1
4.0	6.1	16.9	-10.8
4.5	-1.4	15.7	-17.1
5.0	-1.7	14.5	-16.2
5.5	0.5	13.5	-13.0
6.0	-6.2	12.5	-18.8
6.5	-0.6	11.7	-12.3
7.0	1.1	10.9	-9.8
7.5	-7.0	10.1	-17.1
8.0	-16.1	9.4	-25.5
8.5	-2.9	8.8	-11.6
9.0	-6.8	8.1	-14.9
9.5	-17.1	7.6	-24.6
10.0	-3.2	7.0	-10.2
10.5	-4.2	6.5	-10.7
11.0	-15.0	6.0	-20.9
11.5	-3.2	5.5	-8.7
12.0	-5.7	5.0	-10.7
12.5	-9.5	4.6	-14.0
13.0	-3.6	4.2	-7.7
13.5	-7.9	3.7	-11.6
14.0	-5.0	3.3	-8.3
14.5	-11.3	3.0	-14.2
15.0	-0.4	2.6	-3.0
15.5	-6.1	2.2	-8.3
16.0	-7.0	1.9	-8.9
16.5	-3.4	1.6	-4.9
17.0	-2.5	1.2	-3.8
17.5	-4.5	0.9	-5.4
18.0	-3.7	0.6	-4.4
18.5	-16.1	0.3	-16.4
19.0	-10.1	0.0	-10.1
19.5	-11.8	-0.3	-11.6
20.0	-12.8	-0.5	-12.3
20.5	-18.1	-0.8	-17.3
21.0	-9.0	-1.1	-8.0
21.5	-13.9	-1.3	-12.6
22.0	-13.6	-1.6	-12.0
22.5	-7.1	-1.8	-5.3
23.0	-9.5	-2.0	-7.5
23.5	-11.8	-2.3	-9.5
24.0	-10.3	-2.5	-7.8
24.5	-12.6	-2.7	-9.8
25.0	-13.6	-2.9	-10.7
25.5	-10.9	-3.2	-7.8
26.0	-8.9	-3.4	-5.6
26.5	-12.8	-3.6	-9.2
27.0	-8.7	-3.8	-5.0
27.5	-10.1	-4.0	-6.1
28.0	-19.4	-4.2	-15.3
28.5	-10.9	-4.4	-6.5
29.0	-16.5	-4.6	-11.9
29.5	-22.7	-4.7	-17.9
30.0	-10.7	-4.9	-5.7

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Elevation RHCP, -10° to +10° @ 0.1° increment

27.60 GHz Antenna Pattern in Co-pol EI RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-10.0	-11.3	7.0	-18.3
-9.9	-9.6	7.1	-16.7
-9.8	-11.0	7.2	-18.2
-9.7	-14.1	7.3	-21.4
-9.6	-16.5	7.4	-23.9
-9.5	-9.4	7.6	-17.0
-9.4	-6.9	7.7	-14.6
-9.3	-6.0	7.8	-13.8
-9.2	-7.4	7.9	-15.3
-9.1	-12.6	8.0	-20.6
-9.0	-16.4	8.1	-24.6
-8.9	-7.9	8.3	-16.2
-8.8	-3.4	8.4	-11.8
-8.7	-1.6	8.5	-10.1
-8.6	-1.4	8.6	-10.1
-8.5	-2.7	8.8	-11.5
-8.4	-6.4	8.9	-15.3
-8.3	-14.9	9.0	-24.0
-8.2	-13.0	9.2	-22.2
-8.1	-6.1	9.3	-15.4
-8.0	-3.2	9.4	-12.7
-7.9	-2.7	9.6	-12.3
-7.8	-3.8	9.7	-13.5
-7.7	-7.6	9.8	-17.5
-7.6	-12.6	10.0	-22.6
-7.5	-10.5	10.1	-20.6
-7.4	-6.0	10.3	-16.2
-7.3	-4.3	10.4	-14.7
-7.2	-3.2	10.6	-13.7
-7.1	-3.3	10.7	-14.0
-7.0	-2.7	10.9	-13.6
-6.9	-2.5	11.0	-13.6
-6.8	-3.6	11.2	-14.7
-6.7	-7.4	11.3	-18.7
-6.6	-21.1	11.5	-32.6
-6.5	-7.8	11.7	-19.5
-6.4	-1.8	11.8	-13.6
-6.3	0.5	12.0	-11.5
-6.2	0.8	12.2	-11.4
-6.1	-0.8	12.4	-13.1
-6.0	-4.4	12.5	-17.0
-5.9	-8.5	12.7	-21.2
-5.8	-6.0	12.9	-19.0
-5.7	-3.5	13.1	-16.6
-5.6	-3.3	13.3	-16.6
-5.5	-4.9	13.5	-18.4
-5.4	-4.2	13.7	-17.9
-5.3	-2.1	13.9	-16.0
-5.2	0.0	14.1	-14.1
-5.1	0.1	14.3	-14.2
-5.0	-1.5	14.5	-16.0
-4.9	-7.4	14.7	-22.1
-4.8	-12.1	15.0	-27.1
-4.7	-3.9	15.2	-19.1
-4.6	-0.3	15.4	-15.7
-4.5	0.8	15.7	-14.8
-4.4	1.0	15.9	-14.9
-4.3	1.2	16.2	-15.0
-4.2	2.3	16.4	-14.1
-4.1	3.8	16.7	-12.9

27.60 GHz Antenna Pattern in Co-pol EI RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	47.2		
0.1	46.9		
0.2	46.1		
0.3	44.8		
0.4	42.9		
0.5	40.3		
0.6	37.0		
0.7	32.7		
0.8	27.2		
0.9	21.2		
1.0	18.1		
1.1	17.5		
1.2	16.7		
1.3	16.6		
1.4	16.8		
1.5	16.3		
1.6	13.8		
1.7	8.6		
1.8	8.9		
1.9	14.3		
2.0	17.0		
2.1	17.9		
2.2	17.7		
2.3	16.9		
2.4	16.0		
2.5	15.5		
2.6	15.0		
2.7	13.8		
2.8	11.7		
2.9	8.8		
3.0	5.9	20.1	-14.1
3.1	6.6	19.7	-13.1
3.2	8.5	19.4	-10.8
3.3	9.3	19.0	-9.7
3.4	9.2	18.7	-9.6
3.5	8.3	18.4	-10.1
3.6	7.2	18.1	-10.9
3.7	5.9	17.8	-11.9
3.8	5.1	17.5	-12.4
3.9	5.3	17.2	-11.9
4.0	6.1	16.9	-10.8
4.1	6.8	16.7	-9.9
4.2	6.7	16.4	-9.7
4.3	5.4	16.2	-10.8
4.4	3.2	15.9	-12.8
4.5	-1.4	15.7	-17.1
4.6	-12.7	15.4	-28.2
4.7	-9.4	15.2	-24.6
4.8	-3.5	15.0	-18.5
4.9	-1.9	14.7	-16.7
5.0	-1.7	14.5	-16.2
5.1	-2.5	14.3	-16.8
5.2	-2.7	14.1	-16.8
5.3	-1.4	13.9	-15.3
5.4	-0.4	13.7	-14.1
5.5	0.5	13.5	-13.0
5.6	1.0	13.3	-12.3
5.7	0.7	13.1	-12.4
5.8	-1.1	12.9	-14.1
5.9	-3.9	12.7	-16.6

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Elevation RHCP, -10° to +10° @ 0.1° increment

-4.0	4.9	16.9	-12.1
-3.9	5.3	17.2	-11.9
-3.8	5.1	17.5	-12.4
-3.7	4.2	17.8	-13.6
-3.6	2.7	18.1	-15.3
-3.5	2.4	18.4	-16.0
-3.4	4.9	18.7	-13.8
-3.3	7.7	19.0	-11.4
-3.2	9.7	19.4	-9.7
-3.1	10.6	19.7	-9.1
-3.0	10.6	20.1	-9.5
-2.9	10.0		
-2.8	9.5		
-2.7	9.9		
-2.6	10.6		
-2.5	10.9		
-2.4	10.1		
-2.3	8.5		
-2.2	6.9		
-2.1	7.6		
-2.0	10.0		
-1.9	12.8		
-1.8	15.4		
-1.7	17.8		
-1.6	19.5		
-1.5	20.2		
-1.4	19.8		
-1.3	17.8		
-1.2	12.8		
-1.1	7.7		
-1.0	19.4		
-0.9	26.3		
-0.8	31.3		
-0.7	35.4		
-0.6	38.7		
-0.5	41.4		
-0.4	43.6		
-0.3	45.2		
-0.2	46.4		
-0.1	47.0		
0.0	47.2		

6.0	-6.2	12.5	-18.8
6.1	-3.9	12.4	-16.3
6.2	-0.6	12.2	-12.8
6.3	0.8	12.0	-11.2
6.4	0.9	11.8	-10.9
6.5	-0.6	11.7	-12.3
6.6	-5.1	11.5	-16.6
6.7	-10.7	11.3	-22.0
6.8	-5.3	11.2	-16.5
6.9	-0.7	11.0	-11.7
7.0	1.1	10.9	-9.8
7.1	1.7	10.7	-9.1
7.2	1.4	10.6	-9.1
7.3	-0.2	10.4	-10.6
7.4	-2.8	10.3	-13.1
7.5	-7.0	10.1	-17.1
7.6	-12.6	10.0	-22.6
7.7	-19.8	9.8	-29.6
7.8	-19.7	9.7	-29.4
7.9	-15.7	9.6	-25.3
8.0	-16.1	9.4	-25.5
8.1	-11.9	9.3	-21.1
8.2	-7.7	9.2	-16.8
8.3	-4.2	9.0	-13.2
8.4	-2.9	8.9	-11.8
8.5	-2.9	8.8	-11.6
8.6	-4.3	8.6	-12.9
8.7	-7.3	8.5	-15.8
8.8	-14.8	8.4	-23.1
8.9	-12.7	8.3	-21.0
9.0	-6.8	8.1	-14.9
9.1	-4.5	8.0	-12.6
9.2	-4.3	7.9	-12.2
9.3	-6.2	7.8	-14.0
9.4	-11.3	7.7	-19.0
9.5	-17.1	7.6	-24.6
9.6	-8.1	7.4	-15.6
9.7	-4.1	7.3	-11.5
9.8	-2.4	7.2	-9.6
9.9	-2.3	7.1	-9.4
10.0	-3.2	7.0	-10.2

Orbit Communication Systems Ltd.
AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
X-pol Azimuth RHCP, -10° to +10° @ 0.1° increment

27.60 GHz Antenna Pattern in X-pol Az RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-10.0	-13.0	-2.0	-11.0
-9.9	-13.6	-2.0	-11.6
-9.8	-13.8	-2.0	-11.8
-9.7	-13.3	-2.0	-11.3
-9.6	-12.4	-2.0	-10.4
-9.5	-11.6	-2.0	-9.6
-9.4	-9.5	-2.0	-7.5
-9.3	-9.3	-2.0	-7.3
-9.2	-9.0	-2.0	-7.0
-9.1	-10.4	-2.0	-8.4
-9.0	-14.4	-2.0	-12.4
-8.9	-20.5	-2.0	-18.5
-8.8	-23.9	-2.0	-21.9
-8.7	-14.5	-2.0	-12.5
-8.6	-10.7	-2.0	-8.7
-8.5	-9.7	-2.0	-7.7
-8.4	-9.4	-2.0	-7.4
-8.3	-11.5	-2.0	-9.5
-8.2	-13.2	-2.0	-11.2
-8.1	-13.5	-2.0	-11.5
-8.0	-14.9	-2.0	-12.9
-7.9	-13.4	-2.0	-11.4
-7.8	-11.0	-2.0	-9.0
-7.7	-10.8	-2.0	-8.8
-7.6	-11.2	-2.0	-9.2
-7.5	-10.9	-2.0	-8.9
-7.4	-11.8	-2.0	-9.8
-7.3	-14.5	-2.0	-12.5
-7.2	-15.0	-2.0	-13.0
-7.1	-16.1	-2.0	-14.1
-7.0	-14.2	-2.1	-12.1
-6.9	-12.0	-2.0	-10.1
-6.8	-10.3	-1.8	-8.5
-6.7	-8.8	-1.7	-7.1
-6.6	-7.4	-1.5	-5.9
-6.5	-6.7	-1.3	-5.4
-6.4	-6.3	-1.2	-5.1
-6.3	-5.8	-1.0	-4.8
-6.2	-4.9	-0.8	-4.1
-6.1	-3.7	-0.6	-3.1
-6.0	-2.8	-0.5	-2.3
-5.9	-2.1	-0.3	-1.8
-5.8	-2.3	-0.1	-2.2
-5.7	-2.2	0.1	-2.3
-5.6	-2.5	0.3	-2.8
-5.5	-3.1	0.5	-3.6
-5.4	-2.9	0.7	-3.6
-5.3	-2.9	0.9	-3.8
-5.2	-2.5	1.1	-3.6
-5.1	-2.3	1.3	-3.6
-5.0	-1.8	1.5	-3.4
-4.9	-0.9	1.7	-2.7
-4.8	0.1	2.0	-1.8
-4.7	0.9	2.2	-1.3
-4.6	2.1	2.4	-0.3
-4.5	2.9	2.7	0.3
-4.4	3.3	2.9	0.3
-4.3	3.6	3.2	0.4
-4.2	3.3	3.4	-0.1
-4.1	2.8	3.7	-0.9

27.60 GHz Antenna Pattern in X-pol Az RHCP

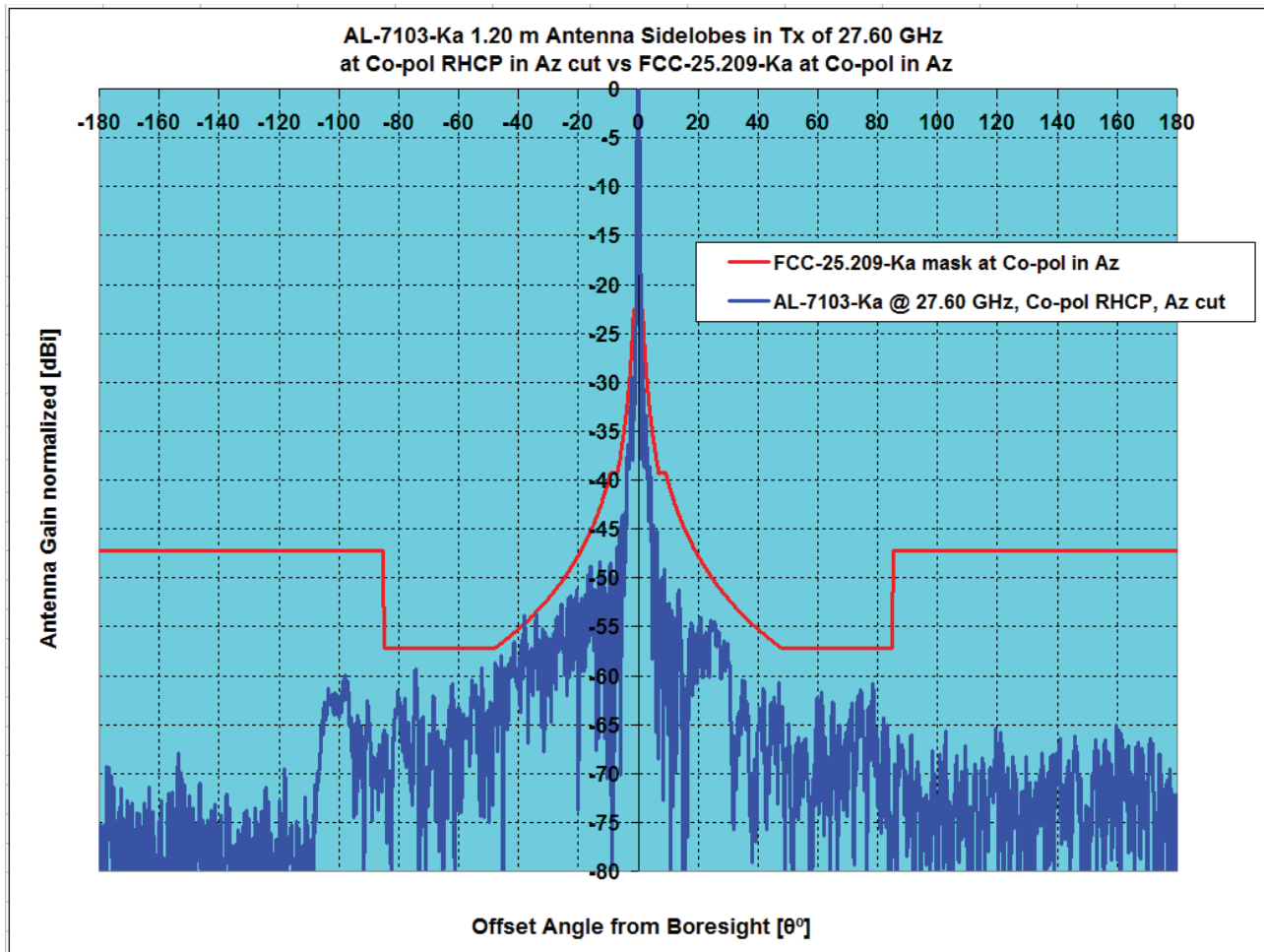
Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	14.2		
0.1	11.4		
0.2	9.3		
0.3	8.2		
0.4	8.0		
0.5	8.2		
0.6	7.8		
0.7	7.5		
0.8	6.6		
0.9	5.5		
1.0	4.4		
1.1	2.8		
1.2	1.4		
1.3	-0.2		
1.4	-0.7		
1.5	-1.5		
1.6	-1.6		
1.7	-3.1		
1.8	-4.1	12.6	-16.7
1.9	-5.2	12.0	-17.2
2.0	-7.4	11.5	-18.9
2.1	-7.9	10.9	-18.8
2.2	-7.1	10.4	-17.5
2.3	-5.2	10.0	-15.2
2.4	-3.0	9.5	-12.5
2.5	-3.2	9.1	-12.3
2.6	-1.7	8.6	-10.3
2.7	-1.5	8.2	-9.7
2.8	-2.5	7.8	-10.3
2.9	-2.2	7.4	-9.6
3.0	-5.5	7.1	-12.6
3.1	-9.8	6.7	-16.5
3.2	-14.5	6.4	-20.8
3.3	-12.1	6.0	-18.1
3.4	-10.7	5.7	-16.4
3.5	-15.3	5.4	-20.7
3.6	-16.6	5.1	-21.7
3.7	-12.9	4.8	-17.7
3.8	-12.6	4.5	-17.1
3.9	-13.7	4.2	-18.0
4.0	-15.1	3.9	-19.0
4.1	-26.4	3.7	-30.0
4.2	-16.2	3.4	-19.6
4.3	-19.4	3.2	-22.6
4.4	-13.7	2.9	-16.6
4.5	-16.6	2.7	-19.3
4.6	-17.7	2.4	-20.2
4.7	-17.5	2.2	-19.7
4.8	-23.1	2.0	-25.0
4.9	-15.4	1.7	-17.1
5.0	-15.0	1.5	-16.5
5.1	-18.4	1.3	-19.7
5.2	-22.5	1.1	-23.6
5.3	-22.8	0.9	-23.7
5.4	-24.2	0.7	-24.9
5.5	-22.2	0.5	-22.7
5.6	-19.8	0.3	-20.1
5.7	-24.5	0.1	-24.6
5.8	-20.0	-0.1	-19.9
5.9	-18.7	-0.3	-18.4

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 X-pol Azimuth RHCP, -10° to +10° @ 0.1° increment

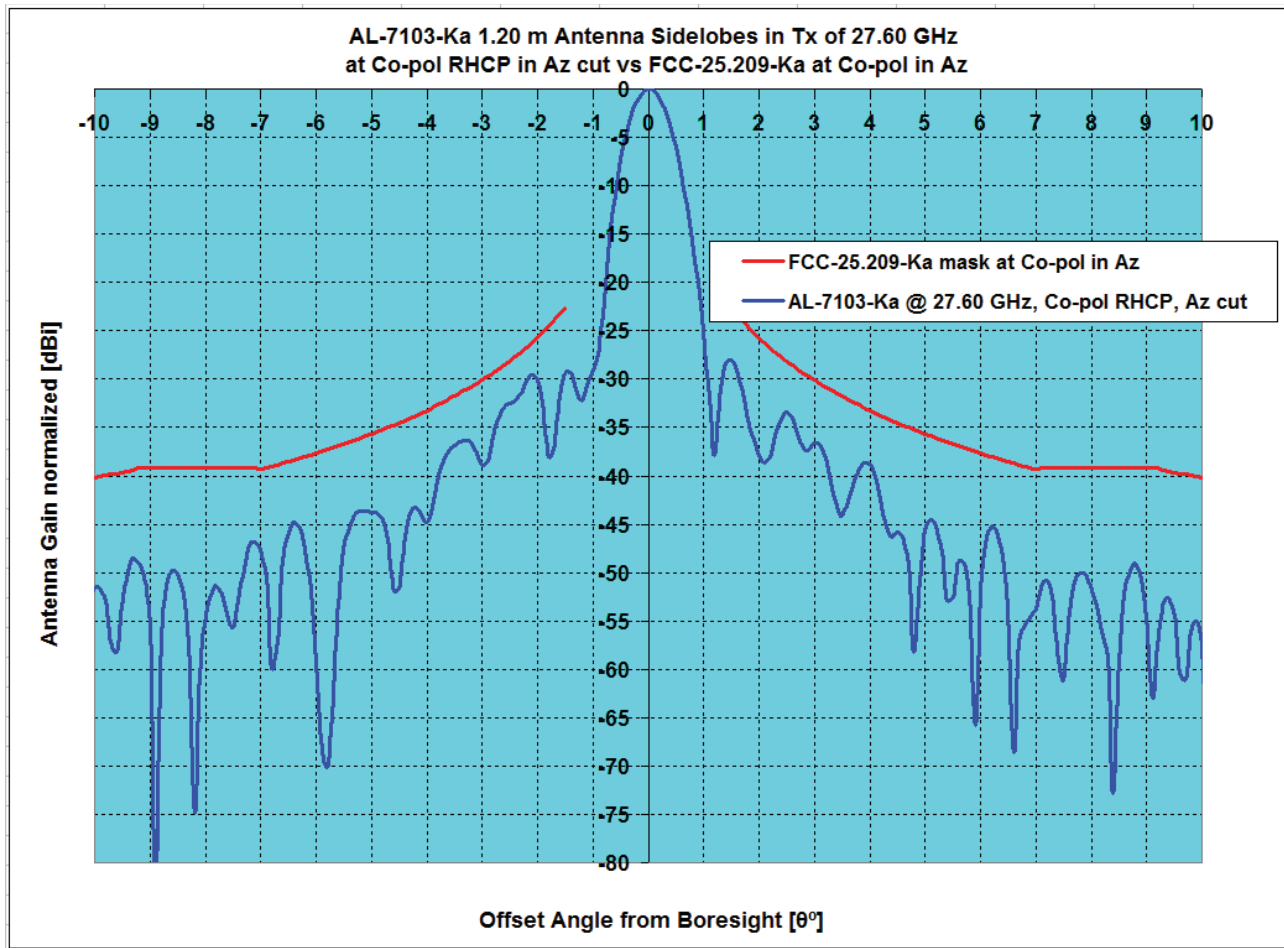
-4.0	2.2	3.9	-1.8
-3.9	1.5	4.2	-2.7
-3.8	1.0	4.5	-3.5
-3.7	0.9	4.8	-3.9
-3.6	0.6	5.1	-4.5
-3.5	1.0	5.4	-4.4
-3.4	1.2	5.7	-4.5
-3.3	1.1	6.0	-4.9
-3.2	0.9	6.4	-5.5
-3.1	-0.1	6.7	-6.8
-3.0	-1.4	7.1	-8.5
-2.9	-1.9	7.4	-9.3
-2.8	-1.3	7.8	-9.1
-2.7	0.5	8.2	-7.7
-2.6	1.5	8.6	-7.1
-2.5	1.4	9.1	-7.6
-2.4	0.7	9.5	-8.8
-2.3	-1.8	10.0	-11.7
-2.2	-4.4	10.4	-14.9
-2.1	-4.7	10.9	-15.7
-2.0	-3.5	11.5	-15.0
-1.9	-2.9	12.0	-15.0
-1.8	-2.6	12.6	-15.2
-1.7	0.0		
-1.6	3.0		
-1.5	5.2		
-1.4	6.1		
-1.3	5.4		
-1.2	1.0		
-1.1	-7.3		
-1.0	6.6		
-0.9	12.6		
-0.8	16.1		
-0.7	18.0		
-0.6	19.1		
-0.5	19.5		
-0.4	19.7		
-0.3	19.4		
-0.2	18.4		
-0.1	16.6		
0.0	14.2		

6.0	-15.2	-0.5	-14.7
6.1	-15.2	-0.6	-14.5
6.2	-13.2	-0.8	-12.4
6.3	-12.5	-1.0	-11.6
6.4	-13.1	-1.2	-12.0
6.5	-12.8	-1.3	-11.5
6.6	-13.7	-1.5	-12.2
6.7	-14.4	-1.7	-12.8
6.8	-15.3	-1.8	-13.5
6.9	-18.5	-2.0	-16.5
7.0	-22.5	-2.1	-20.4
7.1	-24.2	-2.0	-22.2
7.2	-17.1	-2.0	-15.1
7.3	-12.4	-2.0	-10.4
7.4	-9.3	-2.0	-7.3
7.5	-8.5	-2.0	-6.5
7.6	-8.1	-2.0	-6.1
7.7	-8.6	-2.0	-6.6
7.8	-9.7	-2.0	-7.7
7.9	-9.3	-2.0	-7.3
8.0	-10.2	-2.0	-8.2
8.1	-11.7	-2.0	-9.7
8.2	-11.8	-2.0	-9.8
8.3	-13.5	-2.0	-11.5
8.4	-16.2	-2.0	-14.2
8.5	-20.3	-2.0	-18.3
8.6	-24.2	-2.0	-22.2
8.7	-22.5	-2.0	-20.5
8.8	-22.3	-2.0	-20.3
8.9	-24.8	-2.0	-22.8
9.0	-23.0	-2.0	-21.0
9.1	-20.9	-2.0	-18.9
9.2	-26.6	-2.0	-24.6
9.3	-27.8	-2.0	-25.8
9.4	-32.2	-2.0	-30.2
9.5	-24.8	-2.0	-22.8
9.6	-21.7	-2.0	-19.7
9.7	-22.5	-2.0	-20.5
9.8	-27.2	-2.0	-25.2
9.9	-33.2	-2.0	-31.2
10.0	-28.7	-2.0	-26.7

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern, Co-pol, Azimuth RHCP

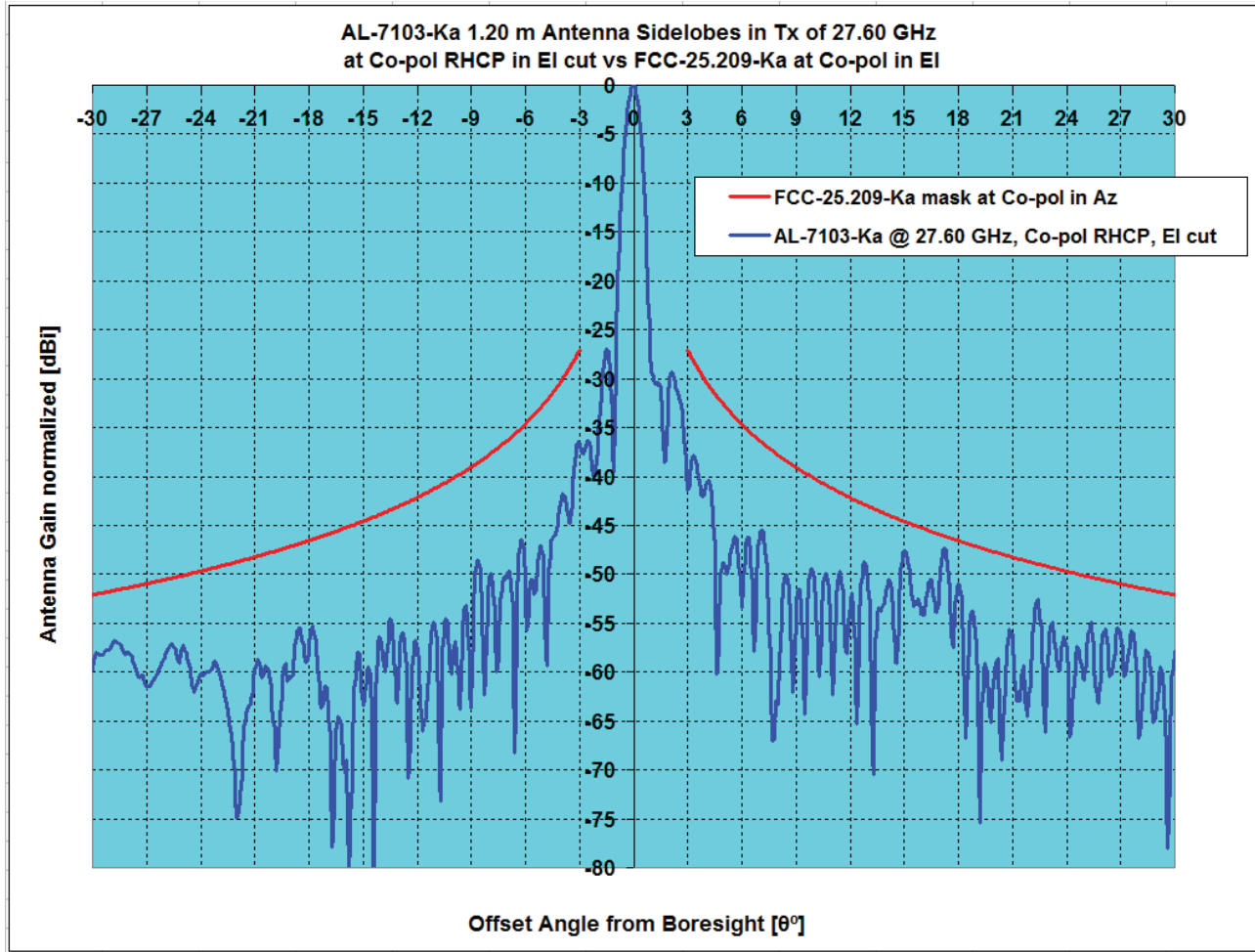


Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
				1.5°≤θ≤7°	7°≤θ≤180°	1.5°≤θ≤7°	7°≤θ≤180°
Pattern Rule vs Antenna System	Type	GHz	dBi				
FCC-25.209-Ka, Co-pol Az, vs AL-7103-Ka	Az , RHCP	27.60	47.20	-3.26	0.90	0.00%	0.08%

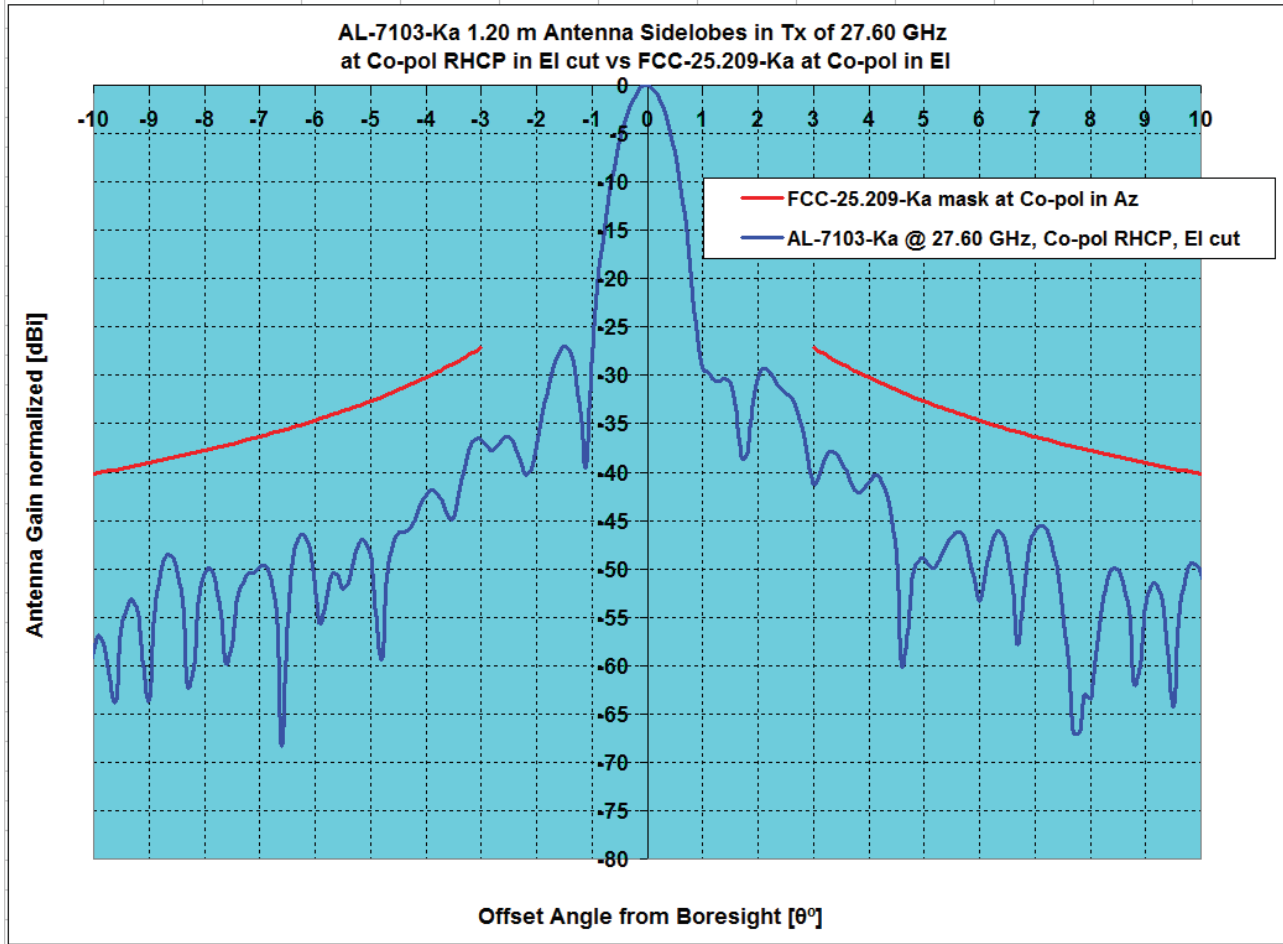


Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
				1.5° ≤ θ ≤ 7°	7° ≤ θ ≤ 180°	1.5° ≤ θ ≤ 7°	7° ≤ θ ≤ 180°
Pattern Rule vs Antenna System	Type	GHz	dBi				
FCC-25.209-Ka, Co-pol Az, vs AL-7103-Ka	Az , RHCP	27.60	47.20	-3.26	0.90	0.00%	0.08%

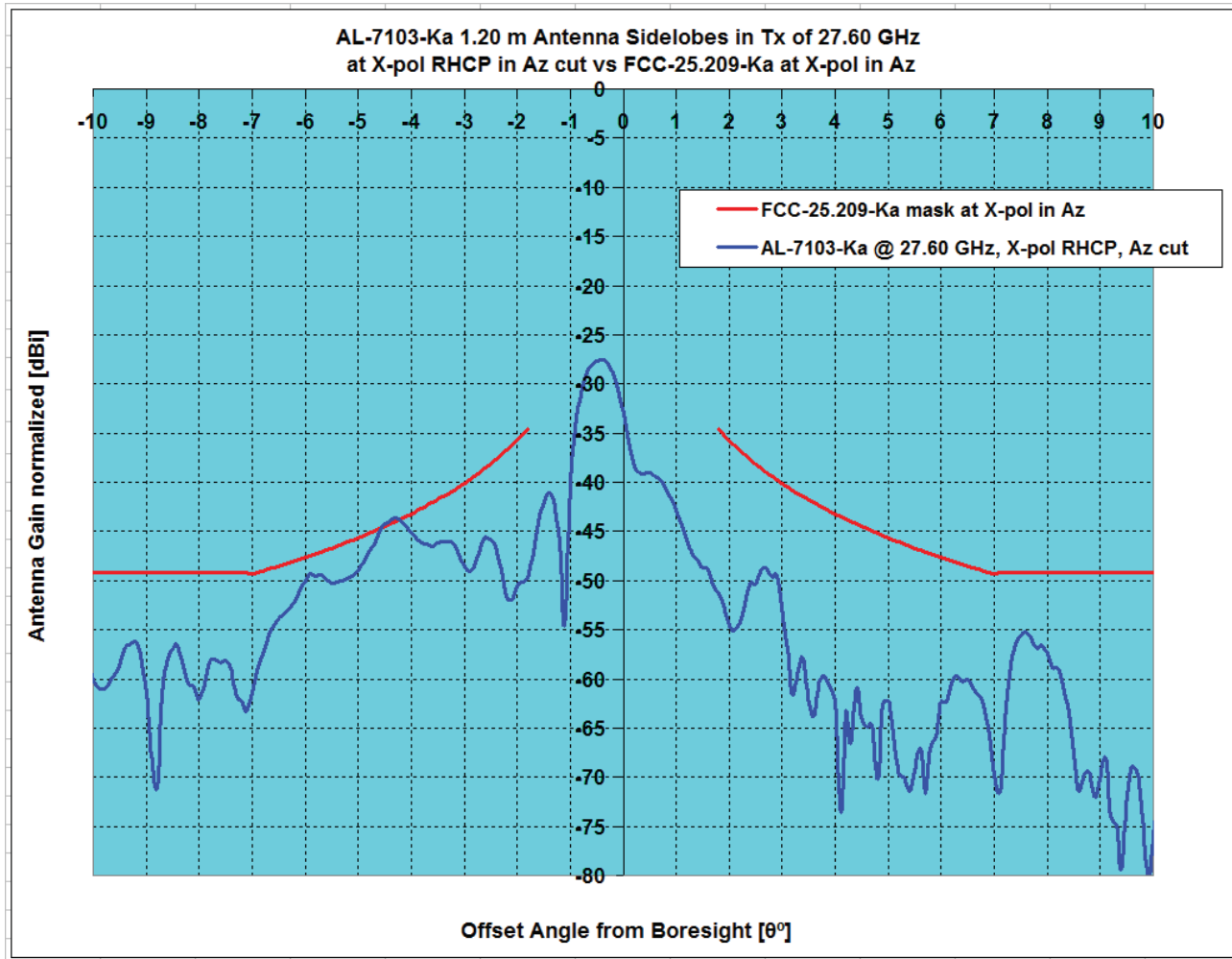
Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern, Co-pol, Elevation RHCP



Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
				3°≤θ≤7°	7°≤θ≤30°	3°≤θ≤7°	7°≤θ≤30°
Pattern Rule vs Antenna System	Type	GHz	dBi				
FCC-25.209-Ka, Co-pol EI, vs AL-7103-Ka	EI, RHCP	27.60	47.20	-9.09	-1.24	0.00%	0.00%



Description	Plane, CirP Type	Frequency GHz	Ant. Gain dBi	Peak Excursions dB		Over Mask %	
				3°≤θ≤7°	7°≤θ≤30°	3°≤θ≤7°	7°≤θ≤30°
FCC-25.209-Ka, Co-pol EI, vs AL-7103-Ka	EI, RHCP	27.60	47.20	-9.09	-1.24	0.00%	0.00%



Description	Plane, CirP Type	Frequency GHz	Ant. Gain dBi	Peak Excursions dB		Over Mask %	
				1.8°≤θ≤7°	1.8°≤θ≤9.2°	1.8°≤θ≤7°	1.8°≤θ≤9.2°
FCC-25.209-Ka, X-pol Az, vs AL-7103-Ka	Az , RHCP	27.60	47.20	0.44	0.44	2.83%	1.81%

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Azimuth LHCP, -180° to +180° @ 1.0° increment

28,30 GHz Antenna Pattern in Co-pol Az LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-179.0	-30.3	0.0	-30.3
-178.0	-30.9	0.0	-30.9
-177.0	-24.1	0.0	-24.1
-176.0	-27.0	0.0	-27.0
-175.0	-26.0	0.0	-26.0
-174.0	-32.8	0.0	-32.8
-173.0	-23.0	0.0	-23.0
-172.0	-45.2	0.0	-45.2
-171.0	-26.5	0.0	-26.5
-170.0	-28.4	0.0	-28.4
-169.0	-28.9	0.0	-28.9
-168.0	-38.7	0.0	-38.7
-167.0	-31.5	0.0	-31.5
-166.0	-32.7	0.0	-32.7
-165.0	-34.3	0.0	-34.3
-164.0	-29.4	0.0	-29.4
-163.0	-37.3	0.0	-37.3
-162.0	-34.9	0.0	-34.9
-161.0	-39.4	0.0	-39.4
-160.0	-27.7	0.0	-27.7
-159.0	-38.1	0.0	-38.1
-158.0	-35.8	0.0	-35.8
-157.0	-38.9	0.0	-38.9
-156.0	-38.9	0.0	-38.9
-155.0	-27.2	0.0	-27.2
-154.0	-30.6	0.0	-30.6
-153.0	-30.8	0.0	-30.8
-152.0	-33.4	0.0	-33.4
-151.0	-31.6	0.0	-31.6
-150.0	-31.7	0.0	-31.7
-149.0	-33.0	0.0	-33.0
-148.0	-38.0	0.0	-38.0
-147.0	-28.3	0.0	-28.3
-146.0	-36.8	0.0	-36.8
-145.0	-38.4	0.0	-38.4
-144.0	-32.8	0.0	-32.8
-143.0	-34.6	0.0	-34.6
-142.0	-47.7	0.0	-47.7
-141.0	-34.4	0.0	-34.4
-140.0	-28.4	0.0	-28.4
-139.0	-34.3	0.0	-34.3
-138.0	-28.0	0.0	-28.0
-137.0	-31.9	0.0	-31.9
-136.0	-28.8	0.0	-28.8
-135.0	-27.6	0.0	-27.6
-134.0	-25.1	0.0	-25.1
-133.0	-30.2	0.0	-30.2
-132.0	-30.5	0.0	-30.5
-131.0	-27.7	0.0	-27.7
-130.0	-26.3	0.0	-26.3
-129.0	-23.8	0.0	-23.8
-128.0	-26.0	0.0	-26.0
-127.0	-27.5	0.0	-27.5
-126.0	-37.2	0.0	-37.2
-125.0	-36.3	0.0	-36.3
-124.0	-31.3	0.0	-31.3
-123.0	-31.6	0.0	-31.6
-122.0	-26.4	0.0	-26.4
-121.0	-26.9	0.0	-26.9
-120.0	-27.2	0.0	-27.2

28,30 GHz Antenna Pattern in Co-pol Az LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	48.2		
1.0	20.0		
2.0	9.4	21.5	-12.1
3.0	10.0	17.1	-7.1
4.0	6.8	13.9	-7.2
5.0	1.4	11.5	-10.1
6.0	4.3	9.5	-5.3
7.0	1.7	7.9	-6.1
8.0	-6.5	8.0	-14.5
9.0	-6.0	8.0	-14.0
10.0	-4.7	7.0	-11.7
11.0	-10.8	6.0	-16.8
12.0	-9.8	5.0	-14.8
13.0	-6.0	4.2	-10.1
14.0	-9.1	3.3	-12.4
15.0	-8.5	2.6	-11.1
16.0	-13.4	1.9	-15.3
17.0	-14.0	1.2	-15.2
18.0	-17.6	0.6	-18.2
19.0	-22.1	0.0	-22.1
20.0	-15.5	-0.5	-15.0
21.0	-8.6	-1.1	-7.6
22.0	-14.2	-1.6	-12.6
23.0	-14.4	-2.0	-12.3
24.0	-17.7	-2.5	-15.2
25.0	-13.2	-2.9	-10.3
26.0	-9.8	-3.4	-6.4
27.0	-13.9	-3.8	-10.1
28.0	-19.1	-4.2	-14.9
29.0	-7.7	-4.6	-3.1
30.0	-9.8	-4.9	-4.9
31.0	-10.4	-5.3	-5.1
32.0	-8.5	-5.6	-2.9
33.0	-6.9	-6.0	-0.9
34.0	-8.9	-6.3	-2.6
35.0	-14.7	-6.6	-8.1
36.0	-23.5	-6.9	-16.6
37.0	-25.0	-7.2	-17.8
38.0	-20.0	-7.5	-12.5
39.0	-19.9	-7.8	-12.1
40.0	-17.1	-8.1	-9.0
41.0	-36.4	-8.3	-28.1
42.0	-22.8	-8.6	-14.2
43.0	-21.7	-8.8	-12.9
44.0	-20.2	-9.1	-11.2
45.0	-12.1	-9.3	-2.8
46.0	-12.2	-9.6	-2.6
47.0	-10.4	-9.8	-0.6
48.0	-10.7	-10.0	-0.7
49.0	-16.6	-10.0	-6.6
50.0	-18.9	-10.0	-8.9
51.0	-16.9	-10.0	-6.9
52.0	-14.8	-10.0	-4.8
53.0	-18.0	-10.0	-8.0
54.0	-22.0	-10.0	-12.0
55.0	-22.1	-10.0	-12.1
56.0	-18.7	-10.0	-8.7
57.0	-16.0	-10.0	-6.0
58.0	-24.7	-10.0	-14.7
59.0	-19.2	-10.0	-9.2

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Azimuth LHCP, -180° to +180° @ 1.0° increment

-119.0	-33.8	0.0	-33.8
-118.0	-27.1	0.0	-27.1
-117.0	-25.7	0.0	-25.7
-116.0	-25.3	0.0	-25.3
-115.0	-24.9	0.0	-24.9
-114.0	-23.3	0.0	-23.3
-113.0	-30.0	0.0	-30.0
-112.0	-24.9	0.0	-24.9
-111.0	-25.4	0.0	-25.4
-110.0	-25.5	0.0	-25.5
-109.0	-21.7	0.0	-21.7
-108.0	-22.6	0.0	-22.6
-107.0	-21.5	0.0	-21.5
-106.0	-16.7	0.0	-16.7
-105.0	-14.7	0.0	-14.7
-104.0	-14.6	0.0	-14.6
-103.0	-12.3	0.0	-12.3
-102.0	-12.3	0.0	-12.3
-101.0	-12.0	0.0	-12.0
-100.0	-14.1	0.0	-14.1
-99.0	-16.9	0.0	-16.9
-98.0	-18.7	0.0	-18.7
-97.0	-13.5	0.0	-13.5
-96.0	-14.1	0.0	-14.1
-95.0	-14.6	0.0	-14.6
-94.0	-13.0	0.0	-13.0
-93.0	-12.2	0.0	-12.2
-92.0	-12.9	0.0	-12.9
-91.0	-12.7	0.0	-12.7
-90.0	-19.7	0.0	-19.7
-89.0	-13.4	0.0	-13.4
-88.0	-15.1	0.0	-15.1
-87.0	-15.6	0.0	-15.6
-86.0	-12.8	0.0	-12.8
-85.0	-27.9	-10.0	-17.9
-84.0	-13.8	-10.0	-3.8
-83.0	-18.1	-10.0	-8.1
-82.0	-19.9	-10.0	-9.9
-81.0	-16.8	-10.0	-6.8
-80.0	-34.9	-10.0	-24.9
-79.0	-15.6	-10.0	-5.6
-78.0	-15.5	-10.0	-5.5
-77.0	-31.6	-10.0	-21.6
-76.0	-15.6	-10.0	-5.6
-75.0	-16.4	-10.0	-6.4
-74.0	-18.1	-10.0	-8.1
-73.0	-18.2	-10.0	-8.2
-72.0	-20.5	-10.0	-10.5
-71.0	-17.7	-10.0	-7.7
-70.0	-17.9	-10.0	-7.9
-69.0	-25.4	-10.0	-15.4
-68.0	-19.7	-10.0	-9.7
-67.0	-16.8	-10.0	-6.8
-66.0	-24.3	-10.0	-14.3
-65.0	-22.1	-10.0	-12.1
-64.0	-15.0	-10.0	-5.0
-63.0	-13.4	-10.0	-3.4
-62.0	-22.5	-10.0	-12.5
-61.0	-19.0	-10.0	-9.0
-60.0	-20.8	-10.0	-10.8
-59.0	-16.2	-10.0	-6.2
-58.0	-15.0	-10.0	-5.0
-57.0	-15.1	-10.0	-5.1

60.0	-27.5	-10.0	-17.5
61.0	-14.6	-10.0	-4.6
62.0	-16.6	-10.0	-6.6
63.0	-15.3	-10.0	-5.3
64.0	-20.0	-10.0	-10.0
65.0	-21.0	-10.0	-11.0
66.0	-20.6	-10.0	-10.6
67.0	-18.0	-10.0	-8.0
68.0	-19.1	-10.0	-9.1
69.0	-21.6	-10.0	-11.6
70.0	-17.3	-10.0	-7.3
71.0	-20.6	-10.0	-10.6
72.0	-19.9	-10.0	-9.9
73.0	-22.0	-10.0	-12.0
74.0	-14.3	-10.0	-4.3
75.0	-17.6	-10.0	-7.6
76.0	-14.8	-10.0	-4.8
77.0	-20.9	-10.0	-10.9
78.0	-17.3	-10.0	-7.3
79.0	-26.4	-10.0	-16.4
80.0	-27.1	-10.0	-17.1
81.0	-33.8	-10.0	-23.8
82.0	-26.9	-10.0	-16.9
83.0	-23.4	-10.0	-13.4
84.0	-28.3	-10.0	-18.3
85.0	-17.3	-10.0	-7.3
86.0	-26.8	0.0	-26.8
87.0	-20.5	0.0	-20.5
88.0	-30.2	0.0	-30.2
89.0	-20.4	0.0	-20.4
90.0	-21.4	0.0	-21.4
91.0	-27.9	0.0	-27.9
92.0	-31.0	0.0	-31.0
93.0	-25.3	0.0	-25.3
94.0	-23.4	0.0	-23.4
95.0	-20.9	0.0	-20.9
96.0	-28.4	0.0	-28.4
97.0	-19.2	0.0	-19.2
98.0	-22.3	0.0	-22.3
99.0	-18.2	0.0	-18.2
100.0	-21.9	0.0	-21.9
101.0	-25.2	0.0	-25.2
102.0	-24.7	0.0	-24.7
103.0	-19.8	0.0	-19.8
104.0	-20.9	0.0	-20.9
105.0	-26.2	0.0	-26.2
106.0	-20.1	0.0	-20.1
107.0	-31.4	0.0	-31.4
108.0	-22.8	0.0	-22.8
109.0	-19.1	0.0	-19.1
110.0	-24.9	0.0	-24.9
111.0	-20.4	0.0	-20.4
112.0	-26.8	0.0	-26.8
113.0	-34.9	0.0	-34.9
114.0	-35.1	0.0	-35.1
115.0	-21.1	0.0	-21.1
116.0	-24.3	0.0	-24.3
117.0	-30.2	0.0	-30.2
118.0	-19.4	0.0	-19.4
119.0	-19.0	0.0	-19.0
120.0	-45.6	0.0	-45.6
121.0	-27.7	0.0	-27.7
122.0	-20.8	0.0	-20.8

Orbit Communication Systems Ltd.
AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
Co-pol Azimuth LHCP, -180° to +180° @ 1.0° increment

-56.0	-34.5	-10.0	-24.5
-55.0	-19.8	-10.0	-9.8
-54.0	-17.1	-10.0	-7.1
-53.0	-15.2	-10.0	-5.2
-52.0	-26.5	-10.0	-16.5
-51.0	-21.9	-10.0	-11.9
-50.0	-18.2	-10.0	-8.2
-49.0	-13.5	-10.0	-3.5
-48.0	-9.1	-10.0	0.9
-47.0	-11.2	-9.8	-1.4
-46.0	-11.2	-9.6	-1.7
-45.0	-12.4	-9.3	-3.1
-44.0	-12.6	-9.1	-3.5
-43.0	-14.5	-8.8	-5.7
-42.0	-11.3	-8.6	-2.7
-41.0	-18.6	-8.3	-10.3
-40.0	-12.8	-8.1	-4.8
-39.0	-11.2	-7.8	-3.4
-38.0	-10.4	-7.5	-2.9
-37.0	-9.3	-7.2	-2.1
-36.0	-11.5	-6.9	-4.6
-35.0	-12.9	-6.6	-6.3
-34.0	-16.4	-6.3	-10.1
-33.0	-15.3	-6.0	-9.4
-32.0	-12.8	-5.6	-7.2
-31.0	-8.2	-5.3	-2.9
-30.0	-10.2	-4.9	-5.3
-29.0	-11.2	-4.6	-6.7
-28.0	-7.4	-4.2	-3.2
-27.0	-5.8	-3.8	-2.0
-26.0	-19.7	-3.4	-16.3
-25.0	-4.6	-2.9	-1.6
-24.0	-4.7	-2.5	-2.2
-23.0	-10.9	-2.0	-8.9
-22.0	-6.7	-1.6	-5.1
-21.0	-7.8	-1.1	-6.8
-20.0	-3.3	-0.5	-2.8
-19.0	-3.4	0.0	-3.5
-18.0	-2.5	0.6	-3.1
-17.0	-4.7	1.2	-6.0
-16.0	-6.5	1.9	-8.4
-15.0	-1.1	2.6	-3.7
-14.0	0.3	3.3	-3.1
-13.0	-8.1	4.2	-12.3
-12.0	-0.7	5.0	-5.7
-11.0	-5.0	6.0	-11.0
-10.0	-11.9	7.0	-18.9
-9.0	-1.9	8.0	-9.9
-8.0	-8.2	8.0	-16.2
-7.0	2.0	7.9	-5.8
-6.0	-16.0	9.5	-25.5
-5.0	3.5	11.5	-8.0
-4.0	5.3	13.9	-8.6
-3.0	11.3	17.1	-5.8
-2.0	17.7	21.5	-3.8
-1.0	14.0		
0.0	48.2		

123.0	-26.2	0.0	-26.2
124.0	-29.9	0.0	-29.9
125.0	-33.1	0.0	-33.1
126.0	-33.4	0.0	-33.4
127.0	-27.3	0.0	-27.3
128.0	-26.6	0.0	-26.6
129.0	-22.4	0.0	-22.4
130.0	-19.1	0.0	-19.1
131.0	-19.6	0.0	-19.6
132.0	-28.5	0.0	-28.5
133.0	-20.0	0.0	-20.0
134.0	-23.9	0.0	-23.9
135.0	-24.0	0.0	-24.0
136.0	-25.9	0.0	-25.9
137.0	-21.6	0.0	-21.6
138.0	-25.2	0.0	-25.2
139.0	-29.6	0.0	-29.6
140.0	-26.8	0.0	-26.8
141.0	-23.9	0.0	-23.9
142.0	-22.7	0.0	-22.7
143.0	-23.8	0.0	-23.8
144.0	-30.0	0.0	-30.0
145.0	-24.1	0.0	-24.1
146.0	-26.8	0.0	-26.8
147.0	-24.4	0.0	-24.4
148.0	-25.6	0.0	-25.6
149.0	-27.2	0.0	-27.2
150.0	-37.3	0.0	-37.3
151.0	-18.7	0.0	-18.7
152.0	-20.3	0.0	-20.3
153.0	-31.6	0.0	-31.6
154.0	-30.8	0.0	-30.8
155.0	-23.1	0.0	-23.1
156.0	-29.6	0.0	-29.6
157.0	-28.1	0.0	-28.1
158.0	-23.4	0.0	-23.4
159.0	-23.6	0.0	-23.6
160.0	-23.6	0.0	-23.6
161.0	-28.8	0.0	-28.8
162.0	-30.2	0.0	-30.2
163.0	-27.8	0.0	-27.8
164.0	-37.0	0.0	-37.0
165.0	-25.7	0.0	-25.7
166.0	-26.1	0.0	-26.1
167.0	-25.9	0.0	-25.9
168.0	-27.0	0.0	-27.0
169.0	-22.5	0.0	-22.5
170.0	-37.3	0.0	-37.3
171.0	-22.4	0.0	-22.4
172.0	-26.0	0.0	-26.0
173.0	-32.0	0.0	-32.0
174.0	-25.8	0.0	-25.8
175.0	-25.5	0.0	-25.5
176.0	-30.4	0.0	-30.4
177.0	-26.3	0.0	-26.3
178.0	-34.8	0.0	-34.8
179.0	-26.2	0.0	-26.2

Orbit Communication Systems Ltd.
AL AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
Co-pol Azimuth LHCP, -10° to +10° @ 0.1° increment

28.30 GHz Antenna Pattern in Co-pol Az LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-10.0	-11.9	7.0	-18.9
-9.9	-23.4	7.1	-30.5
-9.8	-9.6	7.2	-16.8
-9.7	-6.6	7.3	-13.9
-9.6	-6.7	7.4	-14.2
-9.5	-10.2	7.6	-17.8
-9.4	-23.4	7.7	-31.1
-9.3	-11.3	7.8	-19.1
-9.2	-5.1	8.0	-13.1
-9.1	-2.4	8.0	-10.4
-9.0	-1.9	8.0	-9.9
-8.9	-2.9	8.0	-10.9
-8.8	-5.7	8.0	-13.7
-8.7	-11.6	8.0	-19.6
-8.6	-13.6	8.0	-21.6
-8.5	-9.5	8.0	-17.5
-8.4	-8.5	8.0	-16.5
-8.3	-10.8	8.0	-18.8
-8.2	-15.6	8.0	-23.6
-8.1	-12.1	8.0	-20.1
-8.0	-8.2	8.0	-16.2
-7.9	-6.1	8.0	-14.1
-7.8	-6.7	8.0	-14.7
-7.7	-9.6	8.0	-17.6
-7.6	-18.8	8.0	-26.8
-7.5	-18.1	8.0	-26.1
-7.4	-7.7	8.0	-15.7
-7.3	-3.4	8.0	-11.4
-7.2	-0.3	8.0	-8.3
-7.1	1.4	8.0	-6.6
-7.0	2.0	7.9	-5.8
-6.9	1.2	8.0	-6.9
-6.8	-1.4	8.2	-9.6
-6.7	-6.8	8.3	-15.2
-6.6	-9.6	8.5	-18.1
-6.5	-3.0	8.7	-11.7
-6.4	0.1	8.8	-8.7
-6.3	0.8	9.0	-8.2
-6.2	-0.4	9.2	-9.6
-6.1	-4.6	9.4	-14.0
-6.0	-16.0	9.5	-25.5
-5.9	-8.3	9.7	-18.0
-5.8	-2.4	9.9	-12.3
-5.7	-0.7	10.1	-10.8
-5.6	-0.5	10.3	-10.8
-5.5	-1.1	10.5	-11.6
-5.4	-1.1	10.7	-11.8
-5.3	0.1	10.9	-10.8
-5.2	1.5	11.1	-9.6
-5.1	2.6	11.3	-8.7
-5.0	3.5	11.5	-8.0
-4.9	4.2	11.7	-7.6
-4.8	4.3	12.0	-7.7
-4.7	3.2	12.2	-9.0
-4.6	0.4	12.4	-12.0
-4.5	-0.2	12.7	-12.9
-4.4	3.2	12.9	-9.7
-4.3	6.1	13.2	-7.0
-4.2	7.4	13.4	-6.0
-4.1	7.0	13.7	-6.6

28.30 GHz Antenna Pattern in Co-pol Az LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	48.2		
0.1	47.8		
0.2	47.0		
0.3	45.7		
0.4	43.9		
0.5	41.4		
0.6	38.5		
0.7	35.0		
0.8	30.8		
0.9	25.9		
1.0	20.0		
1.1	16.2		
1.2	18.8		
1.3	20.8		
1.4	21.2		
1.5	20.2	24.6	-4.4
1.6	18.1	23.9	-5.8
1.7	15.4	23.2	-7.9
1.8	12.7	22.6	-9.9
1.9	10.9	22.0	-11.2
2.0	9.4	21.5	-12.1
2.1	10.0	20.9	-10.9
2.2	12.5	20.4	-7.9
2.3	14.3	20.0	-5.7
2.4	14.8	19.5	-4.7
2.5	14.4	19.1	-4.6
2.6	13.0	18.6	-5.6
2.7	10.6	18.2	-7.6
2.8	9.0	17.8	-8.8
2.9	9.3	17.4	-8.1
3.0	10.0	17.1	-7.1
3.1	9.7	16.7	-7.0
3.2	8.7	16.4	-7.7
3.3	8.0	16.0	-8.1
3.4	8.1	15.7	-7.6
3.5	9.1	15.4	-6.3
3.6	10.2	15.1	-4.9
3.7	10.7	14.8	-4.1
3.8	10.5	14.5	-4.0
3.9	9.2	14.2	-5.0
4.0	6.8	13.9	-7.2
4.1	3.1	13.7	-10.6
4.2	-0.2	13.4	-13.6
4.3	0.3	13.2	-12.9
4.4	0.8	12.9	-12.1
4.5	-1.9	12.7	-14.6
4.6	-8.1	12.4	-20.5
4.7	-3.9	12.2	-16.1
4.8	0.8	12.0	-11.2
4.9	2.3	11.7	-9.4
5.0	1.4	11.5	-10.1
5.1	-2.3	11.3	-13.6
5.2	-8.9	11.1	-20.0
5.3	-2.5	10.9	-13.4
5.4	1.1	10.7	-9.6
5.5	1.1	10.5	-9.4
5.6	-2.8	10.3	-13.0
5.7	-13.6	10.1	-23.7
5.8	-2.9	9.9	-12.8
5.9	2.4	9.7	-7.3

Orbit Communication Systems Ltd.
 AL AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Azimuth LHCP, -10° to +10° @ 0.1° increment

-4.0	5.3	13.9	-8.6
-3.9	3.2	14.2	-11.0
-3.8	4.3	14.5	-10.2
-3.7	7.1	14.8	-7.7
-3.6	9.3	15.1	-5.8
-3.5	10.6	15.4	-4.8
-3.4	11.6	15.7	-4.1
-3.3	12.2	16.0	-3.8
-3.2	12.4	16.4	-3.9
-3.1	12.0	16.7	-4.7
-3.0	11.3	17.1	-5.8
-2.9	11.6	17.4	-5.9
-2.8	13.5	17.8	-4.3
-2.7	15.5	18.2	-2.7
-2.6	16.6	18.6	-2.0
-2.5	16.9	19.1	-2.2
-2.4	16.5	19.5	-3.0
-2.3	16.3	20.0	-3.6
-2.2	17.0	20.4	-3.4
-2.1	17.8	20.9	-3.1
-2.0	17.7	21.5	-3.8
-1.9	16.0	22.0	-6.0
-1.8	12.4	22.6	-10.2
-1.7	12.3	23.2	-10.9
-1.6	16.9	23.9	-7.0
-1.5	19.8	24.6	-4.8
-1.4	21.0		
-1.3	20.9		
-1.2	20.0		
-1.1	17.7		
-1.0	14.0		
-0.9	21.3		
-0.8	29.3		
-0.7	34.7		
-0.6	38.9		
-0.5	42.0		
-0.4	44.5		
-0.3	46.2		
-0.2	47.4		
-0.1	48.1		
0.0	48.2		

6.0	4.3	9.5	-5.3
6.1	3.9	9.4	-5.4
6.2	1.9	9.2	-7.3
6.3	-2.4	9.0	-11.4
6.4	-11.7	8.8	-20.5
6.5	-14.4	8.7	-23.0
6.6	-8.0	8.5	-16.5
6.7	-4.6	8.3	-12.9
6.8	-1.2	8.2	-9.4
6.9	0.8	8.0	-7.2
7.0	1.7	7.9	-6.1
7.1	0.9	8.0	-7.1
7.2	-2.3	8.0	-10.3
7.3	-9.1	8.0	-17.1
7.4	-6.9	8.0	-14.9
7.5	-0.9	8.0	-8.9
7.6	1.5	8.0	-6.5
7.7	2.0	8.0	-6.0
7.8	0.9	8.0	-7.1
7.9	-1.7	8.0	-9.7
8.0	-6.5	8.0	-14.5
8.1	-7.6	8.0	-15.6
8.2	-3.2	8.0	-11.2
8.3	-0.6	8.0	-8.6
8.4	0.0	8.0	-8.0
8.5	-0.9	8.0	-8.9
8.6	-4.0	8.0	-12.0
8.7	-10.8	8.0	-18.8
8.8	-15.6	8.0	-23.6
8.9	-8.3	8.0	-16.3
9.0	-6.0	8.0	-14.0
9.1	-6.1	8.0	-14.1
9.2	-9.2	8.0	-17.2
9.3	-12.4	7.8	-20.2
9.4	-9.7	7.7	-17.4
9.5	-7.1	7.6	-14.6
9.6	-8.2	7.4	-15.6
9.7	-14.0	7.3	-21.3
9.8	-21.9	7.2	-29.1
9.9	-8.7	7.1	-15.8
10.0	-4.7	7.0	-11.7

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Elevation LHCP, -30° to +30° @ 0.5° increment

28.30 GHz Antenna Pattern in Co-pol EI LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-30.0	-11.0	-4.9	-6.1
-29.5	-10.4	-4.7	-5.7
-29.0	-11.3	-4.6	-6.8
-28.5	-17.9	-4.4	-13.5
-28.0	-16.4	-4.2	-12.2
-27.5	-30.6	-4.0	-26.6
-27.0	-20.6	-3.8	-16.8
-26.5	-17.0	-3.6	-13.4
-26.0	-11.3	-3.4	-8.0
-25.5	-14.7	-3.2	-11.6
-25.0	-33.5	-2.9	-30.6
-24.5	-27.2	-2.7	-24.4
-24.0	-33.7	-2.5	-31.2
-23.5	-29.3	-2.3	-27.0
-23.0	-14.9	-2.0	-12.8
-22.5	-13.3	-1.8	-11.5
-22.0	-18.8	-1.6	-17.3
-21.5	-19.2	-1.3	-17.9
-21.0	-20.1	-1.1	-19.0
-20.5	-27.2	-0.8	-26.4
-20.0	-17.3	-0.5	-16.8
-19.5	-13.0	-0.3	-12.8
-19.0	-14.1	0.0	-14.1
-18.5	-14.3	0.3	-14.6
-18.0	-8.3	0.6	-8.9
-17.5	-6.7	0.9	-7.6
-17.0	-14.0	1.2	-15.3
-16.5	-19.5	1.6	-21.1
-16.0	-18.4	1.9	-20.3
-15.5	-11.2	2.2	-13.4
-15.0	-7.6	2.6	-10.2
-14.5	-8.8	3.0	-11.8
-14.0	-20.3	3.3	-23.7
-13.5	-8.5	3.7	-12.3
-13.0	-7.6	4.2	-11.7
-12.5	-7.9	4.6	-12.4
-12.0	-13.3	5.0	-18.3
-11.5	-11.4	5.5	-16.9
-11.0	-9.3	6.0	-15.3
-10.5	-14.1	6.5	-20.5
-10.0	-11.8	7.0	-18.8
-9.5	-19.5	7.6	-27.0
-9.0	-4.0	8.1	-12.1
-8.5	-1.1	8.8	-9.9
-8.0	-10.4	9.4	-19.8
-7.5	-9.7	10.1	-19.8
-7.0	-1.0	10.9	-11.9
-6.5	-2.5	11.7	-14.2
-6.0	1.5	12.5	-11.1
-5.5	0.8	13.5	-12.7
-5.0	0.8	14.5	-13.7
-4.5	-1.0	15.7	-16.7
-4.0	5.4	16.9	-11.6
-3.5	5.8	18.4	-12.6
-3.0	10.1		
-2.5	13.4		
-2.0	10.7		
-1.5	21.2		
-1.0	23.1		
-0.5	42.5		
0.0	48.2		

28.30 GHz Antenna Pattern in Co-pol EI LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	48.2		
0.5	40.0		
1.0	13.7		
1.5	18.5		
2.0	17.2		
2.5	17.4		
3.0	10.0		
3.5	3.8	18.4	-14.6
4.0	9.2	16.9	-7.8
4.5	-4.7	15.7	-20.4
5.0	-4.0	14.5	-18.6
5.5	1.1	13.5	-12.4
6.0	-2.8	12.5	-15.3
6.5	-1.9	11.7	-13.6
7.0	2.3	10.9	-8.6
7.5	-11.6	10.1	-21.7
8.0	-18.4	9.4	-27.8
8.5	-5.8	8.8	-14.6
9.0	-2.0	8.1	-10.1
9.5	-10.6	7.6	-18.2
10.0	-8.7	7.0	-15.7
10.5	-3.7	6.5	-10.2
11.0	-3.5	6.0	-9.4
11.5	0.9	5.5	-4.6
12.0	-6.0	5.0	-11.0
12.5	-1.4	4.6	-5.9
13.0	-3.6	4.2	-7.8
13.5	-5.3	3.7	-9.0
14.0	-3.7	3.3	-7.0
14.5	1.8	3.0	-1.2
15.0	-4.6	2.6	-7.2
15.5	-1.8	2.2	-4.1
16.0	-4.4	1.9	-6.3
16.5	-2.8	1.6	-4.4
17.0	-5.9	1.2	-7.1
17.5	-1.4	0.9	-2.4
18.0	-3.0	0.6	-3.6
18.5	-3.5	0.3	-3.8
19.0	-3.1	0.0	-3.1
19.5	-4.4	-0.3	-4.2
20.0	-5.2	-0.5	-4.7
20.5	-2.2	-0.8	-1.4
21.0	-5.2	-1.1	-4.1
21.5	-11.0	-1.3	-9.7
22.0	-4.1	-1.6	-2.5
22.5	-5.2	-1.8	-3.4
23.0	-2.6	-2.0	-0.5
23.5	-7.5	-2.3	-5.2
24.0	-2.6	-2.5	-0.1
24.5	-5.0	-2.7	-2.3
25.0	-5.2	-2.9	-2.2
25.5	-4.2	-3.2	-1.1
26.0	-4.3	-3.4	-0.9
26.5	-6.0	-3.6	-2.4
27.0	-6.6	-3.8	-2.8
27.5	-5.5	-4.0	-1.5
28.0	-7.2	-4.2	-3.0
28.5	-8.2	-4.4	-3.8
29.0	-9.6	-4.6	-5.0
29.5	-9.6	-4.7	-4.8
30.0	-7.8	-4.9	-2.8

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Elevation LHCP, -10° to +10° @ 0.1° increment

28.30 GHz Antenna Pattern in Co-pol EI LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-10.0	-11.8	7.0	-18.8
-9.9	-12.0	7.1	-19.1
-9.8	-9.8	7.2	-17.0
-9.7	-10.0	7.3	-17.3
-9.6	-12.8	7.4	-20.2
-9.5	-19.5	7.6	-27.0
-9.4	-10.1	7.7	-17.7
-9.3	-5.1	7.8	-12.9
-9.2	-3.1	7.9	-11.0
-9.1	-2.8	8.0	-10.9
-9.0	-4.0	8.1	-12.1
-8.9	-6.0	8.3	-14.3
-8.8	-6.0	8.4	-14.4
-8.7	-3.4	8.5	-11.9
-8.6	-1.6	8.6	-10.2
-8.5	-1.1	8.8	-9.9
-8.4	-1.6	8.9	-10.5
-8.3	-3.4	9.0	-12.5
-8.2	-7.5	9.2	-16.6
-8.1	-11.6	9.3	-20.9
-8.0	-10.4	9.4	-19.8
-7.9	-5.4	9.6	-15.0
-7.8	-3.4	9.7	-13.1
-7.7	-3.1	9.8	-12.9
-7.6	-4.9	10.0	-14.9
-7.5	-9.7	10.1	-19.8
-7.4	-29.5	10.3	-39.7
-7.3	-8.9	10.4	-19.3
-7.2	-3.8	10.6	-14.4
-7.1	-1.9	10.7	-12.7
-7.0	-1.0	10.9	-11.9
-6.9	-0.2	11.0	-11.2
-6.8	0.3	11.2	-10.9
-6.7	0.3	11.3	-11.1
-6.6	-1.0	11.5	-12.5
-6.5	-2.5	11.7	-14.2
-6.4	-1.3	11.8	-13.1
-6.3	1.7	12.0	-10.3
-6.2	3.3	12.2	-8.9
-6.1	3.5	12.4	-8.9
-6.0	1.5	12.5	-11.1
-5.9	-3.0	12.7	-15.8
-5.8	-6.6	12.9	-19.5
-5.7	-1.6	13.1	-14.7
-5.6	1.0	13.3	-12.3
-5.5	0.8	13.5	-12.7
-5.4	-2.5	13.7	-16.2
-5.3	-15.0	13.9	-28.9
-5.2	-6.2	14.1	-20.3
-5.1	-0.8	14.3	-15.1
-5.0	0.8	14.5	-13.7
-4.9	-1.1	14.7	-15.8
-4.8	-7.2	15.0	-22.2
-4.7	-12.4	15.2	-27.6
-4.6	-3.6	15.4	-19.0
-4.5	-1.0	15.7	-16.7
-4.4	-2.1	15.9	-18.0
-4.3	-5.4	16.2	-21.6
-4.2	-1.4	16.4	-17.9
-4.1	3.0	16.7	-13.7

28.30 GHz Antenna Pattern in Co-pol EI LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	48.2		
0.1	47.7		
0.2	46.8		
0.3	45.2		
0.4	43.0		
0.5	40.0		
0.6	36.2		
0.7	31.1		
0.8	24.2		
0.9	14.9		
1.0	13.7		
1.1	16.9		
1.2	19.1		
1.3	20.1		
1.4	20.0		
1.5	18.5		
1.6	16.4		
1.7	15.4		
1.8	16.4		
1.9	17.4		
2.0	17.2		
2.1	15.9		
2.2	15.0		
2.3	15.7		
2.4	17.0		
2.5	17.4		
2.6	16.9		
2.7	15.6		
2.8	13.3		
2.9	11.1		
3.0	10.0		
3.1	9.7		
3.2	8.8		
3.3	7.5		
3.4	5.7		
3.5	3.8	18.4	-14.6
3.6	2.5	18.1	-15.6
3.7	3.5	17.8	-14.3
3.8	6.1	17.5	-11.4
3.9	8.3	17.2	-8.9
4.0	9.2	16.9	-7.8
4.1	9.0	16.7	-7.6
4.2	7.7	16.4	-8.7
4.3	4.7	16.2	-11.5
4.4	-0.4	15.9	-16.3
4.5	-4.7	15.7	-20.4
4.6	-3.2	15.4	-18.7
4.7	-1.8	15.2	-17.0
4.8	-2.1	15.0	-17.1
4.9	-4.0	14.7	-18.7
5.0	-4.0	14.5	-18.6
5.1	-4.3	14.3	-18.6
5.2	-4.8	14.1	-18.9
5.3	-4.0	13.9	-17.9
5.4	-0.4	13.7	-14.1
5.5	1.1	13.5	-12.4
5.6	2.0	13.3	-11.3
5.7	0.4	13.1	-12.7
5.8	-2.9	12.9	-15.8
5.9	-5.8	12.7	-18.5

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Elevation LHCP, -10° to +10° @ 0.1° increment

-4.0	5.4	16.9	-11.6
-3.9	6.3	17.2	-11.0
-3.8	6.3	17.5	-11.2
-3.7	6.1	17.8	-11.7
-3.6	5.8	18.1	-12.3
-3.5	5.8	18.4	-12.6
-3.4	6.5		
-3.3	8.0		
-3.2	9.7		
-3.1	10.5		
-3.0	10.1		
-2.9	8.1		
-2.8	5.8		
-2.7	8.2		
-2.6	11.6		
-2.5	13.4		
-2.4	13.9		
-2.3	13.4		
-2.2	12.2		
-2.1	11.3		
-2.0	10.7		
-1.9	11.4		
-1.8	14.2		
-1.7	17.4		
-1.6	19.9		
-1.5	21.2		
-1.4	21.2		
-1.3	20.0		
-1.2	18.3		
-1.1	19.1		
-1.0	23.1		
-0.9	27.7		
-0.8	32.1		
-0.7	36.1		
-0.6	39.6		
-0.5	42.5		
-0.4	44.7		
-0.3	46.4		
-0.2	47.5		
-0.1	48.1		
0.0	48.2		

6.0	-2.8	12.5	-15.3
6.1	0.7	12.4	-11.6
6.2	2.1	12.2	-10.1
6.3	1.5	12.0	-10.6
6.4	-0.6	11.8	-12.4
6.5	-1.9	11.7	-13.6
6.6	-0.7	11.5	-12.2
6.7	1.0	11.3	-10.4
6.8	2.4	11.2	-8.7
6.9	2.7	11.0	-8.3
7.0	2.3	10.9	-8.6
7.1	0.7	10.7	-10.0
7.2	-1.8	10.6	-12.3
7.3	-5.3	10.4	-15.7
7.4	-10.9	10.3	-21.2
7.5	-11.6	10.1	-21.7
7.6	-8.5	10.0	-18.5
7.7	-7.2	9.8	-17.1
7.8	-8.1	9.7	-17.8
7.9	-14.2	9.6	-23.8
8.0	-18.4	9.4	-27.8
8.1	-7.9	9.3	-17.2
8.2	-4.0	9.2	-13.1
8.3	-2.7	9.0	-11.7
8.4	-3.4	8.9	-12.3
8.5	-5.8	8.8	-14.6
8.6	-8.5	8.6	-17.2
8.7	-5.8	8.5	-14.3
8.8	-2.7	8.4	-11.1
8.9	-1.2	8.3	-9.5
9.0	-2.0	8.1	-10.1
9.1	-3.7	8.0	-11.7
9.2	-7.6	7.9	-15.5
9.3	-12.8	7.8	-20.5
9.4	-12.9	7.7	-20.6
9.5	-10.6	7.6	-18.2
9.6	-9.6	7.4	-17.1
9.7	-11.8	7.3	-19.2
9.8	-15.2	7.2	-22.4
9.9	-13.4	7.1	-20.5
10.0	-8.7	7.0	-15.7

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 X-pol Azimuth LHCP, -10° to +10° @ 0.1° increment

28.30 GHz Antenna Pattern in X-pol Az LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-10.0	-16.3	-2.0	-14.3
-9.9	-15.3	-2.0	-13.3
-9.8	-16.1	-2.0	-14.1
-9.7	-21.6	-2.0	-19.6
-9.6	-29.6	-2.0	-27.6
-9.5	-17.2	-2.0	-15.2
-9.4	-10.7	-2.0	-8.7
-9.3	-8.5	-2.0	-6.5
-9.2	-7.0	-2.0	-5.0
-9.1	-7.2	-2.0	-5.2
-9.0	-7.2	-2.0	-5.2
-8.9	-6.6	-2.0	-4.6
-8.8	-6.4	-2.0	-4.4
-8.7	-5.8	-2.0	-3.8
-8.6	-6.4	-2.0	-4.4
-8.5	-8.3	-2.0	-6.3
-8.4	-12.3	-2.0	-10.3
-8.3	-15.0	-2.0	-13.0
-8.2	-14.5	-2.0	-12.5
-8.1	-11.1	-2.0	-9.1
-8.0	-8.7	-2.0	-6.7
-7.9	-8.1	-2.0	-6.1
-7.8	-7.5	-2.0	-5.5
-7.7	-8.4	-2.0	-6.4
-7.6	-9.3	-2.0	-7.3
-7.5	-11.0	-2.0	-9.0
-7.4	-13.9	-2.0	-11.9
-7.3	-19.4	-2.0	-17.4
-7.2	-22.5	-2.0	-20.5
-7.1	-28.3	-2.0	-26.3
-7.0	-22.6	-2.1	-20.5
-6.9	-12.7	-2.0	-10.8
-6.8	-8.1	-1.8	-6.3
-6.7	-4.9	-1.7	-3.2
-6.6	-3.7	-1.5	-2.2
-6.5	-3.2	-1.3	-1.9
-6.4	-4.4	-1.2	-3.3
-6.3	-7.2	-1.0	-6.2
-6.2	-12.1	-0.8	-11.3
-6.1	-15.5	-0.6	-14.9
-6.0	-12.7	-0.5	-12.2
-5.9	-9.7	-0.3	-9.4
-5.8	-8.6	-0.1	-8.5
-5.7	-6.7	0.1	-6.8
-5.6	-5.1	0.3	-5.4
-5.5	-3.9	0.5	-4.4
-5.4	-3.5	0.7	-4.2
-5.3	-4.6	0.9	-5.5
-5.2	-7.2	1.1	-8.3
-5.1	-12.3	1.3	-13.6
-5.0	-17.0	1.5	-18.5
-4.9	-17.8	1.7	-19.5
-4.8	-10.8	2.0	-12.8
-4.7	-4.8	2.2	-7.0
-4.6	-1.2	2.4	-3.6
-4.5	1.1	2.7	-1.6
-4.4	2.0	2.9	-0.9
-4.3	1.6	3.2	-1.6
-4.2	-0.7	3.4	-4.1
-4.1	-5.7	3.7	-9.4

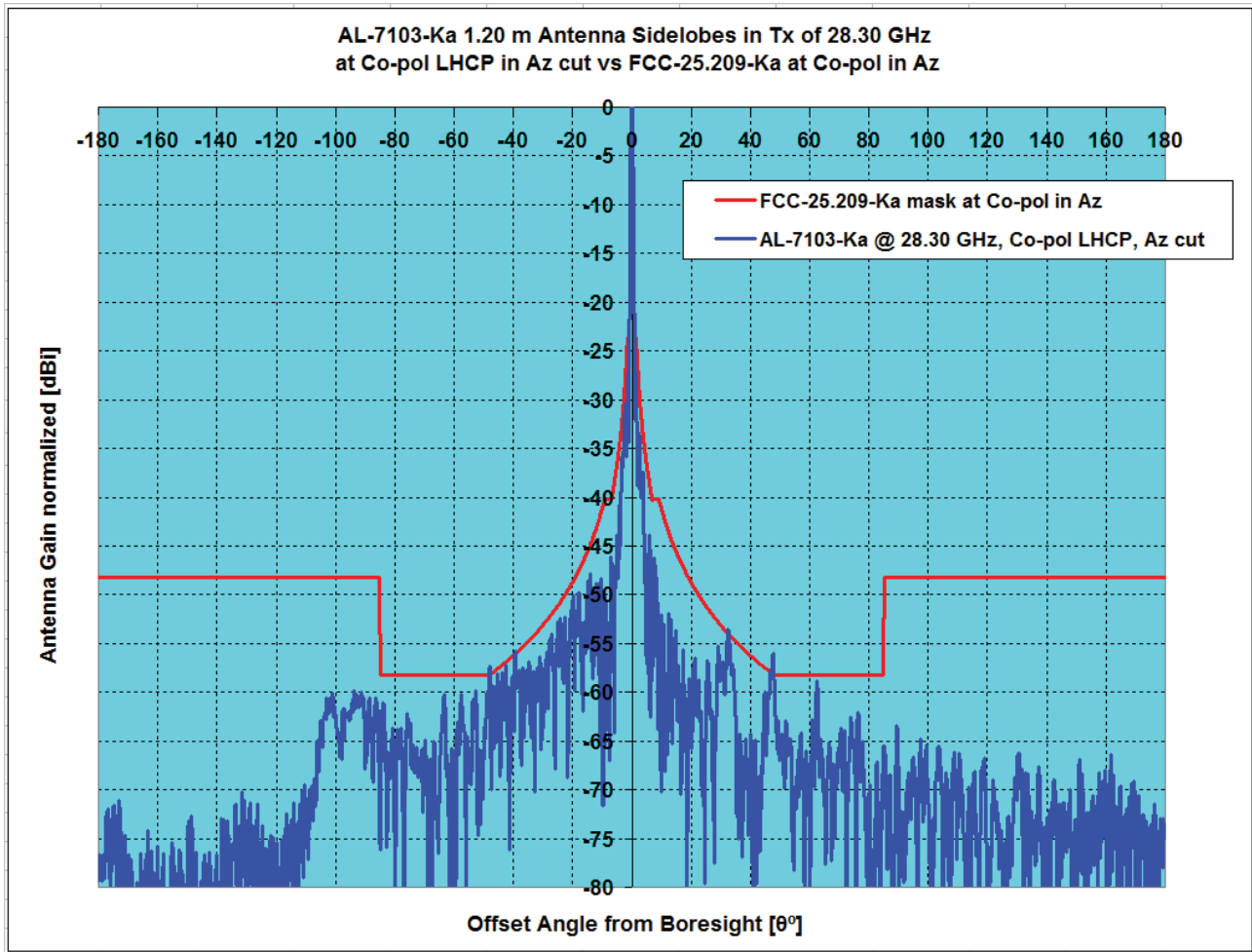
28.30 GHz Antenna Pattern in X-pol Az LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	19.2		
0.1	20.1		
0.2	23.1		
0.3	25.2		
0.4	26.1		
0.5	26.0		
0.6	24.9		
0.7	22.8		
0.8	19.9		
0.9	16.1		
1.0	12.5		
1.1	9.7		
1.2	6.8		
1.3	1.8		
1.4	-11.5		
1.5	-0.2		
1.6	3.1		
1.7	2.8		
1.8	-0.3	12.6	-12.9
1.9	-8.3	12.0	-20.3
2.0	-4.1	11.5	-15.6
2.1	-0.9	10.9	-11.8
2.2	-1.3	10.4	-11.7
2.3	-7.9	10.0	-17.9
2.4	-9.7	9.5	-19.2
2.5	-0.4	9.1	-9.5
2.6	2.7	8.6	-6.0
2.7	3.7	8.2	-4.5
2.8	2.2	7.8	-5.7
2.9	-1.5	7.4	-8.9
3.0	-10.0	7.1	-17.1
3.1	-7.2	6.7	-14.0
3.2	-2.1	6.4	-8.4
3.3	-1.0	6.0	-7.1
3.4	-2.0	5.7	-7.7
3.5	-3.9	5.4	-9.3
3.6	-8.0	5.1	-13.1
3.7	-13.2	4.8	-18.0
3.8	-15.9	4.5	-20.5
3.9	-9.6	4.2	-13.9
4.0	-7.0	3.9	-10.9
4.1	-5.8	3.7	-9.5
4.2	-6.2	3.4	-9.7
4.3	-9.4	3.2	-12.5
4.4	-14.6	2.9	-17.5
4.5	-13.6	2.7	-16.2
4.6	-10.6	2.4	-13.0
4.7	-11.5	2.2	-13.7
4.8	-22.6	2.0	-24.6
4.9	-16.0	1.7	-17.8
5.0	-7.3	1.5	-8.8
5.1	-5.1	1.3	-6.4
5.2	-4.2	1.1	-5.3
5.3	-5.9	0.9	-6.8
5.4	-11.8	0.7	-12.5
5.5	-14.7	0.5	-15.2
5.6	-7.8	0.3	-8.1
5.7	-3.9	0.1	-4.0
5.8	-3.4	-0.1	-3.3
5.9	-4.6	-0.3	-4.3

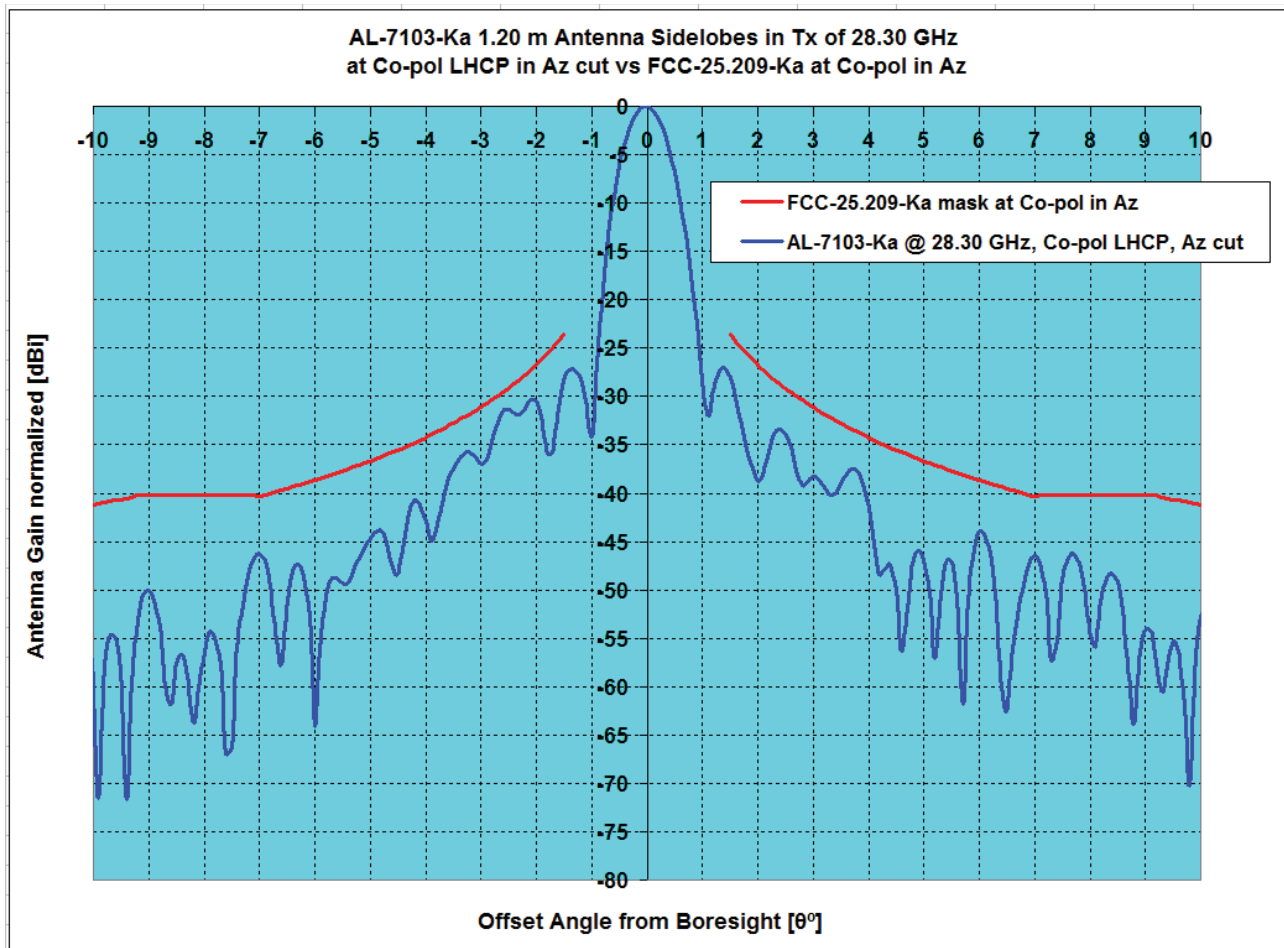
Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 X-pol Azimuth LHCP, -10° to +10° @ 0.1° increment

-4.0	-14.3	3.9	-18.2
-3.9	-7.8	4.2	-12.1
-3.8	-3.8	4.5	-8.3
-3.7	-2.4	4.8	-7.2
-3.6	-2.2	5.1	-7.3
-3.5	-1.5	5.4	-6.9
-3.4	-0.7	5.7	-6.4
-3.3	-1.1	6.0	-7.1
-3.2	-4.5	6.4	-10.9
-3.1	-23.2	6.7	-29.9
-3.0	-5.4	7.1	-12.5
-2.9	1.0	7.4	-6.4
-2.8	3.4	7.8	-4.4
-2.7	2.9	8.2	-5.3
-2.6	-1.1	8.6	-9.8
-2.5	-23.3	9.1	-32.3
-2.4	0.6	9.5	-8.9
-2.3	5.6	10.0	-4.4
-2.2	7.3	10.4	-3.1
-2.1	6.3	10.9	-4.6
-2.0	1.3	11.5	-10.2
-1.9	-4.4	12.0	-16.4
-1.8	6.3	12.6	-6.3
-1.7	10.5		
-1.6	12.0		
-1.5	11.4		
-1.4	8.0		
-1.3	-2.1		
-1.2	5.3		
-1.1	12.4		
-1.0	15.7		
-0.9	18.1		
-0.8	20.5		
-0.7	22.9		
-0.6	24.9		
-0.5	26.2		
-0.4	26.7		
-0.3	26.2		
-0.2	24.7		
-0.1	22.0		
0.0	19.2		

6.0	-7.9	-0.5	-7.4
6.1	-12.6	-0.6	-12.0
6.2	-15.5	-0.8	-14.7
6.3	-12.7	-1.0	-11.8
6.4	-10.7	-1.2	-9.6
6.5	-9.1	-1.3	-7.8
6.6	-6.9	-1.5	-5.4
6.7	-5.5	-1.7	-3.9
6.8	-5.0	-1.8	-3.2
6.9	-6.7	-2.0	-4.7
7.0	-10.1	-2.1	-7.9
7.1	-10.2	-2.0	-8.2
7.2	-7.8	-2.0	-5.8
7.3	-5.7	-2.0	-3.7
7.4	-5.7	-2.0	-3.7
7.5	-6.6	-2.0	-4.6
7.6	-9.0	-2.0	-7.0
7.7	-10.4	-2.0	-8.4
7.8	-9.7	-2.0	-7.7
7.9	-7.8	-2.0	-5.8
8.0	-7.2	-2.0	-5.2
8.1	-8.3	-2.0	-6.3
8.2	-9.7	-2.0	-7.7
8.3	-11.4	-2.0	-9.4
8.4	-14.7	-2.0	-12.7
8.5	-16.5	-2.0	-14.5
8.6	-14.7	-2.0	-12.7
8.7	-11.7	-2.0	-9.7
8.8	-9.2	-2.0	-7.2
8.9	-8.5	-2.0	-6.5
9.0	-9.2	-2.0	-7.2
9.1	-12.1	-2.0	-10.1
9.2	-17.8	-2.0	-15.8
9.3	-19.3	-2.0	-17.3
9.4	-17.3	-2.0	-15.3
9.5	-14.3	-2.0	-12.3
9.6	-13.3	-2.0	-11.3
9.7	-14.0	-2.0	-12.0
9.8	-14.2	-2.0	-12.2
9.9	-14.8	-2.0	-12.8
10.0	-18.5	-2.0	-16.5

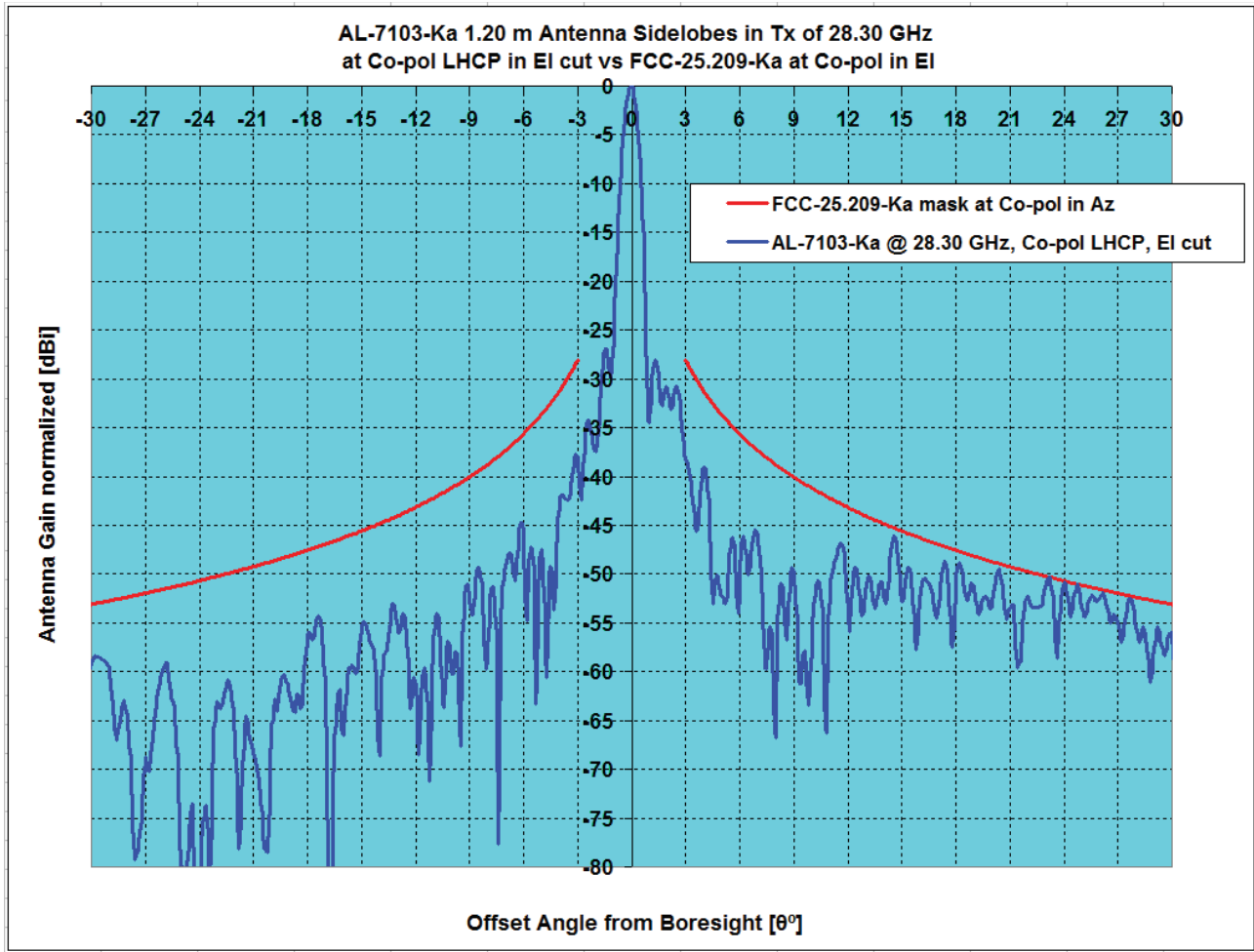


Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
				1.5°≤θ≤7°	7°≤θ≤180°	1.5°≤θ≤7°	7°≤θ≤180°
Pattern Rule vs Antenna System	Type	GHz	dBi				
FCC-25.209-Ka, Co-pol Az, vs AL-7103-Ka	Az , LHCP	28.30	48.20	-1.98	2.11	0.00%	0.45%



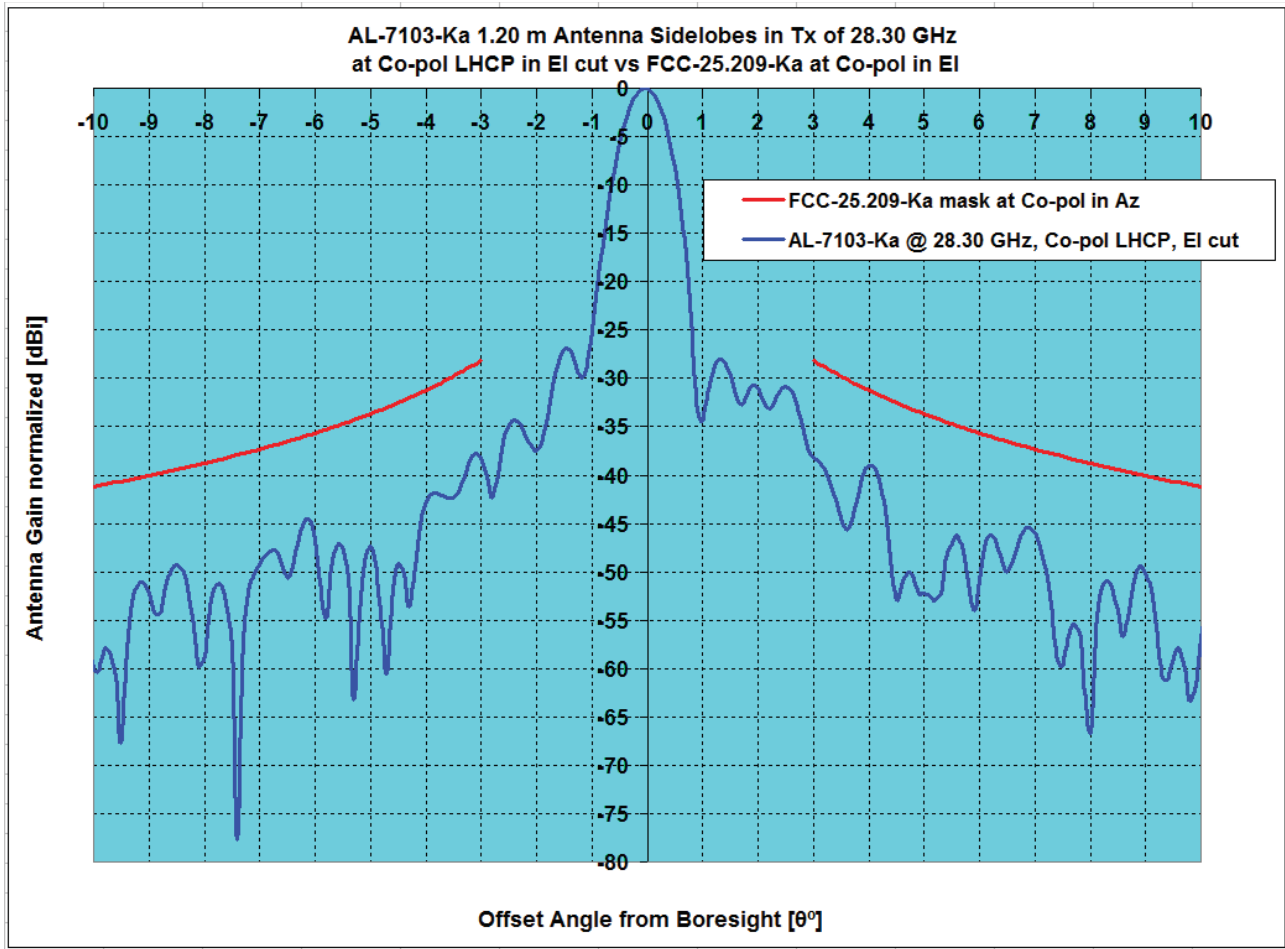
Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
				1.5°≤θ≤7°	7°≤θ≤180°	1.5°≤θ≤7°	7°≤θ≤180°
Pattern Rule vs Antenna System	Type	GHz	dBi				
FCC-25.209-Ka, Co-pol Az, vs AL-7103-Ka	Az , LHCP	28.30	48.20	-1.98	2.11	0.00%	0.45%

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern, Co-pol, Elevation LHCP

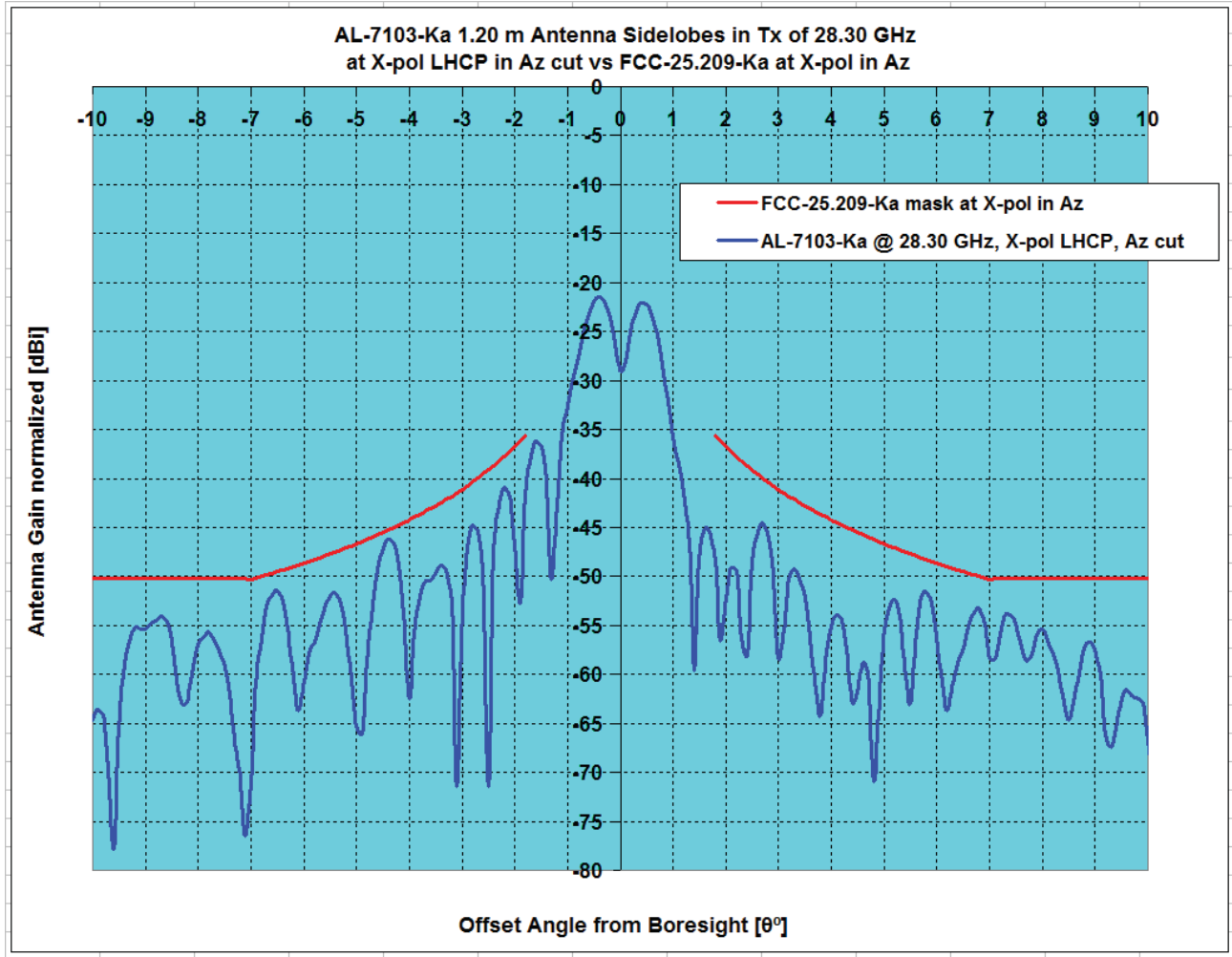


Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
				3°≤θ≤7°	7°≤θ≤30°	3°≤θ≤7°	7°≤θ≤30°
Pattern Rule vs Antenna System	Type	GHz	dBi				
FCC-25.209-Ka, Co-pol EI, vs AL-7103-Ka	EI, LHCP	28.30	48.20	-7.63	0.07	0.00%	0.18%

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern, Co-pol, Elevation LHCP



Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
				3°≤θ≤7°	7°≤θ≤30°	3°≤θ≤7°	7°≤θ≤30°
Pattern Rule vs Antenna System	Type	GHz	dBi				
FCC-25.209-Ka, Co-pol EI, vs AL-7103-Ka	EI, LHCP	28.30	48.20	-7.63	0.07	0.00%	0.18%



Description	Plane, CirP Type	Frequency GHz	Ant. Gain dBi	Peak Excursions dB		Over Mask %	
				1.8°≤θ≤7°	1.8°≤θ≤9.2°	1.8°≤θ≤7°	1.8°≤θ≤9.2°
FCC-25.209-Ka, X-pol Az, vs AL-7103-Ka	Az , LHCP	28.30	48.20	-0.88	-0.88	0.00%	0.00%

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Azimuth RHCP, -180° to +180° @ 1.0° increment

28,30 GHz Antenna Pattern in Co-pol Az RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-179.0	-22.7	0.0	-22.7
-178.0	-36.7	0.0	-36.7
-177.0	-27.2	0.0	-27.2
-176.0	-23.3	0.0	-23.3
-175.0	-25.0	0.0	-25.0
-174.0	-26.3	0.0	-26.3
-173.0	-35.2	0.0	-35.2
-172.0	-31.2	0.0	-31.2
-171.0	-30.7	0.0	-30.7
-170.0	-25.8	0.0	-25.8
-169.0	-32.2	0.0	-32.2
-168.0	-32.3	0.0	-32.3
-167.0	-31.9	0.0	-31.9
-166.0	-32.9	0.0	-32.9
-165.0	-33.3	0.0	-33.3
-164.0	-32.2	0.0	-32.2
-163.0	-29.3	0.0	-29.3
-162.0	-30.0	0.0	-30.0
-161.0	-42.4	0.0	-42.4
-160.0	-30.6	0.0	-30.6
-159.0	-32.7	0.0	-32.7
-158.0	-32.6	0.0	-32.6
-157.0	-33.8	0.0	-33.8
-156.0	-27.6	0.0	-27.6
-155.0	-30.4	0.0	-30.4
-154.0	-36.4	0.0	-36.4
-153.0	-28.7	0.0	-28.7
-152.0	-38.3	0.0	-38.3
-151.0	-31.9	0.0	-31.9
-150.0	-34.5	0.0	-34.5
-149.0	-27.2	0.0	-27.2
-148.0	-31.6	0.0	-31.6
-147.0	-29.1	0.0	-29.1
-146.0	-34.5	0.0	-34.5
-145.0	-28.4	0.0	-28.4
-144.0	-33.0	0.0	-33.0
-143.0	-30.3	0.0	-30.3
-142.0	-32.9	0.0	-32.9
-141.0	-27.4	0.0	-27.4
-140.0	-40.8	0.0	-40.8
-139.0	-30.8	0.0	-30.8
-138.0	-31.1	0.0	-31.1
-137.0	-30.6	0.0	-30.6
-136.0	-27.9	0.0	-27.9
-135.0	-29.7	0.0	-29.7
-134.0	-33.0	0.0	-33.0
-133.0	-28.5	0.0	-28.5
-132.0	-37.5	0.0	-37.5
-131.0	-28.5	0.0	-28.5
-130.0	-33.6	0.0	-33.6
-129.0	-37.7	0.0	-37.7
-128.0	-36.4	0.0	-36.4
-127.0	-32.8	0.0	-32.8
-126.0	-38.3	0.0	-38.3
-125.0	-34.2	0.0	-34.2
-124.0	-28.2	0.0	-28.2
-123.0	-22.4	0.0	-22.4
-122.0	-32.8	0.0	-32.8
-121.0	-30.4	0.0	-30.4
-120.0	-25.8	0.0	-25.8

28,30 GHz Antenna Pattern in Co-pol Az RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	48.3		
1.0	20.4		
2.0	9.7	21.5	-11.8
3.0	10.2	17.1	-6.9
4.0	7.2	13.9	-6.7
5.0	2.5	11.5	-9.0
6.0	3.7	9.5	-5.9
7.0	1.9	7.9	-6.0
8.0	-12.7	8.0	-20.7
9.0	-5.1	8.0	-13.1
10.0	-5.4	7.0	-12.4
11.0	-9.6	6.0	-15.6
12.0	-12.1	5.0	-17.1
13.0	-6.9	4.2	-11.0
14.0	-12.1	3.3	-15.5
15.0	-10.4	2.6	-13.0
16.0	-10.7	1.9	-12.6
17.0	-12.2	1.2	-13.5
18.0	-9.5	0.6	-10.1
19.0	-16.3	0.0	-16.4
20.0	-24.2	-0.5	-23.6
21.0	-9.4	-1.1	-8.3
22.0	-18.2	-1.6	-16.7
23.0	-13.5	-2.0	-11.4
24.0	-18.1	-2.5	-15.6
25.0	-26.3	-2.9	-23.3
26.0	-10.6	-3.4	-7.2
27.0	-16.6	-3.8	-12.8
28.0	-14.7	-4.2	-10.5
29.0	-7.3	-4.6	-2.7
30.0	-8.4	-4.9	-3.5
31.0	-10.9	-5.3	-5.7
32.0	-10.8	-5.6	-5.2
33.0	-8.2	-6.0	-2.2
34.0	-14.7	-6.3	-8.4
35.0	-17.1	-6.6	-10.5
36.0	-30.9	-6.9	-24.0
37.0	-14.3	-7.2	-7.1
38.0	-23.5	-7.5	-16.0
39.0	-16.7	-7.8	-8.9
40.0	-22.1	-8.1	-14.1
41.0	-24.3	-8.3	-16.0
42.0	-24.1	-8.6	-15.6
43.0	-13.0	-8.8	-4.2
44.0	-15.1	-9.1	-6.0
45.0	-15.3	-9.3	-6.0
46.0	-18.4	-9.6	-8.8
47.0	-14.4	-9.8	-4.6
48.0	-16.8	-10.0	-6.8
49.0	-21.1	-10.0	-11.1
50.0	-19.5	-10.0	-9.5
51.0	-13.8	-10.0	-3.8
52.0	-25.6	-10.0	-15.6
53.0	-29.9	-10.0	-19.9
54.0	-26.5	-10.0	-16.5
55.0	-28.1	-10.0	-18.1
56.0	-26.9	-10.0	-16.9
57.0	-27.2	-10.0	-17.2
58.0	-31.2	-10.0	-21.2
59.0	-19.7	-10.0	-9.7

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Azimuth RHCP, -180° to +180° @ 1.0° increment

-119.0	-26.5	0.0	-26.5
-118.0	-29.7	0.0	-29.7
-117.0	-26.4	0.0	-26.4
-116.0	-33.7	0.0	-33.7
-115.0	-28.2	0.0	-28.2
-114.0	-30.2	0.0	-30.2
-113.0	-27.0	0.0	-27.0
-112.0	-31.2	0.0	-31.2
-111.0	-26.7	0.0	-26.7
-110.0	-26.8	0.0	-26.8
-109.0	-34.3	0.0	-34.3
-108.0	-24.1	0.0	-24.1
-107.0	-25.4	0.0	-25.4
-106.0	-26.5	0.0	-26.5
-105.0	-29.8	0.0	-29.8
-104.0	-26.8	0.0	-26.8
-103.0	-20.9	0.0	-20.9
-102.0	-17.1	0.0	-17.1
-101.0	-15.3	0.0	-15.3
-100.0	-16.9	0.0	-16.9
-99.0	-15.8	0.0	-15.8
-98.0	-15.2	0.0	-15.2
-97.0	-16.9	0.0	-16.9
-96.0	-16.8	0.0	-16.8
-95.0	-13.2	0.0	-13.2
-94.0	-12.7	0.0	-12.7
-93.0	-16.6	0.0	-16.6
-92.0	-14.5	0.0	-14.5
-91.0	-15.2	0.0	-15.2
-90.0	-28.8	0.0	-28.8
-89.0	-15.0	0.0	-15.0
-88.0	-17.5	0.0	-17.5
-87.0	-19.7	0.0	-19.7
-86.0	-16.1	0.0	-16.1
-85.0	-36.4	-10.0	-26.4
-84.0	-21.0	-10.0	-11.0
-83.0	-43.2	-10.0	-33.2
-82.0	-14.1	-10.0	-4.1
-81.0	-14.4	-10.0	-4.4
-80.0	-22.4	-10.0	-12.4
-79.0	-32.3	-10.0	-22.3
-78.0	-23.5	-10.0	-13.5
-77.0	-22.7	-10.0	-12.7
-76.0	-13.1	-10.0	-3.1
-75.0	-14.3	-10.0	-4.3
-74.0	-18.4	-10.0	-8.4
-73.0	-24.2	-10.0	-14.2
-72.0	-20.0	-10.0	-10.0
-71.0	-21.5	-10.0	-11.5
-70.0	-14.2	-10.0	-4.2
-69.0	-21.1	-10.0	-11.1
-68.0	-16.6	-10.0	-6.6
-67.0	-15.7	-10.0	-5.7
-66.0	-18.1	-10.0	-8.1
-65.0	-19.6	-10.0	-9.6
-64.0	-16.7	-10.0	-6.7
-63.0	-14.8	-10.0	-4.8
-62.0	-21.9	-10.0	-11.9
-61.0	-15.2	-10.0	-5.2
-60.0	-14.3	-10.0	-4.3
-59.0	-15.5	-10.0	-5.5
-58.0	-22.6	-10.0	-12.6
-57.0	-12.3	-10.0	-2.3

60.0	-25.7	-10.0	-15.7
61.0	-17.4	-10.0	-7.4
62.0	-15.7	-10.0	-5.7
63.0	-13.7	-10.0	-3.7
64.0	-18.5	-10.0	-8.5
65.0	-20.7	-10.0	-10.7
66.0	-27.5	-10.0	-17.5
67.0	-14.1	-10.0	-4.1
68.0	-21.9	-10.0	-11.9
69.0	-22.4	-10.0	-12.4
70.0	-19.0	-10.0	-9.0
71.0	-13.0	-10.0	-3.0
72.0	-15.7	-10.0	-5.7
73.0	-18.1	-10.0	-8.1
74.0	-20.4	-10.0	-10.4
75.0	-13.4	-10.0	-3.4
76.0	-24.4	-10.0	-14.4
77.0	-22.0	-10.0	-12.0
78.0	-13.9	-10.0	-3.9
79.0	-16.9	-10.0	-6.9
80.0	-21.6	-10.0	-11.6
81.0	-22.7	-10.0	-12.7
82.0	-23.7	-10.0	-13.7
83.0	-20.0	-10.0	-10.0
84.0	-22.9	-10.0	-12.9
85.0	-26.0	-10.0	-16.0
86.0	-19.9	0.0	-19.9
87.0	-25.6	0.0	-25.6
88.0	-27.9	0.0	-27.9
89.0	-22.8	0.0	-22.8
90.0	-21.8	0.0	-21.8
91.0	-25.1	0.0	-25.1
92.0	-32.2	0.0	-32.2
93.0	-36.0	0.0	-36.0
94.0	-25.7	0.0	-25.7
95.0	-30.3	0.0	-30.3
96.0	-26.5	0.0	-26.5
97.0	-21.7	0.0	-21.7
98.0	-27.3	0.0	-27.3
99.0	-33.0	0.0	-33.0
100.0	-24.9	0.0	-24.9
101.0	-31.6	0.0	-31.6
102.0	-26.0	0.0	-26.0
103.0	-21.5	0.0	-21.5
104.0	-28.5	0.0	-28.5
105.0	-26.0	0.0	-26.0
106.0	-23.2	0.0	-23.2
107.0	-22.2	0.0	-22.2
108.0	-56.3	0.0	-56.3
109.0	-24.4	0.0	-24.4
110.0	-26.7	0.0	-26.7
111.0	-25.1	0.0	-25.1
112.0	-27.8	0.0	-27.8
113.0	-43.3	0.0	-43.3
114.0	-23.1	0.0	-23.1
115.0	-30.2	0.0	-30.2
116.0	-32.7	0.0	-32.7
117.0	-32.3	0.0	-32.3
118.0	-31.0	0.0	-31.0
119.0	-25.7	0.0	-25.7
120.0	-22.7	0.0	-22.7
121.0	-27.0	0.0	-27.0
122.0	-24.7	0.0	-24.7

Orbit Communication Systems Ltd.
AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
Co-pol Azimuth RHCP, -180° to +180° @ 1.0° increment

-56.0	-11.1	-10.0	-1.1
-55.0	-16.7	-10.0	-6.7
-54.0	-23.2	-10.0	-13.2
-53.0	-12.1	-10.0	-2.1
-52.0	-15.3	-10.0	-5.3
-51.0	-20.1	-10.0	-10.1
-50.0	-14.4	-10.0	-4.4
-49.0	-13.6	-10.0	-3.6
-48.0	-9.3	-10.0	0.8
-47.0	-9.8	-9.8	0.0
-46.0	-14.1	-9.6	-4.5
-45.0	-15.8	-9.3	-6.5
-44.0	-10.9	-9.1	-1.9
-43.0	-18.2	-8.8	-9.3
-42.0	-13.6	-8.6	-5.0
-41.0	-13.2	-8.3	-4.9
-40.0	-11.3	-8.1	-3.3
-39.0	-9.4	-7.8	-1.6
-38.0	-10.2	-7.5	-2.7
-37.0	-10.2	-7.2	-2.9
-36.0	-9.9	-6.9	-3.0
-35.0	-11.4	-6.6	-4.8
-34.0	-12.6	-6.3	-6.3
-33.0	-14.0	-6.0	-8.0
-32.0	-11.1	-5.6	-5.4
-31.0	-8.3	-5.3	-3.0
-30.0	-7.6	-4.9	-2.7
-29.0	-9.6	-4.6	-5.1
-28.0	-5.2	-4.2	-1.1
-27.0	-5.4	-3.8	-1.6
-26.0	-8.8	-3.4	-5.5
-25.0	-4.3	-2.9	-1.3
-24.0	-4.5	-2.5	-2.0
-23.0	-3.4	-2.0	-1.3
-22.0	-5.1	-1.6	-3.5
-21.0	-9.4	-1.1	-8.4
-20.0	-8.7	-0.5	-8.1
-19.0	-3.9	0.0	-4.0
-18.0	-7.5	0.6	-8.2
-17.0	-3.9	1.2	-5.1
-16.0	-11.3	1.9	-13.2
-15.0	-5.0	2.6	-7.6
-14.0	-6.0	3.3	-9.4
-13.0	-9.5	4.2	-13.7
-12.0	-0.8	5.0	-5.9
-11.0	-7.4	6.0	-13.4
-10.0	-15.8	7.0	-22.8
-9.0	-0.4	8.0	-8.4
-8.0	-16.1	8.0	-24.1
-7.0	1.7	7.9	-6.2
-6.0	-4.4	9.5	-14.0
-5.0	2.5	11.5	-9.0
-4.0	3.6	13.9	-10.3
-3.0	11.7	17.1	-5.4
-2.0	17.7	21.5	-3.8
-1.0	13.3		
0.0	48.3		

123.0	-35.2	0.0	-35.2
124.0	-28.2	0.0	-28.2
125.0	-25.3	0.0	-25.3
126.0	-26.0	0.0	-26.0
127.0	-37.0	0.0	-37.0
128.0	-35.9	0.0	-35.9
129.0	-28.8	0.0	-28.8
130.0	-40.3	0.0	-40.3
131.0	-25.6	0.0	-25.6
132.0	-33.5	0.0	-33.5
133.0	-22.4	0.0	-22.4
134.0	-19.1	0.0	-19.1
135.0	-29.5	0.0	-29.5
136.0	-27.3	0.0	-27.3
137.0	-31.3	0.0	-31.3
138.0	-26.4	0.0	-26.4
139.0	-20.7	0.0	-20.7
140.0	-20.5	0.0	-20.5
141.0	-18.8	0.0	-18.8
142.0	-28.0	0.0	-28.0
143.0	-24.2	0.0	-24.2
144.0	-25.3	0.0	-25.3
145.0	-25.4	0.0	-25.4
146.0	-18.3	0.0	-18.3
147.0	-20.4	0.0	-20.4
148.0	-31.4	0.0	-31.4
149.0	-23.0	0.0	-23.0
150.0	-28.9	0.0	-28.9
151.0	-23.7	0.0	-23.7
152.0	-22.5	0.0	-22.5
153.0	-19.4	0.0	-19.4
154.0	-22.1	0.0	-22.1
155.0	-31.3	0.0	-31.3
156.0	-19.6	0.0	-19.6
157.0	-19.4	0.0	-19.4
158.0	-31.7	0.0	-31.7
159.0	-18.2	0.0	-18.2
160.0	-18.8	0.0	-18.8
161.0	-18.5	0.0	-18.5
162.0	-22.7	0.0	-22.7
163.0	-33.1	0.0	-33.1
164.0	-28.3	0.0	-28.3
165.0	-26.4	0.0	-26.4
166.0	-19.9	0.0	-19.9
167.0	-22.7	0.0	-22.7
168.0	-18.8	0.0	-18.8
169.0	-32.2	0.0	-32.2
170.0	-16.9	0.0	-16.9
171.0	-21.4	0.0	-21.4
172.0	-22.6	0.0	-22.6
173.0	-29.6	0.0	-29.6
174.0	-22.7	0.0	-22.7
175.0	-27.2	0.0	-27.2
176.0	-24.7	0.0	-24.7
177.0	-27.6	0.0	-27.6
178.0	-25.2	0.0	-25.2
179.0	-35.6	0.0	-35.6

Orbit Communication Systems Ltd.
 AL AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Azimuth RHCP, -10° to +10° @ 0.1° increment

28.30 GHz Antenna Pattern in Co-pol Az RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-10.0	-15.8	7.0	-22.8
-9.9	-11.3	7.1	-18.4
-9.8	-7.7	7.2	-14.9
-9.7	-6.0	7.3	-13.3
-9.6	-6.9	7.4	-14.3
-9.5	-8.7	7.6	-16.3
-9.4	-6.6	7.7	-14.2
-9.3	-3.4	7.8	-11.2
-9.2	-1.4	8.0	-9.4
-9.1	-0.2	8.0	-8.2
-9.0	-0.4	8.0	-8.4
-8.9	-2.1	8.0	-10.1
-8.8	-6.3	8.0	-14.3
-8.7	-11.2	8.0	-19.2
-8.6	-7.2	8.0	-15.2
-8.5	-3.1	8.0	-11.1
-8.4	-2.0	8.0	-10.0
-8.3	-2.5	8.0	-10.5
-8.2	-5.1	8.0	-13.1
-8.1	-11.1	8.0	-19.1
-8.0	-16.1	8.0	-24.1
-7.9	-10.6	8.0	-18.6
-7.8	-8.1	8.0	-16.1
-7.7	-7.1	8.0	-15.1
-7.6	-8.3	8.0	-16.3
-7.5	-9.1	8.0	-17.1
-7.4	-11.0	8.0	-19.0
-7.3	-7.3	8.0	-15.3
-7.2	-2.7	8.0	-10.7
-7.1	0.2	8.0	-7.8
-7.0	1.7	7.9	-6.2
-6.9	1.6	8.0	-6.4
-6.8	-0.3	8.2	-8.5
-6.7	-4.5	8.3	-12.8
-6.6	-5.5	8.5	-14.0
-6.5	-1.0	8.7	-9.7
-6.4	1.9	8.8	-7.0
-6.3	2.9	9.0	-6.1
-6.2	2.3	9.2	-6.9
-6.1	0.1	9.4	-9.3
-6.0	-4.4	9.5	-14.0
-5.9	-9.0	9.7	-18.7
-5.8	-5.4	9.9	-15.3
-5.7	-3.8	10.1	-13.9
-5.6	-5.1	10.3	-15.4
-5.5	-9.8	10.5	-20.3
-5.4	-7.1	10.7	-17.8
-5.3	-2.1	10.9	-13.0
-5.2	0.5	11.1	-10.6
-5.1	1.7	11.3	-9.6
-5.0	2.5	11.5	-9.0
-4.9	3.3	11.7	-8.4
-4.8	3.8	12.0	-8.1
-4.7	3.2	12.2	-9.0
-4.6	1.0	12.4	-11.4
-4.5	-1.2	12.7	-13.8
-4.4	1.9	12.9	-11.0
-4.3	4.9	13.2	-8.3
-4.2	6.2	13.4	-7.2
-4.1	5.7	13.7	-7.9

28.30 GHz Antenna Pattern in Co-pol Az RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	48.3		
0.1	48.0		
0.2	47.1		
0.3	45.8		
0.4	43.9		
0.5	41.3		
0.6	38.1		
0.7	34.4		
0.8	30.1		
0.9	25.3		
1.0	20.4		
1.1	16.9		
1.2	18.0		
1.3	19.7		
1.4	20.1		
1.5	19.1	24.6	-5.5
1.6	16.8	23.9	-7.1
1.7	13.4	23.2	-9.8
1.8	10.6	22.6	-12.0
1.9	9.3	22.0	-12.7
2.0	9.7	21.5	-11.8
2.1	11.2	20.9	-9.7
2.2	13.1	20.4	-7.4
2.3	14.7	20.0	-5.3
2.4	15.1	19.5	-4.4
2.5	14.0	19.1	-5.1
2.6	11.8	18.6	-6.8
2.7	9.1	18.2	-9.1
2.8	8.4	17.8	-9.4
2.9	9.5	17.4	-7.9
3.0	10.2	17.1	-6.9
3.1	10.1	16.7	-6.6
3.2	9.0	16.4	-7.4
3.3	8.1	16.0	-7.9
3.4	8.1	15.7	-7.7
3.5	8.7	15.4	-6.7
3.6	9.4	15.1	-5.7
3.7	9.9	14.8	-4.9
3.8	9.8	14.5	-4.7
3.9	9.1	14.2	-5.1
4.0	7.2	13.9	-6.7
4.1	4.0	13.7	-9.6
4.2	0.6	13.4	-12.9
4.3	-1.3	13.2	-14.5
4.4	-0.9	12.9	-13.9
4.5	-2.5	12.7	-15.2
4.6	-6.1	12.4	-18.5
4.7	-3.1	12.2	-15.3
4.8	1.2	12.0	-10.8
4.9	3.1	11.7	-8.6
5.0	2.5	11.5	-9.0
5.1	-1.4	11.3	-12.7
5.2	-8.7	11.1	-19.8
5.3	-3.0	10.9	-13.8
5.4	0.8	10.7	-9.8
5.5	1.8	10.5	-8.7
5.6	-0.1	10.3	-10.4
5.7	-5.3	10.1	-15.4
5.8	-3.7	9.9	-13.6
5.9	1.3	9.7	-8.5

Orbit Communication Systems Ltd.
 AL AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Azimuth RHCP, -10° to +10° @ 0.1° increment

-4.0	3.6	13.9	-10.3
-3.9	1.2	14.2	-13.0
-3.8	3.9	14.5	-10.6
-3.7	7.2	14.8	-7.6
-3.6	9.4	15.1	-5.7
-3.5	10.4	15.4	-5.0
-3.4	11.0	15.7	-4.7
-3.3	11.4	16.0	-4.6
-3.2	11.9	16.4	-4.5
-3.1	11.9	16.7	-4.8
-3.0	11.7	17.1	-5.4
-2.9	12.1	17.4	-5.3
-2.8	13.8	17.8	-4.0
-2.7	15.5	18.2	-2.8
-2.6	16.5	18.6	-2.1
-2.5	16.5	19.1	-2.5
-2.4	15.7	19.5	-3.8
-2.3	15.2	20.0	-4.8
-2.2	16.0	20.4	-4.4
-2.1	17.4	20.9	-3.6
-2.0	17.7	21.5	-3.8
-1.9	16.6	22.0	-5.5
-1.8	13.7	22.6	-8.9
-1.7	13.0	23.2	-10.2
-1.6	16.6	23.9	-7.3
-1.5	19.0	24.6	-5.6
-1.4	19.6		
-1.3	18.2		
-1.2	15.5		
-1.1	12.9		
-1.0	13.3		
-0.9	20.8		
-0.8	28.4		
-0.7	34.1		
-0.6	38.4		
-0.5	41.8		
-0.4	44.3		
-0.3	46.1		
-0.2	47.4		
-0.1	48.1		
0.0	48.3		

6.0	3.7	9.5	-5.9
6.1	3.5	9.4	-5.9
6.2	1.7	9.2	-7.5
6.3	-1.7	9.0	-10.7
6.4	-6.4	8.8	-15.2
6.5	-6.7	8.7	-15.4
6.6	-3.9	8.5	-12.4
6.7	-1.7	8.3	-10.1
6.8	0.3	8.2	-7.9
6.9	1.6	8.0	-6.4
7.0	1.9	7.9	-6.0
7.1	0.1	8.0	-7.9
7.2	-4.4	8.0	-12.4
7.3	-9.6	8.0	-17.6
7.4	-4.4	8.0	-12.4
7.5	-0.9	8.0	-8.9
7.6	0.1	8.0	-7.9
7.7	-0.4	8.0	-8.4
7.8	-2.8	8.0	-10.8
7.9	-6.4	8.0	-14.4
8.0	-12.7	8.0	-20.7
8.1	-16.0	8.0	-24.0
8.2	-8.7	8.0	-16.7
8.3	-4.4	8.0	-12.4
8.4	-1.6	8.0	-9.6
8.5	-0.7	8.0	-8.7
8.6	-1.4	8.0	-9.4
8.7	-4.1	8.0	-12.1
8.8	-8.4	8.0	-16.4
8.9	-8.7	8.0	-16.7
9.0	-5.1	8.0	-13.1
9.1	-3.4	8.0	-11.4
9.2	-3.9	8.0	-11.9
9.3	-7.5	7.8	-15.3
9.4	-12.4	7.7	-20.1
9.5	-11.1	7.6	-18.6
9.6	-9.8	7.4	-17.3
9.7	-13.3	7.3	-20.6
9.8	-32.8	7.2	-40.0
9.9	-10.1	7.1	-17.2
10.0	-5.4	7.0	-12.4

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Elevation RHCP, -30° to +30° @ 0.5° increment

28.30 GHz Antenna Pattern in Co-pol EI RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-30.0	-16.0	-4.9	-11.1
-29.5	-11.3	-4.7	-6.6
-29.0	-15.1	-4.6	-10.5
-28.5	-13.4	-4.4	-9.0
-28.0	-9.3	-4.2	-5.1
-27.5	-15.8	-4.0	-11.9
-27.0	-17.7	-3.8	-13.9
-26.5	-14.4	-3.6	-10.8
-26.0	-12.1	-3.4	-8.7
-25.5	-14.7	-3.2	-11.5
-25.0	-21.4	-2.9	-18.5
-24.5	-17.8	-2.7	-15.0
-24.0	-22.3	-2.5	-19.8
-23.5	-22.4	-2.3	-20.1
-23.0	-13.6	-2.0	-11.5
-22.5	-13.8	-1.8	-12.0
-22.0	-19.6	-1.6	-18.0
-21.5	-10.7	-1.3	-9.4
-21.0	-11.3	-1.1	-10.3
-20.5	-15.6	-0.8	-14.8
-20.0	-12.3	-0.5	-11.8
-19.5	-12.7	-0.3	-12.4
-19.0	-17.6	0.0	-17.6
-18.5	-22.2	0.3	-22.5
-18.0	-18.8	0.6	-19.4
-17.5	-12.5	0.9	-13.4
-17.0	-9.4	1.2	-10.6
-16.5	-15.3	1.6	-16.8
-16.0	-19.4	1.9	-21.3
-15.5	-11.9	2.2	-14.1
-15.0	-7.8	2.6	-10.4
-14.5	-7.5	3.0	-10.5
-14.0	-11.5	3.3	-14.8
-13.5	-13.1	3.7	-16.8
-13.0	-8.0	4.2	-12.1
-12.5	-5.4	4.6	-9.9
-12.0	-8.0	5.0	-13.0
-11.5	-17.5	5.5	-23.0
-11.0	-15.5	6.0	-21.4
-10.5	-8.9	6.5	-15.4
-10.0	-6.6	7.0	-13.6
-9.5	-12.3	7.6	-19.9
-9.0	-4.8	8.1	-12.9
-8.5	-0.1	8.8	-8.9
-8.0	-11.1	9.4	-20.6
-7.5	-4.0	10.1	-14.2
-7.0	0.3	10.9	-10.5
-6.5	-8.5	11.7	-20.2
-6.0	3.4	12.5	-9.2
-5.5	0.1	13.5	-13.4
-5.0	1.9	14.5	-12.6
-4.5	0.2	15.7	-15.5
-4.0	4.9	16.9	-12.0
-3.5	5.8	18.4	-12.6
-3.0	11.1		
-2.5	12.8		
-2.0	12.0		
-1.5	21.7		
-1.0	20.5		
-0.5	41.9		
0.0	48.3		

28.30 GHz Antenna Pattern in Co-pol EI RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	48.3		
0.5	42.0		
1.0	15.9		
1.5	19.0		
2.0	18.2		
2.5	17.5		
3.0	10.1		
3.5	6.9	18.4	-11.5
4.0	9.8	16.9	-7.2
4.5	-3.0	15.7	-18.7
5.0	-0.5	14.5	-15.1
5.5	2.6	13.5	-10.9
6.0	-8.5	12.5	-21.0
6.5	-3.0	11.7	-14.7
7.0	2.2	10.9	-8.6
7.5	-12.7	10.1	-22.8
8.0	-8.5	9.4	-17.9
8.5	-8.4	8.8	-17.2
9.0	-2.9	8.1	-11.0
9.5	-3.6	7.6	-11.2
10.0	-19.6	7.0	-26.6
10.5	-3.5	6.5	-10.0
11.0	-2.4	6.0	-8.3
11.5	-3.3	5.5	-8.7
12.0	-6.5	5.0	-11.5
12.5	-1.8	4.6	-6.4
13.0	-12.2	4.2	-16.3
13.5	-6.9	3.7	-10.6
14.0	0.8	3.3	-2.5
14.5	-5.2	3.0	-8.2
15.0	-4.7	2.6	-7.3
15.5	-6.4	2.2	-8.6
16.0	-5.7	1.9	-7.6
16.5	-8.6	1.6	-10.2
17.0	-3.7	1.2	-4.9
17.5	-3.1	0.9	-4.0
18.0	-8.3	0.6	-8.9
18.5	-3.6	0.3	-3.9
19.0	-2.1	0.0	-2.2
19.5	-1.8	-0.3	-1.6
20.0	-4.0	-0.5	-3.5
20.5	-4.3	-0.8	-3.5
21.0	-4.6	-1.1	-3.5
21.5	-14.0	-1.3	-12.7
22.0	-8.9	-1.6	-7.4
22.5	-5.6	-1.8	-3.8
23.0	-7.8	-2.0	-5.7
23.5	-7.2	-2.3	-5.0
24.0	-3.8	-2.5	-1.2
24.5	-5.3	-2.7	-2.5
25.0	-7.3	-2.9	-4.4
25.5	-8.1	-3.2	-5.0
26.0	-8.6	-3.4	-5.2
26.5	-10.7	-3.6	-7.2
27.0	-7.4	-3.8	-3.6
27.5	-6.3	-4.0	-2.3
28.0	-9.8	-4.2	-5.7
28.5	-7.1	-4.4	-2.8
29.0	-7.4	-4.6	-2.9
29.5	-8.8	-4.7	-4.1
30.0	-8.3	-4.9	-3.4

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Elevation RHCP, -10° to +10° @ 0.1° increment

28.30 GHz Antenna Pattern in Co-pol EI RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-10.0	-6.6	7.0	-13.6
-9.9	-11.9	7.1	-19.0
-9.8	-16.1	7.2	-23.3
-9.7	-11.3	7.3	-18.6
-9.6	-8.7	7.4	-16.1
-9.5	-12.3	7.6	-19.9
-9.4	-18.6	7.7	-26.3
-9.3	-12.7	7.8	-20.5
-9.2	-6.5	7.9	-14.5
-9.1	-4.5	8.0	-12.5
-9.0	-4.8	8.1	-12.9
-8.9	-7.5	8.3	-15.8
-8.8	-11.7	8.4	-20.1
-8.7	-6.2	8.5	-14.7
-8.6	-1.9	8.6	-10.6
-8.5	-0.1	8.8	-8.9
-8.4	0.3	8.9	-8.6
-8.3	-0.8	9.0	-9.8
-8.2	-3.9	9.2	-13.1
-8.1	-9.8	9.3	-19.1
-8.0	-11.1	9.4	-20.6
-7.9	-5.3	9.6	-14.8
-7.8	-1.7	9.7	-11.4
-7.7	-0.5	9.8	-10.3
-7.6	-1.4	10.0	-11.3
-7.5	-4.0	10.1	-14.2
-7.4	-12.0	10.3	-22.3
-7.3	-13.7	10.4	-24.1
-7.2	-4.8	10.6	-15.3
-7.1	-1.4	10.7	-12.2
-7.0	0.3	10.9	-10.5
-6.9	1.0	11.0	-10.0
-6.8	0.8	11.2	-10.4
-6.7	0.0	11.3	-11.3
-6.6	-2.6	11.5	-14.1
-6.5	-8.5	11.7	-20.2
-6.4	-9.2	11.8	-21.0
-6.3	-0.9	12.0	-12.9
-6.2	2.7	12.2	-9.5
-6.1	4.1	12.4	-8.3
-6.0	3.4	12.5	-9.2
-5.9	0.6	12.7	-12.1
-5.8	-7.6	12.9	-20.5
-5.7	-11.2	13.1	-24.3
-5.6	-1.8	13.3	-15.1
-5.5	0.1	13.5	-13.4
-5.4	-1.6	13.7	-15.3
-5.3	-7.4	13.9	-21.3
-5.2	-8.3	14.1	-22.4
-5.1	-1.0	14.3	-15.3
-5.0	1.9	14.5	-12.6
-4.9	1.4	14.7	-13.3
-4.8	-2.1	15.0	-17.1
-4.7	-13.5	15.2	-28.7
-4.6	-5.3	15.4	-20.7
-4.5	0.2	15.7	-15.5
-4.4	1.8	15.9	-14.1
-4.3	0.6	16.2	-15.6
-4.2	-1.2	16.4	-17.6
-4.1	1.4	16.7	-15.3

28.30 GHz Antenna Pattern in Co-pol EI RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	48.3		
0.1	48.1		
0.2	47.4		
0.3	46.2		
0.4	44.4		
0.5	42.0		
0.6	38.7		
0.7	34.5		
0.8	28.8		
0.9	21.5		
1.0	15.9		
1.1	18.0		
1.2	19.9		
1.3	20.6		
1.4	20.5		
1.5	19.0		
1.6	16.1		
1.7	13.3		
1.8	15.0		
1.9	17.3		
2.0	18.2		
2.1	17.9		
2.2	17.0		
2.3	16.6		
2.4	17.1		
2.5	17.5		
2.6	17.3		
2.7	15.9		
2.8	13.6		
2.9	11.1		
3.0	10.1		
3.1	10.6		
3.2	10.9		
3.3	10.3		
3.4	8.9		
3.5	6.9	18.4	-11.5
3.6	4.5	18.1	-13.6
3.7	4.0	17.8	-13.8
3.8	6.0	17.5	-11.5
3.9	8.4	17.2	-8.9
4.0	9.8	16.9	-7.2
4.1	10.0	16.7	-6.6
4.2	9.2	16.4	-7.3
4.3	6.8	16.2	-9.4
4.4	2.7	15.9	-13.3
4.5	-3.0	15.7	-18.7
4.6	-2.2	15.4	-17.6
4.7	0.2	15.2	-15.0
4.8	1.2	15.0	-13.8
4.9	0.5	14.7	-14.2
5.0	-0.5	14.5	-15.1
5.1	-0.1	14.3	-14.4
5.2	0.5	14.1	-13.6
5.3	1.1	13.9	-12.8
5.4	2.0	13.7	-11.7
5.5	2.6	13.5	-10.9
5.6	2.5	13.3	-10.8
5.7	1.3	13.1	-11.8
5.8	-2.1	12.9	-15.1
5.9	-9.1	12.7	-21.9

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Elevation RHCP, -10° to +10° @ 0.1° increment

-4.0	4.9	16.9	-12.0
-3.9	7.1	17.2	-10.2
-3.8	7.8	17.5	-9.7
-3.7	7.6	17.8	-10.2
-3.6	6.9	18.1	-11.2
-3.5	5.8	18.4	-12.6
-3.4	5.7		
-3.3	7.1		
-3.2	9.1		
-3.1	10.6		
-3.0	11.1		
-2.9	10.5		
-2.8	9.3		
-2.7	9.2		
-2.6	11.1		
-2.5	12.8		
-2.4	13.6		
-2.3	13.2		
-2.2	12.0		
-2.1	11.4		
-2.0	12.0		
-1.9	13.4		
-1.8	15.2		
-1.7	17.7		
-1.6	20.1		
-1.5	21.7		
-1.4	22.5		
-1.3	21.9		
-1.2	19.7		
-1.1	17.1		
-1.0	20.5		
-0.9	26.5		
-0.8	31.4		
-0.7	35.5		
-0.6	39.0		
-0.5	41.9		
-0.4	44.1		
-0.3	45.9		
-0.2	47.2		
-0.1	48.0		
0.0	48.3		

6.0	-8.5	12.5	-21.0
6.1	-1.4	12.4	-13.8
6.2	0.9	12.2	-11.3
6.3	1.4	12.0	-10.6
6.4	-0.2	11.8	-12.1
6.5	-3.0	11.7	-14.7
6.6	-4.1	11.5	-15.6
6.7	-1.3	11.3	-12.7
6.8	1.3	11.2	-9.9
6.9	2.3	11.0	-8.8
7.0	2.2	10.9	-8.6
7.1	1.6	10.7	-9.1
7.2	-0.3	10.6	-10.9
7.3	-3.2	10.4	-13.7
7.4	-7.9	10.3	-18.2
7.5	-12.7	10.1	-22.8
7.6	-9.0	10.0	-19.0
7.7	-6.6	9.8	-16.4
7.8	-5.3	9.7	-15.0
7.9	-6.5	9.6	-16.1
8.0	-8.5	9.4	-17.9
8.1	-8.5	9.3	-17.8
8.2	-6.2	9.2	-15.4
8.3	-4.5	9.0	-13.5
8.4	-4.8	8.9	-13.7
8.5	-8.4	8.8	-17.2
8.6	-18.8	8.6	-27.5
8.7	-12.0	8.5	-20.5
8.8	-5.7	8.4	-14.1
8.9	-3.2	8.3	-11.5
9.0	-2.9	8.1	-11.0
9.1	-5.3	8.0	-13.3
9.2	-11.9	7.9	-19.9
9.3	-17.0	7.8	-24.8
9.4	-6.9	7.7	-14.6
9.5	-3.6	7.6	-11.2
9.6	-2.1	7.4	-9.6
9.7	-2.9	7.3	-10.2
9.8	-5.5	7.2	-12.7
9.9	-11.4	7.1	-18.5
10.0	-19.6	7.0	-26.6

Orbit Communication Systems Ltd.
AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
X-pol Azimuth RHCP, -10° to +10° @ 0.1° increment

28.30 GHz Antenna Pattern in X-pol Az RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-10.0	-12.7	-2.0	-10.7
-9.9	-17.7	-2.0	-15.7
-9.8	-18.5	-2.0	-16.5
-9.7	-16.9	-2.0	-14.9
-9.6	-13.7	-2.0	-11.7
-9.5	-10.0	-2.0	-8.0
-9.4	-7.9	-2.0	-5.9
-9.3	-6.3	-2.0	-4.3
-9.2	-6.7	-2.0	-4.7
-9.1	-7.2	-2.0	-5.2
-9.0	-9.7	-2.0	-7.7
-8.9	-12.8	-2.0	-10.8
-8.8	-19.6	-2.0	-17.6
-8.7	-12.8	-2.0	-10.8
-8.6	-7.9	-2.0	-5.9
-8.5	-6.0	-2.0	-4.0
-8.4	-5.4	-2.0	-3.4
-8.3	-6.6	-2.0	-4.6
-8.2	-9.5	-2.0	-7.5
-8.1	-15.3	-2.0	-13.3
-8.0	-19.4	-2.0	-17.4
-7.9	-15.4	-2.0	-13.4
-7.8	-13.5	-2.0	-11.5
-7.7	-13.8	-2.0	-11.8
-7.6	-15.9	-2.0	-13.9
-7.5	-15.8	-2.0	-13.8
-7.4	-15.1	-2.0	-13.1
-7.3	-13.4	-2.0	-11.4
-7.2	-13.3	-2.0	-11.3
-7.1	-13.0	-2.0	-11.0
-7.0	-11.8	-2.1	-9.6
-6.9	-13.1	-2.0	-11.1
-6.8	-17.4	-1.8	-15.6
-6.7	-21.3	-1.7	-19.7
-6.6	-12.7	-1.5	-11.2
-6.5	-7.1	-1.3	-5.8
-6.4	-5.5	-1.2	-4.3
-6.3	-3.1	-1.0	-2.1
-6.2	-2.7	-0.8	-1.9
-6.1	-2.2	-0.6	-1.6
-6.0	-4.0	-0.5	-3.5
-5.9	-3.8	-0.3	-3.5
-5.8	-5.0	-0.1	-4.9
-5.7	-6.4	0.1	-6.5
-5.6	-6.4	0.3	-6.7
-5.5	-5.7	0.5	-6.1
-5.4	-4.8	0.7	-5.5
-5.3	-3.8	0.9	-4.7
-5.2	-3.1	1.1	-4.2
-5.1	-2.8	1.3	-4.2
-5.0	-2.7	1.5	-4.2
-4.9	-2.8	1.7	-4.6
-4.8	-3.1	2.0	-5.0
-4.7	-3.3	2.2	-5.5
-4.6	-2.5	2.4	-5.0
-4.5	-0.9	2.7	-3.6
-4.4	0.8	2.9	-2.1
-4.3	2.6	3.2	-0.6
-4.2	3.7	3.4	0.3
-4.1	4.4	3.7	0.7

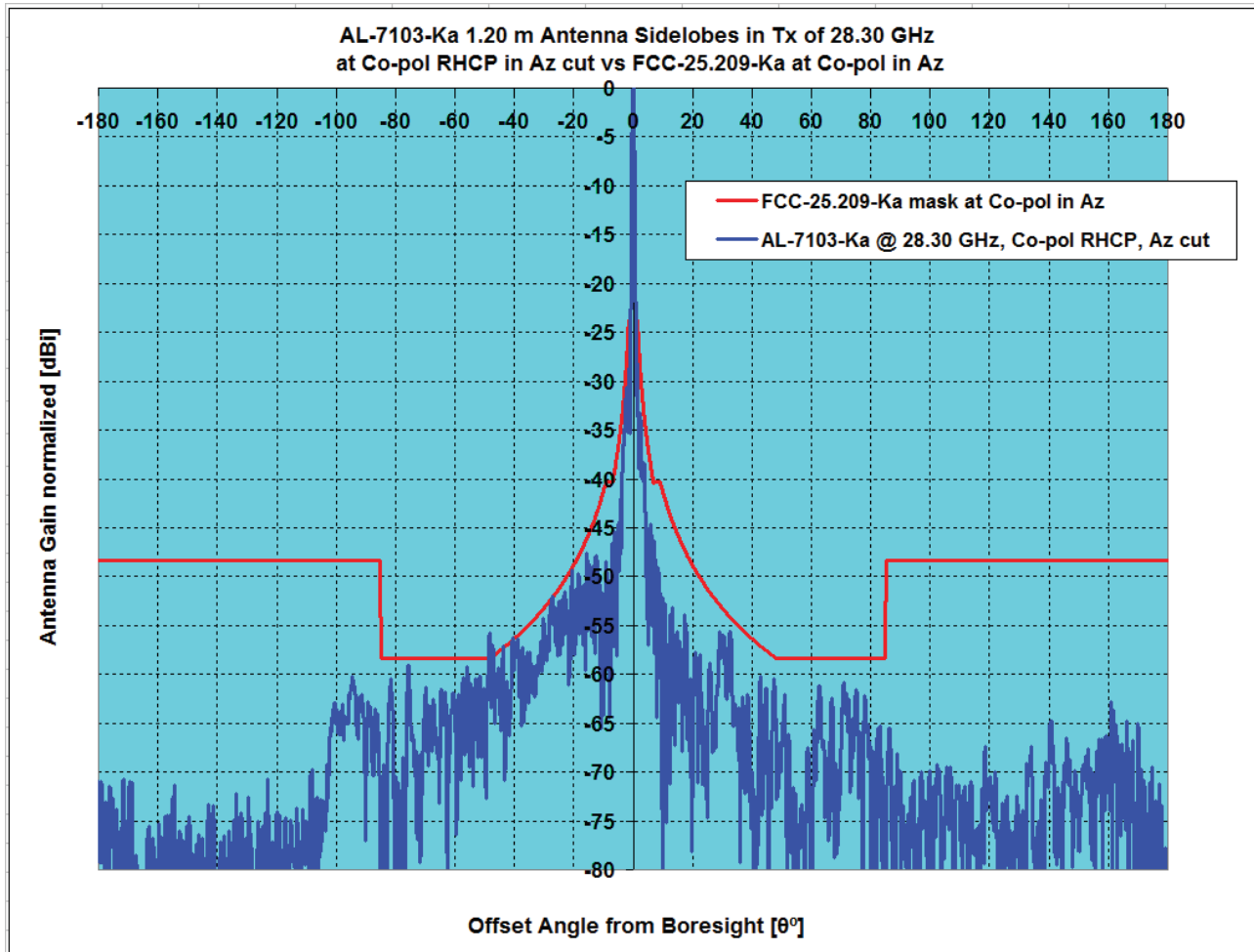
28.30 GHz Antenna Pattern in X-pol Az RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	12.9		
0.1	14.4		
0.2	15.1		
0.3	14.9		
0.4	14.0		
0.5	12.3		
0.6	9.7		
0.7	6.1		
0.8	2.3		
0.9	1.4		
1.0	2.1		
1.1	3.0		
1.2	2.6		
1.3	1.7		
1.4	-0.4		
1.5	-1.9		
1.6	-2.1		
1.7	-0.5		
1.8	-1.1	12.6	-13.7
1.9	-2.4	12.0	-14.4
2.0	-5.7	11.5	-17.1
2.1	-19.7	10.9	-30.7
2.2	-7.0	10.4	-17.4
2.3	-1.7	10.0	-11.6
2.4	0.7	9.5	-8.8
2.5	2.2	9.1	-6.8
2.6	2.5	8.6	-6.1
2.7	1.3	8.2	-7.0
2.8	-0.9	7.8	-8.8
2.9	-4.2	7.4	-11.7
3.0	-9.5	7.1	-16.6
3.1	-13.7	6.7	-20.4
3.2	-12.2	6.4	-18.6
3.3	-13.3	6.0	-19.4
3.4	-20.6	5.7	-26.4
3.5	-29.5	5.4	-34.9
3.6	-22.7	5.1	-27.8
3.7	-41.9	4.8	-46.7
3.8	-18.5	4.5	-23.1
3.9	-17.3	4.2	-21.5
4.0	-11.2	3.9	-15.2
4.1	-12.3	3.7	-15.9
4.2	-12.4	3.4	-15.8
4.3	-16.6	3.2	-19.7
4.4	-28.6	2.9	-31.5
4.5	-23.9	2.7	-26.6
4.6	-16.3	2.4	-18.7
4.7	-16.8	2.2	-19.0
4.8	-27.8	2.0	-29.7
4.9	-22.2	1.7	-23.9
5.0	-15.1	1.5	-16.6
5.1	-10.8	1.3	-12.1
5.2	-10.4	1.1	-11.5
5.3	-10.4	0.9	-11.3
5.4	-12.5	0.7	-13.2
5.5	-21.4	0.5	-21.9
5.6	-22.0	0.3	-22.3
5.7	-11.8	0.1	-11.9
5.8	-10.9	-0.1	-10.8
5.9	-9.5	-0.3	-9.2

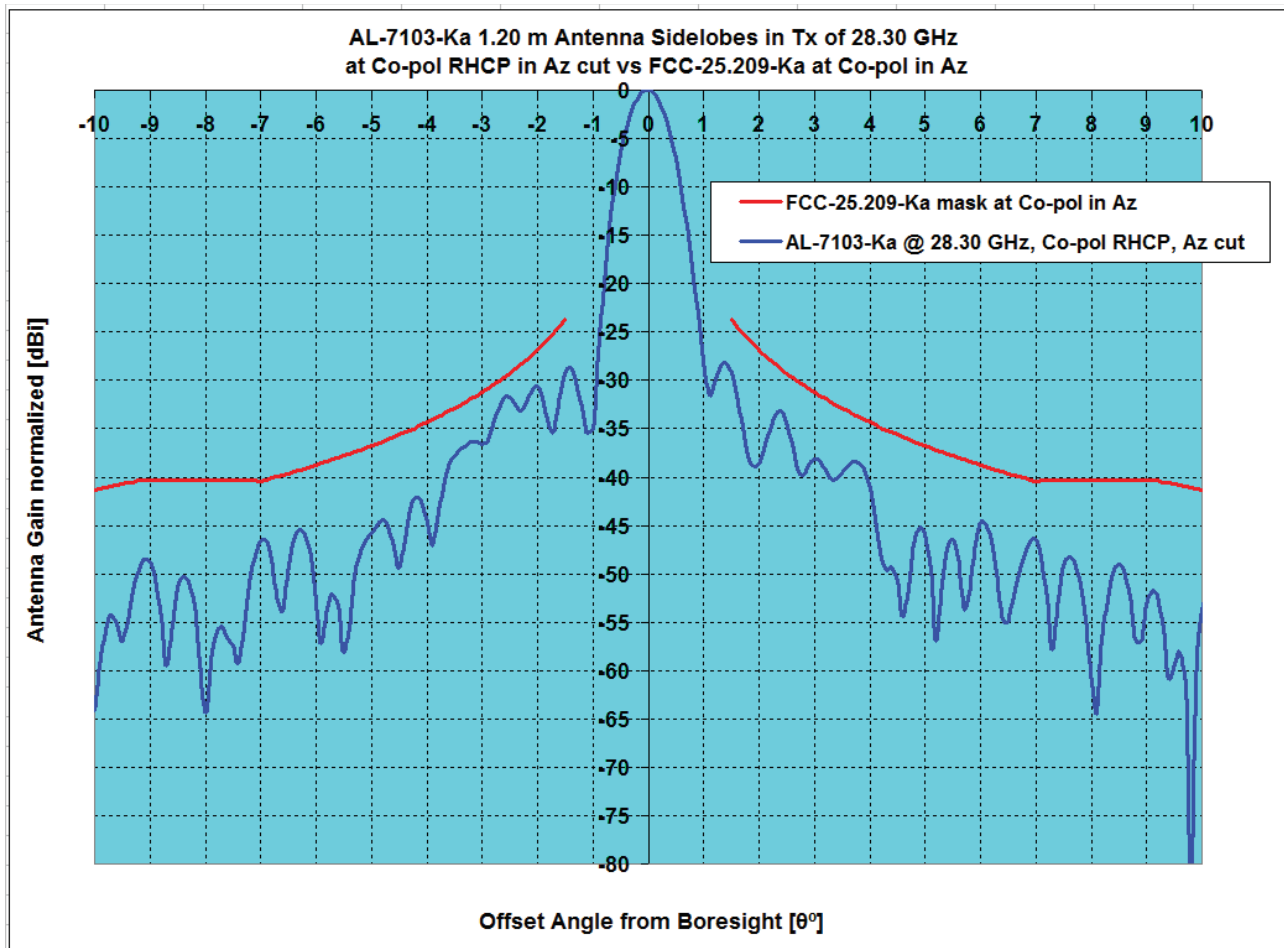
Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 X-pol Azimuth RHCP, -10° to +10° @ 0.1° increment

-4.0	4.9	3.9	0.9
-3.9	4.6	4.2	0.4
-3.8	4.1	4.5	-0.4
-3.7	3.3	4.8	-1.5
-3.6	2.5	5.1	-2.6
-3.5	2.1	5.4	-3.3
-3.4	1.9	5.7	-3.8
-3.3	2.1	6.0	-3.9
-3.2	2.6	6.4	-3.8
-3.1	3.1	6.7	-3.6
-3.0	3.3	7.1	-3.8
-2.9	3.0	7.4	-4.4
-2.8	2.7	7.8	-5.2
-2.7	2.7	8.2	-5.5
-2.6	3.6	8.6	-5.0
-2.5	4.8	9.1	-4.3
-2.4	5.4	9.5	-4.1
-2.3	5.5	10.0	-4.5
-2.2	4.9	10.4	-5.6
-2.1	3.2	10.9	-7.7
-2.0	0.9	11.5	-10.6
-1.9	-1.5	12.0	-13.5
-1.8	-1.9	12.6	-14.6
-1.7	-0.8		
-1.6	1.3		
-1.5	3.1		
-1.4	4.7		
-1.3	5.2		
-1.2	5.0		
-1.1	3.6		
-1.0	0.4		
-0.9	1.1		
-0.8	5.2		
-0.7	7.9		
-0.6	10.1		
-0.5	10.6		
-0.4	9.6		
-0.3	6.3		
-0.2	6.2		
-0.1	10.2		
0.0	12.9		

6.0	-10.7	-0.5	-10.3
6.1	-14.2	-0.6	-13.6
6.2	-18.3	-0.8	-17.4
6.3	-27.2	-1.0	-26.2
6.4	-28.9	-1.2	-27.8
6.5	-23.3	-1.3	-22.0
6.6	-16.4	-1.5	-15.0
6.7	-14.7	-1.7	-13.1
6.8	-11.0	-1.8	-9.2
6.9	-9.0	-2.0	-7.0
7.0	-7.5	-2.1	-5.4
7.1	-7.6	-2.0	-5.6
7.2	-7.0	-2.0	-5.0
7.3	-6.8	-2.0	-4.8
7.4	-7.3	-2.0	-5.3
7.5	-7.6	-2.0	-5.6
7.6	-7.4	-2.0	-5.4
7.7	-8.7	-2.0	-6.7
7.8	-9.2	-2.0	-7.2
7.9	-10.2	-2.0	-8.2
8.0	-11.2	-2.0	-9.2
8.1	-15.3	-2.0	-13.3
8.2	-18.7	-2.0	-16.7
8.3	-22.5	-2.0	-20.5
8.4	-32.3	-2.0	-30.3
8.5	-21.1	-2.0	-19.1
8.6	-21.2	-2.0	-19.2
8.7	-16.7	-2.0	-14.7
8.8	-15.4	-2.0	-13.4
8.9	-14.2	-2.0	-12.2
9.0	-13.9	-2.0	-11.9
9.1	-14.4	-2.0	-12.4
9.2	-15.2	-2.0	-13.2
9.3	-14.3	-2.0	-12.3
9.4	-14.2	-2.0	-12.2
9.5	-15.2	-2.0	-13.2
9.6	-14.9	-2.0	-12.9
9.7	-14.5	-2.0	-12.5
9.8	-16.1	-2.0	-14.1
9.9	-14.1	-2.0	-12.1
10.0	-14.2	-2.0	-12.2

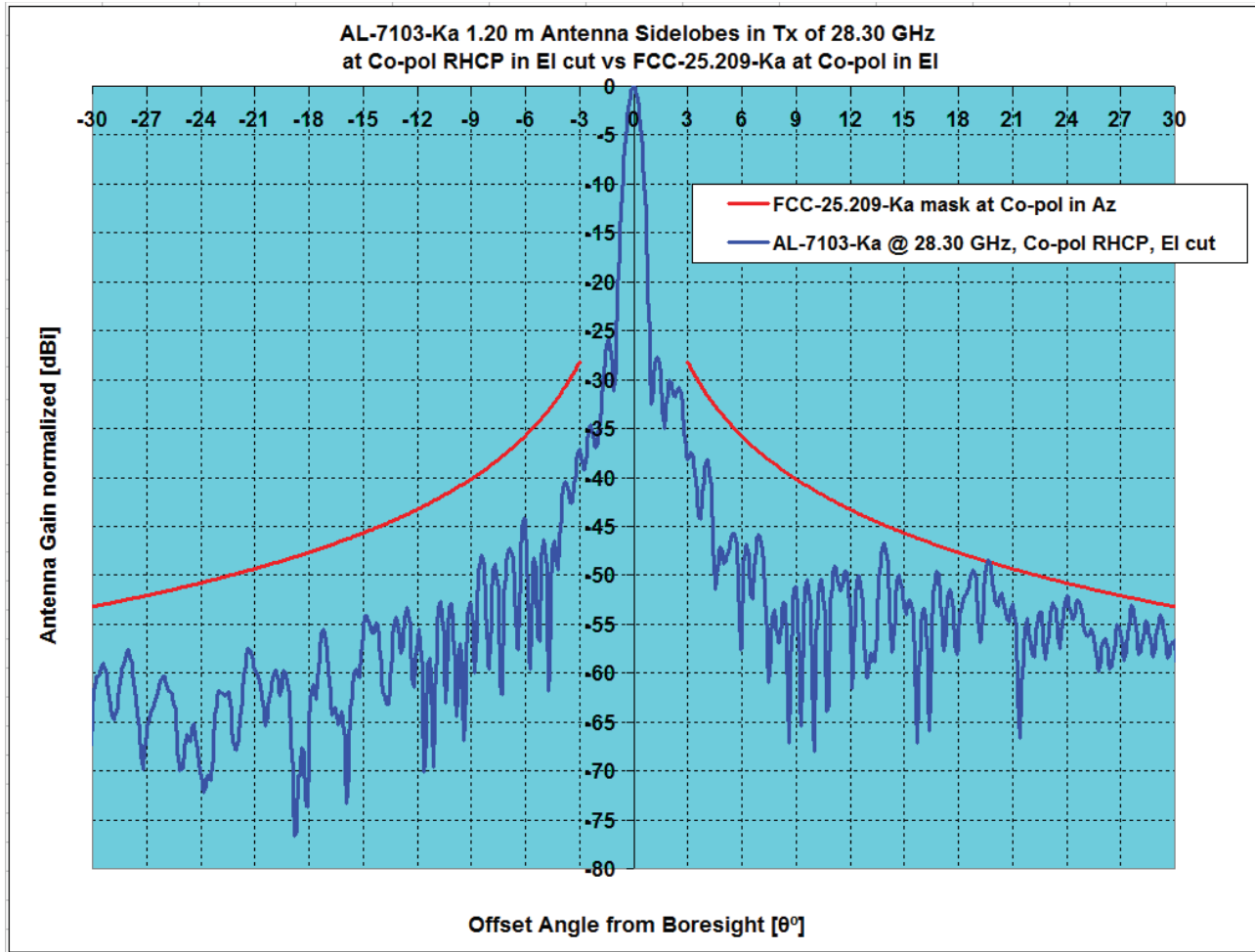


Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
				1.5°≤θ≤7°	7°≤θ≤180°	1.5°≤θ≤7°	7°≤θ≤180°
Pattern Rule vs Antenna System	Type	GHz	dBi				
FCC-25.209-Ka, Co-pol Az, vs AL-7103-Ka	Az , RHCP	28.30	48.30	-2.09	2.56	0.00%	0.45%



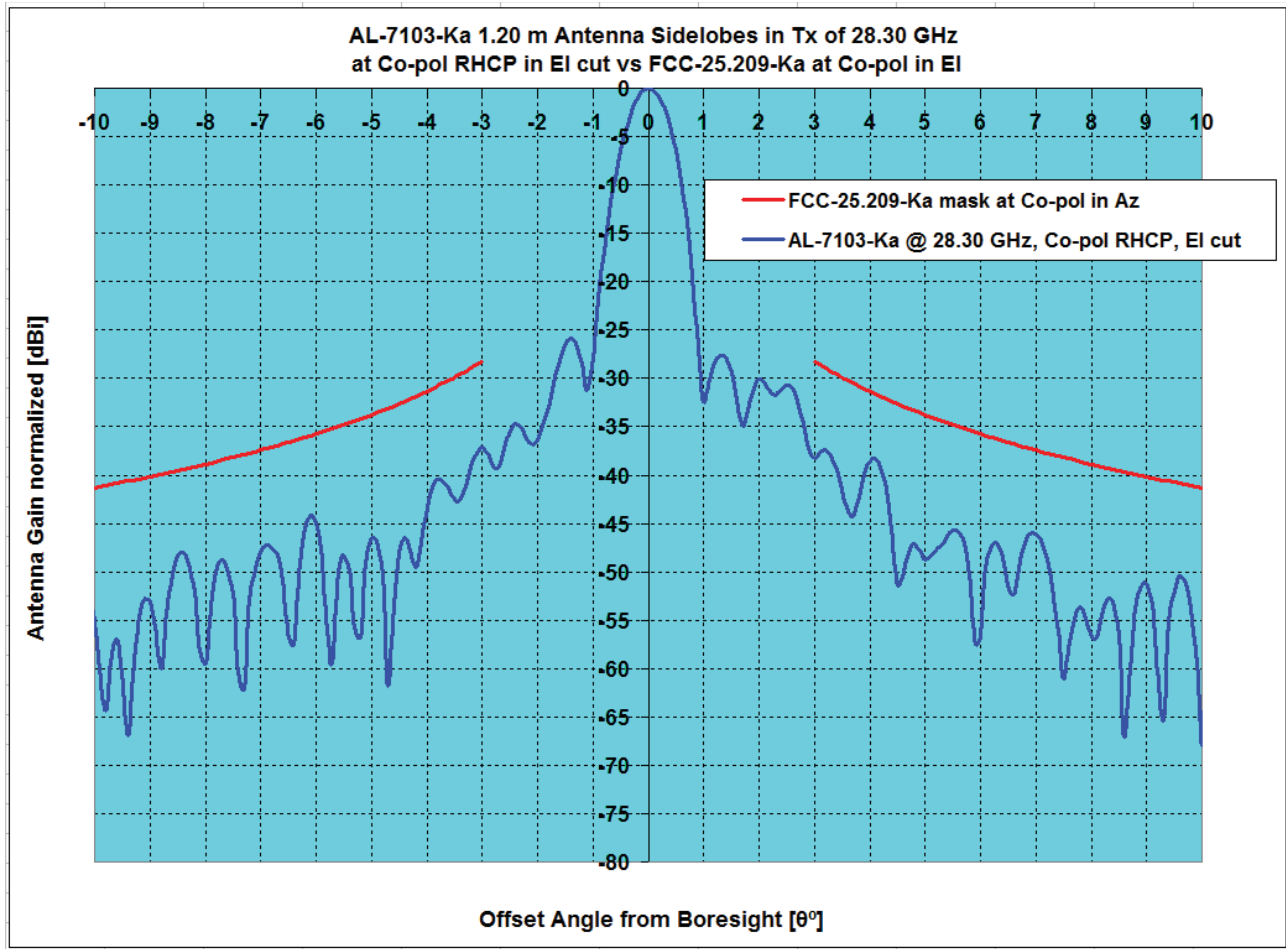
Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
				1.5°≤θ≤7°	7°≤θ≤180°	1.5°≤θ≤7°	7°≤θ≤180°
FCC-25.209-Ka, Co-pol Az, vs AL-7103-Ka	Az , RHCP	28.30	48.30	-2.09	2.56	0.00%	0.45%

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern, Co-pol, Elevation RHCP

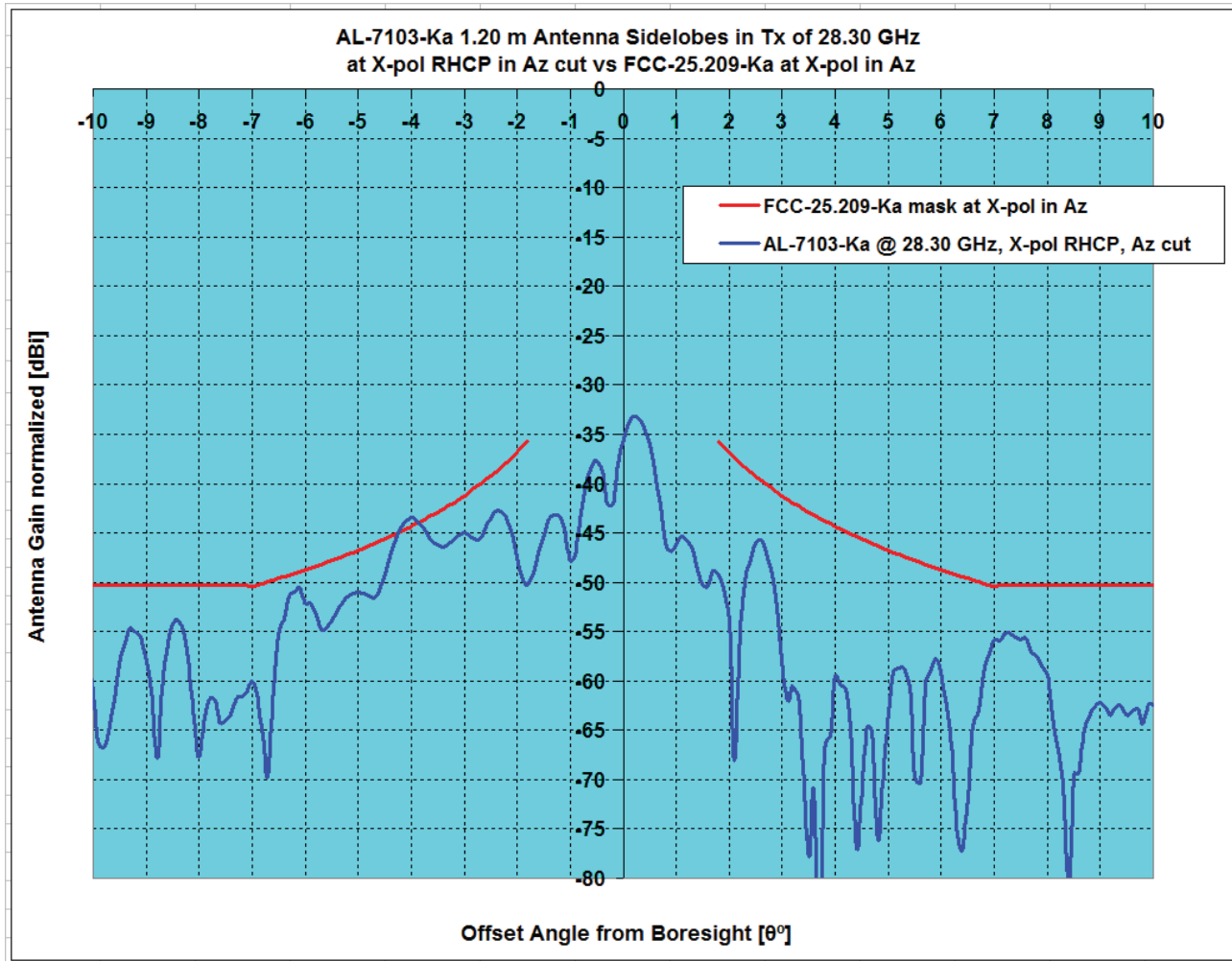


Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
				3°≤θ≤7°	7°≤θ≤30°	3°≤θ≤7°	7°≤θ≤30°
Pattern Rule vs Antenna System	Type	GHz	dBi				
FCC-25.209-Ka, Co-pol EI, vs AL-7103-Ka	EI , RHCP	28.30	48.30	-6.63	0.22	0.00%	0.18%

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern, Co-pol, Elevation RHCP



Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
				3°≤θ≤7°	7°≤θ≤30°	3°≤θ≤7°	7°≤θ≤30°
Pattern Rule vs Antenna System	Type	GHz	dBi				
FCC-25.209-Ka, Co-pol EI, vs AL-7103-Ka	EI, RHCP	28.30	48.30	-6.63	0.22	0.00%	0.18%



Description	Plane, CirP Type	Frequency GHz	Ant. Gain dBi	Peak Excursions dB		Over Mask %	
				1.8°≤θ≤7°	1.8°≤θ≤9.2°	1.8°≤θ≤7°	1.8°≤θ≤9.2°
FCC-25.209-Ka, X-pol Az, vs AL-7103-Ka	Az , RHCP	28.30	48.30	0.92	0.92	3.77%	2.41%

Orbit Communication Systems Ltd.
AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
Co-pol Azimuth LHCP, -180° to +180° @ 1.0° increment

29.10 GHz Antenna Pattern in Co-pol Az LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-179.0	-26.5	0.0	-26.5
-178.0	-34.6	0.0	-34.6
-177.0	-33.1	0.0	-33.1
-176.0	-40.3	0.0	-40.3
-175.0	-35.6	0.0	-35.6
-174.0	-37.1	0.0	-37.1
-173.0	-35.8	0.0	-35.8
-172.0	-46.4	0.0	-46.4
-171.0	-28.2	0.0	-28.2
-170.0	-35.0	0.0	-35.0
-169.0	-27.6	0.0	-27.6
-168.0	-39.6	0.0	-39.6
-167.0	-31.2	0.0	-31.2
-166.0	-33.0	0.0	-33.0
-165.0	-34.4	0.0	-34.4
-164.0	-33.2	0.0	-33.2
-163.0	-28.4	0.0	-28.4
-162.0	-27.7	0.0	-27.7
-161.0	-51.1	0.0	-51.1
-160.0	-30.5	0.0	-30.5
-159.0	-25.9	0.0	-25.9
-158.0	-32.9	0.0	-32.9
-157.0	-34.4	0.0	-34.4
-156.0	-29.0	0.0	-29.0
-155.0	-45.3	0.0	-45.3
-154.0	-35.5	0.0	-35.5
-153.0	-36.5	0.0	-36.5
-152.0	-36.3	0.0	-36.3
-151.0	-31.1	0.0	-31.1
-150.0	-36.3	0.0	-36.3
-149.0	-29.0	0.0	-29.0
-148.0	-47.2	0.0	-47.2
-147.0	-35.5	0.0	-35.5
-146.0	-34.8	0.0	-34.8
-145.0	-34.1	0.0	-34.1
-144.0	-33.9	0.0	-33.9
-143.0	-31.0	0.0	-31.0
-142.0	-34.2	0.0	-34.2
-141.0	-32.8	0.0	-32.8
-140.0	-28.1	0.0	-28.1
-139.0	-26.0	0.0	-26.0
-138.0	-31.3	0.0	-31.3
-137.0	-27.9	0.0	-27.9
-136.0	-27.6	0.0	-27.6
-135.0	-33.9	0.0	-33.9
-134.0	-31.6	0.0	-31.6
-133.0	-32.0	0.0	-32.0
-132.0	-27.3	0.0	-27.3
-131.0	-30.2	0.0	-30.2
-130.0	-28.5	0.0	-28.5
-129.0	-28.7	0.0	-28.7
-128.0	-28.7	0.0	-28.7
-127.0	-26.4	0.0	-26.4
-126.0	-33.2	0.0	-33.2
-125.0	-32.1	0.0	-32.1
-124.0	-35.6	0.0	-35.6
-123.0	-26.3	0.0	-26.3
-122.0	-24.0	0.0	-24.0
-121.0	-38.2	0.0	-38.2
-120.0	-29.9	0.0	-29.9

29.10 GHz Antenna Pattern in Co-pol Az LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	48.5		
1.0	22.1		
2.0	9.8	21.5	-11.7
3.0	11.4	17.1	-5.7
4.0	2.8	13.9	-11.1
5.0	2.4	11.5	-9.1
6.0	-1.2	9.5	-10.7
7.0	-18.0	7.9	-25.9
8.0	-12.6	8.0	-20.6
9.0	-14.2	8.0	-22.2
10.0	-8.1	7.0	-15.1
11.0	-8.1	6.0	-14.1
12.0	-23.8	5.0	-28.8
13.0	-10.7	4.2	-14.8
14.0	-10.2	3.3	-13.6
15.0	-7.7	2.6	-10.3
16.0	-15.7	1.9	-17.6
17.0	-8.8	1.2	-10.0
18.0	-29.3	0.6	-29.9
19.0	-6.2	0.0	-6.3
20.0	-18.9	-0.5	-18.4
21.0	-17.5	-1.1	-16.5
22.0	-9.5	-1.6	-8.0
23.0	-11.7	-2.0	-9.6
24.0	-7.2	-2.5	-4.7
25.0	-7.4	-2.9	-4.5
26.0	-7.0	-3.4	-3.7
27.0	-7.6	-3.8	-3.8
28.0	-8.2	-4.2	-4.0
29.0	-9.4	-4.6	-4.9
30.0	-10.5	-4.9	-5.6
31.0	-15.8	-5.3	-10.5
32.0	-18.5	-5.6	-12.9
33.0	-13.6	-6.0	-7.6
34.0	-14.0	-6.3	-7.7
35.0	-13.7	-6.6	-7.1
36.0	-13.2	-6.9	-6.3
37.0	-12.3	-7.2	-5.1
38.0	-9.2	-7.5	-1.7
39.0	-15.3	-7.8	-7.5
40.0	-16.9	-8.1	-8.9
41.0	-27.9	-8.3	-19.6
42.0	-17.7	-8.6	-9.1
43.0	-15.4	-8.8	-6.6
44.0	-14.4	-9.1	-5.3
45.0	-15.8	-9.3	-6.4
46.0	-15.5	-9.6	-6.0
47.0	-10.6	-9.8	-0.8
48.0	-33.1	-10.0	-23.1
49.0	-30.0	-10.0	-20.0
50.0	-18.1	-10.0	-8.1
51.0	-22.4	-10.0	-12.4
52.0	-20.9	-10.0	-10.9
53.0	-29.8	-10.0	-19.8
54.0	-14.7	-10.0	-4.7
55.0	-13.4	-10.0	-3.4
56.0	-17.8	-10.0	-7.8
57.0	-20.2	-10.0	-10.2
58.0	-18.0	-10.0	-8.0
59.0	-16.1	-10.0	-6.1

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Azimuth LHCP, -180° to +180° @ 1.0° increment

-119.0	-21.9	0.0	-21.9
-118.0	-29.2	0.0	-29.2
-117.0	-29.5	0.0	-29.5
-116.0	-33.5	0.0	-33.5
-115.0	-33.3	0.0	-33.3
-114.0	-26.4	0.0	-26.4
-113.0	-24.7	0.0	-24.7
-112.0	-23.7	0.0	-23.7
-111.0	-20.7	0.0	-20.7
-110.0	-17.0	0.0	-17.0
-109.0	-18.0	0.0	-18.0
-108.0	-16.4	0.0	-16.4
-107.0	-15.2	0.0	-15.2
-106.0	-14.6	0.0	-14.6
-105.0	-12.6	0.0	-12.6
-104.0	-11.8	0.0	-11.8
-103.0	-11.3	0.0	-11.3
-102.0	-11.7	0.0	-11.7
-101.0	-15.5	0.0	-15.5
-100.0	-20.2	0.0	-20.2
-99.0	-15.2	0.0	-15.2
-98.0	-12.0	0.0	-12.0
-97.0	-12.0	0.0	-12.0
-96.0	-13.1	0.0	-13.1
-95.0	-15.0	0.0	-15.0
-94.0	-12.5	0.0	-12.5
-93.0	-14.4	0.0	-14.4
-92.0	-21.3	0.0	-21.3
-91.0	-16.0	0.0	-16.0
-90.0	-15.9	0.0	-15.9
-89.0	-18.6	0.0	-18.6
-88.0	-14.6	0.0	-14.6
-87.0	-21.4	0.0	-21.4
-86.0	-16.4	0.0	-16.4
-85.0	-18.2	-10.0	-8.2
-84.0	-33.6	-10.0	-23.6
-83.0	-22.7	-10.0	-12.7
-82.0	-17.7	-10.0	-7.7
-81.0	-28.2	-10.0	-18.2
-80.0	-20.5	-10.0	-10.5
-79.0	-23.1	-10.0	-13.1
-78.0	-17.6	-10.0	-7.6
-77.0	-18.3	-10.0	-8.3
-76.0	-17.2	-10.0	-7.2
-75.0	-30.5	-10.0	-20.5
-74.0	-18.1	-10.0	-8.1
-73.0	-20.2	-10.0	-10.2
-72.0	-25.3	-10.0	-15.3
-71.0	-17.4	-10.0	-7.4
-70.0	-26.2	-10.0	-16.2
-69.0	-29.2	-10.0	-19.2
-68.0	-20.3	-10.0	-10.3
-67.0	-29.3	-10.0	-19.3
-66.0	-21.6	-10.0	-11.6
-65.0	-16.8	-10.0	-6.8
-64.0	-18.7	-10.0	-8.7
-63.0	-23.5	-10.0	-13.5
-62.0	-24.1	-10.0	-14.1
-61.0	-18.4	-10.0	-8.4
-60.0	-16.8	-10.0	-6.8
-59.0	-15.3	-10.0	-5.3
-58.0	-22.4	-10.0	-12.4
-57.0	-16.6	-10.0	-6.6

60.0	-14.1	-10.0	-4.1
61.0	-27.9	-10.0	-17.9
62.0	-23.0	-10.0	-13.0
63.0	-18.4	-10.0	-8.4
64.0	-15.4	-10.0	-5.4
65.0	-11.4	-10.0	-1.4
66.0	-22.2	-10.0	-12.2
67.0	-22.7	-10.0	-12.7
68.0	-21.2	-10.0	-11.2
69.0	-21.0	-10.0	-11.0
70.0	-12.8	-10.0	-2.8
71.0	-17.3	-10.0	-7.3
72.0	-14.4	-10.0	-4.4
73.0	-15.0	-10.0	-5.0
74.0	-12.8	-10.0	-2.8
75.0	-18.7	-10.0	-8.7
76.0	-19.3	-10.0	-9.3
77.0	-18.5	-10.0	-8.5
78.0	-15.1	-10.0	-5.1
79.0	-25.4	-10.0	-15.4
80.0	-18.5	-10.0	-8.5
81.0	-16.2	-10.0	-6.2
82.0	-23.2	-10.0	-13.2
83.0	-21.9	-10.0	-11.9
84.0	-22.8	-10.0	-12.8
85.0	-32.2	-10.0	-22.2
86.0	-17.4	0.0	-17.4
87.0	-19.8	0.0	-19.8
88.0	-16.0	0.0	-16.0
89.0	-24.1	0.0	-24.1
90.0	-22.2	0.0	-22.2
91.0	-23.5	0.0	-23.5
92.0	-19.0	0.0	-19.0
93.0	-28.5	0.0	-28.5
94.0	-20.8	0.0	-20.8
95.0	-17.1	0.0	-17.1
96.0	-21.5	0.0	-21.5
97.0	-28.0	0.0	-28.0
98.0	-33.9	0.0	-33.9
99.0	-18.0	0.0	-18.0
100.0	-18.9	0.0	-18.9
101.0	-21.5	0.0	-21.5
102.0	-25.1	0.0	-25.1
103.0	-20.5	0.0	-20.5
104.0	-34.7	0.0	-34.7
105.0	-16.5	0.0	-16.5
106.0	-21.5	0.0	-21.5
107.0	-26.9	0.0	-26.9
108.0	-21.8	0.0	-21.8
109.0	-35.2	0.0	-35.2
110.0	-21.5	0.0	-21.5
111.0	-24.7	0.0	-24.7
112.0	-18.9	0.0	-18.9
113.0	-26.8	0.0	-26.8
114.0	-23.8	0.0	-23.8
115.0	-25.0	0.0	-25.0
116.0	-20.3	0.0	-20.3
117.0	-18.5	0.0	-18.5
118.0	-28.1	0.0	-28.1
119.0	-21.8	0.0	-21.8
120.0	-17.6	0.0	-17.6
121.0	-27.4	0.0	-27.4
122.0	-21.8	0.0	-21.8

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Azimuth LHCP, -180° to +180° @ 1.0° increment

-56.0	-19.0	-10.0	-9.0
-55.0	-13.9	-10.0	-3.9
-54.0	-15.8	-10.0	-5.8
-53.0	-17.4	-10.0	-7.4
-52.0	-16.9	-10.0	-6.9
-51.0	-11.7	-10.0	-1.7
-50.0	-16.7	-10.0	-6.7
-49.0	-15.3	-10.0	-5.3
-48.0	-14.8	-10.0	-4.8
-47.0	-15.2	-9.8	-5.4
-46.0	-12.4	-9.6	-2.8
-45.0	-12.5	-9.3	-3.1
-44.0	-13.8	-9.1	-4.7
-43.0	-14.2	-8.8	-5.4
-42.0	-8.6	-8.6	0.0
-41.0	-11.1	-8.3	-2.7
-40.0	-11.5	-8.1	-3.4
-39.0	-8.4	-7.8	-0.6
-38.0	-10.3	-7.5	-2.9
-37.0	-8.7	-7.2	-1.5
-36.0	-12.6	-6.9	-5.7
-35.0	-12.2	-6.6	-5.6
-34.0	-10.5	-6.3	-4.2
-33.0	-20.8	-6.0	-14.9
-32.0	-9.7	-5.6	-4.0
-31.0	-12.5	-5.3	-7.3
-30.0	-18.5	-4.9	-13.6
-29.0	-10.9	-4.6	-6.4
-28.0	-12.7	-4.2	-8.6
-27.0	-20.0	-3.8	-16.3
-26.0	-14.0	-3.4	-10.6
-25.0	-11.1	-2.9	-8.1
-24.0	-14.9	-2.5	-12.4
-23.0	-6.0	-2.0	-3.9
-22.0	-27.5	-1.6	-25.9
-21.0	-3.6	-1.1	-2.6
-20.0	-10.6	-0.5	-10.0
-19.0	-6.7	0.0	-6.8
-18.0	-4.0	0.6	-4.6
-17.0	-9.9	1.2	-11.1
-16.0	0.1	1.9	-1.8
-15.0	-6.3	2.6	-8.9
-14.0	-9.8	3.3	-13.2
-13.0	-5.3	4.2	-9.5
-12.0	-9.7	5.0	-14.7
-11.0	-8.2	6.0	-14.2
-10.0	0.4	7.0	-6.6
-9.0	-4.6	8.0	-12.6
-8.0	-9.7	8.0	-17.7
-7.0	2.4	7.9	-5.4
-6.0	-11.4	9.5	-21.0
-5.0	4.0	11.5	-7.5
-4.0	4.4	13.9	-9.5
-3.0	9.7	17.1	-7.3
-2.0	18.6	21.5	-2.9
-1.0	14.4		
0.0	48.5		

123.0	-26.8	0.0	-26.8
124.0	-22.6	0.0	-22.6
125.0	-30.8	0.0	-30.8
126.0	-42.8	0.0	-42.8
127.0	-22.4	0.0	-22.4
128.0	-28.6	0.0	-28.6
129.0	-19.7	0.0	-19.7
130.0	-27.5	0.0	-27.5
131.0	-19.4	0.0	-19.4
132.0	-19.0	0.0	-19.0
133.0	-21.1	0.0	-21.1
134.0	-23.1	0.0	-23.1
135.0	-21.0	0.0	-21.0
136.0	-23.1	0.0	-23.1
137.0	-20.0	0.0	-20.0
138.0	-20.8	0.0	-20.8
139.0	-20.8	0.0	-20.8
140.0	-17.8	0.0	-17.8
141.0	-19.8	0.0	-19.8
142.0	-26.9	0.0	-26.9
143.0	-32.7	0.0	-32.7
144.0	-29.2	0.0	-29.2
145.0	-23.3	0.0	-23.3
146.0	-19.9	0.0	-19.9
147.0	-20.6	0.0	-20.6
148.0	-35.3	0.0	-35.3
149.0	-24.5	0.0	-24.5
150.0	-24.6	0.0	-24.6
151.0	-24.4	0.0	-24.4
152.0	-29.8	0.0	-29.8
153.0	-28.4	0.0	-28.4
154.0	-21.7	0.0	-21.7
155.0	-22.7	0.0	-22.7
156.0	-24.9	0.0	-24.9
157.0	-25.7	0.0	-25.7
158.0	-19.2	0.0	-19.2
159.0	-20.1	0.0	-20.1
160.0	-20.2	0.0	-20.2
161.0	-28.7	0.0	-28.7
162.0	-25.2	0.0	-25.2
163.0	-21.4	0.0	-21.4
164.0	-17.7	0.0	-17.7
165.0	-19.7	0.0	-19.7
166.0	-17.8	0.0	-17.8
167.0	-25.6	0.0	-25.6
168.0	-29.5	0.0	-29.5
169.0	-17.7	0.0	-17.7
170.0	-21.0	0.0	-21.0
171.0	-24.3	0.0	-24.3
172.0	-21.5	0.0	-21.5
173.0	-27.9	0.0	-27.9
174.0	-29.5	0.0	-29.5
175.0	-27.9	0.0	-27.9
176.0	-34.4	0.0	-34.4
177.0	-35.2	0.0	-35.2
178.0	-24.6	0.0	-24.6
179.0	-30.0	0.0	-30.0

Orbit Communication Systems Ltd.
 AL AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Azimuth LHCP, -10° to +10° @ 0.1° increment

29.10 GHz Antenna Pattern in Co-pol Az LHCP				29.10 GHz Antenna Pattern in Co-pol Az LHCP			
Angle Degrees	Gain dBi	Mask dBi	Over Mask dB	Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-10.0	0.4	7.0	-6.6	0.0	48.5		
-9.9	1.9	7.1	-5.2	0.1	48.3		
-9.8	2.4	7.2	-4.8	0.2	47.6		
-9.7	1.8	7.3	-5.6	0.3	46.4		
-9.6	-0.1	7.4	-7.5	0.4	44.7		
-9.5	-3.2	7.6	-10.8	0.5	42.4		
-9.4	-6.9	7.7	-14.6	0.6	39.6		
-9.3	-8.1	7.8	-15.9	0.7	36.2		
-9.2	-5.9	8.0	-13.9	0.8	32.2		
-9.1	-4.5	8.0	-12.5	0.9	27.4		
-9.0	-4.6	8.0	-12.6	1.0	22.1		
-8.9	-6.4	8.0	-14.4	1.1	17.6		
-8.8	-9.7	8.0	-17.7	1.2	18.2		
-8.7	-12.5	8.0	-20.5	1.3	19.9		
-8.6	-8.1	8.0	-16.1	1.4	20.4		
-8.5	-4.2	8.0	-12.2	1.5	19.6	24.6	-5.0
-8.4	-2.0	8.0	-10.0	1.6	17.8	23.9	-6.1
-8.3	-1.6	8.0	-9.6	1.7	15.3	23.2	-7.9
-8.2	-2.5	8.0	-10.5	1.8	12.3	22.6	-10.3
-8.1	-6.0	8.0	-14.0	1.9	10.4	22.0	-11.6
-8.0	-9.7	8.0	-17.7	2.0	9.8	21.5	-11.7
-7.9	-5.5	8.0	-13.5	2.1	11.1	20.9	-9.8
-7.8	-1.6	8.0	-9.6	2.2	12.8	20.4	-7.6
-7.7	0.2	8.0	-7.8	2.3	13.8	20.0	-6.2
-7.6	0.1	8.0	-7.9	2.4	14.3	19.5	-5.2
-7.5	-1.8	8.0	-9.8	2.5	14.0	19.1	-5.1
-7.4	-5.6	8.0	-13.6	2.6	13.4	18.6	-5.2
-7.3	-7.7	8.0	-15.7	2.7	12.7	18.2	-5.5
-7.2	-2.3	8.0	-10.3	2.8	12.3	17.8	-5.5
-7.1	1.0	8.0	-7.0	2.9	12.1	17.4	-5.3
-7.0	2.4	7.9	-5.4	3.0	11.4	17.1	-5.7
-6.9	3.1	8.0	-4.9	3.1	10.2	16.7	-6.5
-6.8	2.4	8.2	-5.8	3.2	9.2	16.4	-7.1
-6.7	0.4	8.3	-8.0	3.3	8.8	16.0	-7.3
-6.6	-3.3	8.5	-11.8	3.4	9.3	15.7	-6.4
-6.5	-11.3	8.7	-20.0	3.5	9.7	15.4	-5.7
-6.4	-9.6	8.8	-18.5	3.6	9.7	15.1	-5.4
-6.3	-4.4	9.0	-13.4	3.7	9.0	14.8	-5.8
-6.2	-2.7	9.2	-11.9	3.8	7.6	14.5	-6.9
-6.1	-4.5	9.4	-13.9	3.9	5.0	14.2	-9.2
-6.0	-11.4	9.5	-21.0	4.0	2.8	13.9	-11.1
-5.9	-12.8	9.7	-22.5	4.1	2.6	13.7	-11.1
-5.8	-3.3	9.9	-13.2	4.2	3.1	13.4	-10.3
-5.7	0.4	10.1	-9.7	4.3	2.5	13.2	-10.6
-5.6	1.3	10.3	-9.0	4.4	0.4	12.9	-12.5
-5.5	-0.1	10.5	-10.6	4.5	-1.2	12.7	-13.9
-5.4	-4.3	10.7	-15.0	4.6	1.3	12.4	-11.2
-5.3	-13.6	10.9	-24.5	4.7	4.1	12.2	-8.1
-5.2	-3.4	11.1	-14.5	4.8	5.0	12.0	-7.0
-5.1	1.9	11.3	-9.4	4.9	4.5	11.7	-7.3
-5.0	4.0	11.5	-7.5	5.0	2.4	11.5	-9.1
-4.9	4.9	11.7	-6.8	5.1	-1.2	11.3	-12.6
-4.8	4.9	12.0	-7.0	5.2	-6.2	11.1	-17.3
-4.7	4.4	12.2	-7.8	5.3	-5.5	10.9	-16.4
-4.6	2.8	12.4	-9.6	5.4	-5.5	10.7	-16.1
-4.5	0.0	12.7	-12.7	5.5	-9.5	10.5	-20.0
-4.4	-3.1	12.9	-16.0	5.6	-8.1	10.3	-18.3
-4.3	-1.2	13.2	-14.4	5.7	-3.2	10.1	-13.3
-4.2	2.7	13.4	-10.8	5.8	-0.6	9.9	-10.5
-4.1	4.4	13.7	-9.3	5.9	-0.1	9.7	-9.8
-4.0	4.4	13.9	-9.5	6.0	-1.2	9.5	-10.7
-3.9	3.5	14.2	-10.7	6.1	-4.1	9.4	-13.5

Orbit Communication Systems Ltd.
 AL AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Azimuth LHCP, -10° to +10° @ 0.1° increment

-3.8	3.9	14.5	-10.6		6.2	-10.2	9.2	-19.4
-3.7	6.5	14.8	-8.2		6.3	-13.1	9.0	-22.1
-3.6	9.4	15.1	-5.7		6.4	-7.5	8.8	-16.3
-3.5	11.3	15.4	-4.1		6.5	-4.5	8.7	-13.2
-3.4	12.1	15.7	-3.6		6.6	-3.2	8.5	-11.7
-3.3	12.2	16.0	-3.9		6.7	-2.7	8.3	-11.1
-3.2	11.7	16.4	-4.6		6.8	-3.7	8.2	-11.9
-3.1	10.9	16.7	-5.8		6.9	-7.6	8.0	-15.6
-3.0	9.7	17.1	-7.3		7.0	-18.0	7.9	-25.9
-2.9	8.7	17.4	-8.7		7.1	-9.9	8.0	-17.9
-2.8	9.4	17.8	-8.5		7.2	-4.9	8.0	-12.9
-2.7	11.6	18.2	-6.6		7.3	-3.4	8.0	-11.4
-2.6	14.0	18.6	-4.6		7.4	-4.2	8.0	-12.2
-2.5	15.9	19.1	-3.1		7.5	-8.6	8.0	-16.6
-2.4	17.3	19.5	-2.2		7.6	-21.5	8.0	-29.5
-2.3	18.2	20.0	-1.8		7.7	-12.4	8.0	-20.4
-2.2	18.8	20.4	-1.6		7.8	-8.5	8.0	-16.5
-2.1	19.1	20.9	-1.9		7.9	-8.6	8.0	-16.6
-2.0	18.6	21.5	-2.9		8.0	-12.6	8.0	-20.6
-1.9	17.1	22.0	-4.9		8.1	-16.4	8.0	-24.4
-1.8	14.0	22.6	-8.6		8.2	-10.6	8.0	-18.6
-1.7	10.3	23.2	-13.0		8.3	-7.9	8.0	-15.9
-1.6	12.1	23.9	-11.8		8.4	-9.6	8.0	-17.6
-1.5	15.4	24.6	-9.2		8.5	-16.8	8.0	-24.8
-1.4	17.0				8.6	-15.4	8.0	-23.4
-1.3	17.2				8.7	-8.5	8.0	-16.5
-1.2	17.0				8.8	-6.9	8.0	-14.9
-1.1	16.4				8.9	-9.4	8.0	-17.4
-1.0	14.4				9.0	-14.2	8.0	-22.2
-0.9	19.2				9.1	-12.2	8.0	-20.2
-0.8	27.6				9.2	-5.5	8.0	-13.5
-0.7	33.6				9.3	-3.0	7.8	-10.8
-0.6	38.2				9.4	-3.1	7.7	-10.8
-0.5	41.6				9.5	-5.5	7.6	-13.0
-0.4	44.2				9.6	-10.7	7.4	-18.1
-0.3	46.0				9.7	-13.9	7.3	-21.2
-0.2	47.4				9.8	-9.1	7.2	-16.3
-0.1	48.2				9.9	-7.0	7.1	-14.1
0.0	48.5				10.0	-8.1	7.0	-15.1

Orbit Communication Systems Ltd.
AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
Co-pol Elevation LHCP, -30° to +30° @ 0.5° increment

29.10 GHz Antenna Pattern in Co-pol EI LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-30.0	-14.2	-4.9	-9.3
-29.5	-11.7	-4.7	-7.0
-29.0	-13.5	-4.6	-9.0
-28.5	-12.3	-4.4	-7.9
-28.0	-11.3	-4.2	-7.1
-27.5	-11.5	-4.0	-7.5
-27.0	-10.2	-3.8	-6.4
-26.5	-10.1	-3.6	-6.5
-26.0	-12.7	-3.4	-9.3
-25.5	-12.8	-3.2	-9.6
-25.0	-8.7	-2.9	-5.7
-24.5	-9.1	-2.7	-6.4
-24.0	-11.7	-2.5	-9.2
-23.5	-10.2	-2.3	-7.9
-23.0	-11.6	-2.0	-9.6
-22.5	-12.7	-1.8	-10.9
-22.0	-10.9	-1.6	-9.4
-21.5	-15.0	-1.3	-13.6
-21.0	-25.7	-1.1	-24.7
-20.5	-20.9	-0.8	-20.1
-20.0	-11.1	-0.5	-10.5
-19.5	-10.2	-0.3	-10.0
-19.0	-11.0	0.0	-11.0
-18.5	-15.9	0.3	-16.2
-18.0	-11.5	0.6	-12.2
-17.5	-7.3	0.9	-8.3
-17.0	-8.6	1.2	-9.8
-16.5	-18.7	1.6	-20.2
-16.0	-11.1	1.9	-13.0
-15.5	-13.0	2.2	-15.3
-15.0	-13.4	2.6	-16.0
-14.5	-11.2	3.0	-14.2
-14.0	-7.2	3.3	-10.6
-13.5	-8.3	3.7	-12.1
-13.0	-10.7	4.2	-14.9
-12.5	-14.8	4.6	-19.4
-12.0	-8.9	5.0	-14.0
-11.5	-11.5	5.5	-17.0
-11.0	-11.1	6.0	-17.1
-10.5	-11.4	6.5	-17.9
-10.0	-17.0	7.0	-24.0
-9.5	-9.5	7.6	-17.1
-9.0	-10.1	8.1	-18.3
-8.5	-10.0	8.8	-18.8
-8.0	-21.7	9.4	-31.1
-7.5	-20.0	10.1	-30.1
-7.0	-12.2	10.9	-23.1
-6.5	1.0	11.7	-10.6
-6.0	0.6	12.5	-11.9
-5.5	-9.2	13.5	-22.7
-5.0	2.5	14.5	-12.1
-4.5	0.6	15.7	-15.1
-4.0	0.2	16.9	-16.8
-3.5	3.3	18.4	-15.1
-3.0	11.6		
-2.5	12.4		
-2.0	12.7		
-1.5	21.5		
-1.0	23.1		
-0.5	42.5		
0.0	48.5		

29.10 GHz Antenna Pattern in Co-pol EI LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	48.5		
0.5	41.0		
1.0	16.6		
1.5	15.0		
2.0	17.4		
2.5	16.2		
3.0	6.3		
3.5	7.1	18.4	-11.3
4.0	6.7	16.9	-10.3
4.5	-0.4	15.7	-16.1
5.0	1.7	14.5	-12.8
5.5	2.5	13.5	-11.0
6.0	-14.9	12.5	-27.5
6.5	-5.8	11.7	-17.4
7.0	2.1	10.9	-8.8
7.5	0.6	10.1	-9.5
8.0	-2.7	9.4	-12.1
8.5	-1.8	8.8	-10.6
9.0	-12.4	8.1	-20.5
9.5	0.6	7.6	-6.9
10.0	0.9	7.0	-6.1
10.5	-11.2	6.5	-17.7
11.0	-6.1	6.0	-12.1
11.5	-6.1	5.5	-11.6
12.0	-12.5	5.0	-17.5
12.5	-3.3	4.6	-7.9
13.0	-11.3	4.2	-15.4
13.5	-4.4	3.7	-8.2
14.0	-1.9	3.3	-5.2
14.5	-5.8	3.0	-8.8
15.0	-3.6	2.6	-6.2
15.5	-7.8	2.2	-10.0
16.0	-8.3	1.9	-10.1
16.5	-2.8	1.6	-4.4
17.0	-28.4	1.2	-29.6
17.5	-4.5	0.9	-5.4
18.0	-6.9	0.6	-7.5
18.5	-2.8	0.3	-3.1
19.0	-6.0	0.0	-6.1
19.5	-3.5	-0.3	-3.2
20.0	-7.3	-0.5	-6.7
20.5	-7.3	-0.8	-6.5
21.0	-4.9	-1.1	-3.9
21.5	-5.3	-1.3	-4.0
22.0	-7.3	-1.6	-5.7
22.5	-5.9	-1.8	-4.1
23.0	-8.2	-2.0	-6.1
23.5	-9.9	-2.3	-7.6
24.0	-12.7	-2.5	-10.2
24.5	-16.8	-2.7	-14.1
25.0	-5.5	-2.9	-2.5
25.5	-11.9	-3.2	-8.7
26.0	-14.4	-3.4	-11.1
26.5	-7.5	-3.6	-4.0
27.0	-15.5	-3.8	-11.7
27.5	-12.6	-4.0	-8.6
28.0	-13.2	-4.2	-9.0
28.5	-13.3	-4.4	-8.9
29.0	-21.0	-4.6	-16.5
29.5	-13.9	-4.7	-9.2
30.0	-12.6	-4.9	-7.7

Orbit Communication Systems Ltd.
AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
Co-pol Elevation LHCP, -10° to +10° @ 0.1° increment

29.10 GHz Antenna Pattern in Co-pol EI LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-10.0	-17.0	7.0	-24.0
-9.9	-14.8	7.1	-21.9
-9.8	-17.8	7.2	-25.0
-9.7	-16.9	7.3	-24.3
-9.6	-12.3	7.4	-19.7
-9.5	-9.5	7.6	-17.1
-9.4	-9.3	7.7	-17.0
-9.3	-12.4	7.8	-20.2
-9.2	-21.2	7.9	-29.1
-9.1	-16.6	8.0	-24.6
-9.0	-10.1	8.1	-18.3
-8.9	-8.2	8.3	-16.4
-8.8	-9.4	8.4	-17.8
-8.7	-12.5	8.5	-21.1
-8.6	-14.9	8.6	-23.6
-8.5	-10.0	8.8	-18.8
-8.4	-7.2	8.9	-16.1
-8.3	-7.2	9.0	-16.2
-8.2	-9.1	9.2	-18.3
-8.1	-15.5	9.3	-24.8
-8.0	-21.7	9.4	-31.1
-7.9	-13.6	9.6	-23.2
-7.8	-12.2	9.7	-21.9
-7.7	-12.9	9.8	-22.7
-7.6	-15.8	10.0	-25.7
-7.5	-20.0	10.1	-30.1
-7.4	-16.5	10.3	-26.8
-7.3	-11.4	10.4	-21.8
-7.2	-8.8	10.6	-19.4
-7.1	-8.8	10.7	-19.5
-7.0	-12.2	10.9	-23.1
-6.9	-15.7	11.0	-26.8
-6.8	-7.3	11.2	-18.5
-6.7	-2.0	11.3	-13.4
-6.6	0.5	11.5	-11.0
-6.5	1.0	11.7	-10.6
-6.4	0.4	11.8	-11.4
-6.3	-2.1	12.0	-14.1
-6.2	-3.4	12.2	-15.6
-6.1	-1.3	12.4	-13.7
-6.0	0.6	12.5	-11.9
-5.9	0.9	12.7	-11.8
-5.8	-1.1	12.9	-14.0
-5.7	-6.0	13.1	-19.1
-5.6	-15.0	13.3	-28.3
-5.5	-9.2	13.5	-22.7
-5.4	-5.6	13.7	-19.3
-5.3	-7.1	13.9	-21.0
-5.2	-6.5	14.1	-20.6
-5.1	-1.0	14.3	-15.3
-5.0	2.5	14.5	-12.1
-4.9	4.2	14.7	-10.5
-4.8	4.1	15.0	-10.9
-4.7	2.6	15.2	-12.6
-4.6	0.9	15.4	-14.5
-4.5	0.6	15.7	-15.1
-4.4	1.6	15.9	-14.3
-4.3	2.3	16.2	-13.9
-4.2	2.0	16.4	-14.4
-4.1	1.1	16.7	-15.5

29.10 GHz Antenna Pattern in Co-pol EI LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	48.5		
0.1	48.2		
0.2	47.3		
0.3	45.8		
0.4	43.8		
0.5	41.0		
0.6	37.3		
0.7	32.2		
0.8	25.0		
0.9	13.9		
1.0	16.6		
1.1	18.8		
1.2	18.7		
1.3	17.6		
1.4	16.3		
1.5	15.0		
1.6	13.6		
1.7	13.8		
1.8	15.3		
1.9	16.6		
2.0	17.4		
2.1	17.8		
2.2	17.9		
2.3	17.7		
2.4	17.2		
2.5	16.2		
2.6	14.6		
2.7	12.2		
2.8	9.3		
2.9	7.1		
3.0	6.3		
3.1	6.6		
3.2	7.5		
3.3	8.4		
3.4	8.3		
3.5	7.1	18.4	-11.3
3.6	5.4	18.1	-12.7
3.7	4.0	17.8	-13.8
3.8	4.7	17.5	-12.8
3.9	6.2	17.2	-11.0
4.0	6.7	16.9	-10.3
4.1	5.8	16.7	-10.9
4.2	4.7	16.4	-11.7
4.3	2.3	16.2	-13.9
4.4	0.1	15.9	-15.8
4.5	-0.4	15.7	-16.1
4.6	0.6	15.4	-14.8
4.7	2.0	15.2	-13.2
4.8	3.3	15.0	-11.7
4.9	3.7	14.7	-11.0
5.0	1.7	14.5	-12.8
5.1	-2.6	14.3	-16.9
5.2	-14.4	14.1	-28.5
5.3	-5.6	13.9	-19.5
5.4	0.9	13.7	-12.8
5.5	2.5	13.5	-11.0
5.6	3.0	13.3	-10.3
5.7	1.6	13.1	-11.5
5.8	-2.8	12.9	-15.7
5.9	-12.9	12.7	-25.6

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Elevation LHCP, -10° to +10° @ 0.1° increment

-4.0	0.2	16.9	-16.8
-3.9	-0.2	17.2	-17.4
-3.8	-0.1	17.5	-17.6
-3.7	0.8	17.8	-17.0
-3.6	2.1	18.1	-16.0
-3.5	3.3	18.4	-15.1
-3.4	4.7		
-3.3	6.6		
-3.2	8.7		
-3.1	10.6		
-3.0	11.6		
-2.9	11.6		
-2.8	10.8		
-2.7	10.3		
-2.6	10.9		
-2.5	12.4		
-2.4	13.5		
-2.3	13.9		
-2.2	13.6		
-2.1	13.0		
-2.0	12.7		
-1.9	13.3		
-1.8	15.2		
-1.7	17.8		
-1.6	20.2		
-1.5	21.5		
-1.4	21.9		
-1.3	21.1		
-1.2	19.6		
-1.1	19.4		
-1.0	23.1		
-0.9	27.8		
-0.8	32.3		
-0.7	36.3		
-0.6	39.7		
-0.5	42.5		
-0.4	44.7		
-0.3	46.5		
-0.2	47.7		
-0.1	48.3		
0.0	48.5		

6.0	-14.9	12.5	-27.5
6.1	-6.9	12.4	-19.3
6.2	-5.5	12.2	-17.7
6.3	-5.8	12.0	-17.8
6.4	-6.7	11.8	-18.5
6.5	-5.8	11.7	-17.4
6.6	-2.8	11.5	-14.4
6.7	-0.2	11.3	-11.6
6.8	1.7	11.2	-9.5
6.9	2.3	11.0	-8.7
7.0	2.1	10.9	-8.8
7.1	1.0	10.7	-9.7
7.2	-0.7	10.6	-11.3
7.3	-1.0	10.4	-11.4
7.4	-0.1	10.3	-10.3
7.5	0.6	10.1	-9.5
7.6	1.0	10.0	-9.0
7.7	0.3	9.8	-9.6
7.8	-1.3	9.7	-11.0
7.9	-2.9	9.6	-12.5
8.0	-2.7	9.4	-12.1
8.1	-1.2	9.3	-10.5
8.2	-0.1	9.2	-9.3
8.3	0.0	9.0	-9.0
8.4	0.0	8.9	-8.9
8.5	-1.8	8.8	-10.6
8.6	-3.9	8.6	-12.5
8.7	-7.5	8.5	-16.0
8.8	-11.4	8.4	-19.8
8.9	-13.0	8.3	-21.2
9.0	-12.4	8.1	-20.5
9.1	-13.2	8.0	-21.3
9.2	-13.0	7.9	-20.9
9.3	-7.2	7.8	-15.0
9.4	-2.2	7.7	-9.9
9.5	0.6	7.6	-6.9
9.6	2.4	7.4	-5.0
9.7	3.4	7.3	-4.0
9.8	3.4	7.2	-3.8
9.9	2.3	7.1	-4.8
10.0	0.9	7.0	-6.1

Orbit Communication Systems Ltd.
AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
X-pol Azimuth LHCP, -10° to +10° @ 0.1° increment

29.10 GHz Antenna Pattern in X-pol Az LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-10.0	-7.7	-2.0	-5.7
-9.9	-10.2	-2.0	-8.2
-9.8	-14.2	-2.0	-12.2
-9.7	-22.3	-2.0	-20.3
-9.6	-27.5	-2.0	-25.5
-9.5	-17.7	-2.0	-15.7
-9.4	-16.2	-2.0	-14.2
-9.3	-17.0	-2.0	-15.0
-9.2	-15.5	-2.0	-13.5
-9.1	-10.5	-2.0	-8.5
-9.0	-7.6	-2.0	-5.6
-8.9	-5.3	-2.0	-3.3
-8.8	-4.3	-2.0	-2.3
-8.7	-3.7	-2.0	-1.7
-8.6	-4.0	-2.0	-2.0
-8.5	-5.0	-2.0	-3.0
-8.4	-6.9	-2.0	-4.9
-8.3	-9.2	-2.0	-7.2
-8.2	-10.6	-2.0	-8.6
-8.1	-8.2	-2.0	-6.2
-8.0	-6.0	-2.0	-4.0
-7.9	-4.7	-2.0	-2.7
-7.8	-4.9	-2.0	-2.9
-7.7	-7.3	-2.0	-5.3
-7.6	-11.6	-2.0	-9.6
-7.5	-21.7	-2.0	-19.7
-7.4	-12.4	-2.0	-10.4
-7.3	-8.0	-2.0	-6.0
-7.2	-6.4	-2.0	-4.4
-7.1	-7.5	-2.0	-5.5
-7.0	-10.9	-2.1	-8.8
-6.9	-18.2	-2.0	-16.2
-6.8	-16.0	-1.8	-14.2
-6.7	-10.6	-1.7	-9.0
-6.6	-7.2	-1.5	-5.7
-6.5	-6.2	-1.3	-4.9
-6.4	-6.3	-1.2	-5.2
-6.3	-7.2	-1.0	-6.2
-6.2	-10.1	-0.8	-9.3
-6.1	-14.8	-0.6	-14.2
-6.0	-20.9	-0.5	-20.5
-5.9	-11.0	-0.3	-10.8
-5.8	-7.5	-0.1	-7.4
-5.7	-6.5	0.1	-6.6
-5.6	-8.4	0.3	-8.7
-5.5	-11.1	0.5	-11.6
-5.4	-8.2	0.7	-8.9
-5.3	-3.9	0.9	-4.8
-5.2	-1.5	1.1	-2.6
-5.1	-1.0	1.3	-2.3
-5.0	-1.7	1.5	-3.2
-4.9	-4.0	1.7	-5.7
-4.8	-7.3	2.0	-9.2
-4.7	-7.2	2.2	-9.4
-4.6	-5.1	2.4	-7.5
-4.5	-3.2	2.7	-5.9
-4.4	-1.9	2.9	-4.8
-4.3	-1.2	3.2	-4.3
-4.2	-1.0	3.4	-4.4
-4.1	-2.1	3.7	-5.8

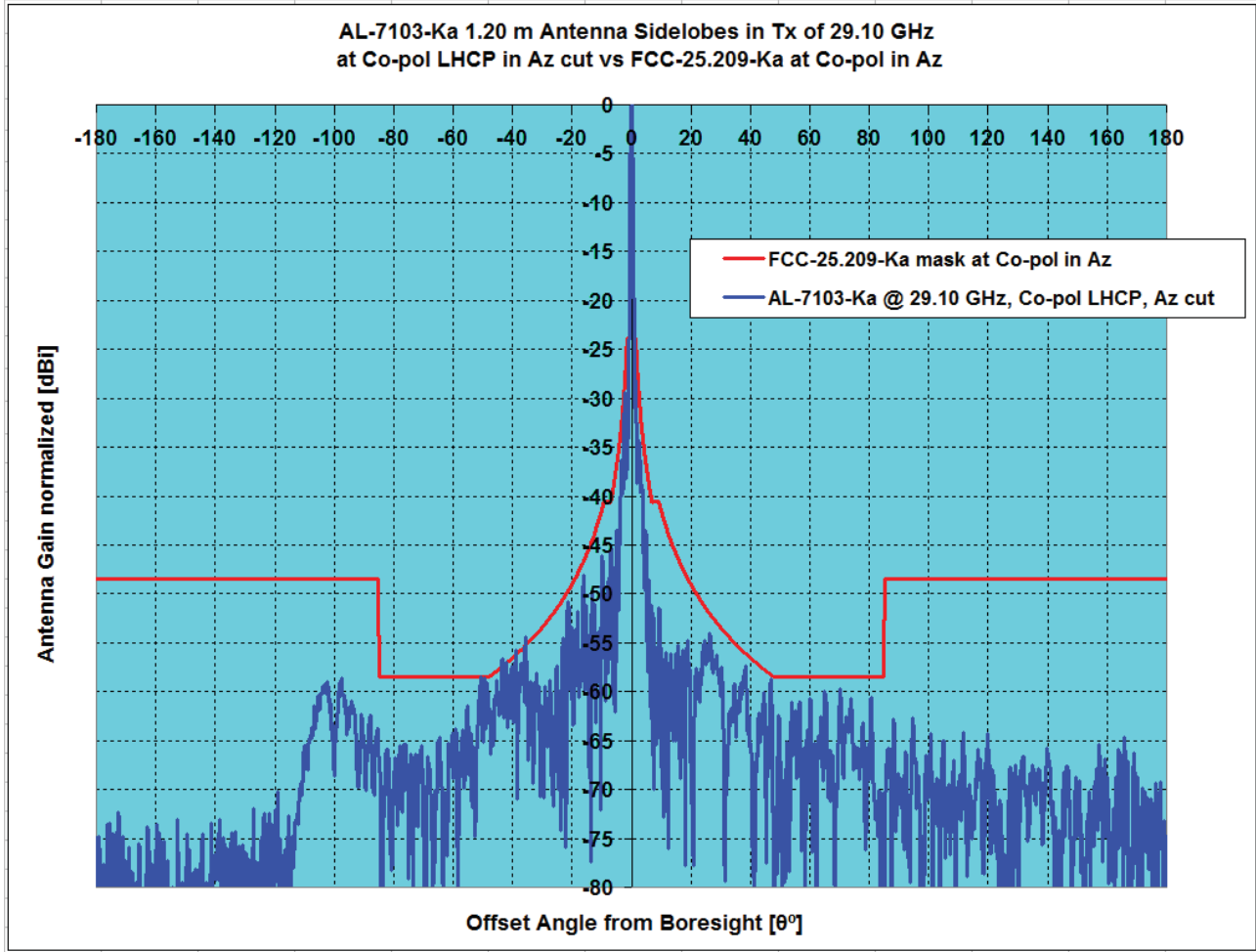
29.10 GHz Antenna Pattern in X-pol Az LHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	15.5		
0.1	19.8		
0.2	23.9		
0.3	26.3		
0.4	27.7		
0.5	28.0		
0.6	27.4		
0.7	25.8		
0.8	23.2		
0.9	19.3		
1.0	13.7		
1.1	6.8		
1.2	6.4		
1.3	6.2		
1.4	1.6		
1.5	-10.4		
1.6	1.7		
1.7	5.3		
1.8	5.6	12.6	-7.0
1.9	2.7	12.0	-9.3
2.0	-4.8	11.5	-16.3
2.1	-9.3	10.9	-20.3
2.2	-2.6	10.4	-13.0
2.3	-1.5	10.0	-11.5
2.4	-1.8	9.5	-11.3
2.5	-3.5	9.1	-12.6
2.6	-1.6	8.6	-10.2
2.7	-0.1	8.2	-8.3
2.8	-0.7	7.8	-8.5
2.9	-4.6	7.4	-12.0
3.0	-11.7	7.1	-18.8
3.1	-6.8	6.7	-13.6
3.2	-2.7	6.4	-9.1
3.3	-2.2	6.0	-8.2
3.4	-5.1	5.7	-10.8
3.5	-10.0	5.4	-15.4
3.6	-13.9	5.1	-19.0
3.7	-7.2	4.8	-12.0
3.8	-3.9	4.5	-8.4
3.9	-2.9	4.2	-7.1
4.0	-3.3	3.9	-7.3
4.1	-4.2	3.7	-7.9
4.2	-7.3	3.4	-10.7
4.3	-10.9	3.2	-14.1
4.4	-21.0	2.9	-23.9
4.5	-9.5	2.7	-12.2
4.6	-5.7	2.4	-8.1
4.7	-4.4	2.2	-6.6
4.8	-4.7	2.0	-6.7
4.9	-9.9	1.7	-11.7
5.0	-13.3	1.5	-14.8
5.1	-10.1	1.3	-11.5
5.2	-7.0	1.1	-8.1
5.3	-7.9	0.9	-8.8
5.4	-12.2	0.7	-12.9
5.5	-27.4	0.5	-27.9
5.6	-11.3	0.3	-11.6
5.7	-7.7	0.1	-7.8
5.8	-7.9	-0.1	-7.8
5.9	-12.1	-0.3	-11.8

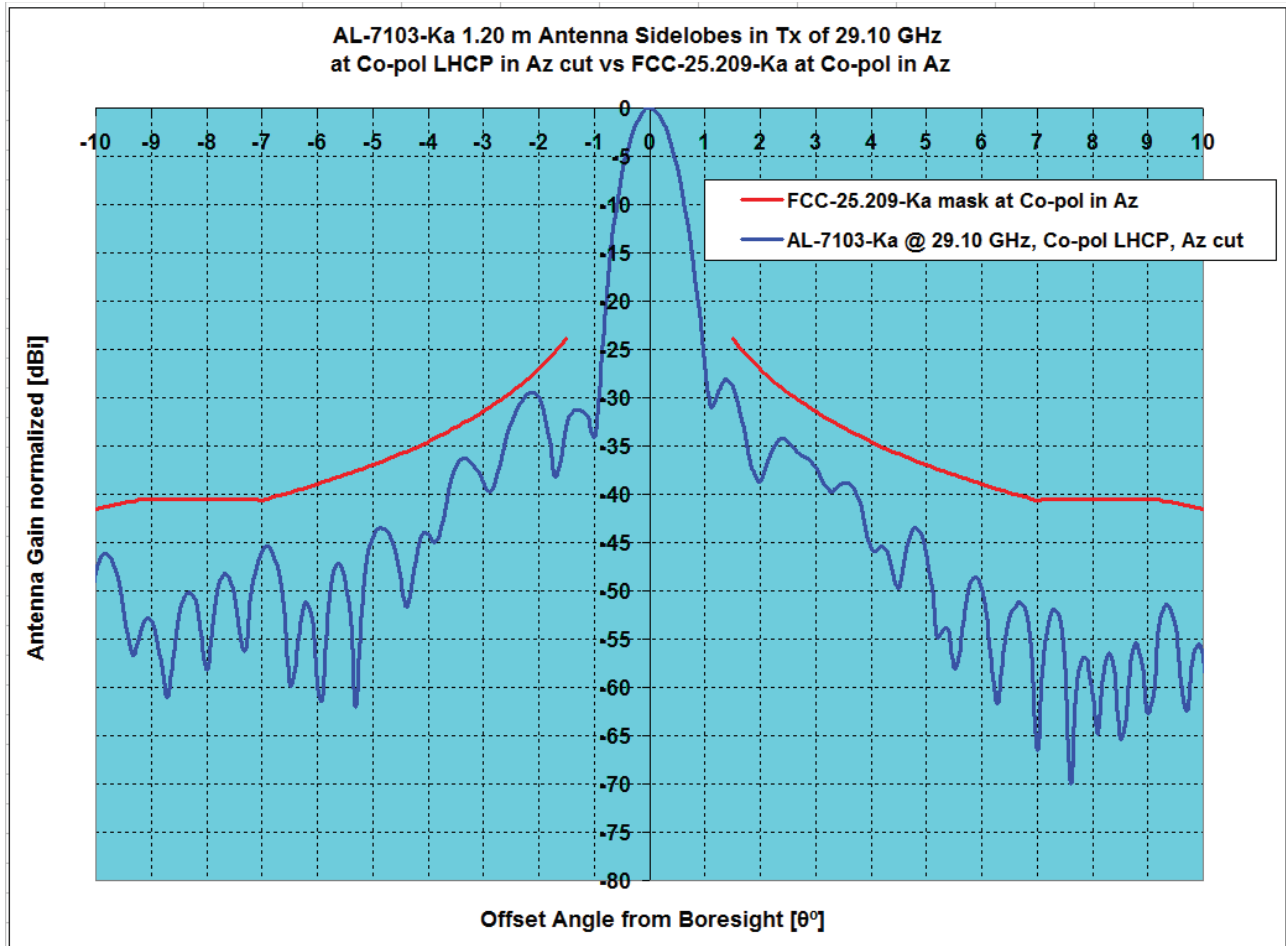
Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 X-pol Azimuth LHCP, -10° to +10° @ 0.1° increment

-4.0	-6.1	3.9	-10.0
-3.9	-19.3	4.2	-23.5
-3.8	-7.3	4.5	-11.8
-3.7	-2.0	4.8	-6.8
-3.6	0.0	5.1	-5.1
-3.5	-0.6	5.4	-6.0
-3.4	-5.6	5.7	-11.3
-3.3	-12.2	6.0	-18.2
-3.2	-1.9	6.4	-8.3
-3.1	2.0	6.7	-4.7
-3.0	2.8	7.1	-4.2
-2.9	0.8	7.4	-6.6
-2.8	-5.7	7.8	-13.5
-2.7	-11.3	8.2	-19.5
-2.6	0.2	8.6	-8.4
-2.5	3.1	9.1	-5.9
-2.4	2.6	9.5	-6.9
-2.3	-1.6	10.0	-11.5
-2.2	-9.1	10.4	-19.5
-2.1	2.6	10.9	-8.4
-2.0	7.1	11.5	-4.3
-1.9	8.9	12.0	-3.1
-1.8	8.4	12.6	-4.2
-1.7	5.5		
-1.6	-3.0		
-1.5	0.2		
-1.4	7.3		
-1.3	10.7		
-1.2	12.4		
-1.1	13.5		
-1.0	13.8		
-0.9	13.7		
-0.8	13.7		
-0.7	15.0		
-0.6	17.2		
-0.5	19.3		
-0.4	20.7		
-0.3	21.1		
-0.2	20.2		
-0.1	17.7		
0.0	15.5		

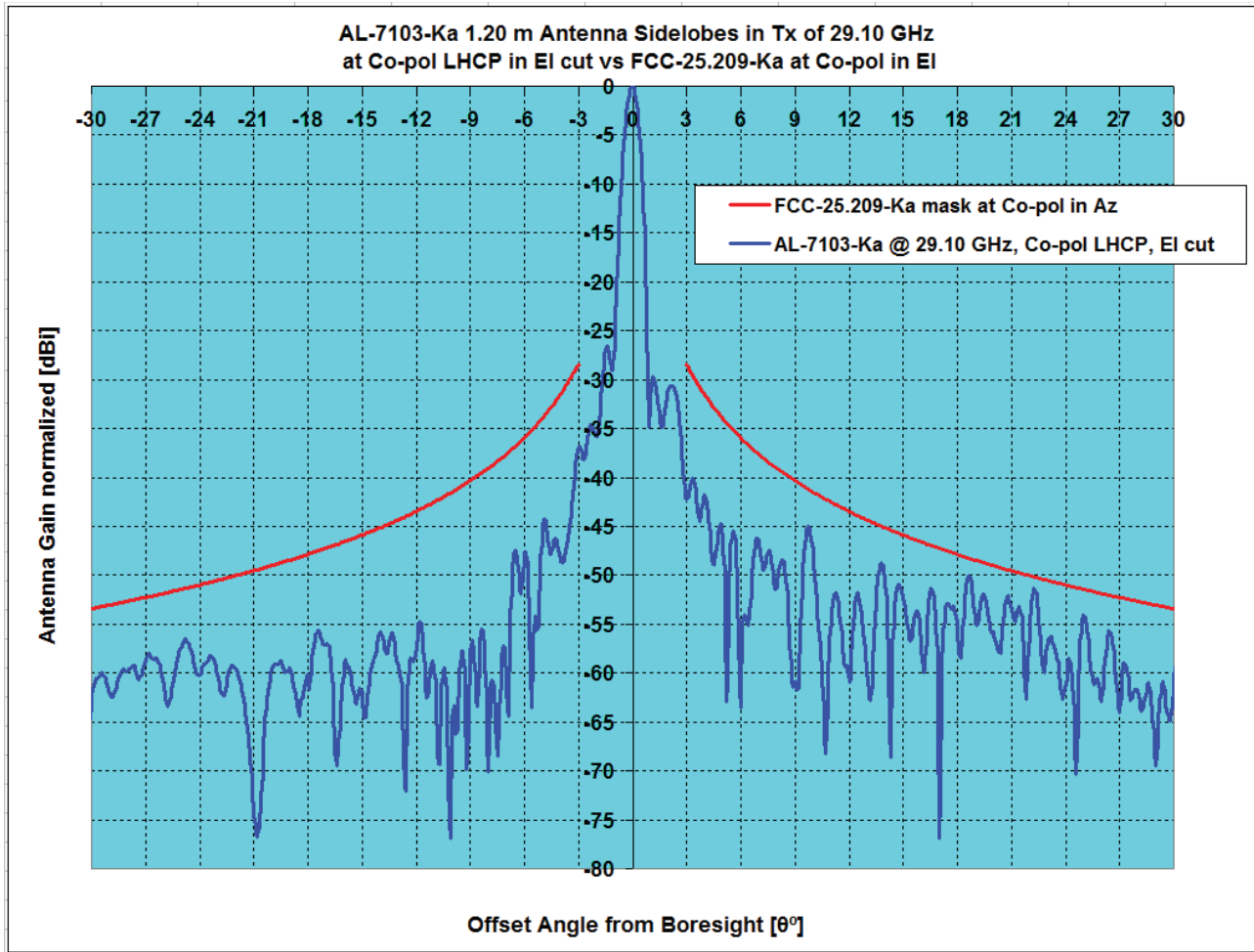
6.0	-21.7	-0.5	-21.2
6.1	-11.2	-0.6	-10.6
6.2	-6.0	-0.8	-5.2
6.3	-5.2	-1.0	-4.2
6.4	-5.9	-1.2	-4.8
6.5	-9.6	-1.3	-8.3
6.6	-15.0	-1.5	-13.5
6.7	-10.9	-1.7	-9.2
6.8	-7.7	-1.8	-5.9
6.9	-8.1	-2.0	-6.2
7.0	-10.0	-2.1	-7.9
7.1	-16.9	-2.0	-14.9
7.2	-24.7	-2.0	-22.7
7.3	-14.0	-2.0	-12.0
7.4	-13.8	-2.0	-11.8
7.5	-15.0	-2.0	-13.0
7.6	-16.2	-2.0	-14.2
7.7	-18.8	-2.0	-16.8
7.8	-18.0	-2.0	-16.0
7.9	-15.2	-2.0	-13.2
8.0	-17.0	-2.0	-15.0
8.1	-18.3	-2.0	-16.3
8.2	-24.0	-2.0	-22.0
8.3	-19.7	-2.0	-17.7
8.4	-17.1	-2.0	-15.1
8.5	-14.0	-2.0	-12.0
8.6	-13.2	-2.0	-11.2
8.7	-17.1	-2.0	-15.1
8.8	-18.8	-2.0	-16.8
8.9	-28.1	-2.0	-26.1
9.0	-18.8	-2.0	-16.8
9.1	-12.8	-2.0	-10.8
9.2	-12.1	-2.0	-10.1
9.3	-11.8	-2.0	-9.8
9.4	-12.8	-2.0	-10.8
9.5	-19.1	-2.0	-17.1
9.6	-16.6	-2.0	-14.6
9.7	-12.9	-2.0	-10.9
9.8	-10.6	-2.0	-8.6
9.9	-10.0	-2.0	-8.0
10.0	-11.6	-2.0	-9.6



Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
				1.5°≤θ≤7°	7°≤θ≤180°	1.5°≤θ≤7°	7°≤θ≤180°
Pattern Rule vs Antenna System	Type	GHz	dBi				
FCC-25.209-Ka, Co-pol Az, vs AL-7103-Ka	Az , LHCP	29.10	48.50	-1.60	0.94	0.00%	0.28%

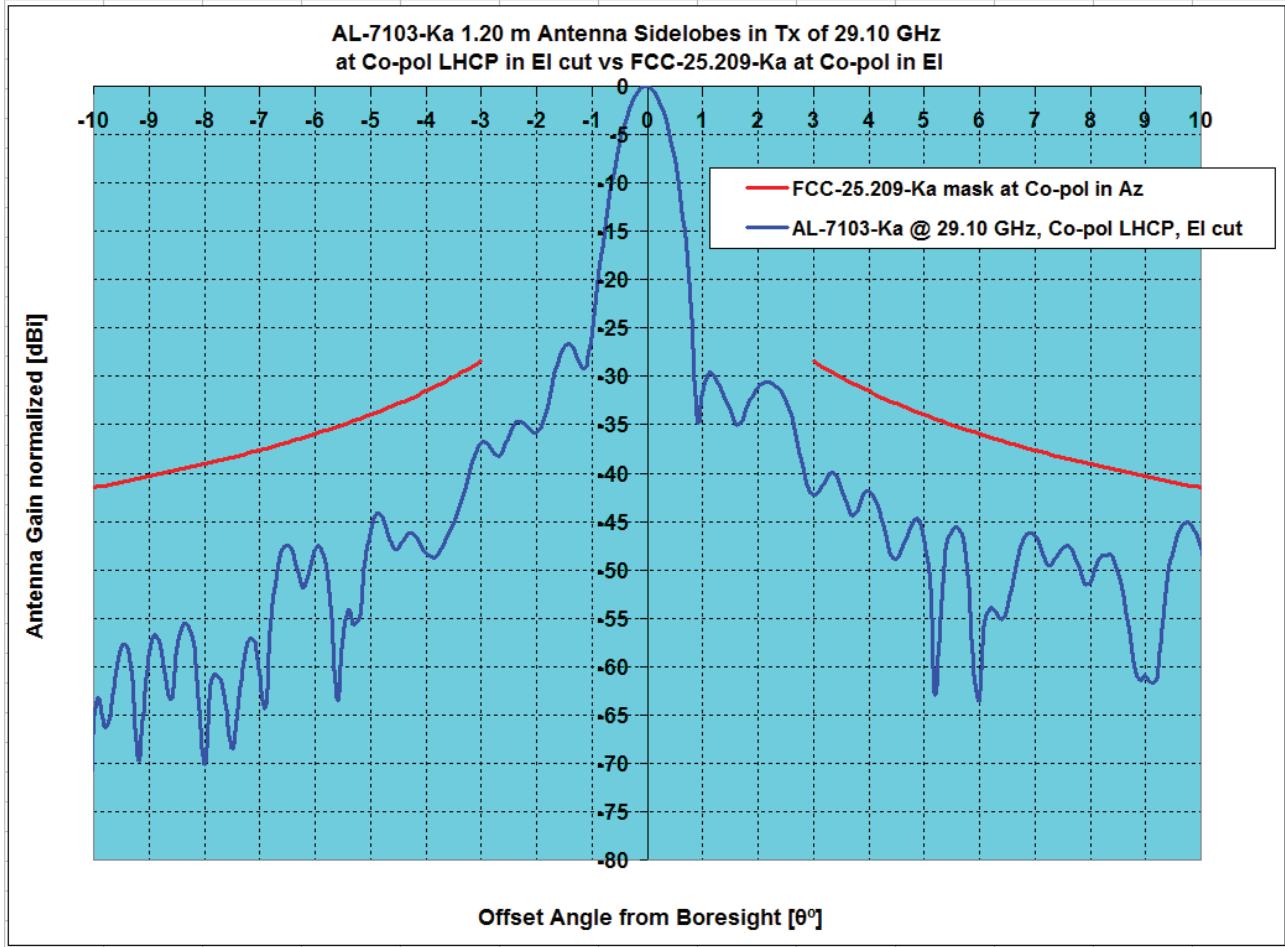


Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
				1.5°≤θ≤7°	7°≤θ≤180°	1.5°≤θ≤7°	7°≤θ≤180°
Pattern Rule vs Antenna System	Type	GHz	dBi				
FCC-25.209-Ka, Co-pol Az, vs AL-7103-Ka	Az , LHCP	29.10	48.50	-1.60	0.94	0.00%	0.28%



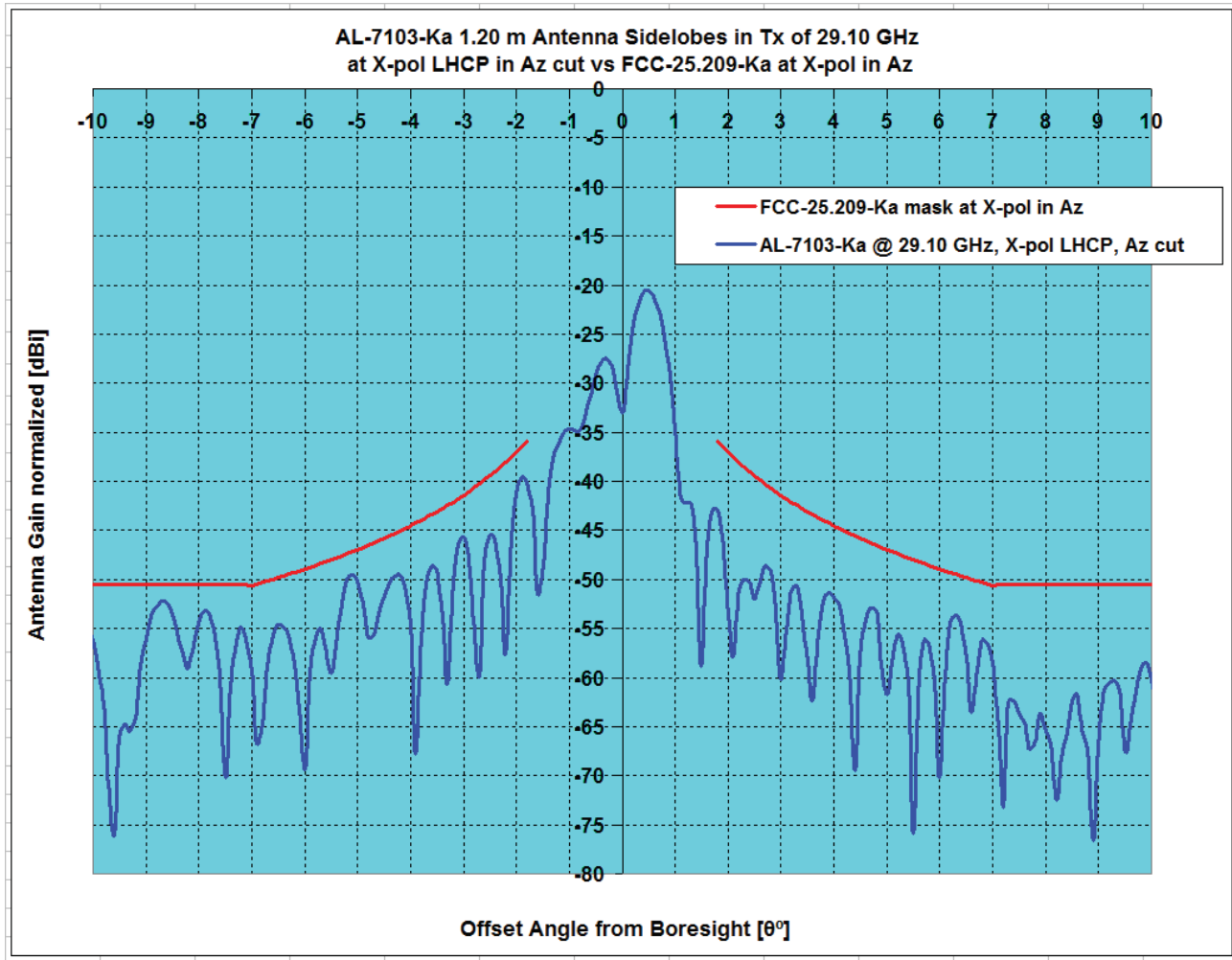
Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
				3°≤θ≤7°	7°≤θ≤30°	3°≤θ≤7°	7°≤θ≤30°
Pattern Rule vs Antenna System	Type	GHz	dBi				
FCC-25.209-Ka, Co-pol EI, vs AL-7103-Ka	EI, LHCP	29.10	48.50	-8.46	-1.17	0.00%	0.00%

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern, Co-pol, Elevation LHCP



Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
				3°≤θ≤7°	7°≤θ≤30°	3°≤θ≤7°	7°≤θ≤30°
Pattern Rule vs Antenna System	Type	GHz	dBi				
FCC-25.209-Ka, Co-pol EI, vs AL-7103-Ka	EI, LHCP	29.10	48.50	-8.46	-1.17	0.00%	0.00%

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern, X-pol, Azimuth LHCP



Description	Plane, CirP Type	Frequency GHz	Ant. Gain dBi	Peak Excursions dB		Over Mask %	
				1.8°≤θ≤7°	1.8°≤θ≤9.2°	1.8°≤θ≤7°	1.8°≤θ≤9.2°
FCC-25.209-Ka, X-pol Az, vs AL-7103-Ka	Az , LHCP	29.10	48.50	-2.31	-1.68	0.00%	0.00%

Orbit Communication Systems Ltd.
AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
Co-pol Azimuth RHCP, -180° to +180° @ 1.0° increment

29.10 GHz Antenna Pattern in Co-pol Az RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-179.0	-31.2	0.0	-31.2
-178.0	-29.8	0.0	-29.8
-177.0	-27.5	0.0	-27.5
-176.0	-23.4	0.0	-23.4
-175.0	-31.3	0.0	-31.3
-174.0	-35.8	0.0	-35.8
-173.0	-31.5	0.0	-31.5
-172.0	-33.8	0.0	-33.8
-171.0	-35.8	0.0	-35.8
-170.0	-33.0	0.0	-33.0
-169.0	-25.5	0.0	-25.5
-168.0	-44.0	0.0	-44.0
-167.0	-25.2	0.0	-25.2
-166.0	-30.0	0.0	-30.0
-165.0	-39.8	0.0	-39.8
-164.0	-36.0	0.0	-36.0
-163.0	-36.9	0.0	-36.9
-162.0	-33.1	0.0	-33.1
-161.0	-33.9	0.0	-33.9
-160.0	-29.9	0.0	-29.9
-159.0	-33.1	0.0	-33.1
-158.0	-31.7	0.0	-31.7
-157.0	-32.8	0.0	-32.8
-156.0	-30.9	0.0	-30.9
-155.0	-35.3	0.0	-35.3
-154.0	-34.2	0.0	-34.2
-153.0	-32.3	0.0	-32.3
-152.0	-36.8	0.0	-36.8
-151.0	-31.1	0.0	-31.1
-150.0	-32.4	0.0	-32.4
-149.0	-28.0	0.0	-28.0
-148.0	-26.2	0.0	-26.2
-147.0	-28.4	0.0	-28.4
-146.0	-34.4	0.0	-34.4
-145.0	-27.0	0.0	-27.0
-144.0	-30.8	0.0	-30.8
-143.0	-33.6	0.0	-33.6
-142.0	-34.3	0.0	-34.3
-141.0	-32.6	0.0	-32.6
-140.0	-33.5	0.0	-33.5
-139.0	-27.6	0.0	-27.6
-138.0	-41.6	0.0	-41.6
-137.0	-34.1	0.0	-34.1
-136.0	-37.0	0.0	-37.0
-135.0	-29.4	0.0	-29.4
-134.0	-27.4	0.0	-27.4
-133.0	-28.1	0.0	-28.1
-132.0	-39.7	0.0	-39.7
-131.0	-30.6	0.0	-30.6
-130.0	-42.3	0.0	-42.3
-129.0	-27.9	0.0	-27.9
-128.0	-31.9	0.0	-31.9
-127.0	-25.7	0.0	-25.7
-126.0	-38.1	0.0	-38.1
-125.0	-27.5	0.0	-27.5
-124.0	-28.7	0.0	-28.7
-123.0	-34.5	0.0	-34.5
-122.0	-35.3	0.0	-35.3
-121.0	-29.9	0.0	-29.9
-120.0	-27.8	0.0	-27.8

29.10 GHz Antenna Pattern in Co-pol Az RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	48.5		
1.0	22.7		
2.0	11.0	21.5	-10.5
3.0	11.8	17.1	-5.3
4.0	0.6	13.9	-13.3
5.0	2.3	11.5	-9.2
6.0	1.3	9.5	-8.3
7.0	-27.0	7.9	-34.8
8.0	-13.7	8.0	-21.7
9.0	-16.1	8.0	-24.1
10.0	-10.4	7.0	-17.4
11.0	-13.0	6.0	-19.0
12.0	-8.6	5.0	-13.6
13.0	-7.0	4.2	-11.2
14.0	-6.5	3.3	-9.9
15.0	-9.3	2.6	-11.9
16.0	-14.8	1.9	-16.7
17.0	-6.2	1.2	-7.5
18.0	-16.8	0.6	-17.4
19.0	-10.0	0.0	-10.0
20.0	-10.8	-0.5	-10.3
21.0	-20.8	-1.1	-19.8
22.0	-12.2	-1.6	-10.6
23.0	-10.0	-2.0	-7.9
24.0	-8.2	-2.5	-5.7
25.0	-9.2	-2.9	-6.3
26.0	-9.8	-3.4	-6.4
27.0	-13.1	-3.8	-9.3
28.0	-9.9	-4.2	-5.7
29.0	-14.9	-4.6	-10.4
30.0	-14.3	-4.9	-9.4
31.0	-13.2	-5.3	-7.9
32.0	-30.0	-5.6	-24.4
33.0	-17.1	-6.0	-11.2
34.0	-22.0	-6.3	-15.7
35.0	-20.0	-6.6	-13.4
36.0	-22.1	-6.9	-15.2
37.0	-14.6	-7.2	-7.4
38.0	-18.1	-7.5	-10.7
39.0	-17.6	-7.8	-9.8
40.0	-25.4	-8.1	-17.4
41.0	-18.6	-8.3	-10.3
42.0	-18.9	-8.6	-10.4
43.0	-24.8	-8.8	-16.0
44.0	-17.0	-9.1	-7.9
45.0	-36.1	-9.3	-26.7
46.0	-17.4	-9.6	-7.8
47.0	-8.5	-9.8	1.3
48.0	-19.5	-10.0	-9.5
49.0	-15.4	-10.0	-5.4
50.0	-15.7	-10.0	-5.7
51.0	-18.0	-10.0	-8.0
52.0	-21.3	-10.0	-11.3
53.0	-31.1	-10.0	-21.1
54.0	-19.9	-10.0	-9.9
55.0	-17.0	-10.0	-7.0
56.0	-13.4	-10.0	-3.4
57.0	-18.1	-10.0	-8.1
58.0	-23.1	-10.0	-13.1
59.0	-14.2	-10.0	-4.2

Orbit Communication Systems Ltd.
AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
Co-pol Azimuth RHCP, -180° to +180° @ 1.0° increment

-119.0	-37.7	0.0	-37.7	60.0	-15.5	-10.0	-5.5
-118.0	-39.4	0.0	-39.4	61.0	-21.9	-10.0	-11.9
-117.0	-32.2	0.0	-32.2	62.0	-21.2	-10.0	-11.2
-116.0	-23.4	0.0	-23.4	63.0	-28.3	-10.0	-18.3
-115.0	-25.3	0.0	-25.3	64.0	-18.8	-10.0	-8.8
-114.0	-27.7	0.0	-27.7	65.0	-10.6	-10.0	-0.6
-113.0	-27.6	0.0	-27.6	66.0	-14.4	-10.0	-4.4
-112.0	-23.4	0.0	-23.4	67.0	-15.8	-10.0	-5.8
-111.0	-25.8	0.0	-25.8	68.0	-12.8	-10.0	-2.8
-110.0	-22.2	0.0	-22.2	69.0	-14.2	-10.0	-4.2
-109.0	-20.3	0.0	-20.3	70.0	-15.4	-10.0	-5.4
-108.0	-18.2	0.0	-18.2	71.0	-25.0	-10.0	-15.0
-107.0	-15.0	0.0	-15.0	72.0	-15.3	-10.0	-5.3
-106.0	-14.4	0.0	-14.4	73.0	-18.2	-10.0	-8.2
-105.0	-13.1	0.0	-13.1	74.0	-30.1	-10.0	-20.1
-104.0	-13.0	0.0	-13.0	75.0	-18.2	-10.0	-8.2
-103.0	-13.1	0.0	-13.1	76.0	-27.6	-10.0	-17.6
-102.0	-14.6	0.0	-14.6	77.0	-20.5	-10.0	-10.5
-101.0	-17.3	0.0	-17.3	78.0	-23.3	-10.0	-13.3
-100.0	-25.5	0.0	-25.5	79.0	-25.1	-10.0	-15.1
-99.0	-47.2	0.0	-47.2	80.0	-29.0	-10.0	-19.0
-98.0	-22.8	0.0	-22.8	81.0	-13.9	-10.0	-3.9
-97.0	-17.0	0.0	-17.0	82.0	-17.7	-10.0	-7.7
-96.0	-14.5	0.0	-14.5	83.0	-26.3	-10.0	-16.3
-95.0	-14.6	0.0	-14.6	84.0	-24.7	-10.0	-14.7
-94.0	-20.7	0.0	-20.7	85.0	-18.2	-10.0	-8.2
-93.0	-18.3	0.0	-18.3	86.0	-23.2	0.0	-23.2
-92.0	-14.2	0.0	-14.2	87.0	-31.3	0.0	-31.3
-91.0	-18.2	0.0	-18.2	88.0	-22.4	0.0	-22.4
-90.0	-19.8	0.0	-19.8	89.0	-16.4	0.0	-16.4
-89.0	-16.8	0.0	-16.8	90.0	-27.2	0.0	-27.2
-88.0	-14.9	0.0	-14.9	91.0	-20.7	0.0	-20.7
-87.0	-13.1	0.0	-13.1	92.0	-25.9	0.0	-25.9
-86.0	-18.3	0.0	-18.3	93.0	-21.0	0.0	-21.0
-85.0	-12.5	-10.0	-2.5	94.0	-25.5	0.0	-25.5
-84.0	-12.6	-10.0	-2.6	95.0	-22.3	0.0	-22.3
-83.0	-27.9	-10.0	-17.9	96.0	-23.2	0.0	-23.2
-82.0	-14.9	-10.0	-4.9	97.0	-25.0	0.0	-25.0
-81.0	-15.4	-10.0	-5.4	98.0	-20.5	0.0	-20.5
-80.0	-16.5	-10.0	-6.5	99.0	-24.4	0.0	-24.4
-79.0	-16.8	-10.0	-6.8	100.0	-30.7	0.0	-30.7
-78.0	-17.9	-10.0	-7.9	101.0	-21.7	0.0	-21.7
-77.0	-17.5	-10.0	-7.5	102.0	-20.1	0.0	-20.1
-76.0	-23.3	-10.0	-13.3	103.0	-27.6	0.0	-27.6
-75.0	-15.3	-10.0	-5.3	104.0	-25.2	0.0	-25.2
-74.0	-14.4	-10.0	-4.4	105.0	-26.1	0.0	-26.1
-73.0	-16.0	-10.0	-6.0	106.0	-20.6	0.0	-20.6
-72.0	-17.4	-10.0	-7.4	107.0	-20.1	0.0	-20.1
-71.0	-16.4	-10.0	-6.4	108.0	-24.1	0.0	-24.1
-70.0	-20.9	-10.0	-10.9	109.0	-41.2	0.0	-41.2
-69.0	-17.2	-10.0	-7.2	110.0	-31.0	0.0	-31.0
-68.0	-28.3	-10.0	-18.3	111.0	-19.2	0.0	-19.2
-67.0	-20.7	-10.0	-10.7	112.0	-27.0	0.0	-27.0
-66.0	-24.3	-10.0	-14.3	113.0	-22.1	0.0	-22.1
-65.0	-13.2	-10.0	-3.2	114.0	-22.3	0.0	-22.3
-64.0	-14.4	-10.0	-4.4	115.0	-27.5	0.0	-27.5
-63.0	-18.5	-10.0	-8.5	116.0	-22.1	0.0	-22.1
-62.0	-19.2	-10.0	-9.2	117.0	-32.5	0.0	-32.5
-61.0	-22.9	-10.0	-12.9	118.0	-32.9	0.0	-32.9
-60.0	-18.0	-10.0	-8.0	119.0	-22.8	0.0	-22.8
-59.0	-20.4	-10.0	-10.4	120.0	-27.0	0.0	-27.0
-58.0	-16.5	-10.0	-6.5	121.0	-21.9	0.0	-21.9
-57.0	-13.4	-10.0	-3.4	122.0	-24.3	0.0	-24.3

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Azimuth RHCP, -180° to +180° @ 1.0° increment

-56.0	-16.6	-10.0	-6.6	123.0	-27.6	0.0	-27.6
-55.0	-10.9	-10.0	-0.9	124.0	-20.6	0.0	-20.6
-54.0	-12.8	-10.0	-2.8	125.0	-34.2	0.0	-34.2
-53.0	-16.8	-10.0	-6.8	126.0	-24.7	0.0	-24.7
-52.0	-18.8	-10.0	-8.8	127.0	-27.5	0.0	-27.5
-51.0	-10.5	-10.0	-0.5	128.0	-21.5	0.0	-21.5
-50.0	-10.3	-10.0	-0.3	129.0	-27.9	0.0	-27.9
-49.0	-19.5	-10.0	-9.5	130.0	-19.8	0.0	-19.8
-48.0	-12.4	-10.0	-2.4	131.0	-25.2	0.0	-25.2
-47.0	-13.8	-9.8	-4.0	132.0	-26.1	0.0	-26.1
-46.0	-16.5	-9.6	-7.0	133.0	-24.3	0.0	-24.3
-45.0	-11.8	-9.3	-2.4	134.0	-19.4	0.0	-19.4
-44.0	-12.3	-9.1	-3.2	135.0	-24.9	0.0	-24.9
-43.0	-12.4	-8.8	-3.6	136.0	-28.2	0.0	-28.2
-42.0	-5.7	-8.6	2.9	137.0	-26.0	0.0	-26.0
-41.0	-8.6	-8.3	-0.3	138.0	-18.9	0.0	-18.9
-40.0	-13.6	-8.1	-5.6	139.0	-22.5	0.0	-22.5
-39.0	-9.1	-7.8	-1.3	140.0	-28.2	0.0	-28.2
-38.0	-9.6	-7.5	-2.1	141.0	-22.6	0.0	-22.6
-37.0	-9.0	-7.2	-1.8	142.0	-19.8	0.0	-19.8
-36.0	-10.7	-6.9	-3.8	143.0	-24.9	0.0	-24.9
-35.0	-12.2	-6.6	-5.6	144.0	-35.2	0.0	-35.2
-34.0	-9.4	-6.3	-3.1	145.0	-25.6	0.0	-25.6
-33.0	-14.1	-6.0	-8.2	146.0	-32.6	0.0	-32.6
-32.0	-9.9	-5.6	-4.3	147.0	-20.2	0.0	-20.2
-31.0	-7.9	-5.3	-2.7	148.0	-19.1	0.0	-19.1
-30.0	-14.1	-4.9	-9.2	149.0	-24.5	0.0	-24.5
-29.0	-9.1	-4.6	-4.5	150.0	-25.1	0.0	-25.1
-28.0	-14.0	-4.2	-9.8	151.0	-24.3	0.0	-24.3
-27.0	-13.7	-3.8	-9.9	152.0	-23.7	0.0	-23.7
-26.0	-11.8	-3.4	-8.4	153.0	-33.0	0.0	-33.0
-25.0	-4.6	-2.9	-1.6	154.0	-23.4	0.0	-23.4
-24.0	-9.0	-2.5	-6.5	155.0	-23.1	0.0	-23.1
-23.0	-8.9	-2.0	-6.8	156.0	-25.4	0.0	-25.4
-22.0	-12.2	-1.6	-10.6	157.0	-20.2	0.0	-20.2
-21.0	-1.2	-1.1	-0.2	158.0	-29.8	0.0	-29.8
-20.0	-9.3	-0.5	-8.8	159.0	-19.5	0.0	-19.5
-19.0	-6.2	0.0	-6.3	160.0	-17.5	0.0	-17.5
-18.0	-5.5	0.6	-6.1	161.0	-18.5	0.0	-18.5
-17.0	-11.2	1.2	-12.4	162.0	-25.5	0.0	-25.5
-16.0	-2.4	1.9	-4.3	163.0	-37.8	0.0	-37.8
-15.0	-10.7	2.6	-13.3	164.0	-26.5	0.0	-26.5
-14.0	-1.1	3.3	-4.4	165.0	-30.3	0.0	-30.3
-13.0	-6.7	4.2	-10.9	166.0	-28.2	0.0	-28.2
-12.0	-17.3	5.0	-22.4	167.0	-20.9	0.0	-20.9
-11.0	-20.1	6.0	-26.0	168.0	-24.6	0.0	-24.6
-10.0	0.9	7.0	-6.1	169.0	-25.4	0.0	-25.4
-9.0	-12.9	8.0	-20.9	170.0	-41.9	0.0	-41.9
-8.0	-8.2	8.0	-16.2	171.0	-35.7	0.0	-35.7
-7.0	-0.2	7.9	-8.1	172.0	-18.2	0.0	-18.2
-6.0	-22.4	9.5	-31.9	173.0	-25.8	0.0	-25.8
-5.0	4.1	11.5	-7.4	174.0	-23.5	0.0	-23.5
-4.0	1.3	13.9	-12.6	175.0	-28.9	0.0	-28.9
-3.0	8.9	17.1	-8.2	176.0	-27.7	0.0	-27.7
-2.0	16.9	21.5	-4.6	177.0	-37.1	0.0	-37.1
-1.0	13.9			178.0	-33.2	0.0	-33.2
0.0	48.5			179.0	-31.0	0.0	-31.0

Orbit Communication Systems Ltd.
AL AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
Co-pol Azimuth RHCP, -10° to +10° @ 0.1° increment

29.10 GHz Antenna Pattern in Co-pol Az RHCP				29.10 GHz Antenna Pattern in Co-pol Az RHCP			
Angle Degrees	Gain dBi	Mask dBi	Over Mask dB	Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-10.0	0.9	7.0	-6.1	0.0	48.5		
-9.9	2.4	7.1	-4.7	0.1	48.3		
-9.8	2.7	7.2	-4.5	0.2	47.7		
-9.7	1.8	7.3	-5.5	0.3	46.5		
-9.6	0.0	7.4	-7.4	0.4	44.8		
-9.5	-2.7	7.6	-10.3	0.5	42.4		
-9.4	-6.6	7.7	-14.3	0.6	39.5		
-9.3	-9.5	7.8	-17.3	0.7	36.0		
-9.2	-9.6	8.0	-17.6	0.8	31.9		
-9.1	-10.3	8.0	-18.3	0.9	27.3		
-9.0	-12.9	8.0	-20.9	1.0	22.7		
-8.9	-19.6	8.0	-27.6	1.1	18.6		
-8.8	-14.9	8.0	-22.9	1.2	18.1		
-8.7	-8.4	8.0	-16.4	1.3	19.4		
-8.6	-5.1	8.0	-13.1	1.4	19.9		
-8.5	-3.0	8.0	-11.0	1.5	19.4	24.6	-5.2
-8.4	-2.1	8.0	-10.1	1.6	17.6	23.9	-6.3
-8.3	-2.1	8.0	-10.1	1.7	15.0	23.2	-8.2
-8.2	-3.6	8.0	-11.6	1.8	12.2	22.6	-10.4
-8.1	-6.5	8.0	-14.5	1.9	10.7	22.0	-11.3
-8.0	-8.2	8.0	-16.2	2.0	11.0	21.5	-10.5
-7.9	-5.7	8.0	-13.7	2.1	12.3	20.9	-8.7
-7.8	-2.9	8.0	-10.9	2.2	13.7	20.4	-6.8
-7.7	-2.0	8.0	-10.0	2.3	14.3	20.0	-5.6
-7.6	-2.8	8.0	-10.8	2.4	14.5	19.5	-5.0
-7.5	-5.6	8.0	-13.6	2.5	13.9	19.1	-5.2
-7.4	-8.8	8.0	-16.8	2.6	12.6	18.6	-6.0
-7.3	-7.0	8.0	-15.0	2.7	11.8	18.2	-6.4
-7.2	-2.8	8.0	-10.8	2.8	11.5	17.8	-6.3
-7.1	-1.0	8.0	-9.0	2.9	11.8	17.4	-5.6
-7.0	-0.2	7.9	-8.1	3.0	11.8	17.1	-5.3
-6.9	-0.6	8.0	-8.6	3.1	11.4	16.7	-5.3
-6.8	-1.9	8.2	-10.0	3.2	10.4	16.4	-6.0
-6.7	-4.5	8.3	-12.8	3.3	9.5	16.0	-6.5
-6.6	-8.4	8.5	-16.9	3.4	8.9	15.7	-6.8
-6.5	-14.9	8.7	-23.5	3.5	8.3	15.4	-7.1
-6.4	-9.5	8.8	-18.3	3.6	7.7	15.1	-7.4
-6.3	-5.9	9.0	-14.9	3.7	6.8	14.8	-8.0
-6.2	-5.7	9.2	-14.9	3.8	5.0	14.5	-9.5
-6.1	-8.3	9.4	-17.6	3.9	2.8	14.2	-11.4
-6.0	-22.4	9.5	-31.9	4.0	0.6	13.9	-13.3
-5.9	-6.6	9.7	-16.4	4.1	0.6	13.7	-13.1
-5.8	-0.5	9.9	-10.4	4.2	2.3	13.4	-11.1
-5.7	1.9	10.1	-8.2	4.3	2.7	13.2	-10.5
-5.6	3.0	10.3	-7.3	4.4	3.3	12.9	-9.6
-5.5	1.8	10.5	-8.7	4.5	3.5	12.7	-9.1
-5.4	-1.5	10.7	-12.2	4.6	4.1	12.4	-8.3
-5.3	-7.2	10.9	-18.1	4.7	5.2	12.2	-7.0
-5.2	-2.9	11.1	-14.0	4.8	5.6	12.0	-6.4
-5.1	2.1	11.3	-9.2	4.9	4.5	11.7	-7.3
-5.0	4.1	11.5	-7.4	5.0	2.3	11.5	-9.2
-4.9	4.6	11.7	-7.1	5.1	-3.4	11.3	-14.7
-4.8	4.0	12.0	-8.0	5.2	-22.5	11.1	-33.6
-4.7	2.3	12.2	-9.9	5.3	-8.4	10.9	-19.3
-4.6	0.2	12.4	-12.2	5.4	-5.9	10.7	-16.6
-4.5	-1.9	12.7	-14.6	5.5	-11.6	10.5	-22.1
-4.4	-2.9	12.9	-15.8	5.6	-10.8	10.3	-21.1
-4.3	-1.4	13.2	-14.6	5.7	-3.5	10.1	-13.6
-4.2	0.7	13.4	-12.8	5.8	0.2	9.9	-9.7
-4.1	1.9	13.7	-11.8	5.9	1.7	9.7	-8.0
-4.0	1.3	13.9	-12.6	6.0	1.3	9.5	-8.3
-3.9	0.7	14.2	-13.5	6.1	-0.7	9.4	-10.1

Orbit Communication Systems Ltd.
 AL AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Azimuth RHCP, -10° to +10° @ 0.1° increment

-3.8	2.6	14.5	-11.9		6.2	-2.6	9.2	-11.8
-3.7	6.3	14.8	-8.4		6.3	-3.0	9.0	-12.1
-3.6	9.1	15.1	-6.0		6.4	-1.8	8.8	-10.6
-3.5	10.5	15.4	-4.8		6.5	-1.7	8.7	-10.3
-3.4	11.0	15.7	-4.7		6.6	-2.5	8.5	-11.0
-3.3	10.6	16.0	-5.5		6.7	-4.4	8.3	-12.8
-3.2	9.8	16.4	-6.6		6.8	-9.2	8.2	-17.4
-3.1	9.0	16.7	-7.7		6.9	-16.1	8.0	-24.1
-3.0	8.9	17.1	-8.2		7.0	-27.0	7.9	-34.8
-2.9	9.4	17.4	-8.0		7.1	-12.1	8.0	-20.1
-2.8	10.8	17.8	-7.0		7.2	-7.6	8.0	-15.6
-2.7	12.8	18.2	-5.5		7.3	-5.9	8.0	-13.9
-2.6	14.6	18.6	-4.1		7.4	-6.6	8.0	-14.6
-2.5	15.9	19.1	-3.2		7.5	-9.7	8.0	-17.7
-2.4	16.5	19.5	-3.0		7.6	-14.0	8.0	-22.0
-2.3	16.8	20.0	-3.1		7.7	-12.3	8.0	-20.3
-2.2	17.0	20.4	-3.4		7.8	-10.0	8.0	-18.0
-2.1	17.1	20.9	-3.9		7.9	-10.9	8.0	-18.9
-2.0	16.9	21.5	-4.6		8.0	-13.7	8.0	-21.7
-1.9	15.9	22.0	-6.1		8.1	-11.0	8.0	-19.0
-1.8	14.0	22.6	-8.6		8.2	-6.5	8.0	-14.5
-1.7	12.0	23.2	-11.2		8.3	-4.7	8.0	-12.7
-1.6	12.8	23.9	-11.1		8.4	-4.5	8.0	-12.5
-1.5	14.6	24.6	-10.0		8.5	-7.5	8.0	-15.5
-1.4	15.5				8.6	-12.9	8.0	-20.9
-1.3	15.4				8.7	-16.7	8.0	-24.7
-1.2	15.5				8.8	-12.1	8.0	-20.1
-1.1	15.8				8.9	-11.6	8.0	-19.6
-1.0	13.9				9.0	-16.1	8.0	-24.1
-0.9	16.1				9.1	-22.0	8.0	-30.0
-0.8	25.9				9.2	-12.2	8.0	-20.2
-0.7	32.4				9.3	-8.1	7.8	-15.9
-0.6	37.5				9.4	-6.7	7.7	-14.4
-0.5	41.2				9.5	-8.6	7.6	-16.1
-0.4	43.9				9.6	-13.9	7.4	-21.4
-0.3	45.9				9.7	-16.7	7.3	-24.1
-0.2	47.3				9.8	-11.4	7.2	-18.6
-0.1	48.2				9.9	-8.8	7.1	-15.9
0.0	48.5				10.0	-10.4	7.0	-17.4

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Elevation RHCP, -30° to +30° @ 0.5° increment

29.10 GHz Antenna Pattern in Co-pol EI RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-30.0	-8.5	-4.9	-3.6
-29.5	-6.5	-4.7	-1.7
-29.0	-8.8	-4.6	-4.2
-28.5	-8.2	-4.4	-3.9
-28.0	-7.0	-4.2	-2.8
-27.5	-8.4	-4.0	-4.5
-27.0	-8.5	-3.8	-4.7
-26.5	-7.5	-3.6	-3.9
-26.0	-8.7	-3.4	-5.3
-25.5	-6.9	-3.2	-3.7
-25.0	-5.0	-2.9	-2.0
-24.5	-7.1	-2.7	-4.3
-24.0	-12.6	-2.5	-10.1
-23.5	-11.9	-2.3	-9.6
-23.0	-7.4	-2.0	-5.3
-22.5	-9.1	-1.8	-7.3
-22.0	-13.9	-1.6	-12.3
-21.5	-15.0	-1.3	-13.7
-21.0	-16.7	-1.1	-15.6
-20.5	-19.7	-0.8	-18.9
-20.0	-16.9	-0.5	-16.4
-19.5	-15.0	-0.3	-14.7
-19.0	-9.2	0.0	-9.2
-18.5	-13.5	0.3	-13.8
-18.0	-36.4	0.6	-37.0
-17.5	-15.2	0.9	-16.2
-17.0	-11.2	1.2	-12.4
-16.5	-11.8	1.6	-13.3
-16.0	-18.0	1.9	-19.9
-15.5	-9.9	2.2	-12.1
-15.0	-12.3	2.6	-14.9
-14.5	-10.1	3.0	-13.0
-14.0	-6.4	3.3	-9.7
-13.5	-10.6	3.7	-14.3
-13.0	-12.3	4.2	-16.5
-12.5	-21.2	4.6	-25.8
-12.0	-20.6	5.0	-25.6
-11.5	-9.6	5.5	-15.1
-11.0	-8.6	6.0	-14.5
-10.5	-8.3	6.5	-14.7
-10.0	-11.3	7.0	-18.3
-9.5	-10.5	7.6	-18.0
-9.0	-60.6	8.1	-68.7
-8.5	-15.4	8.8	-24.2
-8.0	-8.7	9.4	-18.1
-7.5	-12.7	10.1	-22.8
-7.0	-3.8	10.9	-14.7
-6.5	-1.1	11.7	-12.7
-6.0	-0.4	12.5	-12.9
-5.5	-9.6	13.5	-23.1
-5.0	1.4	14.5	-13.1
-4.5	-3.5	15.7	-19.1
-4.0	1.1	16.9	-15.8
-3.5	6.0	18.4	-12.4
-3.0	11.4		
-2.5	13.2		
-2.0	11.9		
-1.5	21.4		
-1.0	22.2		
-0.5	42.5		
0.0	48.5		

29.10 GHz Antenna Pattern in Co-pol EI RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	48.5		
0.5	41.5		
1.0	16.9		
1.5	14.1		
2.0	19.1		
2.5	16.8		
3.0	7.0		
3.5	8.7	18.4	-9.7
4.0	8.1	16.9	-8.9
4.5	-6.8	15.7	-22.4
5.0	0.6	14.5	-13.9
5.5	3.6	13.5	-9.9
6.0	-11.3	12.5	-23.9
6.5	-7.7	11.7	-19.4
7.0	3.3	10.9	-7.6
7.5	2.0	10.1	-8.2
8.0	-9.3	9.4	-18.7
8.5	-5.2	8.8	-14.0
9.0	-4.4	8.1	-12.5
9.5	-2.2	7.6	-9.7
10.0	-3.7	7.0	-10.7
10.5	-4.5	6.5	-11.0
11.0	-4.6	6.0	-10.6
11.5	-19.9	5.5	-25.4
12.0	-5.9	5.0	-10.9
12.5	-7.8	4.6	-12.4
13.0	-3.1	4.2	-7.3
13.5	-8.8	3.7	-12.6
14.0	-12.8	3.3	-16.2
14.5	-6.3	3.0	-9.3
15.0	-4.5	2.6	-7.1
15.5	-9.0	2.2	-11.2
16.0	-1.4	1.9	-3.3
16.5	-7.3	1.6	-8.9
17.0	-8.2	1.2	-9.4
17.5	-6.1	0.9	-7.0
18.0	-3.6	0.6	-4.2
18.5	-6.9	0.3	-7.2
19.0	-4.9	0.0	-5.0
19.5	-7.4	-0.3	-7.1
20.0	-6.0	-0.5	-5.5
20.5	-9.1	-0.8	-8.3
21.0	-7.1	-1.1	-6.1
21.5	-6.6	-1.3	-5.3
22.0	-8.4	-1.6	-6.9
22.5	-8.8	-1.8	-7.0
23.0	-5.5	-2.0	-3.4
23.5	-10.0	-2.3	-7.7
24.0	-17.8	-2.5	-15.3
24.5	-9.4	-2.7	-6.6
25.0	-11.6	-2.9	-8.6
25.5	-20.8	-3.2	-17.6
26.0	-18.5	-3.4	-15.1
26.5	-13.9	-3.6	-10.3
27.0	-17.5	-3.8	-13.7
27.5	-17.2	-4.0	-13.2
28.0	-9.8	-4.2	-5.6
28.5	-16.8	-4.4	-12.5
29.0	-15.7	-4.6	-11.1
29.5	-14.1	-4.7	-9.3
30.0	-14.2	-4.9	-9.3

Orbit Communication Systems Ltd.
AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
Co-pol Elevation RHCP, -10° to +10° @ 0.1° increment

29.10 GHz Antenna Pattern in Co-pol EI RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-10.0	-11.3	7.0	-18.3
-9.9	-9.1	7.1	-16.2
-9.8	-9.5	7.2	-16.7
-9.7	-15.3	7.3	-22.7
-9.6	-19.9	7.4	-27.4
-9.5	-10.5	7.6	-18.0
-9.4	-7.0	7.7	-14.7
-9.3	-6.2	7.8	-14.0
-9.2	-8.0	7.9	-15.9
-9.1	-13.9	8.0	-21.9
-9.0	-60.6	8.1	-68.7
-8.9	-13.7	8.3	-22.0
-8.8	-11.5	8.4	-19.9
-8.7	-11.3	8.5	-19.8
-8.6	-13.3	8.6	-21.9
-8.5	-15.4	8.8	-24.2
-8.4	-11.4	8.9	-20.3
-8.3	-9.0	9.0	-18.0
-8.2	-7.8	9.2	-17.0
-8.1	-7.9	9.3	-17.2
-8.0	-8.7	9.4	-18.1
-7.9	-9.9	9.6	-19.5
-7.8	-10.4	9.7	-20.1
-7.7	-12.4	9.8	-22.2
-7.6	-13.6	10.0	-23.6
-7.5	-12.7	10.1	-22.8
-7.4	-10.2	10.3	-20.5
-7.3	-7.3	10.4	-17.7
-7.2	-5.6	10.6	-16.2
-7.1	-4.6	10.7	-15.3
-7.0	-3.8	10.9	-14.7
-6.9	-5.2	11.0	-16.2
-6.8	-6.9	11.2	-18.1
-6.7	-4.9	11.3	-16.2
-6.6	-2.3	11.5	-13.8
-6.5	-1.1	11.7	-12.7
-6.4	-2.0	11.8	-13.8
-6.3	-5.8	12.0	-17.8
-6.2	-9.9	12.2	-22.1
-6.1	-4.4	12.4	-16.7
-6.0	-0.4	12.5	-12.9
-5.9	0.9	12.7	-11.8
-5.8	0.4	12.9	-12.5
-5.7	-2.4	13.1	-15.5
-5.6	-8.5	13.3	-21.8
-5.5	-9.6	13.5	-23.1
-5.4	-6.5	13.7	-20.2
-5.3	-8.3	13.9	-22.2
-5.2	-14.5	14.1	-28.6
-5.1	-3.6	14.3	-17.9
-5.0	1.4	14.5	-13.1
-4.9	3.8	14.7	-10.9
-4.8	3.8	15.0	-11.2
-4.7	1.9	15.2	-13.3
-4.6	-2.9	15.4	-18.4
-4.5	-3.5	15.7	-19.1
-4.4	1.2	15.9	-14.7
-4.3	3.8	16.2	-12.4
-4.2	3.9	16.4	-12.5
-4.1	2.9	16.7	-13.8

29.10 GHz Antenna Pattern in Co-pol EI RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	48.5		
0.1	48.2		
0.2	47.4		
0.3	46.1		
0.4	44.1		
0.5	41.5		
0.6	38.0		
0.7	33.4		
0.8	27.2		
0.9	19.4		
1.0	16.9		
1.1	18.4		
1.2	18.3		
1.3	17.4		
1.4	16.1		
1.5	14.1		
1.6	11.3		
1.7	11.7		
1.8	15.1		
1.9	17.7		
2.0	19.1		
2.1	19.5		
2.2	19.5		
2.3	19.0		
2.4	18.1		
2.5	16.8		
2.6	14.7		
2.7	11.8		
2.8	8.5		
2.9	6.5		
3.0	7.0		
3.1	8.4		
3.2	9.4		
3.3	9.9		
3.4	9.6		
3.5	8.7	18.4	-9.7
3.6	7.3	18.1	-10.8
3.7	6.2	17.8	-11.6
3.8	6.5	17.5	-11.0
3.9	7.6	17.2	-9.6
4.0	8.1	16.9	-8.9
4.1	7.2	16.7	-9.5
4.2	5.0	16.4	-11.5
4.3	1.5	16.2	-14.7
4.4	-4.1	15.9	-20.1
4.5	-6.8	15.7	-22.4
4.6	-2.2	15.4	-17.6
4.7	0.9	15.2	-14.3
4.8	2.4	15.0	-12.6
4.9	2.0	14.7	-12.7
5.0	0.6	14.5	-13.9
5.1	-2.4	14.3	-16.7
5.2	-4.2	14.1	-18.3
5.3	-0.9	13.9	-14.7
5.4	2.3	13.7	-11.4
5.5	3.6	13.5	-9.9
5.6	3.4	13.3	-9.9
5.7	1.5	13.1	-11.6
5.8	-2.9	12.9	-15.8
5.9	-13.9	12.7	-26.7

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 Co-pol Elevation RHCP, -10° to +10° @ 0.1° increment

-4.0	1.1	16.9	-15.8
-3.9	1.3	17.2	-15.9
-3.8	3.5	17.5	-14.0
-3.7	5.2	17.8	-12.6
-3.6	6.1	18.1	-12.0
-3.5	6.0	18.4	-12.4
-3.4	5.4		
-3.3	5.9		
-3.2	7.8		
-3.1	9.8		
-3.0	11.4		
-2.9	12.1		
-2.8	12.3		
-2.7	12.3		
-2.6	12.6		
-2.5	13.2		
-2.4	13.7		
-2.3	13.5		
-2.2	12.8		
-2.1	11.9		
-2.0	11.9		
-1.9	13.1		
-1.8	15.3		
-1.7	17.8		
-1.6	20.0		
-1.5	21.4		
-1.4	21.9		
-1.3	21.4		
-1.2	19.6		
-1.1	18.4		
-1.0	22.2		
-0.9	27.7		
-0.8	32.4		
-0.7	36.4		
-0.6	39.8		
-0.5	42.5		
-0.4	44.7		
-0.3	46.4		
-0.2	47.6		
-0.1	48.3		
0.0	48.5		

6.0	-11.3	12.5	-23.9
6.1	-5.7	12.4	-18.1
6.2	-4.7	12.2	-16.9
6.3	-7.8	12.0	-19.8
6.4	-14.7	11.8	-26.5
6.5	-7.7	11.7	-19.4
6.6	-1.6	11.5	-13.1
6.7	1.5	11.3	-9.8
6.8	3.3	11.2	-7.9
6.9	3.7	11.0	-7.3
7.0	3.3	10.9	-7.6
7.1	1.5	10.7	-9.2
7.2	-0.7	10.6	-11.3
7.3	-1.5	10.4	-11.9
7.4	0.1	10.3	-10.1
7.5	2.0	10.1	-8.2
7.6	2.3	10.0	-7.7
7.7	1.5	9.8	-8.3
7.8	-1.1	9.7	-10.8
7.9	-6.5	9.6	-16.0
8.0	-9.3	9.4	-18.7
8.1	-4.5	9.3	-13.7
8.2	-1.8	9.2	-10.9
8.3	-1.1	9.0	-10.1
8.4	-2.4	8.9	-11.3
8.5	-5.2	8.8	-14.0
8.6	-10.7	8.6	-19.4
8.7	-27.2	8.5	-35.8
8.8	-11.5	8.4	-19.9
8.9	-6.2	8.3	-14.5
9.0	-4.4	8.1	-12.5
9.1	-5.7	8.0	-13.7
9.2	-8.8	7.9	-16.7
9.3	-13.6	7.8	-21.4
9.4	-7.4	7.7	-15.0
9.5	-2.2	7.6	-9.7
9.6	0.4	7.4	-7.1
9.7	1.5	7.3	-5.9
9.8	1.4	7.2	-5.8
9.9	-0.1	7.1	-7.2
10.0	-3.7	7.0	-10.7

Orbit Communication Systems Ltd.
AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
X-pol Azimuth RHCP, -10° to +10° @ 0.1° increment

29.10 GHz Antenna Pattern in X-pol Az RHCP

Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
-10.0	-3.8	-2.0	-1.8
-9.9	-3.4	-2.0	-1.4
-9.8	-3.2	-2.0	-1.2
-9.7	-3.4	-2.0	-1.4
-9.6	-4.5	-2.0	-2.5
-9.5	-5.4	-2.0	-3.4
-9.4	-6.9	-2.0	-4.9
-9.3	-8.7	-2.0	-6.7
-9.2	-10.5	-2.0	-8.5
-9.1	-11.9	-2.0	-9.9
-9.0	-13.8	-2.0	-11.8
-8.9	-13.3	-2.0	-11.3
-8.8	-14.7	-2.0	-12.7
-8.7	-17.9	-2.0	-15.9
-8.6	-25.4	-2.0	-23.4
-8.5	-18.0	-2.0	-16.0
-8.4	-12.7	-2.0	-10.7
-8.3	-10.5	-2.0	-8.5
-8.2	-9.2	-2.0	-7.2
-8.1	-10.4	-2.0	-8.4
-8.0	-12.9	-2.0	-10.9
-7.9	-14.2	-2.0	-12.2
-7.8	-14.3	-2.0	-12.3
-7.7	-10.8	-2.0	-8.8
-7.6	-10.9	-2.0	-8.9
-7.5	-12.2	-2.0	-10.2
-7.4	-16.8	-2.0	-14.8
-7.3	-21.3	-2.0	-19.3
-7.2	-11.6	-2.0	-9.6
-7.1	-8.1	-2.0	-6.1
-7.0	-6.5	-2.1	-4.4
-6.9	-6.1	-2.0	-4.2
-6.8	-6.9	-1.8	-5.1
-6.7	-9.4	-1.7	-7.8
-6.6	-9.0	-1.5	-7.5
-6.5	-7.1	-1.3	-5.8
-6.4	-3.7	-1.2	-2.5
-6.3	-1.3	-1.0	-0.4
-6.2	0.3	-0.8	1.1
-6.1	0.4	-0.6	1.0
-6.0	-0.6	-0.5	-0.1
-5.9	-3.1	-0.3	-2.8
-5.8	-8.2	-0.1	-8.1
-5.7	-12.7	0.1	-12.8
-5.6	-8.1	0.3	-8.4
-5.5	-4.7	0.5	-5.1
-5.4	-3.3	0.7	-4.0
-5.3	-4.5	0.9	-5.4
-5.2	-5.7	1.1	-6.8
-5.1	-5.7	1.3	-7.0
-5.0	-4.9	1.5	-6.4
-4.9	-3.7	1.7	-5.4
-4.8	-3.1	2.0	-5.1
-4.7	-3.1	2.2	-5.3
-4.6	-3.4	2.4	-5.8
-4.5	-2.1	2.7	-4.8
-4.4	-0.7	2.9	-3.6
-4.3	0.9	3.2	-2.3
-4.2	2.4	3.4	-1.0
-4.1	3.9	3.7	0.2

29.10 GHz Antenna Pattern in X-pol Az RHCP

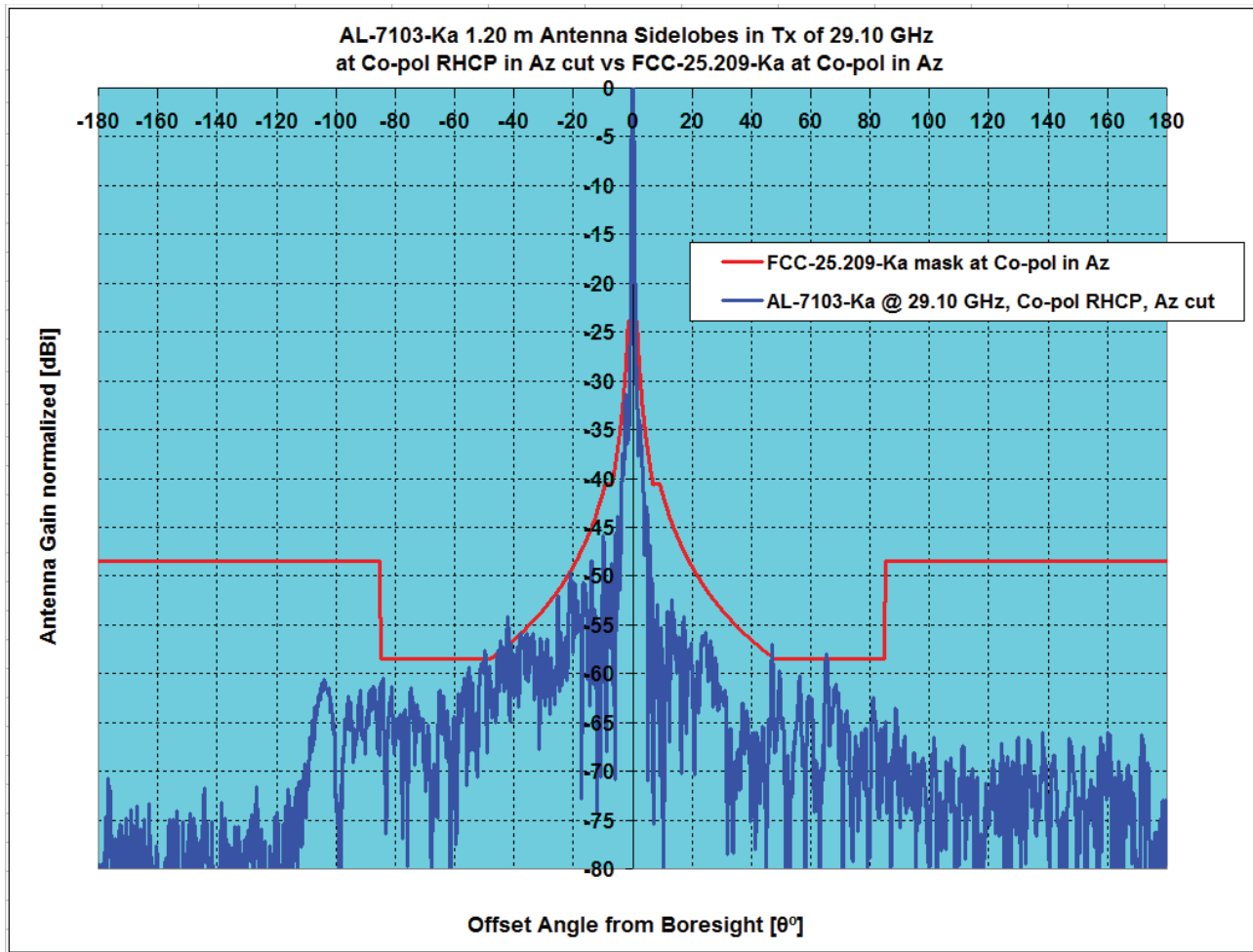
Angle Degrees	Gain dBi	Mask dBi	Over Mask dB
0.0	18.5		
0.1	16.9		
0.2	16.5		
0.3	17.2		
0.4	18.3		
0.5	19.3		
0.6	19.6		
0.7	19.3		
0.8	18.2		
0.9	16.0		
1.0	12.3		
1.1	6.4		
1.2	-3.8		
1.3	-1.5		
1.4	0.6		
1.5	-1.3		
1.6	-2.9		
1.7	-0.6		
1.8	1.4	12.6	-11.2
1.9	0.9	12.0	-11.2
2.0	-2.9	11.5	-14.4
2.1	-12.4	10.9	-23.3
2.2	-9.1	10.4	-19.5
2.3	-2.5	10.0	-12.5
2.4	-1.8	9.5	-11.3
2.5	-2.9	9.1	-12.0
2.6	-4.8	8.6	-13.4
2.7	-4.9	8.2	-13.2
2.8	-3.0	7.8	-10.9
2.9	-3.3	7.4	-10.7
3.0	-5.3	7.1	-12.4
3.1	-16.1	6.7	-22.8
3.2	-14.8	6.4	-21.2
3.3	-6.0	6.0	-12.1
3.4	-4.8	5.7	-10.5
3.5	-5.5	5.4	-10.9
3.6	-6.9	5.1	-12.0
3.7	-8.8	4.8	-13.6
3.8	-8.0	4.5	-12.5
3.9	-9.3	4.2	-13.5
4.0	-12.4	3.9	-16.4
4.1	-12.4	3.7	-16.1
4.2	-8.3	3.4	-11.7
4.3	-4.7	3.2	-7.9
4.4	-4.3	2.9	-7.2
4.5	-6.1	2.7	-8.8
4.6	-12.8	2.4	-15.3
4.7	-18.1	2.2	-20.3
4.8	-9.7	2.0	-11.7
4.9	-9.4	1.7	-11.2
5.0	-10.6	1.5	-12.1
5.1	-16.6	1.3	-17.9
5.2	-20.4	1.1	-21.5
5.3	-14.1	0.9	-15.0
5.4	-9.2	0.7	-9.9
5.5	-10.6	0.5	-11.1
5.6	-17.3	0.3	-17.6
5.7	-21.3	0.1	-21.4
5.8	-12.8	-0.1	-12.7
5.9	-10.3	-0.3	-10.0

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
 X-pol Azimuth RHCP, -10° to +10° @ 0.1° increment

-4.0	4.5	3.9	0.5
-3.9	4.6	4.2	0.4
-3.8	4.0	4.5	-0.5
-3.7	2.6	4.8	-2.2
-3.6	0.9	5.1	-4.2
-3.5	-0.7	5.4	-6.1
-3.4	-0.4	5.7	-6.2
-3.3	0.8	6.0	-5.2
-3.2	2.1	6.4	-4.3
-3.1	3.0	6.7	-3.8
-3.0	3.1	7.1	-4.0
-2.9	2.2	7.4	-5.2
-2.8	-0.2	7.8	-8.0
-2.7	-5.0	8.2	-13.2
-2.6	-10.7	8.6	-19.4
-2.5	-4.9	9.1	-13.9
-2.4	-2.3	9.5	-11.8
-2.3	-1.8	10.0	-11.8
-2.2	0.0	10.4	-10.4
-2.1	3.2	10.9	-7.8
-2.0	5.5	11.5	-6.0
-1.9	6.0	12.0	-6.0
-1.8	3.8	12.6	-8.8
-1.7	-0.3		
-1.6	6.8		
-1.5	12.7		
-1.4	16.0		
-1.3	17.5		
-1.2	17.4		
-1.1	15.4		
-1.0	10.3		
-0.9	9.7		
-0.8	16.9		
-0.7	21.0		
-0.6	23.4		
-0.5	24.4		
-0.4	24.4		
-0.3	23.8		
-0.2	22.5		
-0.1	20.6		
0.0	18.5		

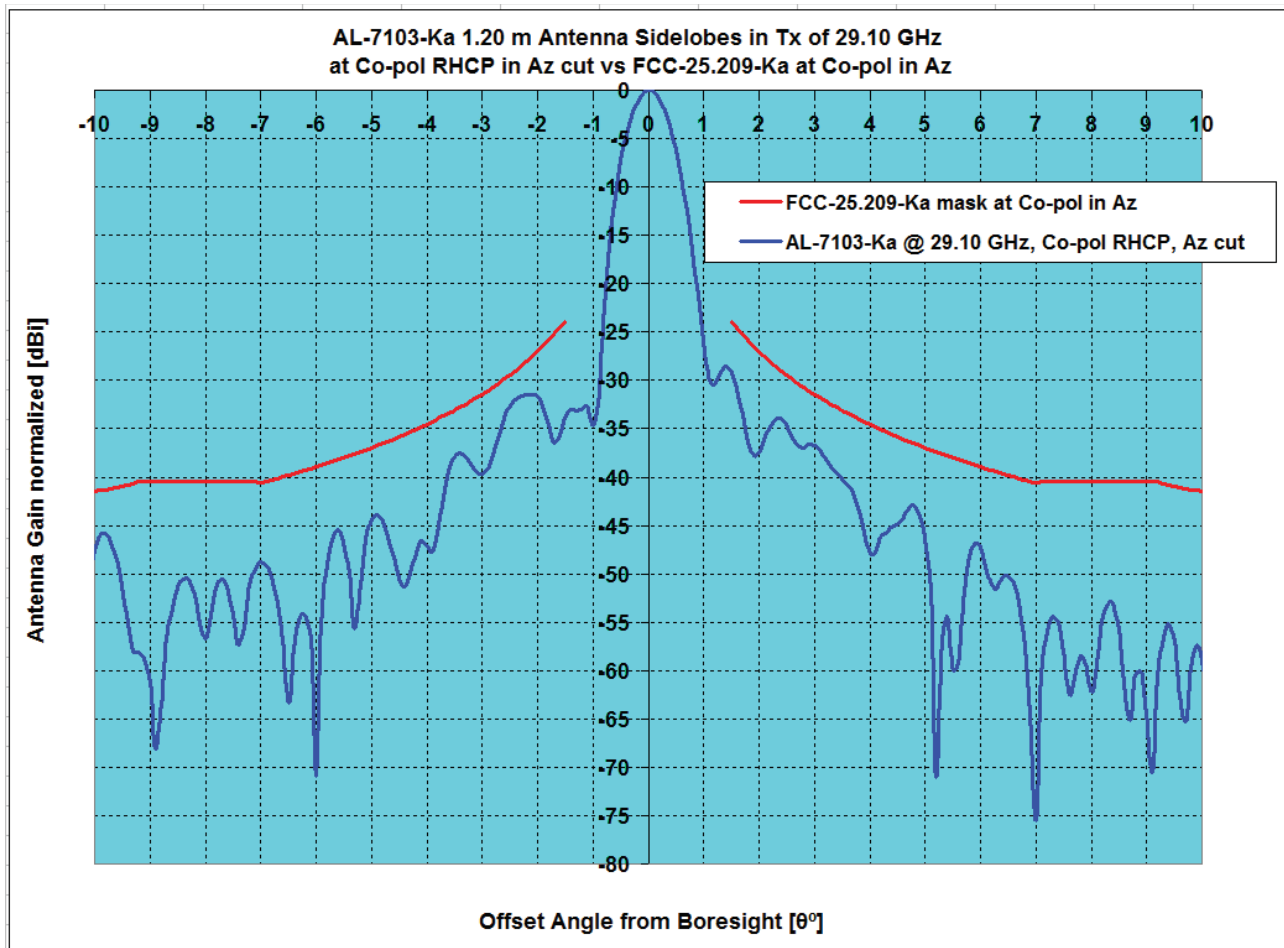
6.0	-11.1	-0.5	-10.6
6.1	-12.8	-0.6	-12.2
6.2	-16.6	-0.8	-15.8
6.3	-14.8	-1.0	-13.8
6.4	-13.7	-1.2	-12.5
6.5	-12.8	-1.3	-11.5
6.6	-16.6	-1.5	-15.1
6.7	-18.3	-1.7	-16.7
6.8	-15.5	-1.8	-13.6
6.9	-13.8	-2.0	-11.8
7.0	-15.5	-2.1	-13.4
7.1	-20.6	-2.0	-18.6
7.2	-24.8	-2.0	-22.8
7.3	-15.3	-2.0	-13.3
7.4	-13.1	-2.0	-11.1
7.5	-13.1	-2.0	-11.1
7.6	-15.3	-2.0	-13.3
7.7	-17.1	-2.0	-15.1
7.8	-15.2	-2.0	-13.2
7.9	-11.8	-2.0	-9.8
8.0	-12.9	-2.0	-10.9
8.1	-15.1	-2.0	-13.1
8.2	-24.8	-2.0	-22.8
8.3	-31.2	-2.0	-29.2
8.4	-24.4	-2.0	-22.4
8.5	-23.1	-2.0	-21.1
8.6	-28.4	-2.0	-26.4
8.7	-21.0	-2.0	-19.0
8.8	-21.8	-2.0	-19.8
8.9	-16.2	-2.0	-14.2
9.0	-17.5	-2.0	-15.5
9.1	-18.4	-2.0	-16.4
9.2	-20.1	-2.0	-18.1
9.3	-20.9	-2.0	-18.9
9.4	-19.0	-2.0	-17.0
9.5	-18.4	-2.0	-16.4
9.6	-19.8	-2.0	-17.8
9.7	-19.9	-2.0	-17.9
9.8	-26.9	-2.0	-24.9
9.9	-26.5	-2.0	-24.5
10.0	-23.8	-2.0	-21.8

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern, Co-pol, Azimuth RHCP



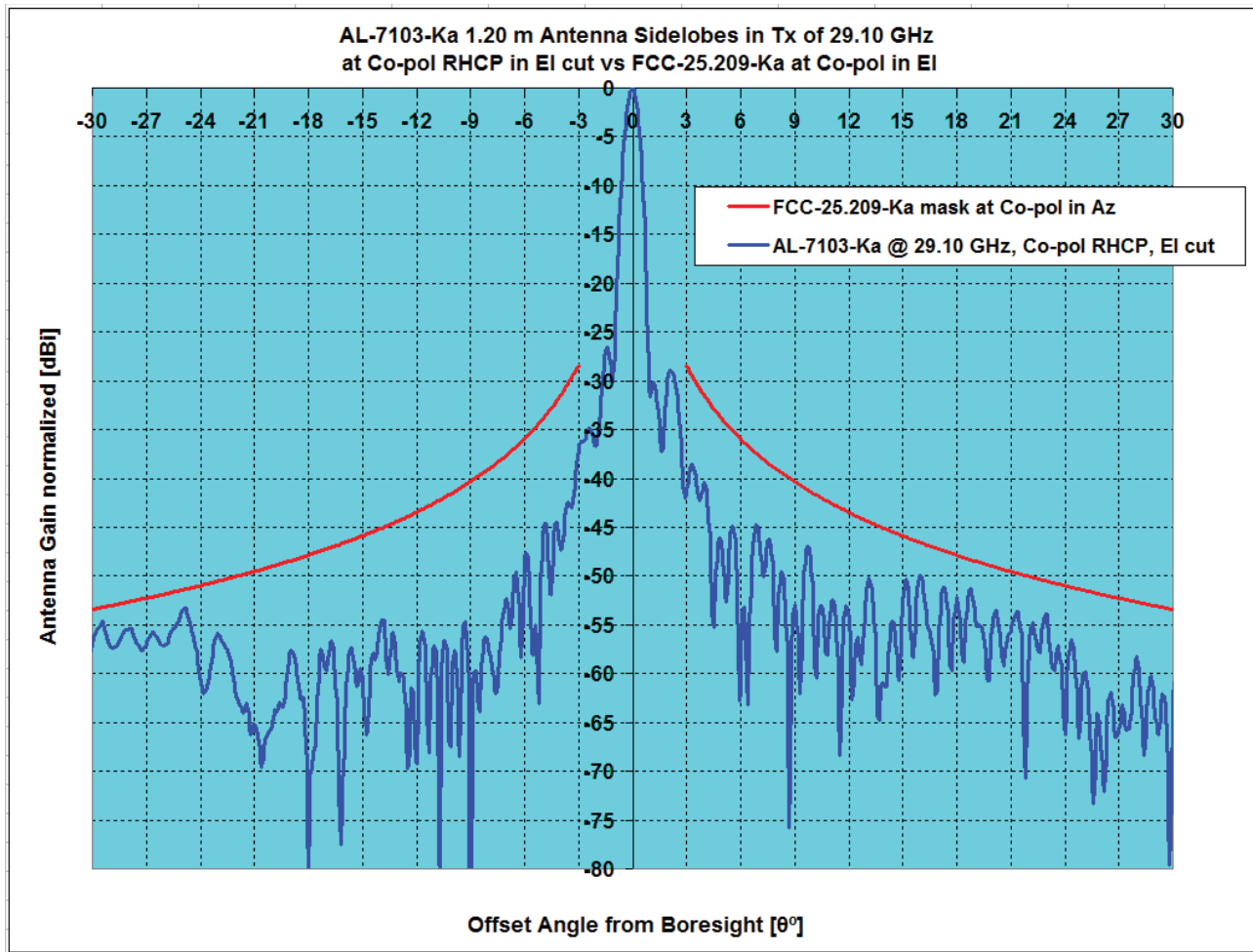
Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
				1.5°≤θ≤7°	7°≤θ≤180°	1.5°≤θ≤7°	7°≤θ≤180°
FCC-25.209-Ka, Co-pol Az, vs AL-7103-Ka	Az , RHCP	29.10	48.50	-2.95	2.92	0.00%	0.70%

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern, Co-pol, Azimuth RHCP



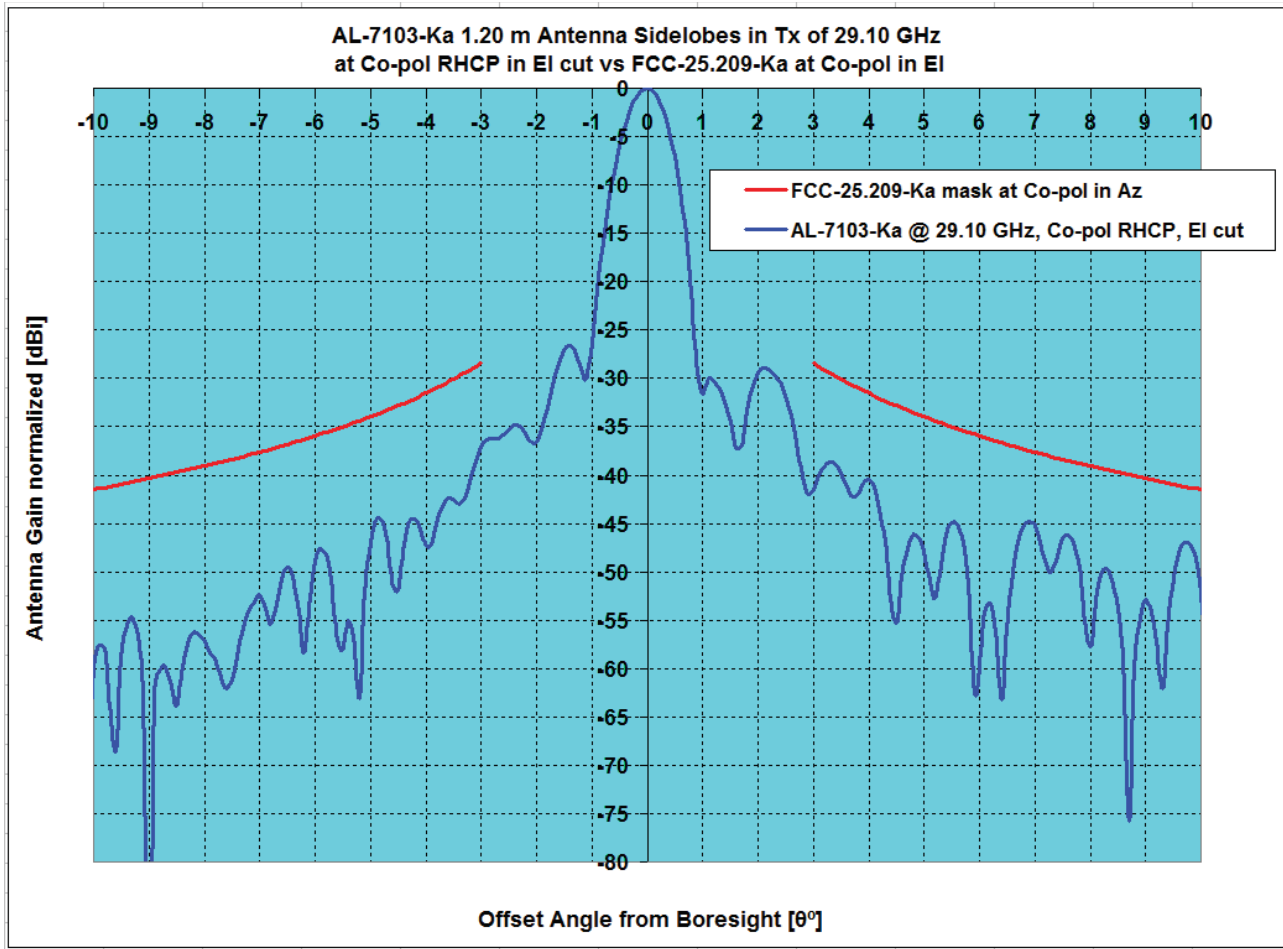
Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
				1.5° ≤ θ ≤ 7°	7° ≤ θ ≤ 180°	1.5° ≤ θ ≤ 7°	7° ≤ θ ≤ 180°
Pattern Rule vs Antenna System	Type	GHz	dBi				
FCC-25.209-Ka, Co-pol Az, vs AL-7103-Ka	Az , RHCP	29.10	48.50	-2.95	2.92	0.00%	0.70%

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern, Co-pol, Elevation RHCP

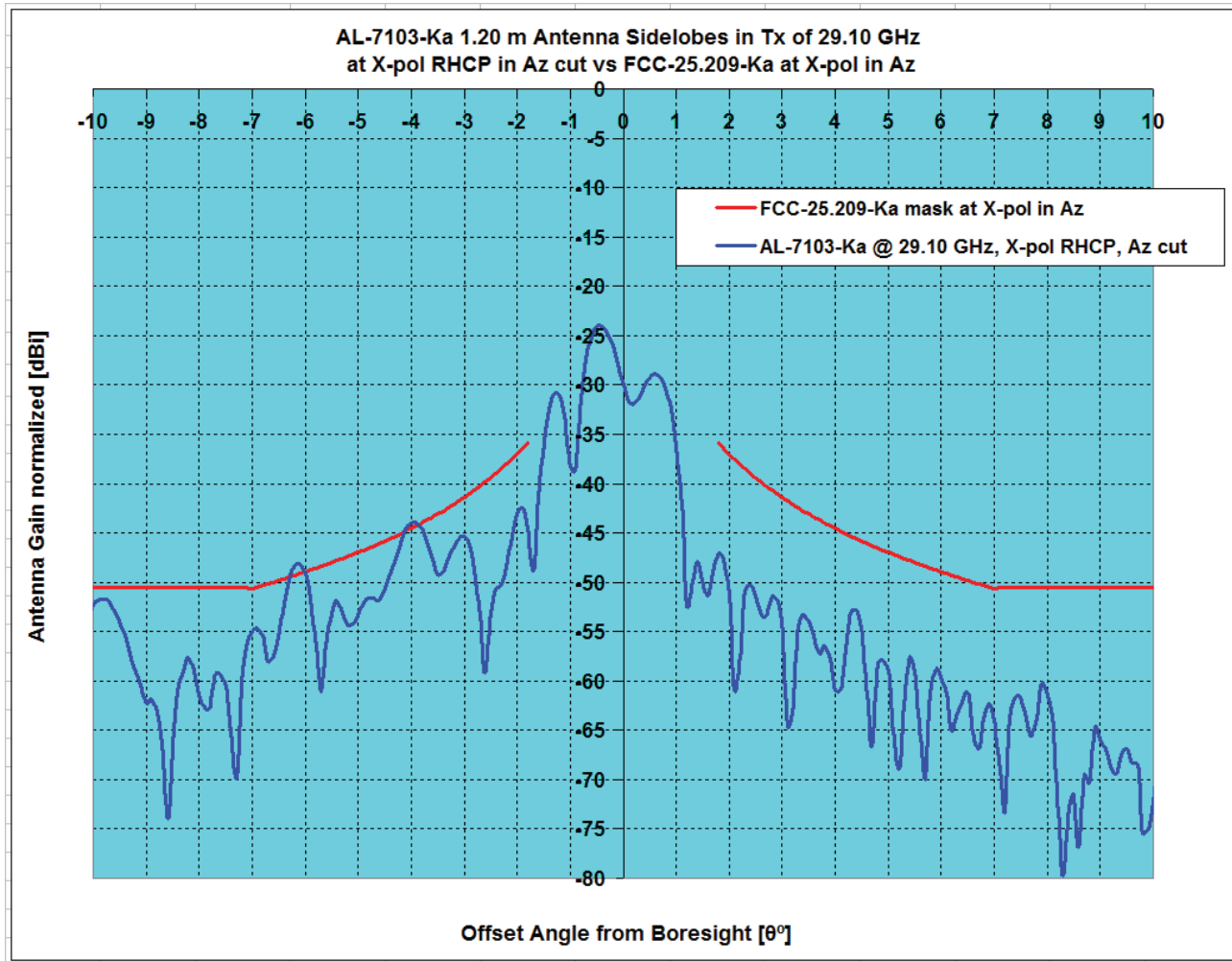


Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
				3°≤θ≤7°	7°≤θ≤30°	3°≤θ≤7°	7°≤θ≤30°
Pattern Rule vs Antenna System	Type	GHz	dBi				
FCC-25.209-Ka, Co-pol EI, vs AL-7103-Ka	EI, RHCP	29.10	48.50	-7.30	-1.44	0.00%	0.00%

Orbit Communication Systems Ltd.
 AL-7103-Ka, 1.20 m Antenna, Pattern, Co-pol, Elevation RHCP



Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
				3°≤θ≤7°	7°≤θ≤30°	3°≤θ≤7°	7°≤θ≤30°
FCC-25.209-Ka, Co-pol EI, vs AL-7103-Ka	EI, RHCP	29.10	48.50	-7.30	-1.44	0.00%	0.00%



Description	Plane, CirP Type	Frequency GHz	Ant. Gain dBi	Peak Excursions dB		Over Mask %	
				1.8°≤θ≤7°	1.8°≤θ≤9.2°	1.8°≤θ≤7°	1.8°≤θ≤9.2°
FCC-25.209-Ka, X-pol Az, vs AL-7103-Ka	Az , RHCP	29.10	48.50	1.08	1.08	4.72%	3.01%