REQUEST FOR SPECIAL TEMPORARY AUTHORITY

O3b Limited ("O3b"), pursuant to Section 25.120 of the Commission's rules, hereby respectfully requests special temporary authority ("STA") to operate an earth station to be located at the Data Technology Solutions ("DTS") facility in Breaux Bridge, Louisiana ("DTS Earth Station") that will communicate with the satellite system operated by O3b. In this filing, O3b seeks a 30-day STA for the period between September 15, 2014 and October 14, 2014.[1]

The DTS Earth Station will be used for non-commercial testing and demonstration purposes, exhibiting O3b's system to the U.S. energy industry. The DTS Earth Station will simulate diverse data applications on the O3b satellite system, including interactive video and audio teleconferencing, access to Enterprise Cloud Services and very large file transfers. As discussed below, grant of the requested authority is in the public interest as it will allow O3b to test and demonstrate O3b services that could benefit the U.S. energy industry.

Test Details and Public Interest Showing

The DTS Earth Station will communicate with O3b's Ka-band, Medium Earth Orbit, non-geostationary orbit ("NGSO") satellite system[2] and O3b's gateway earth station in Vernon, TX.[3]

The frequencies to be used by the DTS Earth Station are:

- 28.35-28.4 GHz (uplink)
- 18.3-18.6 GHz (downlink)

The DTS Earth Station will consist of two (2) 1.2m antennas manufactured by Orbit, and will operate with a ViaSat MEOLink modem. This Orbit 1.2m terminal is the same Orbit 1.2m terminal for which O3b has previously been granted authority to operate at the CODA Lab location in San Diego, California.[4]

The DTS Earth Station antennas will be mounted on a fixed pedestal at the DTS facility. Although the pointing angle of the antennas will change as O3b's in-orbit satellites are tracked, the pedestal will remain stationary during the demonstration.

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[1] O3b will be filing a second STA request, which it understands the International Bureau will put on Public Notice, covering the 30-day period between October 15, 2014, and November 13, 2014.

[2] O3b's first four satellites were launched on June 25, 2013. O3b's next four satellites were launched on July 10, 2014.

[3] *See* O3b Limited, Call Sign E130021, File No. SES-LIC-20130124-00089, granted June 20, 2013 ("O3b Texas License").

[4] *See* O3b Limited, File No. SES-STA-20131228-01209, filed December 23, 2013 ("O3b CODA STA Application"), and which was placed on Public Notice on April 2, 2014 and granted on April 29, 2014.

Grant of this application will serve the public interest, convenience, and necessity by allowing O3b to show how its system can effectively deliver low latency, high throughput service to and from isolated resource extraction operations, such as offshore oil platforms.[5] This capability will allow for better connectivity and living conditions at these remote facilities while enhancing the safe and efficient extraction of important energy resources. O3b will demonstrate the system's capabilities for providing a variety of valuable communications, including voice and video conferencing and Enterprise Data Applications.

Technical Parameters

O3b is attaching the following documents with the technical details of the operations proposed under the requested STA:

- Annex 1: FCC Form 312, Schedule B. O3b proposes to operate the DTS Earth Station during this 30-day term in accordance with the parameters specified in the Schedule B.[6]
- Annex 2: Link Budgets. Representative links for the DTS Earth Station are provided.
- Annex 3: Characteristics of the 1.2m Orbit Antenna are provided for the Commission's convenience. O3b previously submitted this information to the Commission.[7]
- Annex 4: Antenna Patterns. Measured 30 GHz band antenna performance data for the 1.2m antenna is provided for the Commission's convenience. O3b previously submitted this data to the Commission.[8]

Further, O3b incorporates by reference the following technical parameters previously provided by O3b:

- Schedule S. In its application for a gateway earth station in Hawaii, O3b submitted a Schedule S describing its satellite system's technical characteristics.[9] The Schedule S correctly described the O3b satellite system for that application, and numerically enveloped all of the necessary parameters for future earth station applications. In order to assist the Commission in processing present and future applications, however, O3b subsequently provided a

[5] The DTS Earth Station will not, for purposes of the STA, communicate with any offshore platforms or other offsite facilities. The only points of communication will be O3b's space stations and O3b's gateway earth station in Vernon, Texas.

[6] Although O3b is not currently seeking a regular license for the DTS Earth Station, O3b is providing a Schedule B containing technical parameters for the Commission's convenience.

[7] *See* O3b maritime earth station application, File No. SES-LIC-20130528-00455, Technical Attachment at A.6.

[8] *See* O3b maritime earth station answers (Oct. 25, 2013) ("Maritime Earth Station Answers"), File No. SES-AMD-20131025-01138, answer to Question 10.

[9] *See* O3b Limited, Call Sign E100088, File No. SES-LIC-20100723-00952, granted Sept. 25, 2012 ("O3b Hawaii License").

modified Schedule S that incorporates additional information submitted to the Commission since the Hawaii application was filed.[10] O3b will operate its DTS Earth Station within the parameters described in O3b's modified Schedule S.

- U.S. Government Coordination. O3b has completed all necessary coordination with US government satellite networks operating in Ka-band, including GSO and non-GSO networks, as well as their associated specific earth stations filed under 9.7A and 9.7B of the ITU Radio Regulations through other administrations. O3b has also completed coordination, according to US footnote 334 of the FCC table of frequency allocations, with the US government, and this US334 coordination agreement specifically provides for additional earth stations in US territory operating with O3b's satellites, such as the DTS Earth Station. As a result, O3b's existing US334 coordination agreement covers the use of the DTS Earth Station as requested in this application.

Proposed Spectrum Use

O3b's proposed operations pose no risk of harmful interference to other lawfully authorized stations. As demonstrated below, the DTS Earth Station will provide the requisite protection to geostationary orbit ("GSO") FSS stations operating in the bands proposed by O3b. Transmissions by O3b under the proposed STA will occur on a secondary, non-harmful interference basis, and O3b acknowledges that it will not be entitled to interference protection.

UPLINK

28.35-28.4 GHz – Secondary uplink band shared with primary GSO FSS stations.

In the 28.35–28.4 GHz band, there is a primary allocation for GSO FSS systems and a secondary allocation for NGSO FSS systems. O3b's DTS Earth Station transmissions in this band will be consistent with their secondary status vis-à-vis GSO FSS transmissions. The Commission has allowed similar secondary use of frequencies in the Ka-band uplink allocated to GSO FSS on a primary basis where applicants are prepared to accept interference from primary operations and can demonstrate that their proposed operations are not likely to cause harmful interference to primary operations.[11] O3b agrees to both of these standards.

As a secondary user of the 28.35-28.4 GHz band in the United States, O3b makes no claim of protection from interference from U.S.-licensed GSO FSS networks in this band segment. Regarding O3b's uplink operations in the 28.35-28.4 GHz band, the ITU has developed uplink equivalent power flux

[10] *See* Maritime Earth Station Answers, Call Sign E130098, File No. SES-AMD-20131025-01138, answer to question 6.

[11] *Northrop Grumman Space & Missions Systems Corporation*, 24 FCC Rcd 2330, at ¶¶ 72-73 (Int'l Bur. 2009); *contactMEO Communications*, LLC, 21 FCC Rcd 4035, at ¶¶ 23-24, (Int'l Bur., 2006).

density limits ("$EPFD_{up}$") limits to protect co-frequency GSO FSS operations from unacceptable interference from NGSO FSS systems operating in the same frequencies. Specifically, in accordance with Article 22 of the ITU Radio Regulations, if the applicable $EPFD_{up}$ limits are met, the NGSO FSS satellite system is considered to have met its obligations to protect GSO FSS networks from unacceptable interference. O3b demonstrated that its gateway located at Hawaii operating at the authorized power levels will meet the applicable ITU $EPFD_{up}$ limits in all frequency ranges where these limits apply, due to the inherent angular separation between the O3b and geostationary orbits when viewed from the Earth at latitudes away from the equator.[12]

The DTS Earth Station is located further north in latitude than the Hawaii gateway,[13] which results in an even greater angular separation between the O3b and geostationary orbits as viewed from the Earth and an even greater assurance that the applicable ITU $EPFD_m$ limits will be met by O3b's proposed operations. The proposed DTS Earth Station operations, therefore, also will meet the applicable ITU $EPFD_{up}$ limits. In any event, O3b confirms that its operations will be on a secondary basis relative to U.S.-licensed GSO FSS networks in the same band.

DOWNLINK

18.3-18.6 GHz – Non-conforming downlink band shared with primary GSO FSS stations.

The 18.3-18.6 GHz band is allocated in the United States on a primary basis to GSO FSS. In the 18.3-18.6 GHz downlink band, the ITU has developed downlink equivalent power flux density ("$EPFD_{down}$") limits to protect GSO FSS networks from unacceptable interference from NGSO FSS systems operating in the same frequencies. Specifically, in accordance with Article 22 of the ITU Radio Regulations, if the applicable $EPFD_{down}$ limits are met, the NGSO FSS satellite system is considered to have met its obligations to protect GSO FSS networks from unacceptable interference. O3b confirms that its system will meet the applicable ITU $EPFD_{down}$ limits in all frequency ranges where these limits apply.[14]

As an example of how these limits will be satisfied, O3b provided $EPFD_{down}$ calculations for transmissions to its Hawaii gateway earth station.[15] O3b also showed how the $EPFD_{down}$ limits can be satisfied at all latitudes.[16] Compliance with the $EPFD_{down}$ limits is more easily achieved in the case of transmissions to O3b's DTS Earth Station than it is in the case of transmissions to O3b's Hawaii earth

[12] O3b Hawaii License Application, FCC File No. SES-LIC-20100723-00952, *Technical Attachment* at A.10.1.
[13] The O3b Hawaii gateway latitude is 21° 40' 17.8" N; the DTS Earth Station latitude is 30° 16' 54.3" N.
[14] *See* ITU Radio Regulations, Article 22. *See* also O3b Hawaii License Application, FCC File No. SES-LIC-20100723-00952, *Technical Attachment* at A.10.1 for a discussion of O3b's compliance with the operational limits in Article 22 of the ITU Radio Regulations.
[15] O3b Hawaii License Application, FCC File No. SES-LIC-20100723-00952, *Technical Attachment* at A.10.1.
[16] *See id*.

station. O3b is able to satisfy the limits by taking advantage of the inherent angular separation of the O3b and the GSO orbits when viewed from the surface of the Earth at latitudes away from the equator,[17] and O3b's DTS Earth Station will be located further from the equator than O3b's Hawaii earth station. The DTS Earth Station location, therefore, presents an even stronger case for non-interference to GSO FSS networks than the Hawaii gateway location.

Conclusion

The requested STA will allow O3b to evaluate and demonstrate the O3b system's operational capabilities and will not result in harmful interference to other authorized spectrum users. Accordingly, and for good cause shown, O3b respectfully requests that its STA be granted in time for it to commence testing under this 30-day STA request on September 15, 2014.

[17] *See id*.

ANNEX 1 – Form 312, Schedule B

The Form 312, Schedule B is provided on the pages that follow.

SATELLITE EARTH STATION AUTHORIZATIONS

FCC Form 312 - Schedule B :(Technical and Operational Description)

Location of Earth Station Site

E1: Site Identifier:	Data Technology Solutions	E5. Call Sign: N/A	
E2: Contact Name:	Mr. Mike Guidroz	E6. Phone Number: 337-332-4347	
E3. Street:	1300 N. Berard Street	E7. City: Breaux Bridge	
		E8. County: St. Martin Parish	
E4. State	LA	E9. Zip Code	70517
E10. Area of Operation:	Fixed		
E11. Latitude:	30 ° 16 ' 54.12 " N		
E12. Longitude:	91 ° 54 ' 51.84 " W		

E15. If the proposed antenna(s) operate in the Fixed Satellite Service (FSS) with geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a) and (b) as demonstrated by the manufacturer's qualification measurement? If NO, provide a technical analysis showing compliance with two-degree spacing	○ Yes No N/A
E16. If the proposed antenna(s) do not operate in the Fixed Satellite Service (FSS), or if they operate in the Fixed Satellite Service (FSS) with non-geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a2) and	◉ Yes No N/A
E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	○ Yes ◉ No
E18. Is frequency coordination required? If YES, attach a frequency coordination report as	Yes ◉ No
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	Yes ◉ No
E20. FAA Notification - (See 47 CFR Part 17 and 47 CFR part 25.113(c)) Where FAA notification is required, have you attached a copy of a completed FCC Form 854 and or the FAA's study regarding the potential hazard of the structure to aviation? **FAILURE TO COMPLY WITH 47 CFR PARTS 17 AND 25 WILL RESULT IN THE RETURN OF THIS APPLICATION.**	○ Yes ◉ No

POINTS OF COMMUNICATION

Satellite Name:O3B-A | O3B-A | Eq. NGSO If you selected OTHER, please enter the following:	
E21. Common Name:	E22. ITU Name:
E23. Orbit Location:	E24. Country:

POINTS OF COMMUNICATION (Destination Points)

E25. Site Identifier:	
E26. Common Name:	E27. Country:

ANTENNA

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size	E41/42. Antenna Gain Transmit and/or Receive (___dBi at_____GHz)
DTS Facility	Orbit 1.2m	2	Orbit Communications	AL-7103-Ka	1.2	45 dBi at 19.2
						48.0 dBi at 28.3 GHz

E28. Antenna Id	E33/34. Diameter Minor/Major(meters)	E35. Above Ground Level (meters)	E36. Above Sea Level (meters)	E37. Building Height Above Ground Level (meters)	E38. Total Input Power at antenna flange (Watts)	E39. Maximum Antenna Height Above Rooftop (meters)	E40. Total EIRP for al carriers (dBW)
Orbit 1.2m	1.2/1.2	2.0	4.0	0.0	20.0	2.0	60.5

FREQUENCY

E28. Antenna Id	E43/44. Frequency Bands(MHz)	E45. T/R Mode	E46. Antenna Polarization(H,V,L,R)	E47. Emission Designator	E48. Maximum EIRP per Carrier(dBW)	E49. Maximum EIRP Density per Carrier(dBW/4kHz)
Orbit 1.2m	18300 - 18600	R	Left and Right Circular	54MG7D	45.6	4.3
E50. Various Modulations up to 32APSK; Digital Data Link						
Orbit 1.2m	28350 - 24000	T	Left and Right Circular	54MG7D	61.5	21
E50. Various Modulations up to 32APSK; Digital Data Link						

FREQUENCY COORDINATION

E28. Antenna Id	E51. Satellite Orbit Type	E52/53. Frequency Limits(MHz)	E54/55. Range of Satellite Arc E/W Limit	E56. Earth Station Azimuth Angle Eastern Limit	E57. Antenna Elevation Angle Eastern Limit	E58. Earth Station Azimuth Angle Western Limit	E59. Antenna Elevation Angle Western Limit	E60. Maximum EIRP Density toward the Horizon(dBW/4kHz)
Orbit 1.2	Non-Geostationary	18300 - 18600	NON-GEO	122.6	10.0	219.3	10	--
Orbit 1.2	Non-Geostationary	23500 - 24000	NON-GEO	122.6	10.0	219.3	10	-39.8

ANNEX 2 – Link Budgets

Representative link budgets for the 1.2m Orbit antenna at the DTS Earth Station are provided on the following four pages. Please see the chart below for reference.

Link Description	**Carrier**	**MODCOD**	**Table #**
1.2m in Breaux Bridge, LA	54 MHz by 54 MHz	16APSK 2/3rds FWD QPSK 2/3rds RTN	1,2

O3b Network Link Analysis - Tier 1 Service For Lafayette_LA, United States

Link Budget Creator - Rev 3.2.9: July 17, 2014		Tier 1	Tier 1
Ground Parameter		**Teleport**	**Telco**
Location		Vernon (RHCP), United States	Lafayette_LA, United States
Latitude	(°)	34.2	30.2
Longitude (East)	(°)	260.7	268.0
E/S Range to SV	(km)	10824.6	11068.0
E/S Elevation to SV	(°)	21.5	18.7
E/S Altitude	(km)	0.3	0.0
SV Beam Identifier	(#)	14	
Minutes Into Pass (Sample #1)	(Min)	0:0	
Telco Spot Beam Off-Angle	(°)	0.20	
Telco Spot Beam Diameter	(km)	66.20	
Maximum Roundtrip Latency	(msec)	146.05	
Modulation Parameters		**Forward**	**Return**
Enter Receiver	Type	DVB-S2	
Modem Overhead	(%)	1.0%	
Number of Carriers per Channel	(#)	1	
Available Bandwidth	(Hz)	54,000,000	
Channel Symbol Rate	(sps)	45,000,000	
Channel Modulation Type		16APSK	
Channel FEC Rate		0.67	
Channel Spectral Efficiency	(bits/Sym)	2.67	
Channel Throughput (100% / 100% of Full Rate)	(bps)	118,800,000	
Uplink		**Forward**	**Return**
E/S Tx Channels per HPA	(#)	5	
E/S Tx Carrier Frequency	(MHz)	28,709	
E/S Tx HPA Power Level	(W)	125	
E/S Tx OBO	(dB)	-14.00	
E/S Tx Post-HPA Losses	(dB)	-2.24	
E/S Tx Antenna Gain (7.3 m / 1.2 m)	(dB)	65.03	
E/S Tx EIRP Per Channel	(dBW)	62.77	
E/S Tx Pointing Loss	(dB)	-0.50	
E/S Tx RF Link Availability	(%)	75.000	
E/S Tx Atmospheric Losses	(dB)	-1.66	
E/S Tx Spreading Loss	(dB)	-151.68	
Satellite		**Forward**	**Return**
SV Number of Channels per HPA	(#)	1	
SV Rx G/T	(dB/K)	5.58	
SV Rx Power Per Tier	(dBW)	-136.12	
SV Rx Flux Density Per Tier	(dBW/m^2)	-91.08	
SV Tx OBO (ALC / FGM)	(dB)	-3.80	
SV Tx Post-TWTA Losses	(dB)	-1.50	
SV Tx Antenna Gain	(dBi)	31.94	
SV Tx EIRP Per Channel/Carrier	(dBW)	44.77	
SV Tx Pointing Loss	(dB)	0.00	
Downlink		**Forward**	**Return**
E/S Rx Carrier Frequency	(MHz)	18,909	
E/S Rx Wavelength	(m)	0.015854	
E/S Rx RF Link Availability	(%)	70	
E/S Rx Atmospheric Losses	(dB)	-1.61	
E/S Rx Pointing Loss	(dB)	-1.00	
E/S Rx Antenna Gain (1.2 m / 7.3 m)	(dBi)	42.7	
E/S Rx Effective G/T	(dB/K)	17.9	
E/S Rx Power Per Channel	(dBW)	-114.0	
E/S Rx Flux Density Per Channel	(dBW/m^2)	-109.7	
Total Link		**Forward**	**Return**
Carrier / Noise Bandwidth	(dB)	76.53	
Carrier / Noise Uplink	(dB)	15.95	
Carrier / Noise Downlink	(dB)	13.30	
Carrier / Intermodulation Im (C/Im)	(dB)	29.35	
(C/N) - Total Actual	(dB)	11.17	
(C/N) - Total Required	(dB)	10.10	
(E_b/N_o) - Total Actual	(dB)	6.91	
(E_b/N_o) - Total Required	(dB)	5.84	
Excess Margin	**(dB)**	**1.07**	
Fade Margin	**(dB)**	**13.77**	

O3b Network Link Analysis - Tier 1 Service For Lafayette_LA, United States

Link Budget Creator - Rev 3.2.9: July 17, 2014		Tier 1	Tier 1
Ground Parameter		**Teleport**	**Telco**
Location		Vernon (RHCP), United States	Lafayette_LA, United States
Latitude	(°)	34.2	30.2
Longitude (East)	(°)	260.7	268.0
E/S Range to SV	(km)	10824.6	11068.0
E/S Elevation to SV	(°)	21.5	18.7
E/S Altitude	(km)	0.3	0.0
SV Beam Identifier	(#)	14	
Minutes Into Pass (Sample #1)	(Min)	0:0	
Telco Spot Beam Off-Angle	(°)	0.20	
Telco Spot Beam Diameter	(km)	66.20	
Maximum Roundtrip Latency	(msec)	146.05	
Modulation Parameters		**Forward**	**Return**
Enter Receiver	Type		DVB-S2
Modem Overhead	(%)		1.0%
Number of Carriers per Channel	(#)		1
Available Bandwidth	(Hz)		54,000,000
Channel Symbol Rate	(sps)		45,000,000
Channel Modulation Type			8PSK
Channel FEC Rate			0.67
Channel Spectral Efficiency	(bits/Sym)		2.00
Channel Throughput (100% / 100% of Full Rate)	(bps)		**89,100,000**
Uplink		**Forward**	**Return**
E/S Tx Channels per HPA	(#)		1
E/S Tx Carrier Frequency	(MHz)		28,709
E/S Tx HPA Power Level	(W)		40
E/S Tx OBO	(dB)		-3.00
E/S Tx Post-HPA Losses	(dB)		-0.28
E/S Tx Antenna Gain (7.3 m / 1.2 m)	(dB)		46.5
E/S Tx EIRP Per Channel	(dBW)		59.21
E/S Tx Pointing Loss	(dB)		-1.00
E/S Tx RF Link Availability	(%)		70.000
E/S Tx Atmospheric Losses	(dB)		-2.42
E/S Tx Spreading Loss	(dB)		-151.87
Satellite		**Forward**	**Return**
SV Number of Channels per HPA	(#)		5
SV Rx G/T	(dB/K)		5.10
SV Rx Power Per Tier	(dBW)		-141.61
SV Rx Flux Density Per Tier	(dBW/m^2)		-96.09
SV Tx OBO (ALC / FGM)	(dB)		-18.87
SV Tx Post-TWTA Losses	(dB)		-1.50
SV Tx Antenna Gain	(dBi)		31.95
SV Tx EIRP Per Channel/Carrier	(dBW)		22.72
SV Tx Pointing Loss	(dB)		0.00
Downlink		**Forward**	**Return**
E/S Rx Carrier Frequency	(MHz)		18,909
E/S Rx Spreading Loss	(dB)		-151.68
E/S Rx RF Link Availability	(%)		75.000
E/S Rx Atmospheric Losses	(dB)		-1.13
E/S Rx Pointing Loss	(dB)		-0.50
E/S Rx Antenna Gain (1.2 m / 7.3 m)	(dBi)		62.24
E/S Rx Effective G/T	(dB/K)		38.84
E/S Rx Power Per Channel	(dBW)		-115.34
E/S Rx Flux Density Per Channel	(dBW/m^2)		-130.59
Total Link		**Forward**	**Return**
Carrier / Noise Bandwidth	(dB)		76.53
Carrier / Noise Uplink	(dB)		10.46
Carrier / Noise Downlink	(dB)		13.33
Carrier / Intermodulation Im (C/Im)	(dB)		25.81
(C/N) - Total Actual	(dB)		8.47
(C/N) - Total Required	(dB)		7.60
(E_b/N_o) - Total Actual	(dB)		5.46
(E_b/N_o) - Total Required	(dB)		4.59
Excess Margin	**(dB)**		**0.87**
Fade Margin	**(dB)**		**11.07**

ANNEX 3 – Antenna Terminal Characteristics

The O3b 1.2 meter ("1.2m") terminals offers service data rates of up to 150 Mbps. The figure below shows this terminal.

Figure: O3b's 1.2 meter terminal

The 1.2m antenna is fully stabilized to account for the movement of the O3b satellite in its orbit. Each antenna is enclosed within a radome to protect it from the environment.

The antennas and their associated control system will ensure that they maintain a stabilization tracking accuracy of better than 0.2 degrees. The internal controller software continuously monitors the instantaneous antenna tracking error and will cease transmissions within 100ms if an unexpected event occurs that causes the tracking error to exceed 0.5 degrees. Transmissions will not restart until the tracking error, relative to the target O3b satellite, is less than 0.2 degrees.

The 1.2m antennas are no smaller in antenna size than the range of antenna sizes that O3b has previously described to the Commission as its "Tier 2" service.[18] Therefore these 1.2m antennas present no new technical issues in terms of interference with respect to GSO or other NGSO satellite networks.

[18] See O3b's Hawaii application, FCC File No. SES-LIC-20100723-00952, technical narrative at Section A.5.

ANNEX 4 – Antenna Radiation Patterns

This annex contains a series of radiation pattern measurements of production antennas that have been performed on a calibrated antenna range. Pattern measurements are provided for the bottom, middle, and top frequencies of O3b's overall 30 GHz band frequency range, *i.e.*, 27.6-29.1, in accordance with the description in Section 25.138(d) of the FCC's rules that applies to GSO FSS earth stations. The measured performance data is applicable to both senses of circular polarization.

Recognizing that there are no existing FCC rules relating to the uplink off-axis EIRP density levels for non-GSO FSS networks, O3b nevertheless believes it is useful to compare the off-axis EIRP density levels from the O3b transmitting 1.2m terminals with the levels in §25.138(a) which relate to blanket licensing of GSO FSS transmitting earth stations. The §25.138(a) levels are intended to ensure interference compatible operations between co-frequency, co-coverage GSO satellites spaced two degrees apart in the GSO orbit. O3b confirms here that its 1.2m transmitting terminals will actually comply with the off-axis EIRP density levels of §25.138(a)(1) to (4).

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

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth LHCP, -180º to +180º @ 1.0º increment

27.60 GHz @ -9,52 dBW / 40 kHz in Co-pol Az LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-179.0	-36.6	-10.5	-26.1
-178.0	-28.7	-10.5	-18.2
-177.0	-35.2	-10.5	-24.7
-176.0	-32.4	-10.5	-21.9
-175.0	-41.4	-10.5	-30.9
-174.0	-38.3	-10.5	-27.8
-173.0	-42.1	-10.5	-31.6
-172.0	-44.0	-10.5	-33.5
-171.0	-41.6	-10.5	-31.1
-170.0	-43.4	-10.5	-32.9
-169.0	-46.8	-10.5	-36.3
-168.0	-40.6	-10.5	-30.1
-167.0	-42.9	-10.5	-32.4
-166.0	-43.8	-10.5	-33.3
-165.0	-40.6	-10.5	-30.1
-164.0	-54.5	-10.5	-44.0
-163.0	-46.1	-10.5	-35.6
-162.0	-41.4	-10.5	-30.9
-161.0	-40.1	-10.5	-29.6
-160.0	-56.3	-10.5	-45.8
-159.0	-38.4	-10.5	-27.9
-158.0	-43.7	-10.5	-33.2
-157.0	-41.6	-10.5	-31.1
-156.0	-33.7	-10.5	-23.2
-155.0	-37.8	-10.5	-27.3
-154.0	-38.4	-10.5	-27.9
-153.0	-42.3	-10.5	-31.8
-152.0	-46.8	-10.5	-36.3
-151.0	-36.2	-10.5	-25.7
-150.0	-45.7	-10.5	-35.2
-149.0	-45.8	-10.5	-35.3
-148.0	-37.7	-10.5	-27.2
-147.0	-43.5	-10.5	-33.0
-146.0	-37.1	-10.5	-26.6
-145.0	-41.0	-10.5	-30.5
-144.0	-49.5	-10.5	-39.0
-143.0	-41.1	-10.5	-30.6
-142.0	-53.1	-10.5	-42.6
-141.0	-35.2	-10.5	-24.7
-140.0	-35.8	-10.5	-25.3
-139.0	-34.8	-10.5	-24.3
-138.0	-36.8	-10.5	-26.3
-137.0	-39.3	-10.5	-28.8
-136.0	-38.1	-10.5	-27.6
-135.0	-40.4	-10.5	-29.9
-134.0	-44.0	-10.5	-33.5
-133.0	-31.7	-10.5	-21.2
-132.0	-34.6	-10.5	-24.1
-131.0	-38.5	-10.5	-28.0
-130.0	-30.2	-10.5	-19.7
-129.0	-31.0	-10.5	-20.5
-128.0	-36.7	-10.5	-26.2
-127.0	-43.6	-10.5	-33.1
-126.0	-43.6	-10.5	-33.1
-125.0	-35.5	-10.5	-25.0
-124.0	-35.0	-10.5	-24.5
-123.0	-40.9	-10.5	-30.4
-122.0	-38.4	-10.5	-27.9
-121.0	-33.6	-10.5	-23.1
-120.0	-38.0	-10.5	-27.5

27.60 GHz @ -9,52 dBW / 40 kHz in Co-pol Az LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	37.9		
1.0	10.1		
2.0	-2.6	11.0	-13.6
3.0	1.2	6.6	-5.3
4.0	-1.2	3.4	-4.6
5.0	-8.6	1.0	-9.6
6.0	-13.7	-1.0	-12.8
7.0	-11.4	-2.6	-8.8
8.0	-10.6	-2.6	-8.0
9.0	-26.9	-2.6	-24.3
10.0	-23.2	-3.5	-19.7
11.0	-17.5	-4.5	-12.9
12.0	-19.3	-5.5	-13.9
13.0	-21.3	-6.3	-14.9
14.0	-18.6	-7.2	-11.4
15.0	-23.3	-7.9	-15.4
16.0	-28.7	-8.6	-20.1
17.0	-23.2	-9.3	-13.9
18.0	-22.4	-9.9	-12.6
19.0	-24.1	-10.5	-13.7
20.0	-25.5	-11.0	-14.4
21.0	-24.5	-11.6	-12.9
22.0	-32.6	-12.1	-20.5
23.0	-18.0	-12.5	-5.5
24.0	-22.5	-13.0	-9.5
25.0	-19.0	-13.4	-5.5
26.0	-21.9	-13.9	-8.0
27.0	-21.9	-14.3	-7.6
28.0	-20.0	-14.7	-5.3
29.0	-17.8	-15.1	-2.7
30.0	-21.0	-15.4	-5.6
31.0	-29.6	-15.8	-13.8
32.0	-25.7	-16.1	-9.6
33.0	-24.0	-16.5	-7.5
34.0	-25.1	-16.8	-8.3
35.0	-35.4	-17.1	-18.3
36.0	-32.8	-17.4	-15.4
37.0	-24.9	-17.7	-7.2
38.0	-30.9	-18.0	-12.9
39.0	-47.8	-18.3	-29.5
40.0	-33.0	-18.6	-14.4
41.0	-26.0	-18.8	-7.2
42.0	-21.3	-19.1	-2.2
43.0	-22.0	-19.3	-2.6
44.0	-25.7	-19.6	-6.1
45.0	-26.8	-19.8	-7.0
46.0	-23.1	-20.1	-3.0
47.0	-24.5	-20.3	-4.2
48.0	-23.4	-20.5	-2.8
49.0	-24.3	-10.5	-13.8
50.0	-28.4	-10.5	-17.9
51.0	-29.6	-10.5	-19.1
52.0	-34.4	-10.5	-23.9
53.0	-28.0	-10.5	-17.5
54.0	-28.5	-10.5	-18.0
55.0	-22.7	-10.5	-12.2
56.0	-25.1	-10.5	-14.6
57.0	-25.9	-10.5	-15.4
58.0	-28.5	-10.5	-18.0
59.0	-31.9	-10.5	-21.4

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth LHCP, -180º to +180º @ 1.0º increment

-119.0	-47.5	-10.5	-37.0
-118.0	-32.6	-10.5	-22.1
-117.0	-30.2	-10.5	-19.7
-116.0	-31.9	-10.5	-21.4
-115.0	-30.1	-10.5	-19.6
-114.0	-31.8	-10.5	-21.3
-113.0	-32.3	-10.5	-21.8
-112.0	-31.5	-10.5	-21.0
-111.0	-27.3	-10.5	-16.8
-110.0	-26.1	-10.5	-15.6
-109.0	-24.3	-10.5	-13.8
-108.0	-22.9	-10.5	-12.4
-107.0	-22.4	-10.5	-11.9
-106.0	-20.6	-10.5	-10.1
-105.0	-18.6	-10.5	-8.1
-104.0	-17.6	-10.5	-7.1
-103.0	-16.9	-10.5	-6.4
-102.0	-17.0	-10.5	-6.5
-101.0	-18.2	-10.5	-7.7
-100.0	-20.0	-10.5	-9.5
-99.0	-19.7	-10.5	-9.2
-98.0	-17.4	-10.5	-6.9
-97.0	-16.6	-10.5	-6.1
-96.0	-19.6	-10.5	-9.1
-95.0	-20.1	-10.5	-9.6
-94.0	-17.0	-10.5	-6.5
-93.0	-17.8	-10.5	-7.3
-92.0	-21.7	-10.5	-11.2
-91.0	-17.4	-10.5	-6.9
-90.0	-18.8	-10.5	-8.3
-89.0	-23.1	-10.5	-12.6
-88.0	-22.4	-10.5	-11.9
-87.0	-28.6	-10.5	-18.1
-86.0	-24.4	-10.5	-13.9
-85.0	-29.8	-10.5	-19.3
-84.0	-36.6	-10.5	-26.1
-83.0	-26.4	-10.5	-15.9
-82.0	-24.5	-10.5	-14.0
-81.0	-34.3	-10.5	-23.8
-80.0	-54.2	-10.5	-43.7
-79.0	-36.4	-10.5	-25.9
-78.0	-25.4	-10.5	-14.9
-77.0	-40.9	-10.5	-30.4
-76.0	-38.8	-10.5	-28.3
-75.0	-29.1	-10.5	-18.6
-74.0	-25.3	-10.5	-14.8
-73.0	-32.3	-10.5	-21.8
-72.0	-24.8	-10.5	-14.3
-71.0	-27.1	-10.5	-16.6
-70.0	-39.2	-10.5	-28.7
-69.0	-32.6	-10.5	-22.1
-68.0	-27.3	-10.5	-16.8
-67.0	-28.6	-10.5	-18.1
-66.0	-29.8	-10.5	-19.3
-65.0	-37.7	-10.5	-27.2
-64.0	-27.1	-10.5	-16.6
-63.0	-27.6	-10.5	-17.1
-62.0	-23.7	-10.5	-13.2
-61.0	-35.7	-10.5	-25.2
-60.0	-24.4	-10.5	-13.9
-59.0	-42.8	-10.5	-32.3
-58.0	-45.8	-10.5	-35.3
-57.0	-28.3	-10.5	-17.8
60.0	-26.6	-10.5	-16.1
61.0	-23.2	-10.5	-12.7
62.0	-25.0	-10.5	-14.5
63.0	-36.4	-10.5	-25.9
64.0	-41.5	-10.5	-31.0
65.0	-23.1	-10.5	-12.6
66.0	-22.8	-10.5	-12.3
67.0	-28.2	-10.5	-17.7
68.0	-37.2	-10.5	-26.7
69.0	-23.6	-10.5	-13.1
70.0	-26.6	-10.5	-16.1
71.0	-28.3	-10.5	-17.8
72.0	-28.0	-10.5	-17.5
73.0	-33.1	-10.5	-22.6
74.0	-26.5	-10.5	-16.0
75.0	-26.0	-10.5	-15.5
76.0	-28.8	-10.5	-18.3
77.0	-40.3	-10.5	-29.8
78.0	-28.2	-10.5	-17.7
79.0	-25.5	-10.5	-15.0
80.0	-32.5	-10.5	-22.0
81.0	-34.3	-10.5	-23.8
82.0	-34.2	-10.5	-23.7
83.0	-32.9	-10.5	-22.4
84.0	-32.5	-10.5	-22.0
85.0	-30.1	-10.5	-19.6
86.0	-31.3	-10.5	-20.8
87.0	-29.5	-10.5	-19.0
88.0	-34.4	-10.5	-23.9
89.0	-36.6	-10.5	-26.1
90.0	-32.4	-10.5	-21.9
91.0	-30.8	-10.5	-20.3
92.0	-35.9	-10.5	-25.4
93.0	-30.5	-10.5	-20.0
94.0	-32.9	-10.5	-22.4
95.0	-29.7	-10.5	-19.2
96.0	-34.6	-10.5	-24.1
97.0	-36.9	-10.5	-26.4
98.0	-25.5	-10.5	-15.0
99.0	-32.0	-10.5	-21.5
100.0	-30.6	-10.5	-20.1
101.0	-33.2	-10.5	-22.7
102.0	-30.4	-10.5	-19.9
103.0	-32.1	-10.5	-21.6
104.0	-32.1	-10.5	-21.6
105.0	-31.7	-10.5	-21.2
106.0	-34.0	-10.5	-23.5
107.0	-30.3	-10.5	-19.8
108.0	-41.7	-10.5	-31.2
109.0	-32.8	-10.5	-22.3
110.0	-37.6	-10.5	-27.1
111.0	-29.1	-10.5	-18.6
112.0	-32.7	-10.5	-22.2
113.0	-34.5	-10.5	-24.0
114.0	-34.4	-10.5	-23.9
115.0	-30.8	-10.5	-20.3
116.0	-32.8	-10.5	-22.3
117.0	-30.0	-10.5	-19.5
118.0	-33.9	-10.5	-23.4
119.0	-32.9	-10.5	-22.4
120.0	-29.6	-10.5	-19.1
121.0	-30.9	-10.5	-20.4
122.0	-28.1	-10.5	-17.6

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth LHCP, -180º to +180º @ 1.0º increment

-56.0	-27.1	-10.5	-16.6
-55.0	-27.2	-10.5	-16.7
-54.0	-31.7	-10.5	-21.2
-53.0	-30.1	-10.5	-19.6
-52.0	-28.4	-10.5	-17.9
-51.0	-26.9	-10.5	-16.4
-50.0	-30.7	-10.5	-20.2
-49.0	-23.0	-10.5	-12.5
-48.0	-21.6	-20.5	-1.1
-47.0	-22.8	-20.3	-2.5
-46.0	-20.9	-20.1	-0.8
-45.0	-21.5	-19.8	-1.7
-44.0	-22.2	-19.6	-2.6
-43.0	-23.1	-19.3	-3.8
-42.0	-23.0	-19.1	-3.9
-41.0	-20.5	-18.8	-1.7
-40.0	-20.3	-18.6	-1.7
-39.0	-25.5	-18.3	-7.2
-38.0	-23.8	-18.0	-5.8
-37.0	-24.6	-17.7	-6.9
-36.0	-21.3	-17.4	-3.8
-35.0	-22.1	-17.1	-5.0
-34.0	-20.6	-16.8	-3.8
-33.0	-28.9	-16.5	-12.4
-32.0	-24.0	-16.1	-7.9
-31.0	-22.3	-15.8	-6.5
-30.0	-25.5	-15.4	-10.0
-29.0	-32.8	-15.1	-17.7
-28.0	-23.2	-14.7	-8.5
-27.0	-19.2	-14.3	-4.9
-26.0	-25.5	-13.9	-11.7
-25.0	-22.3	-13.4	-8.8
-24.0	-22.3	-13.0	-9.3
-23.0	-24.4	-12.5	-11.8
-22.0	-20.7	-12.1	-8.6
-21.0	-15.6	-11.6	-4.0
-20.0	-41.7	-11.0	-30.6
-19.0	-17.0	-10.5	-6.5
-18.0	-18.6	-9.9	-8.8
-17.0	-15.7	-9.3	-6.5
-16.0	-13.0	-8.6	-4.4
-15.0	-11.8	-7.9	-3.9
-14.0	-15.6	-7.2	-8.5
-13.0	-13.3	-6.3	-7.0
-12.0	-22.0	-5.5	-16.6
-11.0	-18.9	-4.5	-14.4
-10.0	-15.6	-3.5	-12.1
-9.0	-18.1	-2.6	-15.5
-8.0	-18.7	-2.6	-16.1
-7.0	-9.1	-2.6	-6.5
-6.0	-16.8	-1.0	-15.8
-5.0	-6.2	1.0	-7.2
-4.0	-6.3	3.4	-9.7
-3.0	-2.3	6.6	-8.8
-2.0	6.9	11.0	-4.1
-1.0	8.5		
0.0	37.9		

123.0	-32.4	-10.5	-21.9
124.0	-29.6	-10.5	-19.1
125.0	-35.5	-10.5	-25.0
126.0	-43.8	-10.5	-33.3
127.0	-36.6	-10.5	-26.1
128.0	-45.1	-10.5	-34.6
129.0	-37.6	-10.5	-27.1
130.0	-32.3	-10.5	-21.8
131.0	-39.5	-10.5	-29.0
132.0	-30.8	-10.5	-20.3
133.0	-34.7	-10.5	-24.2
134.0	-34.0	-10.5	-23.5
135.0	-28.7	-10.5	-18.2
136.0	-28.9	-10.5	-18.4
137.0	-34.3	-10.5	-23.8
138.0	-32.2	-10.5	-21.7
139.0	-27.2	-10.5	-16.7
140.0	-30.9	-10.5	-20.4
141.0	-44.8	-10.5	-34.3
142.0	-37.4	-10.5	-26.9
143.0	-32.1	-10.5	-21.6
144.0	-36.8	-10.5	-26.3
145.0	-28.5	-10.5	-18.0
146.0	-31.4	-10.5	-20.9
147.0	-30.3	-10.5	-19.8
148.0	-39.7	-10.5	-29.2
149.0	-45.7	-10.5	-35.2
150.0	-36.8	-10.5	-26.3
151.0	-36.1	-10.5	-25.6
152.0	-44.0	-10.5	-33.5
153.0	-37.5	-10.5	-27.0
154.0	-37.3	-10.5	-26.8
155.0	-32.0	-10.5	-21.5
156.0	-34.0	-10.5	-23.5
157.0	-34.7	-10.5	-24.2
158.0	-42.3	-10.5	-31.8
159.0	-39.6	-10.5	-29.1
160.0	-48.0	-10.5	-37.5
161.0	-35.1	-10.5	-24.6
162.0	-49.0	-10.5	-38.5
163.0	-31.3	-10.5	-20.8
164.0	-30.7	-10.5	-20.2
165.0	-33.8	-10.5	-23.3
166.0	-31.2	-10.5	-20.7
167.0	-39.7	-10.5	-29.2
168.0	-32.4	-10.5	-21.9
169.0	-39.4	-10.5	-28.9
170.0	-49.5	-10.5	-39.0
171.0	-30.5	-10.5	-20.0
172.0	-31.2	-10.5	-20.7
173.0	-31.7	-10.5	-21.2
174.0	-31.7	-10.5	-21.2
175.0	-35.7	-10.5	-25.2
176.0	-32.9	-10.5	-22.4
177.0	-44.0	-10.5	-33.5
178.0	-34.8	-10.5	-24.3
179.0	-29.9	-10.5	-19.4

Orbit Communication Systems Ltd.

AL AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth LHCP LHCP, -10º to +10º @ 0.1º increment

27.60 GHz @ -9,52 dBW / 40 kHz in Co-pol Az LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-10.0	-15.6	-3.5	-12.1
-9.9	-15.2	-3.4	-11.8
-9.8	-16.7	-3.3	-13.4
-9.7	-20.9	-3.2	-17.8
-9.6	-26.5	-3.1	-23.5
-9.5	-18.4	-2.9	-15.4
-9.4	-14.5	-2.8	-11.7
-9.3	-12.6	-2.7	-9.9
-9.2	-12.6	-2.6	-10.0
-9.1	-14.4	-2.6	-11.8
-9.0	-18.1	-2.6	-15.5
-8.9	-27.7	-2.6	-25.0
-8.8	-21.8	-2.6	-19.2
-8.7	-16.9	-2.6	-14.3
-8.6	-14.4	-2.6	-11.8
-8.5	-14.7	-2.6	-12.0
-8.4	-16.1	-2.6	-13.4
-8.3	-20.7	-2.6	-18.1
-8.2	-30.1	-2.6	-27.5
-8.1	-23.4	-2.6	-20.8
-8.0	-18.7	-2.6	-16.1
-7.9	-16.9	-2.6	-14.3
-7.8	-17.6	-2.6	-15.0
-7.7	-20.8	-2.6	-18.2
-7.6	-24.2	-2.6	-21.6
-7.5	-16.1	-2.6	-13.5
-7.4	-11.1	-2.6	-8.5
-7.3	-8.5	-2.6	-5.8
-7.2	-7.6	-2.6	-4.9
-7.1	-7.7	-2.6	-5.1
-7.0	-9.1	-2.6	-6.5
-6.9	-13.0	-2.5	-10.6
-6.8	-25.6	-2.3	-23.3
-6.7	-19.3	-2.2	-17.2
-6.6	-11.4	-2.0	-9.4
-6.5	-9.0	-1.8	-7.2
-6.4	-8.5	-1.7	-6.9
-6.3	-10.0	-1.5	-8.5
-6.2	-12.4	-1.3	-11.1
-6.1	-16.8	-1.1	-15.7
-6.0	-16.8	-1.0	-15.8
-5.9	-13.9	-0.8	-13.2
-5.8	-12.8	-0.6	-12.2
-5.7	-13.0	-0.4	-12.6
-5.6	-13.6	-0.2	-13.4
-5.5	-12.5	0.0	-12.4
-5.4	-10.8	0.2	-11.0
-5.3	-9.0	0.4	-9.4
-5.2	-7.6	0.6	-8.2
-5.1	-6.6	0.8	-7.4
-5.0	-6.2	1.0	-7.2
-4.9	-6.9	1.2	-8.1
-4.8	-8.9	1.5	-10.3
-4.7	-13.7	1.7	-15.4
-4.6	-21.3	1.9	-23.2
-4.5	-12.4	2.2	-14.5
-4.4	-7.9	2.4	-10.3
-4.3	-6.3	2.7	-8.9
-4.2	-6.2	2.9	-9.1
-4.1	-6.7	3.2	-9.9

27.60 GHz @ -9,52 dBW / 40 kHz in Co-pol Az LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	37.9		
0.1	37.7		
0.2	37.0		
0.3	35.9		
0.4	34.3		
0.5	32.1		
0.6	29.4		
0.7	26.1		
0.8	22.0		
0.9	16.9		
1.0	10.1		
1.1	-0.5		
1.2	3.2		
1.3	7.8		
1.4	9.7		
1.5	10.0		
1.6	9.0		
1.7	7.0		
1.8	4.2		
1.9	0.9		
2.0	-2.6	11.0	-13.6
2.1	-5.4	10.4	-15.9
2.2	-4.8	9.9	-14.7
2.3	-1.2	9.5	-10.7
2.4	1.5	9.0	-7.5
2.5	2.4	8.6	-6.1
2.6	2.5	8.1	-5.6
2.7	1.7	7.7	-6.0
2.8	1.7	7.3	-5.6
2.9	1.3	6.9	-5.6
3.0	1.2	6.6	-5.3
3.1	1.0	6.2	-5.2
3.2	0.0	5.9	-5.9
3.3	-1.9	5.5	-7.5
3.4	-3.8	5.2	-9.0
3.5	-4.2	4.9	-9.1
3.6	-2.8	4.6	-7.4
3.7	-1.5	4.3	-5.8
3.8	-0.7	4.0	-4.7
3.9	-0.6	3.7	-4.3
4.0	-1.2	3.4	-4.6
4.1	-2.8	3.2	-6.0
4.2	-4.7	2.9	-7.6
4.3	-6.7	2.7	-9.4
4.4	-8.2	2.4	-10.6
4.5	-8.9	2.2	-11.0
4.6	-10.6	1.9	-12.5
4.7	-15.1	1.7	-16.8
4.8	-24.9	1.5	-26.4
4.9	-12.3	1.2	-13.5
5.0	-8.6	1.0	-9.6
5.1	-8.0	0.8	-8.8
5.2	-8.1	0.6	-8.7
5.3	-9.6	0.4	-10.0
5.4	-11.6	0.2	-11.8
5.5	-10.9	0.0	-10.9
5.6	-11.1	-0.2	-10.9
5.7	-12.4	-0.4	-12.0
5.8	-16.5	-0.6	-15.9
5.9	-22.9	-0.8	-22.2

Orbit Communication Systems Ltd.

AL AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth LHCP LHCP, -10º to +10º @ 0.1º increment

-4.0	-6.3	3.4	-9.7
-3.9	-4.3	3.7	-8.0
-3.8	-1.9	4.0	-6.0
-3.7	-0.1	4.3	-4.4
-3.6	1.1	4.6	-3.5
-3.5	1.9	4.9	-3.0
-3.4	2.3	5.2	-2.9
-3.3	2.1	5.5	-3.5
-3.2	1.1	5.9	-4.7
-3.1	-0.7	6.2	-6.9
-3.0	-2.3	6.6	-8.8
-2.9	-1.0	6.9	-8.0
-2.8	1.6	7.3	-5.7
-2.7	3.4	7.7	-4.3
-2.6	4.5	8.1	-3.6
-2.5	5.3	8.6	-3.2
-2.4	6.3	9.0	-2.7
-2.3	7.5	9.5	-1.9
-2.2	8.4	9.9	-1.5
-2.1	8.3	10.4	-2.1
-2.0	6.9	11.0	-4.1
-1.9	3.0		
-1.8	-4.9		
-1.7	1.3		
-1.6	6.5		
-1.5	8.3		
-1.4	8.4		
-1.3	7.4		
-1.2	6.9		
-1.1	7.7		
-1.0	8.5		
-0.9	12.1		
-0.8	18.3		
-0.7	23.7		
-0.6	28.0		
-0.5	31.3		
-0.4	33.8		
-0.3	35.6		
-0.2	36.8		
-0.1	37.6		
0.0	37.9		

6.0	-13.7	-1.0	-12.8
6.1	-9.8	-1.1	-8.7
6.2	-7.7	-1.3	-6.4
6.3	-8.0	-1.5	-6.6
6.4	-10.2	-1.7	-8.5
6.5	-14.9	-1.8	-13.1
6.6	-24.4	-2.0	-22.4
6.7	-17.8	-2.2	-15.6
6.8	-13.3	-2.3	-11.0
6.9	-11.3	-2.5	-8.9
7.0	-11.4	-2.6	-8.8
7.1	-11.8	-2.6	-9.2
7.2	-13.1	-2.6	-10.5
7.3	-15.5	-2.6	-12.8
7.4	-19.8	-2.6	-17.2
7.5	-24.0	-2.6	-21.3
7.6	-19.0	-2.6	-16.4
7.7	-14.1	-2.6	-11.4
7.8	-11.5	-2.6	-8.9
7.9	-10.7	-2.6	-8.1
8.0	-10.6	-2.6	-8.0
8.1	-12.8	-2.6	-10.2
8.2	-16.5	-2.6	-13.9
8.3	-23.7	-2.6	-21.0
8.4	-18.1	-2.6	-15.5
8.5	-12.5	-2.6	-9.9
8.6	-10.4	-2.6	-7.8
8.7	-11.1	-2.6	-8.5
8.8	-12.7	-2.6	-10.0
8.9	-17.5	-2.6	-14.9
9.0	-26.9	-2.6	-24.3
9.1	-20.3	-2.6	-17.7
9.2	-16.4	-2.6	-13.7
9.3	-14.8	-2.7	-12.1
9.4	-16.3	-2.8	-13.5
9.5	-20.8	-2.9	-17.8
9.6	-22.8	-3.1	-19.8
9.7	-17.9	-3.2	-14.7
9.8	-16.9	-3.3	-13.6
9.9	-18.1	-3.4	-14.7
10.0	-23.2	-3.5	-19.7

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Elevation LHCP, -30º to +30º @ 0.5º increment

27.60 GHz @ -9,52 dBW / 40 kHz in Co-pol El LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-30.0	-23.0	-12.4	-10.6
-29.5	-23.3	-12.2	-11.1
-29.0	-19.5	-12.1	-7.4
-28.5	-21.9	-11.9	-10.0
-28.0	-26.0	-11.7	-14.3
-27.5	-23.8	-11.5	-12.4
-27.0	-25.4	-11.3	-14.1
-26.5	-23.5	-11.1	-12.4
-26.0	-20.3	-10.9	-9.4
-25.5	-18.4	-10.7	-7.7
-25.0	-18.4	-10.4	-8.0
-24.5	-20.0	-10.2	-9.7
-24.0	-18.6	-10.0	-8.6
-23.5	-22.4	-9.8	-12.7
-23.0	-19.2	-9.5	-9.7
-22.5	-17.7	-9.3	-8.4
-22.0	-21.1	-9.1	-12.0
-21.5	-21.2	-8.8	-12.4
-21.0	-18.0	-8.6	-9.4
-20.5	-18.4	-8.3	-10.1
-20.0	-20.9	-8.0	-12.9
-19.5	-21.1	-7.8	-13.4
-19.0	-21.6	-7.5	-14.1
-18.5	-17.5	-7.2	-10.4
-18.0	-16.7	-6.9	-9.8
-17.5	-18.4	-6.6	-11.8
-17.0	-23.7	-6.3	-17.4
-16.5	-32.5	-5.9	-26.6
-16.0	-22.0	-5.6	-16.4
-15.5	-20.7	-5.3	-15.4
-15.0	-23.1	-4.9	-18.2
-14.5	-21.5	-4.5	-16.9
-14.0	-16.0	-4.2	-11.9
-13.5	-16.0	-3.8	-12.2
-13.0	-20.4	-3.3	-17.1
-12.5	-32.9	-2.9	-30.0
-12.0	-22.0	-2.5	-19.5
-11.5	-38.0	-2.0	-36.0
-11.0	-15.3	-1.5	-13.8
-10.5	-16.8	-1.0	-15.8
-10.0	-20.6	-0.5	-20.1
-9.5	-19.0	0.1	-19.1
-9.0	-23.6	0.4	-24.0
-8.5	-15.3	0.4	-15.7
-8.0	-16.0	0.4	-16.3
-7.5	-17.8	0.4	-18.2
-7.0	-13.3	0.4	-13.7
-6.5	-24.4	1.2	-25.6
-6.0	-13.1	2.0	-15.1
-5.5	-17.0	3.0	-19.9
-5.0	-7.9	4.0	-11.9
-4.5	-7.5	5.2	-12.6
-4.0	-3.6	6.4	-10.0
-3.5	-10.2	7.9	-18.1
-3.0	1.4		
-2.5	2.9		
-2.0	1.2		
-1.5	11.0		
-1.0	12.2		
-0.5	31.8		
0.0	37.9		

27.60 GHz @ -9,52 dBW / 40 kHz in Co-pol El LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	37.9		
0.5	30.4		
1.0	10.1		
1.5	7.4		
2.0	8.2		
2.5	6.1		
3.0	-2.8		
3.5	-1.8	7.9	-9.7
4.0	-3.8	6.4	-10.3
4.5	-12.5	5.2	-17.7
5.0	-10.4	4.0	-14.4
5.5	-15.9	3.0	-18.9
6.0	-17.0	2.0	-19.0
6.5	-9.3	1.2	-10.5
7.0	-8.5	0.4	-8.9
7.5	-15.9	0.4	-16.3
8.0	-15.8	0.4	-16.2
8.5	-15.5	0.4	-15.8
9.0	-13.8	0.4	-14.1
9.5	-19.4	0.1	-19.5
10.0	-19.8	-0.5	-19.3
10.5	-11.6	-1.0	-10.6
11.0	-29.4	-1.5	-27.9
11.5	-10.6	-2.0	-8.6
12.0	-10.7	-2.5	-8.2
12.5	-16.3	-2.9	-13.3
13.0	-13.8	-3.3	-10.5
13.5	-13.3	-3.8	-9.5
14.0	-29.8	-4.2	-25.7
14.5	-13.3	-4.5	-8.7
15.0	-12.7	-4.9	-7.8
15.5	-11.8	-5.3	-6.5
16.0	-14.8	-5.6	-9.2
16.5	-9.4	-5.9	-3.5
17.0	-17.5	-6.3	-11.3
17.5	-16.7	-6.6	-10.1
18.0	-16.4	-6.9	-9.5
18.5	-16.7	-7.2	-9.6
19.0	-26.6	-7.5	-19.1
19.5	-13.8	-7.8	-6.1
20.0	-21.9	-8.0	-13.9
20.5	-15.5	-8.3	-7.2
21.0	-13.1	-8.6	-4.5
21.5	-17.5	-8.8	-8.7
22.0	-20.5	-9.1	-11.4
22.5	-12.7	-9.3	-3.4
23.0	-17.8	-9.5	-8.2
23.5	-16.7	-9.8	-6.9
24.0	-18.0	-10.0	-8.0
24.5	-16.4	-10.2	-6.2
25.0	-17.2	-10.4	-6.8
25.5	-14.1	-10.7	-3.5
26.0	-15.2	-10.9	-4.4
26.5	-16.4	-11.1	-5.3
27.0	-15.3	-11.3	-4.0
27.5	-19.3	-11.5	-7.8
28.0	-24.5	-11.7	-12.8
28.5	-18.3	-11.9	-6.4
29.0	-24.4	-12.1	-12.3
29.5	-23.9	-12.2	-11.6
30.0	-16.1	-12.4	-3.7

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Elevation LHCP, -10º to +10º @ 0.1º increment

27.60 GHz @ -9,52 dBW / 40 kHz in Co-pol El LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-10.0	-20.6	-0.5	-20.1
-9.9	-18.5	-0.4	-18.2
-9.8	-19.7	-0.3	-19.4
-9.7	-23.6	-0.2	-23.4
-9.6	-26.0	-0.1	-26.0
-9.5	-19.0	0.1	-19.1
-9.4	-14.8	0.2	-15.0
-9.3	-15.0	0.3	-15.3
-9.2	-17.0	0.4	-17.4
-9.1	-21.4	0.4	-21.8
-9.0	-23.6	0.4	-24.0
-8.9	-16.8	0.4	-17.2
-8.8	-13.5	0.4	-13.9
-8.7	-12.8	0.4	-13.2
-8.6	-13.4	0.4	-13.7
-8.5	-15.3	0.4	-15.7
-8.4	-18.1	0.4	-18.5
-8.3	-27.1	0.4	-27.5
-8.2	-25.4	0.4	-25.8
-8.1	-19.4	0.4	-19.8
-8.0	-16.0	0.4	-16.3
-7.9	-14.2	0.4	-14.5
-7.8	-14.0	0.4	-14.4
-7.7	-15.6	0.4	-16.0
-7.6	-17.0	0.4	-17.4
-7.5	-17.8	0.4	-18.2
-7.4	-16.7	0.4	-17.1
-7.3	-16.3	0.4	-16.7
-7.2	-17.3	0.4	-17.6
-7.1	-16.6	0.4	-17.0
-7.0	-13.3	0.4	-13.7
-6.9	-10.6	0.5	-11.1
-6.8	-9.7	0.7	-10.4
-6.7	-10.5	0.8	-11.3
-6.6	-14.2	1.0	-15.2
-6.5	-24.4	1.2	-25.6
-6.4	-15.0	1.3	-16.3
-6.3	-10.0	1.5	-11.5
-6.2	-8.5	1.7	-10.2
-6.1	-9.1	1.9	-11.0
-6.0	-13.1	2.0	-15.1
-5.9	-26.9	2.2	-29.1
-5.8	-17.6	2.4	-20.0
-5.7	-12.5	2.6	-15.1
-5.6	-12.2	2.8	-15.0
-5.5	-17.0	3.0	-19.9
-5.4	-30.0	3.2	-33.2
-5.3	-12.8	3.4	-16.2
-5.2	-8.0	3.6	-11.6
-5.1	-6.7	3.8	-10.5
-5.0	-7.9	4.0	-11.9
-4.9	-12.8	4.2	-17.0
-4.8	-37.0	4.5	-41.5
-4.7	-13.5	4.7	-18.2
-4.6	-8.4	4.9	-13.3
-4.5	-7.5	5.2	-12.6
-4.4	-8.7	5.4	-14.1
-4.3	-9.8	5.7	-15.5
-4.2	-7.6	5.9	-13.5
-4.1	-4.9	6.2	-11.1

27.60 GHz @ -9,52 dBW / 40 kHz in Co-pol El LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	37.9		
0.1	37.5		
0.2	36.7		
0.3	35.3		
0.4	33.2		
0.5	30.4		
0.6	26.7		
0.7	21.7		
0.8	15.7		
0.9	10.9		
1.0	10.1		
1.1	8.9		
1.2	6.9		
1.3	6.8		
1.4	7.8		
1.5	7.4		
1.6	5.0		
1.7	1.0		
1.8	2.8		
1.9	6.5		
2.0	8.2		
2.1	8.5		
2.2	7.7		
2.3	6.7		
2.4	6.1		
2.5	6.1		
2.6	5.9		
2.7	4.8		
2.8	2.6		
2.9	-0.5		
3.0	-2.8		
3.1	-2.4		
3.2	-1.2		
3.3	-1.0		
3.4	-1.2		
3.5	-1.8	7.9	-9.7
3.6	-2.5	7.6	-10.1
3.7	-4.2	7.3	-11.5
3.8	-5.3	7.0	-12.3
3.9	-5.2	6.7	-11.9
4.0	-3.8	6.4	-10.3
4.1	-2.6	6.2	-8.7
4.2	-2.3	5.9	-8.2
4.3	-3.6	5.7	-9.3
4.4	-6.4	5.4	-11.8
4.5	-12.5	5.2	-17.7
4.6	-25.4	4.9	-30.3
4.7	-14.7	4.7	-19.4
4.8	-11.6	4.5	-16.1
4.9	-10.3	4.2	-14.6
5.0	-10.4	4.0	-14.4
5.1	-10.2	3.8	-14.0
5.2	-10.4	3.6	-14.0
5.3	-11.1	3.4	-14.5
5.4	-13.0	3.2	-16.2
5.5	-15.9	3.0	-18.9
5.6	-17.1	2.8	-19.9
5.7	-15.3	2.6	-17.9
5.8	-15.2	2.4	-17.6
5.9	-17.2	2.2	-19.4

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Elevation LHCP, -10º to +10º @ 0.1º increment

-4.0	-3.6	6.4	-10.0
-3.9	-3.5	6.7	-10.2
-3.8	-4.5	7.0	-11.5
-3.7	-6.2	7.3	-13.4
-3.6	-8.6	7.6	-16.2
-3.5	-10.2	7.9	-18.1
-3.4	-7.6		
-3.3	-3.6		
-3.2	-0.5		
-3.1	1.1		
-3.0	1.4		
-2.9	0.6		
-2.8	-0.8		
-2.7	-0.6		
-2.6	1.3		
-2.5	2.9		
-2.4	3.3		
-2.3	2.5		
-2.2	1.1		
-2.1	0.5		
-2.0	1.2		
-1.9	2.2		
-1.8	4.2		
-1.7	7.0		
-1.6	9.5		
-1.5	11.0		
-1.4	11.3		
-1.3	9.8		
-1.2	6.1		
-1.1	2.0		
-1.0	12.2		
-0.9	17.3		
-0.8	21.7		
-0.7	25.6		
-0.6	29.0		
-0.5	31.8		
-0.4	34.1		
-0.3	35.8		
-0.2	37.0		
-0.1	37.7		
0.0	37.9		

6.0	-17.0	2.0	-19.0
6.1	-13.0	1.9	-14.8
6.2	-9.2	1.7	-10.8
6.3	-7.4	1.5	-9.0
6.4	-7.5	1.3	-8.8
6.5	-9.3	1.2	-10.5
6.6	-13.9	1.0	-14.9
6.7	-25.3	0.8	-26.2
6.8	-15.1	0.7	-15.8
6.9	-10.9	0.5	-11.5
7.0	-8.5	0.4	-8.9
7.1	-8.1	0.4	-8.4
7.2	-8.6	0.4	-9.0
7.3	-10.1	0.4	-10.5
7.4	-12.2	0.4	-12.6
7.5	-15.9	0.4	-16.3
7.6	-24.1	0.4	-24.5
7.7	-31.2	0.4	-31.5
7.8	-19.2	0.4	-19.6
7.9	-16.2	0.4	-16.5
8.0	-15.8	0.4	-16.2
8.1	-17.2	0.4	-17.5
8.2	-21.3	0.4	-21.7
8.3	-21.5	0.4	-21.9
8.4	-18.1	0.4	-18.5
8.5	-15.5	0.4	-15.8
8.6	-15.9	0.4	-16.3
8.7	-19.6	0.4	-20.0
8.8	-34.6	0.4	-35.0
8.9	-19.8	0.4	-20.2
9.0	-13.8	0.4	-14.1
9.1	-11.4	0.4	-11.8
9.2	-10.8	0.4	-11.2
9.3	-11.5	0.3	-11.8
9.4	-14.6	0.2	-14.8
9.5	-19.4	0.1	-19.5
9.6	-21.8	-0.1	-21.7
9.7	-17.5	-0.2	-17.4
9.8	-16.6	-0.3	-16.3
9.9	-17.1	-0.4	-16.7
10.0	-19.8	-0.5	-19.3

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
X-pol Azimuth LHCP, -10º to +10º @ 0.1º increment

27.60 GHz @ -9,52 dBW / 40 kHz in X-pol Az LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-10.0	-18.9	-12.6	-6.3
-9.9	-24.6	-12.6	-12.0
-9.8	-29.3	-12.6	-16.6
-9.7	-22.6	-12.6	-10.0
-9.6	-20.5	-12.6	-7.9
-9.5	-19.4	-12.6	-6.7
-9.4	-19.9	-12.6	-7.2
-9.3	-21.3	-12.6	-8.7
-9.2	-21.0	-12.6	-8.3
-9.1	-18.2	-12.6	-5.5
-9.0	-16.2	-12.6	-3.6
-8.9	-15.4	-12.6	-2.8
-8.8	-16.1	-12.6	-3.5
-8.7	-17.6	-12.6	-5.0
-8.6	-21.4	-12.6	-8.8
-8.5	-27.0	-12.6	-14.3
-8.4	-30.8	-12.6	-18.2
-8.3	-25.0	-12.6	-12.4
-8.2	-22.8	-12.6	-10.2
-8.1	-19.0	-12.6	-6.4
-8.0	-18.3	-12.6	-5.6
-7.9	-18.2	-12.6	-5.6
-7.8	-18.0	-12.6	-5.4
-7.7	-18.8	-12.6	-6.2
-7.6	-19.5	-12.6	-6.9
-7.5	-20.1	-12.6	-7.5
-7.4	-22.1	-12.6	-9.5
-7.3	-24.6	-12.6	-11.9
-7.2	-22.4	-12.6	-9.7
-7.1	-18.2	-12.6	-5.6
-7.0	-15.0	-12.6	-2.4
-6.9	-13.7	-12.5	-1.2
-6.8	-12.8	-12.3	-0.5
-6.7	-13.5	-12.2	-1.4
-6.6	-16.6	-12.0	-4.7
-6.5	-23.0	-11.8	-11.2
-6.4	-28.1	-11.7	-16.5
-6.3	-20.0	-11.5	-8.5
-6.2	-17.1	-11.3	-5.8
-6.1	-17.0	-11.1	-5.9
-6.0	-18.9	-11.0	-8.0
-5.9	-20.4	-10.8	-9.6
-5.8	-17.1	-10.6	-6.5
-5.7	-14.2	-10.4	-3.8
-5.6	-12.5	-10.2	-2.3
-5.5	-12.4	-10.0	-2.4
-5.4	-13.8	-9.8	-4.0
-5.3	-16.6	-9.6	-7.0
-5.2	-20.4	-9.4	-11.0
-5.1	-27.4	-9.2	-18.2
-5.0	-25.2	-9.0	-16.2
-4.9	-16.8	-8.8	-8.0
-4.8	-12.2	-8.5	-3.7
-4.7	-9.7	-8.3	-1.4
-4.6	-8.4	-8.1	-0.3
-4.5	-9.0	-7.8	-1.1
-4.4	-11.3	-7.6	-3.7
-4.3	-16.8	-7.3	-9.5
-4.2	-29.5	-7.1	-22.4
-4.1	-17.3	-6.8	-10.5

27.60 GHz @ -9,52 dBW / 40 kHz in X-pol Az LHCP

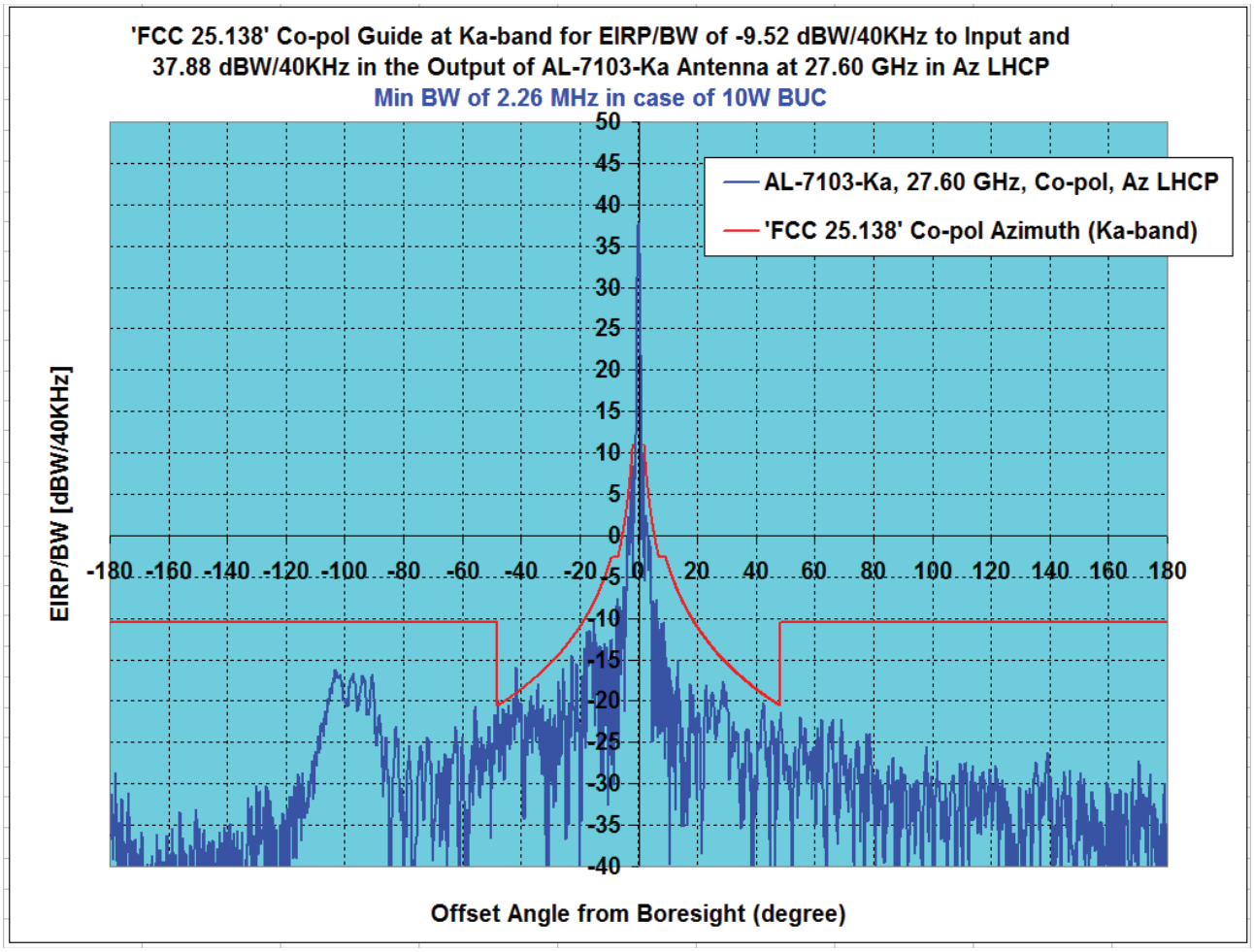
Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	4.8		
0.1	13.0		
0.2	16.7		
0.3	18.4		
0.4	18.8		
0.5	18.3		
0.6	16.8		
0.7	14.4		
0.8	11.0		
0.9	6.8		
1.0	3.6		
1.1	2.0		
1.2	-0.6		
1.3	-6.0		
1.4	-21.3		
1.5	-6.6		
1.6	-3.2		
1.7	-3.1		
1.8	-5.7		
1.9	-11.5		
2.0	-12.6	1.0	-13.6
2.1	-9.1	0.4	-9.6
2.2	-8.4	-0.1	-8.4
2.3	-12.1	-0.5	-11.5
2.4	-21.7	-1.0	-20.7
2.5	-15.7	-1.4	-14.2
2.6	-8.6	-1.9	-6.7
2.7	-6.1	-2.3	-3.8
2.8	-6.1	-2.7	-3.4
2.9	-9.0	-3.1	-5.9
3.0	-14.6	-3.4	-11.2
3.1	-24.6	-3.8	-20.8
3.2	-17.0	-4.1	-12.9
3.3	-14.5	-4.5	-10.0
3.4	-14.1	-4.8	-9.3
3.5	-14.9	-5.1	-9.8
3.6	-16.5	-5.4	-11.1
3.7	-18.4	-5.7	-12.7
3.8	-21.4	-6.0	-15.4
3.9	-52.5	-6.3	-46.2
4.0	-18.8	-6.6	-12.3
4.1	-14.7	-6.8	-7.9
4.2	-12.1	-7.1	-5.0
4.3	-12.6	-7.3	-5.3
4.4	-16.2	-7.6	-8.7
4.5	-23.2	-7.8	-15.3
4.6	-23.0	-8.1	-14.9
4.7	-16.1	-8.3	-7.8
4.8	-14.9	-8.5	-6.4
4.9	-16.4	-8.8	-7.7
5.0	-21.9	-9.0	-12.9
5.1	-19.7	-9.2	-10.5
5.2	-14.7	-9.4	-5.3
5.3	-13.0	-9.6	-3.4
5.4	-13.7	-9.8	-3.9
5.5	-16.9	-10.0	-6.9
5.6	-27.4	-10.2	-17.2
5.7	-21.4	-10.4	-11.0
5.8	-14.6	-10.6	-4.0
5.9	-12.7	-10.8	-2.0

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

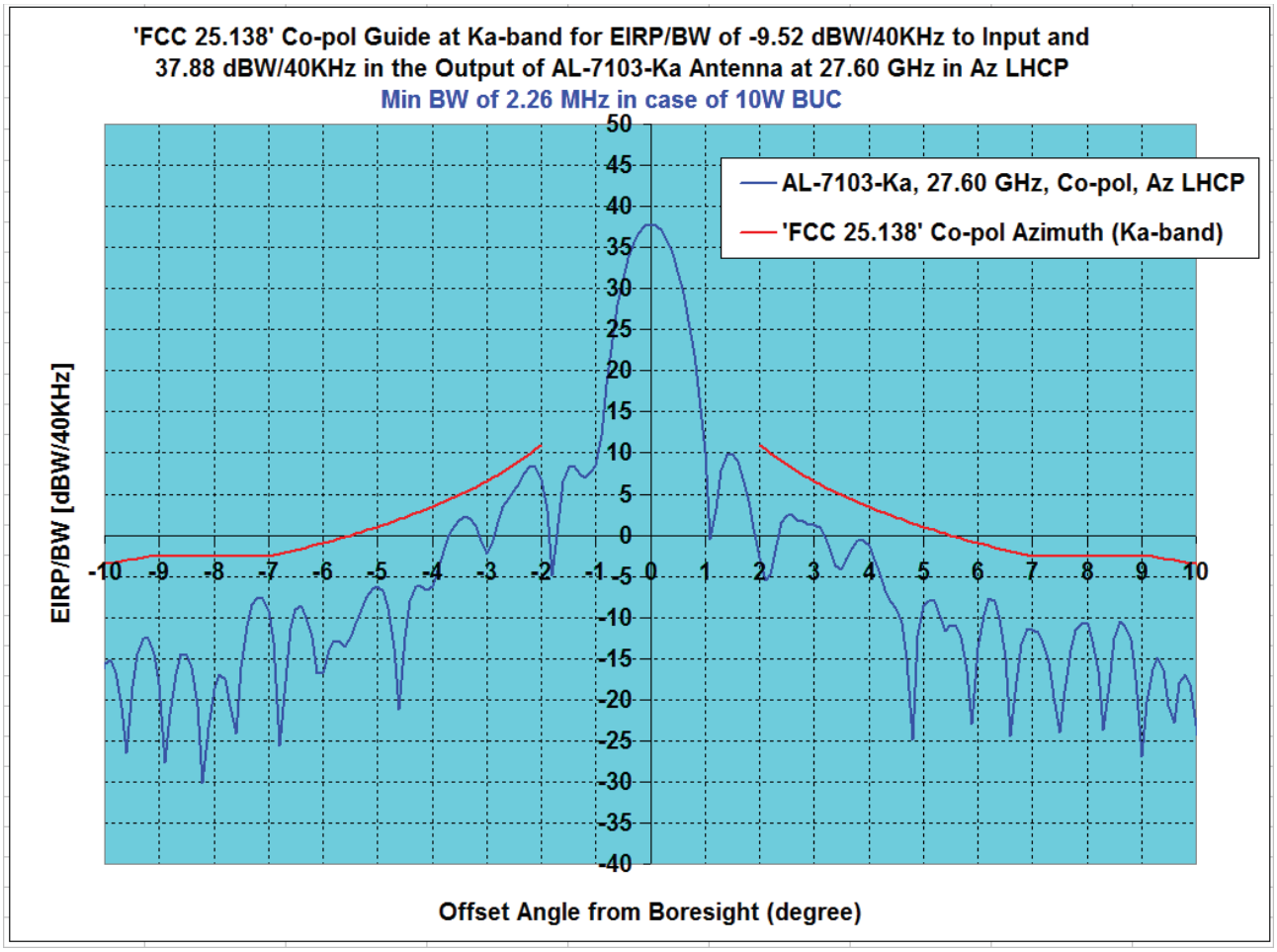
-4.0	-12.9	-6.6	-6.3
-3.9	-12.1	-6.3	-5.9
-3.8	-12.9	-6.0	-6.9
-3.7	-12.4	-5.7	-6.7
-3.6	-11.1	-5.4	-5.7
-3.5	-9.8	-5.1	-4.7
-3.4	-10.6	-4.8	-5.9
-3.3	-14.1	-4.5	-9.6
-3.2	-17.8	-4.1	-13.7
-3.1	-10.7	-3.8	-6.9
-3.0	-7.1	-3.4	-3.7
-2.9	-5.8	-3.1	-2.7
-2.8	-7.2	-2.7	-4.5
-2.7	-13.4	-2.3	-11.1
-2.6	-17.0	-1.9	-15.2
-2.5	-6.5	-1.4	-5.1
-2.4	-3.0	-1.0	-1.9
-2.3	-2.4	-0.5	-1.9
-2.2	-4.8	-0.1	-4.7
-2.1	-14.0	0.4	-14.5
-2.0	-8.1	1.0	-9.1
-1.9	-0.7		
-1.8	2.2		
-1.7	2.7		
-1.6	0.8		
-1.5	-5.9		
-1.4	-7.1		
-1.3	1.7		
-1.2	5.3		
-1.1	7.2		
-1.0	8.3		
-0.9	10.2		
-0.8	13.0		
-0.7	15.5		
-0.6	17.3		
-0.5	18.2		
-0.4	18.2		
-0.3	16.9		
-0.2	13.8		
-0.1	6.7		
0.0	4.8		

6.0	-13.3	-11.0	-2.3
6.1	-16.2	-11.1	-5.0
6.2	-21.3	-11.3	-10.0
6.3	-22.0	-11.5	-10.5
6.4	-17.5	-11.7	-5.8
6.5	-16.2	-11.8	-4.4
6.6	-16.7	-12.0	-4.7
6.7	-18.5	-12.2	-6.4
6.8	-21.8	-12.3	-9.5
6.9	-24.7	-12.5	-12.2
7.0	-29.4	-12.6	-16.8
7.1	-39.3	-12.6	-26.6
7.2	-32.6	-12.6	-20.0
7.3	-23.7	-12.6	-11.1
7.4	-20.1	-12.6	-7.4
7.5	-19.7	-12.6	-7.0
7.6	-19.3	-12.6	-6.7
7.7	-21.6	-12.6	-9.0
7.8	-25.5	-12.6	-12.9
7.9	-36.9	-12.6	-24.2
8.0	-32.1	-12.6	-19.5
8.1	-22.8	-12.6	-10.2
8.2	-20.7	-12.6	-8.0
8.3	-18.7	-12.6	-6.1
8.4	-18.5	-12.6	-5.9
8.5	-21.2	-12.6	-8.6
8.6	-24.3	-12.6	-11.6
8.7	-23.5	-12.6	-10.8
8.8	-21.2	-12.6	-8.6
8.9	-19.2	-12.6	-6.5
9.0	-18.7	-12.6	-6.0
9.1	-20.4	-12.6	-7.8
9.2	-24.2	-12.6	-11.5
9.3	-31.1	-12.6	-18.5
9.4	-26.2	-12.6	-13.6
9.5	-23.8	-12.6	-11.2
9.6	-22.4	-12.6	-9.8
9.7	-27.1	-12.6	-14.5
9.8	-34.2	-12.6	-21.6
9.9	-29.9	-12.6	-17.2
10.0	-26.3	-12.6	-13.7

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



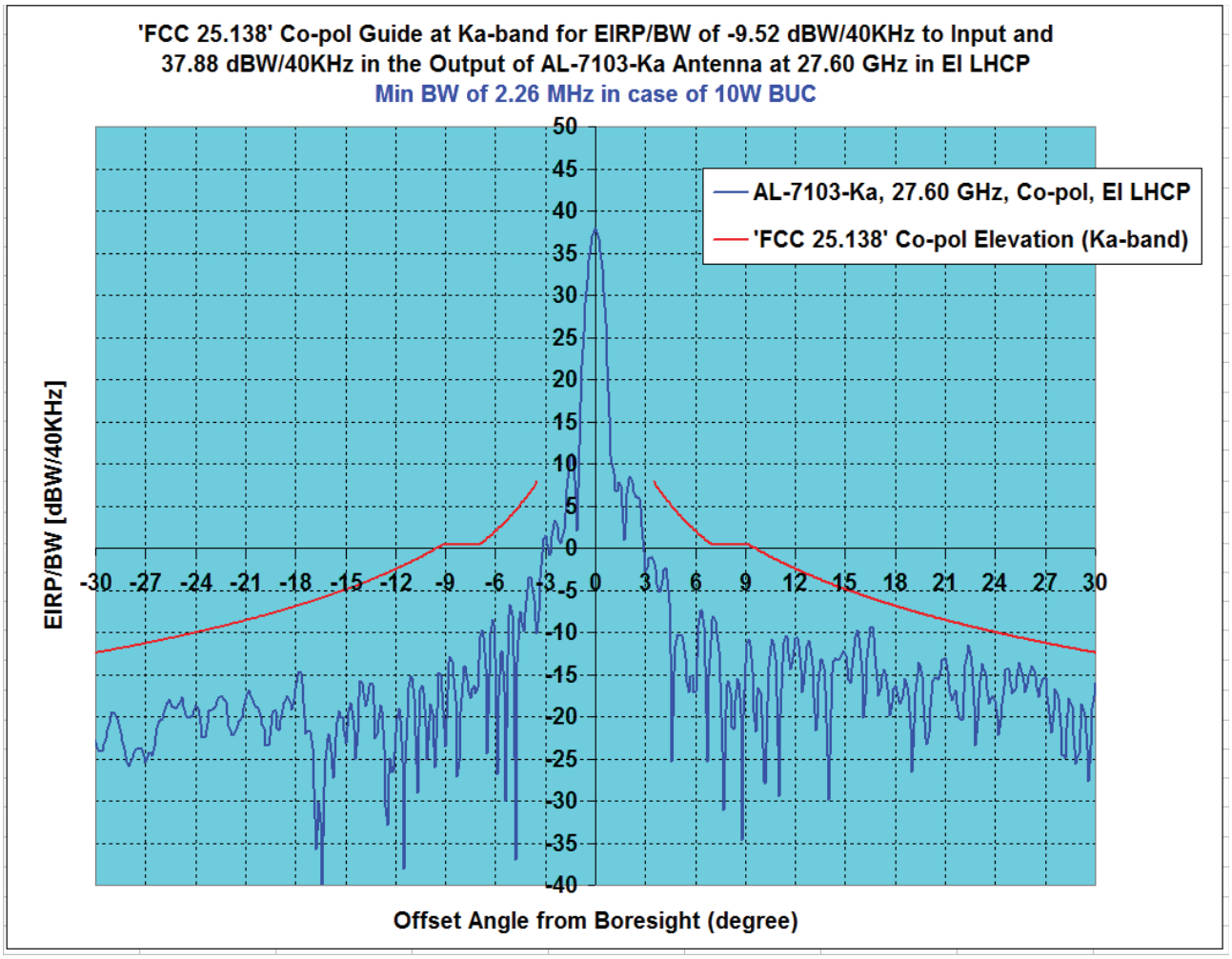
Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Freq., Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (2° to 10°)	± (10° to 180°)	%
AL-7103-Ka, 27.60 GHz, Co-pol, Az LHCP	'FCC 25.138' Co-pol Azimuth (Ka-band)	47.40	-9.52	-1.55	3.00	0.20



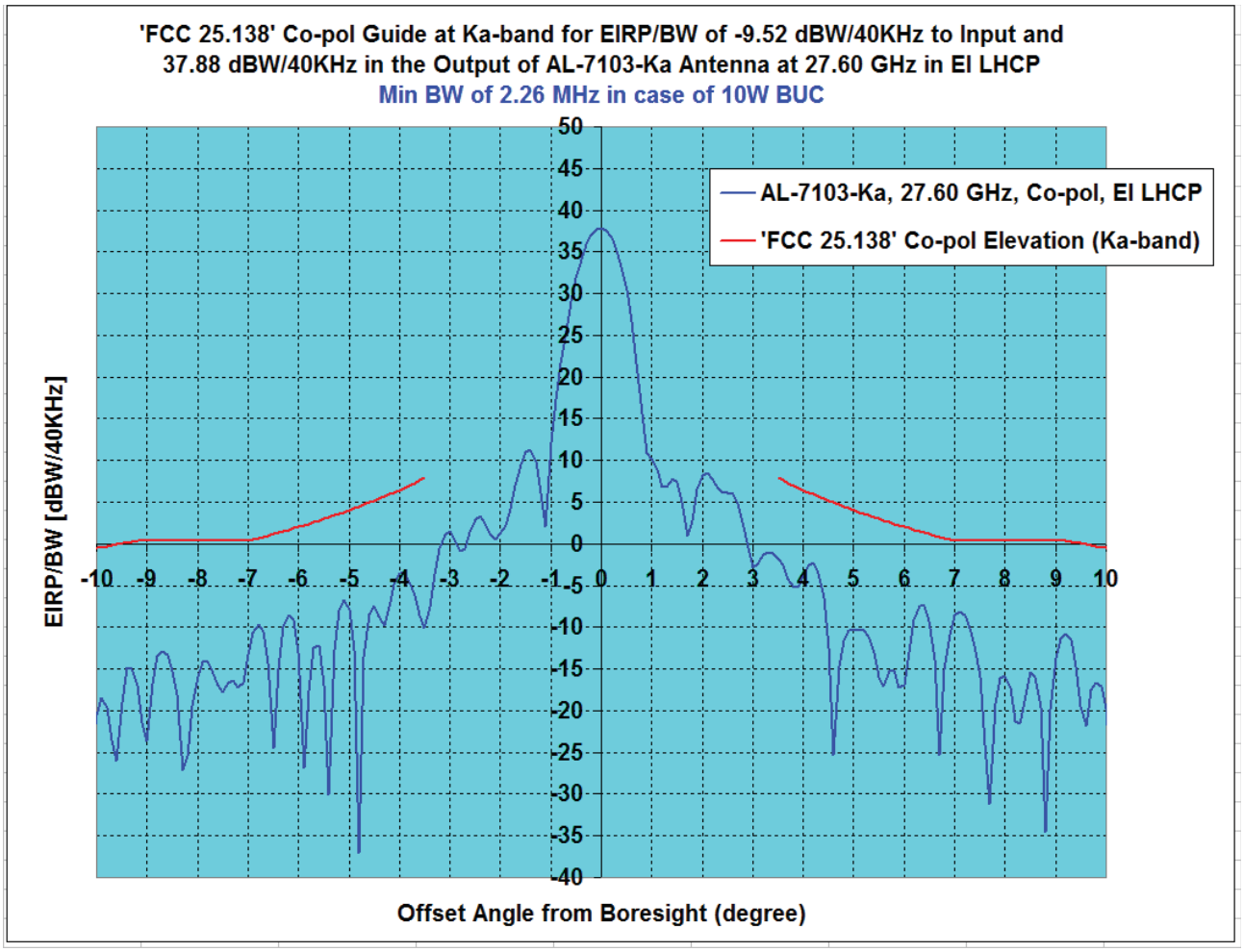
Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Freq., Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (2° to 10°)	± (10° to 180°)	%
AL-7103-Ka, 27.60 GHz, Co-pol, Az LHCP	'FCC 25.138' Co-pol Azimuth (Ka-band)	47.40	-9.52	-1.55	3.00	0.20

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd, Co-pol, Elevation LHCP

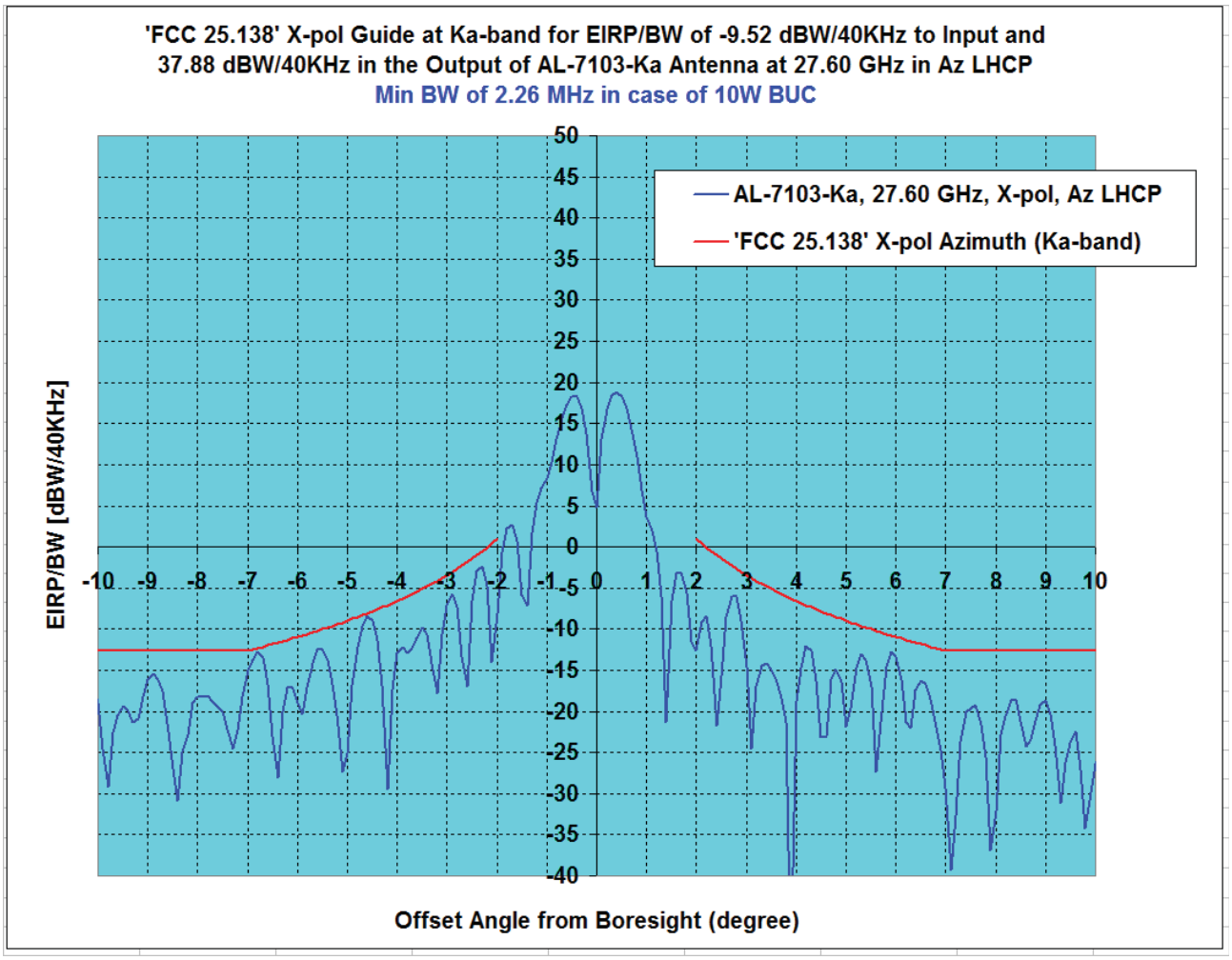


Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Frequency, Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (3.5° to 10°)	± (10° to 30°)	%
AL-7103-Ka, 27.60 GHz, Co-pol, El LHCP	'FCC 25.138' Co-pol Elevation (Ka-band)	47.40	-9.52	-8.18	-2.21	0.00



Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Frequency, Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (3.5° to 10°)	± (10° to 30°)	%
AL-7103-Ka, 27.60 GHz, Co-pol, El LHCP	'FCC 25.138' Co-pol Elevation (Ka-band)	47.40	-9.52	-8.18	-2.21	0.00

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



Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Frequency, Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (2° to 7°)	± (2° to 9.2°)	%
AL-7103-Ka, 27.60 GHz, X-pol, Az LHCP	'FCC 25.138' X-pol Azimuth (Ka-band)	47.40	-9.52	-0.30	-0.30	0.00

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth RHCP, -180º to +180º @ 1.0º increment

27.60 GHz @ -10.94 dBW / 40 kHz in Co-pol Az RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-179.0	-40.0	-10.5	-29.5
-178.0	-40.3	-10.5	-29.8
-177.0	-34.9	-10.5	-24.4
-176.0	-42.4	-10.5	-31.9
-175.0	-41.9	-10.5	-31.4
-174.0	-38.9	-10.5	-28.4
-173.0	-46.7	-10.5	-36.2
-172.0	-38.7	-10.5	-28.2
-171.0	-48.8	-10.5	-38.3
-170.0	-40.6	-10.5	-30.1
-169.0	-38.2	-10.5	-27.7
-168.0	-42.6	-10.5	-32.1
-167.0	-53.8	-10.5	-43.3
-166.0	-43.3	-10.5	-32.8
-165.0	-36.9	-10.5	-26.4
-164.0	-50.5	-10.5	-40.0
-163.0	-49.0	-10.5	-38.5
-162.0	-42.0	-10.5	-31.5
-161.0	-42.4	-10.5	-31.9
-160.0	-38.9	-10.5	-28.4
-159.0	-44.1	-10.5	-33.6
-158.0	-43.3	-10.5	-32.8
-157.0	-35.9	-10.5	-25.4
-156.0	-42.3	-10.5	-31.8
-155.0	-50.0	-10.5	-39.5
-154.0	-34.2	-10.5	-23.7
-153.0	-45.2	-10.5	-34.7
-152.0	-43.8	-10.5	-33.3
-151.0	-46.2	-10.5	-35.7
-150.0	-39.8	-10.5	-29.3
-149.0	-44.7	-10.5	-34.2
-148.0	-49.8	-10.5	-39.3
-147.0	-39.4	-10.5	-28.9
-146.0	-44.3	-10.5	-33.8
-145.0	-41.3	-10.5	-30.8
-144.0	-38.5	-10.5	-28.0
-143.0	-39.8	-10.5	-29.3
-142.0	-44.6	-10.5	-34.1
-141.0	-40.4	-10.5	-29.9
-140.0	-45.1	-10.5	-34.6
-139.0	-45.9	-10.5	-35.4
-138.0	-45.1	-10.5	-34.6
-137.0	-39.7	-10.5	-29.2
-136.0	-41.2	-10.5	-30.7
-135.0	-46.4	-10.5	-35.9
-134.0	-48.6	-10.5	-38.1
-133.0	-40.6	-10.5	-30.1
-132.0	-39.1	-10.5	-28.6
-131.0	-50.4	-10.5	-39.9
-130.0	-38.3	-10.5	-27.8
-129.0	-44.1	-10.5	-33.6
-128.0	-38.7	-10.5	-28.2
-127.0	-39.0	-10.5	-28.5
-126.0	-48.7	-10.5	-38.2
-125.0	-41.0	-10.5	-30.5
-124.0	-49.9	-10.5	-39.4
-123.0	-48.9	-10.5	-38.4
-122.0	-42.7	-10.5	-32.2
-121.0	-40.6	-10.5	-30.1
-120.0	-58.8	-10.5	-48.3

27.60 GHz @ -10.94 dBW / 40 kHz in Co-pol Az RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	36.3		
1.0	11.3		
2.0	-1.6	11.0	-12.5
3.0	-0.3	6.6	-6.9
4.0	-2.5	3.4	-5.9
5.0	-9.5	1.0	-10.5
6.0	-15.5	-1.0	-14.6
7.0	-17.5	-2.6	-14.9
8.0	-15.6	-2.6	-12.9
9.0	-18.6	-2.6	-15.9
10.0	-21.1	-3.5	-17.6
11.0	-18.8	-4.5	-14.2
12.0	-19.5	-5.5	-14.0
13.0	-18.9	-6.3	-12.5
14.0	-17.7	-7.2	-10.6
15.0	-51.3	-7.9	-43.4
16.0	-28.6	-8.6	-20.0
17.0	-21.3	-9.3	-12.0
18.0	-20.4	-9.9	-10.5
19.0	-21.4	-10.5	-10.9
20.0	-22.1	-11.0	-11.0
21.0	-18.7	-11.6	-7.2
22.0	-23.0	-12.1	-11.0
23.0	-20.7	-12.5	-8.2
24.0	-18.7	-13.0	-5.7
25.0	-19.1	-13.4	-5.6
26.0	-20.5	-13.9	-6.6
27.0	-19.3	-14.3	-5.0
28.0	-23.1	-14.7	-8.4
29.0	-20.9	-15.1	-5.8
30.0	-20.6	-15.4	-5.2
31.0	-29.2	-15.8	-13.4
32.0	-29.9	-16.1	-13.7
33.0	-31.0	-16.5	-14.6
34.0	-28.5	-16.8	-11.7
35.0	-25.8	-17.1	-8.7
36.0	-28.8	-17.4	-11.4
37.0	-33.4	-17.7	-15.7
38.0	-42.9	-18.0	-24.9
39.0	-34.5	-18.3	-16.2
40.0	-28.9	-18.6	-10.4
41.0	-27.4	-18.8	-8.6
42.0	-26.0	-19.1	-6.9
43.0	-34.4	-19.3	-15.1
44.0	-31.6	-19.6	-12.1
45.0	-30.6	-19.8	-10.8
46.0	-32.8	-20.1	-12.7
47.0	-24.5	-20.3	-4.2
48.0	-26.9	-20.5	-6.4
49.0	-46.8	-10.5	-36.3
50.0	-33.1	-10.5	-22.6
51.0	-40.3	-10.5	-29.8
52.0	-41.0	-10.5	-30.5
53.0	-30.6	-10.5	-20.1
54.0	-32.2	-10.5	-21.7
55.0	-36.1	-10.5	-25.6
56.0	-30.1	-10.5	-19.6
57.0	-36.0	-10.5	-25.5
58.0	-53.0	-10.5	-42.5
59.0	-37.0	-10.5	-26.5

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth RHCP, -180º to +180º @ 1.0º increment

-119.0	-41.1	-10.5	-30.6
-118.0	-33.3	-10.5	-22.8
-117.0	-40.3	-10.5	-29.8
-116.0	-39.4	-10.5	-28.9
-115.0	-42.9	-10.5	-32.4
-114.0	-43.5	-10.5	-33.0
-113.0	-42.1	-10.5	-31.6
-112.0	-45.5	-10.5	-35.0
-111.0	-38.9	-10.5	-28.4
-110.0	-45.2	-10.5	-34.7
-109.0	-40.4	-10.5	-29.9
-108.0	-34.9	-10.5	-24.4
-107.0	-33.7	-10.5	-23.2
-106.0	-30.5	-10.5	-20.0
-105.0	-27.5	-10.5	-17.0
-104.0	-27.1	-10.5	-16.6
-103.0	-25.7	-10.5	-15.2
-102.0	-25.6	-10.5	-15.1
-101.0	-26.3	-10.5	-15.8
-100.0	-28.0	-10.5	-17.5
-99.0	-25.3	-10.5	-14.8
-98.0	-24.9	-10.5	-14.4
-97.0	-26.3	-10.5	-15.8
-96.0	-28.1	-10.5	-17.6
-95.0	-30.9	-10.5	-20.4
-94.0	-37.9	-10.5	-27.4
-93.0	-29.7	-10.5	-19.2
-92.0	-34.2	-10.5	-23.7
-91.0	-31.3	-10.5	-20.8
-90.0	-29.2	-10.5	-18.7
-89.0	-32.7	-10.5	-22.2
-88.0	-32.9	-10.5	-22.4
-87.0	-35.4	-10.5	-24.9
-86.0	-32.9	-10.5	-22.4
-85.0	-29.8	-10.5	-19.3
-84.0	-30.1	-10.5	-19.6
-83.0	-33.5	-10.5	-23.0
-82.0	-31.9	-10.5	-21.4
-81.0	-27.2	-10.5	-16.7
-80.0	-27.6	-10.5	-17.1
-79.0	-28.0	-10.5	-17.5
-78.0	-26.0	-10.5	-15.5
-77.0	-28.8	-10.5	-18.3
-76.0	-34.5	-10.5	-24.0
-75.0	-31.9	-10.5	-21.4
-74.0	-25.0	-10.5	-14.5
-73.0	-38.9	-10.5	-28.4
-72.0	-27.9	-10.5	-17.4
-71.0	-45.7	-10.5	-35.2
-70.0	-37.1	-10.5	-26.6
-69.0	-31.7	-10.5	-21.2
-68.0	-27.8	-10.5	-17.3
-67.0	-29.4	-10.5	-18.9
-66.0	-31.2	-10.5	-20.7
-65.0	-42.2	-10.5	-31.7
-64.0	-34.1	-10.5	-23.6
-63.0	-26.7	-10.5	-16.2
-62.0	-24.6	-10.5	-14.1
-61.0	-28.7	-10.5	-18.2
-60.0	-31.6	-10.5	-21.1
-59.0	-37.7	-10.5	-27.2
-58.0	-29.7	-10.5	-19.2
-57.0	-29.2	-10.5	-18.7
60.0	-26.8	-10.5	-16.3
61.0	-29.1	-10.5	-18.6
62.0	-40.2	-10.5	-29.7
63.0	-37.1	-10.5	-26.6
64.0	-44.7	-10.5	-34.2
65.0	-26.5	-10.5	-16.0
66.0	-33.5	-10.5	-23.0
67.0	-30.9	-10.5	-20.4
68.0	-31.1	-10.5	-20.6
69.0	-34.8	-10.5	-24.3
70.0	-34.7	-10.5	-24.2
71.0	-31.4	-10.5	-20.9
72.0	-43.1	-10.5	-32.6
73.0	-29.2	-10.5	-18.7
74.0	-29.3	-10.5	-18.8
75.0	-29.0	-10.5	-18.5
76.0	-33.1	-10.5	-22.6
77.0	-26.9	-10.5	-16.4
78.0	-26.3	-10.5	-15.8
79.0	-33.9	-10.5	-23.4
80.0	-35.0	-10.5	-24.5
81.0	-39.8	-10.5	-29.3
82.0	-31.1	-10.5	-20.6
83.0	-34.2	-10.5	-23.7
84.0	-42.8	-10.5	-32.3
85.0	-41.9	-10.5	-31.4
86.0	-37.7	-10.5	-27.2
87.0	-29.9	-10.5	-19.4
88.0	-32.1	-10.5	-21.6
89.0	-38.0	-10.5	-27.5
90.0	-39.1	-10.5	-28.6
91.0	-31.6	-10.5	-21.1
92.0	-34.7	-10.5	-24.2
93.0	-37.5	-10.5	-27.0
94.0	-35.4	-10.5	-24.9
95.0	-41.7	-10.5	-31.2
96.0	-39.4	-10.5	-28.9
97.0	-36.6	-10.5	-26.1
98.0	-36.8	-10.5	-26.3
99.0	-33.8	-10.5	-23.3
100.0	-46.0	-10.5	-35.5
101.0	-33.9	-10.5	-23.4
102.0	-43.5	-10.5	-33.0
103.0	-35.4	-10.5	-24.9
104.0	-39.6	-10.5	-29.1
105.0	-45.4	-10.5	-34.9
106.0	-33.0	-10.5	-22.5
107.0	-42.8	-10.5	-32.3
108.0	-36.9	-10.5	-26.4
109.0	-36.1	-10.5	-25.6
110.0	-46.4	-10.5	-35.9
111.0	-37.1	-10.5	-26.6
112.0	-37.4	-10.5	-26.9
113.0	-37.0	-10.5	-26.5
114.0	-39.3	-10.5	-28.8
115.0	-35.4	-10.5	-24.9
116.0	-37.2	-10.5	-26.7
117.0	-41.7	-10.5	-31.2
118.0	-35.6	-10.5	-25.1
119.0	-32.3	-10.5	-21.8
120.0	-35.7	-10.5	-25.2
121.0	-31.7	-10.5	-21.2
122.0	-43.7	-10.5	-33.2

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

-56.0	-28.5	-10.5	-18.0
-55.0	-26.2	-10.5	-15.7
-54.0	-28.1	-10.5	-17.6
-53.0	-28.0	-10.5	-17.5
-52.0	-25.3	-10.5	-14.8
-51.0	-29.8	-10.5	-19.3
-50.0	-34.5	-10.5	-24.0
-49.0	-31.6	-10.5	-21.1
-48.0	-26.4	-20.5	-5.9
-47.0	-31.5	-20.3	-11.2
-46.0	-24.1	-20.1	-4.0
-45.0	-28.5	-19.8	-8.7
-44.0	-25.1	-19.6	-5.5
-43.0	-22.4	-19.3	-3.1
-42.0	-23.0	-19.1	-3.9
-41.0	-23.1	-18.8	-4.3
-40.0	-24.7	-18.6	-6.1
-39.0	-20.0	-18.3	-1.7
-38.0	-17.5	-18.0	0.5
-37.0	-23.4	-17.7	-5.7
-36.0	-25.3	-17.4	-7.9
-35.0	-24.0	-17.1	-6.9
-34.0	-17.4	-16.8	-0.6
-33.0	-24.4	-16.5	-7.9
-32.0	-21.3	-16.1	-5.2
-31.0	-19.3	-15.8	-3.5
-30.0	-25.0	-15.4	-9.5
-29.0	-28.5	-15.1	-13.4
-28.0	-19.3	-14.7	-4.6
-27.0	-18.6	-14.3	-4.3
-26.0	-20.5	-13.9	-6.7
-25.0	-19.9	-13.4	-6.4
-24.0	-24.2	-13.0	-11.2
-23.0	-24.0	-12.5	-11.4
-22.0	-18.1	-12.1	-6.0
-21.0	-15.9	-11.6	-4.4
-20.0	-37.5	-11.0	-26.5
-19.0	-17.5	-10.5	-7.0
-18.0	-22.2	-9.9	-12.3
-17.0	-19.2	-9.3	-10.0
-16.0	-13.3	-8.6	-4.7
-15.0	-16.4	-7.9	-8.5
-14.0	-31.4	-7.2	-24.3
-13.0	-13.2	-6.3	-6.9
-12.0	-17.4	-5.5	-11.9
-11.0	-30.1	-4.5	-25.5
-10.0	-15.3	-3.5	-11.8
-9.0	-19.2	-2.6	-16.6
-8.0	-18.2	-2.6	-15.5
-7.0	-11.3	-2.6	-8.7
-6.0	-23.0	-1.0	-22.0
-5.0	-7.5	1.0	-8.5
-4.0	-8.5	3.4	-12.0
-3.0	-2.7	6.6	-9.2
-2.0	6.2	11.0	-4.8
-1.0	7.2		
0.0	36.3		

123.0	-34.2	-10.5	-23.7
124.0	-48.6	-10.5	-38.1
125.0	-33.9	-10.5	-23.4
126.0	-33.7	-10.5	-23.2
127.0	-47.4	-10.5	-36.9
128.0	-35.6	-10.5	-25.1
129.0	-42.0	-10.5	-31.5
130.0	-36.8	-10.5	-26.3
131.0	-41.4	-10.5	-30.9
132.0	-36.5	-10.5	-26.0
133.0	-34.7	-10.5	-24.2
134.0	-33.9	-10.5	-23.4
135.0	-31.7	-10.5	-21.2
136.0	-49.6	-10.5	-39.1
137.0	-33.8	-10.5	-23.3
138.0	-32.0	-10.5	-21.5
139.0	-37.3	-10.5	-26.8
140.0	-34.9	-10.5	-24.4
141.0	-33.0	-10.5	-22.5
142.0	-37.3	-10.5	-26.8
143.0	-36.5	-10.5	-26.0
144.0	-42.7	-10.5	-32.2
145.0	-37.3	-10.5	-26.8
146.0	-32.1	-10.5	-21.6
147.0	-34.3	-10.5	-23.8
148.0	-47.1	-10.5	-36.6
149.0	-44.2	-10.5	-33.7
150.0	-41.6	-10.5	-31.1
151.0	-40.0	-10.5	-29.5
152.0	-35.3	-10.5	-24.8
153.0	-35.0	-10.5	-24.5
154.0	-38.6	-10.5	-28.1
155.0	-33.0	-10.5	-22.5
156.0	-39.1	-10.5	-28.6
157.0	-35.4	-10.5	-24.9
158.0	-32.8	-10.5	-22.3
159.0	-34.3	-10.5	-23.8
160.0	-36.6	-10.5	-26.1
161.0	-48.5	-10.5	-38.0
162.0	-34.3	-10.5	-23.8
163.0	-33.9	-10.5	-23.4
164.0	-36.4	-10.5	-25.9
165.0	-37.1	-10.5	-26.6
166.0	-34.0	-10.5	-23.5
167.0	-35.0	-10.5	-24.5
168.0	-32.5	-10.5	-22.0
169.0	-39.4	-10.5	-28.9
170.0	-45.8	-10.5	-35.3
171.0	-30.1	-10.5	-19.6
172.0	-34.3	-10.5	-23.8
173.0	-37.9	-10.5	-27.4
174.0	-31.8	-10.5	-21.3
175.0	-50.0	-10.5	-39.5
176.0	-38.0	-10.5	-27.5
177.0	-45.0	-10.5	-34.5
178.0	-37.9	-10.5	-27.4
179.0	-38.0	-10.5	-27.5

Orbit Communication Systems Ltd.

AL AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth RHCP, -10º to +10º @ 0.1º increment

27.60 GHz @ -10.94 dBW / 40 kHz in Co-pol Az RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-10.0	-15.3	-3.5	-11.8
-9.9	-15.3	-3.4	-11.9
-9.8	-16.7	-3.3	-13.5
-9.7	-20.8	-3.2	-17.7
-9.6	-21.8	-3.1	-18.8
-9.5	-17.4	-2.9	-14.5
-9.4	-13.7	-2.8	-10.8
-9.3	-12.2	-2.7	-9.5
-9.2	-12.8	-2.6	-10.2
-9.1	-14.1	-2.6	-11.4
-9.0	-19.2	-2.6	-16.6
-8.9	-46.6	-2.6	-43.9
-8.8	-20.5	-2.6	-17.9
-8.7	-15.0	-2.6	-12.4
-8.6	-13.5	-2.6	-10.9
-8.5	-13.8	-2.6	-11.1
-8.4	-16.0	-2.6	-13.4
-8.3	-21.1	-2.6	-18.5
-8.2	-38.6	-2.6	-35.9
-8.1	-24.1	-2.6	-21.5
-8.0	-18.2	-2.6	-15.5
-7.9	-16.1	-2.6	-13.5
-7.8	-15.1	-2.6	-12.5
-7.7	-16.0	-2.6	-13.3
-7.6	-18.0	-2.6	-15.3
-7.5	-19.5	-2.6	-16.8
-7.4	-16.6	-2.6	-13.9
-7.3	-13.4	-2.6	-10.7
-7.2	-10.9	-2.6	-8.3
-7.1	-10.5	-2.6	-7.9
-7.0	-11.3	-2.6	-8.7
-6.9	-14.4	-2.5	-11.9
-6.8	-23.7	-2.3	-21.4
-6.7	-20.6	-2.2	-18.5
-6.6	-12.7	-2.0	-10.7
-6.5	-9.5	-1.8	-7.7
-6.4	-8.6	-1.7	-6.9
-6.3	-9.1	-1.5	-7.6
-6.2	-11.3	-1.3	-10.0
-6.1	-15.5	-1.1	-14.4
-6.0	-23.0	-1.0	-22.0
-5.9	-30.8	-0.8	-30.0
-5.8	-33.9	-0.6	-33.3
-5.7	-28.2	-0.4	-27.8
-5.6	-17.0	-0.2	-16.8
-5.5	-11.4	0.0	-11.4
-5.4	-9.2	0.2	-9.3
-5.3	-7.8	0.4	-8.2
-5.2	-7.4	0.6	-8.0
-5.1	-7.4	0.8	-8.2
-5.0	-7.5	1.0	-8.5
-4.9	-7.5	1.2	-8.7
-4.8	-8.2	1.5	-9.7
-4.7	-10.5	1.7	-12.2
-4.6	-15.6	1.9	-17.5
-4.5	-15.5	2.2	-17.6
-4.4	-10.2	2.4	-12.6
-4.3	-7.7	2.7	-10.3
-4.2	-6.9	2.9	-9.9
-4.1	-7.7	3.2	-10.9

27.60 GHz @ -10.94 dBW / 40 kHz in Co-pol Az RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	36.3		
0.1	36.1		
0.2	35.4		
0.3	34.3		
0.4	32.6		
0.5	30.4		
0.6	27.6		
0.7	24.3		
0.8	20.5		
0.9	16.3		
1.0	11.3		
1.1	4.2		
1.2	-1.6		
1.3	5.1		
1.4	7.8		
1.5	8.3		
1.6	7.2		
1.7	5.0		
1.8	2.1		
1.9	0.0		
2.0	-1.6	11.0	-12.5
2.1	-2.4	10.4	-12.9
2.2	-1.9	9.9	-11.9
2.3	0.4	9.5	-9.1
2.4	2.1	9.0	-6.9
2.5	2.8	8.6	-5.7
2.6	2.2	8.1	-5.9
2.7	0.7	7.7	-7.0
2.8	-0.8	7.3	-8.1
2.9	-1.1	6.9	-8.0
3.0	-0.3	6.6	-6.9
3.1	-0.5	6.2	-6.7
3.2	-1.9	5.9	-7.8
3.3	-4.3	5.5	-9.9
3.4	-6.8	5.2	-12.1
3.5	-7.9	4.9	-12.8
3.6	-6.4	4.6	-11.0
3.7	-4.7	4.3	-9.0
3.8	-3.1	4.0	-7.1
3.9	-2.4	3.7	-6.1
4.0	-2.5	3.4	-5.9
4.1	-3.8	3.2	-7.0
4.2	-6.1	2.9	-9.0
4.3	-9.1	2.7	-11.8
4.4	-10.1	2.4	-12.5
4.5	-9.6	2.2	-11.7
4.6	-9.9	1.9	-11.8
4.7	-13.0	1.7	-14.7
4.8	-22.0	1.5	-23.5
4.9	-14.8	1.2	-16.0
5.0	-9.5	1.0	-10.5
5.1	-8.3	0.8	-9.1
5.2	-8.9	0.6	-9.5
5.3	-11.8	0.4	-12.2
5.4	-16.6	0.2	-16.8
5.5	-16.2	0.0	-16.2
5.6	-12.6	-0.2	-12.4
5.7	-12.7	-0.4	-12.3
5.8	-16.0	-0.6	-15.4
5.9	-29.5	-0.8	-28.7

Orbit Communication Systems Ltd.

AL AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth RHCP, -10º to +10º @ 0.1º increment

-4.0	-8.5	3.4	-12.0
-3.9	-7.0	3.7	-10.7
-3.8	-4.3	4.0	-8.4
-3.7	-2.3	4.3	-6.6
-3.6	-1.2	4.6	-5.8
-3.5	-0.6	4.9	-5.5
-3.4	-0.2	5.2	-5.5
-3.3	-0.1	5.5	-5.7
-3.2	-0.3	5.9	-6.1
-3.1	-1.4	6.2	-7.6
-3.0	-2.7	6.6	-9.2
-2.9	-2.3	6.9	-9.2
-2.8	0.3	7.3	-7.0
-2.7	2.4	7.7	-5.4
-2.6	3.4	8.1	-4.8
-2.5	3.7	8.6	-4.8
-2.4	4.0	9.0	-5.0
-2.3	4.8	9.5	-4.6
-2.2	6.1	9.9	-3.9
-2.1	6.8	10.4	-3.7
-2.0	6.2	11.0	-4.8
-1.9	3.8		
-1.8	-1.7		
-1.7	-1.0		
-1.6	4.4		
-1.5	6.8		
-1.4	6.9		
-1.3	5.3		
-1.2	4.0		
-1.1	5.6		
-1.0	7.2		
-0.9	8.8		
-0.8	14.4		
-0.7	20.5		
-0.6	25.3		
-0.5	28.9		
-0.4	31.7		
-0.3	33.7		
-0.2	35.1		
-0.1	35.9		
0.0	36.3		

6.0	-15.5	-1.0	-14.6
6.1	-10.8	-1.1	-9.7
6.2	-9.0	-1.3	-7.7
6.3	-9.4	-1.5	-7.9
6.4	-12.1	-1.7	-10.4
6.5	-18.0	-1.8	-16.2
6.6	-32.3	-2.0	-30.3
6.7	-20.9	-2.2	-18.8
6.8	-19.1	-2.3	-16.8
6.9	-18.4	-2.5	-15.9
7.0	-17.5	-2.6	-14.9
7.1	-15.3	-2.6	-12.7
7.2	-14.6	-2.6	-12.0
7.3	-16.3	-2.6	-13.6
7.4	-22.6	-2.6	-20.0
7.5	-24.8	-2.6	-22.2
7.6	-17.9	-2.6	-15.3
7.7	-14.6	-2.6	-12.0
7.8	-13.8	-2.6	-11.1
7.9	-13.9	-2.6	-11.3
8.0	-15.6	-2.6	-12.9
8.1	-17.3	-2.6	-14.6
8.2	-19.9	-2.6	-17.2
8.3	-22.4	-2.6	-19.8
8.4	-36.5	-2.6	-33.9
8.5	-22.8	-2.6	-20.1
8.6	-16.1	-2.6	-13.5
8.7	-13.7	-2.6	-11.0
8.8	-12.8	-2.6	-10.2
8.9	-14.4	-2.6	-11.8
9.0	-18.6	-2.6	-15.9
9.1	-26.7	-2.6	-24.0
9.2	-21.4	-2.6	-18.8
9.3	-16.9	-2.7	-14.2
9.4	-16.4	-2.8	-13.6
9.5	-18.3	-2.9	-15.3
9.6	-24.1	-3.1	-21.0
9.7	-24.8	-3.2	-21.6
9.8	-19.9	-3.3	-16.6
9.9	-18.7	-3.4	-15.4
10.0	-21.1	-3.5	-17.6

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Elevation RHCP, -30º to +30º @ 0.5º increment

27.60 GHz @ -10.94 dBW / 40 kHz in Co-pol El RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-30.0	-23.6	-12.4	-11.2
-29.5	-21.9	-12.2	-9.7
-29.0	-21.4	-12.1	-9.3
-28.5	-20.9	-11.9	-9.0
-28.0	-21.8	-11.7	-10.1
-27.5	-23.9	-11.5	-12.4
-27.0	-25.3	-11.3	-14.0
-26.5	-24.2	-11.1	-13.1
-26.0	-22.3	-10.9	-11.4
-25.5	-21.2	-10.7	-10.5
-25.0	-21.0	-10.4	-10.6
-24.5	-24.6	-10.2	-14.3
-24.0	-23.9	-10.0	-13.9
-23.5	-23.7	-9.8	-13.9
-23.0	-23.5	-9.5	-13.9
-22.5	-27.7	-9.3	-18.4
-22.0	-38.5	-9.1	-29.4
-21.5	-28.5	-8.8	-19.7
-21.0	-23.4	-8.6	-14.8
-20.5	-23.7	-8.3	-15.4
-20.0	-28.3	-8.0	-20.3
-19.5	-25.3	-7.8	-17.5
-19.0	-24.2	-7.5	-16.8
-18.5	-19.3	-7.2	-12.1
-18.0	-21.4	-6.9	-14.5
-17.5	-22.7	-6.6	-16.1
-17.0	-25.4	-6.3	-19.1
-16.5	-30.8	-5.9	-24.8
-16.0	-34.1	-5.6	-28.5
-15.5	-26.0	-5.3	-20.7
-15.0	-27.1	-4.9	-22.2
-14.5	-28.3	-4.5	-23.7
-14.0	-21.0	-4.2	-16.8
-13.5	-18.3	-3.8	-14.5
-13.0	-21.7	-3.3	-18.4
-12.5	-34.4	-2.9	-31.5
-12.0	-21.6	-2.5	-19.1
-11.5	-28.4	-2.0	-26.4
-11.0	-18.9	-1.5	-17.4
-10.5	-19.5	-1.0	-18.5
-10.0	-22.2	-0.5	-21.7
-9.5	-20.4	0.1	-20.4
-9.0	-27.3	0.4	-27.7
-8.5	-13.7	0.4	-14.0
-8.0	-14.2	0.4	-14.6
-7.5	-21.4	0.4	-21.8
-7.0	-13.7	0.4	-14.0
-6.5	-18.7	1.2	-19.9
-6.0	-15.4	2.0	-17.4
-5.5	-15.8	3.0	-18.8
-5.0	-12.4	4.0	-16.4
-4.5	-10.1	5.2	-15.3
-4.0	-6.0	6.4	-12.5
-3.5	-8.5	7.9	-16.4
-3.0	-0.4		
-2.5	-0.1		
-2.0	-1.0		
-1.5	9.3		
-1.0	8.5		
-0.5	30.4		
0.0	36.3		

27.60 GHz @ -10.94 dBW / 40 kHz in Co-pol El RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	36.3		
0.5	29.4		
1.0	7.1		
1.5	5.4		
2.0	6.1		
2.5	4.5		
3.0	-5.0		
3.5	-2.6	7.9	-10.5
4.0	-4.8	6.4	-11.2
4.5	-12.3	5.2	-17.5
5.0	-12.6	4.0	-16.6
5.5	-10.4	3.0	-13.4
6.0	-17.2	2.0	-19.2
6.5	-11.5	1.2	-12.7
7.0	-9.8	0.4	-10.2
7.5	-17.9	0.4	-18.3
8.0	-27.0	0.4	-27.4
8.5	-13.8	0.4	-14.2
9.0	-17.7	0.4	-18.1
9.5	-28.0	0.1	-28.1
10.0	-14.2	-0.5	-13.7
10.5	-15.2	-1.0	-14.1
11.0	-25.9	-1.5	-24.4
11.5	-14.2	-2.0	-12.1
12.0	-16.6	-2.5	-14.1
12.5	-20.4	-2.9	-17.5
13.0	-14.5	-3.3	-11.1
13.5	-18.8	-3.8	-15.0
14.0	-15.9	-4.2	-11.7
14.5	-22.2	-4.5	-17.7
15.0	-11.4	-4.9	-6.5
15.5	-17.0	-5.3	-11.8
16.0	-18.0	-5.6	-12.4
16.5	-14.3	-5.9	-8.4
17.0	-13.5	-6.3	-7.2
17.5	-15.4	-6.6	-8.9
18.0	-14.7	-6.9	-7.8
18.5	-27.0	-7.2	-19.9
19.0	-21.0	-7.5	-13.6
19.5	-22.8	-7.8	-15.0
20.0	-23.7	-8.0	-15.7
20.5	-29.1	-8.3	-20.8
21.0	-19.9	-8.6	-11.4
21.5	-24.8	-8.8	-16.0
22.0	-24.5	-9.1	-15.5
22.5	-18.0	-9.3	-8.7
23.0	-20.4	-9.5	-10.9
23.5	-22.7	-9.8	-12.9
24.0	-21.2	-10.0	-11.2
24.5	-23.5	-10.2	-13.3
25.0	-24.5	-10.4	-14.1
25.5	-21.9	-10.7	-11.2
26.0	-19.9	-10.9	-9.0
26.5	-23.7	-11.1	-12.7
27.0	-19.7	-11.3	-8.4
27.5	-21.0	-11.5	-9.5
28.0	-30.4	-11.7	-18.7
28.5	-21.8	-11.9	-9.9
29.0	-27.4	-12.1	-15.4
29.5	-33.6	-12.2	-21.4
30.0	-21.6	-12.4	-9.2

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Elevation RHCP, -10º to +10º @ 0.1º increment

27.60 GHz @ -10.94 dBW / 40 kHz in Co-pol El RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-10.0	-22.2	-0.5	-21.7
-9.9	-20.6	-0.4	-20.2
-9.8	-21.9	-0.3	-21.6
-9.7	-25.0	-0.2	-24.9
-9.6	-27.4	-0.1	-27.4
-9.5	-20.4	0.1	-20.4
-9.4	-17.9	0.2	-18.0
-9.3	-16.9	0.3	-17.2
-9.2	-18.4	0.4	-18.7
-9.1	-23.5	0.4	-23.9
-9.0	-27.3	0.4	-27.7
-8.9	-18.8	0.4	-19.2
-8.8	-14.3	0.4	-14.7
-8.7	-12.5	0.4	-12.9
-8.6	-12.4	0.4	-12.7
-8.5	-13.7	0.4	-14.0
-8.4	-17.3	0.4	-17.7
-8.3	-25.9	0.4	-26.3
-8.2	-24.0	0.4	-24.3
-8.1	-17.0	0.4	-17.4
-8.0	-14.2	0.4	-14.6
-7.9	-13.6	0.4	-14.0
-7.8	-14.7	0.4	-15.1
-7.7	-18.6	0.4	-18.9
-7.6	-23.6	0.4	-23.9
-7.5	-21.4	0.4	-21.8
-7.4	-16.9	0.4	-17.3
-7.3	-15.2	0.4	-15.6
-7.2	-14.1	0.4	-14.5
-7.1	-14.2	0.4	-14.6
-7.0	-13.7	0.4	-14.0
-6.9	-13.5	0.5	-14.0
-6.8	-14.5	0.7	-15.2
-6.7	-18.3	0.8	-19.2
-6.6	-32.0	1.0	-33.1
-6.5	-18.7	1.2	-19.9
-6.4	-12.7	1.3	-14.0
-6.3	-10.4	1.5	-11.9
-6.2	-10.2	1.7	-11.9
-6.1	-11.7	1.9	-13.6
-6.0	-15.4	2.0	-17.4
-5.9	-19.5	2.2	-21.7
-5.8	-17.0	2.4	-19.4
-5.7	-14.4	2.6	-17.0
-5.6	-14.3	2.8	-17.1
-5.5	-15.8	3.0	-18.8
-5.4	-15.2	3.2	-18.4
-5.3	-13.0	3.4	-16.4
-5.2	-11.0	3.6	-14.6
-5.1	-10.9	3.8	-14.7
-5.0	-12.4	4.0	-16.4
-4.9	-18.3	4.2	-22.5
-4.8	-23.1	4.5	-27.5
-4.7	-14.8	4.7	-19.5
-4.6	-11.2	4.9	-16.1
-4.5	-10.1	5.2	-15.3
-4.4	-9.9	5.4	-15.3
-4.3	-9.7	5.7	-15.4
-4.2	-8.6	5.9	-14.5
-4.1	-7.1	6.2	-13.3

27.60 GHz @ -10.94 dBW / 40 kHz in Co-pol El RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	36.3		
0.1	35.9		
0.2	35.2		
0.3	33.8		
0.4	31.9		
0.5	29.4		
0.6	26.1		
0.7	21.8		
0.8	16.2		
0.9	10.2		
1.0	7.1		
1.1	6.6		
1.2	5.8		
1.3	5.6		
1.4	5.9		
1.5	5.4		
1.6	2.9		
1.7	-2.3		
1.8	-2.0		
1.9	3.3		
2.0	6.1		
2.1	7.0		
2.2	6.8		
2.3	5.9		
2.4	5.1		
2.5	4.5		
2.6	4.0		
2.7	2.8		
2.8	0.8		
2.9	-2.2		
3.0	-5.0		
3.1	-4.3		
3.2	-2.4		
3.3	-1.6		
3.4	-1.8		
3.5	-2.6	7.9	-10.5
3.6	-3.7	7.6	-11.3
3.7	-5.0	7.3	-12.3
3.8	-5.8	7.0	-12.8
3.9	-5.6	6.7	-12.3
4.0	-4.8	6.4	-11.2
4.1	-4.1	6.2	-10.3
4.2	-4.2	5.9	-10.1
4.3	-5.6	5.7	-11.2
4.4	-7.8	5.4	-13.2
4.5	-12.3	5.2	-17.5
4.6	-23.7	4.9	-28.6
4.7	-20.4	4.7	-25.1
4.8	-14.5	4.5	-18.9
4.9	-12.9	4.2	-17.1
5.0	-12.6	4.0	-16.6
5.1	-13.5	3.8	-17.3
5.2	-13.7	3.6	-17.3
5.3	-12.3	3.4	-15.7
5.4	-11.3	3.2	-14.5
5.5	-10.4	3.0	-13.4
5.6	-9.9	2.8	-12.7
5.7	-10.3	2.6	-12.9
5.8	-12.1	2.4	-14.5
5.9	-14.9	2.2	-17.1

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table

Co-pol Elevation RHCP, -10º to +10º @ 0.1º increment

-4.0	-6.0	6.4	-12.5
-3.9	-5.6	6.7	-12.3
-3.8	-5.8	7.0	-12.9
-3.7	-6.7	7.3	-14.0
-3.6	-8.2	7.6	-15.8
-3.5	-8.5	7.9	-16.4
-3.4	-6.0		
-3.3	-3.3		
-3.2	-1.2		
-3.1	-0.3		
-3.0	-0.4		
-2.9	-1.0		
-2.8	-1.5		
-2.7	-1.0		
-2.6	-0.3		
-2.5	-0.1		
-2.4	-0.8		
-2.3	-2.5		
-2.2	-4.0		
-2.1	-3.4		
-2.0	-1.0		
-1.9	1.8		
-1.8	4.5		
-1.7	6.8		
-1.6	8.5		
-1.5	9.3		
-1.4	8.9		
-1.3	6.9		
-1.2	1.8		
-1.1	-3.2		
-1.0	8.5		
-0.9	15.4		
-0.8	20.3		
-0.7	24.4		
-0.6	27.7		
-0.5	30.4		
-0.4	32.6		
-0.3	34.2		
-0.2	35.4		
-0.1	36.1		
0.0	36.3		

6.0	-17.2	2.0	-19.2
6.1	-14.9	1.9	-16.7
6.2	-11.6	1.7	-13.3
6.3	-10.1	1.5	-11.6
6.4	-10.0	1.3	-11.4
6.5	-11.5	1.2	-12.7
6.6	-16.0	1.0	-17.0
6.7	-21.6	0.8	-22.4
6.8	-16.2	0.7	-16.9
6.9	-11.6	0.5	-12.1
7.0	-9.8	0.4	-10.2
7.1	-9.3	0.4	-9.6
7.2	-9.5	0.4	-9.9
7.3	-11.1	0.4	-11.5
7.4	-13.7	0.4	-14.1
7.5	-17.9	0.4	-18.3
7.6	-23.5	0.4	-23.9
7.7	-30.7	0.4	-31.1
7.8	-30.7	0.4	-31.0
7.9	-26.7	0.4	-27.0
8.0	-27.0	0.4	-27.4
8.1	-22.8	0.4	-23.2
8.2	-18.6	0.4	-19.0
8.3	-15.1	0.4	-15.5
8.4	-13.8	0.4	-14.2
8.5	-13.8	0.4	-14.2
8.6	-15.2	0.4	-15.6
8.7	-18.2	0.4	-18.6
8.8	-25.7	0.4	-26.1
8.9	-23.7	0.4	-24.0
9.0	-17.7	0.4	-18.1
9.1	-15.5	0.4	-15.8
9.2	-15.3	0.4	-15.6
9.3	-17.1	0.3	-17.4
9.4	-22.2	0.2	-22.4
9.5	-28.0	0.1	-28.1
9.6	-19.1	-0.1	-19.0
9.7	-15.1	-0.2	-14.9
9.8	-13.3	-0.3	-13.0
9.9	-13.2	-0.4	-12.8
10.0	-14.2	-0.5	-13.7

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
X-pol Azimuth RHCP, -10º to +10º @ 0.1º increment

27.60 GHz @ -10.94 dBW / 40 kHz in X-pol Az RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-10.0	-23.9	-12.6	-11.3
-9.9	-24.5	-12.6	-11.9
-9.8	-24.8	-12.6	-12.1
-9.7	-24.3	-12.6	-11.7
-9.6	-23.3	-12.6	-10.7
-9.5	-22.5	-12.6	-9.9
-9.4	-20.5	-12.6	-7.8
-9.3	-20.3	-12.6	-7.6
-9.2	-20.0	-12.6	-7.4
-9.1	-21.3	-12.6	-8.7
-9.0	-25.4	-12.6	-12.7
-8.9	-31.4	-12.6	-18.8
-8.8	-34.8	-12.6	-22.2
-8.7	-25.5	-12.6	-12.8
-8.6	-21.7	-12.6	-9.0
-8.5	-20.6	-12.6	-8.0
-8.4	-20.3	-12.6	-7.7
-8.3	-22.5	-12.6	-9.8
-8.2	-24.1	-12.6	-11.5
-8.1	-24.5	-12.6	-11.8
-8.0	-25.9	-12.6	-13.2
-7.9	-24.3	-12.6	-11.7
-7.8	-22.0	-12.6	-9.3
-7.7	-21.8	-12.6	-9.1
-7.6	-22.1	-12.6	-9.5
-7.5	-21.9	-12.6	-9.2
-7.4	-22.7	-12.6	-10.1
-7.3	-25.5	-12.6	-12.8
-7.2	-25.9	-12.6	-13.3
-7.1	-27.1	-12.6	-14.4
-7.0	-25.1	-12.6	-12.5
-6.9	-23.0	-12.5	-10.5
-6.8	-21.3	-12.3	-9.0
-6.7	-19.7	-12.2	-7.5
-6.6	-18.3	-12.0	-6.3
-6.5	-17.7	-11.8	-5.8
-6.4	-17.2	-11.7	-5.6
-6.3	-16.7	-11.5	-5.2
-6.2	-15.8	-11.3	-4.5
-6.1	-14.7	-11.1	-3.5
-6.0	-13.7	-11.0	-2.8
-5.9	-13.0	-10.8	-2.3
-5.8	-13.3	-10.6	-2.7
-5.7	-13.2	-10.4	-2.8
-5.6	-13.5	-10.2	-3.3
-5.5	-14.0	-10.0	-4.0
-5.4	-13.9	-9.8	-4.1
-5.3	-13.8	-9.6	-4.2
-5.2	-13.5	-9.4	-4.1
-5.1	-13.2	-9.2	-4.1
-5.0	-12.8	-9.0	-3.8
-4.9	-11.9	-8.8	-3.1
-4.8	-10.8	-8.5	-2.3
-4.7	-10.0	-8.3	-1.7
-4.6	-8.8	-8.1	-0.7
-4.5	-8.0	-7.8	-0.2
-4.4	-7.7	-7.6	-0.1
-4.3	-7.3	-7.3	0.0
-4.2	-7.6	-7.1	-0.6
-4.1	-8.1	-6.8	-1.3

27.60 GHz @ -10.94 dBW / 40 kHz in X-pol Az RHCP

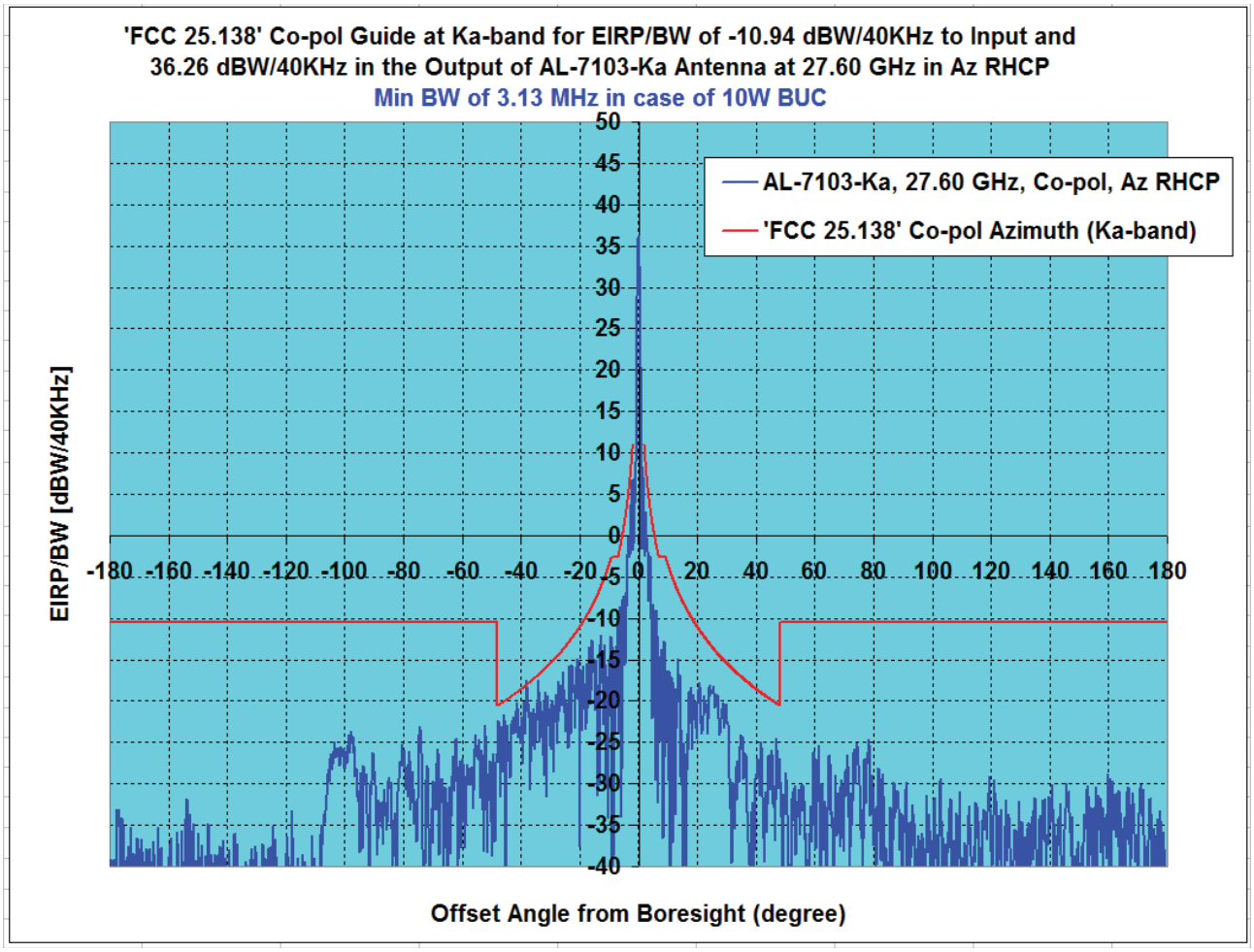
Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	3.3		
0.1	0.4		
0.2	-1.6		
0.3	-2.7		
0.4	-2.9		
0.5	-2.8		
0.6	-3.1		
0.7	-3.5		
0.8	-4.4		
0.9	-5.5		
1.0	-6.6		
1.1	-8.1		
1.2	-9.6		
1.3	-11.2		
1.4	-11.6		
1.5	-12.4		
1.6	-12.6		
1.7	-14.1		
1.8	-15.0		
1.9	-16.1		
2.0	-18.3	1.0	-19.3
2.1	-18.8	0.4	-19.2
2.2	-18.0	-0.1	-18.0
2.3	-16.2	-0.5	-15.6
2.4	-13.9	-1.0	-12.9
2.5	-14.2	-1.4	-12.7
2.6	-12.6	-1.9	-10.7
2.7	-12.5	-2.3	-10.2
2.8	-13.4	-2.7	-10.7
2.9	-13.1	-3.1	-10.0
3.0	-16.5	-3.4	-13.0
3.1	-20.8	-3.8	-17.0
3.2	-25.4	-4.1	-21.3
3.3	-23.0	-4.5	-18.5
3.4	-21.7	-4.8	-16.9
3.5	-26.2	-5.1	-21.1
3.6	-27.5	-5.4	-22.1
3.7	-23.9	-5.7	-18.2
3.8	-23.5	-6.0	-17.5
3.9	-24.7	-6.3	-18.4
4.0	-26.0	-6.6	-19.4
4.1	-37.3	-6.8	-30.5
4.2	-27.2	-7.1	-20.1
4.3	-30.3	-7.3	-23.0
4.4	-24.6	-7.6	-17.1
4.5	-27.5	-7.8	-19.7
4.6	-28.7	-8.1	-20.6
4.7	-28.4	-8.3	-20.1
4.8	-34.0	-8.5	-25.5
4.9	-26.3	-8.8	-17.5
5.0	-26.0	-9.0	-17.0
5.1	-29.3	-9.2	-20.1
5.2	-33.4	-9.4	-24.0
5.3	-33.7	-9.6	-24.1
5.4	-35.1	-9.8	-25.3
5.5	-33.1	-10.0	-23.1
5.6	-30.8	-10.2	-20.6
5.7	-35.4	-10.4	-25.0
5.8	-30.9	-10.6	-20.3
5.9	-29.6	-10.8	-18.9

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

-4.0	-8.8	-6.6	-2.2
-3.9	-9.4	-6.3	-3.2
-3.8	-9.9	-6.0	-3.9
-3.7	-10.1	-5.7	-4.4
-3.6	-10.3	-5.4	-4.9
-3.5	-10.0	-5.1	-4.9
-3.4	-9.8	-4.8	-5.0
-3.3	-9.8	-4.5	-5.4
-3.2	-10.0	-4.1	-5.9
-3.1	-11.1	-3.8	-7.3
-3.0	-12.3	-3.4	-8.9
-2.9	-12.8	-3.1	-9.8
-2.8	-12.3	-2.7	-9.6
-2.7	-10.4	-2.3	-8.2
-2.6	-9.4	-1.9	-7.6
-2.5	-9.5	-1.4	-8.1
-2.4	-10.2	-1.0	-9.2
-2.3	-12.7	-0.5	-12.2
-2.2	-15.4	-0.1	-15.3
-2.1	-15.7	0.4	-16.1
-2.0	-14.4	1.0	-15.4
-1.9	-13.9		
-1.8	-13.6		
-1.7	-10.9		
-1.6	-7.9		
-1.5	-5.7		
-1.4	-4.9		
-1.3	-5.6		
-1.2	-10.0		
-1.1	-18.2		
-1.0	-4.3		
-0.9	1.7		
-0.8	5.2		
-0.7	7.1		
-0.6	8.1		
-0.5	8.6		
-0.4	8.8		
-0.3	8.4		
-0.2	7.4		
-0.1	5.6		
0.0	3.3		

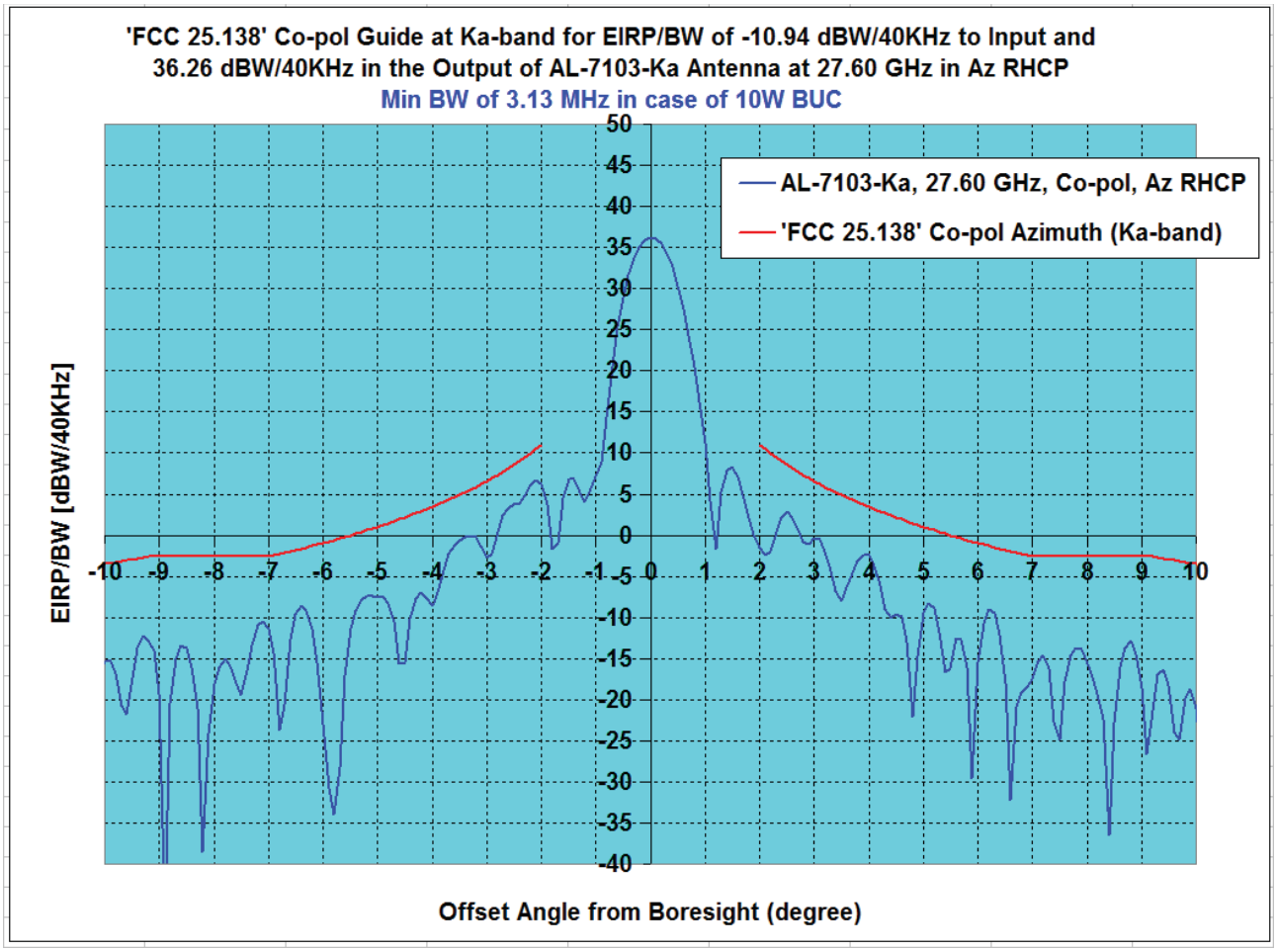
6.0	-26.1	-11.0	-15.2
6.1	-26.1	-11.1	-15.0
6.2	-24.1	-11.3	-12.8
6.3	-23.5	-11.5	-12.0
6.4	-24.1	-11.7	-12.4
6.5	-23.8	-11.8	-11.9
6.6	-24.6	-12.0	-12.6
6.7	-25.3	-12.2	-13.2
6.8	-26.3	-12.3	-14.0
6.9	-29.4	-12.5	-17.0
7.0	-33.5	-12.6	-20.8
7.1	-35.2	-12.6	-22.5
7.2	-28.0	-12.6	-15.4
7.3	-23.3	-12.6	-10.7
7.4	-20.2	-12.6	-7.6
7.5	-19.4	-12.6	-6.8
7.6	-19.0	-12.6	-6.4
7.7	-19.5	-12.6	-6.9
7.8	-20.6	-12.6	-8.0
7.9	-20.3	-12.6	-7.6
8.0	-21.1	-12.6	-8.5
8.1	-22.6	-12.6	-10.0
8.2	-22.7	-12.6	-10.1
8.3	-24.4	-12.6	-11.8
8.4	-27.1	-12.6	-14.5
8.5	-31.2	-12.6	-18.6
8.6	-35.1	-12.6	-22.5
8.7	-33.4	-12.6	-20.8
8.8	-33.2	-12.6	-20.6
8.9	-35.7	-12.6	-23.1
9.0	-34.0	-12.6	-21.3
9.1	-31.8	-12.6	-19.2
9.2	-37.5	-12.6	-24.9
9.3	-38.7	-12.6	-26.1
9.4	-43.2	-12.6	-30.5
9.5	-35.8	-12.6	-23.1
9.6	-32.6	-12.6	-20.0
9.7	-33.4	-12.6	-20.8
9.8	-38.1	-12.6	-25.5
9.9	-44.1	-12.6	-31.5
10.0	-39.6	-12.6	-27.0

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



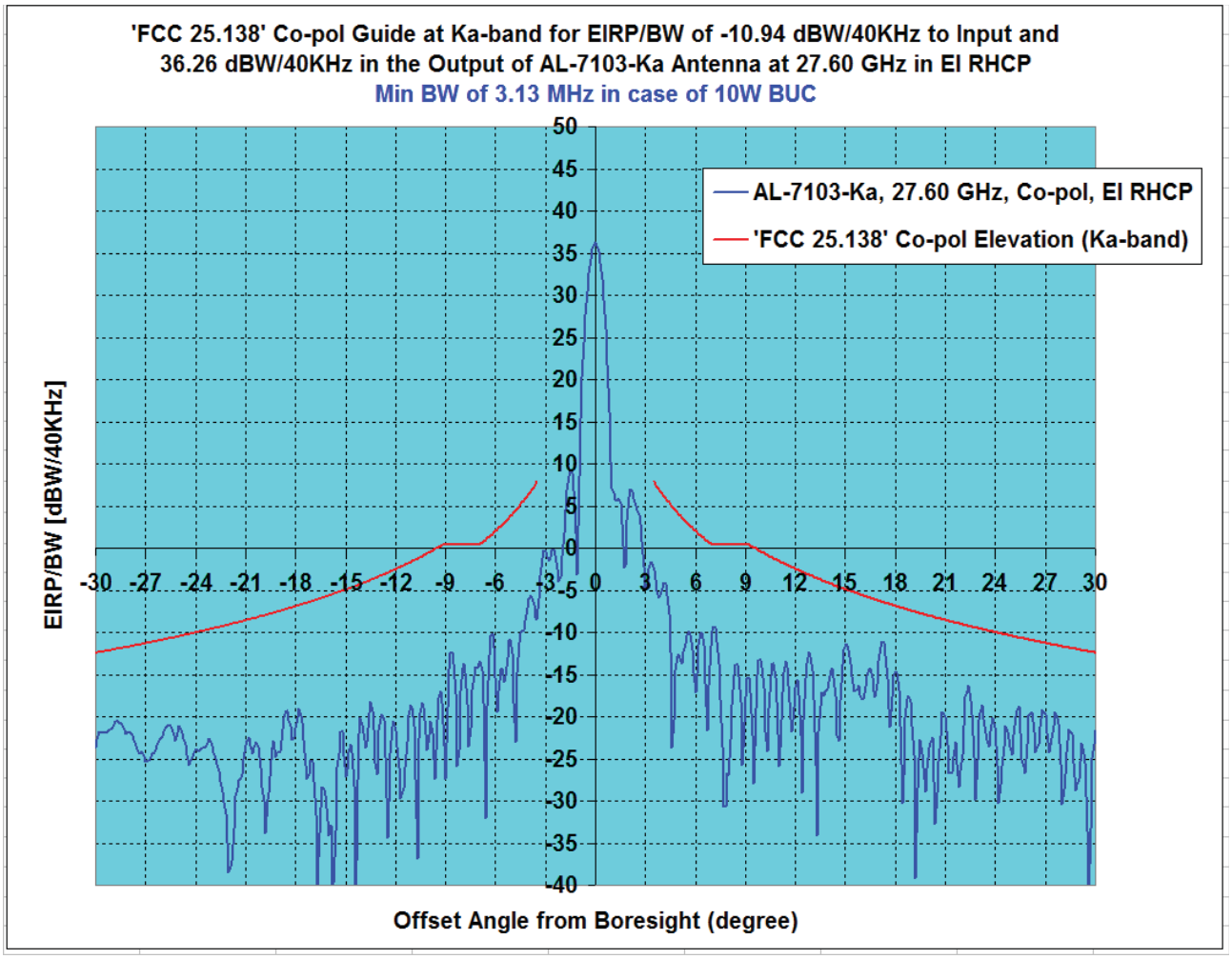
Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Freq., Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (2° to 10°)	± (10° to 180°)	%
AL-7103-Ka, 27.60 GHz, Co-pol, Az RHCP	'FCC 25.138' Co-pol Azimuth (Ka-band)	47.20	-10.94	-3.69	0.46	0.03

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

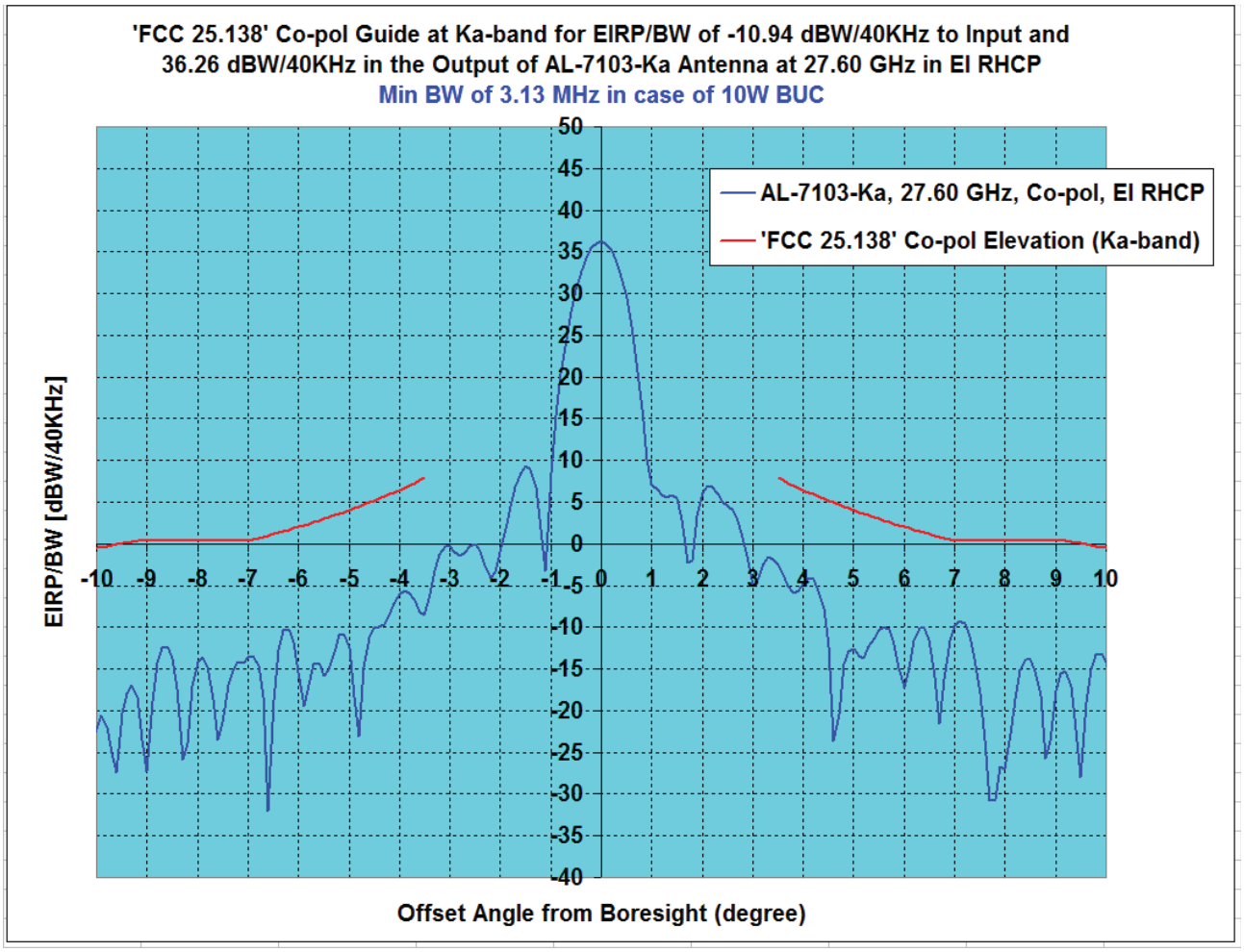


Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Freq., Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (2° to 10°)	± (10° to 180°)	%
AL-7103-Ka, 27.60 GHz, Co-pol, Az RHCP	'FCC 25.138' Co-pol Azimuth (Ka-band)	47.20	-10.94	-3.69	0.46	0.03

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

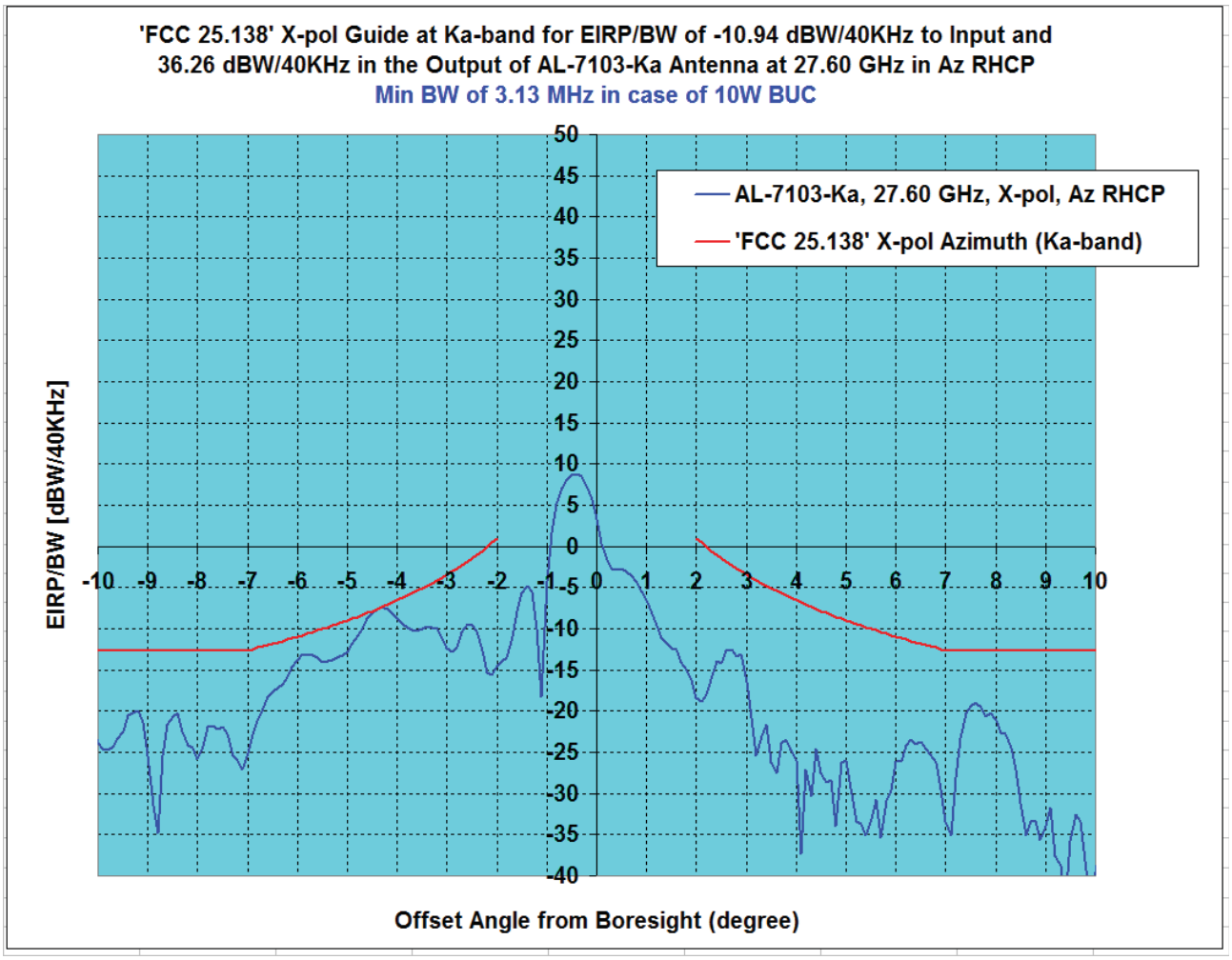


Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Frequency, Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (3.5° to 10°)	± (10° to 30°)	%
AL-7103-Ka, 27.60 GHz, Co-pol, El RHCP	'FCC 25.138' Co-pol Elevation (Ka-band)	47.20	-10.94	-9.65	-4.68	0.00



Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Frequency, Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (3.5° to 10°)	± (10° to 30°)	%
AL-7103-Ka, 27.60 GHz, Co-pol, El RHCP	'FCC 25.138' Co-pol Elevation (Ka-band)	47.20	-10.94	-9.65	-4.68	0.00

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



Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Frequency, Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (2° to 7°)	± (2° to 9.2°)	%
AL-7103-Ka, 27.60 GHz, X-pol, Az RHCP	'FCC 25.138' X-pol Azimuth (Ka-band)	47.20	-10.94	0.00	0.00	0.68

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth LHCP, -180º to +180º @ 1.0º increment

28.30 GHz @ -9,62 dBW / 40 kHz in Co-pol Az LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-179.0	-39.9	-10.5	-29.4
-178.0	-40.5	-10.5	-30.0
-177.0	-33.7	-10.5	-23.2
-176.0	-36.6	-10.5	-26.1
-175.0	-35.6	-10.5	-25.1
-174.0	-42.4	-10.5	-31.9
-173.0	-32.6	-10.5	-22.1
-172.0	-54.8	-10.5	-44.3
-171.0	-36.1	-10.5	-25.6
-170.0	-38.0	-10.5	-27.5
-169.0	-38.6	-10.5	-28.1
-168.0	-48.3	-10.5	-37.8
-167.0	-41.1	-10.5	-30.6
-166.0	-42.4	-10.5	-31.9
-165.0	-44.0	-10.5	-33.5
-164.0	-39.1	-10.5	-28.6
-163.0	-46.9	-10.5	-36.4
-162.0	-44.5	-10.5	-34.0
-161.0	-49.0	-10.5	-38.5
-160.0	-37.3	-10.5	-26.8
-159.0	-47.7	-10.5	-37.2
-158.0	-45.5	-10.5	-35.0
-157.0	-48.5	-10.5	-38.0
-156.0	-48.5	-10.5	-38.0
-155.0	-36.8	-10.5	-26.3
-154.0	-40.2	-10.5	-29.7
-153.0	-40.4	-10.5	-29.9
-152.0	-43.0	-10.5	-32.5
-151.0	-41.2	-10.5	-30.7
-150.0	-41.3	-10.5	-30.8
-149.0	-42.7	-10.5	-32.2
-148.0	-47.7	-10.5	-37.2
-147.0	-37.9	-10.5	-27.4
-146.0	-46.4	-10.5	-35.9
-145.0	-48.0	-10.5	-37.5
-144.0	-42.4	-10.5	-31.9
-143.0	-44.2	-10.5	-33.7
-142.0	-57.3	-10.5	-46.8
-141.0	-44.0	-10.5	-33.5
-140.0	-38.0	-10.5	-27.5
-139.0	-43.9	-10.5	-33.4
-138.0	-37.6	-10.5	-27.1
-137.0	-41.6	-10.5	-31.1
-136.0	-38.4	-10.5	-27.9
-135.0	-37.2	-10.5	-26.7
-134.0	-34.7	-10.5	-24.2
-133.0	-39.8	-10.5	-29.3
-132.0	-40.2	-10.5	-29.7
-131.0	-37.3	-10.5	-26.8
-130.0	-35.9	-10.5	-25.4
-129.0	-33.5	-10.5	-23.0
-128.0	-35.6	-10.5	-25.1
-127.0	-37.1	-10.5	-26.6
-126.0	-46.8	-10.5	-36.3
-125.0	-45.9	-10.5	-35.4
-124.0	-40.9	-10.5	-30.4
-123.0	-41.3	-10.5	-30.8
-122.0	-36.1	-10.5	-25.6
-121.0	-36.5	-10.5	-26.0
-120.0	-36.9	-10.5	-26.4

28.30 GHz @ -9,62 dBW / 40 kHz in Co-pol Az LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	38.6		
1.0	10.3		
2.0	-0.2	11.0	-11.2
3.0	0.4	6.6	-6.2
4.0	-2.8	3.4	-6.3
5.0	-8.2	1.0	-9.2
6.0	-5.4	-1.0	-4.4
7.0	-7.9	-2.6	-5.3
8.0	-16.1	-2.6	-13.5
9.0	-15.6	-2.6	-13.0
10.0	-14.3	-3.5	-10.8
11.0	-20.4	-4.5	-15.9
12.0	-19.4	-5.5	-13.9
13.0	-15.6	-6.3	-9.2
14.0	-18.7	-7.2	-11.5
15.0	-18.1	-7.9	-10.2
16.0	-23.0	-8.6	-14.4
17.0	-23.6	-9.3	-14.4
18.0	-27.2	-9.9	-17.3
19.0	-31.7	-10.5	-21.3
20.0	-25.2	-11.0	-14.1
21.0	-18.2	-11.6	-6.7
22.0	-23.8	-12.1	-11.8
23.0	-24.0	-12.5	-11.4
24.0	-27.3	-13.0	-14.3
25.0	-22.8	-13.4	-9.4
26.0	-19.4	-13.9	-5.5
27.0	-23.5	-14.3	-9.2
28.0	-28.7	-14.7	-14.0
29.0	-17.3	-15.1	-2.2
30.0	-19.4	-15.4	-4.0
31.0	-20.0	-15.8	-4.2
32.0	-18.1	-16.1	-2.0
33.0	-16.5	-16.5	0.0
34.0	-18.5	-16.8	-1.7
35.0	-24.3	-17.1	-7.2
36.0	-33.2	-17.4	-15.8
37.0	-34.6	-17.7	-16.9
38.0	-29.6	-18.0	-11.7
39.0	-29.5	-18.3	-11.2
40.0	-26.7	-18.6	-8.1
41.0	-46.0	-18.8	-27.2
42.0	-32.4	-19.1	-13.3
43.0	-31.4	-19.3	-12.0
44.0	-29.9	-19.6	-10.3
45.0	-21.8	-19.8	-1.9
46.0	-21.8	-20.1	-1.7
47.0	-20.0	-20.3	0.3
48.0	-20.3	-20.5	0.2
49.0	-26.3	-10.5	-15.8
50.0	-28.5	-10.5	-18.0
51.0	-26.5	-10.5	-16.0
52.0	-24.4	-10.5	-13.9
53.0	-27.6	-10.5	-17.1
54.0	-31.6	-10.5	-21.1
55.0	-31.8	-10.5	-21.3
56.0	-28.3	-10.5	-17.8
57.0	-25.6	-10.5	-15.1
58.0	-34.3	-10.5	-23.8
59.0	-28.8	-10.5	-18.3

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth LHCP, -180º to +180º @ 1.0º increment

-119.0	-43.4	-10.5	-32.9
-118.0	-36.7	-10.5	-26.2
-117.0	-35.3	-10.5	-24.8
-116.0	-34.9	-10.5	-24.4
-115.0	-34.5	-10.5	-24.0
-114.0	-32.9	-10.5	-22.4
-113.0	-39.6	-10.5	-29.1
-112.0	-34.5	-10.5	-24.0
-111.0	-35.0	-10.5	-24.5
-110.0	-35.2	-10.5	-24.7
-109.0	-31.3	-10.5	-20.8
-108.0	-32.2	-10.5	-21.7
-107.0	-31.1	-10.5	-20.6
-106.0	-26.3	-10.5	-15.8
-105.0	-24.4	-10.5	-13.9
-104.0	-24.2	-10.5	-13.7
-103.0	-22.0	-10.5	-11.5
-102.0	-22.0	-10.5	-11.5
-101.0	-21.6	-10.5	-11.1
-100.0	-23.7	-10.5	-13.2
-99.0	-26.5	-10.5	-16.0
-98.0	-28.3	-10.5	-17.8
-97.0	-23.2	-10.5	-12.7
-96.0	-23.7	-10.5	-13.2
-95.0	-24.2	-10.5	-13.7
-94.0	-22.7	-10.5	-12.2
-93.0	-21.8	-10.5	-11.3
-92.0	-22.5	-10.5	-12.0
-91.0	-22.3	-10.5	-11.8
-90.0	-29.3	-10.5	-18.8
-89.0	-23.0	-10.5	-12.5
-88.0	-24.7	-10.5	-14.2
-87.0	-25.2	-10.5	-14.7
-86.0	-22.4	-10.5	-11.9
-85.0	-37.6	-10.5	-27.1
-84.0	-23.5	-10.5	-13.0
-83.0	-27.7	-10.5	-17.2
-82.0	-29.5	-10.5	-19.0
-81.0	-26.4	-10.5	-15.9
-80.0	-44.5	-10.5	-34.0
-79.0	-25.2	-10.5	-14.7
-78.0	-25.1	-10.5	-14.6
-77.0	-41.2	-10.5	-30.7
-76.0	-25.2	-10.5	-14.7
-75.0	-26.1	-10.5	-15.6
-74.0	-27.7	-10.5	-17.2
-73.0	-27.9	-10.5	-17.4
-72.0	-30.1	-10.5	-19.6
-71.0	-27.4	-10.5	-16.9
-70.0	-27.6	-10.5	-17.1
-69.0	-35.0	-10.5	-24.5
-68.0	-29.4	-10.5	-18.9
-67.0	-26.5	-10.5	-16.0
-66.0	-33.9	-10.5	-23.4
-65.0	-31.7	-10.5	-21.2
-64.0	-24.6	-10.5	-14.1
-63.0	-23.1	-10.5	-12.6
-62.0	-32.2	-10.5	-21.7
-61.0	-28.6	-10.5	-18.1
-60.0	-30.4	-10.5	-19.9
-59.0	-25.8	-10.5	-15.3
-58.0	-24.6	-10.5	-14.1
-57.0	-24.7	-10.5	-14.2

60.0	-37.1	-10.5	-26.6
61.0	-24.2	-10.5	-13.7
62.0	-26.2	-10.5	-15.7
63.0	-24.9	-10.5	-14.4
64.0	-29.7	-10.5	-19.2
65.0	-30.6	-10.5	-20.1
66.0	-30.3	-10.5	-19.8
67.0	-27.6	-10.5	-17.1
68.0	-28.7	-10.5	-18.2
69.0	-31.2	-10.5	-20.7
70.0	-26.9	-10.5	-16.4
71.0	-30.2	-10.5	-19.7
72.0	-29.5	-10.5	-19.0
73.0	-31.6	-10.5	-21.1
74.0	-24.0	-10.5	-13.5
75.0	-27.3	-10.5	-16.8
76.0	-24.4	-10.5	-13.9
77.0	-30.6	-10.5	-20.1
78.0	-26.9	-10.5	-16.4
79.0	-36.0	-10.5	-25.5
80.0	-36.7	-10.5	-26.2
81.0	-43.4	-10.5	-32.9
82.0	-36.6	-10.5	-26.1
83.0	-33.0	-10.5	-22.5
84.0	-37.9	-10.5	-27.4
85.0	-26.9	-10.5	-16.4
86.0	-36.4	-10.5	-25.9
87.0	-30.1	-10.5	-19.6
88.0	-39.8	-10.5	-29.3
89.0	-30.0	-10.5	-19.5
90.0	-31.0	-10.5	-20.5
91.0	-37.5	-10.5	-27.0
92.0	-40.6	-10.5	-30.1
93.0	-34.9	-10.5	-24.4
94.0	-33.0	-10.5	-22.5
95.0	-30.5	-10.5	-20.0
96.0	-38.0	-10.5	-27.5
97.0	-28.8	-10.5	-18.3
98.0	-31.9	-10.5	-21.4
99.0	-27.8	-10.5	-17.3
100.0	-31.5	-10.5	-21.0
101.0	-34.8	-10.5	-24.3
102.0	-34.3	-10.5	-23.8
103.0	-29.4	-10.5	-18.9
104.0	-30.5	-10.5	-20.0
105.0	-35.8	-10.5	-25.3
106.0	-29.7	-10.5	-19.2
107.0	-41.0	-10.5	-30.5
108.0	-32.5	-10.5	-22.0
109.0	-28.7	-10.5	-18.2
110.0	-34.6	-10.5	-24.1
111.0	-30.0	-10.5	-19.5
112.0	-36.5	-10.5	-26.0
113.0	-44.6	-10.5	-34.1
114.0	-44.8	-10.5	-34.3
115.0	-30.7	-10.5	-20.2
116.0	-33.9	-10.5	-23.4
117.0	-39.9	-10.5	-29.4
118.0	-29.0	-10.5	-18.5
119.0	-28.6	-10.5	-18.1
120.0	-55.2	-10.5	-44.7
121.0	-37.3	-10.5	-26.8
122.0	-30.4	-10.5	-19.9

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth LHCP, -180º to +180º @ 1.0º increment

-56.0	-44.1	-10.5	-33.6
-55.0	-29.4	-10.5	-18.9
-54.0	-26.7	-10.5	-16.2
-53.0	-24.9	-10.5	-14.4
-52.0	-36.1	-10.5	-25.6
-51.0	-31.5	-10.5	-21.0
-50.0	-27.8	-10.5	-17.3
-49.0	-23.2	-10.5	-12.7
-48.0	-18.7	-20.5	1.8
-47.0	-20.8	-20.3	-0.5
-46.0	-20.9	-20.1	-0.8
-45.0	-22.0	-19.8	-2.2
-44.0	-22.2	-19.6	-2.6
-43.0	-24.1	-19.3	-4.8
-42.0	-20.9	-19.1	-1.8
-41.0	-28.2	-18.8	-9.4
-40.0	-22.4	-18.6	-3.9
-39.0	-20.8	-18.3	-2.5
-38.0	-20.0	-18.0	-2.0
-37.0	-18.9	-17.7	-1.2
-36.0	-21.1	-17.4	-3.7
-35.0	-22.5	-17.1	-5.4
-34.0	-26.0	-16.8	-9.3
-33.0	-24.9	-16.5	-8.5
-32.0	-22.4	-16.1	-6.3
-31.0	-17.8	-15.8	-2.0
-30.0	-19.8	-15.4	-4.4
-29.0	-20.8	-15.1	-5.8
-28.0	-17.0	-14.7	-2.3
-27.0	-15.5	-14.3	-1.2
-26.0	-29.3	-13.9	-15.4
-25.0	-14.2	-13.4	-0.8
-24.0	-14.3	-13.0	-1.3
-23.0	-20.5	-12.5	-8.0
-22.0	-16.3	-12.1	-4.2
-21.0	-17.5	-11.6	-5.9
-20.0	-13.0	-11.0	-1.9
-19.0	-13.0	-10.5	-2.6
-18.0	-12.1	-9.9	-2.2
-17.0	-14.3	-9.3	-5.1
-16.0	-16.1	-8.6	-7.5
-15.0	-10.7	-7.9	-2.8
-14.0	-9.3	-7.2	-2.2
-13.0	-17.8	-6.3	-11.4
-12.0	-10.3	-5.5	-4.8
-11.0	-14.7	-4.5	-10.1
-10.0	-21.5	-3.5	-18.0
-9.0	-11.5	-2.6	-8.8
-8.0	-17.8	-2.6	-15.2
-7.0	-7.6	-2.6	-5.0
-6.0	-25.6	-1.0	-24.6
-5.0	-6.1	1.0	-7.2
-4.0	-4.3	3.4	-7.7
-3.0	1.6	6.6	-4.9
-2.0	8.1	11.0	-2.9
-1.0	4.4		
0.0	38.6		

123.0	-35.8	-10.5	-25.3
124.0	-39.5	-10.5	-29.0
125.0	-42.7	-10.5	-32.2
126.0	-43.0	-10.5	-32.5
127.0	-36.9	-10.5	-26.4
128.0	-36.2	-10.5	-25.7
129.0	-32.1	-10.5	-21.6
130.0	-28.7	-10.5	-18.2
131.0	-29.3	-10.5	-18.8
132.0	-38.1	-10.5	-27.6
133.0	-29.7	-10.5	-19.2
134.0	-33.5	-10.5	-23.0
135.0	-33.7	-10.5	-23.2
136.0	-35.6	-10.5	-25.1
137.0	-31.2	-10.5	-20.7
138.0	-34.8	-10.5	-24.3
139.0	-39.2	-10.5	-28.7
140.0	-36.4	-10.5	-25.9
141.0	-33.5	-10.5	-23.0
142.0	-32.3	-10.5	-21.8
143.0	-33.4	-10.5	-22.9
144.0	-39.7	-10.5	-29.2
145.0	-33.7	-10.5	-23.2
146.0	-36.5	-10.5	-26.0
147.0	-34.0	-10.5	-23.5
148.0	-35.2	-10.5	-24.7
149.0	-36.8	-10.5	-26.3
150.0	-47.0	-10.5	-36.5
151.0	-28.3	-10.5	-17.8
152.0	-30.0	-10.5	-19.5
153.0	-41.2	-10.5	-30.7
154.0	-40.4	-10.5	-29.9
155.0	-32.7	-10.5	-22.2
156.0	-39.2	-10.5	-28.7
157.0	-37.8	-10.5	-27.3
158.0	-33.1	-10.5	-22.6
159.0	-33.2	-10.5	-22.7
160.0	-33.2	-10.5	-22.7
161.0	-38.4	-10.5	-27.9
162.0	-39.8	-10.5	-29.3
163.0	-37.5	-10.5	-27.0
164.0	-46.6	-10.5	-36.1
165.0	-35.3	-10.5	-24.8
166.0	-35.8	-10.5	-25.3
167.0	-35.5	-10.5	-25.0
168.0	-36.6	-10.5	-26.1
169.0	-32.1	-10.5	-21.6
170.0	-46.9	-10.5	-36.4
171.0	-32.0	-10.5	-21.5
172.0	-35.6	-10.5	-25.1
173.0	-41.6	-10.5	-31.1
174.0	-35.4	-10.5	-24.9
175.0	-35.1	-10.5	-24.6
176.0	-40.0	-10.5	-29.5
177.0	-35.9	-10.5	-25.4
178.0	-44.4	-10.5	-33.9
179.0	-35.8	-10.5	-25.3

Orbit Communication Systems Ltd.

AL AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth LHCP, -10º to +10º @ 0.1º increment

28.30 GHz @ -9,62 dBW / 40 kHz in Co-pol Az LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-10.0	-21.5	-3.5	-18.0
-9.9	-33.0	-3.4	-29.6
-9.8	-19.2	-3.3	-15.9
-9.7	-16.2	-3.2	-13.1
-9.6	-16.4	-3.1	-13.3
-9.5	-19.8	-2.9	-16.9
-9.4	-33.0	-2.8	-30.2
-9.3	-20.9	-2.7	-18.2
-9.2	-14.7	-2.6	-12.1
-9.1	-12.0	-2.6	-9.4
-9.0	-11.5	-2.6	-8.8
-8.9	-12.5	-2.6	-9.9
-8.8	-15.3	-2.6	-12.7
-8.7	-21.3	-2.6	-18.6
-8.6	-23.2	-2.6	-20.6
-8.5	-19.2	-2.6	-16.5
-8.4	-18.2	-2.6	-15.5
-8.3	-20.4	-2.6	-17.8
-8.2	-25.2	-2.6	-22.6
-8.1	-21.8	-2.6	-19.1
-8.0	-17.8	-2.6	-15.2
-7.9	-15.7	-2.6	-13.1
-7.8	-16.3	-2.6	-13.7
-7.7	-19.2	-2.6	-16.6
-7.6	-28.4	-2.6	-25.8
-7.5	-27.7	-2.6	-25.0
-7.4	-17.3	-2.6	-14.7
-7.3	-13.0	-2.6	-10.4
-7.2	-10.0	-2.6	-7.3
-7.1	-8.2	-2.6	-5.5
-7.0	-7.6	-2.6	-5.0
-6.9	-8.5	-2.5	-6.0
-6.8	-11.0	-2.3	-8.7
-6.7	-16.4	-2.2	-14.3
-6.6	-19.2	-2.0	-17.2
-6.5	-12.7	-1.8	-10.8
-6.4	-9.5	-1.7	-7.8
-6.3	-8.8	-1.5	-7.4
-6.2	-10.0	-1.3	-8.7
-6.1	-14.2	-1.1	-13.1
-6.0	-25.6	-1.0	-24.6
-5.9	-17.9	-0.8	-17.1
-5.8	-12.0	-0.6	-11.5
-5.7	-10.3	-0.4	-9.9
-5.6	-10.2	-0.2	-9.9
-5.5	-10.7	0.0	-10.7
-5.4	-10.7	0.2	-10.9
-5.3	-9.5	0.4	-9.9
-5.2	-8.1	0.6	-8.7
-5.1	-7.1	0.8	-7.9
-5.0	-6.1	1.0	-7.2
-4.9	-5.4	1.2	-6.7
-4.8	-5.4	1.5	-6.8
-4.7	-6.4	1.7	-8.1
-4.6	-9.2	1.9	-11.1
-4.5	-9.8	2.2	-12.0
-4.4	-6.4	2.4	-8.8
-4.3	-3.5	2.7	-6.1
-4.2	-2.2	2.9	-5.1
-4.1	-2.6	3.2	-5.8

28.30 GHz @ -9,62 dBW / 40 kHz in Co-pol Az LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	38.6		
0.1	38.2		
0.2	37.4		
0.3	36.1		
0.4	34.3		
0.5	31.8		
0.6	28.9		
0.7	25.4		
0.8	21.2		
0.9	16.2		
1.0	10.3		
1.1	6.6		
1.2	9.2		
1.3	11.2		
1.4	11.6		
1.5	10.5		
1.6	8.4		
1.7	5.7		
1.8	3.1		
1.9	1.2		
2.0	-0.2	11.0	-11.2
2.1	0.4	10.4	-10.1
2.2	2.9	9.9	-7.1
2.3	4.7	9.5	-4.8
2.4	5.2	9.0	-3.8
2.5	4.8	8.6	-3.8
2.6	3.4	8.1	-4.8
2.7	1.0	7.7	-6.7
2.8	-0.6	7.3	-7.9
2.9	-0.3	6.9	-7.2
3.0	0.4	6.6	-6.2
3.1	0.1	6.2	-6.1
3.2	-0.9	5.9	-6.8
3.3	-1.6	5.5	-7.2
3.4	-1.5	5.2	-6.7
3.5	-0.5	4.9	-5.4
3.6	0.6	4.6	-4.0
3.7	1.1	4.3	-3.2
3.8	0.9	4.0	-3.1
3.9	-0.4	3.7	-4.1
4.0	-2.8	3.4	-6.3
4.1	-6.6	3.2	-9.7
4.2	-9.8	2.9	-12.7
4.3	-9.3	2.7	-12.0
4.4	-8.8	2.4	-11.2
4.5	-11.6	2.2	-13.7
4.6	-17.7	1.9	-19.6
4.7	-13.5	1.7	-15.2
4.8	-8.8	1.5	-10.3
4.9	-7.3	1.2	-8.6
5.0	-8.2	1.0	-9.2
5.1	-11.9	0.8	-12.7
5.2	-18.5	0.6	-19.1
5.3	-12.2	0.4	-12.5
5.4	-8.5	0.2	-8.7
5.5	-8.5	0.0	-8.5
5.6	-12.4	-0.2	-12.2
5.7	-23.2	-0.4	-22.8
5.8	-12.5	-0.6	-11.9
5.9	-7.2	-0.8	-6.4

Orbit Communication Systems Ltd.

AL AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth LHCP, -10º to +10º @ 0.1º increment

-4.0	-4.3	3.4	-7.7
-3.9	-6.4	3.7	-10.1
-3.8	-5.3	4.0	-9.3
-3.7	-2.5	4.3	-6.8
-3.6	-0.3	4.6	-4.9
-3.5	1.0	4.9	-3.9
-3.4	2.0	5.2	-3.2
-3.3	2.6	5.5	-2.9
-3.2	2.8	5.9	-3.1
-3.1	2.4	6.2	-3.8
-3.0	1.6	6.6	-4.9
-2.9	2.0	6.9	-5.0
-2.8	3.9	7.3	-3.4
-2.7	5.9	7.7	-1.8
-2.6	7.0	8.1	-1.1
-2.5	7.2	8.6	-1.3
-2.4	6.8	9.0	-2.2
-2.3	6.7	9.5	-2.7
-2.2	7.4	9.9	-2.5
-2.1	8.2	10.4	-2.2
-2.0	8.1	11.0	-2.9
-1.9	6.4		
-1.8	2.8		
-1.7	2.7		
-1.6	7.3		
-1.5	10.2		
-1.4	11.3		
-1.3	11.3		
-1.2	10.4		
-1.1	8.1		
-1.0	4.4		
-0.9	11.7		
-0.8	19.6		
-0.7	25.1		
-0.6	29.3		
-0.5	32.4		
-0.4	34.8		
-0.3	36.6		
-0.2	37.8		
-0.1	38.4		
0.0	38.6		

6.0	-5.4	-1.0	-4.4
6.1	-5.7	-1.1	-4.6
6.2	-7.7	-1.3	-6.4
6.3	-12.0	-1.5	-10.6
6.4	-21.3	-1.7	-19.6
6.5	-24.0	-1.8	-22.2
6.6	-17.6	-2.0	-15.6
6.7	-14.2	-2.2	-12.0
6.8	-10.8	-2.3	-8.5
6.9	-8.8	-2.5	-6.3
7.0	-7.9	-2.6	-5.3
7.1	-8.7	-2.6	-6.0
7.2	-11.9	-2.6	-9.3
7.3	-18.7	-2.6	-16.1
7.4	-16.5	-2.6	-13.9
7.5	-10.5	-2.6	-7.9
7.6	-8.1	-2.6	-5.5
7.7	-7.6	-2.6	-5.0
7.8	-8.7	-2.6	-6.1
7.9	-11.3	-2.6	-8.7
8.0	-16.1	-2.6	-13.5
8.1	-17.2	-2.6	-14.6
8.2	-12.8	-2.6	-10.2
8.3	-10.2	-2.6	-7.6
8.4	-9.6	-2.6	-7.0
8.5	-10.5	-2.6	-7.9
8.6	-13.6	-2.6	-11.0
8.7	-20.4	-2.6	-17.8
8.8	-25.3	-2.6	-22.6
8.9	-17.9	-2.6	-15.3
9.0	-15.6	-2.6	-13.0
9.1	-15.7	-2.6	-13.1
9.2	-18.8	-2.6	-16.2
9.3	-22.0	-2.7	-19.3
9.4	-19.3	-2.8	-16.5
9.5	-16.7	-2.9	-13.7
9.6	-17.8	-3.1	-14.7
9.7	-23.6	-3.2	-20.5
9.8	-31.5	-3.3	-28.3
9.9	-18.3	-3.4	-14.9
10.0	-14.3	-3.5	-10.8

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Elevation LHCP, -30º to +30º @ 0.5º increment

28.30 GHz @ -9,62 dBW / 40 kHz in Co-pol El LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-30.0	-20.7	-12.4	-8.2
-29.5	-20.0	-12.2	-7.8
-29.0	-20.9	-12.1	-8.9
-28.5	-27.5	-11.9	-15.6
-28.0	-26.0	-11.7	-14.3
-27.5	-40.2	-11.5	-28.7
-27.0	-30.2	-11.3	-19.0
-26.5	-26.6	-11.1	-15.5
-26.0	-21.0	-10.9	-10.1
-25.5	-24.4	-10.7	-13.7
-25.0	-43.2	-10.4	-32.7
-24.5	-36.8	-10.2	-26.5
-24.0	-43.4	-10.0	-33.4
-23.5	-38.9	-9.8	-29.2
-23.0	-24.5	-9.5	-14.9
-22.5	-23.0	-9.3	-13.7
-22.0	-28.5	-9.1	-19.4
-21.5	-28.8	-8.8	-20.0
-21.0	-29.7	-8.6	-21.1
-20.5	-36.8	-8.3	-28.5
-20.0	-27.0	-8.0	-18.9
-19.5	-22.6	-7.8	-14.9
-19.0	-23.7	-7.5	-16.2
-18.5	-23.9	-7.2	-16.7
-18.0	-17.9	-6.9	-11.0
-17.5	-16.3	-6.6	-9.7
-17.0	-23.6	-6.3	-17.4
-16.5	-29.1	-5.9	-23.2
-16.0	-28.0	-5.6	-22.4
-15.5	-20.8	-5.3	-15.5
-15.0	-17.3	-4.9	-12.4
-14.5	-18.5	-4.5	-13.9
-14.0	-30.0	-4.2	-25.8
-13.5	-18.1	-3.8	-14.4
-13.0	-17.2	-3.3	-13.8
-12.5	-17.5	-2.9	-14.6
-12.0	-22.9	-2.5	-20.4
-11.5	-21.1	-2.0	-19.0
-11.0	-19.0	-1.5	-17.4
-10.5	-23.7	-1.0	-22.7
-10.0	-21.4	-0.5	-20.9
-9.5	-29.1	0.1	-29.2
-9.0	-13.6	0.4	-14.0
-8.5	-10.8	0.4	-11.1
-8.0	-20.0	0.4	-20.4
-7.5	-19.3	0.4	-19.7
-7.0	-10.7	0.4	-11.0
-6.5	-12.1	1.2	-13.3
-6.0	-8.2	2.0	-10.2
-5.5	-8.8	3.0	-11.8
-5.0	-8.8	4.0	-12.9
-4.5	-10.6	5.2	-15.8
-4.0	-4.2	6.4	-10.7
-3.5	-3.8	7.9	-11.7
-3.0	0.4		
-2.5	3.8		
-2.0	1.1		
-1.5	11.6		
-1.0	13.5		
-0.5	32.9		
0.0	38.6		

28.30 GHz @ -9,62 dBW / 40 kHz in Co-pol El LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	38.6		
0.5	30.4		
1.0	4.1		
1.5	8.9		
2.0	7.6		
2.5	7.8		
3.0	0.4		
3.5	-5.9	7.9	-13.8
4.0	-0.5	6.4	-6.9
4.5	-14.3	5.2	-19.5
5.0	-13.7	4.0	-17.7
5.5	-8.5	3.0	-11.5
6.0	-12.4	2.0	-14.5
6.5	-11.5	1.2	-12.7
7.0	-7.4	0.4	-7.7
7.5	-21.2	0.4	-21.6
8.0	-28.0	0.4	-28.3
8.5	-15.5	0.4	-15.8
9.0	-11.6	0.4	-12.0
9.5	-20.2	0.1	-20.3
10.0	-18.3	-0.5	-17.8
10.5	-13.4	-1.0	-12.3
11.0	-13.1	-1.5	-11.6
11.5	-8.7	-2.0	-6.7
12.0	-15.6	-2.5	-13.1
12.5	-11.0	-2.9	-8.1
13.0	-13.2	-3.3	-9.9
13.5	-14.9	-3.8	-11.2
14.0	-13.3	-4.2	-9.1
14.5	-7.8	-4.5	-3.3
15.0	-14.2	-4.9	-9.3
15.5	-11.4	-5.3	-6.2
16.0	-14.1	-5.6	-8.5
16.5	-12.4	-5.9	-6.5
17.0	-15.5	-6.3	-9.2
17.5	-11.1	-6.6	-4.5
18.0	-12.6	-6.9	-5.7
18.5	-13.1	-7.2	-5.9
19.0	-12.7	-7.5	-5.2
19.5	-14.0	-7.8	-6.3
20.0	-14.8	-8.0	-6.8
20.5	-11.8	-8.3	-3.5
21.0	-14.8	-8.6	-6.3
21.5	-20.6	-8.8	-11.8
22.0	-13.7	-9.1	-4.7
22.5	-14.8	-9.3	-5.5
23.0	-12.2	-9.5	-2.6
23.5	-17.1	-9.8	-7.3
24.0	-12.2	-10.0	-2.2
24.5	-14.6	-10.2	-4.4
25.0	-14.8	-10.4	-4.3
25.5	-13.9	-10.7	-3.2
26.0	-13.9	-10.9	-3.0
26.5	-15.6	-11.1	-4.5
27.0	-16.2	-11.3	-4.9
27.5	-15.1	-11.5	-3.6
28.0	-16.8	-11.7	-5.1
28.5	-17.8	-11.9	-5.9
29.0	-19.2	-12.1	-7.1
29.5	-19.2	-12.2	-6.9
30.0	-17.4	-12.4	-4.9

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Elevation LHCP, -10º to +10º @ 0.1º increment

28.30 GHz @ -9,62 dBW / 40 kHz in Co-pol El LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-10.0	-21.4	-0.5	-20.9
-9.9	-21.7	-0.4	-21.3
-9.8	-19.4	-0.3	-19.1
-9.7	-19.6	-0.2	-19.5
-9.6	-22.4	-0.1	-22.3
-9.5	-29.1	0.1	-29.2
-9.4	-19.7	0.2	-19.9
-9.3	-14.7	0.3	-15.0
-9.2	-12.7	0.4	-13.1
-9.1	-12.5	0.4	-12.8
-9.0	-13.6	0.4	-14.0
-8.9	-15.6	0.4	-16.0
-8.8	-15.6	0.4	-16.0
-8.7	-13.0	0.4	-13.4
-8.6	-11.2	0.4	-11.6
-8.5	-10.8	0.4	-11.1
-8.4	-11.2	0.4	-11.6
-8.3	-13.1	0.4	-13.4
-8.2	-17.1	0.4	-17.5
-8.1	-21.2	0.4	-21.6
-8.0	-20.0	0.4	-20.4
-7.9	-15.1	0.4	-15.4
-7.8	-13.0	0.4	-13.4
-7.7	-12.7	0.4	-13.1
-7.6	-14.6	0.4	-14.9
-7.5	-19.3	0.4	-19.7
-7.4	-39.1	0.4	-39.5
-7.3	-18.5	0.4	-18.9
-7.2	-13.5	0.4	-13.8
-7.1	-11.6	0.4	-11.9
-7.0	-10.7	0.4	-11.0
-6.9	-9.8	0.5	-10.3
-6.8	-9.3	0.7	-10.0
-6.7	-9.3	0.8	-10.2
-6.6	-10.6	1.0	-11.6
-6.5	-12.1	1.2	-13.3
-6.4	-10.9	1.3	-12.3
-6.3	-7.9	1.5	-9.4
-6.2	-6.3	1.7	-8.0
-6.1	-6.1	1.9	-8.0
-6.0	-8.2	2.0	-10.2
-5.9	-12.7	2.2	-14.9
-5.8	-16.2	2.4	-18.6
-5.7	-11.2	2.6	-13.8
-5.6	-8.6	2.8	-11.4
-5.5	-8.8	3.0	-11.8
-5.4	-12.1	3.2	-15.3
-5.3	-24.7	3.4	-28.1
-5.2	-15.8	3.6	-19.4
-5.1	-10.4	3.8	-14.2
-5.0	-8.8	4.0	-12.9
-4.9	-10.7	4.2	-14.9
-4.8	-16.9	4.5	-21.3
-4.7	-22.0	4.7	-26.7
-4.6	-13.2	4.9	-18.1
-4.5	-10.6	5.2	-15.8
-4.4	-11.7	5.4	-17.1
-4.3	-15.0	5.7	-20.7
-4.2	-11.1	5.9	-17.0
-4.1	-6.6	6.2	-12.8

28.30 GHz @ -9,62 dBW / 40 kHz in Co-pol El LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	38.6		
0.1	38.1		
0.2	37.2		
0.3	35.6		
0.4	33.4		
0.5	30.4		
0.6	26.6		
0.7	21.5		
0.8	14.5		
0.9	5.3		
1.0	4.1		
1.1	7.3		
1.2	9.4		
1.3	10.5		
1.4	10.4		
1.5	8.9		
1.6	6.8		
1.7	5.8		
1.8	6.8		
1.9	7.8		
2.0	7.6		
2.1	6.3		
2.2	5.4		
2.3	6.1		
2.4	7.4		
2.5	7.8		
2.6	7.3		
2.7	6.0		
2.8	3.7		
2.9	1.5		
3.0	0.4		
3.1	0.1		
3.2	-0.8		
3.3	-2.1		
3.4	-3.9		
3.5	-5.9	7.9	-13.8
3.6	-7.1	7.6	-14.7
3.7	-6.1	7.3	-13.4
3.8	-3.5	7.0	-10.5
3.9	-1.3	6.7	-8.0
4.0	-0.5	6.4	-6.9
4.1	-0.6	6.2	-6.8
4.2	-1.9	5.9	-7.9
4.3	-4.9	5.7	-10.6
4.4	-10.0	5.4	-15.4
4.5	-14.3	5.2	-19.5
4.6	-12.9	4.9	-17.8
4.7	-11.5	4.7	-16.2
4.8	-11.7	4.5	-16.2
4.9	-13.6	4.2	-17.9
5.0	-13.7	4.0	-17.7
5.1	-13.9	3.8	-17.7
5.2	-14.4	3.6	-18.0
5.3	-13.6	3.4	-17.0
5.4	-10.1	3.2	-13.3
5.5	-8.5	3.0	-11.5
5.6	-7.6	2.8	-10.4
5.7	-9.2	2.6	-11.8
5.8	-12.5	2.4	-14.9
5.9	-15.4	2.2	-17.6

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Elevation LHCP, -10º to +10º @ 0.1º increment

-4.0	-4.2	6.4	-10.7
-3.9	-3.4	6.7	-10.1
-3.8	-3.3	7.0	-10.3
-3.7	-3.5	7.3	-10.8
-3.6	-3.8	7.6	-11.4
-3.5	-3.8	7.9	-11.7
-3.4	-3.1		
-3.3	-1.6		
-3.2	0.0		
-3.1	0.9		
-3.0	0.4		
-2.9	-1.5		
-2.8	-3.8		
-2.7	-1.4		
-2.6	1.9		
-2.5	3.8		
-2.4	4.3		
-2.3	3.8		
-2.2	2.6		
-2.1	1.6		
-2.0	1.1		
-1.9	1.8		
-1.8	4.5		
-1.7	7.8		
-1.6	10.3		
-1.5	11.6		
-1.4	11.6		
-1.3	10.4		
-1.2	8.6		
-1.1	9.4		
-1.0	13.5		
-0.9	18.1		
-0.8	22.5		
-0.7	26.5		
-0.6	30.0		
-0.5	32.9		
-0.4	35.1		
-0.3	36.8		
-0.2	37.9		
-0.1	38.5		
0.0	38.6		

6.0	-12.4	2.0	-14.5
6.1	-8.9	1.9	-10.8
6.2	-7.6	1.7	-9.3
6.3	-8.2	1.5	-9.7
6.4	-10.2	1.3	-11.5
6.5	-11.5	1.2	-12.7
6.6	-10.3	1.0	-11.3
6.7	-8.6	0.8	-9.5
6.8	-7.2	0.7	-7.9
6.9	-6.9	0.5	-7.4
7.0	-7.4	0.4	-7.7
7.1	-8.9	0.4	-9.3
7.2	-11.4	0.4	-11.7
7.3	-14.9	0.4	-15.2
7.4	-20.5	0.4	-20.9
7.5	-21.2	0.4	-21.6
7.6	-18.1	0.4	-18.5
7.7	-16.9	0.4	-17.2
7.8	-17.7	0.4	-18.0
7.9	-23.8	0.4	-24.2
8.0	-28.0	0.4	-28.3
8.1	-17.5	0.4	-17.9
8.2	-13.6	0.4	-13.9
8.3	-12.3	0.4	-12.7
8.4	-13.0	0.4	-13.4
8.5	-15.5	0.4	-15.8
8.6	-18.2	0.4	-18.5
8.7	-15.5	0.4	-15.8
8.8	-12.3	0.4	-12.7
8.9	-10.8	0.4	-11.2
9.0	-11.6	0.4	-12.0
9.1	-13.3	0.4	-13.7
9.2	-17.2	0.4	-17.6
9.3	-22.4	0.3	-22.7
9.4	-22.6	0.2	-22.7
9.5	-20.2	0.1	-20.3
9.6	-19.3	-0.1	-19.2
9.7	-21.4	-0.2	-21.3
9.8	-24.8	-0.3	-24.5
9.9	-23.0	-0.4	-22.6
10.0	-18.3	-0.5	-17.8

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
X-pol Azimuth LHCP, -10º to +10º @ 0.1º increment

28.30 GHz @ -9,62 dBW / 40 kHz in X-pol Az LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-10.0	-25.9	-12.6	-13.3
-9.9	-25.0	-12.6	-12.3
-9.8	-25.7	-12.6	-13.0
-9.7	-31.2	-12.6	-18.5
-9.6	-39.2	-12.6	-26.6
-9.5	-26.9	-12.6	-14.2
-9.4	-20.4	-12.6	-7.7
-9.3	-18.1	-12.6	-5.5
-9.2	-16.6	-12.6	-4.0
-9.1	-16.8	-12.6	-4.2
-9.0	-16.9	-12.6	-4.2
-8.9	-16.2	-12.6	-3.6
-8.8	-16.0	-12.6	-3.4
-8.7	-15.4	-12.6	-2.8
-8.6	-16.0	-12.6	-3.4
-8.5	-17.9	-12.6	-5.3
-8.4	-22.0	-12.6	-9.3
-8.3	-24.6	-12.6	-11.9
-8.2	-24.2	-12.6	-11.5
-8.1	-20.7	-12.6	-8.1
-8.0	-18.4	-12.6	-5.7
-7.9	-17.7	-12.6	-5.0
-7.8	-17.1	-12.6	-4.5
-7.7	-18.1	-12.6	-5.4
-7.6	-18.9	-12.6	-6.3
-7.5	-20.6	-12.6	-8.0
-7.4	-23.5	-12.6	-10.9
-7.3	-29.0	-12.6	-16.4
-7.2	-32.1	-12.6	-19.5
-7.1	-37.9	-12.6	-25.2
-7.0	-32.2	-12.6	-19.6
-6.9	-22.4	-12.5	-9.9
-6.8	-17.8	-12.3	-5.5
-6.7	-14.5	-12.2	-2.3
-6.6	-13.3	-12.0	-1.3
-6.5	-12.8	-11.8	-1.0
-6.4	-14.0	-11.7	-2.4
-6.3	-16.8	-11.5	-5.3
-6.2	-21.7	-11.3	-10.4
-6.1	-25.2	-11.1	-14.0
-6.0	-22.3	-11.0	-11.3
-5.9	-19.3	-10.8	-8.5
-5.8	-18.2	-10.6	-7.6
-5.7	-16.3	-10.4	-5.9
-5.6	-14.7	-10.2	-4.5
-5.5	-13.5	-10.0	-3.5
-5.4	-13.1	-9.8	-3.3
-5.3	-14.2	-9.6	-4.6
-5.2	-16.9	-9.4	-7.5
-5.1	-21.9	-9.2	-12.7
-5.0	-26.6	-9.0	-17.6
-4.9	-27.4	-8.8	-18.6
-4.8	-20.4	-8.5	-11.9
-4.7	-14.4	-8.3	-6.1
-4.6	-10.8	-8.1	-2.7
-4.5	-8.5	-7.8	-0.7
-4.4	-7.6	-7.6	0.0
-4.3	-8.0	-7.3	-0.7
-4.2	-10.3	-7.1	-3.2
-4.1	-15.3	-6.8	-8.5

28.30 GHz @ -9,62 dBW / 40 kHz in X-pol Az LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	9.6		
0.1	10.5		
0.2	13.5		
0.3	15.6		
0.4	16.5		
0.5	16.3		
0.6	15.2		
0.7	13.2		
0.8	10.2		
0.9	6.5		
1.0	2.8		
1.1	0.1		
1.2	-2.8		
1.3	-7.8		
1.4	-21.1		
1.5	-9.8		
1.6	-6.5		
1.7	-6.8		
1.8	-9.9		
1.9	-17.9		
2.0	-13.8	1.0	-14.7
2.1	-10.5	0.4	-10.9
2.2	-10.9	-0.1	-10.8
2.3	-17.6	-0.5	-17.0
2.4	-19.3	-1.0	-18.3
2.5	-10.1	-1.4	-8.6
2.6	-7.0	-1.9	-5.1
2.7	-5.9	-2.3	-3.6
2.8	-7.5	-2.7	-4.8
2.9	-11.1	-3.1	-8.0
3.0	-19.7	-3.4	-16.2
3.1	-16.9	-3.8	-13.1
3.2	-11.7	-4.1	-7.5
3.3	-10.6	-4.5	-6.2
3.4	-11.6	-4.8	-6.8
3.5	-13.6	-5.1	-8.5
3.6	-17.6	-5.4	-12.2
3.7	-22.8	-5.7	-17.1
3.8	-25.6	-6.0	-19.6
3.9	-19.3	-6.3	-13.0
4.0	-16.6	-6.6	-10.0
4.1	-15.4	-6.8	-8.6
4.2	-15.9	-7.1	-8.8
4.3	-19.0	-7.3	-11.6
4.4	-24.2	-7.6	-16.6
4.5	-23.2	-7.8	-15.3
4.6	-20.2	-8.1	-12.1
4.7	-21.1	-8.3	-12.8
4.8	-32.2	-8.5	-23.7
4.9	-25.6	-8.8	-16.9
5.0	-16.9	-9.0	-7.9
5.1	-14.7	-9.2	-5.5
5.2	-13.8	-9.4	-4.4
5.3	-15.5	-9.6	-5.9
5.4	-21.4	-9.8	-11.6
5.5	-24.3	-10.0	-14.3
5.6	-17.4	-10.2	-7.2
5.7	-13.5	-10.4	-3.1
5.8	-13.0	-10.6	-2.4
5.9	-14.2	-10.8	-3.4

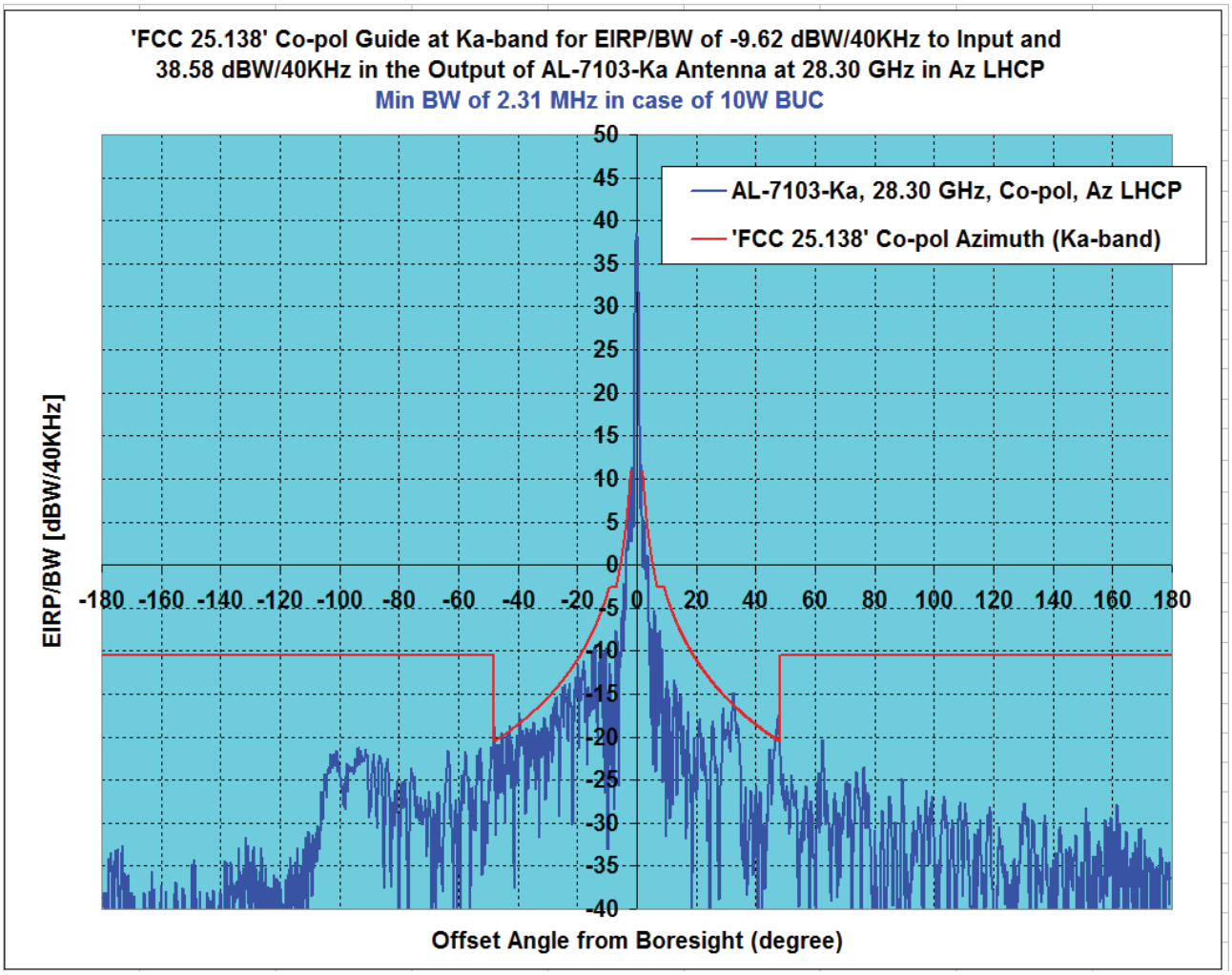
Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
X-pol Azimuth LHCP, -10º to +10º @ 0.1º increment

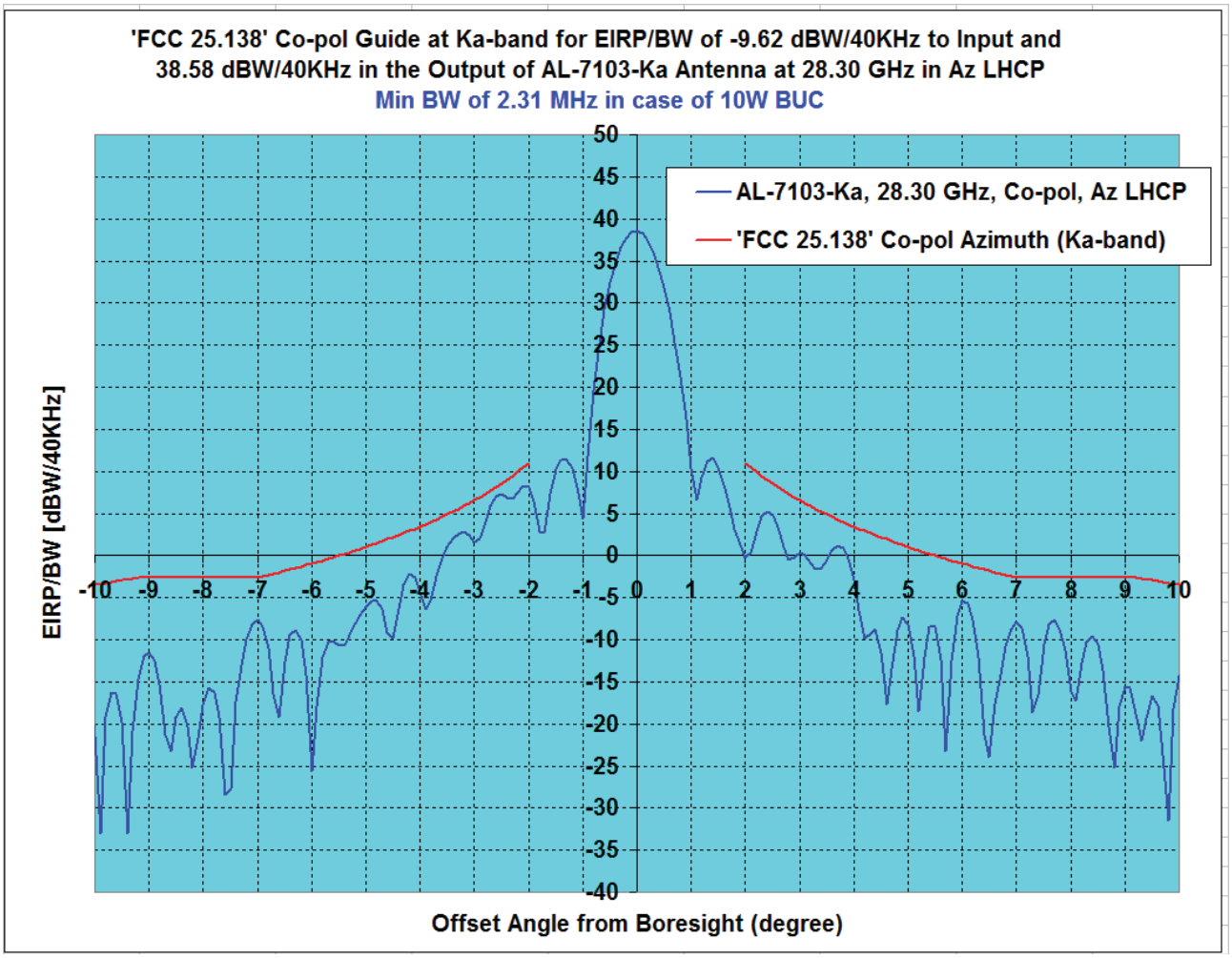
-4.0	-23.9	-6.6	-17.3
-3.9	-17.5	-6.3	-11.2
-3.8	-13.4	-6.0	-7.4
-3.7	-12.0	-5.7	-6.3
-3.6	-11.8	-5.4	-6.4
-3.5	-11.2	-5.1	-6.1
-3.4	-10.3	-4.8	-5.5
-3.3	-10.7	-4.5	-6.2
-3.2	-14.1	-4.1	-10.0
-3.1	-32.8	-3.8	-29.0
-3.0	-15.0	-3.4	-11.6
-2.9	-8.6	-3.1	-5.6
-2.8	-6.2	-2.7	-3.5
-2.7	-6.7	-2.3	-4.4
-2.6	-10.7	-1.9	-8.9
-2.5	-32.9	-1.4	-31.4
-2.4	-9.0	-1.0	-8.0
-2.3	-4.0	-0.5	-3.5
-2.2	-2.3	-0.1	-2.2
-2.1	-3.3	0.4	-3.7
-2.0	-8.4	1.0	-9.3
-1.9	-14.0		
-1.8	-3.3		
-1.7	0.9		
-1.6	2.4		
-1.5	1.8		
-1.4	-1.6		
-1.3	-11.7		
-1.2	-4.3		
-1.1	2.7		
-1.0	6.1		
-0.9	8.5		
-0.8	10.9		
-0.7	13.3		
-0.6	15.3		
-0.5	16.6		
-0.4	17.1		
-0.3	16.6		
-0.2	15.1		
-0.1	12.4		
0.0	9.6		

6.0	-17.5	-11.0	-6.5
6.1	-22.3	-11.1	-11.1
6.2	-25.1	-11.3	-13.8
6.3	-22.4	-11.5	-10.9
6.4	-20.3	-11.7	-8.7
6.5	-18.7	-11.8	-6.9
6.6	-16.6	-12.0	-4.6
6.7	-15.2	-12.2	-3.0
6.8	-14.6	-12.3	-2.3
6.9	-16.3	-12.5	-3.8
7.0	-19.7	-12.6	-7.0
7.1	-19.9	-12.6	-7.2
7.2	-17.4	-12.6	-4.8
7.3	-15.4	-12.6	-2.7
7.4	-15.3	-12.6	-2.7
7.5	-16.2	-12.6	-3.6
7.6	-18.6	-12.6	-6.0
7.7	-20.1	-12.6	-7.4
7.8	-19.3	-12.6	-6.7
7.9	-17.5	-12.6	-4.8
8.0	-16.8	-12.6	-4.2
8.1	-17.9	-12.6	-5.3
8.2	-19.3	-12.6	-6.7
8.3	-21.0	-12.6	-8.4
8.4	-24.3	-12.6	-11.7
8.5	-26.1	-12.6	-13.5
8.6	-24.3	-12.6	-11.7
8.7	-21.3	-12.6	-8.7
8.8	-18.8	-12.6	-6.2
8.9	-18.1	-12.6	-5.5
9.0	-18.9	-12.6	-6.2
9.1	-21.7	-12.6	-9.0
9.2	-27.4	-12.6	-14.8
9.3	-28.9	-12.6	-16.2
9.4	-26.9	-12.6	-14.3
9.5	-23.9	-12.6	-11.3
9.6	-23.0	-12.6	-10.3
9.7	-23.7	-12.6	-11.0
9.8	-23.8	-12.6	-11.2
9.9	-24.4	-12.6	-11.8
10.0	-28.1	-12.6	-15.5

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

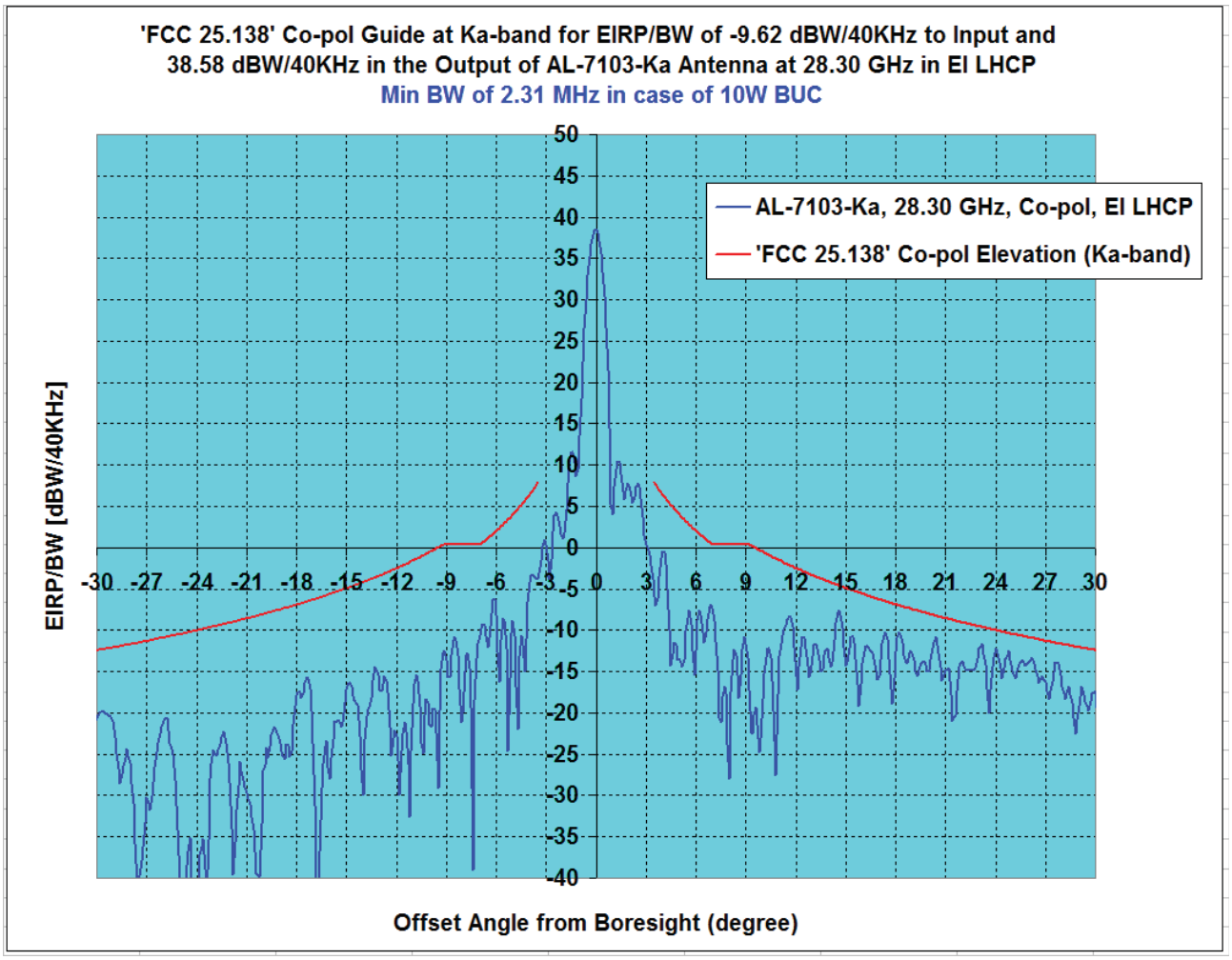


Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Freq., Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (2° to 10°)	± (10° to 180°)	%
AL-7103-Ka, 28.30 GHz, Co-pol, Az LHCP	'FCC 25.138' Co-pol Azimuth (Ka-band)	48.20	-9.62	-1.09	2.99	0.87

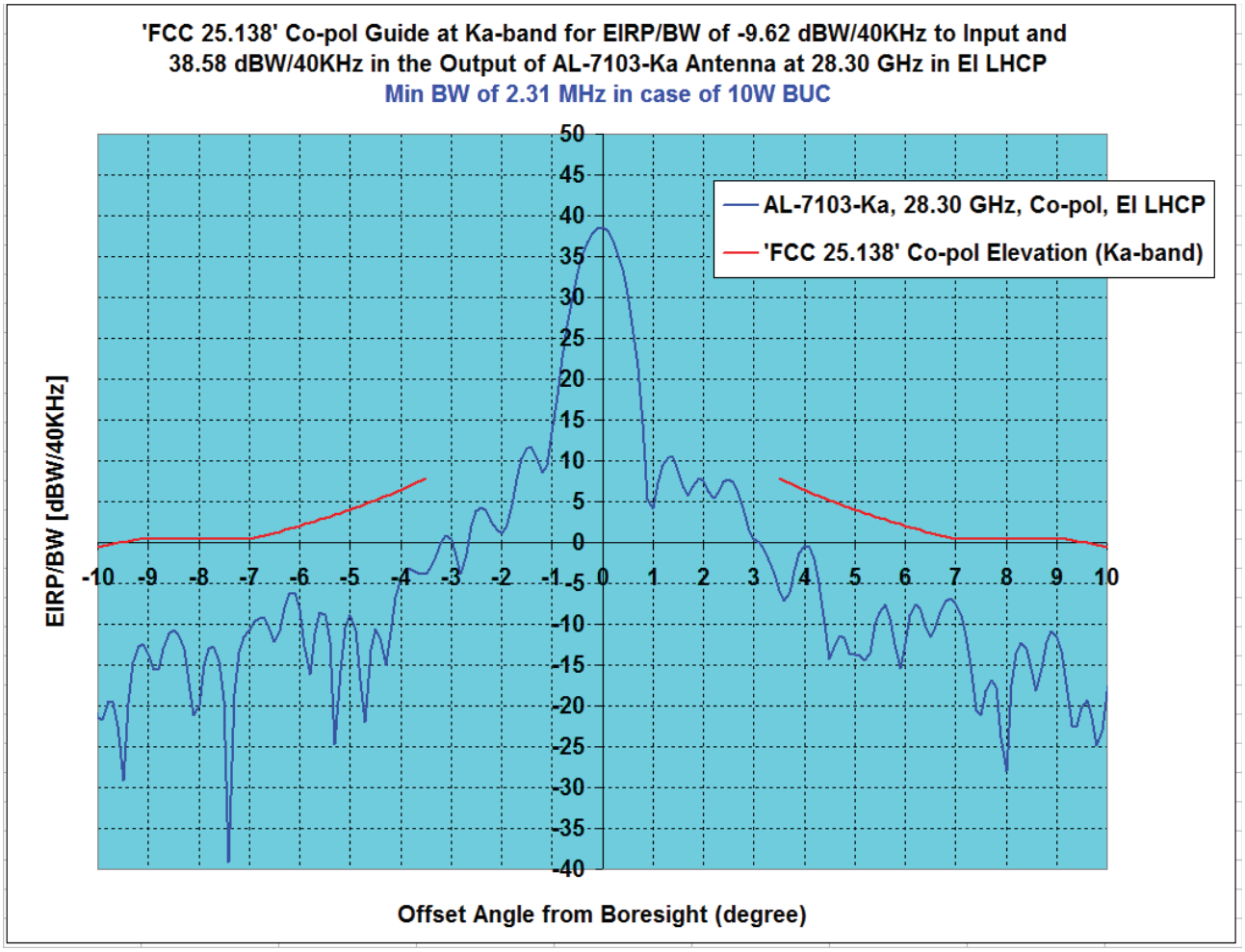


Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Freq., Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (2° to 10°)	± (10° to 180°)	%
AL-7103-Ka, 28.30 GHz, Co-pol, Az LHCP	'FCC 25.138' Co-pol Azimuth (Ka-band)	48.20	-9.62	-1.09	2.99	0.87

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



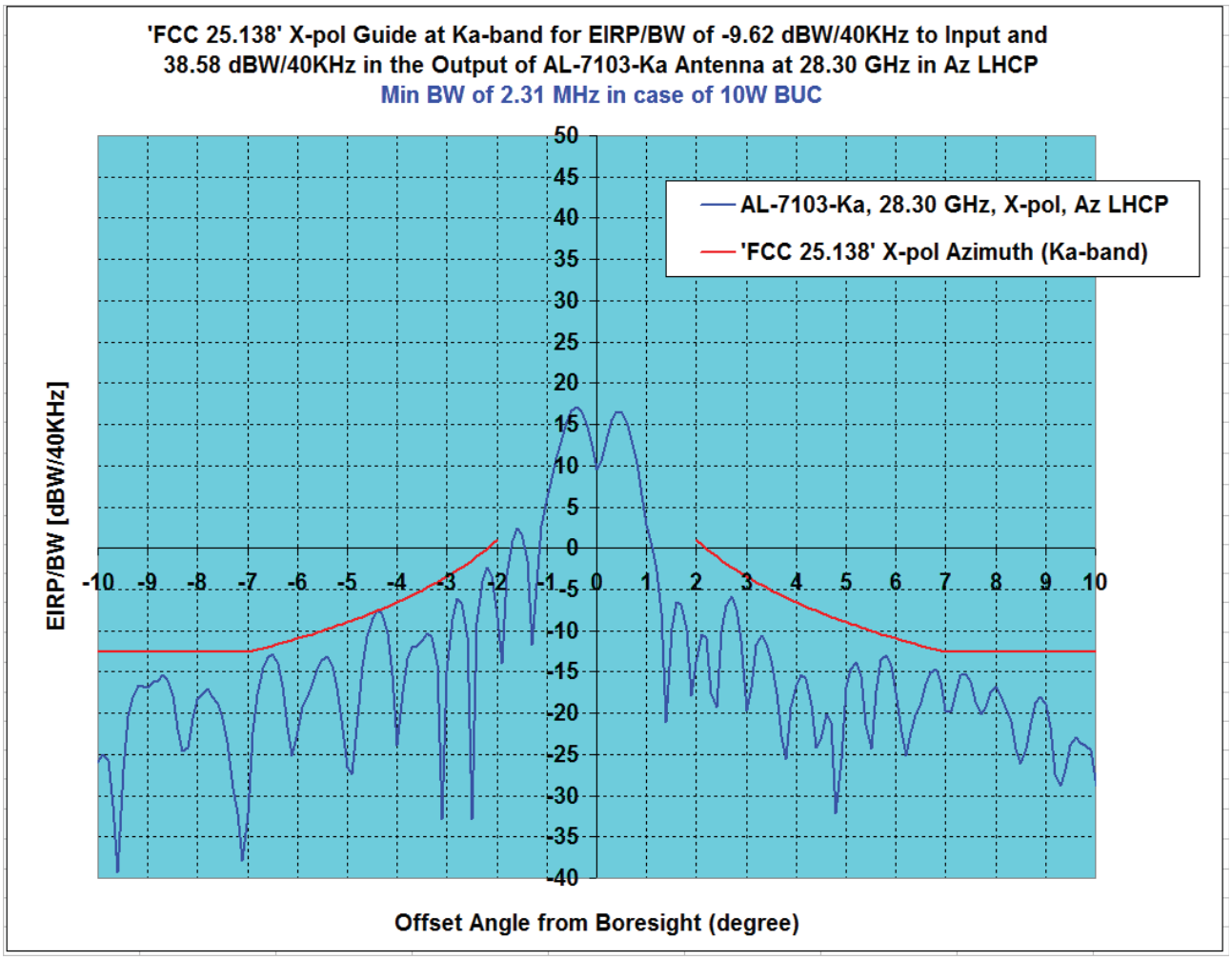
Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Frequency, Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (3.5° to 10°)	± (10° to 30°)	%
AL-7103-Ka, 28.30 GHz, Co-pol, El LHCP	'FCC 25.138' Co-pol Elevation (Ka-band)	48.20	-9.62	-6.75	-2.04	0.00



Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Frequency, Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (3.5° to 10°)	± (10° to 30°)	%
AL-7103-Ka, 28.30 GHz, Co-pol, El LHCP	'FCC 25.138' Co-pol Elevation (Ka-band)	48.20	-9.62	-6.75	-2.04	0.00

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd, X-pol, Azimuth LHCP



Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Frequency, Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (2° to 7°)	± (2° to 9.2°)	%
AL-7103-Ka, 28.30 GHz, X-pol, Az LHCP	'FCC 25.138' X-pol Azimuth (Ka-band)	48.20	-9.62	0.00	0.00	0.00

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth RHCP, -180º to +180º @ 1.0º increment

28.30 GHz @ -11.42 dBW / 40 kHz in Co-pol Az RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-179.0	-34.1	-10.5	-23.6
-178.0	-48.1	-10.5	-37.6
-177.0	-38.6	-10.5	-28.1
-176.0	-34.8	-10.5	-24.3
-175.0	-36.4	-10.5	-25.9
-174.0	-37.7	-10.5	-27.2
-173.0	-46.6	-10.5	-36.1
-172.0	-42.7	-10.5	-32.2
-171.0	-42.1	-10.5	-31.6
-170.0	-37.2	-10.5	-26.7
-169.0	-43.6	-10.5	-33.1
-168.0	-43.8	-10.5	-33.3
-167.0	-43.3	-10.5	-32.8
-166.0	-44.3	-10.5	-33.8
-165.0	-44.7	-10.5	-34.2
-164.0	-43.6	-10.5	-33.1
-163.0	-40.7	-10.5	-30.2
-162.0	-41.4	-10.5	-30.9
-161.0	-53.8	-10.5	-43.3
-160.0	-42.1	-10.5	-31.6
-159.0	-44.1	-10.5	-33.6
-158.0	-44.0	-10.5	-33.5
-157.0	-45.3	-10.5	-34.8
-156.0	-39.0	-10.5	-28.5
-155.0	-41.8	-10.5	-31.3
-154.0	-47.8	-10.5	-37.3
-153.0	-40.2	-10.5	-29.7
-152.0	-49.7	-10.5	-39.2
-151.0	-43.4	-10.5	-32.9
-150.0	-45.9	-10.5	-35.4
-149.0	-38.7	-10.5	-28.2
-148.0	-43.0	-10.5	-32.5
-147.0	-40.6	-10.5	-30.1
-146.0	-45.9	-10.5	-35.4
-145.0	-39.8	-10.5	-29.3
-144.0	-44.4	-10.5	-33.9
-143.0	-41.7	-10.5	-31.2
-142.0	-44.3	-10.5	-33.8
-141.0	-38.8	-10.5	-28.3
-140.0	-52.2	-10.5	-41.7
-139.0	-42.2	-10.5	-31.7
-138.0	-42.6	-10.5	-32.1
-137.0	-42.0	-10.5	-31.5
-136.0	-39.3	-10.5	-28.8
-135.0	-41.1	-10.5	-30.6
-134.0	-44.4	-10.5	-33.9
-133.0	-39.9	-10.5	-29.4
-132.0	-48.9	-10.5	-38.4
-131.0	-39.9	-10.5	-29.4
-130.0	-45.1	-10.5	-34.6
-129.0	-49.1	-10.5	-38.6
-128.0	-47.9	-10.5	-37.4
-127.0	-44.3	-10.5	-33.8
-126.0	-49.7	-10.5	-39.2
-125.0	-45.6	-10.5	-35.1
-124.0	-39.6	-10.5	-29.1
-123.0	-33.9	-10.5	-23.4
-122.0	-44.2	-10.5	-33.7
-121.0	-41.8	-10.5	-31.3
-120.0	-37.2	-10.5	-26.7

28.30 GHz @ -11.42 dBW / 40 kHz in Co-pol Az RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	36.9		
1.0	9.0		
2.0	-1.7	11.0	-12.7
3.0	-1.3	6.6	-7.8
4.0	-4.2	3.4	-7.6
5.0	-8.9	1.0	-10.0
6.0	-7.7	-1.0	-6.8
7.0	-9.5	-2.6	-6.9
8.0	-24.1	-2.6	-21.5
9.0	-16.5	-2.6	-13.9
10.0	-16.8	-3.5	-13.3
11.0	-21.0	-4.5	-16.5
12.0	-23.5	-5.5	-18.0
13.0	-18.3	-6.3	-12.0
14.0	-23.5	-7.2	-16.4
15.0	-21.8	-7.9	-13.9
16.0	-22.1	-8.6	-13.5
17.0	-23.6	-9.3	-14.4
18.0	-20.9	-9.9	-11.1
19.0	-27.7	-10.5	-17.3
20.0	-35.6	-11.0	-24.5
21.0	-20.8	-11.6	-9.3
22.0	-29.7	-12.1	-17.6
23.0	-24.9	-12.5	-12.3
24.0	-29.5	-13.0	-16.5
25.0	-37.7	-13.4	-24.2
26.0	-22.0	-13.9	-8.2
27.0	-28.0	-14.3	-13.7
28.0	-26.1	-14.7	-11.4
29.0	-18.7	-15.1	-3.7
30.0	-19.8	-15.4	-4.4
31.0	-22.4	-15.8	-6.6
32.0	-22.2	-16.1	-6.1
33.0	-19.6	-16.5	-3.2
34.0	-26.2	-16.8	-9.4
35.0	-28.5	-17.1	-11.4
36.0	-42.3	-17.4	-24.9
37.0	-25.7	-17.7	-8.0
38.0	-34.9	-18.0	-16.9
39.0	-28.1	-18.3	-9.9
40.0	-33.6	-18.6	-15.0
41.0	-35.7	-18.8	-16.9
42.0	-35.6	-19.1	-16.5
43.0	-24.4	-19.3	-5.1
44.0	-26.5	-19.6	-6.9
45.0	-26.7	-19.8	-6.9
46.0	-29.8	-20.1	-9.8
47.0	-25.8	-20.3	-5.5
48.0	-28.2	-20.5	-7.7
49.0	-32.5	-10.5	-22.0
50.0	-30.9	-10.5	-20.4
51.0	-25.2	-10.5	-14.7
52.0	-37.1	-10.5	-26.6
53.0	-41.4	-10.5	-30.9
54.0	-37.9	-10.5	-27.4
55.0	-39.5	-10.5	-29.0
56.0	-38.4	-10.5	-27.9
57.0	-38.7	-10.5	-28.2
58.0	-42.6	-10.5	-32.1
59.0	-31.1	-10.5	-20.6

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth RHCP, -180º to +180º @ 1.0º increment

-119.0	-37.9	-10.5	-27.4
-118.0	-41.1	-10.5	-30.6
-117.0	-37.8	-10.5	-27.3
-116.0	-45.1	-10.5	-34.6
-115.0	-39.6	-10.5	-29.1
-114.0	-41.6	-10.5	-31.1
-113.0	-38.4	-10.5	-27.9
-112.0	-42.7	-10.5	-32.2
-111.0	-38.1	-10.5	-27.6
-110.0	-38.2	-10.5	-27.7
-109.0	-45.8	-10.5	-35.3
-108.0	-35.5	-10.5	-25.0
-107.0	-36.8	-10.5	-26.3
-106.0	-38.0	-10.5	-27.5
-105.0	-41.3	-10.5	-30.8
-104.0	-38.2	-10.5	-27.7
-103.0	-32.4	-10.5	-21.9
-102.0	-28.5	-10.5	-18.0
-101.0	-26.7	-10.5	-16.2
-100.0	-28.3	-10.5	-17.8
-99.0	-27.2	-10.5	-16.7
-98.0	-26.6	-10.5	-16.1
-97.0	-28.3	-10.5	-17.8
-96.0	-28.2	-10.5	-17.7
-95.0	-24.6	-10.5	-14.1
-94.0	-24.1	-10.5	-13.6
-93.0	-28.0	-10.5	-17.5
-92.0	-25.9	-10.5	-15.4
-91.0	-26.6	-10.5	-16.1
-90.0	-40.2	-10.5	-29.7
-89.0	-26.4	-10.5	-15.9
-88.0	-28.9	-10.5	-18.4
-87.0	-31.1	-10.5	-20.6
-86.0	-27.5	-10.5	-17.0
-85.0	-47.8	-10.5	-37.3
-84.0	-32.4	-10.5	-21.9
-83.0	-54.6	-10.5	-44.1
-82.0	-25.5	-10.5	-15.0
-81.0	-25.8	-10.5	-15.3
-80.0	-33.8	-10.5	-23.3
-79.0	-43.7	-10.5	-33.2
-78.0	-34.9	-10.5	-24.4
-77.0	-34.1	-10.5	-23.6
-76.0	-24.5	-10.5	-14.0
-75.0	-25.7	-10.5	-15.2
-74.0	-29.8	-10.5	-19.3
-73.0	-35.6	-10.5	-25.1
-72.0	-31.4	-10.5	-20.9
-71.0	-32.9	-10.5	-22.4
-70.0	-25.6	-10.5	-15.1
-69.0	-32.5	-10.5	-22.0
-68.0	-28.0	-10.5	-17.5
-67.0	-27.1	-10.5	-16.6
-66.0	-29.6	-10.5	-19.1
-65.0	-31.0	-10.5	-20.5
-64.0	-28.1	-10.5	-17.6
-63.0	-26.3	-10.5	-15.8
-62.0	-33.3	-10.5	-22.8
-61.0	-26.6	-10.5	-16.1
-60.0	-25.7	-10.5	-15.2
-59.0	-26.9	-10.5	-16.4
-58.0	-34.0	-10.5	-23.5
-57.0	-23.7	-10.5	-13.2
60.0	-37.1	-10.5	-26.6
61.0	-28.8	-10.5	-18.3
62.0	-27.1	-10.5	-16.6
63.0	-25.1	-10.5	-14.6
64.0	-30.0	-10.5	-19.5
65.0	-32.1	-10.5	-21.6
66.0	-38.9	-10.5	-28.4
67.0	-25.5	-10.5	-15.0
68.0	-33.3	-10.5	-22.8
69.0	-33.8	-10.5	-23.3
70.0	-30.5	-10.5	-20.0
71.0	-24.5	-10.5	-14.0
72.0	-27.1	-10.5	-16.6
73.0	-29.5	-10.5	-19.0
74.0	-31.8	-10.5	-21.3
75.0	-24.9	-10.5	-14.4
76.0	-35.8	-10.5	-25.3
77.0	-33.4	-10.5	-22.9
78.0	-25.3	-10.5	-14.8
79.0	-28.3	-10.5	-17.8
80.0	-33.0	-10.5	-22.5
81.0	-34.1	-10.5	-23.6
82.0	-35.1	-10.5	-24.6
83.0	-31.5	-10.5	-21.0
84.0	-34.4	-10.5	-23.9
85.0	-37.4	-10.5	-26.9
86.0	-31.3	-10.5	-20.8
87.0	-37.0	-10.5	-26.5
88.0	-39.3	-10.5	-28.8
89.0	-34.2	-10.5	-23.7
90.0	-33.2	-10.5	-22.7
91.0	-36.5	-10.5	-26.0
92.0	-43.6	-10.5	-33.1
93.0	-47.4	-10.5	-36.9
94.0	-37.1	-10.5	-26.6
95.0	-41.7	-10.5	-31.2
96.0	-37.9	-10.5	-27.4
97.0	-33.1	-10.5	-22.6
98.0	-38.7	-10.5	-28.2
99.0	-44.4	-10.5	-33.9
100.0	-36.3	-10.5	-25.8
101.0	-43.0	-10.5	-32.5
102.0	-37.5	-10.5	-27.0
103.0	-32.9	-10.5	-22.4
104.0	-39.9	-10.5	-29.4
105.0	-37.4	-10.5	-26.9
106.0	-34.7	-10.5	-24.2
107.0	-33.6	-10.5	-23.1
108.0	-67.8	-10.5	-57.3
109.0	-35.8	-10.5	-25.3
110.0	-38.1	-10.5	-27.6
111.0	-36.5	-10.5	-26.0
112.0	-39.2	-10.5	-28.7
113.0	-54.8	-10.5	-44.3
114.0	-34.5	-10.5	-24.0
115.0	-41.7	-10.5	-31.2
116.0	-44.1	-10.5	-33.6
117.0	-43.7	-10.5	-33.2
118.0	-42.5	-10.5	-32.0
119.0	-37.1	-10.5	-26.6
120.0	-34.1	-10.5	-23.6
121.0	-38.4	-10.5	-27.9
122.0	-36.1	-10.5	-25.6

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth RHCP, -180º to +180º @ 1.0º increment

-56.0	-22.5	-10.5	-12.0
-55.0	-28.1	-10.5	-17.6
-54.0	-34.6	-10.5	-24.1
-53.0	-23.6	-10.5	-13.1
-52.0	-26.7	-10.5	-16.2
-51.0	-31.6	-10.5	-21.1
-50.0	-25.8	-10.5	-15.3
-49.0	-25.0	-10.5	-14.5
-48.0	-20.7	-20.5	-0.1
-47.0	-21.3	-20.3	-1.0
-46.0	-25.5	-20.1	-5.4
-45.0	-27.3	-19.8	-7.4
-44.0	-22.4	-19.6	-2.8
-43.0	-29.6	-19.3	-10.3
-42.0	-25.0	-19.1	-5.9
-41.0	-24.6	-18.8	-5.8
-40.0	-22.7	-18.6	-4.2
-39.0	-20.8	-18.3	-2.5
-38.0	-21.6	-18.0	-3.6
-37.0	-21.6	-17.7	-3.9
-36.0	-21.3	-17.4	-3.9
-35.0	-22.8	-17.1	-5.7
-34.0	-24.0	-16.8	-7.2
-33.0	-25.4	-16.5	-9.0
-32.0	-22.5	-16.1	-6.4
-31.0	-19.7	-15.8	-4.0
-30.0	-19.0	-15.4	-3.6
-29.0	-21.0	-15.1	-6.0
-28.0	-16.7	-14.7	-2.0
-27.0	-16.8	-14.3	-2.5
-26.0	-20.3	-13.9	-6.4
-25.0	-15.7	-13.4	-2.3
-24.0	-15.9	-13.0	-2.9
-23.0	-14.8	-12.5	-2.2
-22.0	-16.5	-12.1	-4.4
-21.0	-20.9	-11.6	-9.3
-20.0	-20.1	-11.0	-9.0
-19.0	-15.3	-10.5	-4.9
-18.0	-19.0	-9.9	-9.1
-17.0	-15.3	-9.3	-6.0
-16.0	-22.7	-8.6	-14.1
-15.0	-16.4	-7.9	-8.5
-14.0	-17.5	-7.2	-10.3
-13.0	-20.9	-6.3	-14.6
-12.0	-12.3	-5.5	-6.8
-11.0	-18.8	-4.5	-14.3
-10.0	-27.2	-3.5	-23.7
-9.0	-11.8	-2.6	-9.2
-8.0	-27.5	-2.6	-24.9
-7.0	-9.7	-2.6	-7.1
-6.0	-15.9	-1.0	-14.9
-5.0	-8.9	1.0	-9.9
-4.0	-7.8	3.4	-11.2
-3.0	0.3	6.6	-6.3
-2.0	6.3	11.0	-4.7
-1.0	1.9		
0.0	36.9		

123.0	-46.7	-10.5	-36.2
124.0	-39.7	-10.5	-29.2
125.0	-36.8	-10.5	-26.3
126.0	-37.4	-10.5	-26.9
127.0	-48.4	-10.5	-37.9
128.0	-47.3	-10.5	-36.8
129.0	-40.2	-10.5	-29.7
130.0	-51.8	-10.5	-41.3
131.0	-37.0	-10.5	-26.5
132.0	-45.0	-10.5	-34.5
133.0	-33.8	-10.5	-23.3
134.0	-30.5	-10.5	-20.0
135.0	-40.9	-10.5	-30.4
136.0	-38.7	-10.5	-28.2
137.0	-42.8	-10.5	-32.3
138.0	-37.8	-10.5	-27.3
139.0	-32.1	-10.5	-21.6
140.0	-31.9	-10.5	-21.4
141.0	-30.2	-10.5	-19.7
142.0	-39.4	-10.5	-28.9
143.0	-35.7	-10.5	-25.2
144.0	-36.7	-10.5	-26.2
145.0	-36.8	-10.5	-26.3
146.0	-29.7	-10.5	-19.2
147.0	-31.8	-10.5	-21.3
148.0	-42.9	-10.5	-32.4
149.0	-34.4	-10.5	-23.9
150.0	-40.3	-10.5	-29.8
151.0	-35.1	-10.5	-24.6
152.0	-33.9	-10.5	-23.4
153.0	-30.8	-10.5	-20.3
154.0	-33.5	-10.5	-23.0
155.0	-42.7	-10.5	-32.2
156.0	-31.0	-10.5	-20.5
157.0	-30.8	-10.5	-20.3
158.0	-43.1	-10.5	-32.6
159.0	-29.6	-10.5	-19.1
160.0	-30.3	-10.5	-19.8
161.0	-29.9	-10.5	-19.4
162.0	-34.1	-10.5	-23.6
163.0	-44.6	-10.5	-34.1
164.0	-39.7	-10.5	-29.2
165.0	-37.8	-10.5	-27.3
166.0	-31.3	-10.5	-20.8
167.0	-34.2	-10.5	-23.7
168.0	-30.2	-10.5	-19.7
169.0	-43.6	-10.5	-33.1
170.0	-28.3	-10.5	-17.8
171.0	-32.8	-10.5	-22.3
172.0	-34.0	-10.5	-23.5
173.0	-41.0	-10.5	-30.5
174.0	-34.2	-10.5	-23.7
175.0	-38.6	-10.5	-28.1
176.0	-36.1	-10.5	-25.6
177.0	-39.0	-10.5	-28.5
178.0	-36.6	-10.5	-26.1
179.0	-47.0	-10.5	-36.5

Orbit Communication Systems Ltd.

AL AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth RHCP, -10º to +10º @ 0.1º increment

28.30 GHz @ -11.42 dBW / 40 kHz in Co-pol Az RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-10.0	-27.2	-3.5	-23.7
-9.9	-22.7	-3.4	-19.3
-9.8	-19.1	-3.3	-15.8
-9.7	-17.4	-3.2	-14.2
-9.6	-18.3	-3.1	-15.2
-9.5	-20.1	-2.9	-17.2
-9.4	-18.0	-2.8	-15.1
-9.3	-14.8	-2.7	-12.1
-9.2	-12.8	-2.6	-10.2
-9.1	-11.6	-2.6	-9.0
-9.0	-11.8	-2.6	-9.2
-8.9	-13.5	-2.6	-10.9
-8.8	-17.7	-2.6	-15.1
-8.7	-22.6	-2.6	-20.0
-8.6	-18.6	-2.6	-16.0
-8.5	-14.5	-2.6	-11.9
-8.4	-13.4	-2.6	-10.8
-8.3	-13.9	-2.6	-11.3
-8.2	-16.5	-2.6	-13.9
-8.1	-22.5	-2.6	-19.9
-8.0	-27.5	-2.6	-24.9
-7.9	-22.0	-2.6	-19.4
-7.8	-19.5	-2.6	-16.9
-7.7	-18.5	-2.6	-15.9
-7.6	-19.7	-2.6	-17.1
-7.5	-20.6	-2.6	-17.9
-7.4	-22.4	-2.6	-19.8
-7.3	-18.7	-2.6	-16.1
-7.2	-14.2	-2.6	-11.5
-7.1	-11.2	-2.6	-8.6
-7.0	-9.7	-2.6	-7.1
-6.9	-9.8	-2.5	-7.3
-6.8	-11.8	-2.3	-9.5
-6.7	-15.9	-2.2	-13.7
-6.6	-16.9	-2.0	-14.9
-6.5	-12.4	-1.8	-10.6
-6.4	-9.5	-1.7	-7.9
-6.3	-8.5	-1.5	-7.0
-6.2	-9.1	-1.3	-7.8
-6.1	-11.3	-1.1	-10.2
-6.0	-15.9	-1.0	-14.9
-5.9	-20.4	-0.8	-19.6
-5.8	-16.8	-0.6	-16.3
-5.7	-15.2	-0.4	-14.8
-5.6	-16.5	-0.2	-16.3
-5.5	-21.3	0.0	-21.3
-5.4	-18.5	0.2	-18.7
-5.3	-13.5	0.4	-13.9
-5.2	-10.9	0.6	-11.5
-5.1	-9.8	0.8	-10.6
-5.0	-8.9	1.0	-9.9
-4.9	-8.1	1.2	-9.4
-4.8	-7.6	1.5	-9.1
-4.7	-8.2	1.7	-9.9
-4.6	-10.4	1.9	-12.3
-4.5	-12.6	2.2	-14.7
-4.4	-9.5	2.4	-12.0
-4.3	-6.6	2.7	-9.2
-4.2	-5.2	2.9	-8.1
-4.1	-5.7	3.2	-8.9

28.30 GHz @ -11.42 dBW / 40 kHz in Co-pol Az RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	36.9		
0.1	36.6		
0.2	35.7		
0.3	34.4		
0.4	32.4		
0.5	29.9		
0.6	26.7		
0.7	23.0		
0.8	18.6		
0.9	13.9		
1.0	9.0		
1.1	5.4		
1.2	6.5		
1.3	8.3		
1.4	8.7		
1.5	7.7		
1.6	5.4		
1.7	2.0		
1.8	-0.8		
1.9	-2.1		
2.0	-1.7	11.0	-12.7
2.1	-0.2	10.4	-10.7
2.2	1.6	9.9	-8.3
2.3	3.3	9.5	-6.2
2.4	3.7	9.0	-5.3
2.5	2.5	8.6	-6.0
2.6	0.4	8.1	-7.8
2.7	-2.3	7.7	-10.0
2.8	-3.0	7.3	-10.3
2.9	-1.9	6.9	-8.8
3.0	-1.3	6.6	-7.8
3.1	-1.3	6.2	-7.6
3.2	-2.4	5.9	-8.3
3.3	-3.3	5.5	-8.8
3.4	-3.4	5.2	-8.6
3.5	-2.7	4.9	-7.6
3.6	-2.0	4.6	-6.6
3.7	-1.5	4.3	-5.8
3.8	-1.6	4.0	-5.6
3.9	-2.3	3.7	-6.0
4.0	-4.2	3.4	-7.6
4.1	-7.4	3.2	-10.6
4.2	-10.9	2.9	-13.8
4.3	-12.7	2.7	-15.4
4.4	-12.4	2.4	-14.8
4.5	-14.0	2.2	-16.1
4.6	-17.5	1.9	-19.4
4.7	-14.5	1.7	-16.2
4.8	-10.2	1.5	-11.7
4.9	-8.3	1.2	-9.6
5.0	-8.9	1.0	-10.0
5.1	-12.9	0.8	-13.7
5.2	-20.1	0.6	-20.7
5.3	-14.4	0.4	-14.8
5.4	-10.6	0.2	-10.8
5.5	-9.6	0.0	-9.6
5.6	-11.5	-0.2	-11.3
5.7	-16.8	-0.4	-16.4
5.8	-15.1	-0.6	-14.5
5.9	-10.1	-0.8	-9.4

Orbit Communication Systems Ltd.

AL AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth RHCP, -10º to +10º @ 0.1º increment

-4.0	-7.8	3.4	-11.2
-3.9	-10.2	3.7	-14.0
-3.8	-7.5	4.0	-11.5
-3.7	-4.2	4.3	-8.5
-3.6	-2.0	4.6	-6.6
-3.5	-1.0	4.9	-5.9
-3.4	-0.4	5.2	-5.6
-3.3	0.0	5.5	-5.5
-3.2	0.5	5.9	-5.4
-3.1	0.5	6.2	-5.7
-3.0	0.3	6.6	-6.3
-2.9	0.7	6.9	-6.2
-2.8	2.4	7.3	-5.0
-2.7	4.0	7.7	-3.7
-2.6	5.1	8.1	-3.0
-2.5	5.1	8.6	-3.4
-2.4	4.3	9.0	-4.7
-2.3	3.8	9.5	-5.7
-2.2	4.6	9.9	-5.3
-2.1	5.9	10.4	-4.5
-2.0	6.3	11.0	-4.7
-1.9	5.1		
-1.8	2.3		
-1.7	1.6		
-1.6	5.1		
-1.5	7.6		
-1.4	8.1		
-1.3	6.8		
-1.2	4.1		
-1.1	1.5		
-1.0	1.9		
-0.9	9.4		
-0.8	17.0		
-0.7	22.6		
-0.6	27.0		
-0.5	30.4		
-0.4	32.9		
-0.3	34.7		
-0.2	36.0		
-0.1	36.7		
0.0	36.9		

6.0	-7.7	-1.0	-6.8
6.1	-7.9	-1.1	-6.8
6.2	-9.7	-1.3	-8.4
6.3	-13.1	-1.5	-11.6
6.4	-17.8	-1.7	-16.2
6.5	-18.1	-1.8	-16.3
6.6	-15.3	-2.0	-13.3
6.7	-13.1	-2.2	-11.0
6.8	-11.2	-2.3	-8.8
6.9	-9.8	-2.5	-7.4
7.0	-9.5	-2.6	-6.9
7.1	-11.3	-2.6	-8.7
7.2	-15.8	-2.6	-13.2
7.3	-21.0	-2.6	-18.4
7.4	-15.9	-2.6	-13.2
7.5	-12.3	-2.6	-9.7
7.6	-11.3	-2.6	-8.7
7.7	-11.8	-2.6	-9.2
7.8	-14.3	-2.6	-11.6
7.9	-17.9	-2.6	-15.2
8.0	-24.1	-2.6	-21.5
8.1	-27.4	-2.6	-24.8
8.2	-20.1	-2.6	-17.5
8.3	-15.8	-2.6	-13.2
8.4	-13.0	-2.6	-10.4
8.5	-12.2	-2.6	-9.5
8.6	-12.8	-2.6	-10.1
8.7	-15.6	-2.6	-12.9
8.8	-19.8	-2.6	-17.2
8.9	-20.1	-2.6	-17.5
9.0	-16.5	-2.6	-13.9
9.1	-14.8	-2.6	-12.2
9.2	-15.3	-2.6	-12.7
9.3	-18.9	-2.7	-16.2
9.4	-23.9	-2.8	-21.0
9.5	-22.5	-2.9	-19.5
9.6	-21.2	-3.1	-18.2
9.7	-24.7	-3.2	-21.5
9.8	-44.2	-3.3	-40.9
9.9	-21.5	-3.4	-18.1
10.0	-16.8	-3.5	-13.3

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Elevation RHCP, -30º to +30º @ 0.5º increment

28.30 GHz @ -11.42 dBW / 40 kHz in Co-pol El RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-30.0	-27.5	-12.4	-15.0
-29.5	-22.7	-12.2	-10.5
-29.0	-26.5	-12.1	-14.5
-28.5	-24.8	-11.9	-12.9
-28.0	-20.7	-11.7	-9.0
-27.5	-27.3	-11.5	-15.8
-27.0	-29.1	-11.3	-17.9
-26.5	-25.8	-11.1	-14.7
-26.0	-23.5	-10.9	-12.6
-25.5	-26.1	-10.7	-15.5
-25.0	-32.8	-10.4	-22.4
-24.5	-29.2	-10.2	-19.0
-24.0	-33.7	-10.0	-23.7
-23.5	-33.8	-9.8	-24.0
-23.0	-25.0	-9.5	-15.4
-22.5	-25.2	-9.3	-15.9
-22.0	-31.0	-9.1	-21.9
-21.5	-22.2	-8.8	-13.4
-21.0	-22.8	-8.6	-14.2
-20.5	-27.0	-8.3	-18.7
-20.0	-23.8	-8.0	-15.7
-19.5	-24.1	-7.8	-16.4
-19.0	-29.0	-7.5	-21.5
-18.5	-33.6	-7.2	-26.5
-18.0	-30.2	-6.9	-23.3
-17.5	-23.9	-6.6	-17.3
-17.0	-20.8	-6.3	-14.6
-16.5	-26.7	-5.9	-20.8
-16.0	-30.9	-5.6	-25.3
-15.5	-23.3	-5.3	-18.1
-15.0	-19.2	-4.9	-14.3
-14.5	-18.9	-4.5	-14.4
-14.0	-22.9	-4.2	-18.8
-13.5	-24.5	-3.8	-20.8
-13.0	-19.4	-3.3	-16.1
-12.5	-16.8	-2.9	-13.9
-12.0	-19.4	-2.5	-16.9
-11.5	-28.9	-2.0	-26.9
-11.0	-26.9	-1.5	-25.4
-10.5	-20.3	-1.0	-19.3
-10.0	-18.0	-0.5	-17.5
-9.5	-23.7	0.1	-23.8
-9.0	-16.2	0.4	-16.5
-8.5	-11.5	0.4	-11.9
-8.0	-22.6	0.4	-22.9
-7.5	-15.5	0.4	-15.8
-7.0	-11.1	0.4	-11.5
-6.5	-20.0	1.2	-21.1
-6.0	-8.0	2.0	-10.1
-5.5	-11.3	3.0	-14.3
-5.0	-9.5	4.0	-13.6
-4.5	-11.2	5.2	-16.4
-4.0	-6.5	6.4	-12.9
-3.5	-5.6	7.9	-13.5
-3.0	-0.3		
-2.5	1.4		
-2.0	0.6		
-1.5	10.3		
-1.0	9.1		
-0.5	30.5		
0.0	36.9		

28.30 GHz @ -11.42 dBW / 40 kHz in Co-pol El RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	36.9		
0.5	30.5		
1.0	4.5		
1.5	7.6		
2.0	6.8		
2.5	6.1		
3.0	-1.4		
3.5	-4.6	7.9	-12.5
4.0	-1.7	6.4	-8.1
4.5	-14.5	5.2	-19.6
5.0	-11.9	4.0	-16.0
5.5	-8.8	3.0	-11.8
6.0	-19.9	2.0	-22.0
6.5	-14.4	1.2	-15.6
7.0	-9.2	0.4	-9.5
7.5	-24.1	0.4	-24.5
8.0	-19.9	0.4	-20.3
8.5	-19.8	0.4	-20.2
9.0	-14.3	0.4	-14.7
9.5	-15.1	0.1	-15.1
10.0	-31.1	-0.5	-30.6
10.5	-14.9	-1.0	-13.9
11.0	-13.8	-1.5	-12.2
11.5	-14.7	-2.0	-12.7
12.0	-17.9	-2.5	-15.4
12.5	-13.2	-2.9	-10.3
13.0	-23.6	-3.3	-20.2
13.5	-18.3	-3.8	-14.5
14.0	-10.6	-4.2	-6.4
14.5	-16.6	-4.5	-12.1
15.0	-16.1	-4.9	-11.2
15.5	-17.8	-5.3	-12.5
16.0	-17.1	-5.6	-11.5
16.5	-20.0	-5.9	-14.1
17.0	-15.1	-6.3	-8.8
17.5	-14.5	-6.6	-7.9
18.0	-19.7	-6.9	-12.8
18.5	-15.0	-7.2	-7.8
19.0	-13.6	-7.5	-6.1
19.5	-13.2	-7.8	-5.5
20.0	-15.4	-8.0	-7.4
20.5	-15.8	-8.3	-7.5
21.0	-16.0	-8.6	-7.5
21.5	-25.4	-8.8	-16.6
22.0	-20.3	-9.1	-11.3
22.5	-17.1	-9.3	-7.8
23.0	-19.2	-9.5	-9.7
23.5	-18.7	-9.8	-8.9
24.0	-15.2	-10.0	-5.2
24.5	-16.7	-10.2	-6.5
25.0	-18.7	-10.4	-8.3
25.5	-19.5	-10.7	-8.9
26.0	-20.0	-10.9	-9.2
26.5	-22.2	-11.1	-11.1
27.0	-18.8	-11.3	-7.5
27.5	-17.7	-11.5	-6.2
28.0	-21.3	-11.7	-9.6
28.5	-18.5	-11.9	-6.7
29.0	-18.8	-12.1	-6.8
29.5	-20.3	-12.2	-8.0
30.0	-19.7	-12.4	-7.3

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Elevation RHCP, -10º to +10º @ 0.1º increment

28.30 GHz @ -11.42 dBW / 40 kHz in Co-pol El RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-10.0	-18.0	-0.5	-17.5
-9.9	-23.3	-0.4	-22.9
-9.8	-27.5	-0.3	-27.2
-9.7	-22.7	-0.2	-22.5
-9.6	-20.1	-0.1	-20.0
-9.5	-23.7	0.1	-23.8
-9.4	-30.1	0.2	-30.2
-9.3	-24.1	0.3	-24.4
-9.2	-18.0	0.4	-18.3
-9.1	-15.9	0.4	-16.3
-9.0	-16.2	0.4	-16.5
-8.9	-19.0	0.4	-19.3
-8.8	-23.1	0.4	-23.5
-8.7	-17.6	0.4	-18.0
-8.6	-13.4	0.4	-13.7
-8.5	-11.5	0.4	-11.9
-8.4	-11.1	0.4	-11.5
-8.3	-12.2	0.4	-12.6
-8.2	-15.4	0.4	-15.7
-8.1	-21.2	0.4	-21.6
-8.0	-22.6	0.4	-22.9
-7.9	-16.7	0.4	-17.0
-7.8	-13.1	0.4	-13.5
-7.7	-11.9	0.4	-12.3
-7.6	-12.8	0.4	-13.2
-7.5	-15.5	0.4	-15.8
-7.4	-23.4	0.4	-23.8
-7.3	-25.1	0.4	-25.5
-7.2	-16.2	0.4	-16.6
-7.1	-12.9	0.4	-13.2
-7.0	-11.1	0.4	-11.5
-6.9	-10.4	0.5	-10.9
-6.8	-10.7	0.7	-11.3
-6.7	-11.4	0.8	-12.2
-6.6	-14.0	1.0	-15.0
-6.5	-20.0	1.2	-21.1
-6.4	-20.6	1.3	-21.9
-6.3	-12.4	1.5	-13.9
-6.2	-8.7	1.7	-10.4
-6.1	-7.3	1.9	-9.2
-6.0	-8.0	2.0	-10.1
-5.9	-10.8	2.2	-13.1
-5.8	-19.0	2.4	-21.4
-5.7	-22.6	2.6	-25.2
-5.6	-13.2	2.8	-16.0
-5.5	-11.3	3.0	-14.3
-5.4	-13.0	3.2	-16.2
-5.3	-18.8	3.4	-22.2
-5.2	-19.8	3.6	-23.4
-5.1	-12.4	3.8	-16.2
-5.0	-9.5	4.0	-13.6
-4.9	-10.0	4.2	-14.3
-4.8	-13.5	4.5	-18.0
-4.7	-24.9	4.7	-29.6
-4.6	-16.7	4.9	-21.6
-4.5	-11.2	5.2	-16.4
-4.4	-9.6	5.4	-15.0
-4.3	-10.9	5.7	-16.5
-4.2	-12.6	5.9	-18.5
-4.1	-10.1	6.2	-16.2

28.30 GHz @ -11.42 dBW / 40 kHz in Co-pol El RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	36.9		
0.1	36.7		
0.2	36.0		
0.3	34.8		
0.4	33.0		
0.5	30.5		
0.6	27.3		
0.7	23.0		
0.8	17.4		
0.9	10.1		
1.0	4.5		
1.1	6.6		
1.2	8.5		
1.3	9.2		
1.4	9.0		
1.5	7.6		
1.6	4.7		
1.7	1.9		
1.8	3.5		
1.9	5.9		
2.0	6.8		
2.1	6.5		
2.2	5.6		
2.3	5.1		
2.4	5.7		
2.5	6.1		
2.6	5.9		
2.7	4.5		
2.8	2.2		
2.9	-0.3		
3.0	-1.4		
3.1	-0.9		
3.2	-0.5		
3.3	-1.1		
3.4	-2.5		
3.5	-4.6	7.9	-12.5
3.6	-6.9	7.6	-14.5
3.7	-7.4	7.3	-14.7
3.8	-5.4	7.0	-12.4
3.9	-3.1	6.7	-9.8
4.0	-1.7	6.4	-8.1
4.1	-1.4	6.2	-7.6
4.2	-2.3	5.9	-8.2
4.3	-4.6	5.7	-10.3
4.4	-8.8	5.4	-14.2
4.5	-14.5	5.2	-19.6
4.6	-13.6	4.9	-18.5
4.7	-11.2	4.7	-15.9
4.8	-10.2	4.5	-14.7
4.9	-10.9	4.2	-15.1
5.0	-11.9	4.0	-16.0
5.1	-11.5	3.8	-15.3
5.2	-10.9	3.6	-14.5
5.3	-10.3	3.4	-13.7
5.4	-9.4	3.2	-12.6
5.5	-8.8	3.0	-11.8
5.6	-8.9	2.8	-11.7
5.7	-10.2	2.6	-12.8
5.8	-13.6	2.4	-16.0
5.9	-20.6	2.2	-22.8

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Elevation RHCP, -10º to +10º @ 0.1º increment

-4.0	-6.5	6.4	-12.9
-3.9	-4.4	6.7	-11.1
-3.8	-3.6	7.0	-10.6
-3.7	-3.8	7.3	-11.1
-3.6	-4.5	7.6	-12.1
-3.5	-5.6	7.9	-13.5
-3.4	-5.7		
-3.3	-4.3		
-3.2	-2.3		
-3.1	-0.9		
-3.0	-0.3		
-2.9	-0.9		
-2.8	-2.1		
-2.7	-2.3		
-2.6	-0.4		
-2.5	1.4		
-2.4	2.2		
-2.3	1.8		
-2.2	0.6		
-2.1	0.0		
-2.0	0.6		
-1.9	2.0		
-1.8	3.8		
-1.7	6.3		
-1.6	8.7		
-1.5	10.3		
-1.4	11.1		
-1.3	10.5		
-1.2	8.3		
-1.1	5.7		
-1.0	9.1		
-0.9	15.1		
-0.8	19.9		
-0.7	24.1		
-0.6	27.6		
-0.5	30.5		
-0.4	32.7		
-0.3	34.5		
-0.2	35.8		
-0.1	36.6		
0.0	36.9		

6.0	-19.9	2.0	-22.0
6.1	-12.8	1.9	-14.7
6.2	-10.5	1.7	-12.2
6.3	-10.0	1.5	-11.6
6.4	-11.6	1.3	-13.0
6.5	-14.4	1.2	-15.6
6.6	-15.5	1.0	-16.5
6.7	-12.7	0.8	-13.6
6.8	-10.1	0.7	-10.8
6.9	-9.2	0.5	-9.7
7.0	-9.2	0.4	-9.5
7.1	-9.8	0.4	-10.2
7.2	-11.7	0.4	-12.1
7.3	-14.7	0.4	-15.0
7.4	-19.3	0.4	-19.7
7.5	-24.1	0.4	-24.5
7.6	-20.4	0.4	-20.8
7.7	-18.0	0.4	-18.4
7.8	-16.7	0.4	-17.1
7.9	-17.9	0.4	-18.3
8.0	-19.9	0.4	-20.3
8.1	-20.0	0.4	-20.3
8.2	-17.6	0.4	-18.0
8.3	-15.9	0.4	-16.3
8.4	-16.2	0.4	-16.6
8.5	-19.8	0.4	-20.2
8.6	-30.2	0.4	-30.6
8.7	-23.5	0.4	-23.8
8.8	-17.1	0.4	-17.5
8.9	-14.6	0.4	-15.0
9.0	-14.3	0.4	-14.7
9.1	-16.7	0.4	-17.1
9.2	-23.4	0.4	-23.7
9.3	-28.4	0.3	-28.7
9.4	-18.4	0.2	-18.5
9.5	-15.1	0.1	-15.1
9.6	-13.5	-0.1	-13.5
9.7	-14.3	-0.2	-14.2
9.8	-16.9	-0.3	-16.6
9.9	-22.8	-0.4	-22.4
10.0	-31.1	-0.5	-30.6

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
X-pol Azimuth RHCP, -10º to +10º @ 0.1º increment

28.30 GHz @ -11.42 dBW / 40 kHz in X-pol Az RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-10.0	-24.2	-12.6	-11.5
-9.9	-29.2	-12.6	-16.5
-9.8	-29.9	-12.6	-17.2
-9.7	-28.3	-12.6	-15.7
-9.6	-25.1	-12.6	-12.5
-9.5	-21.4	-12.6	-8.8
-9.4	-19.3	-12.6	-6.6
-9.3	-17.7	-12.6	-5.1
-9.2	-18.2	-12.6	-5.5
-9.1	-18.6	-12.6	-6.0
-9.0	-21.1	-12.6	-8.5
-8.9	-24.2	-12.6	-11.6
-8.8	-31.0	-12.6	-18.3
-8.7	-24.3	-12.6	-11.6
-8.6	-19.3	-12.6	-6.7
-8.5	-17.4	-12.6	-4.8
-8.4	-16.9	-12.6	-4.2
-8.3	-18.0	-12.6	-5.4
-8.2	-20.9	-12.6	-8.3
-8.1	-26.8	-12.6	-14.1
-8.0	-30.8	-12.6	-18.2
-7.9	-26.8	-12.6	-14.2
-7.8	-25.0	-12.6	-12.3
-7.7	-25.2	-12.6	-12.6
-7.6	-27.3	-12.6	-14.7
-7.5	-27.2	-12.6	-14.5
-7.4	-26.5	-12.6	-13.9
-7.3	-24.9	-12.6	-12.2
-7.2	-24.8	-12.6	-12.1
-7.1	-24.4	-12.6	-11.8
-7.0	-23.2	-12.6	-10.5
-6.9	-24.5	-12.5	-12.0
-6.8	-28.8	-12.3	-16.5
-6.7	-32.7	-12.2	-20.6
-6.6	-24.1	-12.0	-12.1
-6.5	-18.5	-11.8	-6.7
-6.4	-16.9	-11.7	-5.3
-6.3	-14.5	-11.5	-3.1
-6.2	-14.1	-11.3	-2.8
-6.1	-13.6	-11.1	-2.5
-6.0	-15.4	-11.0	-4.4
-5.9	-15.2	-10.8	-4.4
-5.8	-16.5	-10.6	-5.9
-5.7	-17.8	-10.4	-7.4
-5.6	-17.9	-10.2	-7.7
-5.5	-17.1	-10.0	-7.1
-5.4	-16.2	-9.8	-6.4
-5.3	-15.2	-9.6	-5.6
-5.2	-14.6	-9.4	-5.2
-5.1	-14.3	-9.2	-5.1
-5.0	-14.1	-9.0	-5.1
-4.9	-14.2	-8.8	-5.5
-4.8	-14.5	-8.5	-5.9
-4.7	-14.7	-8.3	-6.4
-4.6	-14.0	-8.1	-5.9
-4.5	-12.4	-7.8	-4.5
-4.4	-10.6	-7.6	-3.0
-4.3	-8.9	-7.3	-1.5
-4.2	-7.7	-7.1	-0.6
-4.1	-7.0	-6.8	-0.2

28.30 GHz @ -11.42 dBW / 40 kHz in X-pol Az RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	1.4		
0.1	2.9		
0.2	3.6		
0.3	3.5		
0.4	2.6		
0.5	0.9		
0.6	-1.7		
0.7	-5.3		
0.8	-9.1		
0.9	-10.0		
1.0	-9.3		
1.1	-8.4		
1.2	-8.8		
1.3	-9.8		
1.4	-11.8		
1.5	-13.3		
1.6	-13.5		
1.7	-12.0		
1.8	-12.5		
1.9	-13.8		
2.0	-17.1	1.0	-18.0
2.1	-31.2	0.4	-31.6
2.2	-18.4	-0.1	-18.4
2.3	-13.1	-0.5	-12.6
2.4	-10.7	-1.0	-9.7
2.5	-9.2	-1.4	-7.7
2.6	-8.9	-1.9	-7.0
2.7	-10.2	-2.3	-7.9
2.8	-12.4	-2.7	-9.7
2.9	-15.7	-3.1	-12.6
3.0	-20.9	-3.4	-17.5
3.1	-25.1	-3.8	-21.3
3.2	-23.7	-4.1	-19.5
3.3	-24.7	-4.5	-20.3
3.4	-32.1	-4.8	-27.3
3.5	-40.9	-5.1	-35.8
3.6	-34.2	-5.4	-28.8
3.7	-53.4	-5.7	-47.7
3.8	-30.0	-6.0	-24.0
3.9	-28.7	-6.3	-22.4
4.0	-22.6	-6.6	-16.1
4.1	-23.7	-6.8	-16.9
4.2	-23.8	-7.1	-16.7
4.3	-28.0	-7.3	-20.6
4.4	-40.0	-7.6	-32.4
4.5	-35.4	-7.8	-27.5
4.6	-27.7	-8.1	-19.6
4.7	-28.2	-8.3	-19.9
4.8	-39.2	-8.5	-30.7
4.9	-33.6	-8.8	-24.9
5.0	-26.5	-9.0	-17.5
5.1	-22.2	-9.2	-13.0
5.2	-21.8	-9.4	-12.4
5.3	-21.8	-9.6	-12.2
5.4	-23.9	-9.8	-14.1
5.5	-32.8	-10.0	-22.8
5.6	-33.4	-10.2	-23.2
5.7	-23.2	-10.4	-12.8
5.8	-22.3	-10.6	-11.7
5.9	-20.9	-10.8	-10.2

Orbit Communication Systems Ltd.

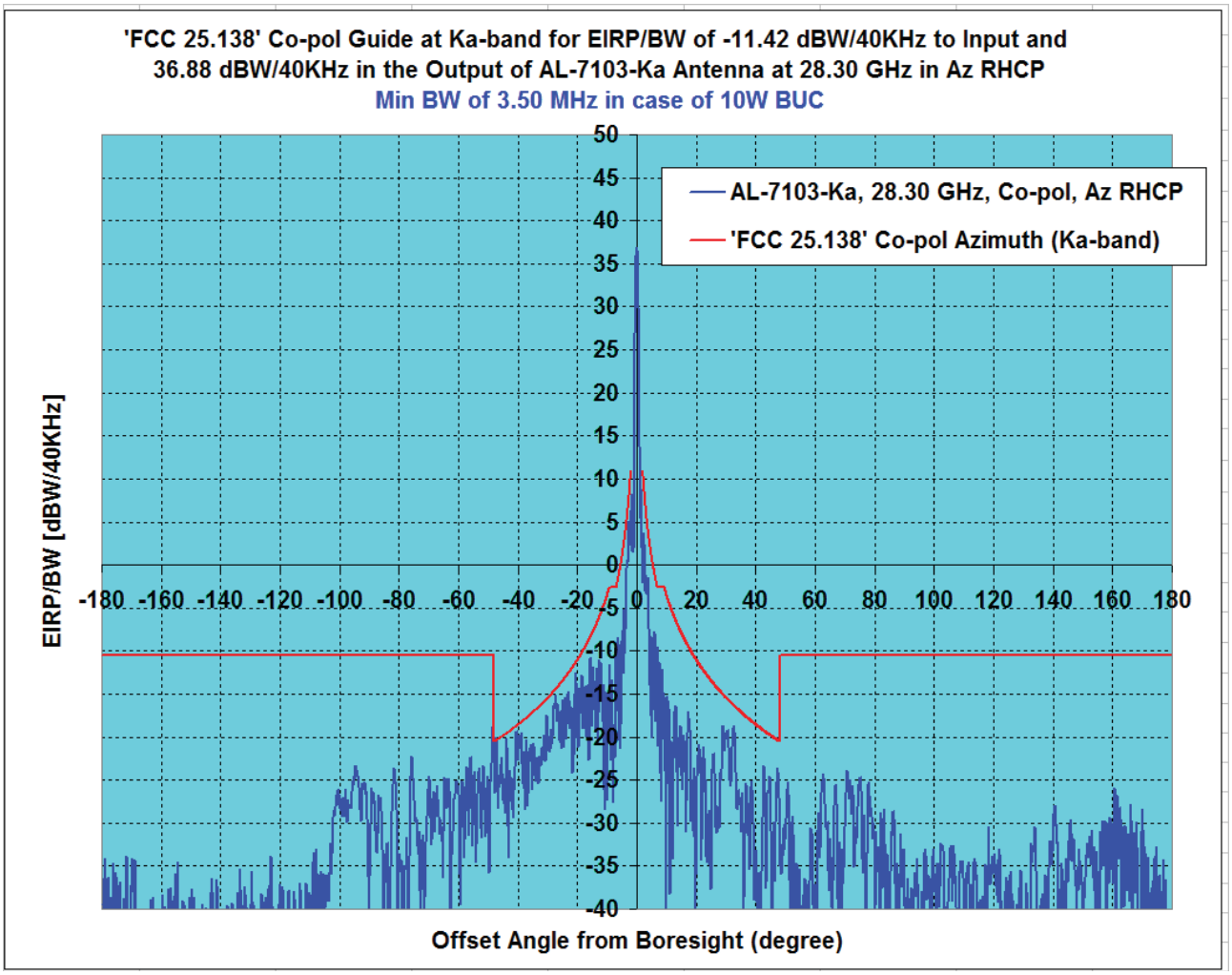
AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table

X-pol Azimuth RHCP, -10º to +10º @ 0.1º increment

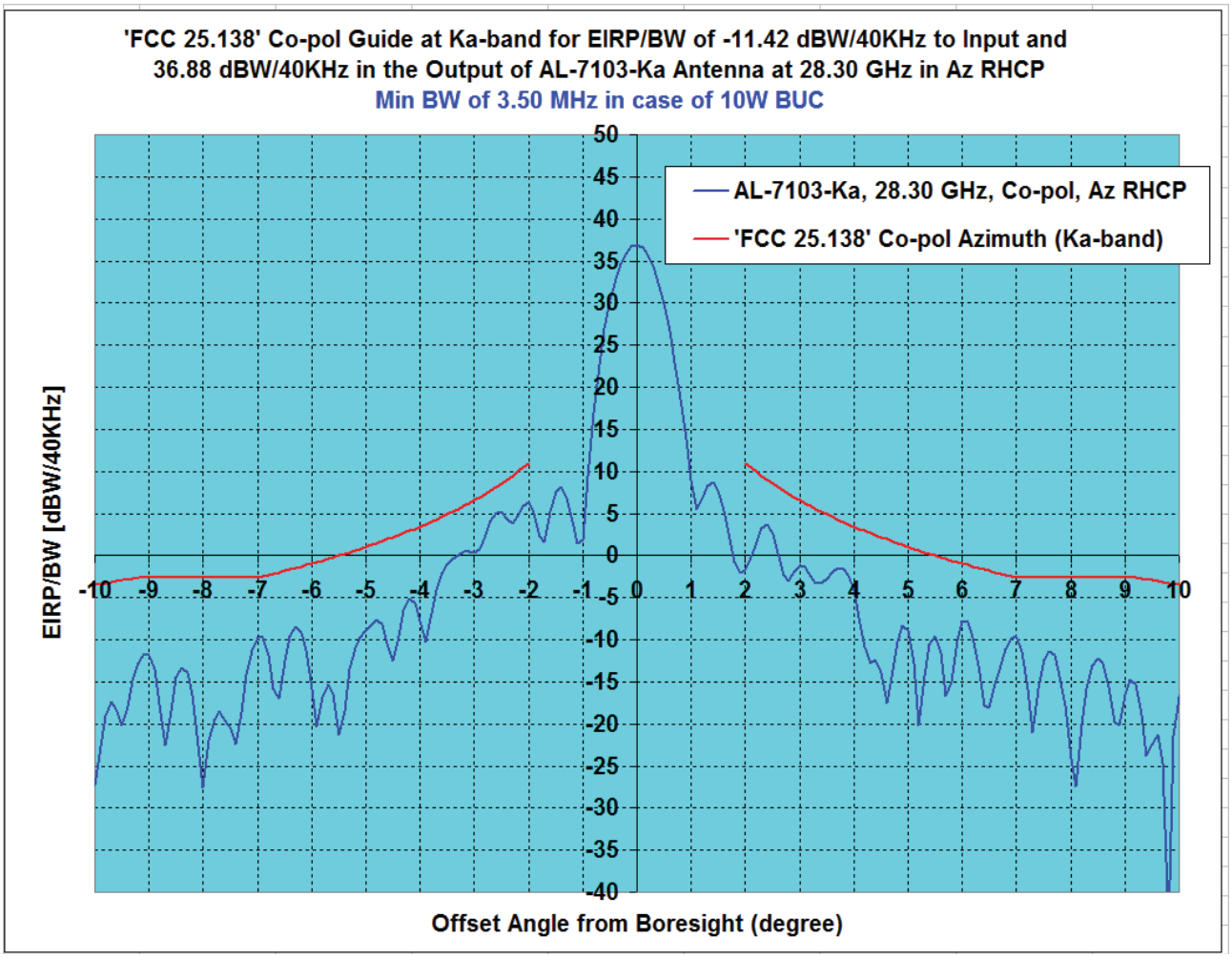
-4.0	-6.6	-6.6	0.0
-3.9	-6.8	-6.3	-0.5
-3.8	-7.3	-6.0	-1.4
-3.7	-8.1	-5.7	-2.4
-3.6	-9.0	-5.4	-3.6
-3.5	-9.3	-5.1	-4.2
-3.4	-9.5	-4.8	-4.8
-3.3	-9.3	-4.5	-4.9
-3.2	-8.8	-4.1	-4.7
-3.1	-8.3	-3.8	-4.6
-3.0	-8.1	-3.4	-4.7
-2.9	-8.4	-3.1	-5.3
-2.8	-8.8	-2.7	-6.1
-2.7	-8.7	-2.3	-6.4
-2.6	-7.8	-1.9	-5.9
-2.5	-6.7	-1.4	-5.2
-2.4	-6.0	-1.0	-5.0
-2.3	-6.0	-0.5	-5.4
-2.2	-6.5	-0.1	-6.5
-2.1	-8.2	0.4	-8.6
-2.0	-10.5	1.0	-11.5
-1.9	-12.9		
-1.8	-13.4		
-1.7	-12.2		
-1.6	-10.1		
-1.5	-8.3		
-1.4	-6.7		
-1.3	-6.3		
-1.2	-6.4		
-1.1	-7.8		
-1.0	-11.0		
-0.9	-10.3		
-0.8	-6.2		
-0.7	-3.5		
-0.6	-1.3		
-0.5	-0.8		
-0.4	-1.8		
-0.3	-5.1		
-0.2	-5.2		
-0.1	-1.2		
0.0	1.4		

6.0	-22.1	-11.0	-11.2
6.1	-25.7	-11.1	-14.5
6.2	-29.7	-11.3	-18.4
6.3	-38.6	-11.5	-27.1
6.4	-40.3	-11.7	-28.7
6.5	-34.8	-11.8	-22.9
6.6	-27.9	-12.0	-15.9
6.7	-26.1	-12.2	-14.0
6.8	-22.4	-12.3	-10.1
6.9	-20.4	-12.5	-8.0
7.0	-18.9	-12.6	-6.3
7.1	-19.1	-12.6	-6.4
7.2	-18.4	-12.6	-5.8
7.3	-18.2	-12.6	-5.6
7.4	-18.7	-12.6	-6.1
7.5	-19.0	-12.6	-6.4
7.6	-18.8	-12.6	-6.2
7.7	-20.1	-12.6	-7.5
7.8	-20.6	-12.6	-8.0
7.9	-21.6	-12.6	-9.0
8.0	-22.6	-12.6	-10.0
8.1	-26.7	-12.6	-14.0
8.2	-30.1	-12.6	-17.5
8.3	-33.9	-12.6	-21.3
8.4	-43.7	-12.6	-31.1
8.5	-32.5	-12.6	-19.9
8.6	-32.6	-12.6	-20.0
8.7	-28.1	-12.6	-15.5
8.8	-26.8	-12.6	-14.2
8.9	-25.7	-12.6	-13.0
9.0	-25.3	-12.6	-12.7
9.1	-25.8	-12.6	-13.1
9.2	-26.6	-12.6	-14.0
9.3	-25.7	-12.6	-13.0
9.4	-25.6	-12.6	-13.0
9.5	-26.7	-12.6	-14.0
9.6	-26.3	-12.6	-13.7
9.7	-25.9	-12.6	-13.3
9.8	-27.5	-12.6	-14.9
9.9	-25.5	-12.6	-12.9
10.0	-25.6	-12.6	-13.0

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

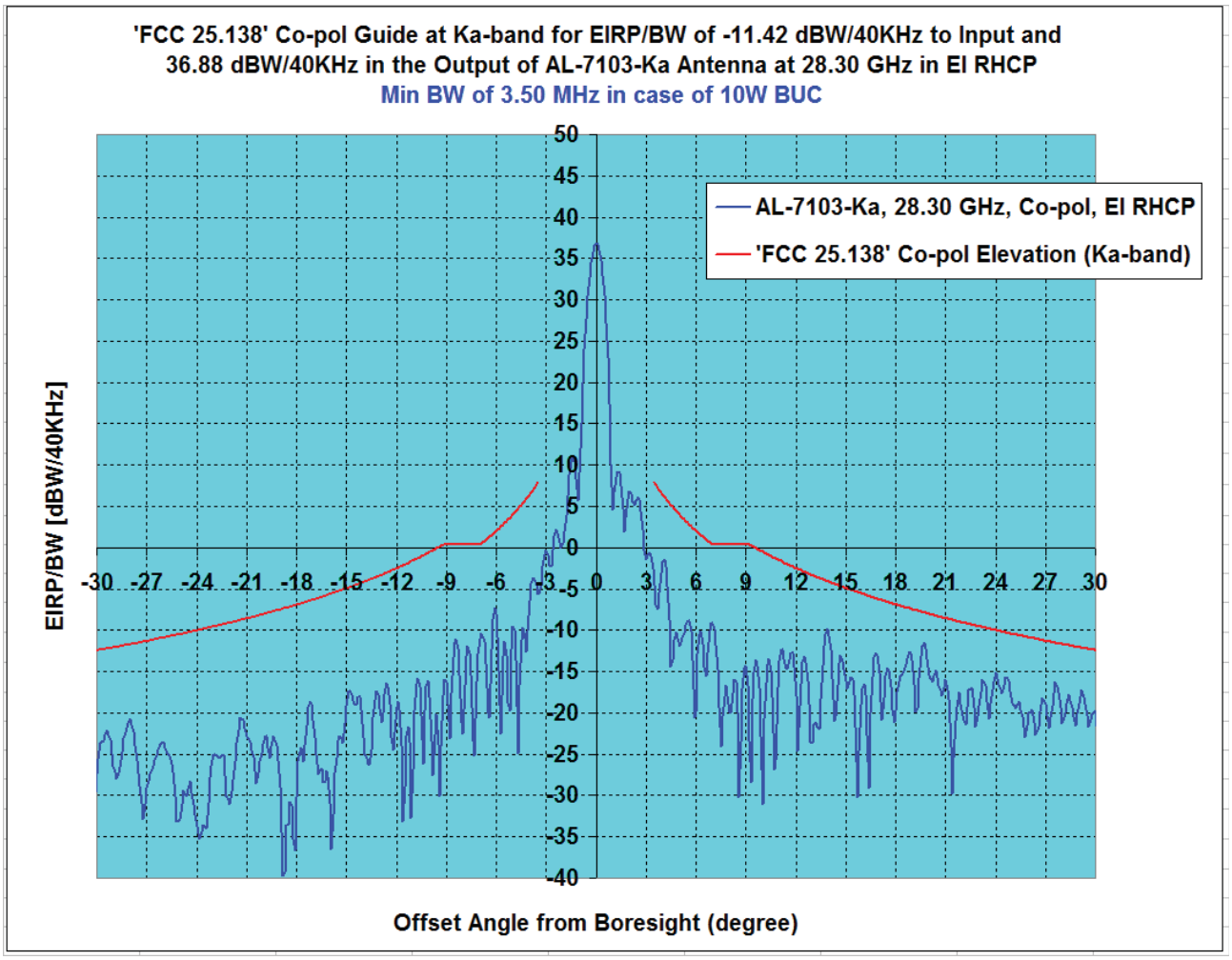


Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Freq., Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (2° to 10°)	± (10° to 180°)	%
AL-7103-Ka, 28.30 GHz, Co-pol, Az RHCP	'FCC 25.138' Co-pol Azimuth (Ka-band)	48.30	-11.42	-3.01	0.25	0.03

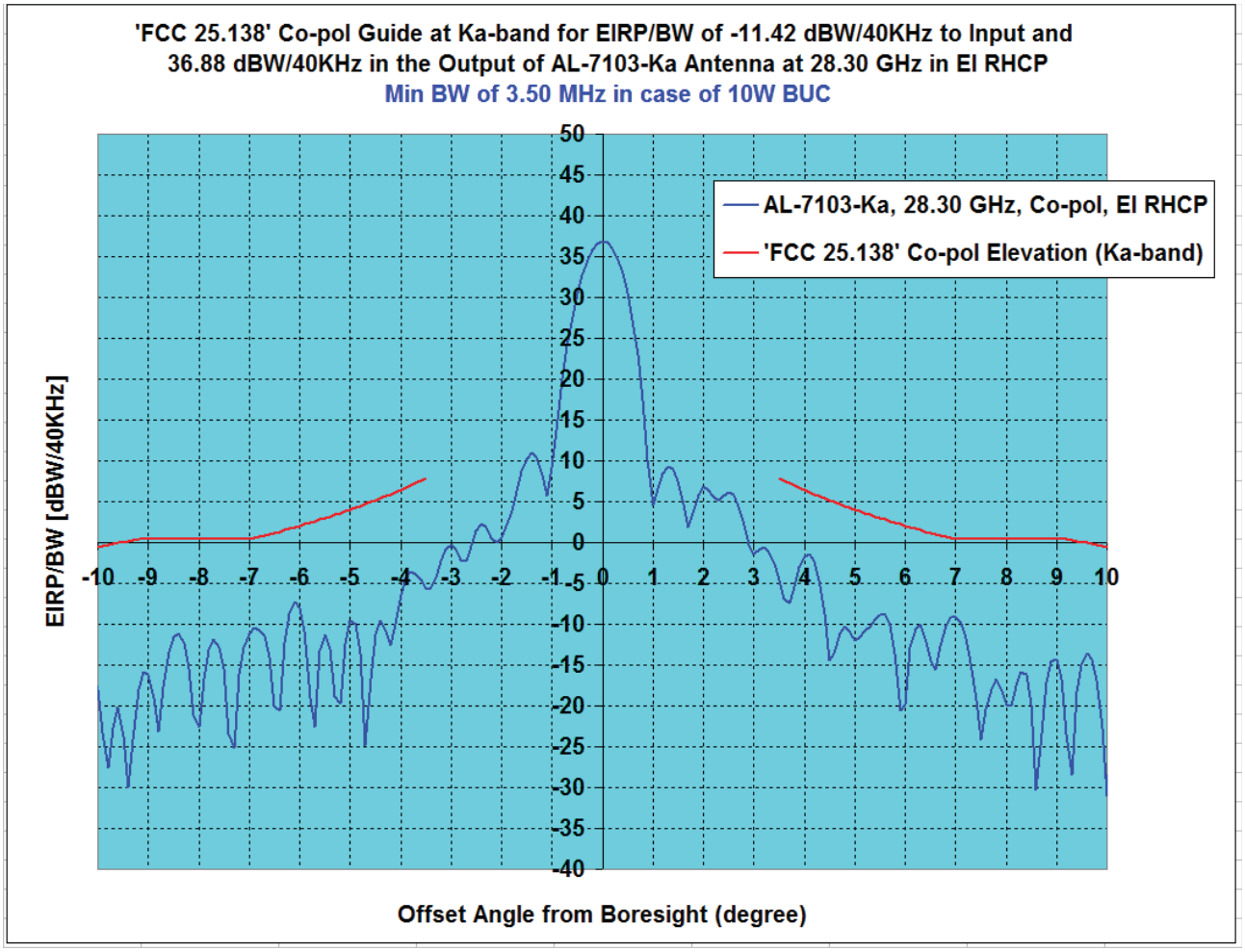


Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Freq., Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (2° to 10°)	± (10° to 180°)	%
AL-7103-Ka, 28.30 GHz, Co-pol, Az RHCP	'FCC 25.138' Co-pol Azimuth (Ka-band)	48.30	-11.42	-3.01	0.25	0.03

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

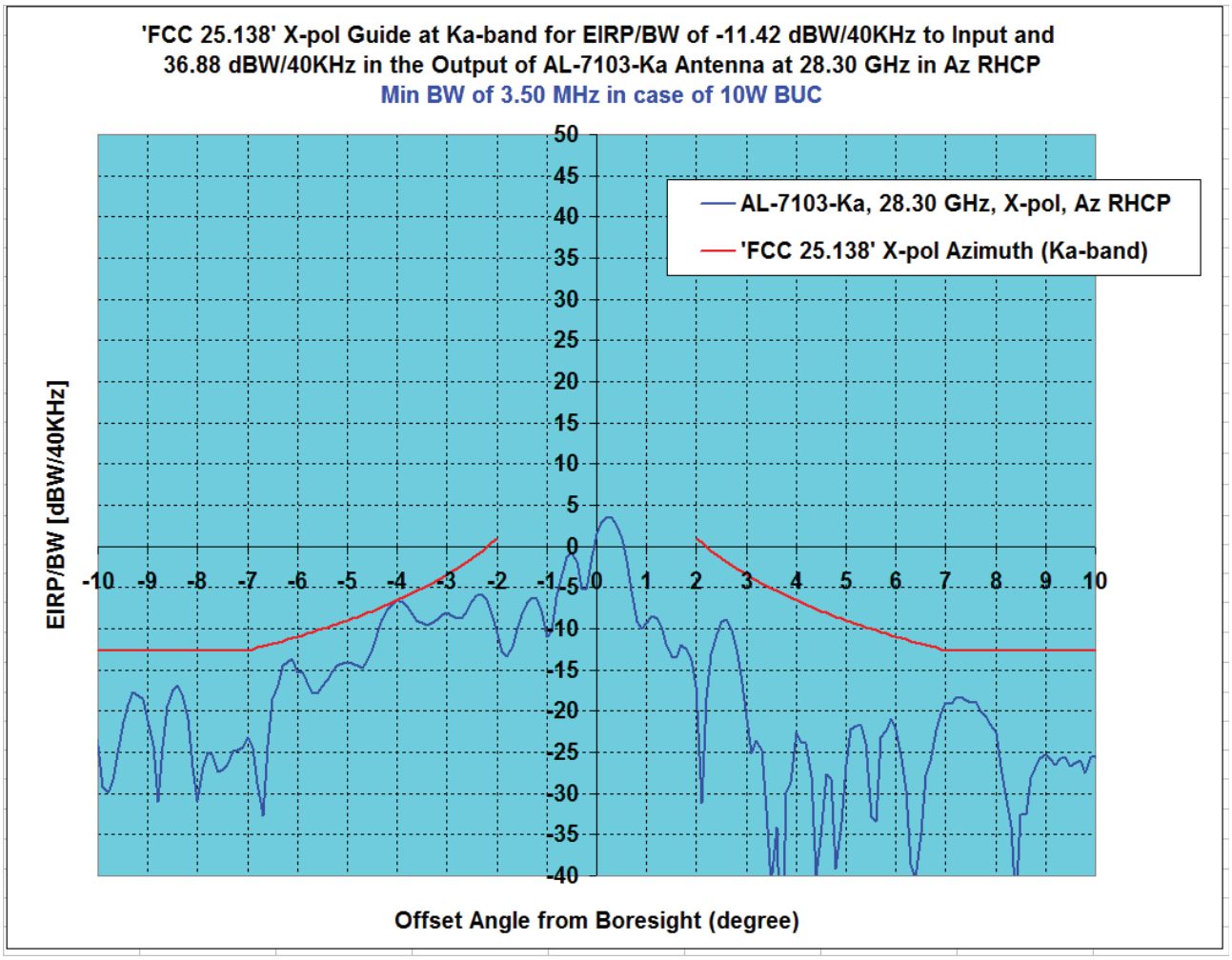


Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Frequency, Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (3.5° to 10°)	± (10° to 30°)	%
AL-7103-Ka, 28.30 GHz, Co-pol, El RHCP	'FCC 25.138' Co-pol Elevation (Ka-band)	48.30	-11.42	-7.55	-3.70	0.00



Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Frequency, Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (3.5° to 10°)	± (10° to 30°)	%
AL-7103-Ka, 28.30 GHz, Co-pol, El RHCP	'FCC 25.138' Co-pol Elevation (Ka-band)	48.30	-11.42	-7.55	-3.70	0.00

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



Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Frequency, Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (2° to 7°)	± (2° to 9.2°)	%
AL-7103-Ka, 28.30 GHz, X-pol, Az RHCP	'FCC 25.138' X-pol Azimuth (Ka-band)	48.30	-11.42	0.00	0.00	0.00

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth LHCP, -180º to +180º @ 1.0º increment

29.10 GHz @ -11.58 dBW / 40 kHz in Co-pol Az LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-179.0	-38.0	-10.5	-27.5
-178.0	-46.2	-10.5	-35.7
-177.0	-44.7	-10.5	-34.2
-176.0	-51.9	-10.5	-41.4
-175.0	-47.2	-10.5	-36.7
-174.0	-48.7	-10.5	-38.2
-173.0	-47.4	-10.5	-36.9
-172.0	-58.0	-10.5	-47.5
-171.0	-39.8	-10.5	-29.3
-170.0	-46.6	-10.5	-36.1
-169.0	-39.2	-10.5	-28.7
-168.0	-51.2	-10.5	-40.7
-167.0	-42.8	-10.5	-32.3
-166.0	-44.5	-10.5	-34.0
-165.0	-46.0	-10.5	-35.5
-164.0	-44.8	-10.5	-34.3
-163.0	-40.0	-10.5	-29.5
-162.0	-39.3	-10.5	-28.8
-161.0	-62.7	-10.5	-52.2
-160.0	-42.1	-10.5	-31.6
-159.0	-37.5	-10.5	-27.0
-158.0	-44.5	-10.5	-34.0
-157.0	-46.0	-10.5	-35.5
-156.0	-40.5	-10.5	-30.0
-155.0	-56.8	-10.5	-46.3
-154.0	-47.1	-10.5	-36.6
-153.0	-48.1	-10.5	-37.6
-152.0	-47.9	-10.5	-37.4
-151.0	-42.6	-10.5	-32.1
-150.0	-47.8	-10.5	-37.3
-149.0	-40.6	-10.5	-30.1
-148.0	-58.8	-10.5	-48.3
-147.0	-47.1	-10.5	-36.6
-146.0	-46.4	-10.5	-35.9
-145.0	-45.6	-10.5	-35.1
-144.0	-45.5	-10.5	-35.0
-143.0	-42.6	-10.5	-32.1
-142.0	-45.8	-10.5	-35.3
-141.0	-44.4	-10.5	-33.9
-140.0	-39.7	-10.5	-29.2
-139.0	-37.6	-10.5	-27.1
-138.0	-42.9	-10.5	-32.4
-137.0	-39.5	-10.5	-29.0
-136.0	-39.1	-10.5	-28.6
-135.0	-45.4	-10.5	-34.9
-134.0	-43.2	-10.5	-32.7
-133.0	-43.6	-10.5	-33.1
-132.0	-38.8	-10.5	-28.3
-131.0	-41.8	-10.5	-31.3
-130.0	-40.0	-10.5	-29.5
-129.0	-40.3	-10.5	-29.8
-128.0	-40.3	-10.5	-29.8
-127.0	-38.0	-10.5	-27.5
-126.0	-44.8	-10.5	-34.3
-125.0	-43.7	-10.5	-33.2
-124.0	-47.2	-10.5	-36.7
-123.0	-37.9	-10.5	-27.4
-122.0	-35.5	-10.5	-25.0
-121.0	-49.7	-10.5	-39.2
-120.0	-41.5	-10.5	-31.0

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	36.9		
1.0	10.5		
2.0	-1.8	11.0	-12.8
3.0	-0.2	6.6	-6.8
4.0	-8.8	3.4	-12.2
5.0	-9.2	1.0	-10.2
6.0	-12.8	-1.0	-11.8
7.0	-29.6	-2.6	-26.9
8.0	-24.2	-2.6	-21.6
9.0	-25.8	-2.6	-23.2
10.0	-19.6	-3.5	-16.1
11.0	-19.7	-4.5	-15.1
12.0	-35.4	-5.5	-29.9
13.0	-22.3	-6.3	-15.9
14.0	-21.8	-7.2	-14.7
15.0	-19.2	-7.9	-11.3
16.0	-27.3	-8.6	-18.7
17.0	-20.3	-9.3	-11.1
18.0	-40.8	-9.9	-31.0
19.0	-17.8	-10.5	-7.3
20.0	-30.5	-11.0	-19.5
21.0	-29.1	-11.6	-17.5
22.0	-21.1	-12.1	-9.1
23.0	-23.3	-12.5	-10.7
24.0	-18.8	-13.0	-5.8
25.0	-19.0	-13.4	-5.6
26.0	-18.6	-13.9	-4.8
27.0	-19.1	-14.3	-4.9
28.0	-19.8	-14.7	-5.1
29.0	-21.0	-15.1	-5.9
30.0	-22.1	-15.4	-6.7
31.0	-27.3	-15.8	-11.6
32.0	-30.1	-16.1	-14.0
33.0	-25.1	-16.5	-8.7
34.0	-25.6	-16.8	-8.8
35.0	-25.3	-17.1	-8.2
36.0	-24.8	-17.4	-7.4
37.0	-23.9	-17.7	-6.2
38.0	-20.8	-18.0	-2.8
39.0	-26.8	-18.3	-8.6
40.0	-28.5	-18.6	-9.9
41.0	-39.5	-18.8	-20.7
42.0	-29.3	-19.1	-10.2
43.0	-27.0	-19.3	-7.7
44.0	-26.0	-19.6	-6.4
45.0	-27.4	-19.8	-7.5
46.0	-27.1	-20.1	-7.1
47.0	-22.2	-20.3	-1.9
48.0	-44.7	-20.5	-24.2
49.0	-41.6	-10.5	-31.1
50.0	-29.6	-10.5	-19.1
51.0	-34.0	-10.5	-23.5
52.0	-32.4	-10.5	-21.9
53.0	-41.4	-10.5	-30.9
54.0	-26.2	-10.5	-15.7
55.0	-25.0	-10.5	-14.5
56.0	-29.4	-10.5	-18.9
57.0	-31.8	-10.5	-21.3
58.0	-29.5	-10.5	-19.0
59.0	-27.7	-10.5	-17.2

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth LHCP, -180º to +180º @ 1.0º increment

-119.0	-33.5	-10.5	-23.0
-118.0	-40.7	-10.5	-30.2
-117.0	-41.1	-10.5	-30.6
-116.0	-45.0	-10.5	-34.5
-115.0	-44.8	-10.5	-34.3
-114.0	-37.9	-10.5	-27.4
-113.0	-36.3	-10.5	-25.8
-112.0	-35.3	-10.5	-24.8
-111.0	-32.3	-10.5	-21.8
-110.0	-28.6	-10.5	-18.1
-109.0	-29.6	-10.5	-19.1
-108.0	-27.9	-10.5	-17.4
-107.0	-26.8	-10.5	-16.3
-106.0	-26.2	-10.5	-15.7
-105.0	-24.2	-10.5	-13.7
-104.0	-23.3	-10.5	-12.8
-103.0	-22.9	-10.5	-12.4
-102.0	-23.3	-10.5	-12.8
-101.0	-27.0	-10.5	-16.5
-100.0	-31.8	-10.5	-21.3
-99.0	-26.8	-10.5	-16.3
-98.0	-23.6	-10.5	-13.1
-97.0	-23.6	-10.5	-13.1
-96.0	-24.7	-10.5	-14.2
-95.0	-26.5	-10.5	-16.0
-94.0	-24.1	-10.5	-13.6
-93.0	-26.0	-10.5	-15.5
-92.0	-32.8	-10.5	-22.3
-91.0	-27.6	-10.5	-17.1
-90.0	-27.5	-10.5	-17.0
-89.0	-30.2	-10.5	-19.7
-88.0	-26.2	-10.5	-15.7
-87.0	-33.0	-10.5	-22.5
-86.0	-28.0	-10.5	-17.5
-85.0	-29.8	-10.5	-19.3
-84.0	-45.2	-10.5	-34.7
-83.0	-34.3	-10.5	-23.8
-82.0	-29.3	-10.5	-18.8
-81.0	-39.7	-10.5	-29.2
-80.0	-32.1	-10.5	-21.6
-79.0	-34.7	-10.5	-24.2
-78.0	-29.2	-10.5	-18.7
-77.0	-29.9	-10.5	-19.4
-76.0	-28.8	-10.5	-18.3
-75.0	-42.1	-10.5	-31.6
-74.0	-29.7	-10.5	-19.2
-73.0	-31.8	-10.5	-21.3
-72.0	-36.9	-10.5	-26.4
-71.0	-29.0	-10.5	-18.5
-70.0	-37.8	-10.5	-27.3
-69.0	-40.8	-10.5	-30.3
-68.0	-31.9	-10.5	-21.4
-67.0	-40.9	-10.5	-30.4
-66.0	-33.2	-10.5	-22.7
-65.0	-28.4	-10.5	-17.9
-64.0	-30.3	-10.5	-19.8
-63.0	-35.1	-10.5	-24.6
-62.0	-35.6	-10.5	-25.1
-61.0	-30.0	-10.5	-19.5
-60.0	-28.4	-10.5	-17.9
-59.0	-26.9	-10.5	-16.4
-58.0	-34.0	-10.5	-23.5
-57.0	-28.2	-10.5	-17.7

60.0	-25.6	-10.5	-15.1
61.0	-39.5	-10.5	-29.0
62.0	-34.6	-10.5	-24.1
63.0	-30.0	-10.5	-19.5
64.0	-27.0	-10.5	-16.5
65.0	-23.0	-10.5	-12.5
66.0	-33.8	-10.5	-23.3
67.0	-34.3	-10.5	-23.8
68.0	-32.8	-10.5	-22.3
69.0	-32.6	-10.5	-22.1
70.0	-24.4	-10.5	-13.9
71.0	-28.9	-10.5	-18.4
72.0	-26.0	-10.5	-15.5
73.0	-26.6	-10.5	-16.1
74.0	-24.4	-10.5	-13.9
75.0	-30.3	-10.5	-19.8
76.0	-30.9	-10.5	-20.4
77.0	-30.1	-10.5	-19.6
78.0	-26.7	-10.5	-16.2
79.0	-37.0	-10.5	-26.5
80.0	-30.1	-10.5	-19.6
81.0	-27.8	-10.5	-17.3
82.0	-34.8	-10.5	-24.3
83.0	-33.5	-10.5	-23.0
84.0	-34.4	-10.5	-23.9
85.0	-43.8	-10.5	-33.3
86.0	-29.0	-10.5	-18.5
87.0	-31.4	-10.5	-20.9
88.0	-27.6	-10.5	-17.1
89.0	-35.6	-10.5	-25.1
90.0	-33.8	-10.5	-23.3
91.0	-35.1	-10.5	-24.6
92.0	-30.6	-10.5	-20.1
93.0	-40.1	-10.5	-29.6
94.0	-32.4	-10.5	-21.9
95.0	-28.6	-10.5	-18.1
96.0	-33.0	-10.5	-22.5
97.0	-39.6	-10.5	-29.1
98.0	-45.5	-10.5	-35.0
99.0	-29.6	-10.5	-19.1
100.0	-30.5	-10.5	-20.0
101.0	-33.0	-10.5	-22.5
102.0	-36.7	-10.5	-26.2
103.0	-32.1	-10.5	-21.6
104.0	-46.3	-10.5	-35.8
105.0	-28.1	-10.5	-17.6
106.0	-33.1	-10.5	-22.6
107.0	-38.5	-10.5	-28.0
108.0	-33.4	-10.5	-22.9
109.0	-46.8	-10.5	-36.3
110.0	-33.1	-10.5	-22.6
111.0	-36.3	-10.5	-25.8
112.0	-30.4	-10.5	-19.9
113.0	-38.3	-10.5	-27.8
114.0	-35.4	-10.5	-24.9
115.0	-36.6	-10.5	-26.1
116.0	-31.9	-10.5	-21.4
117.0	-30.1	-10.5	-19.6
118.0	-39.7	-10.5	-29.2
119.0	-33.4	-10.5	-22.9
120.0	-29.2	-10.5	-18.7
121.0	-39.0	-10.5	-28.5
122.0	-33.4	-10.5	-22.9

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth LHCP, -180º to +180º @ 1.0º increment

-56.0	-30.6	-10.5	-20.1
-55.0	-25.4	-10.5	-14.9
-54.0	-27.4	-10.5	-16.9
-53.0	-29.0	-10.5	-18.5
-52.0	-28.4	-10.5	-17.9
-51.0	-23.3	-10.5	-12.8
-50.0	-28.3	-10.5	-17.8
-49.0	-26.9	-10.5	-16.4
-48.0	-26.4	-20.5	-5.9
-47.0	-26.8	-20.3	-6.5
-46.0	-24.0	-20.1	-3.9
-45.0	-24.1	-19.8	-4.2
-44.0	-25.4	-19.6	-5.8
-43.0	-25.8	-19.3	-6.4
-42.0	-20.2	-19.1	-1.1
-41.0	-22.6	-18.8	-3.8
-40.0	-23.1	-18.6	-4.5
-39.0	-19.9	-18.3	-1.7
-38.0	-21.9	-18.0	-3.9
-37.0	-20.3	-17.7	-2.5
-36.0	-24.1	-17.4	-6.7
-35.0	-23.8	-17.1	-6.7
-34.0	-22.1	-16.8	-5.3
-33.0	-32.4	-16.5	-15.9
-32.0	-21.3	-16.1	-5.1
-31.0	-24.1	-15.8	-8.3
-30.0	-30.1	-15.4	-14.7
-29.0	-22.5	-15.1	-7.4
-28.0	-24.3	-14.7	-9.6
-27.0	-31.6	-14.3	-17.3
-26.0	-25.5	-13.9	-11.7
-25.0	-22.7	-13.4	-9.2
-24.0	-26.4	-13.0	-13.4
-23.0	-17.6	-12.5	-5.0
-22.0	-39.1	-12.1	-27.0
-21.0	-15.2	-11.6	-3.6
-20.0	-22.1	-11.0	-11.1
-19.0	-18.3	-10.5	-7.8
-18.0	-15.6	-9.9	-5.7
-17.0	-21.5	-9.3	-12.2
-16.0	-11.5	-8.6	-2.9
-15.0	-17.9	-7.9	-10.0
-14.0	-21.4	-7.2	-14.3
-13.0	-16.9	-6.3	-10.6
-12.0	-21.2	-5.5	-15.8
-11.0	-19.8	-4.5	-15.3
-10.0	-11.2	-3.5	-7.7
-9.0	-16.2	-2.6	-13.5
-8.0	-21.3	-2.6	-18.6
-7.0	-9.1	-2.6	-6.5
-6.0	-23.0	-1.0	-22.0
-5.0	-7.6	1.0	-8.6
-4.0	-7.2	3.4	-10.6
-3.0	-1.8	6.6	-8.4
-2.0	7.0	11.0	-4.0
-1.0	2.9		
0.0	36.9		

123.0	-38.4	-10.5	-27.9
124.0	-34.2	-10.5	-23.7
125.0	-42.4	-10.5	-31.9
126.0	-54.3	-10.5	-43.8
127.0	-34.0	-10.5	-23.5
128.0	-40.2	-10.5	-29.7
129.0	-31.2	-10.5	-20.7
130.0	-39.0	-10.5	-28.5
131.0	-31.0	-10.5	-20.5
132.0	-30.5	-10.5	-20.0
133.0	-32.7	-10.5	-22.2
134.0	-34.7	-10.5	-24.2
135.0	-32.6	-10.5	-22.1
136.0	-34.7	-10.5	-24.2
137.0	-31.6	-10.5	-21.1
138.0	-32.4	-10.5	-21.9
139.0	-32.4	-10.5	-21.9
140.0	-29.4	-10.5	-18.9
141.0	-31.4	-10.5	-20.9
142.0	-38.5	-10.5	-28.0
143.0	-44.3	-10.5	-33.8
144.0	-40.8	-10.5	-30.3
145.0	-34.9	-10.5	-24.4
146.0	-31.5	-10.5	-21.0
147.0	-32.2	-10.5	-21.7
148.0	-46.9	-10.5	-36.4
149.0	-36.1	-10.5	-25.6
150.0	-36.1	-10.5	-25.6
151.0	-36.0	-10.5	-25.5
152.0	-41.4	-10.5	-30.9
153.0	-40.0	-10.5	-29.5
154.0	-33.3	-10.5	-22.8
155.0	-34.3	-10.5	-23.8
156.0	-36.5	-10.5	-26.0
157.0	-37.3	-10.5	-26.8
158.0	-30.8	-10.5	-20.3
159.0	-31.7	-10.5	-21.2
160.0	-31.8	-10.5	-21.3
161.0	-40.3	-10.5	-29.8
162.0	-36.7	-10.5	-26.2
163.0	-33.0	-10.5	-22.5
164.0	-29.3	-10.5	-18.8
165.0	-31.3	-10.5	-20.8
166.0	-29.4	-10.5	-18.9
167.0	-37.2	-10.5	-26.7
168.0	-41.1	-10.5	-30.6
169.0	-29.3	-10.5	-18.8
170.0	-32.5	-10.5	-22.0
171.0	-35.8	-10.5	-25.3
172.0	-33.1	-10.5	-22.6
173.0	-39.5	-10.5	-29.0
174.0	-41.1	-10.5	-30.6
175.0	-39.5	-10.5	-29.0
176.0	-45.9	-10.5	-35.4
177.0	-46.8	-10.5	-36.3
178.0	-36.2	-10.5	-25.7
179.0	-41.6	-10.5	-31.1

Orbit Communication Systems Ltd.

AL AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth LHCP, -10º to +10º @ 0.1º increment

29.10 GHz @ -11.58 dBW / 40 kHz in Co-pol Az LHCP					29.10 GHz @ -11.58 dBW / 40 kHz in Co-pol Az LHCP			
Angle	EIRPsd	Mask	Over Mask		Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB		Degrees	dBW/40kHz	dBW/40kHz	dB
-10.0	-11.2	-3.5	-7.7		0.0	36.9		
-9.9	-9.7	-3.4	-6.3		0.1	36.7		
-9.8	-9.2	-3.3	-5.9		0.2	36.0		
-9.7	-9.8	-3.2	-6.7		0.3	34.8		
-9.6	-11.7	-3.1	-8.6		0.4	33.1		
-9.5	-14.8	-2.9	-11.9		0.5	30.8		
-9.4	-18.5	-2.8	-15.7		0.6	28.0		
-9.3	-19.7	-2.7	-17.0		0.7	24.7		
-9.2	-17.5	-2.6	-14.8		0.8	20.6		
-9.1	-16.1	-2.6	-13.4		0.9	15.8		
-9.0	-16.2	-2.6	-13.5		1.0	10.5		
-8.9	-18.0	-2.6	-15.4		1.1	6.0		
-8.8	-21.3	-2.6	-18.7		1.2	6.6		
-8.7	-24.1	-2.6	-21.5		1.3	8.3		
-8.6	-19.7	-2.6	-17.1		1.4	8.8		
-8.5	-15.8	-2.6	-13.2		1.5	8.1		
-8.4	-13.6	-2.6	-10.9		1.6	6.3		
-8.3	-13.2	-2.6	-10.6		1.7	3.7		
-8.2	-14.1	-2.6	-11.5		1.8	0.7		
-8.1	-17.5	-2.6	-14.9		1.9	-1.2		
-8.0	-21.3	-2.6	-18.6		2.0	-1.8	11.0	-12.8
-7.9	-17.1	-2.6	-14.4		2.1	-0.5	10.4	-10.9
-7.8	-13.1	-2.6	-10.5		2.2	1.2	9.9	-8.7
-7.7	-11.4	-2.6	-8.8		2.3	2.2	9.5	-7.2
-7.6	-11.5	-2.6	-8.9		2.4	2.7	9.0	-6.3
-7.5	-13.4	-2.6	-10.8		2.5	2.4	8.6	-6.2
-7.4	-17.2	-2.6	-14.6		2.6	1.8	8.1	-6.3
-7.3	-19.2	-2.6	-16.6		2.7	1.2	7.7	-6.6
-7.2	-13.9	-2.6	-11.3		2.8	0.8	7.3	-6.6
-7.1	-10.6	-2.6	-8.0		2.9	0.6	6.9	-6.4
-7.0	-9.1	-2.6	-6.5		3.0	-0.2	6.6	-6.8
-6.9	-8.5	-2.5	-6.0		3.1	-1.4	6.2	-7.6
-6.8	-9.2	-2.3	-6.9		3.2	-2.4	5.9	-8.2
-6.7	-11.2	-2.2	-9.1		3.3	-2.8	5.5	-8.4
-6.6	-14.9	-2.0	-12.9		3.4	-2.3	5.2	-7.5
-6.5	-22.9	-1.8	-21.0		3.5	-1.9	4.9	-6.8
-6.4	-21.2	-1.7	-19.6		3.6	-1.9	4.6	-6.5
-6.3	-16.0	-1.5	-14.5		3.7	-2.6	4.3	-6.9
-6.2	-14.3	-1.3	-13.0		3.8	-4.0	4.0	-8.0
-6.1	-16.1	-1.1	-14.9		3.9	-6.6	3.7	-10.3
-6.0	-23.0	-1.0	-22.0		4.0	-8.8	3.4	-12.2
-5.9	-24.3	-0.8	-23.6		4.1	-9.0	3.2	-12.2
-5.8	-14.8	-0.6	-14.3		4.2	-8.5	2.9	-11.4
-5.7	-11.2	-0.4	-10.8		4.3	-9.0	2.7	-11.7
-5.6	-10.3	-0.2	-10.1		4.4	-11.2	2.4	-13.6
-5.5	-11.7	0.0	-11.7		4.5	-12.8	2.2	-14.9
-5.4	-15.9	0.2	-16.1		4.6	-10.3	1.9	-12.2
-5.3	-25.1	0.4	-25.5		4.7	-7.5	1.7	-9.1
-5.2	-15.0	0.6	-15.6		4.8	-6.6	1.5	-8.0
-5.1	-9.7	0.8	-10.5		4.9	-7.1	1.2	-8.3
-5.0	-7.6	1.0	-8.6		5.0	-9.2	1.0	-10.2
-4.9	-6.7	1.2	-7.9		5.1	-12.8	0.8	-13.6
-4.8	-6.7	1.5	-8.1		5.2	-17.8	0.6	-18.4
-4.7	-7.1	1.7	-8.8		5.3	-17.1	0.4	-17.5
-4.6	-8.8	1.9	-10.7		5.4	-17.0	0.2	-17.2
-4.5	-11.6	2.2	-13.8		5.5	-21.1	0.0	-21.1
-4.4	-14.7	2.4	-17.1		5.6	-19.6	-0.2	-19.4
-4.3	-12.8	2.7	-15.5		5.7	-14.8	-0.4	-14.4
-4.2	-8.9	2.9	-11.8		5.8	-12.2	-0.6	-11.6
-4.1	-7.2	3.2	-10.3		5.9	-11.7	-0.8	-10.9
-4.0	-7.2	3.4	-10.6		6.0	-12.8	-1.0	-11.8
-3.9	-8.0	3.7	-11.8		6.1	-15.7	-1.1	-14.5

Orbit Communication Systems Ltd.

AL AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth LHCP, -10º to +10º @ 0.1º increment

-3.8	-7.7	4.0	-11.7		6.2	-21.8	-1.3	-20.5
-3.7	-5.0	4.3	-9.3		6.3	-24.7	-1.5	-23.2
-3.6	-2.2	4.6	-6.8		6.4	-19.1	-1.7	-17.4
-3.5	-0.3	4.9	-5.2		6.5	-16.1	-1.8	-14.2
-3.4	0.5	5.2	-4.7		6.6	-14.8	-2.0	-12.8
-3.3	0.6	5.5	-4.9		6.7	-14.3	-2.2	-12.1
-3.2	0.2	5.9	-5.7		6.8	-15.3	-2.3	-12.9
-3.1	-0.6	6.2	-6.8		6.9	-19.2	-2.5	-16.7
-3.0	-1.8	6.6	-8.4		7.0	-29.6	-2.6	-26.9
-2.9	-2.8	6.9	-9.8		7.1	-21.5	-2.6	-18.9
-2.8	-2.2	7.3	-9.5		7.2	-16.5	-2.6	-13.8
-2.7	0.0	7.7	-7.7		7.3	-15.0	-2.6	-12.4
-2.6	2.5	8.1	-5.7		7.4	-15.8	-2.6	-13.2
-2.5	4.4	8.6	-4.2		7.5	-20.2	-2.6	-17.5
-2.4	5.7	9.0	-3.3		7.6	-33.1	-2.6	-30.5
-2.3	6.6	9.5	-2.9		7.7	-23.9	-2.6	-21.3
-2.2	7.3	9.9	-2.7		7.8	-20.1	-2.6	-17.5
-2.1	7.5	10.4	-3.0		7.9	-20.2	-2.6	-17.5
-2.0	7.0	11.0	-4.0		8.0	-24.2	-2.6	-21.6
-1.9	5.5				8.1	-28.0	-2.6	-25.3
-1.8	2.4				8.2	-22.2	-2.6	-19.6
-1.7	-1.3				8.3	-19.5	-2.6	-16.9
-1.6	0.5				8.4	-21.2	-2.6	-18.5
-1.5	3.8				8.5	-28.4	-2.6	-25.8
-1.4	5.4				8.6	-27.0	-2.6	-24.3
-1.3	5.6				8.7	-20.1	-2.6	-17.4
-1.2	5.4				8.8	-18.5	-2.6	-15.8
-1.1	4.8				8.9	-21.0	-2.6	-18.4
-1.0	2.9				9.0	-25.8	-2.6	-23.2
-0.9	7.6				9.1	-23.7	-2.6	-21.1
-0.8	16.0				9.2	-17.1	-2.6	-14.4
-0.7	22.0				9.3	-14.6	-2.7	-11.8
-0.6	26.6				9.4	-14.7	-2.8	-11.9
-0.5	30.0				9.5	-17.1	-2.9	-14.1
-0.4	32.6				9.6	-22.3	-3.1	-19.2
-0.3	34.5				9.7	-25.5	-3.2	-22.3
-0.2	35.8				9.8	-20.6	-3.3	-17.4
-0.1	36.6				9.9	-18.6	-3.4	-15.2
0.0	36.9				10.0	-19.6	-3.5	-16.1

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Elevation LHCP, -30º to +30º @ 0.5º increment

29.10 GHz @ -11.58 dBW / 40 kHz in Co-pol El LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-30.0	-25.8	-12.4	-13.4
-29.5	-23.3	-12.2	-11.1
-29.0	-25.1	-12.1	-13.1
-28.5	-23.8	-11.9	-12.0
-28.0	-22.9	-11.7	-11.2
-27.5	-23.1	-11.5	-11.6
-27.0	-21.8	-11.3	-10.5
-26.5	-21.6	-11.1	-10.6
-26.0	-24.3	-10.9	-13.4
-25.5	-24.3	-10.7	-13.7
-25.0	-20.3	-10.4	-9.8
-24.5	-20.7	-10.2	-10.4
-24.0	-23.3	-10.0	-13.3
-23.5	-21.7	-9.8	-12.0
-23.0	-23.2	-9.5	-13.7
-22.5	-24.3	-9.3	-15.0
-22.0	-22.5	-9.1	-13.4
-21.5	-26.5	-8.8	-17.7
-21.0	-37.3	-8.6	-28.8
-20.5	-32.4	-8.3	-24.1
-20.0	-22.6	-8.0	-14.6
-19.5	-21.8	-7.8	-14.1
-19.0	-22.6	-7.5	-15.1
-18.5	-27.5	-7.2	-20.3
-18.0	-23.1	-6.9	-16.2
-17.5	-18.9	-6.6	-12.3
-17.0	-20.1	-6.3	-13.9
-16.5	-30.3	-5.9	-24.3
-16.0	-22.7	-5.6	-17.1
-15.5	-24.6	-5.3	-19.4
-15.0	-25.0	-4.9	-20.1
-14.5	-22.8	-4.5	-18.3
-14.0	-18.8	-4.2	-14.6
-13.5	-19.9	-3.8	-16.1
-13.0	-22.3	-3.3	-19.0
-12.5	-26.4	-2.9	-23.5
-12.0	-20.5	-2.5	-18.0
-11.5	-23.1	-2.0	-21.1
-11.0	-22.7	-1.5	-21.2
-10.5	-23.0	-1.0	-22.0
-10.0	-28.6	-0.5	-28.1
-9.5	-21.1	0.1	-21.2
-9.0	-21.7	0.4	-22.1
-8.5	-21.6	0.4	-22.0
-8.0	-33.2	0.4	-33.6
-7.5	-31.6	0.4	-31.9
-7.0	-23.8	0.4	-24.2
-6.5	-10.5	1.2	-11.7
-6.0	-11.0	2.0	-13.0
-5.5	-20.8	3.0	-23.7
-5.0	-9.1	4.0	-13.1
-4.5	-11.0	5.2	-16.1
-4.0	-11.4	6.4	-17.9
-3.5	-8.3	7.9	-16.2
-3.0	0.0		
-2.5	0.8		
-2.0	1.1		
-1.5	10.0		
-1.0	11.5		
-0.5	30.9		
0.0	36.9		

29.10 GHz @ -11.58 dBW / 40 kHz in Co-pol El LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	36.9		
0.5	29.4		
1.0	5.0		
1.5	3.4		
2.0	5.8		
2.5	4.6		
3.0	-5.3		
3.5	-4.5	7.9	-12.4
4.0	-4.9	6.4	-11.4
4.5	-12.0	5.2	-17.2
5.0	-9.8	4.0	-13.9
5.5	-9.0	3.0	-12.0
6.0	-26.5	2.0	-28.6
6.5	-17.3	1.2	-18.5
7.0	-9.5	0.4	-9.9
7.5	-10.9	0.4	-11.3
8.0	-14.3	0.4	-14.6
8.5	-13.4	0.4	-13.7
9.0	-24.0	0.4	-24.3
9.5	-11.0	0.1	-11.0
10.0	-10.7	-0.5	-10.2
10.5	-22.8	-1.0	-21.8
11.0	-17.7	-1.5	-16.1
11.5	-17.7	-2.0	-15.7
12.0	-24.0	-2.5	-21.6
12.5	-14.9	-2.9	-11.9
13.0	-22.9	-3.3	-19.5
13.5	-16.0	-3.8	-12.2
14.0	-13.4	-4.2	-9.3
14.5	-17.4	-4.5	-12.9
15.0	-15.2	-4.9	-10.2
15.5	-19.3	-5.3	-14.1
16.0	-19.8	-5.6	-14.2
16.5	-14.4	-5.9	-8.4
17.0	-40.0	-6.3	-33.7
17.5	-16.0	-6.6	-9.5
18.0	-18.5	-6.9	-11.6
18.5	-14.3	-7.2	-7.2
19.0	-17.6	-7.5	-10.2
19.5	-15.0	-7.8	-7.3
20.0	-18.8	-8.0	-10.8
20.5	-18.9	-8.3	-10.6
21.0	-16.5	-8.6	-8.0
21.5	-16.8	-8.8	-8.0
22.0	-18.9	-9.1	-9.8
22.5	-17.5	-9.3	-8.2
23.0	-19.7	-9.5	-10.2
23.5	-21.5	-9.8	-11.7
24.0	-24.3	-10.0	-14.3
24.5	-28.4	-10.2	-18.1
25.0	-17.1	-10.4	-6.6
25.5	-23.4	-10.7	-12.8
26.0	-26.0	-10.9	-15.1
26.5	-19.1	-11.1	-8.0
27.0	-27.1	-11.3	-15.8
27.5	-24.1	-11.5	-12.7
28.0	-24.7	-11.7	-13.1
28.5	-24.9	-11.9	-13.0
29.0	-32.6	-12.1	-20.5
29.5	-25.5	-12.2	-13.2
30.0	-24.2	-12.4	-11.8

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Elevation LHCP, -10º to +10º @ 0.1º increment

29.10 GHz @ -11.58 dBW / 40 kHz in Co-pol El LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-10.0	-28.6	-0.5	-28.1
-9.9	-26.4	-0.4	-26.0
-9.8	-29.4	-0.3	-29.1
-9.7	-28.5	-0.2	-28.4
-9.6	-23.8	-0.1	-23.8
-9.5	-21.1	0.1	-21.2
-9.4	-20.9	0.2	-21.1
-9.3	-24.0	0.3	-24.3
-9.2	-32.8	0.4	-33.1
-9.1	-28.2	0.4	-28.6
-9.0	-21.7	0.4	-22.1
-8.9	-19.7	0.4	-20.1
-8.8	-21.0	0.4	-21.4
-8.7	-24.1	0.4	-24.5
-8.6	-26.5	0.4	-26.9
-8.5	-21.6	0.4	-22.0
-8.4	-18.8	0.4	-19.1
-8.3	-18.8	0.4	-19.1
-8.2	-20.7	0.4	-21.1
-8.1	-27.1	0.4	-27.5
-8.0	-33.2	0.4	-33.6
-7.9	-25.2	0.4	-25.6
-7.8	-23.8	0.4	-24.2
-7.7	-24.5	0.4	-24.9
-7.6	-27.3	0.4	-27.7
-7.5	-31.6	0.4	-31.9
-7.4	-28.1	0.4	-28.5
-7.3	-22.9	0.4	-23.3
-7.2	-20.4	0.4	-20.8
-7.1	-20.4	0.4	-20.8
-7.0	-23.8	0.4	-24.2
-6.9	-27.3	0.5	-27.9
-6.8	-18.9	0.7	-19.6
-6.7	-13.6	0.8	-14.5
-6.6	-11.1	1.0	-12.1
-6.5	-10.5	1.2	-11.7
-6.4	-11.2	1.3	-12.5
-6.3	-13.6	1.5	-15.2
-6.2	-15.0	1.7	-16.7
-6.1	-12.9	1.9	-14.8
-6.0	-11.0	2.0	-13.0
-5.9	-10.7	2.2	-12.9
-5.8	-12.6	2.4	-15.0
-5.7	-17.6	2.6	-20.2
-5.6	-26.6	2.8	-29.4
-5.5	-20.8	3.0	-23.7
-5.4	-17.2	3.2	-20.4
-5.3	-18.7	3.4	-22.1
-5.2	-18.1	3.6	-21.7
-5.1	-12.6	3.8	-16.4
-5.0	-9.1	4.0	-13.1
-4.9	-7.3	4.2	-11.6
-4.8	-7.5	4.5	-12.0
-4.7	-9.0	4.7	-13.7
-4.6	-10.7	4.9	-15.6
-4.5	-11.0	5.2	-16.1
-4.4	-9.9	5.4	-15.3
-4.3	-9.3	5.7	-15.0
-4.2	-9.6	5.9	-15.5
-4.1	-10.4	6.2	-16.6

29.10 GHz @ -11.58 dBW / 40 kHz in Co-pol El LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	36.9		
0.1	36.6		
0.2	35.7		
0.3	34.3		
0.4	32.2		
0.5	29.4		
0.6	25.7		
0.7	20.6		
0.8	13.4		
0.9	2.3		
1.0	5.0		
1.1	7.3		
1.2	7.1		
1.3	6.0		
1.4	4.7		
1.5	3.4		
1.6	2.0		
1.7	2.3		
1.8	3.7		
1.9	5.0		
2.0	5.8		
2.1	6.2		
2.2	6.3		
2.3	6.1		
2.4	5.6		
2.5	4.6		
2.6	3.0		
2.7	0.6		
2.8	-2.3		
2.9	-4.4		
3.0	-5.3		
3.1	-5.0		
3.2	-4.1		
3.3	-3.2		
3.4	-3.3		
3.5	-4.5	7.9	-12.4
3.6	-6.2	7.6	-13.7
3.7	-7.5	7.3	-14.8
3.8	-6.9	7.0	-13.9
3.9	-5.4	6.7	-12.1
4.0	-4.9	6.4	-11.4
4.1	-5.8	6.2	-11.9
4.2	-6.9	5.9	-12.8
4.3	-9.3	5.7	-15.0
4.4	-11.5	5.4	-16.9
4.5	-12.0	5.2	-17.2
4.6	-11.0	4.9	-15.9
4.7	-9.6	4.7	-14.3
4.8	-8.3	4.5	-12.8
4.9	-7.9	4.2	-12.1
5.0	-9.8	4.0	-13.9
5.1	-14.2	3.8	-18.0
5.2	-26.0	3.6	-29.6
5.3	-17.2	3.4	-20.6
5.4	-10.7	3.2	-13.9
5.5	-9.0	3.0	-12.0
5.6	-8.6	2.8	-11.4
5.7	-10.0	2.6	-12.6
5.8	-14.4	2.4	-16.8
5.9	-24.4	2.2	-26.7

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Elevation LHCP, -10º to +10º @ 0.1º increment

-4.0	-11.4	6.4	-17.9
-3.9	-11.8	6.7	-18.5
-3.8	-11.7	7.0	-18.7
-3.7	-10.7	7.3	-18.0
-3.6	-9.5	7.6	-17.1
-3.5	-8.3	7.9	-16.2
-3.4	-6.9		
-3.3	-5.0		
-3.2	-2.9		
-3.1	-1.0		
-3.0	0.0		
-2.9	0.0		
-2.8	-0.7		
-2.7	-1.3		
-2.6	-0.7		
-2.5	0.8		
-2.4	2.0		
-2.3	2.3		
-2.2	2.0		
-2.1	1.4		
-2.0	1.1		
-1.9	1.7		
-1.8	3.6		
-1.7	6.3		
-1.6	8.6		
-1.5	10.0		
-1.4	10.3		
-1.3	9.5		
-1.2	8.0		
-1.1	7.8		
-1.0	11.5		
-0.9	16.2		
-0.8	20.7		
-0.7	24.7		
-0.6	28.1		
-0.5	30.9		
-0.4	33.2		
-0.3	34.9		
-0.2	36.1		
-0.1	36.8		
0.0	36.9		

6.0	-26.5	2.0	-28.6
6.1	-18.5	1.9	-20.4
6.2	-17.1	1.7	-18.8
6.3	-17.4	1.5	-18.9
6.4	-18.2	1.3	-19.6
6.5	-17.3	1.2	-18.5
6.6	-14.4	1.0	-15.4
6.7	-11.8	0.8	-12.7
6.8	-9.8	0.7	-10.5
6.9	-9.3	0.5	-9.8
7.0	-9.5	0.4	-9.9
7.1	-10.6	0.4	-11.0
7.2	-12.3	0.4	-12.7
7.3	-12.6	0.4	-12.9
7.4	-11.6	0.4	-12.0
7.5	-10.9	0.4	-11.3
7.6	-10.6	0.4	-10.9
7.7	-11.3	0.4	-11.7
7.8	-12.9	0.4	-13.3
7.9	-14.5	0.4	-14.9
8.0	-14.3	0.4	-14.6
8.1	-12.8	0.4	-13.1
8.2	-11.7	0.4	-12.1
8.3	-11.5	0.4	-11.9
8.4	-11.6	0.4	-12.0
8.5	-13.4	0.4	-13.7
8.6	-15.5	0.4	-15.8
8.7	-19.1	0.4	-19.5
8.8	-23.0	0.4	-23.3
8.9	-24.5	0.4	-24.9
9.0	-24.0	0.4	-24.3
9.1	-24.8	0.4	-25.2
9.2	-24.6	0.4	-24.9
9.3	-18.8	0.3	-19.1
9.4	-13.8	0.2	-14.0
9.5	-11.0	0.1	-11.0
9.6	-9.1	-0.1	-9.1
9.7	-8.2	-0.2	-8.1
9.8	-8.2	-0.3	-7.9
9.9	-9.3	-0.4	-8.9
10.0	-10.7	-0.5	-10.2

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
X-pol Azimuth LHCP, -10º to +10º @ 0.1º increment

29.10 GHz @ -11.58 dBW / 40 kHz in X-pol Az LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-10.0	-15.4	-12.6	-2.7
-9.9	-15.0	-12.6	-2.3
-9.8	-14.8	-12.6	-2.2
-9.7	-15.0	-12.6	-2.4
-9.6	-16.0	-12.6	-3.4
-9.5	-17.0	-12.6	-4.4
-9.4	-18.5	-12.6	-5.8
-9.3	-20.3	-12.6	-7.7
-9.2	-22.1	-12.6	-9.5
-9.1	-23.4	-12.6	-10.8
-9.0	-25.3	-12.6	-12.7
-8.9	-24.9	-12.6	-12.3
-8.8	-26.2	-12.6	-13.6
-8.7	-29.5	-12.6	-16.9
-8.6	-37.0	-12.6	-24.4
-8.5	-29.6	-12.6	-16.9
-8.4	-24.2	-12.6	-11.6
-8.3	-22.1	-12.6	-9.5
-8.2	-20.8	-12.6	-8.1
-8.1	-22.0	-12.6	-9.4
-8.0	-24.5	-12.6	-11.8
-7.9	-25.7	-12.6	-13.1
-7.8	-25.9	-12.6	-13.2
-7.7	-22.4	-12.6	-9.8
-7.6	-22.4	-12.6	-9.8
-7.5	-23.7	-12.6	-11.1
-7.4	-28.4	-12.6	-15.8
-7.3	-32.9	-12.6	-20.3
-7.2	-23.2	-12.6	-10.6
-7.1	-19.7	-12.6	-7.1
-7.0	-18.1	-12.6	-5.4
-6.9	-17.7	-12.5	-5.3
-6.8	-18.5	-12.3	-6.2
-6.7	-21.0	-12.2	-8.9
-6.6	-20.6	-12.0	-8.6
-6.5	-18.7	-11.8	-6.8
-6.4	-15.3	-11.7	-3.6
-6.3	-12.9	-11.5	-1.4
-6.2	-11.3	-11.3	0.0
-6.1	-11.2	-11.1	-0.1
-6.0	-12.2	-11.0	-1.2
-5.9	-14.7	-10.8	-3.9
-5.8	-19.8	-10.6	-9.2
-5.7	-24.2	-10.4	-13.9
-5.6	-19.7	-10.2	-9.5
-5.5	-16.2	-10.0	-6.2
-5.4	-14.9	-9.8	-5.1
-5.3	-16.1	-9.6	-6.5
-5.2	-17.3	-9.4	-7.9
-5.1	-17.3	-9.2	-8.1
-5.0	-16.4	-9.0	-7.5
-4.9	-15.2	-8.8	-6.5
-4.8	-14.7	-8.5	-6.2
-4.7	-14.6	-8.3	-6.3
-4.6	-15.0	-8.1	-6.9
-4.5	-13.7	-7.8	-5.9
-4.4	-12.3	-7.6	-4.7
-4.3	-10.7	-7.3	-3.4
-4.2	-9.1	-7.1	-2.1
-4.1	-7.7	-6.8	-0.9

29.10 GHz @ -11.58 dBW / 40 kHz in X-pol Az LHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	6.9		
0.1	5.3		
0.2	4.9		
0.3	5.6		
0.4	6.8		
0.5	7.7		
0.6	8.1		
0.7	7.7		
0.8	6.6		
0.9	4.4		
1.0	0.7		
1.1	-5.2		
1.2	-15.4		
1.3	-13.1		
1.4	-10.9		
1.5	-12.9		
1.6	-14.4		
1.7	-12.2		
1.8	-10.2		
1.9	-10.7		
2.0	-14.5	1.0	-15.4
2.1	-23.9	0.4	-24.4
2.2	-20.7	-0.1	-20.6
2.3	-14.1	-0.5	-13.6
2.4	-13.4	-1.0	-12.4
2.5	-14.5	-1.4	-13.1
2.6	-16.3	-1.9	-14.5
2.7	-16.5	-2.3	-14.2
2.8	-14.6	-2.7	-11.9
2.9	-14.9	-3.1	-11.8
3.0	-16.9	-3.4	-13.5
3.1	-27.7	-3.8	-23.9
3.2	-26.4	-4.1	-22.2
3.3	-17.6	-4.5	-13.1
3.4	-16.4	-4.8	-11.6
3.5	-17.1	-5.1	-12.0
3.6	-18.5	-5.4	-13.1
3.7	-20.4	-5.7	-14.7
3.8	-19.5	-6.0	-13.5
3.9	-20.9	-6.3	-14.6
4.0	-24.0	-6.6	-17.4
4.1	-24.0	-6.8	-17.2
4.2	-19.8	-7.1	-12.8
4.3	-16.3	-7.3	-8.9
4.4	-15.9	-7.6	-8.3
4.5	-17.7	-7.8	-9.9
4.6	-24.4	-8.1	-16.3
4.7	-29.7	-8.3	-21.4
4.8	-21.3	-8.5	-12.7
4.9	-21.0	-8.8	-12.2
5.0	-22.2	-9.0	-13.2
5.1	-28.2	-9.2	-19.0
5.2	-32.0	-9.4	-22.6
5.3	-25.7	-9.6	-16.1
5.4	-20.8	-9.8	-10.9
5.5	-22.2	-10.0	-12.2
5.6	-28.8	-10.2	-18.6
5.7	-32.9	-10.4	-22.5
5.8	-24.4	-10.6	-13.8
5.9	-21.9	-10.8	-11.1

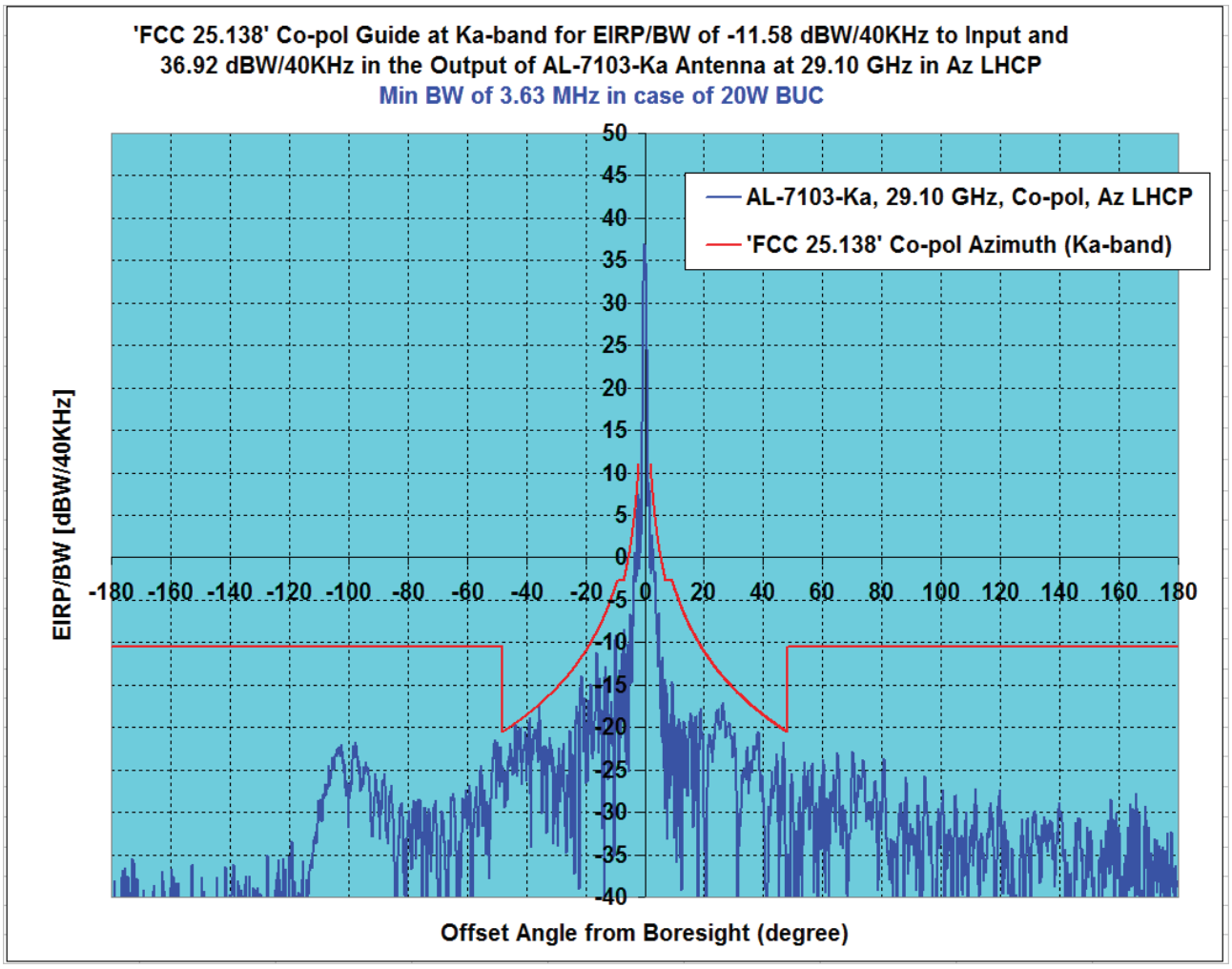
Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
X-pol Azimuth LHCP, -10º to +10º @ 0.1º increment

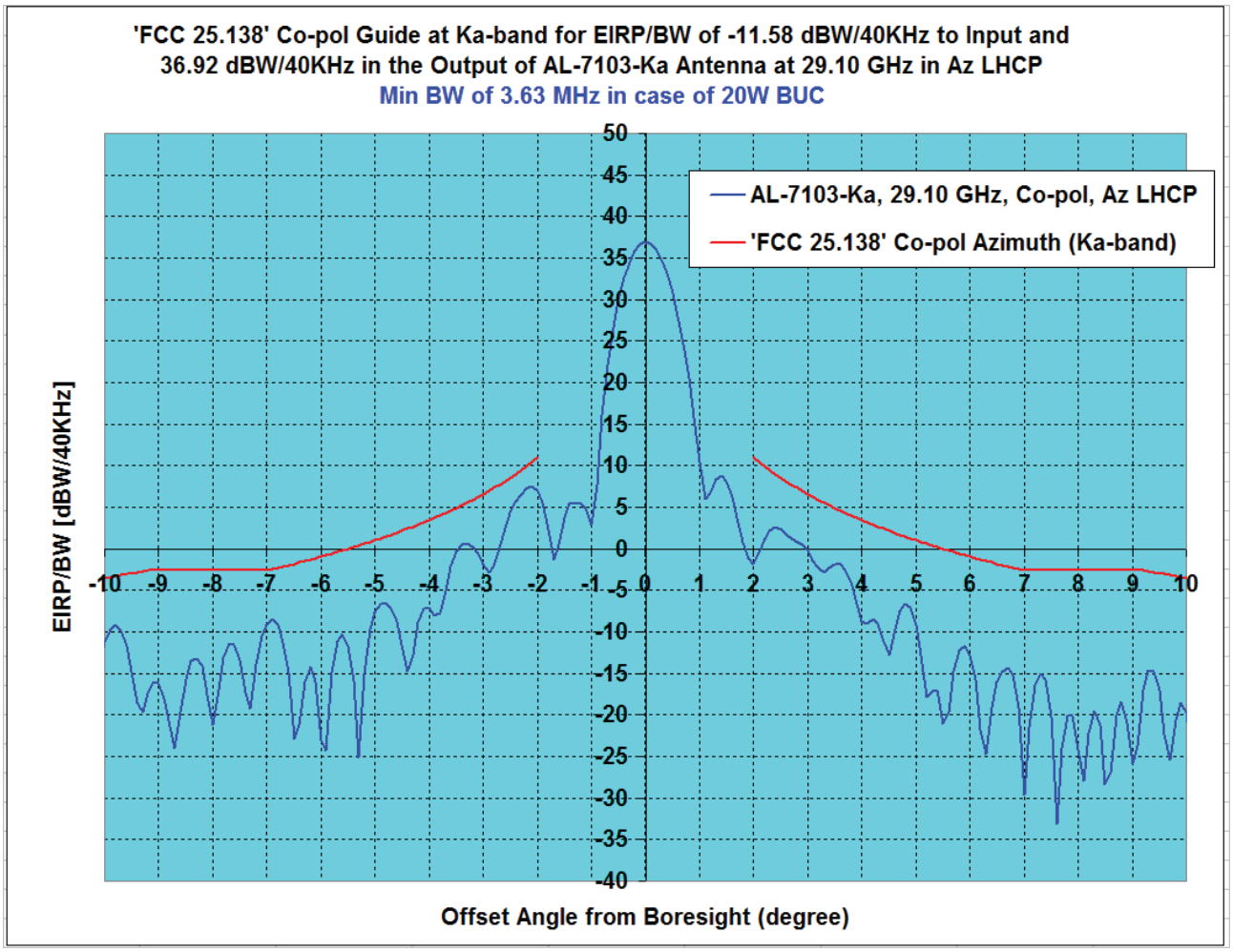
-4.0	-7.1	-6.6	-0.5
-3.9	-6.9	-6.3	-0.7
-3.8	-7.6	-6.0	-1.6
-3.7	-9.0	-5.7	-3.3
-3.6	-10.7	-5.4	-5.3
-3.5	-12.3	-5.1	-7.2
-3.4	-12.0	-4.8	-7.2
-3.3	-10.8	-4.5	-6.3
-3.2	-9.5	-4.1	-5.3
-3.1	-8.6	-3.8	-4.8
-3.0	-8.5	-3.4	-5.0
-2.9	-9.3	-3.1	-6.3
-2.8	-11.8	-2.7	-9.1
-2.7	-16.6	-2.3	-14.3
-2.6	-22.3	-1.9	-20.4
-2.5	-16.4	-1.4	-15.0
-2.4	-13.9	-1.0	-12.9
-2.3	-13.4	-0.5	-12.9
-2.2	-11.5	-0.1	-11.5
-2.1	-8.4	0.4	-8.9
-2.0	-6.1	1.0	-7.1
-1.9	-5.6		
-1.8	-7.8		
-1.7	-11.9		
-1.6	-4.8		
-1.5	1.1		
-1.4	4.4		
-1.3	6.0		
-1.2	5.8		
-1.1	3.8		
-1.0	-1.3		
-0.9	-1.8		
-0.8	5.3		
-0.7	9.4		
-0.6	11.8		
-0.5	12.8		
-0.4	12.9		
-0.3	12.2		
-0.2	11.0		
-0.1	9.1		
0.0	6.9		

6.0	-22.6	-11.0	-11.7
6.1	-24.4	-11.1	-13.3
6.2	-28.2	-11.3	-16.9
6.3	-26.4	-11.5	-14.9
6.4	-25.3	-11.7	-13.6
6.5	-24.4	-11.8	-12.5
6.6	-28.2	-12.0	-16.2
6.7	-29.9	-12.2	-17.8
6.8	-27.0	-12.3	-14.7
6.9	-25.4	-12.5	-12.9
7.0	-27.1	-12.6	-14.5
7.1	-32.2	-12.6	-19.6
7.2	-36.3	-12.6	-23.7
7.3	-26.9	-12.6	-14.3
7.4	-24.7	-12.6	-12.1
7.5	-24.6	-12.6	-12.0
7.6	-26.9	-12.6	-14.3
7.7	-28.7	-12.6	-16.0
7.8	-26.8	-12.6	-14.1
7.9	-23.4	-12.6	-10.8
8.0	-24.5	-12.6	-11.9
8.1	-26.7	-12.6	-14.1
8.2	-36.4	-12.6	-23.8
8.3	-42.8	-12.6	-30.2
8.4	-36.0	-12.6	-23.3
8.5	-34.7	-12.6	-22.0
8.6	-40.0	-12.6	-27.4
8.7	-32.6	-12.6	-20.0
8.8	-33.4	-12.6	-20.8
8.9	-27.8	-12.6	-15.1
9.0	-29.1	-12.6	-16.4
9.1	-30.0	-12.6	-17.4
9.2	-31.7	-12.6	-19.1
9.3	-32.5	-12.6	-19.9
9.4	-30.6	-12.6	-18.0
9.5	-30.0	-12.6	-17.3
9.6	-31.4	-12.6	-18.8
9.7	-31.5	-12.6	-18.8
9.8	-38.5	-12.6	-25.8
9.9	-38.1	-12.6	-25.5
10.0	-35.4	-12.6	-22.7

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

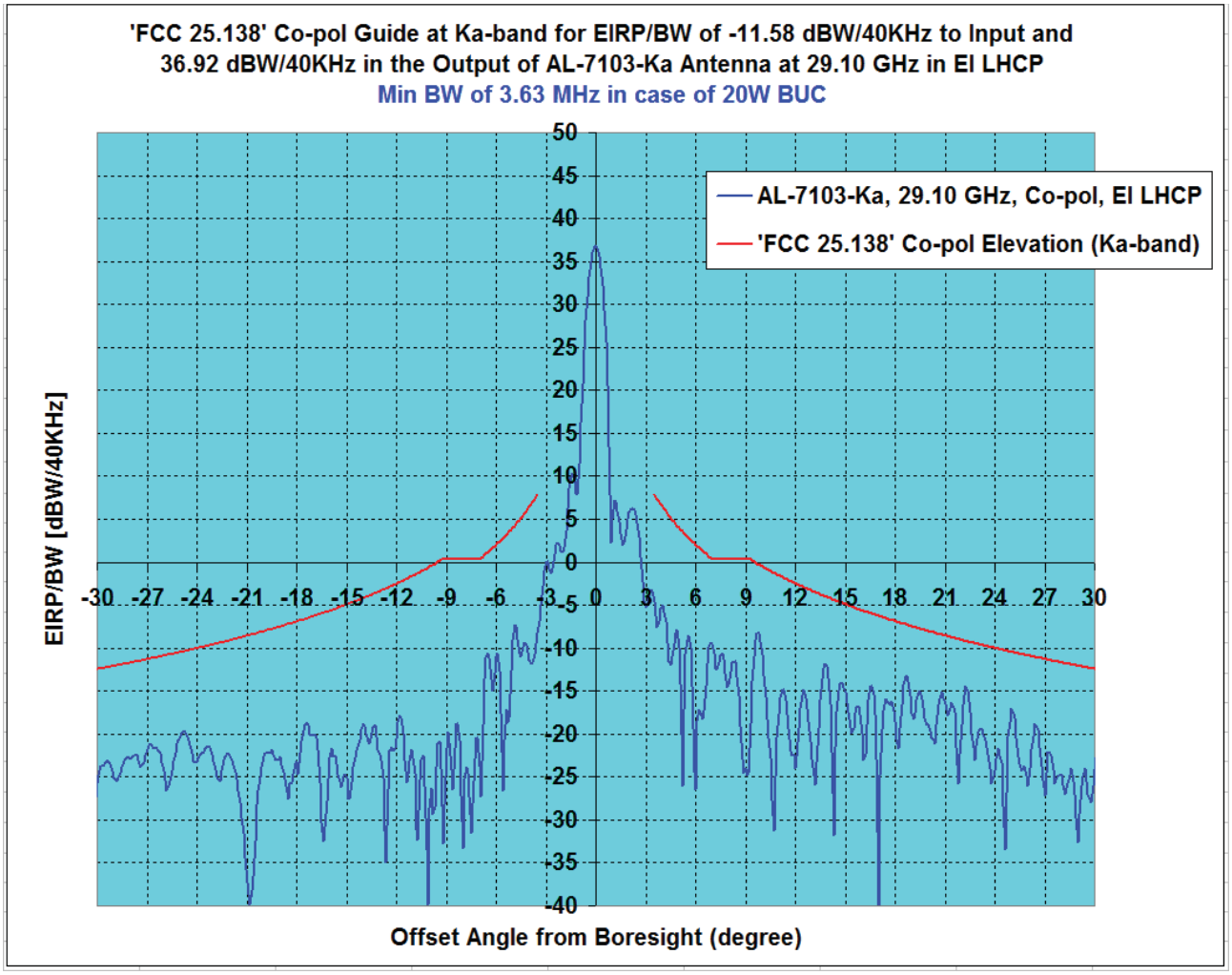


Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Freq., Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (2° to 10°)	± (10° to 180°)	%
AL-7103-Ka, 29.10 GHz, Co-pol, Az LHCP	'FCC 25.138' Co-pol Azimuth (Ka-band)	48.50	-11.58	-2.68	-0.14	0.00

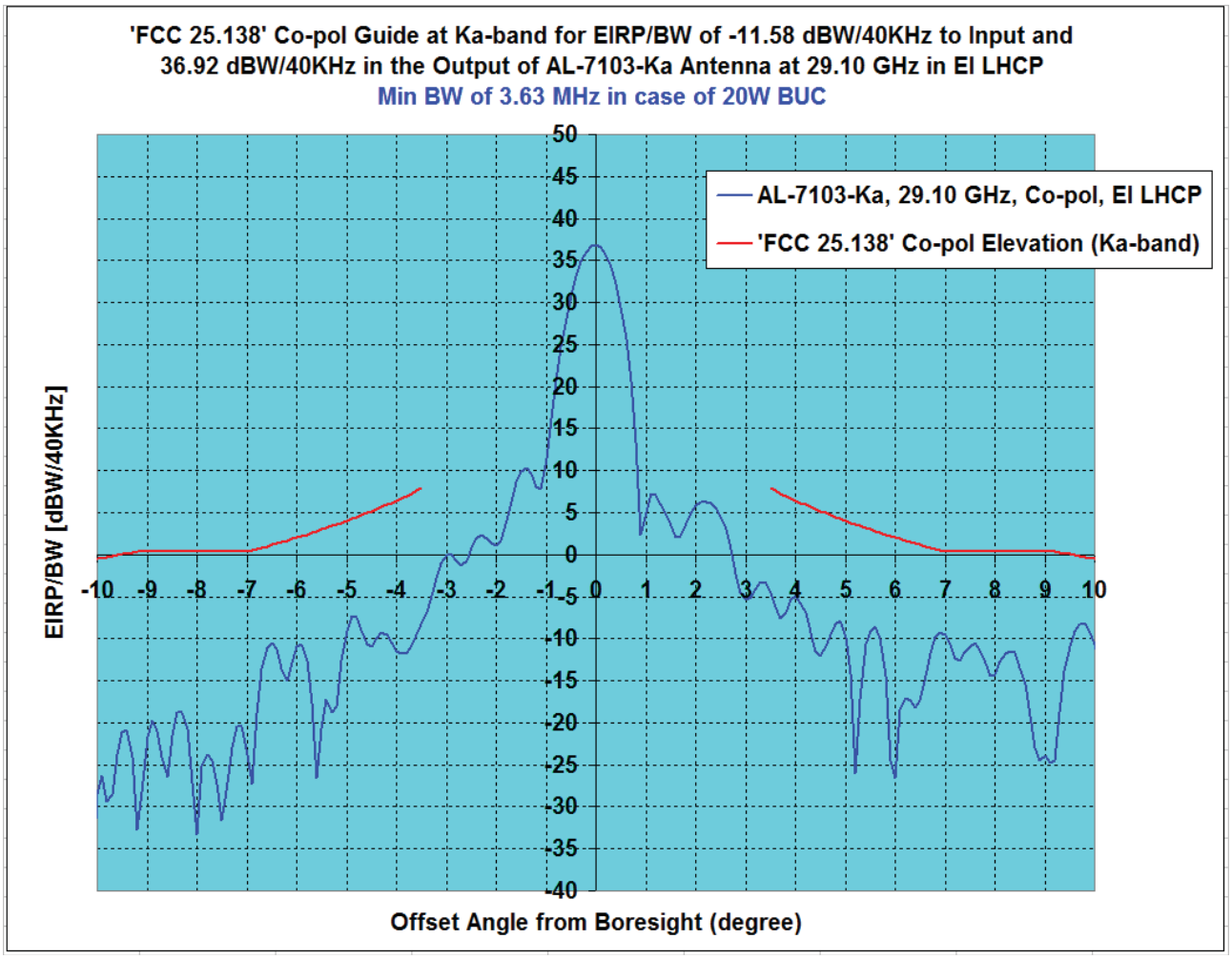


Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Freq., Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (2° to 10°)	± (10° to 180°)	%
AL-7103-Ka, 29.10 GHz, Co-pol, Az LHCP	'FCC 25.138' Co-pol Azimuth (Ka-band)	48.50	-11.58	-2.68	-0.14	0.00

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

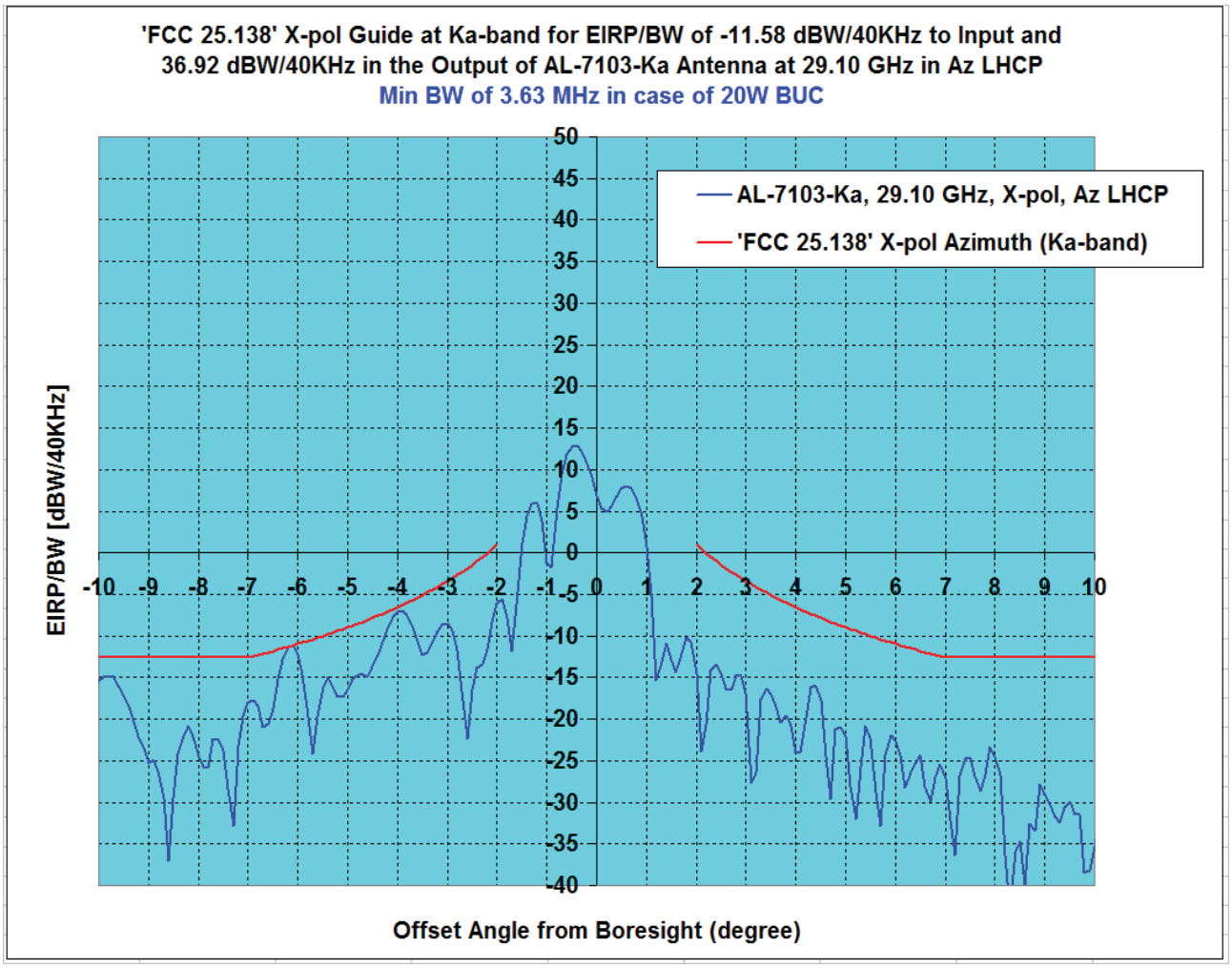


Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Frequency, Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (3.5° to 10°)	± (10° to 30°)	%
AL-7103-Ka, 29.10 GHz, Co-pol, El LHCP	'FCC 25.138' Co-pol Elevation (Ka-band)	48.50	-11.58	-7.93	-5.25	0.00



Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Frequency, Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (3.5° to 10°)	± (10° to 30°)	%
AL-7103-Ka, 29.10 GHz, Co-pol, El LHCP	'FCC 25.138' Co-pol Elevation (Ka-band)	48.50	-11.58	-7.93	-5.25	0.00

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



Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Frequency, Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (2° to 7°)	± (2° to 9.2°)	%
AL-7103-Ka, 29.10 GHz, X-pol, Az LHCP	'FCC 25.138' X-pol Azimuth (Ka-band)	48.50	-11.58	0.00	0.00	0.00

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth RHCP, -180º to +180º @ 1.0º increment

29.10 GHz @ -11.58 dBW / 40 kHz in Co-pol Az RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-179.0	-42.8	-10.5	-32.3
-178.0	-41.4	-10.5	-30.9
-177.0	-39.1	-10.5	-28.6
-176.0	-35.0	-10.5	-24.5
-175.0	-42.8	-10.5	-32.3
-174.0	-47.3	-10.5	-36.8
-173.0	-43.1	-10.5	-32.6
-172.0	-45.4	-10.5	-34.9
-171.0	-47.3	-10.5	-36.8
-170.0	-44.5	-10.5	-34.0
-169.0	-37.0	-10.5	-26.5
-168.0	-55.6	-10.5	-45.1
-167.0	-36.8	-10.5	-26.3
-166.0	-41.6	-10.5	-31.1
-165.0	-51.4	-10.5	-40.9
-164.0	-47.6	-10.5	-37.1
-163.0	-48.5	-10.5	-38.0
-162.0	-44.7	-10.5	-34.2
-161.0	-45.5	-10.5	-35.0
-160.0	-41.5	-10.5	-31.0
-159.0	-44.6	-10.5	-34.1
-158.0	-43.2	-10.5	-32.7
-157.0	-44.4	-10.5	-33.9
-156.0	-42.5	-10.5	-32.0
-155.0	-46.8	-10.5	-36.3
-154.0	-45.8	-10.5	-35.3
-153.0	-43.9	-10.5	-33.4
-152.0	-48.3	-10.5	-37.8
-151.0	-42.7	-10.5	-32.2
-150.0	-44.0	-10.5	-33.5
-149.0	-39.6	-10.5	-29.1
-148.0	-37.8	-10.5	-27.3
-147.0	-40.0	-10.5	-29.5
-146.0	-46.0	-10.5	-35.5
-145.0	-38.6	-10.5	-28.1
-144.0	-42.4	-10.5	-31.9
-143.0	-45.2	-10.5	-34.7
-142.0	-45.8	-10.5	-35.3
-141.0	-44.1	-10.5	-33.6
-140.0	-45.1	-10.5	-34.6
-139.0	-39.2	-10.5	-28.7
-138.0	-53.1	-10.5	-42.6
-137.0	-45.7	-10.5	-35.2
-136.0	-48.6	-10.5	-38.1
-135.0	-40.9	-10.5	-30.4
-134.0	-39.0	-10.5	-28.5
-133.0	-39.7	-10.5	-29.2
-132.0	-51.3	-10.5	-40.8
-131.0	-42.2	-10.5	-31.7
-130.0	-53.9	-10.5	-43.4
-129.0	-39.4	-10.5	-28.9
-128.0	-43.4	-10.5	-32.9
-127.0	-37.3	-10.5	-26.8
-126.0	-49.7	-10.5	-39.2
-125.0	-39.1	-10.5	-28.6
-124.0	-40.3	-10.5	-29.8
-123.0	-46.1	-10.5	-35.6
-122.0	-46.8	-10.5	-36.3
-121.0	-41.5	-10.5	-31.0
-120.0	-39.4	-10.5	-28.9

29.10 GHz @ -11.58 dBW / 40 kHz in Co-pol Az RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	36.9		
1.0	11.1		
2.0	-0.6	11.0	-11.6
3.0	0.2	6.6	-6.4
4.0	-11.0	3.4	-14.4
5.0	-9.3	1.0	-10.3
6.0	-10.3	-1.0	-9.4
7.0	-38.5	-2.6	-35.9
8.0	-25.3	-2.6	-22.6
9.0	-27.7	-2.6	-25.1
10.0	-21.9	-3.5	-18.4
11.0	-24.6	-4.5	-20.1
12.0	-20.2	-5.5	-14.7
13.0	-18.6	-6.3	-12.3
14.0	-18.1	-7.2	-10.9
15.0	-20.9	-7.9	-13.0
16.0	-26.4	-8.6	-17.8
17.0	-17.8	-9.3	-8.6
18.0	-28.4	-9.9	-18.5
19.0	-21.6	-10.5	-11.1
20.0	-22.4	-11.0	-11.4
21.0	-32.4	-11.6	-20.9
22.0	-23.8	-12.1	-11.7
23.0	-21.6	-12.5	-9.0
24.0	-19.7	-13.0	-6.7
25.0	-20.8	-13.4	-7.4
26.0	-21.3	-13.9	-7.5
27.0	-24.7	-14.3	-10.4
28.0	-21.5	-14.7	-6.8
29.0	-26.5	-15.1	-11.5
30.0	-25.9	-15.4	-10.5
31.0	-24.8	-15.8	-9.0
32.0	-41.6	-16.1	-25.4
33.0	-28.7	-16.5	-12.3
34.0	-33.5	-16.8	-16.8
35.0	-31.6	-17.1	-14.5
36.0	-33.7	-17.4	-16.2
37.0	-26.2	-17.7	-8.5
38.0	-29.7	-18.0	-11.7
39.0	-29.1	-18.3	-10.9
40.0	-37.0	-18.6	-18.5
41.0	-30.2	-18.8	-11.4
42.0	-30.5	-19.1	-11.4
43.0	-36.4	-19.3	-17.1
44.0	-28.6	-19.6	-9.0
45.0	-47.7	-19.8	-27.8
46.0	-29.0	-20.1	-8.9
47.0	-20.1	-20.3	0.2
48.0	-31.1	-20.5	-10.6
49.0	-27.0	-10.5	-16.5
50.0	-27.3	-10.5	-16.8
51.0	-29.6	-10.5	-19.1
52.0	-32.9	-10.5	-22.4
53.0	-42.7	-10.5	-32.2
54.0	-31.5	-10.5	-21.0
55.0	-28.6	-10.5	-18.1
56.0	-25.0	-10.5	-14.5
57.0	-29.6	-10.5	-19.1
58.0	-34.7	-10.5	-24.2
59.0	-25.8	-10.5	-15.3

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

-119.0	-49.3	-10.5	-38.8
-118.0	-51.0	-10.5	-40.5
-117.0	-43.8	-10.5	-33.3
-116.0	-35.0	-10.5	-24.5
-115.0	-36.9	-10.5	-26.4
-114.0	-39.2	-10.5	-28.7
-113.0	-39.1	-10.5	-28.6
-112.0	-35.0	-10.5	-24.5
-111.0	-37.4	-10.5	-26.9
-110.0	-33.8	-10.5	-23.3
-109.0	-31.9	-10.5	-21.4
-108.0	-29.8	-10.5	-19.3
-107.0	-26.6	-10.5	-16.1
-106.0	-26.0	-10.5	-15.5
-105.0	-24.7	-10.5	-14.2
-104.0	-24.6	-10.5	-14.1
-103.0	-24.7	-10.5	-14.2
-102.0	-26.2	-10.5	-15.7
-101.0	-28.8	-10.5	-18.3
-100.0	-37.1	-10.5	-26.6
-99.0	-58.8	-10.5	-48.3
-98.0	-34.4	-10.5	-23.9
-97.0	-28.5	-10.5	-18.0
-96.0	-26.1	-10.5	-15.6
-95.0	-26.2	-10.5	-15.7
-94.0	-32.2	-10.5	-21.7
-93.0	-29.8	-10.5	-19.3
-92.0	-25.8	-10.5	-15.3
-91.0	-29.8	-10.5	-19.3
-90.0	-31.3	-10.5	-20.8
-89.0	-28.3	-10.5	-17.8
-88.0	-26.5	-10.5	-16.0
-87.0	-24.7	-10.5	-14.2
-86.0	-29.9	-10.5	-19.4
-85.0	-24.1	-10.5	-13.6
-84.0	-24.2	-10.5	-13.7
-83.0	-39.5	-10.5	-29.0
-82.0	-26.4	-10.5	-15.9
-81.0	-26.9	-10.5	-16.4
-80.0	-28.1	-10.5	-17.6
-79.0	-28.4	-10.5	-17.9
-78.0	-29.5	-10.5	-19.0
-77.0	-29.1	-10.5	-18.6
-76.0	-34.9	-10.5	-24.4
-75.0	-26.9	-10.5	-16.4
-74.0	-26.0	-10.5	-15.5
-73.0	-27.6	-10.5	-17.1
-72.0	-29.0	-10.5	-18.5
-71.0	-28.0	-10.5	-17.5
-70.0	-32.4	-10.5	-21.9
-69.0	-28.8	-10.5	-18.3
-68.0	-39.8	-10.5	-29.3
-67.0	-32.3	-10.5	-21.8
-66.0	-35.9	-10.5	-25.4
-65.0	-24.7	-10.5	-14.2
-64.0	-26.0	-10.5	-15.5
-63.0	-30.1	-10.5	-19.6
-62.0	-30.8	-10.5	-20.3
-61.0	-34.5	-10.5	-24.0
-60.0	-29.6	-10.5	-19.1
-59.0	-32.0	-10.5	-21.5
-58.0	-28.1	-10.5	-17.6
-57.0	-24.9	-10.5	-14.4

60.0	-27.1	-10.5	-16.6
61.0	-33.5	-10.5	-23.0
62.0	-32.7	-10.5	-22.2
63.0	-39.8	-10.5	-29.3
64.0	-30.4	-10.5	-19.9
65.0	-22.2	-10.5	-11.7
66.0	-25.9	-10.5	-15.4
67.0	-27.3	-10.5	-16.8
68.0	-24.4	-10.5	-13.9
69.0	-25.8	-10.5	-15.3
70.0	-27.0	-10.5	-16.5
71.0	-36.6	-10.5	-26.1
72.0	-26.8	-10.5	-16.3
73.0	-29.8	-10.5	-19.3
74.0	-41.7	-10.5	-31.2
75.0	-29.8	-10.5	-19.3
76.0	-39.2	-10.5	-28.7
77.0	-32.1	-10.5	-21.6
78.0	-34.9	-10.5	-24.4
79.0	-36.6	-10.5	-26.1
80.0	-40.6	-10.5	-30.1
81.0	-25.5	-10.5	-15.0
82.0	-29.2	-10.5	-18.7
83.0	-37.9	-10.5	-27.4
84.0	-36.3	-10.5	-25.8
85.0	-29.8	-10.5	-19.3
86.0	-34.8	-10.5	-24.3
87.0	-42.9	-10.5	-32.4
88.0	-34.0	-10.5	-23.5
89.0	-27.9	-10.5	-17.4
90.0	-38.8	-10.5	-28.3
91.0	-32.3	-10.5	-21.8
92.0	-37.4	-10.5	-26.9
93.0	-32.6	-10.5	-22.1
94.0	-37.1	-10.5	-26.6
95.0	-33.8	-10.5	-23.3
96.0	-34.7	-10.5	-24.2
97.0	-36.6	-10.5	-26.1
98.0	-32.1	-10.5	-21.6
99.0	-36.0	-10.5	-25.5
100.0	-42.3	-10.5	-31.8
101.0	-33.2	-10.5	-22.7
102.0	-31.7	-10.5	-21.2
103.0	-39.2	-10.5	-28.7
104.0	-36.8	-10.5	-26.3
105.0	-37.7	-10.5	-27.2
106.0	-32.2	-10.5	-21.7
107.0	-31.7	-10.5	-21.2
108.0	-35.7	-10.5	-25.2
109.0	-52.8	-10.5	-42.3
110.0	-42.6	-10.5	-32.1
111.0	-30.7	-10.5	-20.2
112.0	-38.6	-10.5	-28.1
113.0	-33.7	-10.5	-23.2
114.0	-33.9	-10.5	-23.4
115.0	-39.1	-10.5	-28.6
116.0	-33.7	-10.5	-23.2
117.0	-44.1	-10.5	-33.6
118.0	-44.4	-10.5	-33.9
119.0	-34.4	-10.5	-23.9
120.0	-38.6	-10.5	-28.1
121.0	-33.5	-10.5	-23.0
122.0	-35.9	-10.5	-25.4

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table

Co-pol Azimuth RHCP, -180º to +180º @ 1.0º increment

-56.0	-28.2	-10.5	-17.7
-55.0	-22.5	-10.5	-12.0
-54.0	-24.4	-10.5	-13.9
-53.0	-28.4	-10.5	-17.9
-52.0	-30.4	-10.5	-19.9
-51.0	-22.1	-10.5	-11.6
-50.0	-21.9	-10.5	-11.4
-49.0	-31.1	-10.5	-20.6
-48.0	-24.0	-20.5	-3.5
-47.0	-25.3	-20.3	-5.0
-46.0	-28.1	-20.1	-8.0
-45.0	-23.3	-19.8	-3.5
-44.0	-23.9	-19.6	-4.3
-43.0	-24.0	-19.3	-4.7
-42.0	-17.2	-19.1	1.8
-41.0	-20.2	-18.8	-1.4
-40.0	-25.2	-18.6	-6.6
-39.0	-20.6	-18.3	-2.4
-38.0	-21.2	-18.0	-3.2
-37.0	-20.6	-17.7	-2.9
-36.0	-22.3	-17.4	-4.9
-35.0	-23.7	-17.1	-6.6
-34.0	-21.0	-16.8	-4.2
-33.0	-25.7	-16.5	-9.3
-32.0	-21.5	-16.1	-5.4
-31.0	-19.5	-15.8	-3.7
-30.0	-25.7	-15.4	-10.3
-29.0	-20.7	-15.1	-5.6
-28.0	-25.6	-14.7	-10.9
-27.0	-25.2	-14.3	-11.0
-26.0	-23.4	-13.9	-9.5
-25.0	-16.2	-13.4	-2.7
-24.0	-20.6	-13.0	-7.6
-23.0	-20.4	-12.5	-7.9
-22.0	-23.7	-12.1	-11.7
-21.0	-12.8	-11.6	-1.2
-20.0	-20.9	-11.0	-9.9
-19.0	-17.8	-10.5	-7.3
-18.0	-17.1	-9.9	-7.2
-17.0	-22.8	-9.3	-13.5
-16.0	-14.0	-8.6	-5.3
-15.0	-22.3	-7.9	-14.4
-14.0	-12.7	-7.2	-5.5
-13.0	-18.3	-6.3	-11.9
-12.0	-28.9	-5.5	-23.4
-11.0	-31.7	-4.5	-27.1
-10.0	-10.7	-3.5	-7.2
-9.0	-24.4	-2.6	-21.8
-8.0	-19.8	-2.6	-17.2
-7.0	-11.8	-2.6	-9.2
-6.0	-33.9	-1.0	-33.0
-5.0	-7.4	1.0	-8.5
-4.0	-10.2	3.4	-13.7
-3.0	-2.7	6.6	-9.3
-2.0	5.3	11.0	-5.7
-1.0	2.3		
0.0	36.9		

123.0	-39.2	-10.5	-28.7
124.0	-32.2	-10.5	-21.7
125.0	-45.7	-10.5	-35.2
126.0	-36.3	-10.5	-25.8
127.0	-39.1	-10.5	-28.6
128.0	-33.1	-10.5	-22.6
129.0	-39.5	-10.5	-29.0
130.0	-31.4	-10.5	-20.9
131.0	-36.8	-10.5	-26.3
132.0	-37.7	-10.5	-27.2
133.0	-35.9	-10.5	-25.4
134.0	-31.0	-10.5	-20.5
135.0	-36.5	-10.5	-26.0
136.0	-39.7	-10.5	-29.2
137.0	-37.6	-10.5	-27.1
138.0	-30.5	-10.5	-20.0
139.0	-34.1	-10.5	-23.6
140.0	-39.7	-10.5	-29.2
141.0	-34.2	-10.5	-23.7
142.0	-31.4	-10.5	-20.9
143.0	-36.4	-10.5	-25.9
144.0	-46.8	-10.5	-36.3
145.0	-37.2	-10.5	-26.7
146.0	-44.2	-10.5	-33.7
147.0	-31.8	-10.5	-21.3
148.0	-30.7	-10.5	-20.2
149.0	-36.1	-10.5	-25.6
150.0	-36.6	-10.5	-26.1
151.0	-35.9	-10.5	-25.4
152.0	-35.2	-10.5	-24.7
153.0	-44.6	-10.5	-34.1
154.0	-35.0	-10.5	-24.5
155.0	-34.7	-10.5	-24.2
156.0	-37.0	-10.5	-26.5
157.0	-31.7	-10.5	-21.2
158.0	-41.4	-10.5	-30.9
159.0	-31.1	-10.5	-20.6
160.0	-29.1	-10.5	-18.6
161.0	-30.0	-10.5	-19.5
162.0	-37.0	-10.5	-26.5
163.0	-49.4	-10.5	-38.9
164.0	-38.1	-10.5	-27.6
165.0	-41.9	-10.5	-31.4
166.0	-39.8	-10.5	-29.3
167.0	-32.5	-10.5	-22.0
168.0	-36.2	-10.5	-25.7
169.0	-37.0	-10.5	-26.5
170.0	-53.5	-10.5	-43.0
171.0	-47.3	-10.5	-36.8
172.0	-29.8	-10.5	-19.3
173.0	-37.3	-10.5	-26.8
174.0	-35.1	-10.5	-24.6
175.0	-40.5	-10.5	-30.0
176.0	-39.3	-10.5	-28.8
177.0	-48.7	-10.5	-38.2
178.0	-44.7	-10.5	-34.2
179.0	-42.6	-10.5	-32.1

Orbit Communication Systems Ltd.

AL AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth RHCP, -10º to +10º @ 0.1º increment

29.10 GHz @ -11.58 dBW / 40 kHz in Co-pol Az RHCP					29.10 GHz @ -11.58 dBW / 40 kHz in Co-pol Az RHCP			
Angle	EIRPsd	Mask	Over Mask		Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB		Degrees	dBW/40kHz	dBW/40kHz	dB
-10.0	-10.7	-3.5	-7.2		0.0	36.9		
-9.9	-9.2	-3.4	-5.8		0.1	36.8		
-9.8	-8.9	-3.3	-5.6		0.2	36.1		
-9.7	-9.8	-3.2	-6.6		0.3	34.9		
-9.6	-11.5	-3.1	-8.5		0.4	33.2		
-9.5	-14.3	-2.9	-11.4		0.5	30.8		
-9.4	-18.2	-2.8	-15.4		0.6	28.0		
-9.3	-21.1	-2.7	-18.4		0.7	24.5		
-9.2	-21.2	-2.6	-18.5		0.8	20.4		
-9.1	-21.9	-2.6	-19.3		0.9	15.7		
-9.0	-24.4	-2.6	-21.8		1.0	11.1		
-8.9	-31.1	-2.6	-28.5		1.1	7.0		
-8.8	-26.5	-2.6	-23.9		1.2	6.5		
-8.7	-19.9	-2.6	-17.3		1.3	7.8		
-8.6	-16.6	-2.6	-14.0		1.4	8.4		
-8.5	-14.5	-2.6	-11.9		1.5	7.8		
-8.4	-13.6	-2.6	-11.0		1.6	6.1		
-8.3	-13.7	-2.6	-11.0		1.7	3.4		
-8.2	-15.2	-2.6	-12.6		1.8	0.6		
-8.1	-18.1	-2.6	-15.5		1.9	-0.8		
-8.0	-19.8	-2.6	-17.2		2.0	-0.6	11.0	-11.6
-7.9	-17.3	-2.6	-14.7		2.1	0.7	10.4	-9.7
-7.8	-14.5	-2.6	-11.9		2.2	2.1	9.9	-7.9
-7.7	-13.6	-2.6	-11.0		2.3	2.7	9.5	-6.7
-7.6	-14.4	-2.6	-11.8		2.4	2.9	9.0	-6.1
-7.5	-17.2	-2.6	-14.6		2.5	2.3	8.6	-6.2
-7.4	-20.4	-2.6	-17.8		2.6	1.0	8.1	-7.1
-7.3	-18.5	-2.6	-15.9		2.7	0.3	7.7	-7.5
-7.2	-14.4	-2.6	-11.8		2.8	-0.1	7.3	-7.4
-7.1	-12.6	-2.6	-9.9		2.9	0.3	6.9	-6.7
-7.0	-11.8	-2.6	-9.2		3.0	0.2	6.6	-6.4
-6.9	-12.2	-2.5	-9.7		3.1	-0.2	6.2	-6.4
-6.8	-13.4	-2.3	-11.1		3.2	-1.2	5.9	-7.1
-6.7	-16.0	-2.2	-13.9		3.3	-2.0	5.5	-7.6
-6.6	-20.0	-2.0	-18.0		3.4	-2.6	5.2	-7.9
-6.5	-26.4	-1.8	-24.6		3.5	-3.3	4.9	-8.2
-6.4	-21.0	-1.7	-19.4		3.6	-3.9	4.6	-8.5
-6.3	-17.4	-1.5	-16.0		3.7	-4.7	4.3	-9.0
-6.2	-17.3	-1.3	-16.0		3.8	-6.6	4.0	-10.6
-6.1	-19.8	-1.1	-18.7		3.9	-8.8	3.7	-12.5
-6.0	-33.9	-1.0	-33.0		4.0	-11.0	3.4	-14.4
-5.9	-18.2	-0.8	-17.4		4.1	-11.0	3.2	-14.2
-5.8	-12.1	-0.6	-11.5		4.2	-9.3	2.9	-12.2
-5.7	-9.7	-0.4	-9.3		4.3	-8.9	2.7	-11.5
-5.6	-8.6	-0.2	-8.4		4.4	-8.3	2.4	-10.7
-5.5	-9.8	0.0	-9.8		4.5	-8.1	2.2	-10.2
-5.4	-13.1	0.2	-13.3		4.6	-7.5	1.9	-9.4
-5.3	-18.8	0.4	-19.2		4.7	-6.3	1.7	-8.0
-5.2	-14.4	0.6	-15.0		4.8	-6.0	1.5	-7.5
-5.1	-9.5	0.8	-10.3		4.9	-7.1	1.2	-8.3
-5.0	-7.4	1.0	-8.5		5.0	-9.3	1.0	-10.3
-4.9	-7.0	1.2	-8.2		5.1	-15.0	0.8	-15.8
-4.8	-7.6	1.5	-9.1		5.2	-34.1	0.6	-34.7
-4.7	-9.3	1.7	-11.0		5.3	-20.0	0.4	-20.4
-4.6	-11.3	1.9	-13.3		5.4	-17.5	0.2	-17.7
-4.5	-13.5	2.2	-15.7		5.5	-23.2	0.0	-23.1
-4.4	-14.5	2.4	-16.9		5.6	-22.4	-0.2	-22.2
-4.3	-13.0	2.7	-15.7		5.7	-15.0	-0.4	-14.6
-4.2	-10.9	2.9	-13.8		5.8	-11.3	-0.6	-10.8
-4.1	-9.7	3.2	-12.8		5.9	-9.9	-0.8	-9.1
-4.0	-10.2	3.4	-13.7		6.0	-10.3	-1.0	-9.4
-3.9	-10.9	3.7	-14.6		6.1	-12.3	-1.1	-11.2

Orbit Communication Systems Ltd.

AL AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Azimuth RHCP, -10º to +10º @ 0.1º increment

-3.8	-8.9	4.0	-12.9		6.2	-14.2	-1.3	-12.9
-3.7	-5.2	4.3	-9.5		6.3	-14.6	-1.5	-13.1
-3.6	-2.5	4.6	-7.1		6.4	-13.3	-1.7	-11.7
-3.5	-1.0	4.9	-5.9		6.5	-13.2	-1.8	-11.4
-3.4	-0.6	5.2	-5.8		6.6	-14.0	-2.0	-12.1
-3.3	-1.0	5.5	-6.6		6.7	-16.0	-2.2	-13.8
-3.2	-1.8	5.9	-7.7		6.8	-20.7	-2.3	-18.4
-3.1	-2.5	6.2	-8.8		6.9	-27.7	-2.5	-25.2
-3.0	-2.7	6.6	-9.3		7.0	-38.5	-2.6	-35.9
-2.9	-2.2	6.9	-9.1		7.1	-23.7	-2.6	-21.1
-2.8	-0.8	7.3	-8.1		7.2	-19.1	-2.6	-16.5
-2.7	1.2	7.7	-6.5		7.3	-17.5	-2.6	-14.8
-2.6	3.0	8.1	-5.1		7.4	-18.2	-2.6	-15.5
-2.5	4.3	8.6	-4.3		7.5	-21.3	-2.6	-18.6
-2.4	5.0	9.0	-4.0		7.6	-25.5	-2.6	-22.9
-2.3	5.3	9.5	-4.2		7.7	-23.9	-2.6	-21.2
-2.2	5.4	9.9	-4.5		7.8	-21.6	-2.6	-18.9
-2.1	5.5	10.4	-5.0		7.9	-22.4	-2.6	-19.8
-2.0	5.3	11.0	-5.7		8.0	-25.3	-2.6	-22.6
-1.9	4.3				8.1	-22.5	-2.6	-19.9
-1.8	2.4				8.2	-18.1	-2.6	-15.5
-1.7	0.4				8.3	-16.3	-2.6	-13.6
-1.6	1.2				8.4	-16.0	-2.6	-13.4
-1.5	3.0				8.5	-19.0	-2.6	-16.4
-1.4	3.9				8.6	-24.5	-2.6	-21.8
-1.3	3.8				8.7	-28.3	-2.6	-25.7
-1.2	3.9				8.8	-23.7	-2.6	-21.0
-1.1	4.3				8.9	-23.2	-2.6	-20.6
-1.0	2.3				9.0	-27.7	-2.6	-25.1
-0.9	4.6				9.1	-33.6	-2.6	-31.0
-0.8	14.3				9.2	-23.8	-2.6	-21.2
-0.7	20.9				9.3	-19.7	-2.7	-16.9
-0.6	26.0				9.4	-18.3	-2.8	-15.5
-0.5	29.6				9.5	-20.1	-2.9	-17.2
-0.4	32.3				9.6	-25.5	-3.1	-22.4
-0.3	34.3				9.7	-28.3	-3.2	-25.1
-0.2	35.7				9.8	-23.0	-3.3	-19.7
-0.1	36.6				9.9	-20.4	-3.4	-17.0
0.0	36.9				10.0	-21.9	-3.5	-18.4

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Elevation RHCP, -30º to +30º @ 0.5º increment

29.10 GHz @ -11.58 dBW / 40 kHz in Co-pol El RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-30.0	-20.1	-12.4	-7.7
-29.5	-18.1	-12.2	-5.8
-29.0	-20.3	-12.1	-8.3
-28.5	-19.8	-11.9	-8.0
-28.0	-18.5	-11.7	-6.9
-27.5	-20.0	-11.5	-8.5
-27.0	-20.1	-11.3	-8.8
-26.5	-19.1	-11.1	-8.0
-26.0	-20.3	-10.9	-9.4
-25.5	-18.5	-10.7	-7.8
-25.0	-16.6	-10.4	-6.1
-24.5	-18.6	-10.2	-8.4
-24.0	-24.1	-10.0	-14.1
-23.5	-23.5	-9.8	-13.7
-23.0	-19.0	-9.5	-9.4
-22.5	-20.7	-9.3	-11.4
-22.0	-25.4	-9.1	-16.4
-21.5	-26.6	-8.8	-17.8
-21.0	-28.2	-8.6	-19.7
-20.5	-31.3	-8.3	-23.0
-20.0	-28.5	-8.0	-20.5
-19.5	-26.5	-7.8	-18.8
-19.0	-20.7	-7.5	-13.3
-18.5	-25.1	-7.2	-17.9
-18.0	-48.0	-6.9	-41.1
-17.5	-26.8	-6.6	-20.2
-17.0	-22.8	-6.3	-16.5
-16.5	-23.4	-5.9	-17.4
-16.0	-29.5	-5.6	-23.9
-15.5	-21.4	-5.3	-16.2
-15.0	-23.9	-4.9	-19.0
-14.5	-21.6	-4.5	-17.1
-14.0	-18.0	-4.2	-13.8
-13.5	-22.1	-3.8	-18.4
-13.0	-23.9	-3.3	-20.5
-12.5	-32.8	-2.9	-29.9
-12.0	-32.2	-2.5	-29.7
-11.5	-21.2	-2.0	-19.2
-11.0	-20.2	-1.5	-18.6
-10.5	-19.9	-1.0	-18.8
-10.0	-22.9	-0.5	-22.4
-9.5	-22.1	0.1	-22.1
-9.0	-72.2	0.4	-72.5
-8.5	-27.0	0.4	-27.3
-8.0	-20.2	0.4	-20.6
-7.5	-24.3	0.4	-24.7
-7.0	-15.4	0.4	-15.8
-6.5	-12.6	1.2	-13.8
-6.0	-11.9	2.0	-14.0
-5.5	-21.2	3.0	-24.2
-5.0	-10.2	4.0	-14.2
-4.5	-15.1	5.2	-20.2
-4.0	-10.4	6.4	-16.9
-3.5	-5.6	7.9	-13.5
-3.0	-0.2		
-2.5	1.6		
-2.0	0.3		
-1.5	9.8		
-1.0	10.6		
-0.5	31.0		
0.0	36.9		

29.10 GHz @ -11.58 dBW / 40 kHz in Co-pol El RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	36.9		
0.5	29.9		
1.0	5.3		
1.5	2.5		
2.0	7.5		
2.5	5.2		
3.0	-4.5		
3.5	-2.9	7.9	-10.8
4.0	-3.5	6.4	-10.0
4.5	-18.3	5.2	-23.5
5.0	-11.0	4.0	-15.0
5.5	-8.0	3.0	-11.0
6.0	-22.9	2.0	-25.0
6.5	-19.3	1.2	-20.5
7.0	-8.3	0.4	-8.7
7.5	-9.6	0.4	-10.0
8.0	-20.9	0.4	-21.2
8.5	-16.8	0.4	-17.2
9.0	-16.0	0.4	-16.3
9.5	-13.8	0.1	-13.8
10.0	-15.2	-0.5	-14.7
10.5	-16.1	-1.0	-15.0
11.0	-16.2	-1.5	-14.6
11.5	-31.5	-2.0	-29.5
12.0	-17.4	-2.5	-15.0
12.5	-19.4	-2.9	-16.5
13.0	-14.7	-3.3	-11.4
13.5	-20.4	-3.8	-16.7
14.0	-24.4	-4.2	-20.3
14.5	-17.9	-4.5	-13.4
15.0	-16.1	-4.9	-11.2
15.5	-20.6	-5.3	-15.3
16.0	-13.0	-5.6	-7.4
16.5	-18.9	-5.9	-13.0
17.0	-19.7	-6.3	-13.5
17.5	-17.7	-6.6	-11.1
18.0	-15.2	-6.9	-8.3
18.5	-18.5	-7.2	-11.3
19.0	-16.5	-7.5	-9.0
19.5	-19.0	-7.8	-11.2
20.0	-17.6	-8.0	-9.5
20.5	-20.7	-8.3	-12.4
21.0	-18.7	-8.6	-10.2
21.5	-18.1	-8.8	-9.3
22.0	-20.0	-9.1	-10.9
22.5	-20.4	-9.3	-11.1
23.0	-17.0	-9.5	-7.5
23.5	-21.5	-9.8	-11.8
24.0	-29.4	-10.0	-19.4
24.5	-20.9	-10.2	-10.7
25.0	-23.2	-10.4	-12.7
25.5	-32.4	-10.7	-21.7
26.0	-30.1	-10.9	-19.2
26.5	-25.5	-11.1	-14.4
27.0	-29.1	-11.3	-17.8
27.5	-28.8	-11.5	-17.3
28.0	-21.3	-11.7	-9.7
28.5	-28.4	-11.9	-16.5
29.0	-27.3	-12.1	-15.2
29.5	-25.6	-12.2	-13.4
30.0	-25.8	-12.4	-13.4

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Elevation RHCP, -10º to +10º @ 0.1º increment

29.10 GHz @ -11.58 dBW / 40 kHz in Co-pol El RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-10.0	-22.9	-0.5	-22.4
-9.9	-20.7	-0.4	-20.3
-9.8	-21.1	-0.3	-20.8
-9.7	-26.9	-0.2	-26.7
-9.6	-31.5	-0.1	-31.5
-9.5	-22.1	0.1	-22.1
-9.4	-18.6	0.2	-18.8
-9.3	-17.8	0.3	-18.0
-9.2	-19.6	0.4	-20.0
-9.1	-25.5	0.4	-25.8
-9.0	-72.2	0.4	-72.5
-8.9	-25.3	0.4	-25.7
-8.8	-23.1	0.4	-23.5
-8.7	-22.8	0.4	-23.2
-8.6	-24.9	0.4	-25.2
-8.5	-27.0	0.4	-27.3
-8.4	-23.0	0.4	-23.4
-8.3	-20.6	0.4	-21.0
-8.2	-19.4	0.4	-19.7
-8.1	-19.5	0.4	-19.9
-8.0	-20.2	0.4	-20.6
-7.9	-21.5	0.4	-21.9
-7.8	-22.0	0.4	-22.4
-7.7	-24.0	0.4	-24.4
-7.6	-25.2	0.4	-25.6
-7.5	-24.3	0.4	-24.7
-7.4	-21.8	0.4	-22.2
-7.3	-18.9	0.4	-19.3
-7.2	-17.2	0.4	-17.5
-7.1	-16.2	0.4	-16.5
-7.0	-15.4	0.4	-15.8
-6.9	-16.8	0.5	-17.3
-6.8	-18.5	0.7	-19.2
-6.7	-16.5	0.8	-17.3
-6.6	-13.9	1.0	-14.9
-6.5	-12.6	1.2	-13.8
-6.4	-13.5	1.3	-14.9
-6.3	-17.4	1.5	-18.9
-6.2	-21.5	1.7	-23.2
-6.1	-16.0	1.9	-17.8
-6.0	-11.9	2.0	-14.0
-5.9	-10.6	2.2	-12.9
-5.8	-11.1	2.4	-13.6
-5.7	-14.0	2.6	-16.6
-5.6	-20.1	2.8	-22.9
-5.5	-21.2	3.0	-24.2
-5.4	-18.1	3.2	-21.3
-5.3	-19.8	3.4	-23.2
-5.2	-26.0	3.6	-29.6
-5.1	-15.2	3.8	-19.0
-5.0	-10.2	4.0	-14.2
-4.9	-7.8	4.2	-12.0
-4.8	-7.8	4.5	-12.2
-4.7	-9.7	4.7	-14.4
-4.6	-14.5	4.9	-19.4
-4.5	-15.1	5.2	-20.2
-4.4	-10.4	5.4	-15.8
-4.3	-7.8	5.7	-13.5
-4.2	-7.7	5.9	-13.6
-4.1	-8.7	6.2	-14.8

29.10 GHz @ -11.58 dBW / 40 kHz in Co-pol El RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	36.9		
0.1	36.6		
0.2	35.8		
0.3	34.5		
0.4	32.5		
0.5	29.9		
0.6	26.4		
0.7	21.8		
0.8	15.6		
0.9	7.8		
1.0	5.3		
1.1	6.8		
1.2	6.7		
1.3	5.8		
1.4	4.6		
1.5	2.5		
1.6	-0.2		
1.7	0.1		
1.8	3.5		
1.9	6.1		
2.0	7.5		
2.1	7.9		
2.2	7.9		
2.3	7.4		
2.4	6.5		
2.5	5.2		
2.6	3.1		
2.7	0.3		
2.8	-3.1		
2.9	-5.1		
3.0	-4.5		
3.1	-3.2		
3.2	-2.2		
3.3	-1.7		
3.4	-2.0		
3.5	-2.9	7.9	-10.8
3.6	-4.3	7.6	-11.9
3.7	-5.3	7.3	-12.6
3.8	-5.0	7.0	-12.0
3.9	-4.0	6.7	-10.7
4.0	-3.5	6.4	-10.0
4.1	-4.4	6.2	-10.5
4.2	-6.6	5.9	-12.5
4.3	-10.1	5.7	-15.8
4.4	-15.7	5.4	-21.1
4.5	-18.3	5.2	-23.5
4.6	-13.8	4.9	-18.7
4.7	-10.7	4.7	-15.4
4.8	-9.2	4.5	-13.7
4.9	-9.6	4.2	-13.8
5.0	-11.0	4.0	-15.0
5.1	-14.0	3.8	-17.8
5.2	-15.8	3.6	-19.4
5.3	-12.4	3.4	-15.8
5.4	-9.3	3.2	-12.5
5.5	-8.0	3.0	-11.0
5.6	-8.2	2.8	-11.0
5.7	-10.1	2.6	-12.7
5.8	-14.5	2.4	-16.9
5.9	-25.5	2.2	-27.7

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
Co-pol Elevation RHCP, -10º to +10º @ 0.1º increment

-4.0	-10.4	6.4	-16.9
-3.9	-10.3	6.7	-17.0
-3.8	-8.1	7.0	-15.1
-3.7	-6.4	7.3	-13.7
-3.6	-5.5	7.6	-13.1
-3.5	-5.6	7.9	-13.5
-3.4	-6.1		
-3.3	-5.6		
-3.2	-3.8		
-3.1	-1.8		
-3.0	-0.2		
-2.9	0.5		
-2.8	0.7		
-2.7	0.7		
-2.6	1.1		
-2.5	1.6		
-2.4	2.1		
-2.3	2.0		
-2.2	1.2		
-2.1	0.3		
-2.0	0.3		
-1.9	1.5		
-1.8	3.7		
-1.7	6.2		
-1.6	8.4		
-1.5	9.8		
-1.4	10.3		
-1.3	9.8		
-1.2	8.0		
-1.1	6.9		
-1.0	10.6		
-0.9	16.1		
-0.8	20.9		
-0.7	24.9		
-0.6	28.2		
-0.5	31.0		
-0.4	33.1		
-0.3	34.8		
-0.2	36.1		
-0.1	36.7		
0.0	36.9		

6.0	-22.9	2.0	-25.0
6.1	-17.3	1.9	-19.2
6.2	-16.3	1.7	-18.0
6.3	-19.4	1.5	-20.9
6.4	-26.3	1.3	-27.6
6.5	-19.3	1.2	-20.5
6.6	-13.2	1.0	-14.2
6.7	-10.1	0.8	-10.9
6.8	-8.3	0.7	-9.0
6.9	-7.8	0.5	-8.4
7.0	-8.3	0.4	-8.7
7.1	-10.1	0.4	-10.4
7.2	-12.3	0.4	-12.7
7.3	-13.1	0.4	-13.5
7.4	-11.5	0.4	-11.8
7.5	-9.6	0.4	-10.0
7.6	-9.3	0.4	-9.7
7.7	-10.1	0.4	-10.4
7.8	-12.7	0.4	-13.1
7.9	-18.0	0.4	-18.4
8.0	-20.9	0.4	-21.2
8.1	-16.0	0.4	-16.4
8.2	-13.3	0.4	-13.7
8.3	-12.7	0.4	-13.1
8.4	-13.9	0.4	-14.3
8.5	-16.8	0.4	-17.2
8.6	-22.3	0.4	-22.7
8.7	-38.8	0.4	-39.2
8.8	-23.1	0.4	-23.5
8.9	-17.8	0.4	-18.2
9.0	-16.0	0.4	-16.3
9.1	-17.3	0.4	-17.7
9.2	-20.4	0.4	-20.7
9.3	-25.2	0.3	-25.5
9.4	-18.9	0.2	-19.1
9.5	-13.8	0.1	-13.8
9.6	-11.2	-0.1	-11.2
9.7	-10.1	-0.2	-9.9
9.8	-10.2	-0.3	-9.9
9.9	-11.7	-0.4	-11.3
10.0	-15.2	-0.5	-14.7

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
X-pol Azimuth RHCP, -10º to +10º @ 0.1º increment

29.10 GHz @ -11.58 dBW / 40 kHz in X-pol Az RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
-10.0	-15.4	-12.6	-2.7
-9.9	-15.0	-12.6	-2.3
-9.8	-14.8	-12.6	-2.2
-9.7	-15.0	-12.6	-2.4
-9.6	-16.0	-12.6	-3.4
-9.5	-17.0	-12.6	-4.4
-9.4	-18.5	-12.6	-5.8
-9.3	-20.3	-12.6	-7.7
-9.2	-22.1	-12.6	-9.5
-9.1	-23.4	-12.6	-10.8
-9.0	-25.3	-12.6	-12.7
-8.9	-24.9	-12.6	-12.3
-8.8	-26.2	-12.6	-13.6
-8.7	-29.5	-12.6	-16.9
-8.6	-37.0	-12.6	-24.4
-8.5	-29.6	-12.6	-16.9
-8.4	-24.2	-12.6	-11.6
-8.3	-22.1	-12.6	-9.5
-8.2	-20.8	-12.6	-8.1
-8.1	-22.0	-12.6	-9.4
-8.0	-24.5	-12.6	-11.8
-7.9	-25.7	-12.6	-13.1
-7.8	-25.9	-12.6	-13.2
-7.7	-22.4	-12.6	-9.8
-7.6	-22.4	-12.6	-9.8
-7.5	-23.7	-12.6	-11.1
-7.4	-28.4	-12.6	-15.8
-7.3	-32.9	-12.6	-20.3
-7.2	-23.2	-12.6	-10.6
-7.1	-19.7	-12.6	-7.1
-7.0	-18.1	-12.6	-5.4
-6.9	-17.7	-12.5	-5.3
-6.8	-18.5	-12.3	-6.2
-6.7	-21.0	-12.2	-8.9
-6.6	-20.6	-12.0	-8.6
-6.5	-18.7	-11.8	-6.8
-6.4	-15.3	-11.7	-3.6
-6.3	-12.9	-11.5	-1.4
-6.2	-11.3	-11.3	0.0
-6.1	-11.2	-11.1	-0.1
-6.0	-12.2	-11.0	-1.2
-5.9	-14.7	-10.8	-3.9
-5.8	-19.8	-10.6	-9.2
-5.7	-24.2	-10.4	-13.9
-5.6	-19.7	-10.2	-9.5
-5.5	-16.2	-10.0	-6.2
-5.4	-14.9	-9.8	-5.1
-5.3	-16.1	-9.6	-6.5
-5.2	-17.3	-9.4	-7.9
-5.1	-17.3	-9.2	-8.1
-5.0	-16.4	-9.0	-7.5
-4.9	-15.2	-8.8	-6.5
-4.8	-14.7	-8.5	-6.2
-4.7	-14.6	-8.3	-6.3
-4.6	-15.0	-8.1	-6.9
-4.5	-13.7	-7.8	-5.9
-4.4	-12.3	-7.6	-4.7
-4.3	-10.7	-7.3	-3.4
-4.2	-9.1	-7.1	-2.1
-4.1	-7.7	-6.8	-0.9

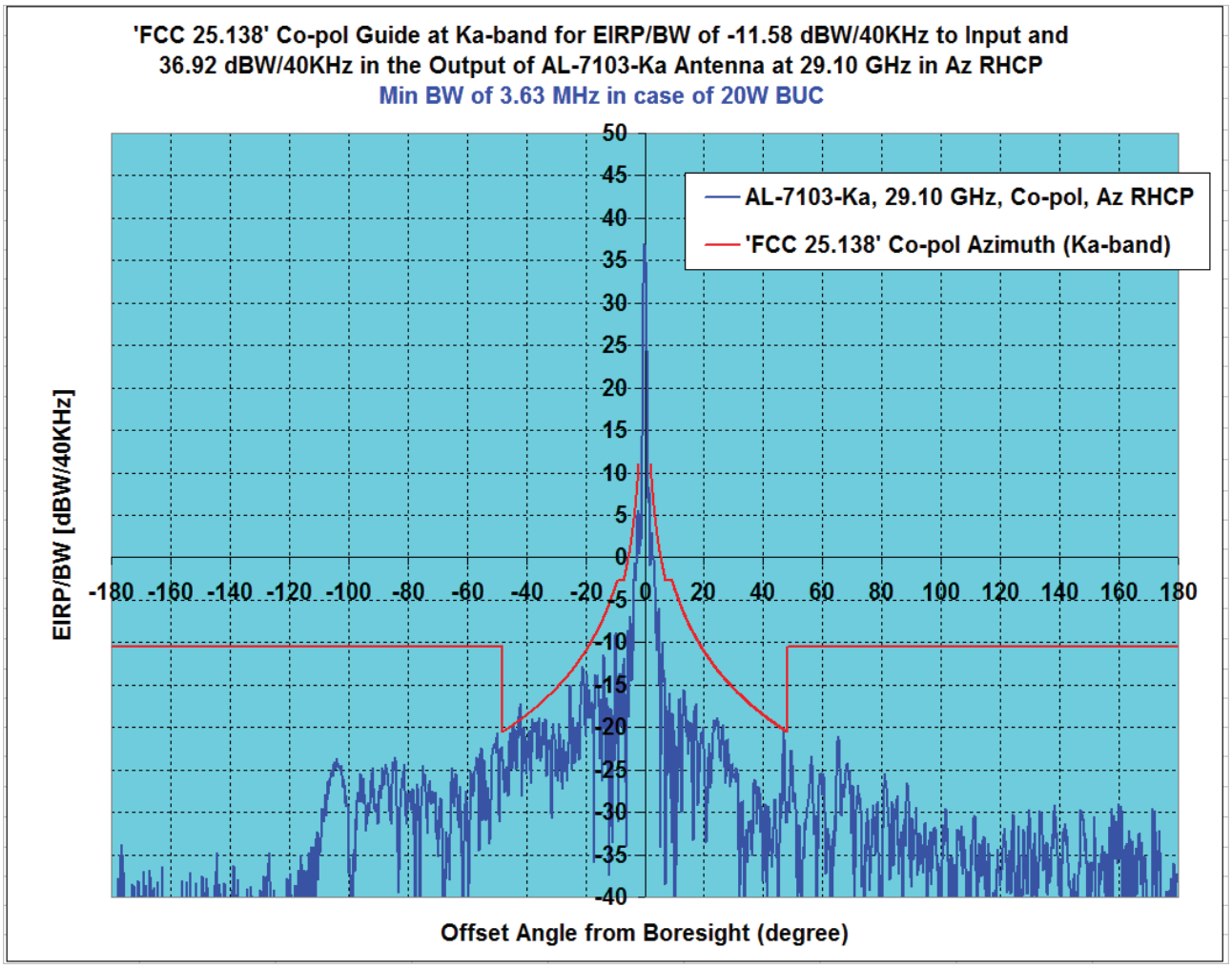
29.10 GHz @ -11.58 dBW / 40 kHz in X-pol Az RHCP

Angle	EIRPsd	Mask	Over Mask
Degrees	dBW/40kHz	dBW/40kHz	dB
0.0	6.9		
0.1	5.3		
0.2	4.9		
0.3	5.6		
0.4	6.8		
0.5	7.7		
0.6	8.1		
0.7	7.7		
0.8	6.6		
0.9	4.4		
1.0	0.7		
1.1	-5.2		
1.2	-15.4		
1.3	-13.1		
1.4	-10.9		
1.5	-12.9		
1.6	-14.4		
1.7	-12.2		
1.8	-10.2		
1.9	-10.7		
2.0	-14.5	1.0	-15.4
2.1	-23.9	0.4	-24.4
2.2	-20.7	-0.1	-20.6
2.3	-14.1	-0.5	-13.6
2.4	-13.4	-1.0	-12.4
2.5	-14.5	-1.4	-13.1
2.6	-16.3	-1.9	-14.5
2.7	-16.5	-2.3	-14.2
2.8	-14.6	-2.7	-11.9
2.9	-14.9	-3.1	-11.8
3.0	-16.9	-3.4	-13.5
3.1	-27.7	-3.8	-23.9
3.2	-26.4	-4.1	-22.2
3.3	-17.6	-4.5	-13.1
3.4	-16.4	-4.8	-11.6
3.5	-17.1	-5.1	-12.0
3.6	-18.5	-5.4	-13.1
3.7	-20.4	-5.7	-14.7
3.8	-19.5	-6.0	-13.5
3.9	-20.9	-6.3	-14.6
4.0	-24.0	-6.6	-17.4
4.1	-24.0	-6.8	-17.2
4.2	-19.8	-7.1	-12.8
4.3	-16.3	-7.3	-8.9
4.4	-15.9	-7.6	-8.3
4.5	-17.7	-7.8	-9.9
4.6	-24.4	-8.1	-16.3
4.7	-29.7	-8.3	-21.4
4.8	-21.3	-8.5	-12.7
4.9	-21.0	-8.8	-12.2
5.0	-22.2	-9.0	-13.2
5.1	-28.2	-9.2	-19.0
5.2	-32.0	-9.4	-22.6
5.3	-25.7	-9.6	-16.1
5.4	-20.8	-9.8	-10.9
5.5	-22.2	-10.0	-12.2
5.6	-28.8	-10.2	-18.6
5.7	-32.9	-10.4	-22.5
5.8	-24.4	-10.6	-13.8
5.9	-21.9	-10.8	-11.1

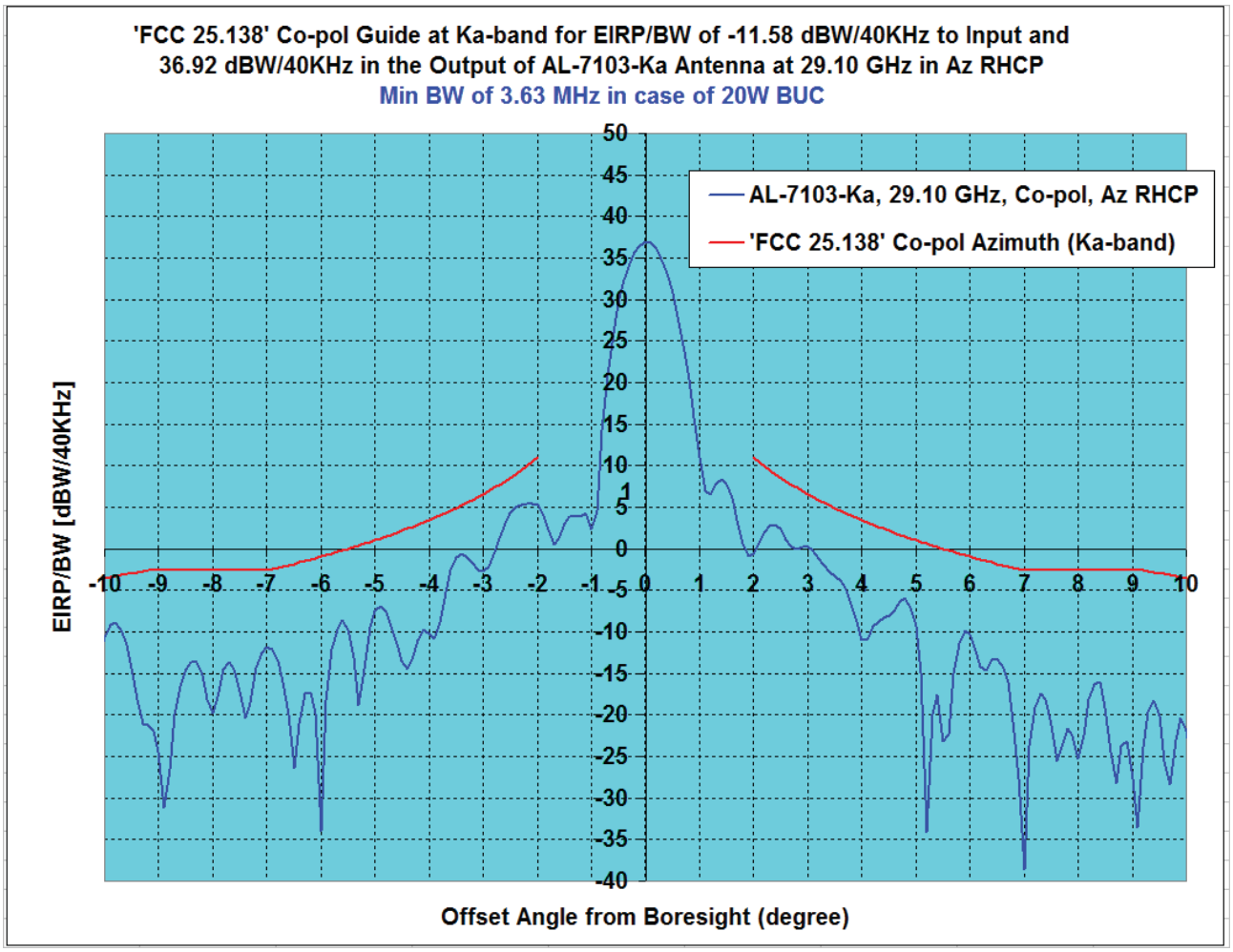
Orbit Communication Systems Ltd.
AL-7103-Ka, 1.20 m Antenna, EIRPsd Data Table
X-pol Azimuth RHCP, -10º to +10º @ 0.1º increment

-4.0	-7.1	-6.6	-0.5
-3.9	-6.9	-6.3	-0.7
-3.8	-7.6	-6.0	-1.6
-3.7	-9.0	-5.7	-3.3
-3.6	-10.7	-5.4	-5.3
-3.5	-12.3	-5.1	-7.2
-3.4	-12.0	-4.8	-7.2
-3.3	-10.8	-4.5	-6.3
-3.2	-9.5	-4.1	-5.3
-3.1	-8.6	-3.8	-4.8
-3.0	-8.5	-3.4	-5.0
-2.9	-9.3	-3.1	-6.3
-2.8	-11.8	-2.7	-9.1
-2.7	-16.6	-2.3	-14.3
-2.6	-22.3	-1.9	-20.4
-2.5	-16.4	-1.4	-15.0
-2.4	-13.9	-1.0	-12.9
-2.3	-13.4	-0.5	-12.9
-2.2	-11.5	-0.1	-11.5
-2.1	-8.4	0.4	-8.9
-2.0	-6.1	1.0	-7.1
-1.9	-5.6		
-1.8	-7.8		
-1.7	-11.9		
-1.6	-4.8		
-1.5	1.1		
-1.4	4.4		
-1.3	6.0		
-1.2	5.8		
-1.1	3.8		
-1.0	-1.3		
-0.9	-1.8		
-0.8	5.3		
-0.7	9.4		
-0.6	11.8		
-0.5	12.8		
-0.4	12.9		
-0.3	12.2		
-0.2	11.0		
-0.1	9.1		
0.0	6.9		

6.0	-22.6	-11.0	-11.7
6.1	-24.4	-11.1	-13.3
6.2	-28.2	-11.3	-16.9
6.3	-26.4	-11.5	-14.9
6.4	-25.3	-11.7	-13.6
6.5	-24.4	-11.8	-12.5
6.6	-28.2	-12.0	-16.2
6.7	-29.9	-12.2	-17.8
6.8	-27.0	-12.3	-14.7
6.9	-25.4	-12.5	-12.9
7.0	-27.1	-12.6	-14.5
7.1	-32.2	-12.6	-19.6
7.2	-36.3	-12.6	-23.7
7.3	-26.9	-12.6	-14.3
7.4	-24.7	-12.6	-12.1
7.5	-24.6	-12.6	-12.0
7.6	-26.9	-12.6	-14.3
7.7	-28.7	-12.6	-16.0
7.8	-26.8	-12.6	-14.1
7.9	-23.4	-12.6	-10.8
8.0	-24.5	-12.6	-11.9
8.1	-26.7	-12.6	-14.1
8.2	-36.4	-12.6	-23.8
8.3	-42.8	-12.6	-30.2
8.4	-36.0	-12.6	-23.3
8.5	-34.7	-12.6	-22.0
8.6	-40.0	-12.6	-27.4
8.7	-32.6	-12.6	-20.0
8.8	-33.4	-12.6	-20.8
8.9	-27.8	-12.6	-15.1
9.0	-29.1	-12.6	-16.4
9.1	-30.0	-12.6	-17.4
9.2	-31.7	-12.6	-19.1
9.3	-32.5	-12.6	-19.9
9.4	-30.6	-12.6	-18.0
9.5	-30.0	-12.6	-17.3
9.6	-31.4	-12.6	-18.8
9.7	-31.5	-12.6	-18.8
9.8	-38.5	-12.6	-25.8
9.9	-38.1	-12.6	-25.5
10.0	-35.4	-12.6	-22.7

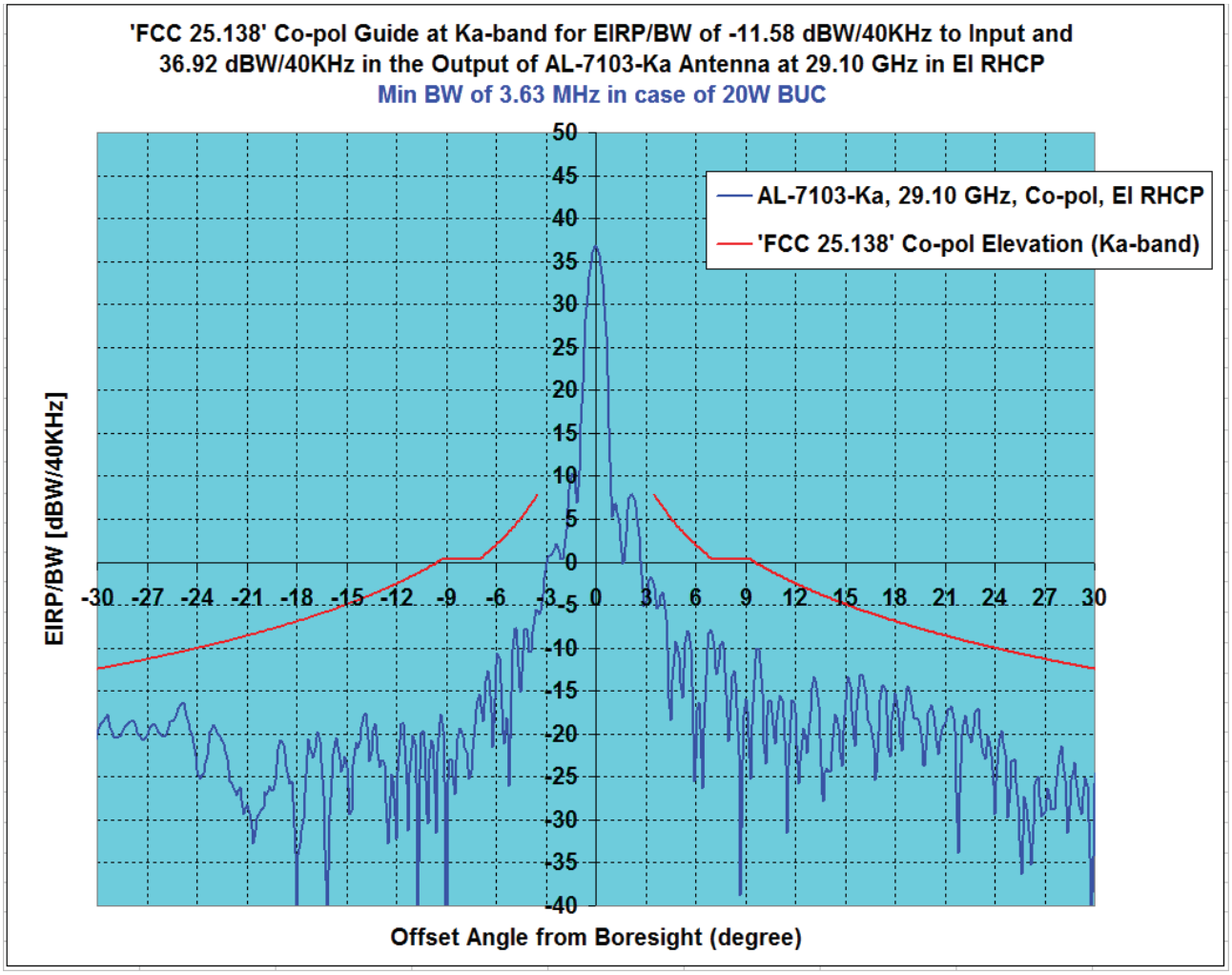


Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Freq., Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (2° to 10°)	± (10° to 180°)	%
AL-7103-Ka, 29.10 GHz, Co-pol, Az RHCP	'FCC 25.138' Co-pol Azimuth (Ka-band)	48.50	-11.58	-4.03	1.84	0.23

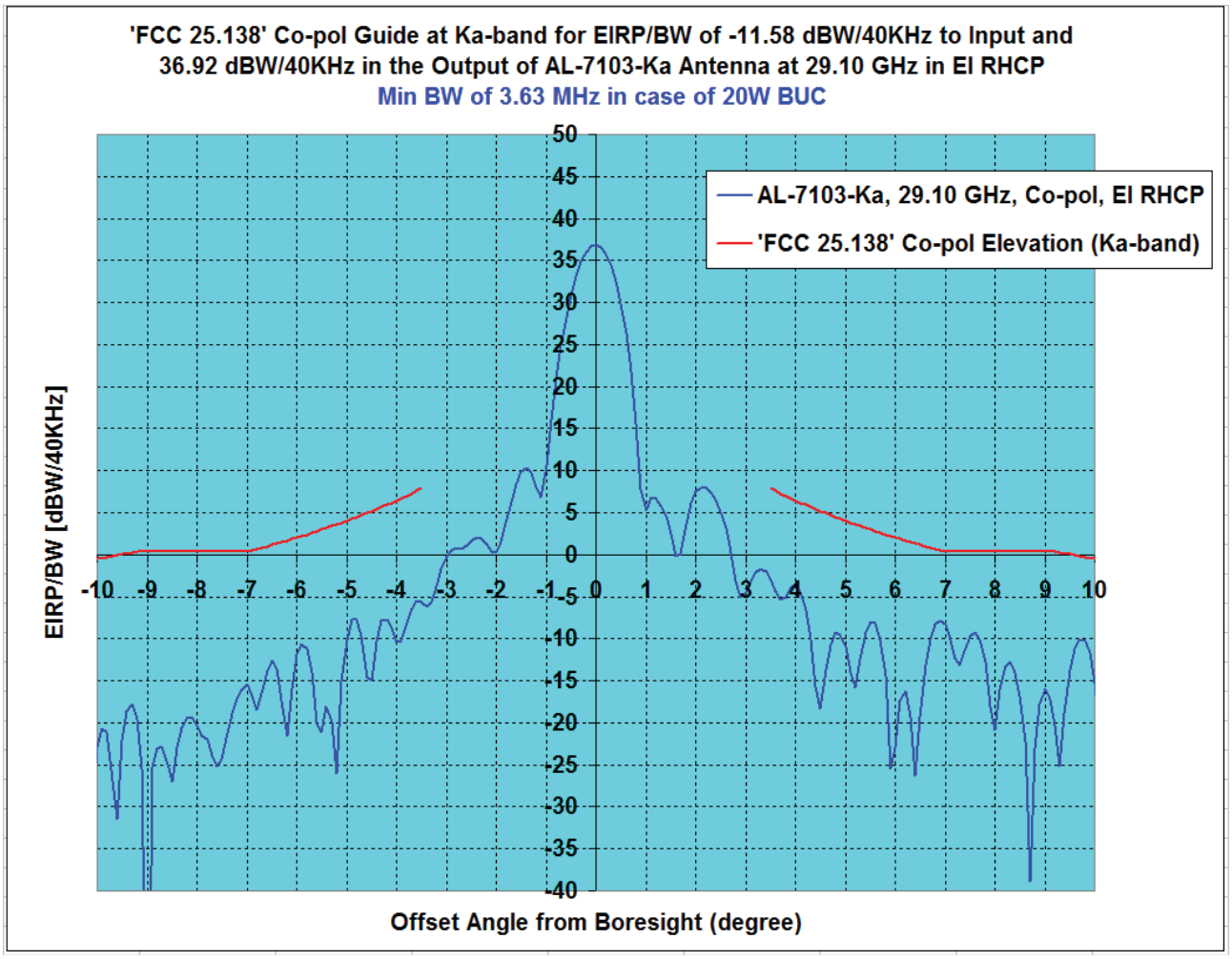


Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Freq., Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (2° to 10°)	± (10° to 180°)	%
AL-7103-Ka, 29.10 GHz, Co-pol, Az RHCP	'FCC 25.138' Co-pol Azimuth (Ka-band)	48.50	-11.58	-4.03	1.84	0.23

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

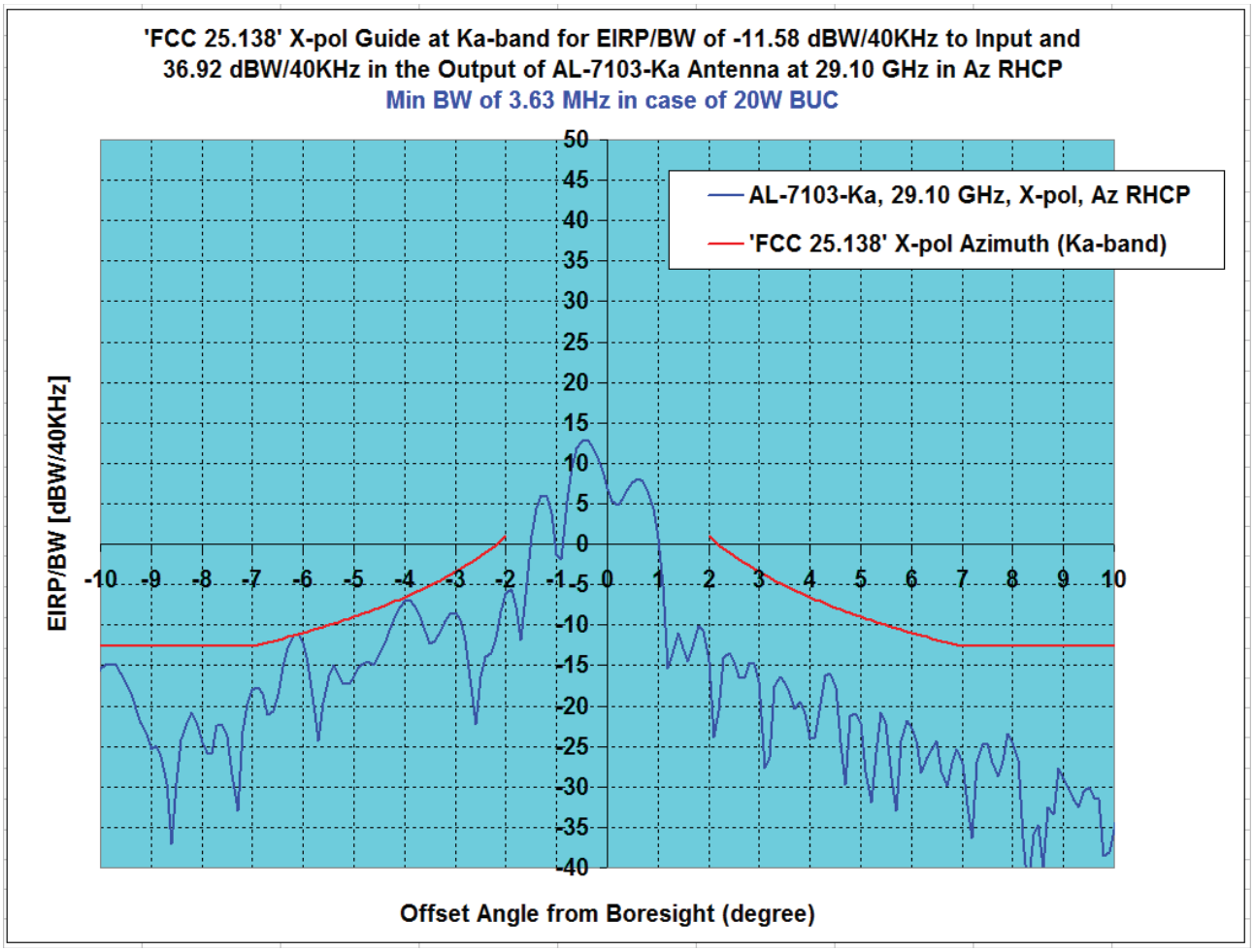


Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Frequency, Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (3.5° to 10°)	± (10° to 30°)	%
AL-7103-Ka, 29.10 GHz, Co-pol, El RHCP	'FCC 25.138' Co-pol Elevation (Ka-band)	48.50	-11.58	-8.38	-5.52	0.00



Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Frequency, Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (3.5° to 10°)	± (10° to 30°)	%
AL-7103-Ka, 29.10 GHz, Co-pol, El RHCP	'FCC 25.138' Co-pol Elevation (Ka-band)	48.50	-11.58	-8.38	-5.52	0.00

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



Configuration	Regulation	Antenna Gain	Input EIRPsd	Peak Excursions dB		Over Mask
System, Frequency, Polarization, Plane	EIRP/BW [dBW/40KHz]	dBi	dBW/40KHz	± (2° to 7°)	± (2° to 9.2°)	%
AL-7103-Ka, 29.10 GHz, X-pol, Az RHCP	'FCC 25.138' X-pol Azimuth (Ka-band)	48.50	-11.58	0.00	0.00	0.68

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
Co-pol Azimuth LHCP, -180º to +180º @ 1.0º increment

27.60 GHz Antenna Pattern in Co-pol Az LHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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	Gain	Mask	Over Mask
Degrees	dBi	dBi	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, -180º to +180º @ 1.0º increment

-119.0	-37.9	0.0	-37.9
-118.0	-23.1	0.0	-23.1
-117.0	-20.7	0.0	-20.7
-116.0	-22.4	0.0	-22.4
-115.0	-20.6	0.0	-20.6
-114.0	-22.3	0.0	-22.3
-113.0	-22.8	0.0	-22.8
-112.0	-22.0	0.0	-22.0
-111.0	-17.7	0.0	-17.7
-110.0	-16.6	0.0	-16.6
-109.0	-14.7	0.0	-14.7
-108.0	-13.3	0.0	-13.3
-107.0	-12.9	0.0	-12.9
-106.0	-11.1	0.0	-11.1
-105.0	-9.0	0.0	-9.0
-104.0	-8.1	0.0	-8.1
-103.0	-7.4	0.0	-7.4
-102.0	-7.5	0.0	-7.5
-101.0	-8.7	0.0	-8.7
-100.0	-10.5	0.0	-10.5
-99.0	-10.2	0.0	-10.2
-98.0	-7.9	0.0	-7.9
-97.0	-7.1	0.0	-7.1
-96.0	-10.1	0.0	-10.1
-95.0	-10.6	0.0	-10.6
-94.0	-7.5	0.0	-7.5
-93.0	-8.2	0.0	-8.2
-92.0	-12.2	0.0	-12.2
-91.0	-7.8	0.0	-7.8
-90.0	-9.3	0.0	-9.3
-89.0	-13.6	0.0	-13.6
-88.0	-12.8	0.0	-12.8
-87.0	-19.0	0.0	-19.0
-86.0	-14.9	0.0	-14.9
-85.0	-20.3	-10.0	-10.3
-84.0	-27.1	-10.0	-17.1
-83.0	-16.9	-10.0	-6.9
-82.0	-15.0	-10.0	-5.0
-81.0	-24.8	-10.0	-14.8
-80.0	-44.7	-10.0	-34.7
-79.0	-26.9	-10.0	-16.9
-78.0	-15.9	-10.0	-5.9
-77.0	-31.4	-10.0	-21.4
-76.0	-29.2	-10.0	-19.2
-75.0	-19.5	-10.0	-9.5
-74.0	-15.8	-10.0	-5.8
-73.0	-22.7	-10.0	-12.7
-72.0	-15.3	-10.0	-5.3
-71.0	-17.6	-10.0	-7.6
-70.0	-29.7	-10.0	-19.7
-69.0	-23.0	-10.0	-13.0
-68.0	-17.8	-10.0	-7.8
-67.0	-19.1	-10.0	-9.1
-66.0	-20.3	-10.0	-10.3
-65.0	-28.2	-10.0	-18.2
-64.0	-17.5	-10.0	-7.5
-63.0	-18.1	-10.0	-8.1
-62.0	-14.1	-10.0	-4.1
-61.0	-26.2	-10.0	-16.2
-60.0	-14.9	-10.0	-4.9
-59.0	-33.3	-10.0	-23.3
-58.0	-36.3	-10.0	-26.3
-57.0	-18.8	-10.0	-8.8
60.0	-17.1	-10.0	-7.1
61.0	-13.7	-10.0	-3.7
62.0	-15.4	-10.0	-5.4
63.0	-26.9	-10.0	-16.9
64.0	-32.0	-10.0	-22.0
65.0	-13.6	-10.0	-3.6
66.0	-13.3	-10.0	-3.3
67.0	-18.7	-10.0	-8.7
68.0	-27.7	-10.0	-17.7
69.0	-14.1	-10.0	-4.1
70.0	-17.1	-10.0	-7.1
71.0	-18.8	-10.0	-8.8
72.0	-18.4	-10.0	-8.4
73.0	-23.6	-10.0	-13.6
74.0	-17.0	-10.0	-7.0
75.0	-16.4	-10.0	-6.4
76.0	-19.3	-10.0	-9.3
77.0	-30.8	-10.0	-20.8
78.0	-18.7	-10.0	-8.7
79.0	-15.9	-10.0	-5.9
80.0	-22.9	-10.0	-12.9
81.0	-24.8	-10.0	-14.8
82.0	-24.7	-10.0	-14.7
83.0	-23.3	-10.0	-13.3
84.0	-23.0	-10.0	-13.0
85.0	-20.5	-10.0	-10.5
86.0	-21.8	0.0	-21.8
87.0	-20.0	0.0	-20.0
88.0	-24.9	0.0	-24.9
89.0	-27.0	0.0	-27.0
90.0	-22.9	0.0	-22.9
91.0	-21.2	0.0	-21.2
92.0	-26.4	0.0	-26.4
93.0	-21.0	0.0	-21.0
94.0	-23.3	0.0	-23.3
95.0	-20.2	0.0	-20.2
96.0	-25.1	0.0	-25.1
97.0	-27.4	0.0	-27.4
98.0	-16.0	0.0	-16.0
99.0	-22.5	0.0	-22.5
100.0	-21.1	0.0	-21.1
101.0	-23.7	0.0	-23.7
102.0	-20.9	0.0	-20.9
103.0	-22.6	0.0	-22.6
104.0	-22.6	0.0	-22.6
105.0	-22.1	0.0	-22.1
106.0	-24.5	0.0	-24.5
107.0	-20.8	0.0	-20.8
108.0	-32.2	0.0	-32.2
109.0	-23.3	0.0	-23.3
110.0	-28.0	0.0	-28.0
111.0	-19.5	0.0	-19.5
112.0	-23.2	0.0	-23.2
113.0	-24.9	0.0	-24.9
114.0	-24.9	0.0	-24.9
115.0	-21.2	0.0	-21.2
116.0	-23.3	0.0	-23.3
117.0	-20.5	0.0	-20.5
118.0	-24.3	0.0	-24.3
119.0	-23.4	0.0	-23.4
120.0	-20.1	0.0	-20.1
121.0	-21.4	0.0	-21.4
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, -180º to +180º @ 1.0º 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, -10º to +10º @ 0.1º increment

27.60 GHz Antenna Pattern in Co-pol Az LHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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	Gain	Mask	Over Mask
Degrees	dBi	dBi	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, -10º to +10º @ 0.1º 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, -30º to +30º @ 0.5º increment

27.60 GHz Antenna Pattern in Co-pol El 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 El 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, -10º to +10º @ 0.1º increment

27.60 GHz Antenna Pattern in Co-pol El LHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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 El LHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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, -10º to +10º @ 0.1º 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, -10º to +10º @ 0.1º increment

27.60 GHz Antenna Pattern in X-pol Az LHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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	Gain	Mask	Over Mask
Degrees	dBi	dBi	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

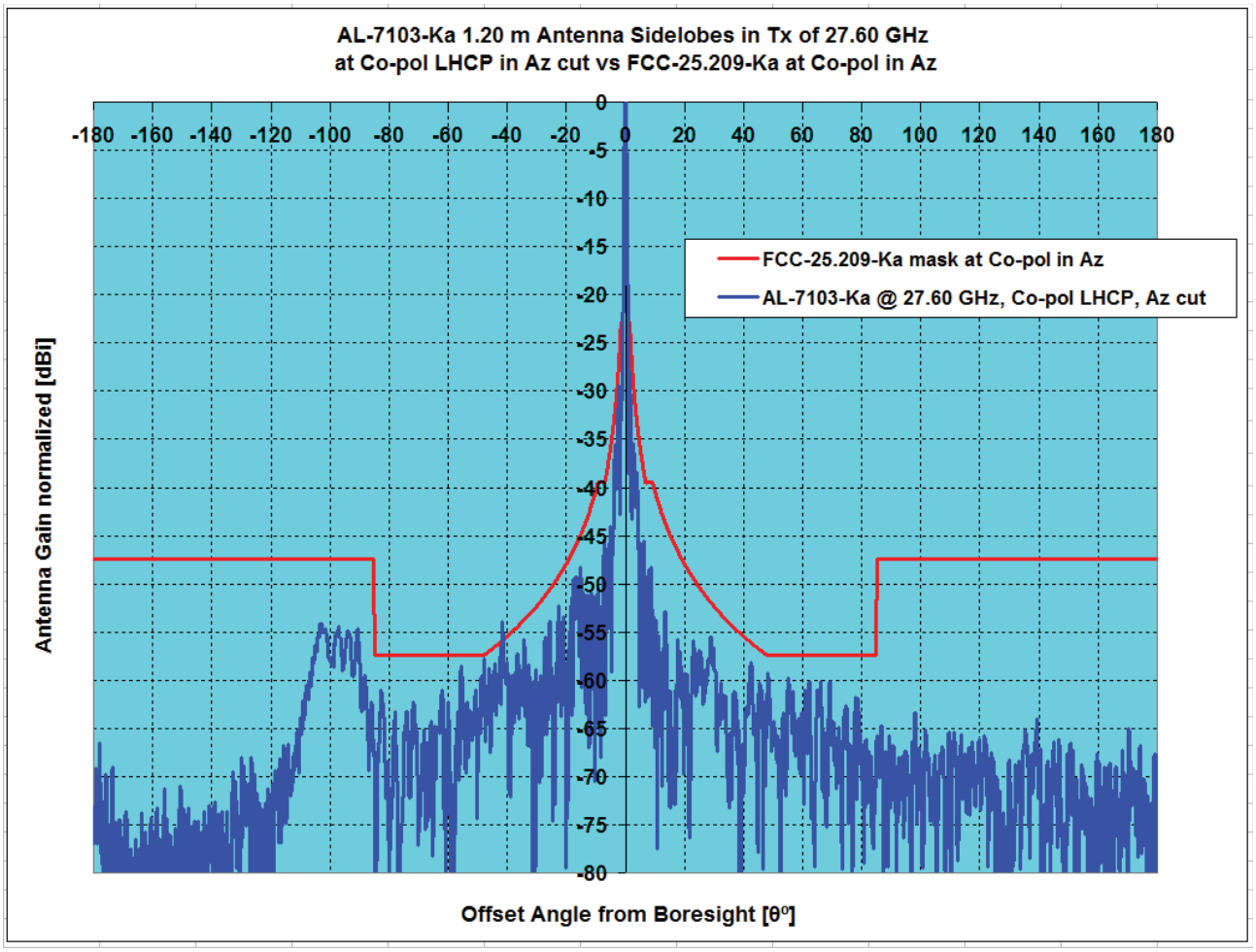
X-pol Azimuth LHCP, -10º to +10º @ 0.1º increment

-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		

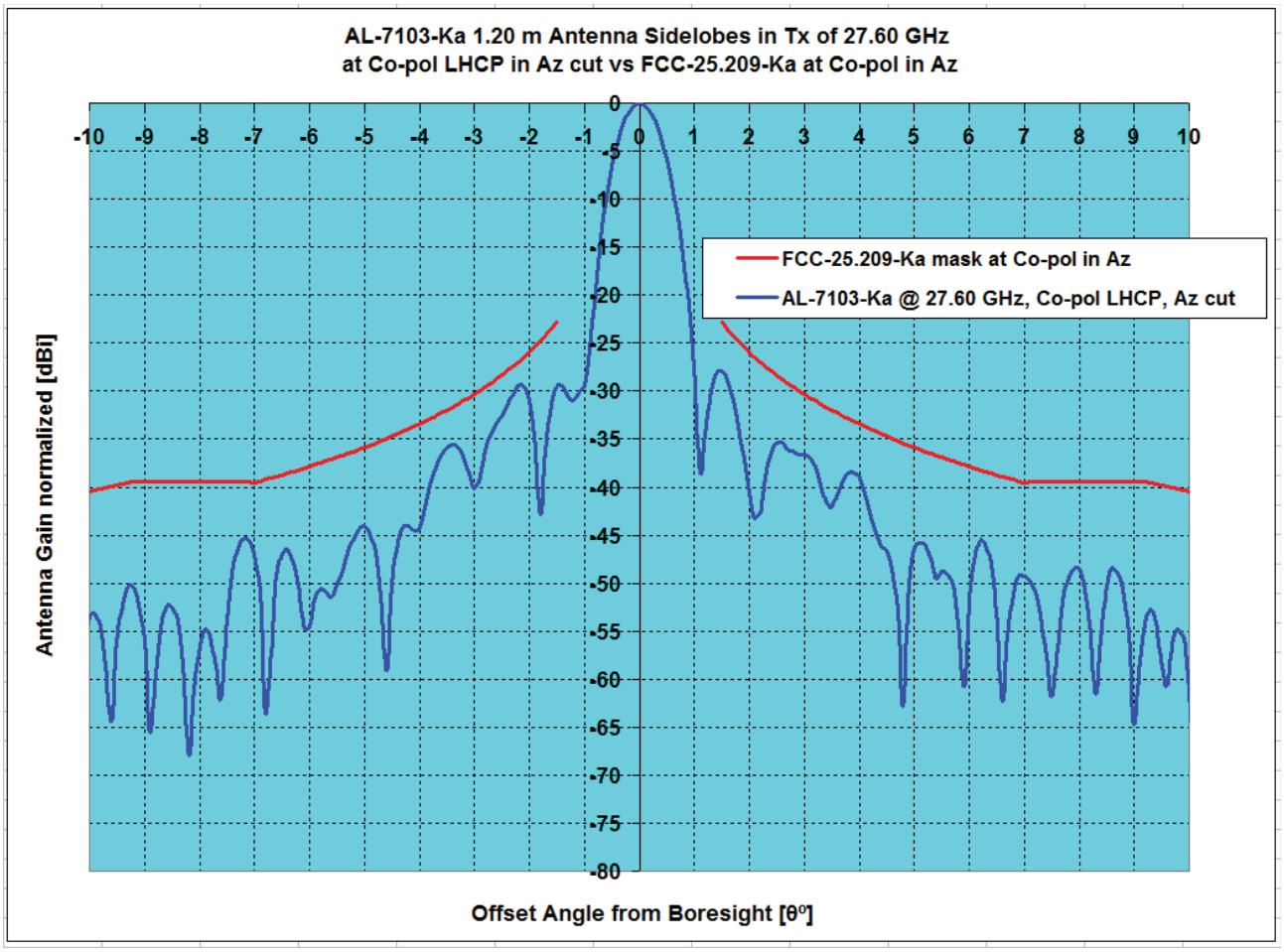
6.0	-3.8	-0.5	-3.3
6.1	-6.6	-0.6	-6.0
6.2	-11.8	-0.8	-10.9
6.3	-12.4	-1.0	-11.5
6.4	-7.9	-1.2	-6.8
6.5	-6.7	-1.3	-5.4
6.6	-7.2	-1.5	-5.7
6.7	-9.0	-1.7	-7.4
6.8	-12.3	-1.8	-10.5
6.9	-15.2	-2.0	-13.2
7.0	-19.9	-2.1	-17.7
7.1	-29.7	-2.0	-27.7
7.2	-23.1	-2.0	-21.1
7.3	-14.2	-2.0	-12.2
7.4	-10.5	-2.0	-8.5
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



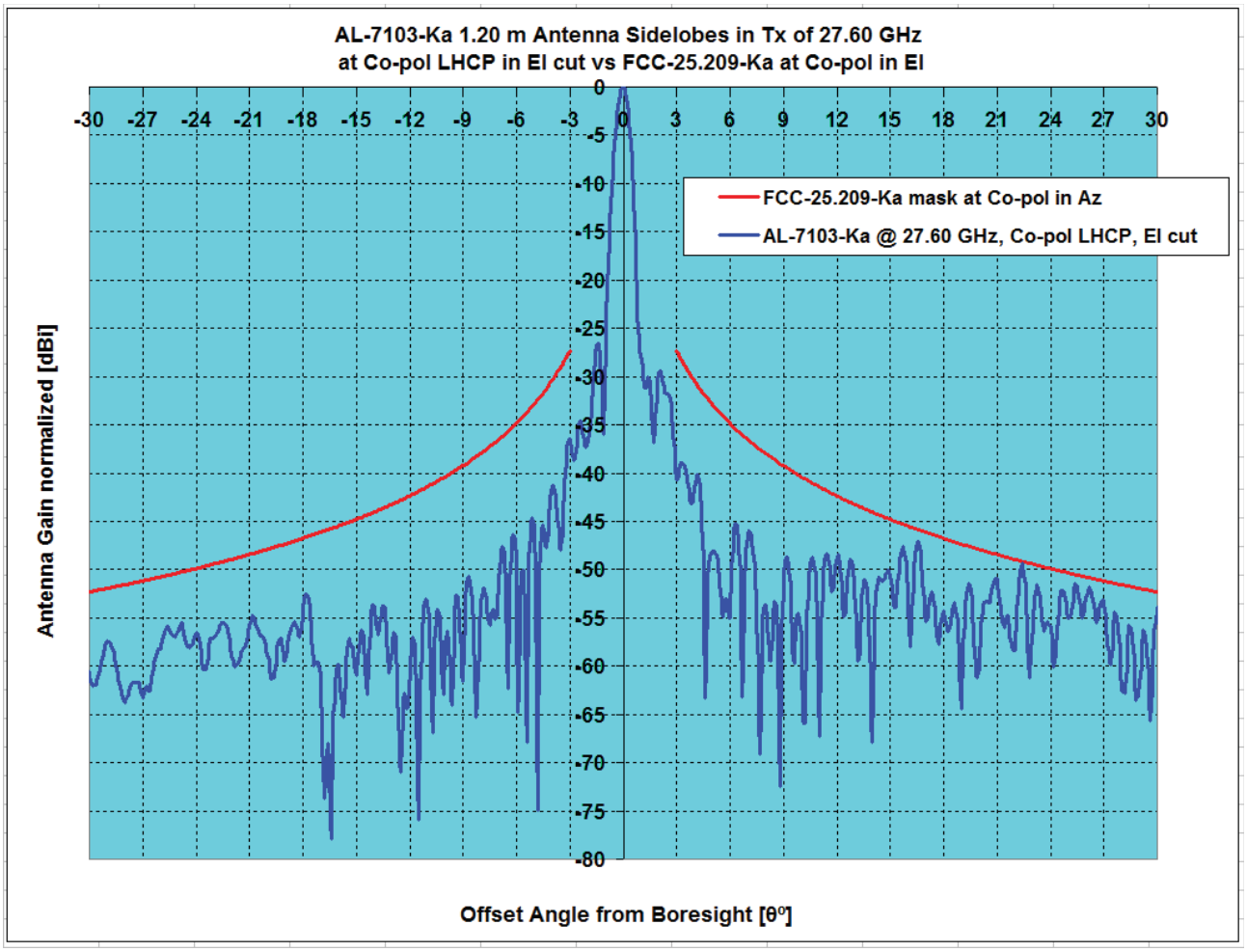
Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	1.5°≤θ≤7°	7°≤θ≤180°	1.5°≤θ≤7°	7°≤θ≤180°
FCC-25.209-Ka, Co-pol Az, vs AL-7103-Ka	Az , LHCP	27.60	47.40	-2.53	2.02	0.00%	0.14%



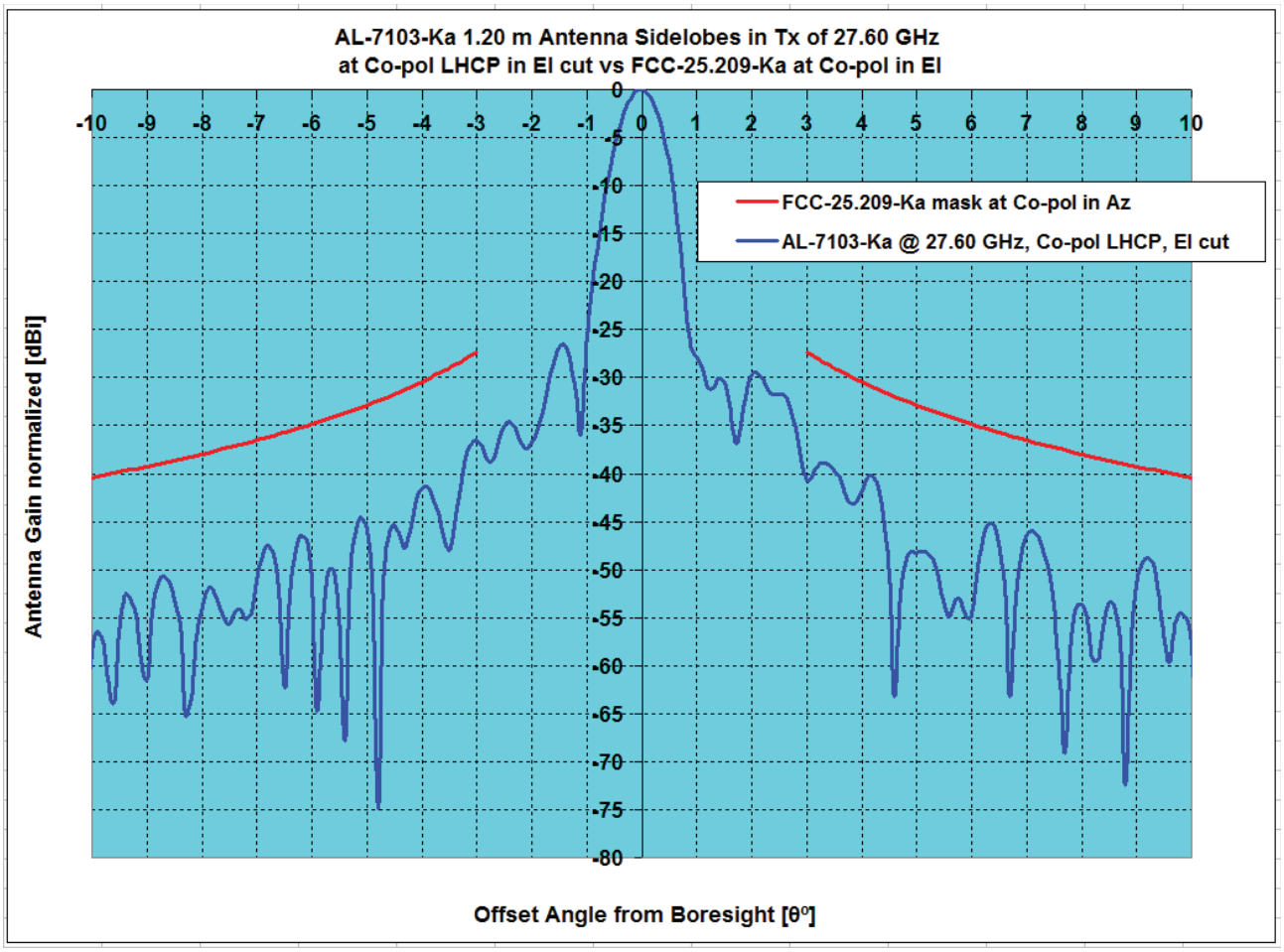
Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	1.5°≤θ≤7°	7°≤θ≤180°	1.5°≤θ≤7°	7°≤θ≤180°
FCC-25.209-Ka, Co-pol Az, vs AL-7103-Ka	Az , LHCP	27.60	47.40	-2.53	2.02	0.00%	0.14%

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, Pattern, Co-pol, Elevation LHCP

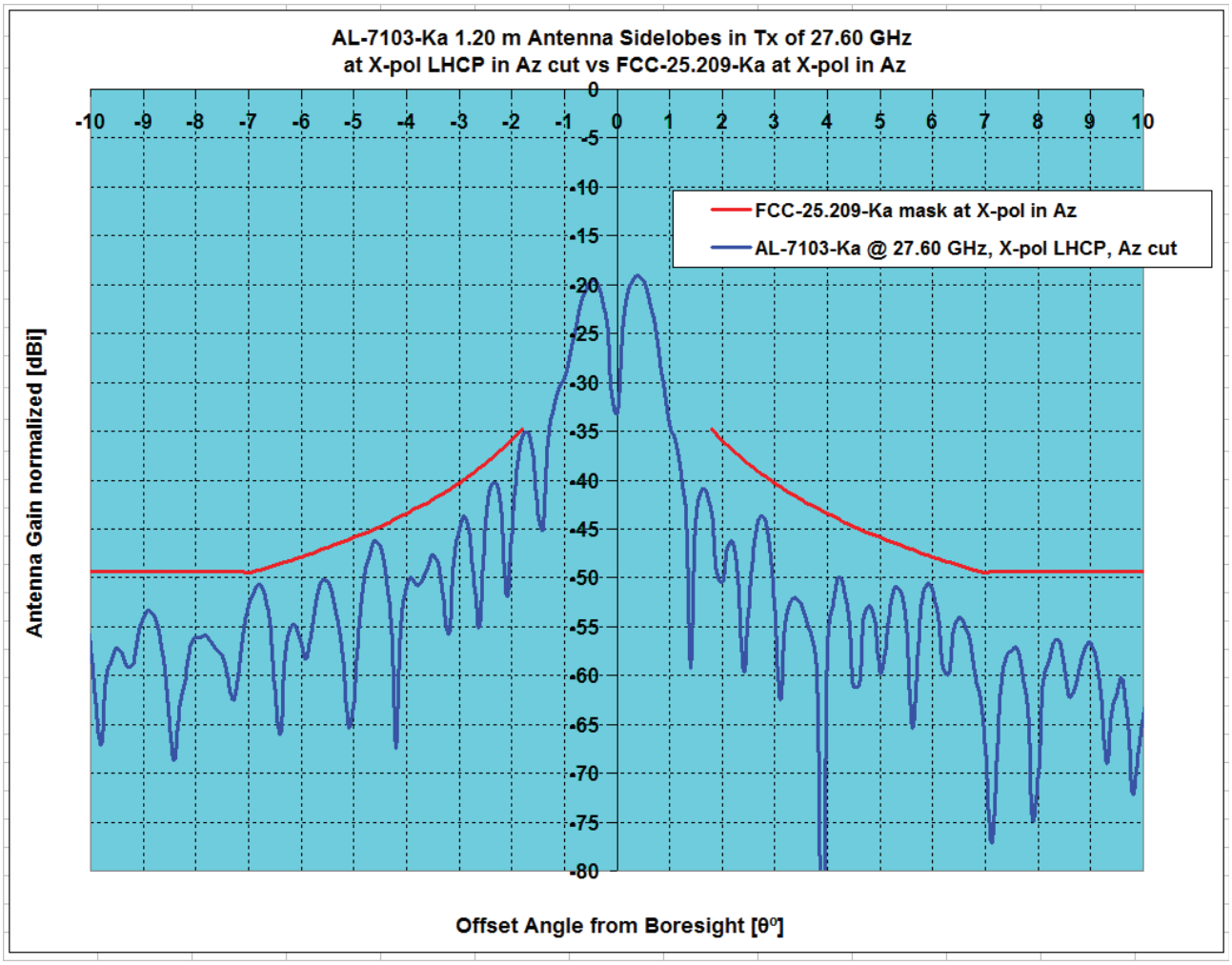


Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	3°≤θ≤7°	7°≤θ≤30°	3°≤θ≤7°	7°≤θ≤30°
FCC-25.209-Ka, Co-pol El, vs AL-7103-Ka	El , LHCP	27.60	47.40	-9.11	-0.19	0.00%	0.00%



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

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



Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	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, -180º to +180º @ 1.0º increment

27.60 GHz Antenna Pattern in Co-pol Az RHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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	Gain	Mask	Over Mask
Degrees	dBi	dBi	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, -180º to +180º @ 1.0º increment

-119.0	-30.2	0.0	-30.2
-118.0	-22.4	0.0	-22.4
-117.0	-29.3	0.0	-29.3
-116.0	-28.5	0.0	-28.5
-115.0	-32.0	0.0	-32.0
-114.0	-32.5	0.0	-32.5
-113.0	-31.1	0.0	-31.1
-112.0	-34.5	0.0	-34.5
-111.0	-28.0	0.0	-28.0
-110.0	-34.3	0.0	-34.3
-109.0	-29.5	0.0	-29.5
-108.0	-24.0	0.0	-24.0
-107.0	-22.8	0.0	-22.8
-106.0	-19.5	0.0	-19.5
-105.0	-16.6	0.0	-16.6
-104.0	-16.2	0.0	-16.2
-103.0	-14.7	0.0	-14.7
-102.0	-14.7	0.0	-14.7
-101.0	-15.4	0.0	-15.4
-100.0	-17.1	0.0	-17.1
-99.0	-14.4	0.0	-14.4
-98.0	-13.9	0.0	-13.9
-97.0	-15.3	0.0	-15.3
-96.0	-17.1	0.0	-17.1
-95.0	-19.9	0.0	-19.9
-94.0	-26.9	0.0	-26.9
-93.0	-18.8	0.0	-18.8
-92.0	-23.2	0.0	-23.2
-91.0	-20.4	0.0	-20.4
-90.0	-18.2	0.0	-18.2
-89.0	-21.8	0.0	-21.8
-88.0	-22.0	0.0	-22.0
-87.0	-24.4	0.0	-24.4
-86.0	-22.0	0.0	-22.0
-85.0	-18.9	-10.0	-8.9
-84.0	-19.1	-10.0	-9.1
-83.0	-22.6	-10.0	-12.6
-82.0	-20.9	-10.0	-10.9
-81.0	-16.3	-10.0	-6.3
-80.0	-16.7	-10.0	-6.7
-79.0	-17.1	-10.0	-7.1
-78.0	-15.1	-10.0	-5.1
-77.0	-17.9	-10.0	-7.9
-76.0	-23.5	-10.0	-13.5
-75.0	-20.9	-10.0	-10.9
-74.0	-14.1	-10.0	-4.1
-73.0	-28.0	-10.0	-18.0
-72.0	-16.9	-10.0	-6.9
-71.0	-34.7	-10.0	-24.7
-70.0	-26.2	-10.0	-16.2
-69.0	-20.7	-10.0	-10.7
-68.0	-16.8	-10.0	-6.8
-67.0	-18.5	-10.0	-8.5
-66.0	-20.3	-10.0	-10.3
-65.0	-31.2	-10.0	-21.2
-64.0	-23.1	-10.0	-13.1
-63.0	-15.8	-10.0	-5.8
-62.0	-13.6	-10.0	-3.6
-61.0	-17.7	-10.0	-7.7
-60.0	-20.7	-10.0	-10.7
-59.0	-26.8	-10.0	-16.8
-58.0	-18.8	-10.0	-8.8
-57.0	-18.3	-10.0	-8.3
60.0	-15.8	-10.0	-5.8
61.0	-18.2	-10.0	-8.2
62.0	-29.2	-10.0	-19.2
63.0	-26.1	-10.0	-16.1
64.0	-33.7	-10.0	-23.7
65.0	-15.5	-10.0	-5.5
66.0	-22.5	-10.0	-12.5
67.0	-20.0	-10.0	-10.0
68.0	-20.1	-10.0	-10.1
69.0	-23.9	-10.0	-13.9
70.0	-23.7	-10.0	-13.7
71.0	-20.5	-10.0	-10.5
72.0	-32.1	-10.0	-22.1
73.0	-18.3	-10.0	-8.3
74.0	-18.3	-10.0	-8.3
75.0	-18.0	-10.0	-8.0
76.0	-22.2	-10.0	-12.2
77.0	-16.0	-10.0	-6.0
78.0	-15.4	-10.0	-5.4
79.0	-22.9	-10.0	-12.9
80.0	-24.1	-10.0	-14.1
81.0	-28.9	-10.0	-18.9
82.0	-20.2	-10.0	-10.2
83.0	-23.2	-10.0	-13.2
84.0	-31.8	-10.0	-21.8
85.0	-30.9	-10.0	-20.9
86.0	-26.7	0.0	-26.7
87.0	-18.9	0.0	-18.9
88.0	-21.1	0.0	-21.1
89.0	-27.1	0.0	-27.1
90.0	-28.2	0.0	-28.2
91.0	-20.7	0.0	-20.7
92.0	-23.8	0.0	-23.8
93.0	-26.6	0.0	-26.6
94.0	-24.4	0.0	-24.4
95.0	-30.8	0.0	-30.8
96.0	-28.5	0.0	-28.5
97.0	-25.7	0.0	-25.7
98.0	-25.9	0.0	-25.9
99.0	-22.8	0.0	-22.8
100.0	-35.1	0.0	-35.1
101.0	-23.0	0.0	-23.0
102.0	-32.6	0.0	-32.6
103.0	-24.5	0.0	-24.5
104.0	-28.7	0.0	-28.7
105.0	-34.5	0.0	-34.5
106.0	-22.1	0.0	-22.1
107.0	-31.9	0.0	-31.9
108.0	-25.9	0.0	-25.9
109.0	-25.1	0.0	-25.1
110.0	-35.4	0.0	-35.4
111.0	-26.2	0.0	-26.2
112.0	-26.4	0.0	-26.4
113.0	-26.1	0.0	-26.1
114.0	-28.4	0.0	-28.4
115.0	-24.4	0.0	-24.4
116.0	-26.3	0.0	-26.3
117.0	-30.8	0.0	-30.8
118.0	-24.7	0.0	-24.7
119.0	-21.4	0.0	-21.4
120.0	-24.8	0.0	-24.8
121.0	-20.8	0.0	-20.8
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, -180º to +180º @ 1.0º 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, -10º to +10º @ 0.1º increment

27.60 GHz Antenna Pattern in Co-pol Az RHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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	Gain	Mask	Over Mask
Degrees	dBi	dBi	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, -10º to +10º @ 0.1º 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, -30º to +30º @ 0.5º increment

27.60 GHz Antenna Pattern in Co-pol El RHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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 El RHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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, -10º to +10º @ 0.1º increment

27.60 GHz Antenna Pattern in Co-pol El RHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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 El RHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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, -10º to +10º @ 0.1º 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, -10º to +10º @ 0.1º increment

27.60 GHz Antenna Pattern in X-pol Az RHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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	Gain	Mask	Over Mask
Degrees	dBi	dBi	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

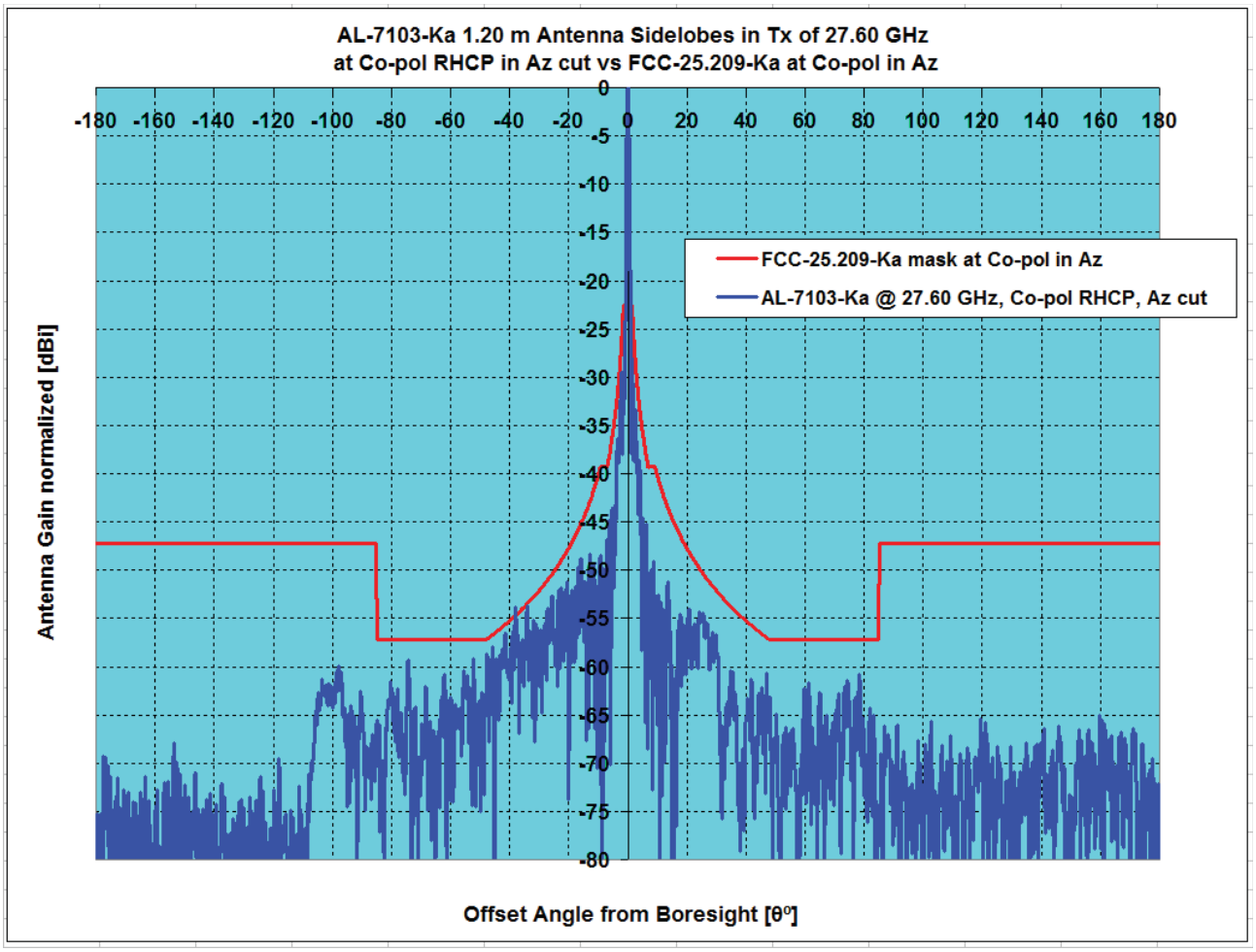
X-pol Azimuth RHCP, -10º to +10º @ 0.1º increment

-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		

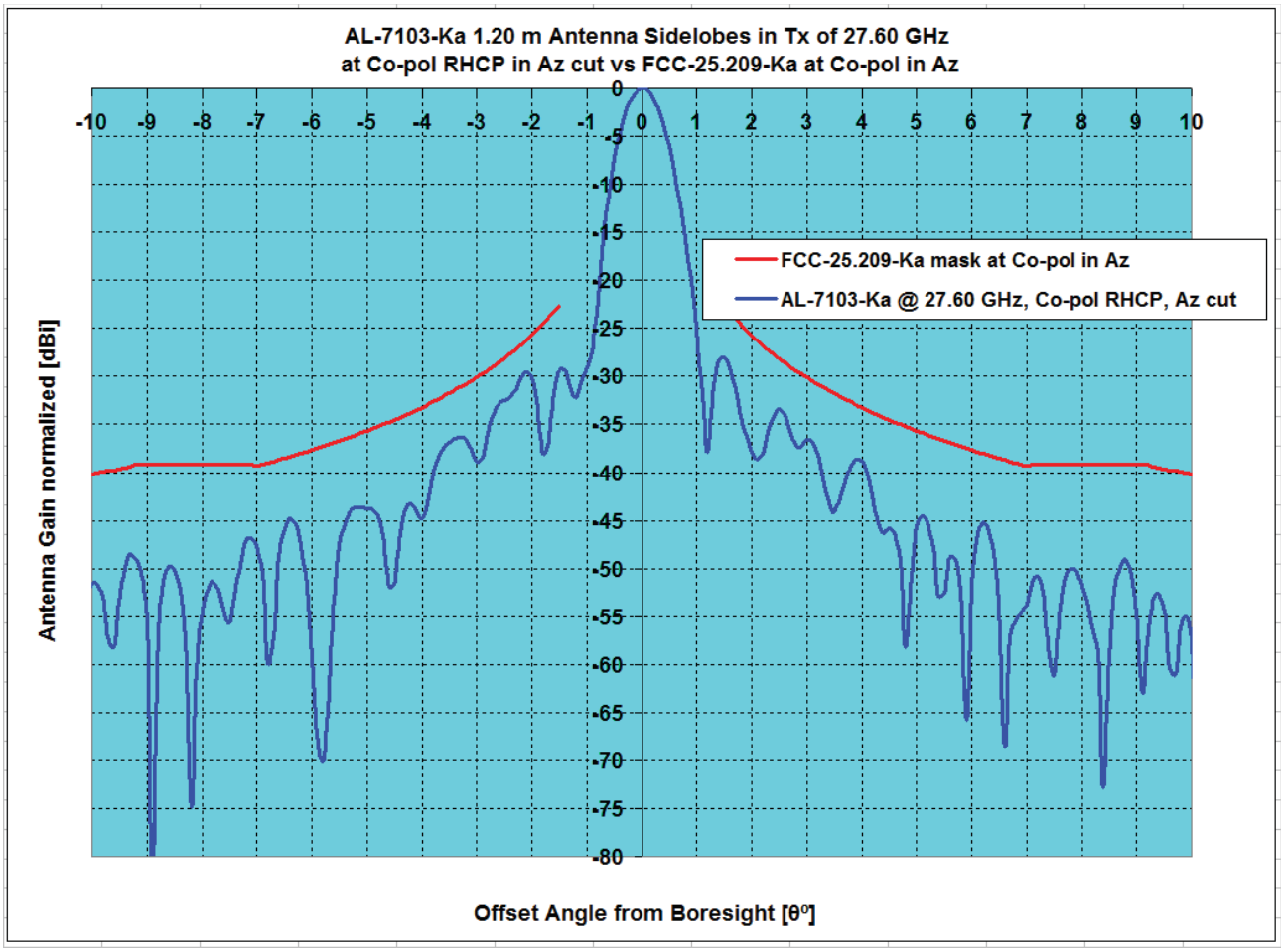
6.0	-15.2	-0.5	-14.7
6.1	-15.2	-0.6	-14.5
6.2	-13.2	-0.8	-12.4
6.3	-12.5	-1.0	-11.6
6.4	-13.1	-1.2	-12.0
6.5	-12.8	-1.3	-11.5
6.6	-13.7	-1.5	-12.2
6.7	-14.4	-1.7	-12.8
6.8	-15.3	-1.8	-13.5
6.9	-18.5	-2.0	-16.5
7.0	-22.5	-2.1	-20.4
7.1	-24.2	-2.0	-22.2
7.2	-17.1	-2.0	-15.1
7.3	-12.4	-2.0	-10.4
7.4	-9.3	-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



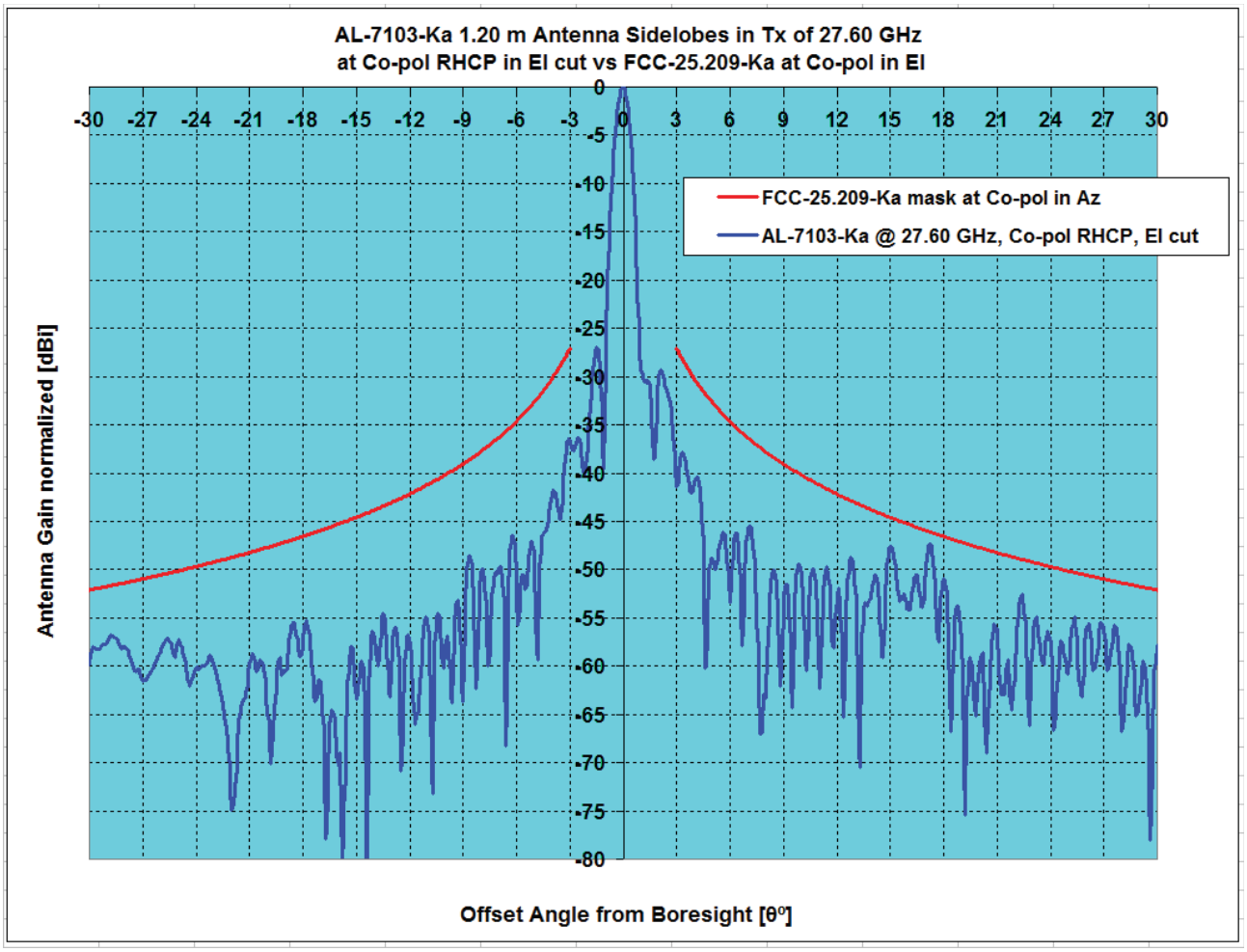
Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	1.5°≤θ≤7°	7°≤θ≤180°	1.5°≤θ≤7°	7°≤θ≤180°
FCC-25.209-Ka, Co-pol Az, vs AL-7103-Ka	Az , RHCP	27.60	47.20	-3.26	0.90	0.00%	0.08%



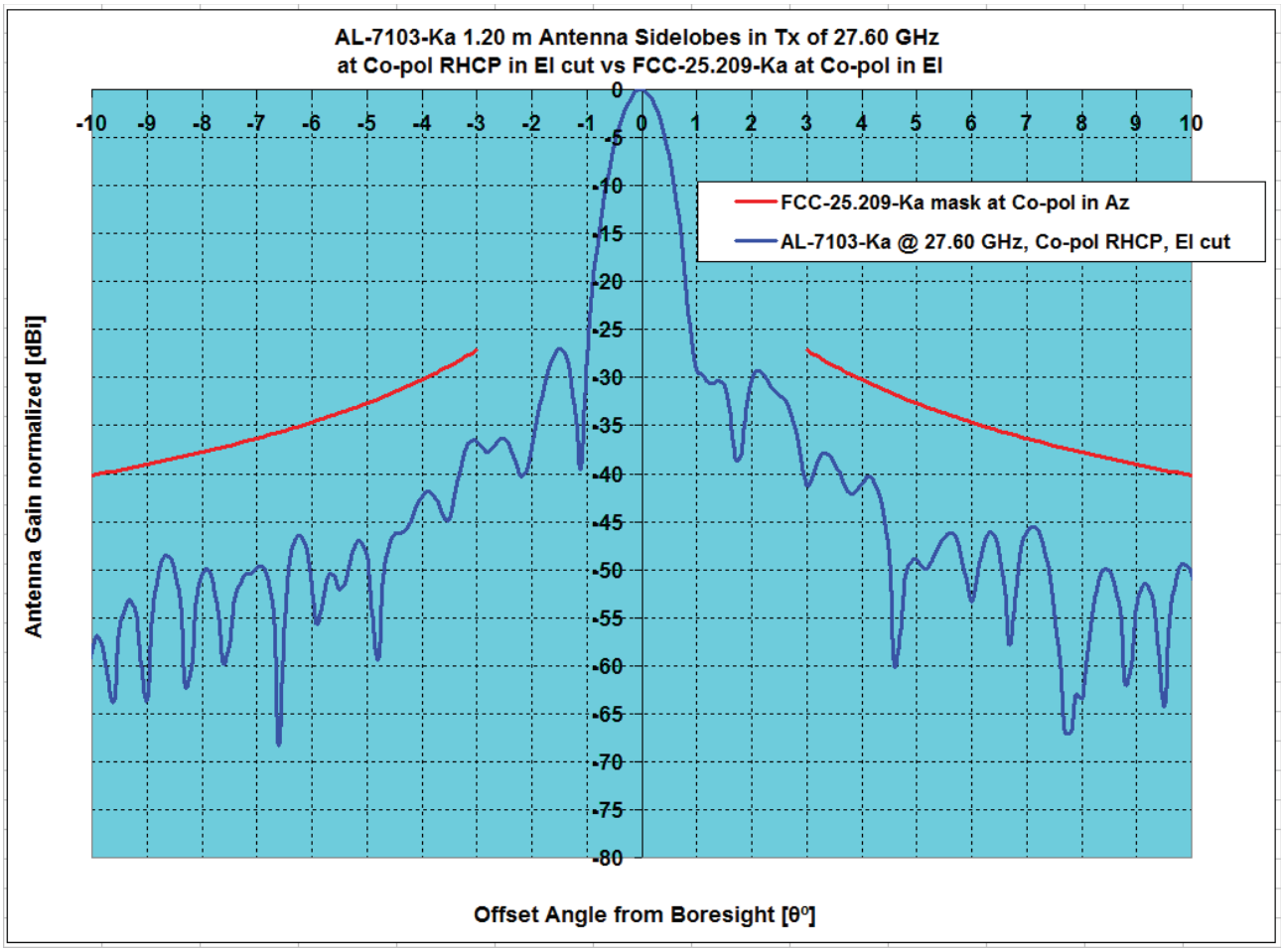
Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	1.5°≤θ≤7°	7°≤θ≤180°	1.5°≤θ≤7°	7°≤θ≤180°
FCC-25.209-Ka, Co-pol Az, vs AL-7103-Ka	Az , RHCP	27.60	47.20	-3.26	0.90	0.00%	0.08%

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, Pattern, Co-pol, Elevation RHCP



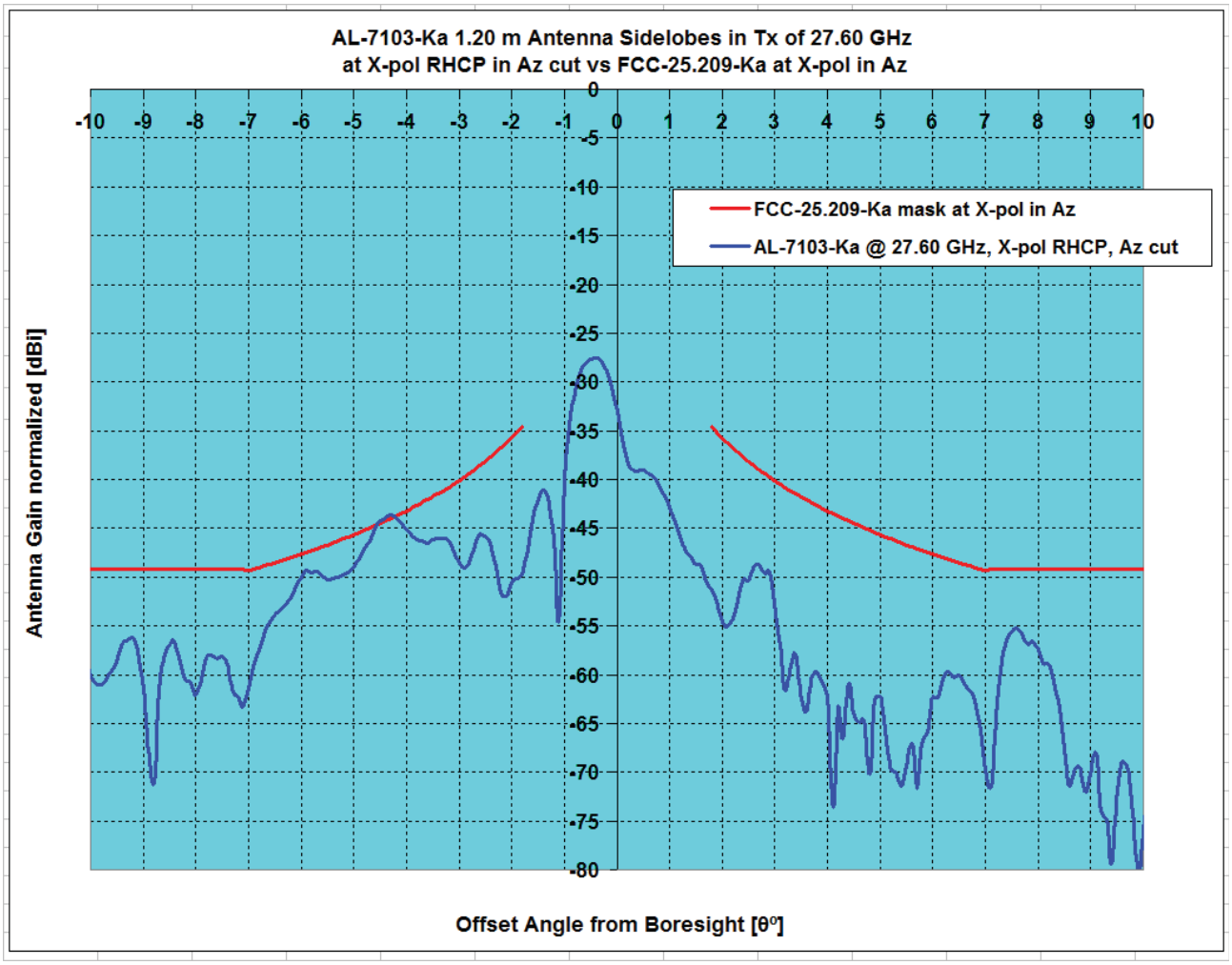
Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	3°≤θ≤7°	7°≤θ≤30°	3°≤θ≤7°	7°≤θ≤30°
FCC-25.209-Ka, Co-pol El, vs AL-7103-Ka	El , RHCP	27.60	47.20	-9.09	-1.24	0.00%	0.00%



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

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, Pattern, X-pol, Azimuth RHCP



Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	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, -180º to +180º @ 1.0º increment

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

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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	Gain	Mask	Over Mask
Degrees	dBi	dBi	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, -180º to +180º @ 1.0º 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, -180º to +180º @ 1.0º 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, -10º to +10º @ 0.1º increment

28.30 GHz Antenna Pattern in Co-pol Az LHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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	Gain	Mask	Over Mask
Degrees	dBi	dBi	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, -10º to +10º @ 0.1º 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, -30º to +30º @ 0.5º increment

28.30 GHz Antenna Pattern in Co-pol El LHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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 El LHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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, -10º to +10º @ 0.1º increment

28.30 GHz Antenna Pattern in Co-pol El LHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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 El LHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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, -10º to +10º @ 0.1º 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, -10º to +10º @ 0.1º increment

28.30 GHz Antenna Pattern in X-pol Az LHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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	Gain	Mask	Over Mask
Degrees	dBi	dBi	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

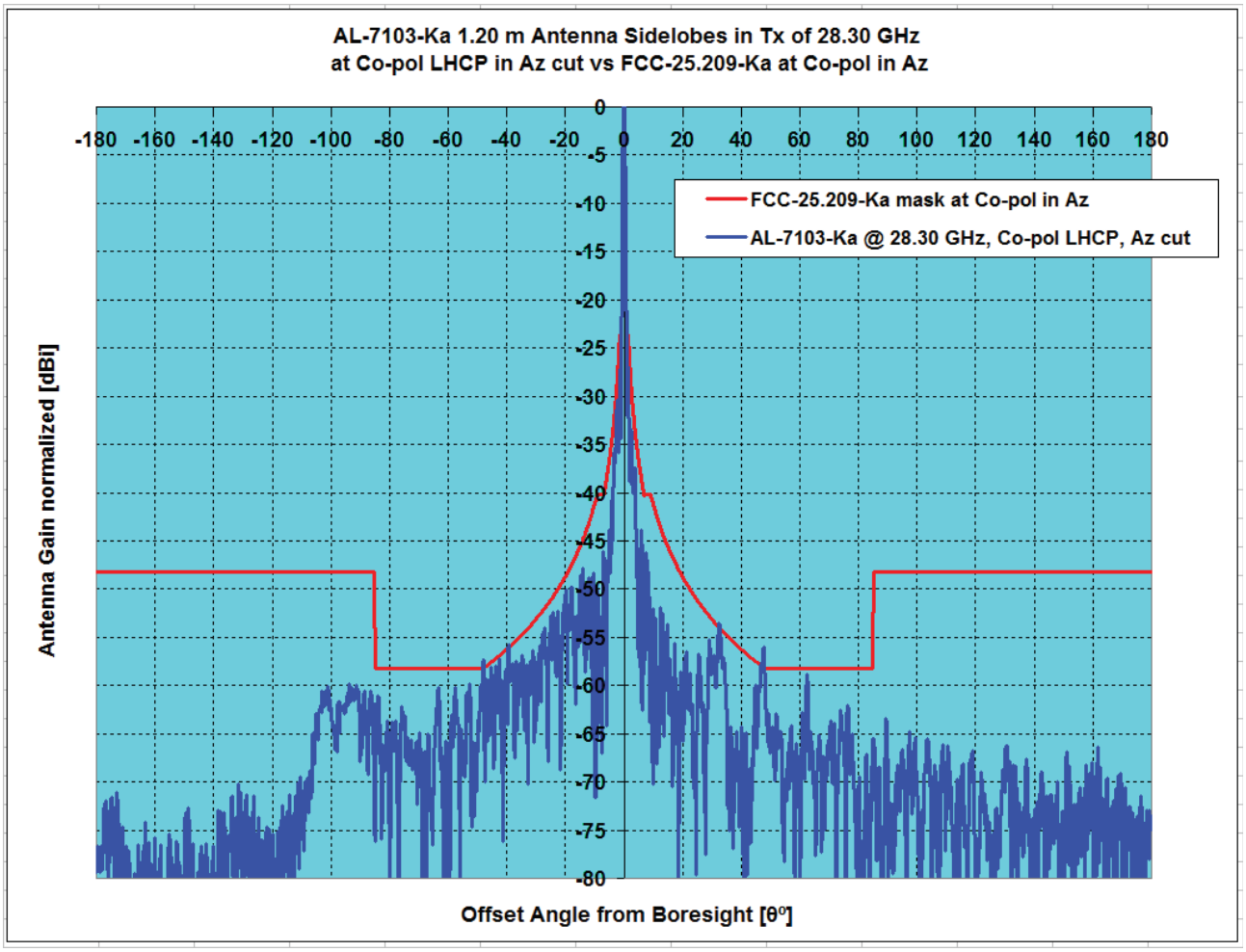
Orbit Communication Systems Ltd.
AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
X-pol Azimuth LHCP, -10º to +10º @ 0.1º increment

-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		

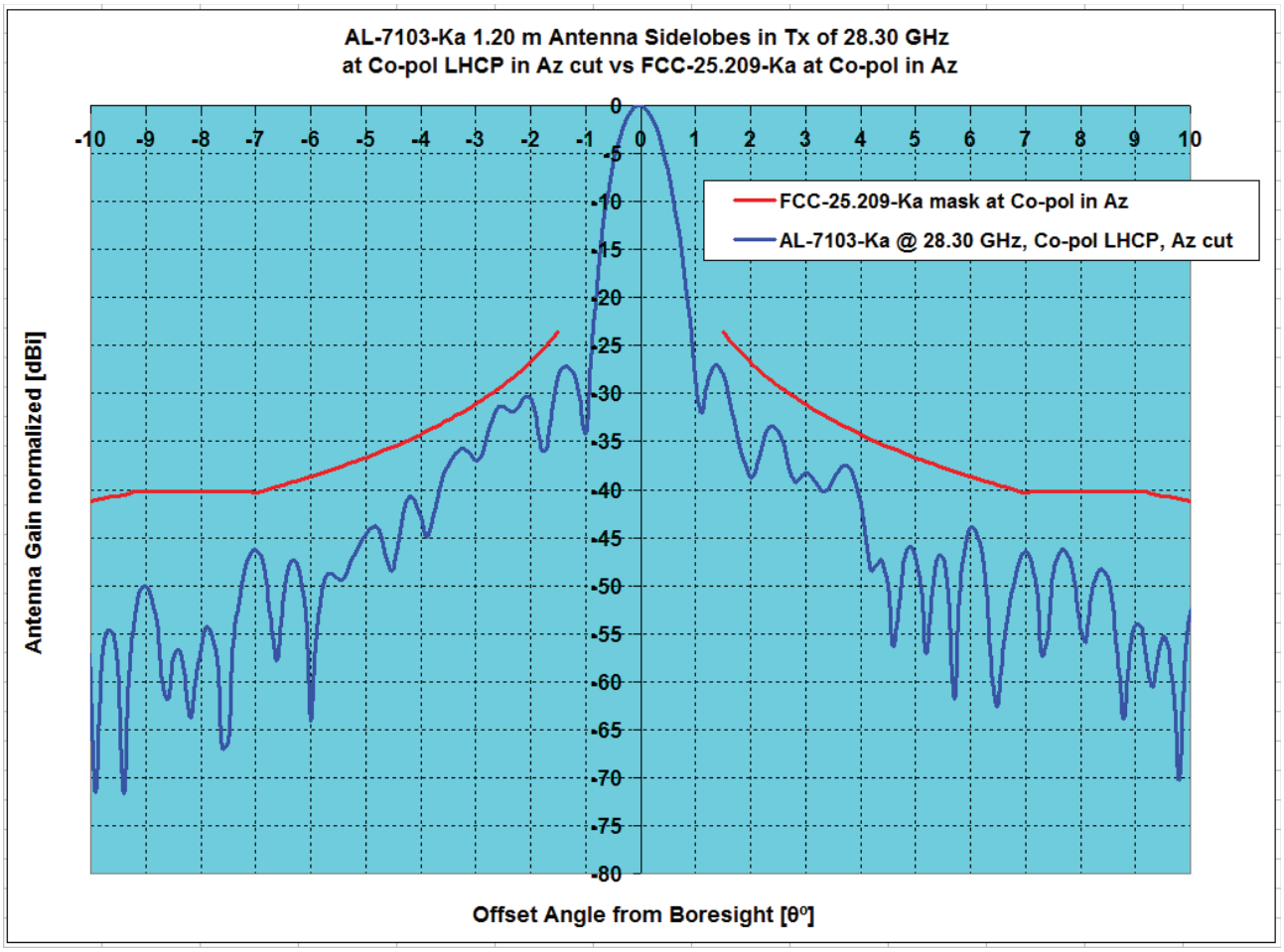
6.0	-7.9	-0.5	-7.4
6.1	-12.6	-0.6	-12.0
6.2	-15.5	-0.8	-14.7
6.3	-12.7	-1.0	-11.8
6.4	-10.7	-1.2	-9.6
6.5	-9.1	-1.3	-7.8
6.6	-6.9	-1.5	-5.4
6.7	-5.5	-1.7	-3.9
6.8	-5.0	-1.8	-3.2
6.9	-6.7	-2.0	-4.7
7.0	-10.1	-2.1	-7.9
7.1	-10.2	-2.0	-8.2
7.2	-7.8	-2.0	-5.8
7.3	-5.7	-2.0	-3.7
7.4	-5.7	-2.0	-3.7
7.5	-6.6	-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

Orbit Communication Systems Ltd.

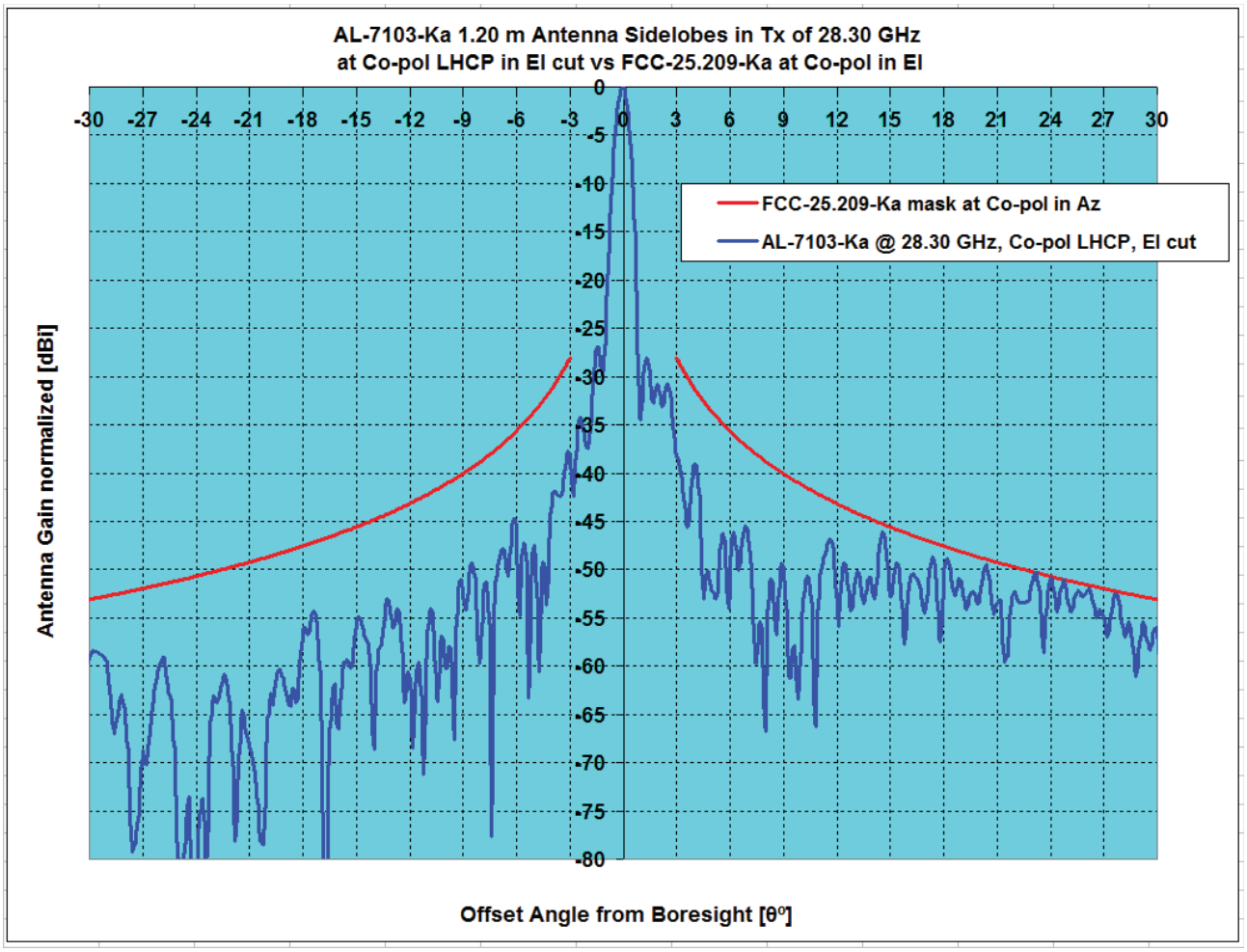
AL-7103-Ka, 1.20 m Antenna, Pattern, Co-pol, Azimuth LHCP



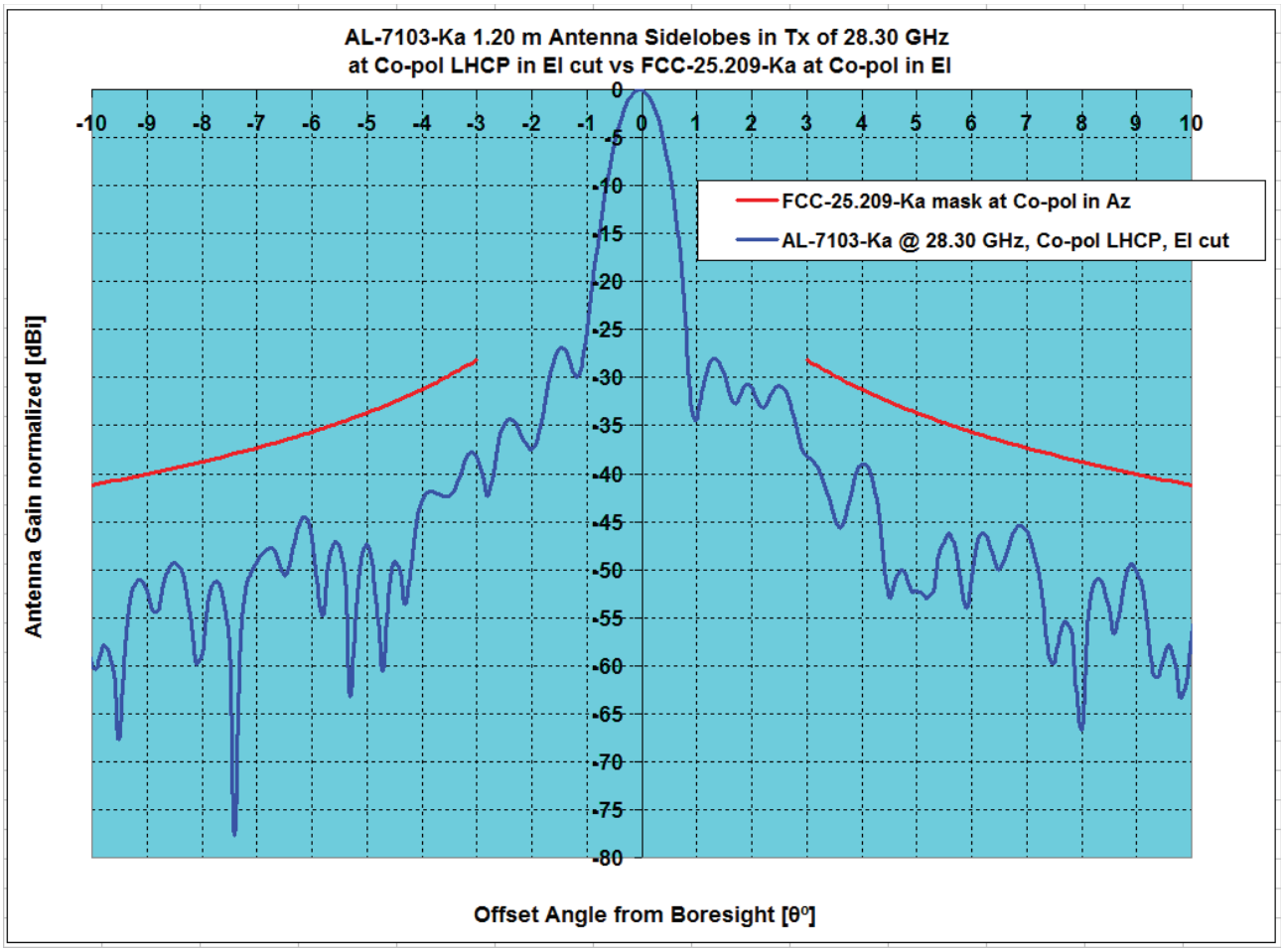
Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	1.5°≤θ≤7°	7°≤θ≤180°	1.5°≤θ≤7°	7°≤θ≤180°
FCC-25.209-Ka, Co-pol Az, vs AL-7103-Ka	Az , LHCP	28.30	48.20	-1.98	2.11	0.00%	0.45%



Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	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 , LHCP	28.30	48.20	-1.98	2.11	0.00%	0.45%

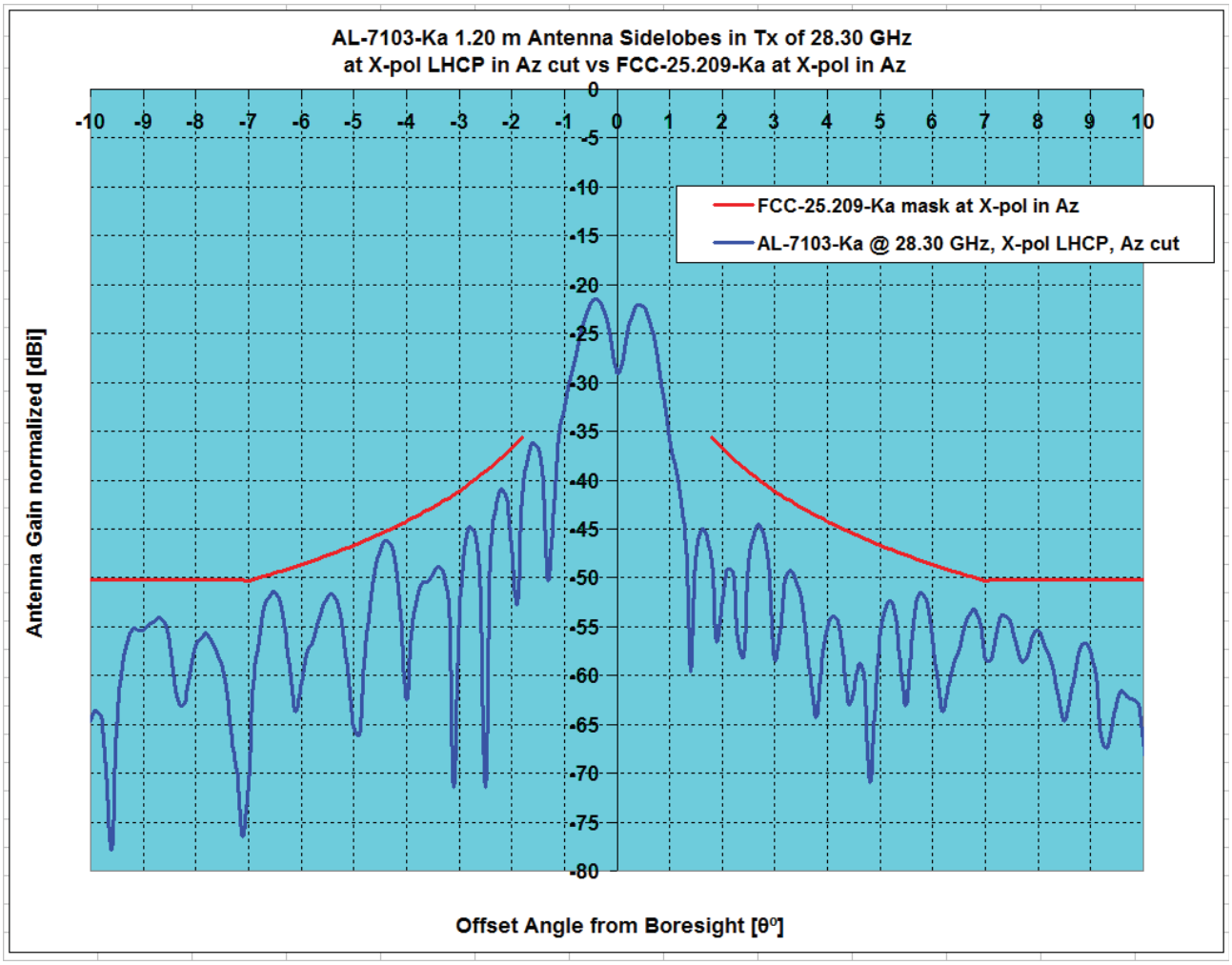


Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	3°≤θ≤7°	7°≤θ≤30°	3°≤θ≤7°	7°≤θ≤30°
FCC-25.209-Ka, Co-pol El, vs AL-7103-Ka	El , LHCP	28.30	48.20	-7.63	0.07	0.00%	0.18%



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



Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	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, -180º to +180º @ 1.0º increment

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

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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	Gain	Mask	Over Mask
Degrees	dBi	dBi	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, -180º to +180º @ 1.0º 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, -180º to +180º @ 1.0º 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, -10º to +10º @ 0.1º increment

28.30 GHz Antenna Pattern in Co-pol Az RHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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	Gain	Mask	Over Mask
Degrees	dBi	dBi	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, -10º to +10º @ 0.1º 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, -30º to +30º @ 0.5º increment

28.30 GHz Antenna Pattern in Co-pol El RHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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 El RHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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, -10º to +10º @ 0.1º increment

28.30 GHz Antenna Pattern in Co-pol El RHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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 El RHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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, -10º to +10º @ 0.1º 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, -10º to +10º @ 0.1º increment

28.30 GHz Antenna Pattern in X-pol Az RHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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	Gain	Mask	Over Mask
Degrees	dBi	dBi	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

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AL-7103-Ka, 1.20 m Antenna, Pattern Data Table

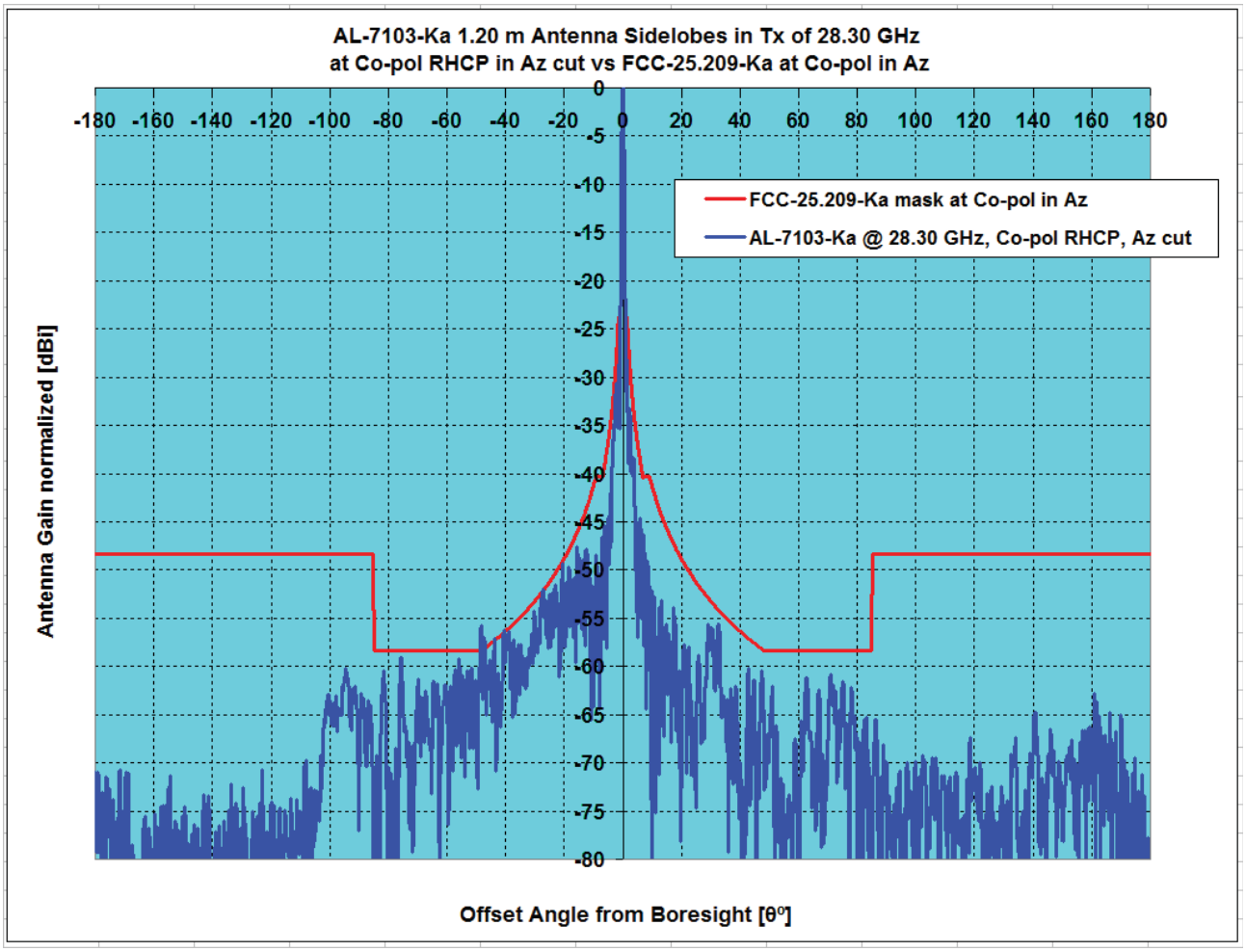
X-pol Azimuth RHCP, -10º to +10º @ 0.1º increment

-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		

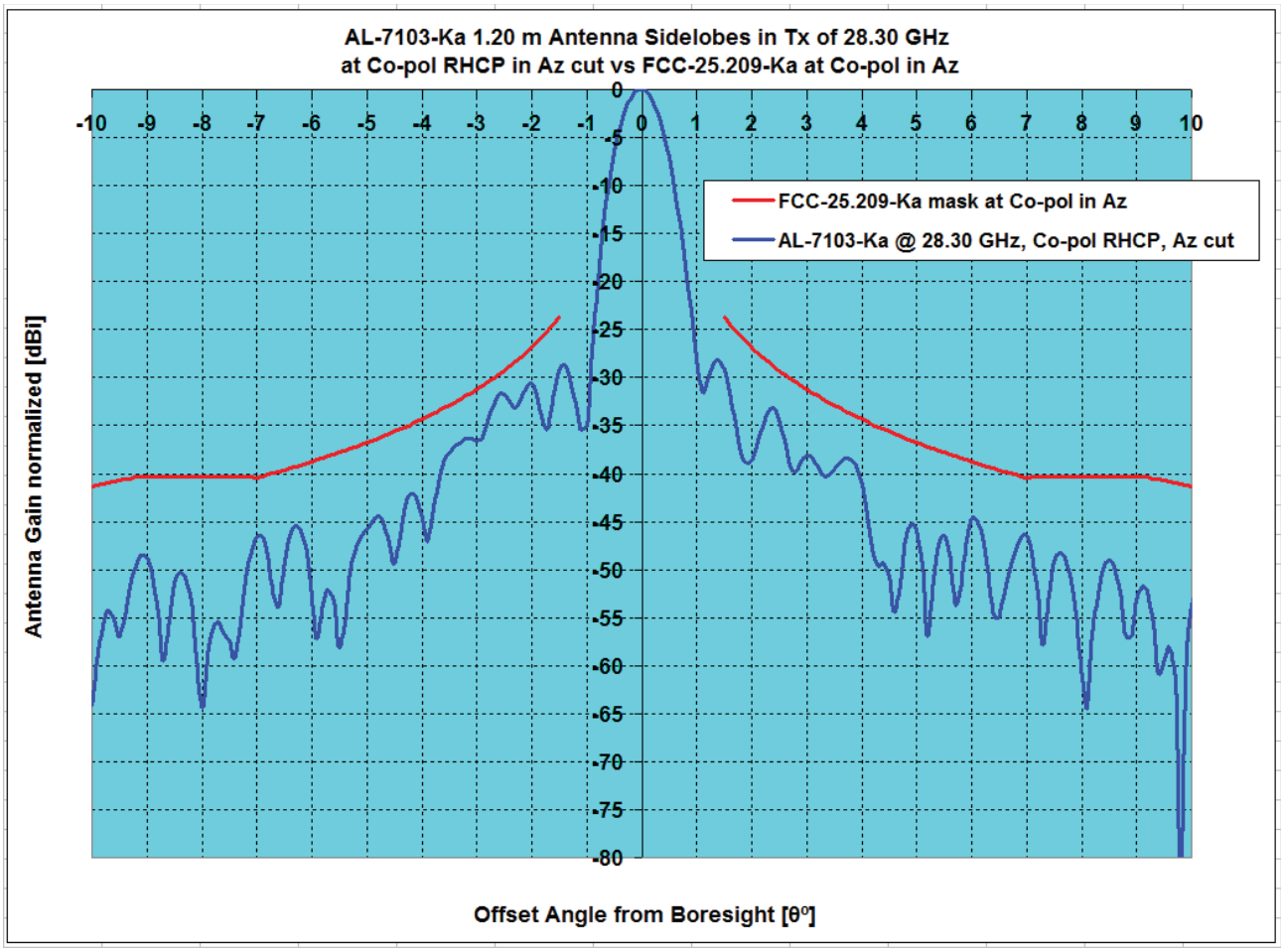
6.0	-10.7	-0.5	-10.3
6.1	-14.2	-0.6	-13.6
6.2	-18.3	-0.8	-17.4
6.3	-27.2	-1.0	-26.2
6.4	-28.9	-1.2	-27.8
6.5	-23.3	-1.3	-22.0
6.6	-16.4	-1.5	-15.0
6.7	-14.7	-1.7	-13.1
6.8	-11.0	-1.8	-9.2
6.9	-9.0	-2.0	-7.0
7.0	-7.5	-2.1	-5.4
7.1	-7.6	-2.0	-5.6
7.2	-7.0	-2.0	-5.0
7.3	-6.8	-2.0	-4.8
7.4	-7.3	-2.0	-5.3
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

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, Pattern, Co-pol, Azimuth RHCP



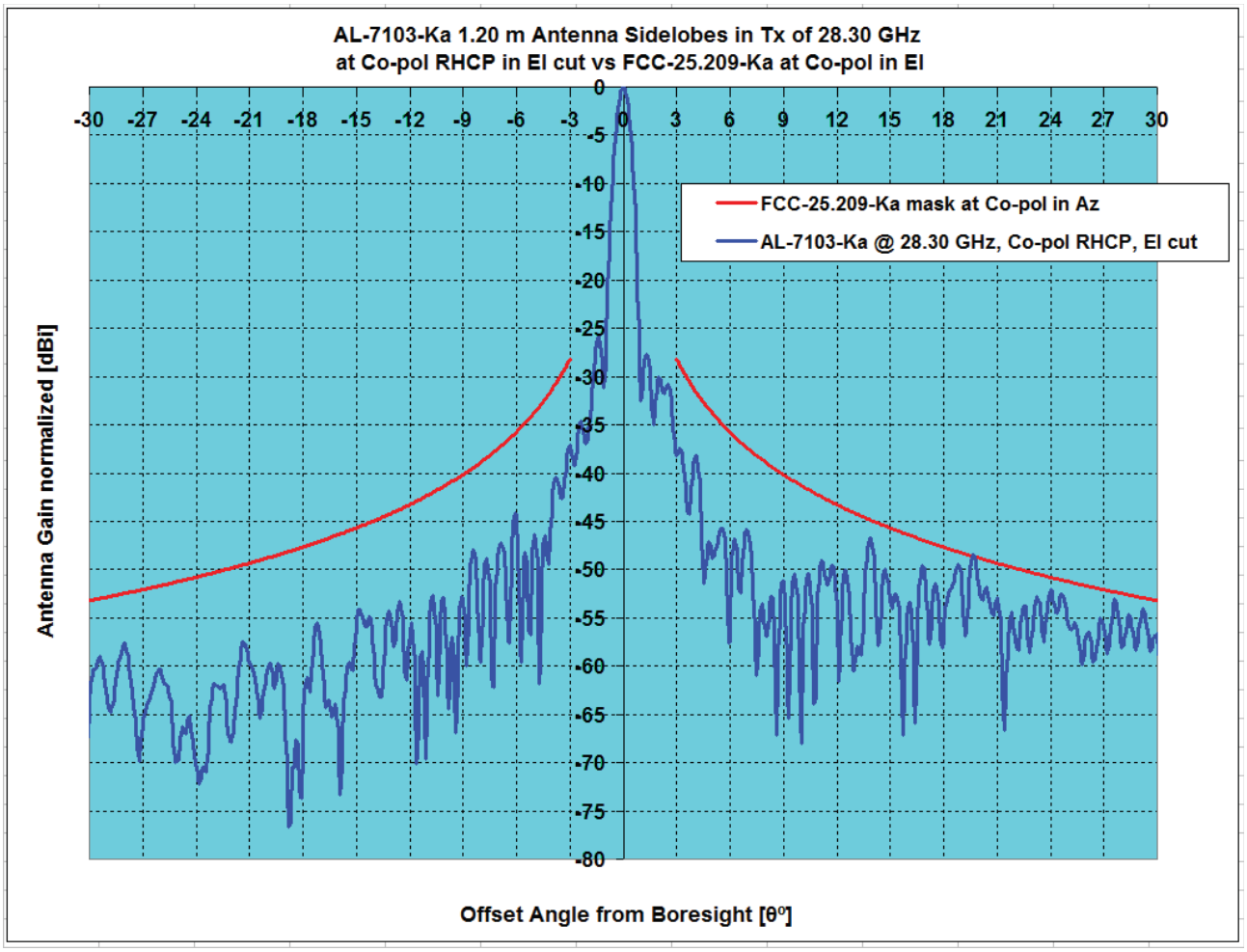
Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	1.5°≤θ≤7°	7°≤θ≤180°	1.5°≤θ≤7°	7°≤θ≤180°
FCC-25.209-Ka, Co-pol Az, vs AL-7103-Ka	Az , RHCP	28.30	48.30	-2.09	2.56	0.00%	0.45%



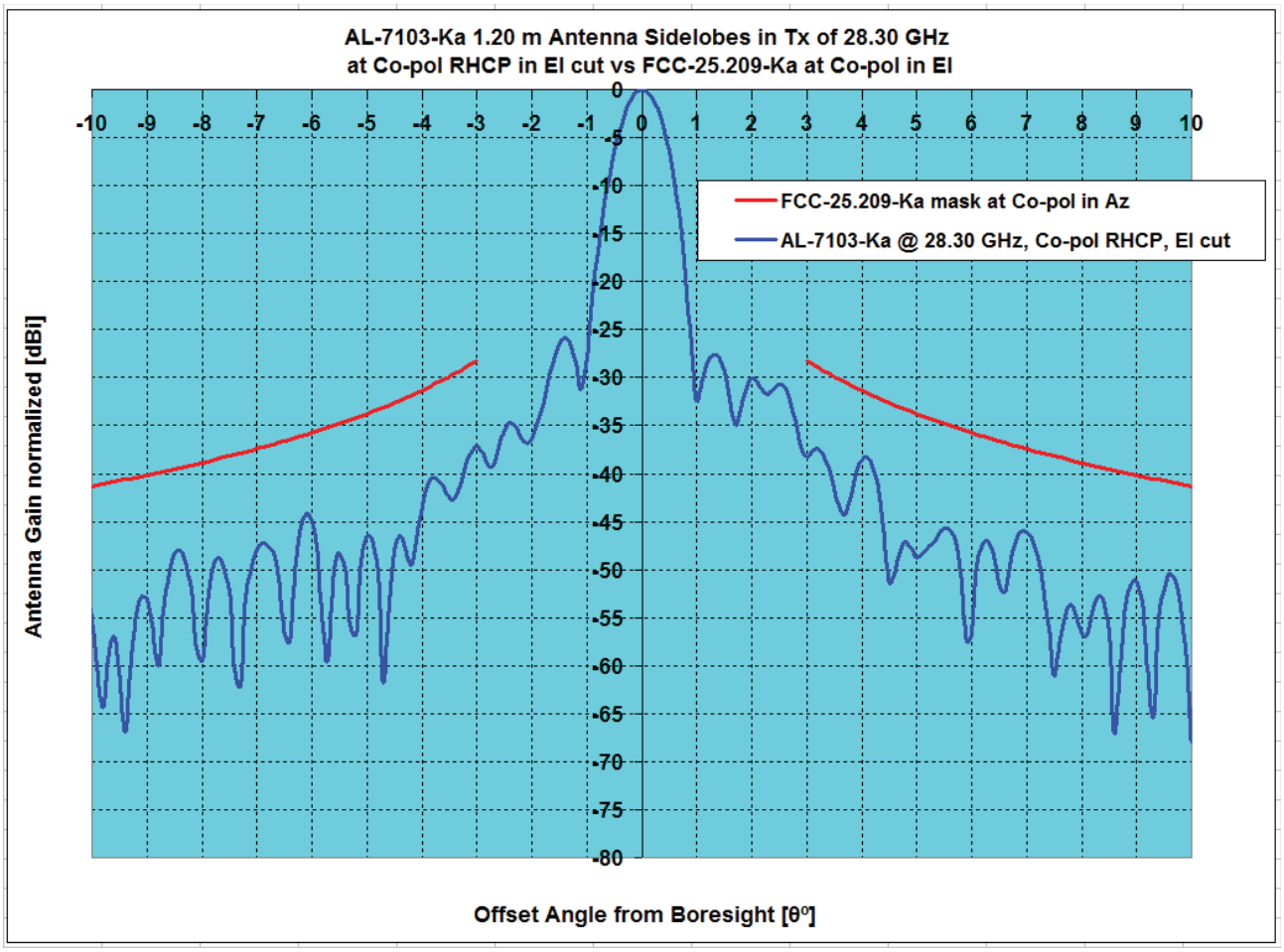
Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	1.5°≤θ≤7°	7°≤θ≤180°	1.5°≤θ≤7°	7°≤θ≤180°
FCC-25.209-Ka, Co-pol Az, vs AL-7103-Ka	Az , RHCP	28.30	48.30	-2.09	2.56	0.00%	0.45%

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, Pattern, Co-pol, Elevation RHCP



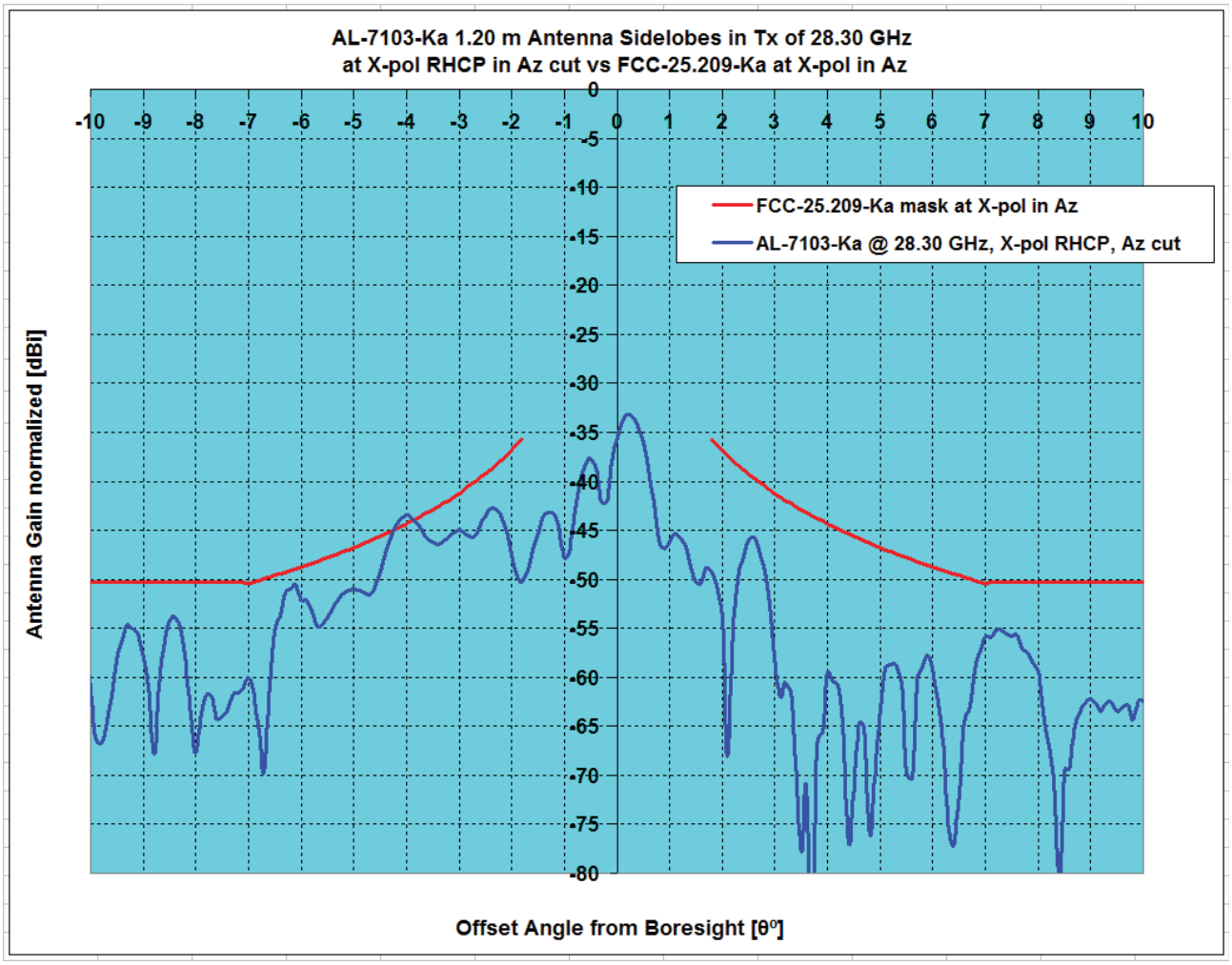
Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	3°≤θ≤7°	7°≤θ≤30°	3°≤θ≤7°	7°≤θ≤30°
FCC-25.209-Ka, Co-pol El, vs AL-7103-Ka	El , RHCP	28.30	48.30	-6.63	0.22	0.00%	0.18%



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



Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	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, -180º to +180º @ 1.0º increment

29.10 GHz Antenna Pattern in Co-pol Az LHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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	Gain	Mask	Over Mask
Degrees	dBi	dBi	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, -180º to +180º @ 1.0º 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, -180º to +180º @ 1.0º 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, -10º to +10º @ 0.1º increment

29.10 GHz Antenna Pattern in Co-pol Az LHCP			
Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	dB
-10.0	0.4	7.0	-6.6
-9.9	1.9	7.1	-5.2
-9.8	2.4	7.2	-4.8
-9.7	1.8	7.3	-5.6
-9.6	-0.1	7.4	-7.5
-9.5	-3.2	7.6	-10.8
-9.4	-6.9	7.7	-14.6
-9.3	-8.1	7.8	-15.9
-9.2	-5.9	8.0	-13.9
-9.1	-4.5	8.0	-12.5
-9.0	-4.6	8.0	-12.6
-8.9	-6.4	8.0	-14.4
-8.8	-9.7	8.0	-17.7
-8.7	-12.5	8.0	-20.5
-8.6	-8.1	8.0	-16.1
-8.5	-4.2	8.0	-12.2
-8.4	-2.0	8.0	-10.0
-8.3	-1.6	8.0	-9.6
-8.2	-2.5	8.0	-10.5
-8.1	-6.0	8.0	-14.0
-8.0	-9.7	8.0	-17.7
-7.9	-5.5	8.0	-13.5
-7.8	-1.6	8.0	-9.6
-7.7	0.2	8.0	-7.8
-7.6	0.1	8.0	-7.9
-7.5	-1.8	8.0	-9.8
-7.4	-5.6	8.0	-13.6
-7.3	-7.7	8.0	-15.7
-7.2	-2.3	8.0	-10.3
-7.1	1.0	8.0	-7.0
-7.0	2.4	7.9	-5.4
-6.9	3.1	8.0	-4.9
-6.8	2.4	8.2	-5.8
-6.7	0.4	8.3	-8.0
-6.6	-3.3	8.5	-11.8
-6.5	-11.3	8.7	-20.0
-6.4	-9.6	8.8	-18.5
-6.3	-4.4	9.0	-13.4
-6.2	-2.7	9.2	-11.9
-6.1	-4.5	9.4	-13.9
-6.0	-11.4	9.5	-21.0
-5.9	-12.8	9.7	-22.5
-5.8	-3.3	9.9	-13.2
-5.7	0.4	10.1	-9.7
-5.6	1.3	10.3	-9.0
-5.5	-0.1	10.5	-10.6
-5.4	-4.3	10.7	-15.0
-5.3	-13.6	10.9	-24.5
-5.2	-3.4	11.1	-14.5
-5.1	1.9	11.3	-9.4
-5.0	4.0	11.5	-7.5
-4.9	4.9	11.7	-6.8
-4.8	4.9	12.0	-7.0
-4.7	4.4	12.2	-7.8
-4.6	2.8	12.4	-9.6
-4.5	0.0	12.7	-12.7
-4.4	-3.1	12.9	-16.0
-4.3	-1.2	13.2	-14.4
-4.2	2.7	13.4	-10.8
-4.1	4.4	13.7	-9.3
-4.0	4.4	13.9	-9.5
-3.9	3.5	14.2	-10.7

29.10 GHz Antenna Pattern in Co-pol Az LHCP			
Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	dB
0.0	48.5		
0.1	48.3		
0.2	47.6		
0.3	46.4		
0.4	44.7		
0.5	42.4		
0.6	39.6		
0.7	36.2		
0.8	32.2		
0.9	27.4		
1.0	22.1		
1.1	17.6		
1.2	18.2		
1.3	19.9		
1.4	20.4		
1.5	19.6	24.6	-5.0
1.6	17.8	23.9	-6.1
1.7	15.3	23.2	-7.9
1.8	12.3	22.6	-10.3
1.9	10.4	22.0	-11.6
2.0	9.8	21.5	-11.7
2.1	11.1	20.9	-9.8
2.2	12.8	20.4	-7.6
2.3	13.8	20.0	-6.2
2.4	14.3	19.5	-5.2
2.5	14.0	19.1	-5.1
2.6	13.4	18.6	-5.2
2.7	12.7	18.2	-5.5
2.8	12.3	17.8	-5.5
2.9	12.1	17.4	-5.3
3.0	11.4	17.1	-5.7
3.1	10.2	16.7	-6.5
3.2	9.2	16.4	-7.1
3.3	8.8	16.0	-7.3
3.4	9.3	15.7	-6.4
3.5	9.7	15.4	-5.7
3.6	9.7	15.1	-5.4
3.7	9.0	14.8	-5.8
3.8	7.6	14.5	-6.9
3.9	5.0	14.2	-9.2
4.0	2.8	13.9	-11.1
4.1	2.6	13.7	-11.1
4.2	3.1	13.4	-10.3
4.3	2.5	13.2	-10.6
4.4	0.4	12.9	-12.5
4.5	-1.2	12.7	-13.9
4.6	1.3	12.4	-11.2
4.7	4.1	12.2	-8.1
4.8	5.0	12.0	-7.0
4.9	4.5	11.7	-7.3
5.0	2.4	11.5	-9.1
5.1	-1.2	11.3	-12.6
5.2	-6.2	11.1	-17.3
5.3	-5.5	10.9	-16.4
5.4	-5.5	10.7	-16.1
5.5	-9.5	10.5	-20.0
5.6	-8.1	10.3	-18.3
5.7	-3.2	10.1	-13.3
5.8	-0.6	9.9	-10.5
5.9	-0.1	9.7	-9.8
6.0	-1.2	9.5	-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, -10º to +10º @ 0.1º 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, -30º to +30º @ 0.5º increment

29.10 GHz Antenna Pattern in Co-pol El LHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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 El LHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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, -10º to +10º @ 0.1º increment

29.10 GHz Antenna Pattern in Co-pol El LHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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 El LHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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, -10º to +10º @ 0.1º 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, -10º to +10º @ 0.1º increment

29.10 GHz Antenna Pattern in X-pol Az LHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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	Gain	Mask	Over Mask
Degrees	dBi	dBi	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

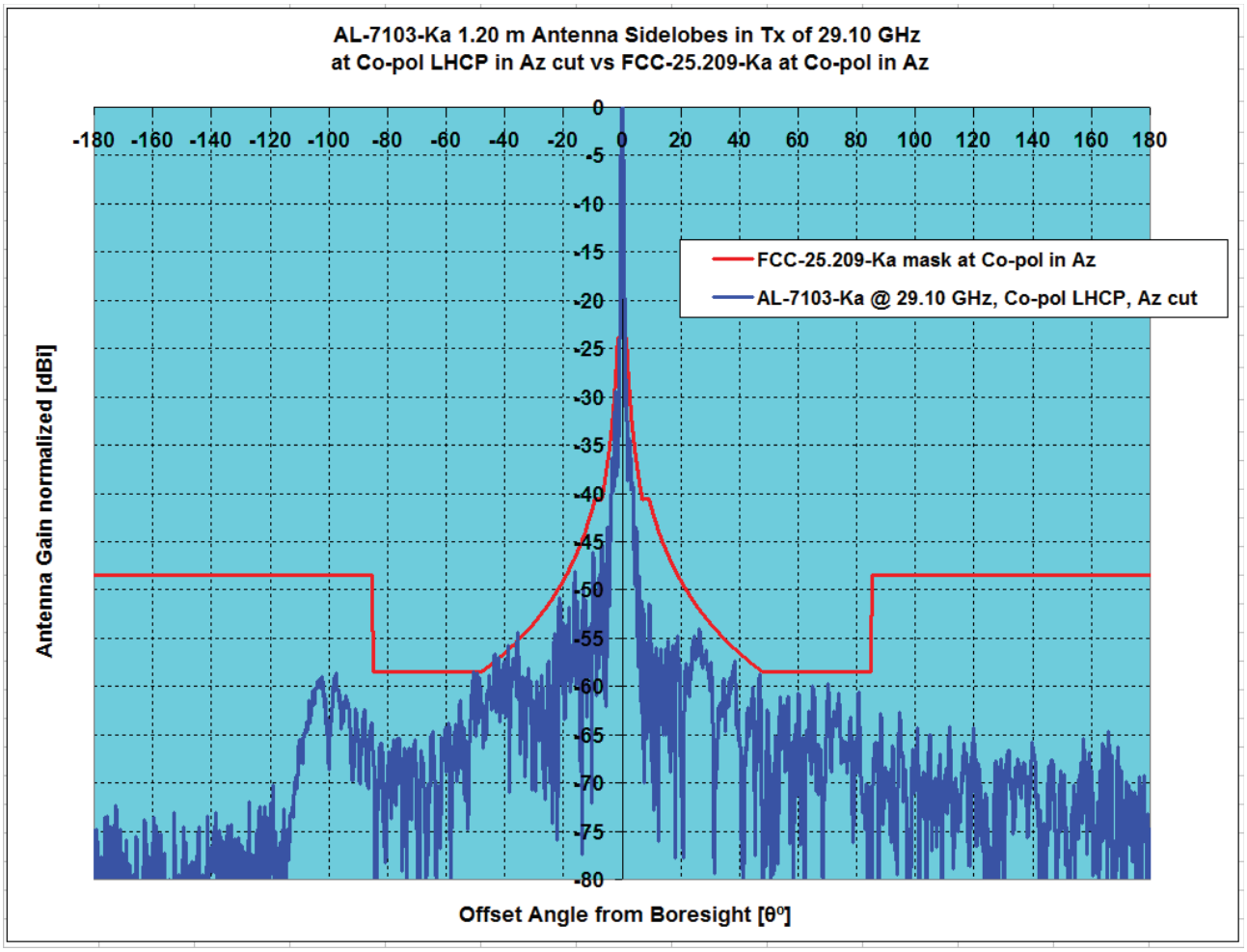
Orbit Communication Systems Ltd.
AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
X-pol Azimuth LHCP, -10º to +10º @ 0.1º increment

-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		

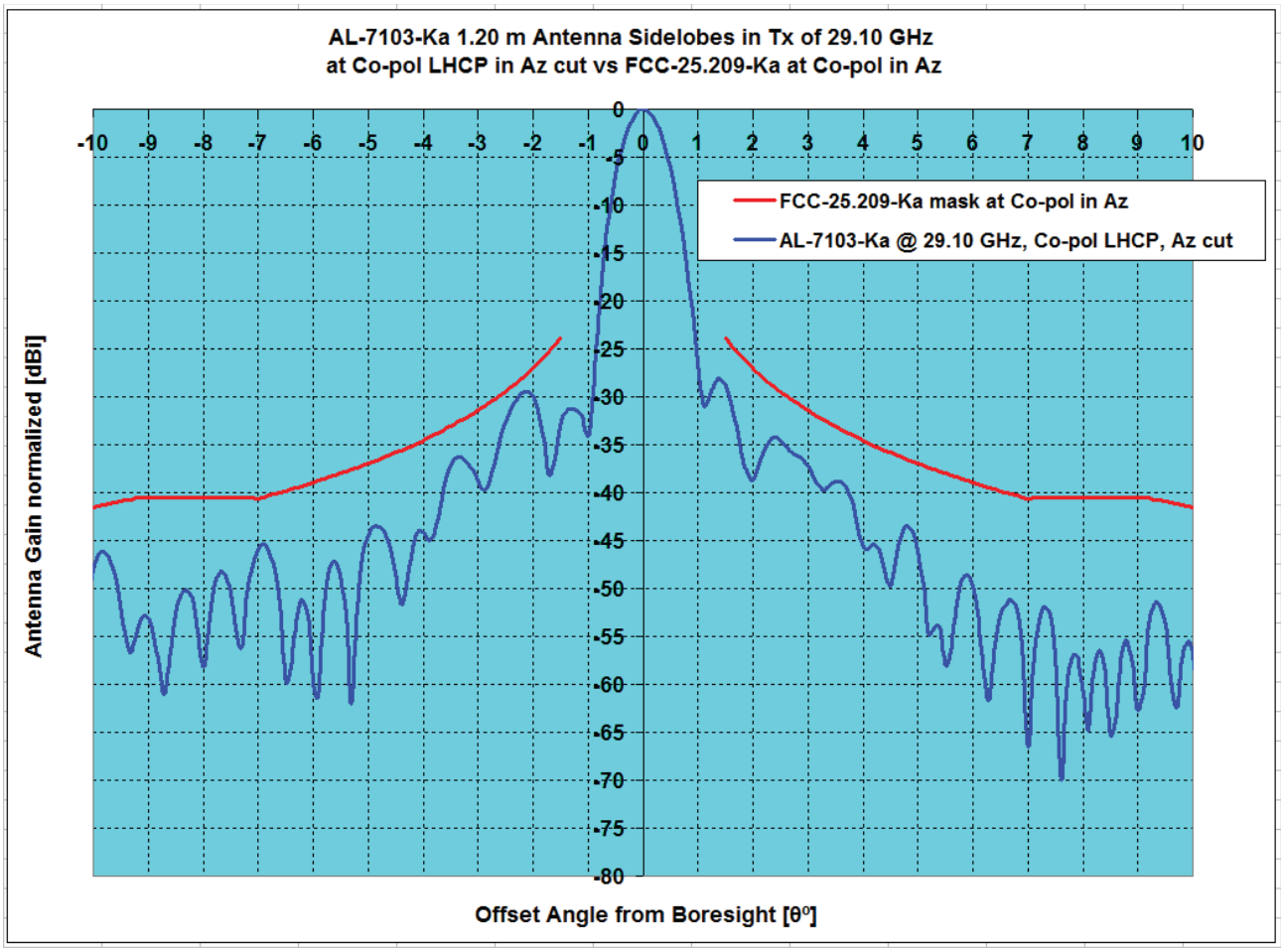
6.0	-21.7	-0.5	-21.2
6.1	-11.2	-0.6	-10.6
6.2	-6.0	-0.8	-5.2
6.3	-5.2	-1.0	-4.2
6.4	-5.9	-1.2	-4.8
6.5	-9.6	-1.3	-8.3
6.6	-15.0	-1.5	-13.5
6.7	-10.9	-1.7	-9.2
6.8	-7.7	-1.8	-5.9
6.9	-8.1	-2.0	-6.2
7.0	-10.0	-2.1	-7.9
7.1	-16.9	-2.0	-14.9
7.2	-24.7	-2.0	-22.7
7.3	-14.0	-2.0	-12.0
7.4	-13.8	-2.0	-11.8
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

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, Pattern, Co-pol, Azimuth LHCP



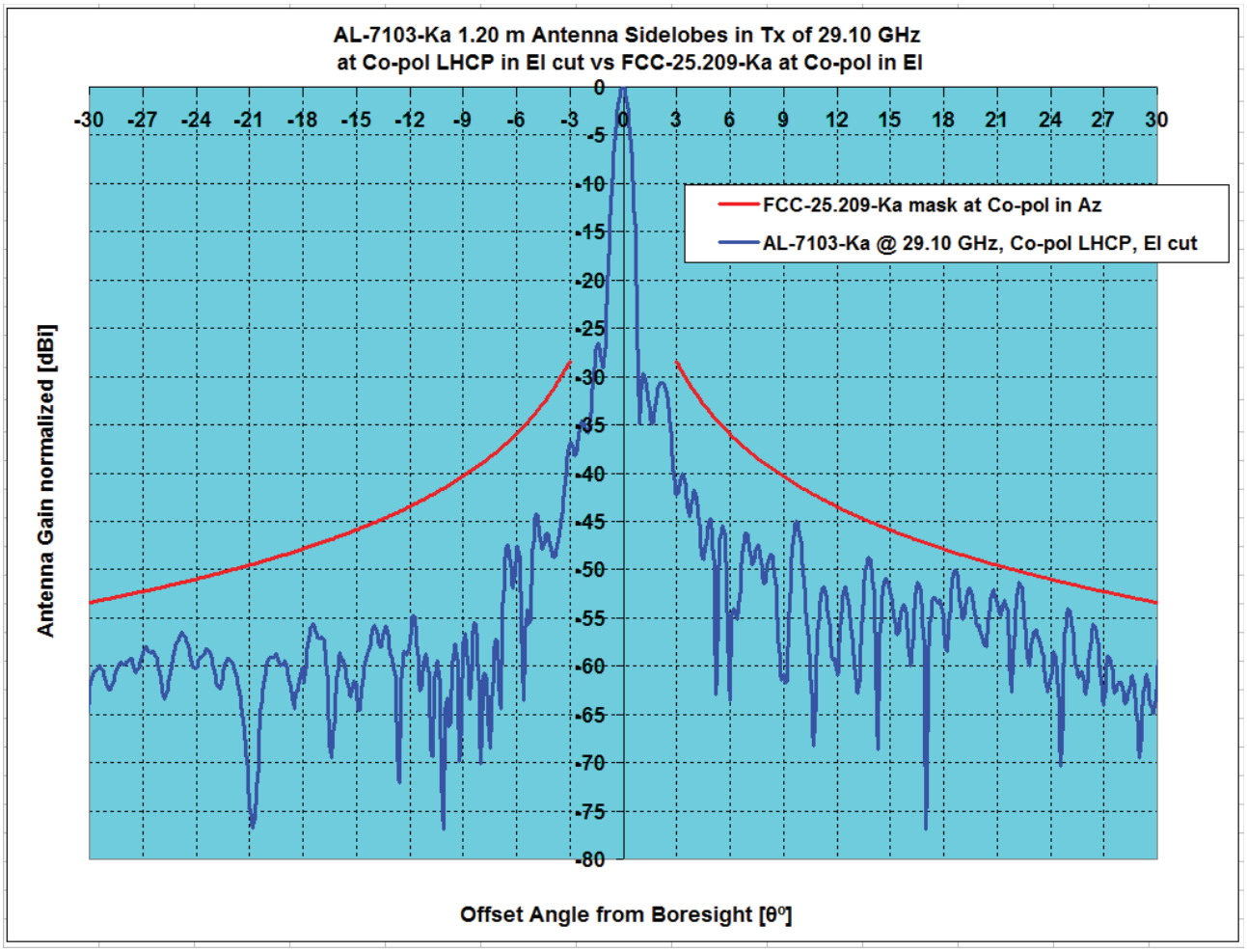
Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	1.5°≤θ≤7°	7°≤θ≤180°	1.5°≤θ≤7°	7°≤θ≤180°
FCC-25.209-Ka, Co-pol Az, vs AL-7103-Ka	Az , LHCP	29.10	48.50	-1.60	0.94	0.00%	0.28%



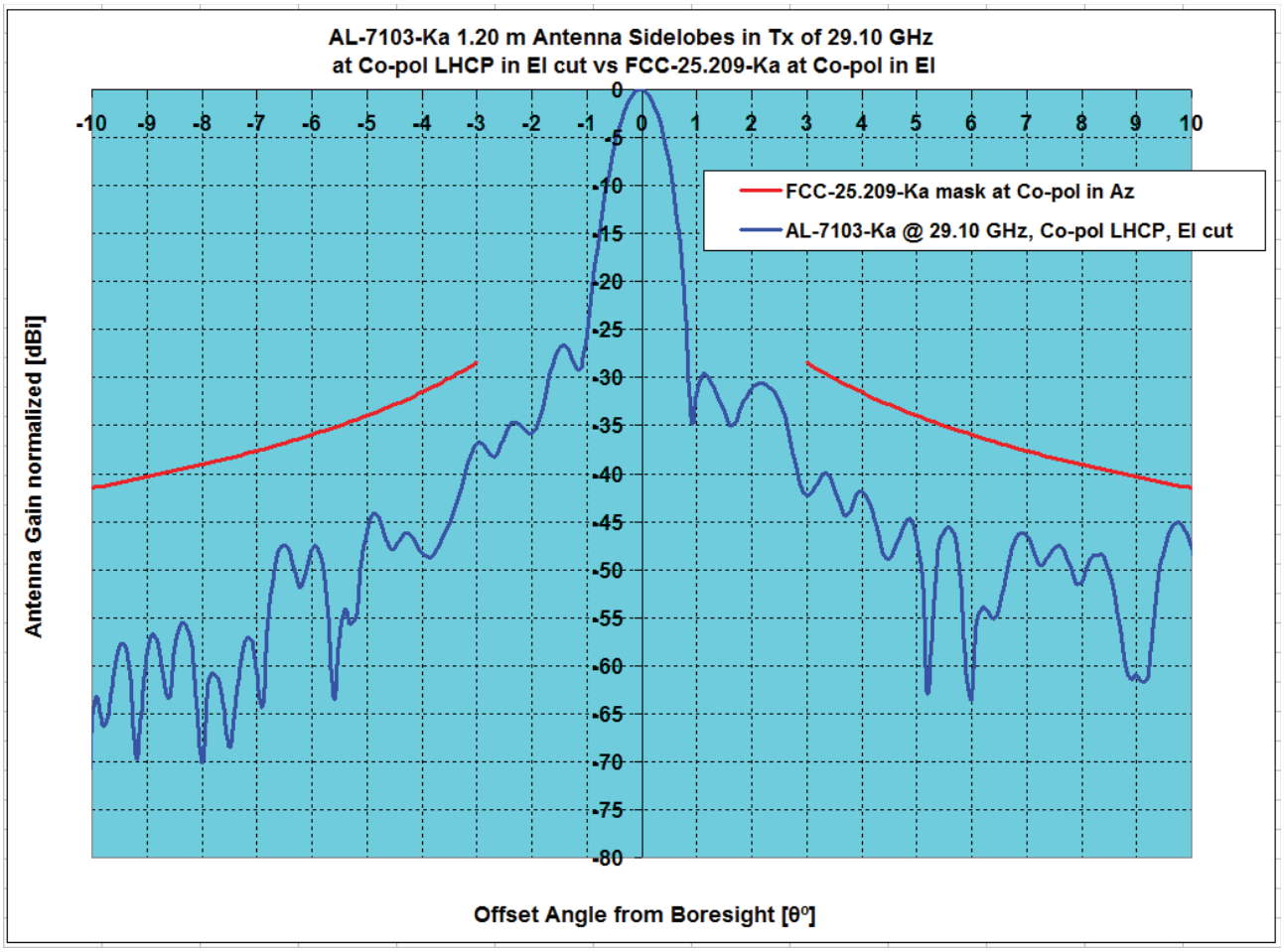
Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	1.5°≤θ≤7°	7°≤θ≤180°	1.5°≤θ≤7°	7°≤θ≤180°
FCC-25.209-Ka, Co-pol Az, vs AL-7103-Ka	Az , LHCP	29.10	48.50	-1.60	0.94	0.00%	0.28%

Orbit Communication Systems Ltd.

AL-7103-Ka, 1.20 m Antenna, Pattern, Co-pol, Elevation LHCP

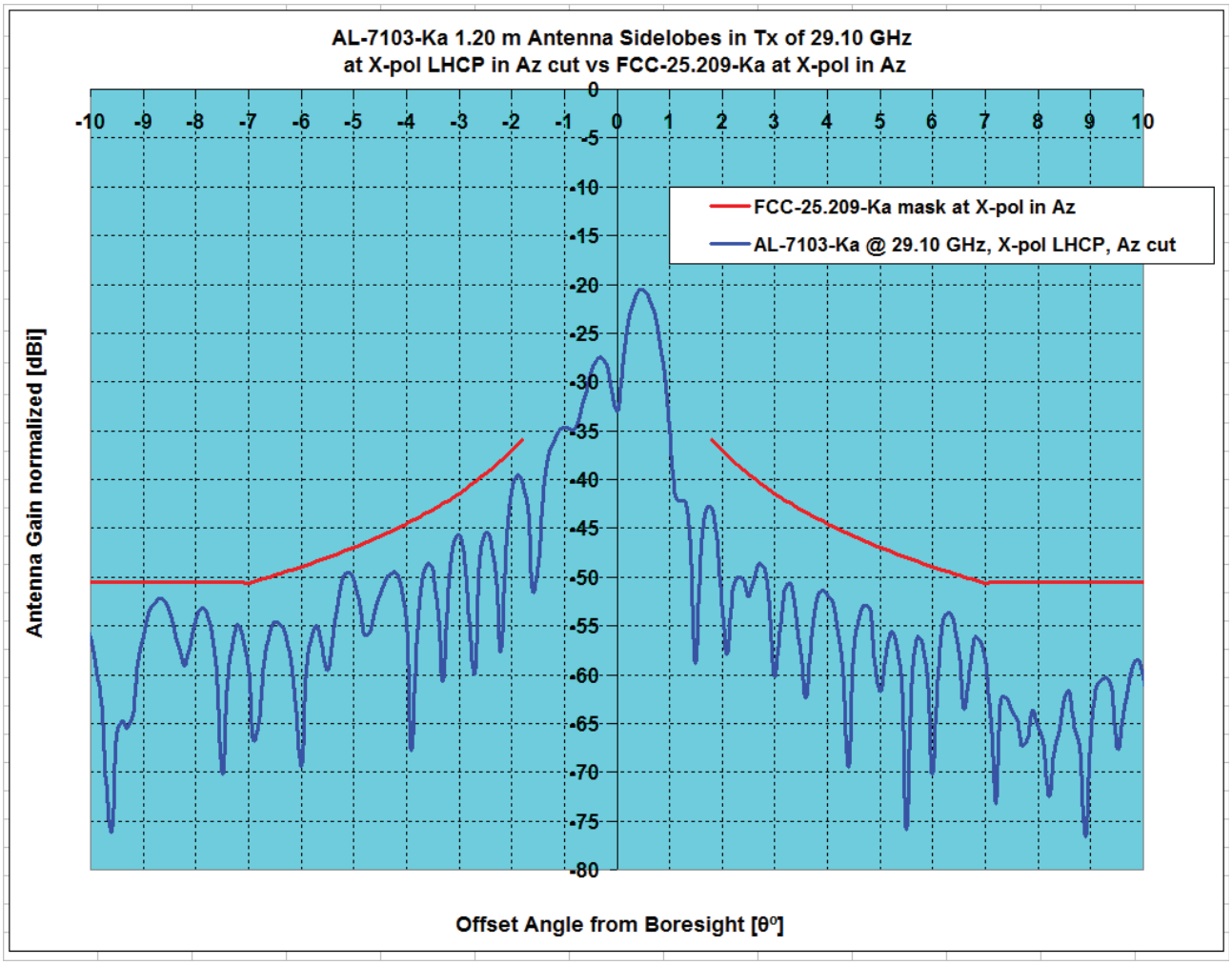


Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	3°≤θ≤7°	7°≤θ≤30°	3°≤θ≤7°	7°≤θ≤30°
FCC-25.209-Ka, Co-pol El, vs AL-7103-Ka	El , LHCP	29.10	48.50	-8.46	-1.17	0.00%	0.00%



Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	3°≤θ≤7°	7°≤θ≤30°	3°≤θ≤7°	7°≤θ≤30°
FCC-25.209-Ka, Co-pol El, vs AL-7103-Ka	El , 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	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	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, -180º to +180º @ 1.0º increment

29.10 GHz Antenna Pattern in Co-pol Az RHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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	Gain	Mask	Over Mask
Degrees	dBi	dBi	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, -180º to +180º @ 1.0º increment

-119.0	-37.7	0.0	-37.7
-118.0	-39.4	0.0	-39.4
-117.0	-32.2	0.0	-32.2
-116.0	-23.4	0.0	-23.4
-115.0	-25.3	0.0	-25.3
-114.0	-27.7	0.0	-27.7
-113.0	-27.6	0.0	-27.6
-112.0	-23.4	0.0	-23.4
-111.0	-25.8	0.0	-25.8
-110.0	-22.2	0.0	-22.2
-109.0	-20.3	0.0	-20.3
-108.0	-18.2	0.0	-18.2
-107.0	-15.0	0.0	-15.0
-106.0	-14.4	0.0	-14.4
-105.0	-13.1	0.0	-13.1
-104.0	-13.0	0.0	-13.0
-103.0	-13.1	0.0	-13.1
-102.0	-14.6	0.0	-14.6
-101.0	-17.3	0.0	-17.3
-100.0	-25.5	0.0	-25.5
-99.0	-47.2	0.0	-47.2
-98.0	-22.8	0.0	-22.8
-97.0	-17.0	0.0	-17.0
-96.0	-14.5	0.0	-14.5
-95.0	-14.6	0.0	-14.6
-94.0	-20.7	0.0	-20.7
-93.0	-18.3	0.0	-18.3
-92.0	-14.2	0.0	-14.2
-91.0	-18.2	0.0	-18.2
-90.0	-19.8	0.0	-19.8
-89.0	-16.8	0.0	-16.8
-88.0	-14.9	0.0	-14.9
-87.0	-13.1	0.0	-13.1
-86.0	-18.3	0.0	-18.3
-85.0	-12.5	-10.0	-2.5
-84.0	-12.6	-10.0	-2.6
-83.0	-27.9	-10.0	-17.9
-82.0	-14.9	-10.0	-4.9
-81.0	-15.4	-10.0	-5.4
-80.0	-16.5	-10.0	-6.5
-79.0	-16.8	-10.0	-6.8
-78.0	-17.9	-10.0	-7.9
-77.0	-17.5	-10.0	-7.5
-76.0	-23.3	-10.0	-13.3
-75.0	-15.3	-10.0	-5.3
-74.0	-14.4	-10.0	-4.4
-73.0	-16.0	-10.0	-6.0
-72.0	-17.4	-10.0	-7.4
-71.0	-16.4	-10.0	-6.4
-70.0	-20.9	-10.0	-10.9
-69.0	-17.2	-10.0	-7.2
-68.0	-28.3	-10.0	-18.3
-67.0	-20.7	-10.0	-10.7
-66.0	-24.3	-10.0	-14.3
-65.0	-13.2	-10.0	-3.2
-64.0	-14.4	-10.0	-4.4
-63.0	-18.5	-10.0	-8.5
-62.0	-19.2	-10.0	-9.2
-61.0	-22.9	-10.0	-12.9
-60.0	-18.0	-10.0	-8.0
-59.0	-20.4	-10.0	-10.4
-58.0	-16.5	-10.0	-6.5
-57.0	-13.4	-10.0	-3.4

60.0	-15.5	-10.0	-5.5
61.0	-21.9	-10.0	-11.9
62.0	-21.2	-10.0	-11.2
63.0	-28.3	-10.0	-18.3
64.0	-18.8	-10.0	-8.8
65.0	-10.6	-10.0	-0.6
66.0	-14.4	-10.0	-4.4
67.0	-15.8	-10.0	-5.8
68.0	-12.8	-10.0	-2.8
69.0	-14.2	-10.0	-4.2
70.0	-15.4	-10.0	-5.4
71.0	-25.0	-10.0	-15.0
72.0	-15.3	-10.0	-5.3
73.0	-18.2	-10.0	-8.2
74.0	-30.1	-10.0	-20.1
75.0	-18.2	-10.0	-8.2
76.0	-27.6	-10.0	-17.6
77.0	-20.5	-10.0	-10.5
78.0	-23.3	-10.0	-13.3
79.0	-25.1	-10.0	-15.1
80.0	-29.0	-10.0	-19.0
81.0	-13.9	-10.0	-3.9
82.0	-17.7	-10.0	-7.7
83.0	-26.3	-10.0	-16.3
84.0	-24.7	-10.0	-14.7
85.0	-18.2	-10.0	-8.2
86.0	-23.2	0.0	-23.2
87.0	-31.3	0.0	-31.3
88.0	-22.4	0.0	-22.4
89.0	-16.4	0.0	-16.4
90.0	-27.2	0.0	-27.2
91.0	-20.7	0.0	-20.7
92.0	-25.9	0.0	-25.9
93.0	-21.0	0.0	-21.0
94.0	-25.5	0.0	-25.5
95.0	-22.3	0.0	-22.3
96.0	-23.2	0.0	-23.2
97.0	-25.0	0.0	-25.0
98.0	-20.5	0.0	-20.5
99.0	-24.4	0.0	-24.4
100.0	-30.7	0.0	-30.7
101.0	-21.7	0.0	-21.7
102.0	-20.1	0.0	-20.1
103.0	-27.6	0.0	-27.6
104.0	-25.2	0.0	-25.2
105.0	-26.1	0.0	-26.1
106.0	-20.6	0.0	-20.6
107.0	-20.1	0.0	-20.1
108.0	-24.1	0.0	-24.1
109.0	-41.2	0.0	-41.2
110.0	-31.0	0.0	-31.0
111.0	-19.2	0.0	-19.2
112.0	-27.0	0.0	-27.0
113.0	-22.1	0.0	-22.1
114.0	-22.3	0.0	-22.3
115.0	-27.5	0.0	-27.5
116.0	-22.1	0.0	-22.1
117.0	-32.5	0.0	-32.5
118.0	-32.9	0.0	-32.9
119.0	-22.8	0.0	-22.8
120.0	-27.0	0.0	-27.0
121.0	-21.9	0.0	-21.9
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, -180º to +180º @ 1.0º increment

-56.0	-16.6	-10.0	-6.6
-55.0	-10.9	-10.0	-0.9
-54.0	-12.8	-10.0	-2.8
-53.0	-16.8	-10.0	-6.8
-52.0	-18.8	-10.0	-8.8
-51.0	-10.5	-10.0	-0.5
-50.0	-10.3	-10.0	-0.3
-49.0	-19.5	-10.0	-9.5
-48.0	-12.4	-10.0	-2.4
-47.0	-13.8	-9.8	-4.0
-46.0	-16.5	-9.6	-7.0
-45.0	-11.8	-9.3	-2.4
-44.0	-12.3	-9.1	-3.2
-43.0	-12.4	-8.8	-3.6
-42.0	-5.7	-8.6	2.9
-41.0	-8.6	-8.3	-0.3
-40.0	-13.6	-8.1	-5.6
-39.0	-9.1	-7.8	-1.3
-38.0	-9.6	-7.5	-2.1
-37.0	-9.0	-7.2	-1.8
-36.0	-10.7	-6.9	-3.8
-35.0	-12.2	-6.6	-5.6
-34.0	-9.4	-6.3	-3.1
-33.0	-14.1	-6.0	-8.2
-32.0	-9.9	-5.6	-4.3
-31.0	-7.9	-5.3	-2.7
-30.0	-14.1	-4.9	-9.2
-29.0	-9.1	-4.6	-4.5
-28.0	-14.0	-4.2	-9.8
-27.0	-13.7	-3.8	-9.9
-26.0	-11.8	-3.4	-8.4
-25.0	-4.6	-2.9	-1.6
-24.0	-9.0	-2.5	-6.5
-23.0	-8.9	-2.0	-6.8
-22.0	-12.2	-1.6	-10.6
-21.0	-1.2	-1.1	-0.2
-20.0	-9.3	-0.5	-8.8
-19.0	-6.2	0.0	-6.3
-18.0	-5.5	0.6	-6.1
-17.0	-11.2	1.2	-12.4
-16.0	-2.4	1.9	-4.3
-15.0	-10.7	2.6	-13.3
-14.0	-1.1	3.3	-4.4
-13.0	-6.7	4.2	-10.9
-12.0	-17.3	5.0	-22.4
-11.0	-20.1	6.0	-26.0
-10.0	0.9	7.0	-6.1
-9.0	-12.9	8.0	-20.9
-8.0	-8.2	8.0	-16.2
-7.0	-0.2	7.9	-8.1
-6.0	-22.4	9.5	-31.9
-5.0	4.1	11.5	-7.4
-4.0	1.3	13.9	-12.6
-3.0	8.9	17.1	-8.2
-2.0	16.9	21.5	-4.6
-1.0	13.9		
0.0	48.5		

123.0	-27.6	0.0	-27.6
124.0	-20.6	0.0	-20.6
125.0	-34.2	0.0	-34.2
126.0	-24.7	0.0	-24.7
127.0	-27.5	0.0	-27.5
128.0	-21.5	0.0	-21.5
129.0	-27.9	0.0	-27.9
130.0	-19.8	0.0	-19.8
131.0	-25.2	0.0	-25.2
132.0	-26.1	0.0	-26.1
133.0	-24.3	0.0	-24.3
134.0	-19.4	0.0	-19.4
135.0	-24.9	0.0	-24.9
136.0	-28.2	0.0	-28.2
137.0	-26.0	0.0	-26.0
138.0	-18.9	0.0	-18.9
139.0	-22.5	0.0	-22.5
140.0	-28.2	0.0	-28.2
141.0	-22.6	0.0	-22.6
142.0	-19.8	0.0	-19.8
143.0	-24.9	0.0	-24.9
144.0	-35.2	0.0	-35.2
145.0	-25.6	0.0	-25.6
146.0	-32.6	0.0	-32.6
147.0	-20.2	0.0	-20.2
148.0	-19.1	0.0	-19.1
149.0	-24.5	0.0	-24.5
150.0	-25.1	0.0	-25.1
151.0	-24.3	0.0	-24.3
152.0	-23.7	0.0	-23.7
153.0	-33.0	0.0	-33.0
154.0	-23.4	0.0	-23.4
155.0	-23.1	0.0	-23.1
156.0	-25.4	0.0	-25.4
157.0	-20.2	0.0	-20.2
158.0	-29.8	0.0	-29.8
159.0	-19.5	0.0	-19.5
160.0	-17.5	0.0	-17.5
161.0	-18.5	0.0	-18.5
162.0	-25.5	0.0	-25.5
163.0	-37.8	0.0	-37.8
164.0	-26.5	0.0	-26.5
165.0	-30.3	0.0	-30.3
166.0	-28.2	0.0	-28.2
167.0	-20.9	0.0	-20.9
168.0	-24.6	0.0	-24.6
169.0	-25.4	0.0	-25.4
170.0	-41.9	0.0	-41.9
171.0	-35.7	0.0	-35.7
172.0	-18.2	0.0	-18.2
173.0	-25.8	0.0	-25.8
174.0	-23.5	0.0	-23.5
175.0	-28.9	0.0	-28.9
176.0	-27.7	0.0	-27.7
177.0	-37.1	0.0	-37.1
178.0	-33.2	0.0	-33.2
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, -10º to +10º @ 0.1º increment

29.10 GHz Antenna Pattern in Co-pol Az RHCP			
Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	dB
-10.0	0.9	7.0	-6.1
-9.9	2.4	7.1	-4.7
-9.8	2.7	7.2	-4.5
-9.7	1.8	7.3	-5.5
-9.6	0.0	7.4	-7.4
-9.5	-2.7	7.6	-10.3
-9.4	-6.6	7.7	-14.3
-9.3	-9.5	7.8	-17.3
-9.2	-9.6	8.0	-17.6
-9.1	-10.3	8.0	-18.3
-9.0	-12.9	8.0	-20.9
-8.9	-19.6	8.0	-27.6
-8.8	-14.9	8.0	-22.9
-8.7	-8.4	8.0	-16.4
-8.6	-5.1	8.0	-13.1
-8.5	-3.0	8.0	-11.0
-8.4	-2.1	8.0	-10.1
-8.3	-2.1	8.0	-10.1
-8.2	-3.6	8.0	-11.6
-8.1	-6.5	8.0	-14.5
-8.0	-8.2	8.0	-16.2
-7.9	-5.7	8.0	-13.7
-7.8	-2.9	8.0	-10.9
-7.7	-2.0	8.0	-10.0
-7.6	-2.8	8.0	-10.8
-7.5	-5.6	8.0	-13.6
-7.4	-8.8	8.0	-16.8
-7.3	-7.0	8.0	-15.0
-7.2	-2.8	8.0	-10.8
-7.1	-1.0	8.0	-9.0
-7.0	-0.2	7.9	-8.1
-6.9	-0.6	8.0	-8.6
-6.8	-1.9	8.2	-10.0
-6.7	-4.5	8.3	-12.8
-6.6	-8.4	8.5	-16.9
-6.5	-14.9	8.7	-23.5
-6.4	-9.5	8.8	-18.3
-6.3	-5.9	9.0	-14.9
-6.2	-5.7	9.2	-14.9
-6.1	-8.3	9.4	-17.6
-6.0	-22.4	9.5	-31.9
-5.9	-6.6	9.7	-16.4
-5.8	-0.5	9.9	-10.4
-5.7	1.9	10.1	-8.2
-5.6	3.0	10.3	-7.3
-5.5	1.8	10.5	-8.7
-5.4	-1.5	10.7	-12.2
-5.3	-7.2	10.9	-18.1
-5.2	-2.9	11.1	-14.0
-5.1	2.1	11.3	-9.2
-5.0	4.1	11.5	-7.4
-4.9	4.6	11.7	-7.1
-4.8	4.0	12.0	-8.0
-4.7	2.3	12.2	-9.9
-4.6	0.2	12.4	-12.2
-4.5	-1.9	12.7	-14.6
-4.4	-2.9	12.9	-15.8
-4.3	-1.4	13.2	-14.6
-4.2	0.7	13.4	-12.8
-4.1	1.9	13.7	-11.8
-4.0	1.3	13.9	-12.6
-3.9	0.7	14.2	-13.5

29.10 GHz Antenna Pattern in Co-pol Az RHCP			
Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	dB
0.0	48.5		
0.1	48.3		
0.2	47.7		
0.3	46.5		
0.4	44.8		
0.5	42.4		
0.6	39.5		
0.7	36.0		
0.8	31.9		
0.9	27.3		
1.0	22.7		
1.1	18.6		
1.2	18.1		
1.3	19.4		
1.4	19.9		
1.5	19.4	24.6	-5.2
1.6	17.6	23.9	-6.3
1.7	15.0	23.2	-8.2
1.8	12.2	22.6	-10.4
1.9	10.7	22.0	-11.3
2.0	11.0	21.5	-10.5
2.1	12.3	20.9	-8.7
2.2	13.7	20.4	-6.8
2.3	14.3	20.0	-5.6
2.4	14.5	19.5	-5.0
2.5	13.9	19.1	-5.2
2.6	12.6	18.6	-6.0
2.7	11.8	18.2	-6.4
2.8	11.5	17.8	-6.3
2.9	11.8	17.4	-5.6
3.0	11.8	17.1	-5.3
3.1	11.4	16.7	-5.3
3.2	10.4	16.4	-6.0
3.3	9.5	16.0	-6.5
3.4	8.9	15.7	-6.8
3.5	8.3	15.4	-7.1
3.6	7.7	15.1	-7.4
3.7	6.8	14.8	-8.0
3.8	5.0	14.5	-9.5
3.9	2.8	14.2	-11.4
4.0	0.6	13.9	-13.3
4.1	0.6	13.7	-13.1
4.2	2.3	13.4	-11.1
4.3	2.7	13.2	-10.5
4.4	3.3	12.9	-9.6
4.5	3.5	12.7	-9.1
4.6	4.1	12.4	-8.3
4.7	5.2	12.2	-7.0
4.8	5.6	12.0	-6.4
4.9	4.5	11.7	-7.3
5.0	2.3	11.5	-9.2
5.1	-3.4	11.3	-14.7
5.2	-22.5	11.1	-33.6
5.3	-8.4	10.9	-19.3
5.4	-5.9	10.7	-16.6
5.5	-11.6	10.5	-22.1
5.6	-10.8	10.3	-21.1
5.7	-3.5	10.1	-13.6
5.8	0.2	9.9	-9.7
5.9	1.7	9.7	-8.0
6.0	1.3	9.5	-8.3
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, -10º to +10º @ 0.1º 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, -30º to +30º @ 0.5º increment

29.10 GHz Antenna Pattern in Co-pol El RHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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 El RHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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, -10º to +10º @ 0.1º increment

29.10 GHz Antenna Pattern in Co-pol El RHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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 El RHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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, -10º to +10º @ 0.1º 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, -10º to +10º @ 0.1º increment

29.10 GHz Antenna Pattern in X-pol Az RHCP

Angle	Gain	Mask	Over Mask
Degrees	dBi	dBi	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	Gain	Mask	Over Mask
Degrees	dBi	dBi	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

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AL-7103-Ka, 1.20 m Antenna, Pattern Data Table
X-pol Azimuth RHCP, -10º to +10º @ 0.1º 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

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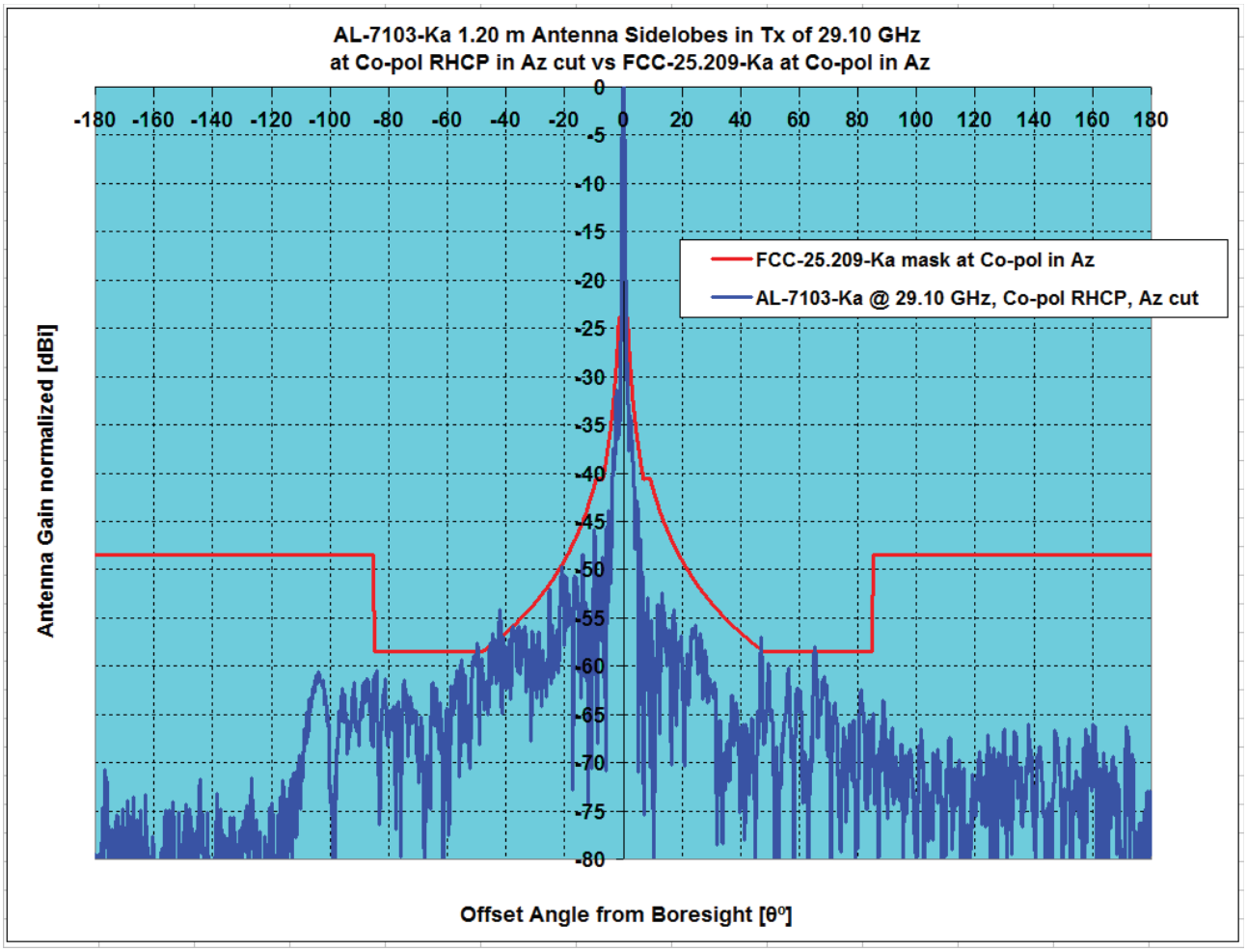
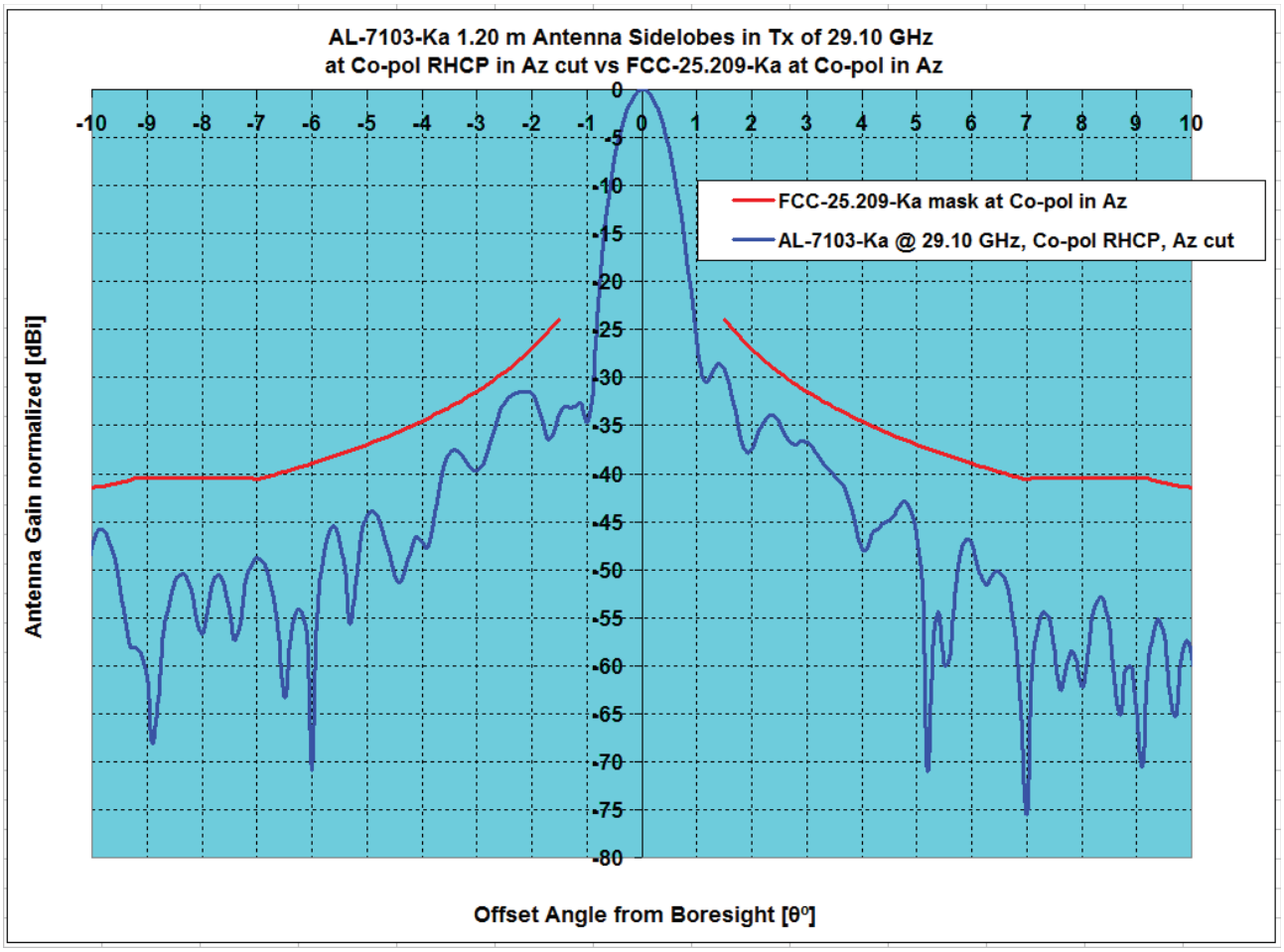
AL-7103-Ka, 1.20 m Antenna, Pattern, Co-pol, Azimuth RHCP



Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	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%



Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	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%

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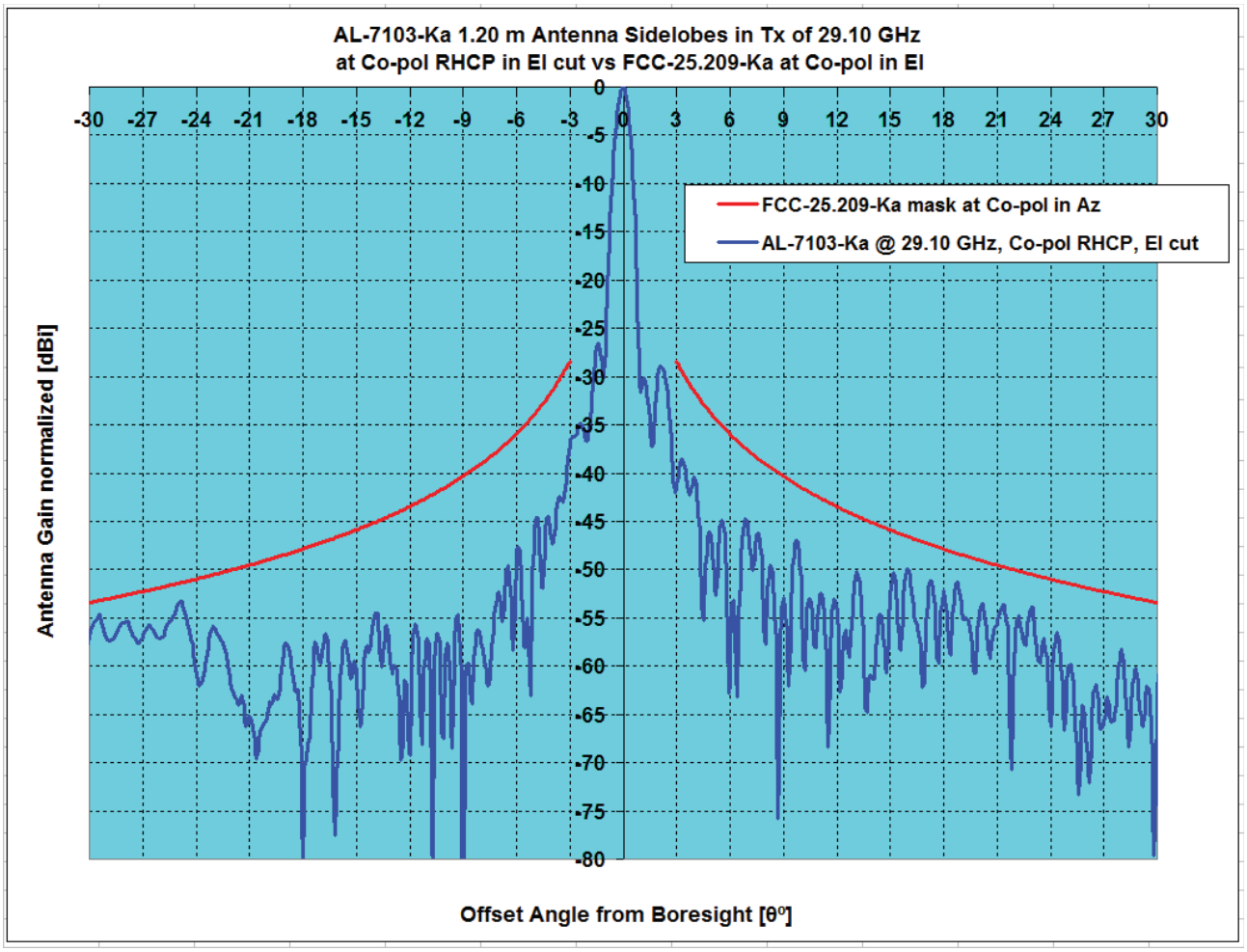
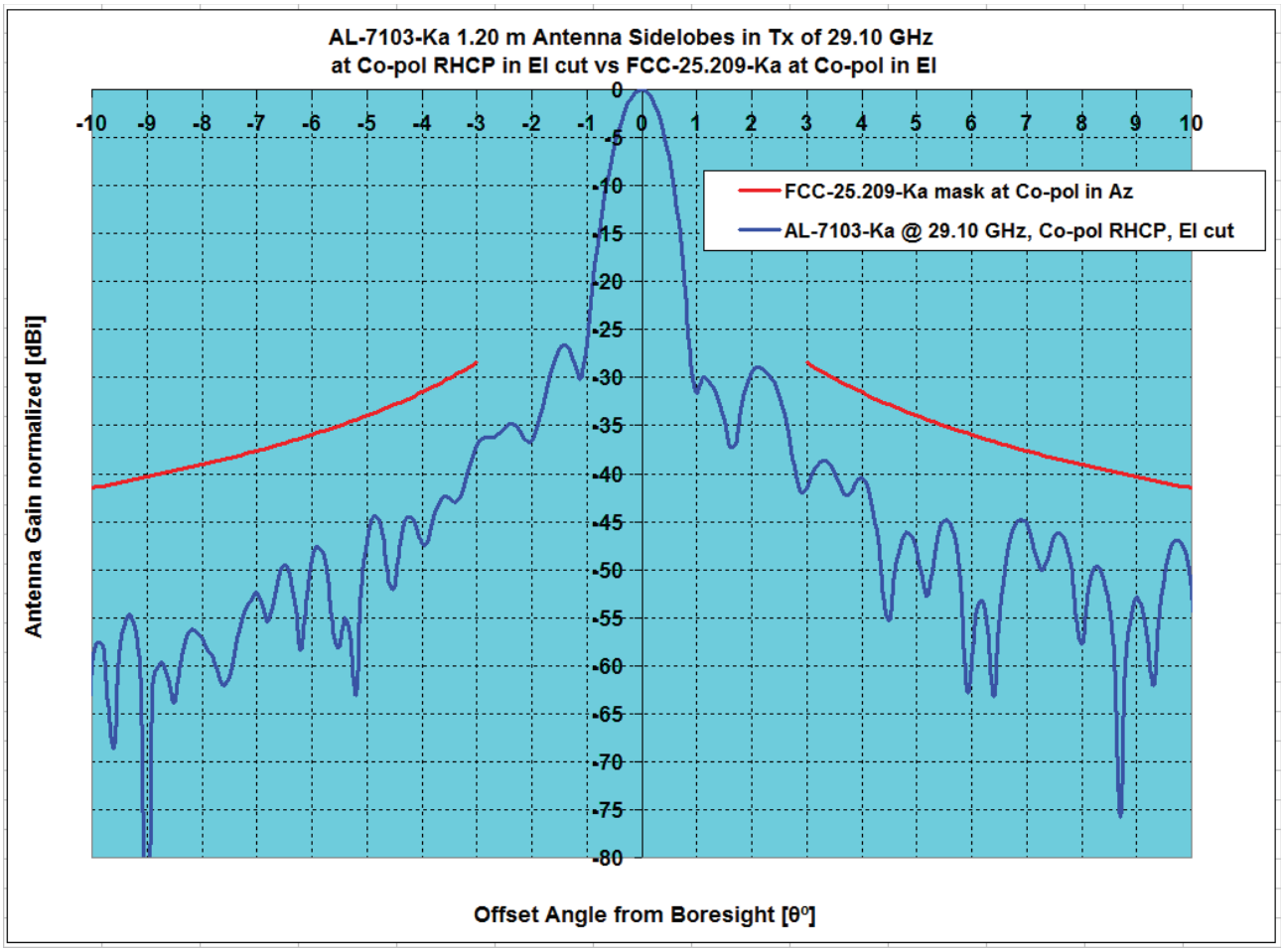
AL-7103-Ka, 1.20 m Antenna, Pattern, Co-pol, Elevation RHCP



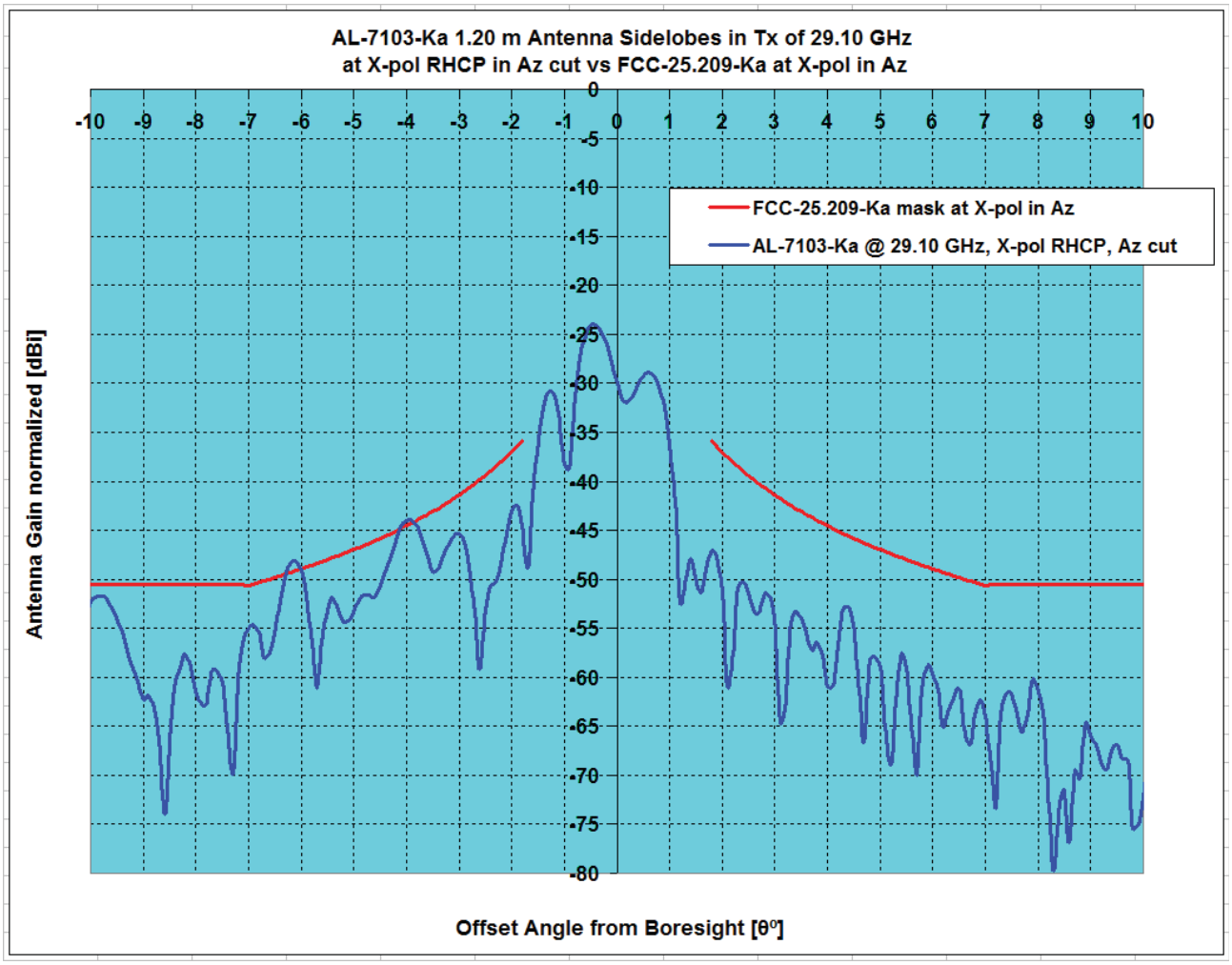
Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	3°≤θ≤7°	7°≤θ≤30°	3°≤θ≤7°	7°≤θ≤30°
FCC-25.209-Ka, Co-pol El, vs AL-7103-Ka	El , RHCP	29.10	48.50	-7.30	-1.44	0.00%	0.00%



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



Description	Plane, CirP	Frequency	Ant. Gain	Peak Excursions dB		Over Mask %	
Pattern Rule vs Antenna System	Type	GHz	dBi	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%