

Range Test Report, ASC 9.4m Ka Band Antenna



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1.0 Scope

This report covers antenna range pattern and axial ratio measurements for an ASC 9.4m reflector antenna (ES94MPEXKA-1, serial no. 15W174) with wideband Ka 4-port feed (4CPWWKA-94-206, serial no. 15WF270) installed. In addition to range tests for axial ratio, feed bench measurements for axial ratio are also included.

The antenna was tested in 2016-2017 at the ASC test range facility near Ashburn, Ontario. It is shown below on the ASC test range tower in Figure 1.



Figure 1: ASC 9.4m reflector antenna installed for testing.

The tests and calculations performed are summarized in Table 1.1.

Table 1.1: Tests Performed	
Section	Description
2.0	Antenna Gain
3.0	Antenna Pattern Tests
4.0	Axial Ratio

2.0 Antenna Gain

Determination of antenna gain is made using the "integrated directivity minus known losses" method covered in ASC signal document number 7585645, *Test Procedure, Range Antenna Pattern Measurements*.

Gain calculations appear below in Tables 2.1 and 2.2 for wideband receive and transmit bands, respectively.

Table 2.1: Antenna Gain Calculations, Receive Band						
Frequency (GHz)	17.7	18.95	19.45	20.2	20.7	21.2
Directivity (dBi) ¹	63.59	64.22	64.48	64.80	65.04	65.13
Feed insertion loss (dB) ²	1.68	1.46	1.41	1.34	1.30	1.27
Strut blockage loss (dB)	0.04	0.04	0.04	0.04	0.04	0.04
Feed VSWR loss (dB)	0.07	0.07	0.07	0.07	0.07	0.07
Cross-pol loss (dB)	0.01	0.01	0.01	0.01	0.01	0.01
Gain (dBi)	61.79	62.64	62.95	63.34	63.62	63.74
Notes:						
1. Integrated from range pattern measurements.						
2. From insertion loss calculations.						

Table 2.2: Antenna Gain Calculations, Transmit Band						
Frequency (GHz)	27.5	28.75	29.25	30	30.5	31
Directivity (dBi) ¹	66.96	67.04	67.39	67.42	67.52	67.37
Feed insertion loss (dB) ²	1.03	1.02	1.02	1.01	1.01	1.01
Strut blockage loss (dB)	0.04	0.04	0.04	0.04	0.04	0.04
Feed VSWR loss (dB)	0.07	0.07	0.07	0.07	0.07	0.07
Cross-pol loss (dB)	0.01	0.01	0.01	0.01	0.01	0.01
Gain (dBi)	65.81	65.90	66.25	66.29	66.39	66.24
Notes:						
1. Integrated from range pattern measurements.						
2. From insertion loss calculations.						

3.0 Antenna Pattern Tests

3.1 Measured Patterns

Pattern measurements for the antenna under test (AUT) are listed in Tables 3.1 and 3.2 below. Where indicated, 'a' patterns are $\pm 180^\circ$ plots, with 'b' patterns the same data plotted on a $\pm 10^\circ$ scale. These patterns are attached at the end of this report.

Note that this is a wideband feed, and different sidelobe curves are typically referenced for the commercial band (17.7-20.2 GHz receive, 27.5-30 GHz transmit) and the military band (20.2-21.2 GHz receive, 30-31 GHz transmit). The attached pattern plots show the appropriate curves for each frequency, with both sets of curves shown for 20.2 and 30 GHz which are common to both commercial and military bands.

Also note that measuring wide elevation patterns requires rolling the antenna 90 degrees. Since all large structures undergo some change in shape under gravity when rolled 90 degrees (to a position this antenna will never see in operation), it is more accurate to present results as a splice of two data sets: (1) narrow cuts ($\pm 5^\circ$) with the antenna in the normal operating position, and (2) wide-angle cuts ($\pm 180^\circ$) with the antenna rolled 90 degrees. In each data set, the range data is properly normalized to gain in dBi before splicing to ensure correct results.

3.2 Antenna Pattern Test Procedure

The pattern results in this report have been obtained in accordance with ASC signal test document number 7585645, *Test Procedure, Range Antenna Pattern Measurements*.

Table 3.1: Pattern Test Plan Matrix – Ka Band Receive				
Plot #	Frequency (GHz)	AUT Port	Plane	Polarization
3.01a,b	17.7	Rx1 (RHCP)	AZ	Co
3.02				Cross
3.03a,b			EL	Co
3.04				Cross
3.05a,b		Rx2 (LHCP)	AZ	Co
3.06				Cross
3.07a,b			EL	Co
3.08				Cross
3.09a,b	18.95	Rx1 (RHCP)	AZ	Co
3.10				Cross
3.11a,b			EL	Co
3.12				Cross
3.13a,b		Rx2 (LHCP)	AZ	Co
3.14				Cross
3.15a,b			EL	Co
3.16				Cross
3.17a,b	19.45	Rx1 (RHCP)	AZ	Co
3.18				Cross
3.19a,b			EL	Co
3.20				Cross
3.21a,b		Rx2 (LHCP)	AZ	Co
3.22				Cross
3.23a,b			EL	Co
3.24				Cross
3.25a,b	20.2	Rx1 (RHCP)	AZ	Co
3.26				Cross
3.27a,b			EL	Co
3.28				Cross
3.29a,b		Rx2 (LHCP)	AZ	Co
3.30				Cross
3.31a,b			EL	Co
3.32				Cross
3.33a,b	20.7	Rx1 (RHCP)	AZ	Co
3.34				Cross
3.35a,b			EL	Co
3.36				Cross
3.37a,b		Rx2 (LHCP)	AZ	Co
3.38				Cross
3.39a,b			EL	Co
3.40				Cross
3.41a,b	21.2	Rx1 (RHCP)	AZ	Co
3.42				Cross
3.43a,b			EL	Co
3.44				Cross
3.45a,b		Rx2 (LHCP)	AZ	Co
3.46				Cross
3.47a,b			EL	Co
3.48				Cross



Table 3.2: Pattern Test Plan Matrix – Ka Band Transmit				
Plot #	Frequency (GHz)	AUT Port	Plane	Polarization
3.49a,b	27.5	Tx1 (RHCP)	AZ	Co
3.50				Cross
3.51a,b			EL	Co
3.52				Cross
3.53a,b		Tx2 (LHCP)	AZ	Co
3.54				Cross
3.55a,b			EL	Co
3.56				Cross
3.57a,b	28.75	Tx1 (RHCP)	AZ	Co
3.58				Cross
3.59a,b			EL	Co
3.60				Cross
3.61a,b		Tx2 (LHCP)	AZ	Co
3.62				Cross
3.63a,b			EL	Co
3.64				Cross
3.65a,b	29.25	Tx1 (RHCP)	AZ	Co
3.66				Cross
3.67a,b			EL	Co
3.68				Cross
3.69a,b		Tx2 (LHCP)	AZ	Co
3.70				Cross
3.71a,b			EL	Co
3.72				Cross
3.73a,b	30	Tx1 (RHCP)	AZ	Co
3.74				Cross
3.75a,b			EL	Co
3.76				Cross
3.77a,b		Tx2 (LHCP)	AZ	Co
3.78				Cross
3.79a,b			EL	Co
3.80				Cross
3.81a,b	30.5	Tx1 (RHCP)	AZ	Co
3.82				Cross
3.83a,b			EL	Co
3.84				Cross
3.85a,b		Tx2 (LHCP)	AZ	Co
3.86				Cross
3.87a,b			EL	Co
3.88				Cross
3.89a,b	31	Tx1 (RHCP)	AZ	Co
3.90				Cross
3.91a,b			EL	Co
3.92				Cross
3.93a,b		Tx2 (LHCP)	AZ	Co
3.94				Cross
3.95a,b			EL	Co
3.96				Cross



4.0 Axial Ratio

Axial ratio bench test results for the feed are shown below in Figures 4.1 through 4.4. These results were obtained using the standard method in which swept S21 response is measured between each feed port and a small linearly polarized probe antenna boresighted to the feed. Note that in all cases, the maximum value measured is 0.50 dB.

Range measurements of the feed installed in the antenna were also performed. The technique used was a modification of the classic technique from Stutzman, in which a rotating CP range source antenna is used to calculate the axial ratio of both the AUT and the source. (The original technique rotates the AUT instead; this is preferred for reducing the effect of measurement errors but is quite impractical for a 9.4m antenna.) The method used is more reliable than the standard “rotating linear source” method under typical measurement conditions.

In the commercial Ka band, only boresight data was recorded, as shown in Tables 4.1 and 4.2 below for the receive and transmit bands, respectively.

Frequency (GHz)	Boresight Axial Ratio (dB)	
	Rx1 (RHCP)	Rx2 (LHCP)
17.7	0.39	0.36
18.95	0.74	0.54
19.45	0.74	0.43
20.2	0.72	0.84

Table 4.1: Commercial receive band axial ratio, feed installed in antenna.

Frequency (GHz)	Boresight Axial Ratio (dB)	
	Tx1 (RHCP)	Tx2 (LHCP)
27.5	0.31	0.42
28.75	0.72	0.42
29.25	0.64	0.42
30	0.54	0.59

Table 4.2: Commercial transmit band axial ratio, feed installed in antenna.

Despite great care in the above measurements, it was not possible to remove all measurement errors. The results above, however, are entirely consistent with a maximum 0.5 dB axial ratio antenna in the presence of range scattering errors in the neighborhood of -34 dB relative to the desired signal. This is as expected given the feed bench test results and accurate alignment of the reflector surface.

Axial ratio in the military Ka band using the same method on the test range was recorded for the 9 points defined below in Figure 4.5; this includes boresight and 8 points equally spaced along a contour 0.5 dB down from the peak of beam. The results shown below in Tables 4.3 and 4.4 show that in all cases measured axial ratio is significantly better than 1.5 dB in receive and 1.0 dB in transmit as required.



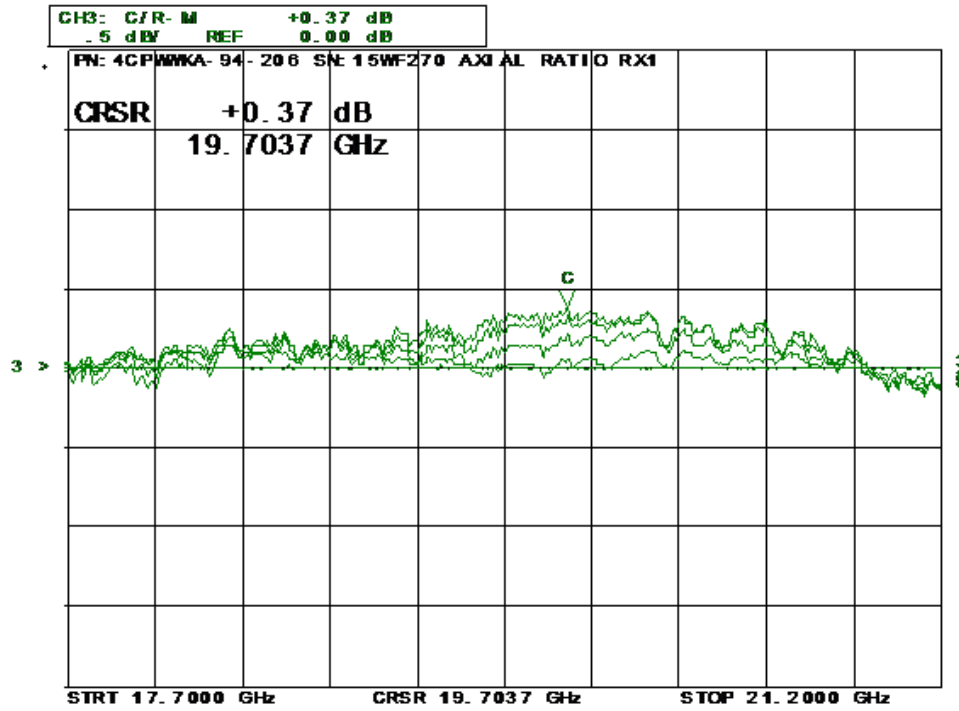


Figure 4.1: Rx1 (RHCP) port axial ratio (4CPWWKA-94-206, serial no. 15WF270).

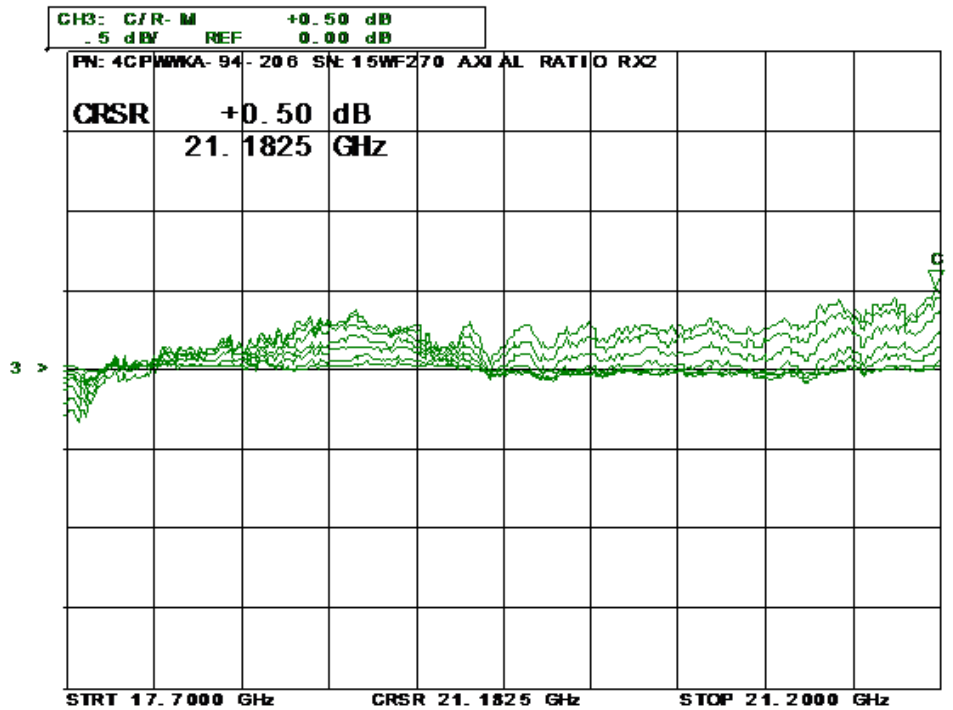


Figure 4.2: Rx2 (LHCP) port axial ratio (4CPWWKA-94-206, serial no. 15WF270).

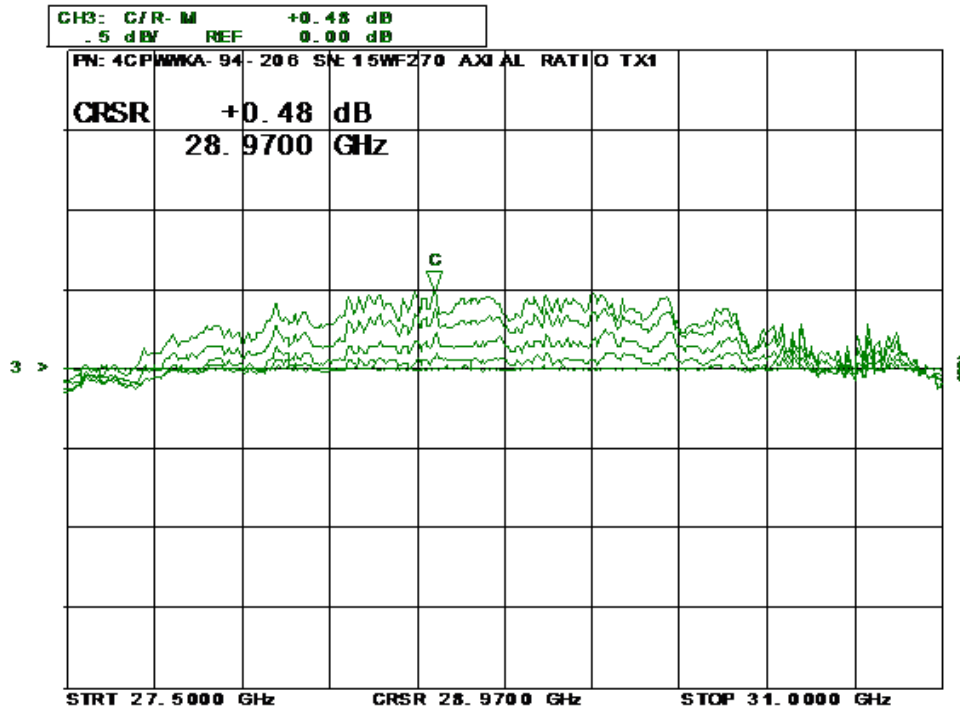


Figure 4.3: Tx1 (RHCP) port axial ratio (4CPWWKA-94-206, serial no. 15WF270).

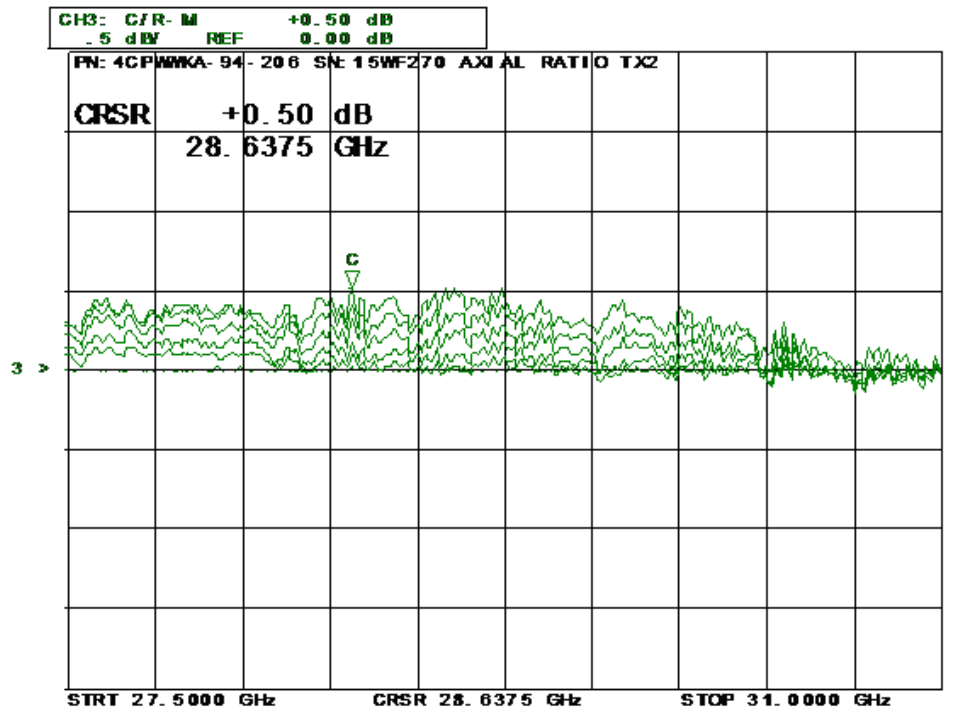


Figure 4.4: Tx2 (LHCP) port axial ratio (4CPWWKA-94-206, serial no. 15WF270).

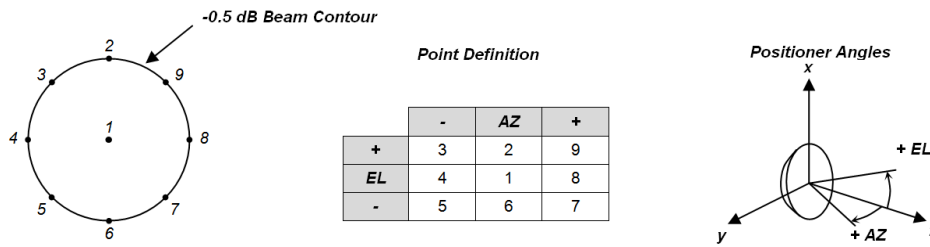


Figure 4.5: Beam pointing angles for axial ratio measurement. Except for point #1 at the peak of beam, all points lie on the -0.5 dB beam contour

Point	20.2 GHz		20.7 GHz		21.2 GHz	
	Rx1 (RHCP)	Rx2 (LHCP)	Rx1 (RHCP)	Rx2 (LHCP)	Rx1 (RHCP)	Rx2 (LHCP)
1	0.72	0.84	0.61	0.77	0.74	0.87
2	0.77	0.77	0.81	0.73	0.91	0.65
3	0.50	0.90	0.57	0.68	0.68	0.79
4	0.46	0.80	0.52	0.68	0.65	0.76
5	0.77	0.73	0.66	0.69	0.73	0.85
6	0.73	0.86	0.75	1.03	0.74	0.94
7	0.65	0.89	0.69	1.01	0.63	0.89
8	0.77	0.84	0.86	0.87	0.72	0.81
9	0.86	0.69	0.91	0.72	0.78	0.80

Table 4.3: Axial ratio, military receive band (20.2-21.2 GHz).

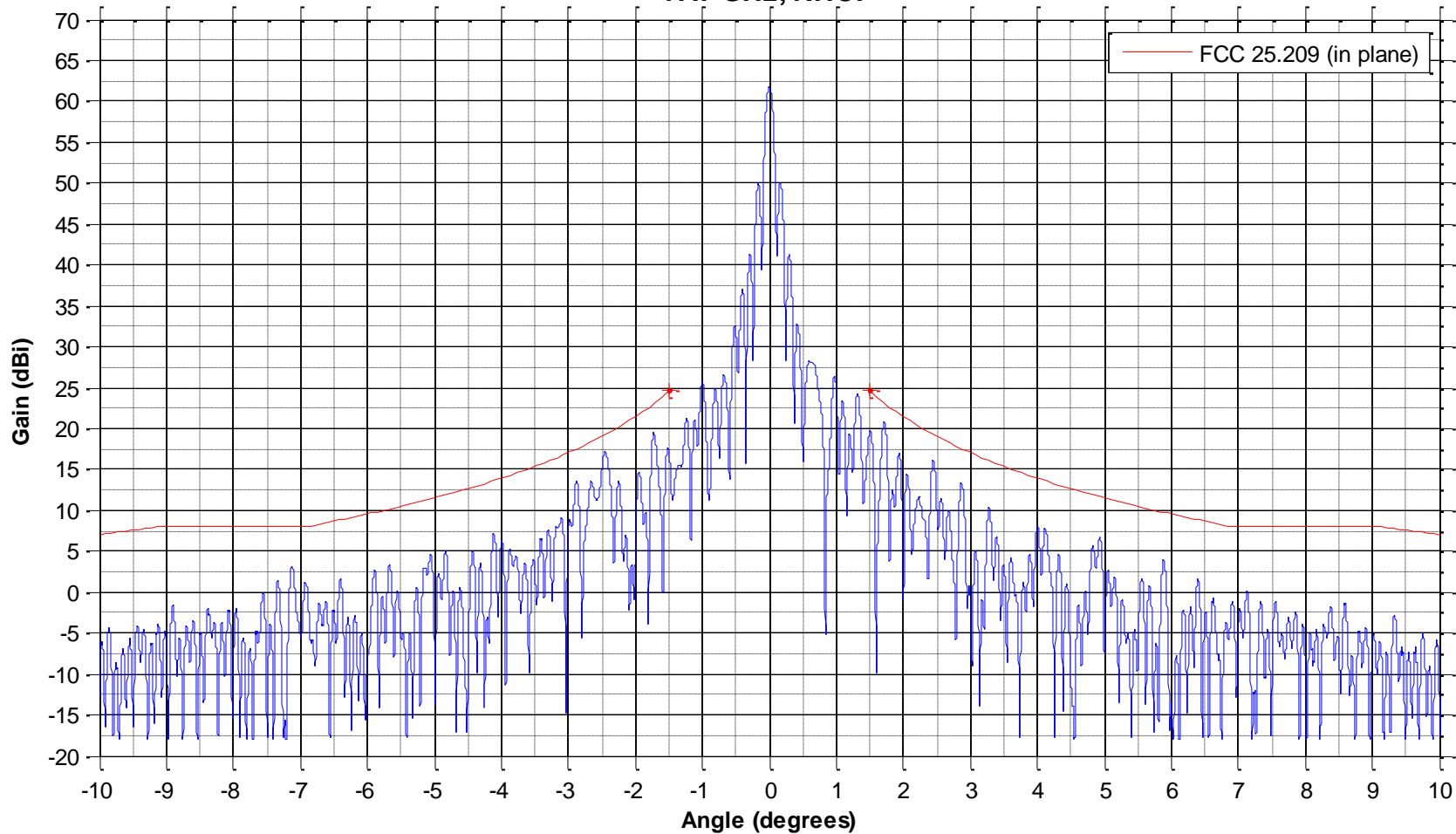
Point	30 GHz		30.5 GHz		31 GHz	
	Rx1 (RHCP)	Rx2 (LHCP)	Rx1 (RHCP)	Rx2 (LHCP)	Rx1 (RHCP)	Rx2 (LHCP)
1	0.54	0.59	0.45	0.70	0.65	0.65
2	0.59	0.49	0.38	0.68	0.61	0.61
3	0.57	0.74	0.47	0.71	0.68	0.73
4	0.53	0.71	0.47	0.49	0.74	0.57
5	0.51	0.79	0.74	0.55	0.67	0.66
6	0.48	0.80	0.62	0.46	0.58	0.39
7	0.52	0.85	0.55	0.80	0.58	0.57
8	0.53	0.44	0.44	0.64	0.46	0.69
9	0.73	0.69	0.38	0.84	0.53	0.60

Table 4.4: Axial ratio, military transmit band (30-31 GHz).

Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX1_17700MHZ
Plot: 3.01a

Gain: 61.79 dBi
-3 dB BW: 0.10°
-10 dB BW: 0.17°

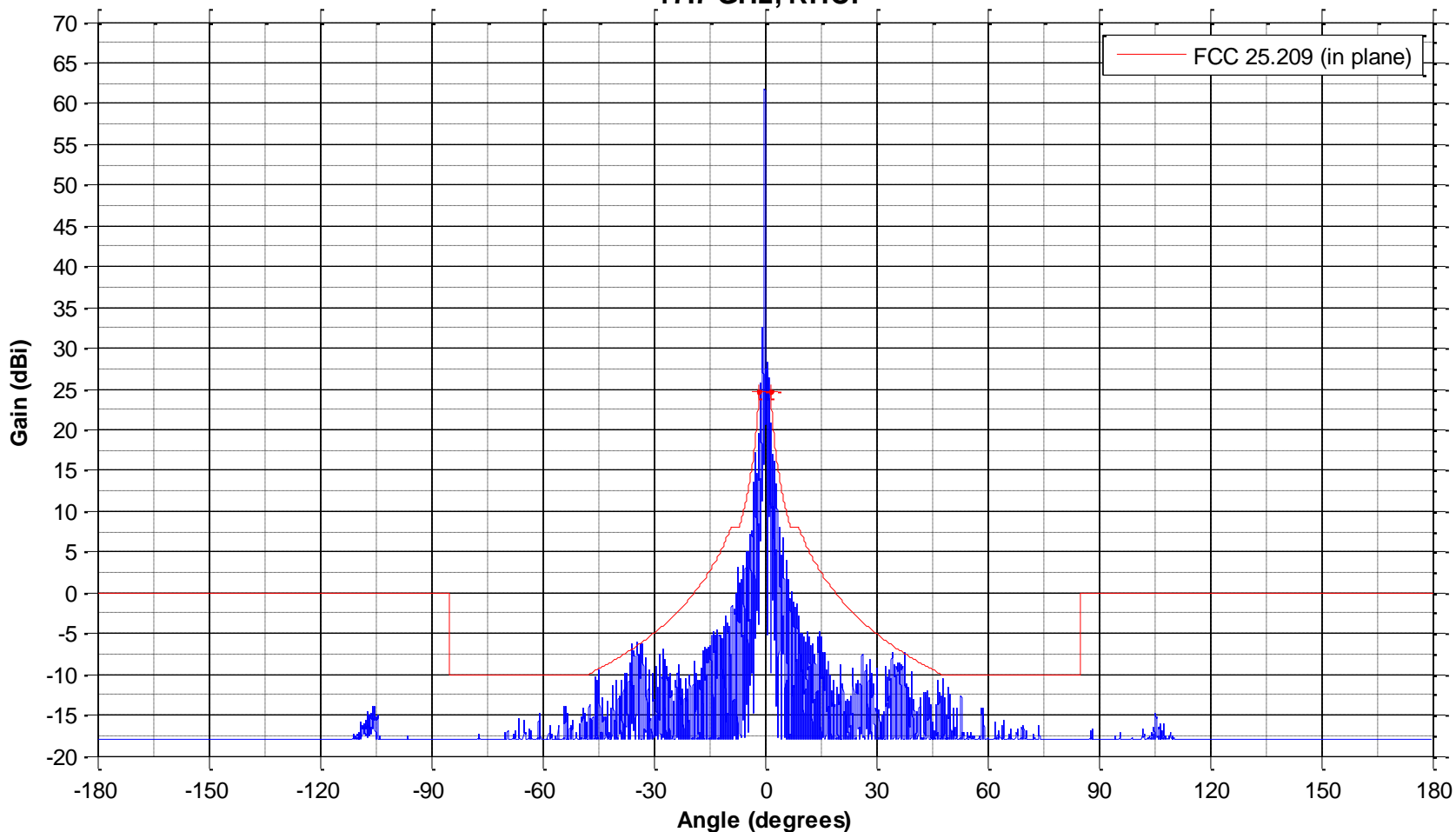
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±10°
17.7 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX1_17700MHZ
Plot: 3.01b

Gain: 61.79 dBi
-3 dB BW: 0.10°
-10 dB BW: 0.17°
Excursions: 0.0%
Max. over: 0.59 dB at -35.86°

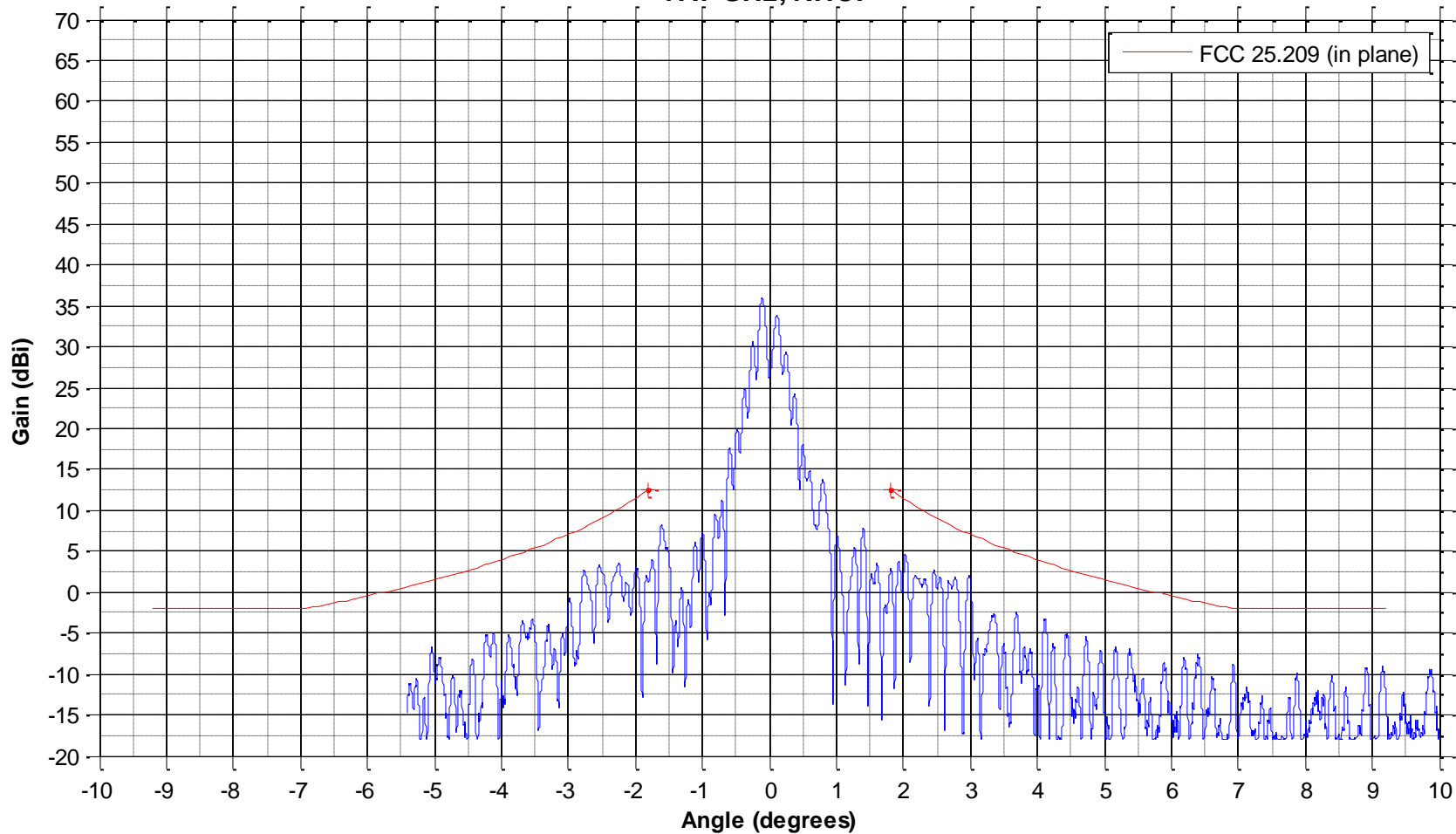
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
17.7 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX1_17700MHZ_CROSSPOL
Plot: 3.02

Gain: 61.79 dBi

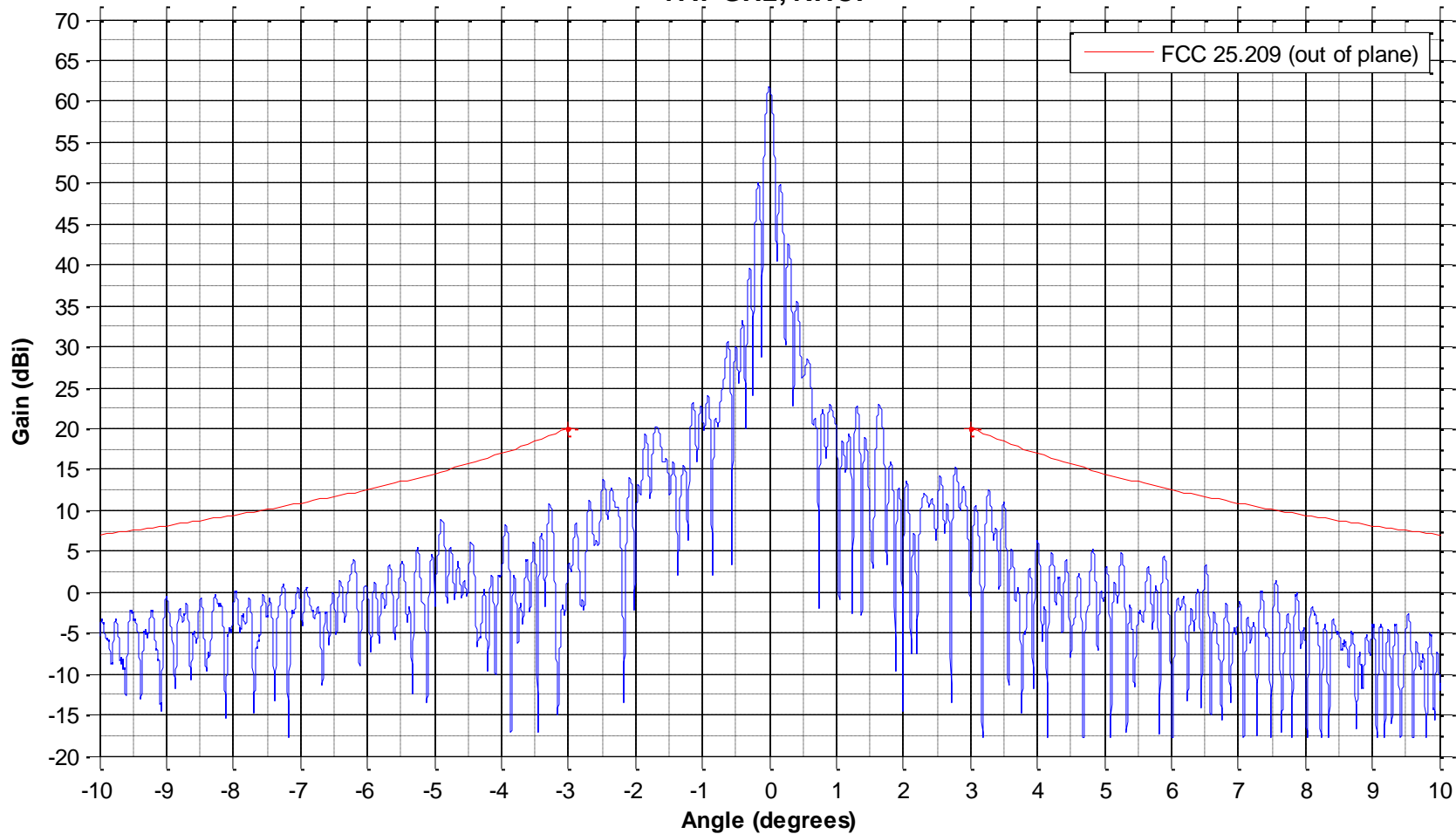
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, $\pm 10^\circ$
17.7 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX1_17700MHZ
Plot: 3.03a

Gain: 61.79 dBi
-3 dB BW: 0.10°
-10 dB BW: 0.17°

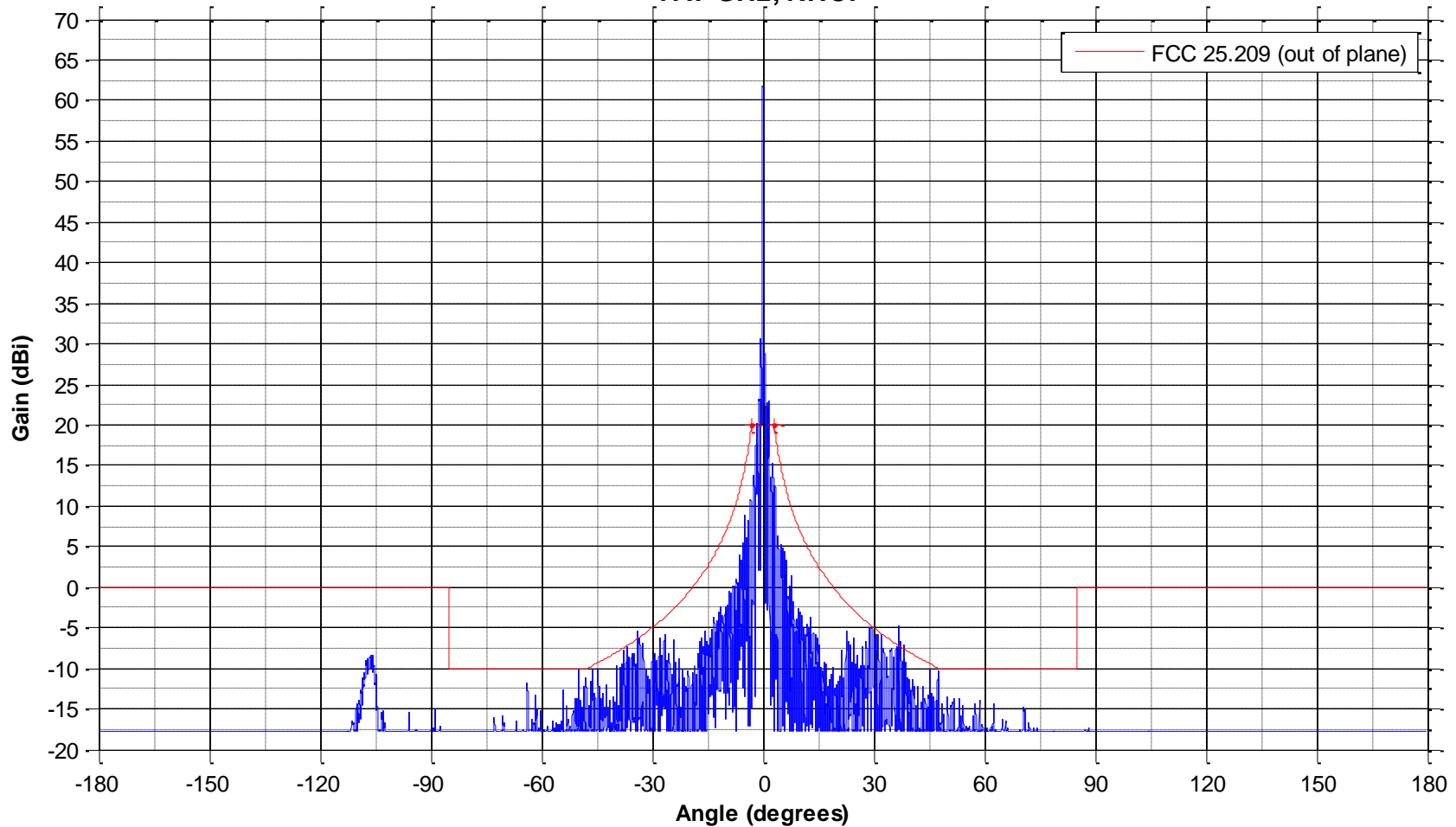
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±10°
17.7 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX1_17700MHZ
Plot: 3.03b

Gain: 61.79 dBi
-3 dB BW: 0.10°
-10 dB BW: 0.17°
Excursions: 0.1%
Max. over: 2.41 dB at 36.74°

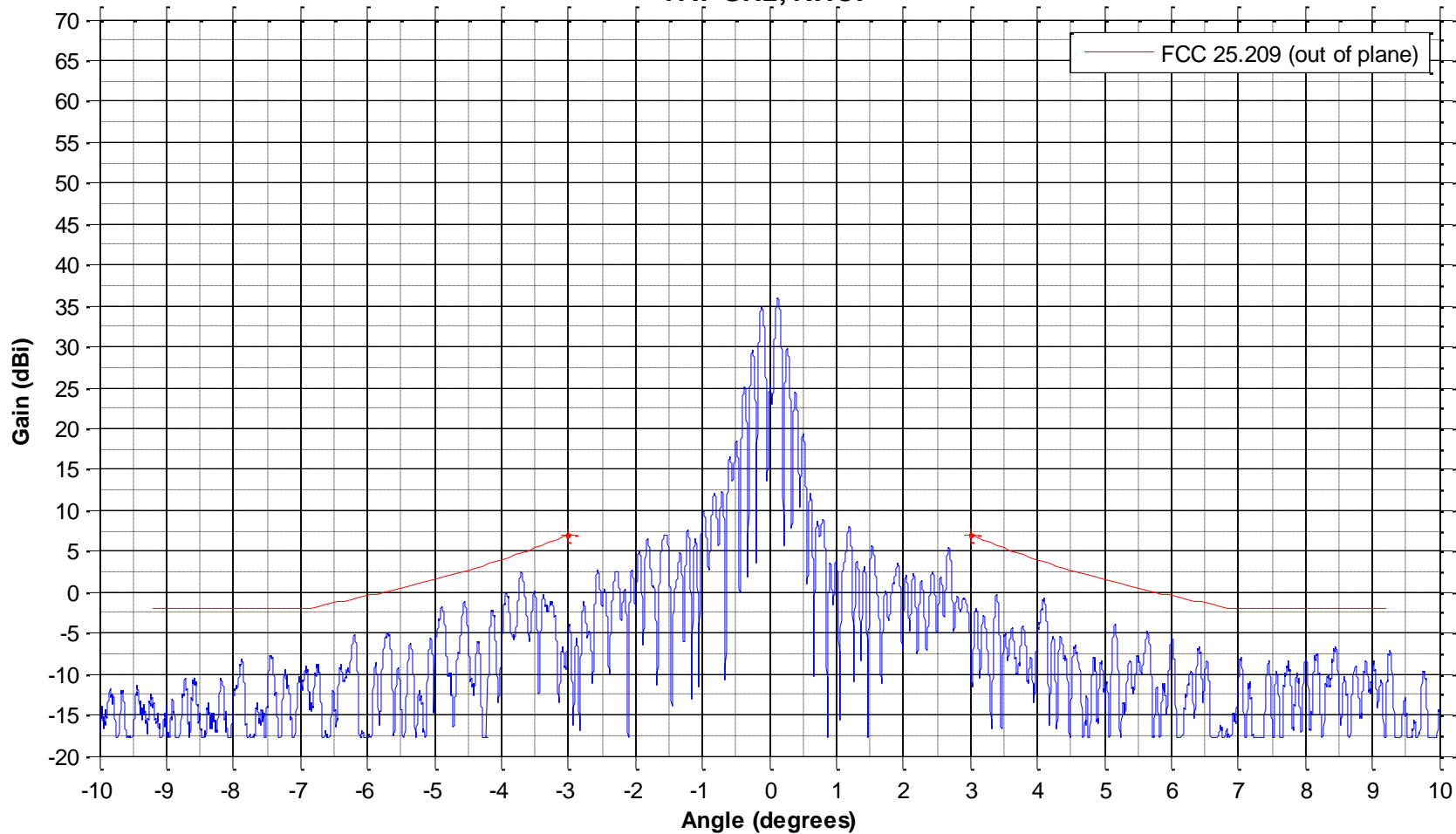
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
17.7 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX1_17700MHZ_CROSSPOL
Plot: 3.04

Gain: 61.79 dBi

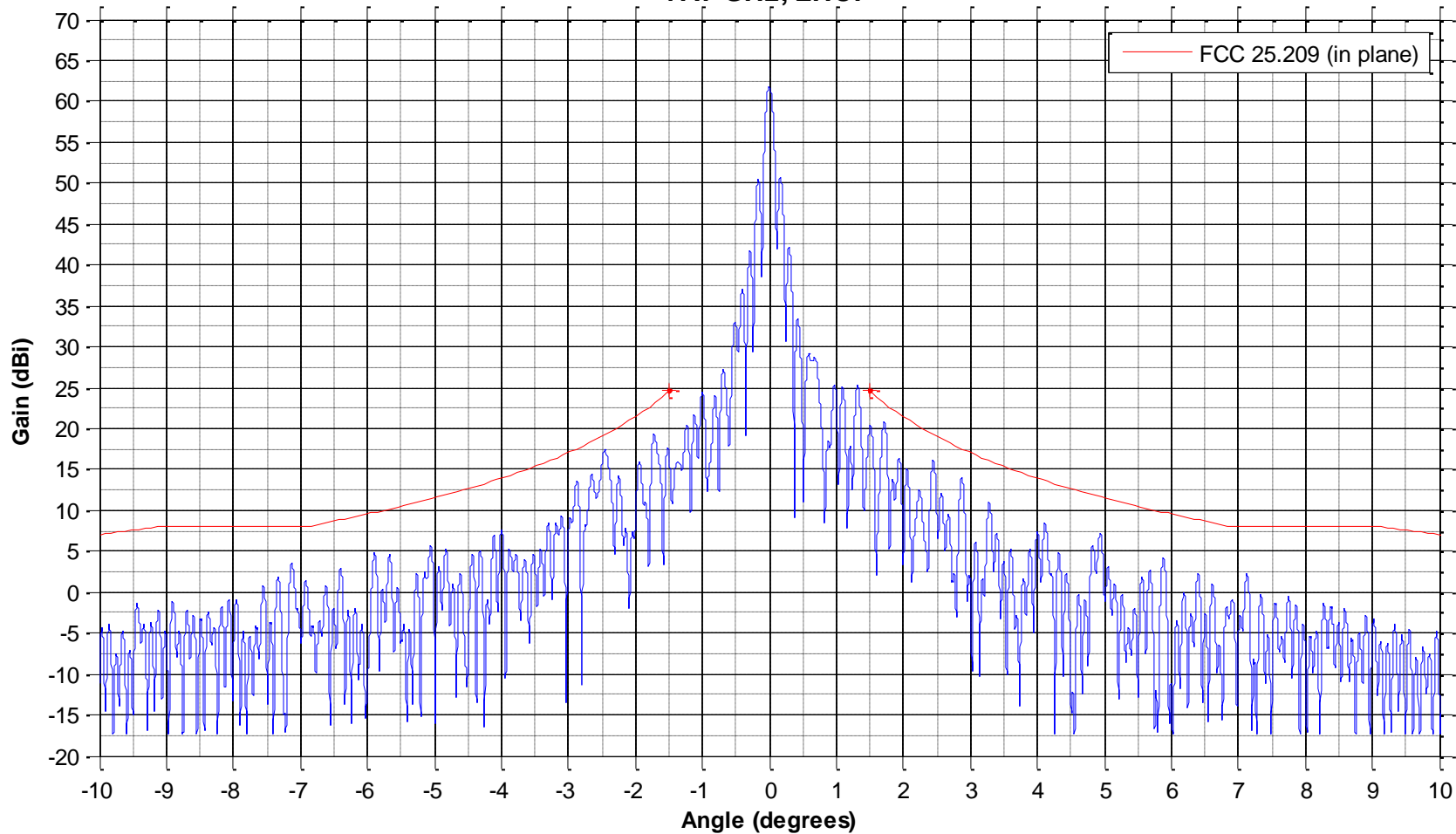
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, ±10°
17.7 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX2_17700MHZ
Plot: 3.05a

Gain: 61.79 dBi
-3 dB BW: 0.10°
-10 dB BW: 0.17°

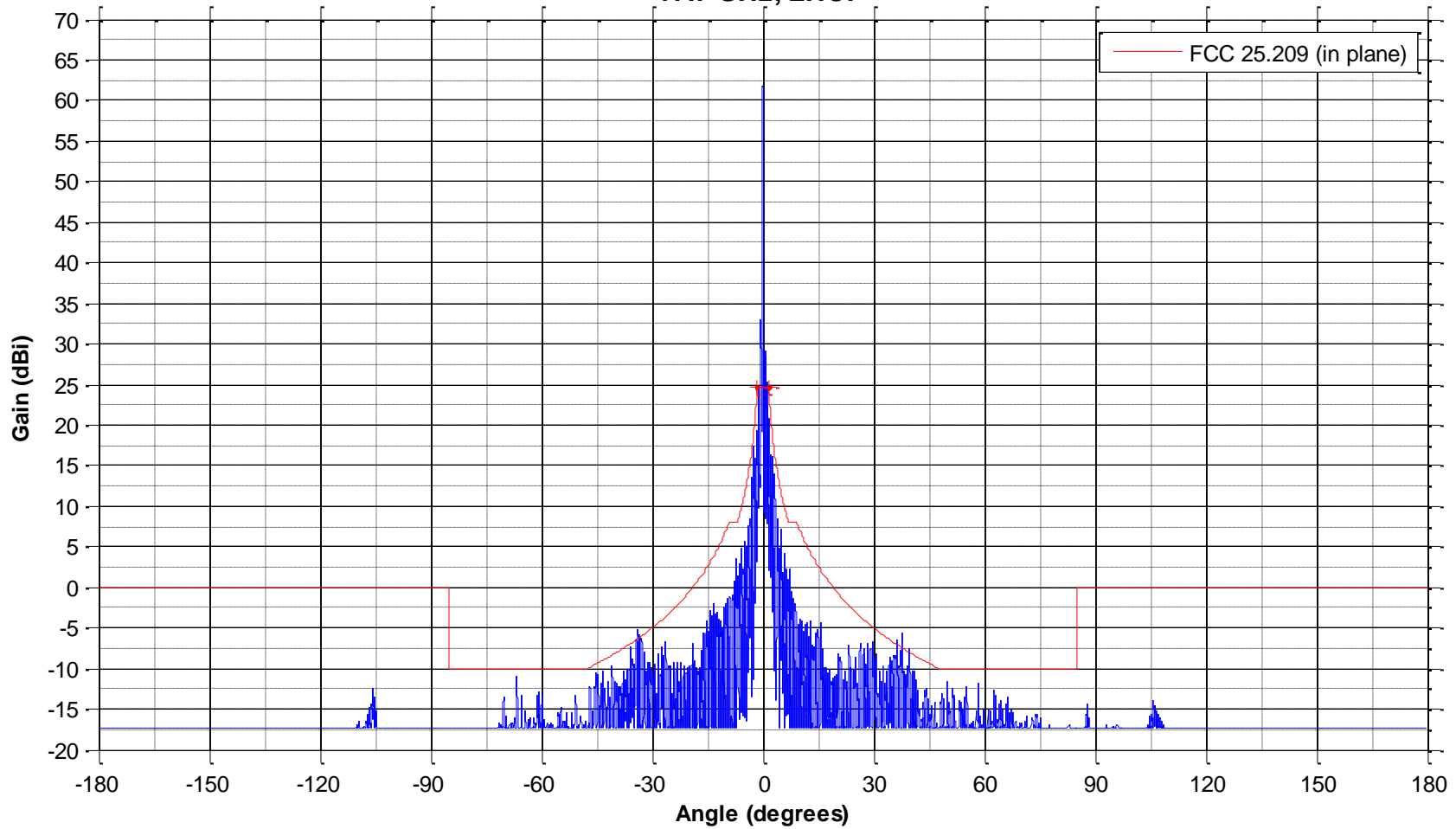
9.4m Ka-Band Earth Station Antenna Co-Pol Azimuth Radiation Pattern, ±10° 17.7 GHz, LHCP



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX2_17700MHZ
Plot: 3.05b

Gain: 61.79 dBi
-3 dB BW: 0.10°
-10 dB BW: 0.17°
Excursions: 0.1%
Max. over: 1.89 dB at 37.88°

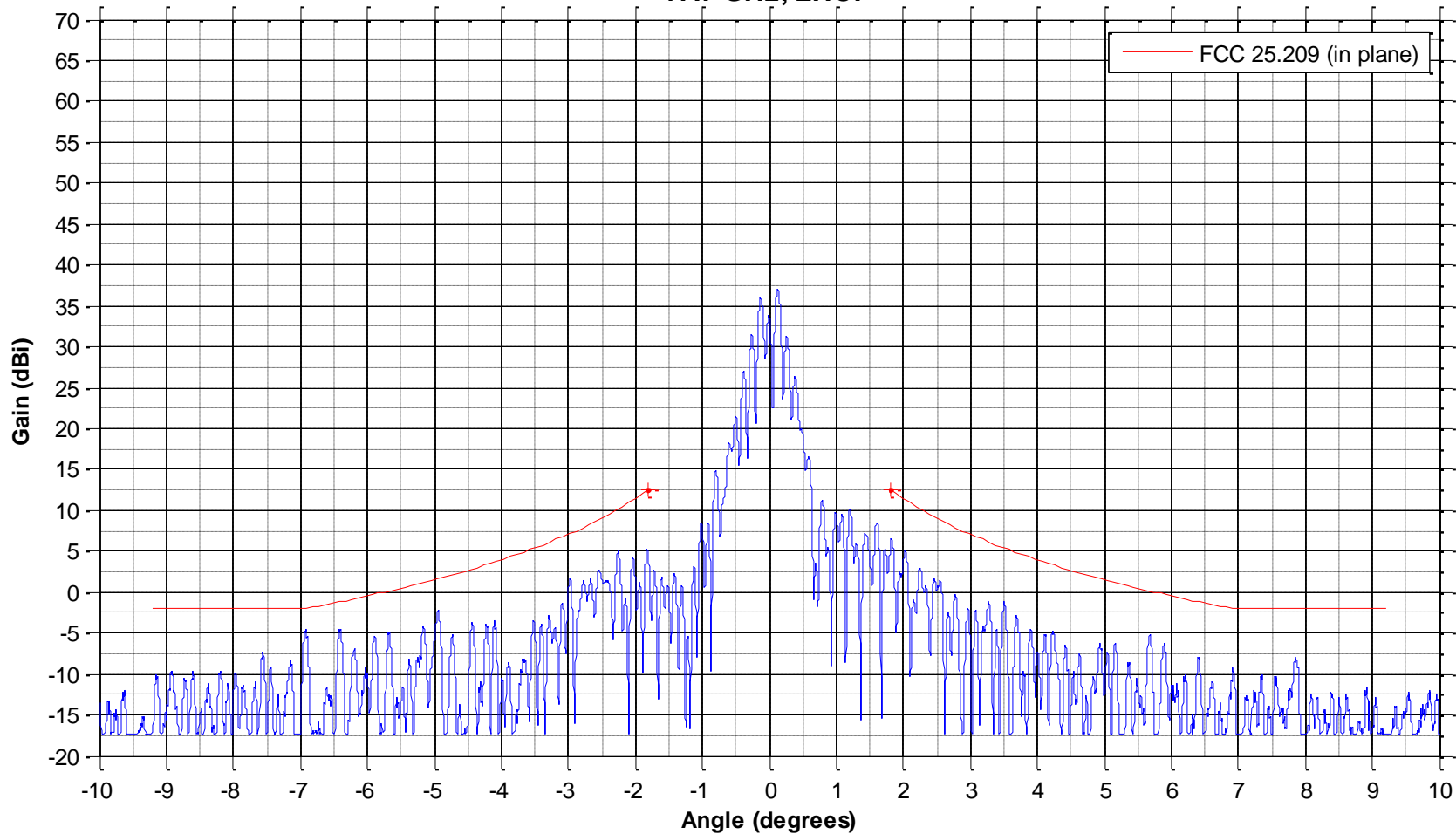
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
17.7 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX2_17700MHZ_CROSSPOL
Plot: 3.06

Gain: 61.79 dBi

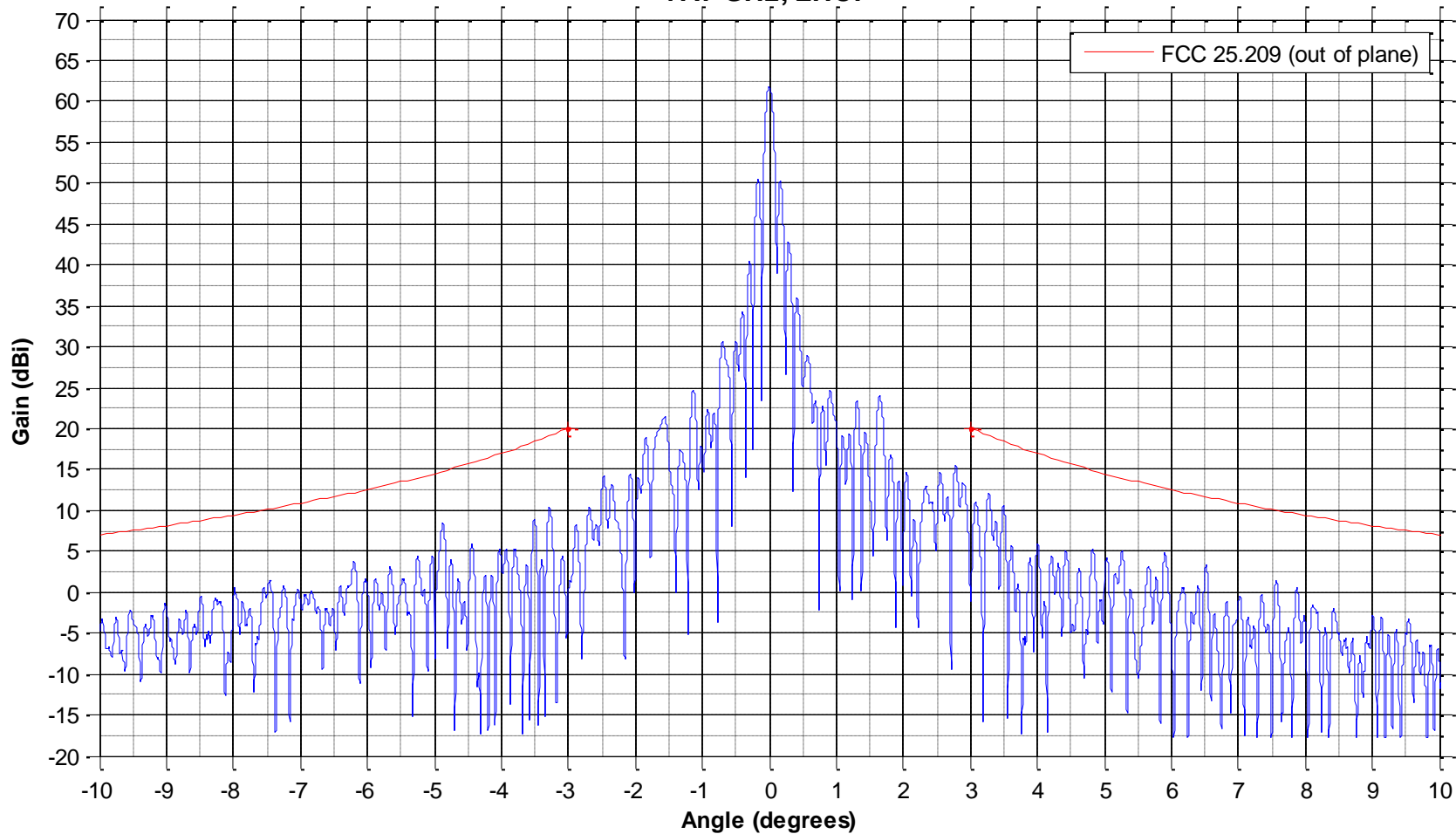
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, $\pm 10^\circ$
17.7 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX2_17700MHZ
Plot: 3.07a

Gain: 61.79 dBi
-3 dB BW: 0.10°
-10 dB BW: 0.17°

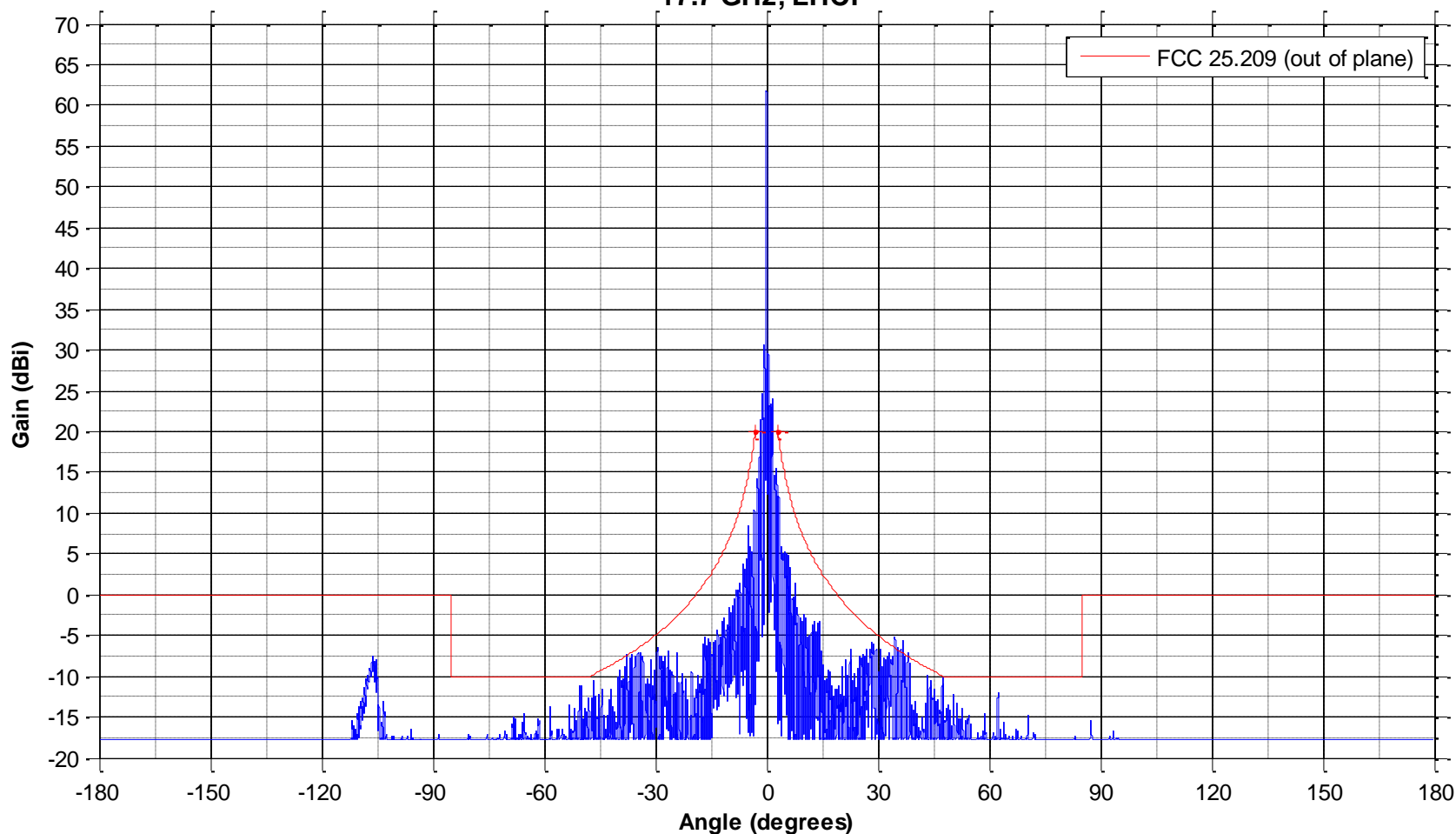
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±10°
17.7 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX2_17700MHZ
Plot: 3.07b

Gain: 61.79 dBi
-3 dB BW: 0.10°
-10 dB BW: 0.17°
Excursions: 0.1%
Max. over: 1.59 dB at 36.73°

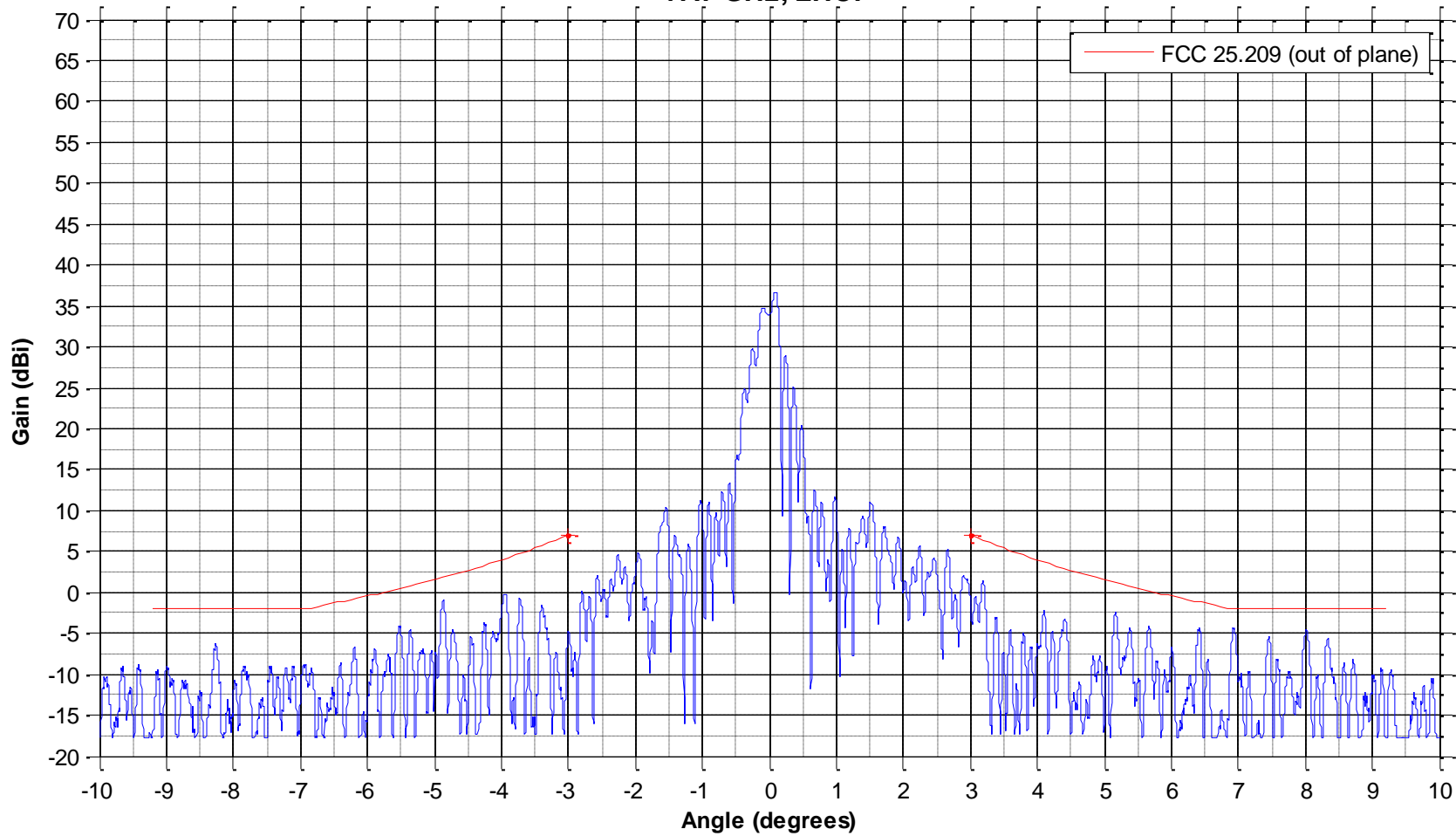
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
17.7 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX2_17700MHZ_CROSSPOL
Plot: 3.08

Gain: 61.79 dBi

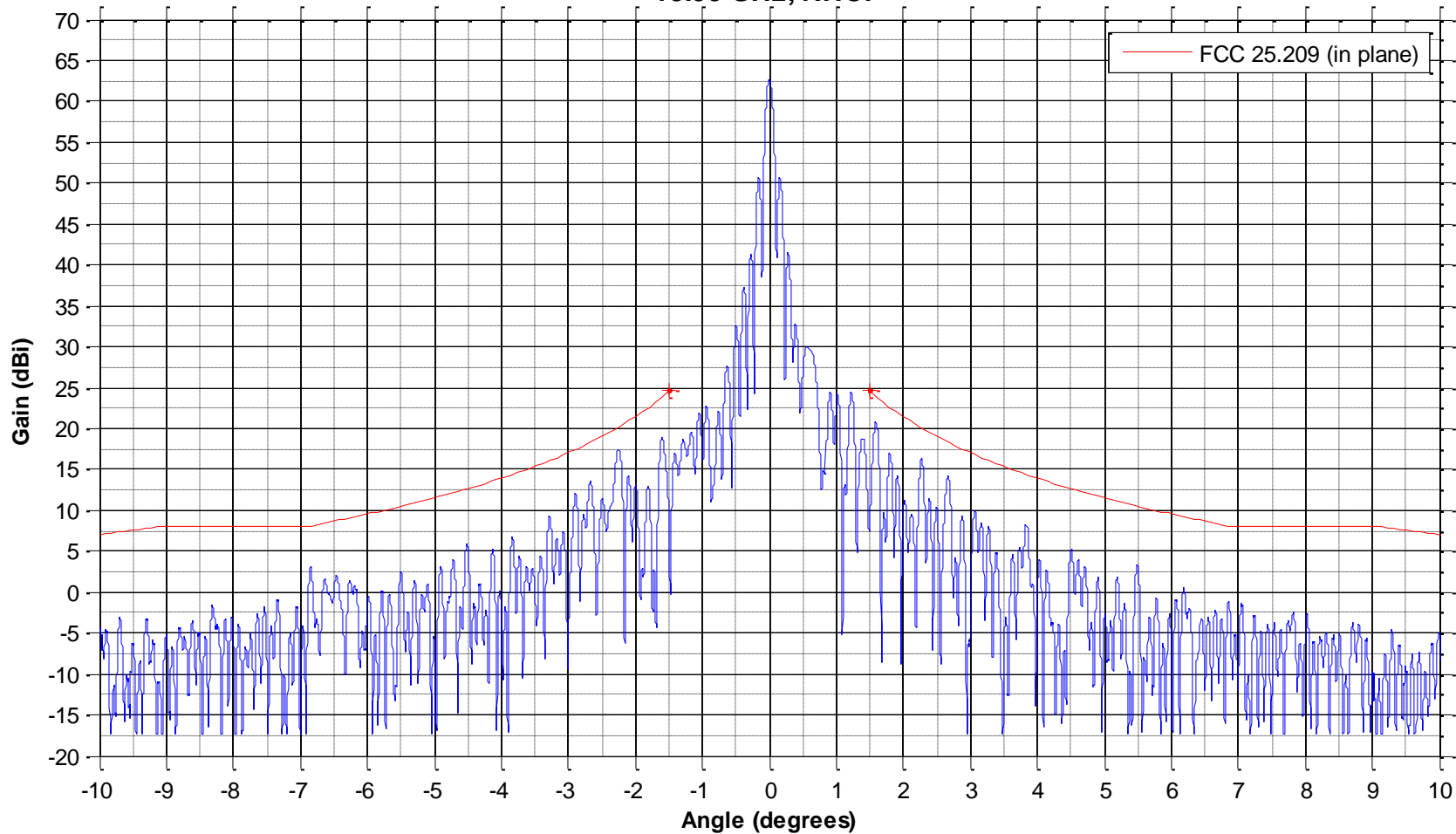
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, $\pm 10^\circ$
17.7 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX1_18950MHZ
Plot: 3.09a

Gain: 62.64 dBi
-3 dB BW: 0.10°
-10 dB BW: 0.16°

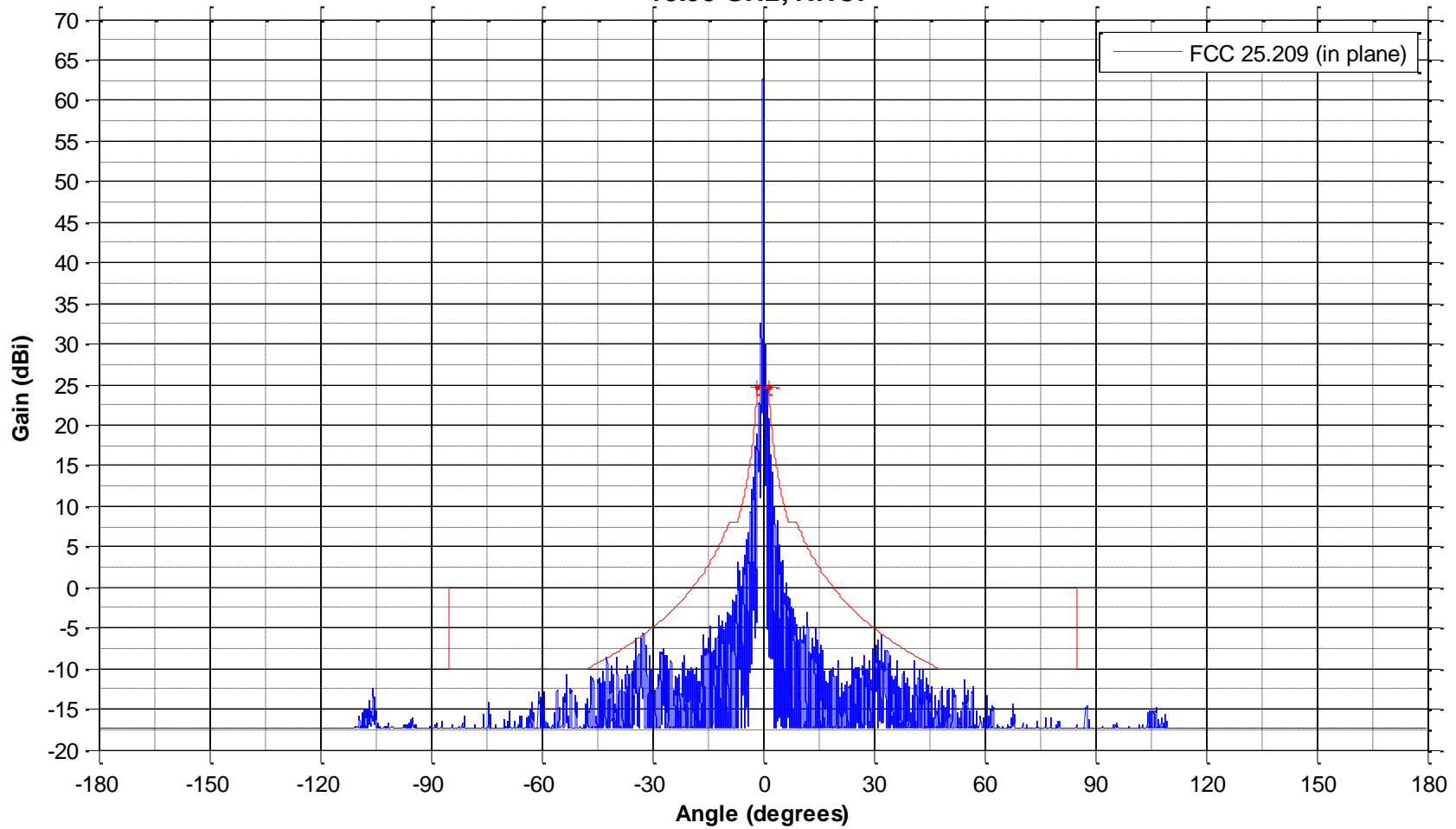
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±10°
18.95 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX1_18950MHZ
Plot: 3.09b

Gain: 62.64 dBi
-3 dB BW: 0.10°
-10 dB BW: 0.16°
Excursions: 0.0%
Max. over: 0.21 dB at -32.36°

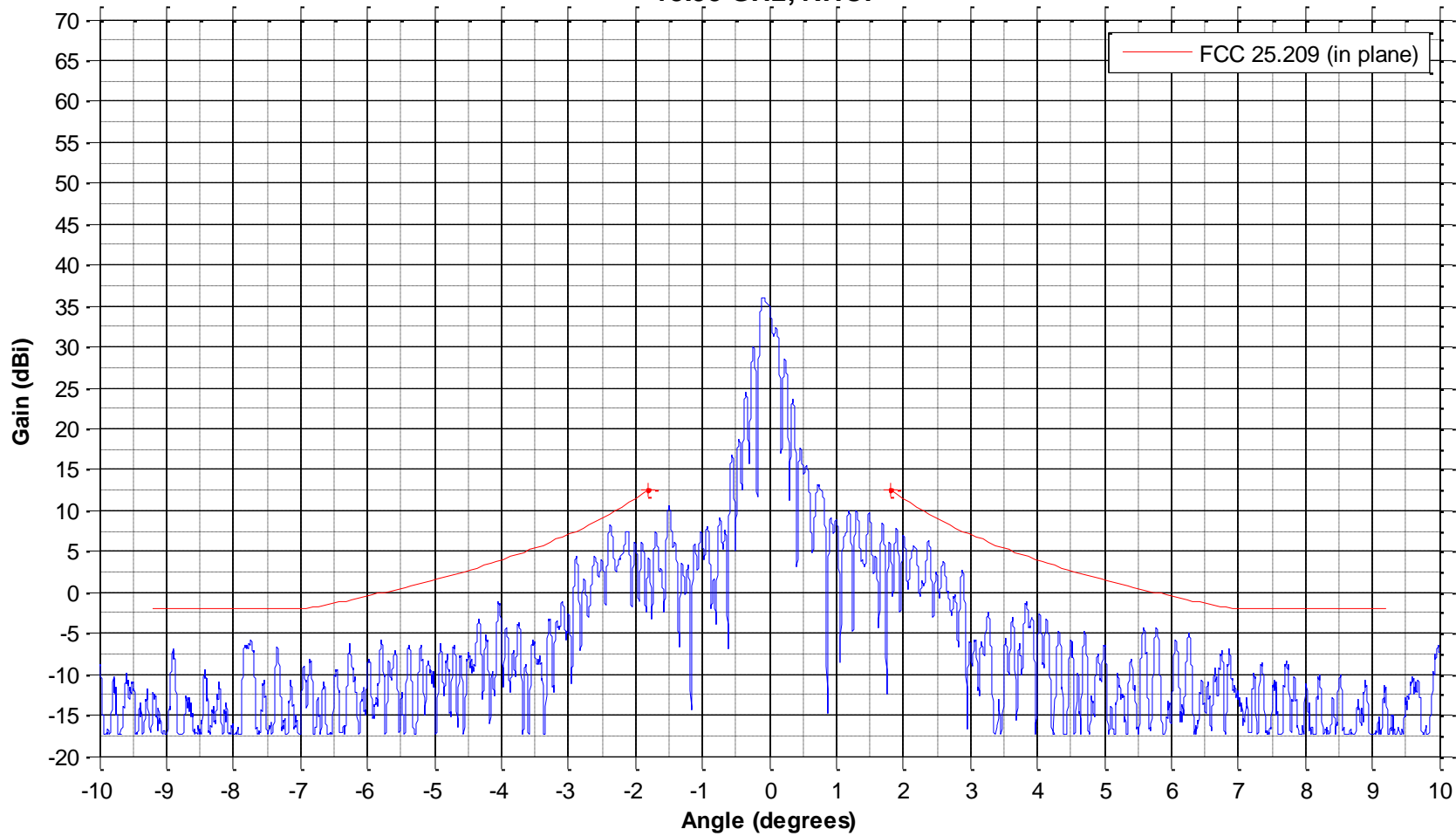
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
18.95 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX1_18950MHZ_CROSSPOL
Plot: 3.10

Gain: 62.64 dBi

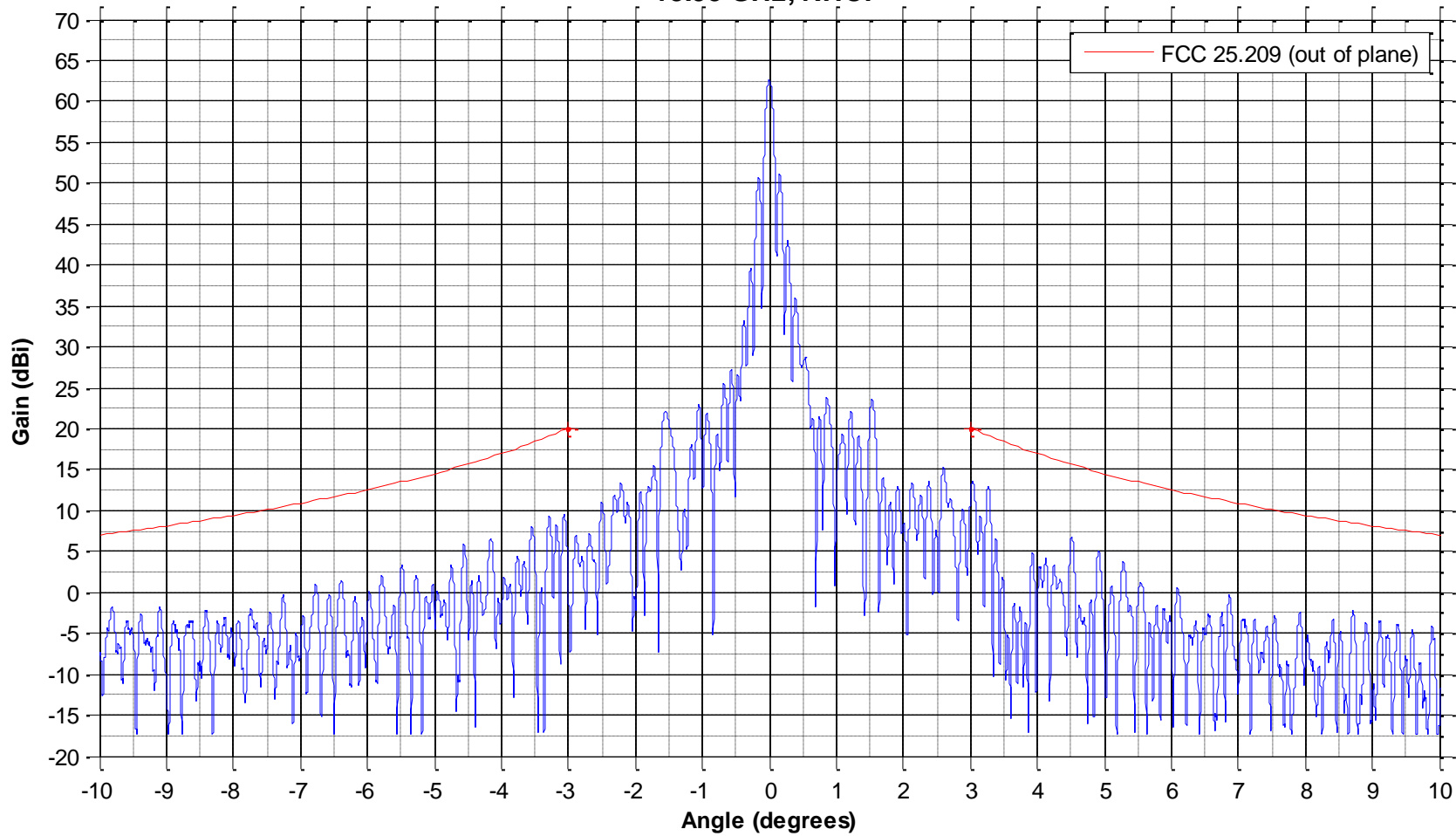
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, $\pm 10^\circ$
18.95 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX1_18950MHZ
Plot: 3.11a

Gain: 62.64 dBi
-3 dB BW: 0.10°
-10 dB BW: 0.16°

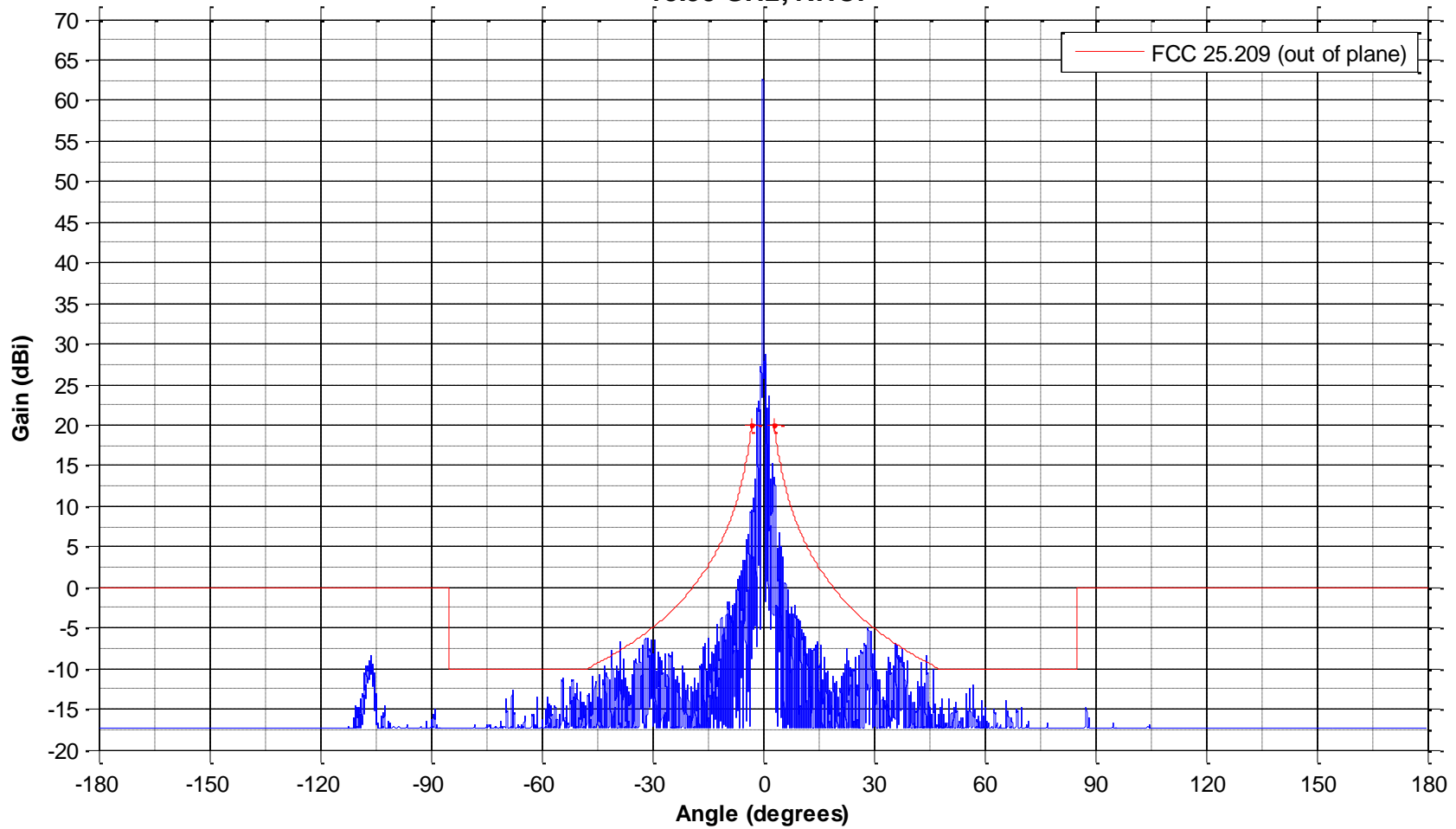
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±10°
18.95 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX1_18950MHZ
Plot: 3.11b

Gain: 62.64 dBi
-3 dB BW: 0.10°
-10 dB BW: 0.16°
Excursions: 0.0%
Max. over: 0.93 dB at -38.55°

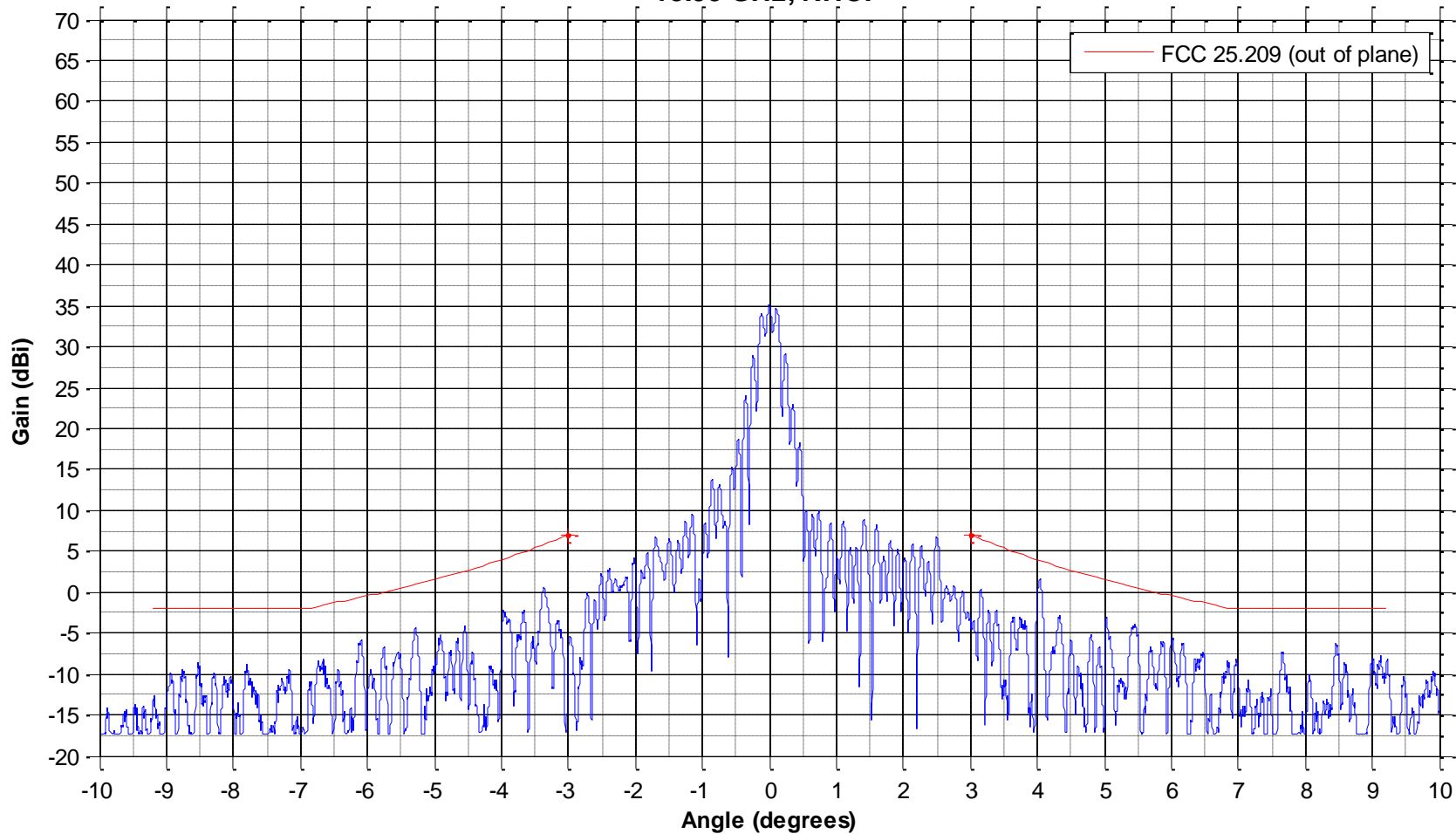
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
18.95 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX1_18950MHZ_CROSSPOL
Plot: 3.12

Gain: 62.64 dBi

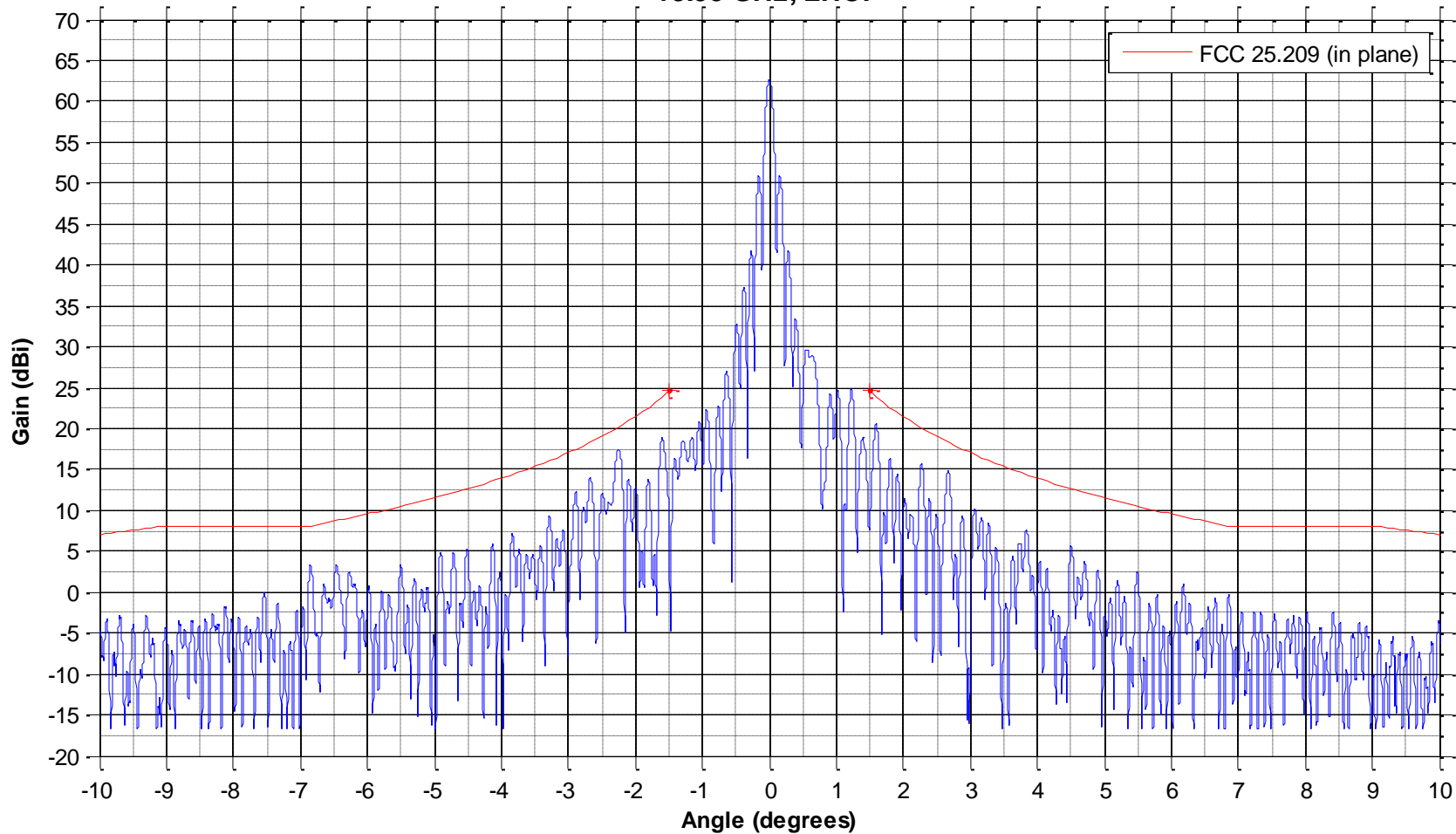
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, $\pm 10^\circ$
18.95 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX2_18950MHZ
Plot: 3.13a

Gain: 62.64 dBi
-3 dB BW: 0.10°
-10 dB BW: 0.16°

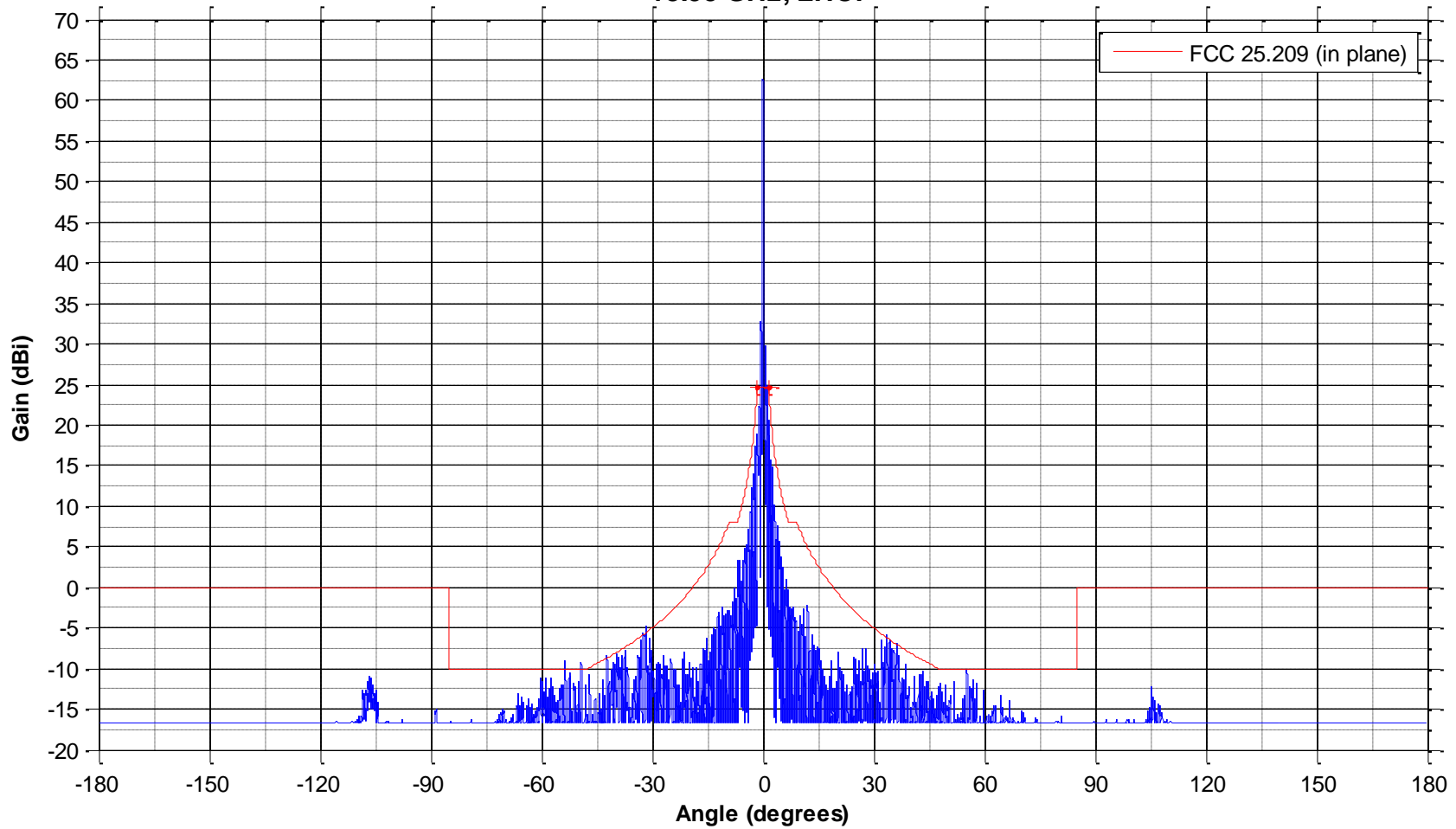
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±10°
18.95 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX2_18950MHZ
Plot: 3.13b

Gain: 62.64 dBi
-3 dB BW: 0.10°
-10 dB BW: 0.16°
Excursions: 0.1%
Max. over: 0.90 dB at -53.50°

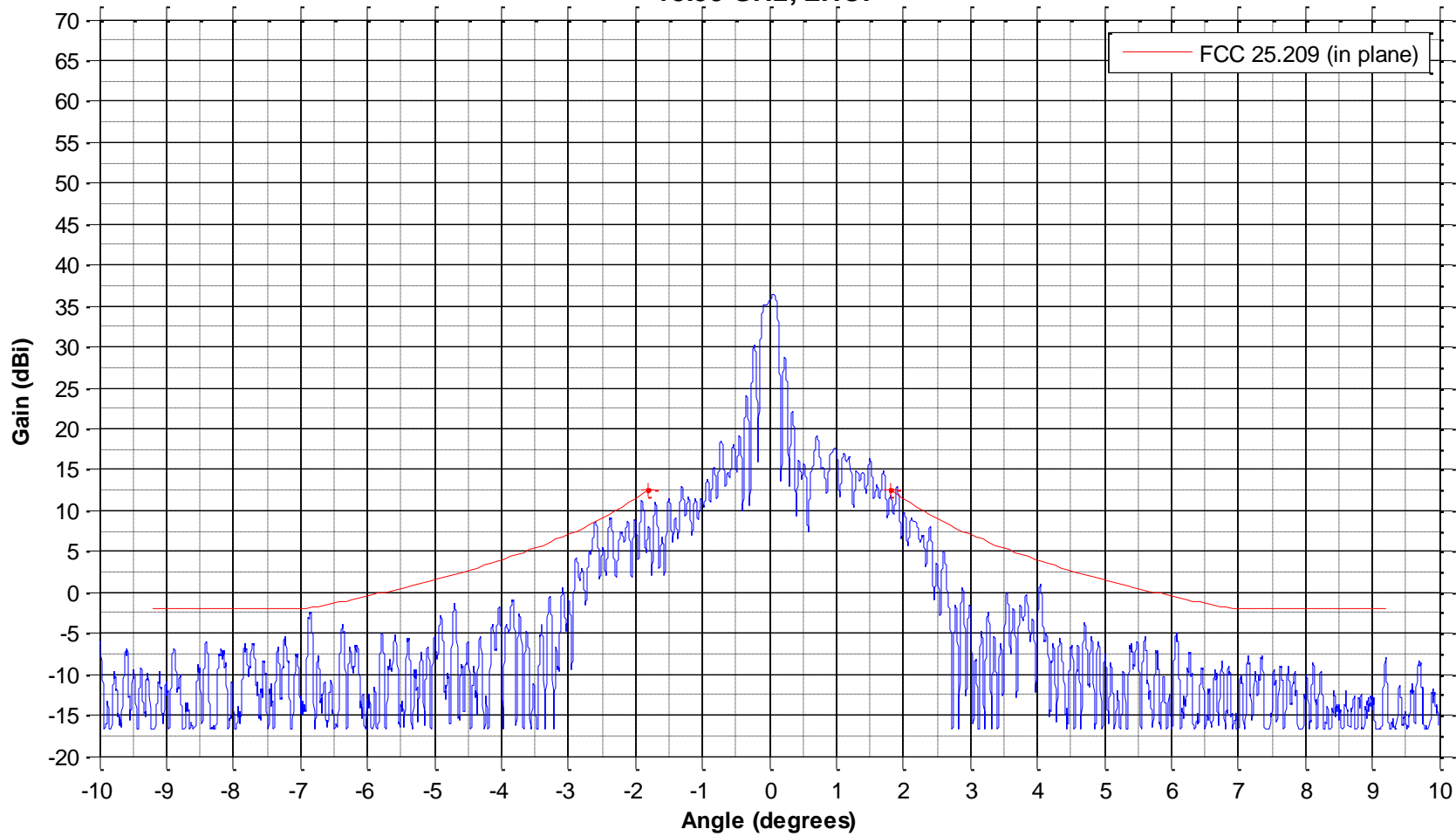
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
18.95 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX2_18950MHZ_CROSSPOL
Plot: 3.14

Gain: 62.64 dBi

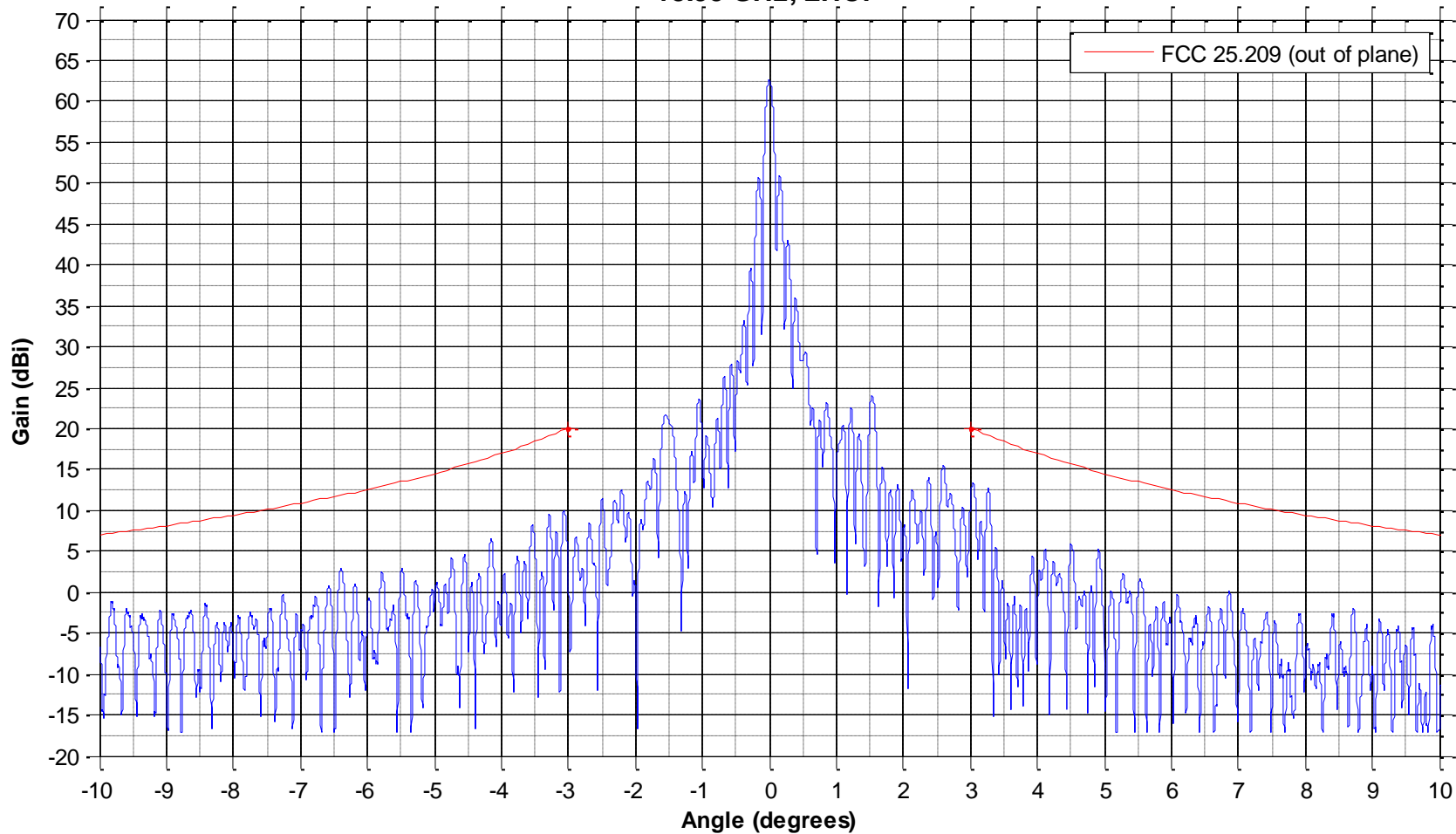
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, $\pm 10^\circ$
18.95 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX2_18950MHZ
Plot: 3.15a

Gain: 62.64 dBi
-3 dB BW: 0.10°
-10 dB BW: 0.16°

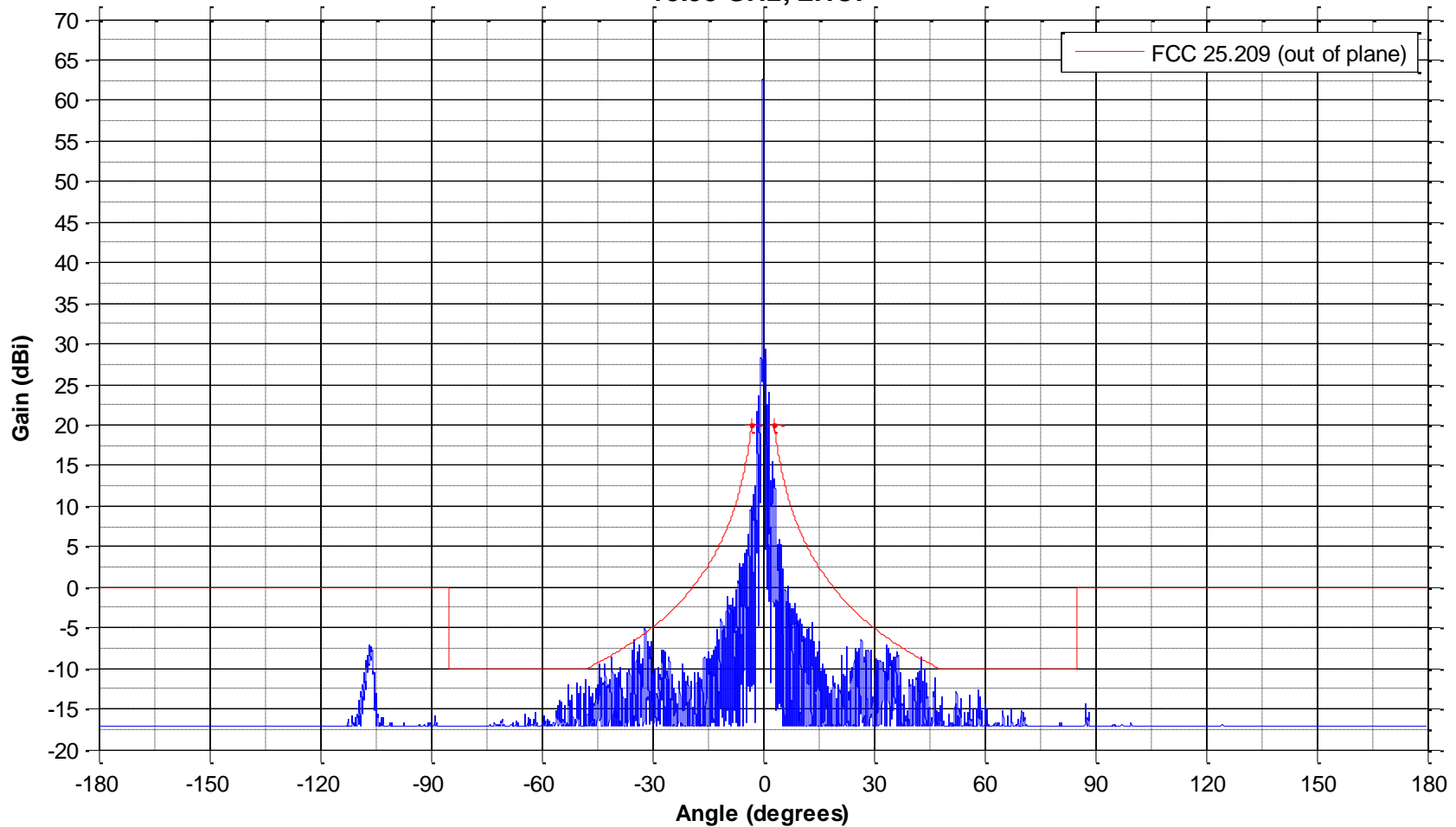
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±10°
18.95 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX2_18950MHZ
Plot: 3.15b

Gain: 62.64 dBi
-3 dB BW: 0.10°
-10 dB BW: 0.16°
Excursions: 0.0%
Max. over: 0.59 dB at -31.88°

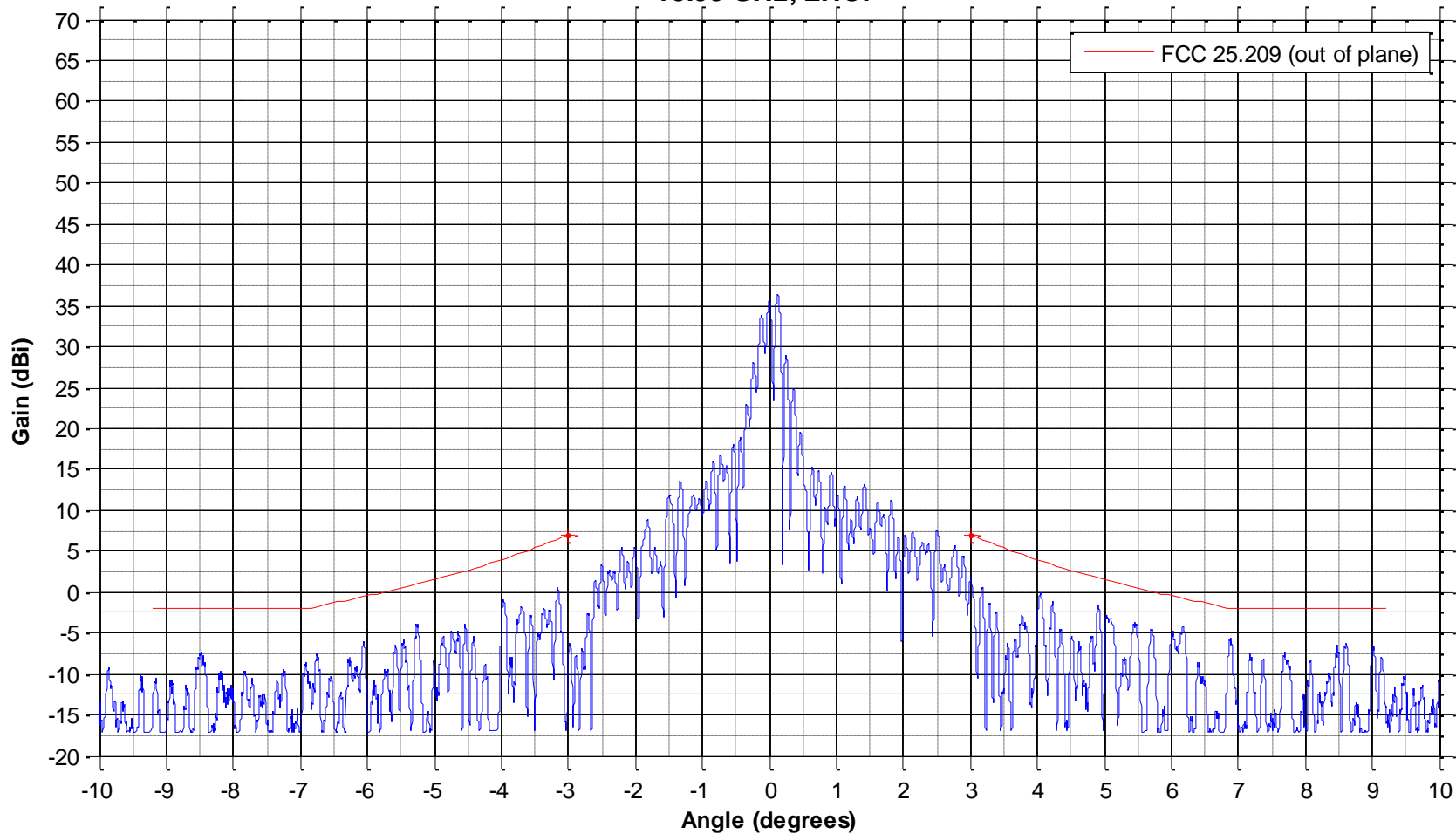
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
18.95 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX2_18950MHZ_CROSSPOL
Plot: 3.16

Gain: 62.64 dBi

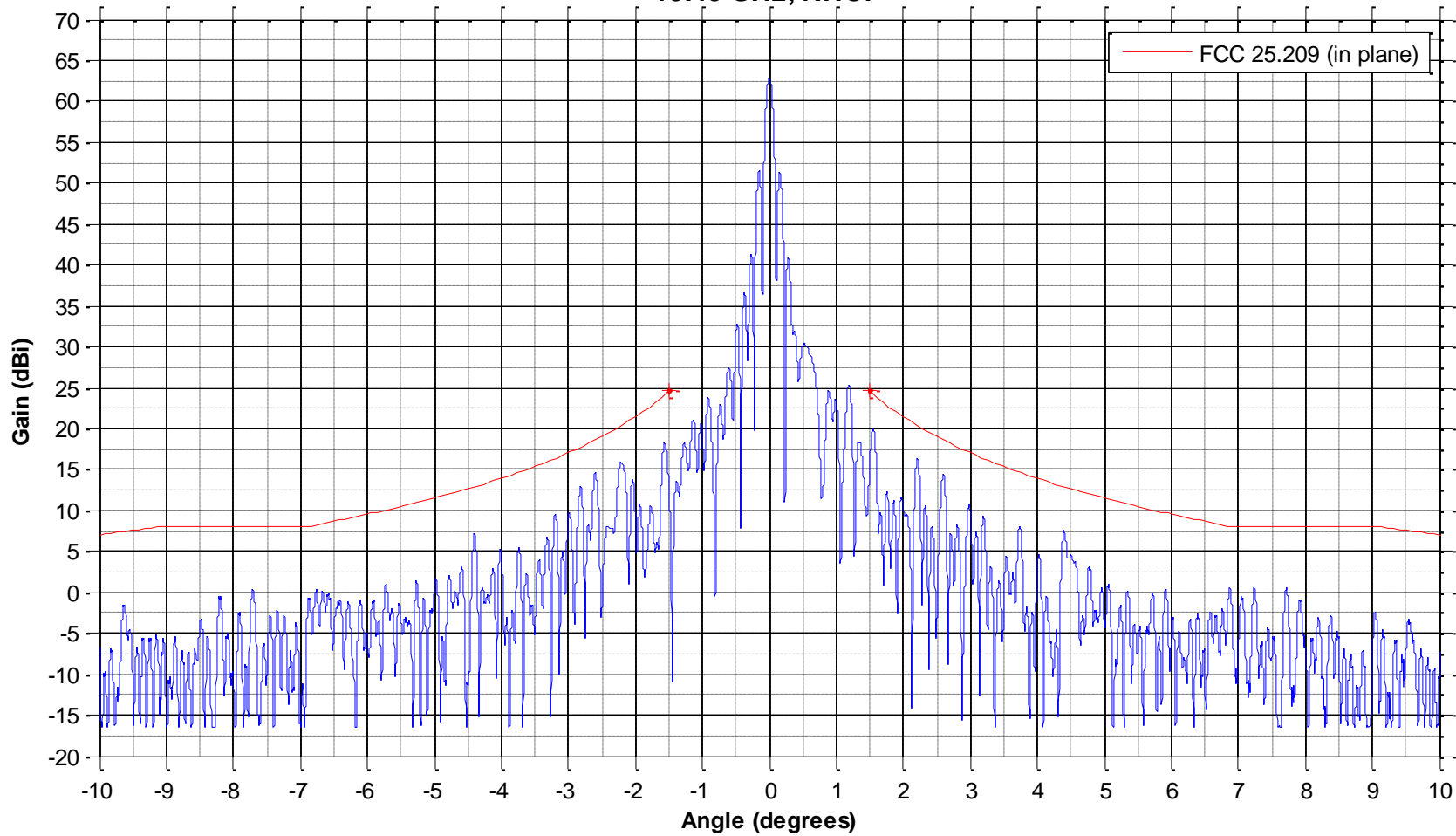
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, $\pm 10^\circ$
18.95 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX1_19450MHZ
Plot: 3.17a

Gain: 62.95 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.16°

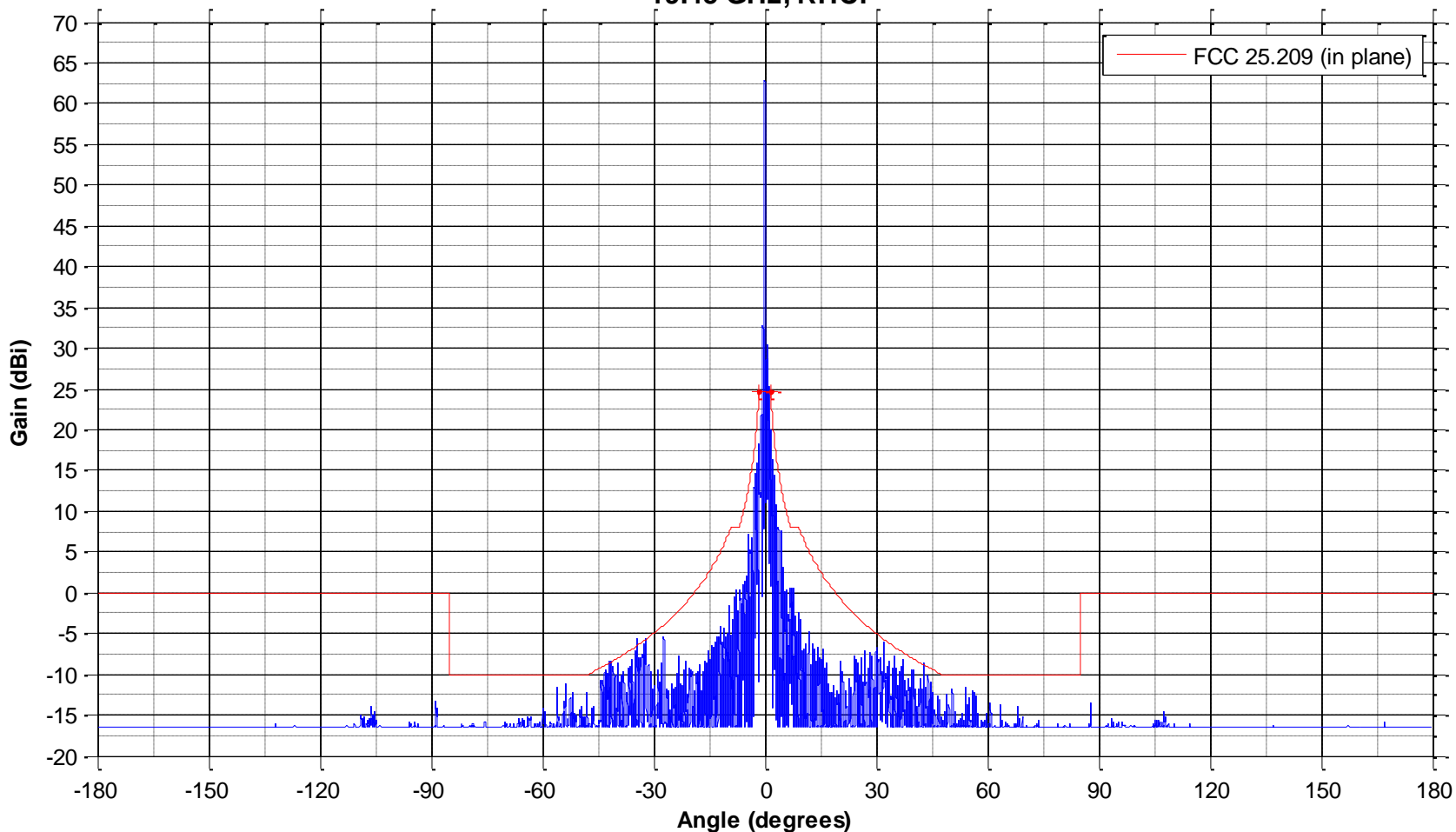
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±10°
19.45 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX1_19450MHZ
Plot: 3.17b

Gain: 62.95 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.16°
Excursions: 0.0%
Max. over: 0.77 dB at -34.29°

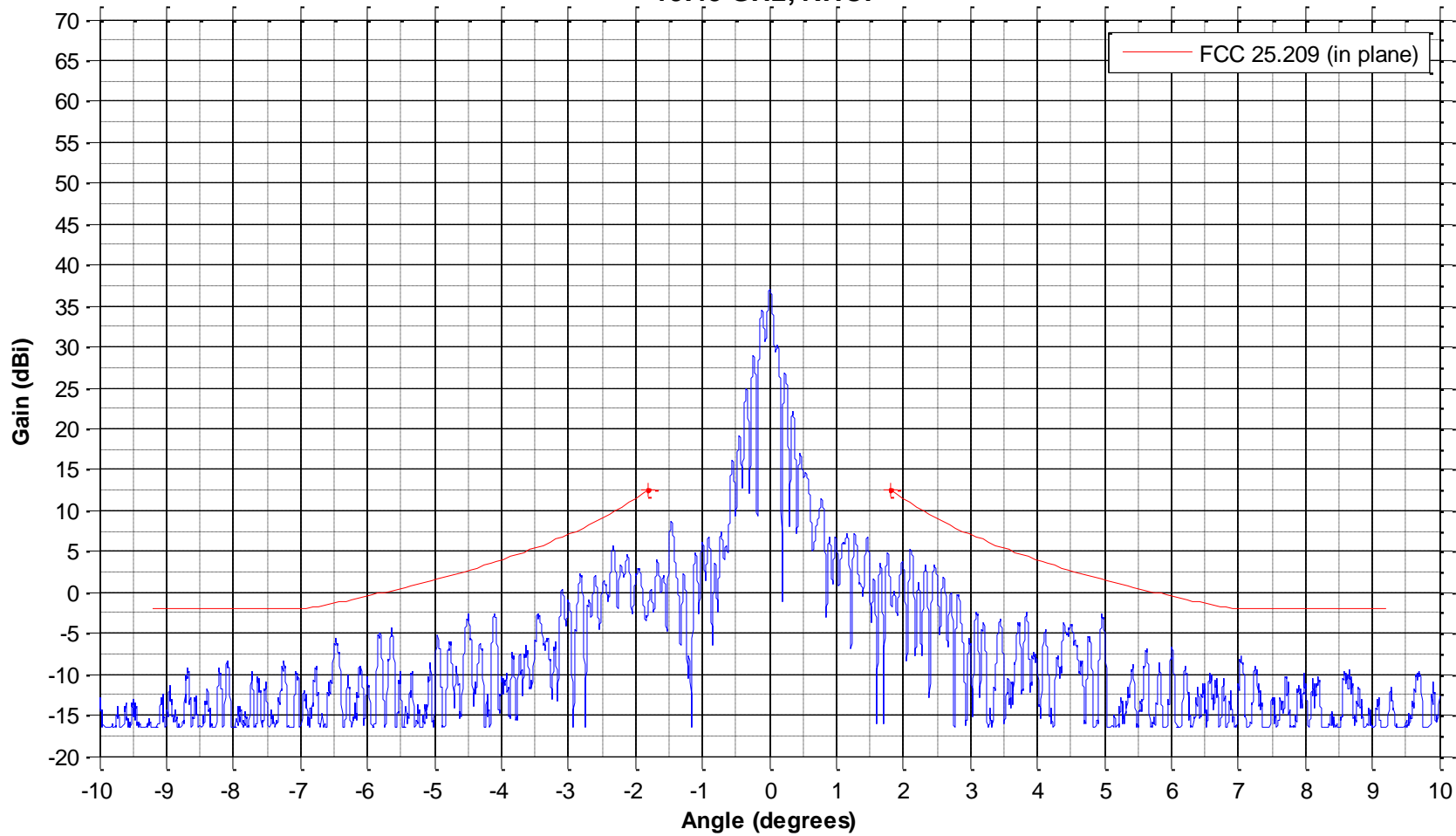
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
19.45 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX1_19450MHZ_CROSSPOL
Plot: 3.18

Gain: 62.95 dBi

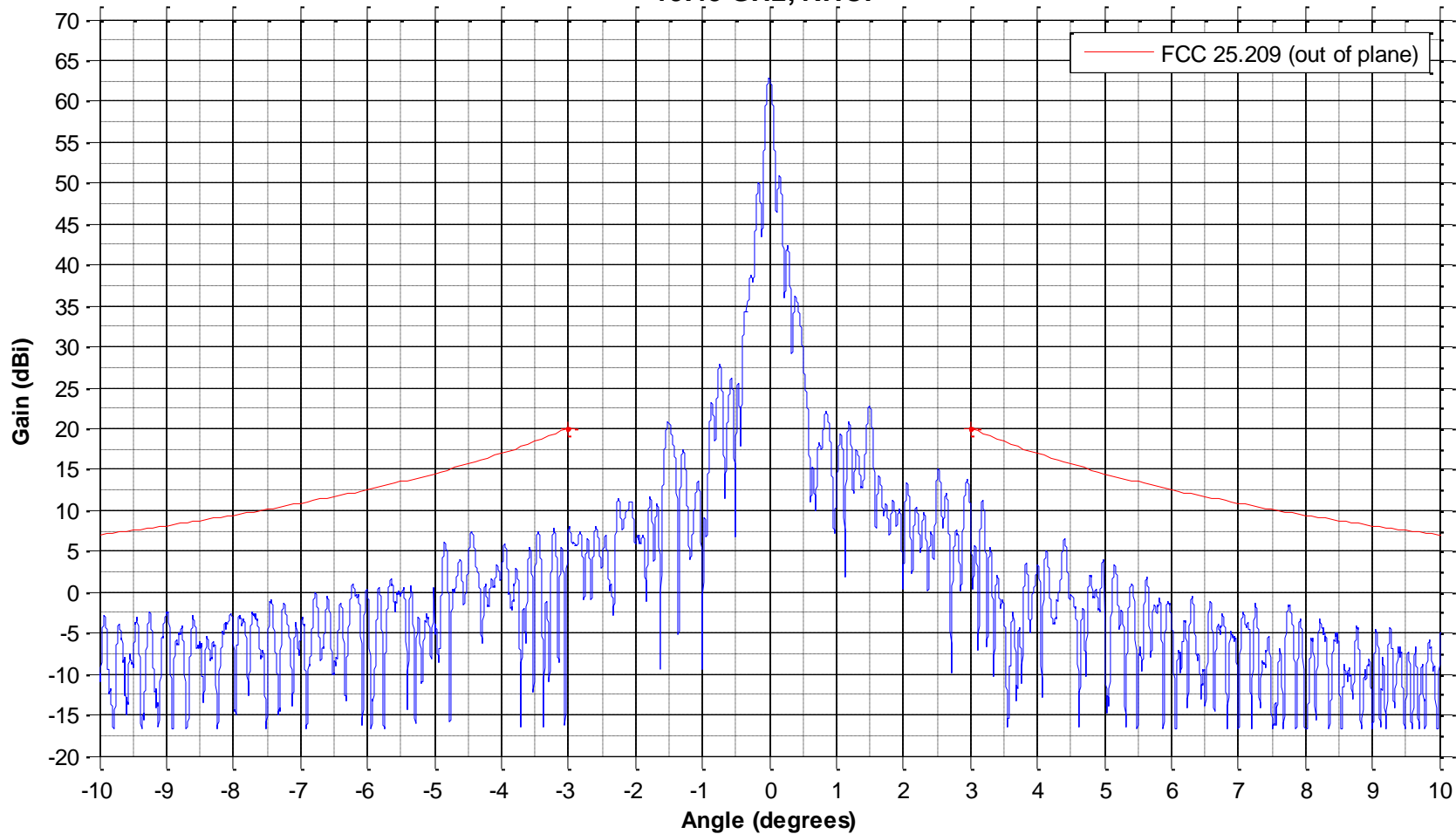
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, $\pm 10^\circ$
19.45 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX1_19450MHZ
Plot: 3.19a

Gain: 62.95 dBi
-3 dB BW: 0.10°
-10 dB BW: 0.16°

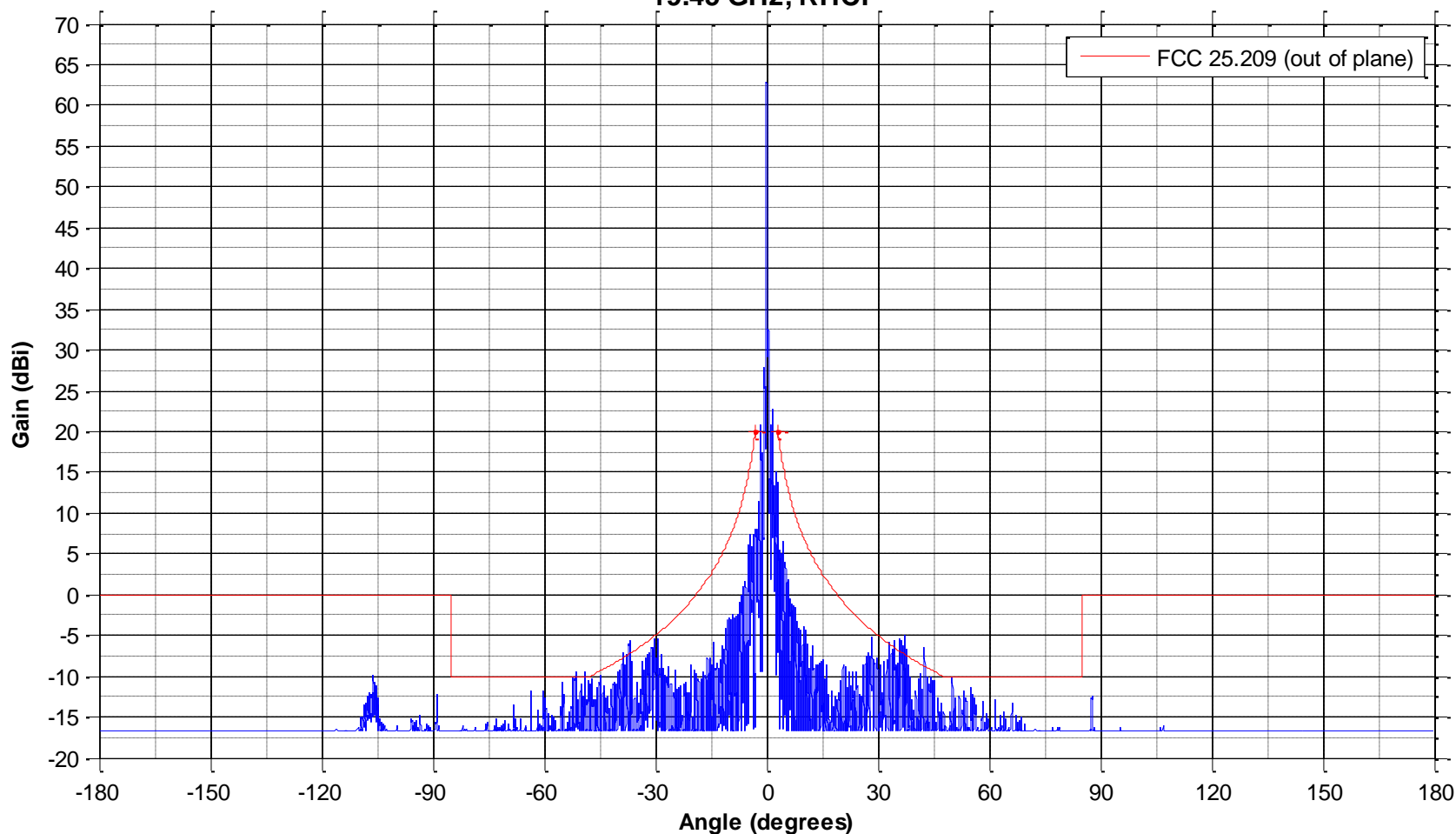
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±10°
19.45 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX1_19450MHZ
Plot: 3.19b

Gain: 62.95 dBi
-3 dB BW: 0.10°
-10 dB BW: 0.16°
Excursions: 0.2%
Max. over: 2.30 dB at 42.61°

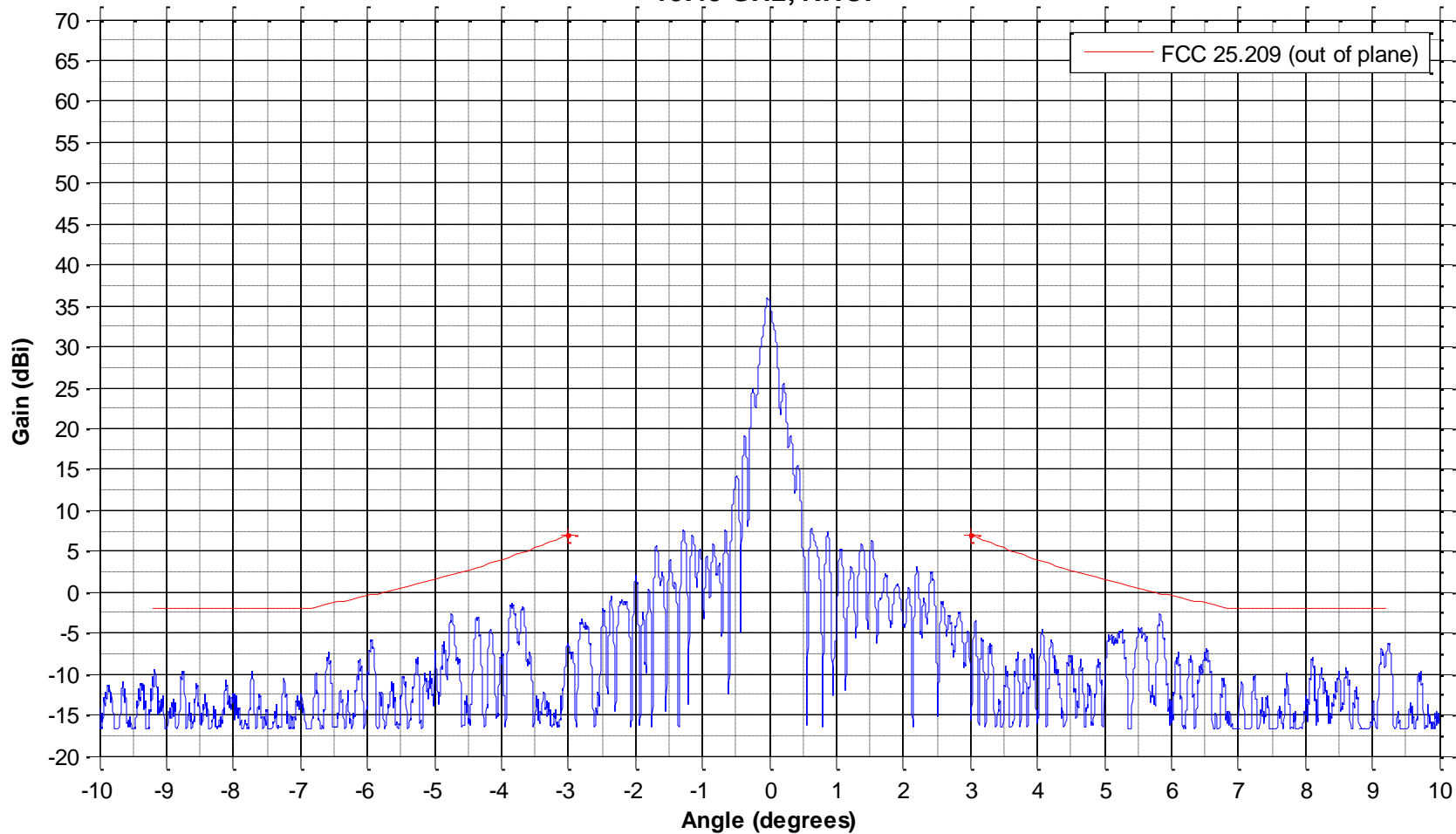
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
19.45 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX1_19450MHZ_CROSSPOL
Plot: 3.20

Gain: 62.95 dBi

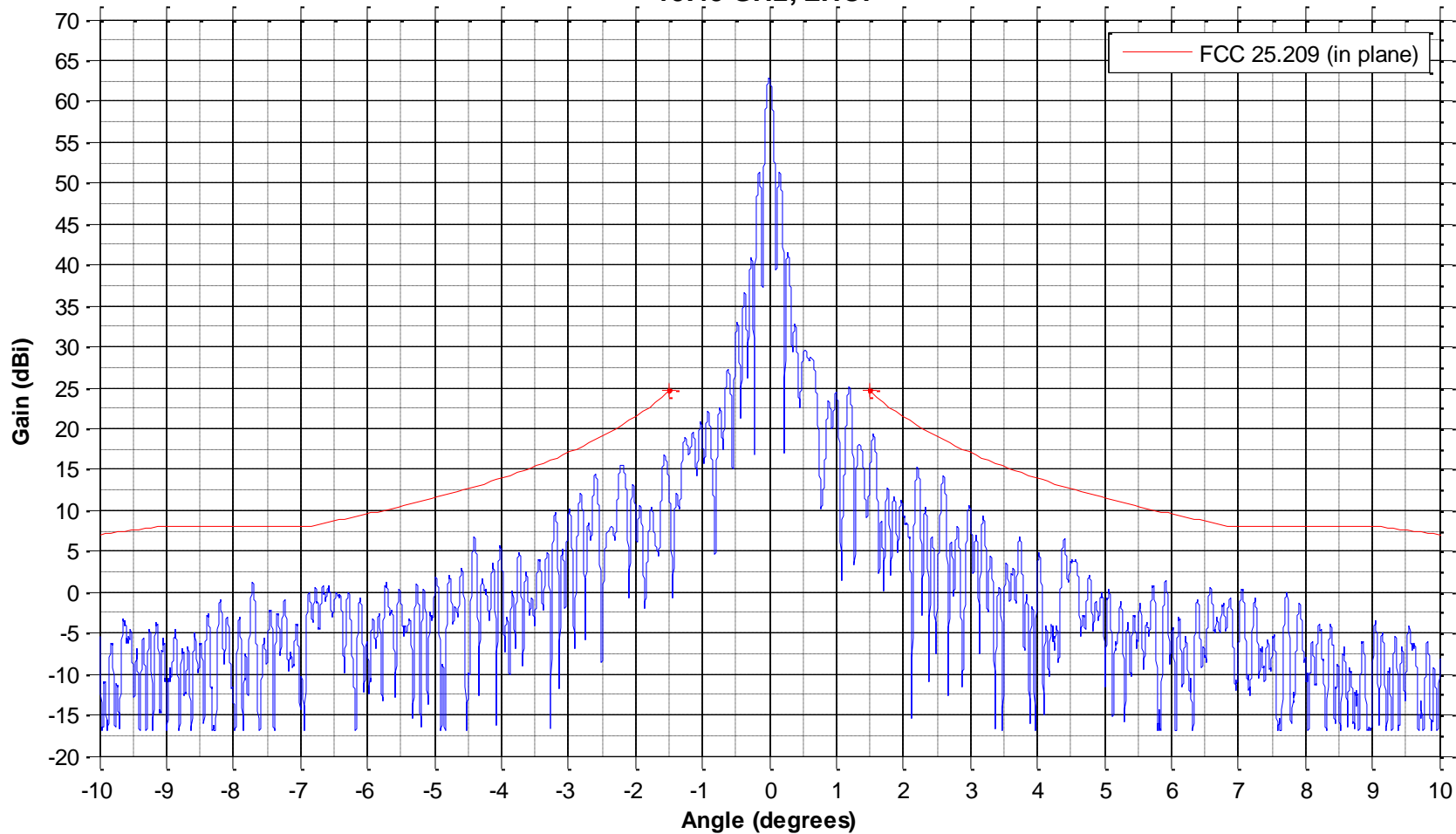
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, $\pm 10^\circ$
19.45 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX2_19450MHZ
Plot: 3.21a

Gain: 62.95 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.15°

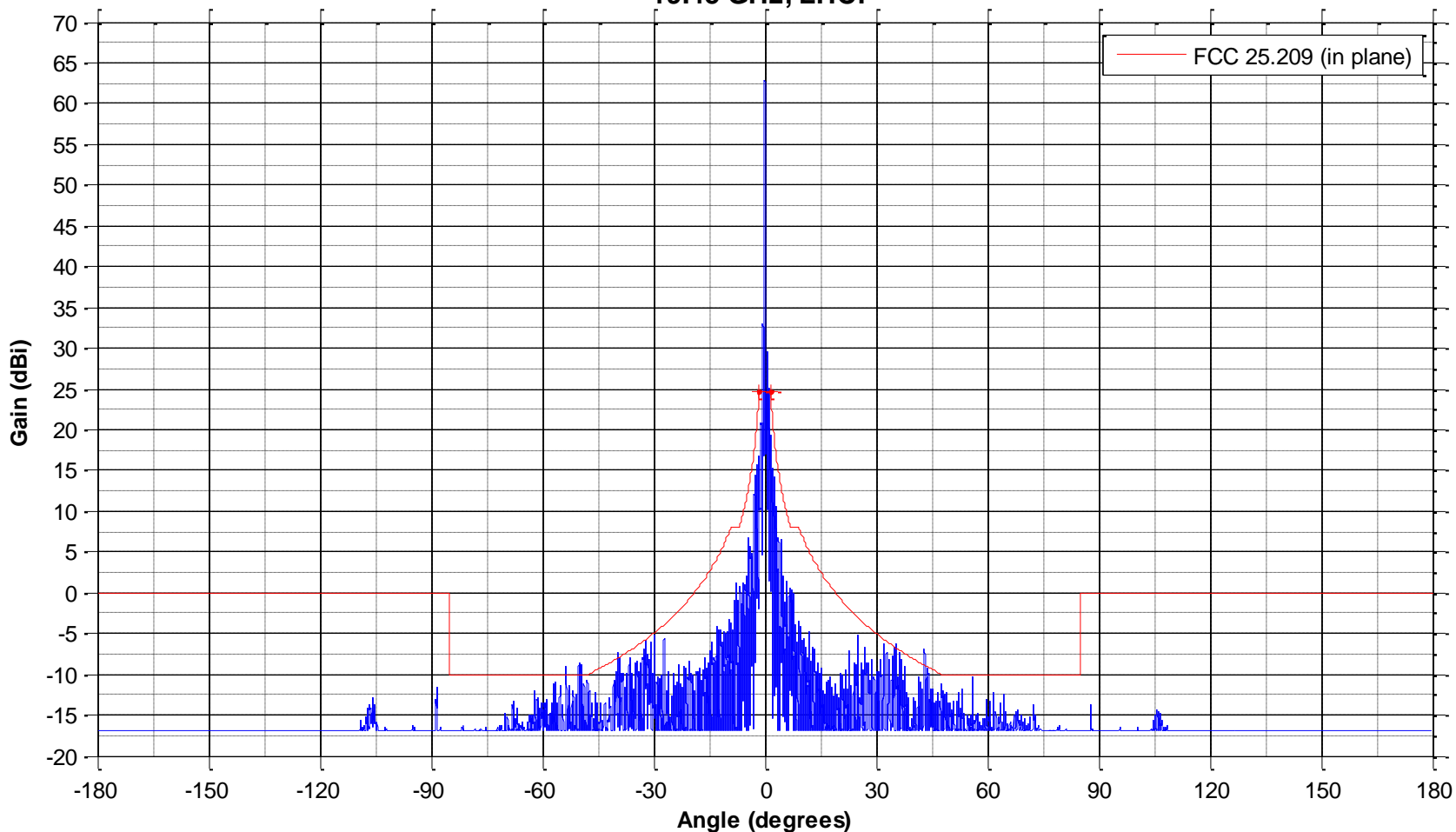
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±10°
19.45 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX2_19450MHZ
Plot: 3.21b

Gain: 62.95 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.15°
Excursions: 0.1%
Max. over: 1.87 dB at 43.03°

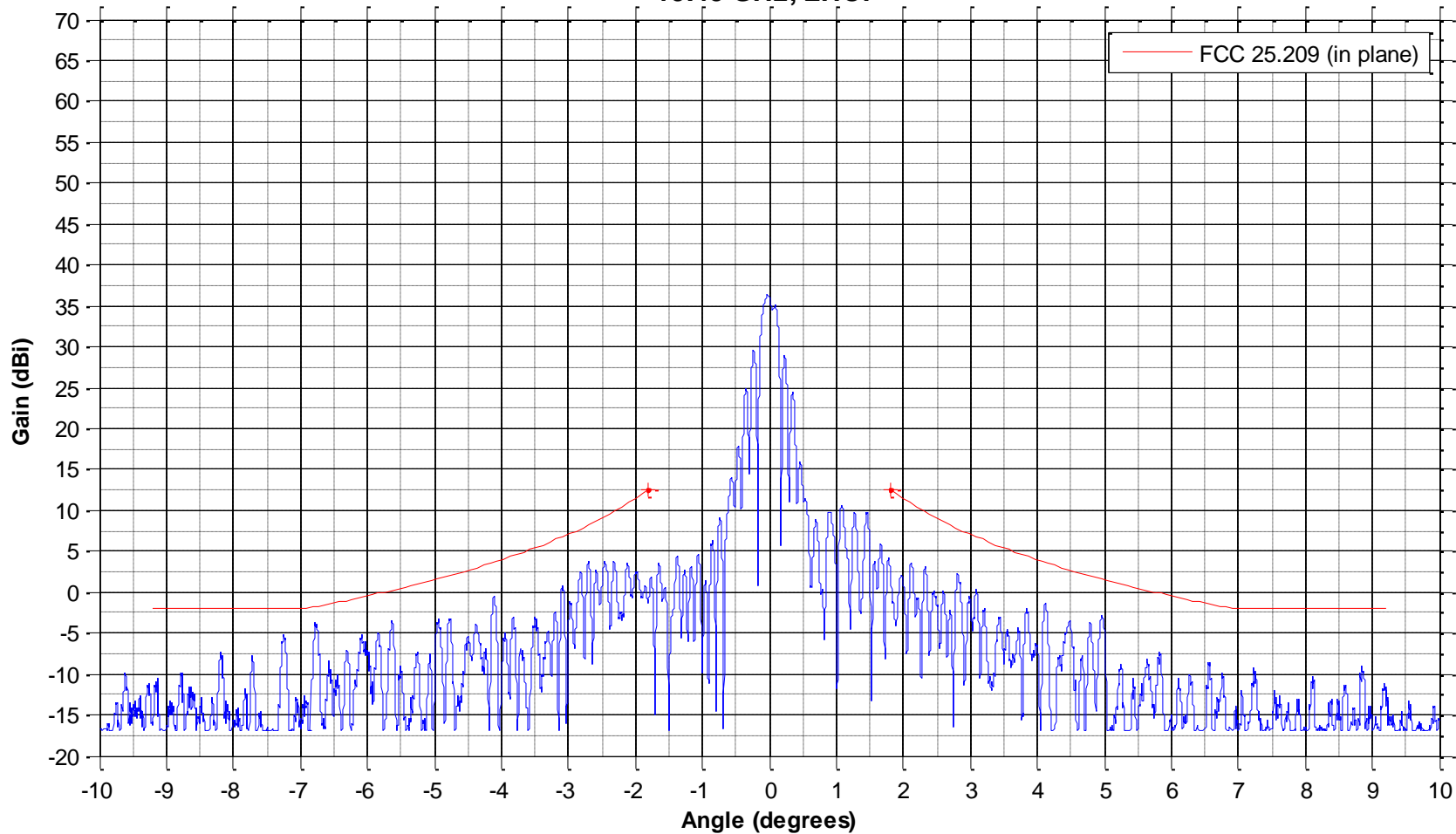
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
19.45 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX2_19450MHZ_CROSSPOL
Plot: 3.22

Gain: 62.95 dBi

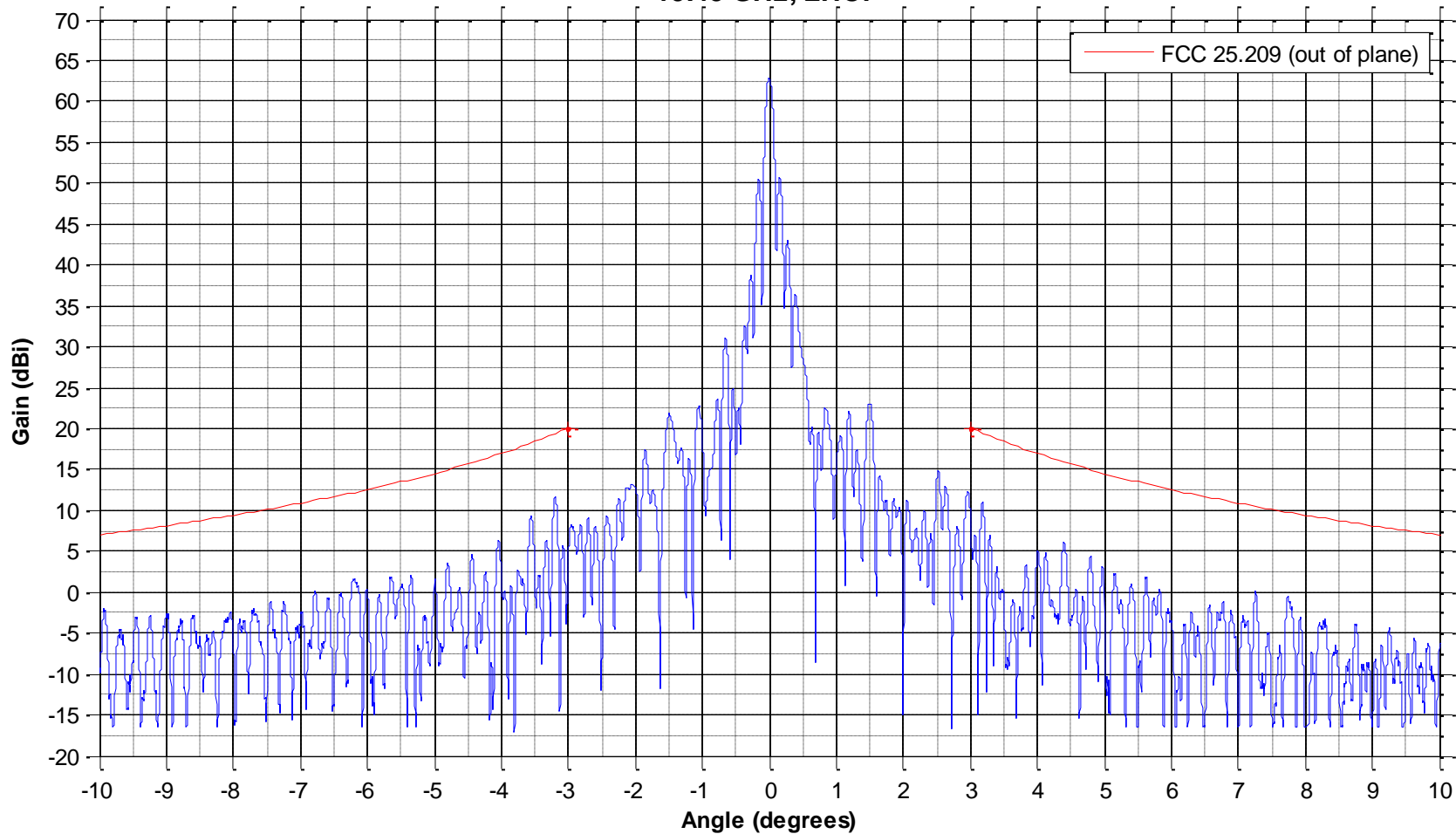
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, $\pm 10^\circ$
19.45 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX2_19450MHZ
Plot: 3.23a

Gain: 62.95 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.16°

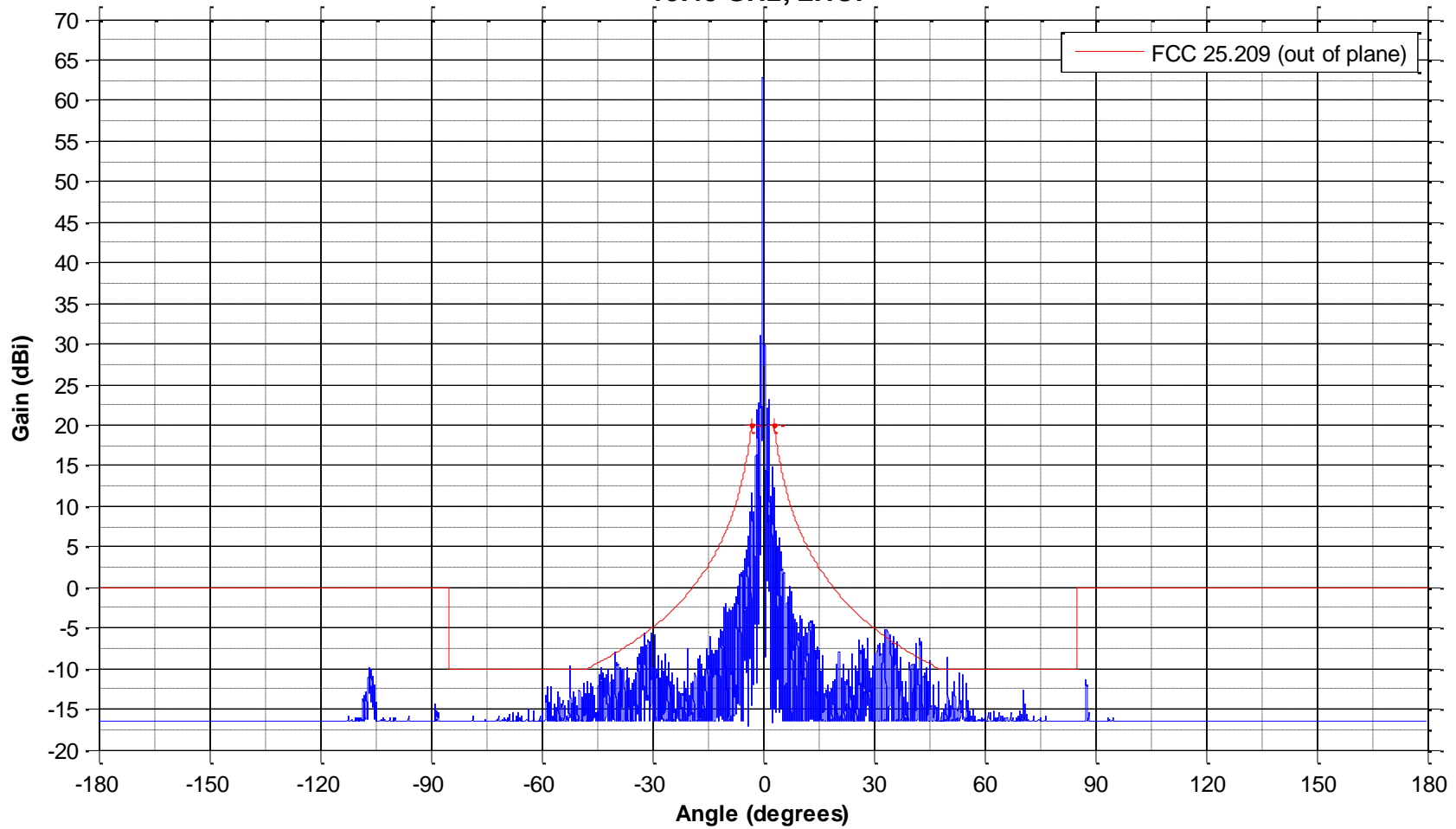
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±10°
19.45 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX2_19450MHZ
Plot: 3.23b

Gain: 62.95 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.16°
Excursions: 0.1%
Max. over: 2.40 dB at 42.63°

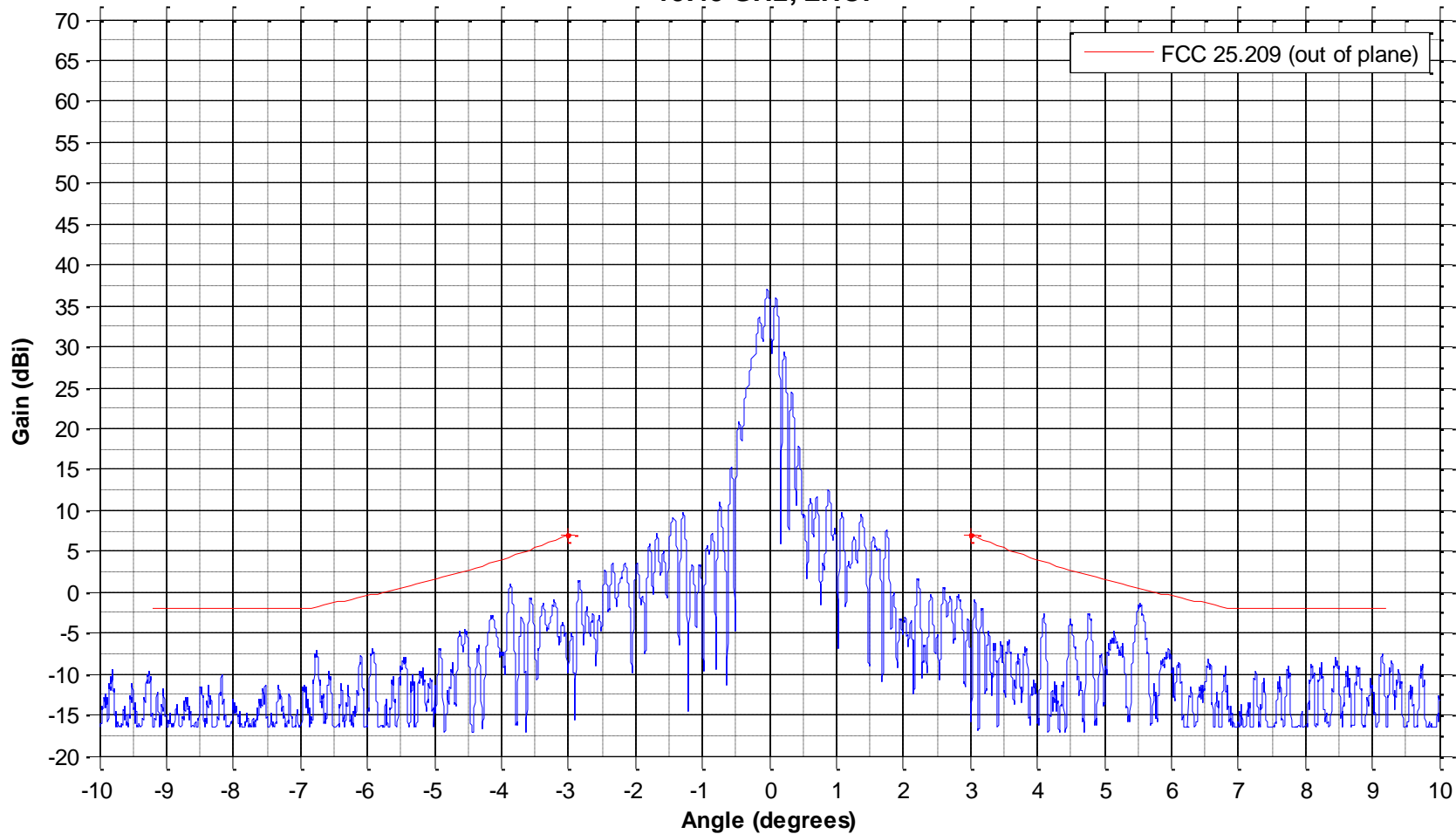
9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
19.45 GHz, LHCP



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX2_19450MHZ_CROSSPOL
Plot: 3.24

Gain: 62.95 dBi

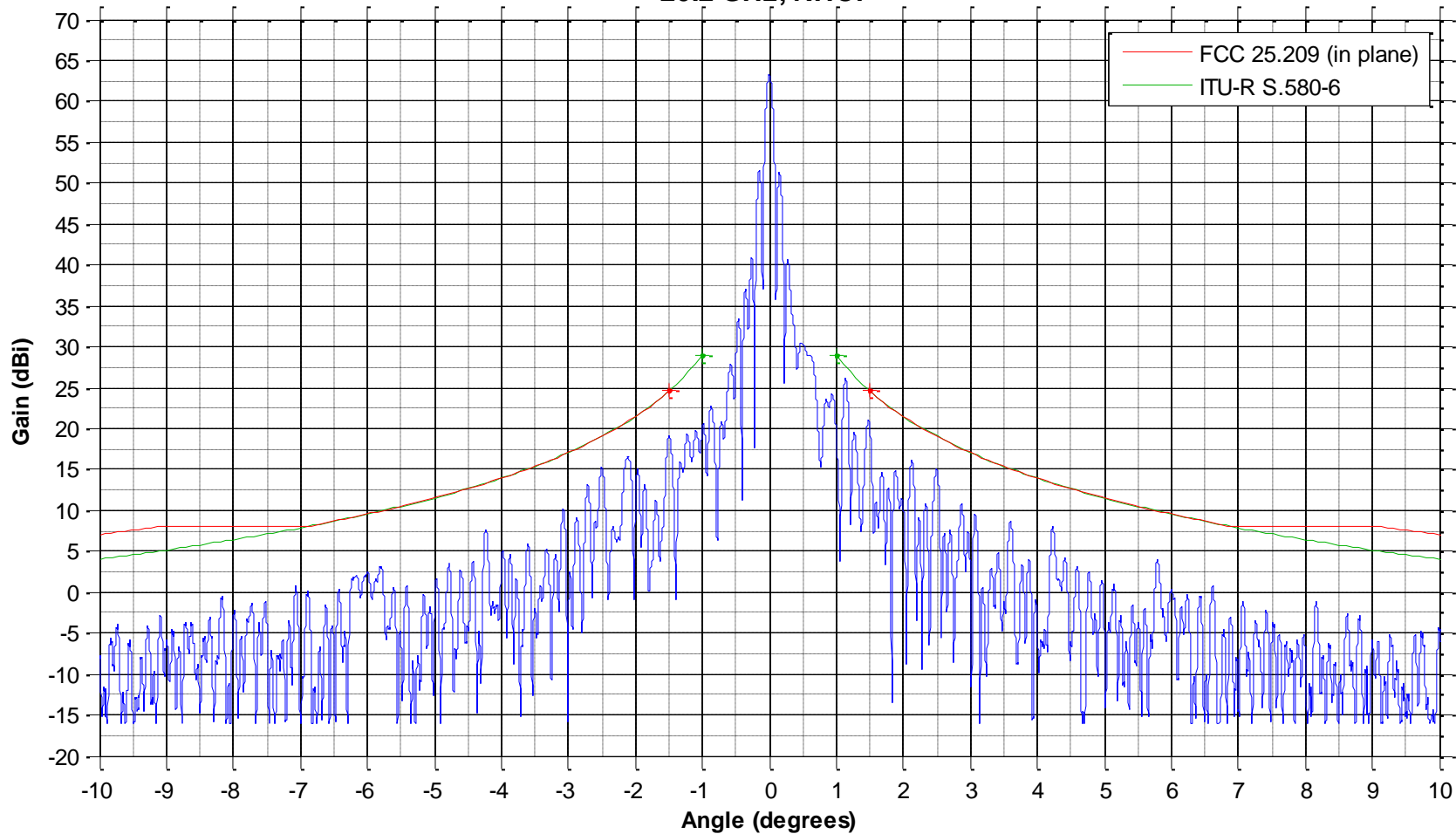
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, $\pm 10^\circ$
19.45 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX1_20200MHZ
Plot: 3.25a

Gain: 63.34 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.15°

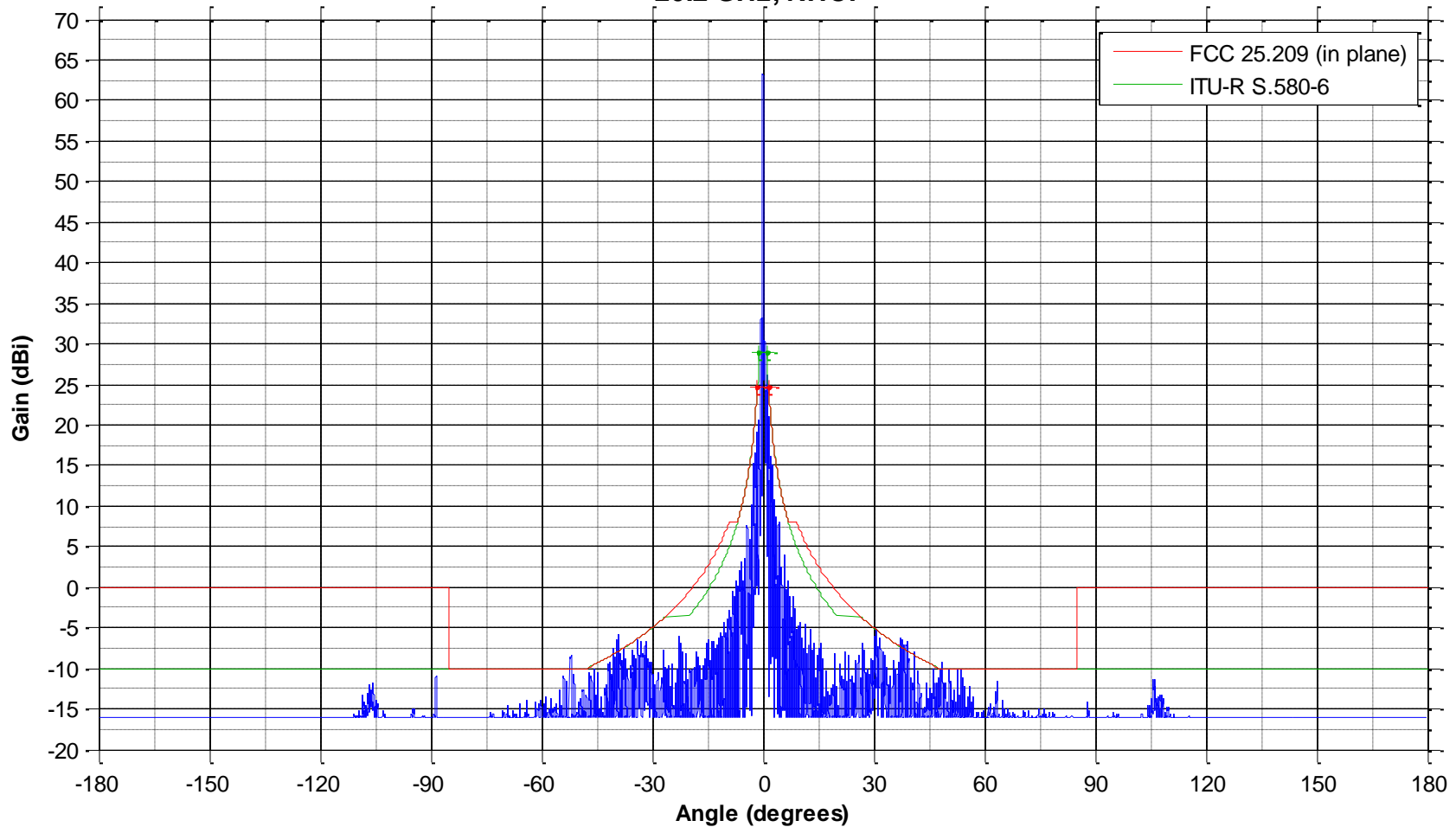
9.4m Ka-Band Earth Station Antenna Co-Pol Azimuth Radiation Pattern, ±10° 20.2 GHz, RHCP



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX1_20200MHZ
Plot: 3.25b

**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
20.2 GHz, RHCP**

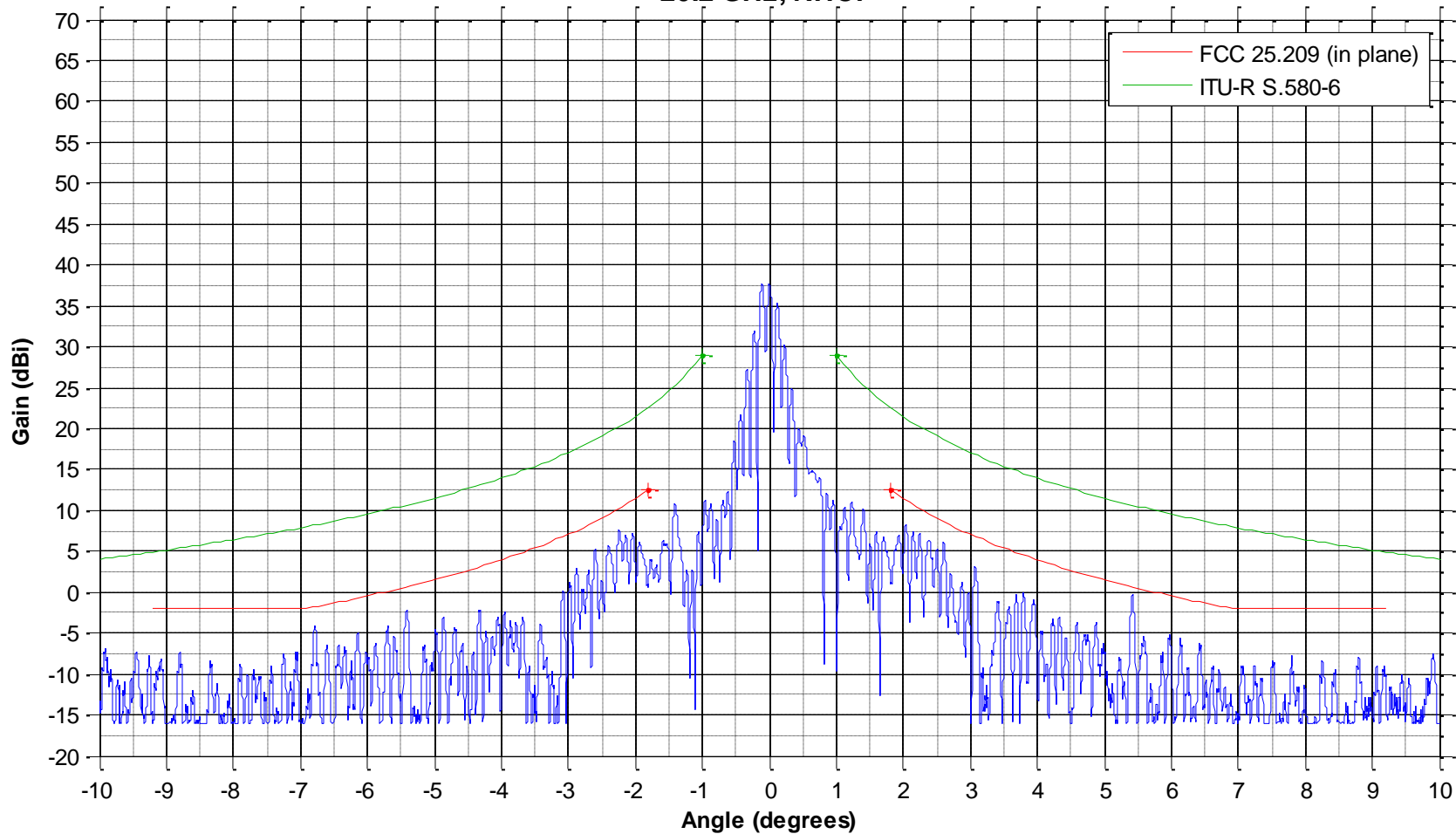
Gain: 63.34 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.15°
Excursions: 0.2% (FCC), 0.2% (ITU)
FCC Max. over: 1.97 dB at -39.06°
ITU Max. over: 1.97 dB at -39.06°



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX1_20200MHZ_CROSSPOL
Plot: 3.26

Gain: 63.34 dBi

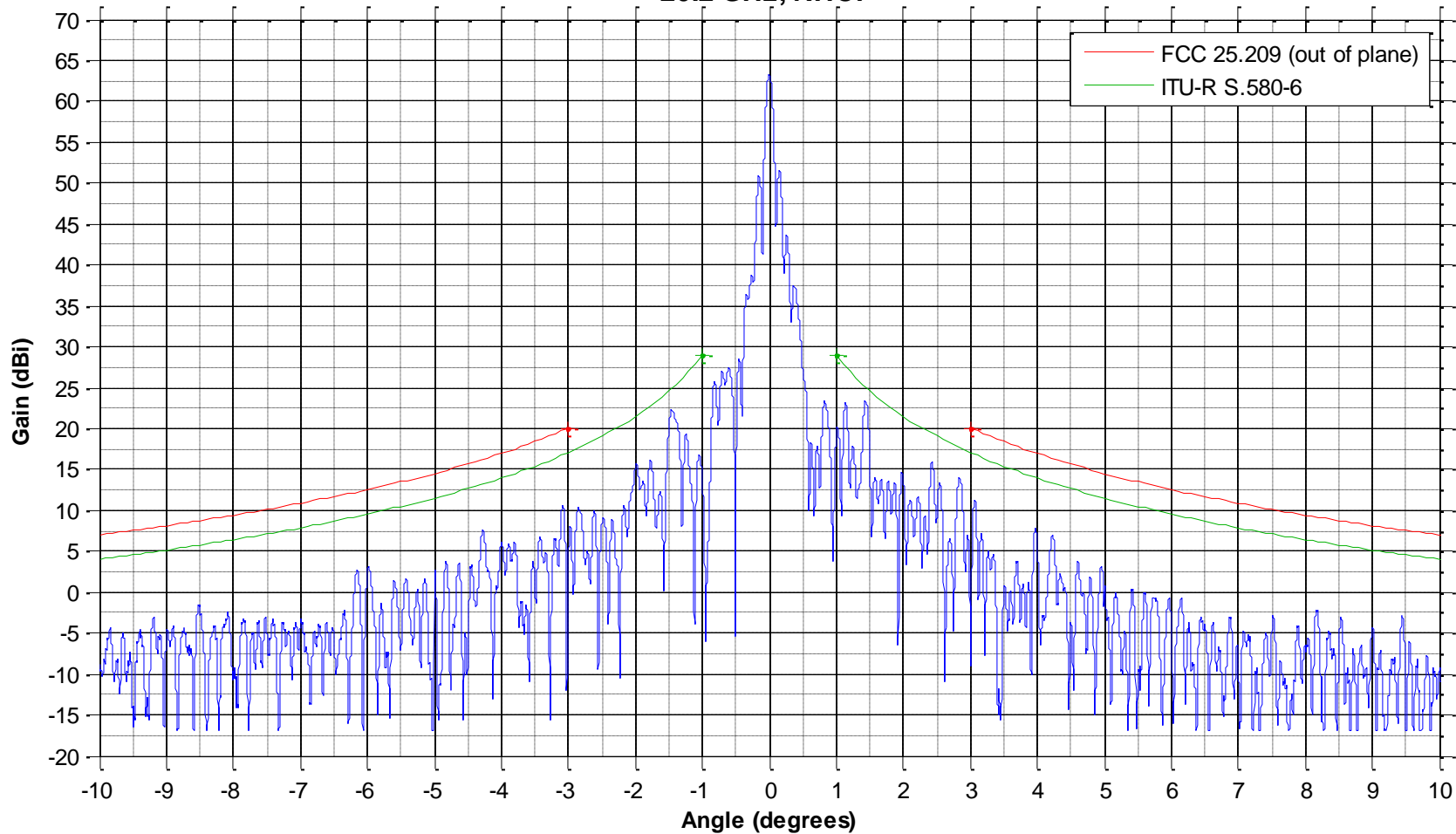
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, $\pm 10^\circ$
20.2 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX1_20200MHZ
Plot: 3.27a

Gain: 63.34 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.15°

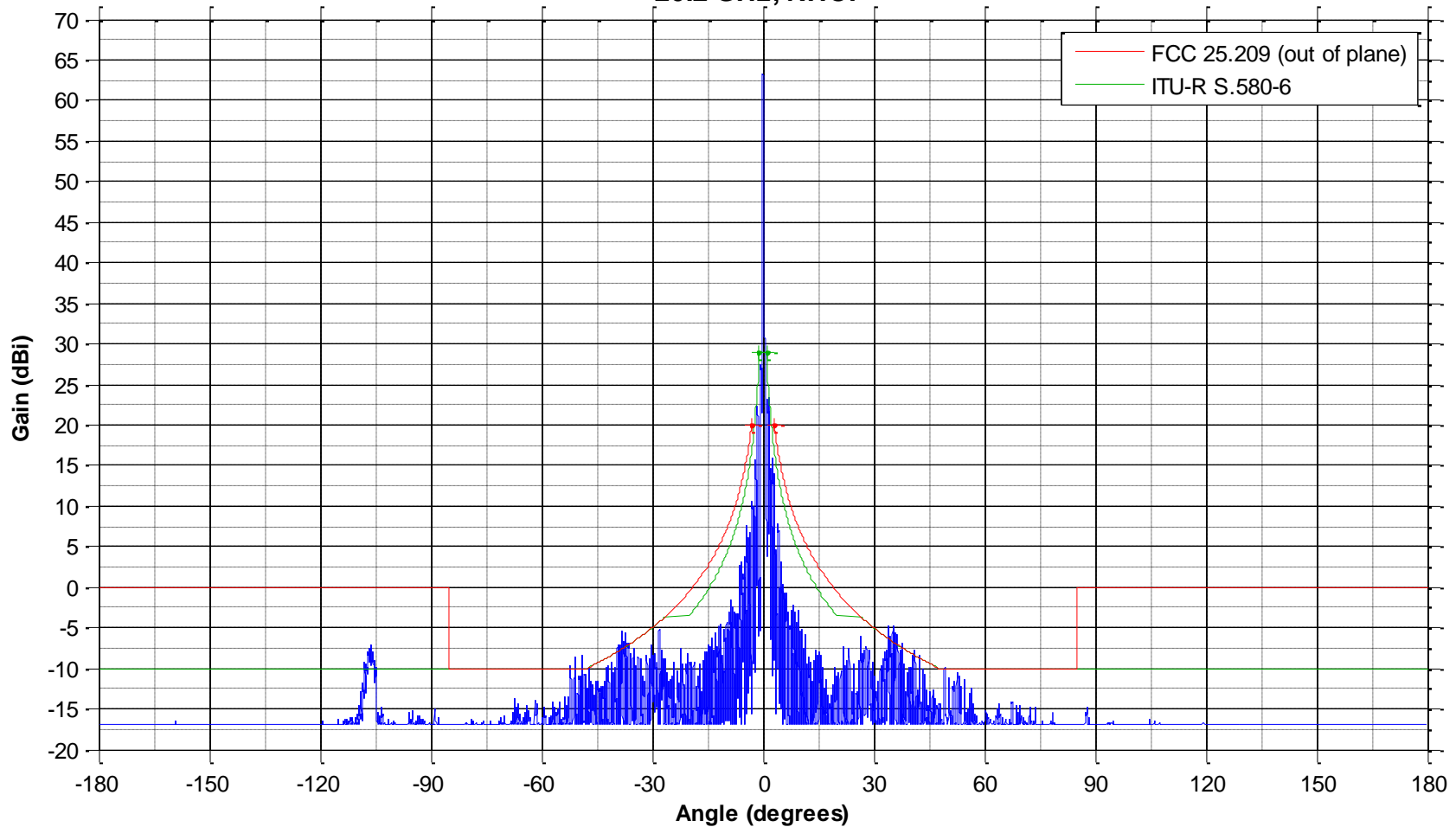
9.4m Ka-Band Earth Station Antenna Co-Pol Elevation Radiation Pattern, ±10° 20.2 GHz, RHCP



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX1_20200MHZ
Plot: 3.27b

Gain: 63.34 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.15°
Excursions: 0.4% (FCC), 1.0% (ITU)
FCC Max. over: 2.16 dB at -38.19°
ITU Max. over: 2.87 dB at -106.19°

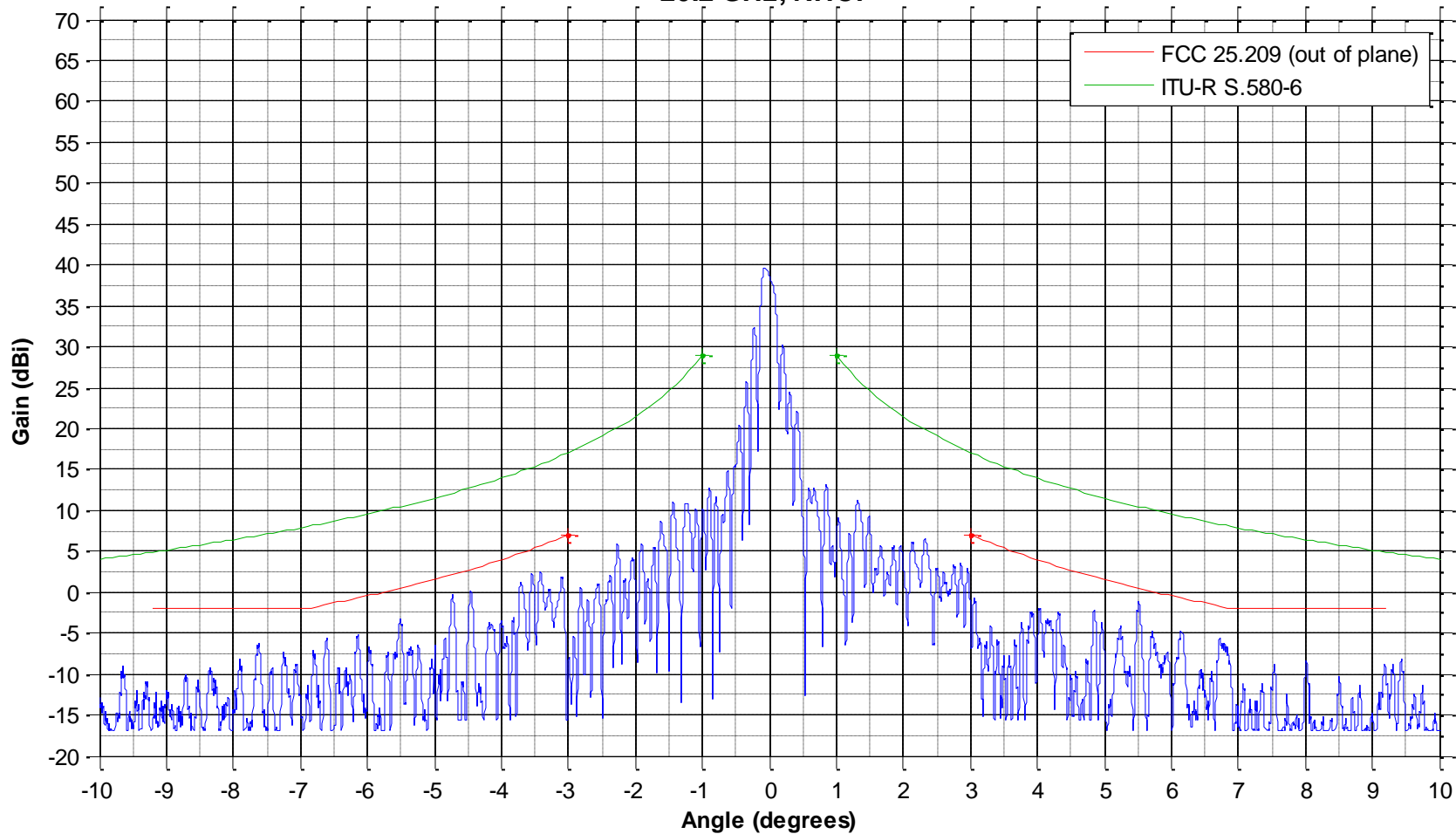
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
20.2 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX1_20200MHZ_CROSSPOL
Plot: 3.28

Gain: 63.34 dBi

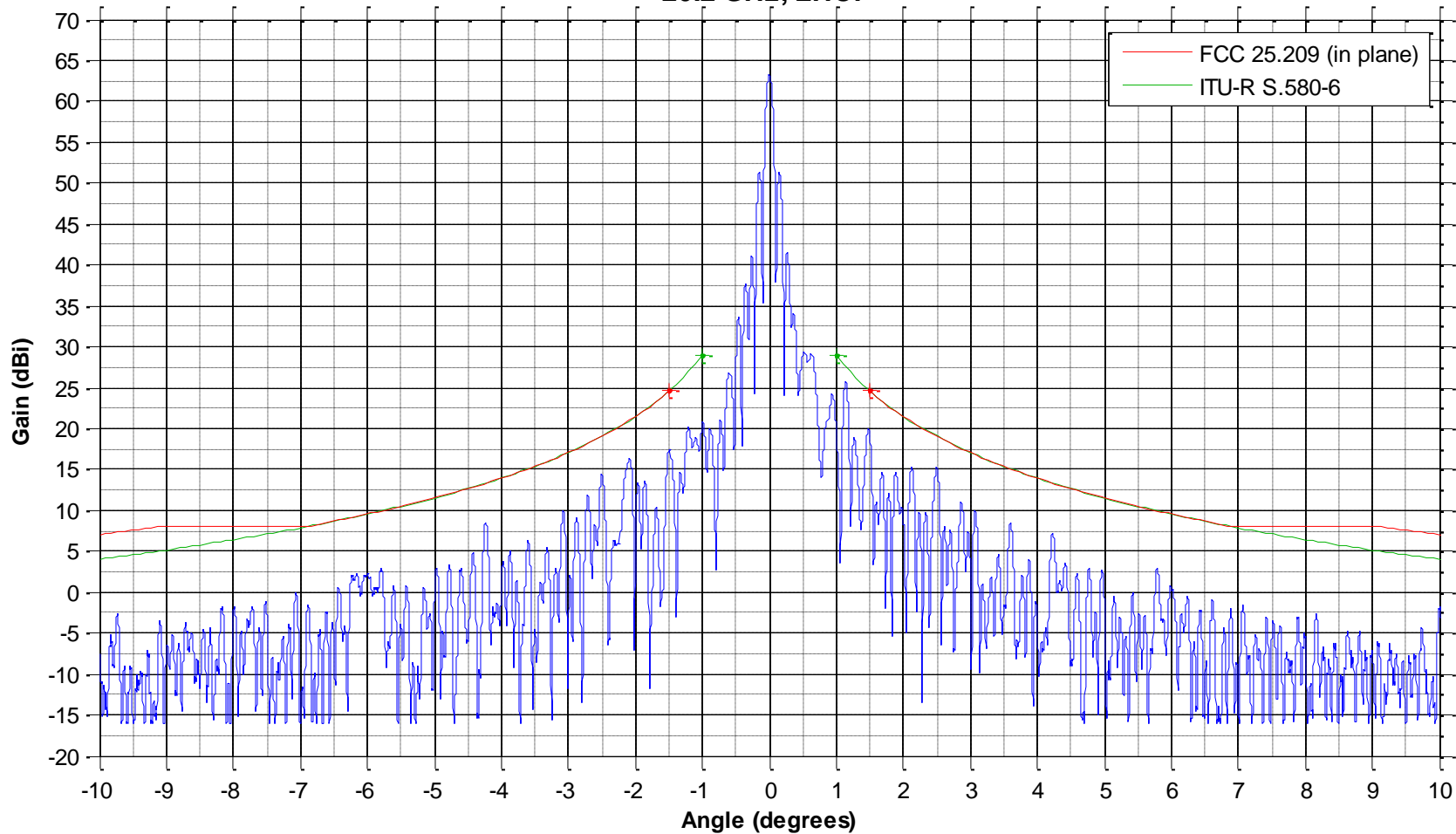
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, ±10°
20.2 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX2_20200MHZ
Plot: 3.29a

Gain: 63.34 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.15°

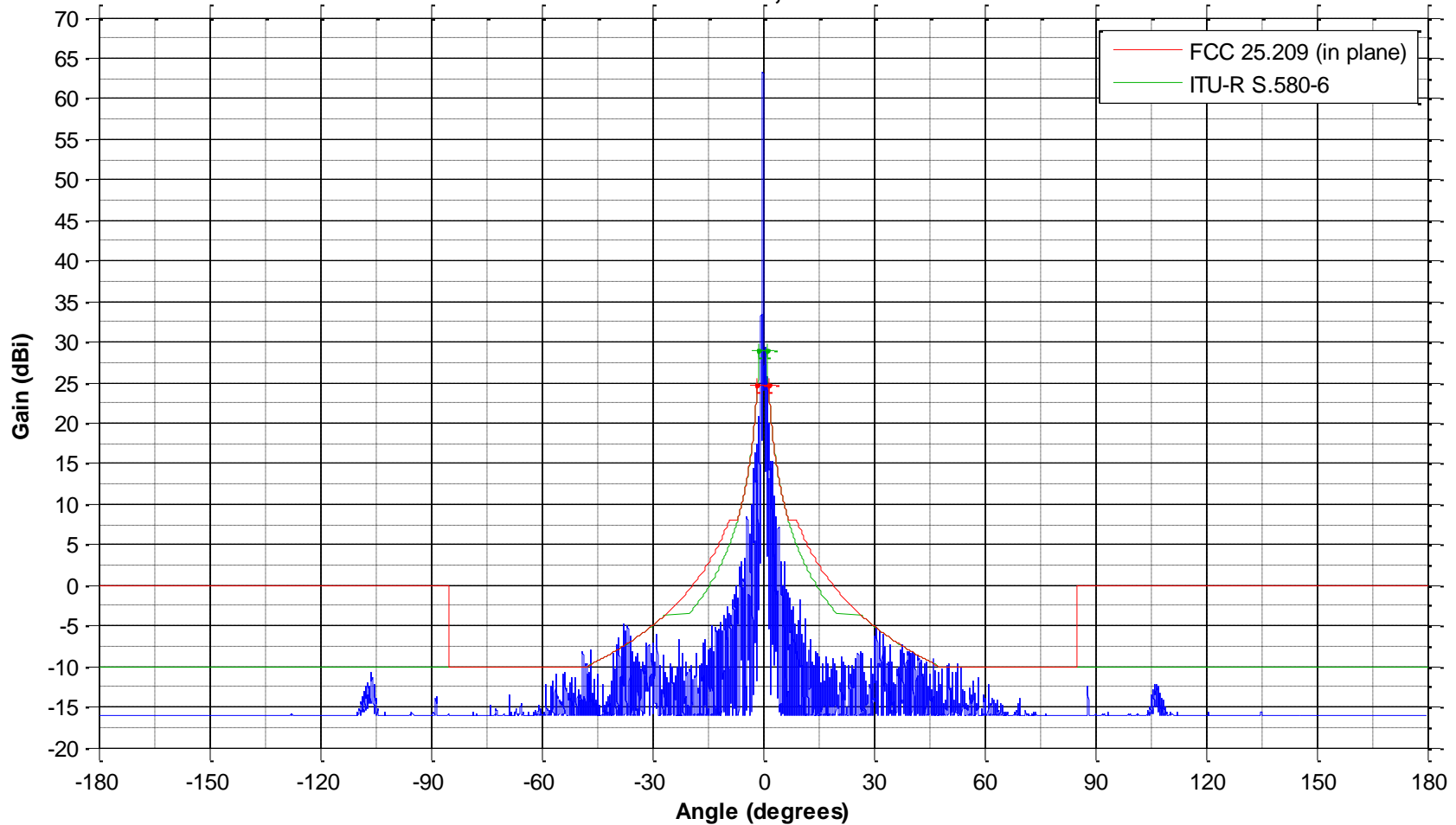
9.4m Ka-Band Earth Station Antenna Co-Pol Azimuth Radiation Pattern, ±10° 20.2 GHz, LHCP



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX2_20200MHZ
Plot: 3.29b

Gain: 63.34 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.15°
Excursions: 0.2% (FCC), 0.2% (ITU)
FCC Max. over: 2.73 dB at -37.79°
ITU Max. over: 2.73 dB at -37.79°

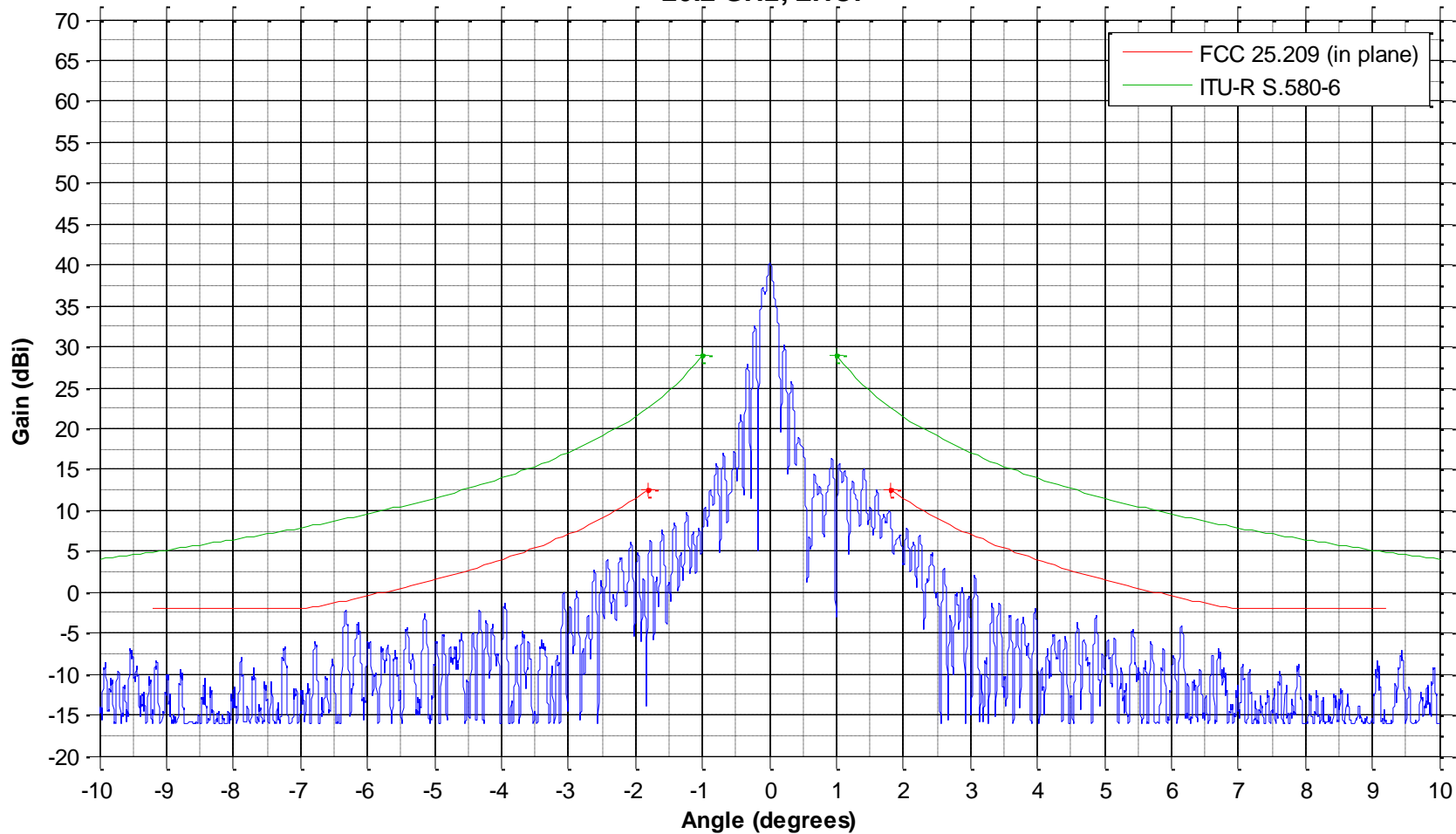
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
20.2 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX2_20200MHZ_CROSSPOL
Plot: 3.30

Gain: 63.34 dBi

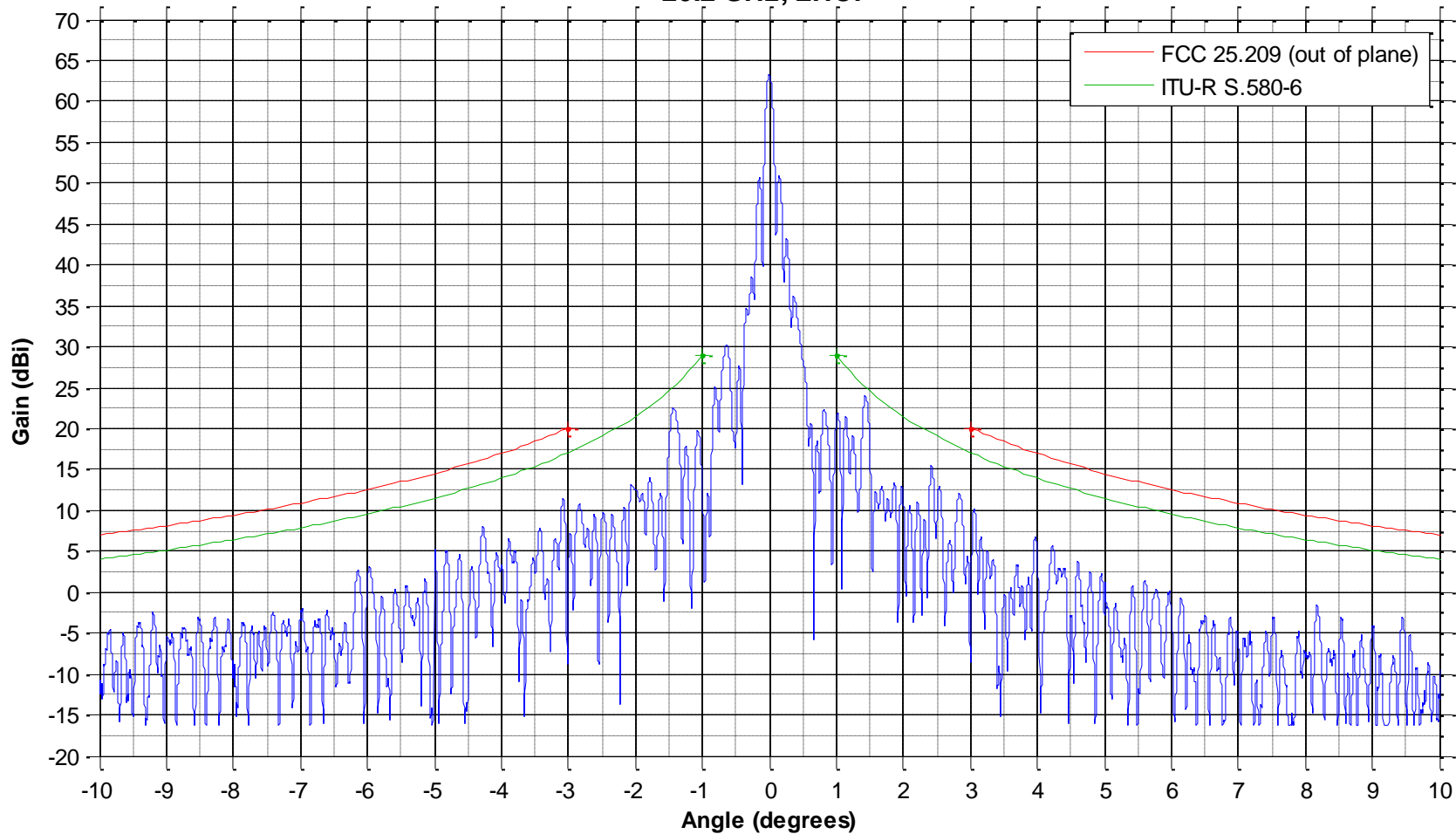
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, $\pm 10^\circ$
20.2 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX2_20200MHZ
Plot: 3.31a

Gain: 63.34 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.15°

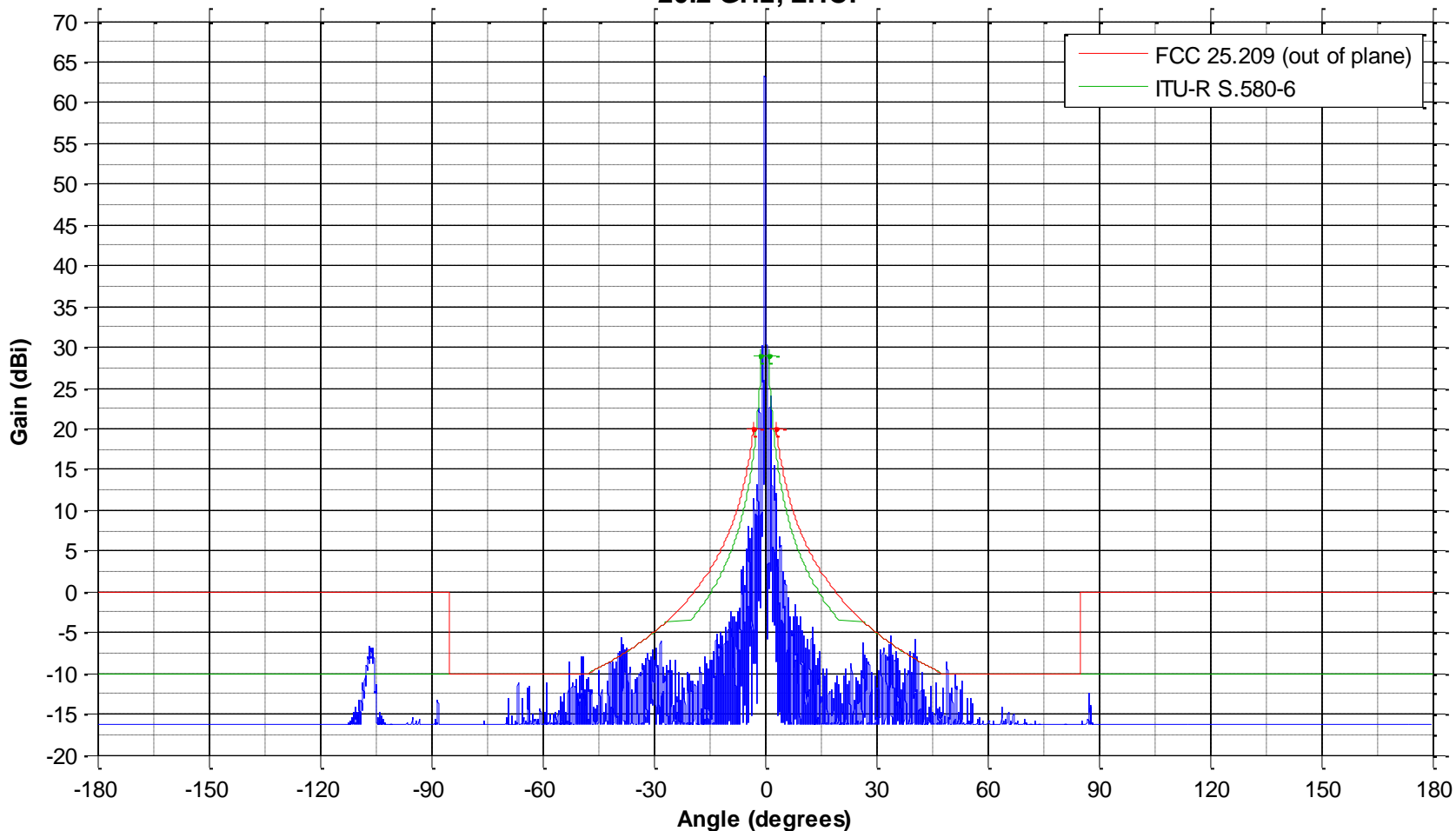
9.4m Ka-Band Earth Station Antenna Co-Pol Elevation Radiation Pattern, ±10° 20.2 GHz, LHCP



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX2_20200MHZ
Plot: 3.31b

Gain: 63.34 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.15°
Excursions: 0.3% (FCC), 0.9% (ITU)
FCC Max. over: 2.43 dB at 40.62°
ITU Max. over: 3.27 dB at -106.54°

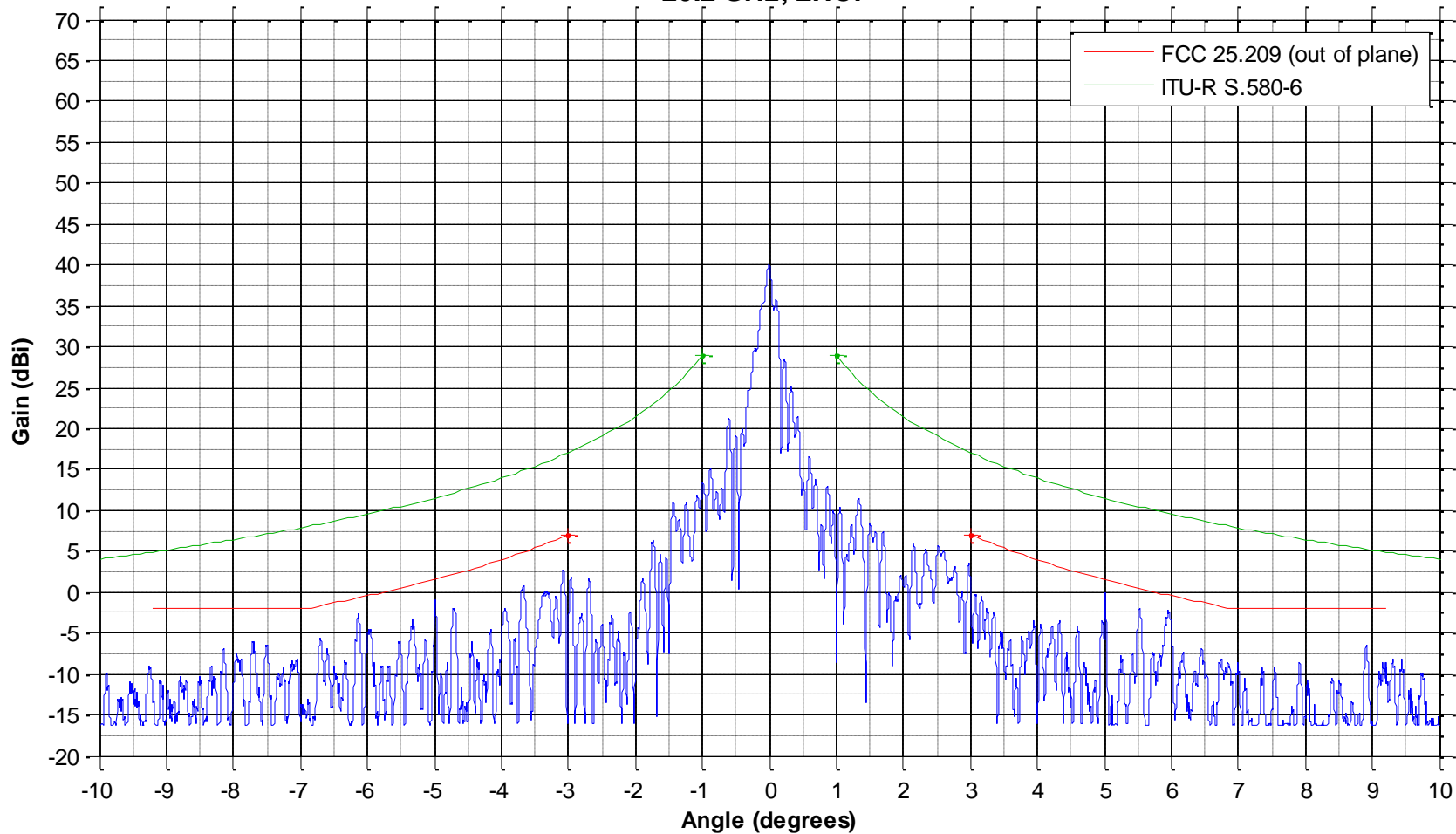
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
20.2 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX2_20200MHZ_CROSSPOL
Plot: 3.32

Gain: 63.34 dBi

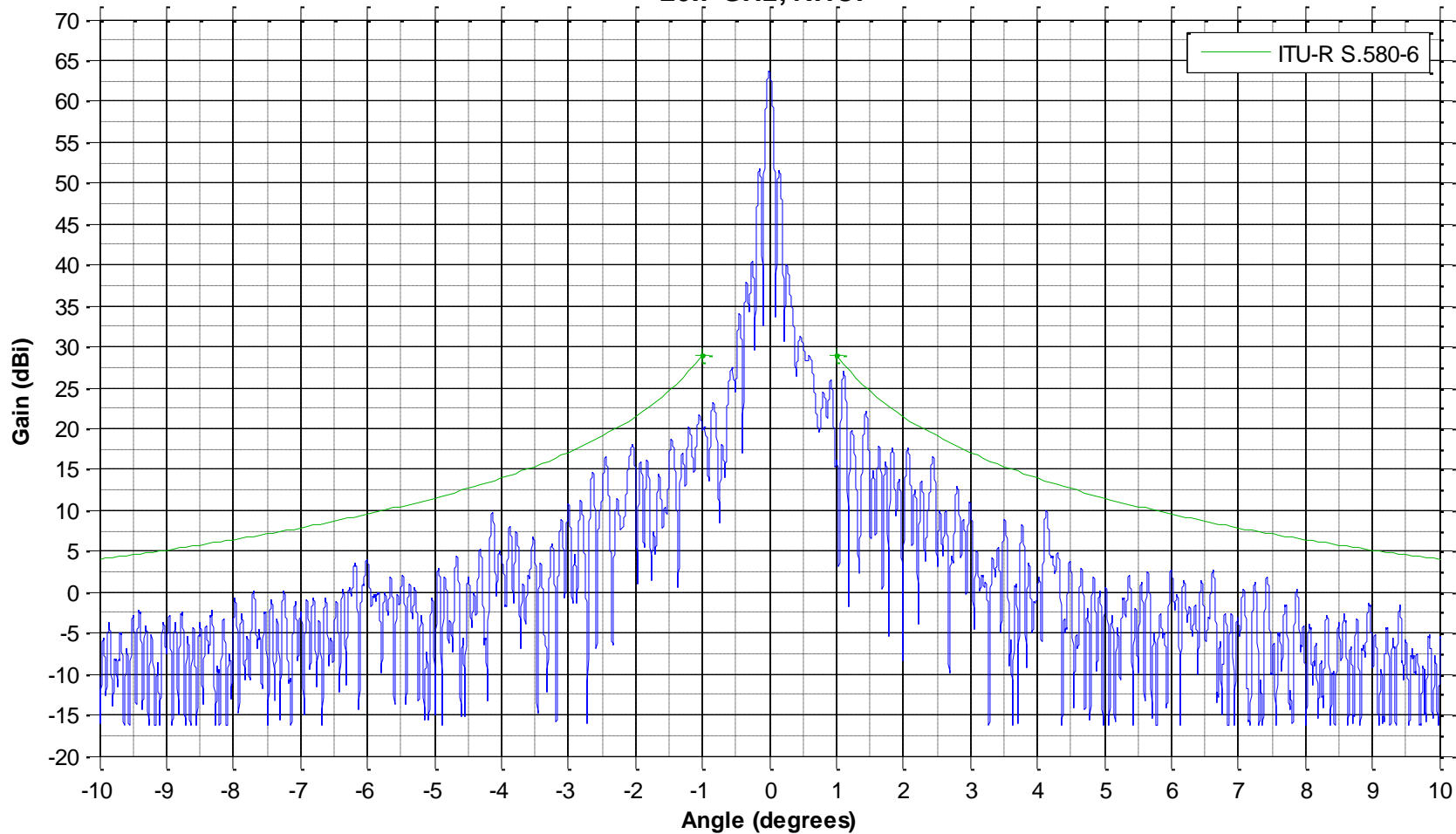
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, $\pm 10^\circ$
20.2 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX1_20700MHZ
Plot: 3.33a

Gain: 63.62 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.15°

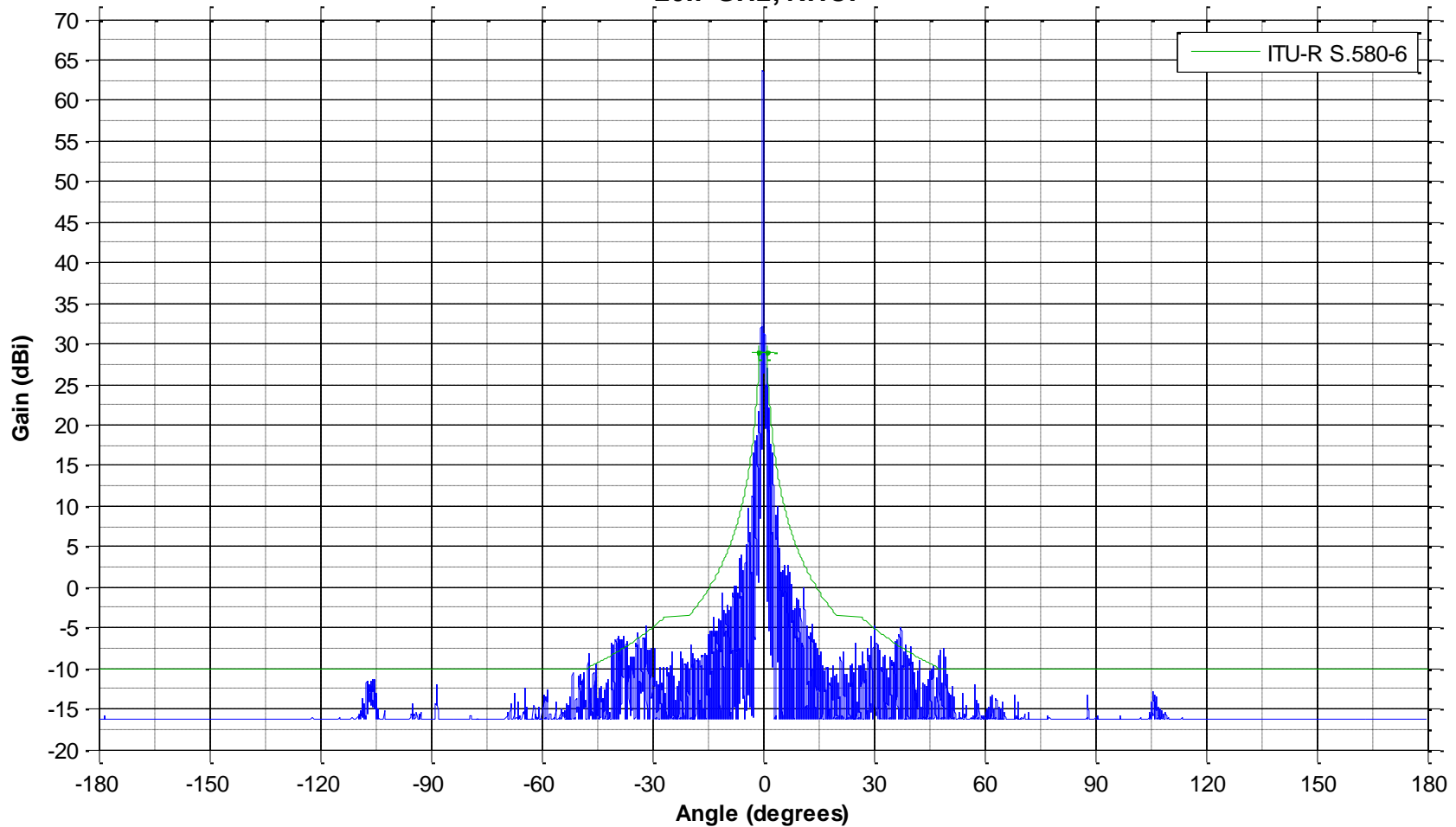
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±10°
20.7 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX1_20700MHZ
Plot: 3.33b

Gain: 63.62 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.15°
Excursions: 0.4%
Max. over: 2.48 dB at 49.05°

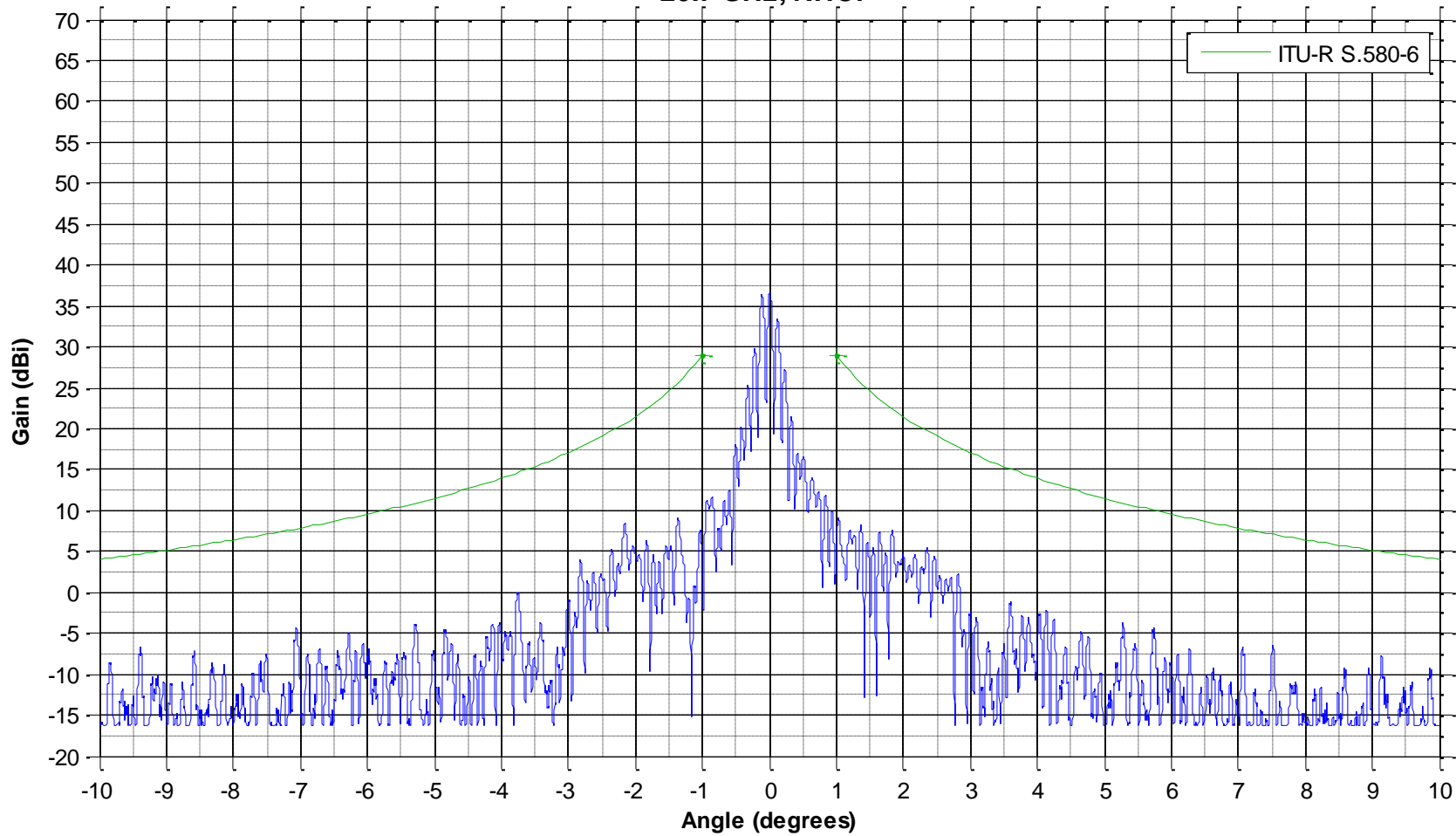
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
20.7 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX1_20700MHZ_CROSSPOL
Plot: 3.34

Gain: 63.62 dBi

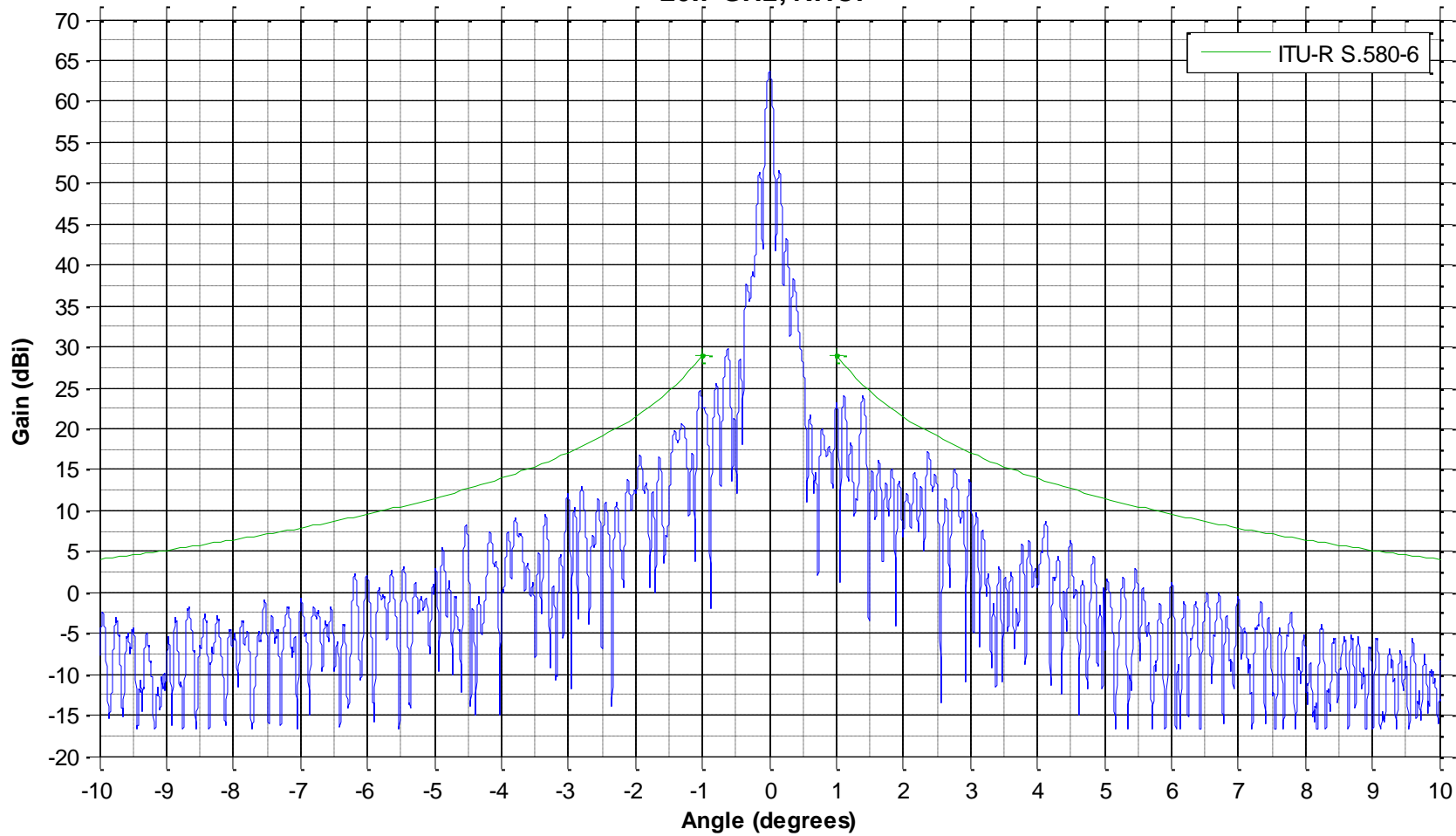
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, $\pm 10^\circ$
20.7 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX1_20700MHZ
Plot: 3.35a

Gain: 63.62 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.15°

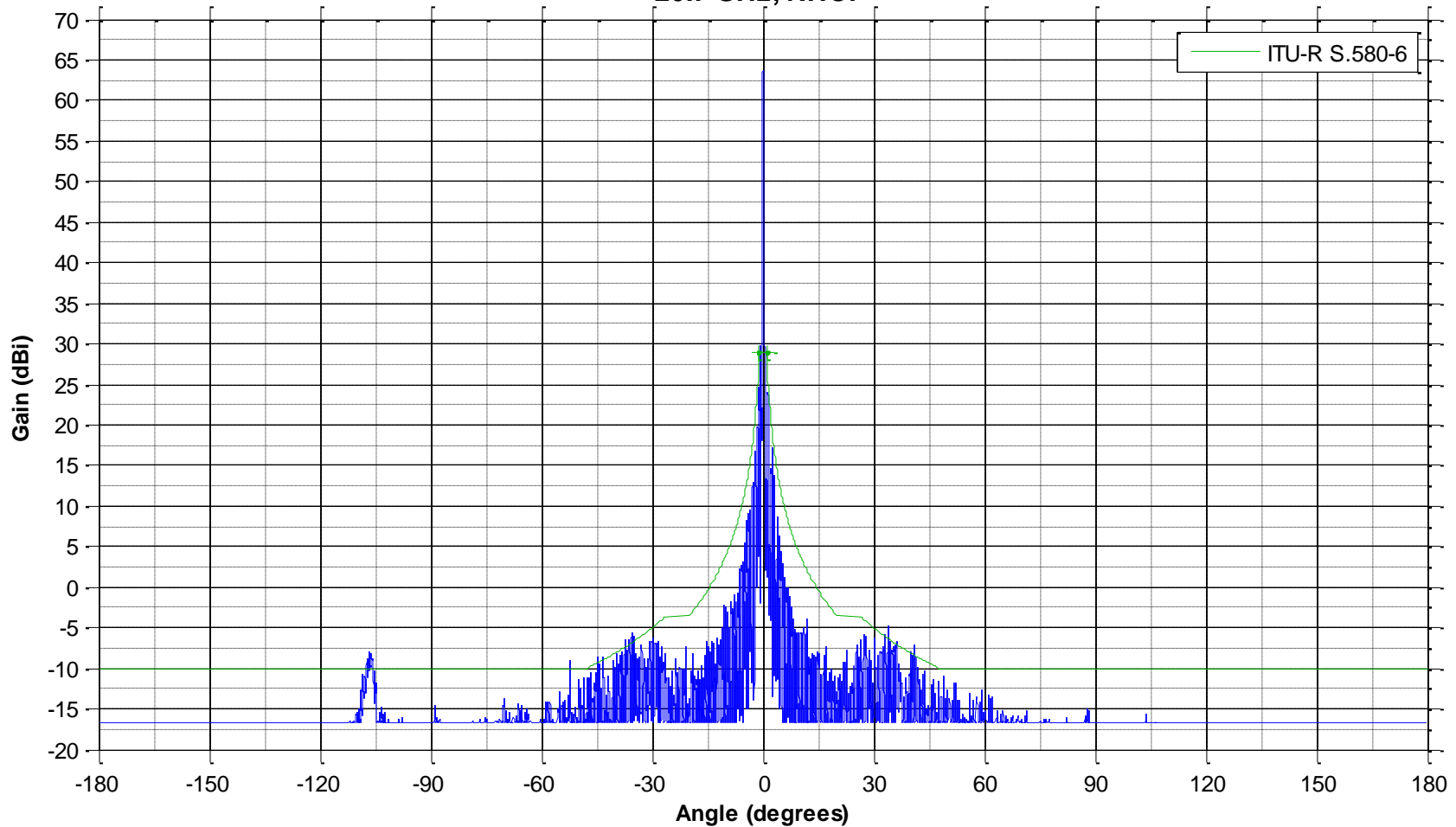
9.4m Ka-Band Earth Station Antenna Co-Pol Elevation Radiation Pattern, ±10° 20.7 GHz, RHCP



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX1_20700MHZ
Plot: 3.35b

Gain: 63.62 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.15°
Excursions: 0.5%
Max. over: 2.07 dB at -106.50°

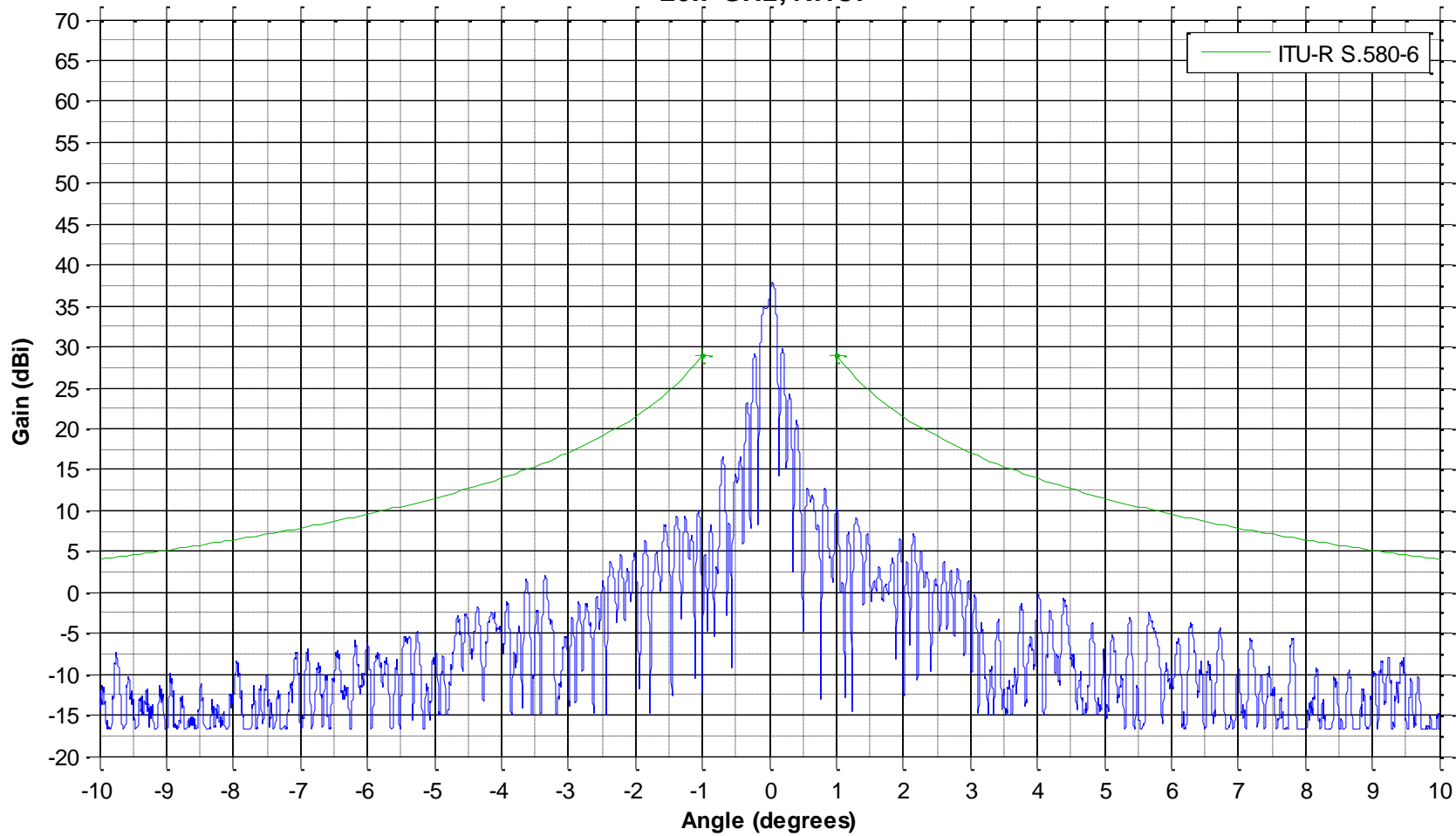
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
20.7 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX1_20700MHZ_CROSSPOL
Plot: 3.36

Gain: 63.62 dBi

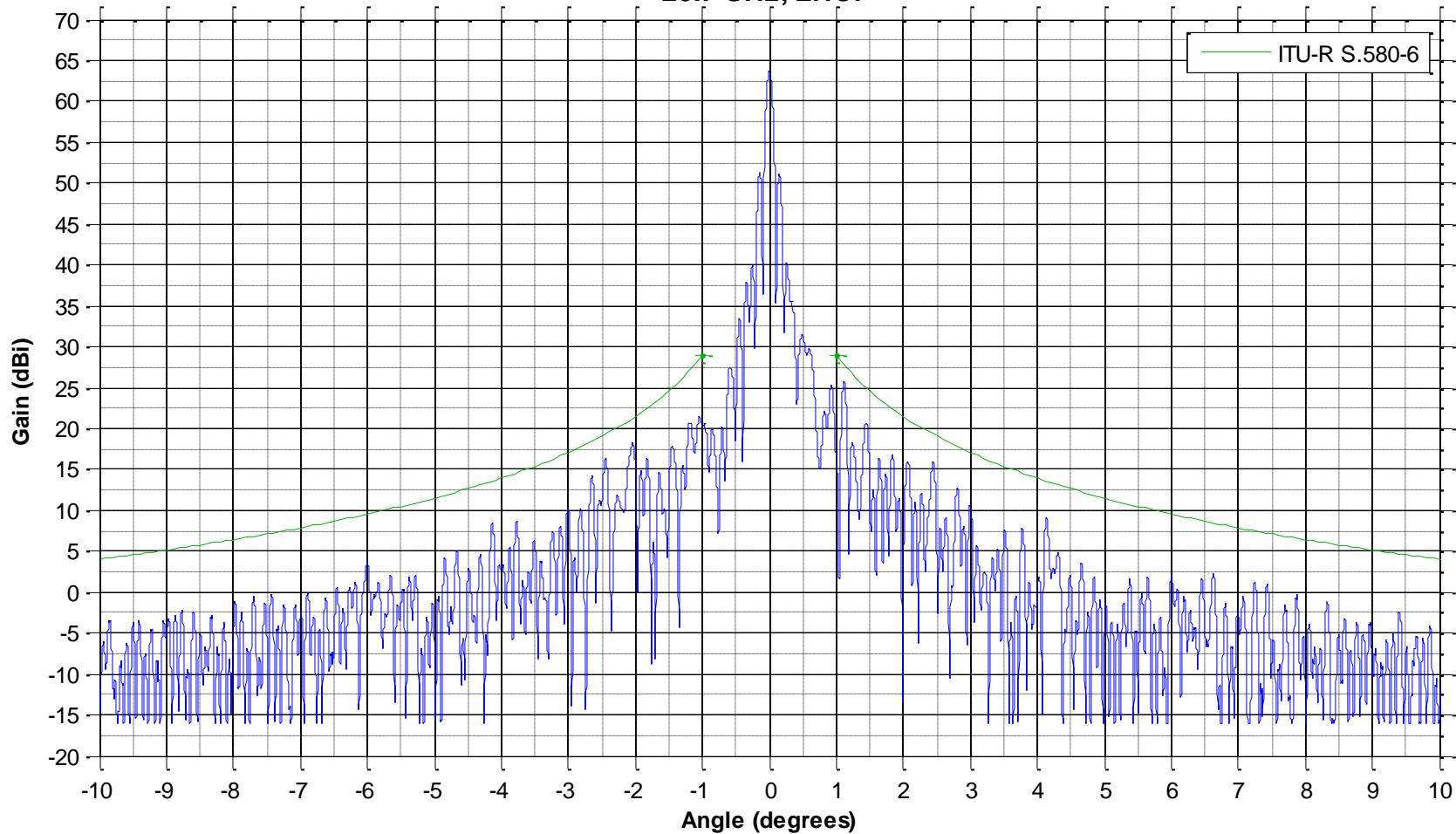
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, ±10°
20.7 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX2_20700MHZ
Plot: 3.37a

Gain: 63.62 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.15°

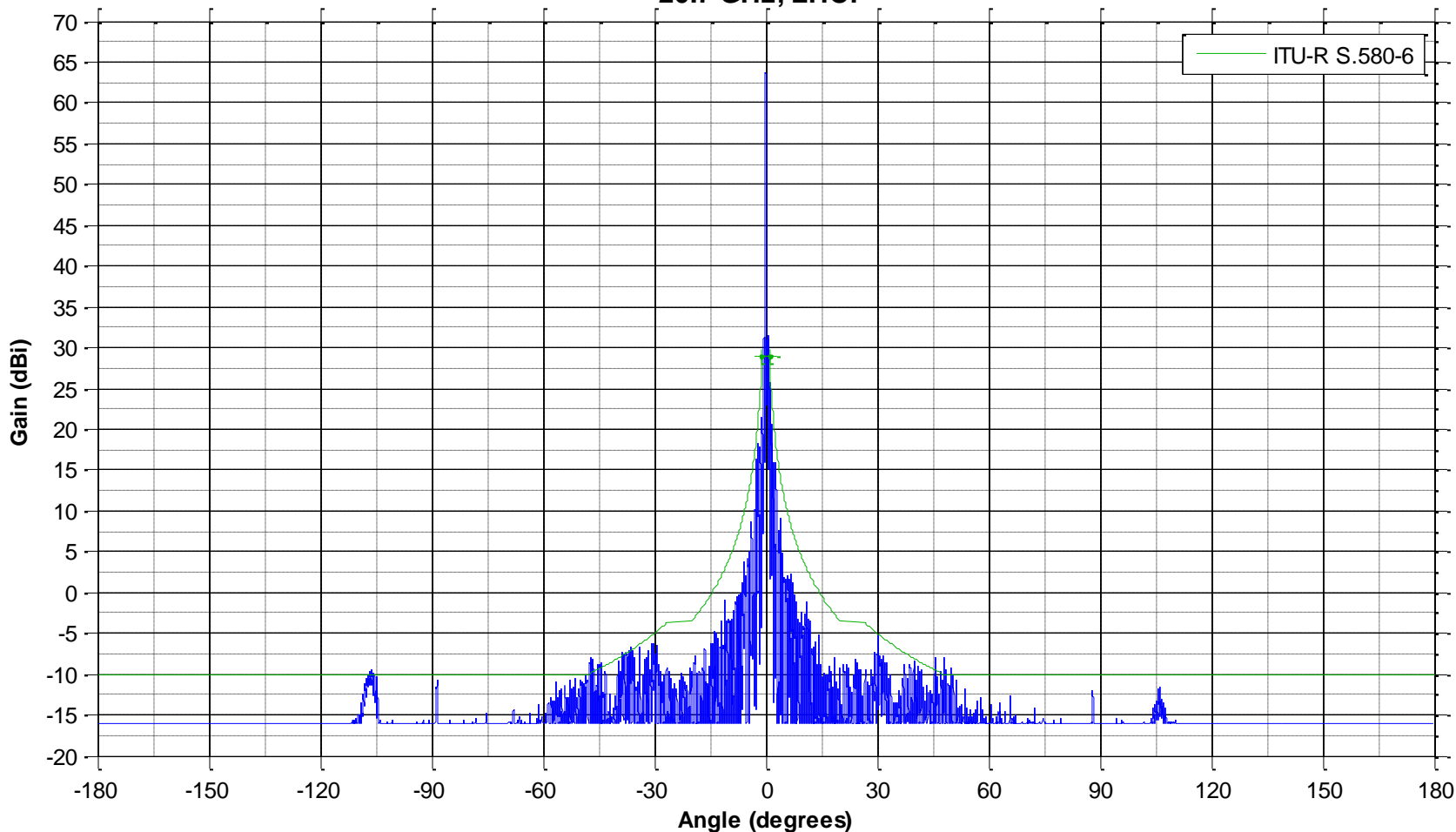
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±10°
20.7 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX2_20700MHZ
Plot: 3.37b

Gain: 63.62 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.15°
Excursions: 0.2%
Max. over: 2.00 dB at 48.15°

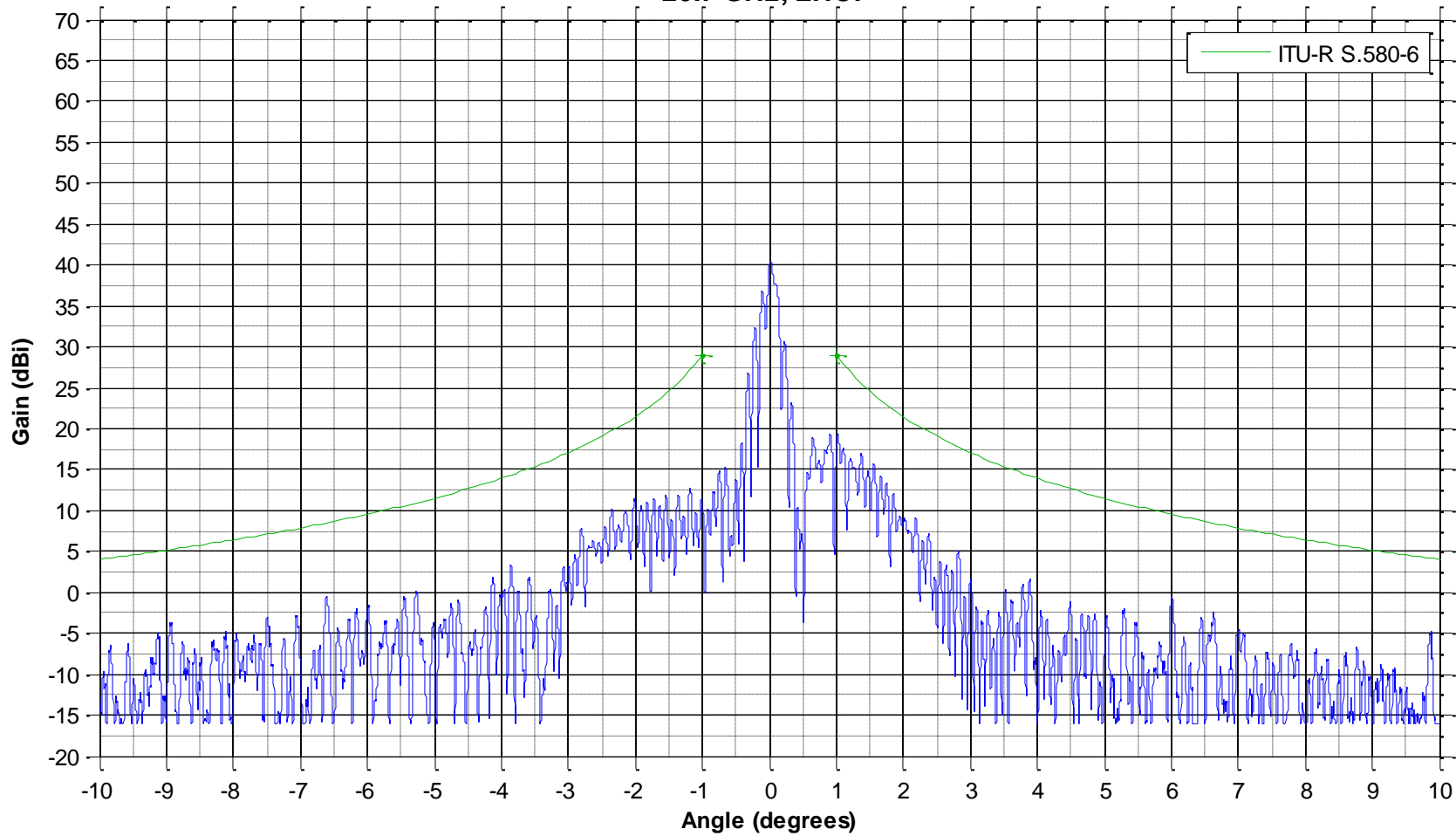
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
20.7 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX2_20700MHZ_CROSSPOL
Plot: 3.38

Gain: 63.62 dBi

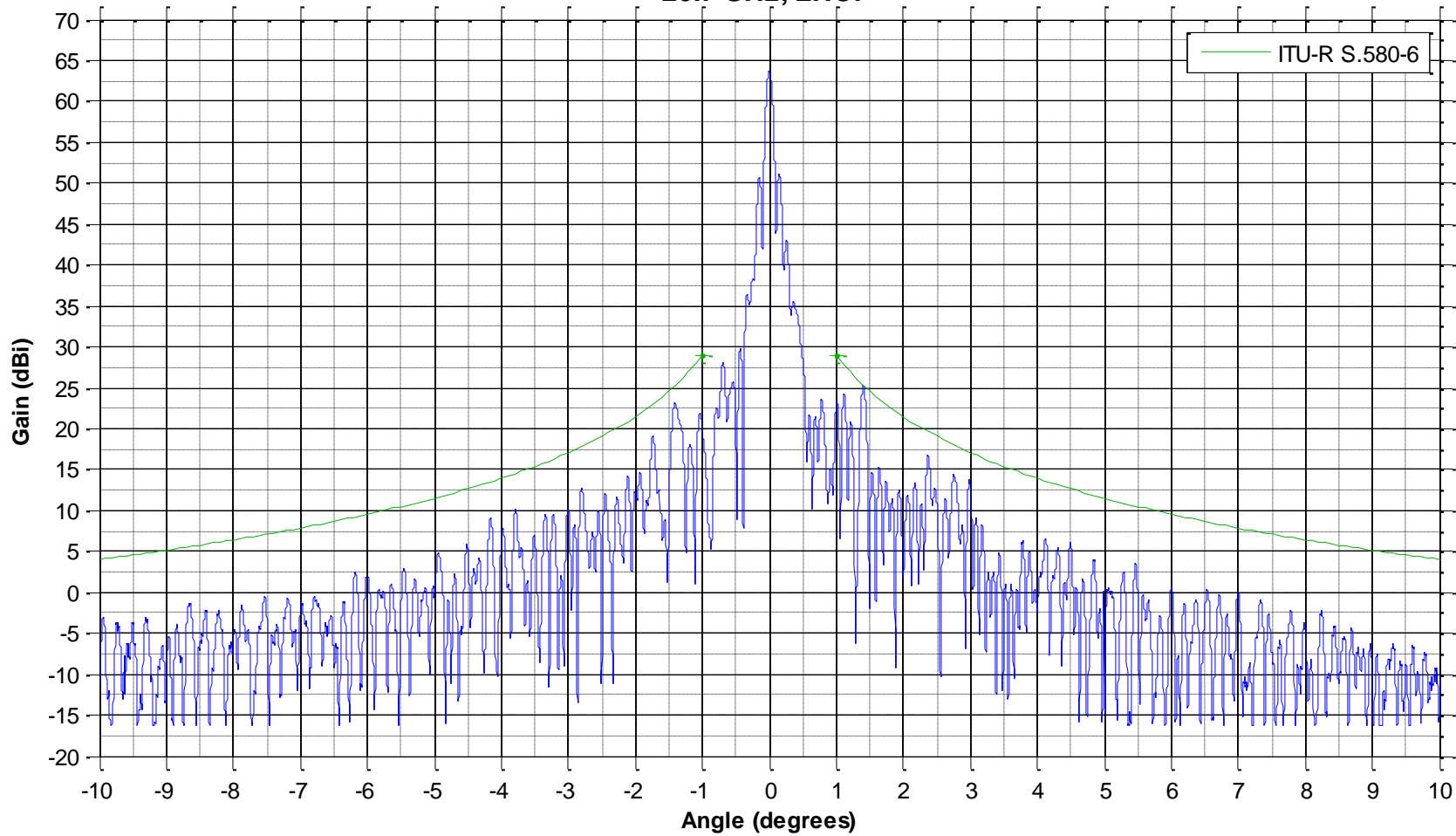
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, $\pm 10^\circ$
20.7 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX2_20700MHZ
Plot: 3.39a

Gain: 63.62 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.15°

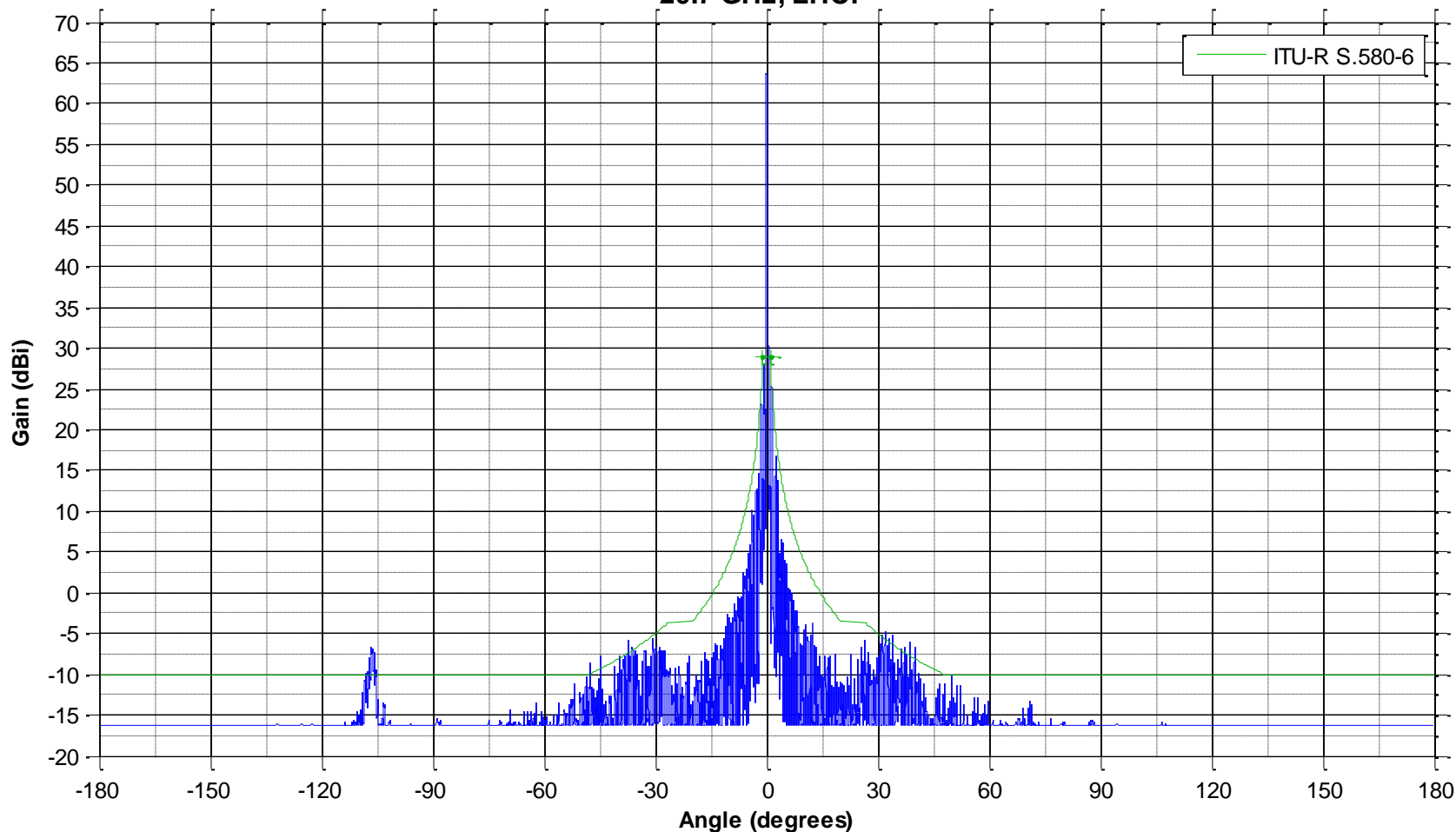
9.4m Ka-Band Earth Station Antenna Co-Pol Elevation Radiation Pattern, ±10° 20.7 GHz, LHCP



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX2_20700MHZ
Plot: 3.39b

Gain: 63.62 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.15°
Excursions: 0.6%
Max. over: 3.37 dB at -106.69°

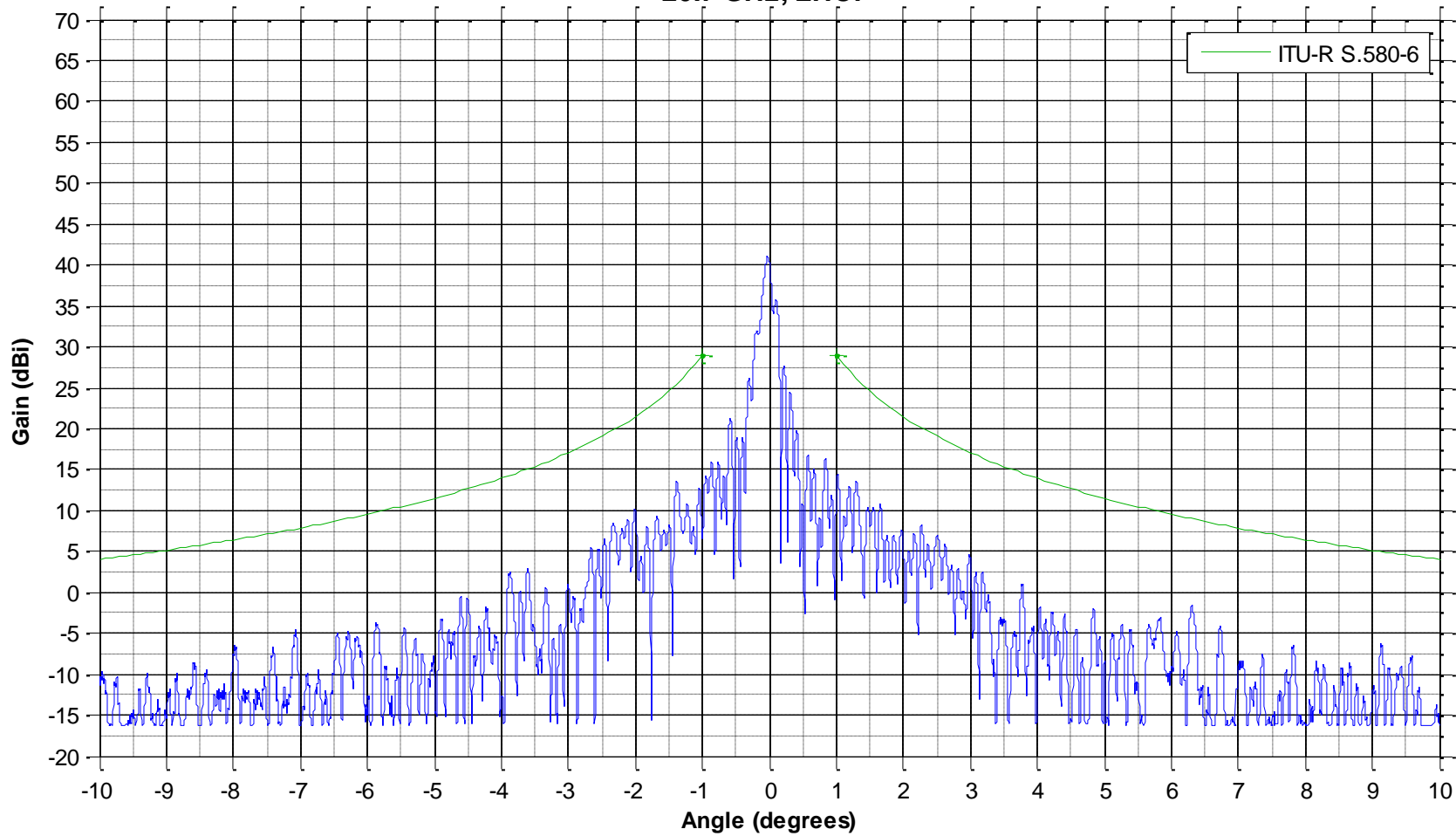
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
20.7 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX2_20700MHZ_CROSSPOL
Plot: 3.40

Gain: 63.62 dBi

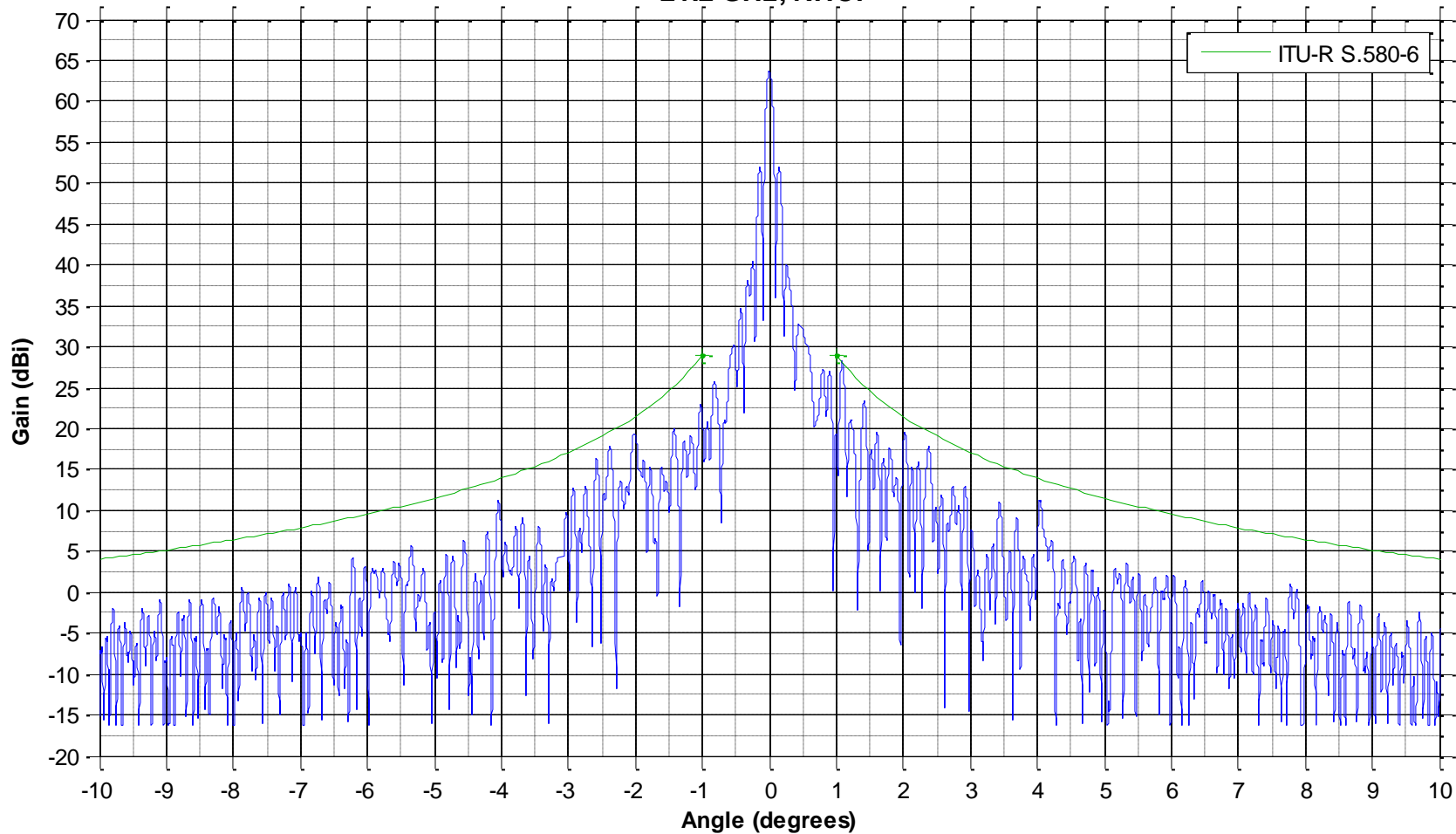
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, $\pm 10^\circ$
20.7 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX1_21200MHZ
Plot: 3.41a

Gain: 63.74 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.14°

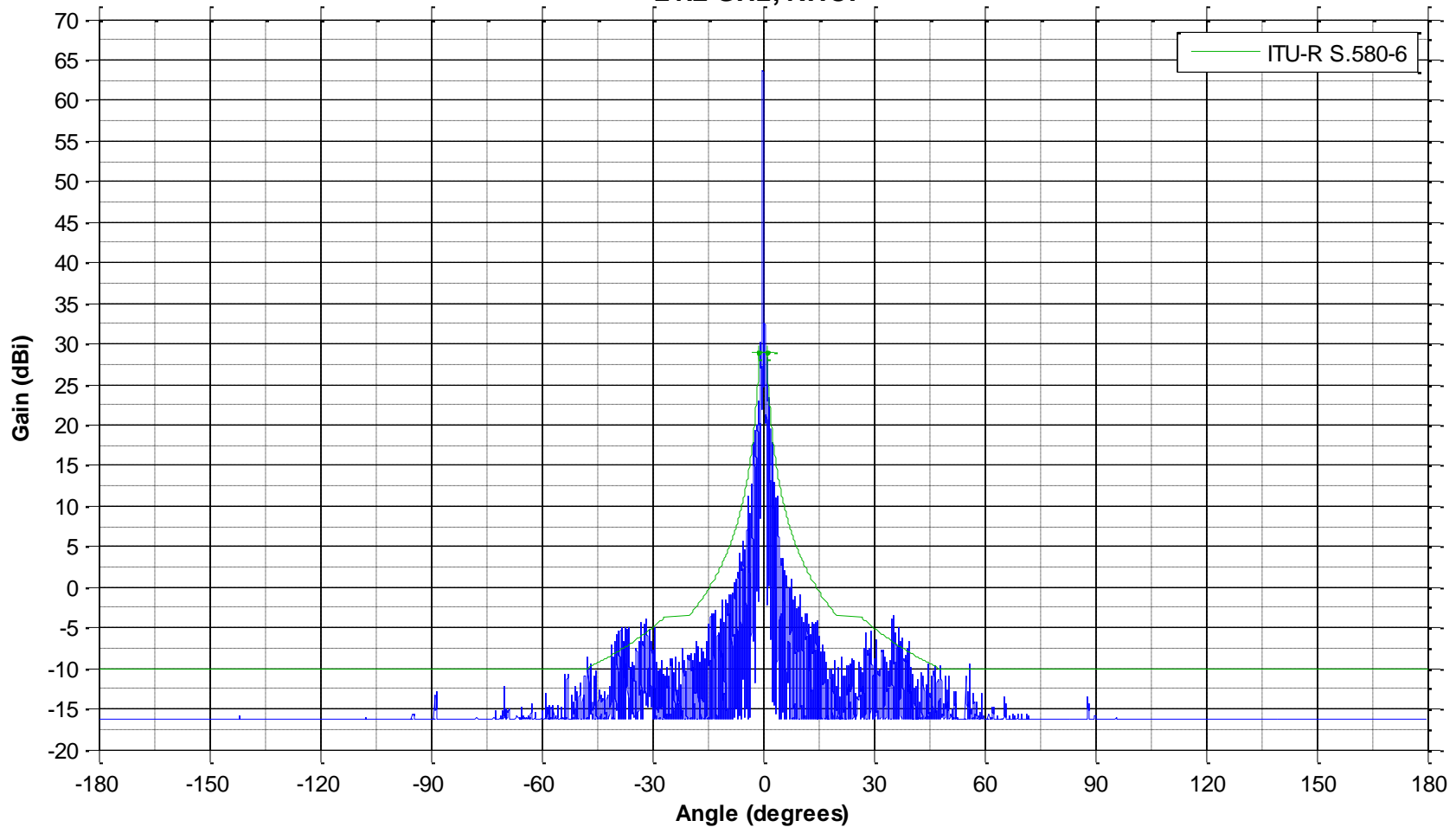
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±10°
21.2 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX1_21200MHZ
Plot: 3.41b

Gain: 63.74 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.14°
Excursions: 0.5%
Max. over: 3.35 dB at 35.48°

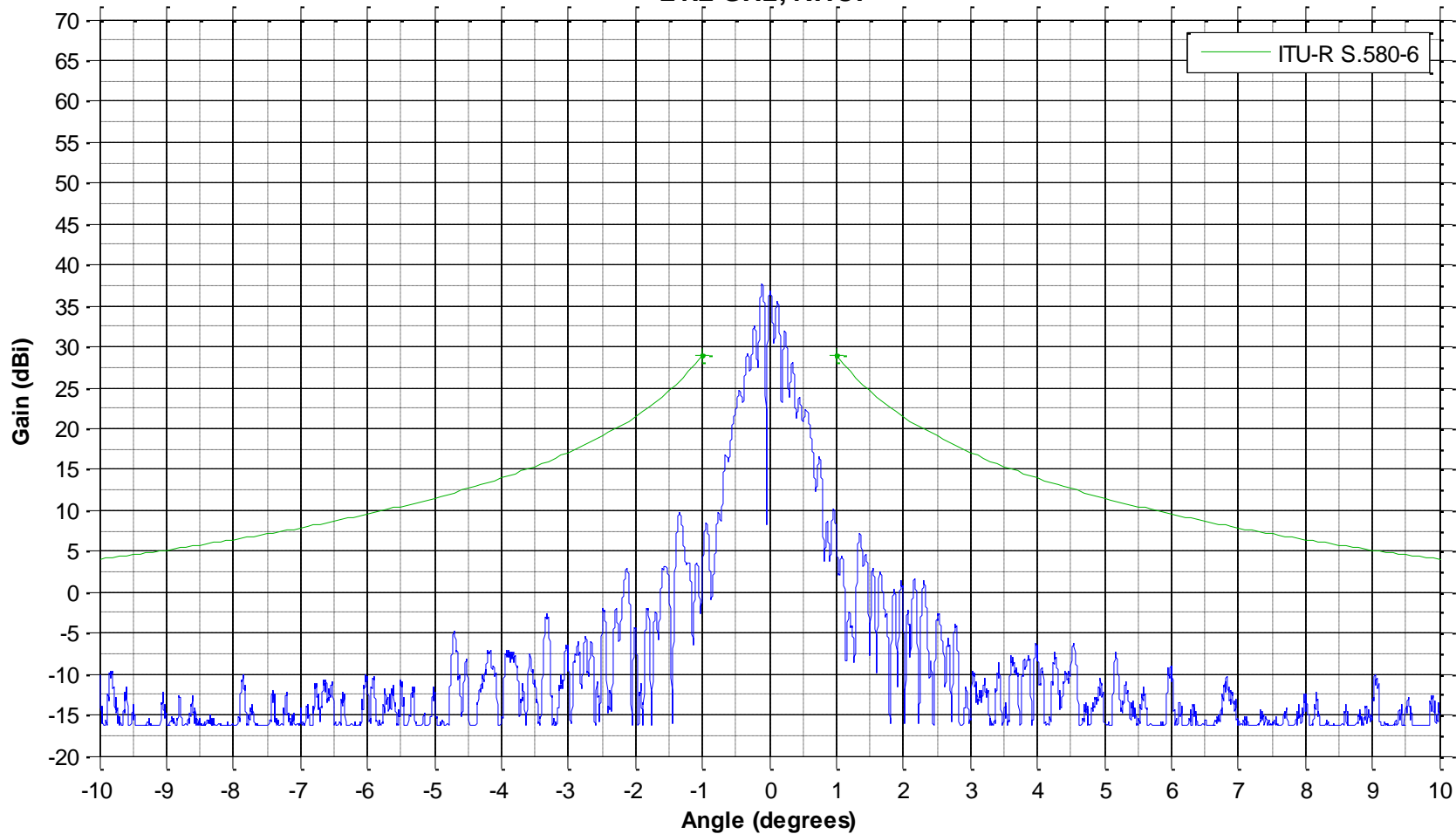
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
21.2 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX1_21200MHZ_CROSSPOL
Plot: 3.42

Gain: 63.74 dBi

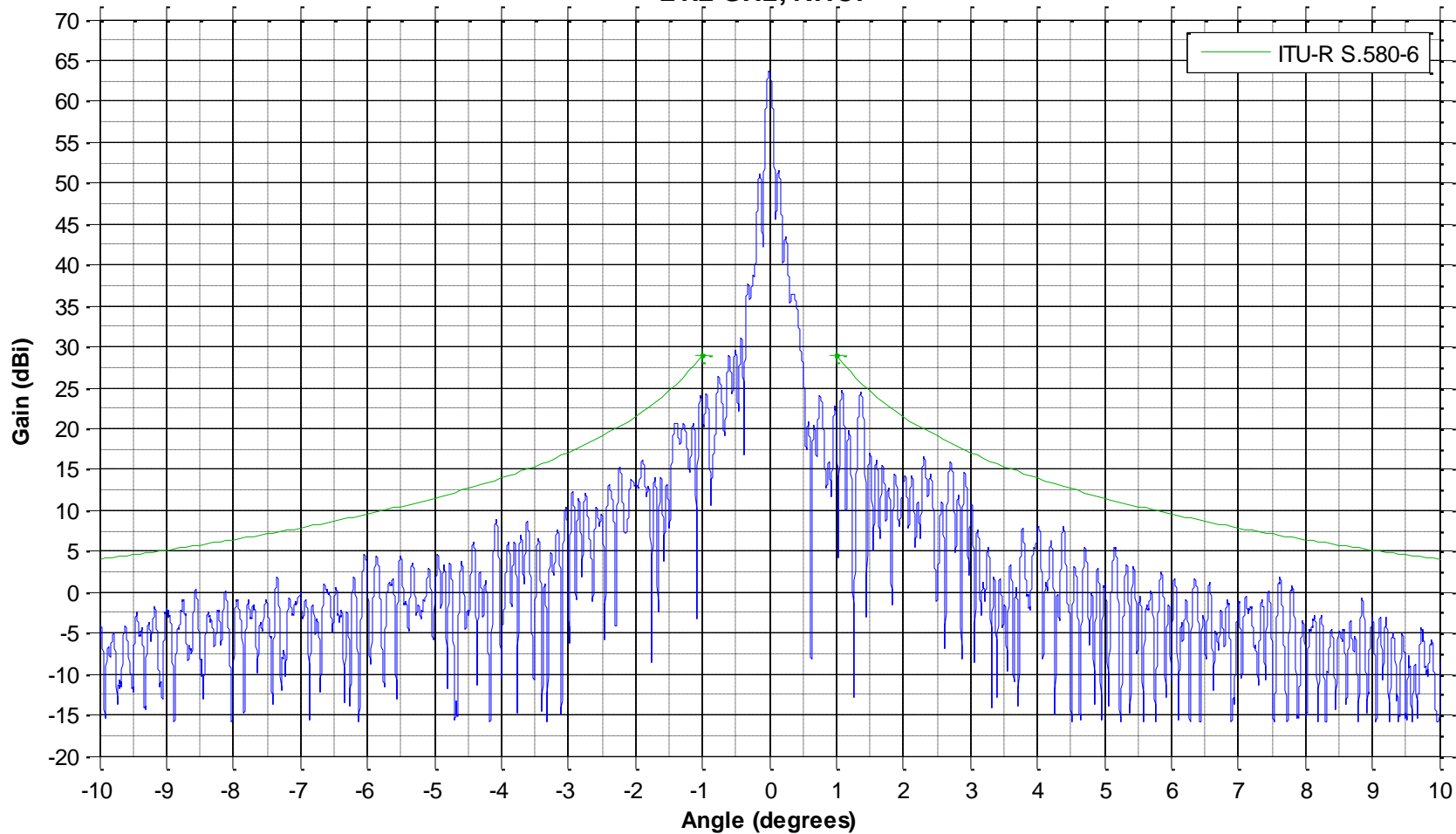
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, $\pm 10^\circ$
21.2 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX1_21200MHZ
Plot: 3.43a

Gain: 63.74 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.14°

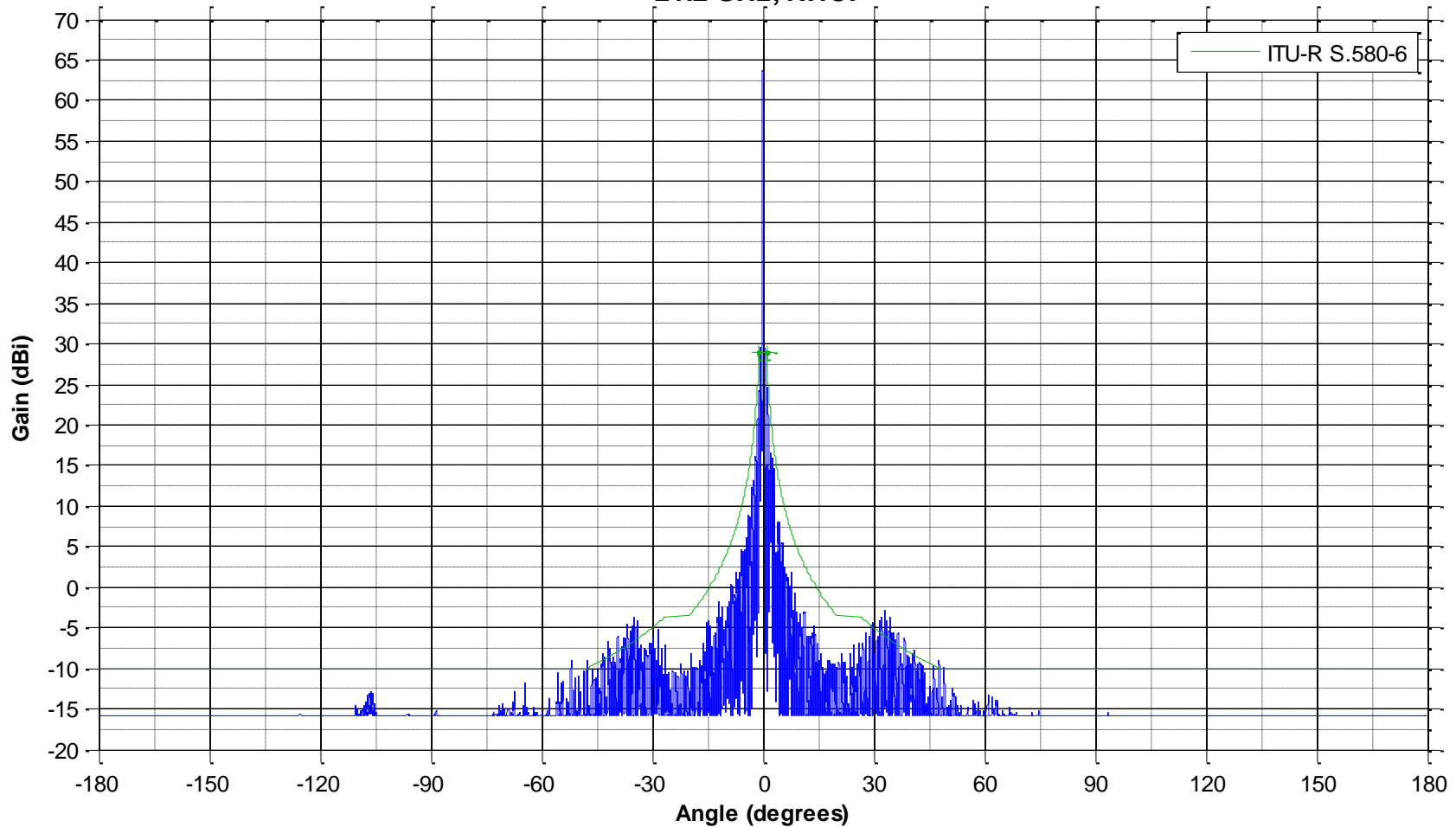
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±10°
21.2 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX1_21200MHZ
Plot: 3.43b

Gain: 63.74 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.14°
Excursions: 0.7%
Max. over: 3.17 dB at 32.98°

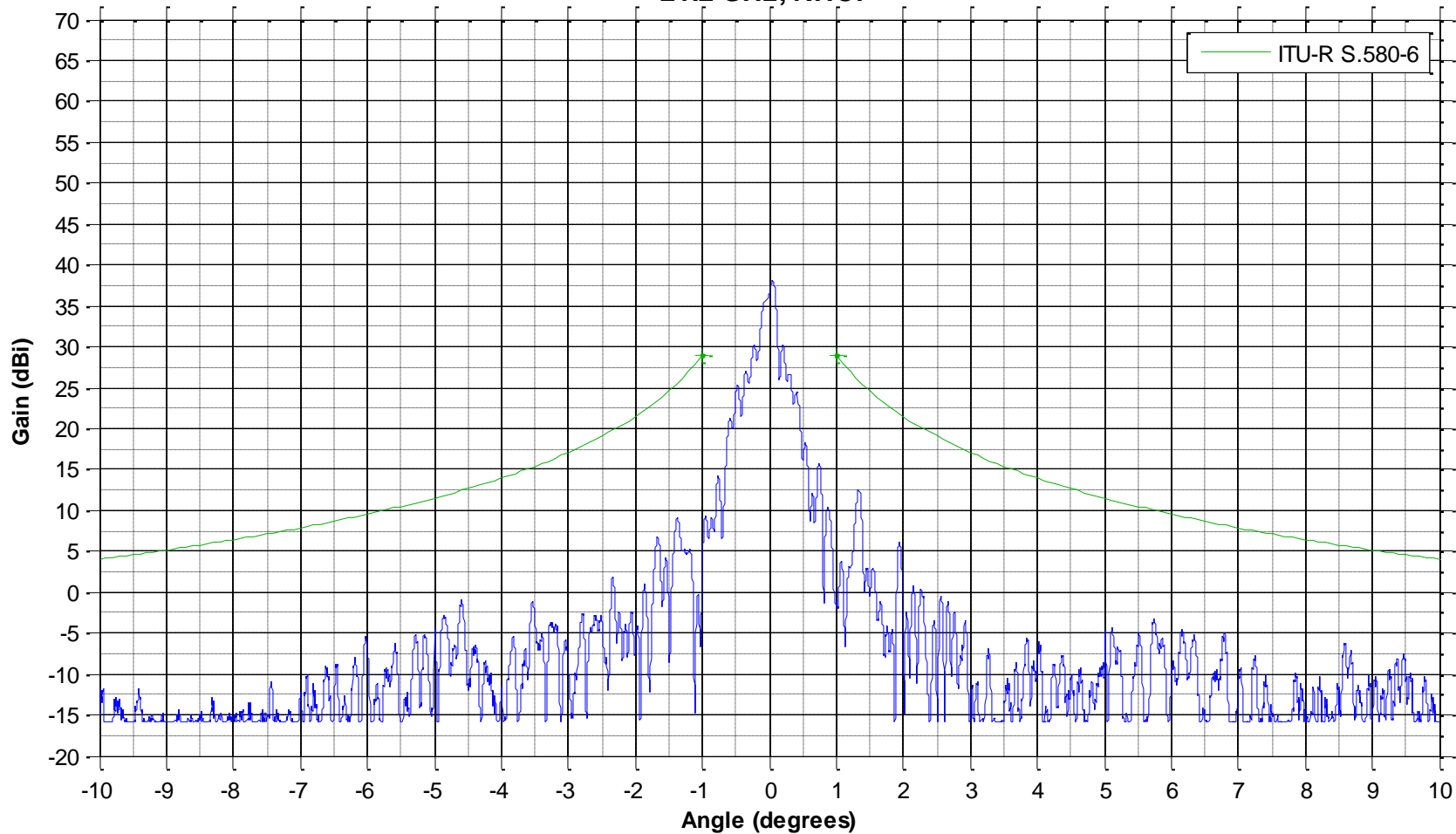
9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
21.2 GHz, RHCP



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX1_21200MHZ_CROSSPOL
Plot: 3.44

Gain: 63.74 dBi

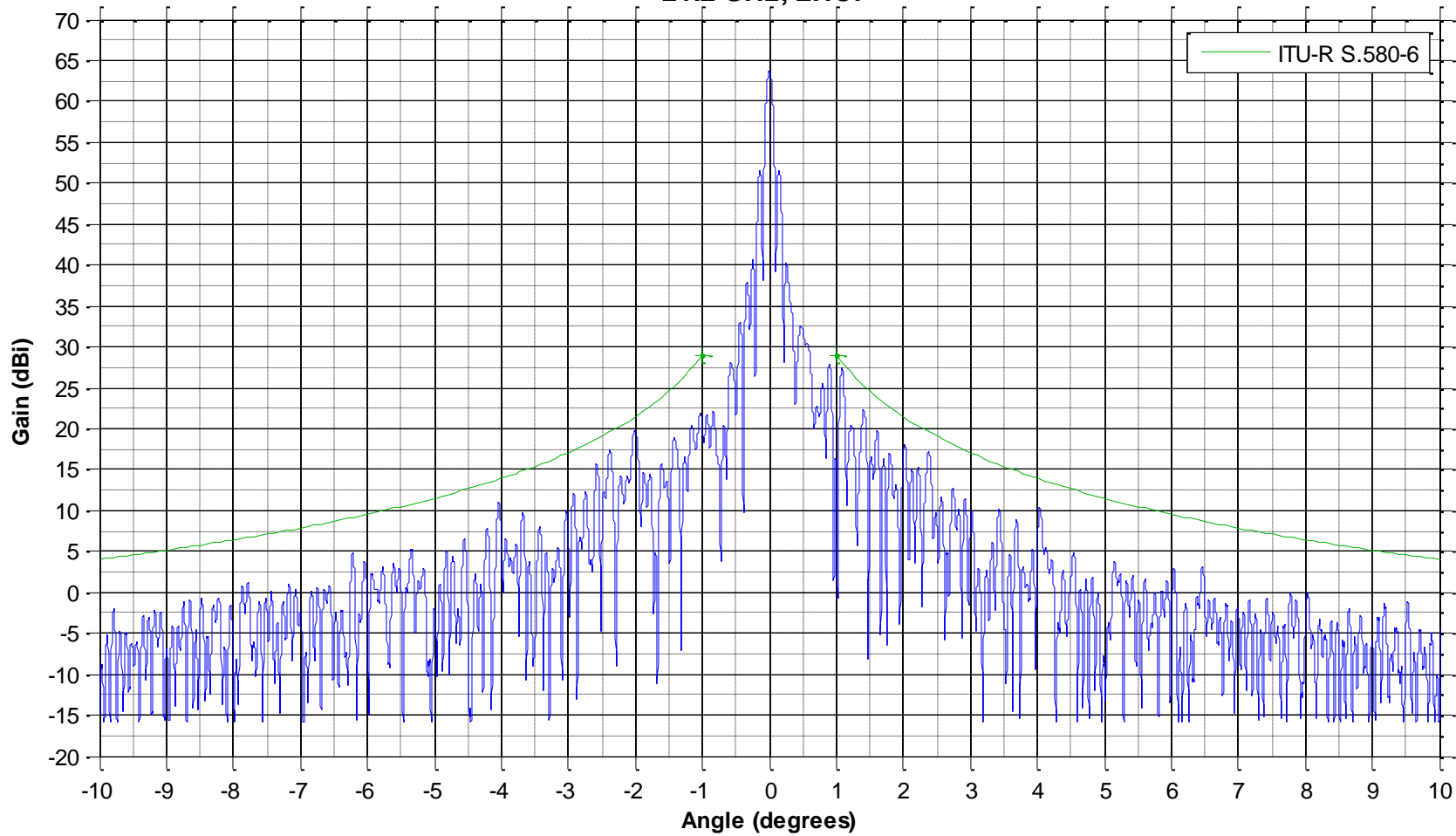
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, $\pm 10^\circ$
21.2 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX2_21200MHZ
Plot: 3.45a

Gain: 63.74 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.15°

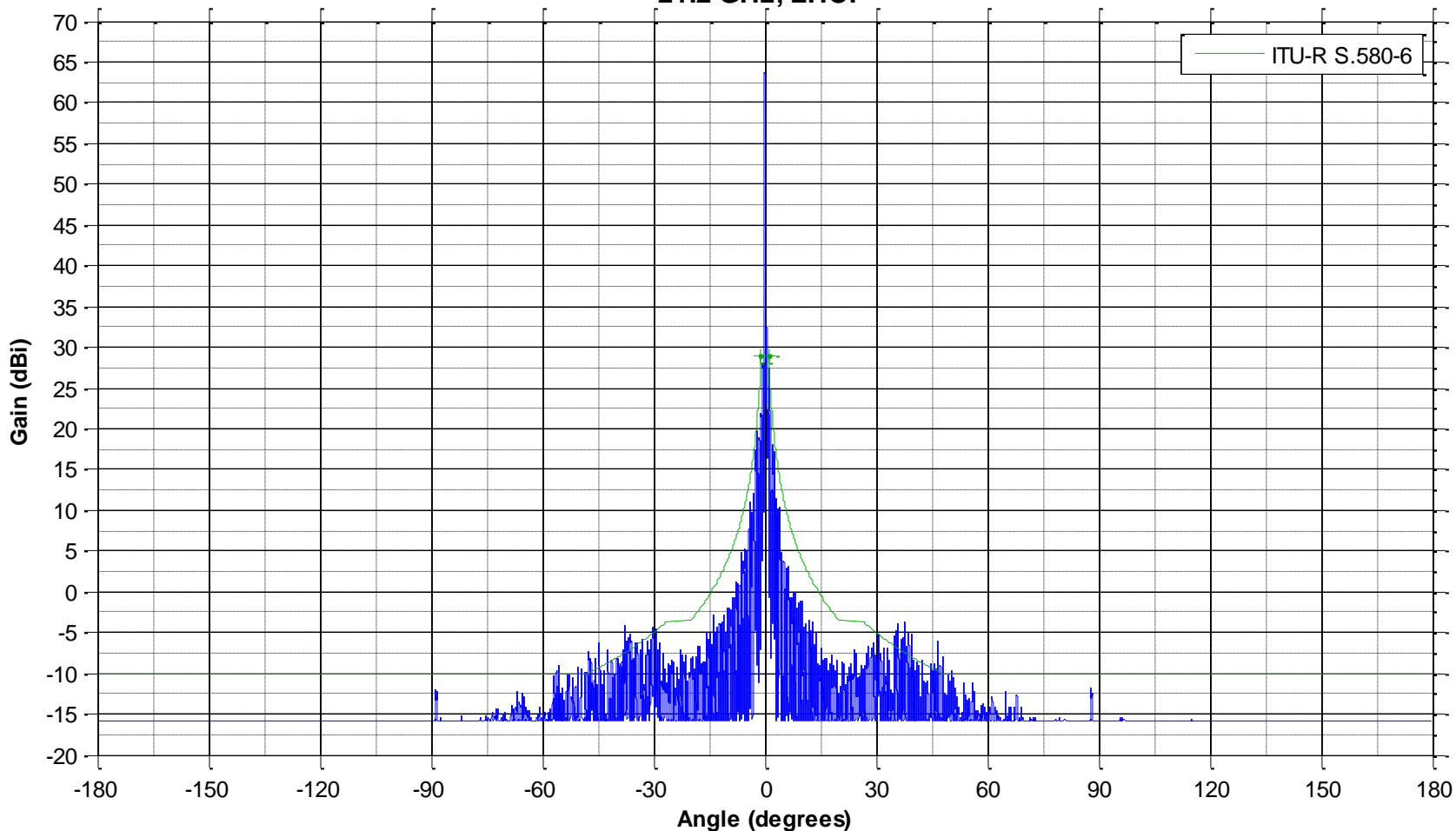
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±10°
21.2 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX2_21200MHZ
Plot: 3.45b

Gain: 63.74 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.15°
Excursions: 0.7%
Max. over: 3.69 dB at 37.77°

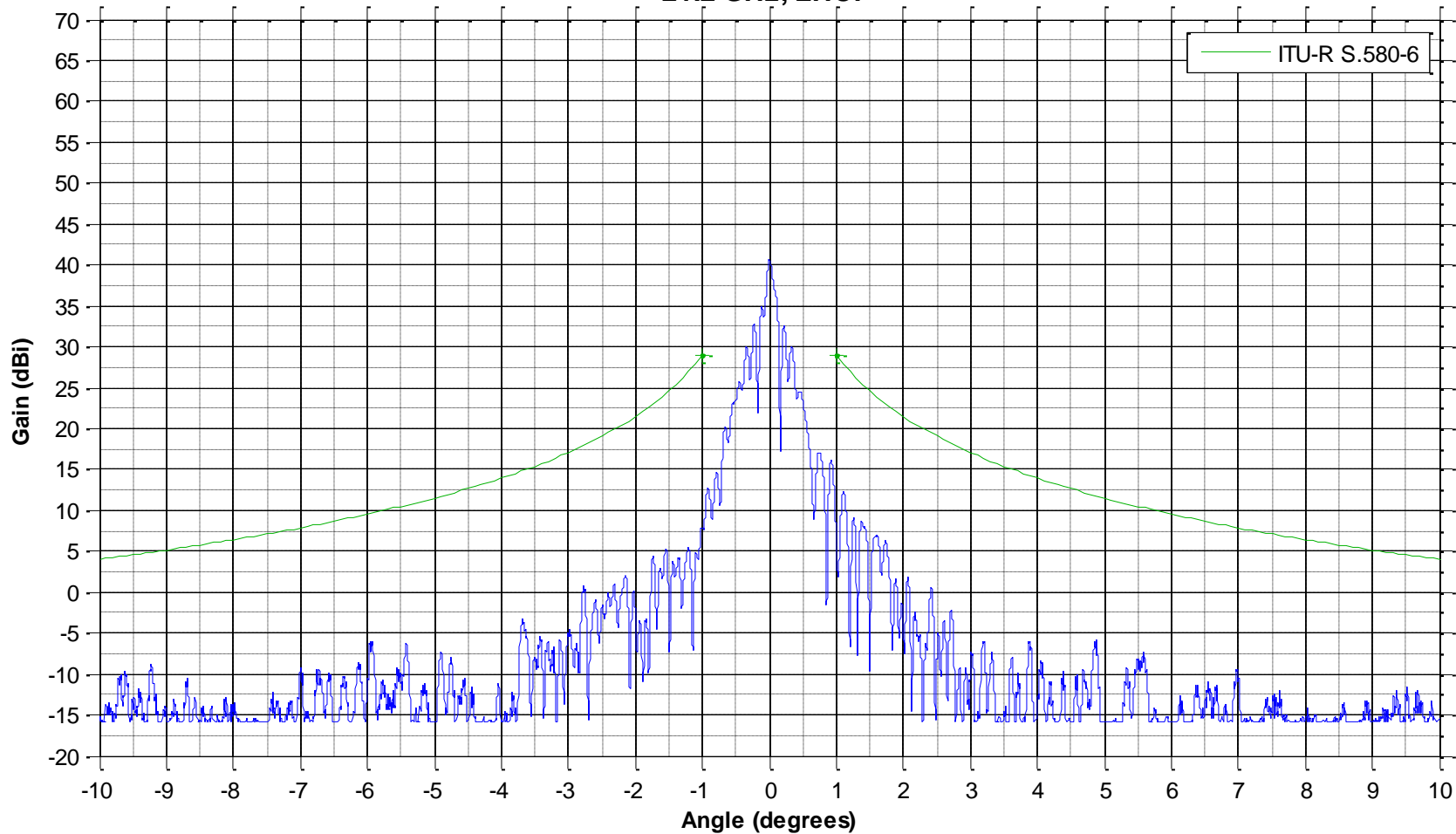
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
21.2 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_RX2_21200MHZ_CROSSPOL
Plot: 3.46

Gain: 63.74 dBi

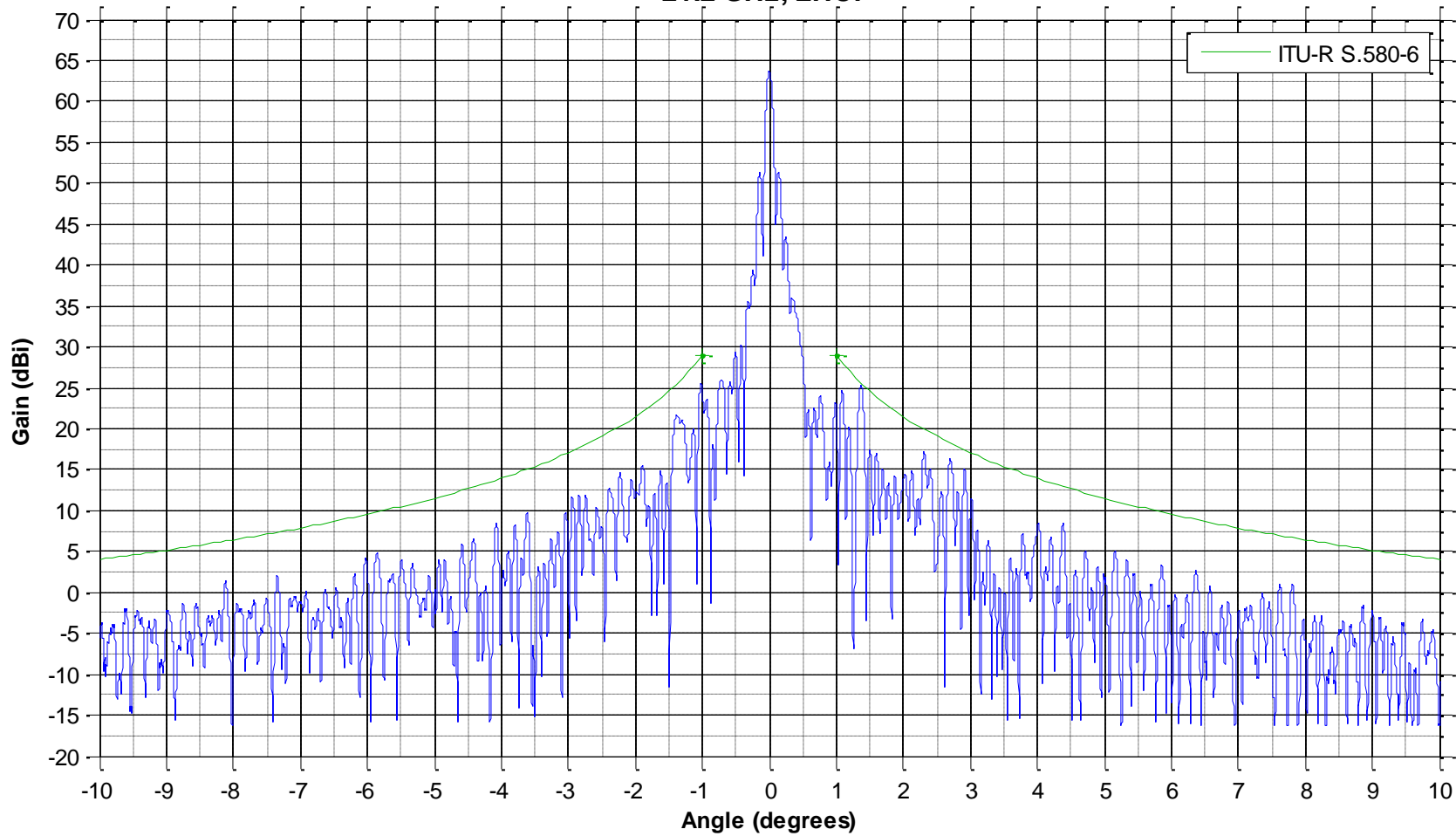
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, $\pm 10^\circ$
21.2 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX2_21200MHZ
Plot: 3.47a

Gain: 63.74 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.14°

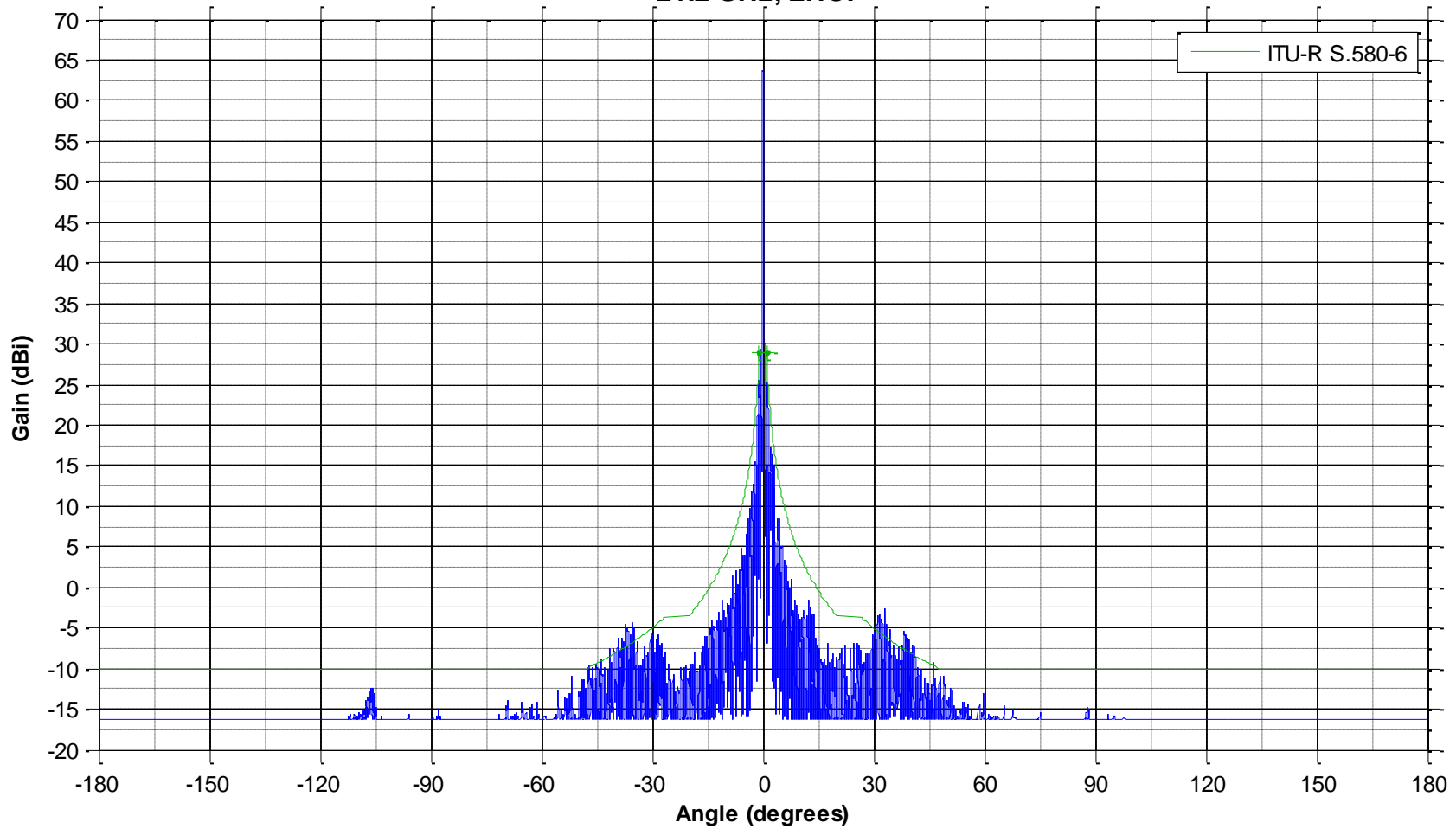
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±10°
21.2 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX2_21200MHZ
Plot: 3.47b

Gain: 63.74 dBi
-3 dB BW: 0.09°
-10 dB BW: 0.14°
Excursions: 0.7%
Max. over: 3.27 dB at 33.00°

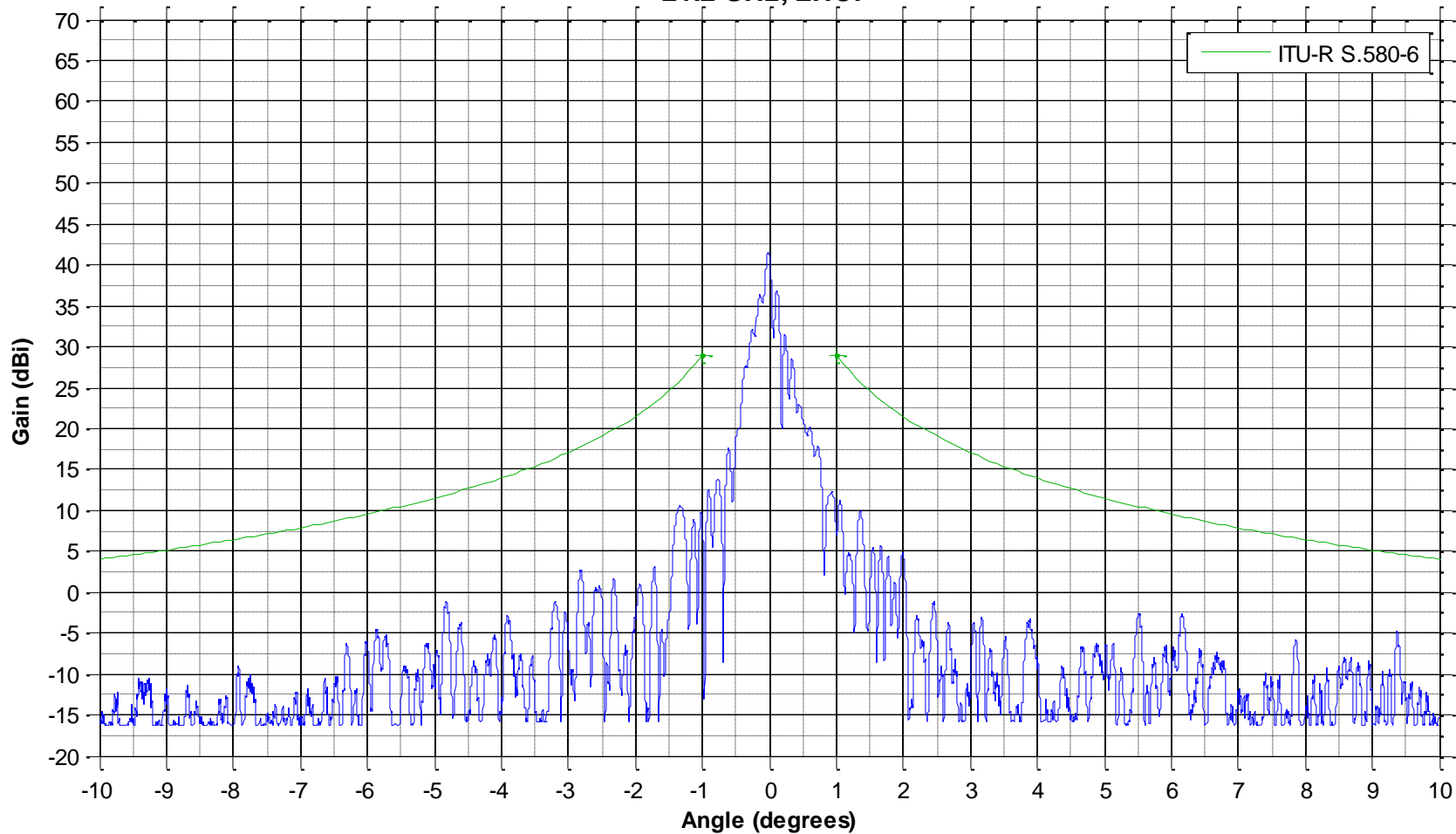
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
21.2 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_RX2_21200MHZ_CROSSPOL
Plot: 3.48

Gain: 63.74 dBi

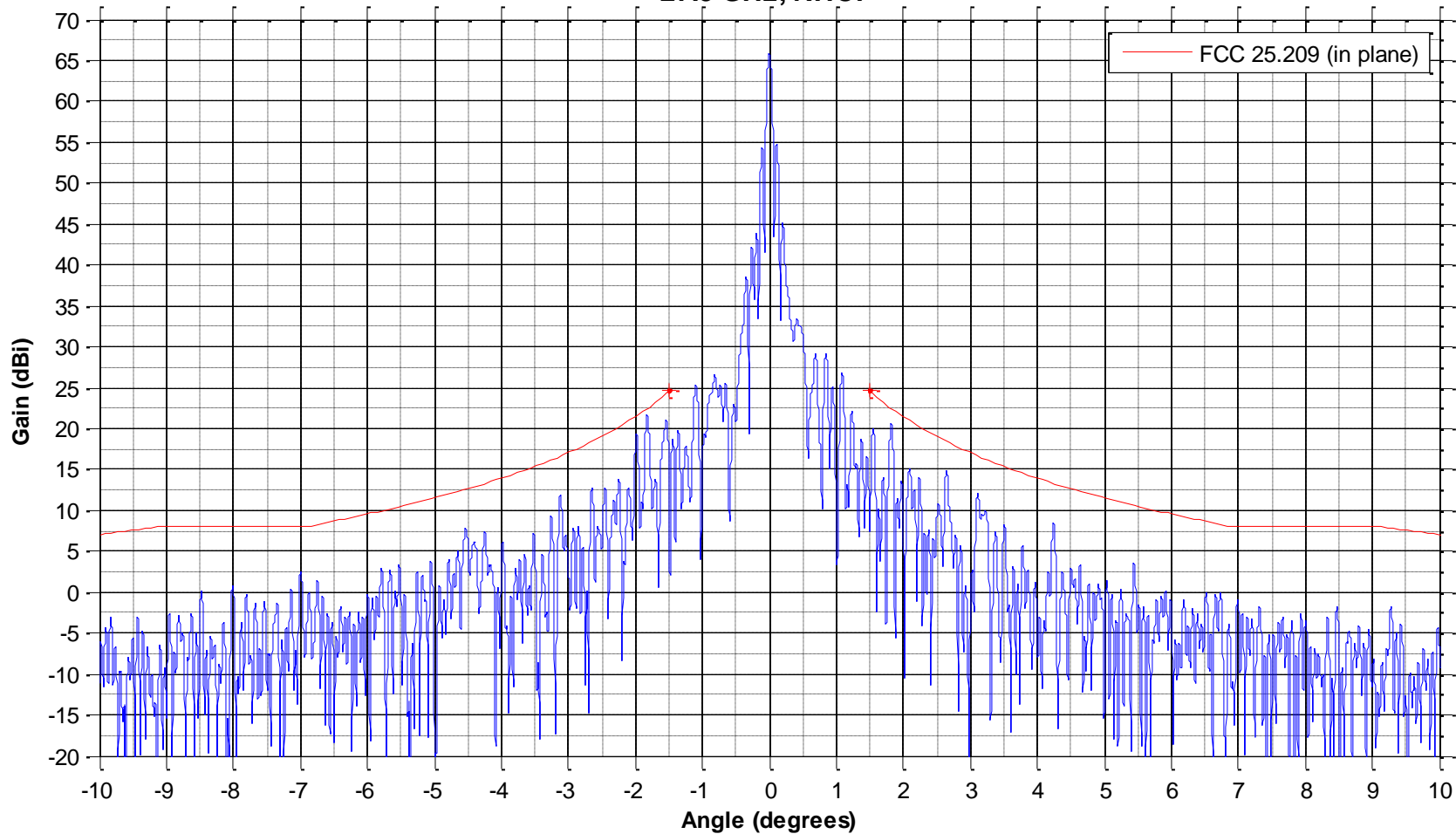
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, $\pm 10^\circ$
21.2 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX1_27500MHZ
Plot: 3.49a

Gain: 65.81 dBi
-3 dB BW: 0.07°
-10 dB BW: 0.11°

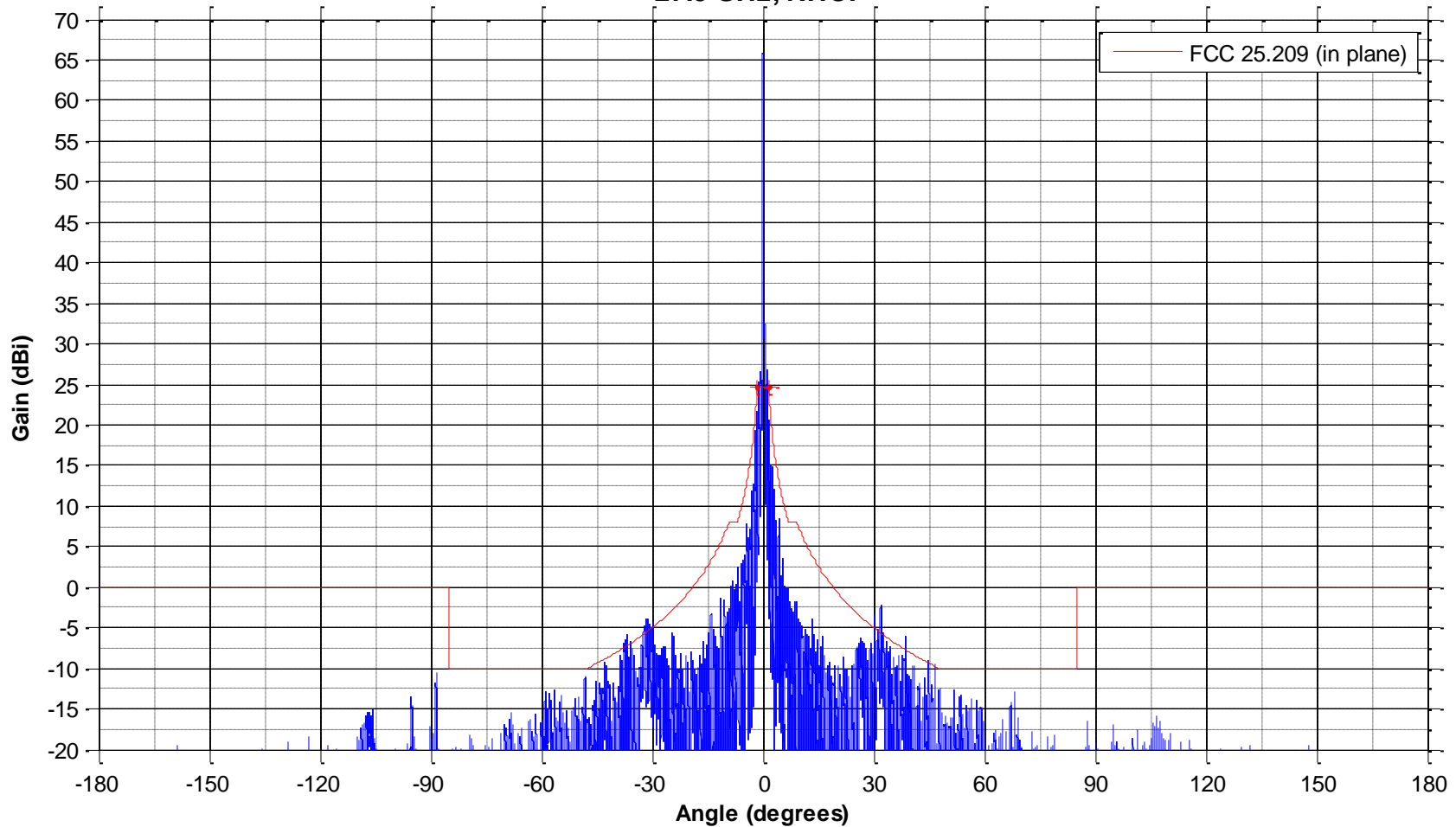
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±10°
27.5 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX1_27500MHZ
Plot: 3.49b

Gain: 65.81 dBi
-3 dB BW: 0.07°
-10 dB BW: 0.11°
Excursions: 0.3%
Max. over: 3.37 dB at 31.90°

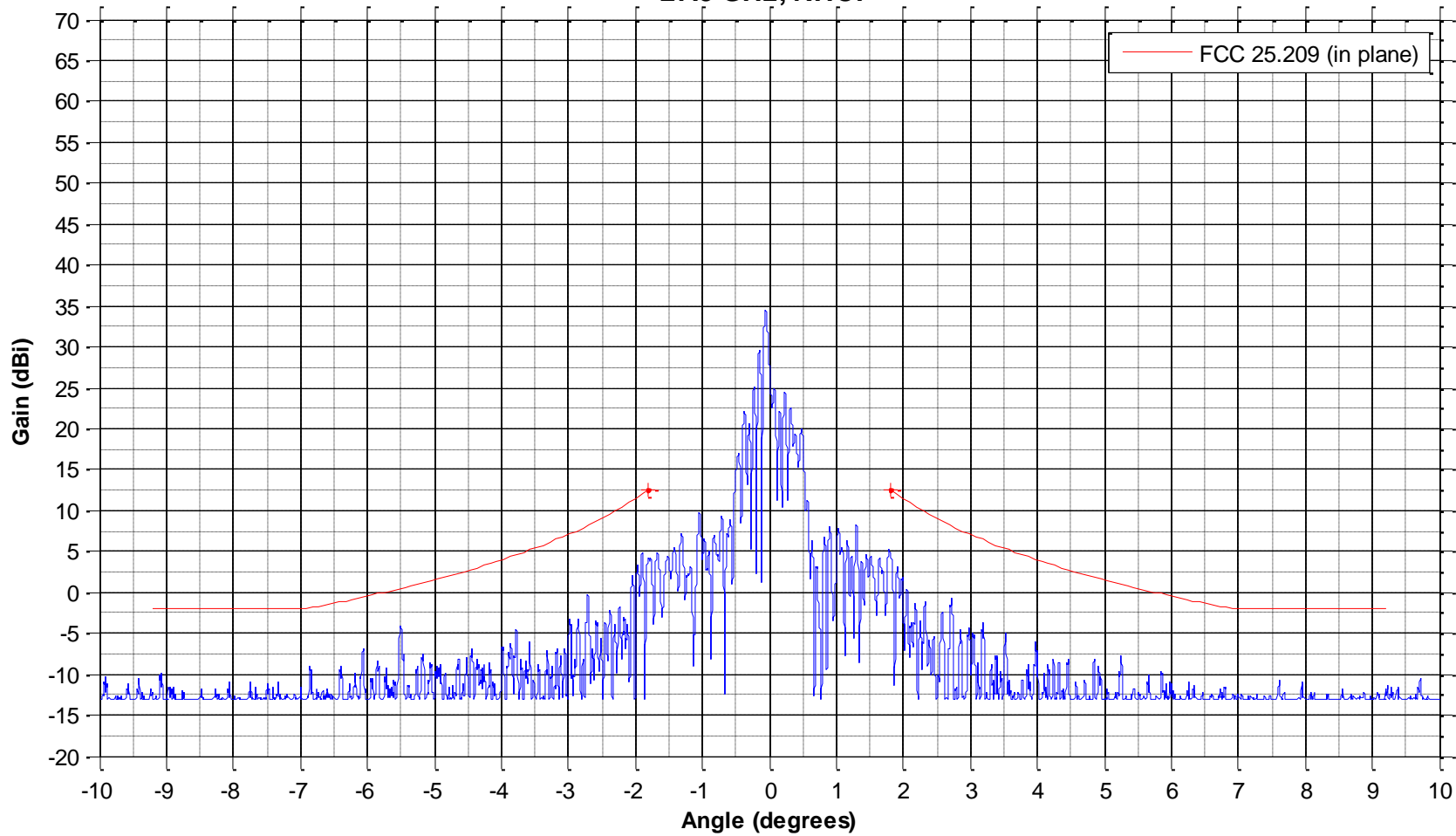
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
27.5 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX1_27500MHZ_CROSSPOL
Plot: 3.50

Gain: 65.81 dBi

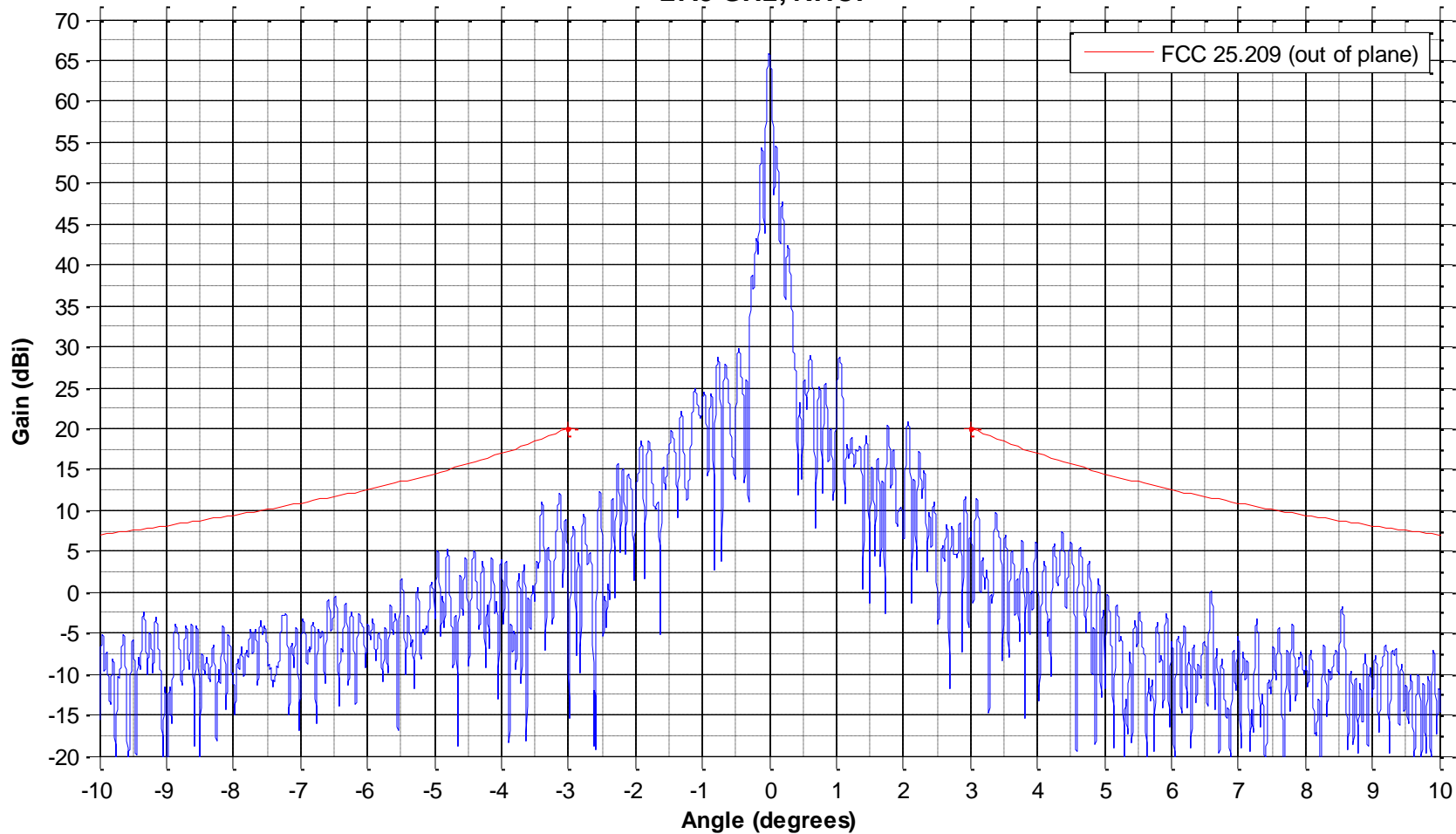
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, $\pm 10^\circ$
27.5 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX1_27500MHZ
Plot: 3.51a

Gain: 65.81 dBi
-3 dB BW: 0.07°
-10 dB BW: 0.11°

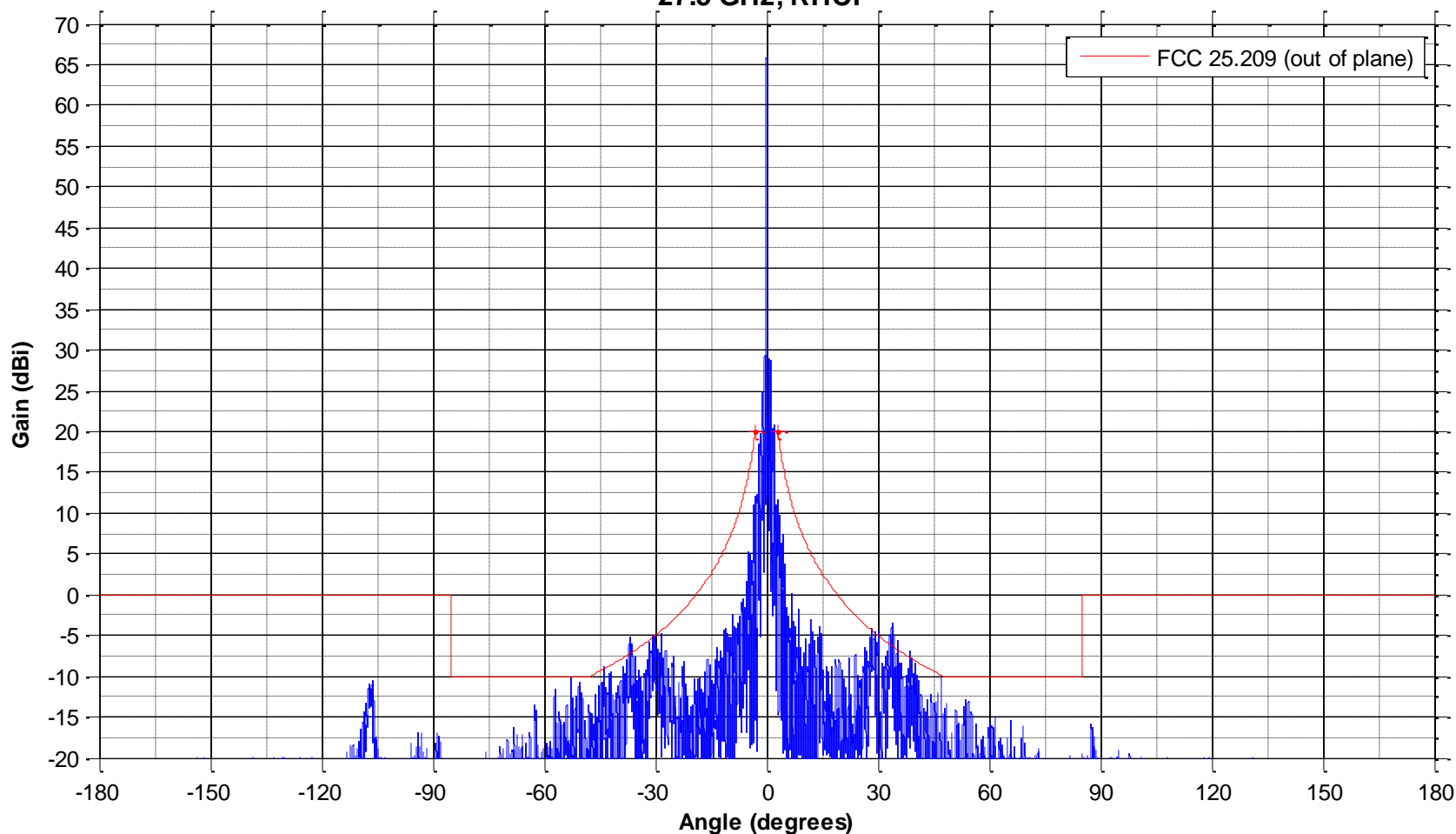
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±10°
27.5 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX1_27500MHZ
Plot: 3.51b

Gain: 65.81 dBi
-3 dB BW: 0.07°
-10 dB BW: 0.11°
Excursions: 0.2%
Max. over: 2.77 dB at 34.17°

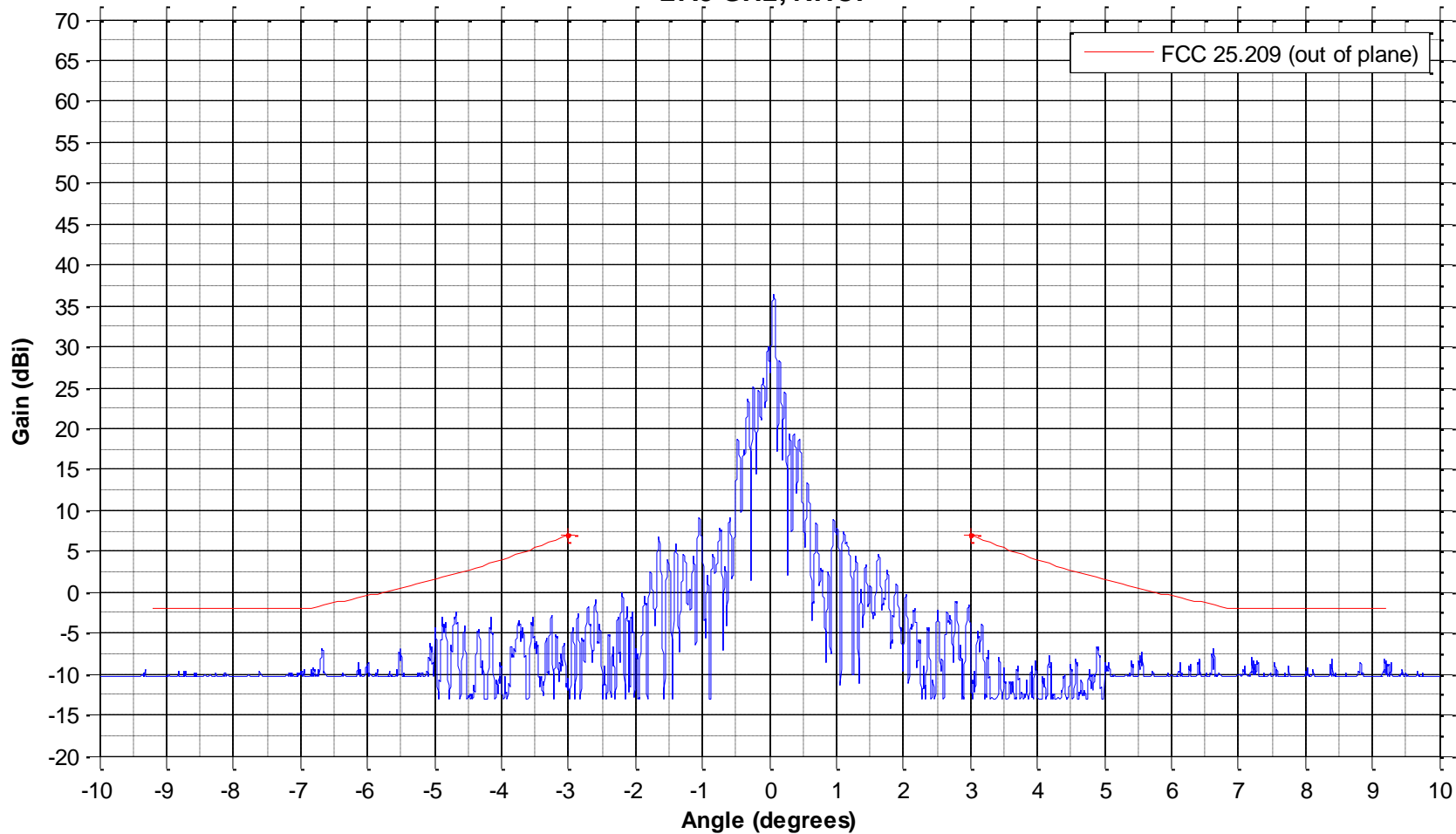
9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
27.5 GHz, RHCP



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX1_27500MHZ_CROSSPOL
Plot: 3.52

Gain: 65.81 dBi

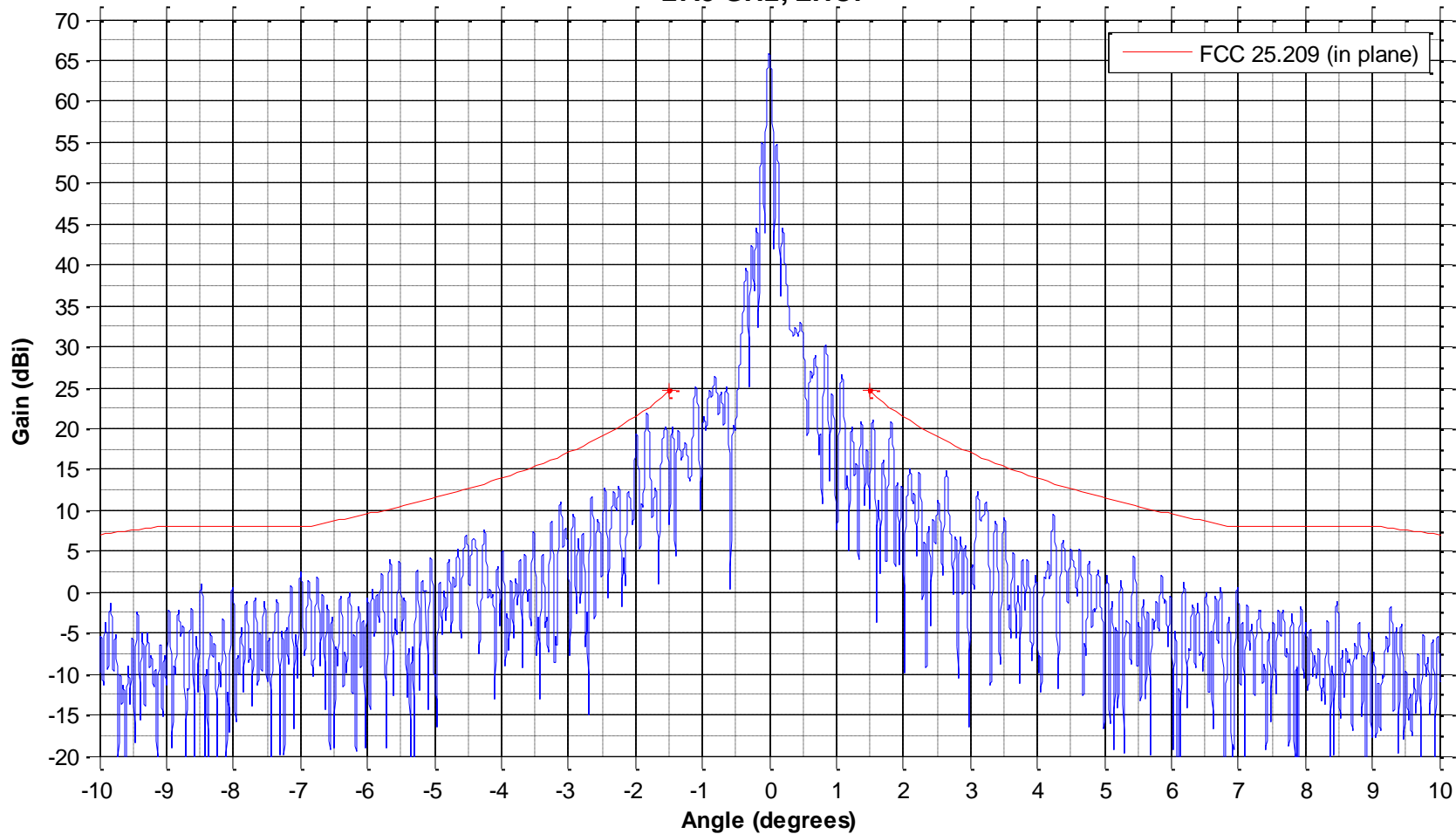
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, $\pm 10^\circ$
27.5 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX2_27500MHZ
Plot: 3.53a

Gain: 65.81 dBi
-3 dB BW: 0.07°
-10 dB BW: 0.11°

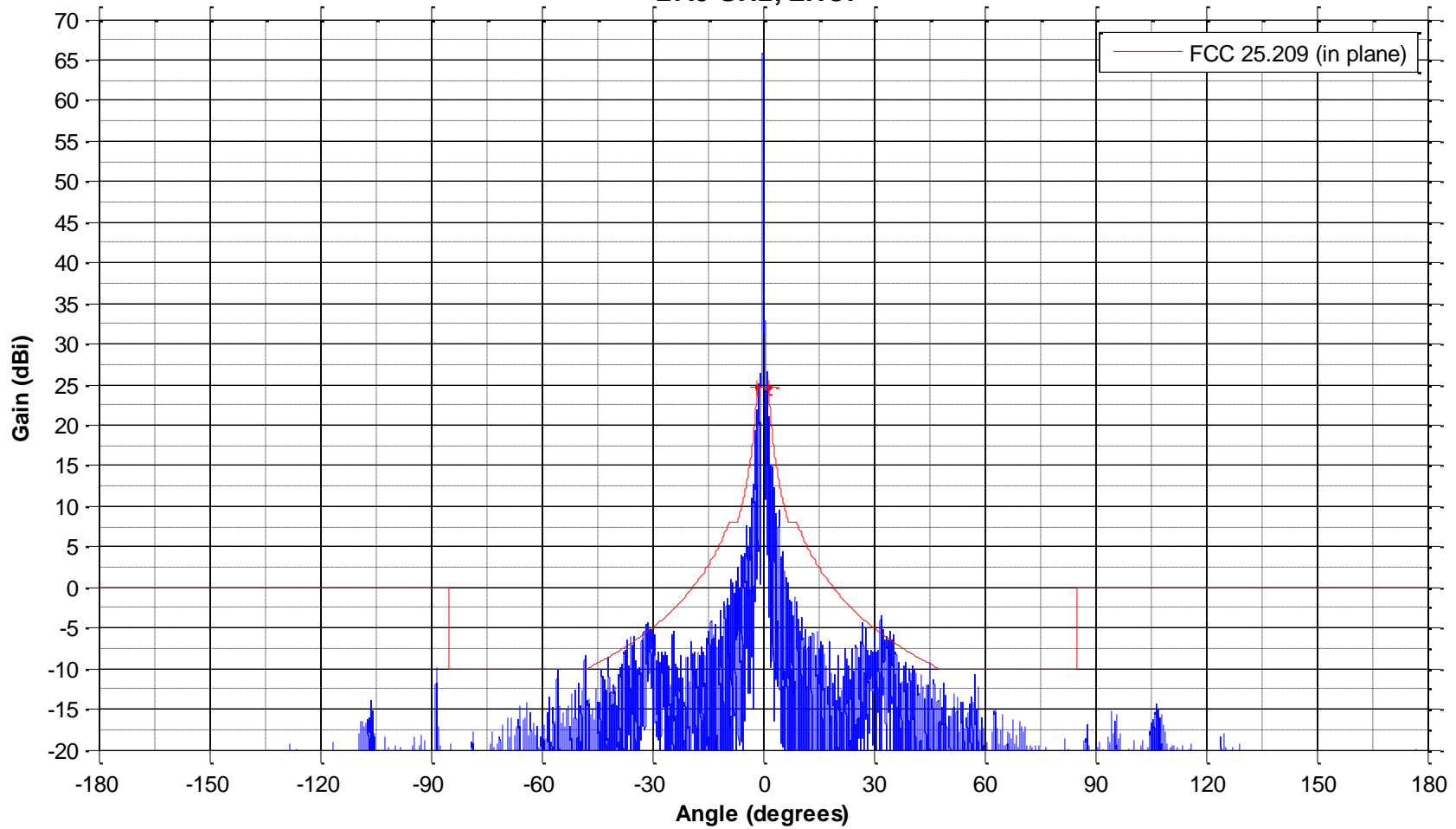
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±10°
27.5 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX2_27500MHZ
Plot: 3.53b

Gain: 65.81 dBi
-3 dB BW: 0.07°
-10 dB BW: 0.11°
Excursions: 0.2%
Max. over: 2.18 dB at 31.91°

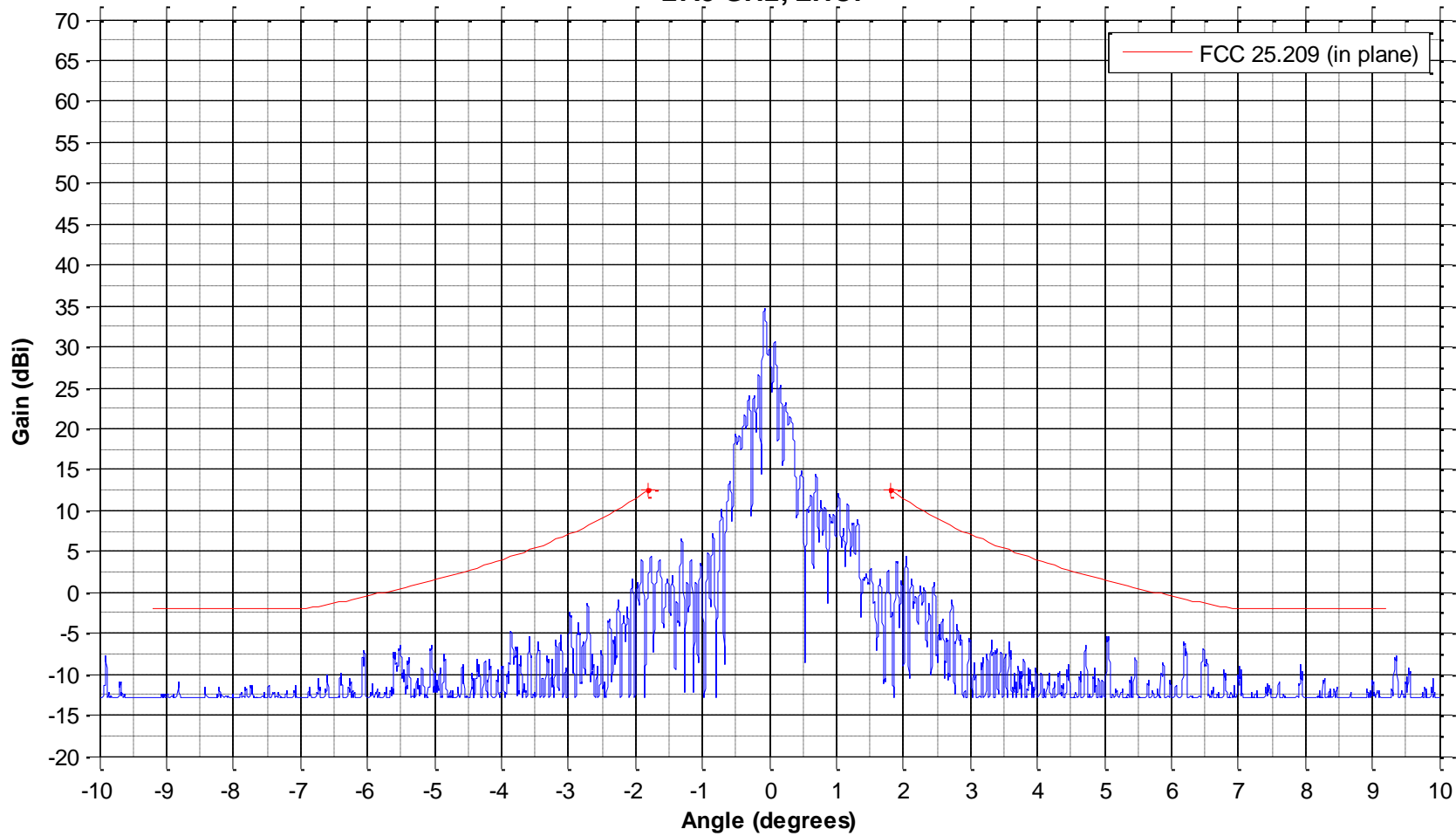
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
27.5 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX2_27500MHZ_CROSSPOL
Plot: 3.54

Gain: 65.81 dBi

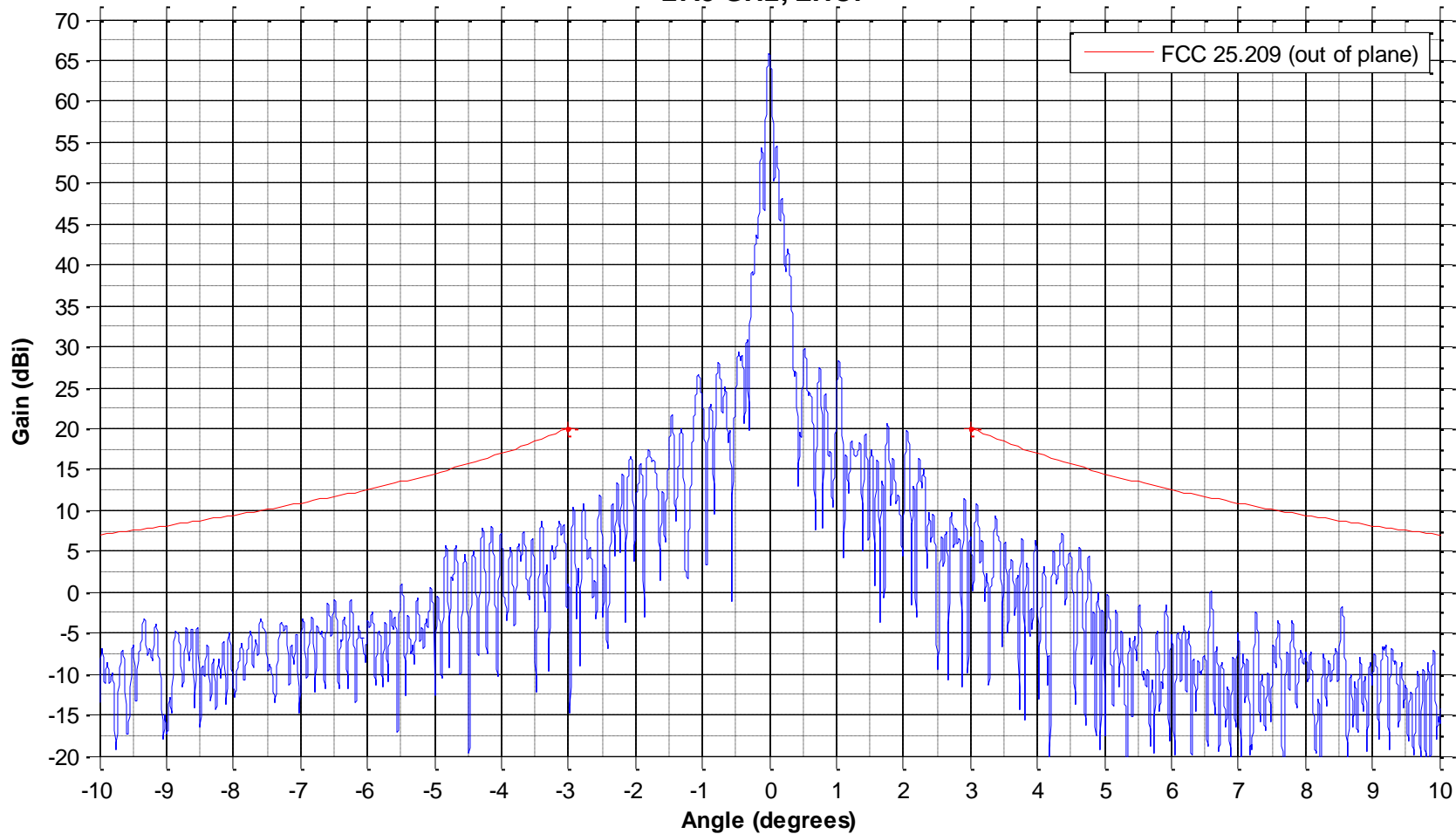
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, $\pm 10^\circ$
27.5 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX2_27500MHZ
Plot: 3.55a

Gain: 65.81 dBi
-3 dB BW: 0.07°
-10 dB BW: 0.11°

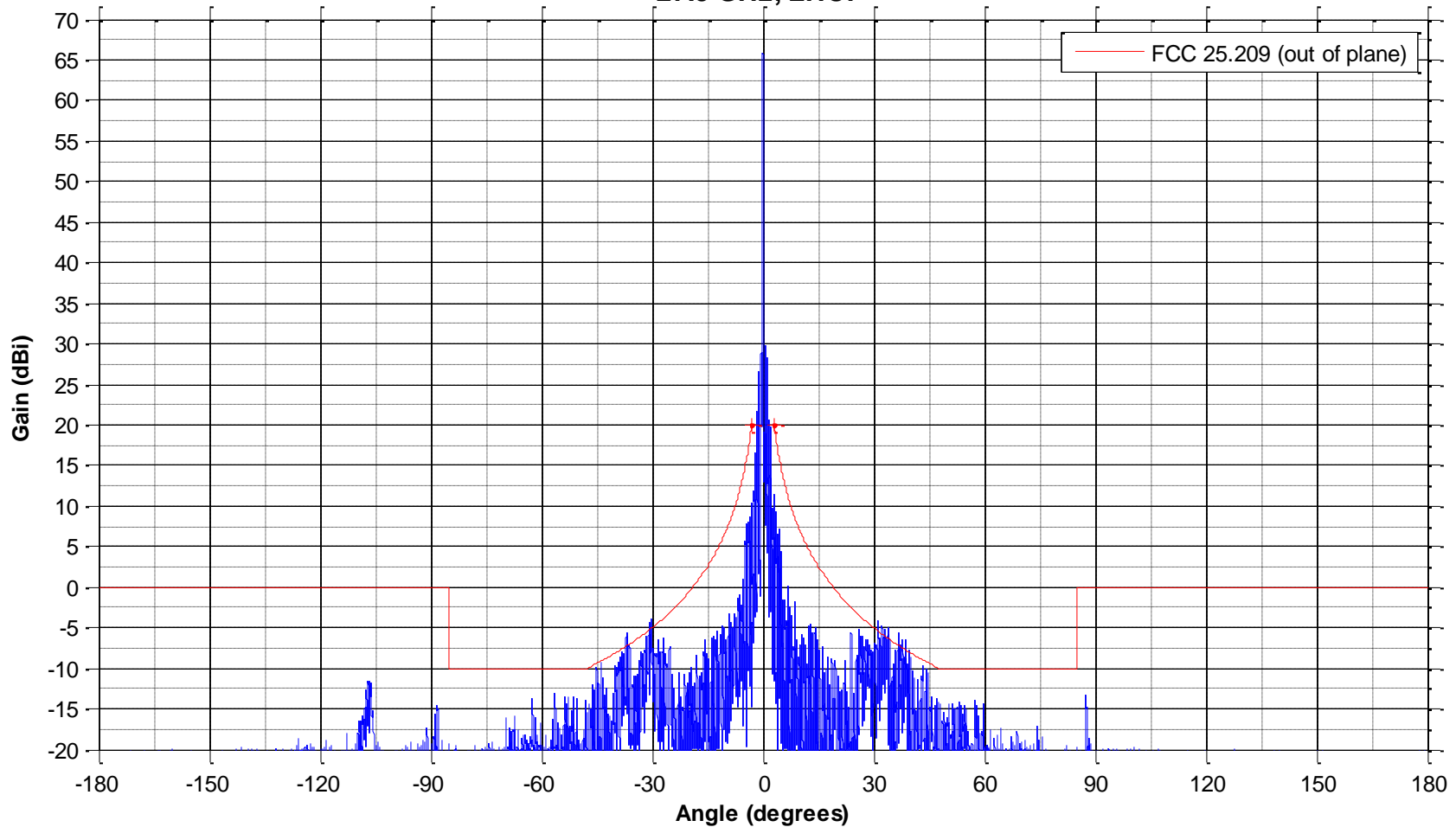
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±10°
27.5 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX2_27500MHZ
Plot: 3.55b

Gain: 65.81 dBi
-3 dB BW: 0.07°
-10 dB BW: 0.11°
Excursions: 0.2%
Max. over: 1.53 dB at -37.01°

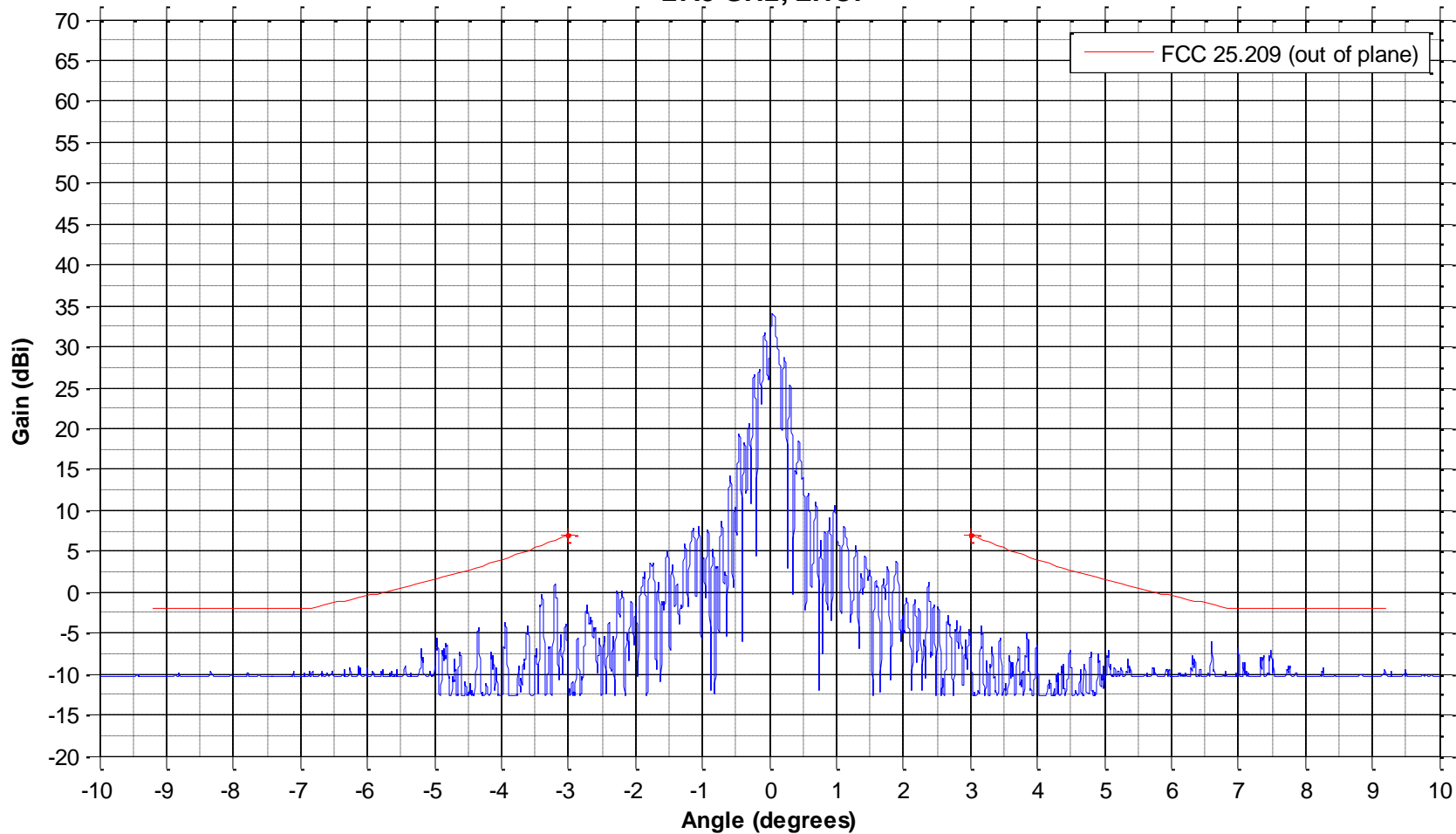
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
27.5 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX2_27500MHZ_CROSSPOL
Plot: 3.56

Gain: 65.81 dBi

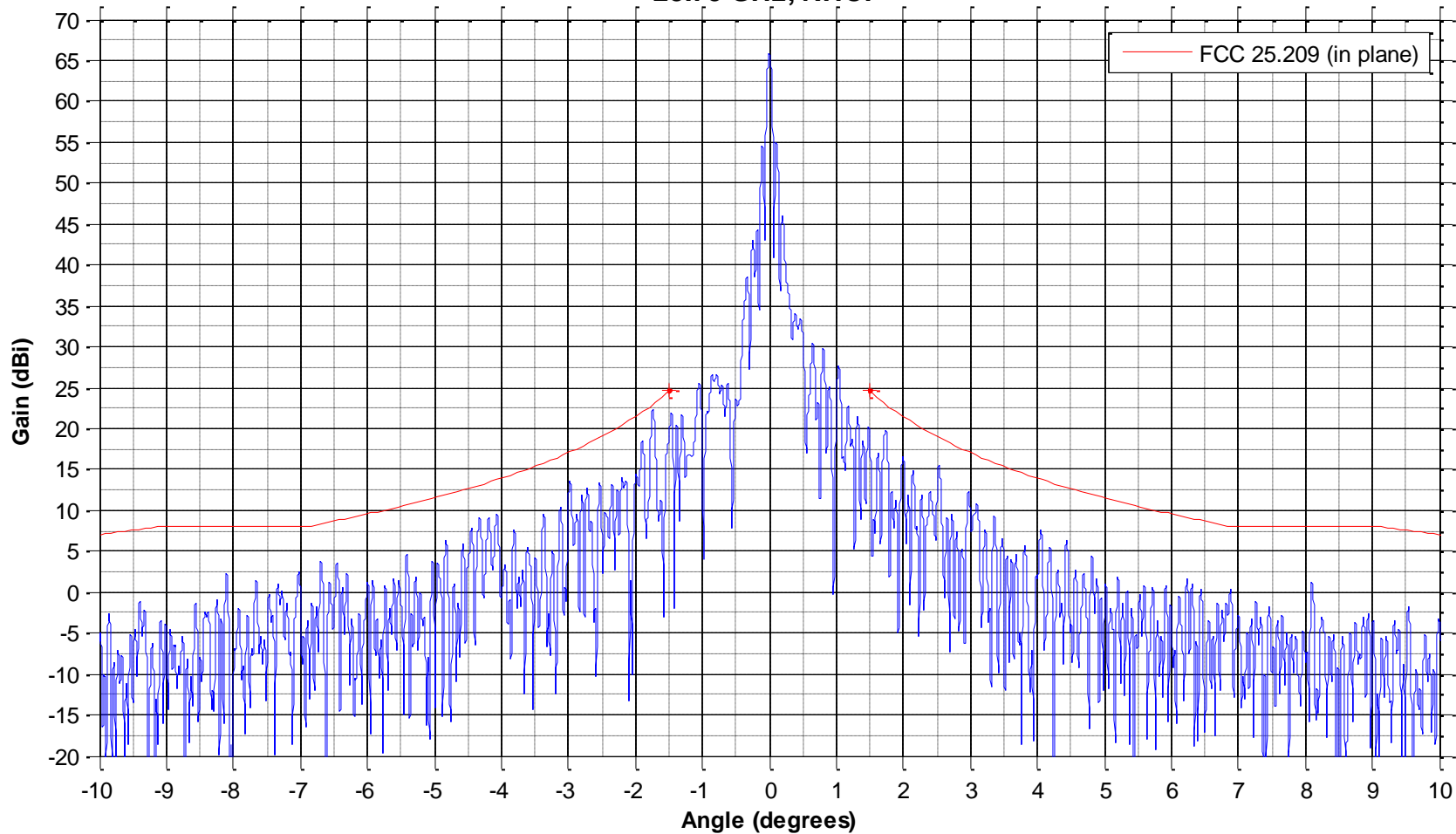
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, $\pm 10^\circ$
27.5 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX1_28750MHZ
Plot: 3.57a

Gain: 65.90 dBi
-3 dB BW: 0.07°
-10 dB BW: 0.11°

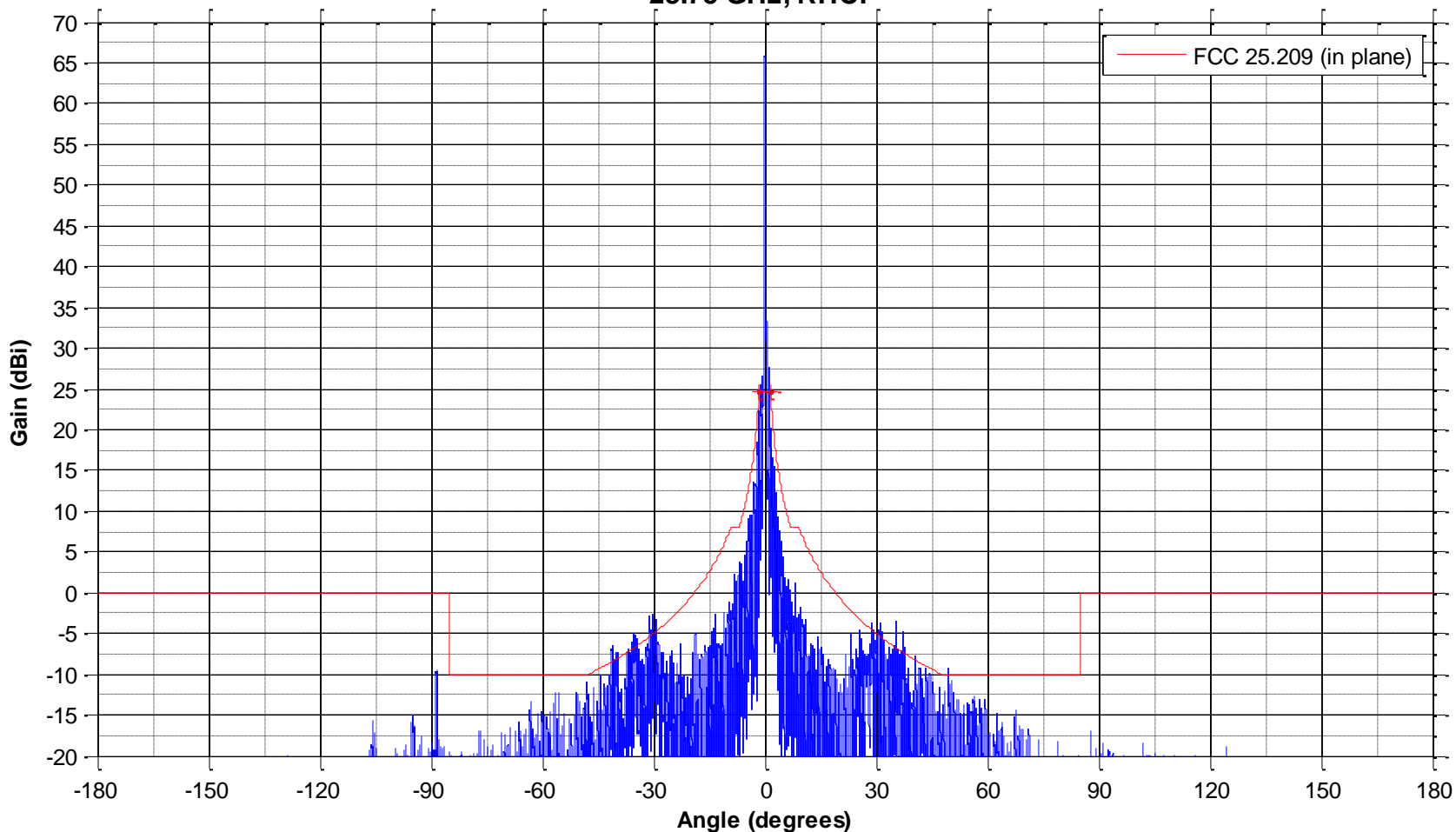
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±10°
28.75 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX1_28750MHZ
Plot: 3.57b

Gain: 65.90 dBi
-3 dB BW: 0.07°
-10 dB BW: 0.11°
Excursions: 0.4%
Max. over: 3.32 dB at 35.39°

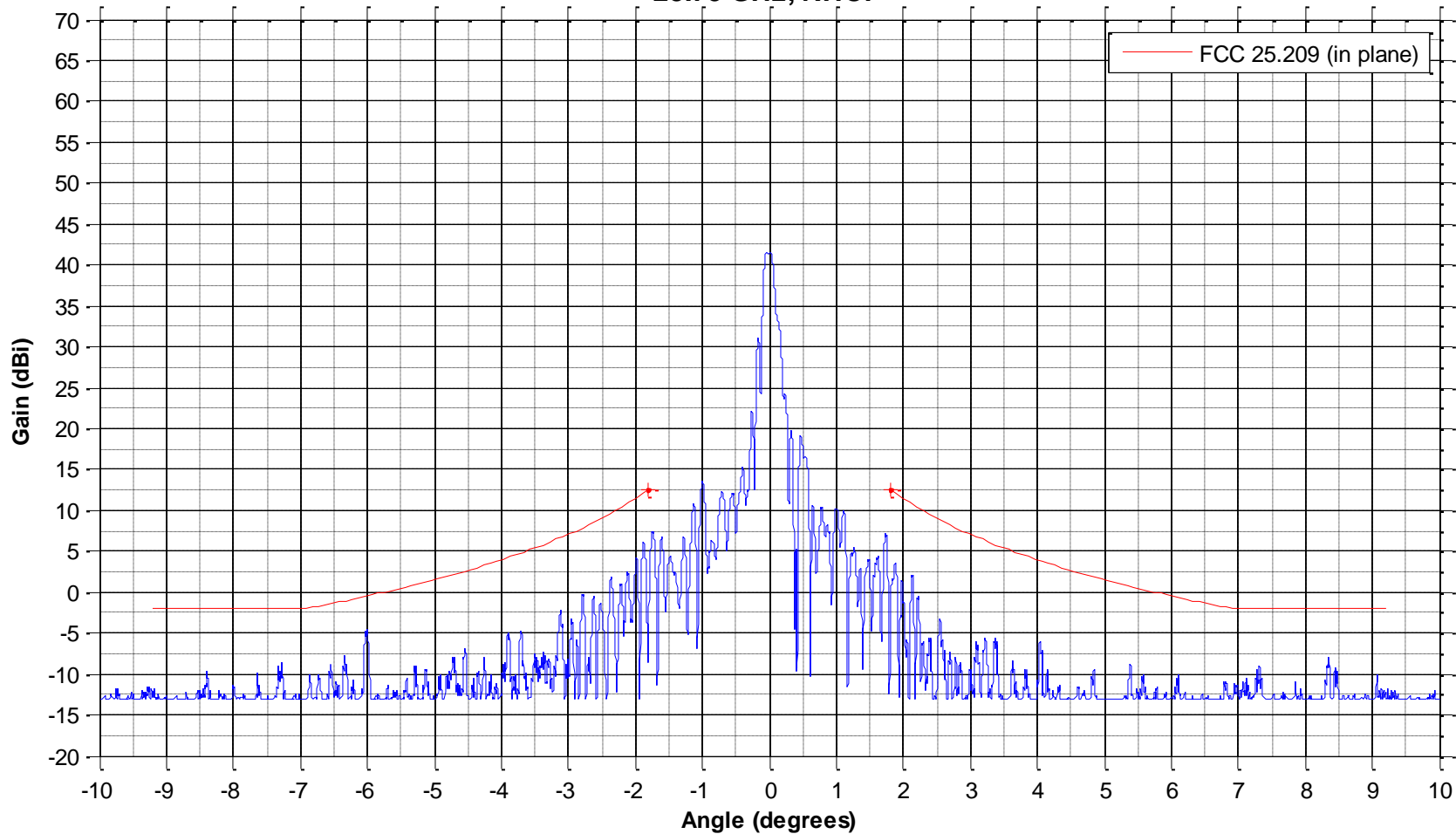
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
28.75 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX1_28750MHZ_CROSSPOL
Plot: 3.58

Gain: 65.90 dBi

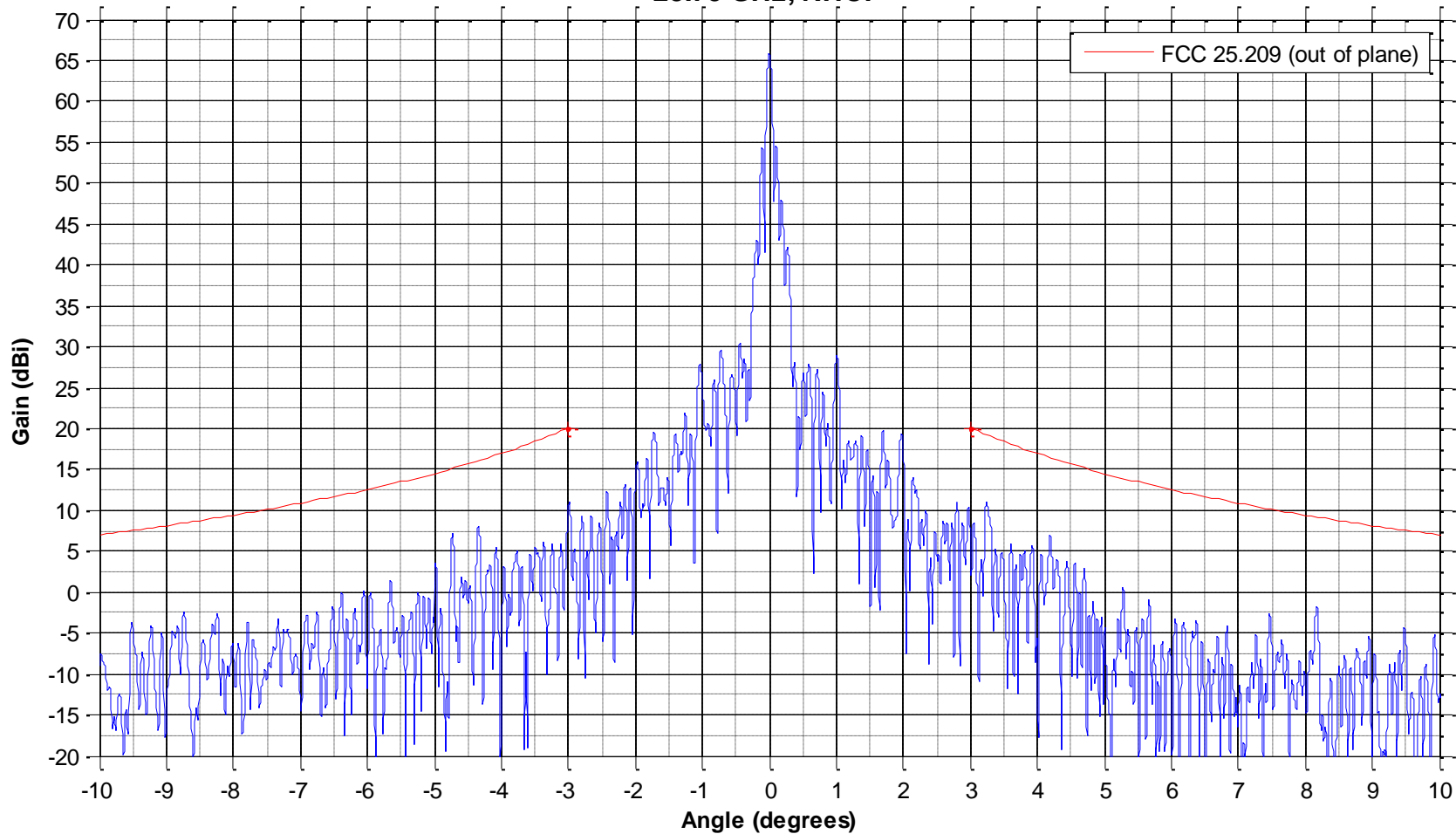
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, $\pm 10^\circ$
28.75 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX1_28750MHZ
Plot: 3.59a

Gain: 65.90 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.11°

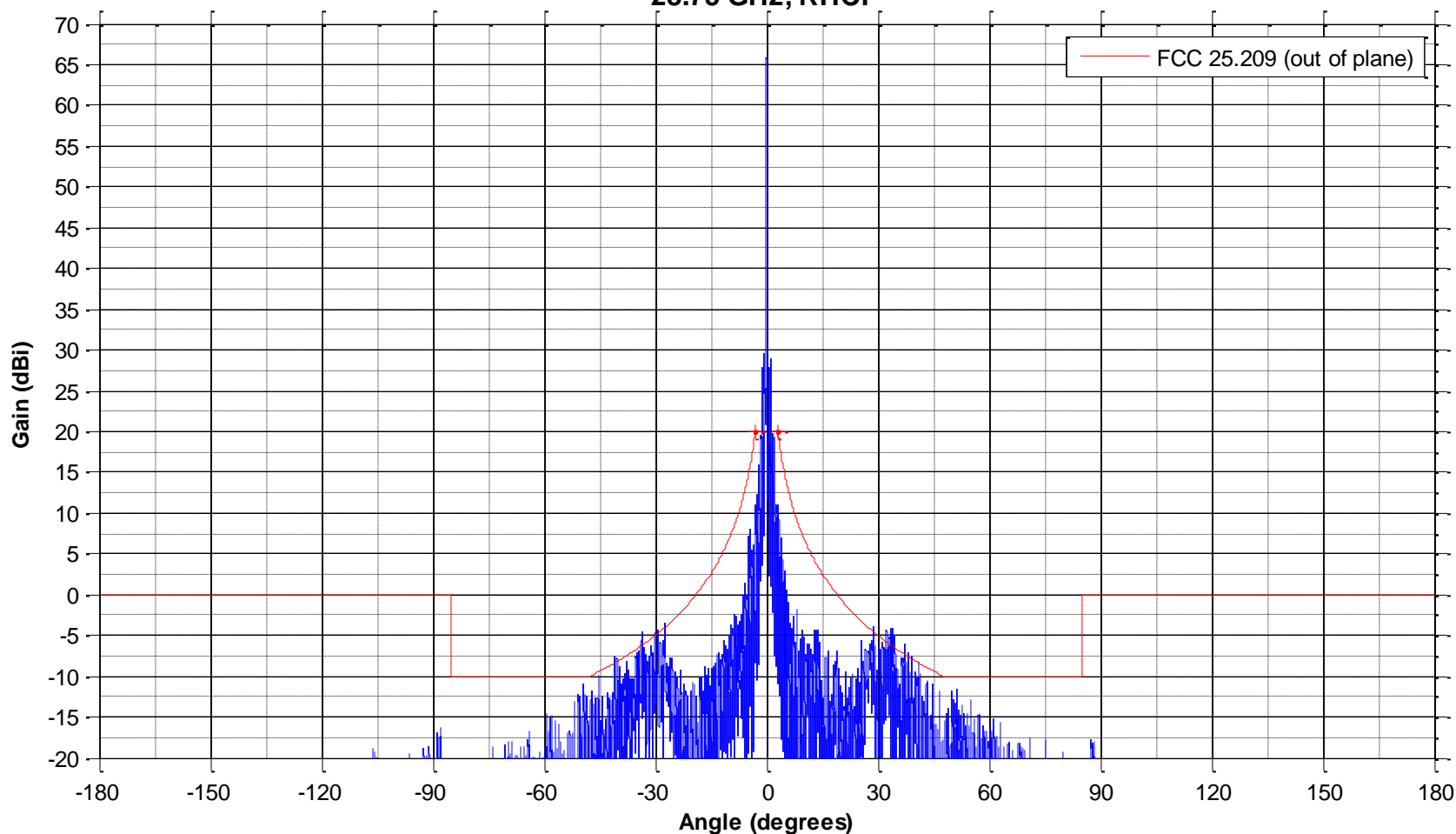
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±10°
28.75 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX1_28750MHZ
Plot: 3.59b

Gain: 65.90 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.11°
Excursions: 0.3%
Max. over: 2.08 dB at 33.88°

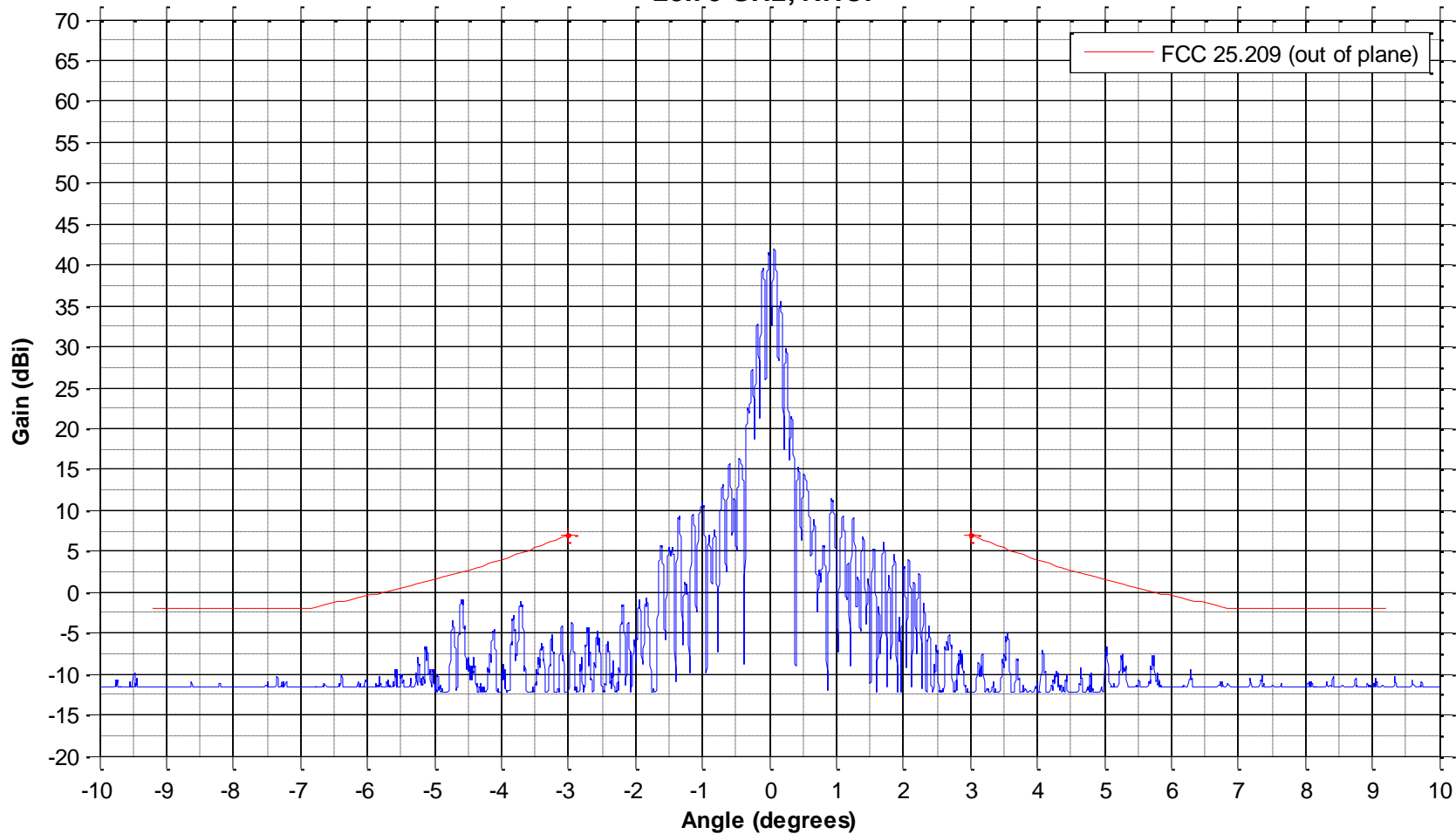
9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
28.75 GHz, RHCP



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX1_28750MHZ_CROSSPOL
Plot: 3.60

Gain: 65.90 dBi

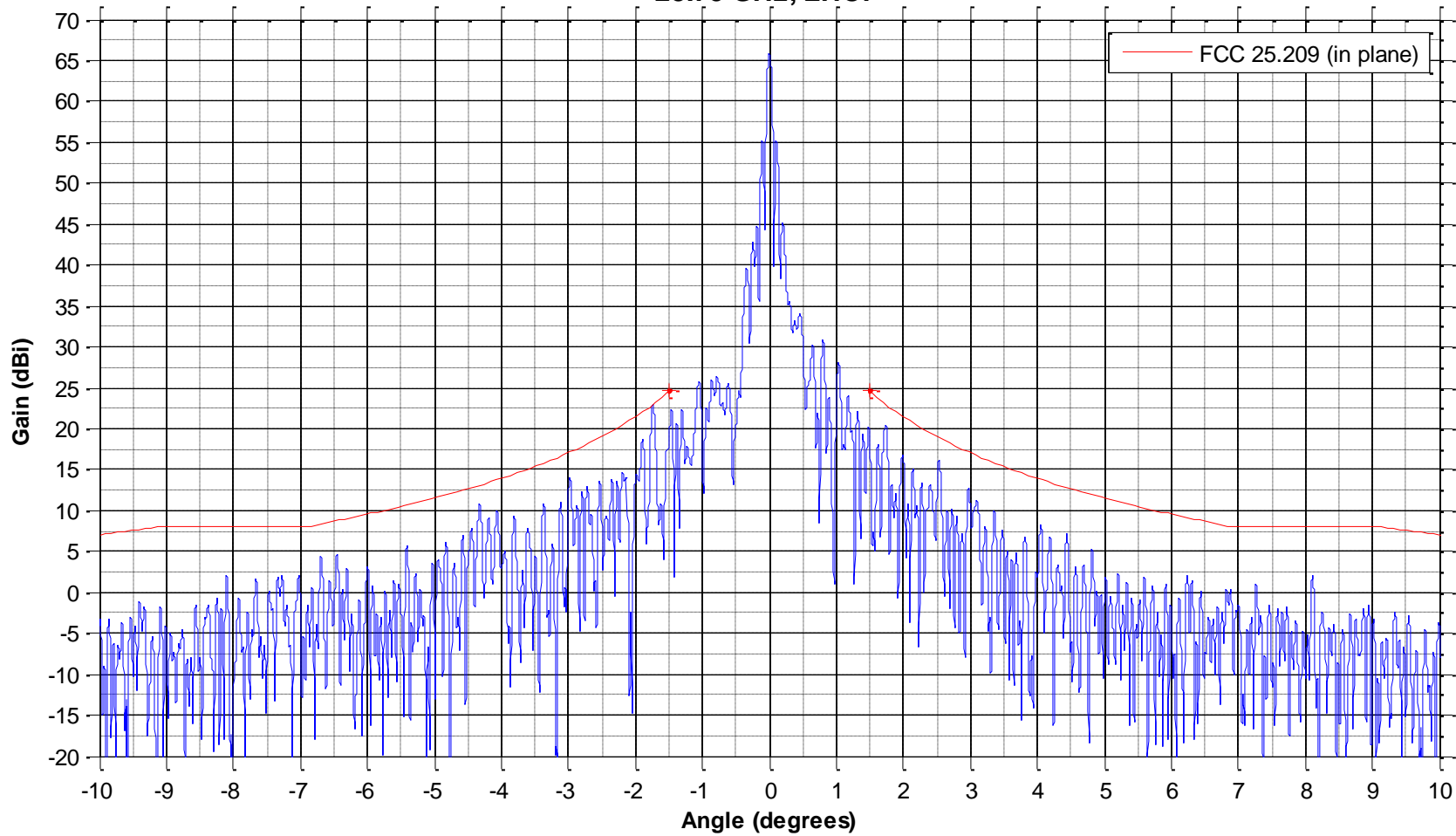
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, $\pm 10^\circ$
28.75 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX2_28750MHZ
Plot: 3.61a

Gain: 65.90 dBi
-3 dB BW: 0.07°
-10 dB BW: 0.10°

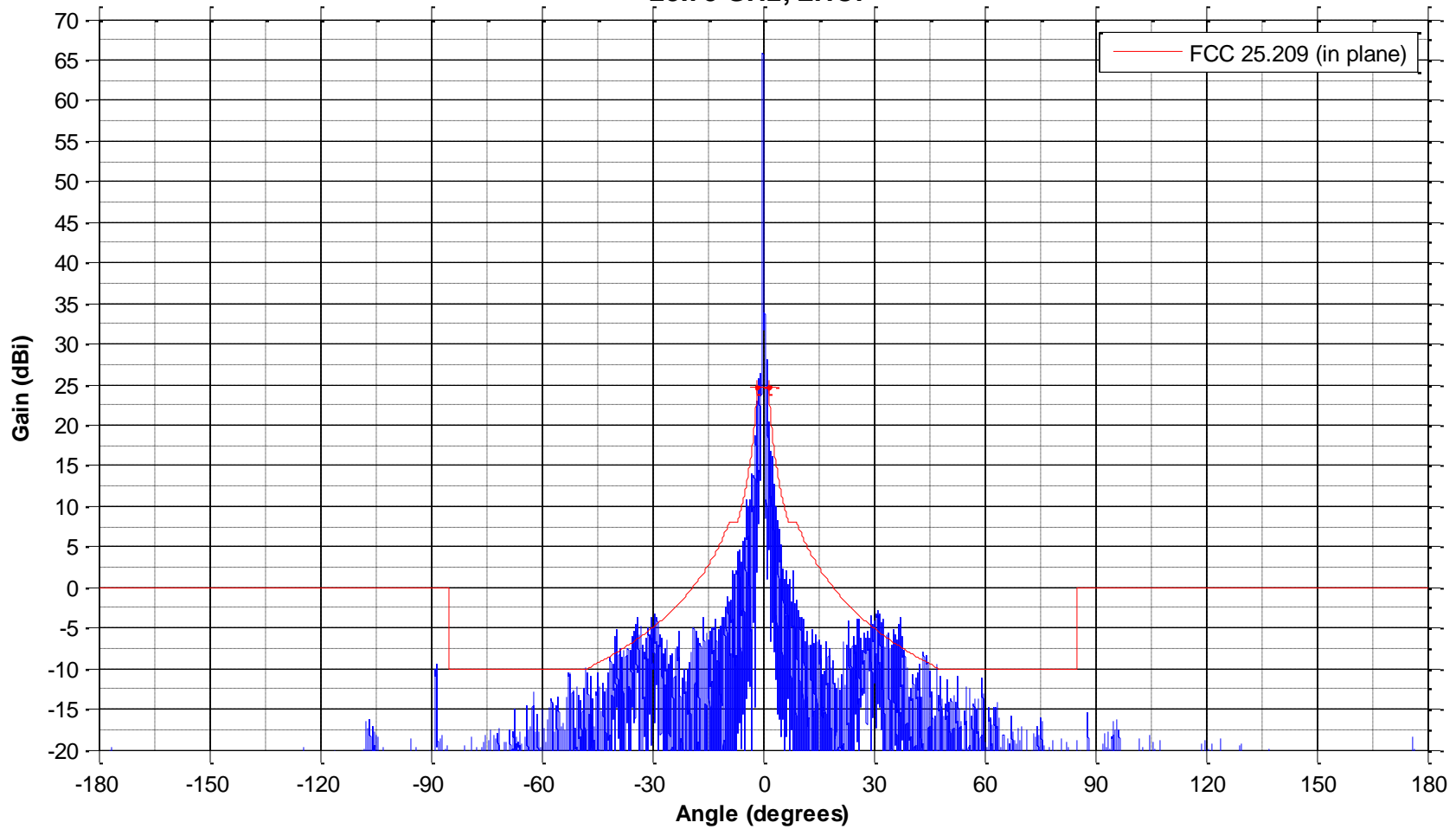
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±10°
28.75 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX2_28750MHZ
Plot: 3.61b

Gain: 65.90 dBi
-3 dB BW: 0.07°
-10 dB BW: 0.10°
Excursions: 0.7%
Max. over: 3.58 dB at 37.18°

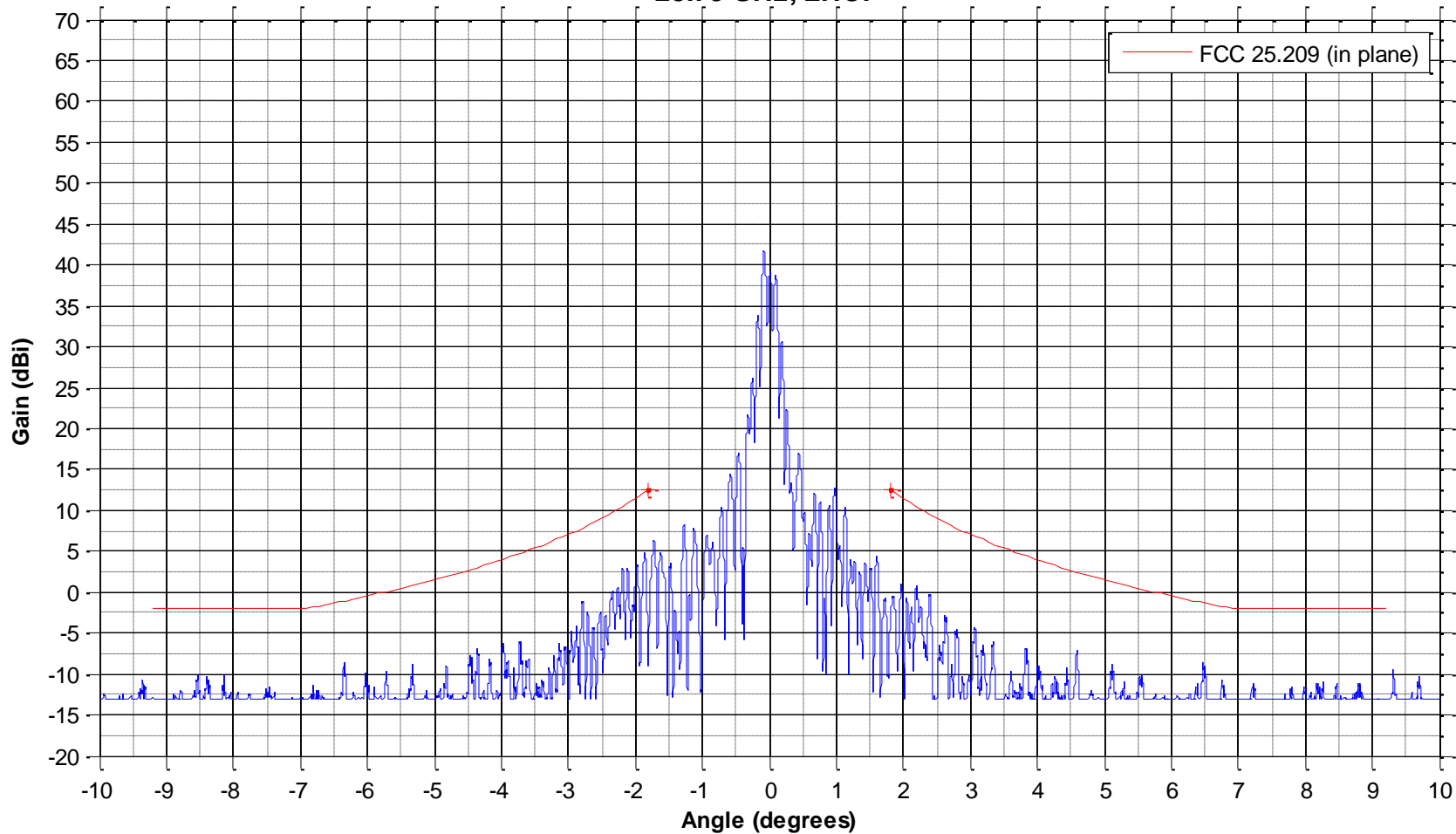
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
28.75 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX2_28750MHZ_CROSSPOL
Plot: 3.62

Gain: 65.90 dBi

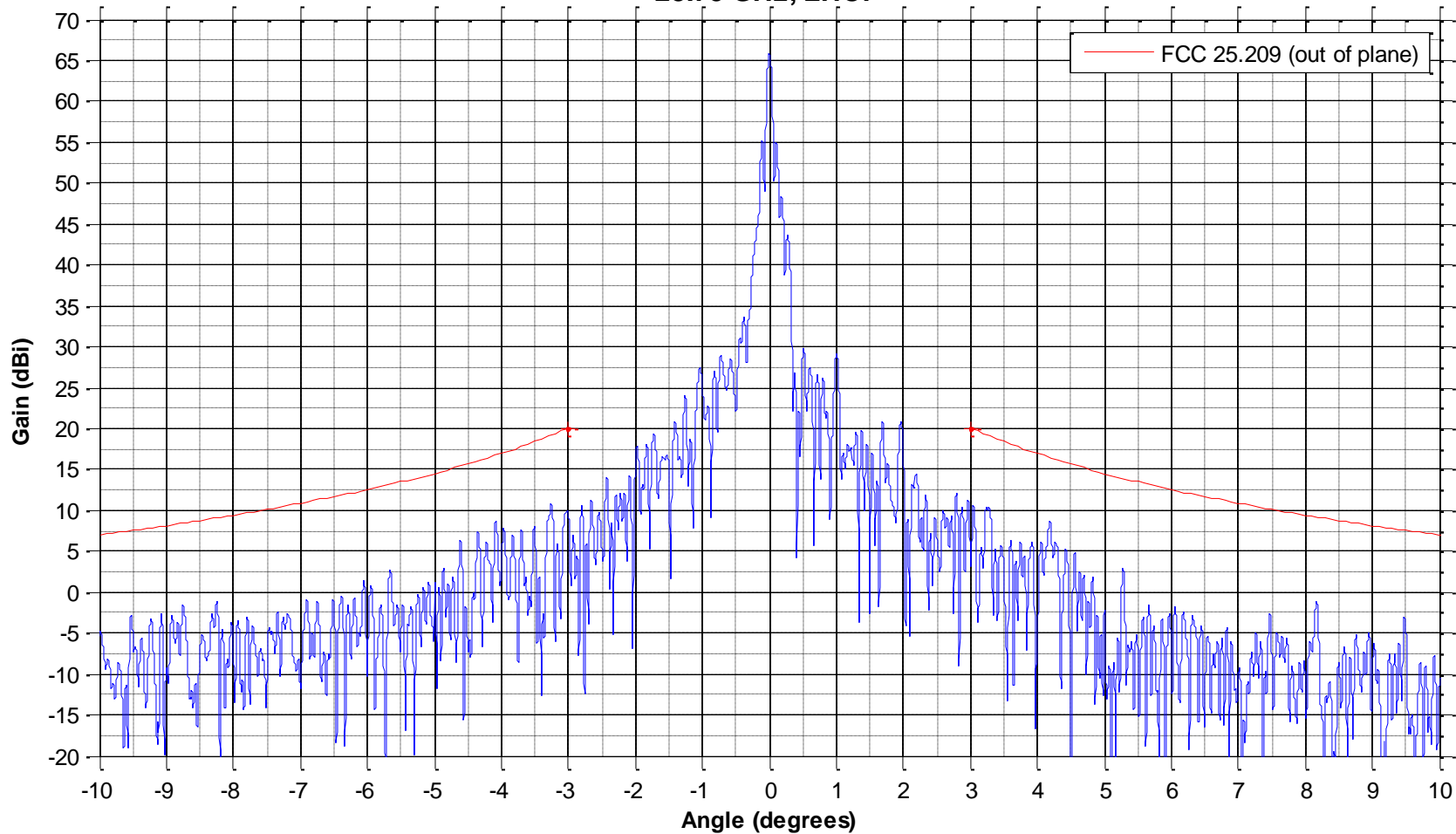
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, $\pm 10^\circ$
28.75 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX2_28750MHZ
Plot: 3.63a

Gain: 65.90 dBi
-3 dB BW: 0.07°
-10 dB BW: 0.11°

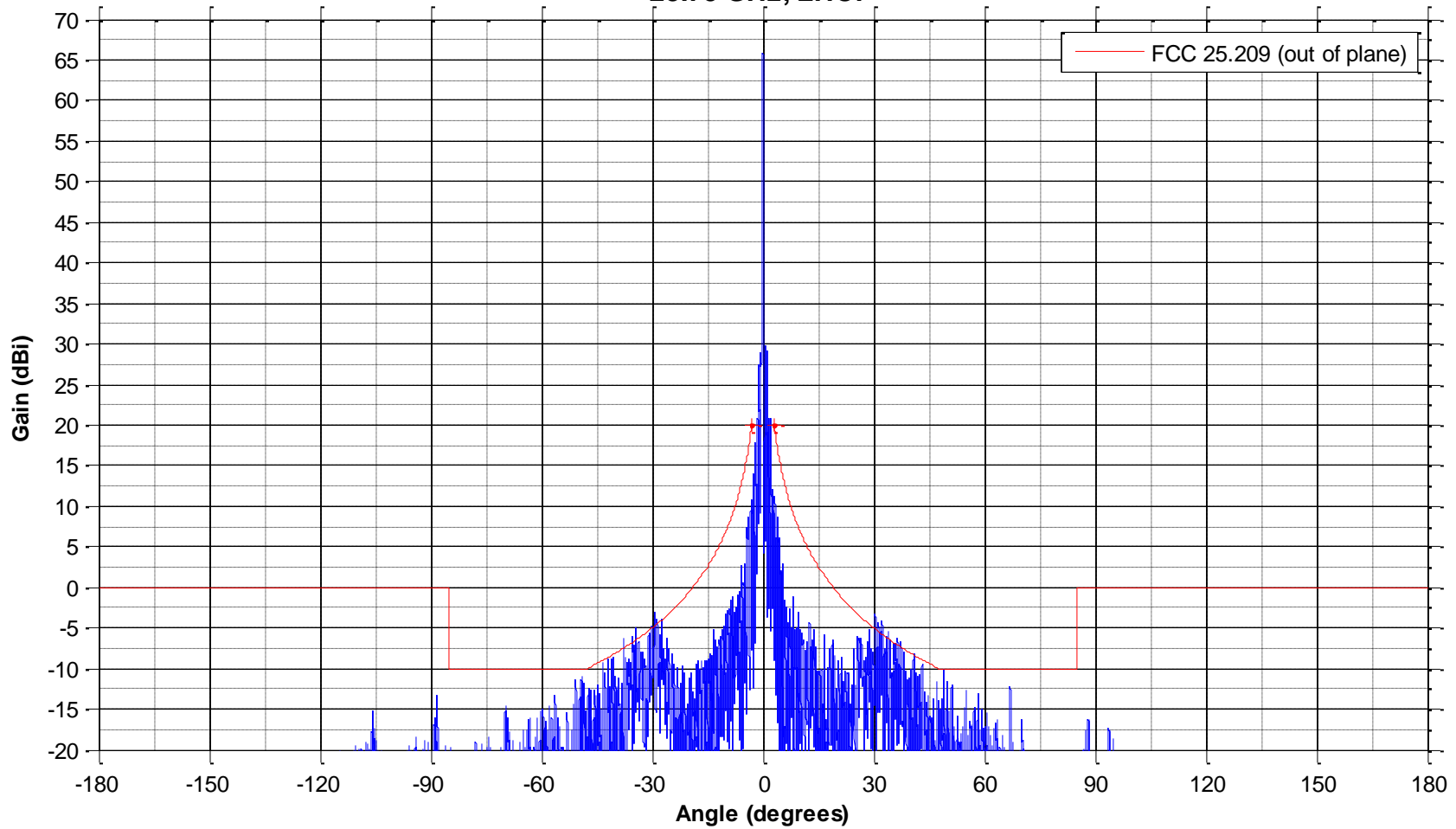
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±10°
28.75 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX2_28750MHZ
Plot: 3.63b

Gain: 65.90 dBi
-3 dB BW: 0.07°
-10 dB BW: 0.11°
Excursions: 0.2%
Max. over: 1.90 dB at 30.43°

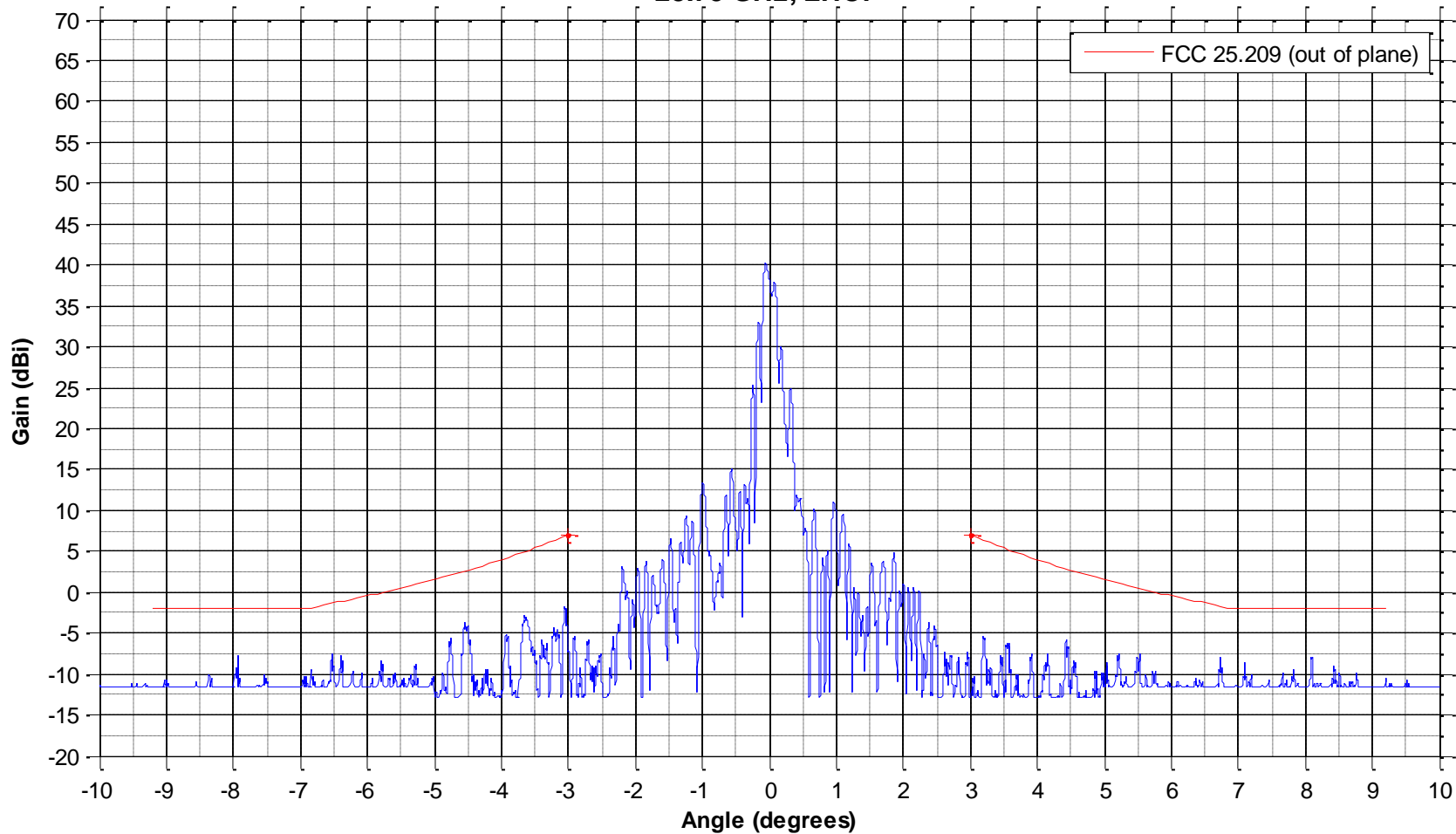
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
28.75 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX2_28750MHZ_CROSSPOL
Plot: 3.64

Gain: 65.90 dBi

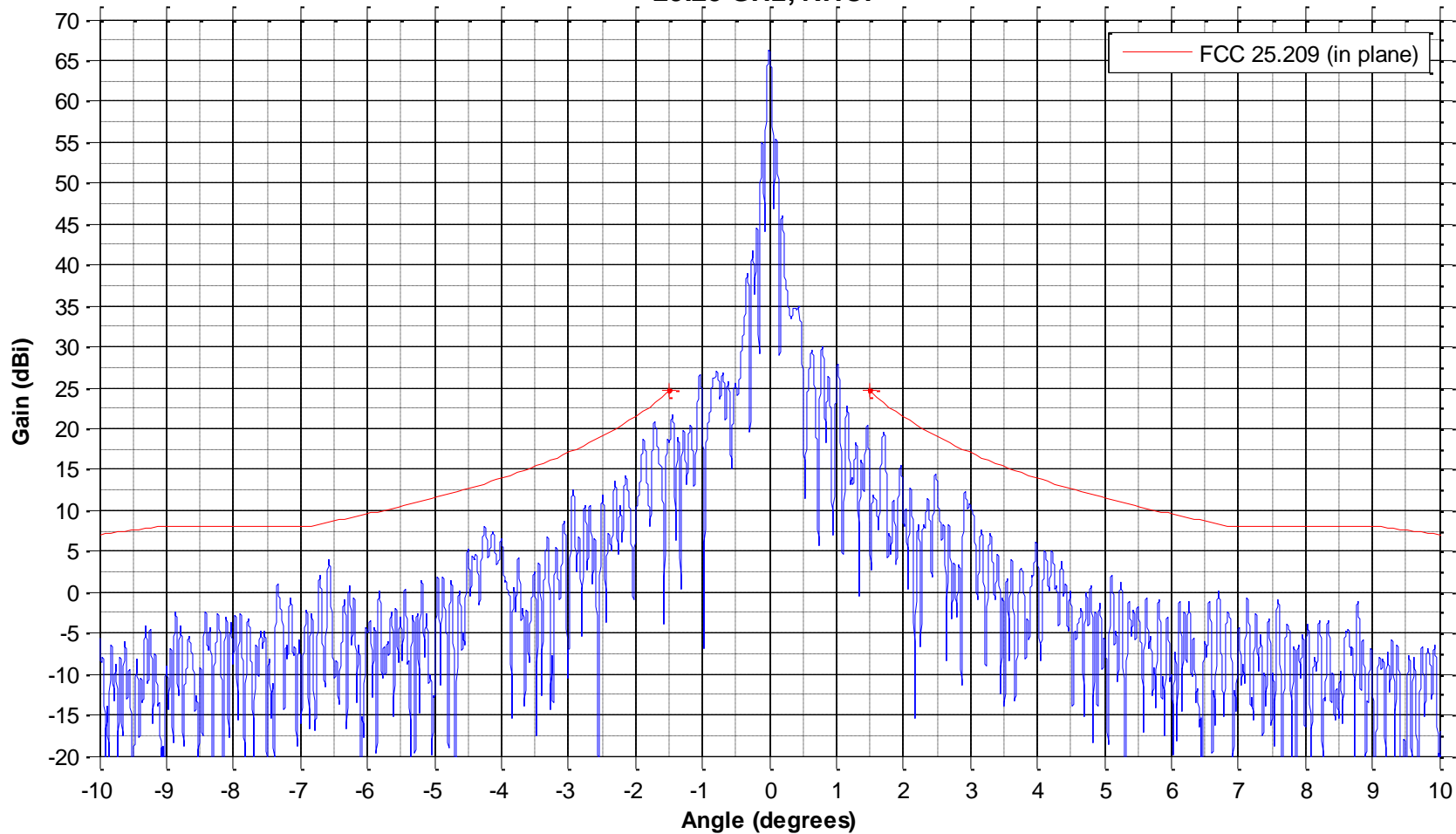
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, $\pm 10^\circ$
28.75 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX1_29250MHZ
Plot: 3.65a

Gain: 66.25 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.11°

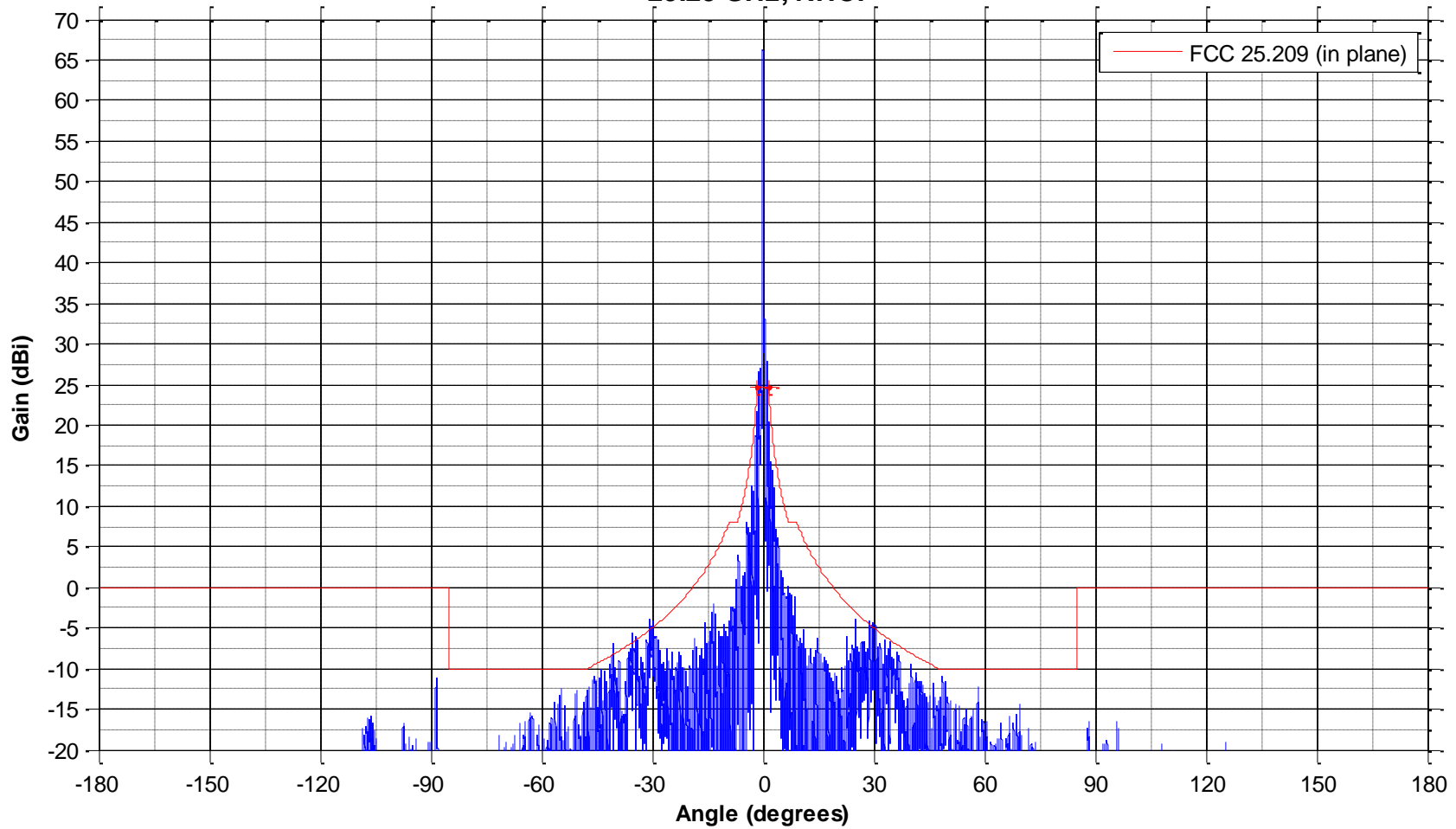
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±10°
29.25 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX1_29250MHZ
Plot: 3.65b

Gain: 66.25 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.11°
Excursions: 0.1%
Max. over: 1.36 dB at -30.73°

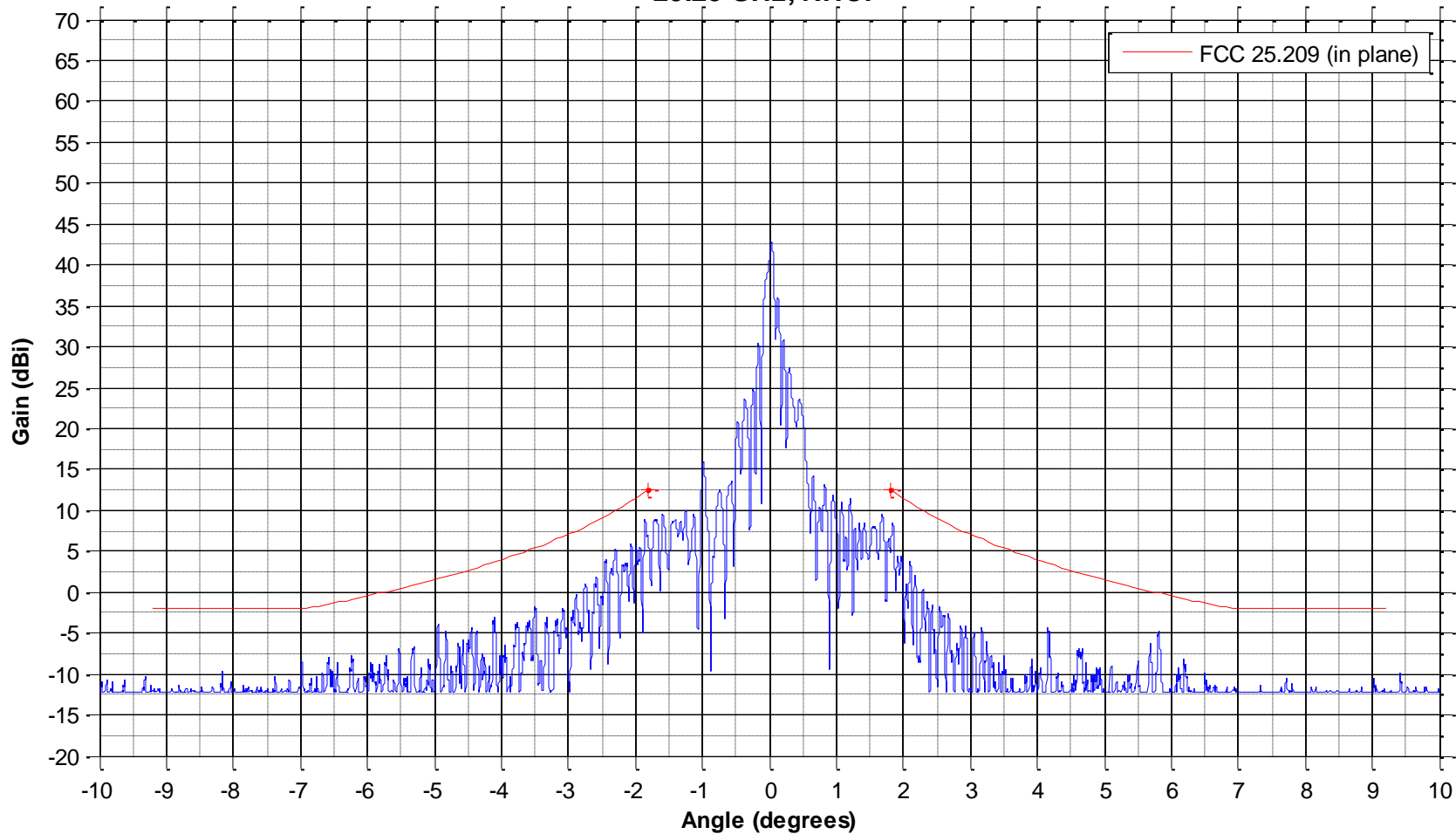
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
29.25 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX1_29250MHZ_CROSSPOL
Plot: 3.66

Gain: 66.25 dBi

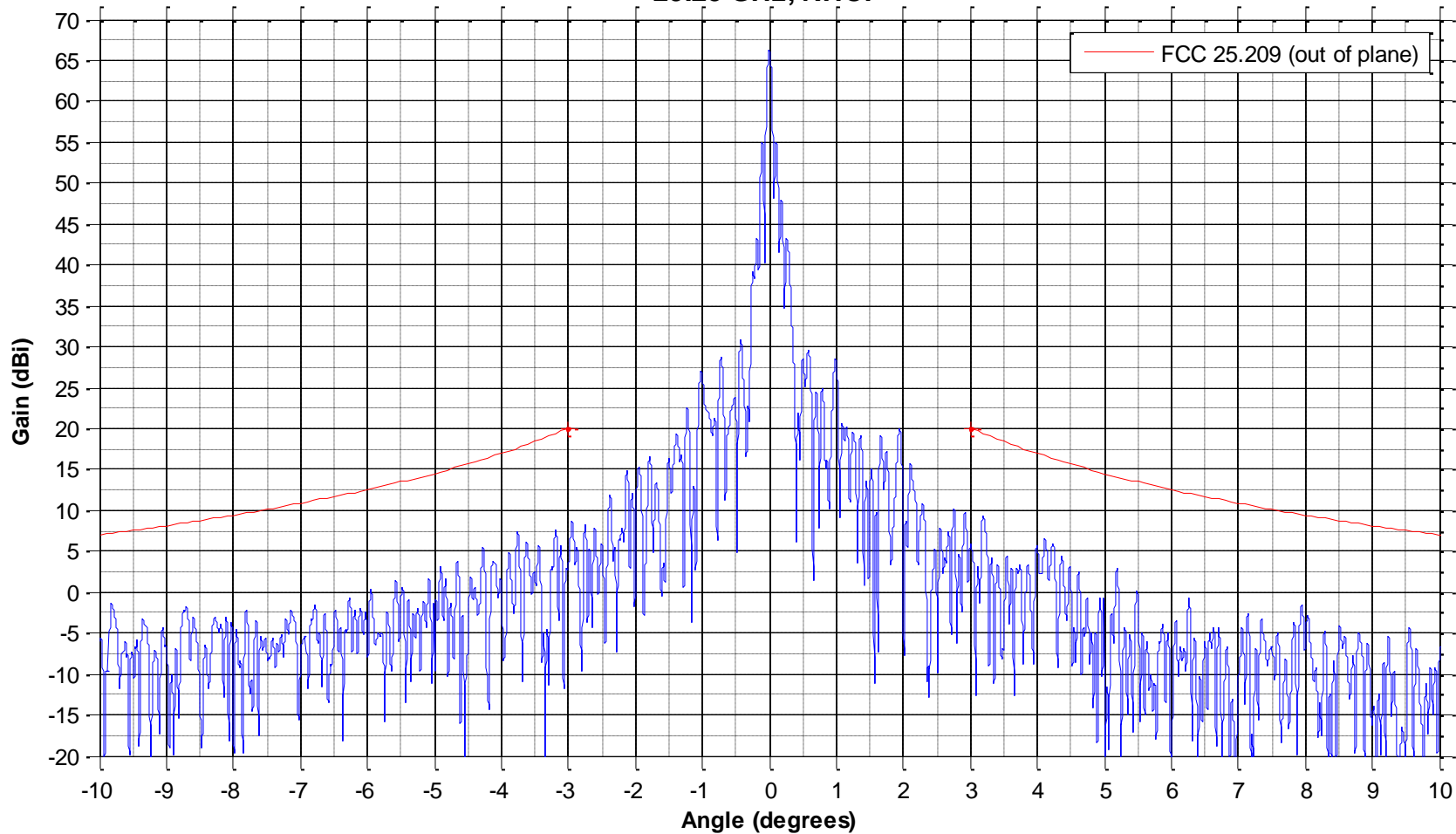
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, $\pm 10^\circ$
29.25 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX1_29250MHZ
Plot: 3.67a

Gain: 66.25 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.10°

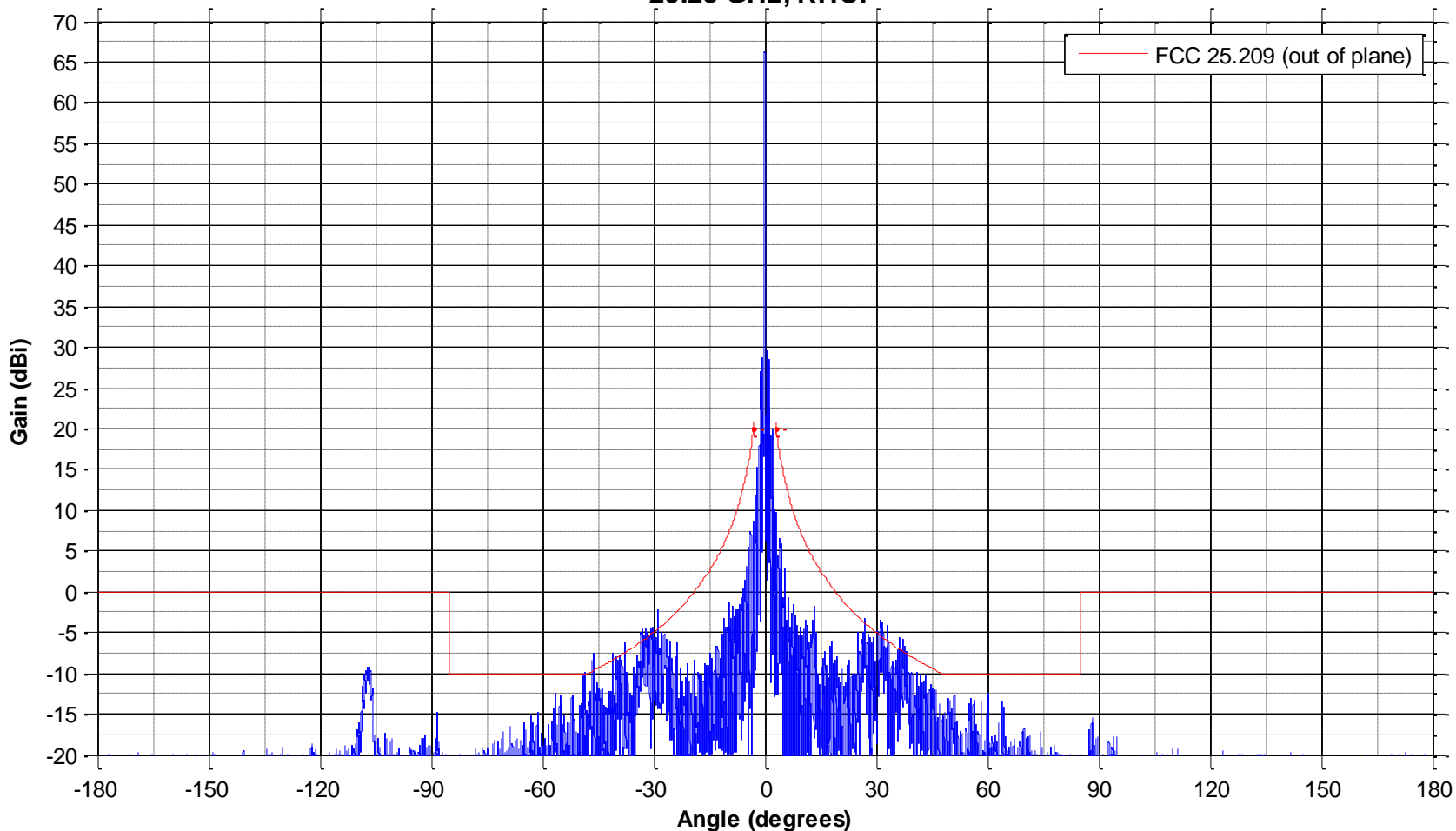
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±10°
29.25 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX1_29250MHZ
Plot: 3.67b

Gain: 66.25 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.10°
Excursions: 0.5%
Max. over: 2.31 dB at -28.71°

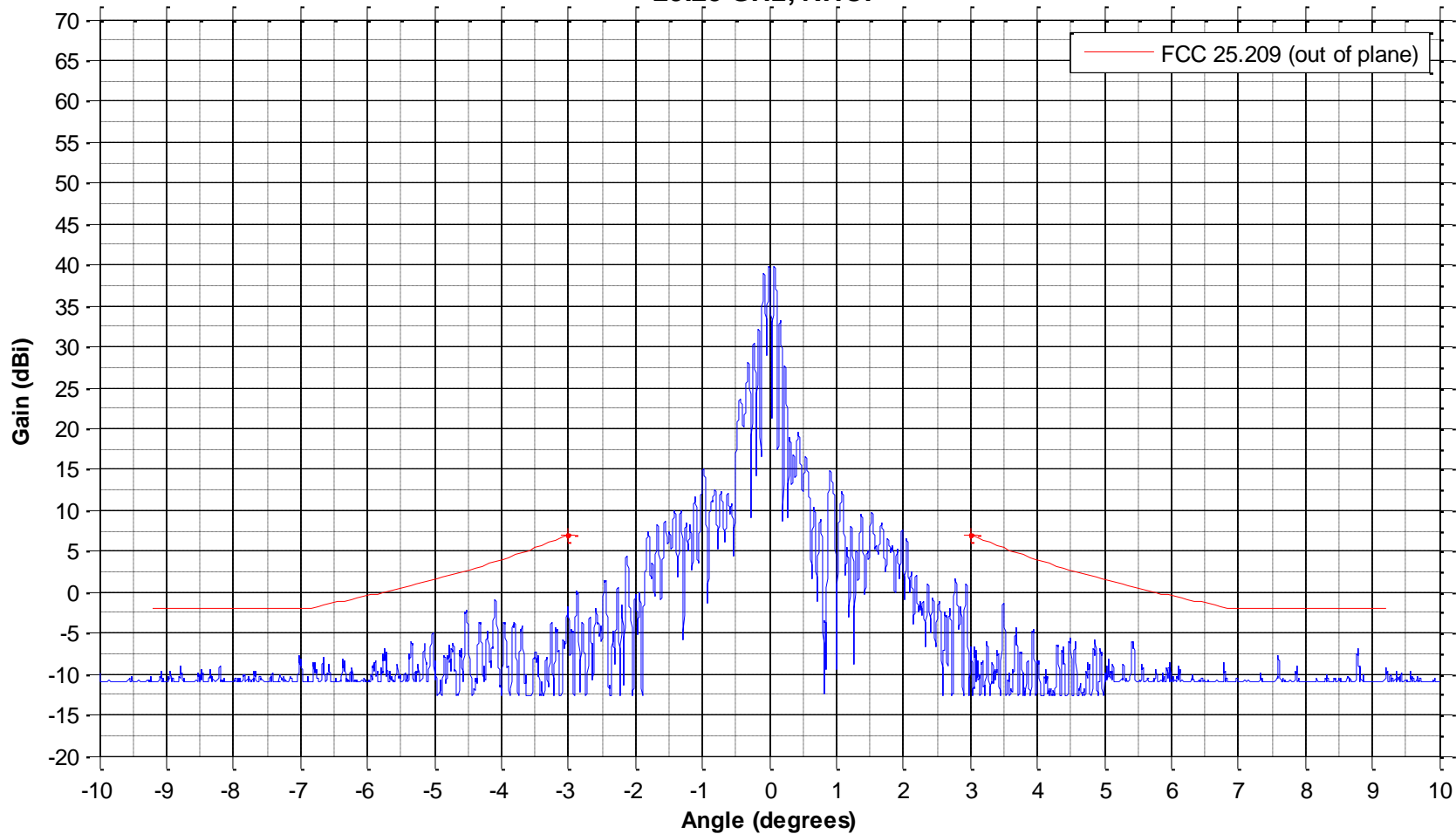
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
29.25 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX1_29250MHZ_CROSSPOL
Plot: 3.68

Gain: 66.25 dBi

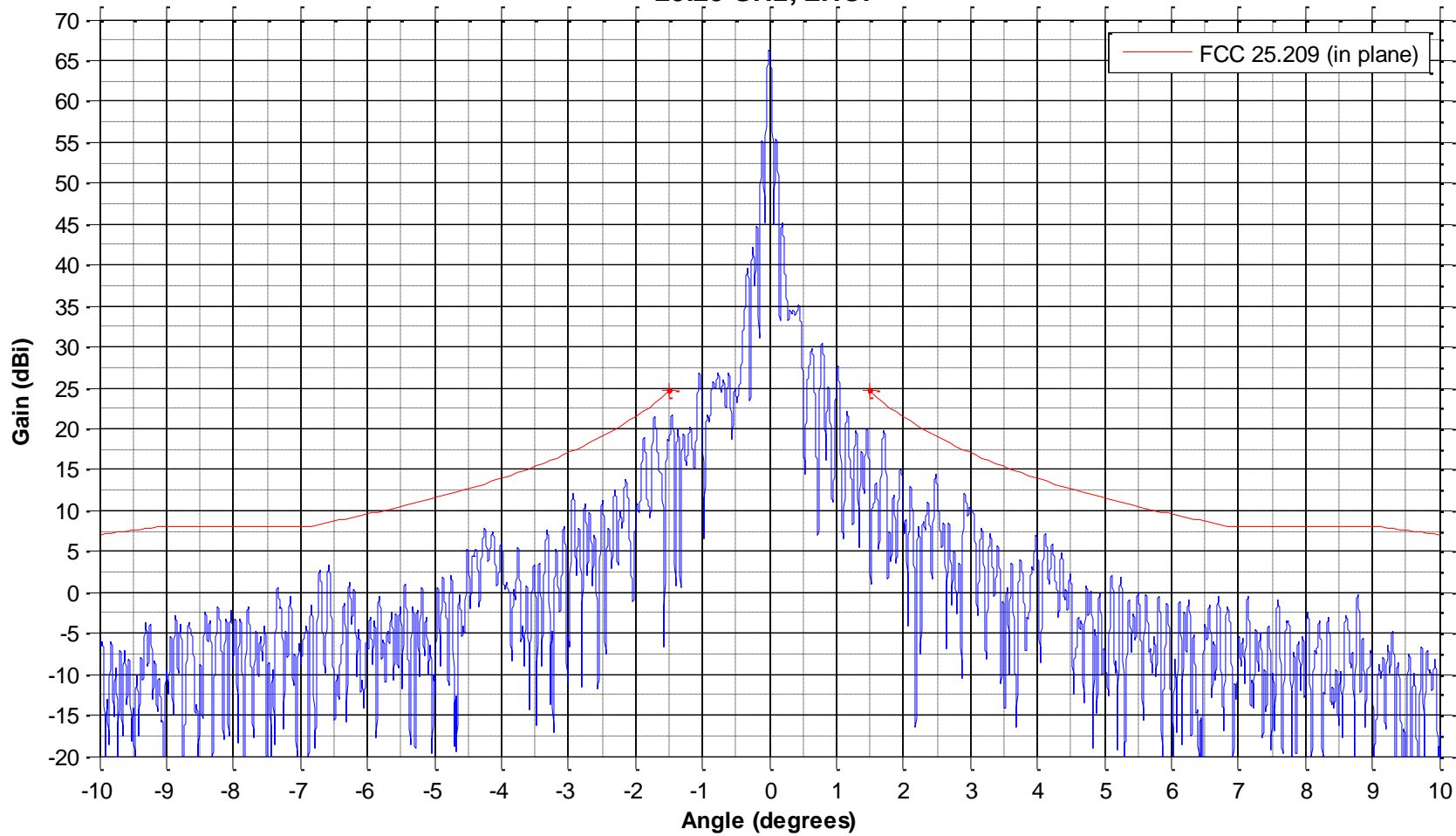
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, $\pm 10^\circ$
29.25 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX2_29250MHZ
Plot: 3.69a

Gain: 66.25 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.10°

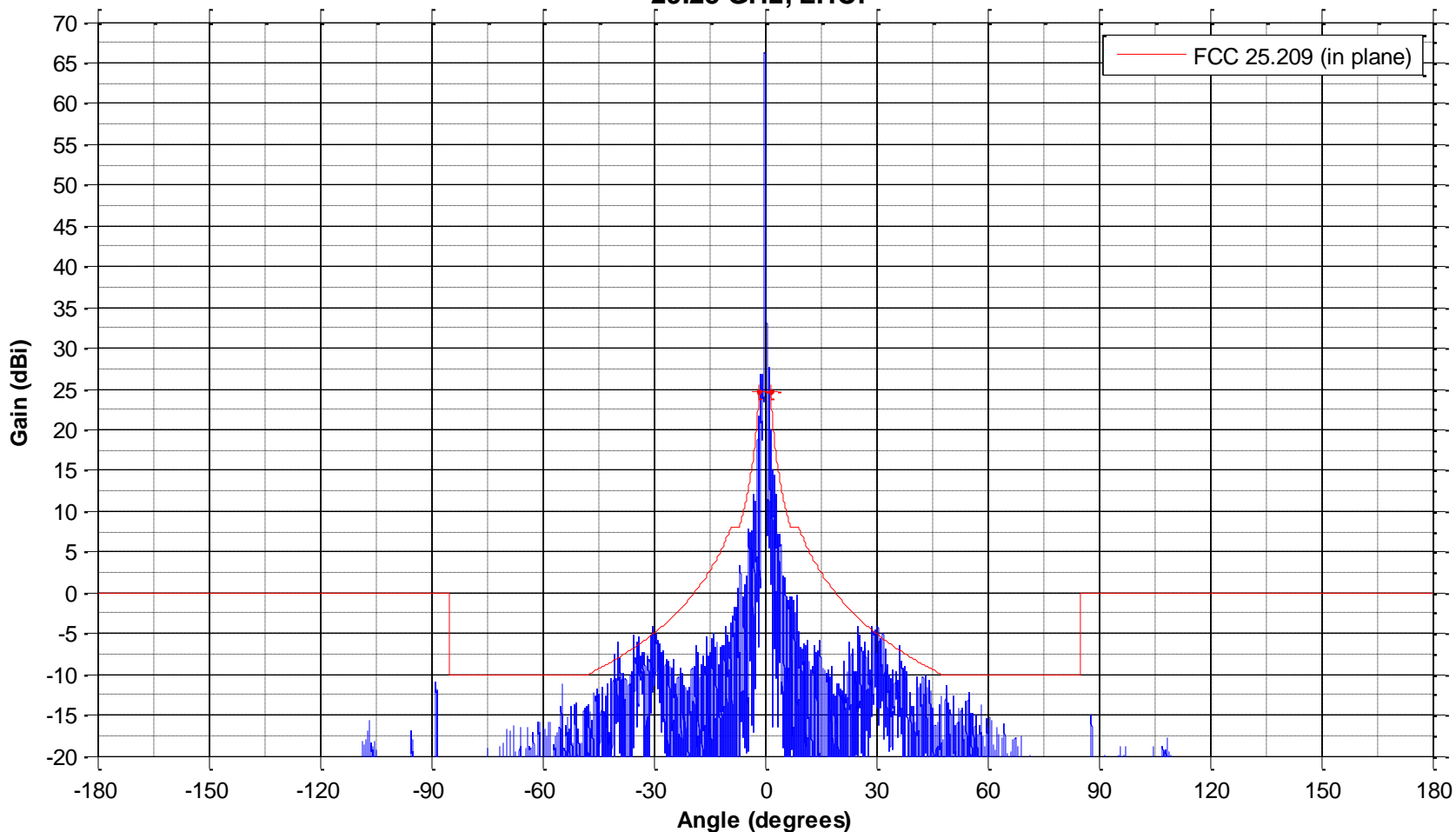
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±10°
29.25 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX2_29250MHZ
Plot: 3.69b

Gain: 66.25 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.10°
Excursions: 0.2%
Max. over: 1.90 dB at -39.55°

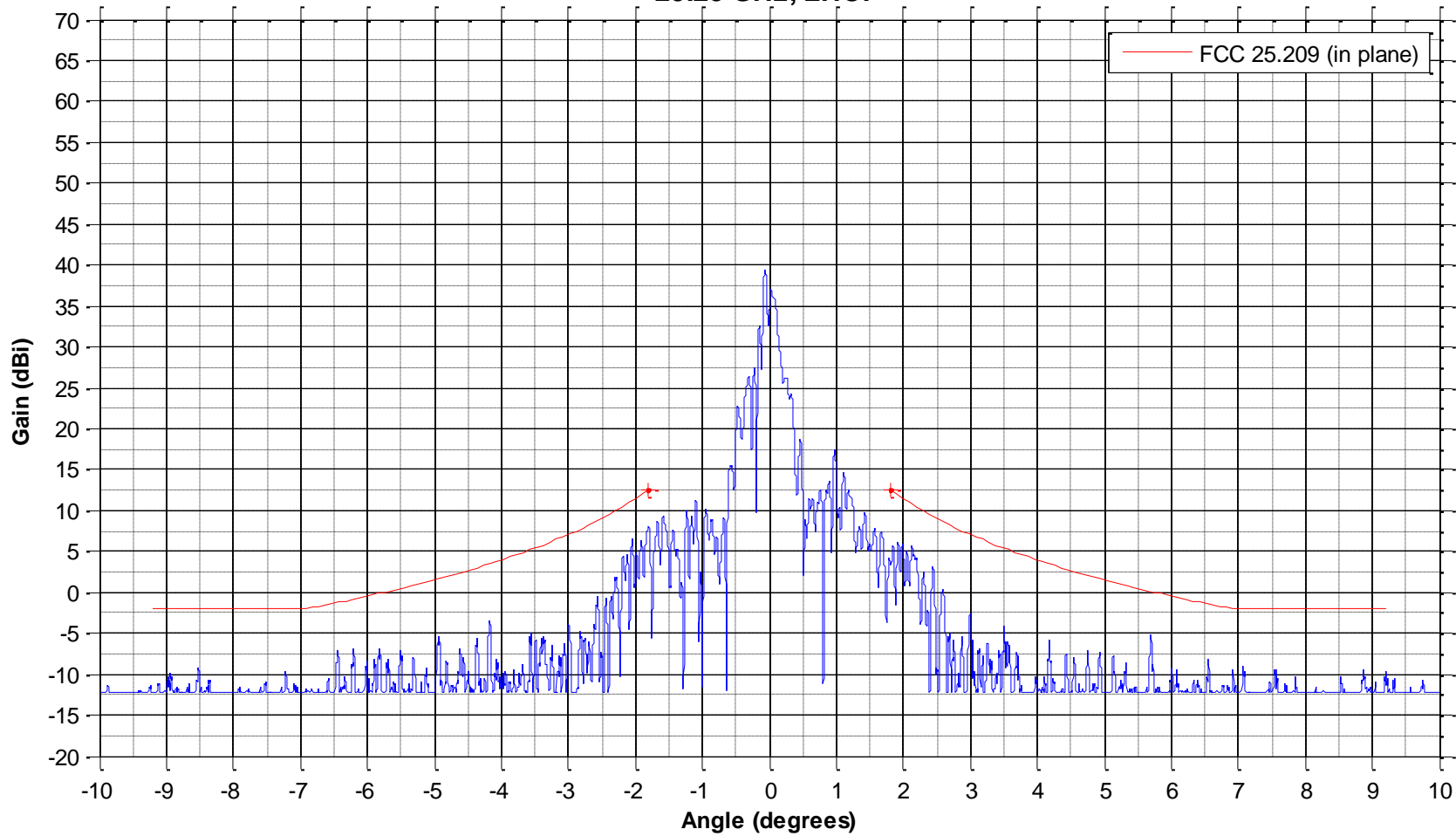
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
29.25 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX2_29250MHZ_CROSSPOL
Plot: 3.70

Gain: 66.25 dBi

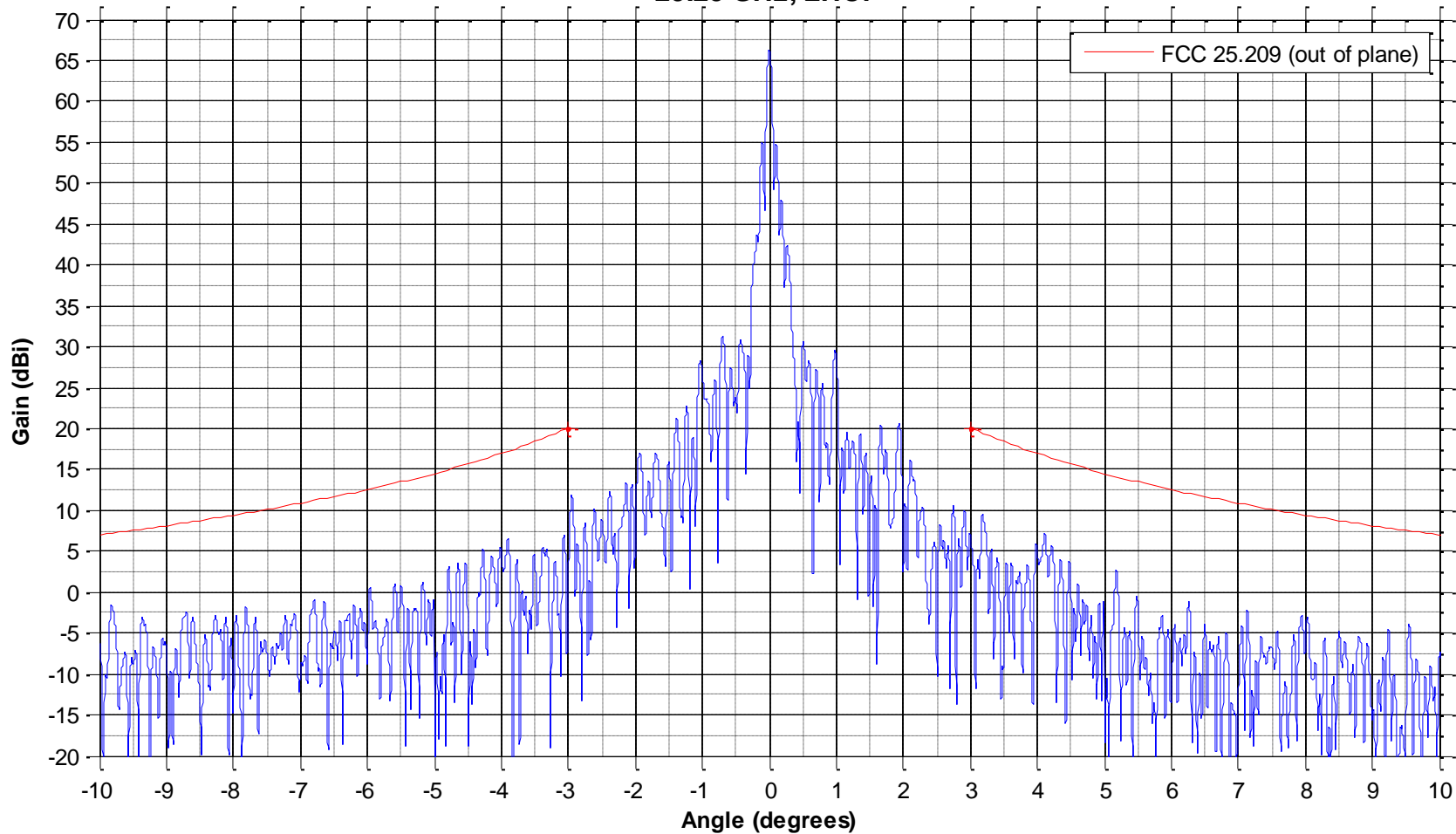
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, $\pm 10^\circ$
29.25 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX2_29250MHZ
Plot: 3.71a

Gain: 66.25 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.11°

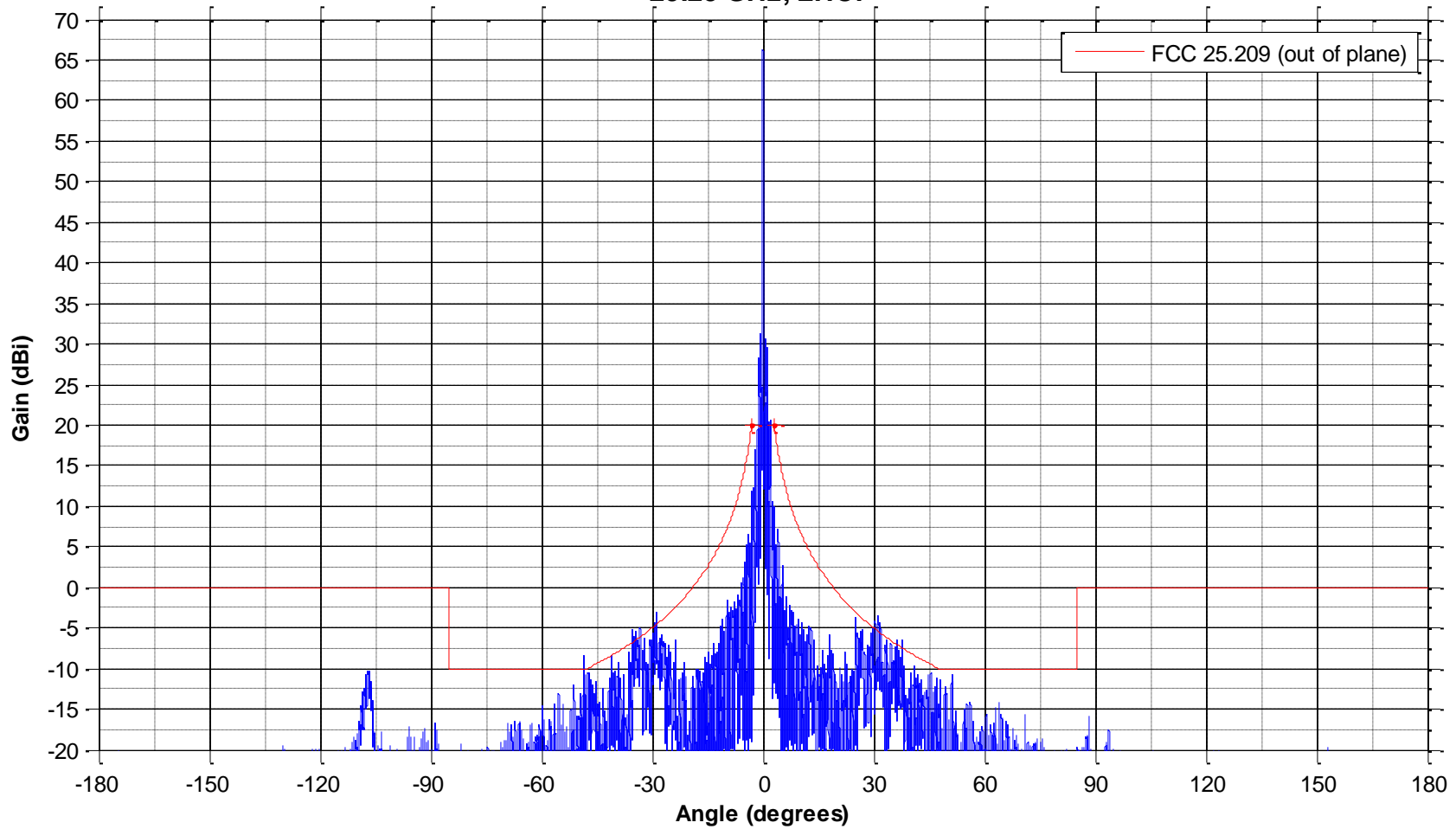
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±10°
29.25 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX2_29250MHZ
Plot: 3.71b

Gain: 66.25 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.11°
Excursions: 0.2%
Max. over: 1.93 dB at 31.36°

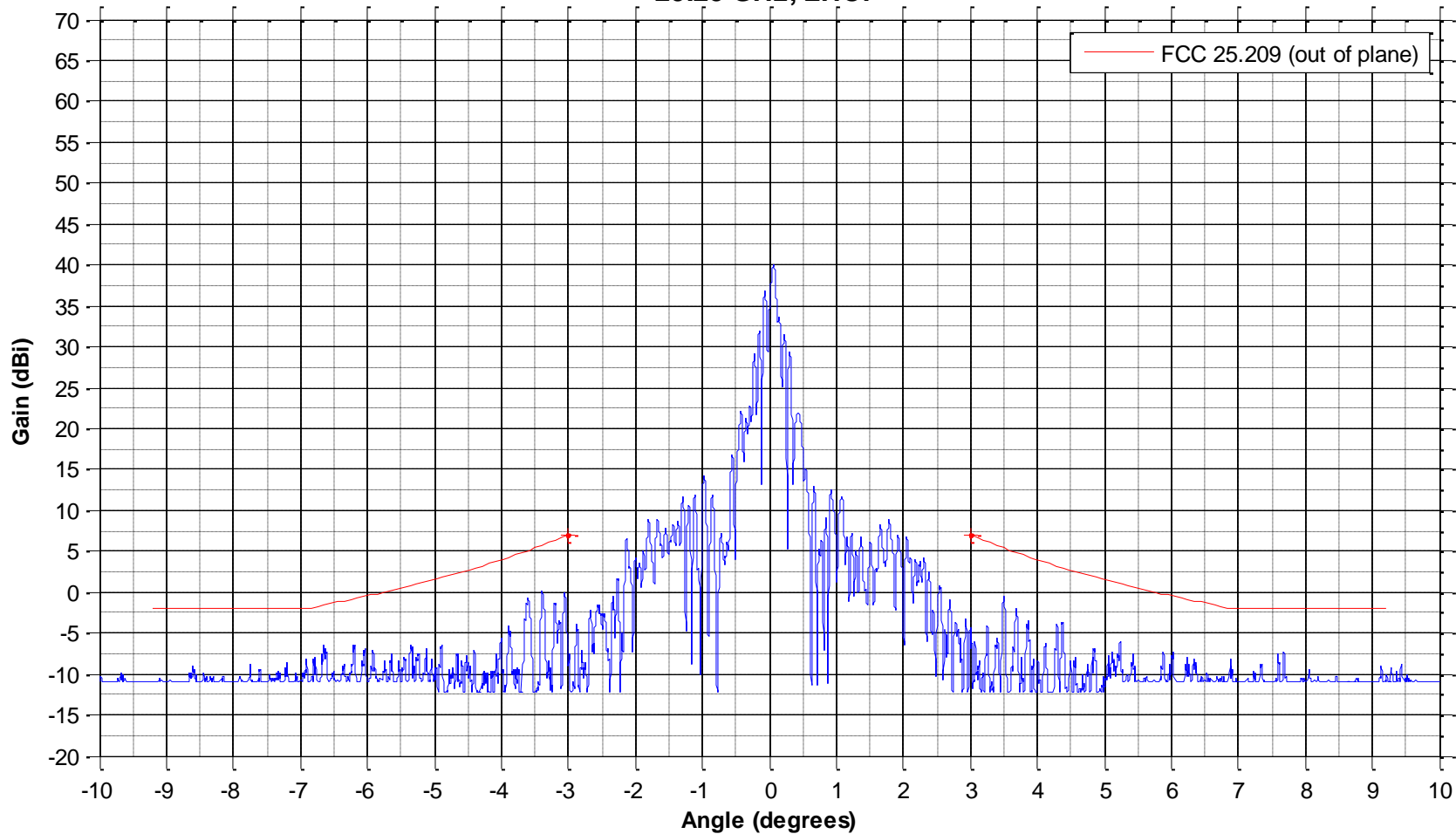
9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
29.25 GHz, LHCP



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX2_29250MHZ_CROSSPOL
Plot: 3.72

Gain: 66.25 dBi

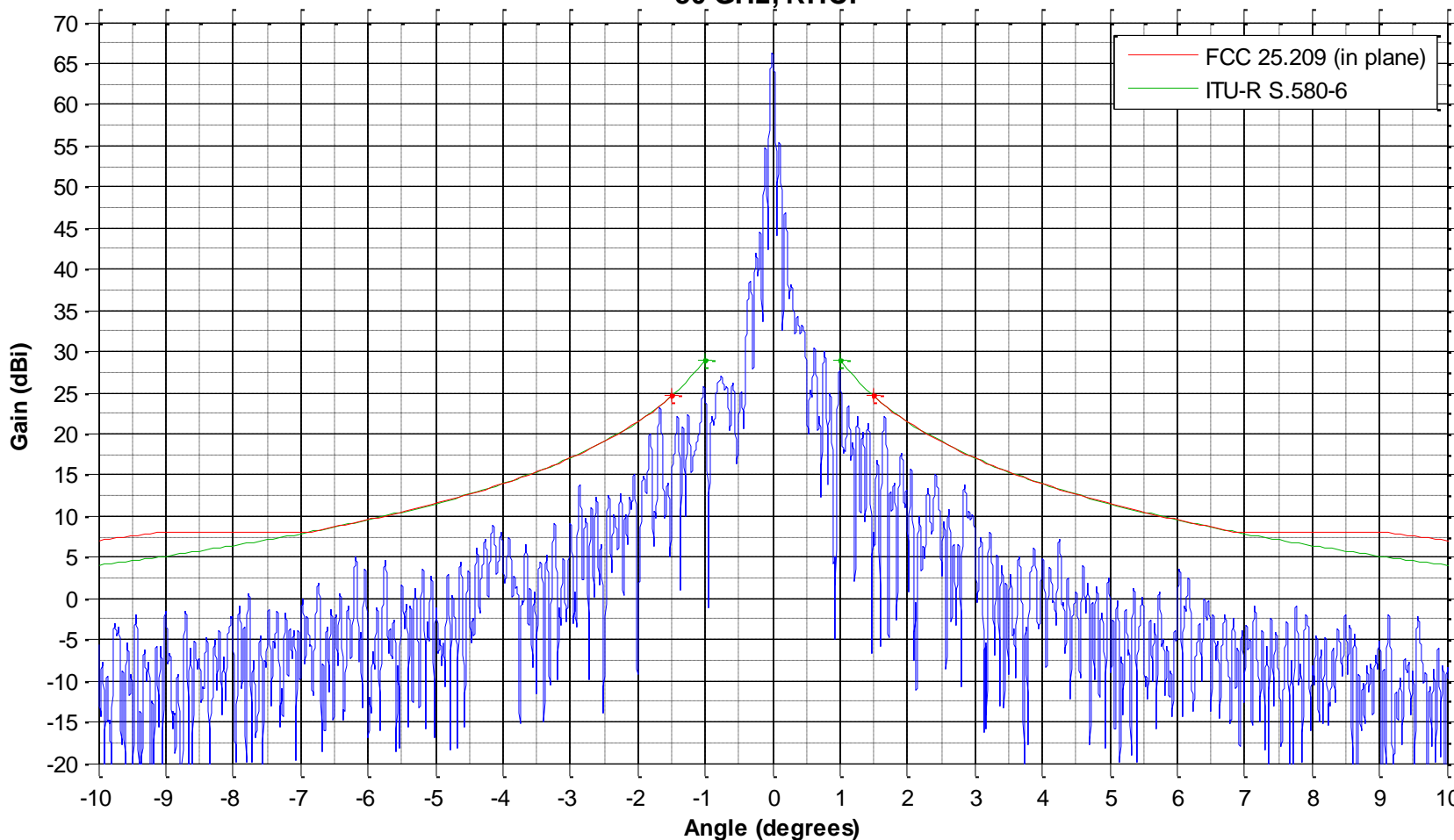
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, $\pm 10^\circ$
29.25 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX1_30000MHZ
Plot: 3.73a

Gain: 66.29 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.10°

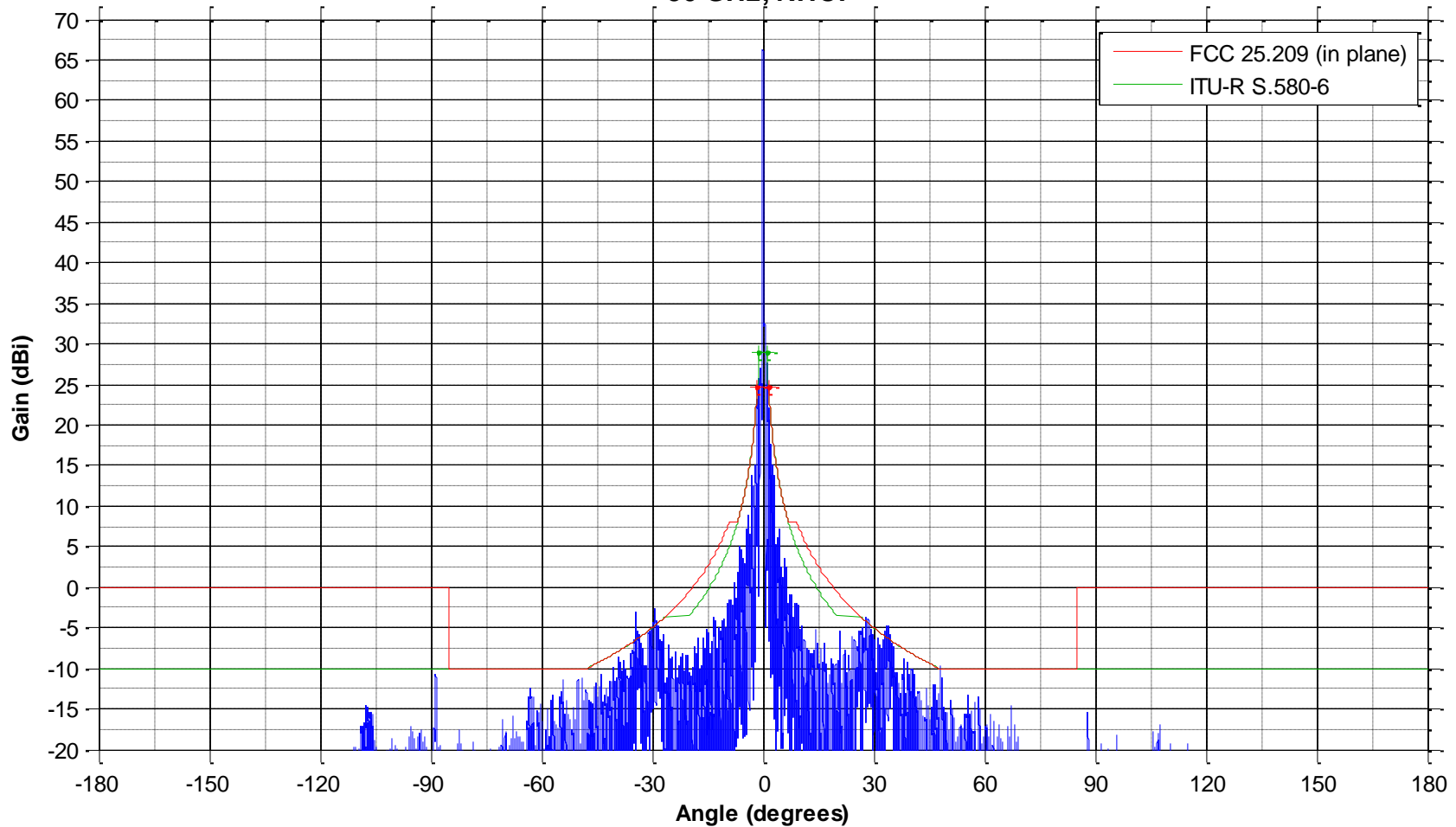
9.4m Ka-Band Earth Station Antenna Co-Pol Azimuth Radiation Pattern, ±10° 30 GHz, RHCP



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX1_30000MHZ
Plot: 3.73b

Gain: 66.29 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.10°
Excursions: 0.3% (FCC), 0.3% (ITU)
FCC Max. over: 3.42 dB at -34.30°
ITU Max. over: 3.42 dB at -34.30°

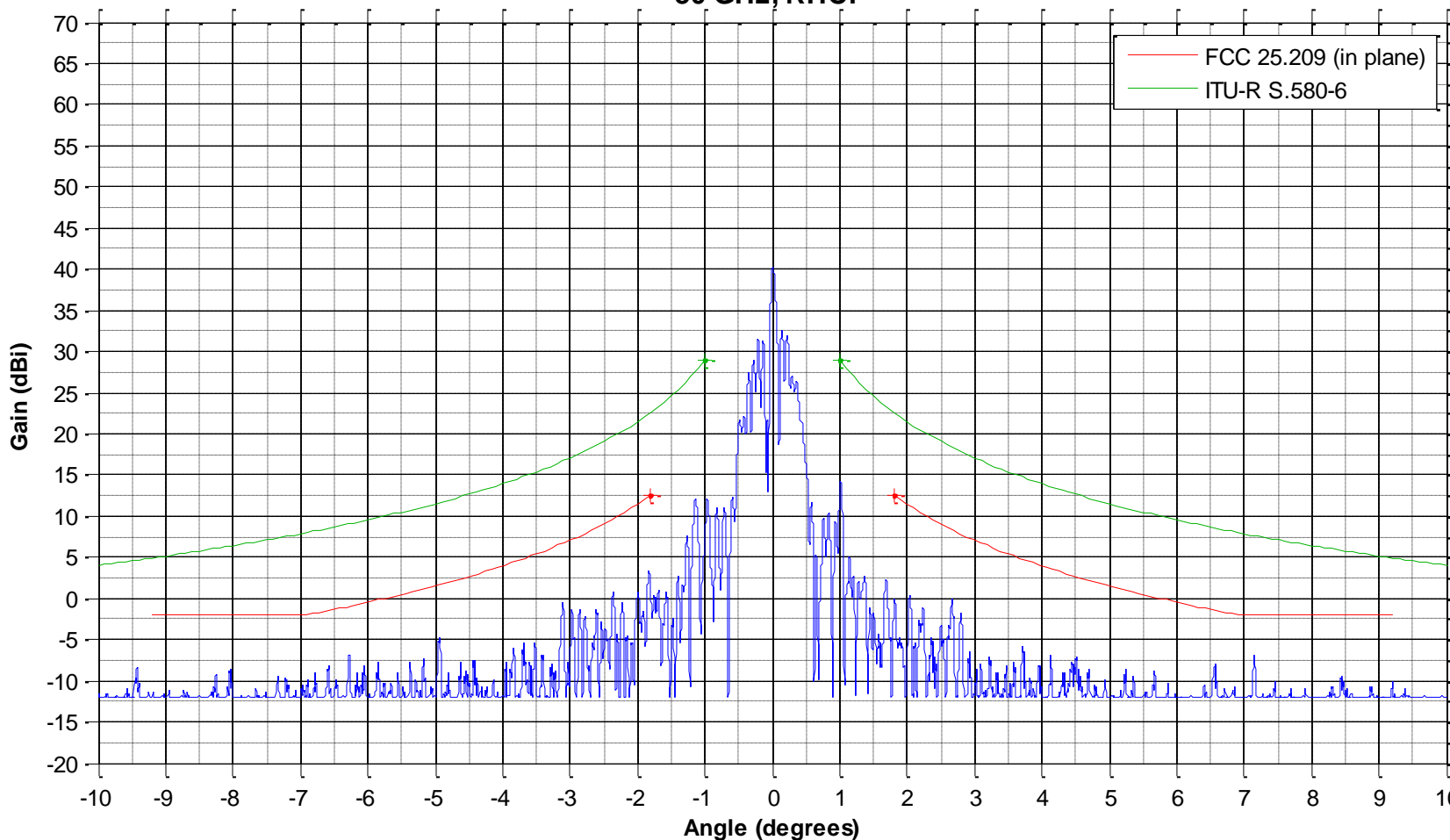
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
30 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX1_30000MHZ_CROSSPOL
Plot: 3.74

Gain: 66.29 dBi

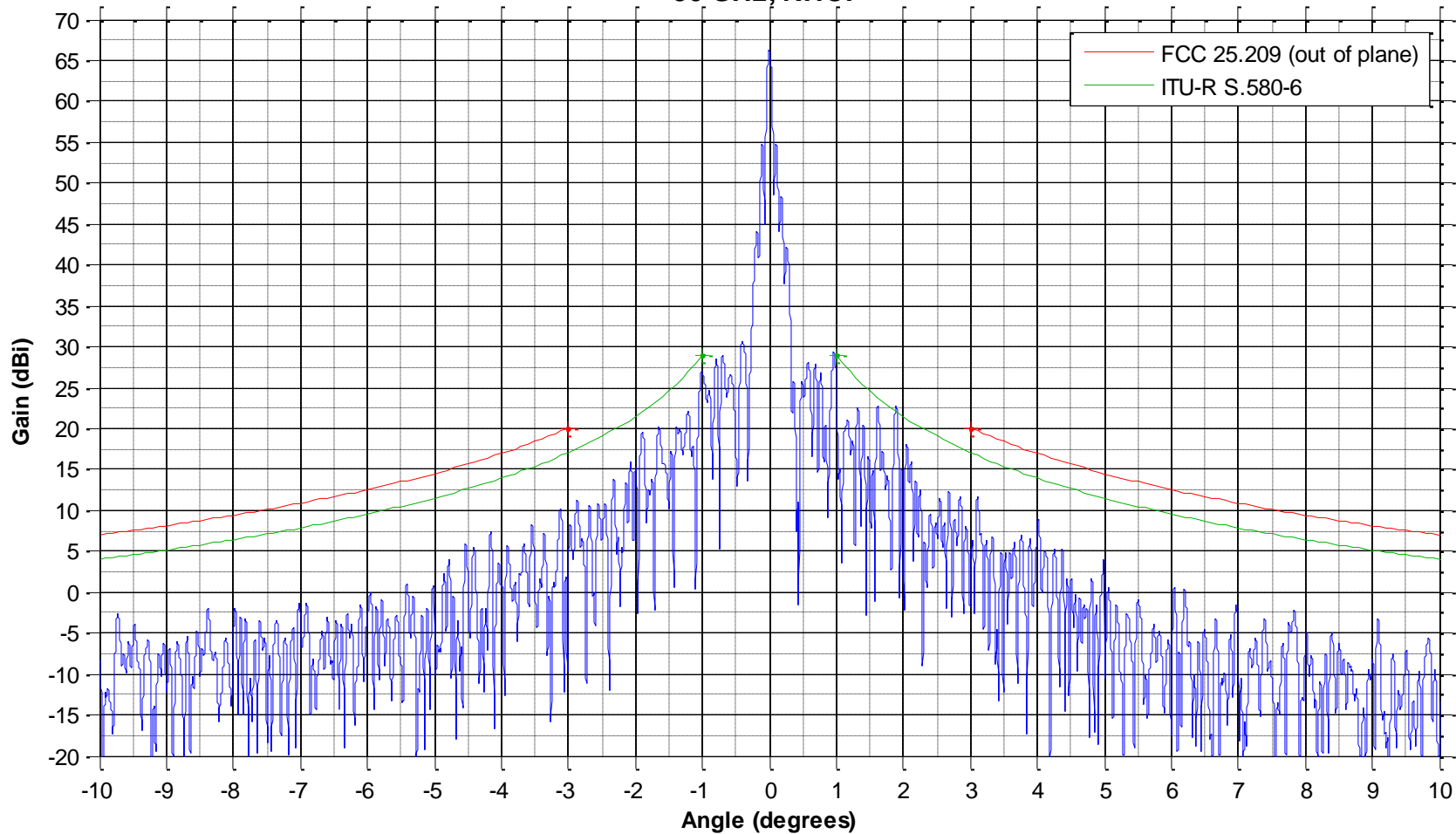
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, ±10°
30 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX1_30000MHZ
Plot: 3.75a

Gain: 66.29 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.10°

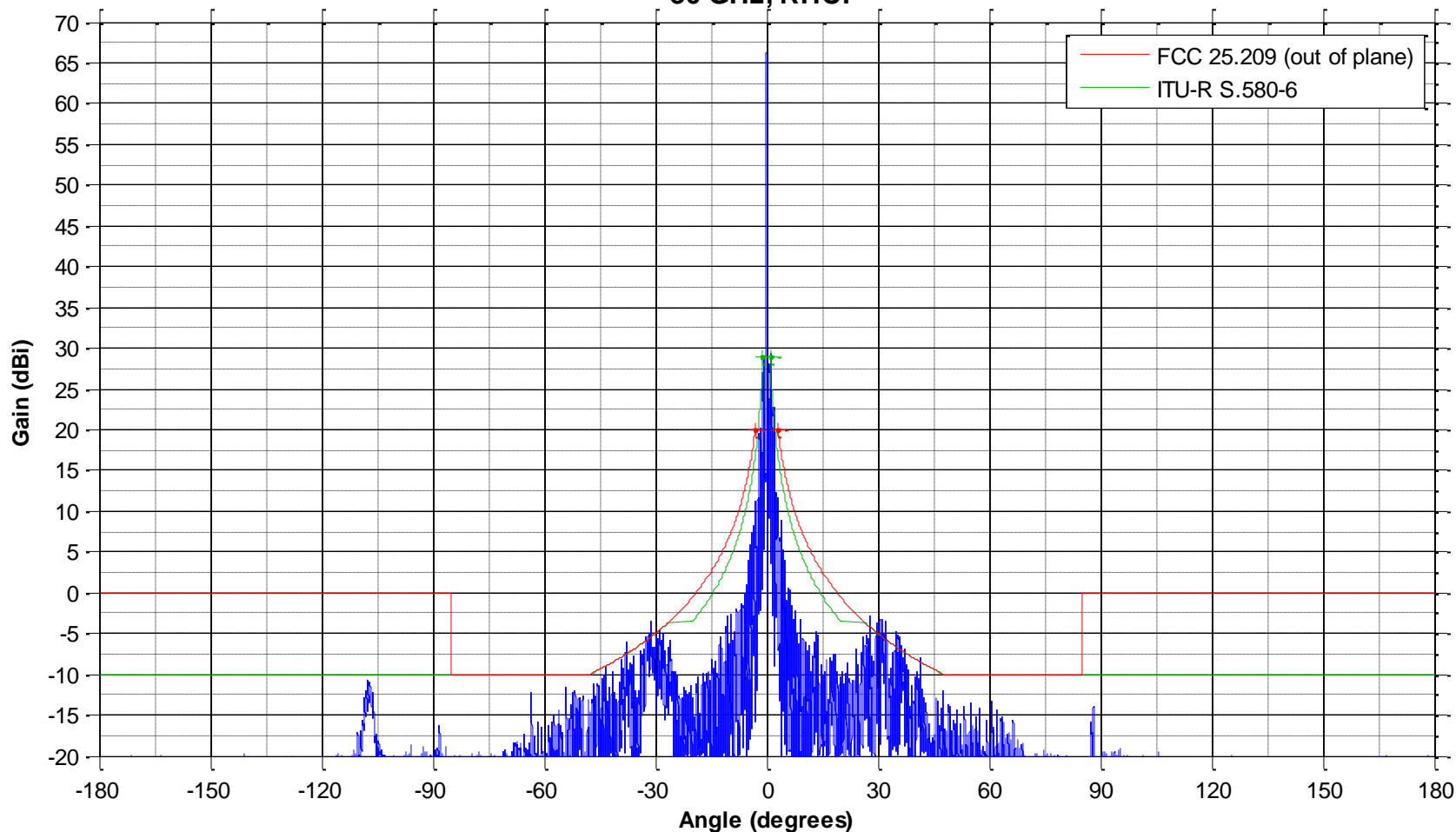
9.4m Ka-Band Earth Station Antenna Co-Pol Elevation Radiation Pattern, ±10° 30 GHz, RHCP



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX1_30000MHZ
Plot: 3.75b

Gain: 66.29 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.10°
Excursions: 0.3% (FCC), 0.4% (ITU)
FCC Max. over: 2.11 dB at 31.92°
ITU Max. over: 2.11 dB at 31.92°

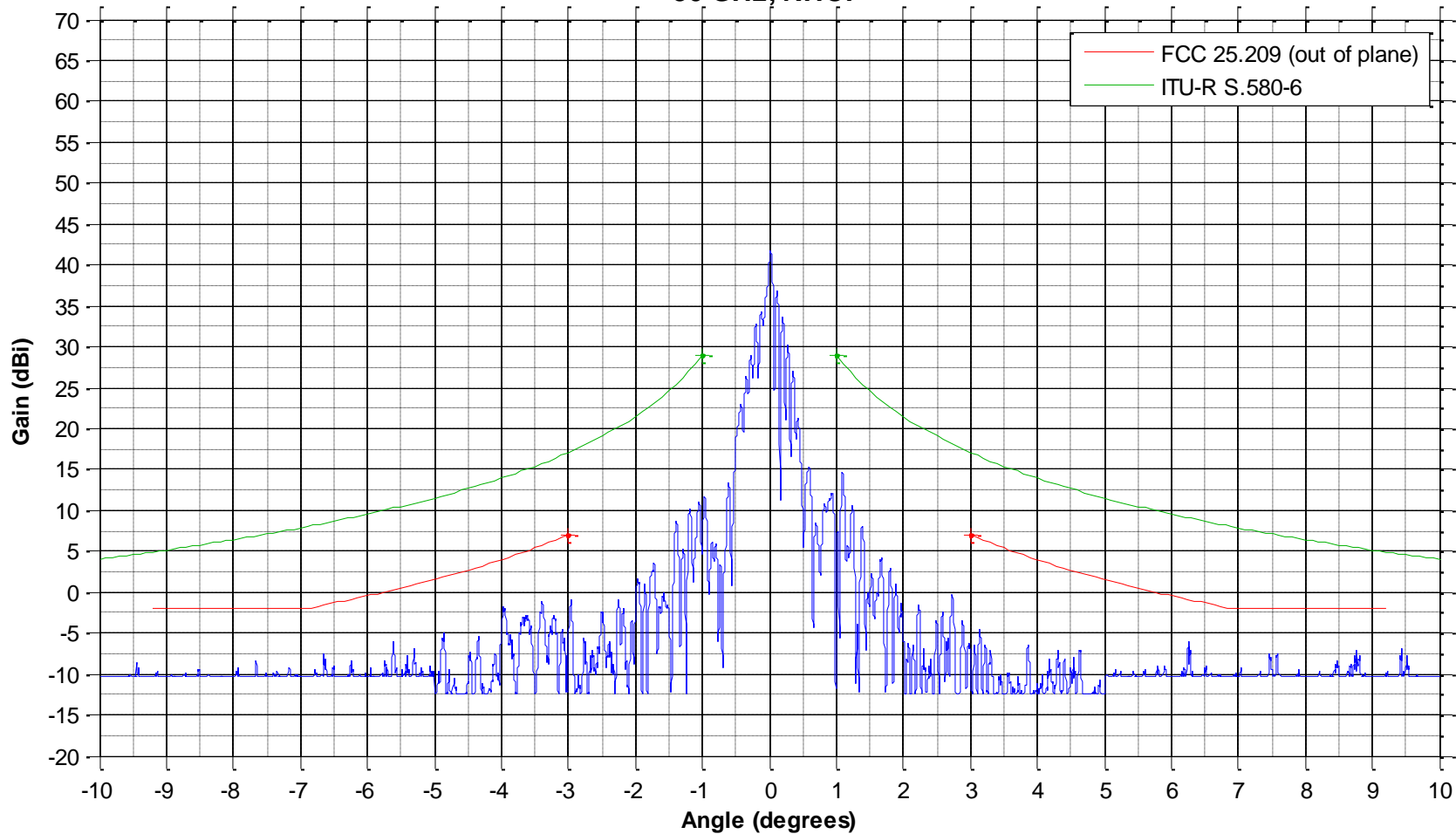
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
30 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX1_30000MHZ_CROSSPOL
Plot: 3.76

Gain: 66.29 dBi

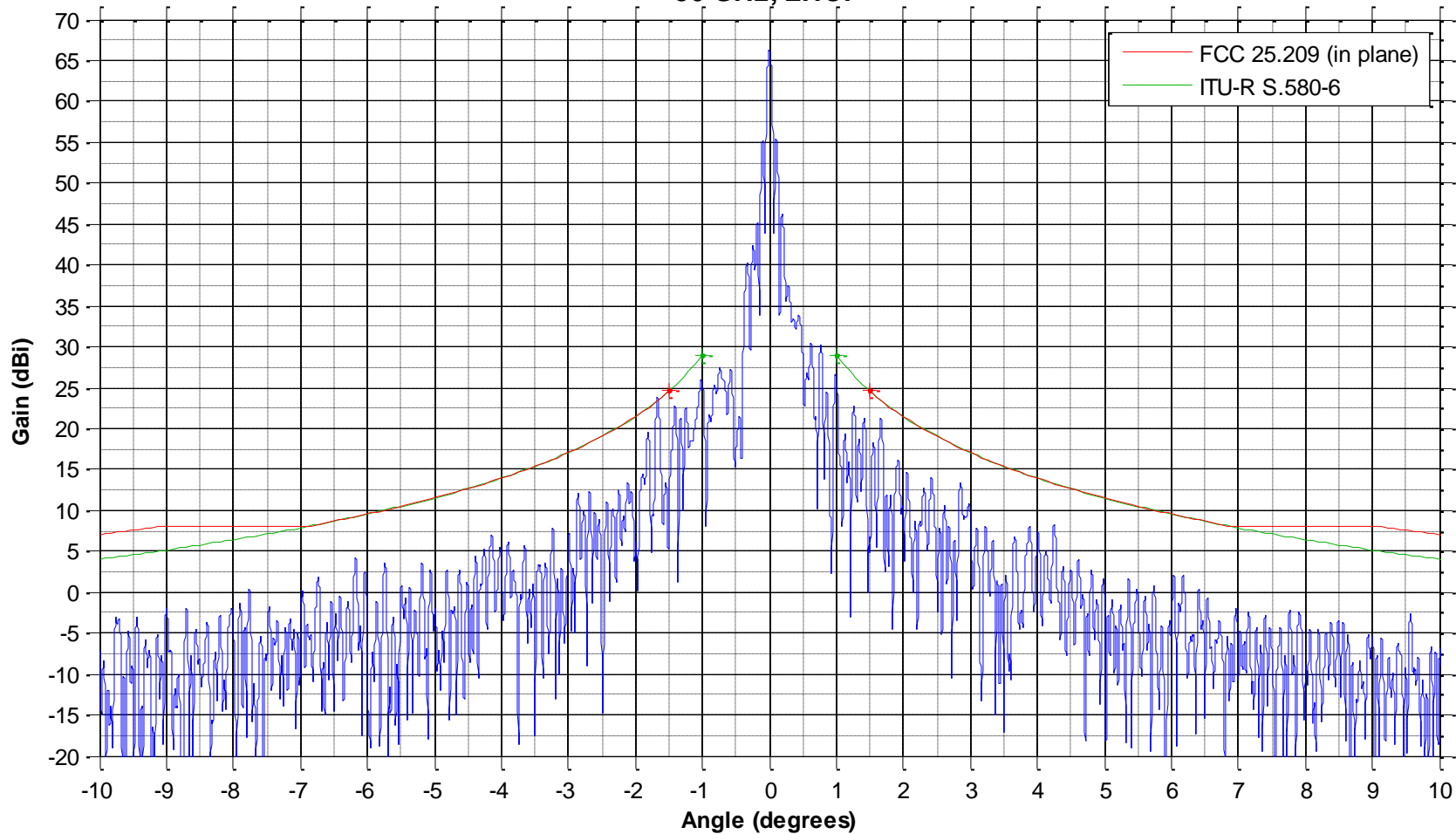
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, $\pm 10^\circ$
30 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX2_30000MHZ
Plot: 3.77a

Gain: 66.29 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.10°

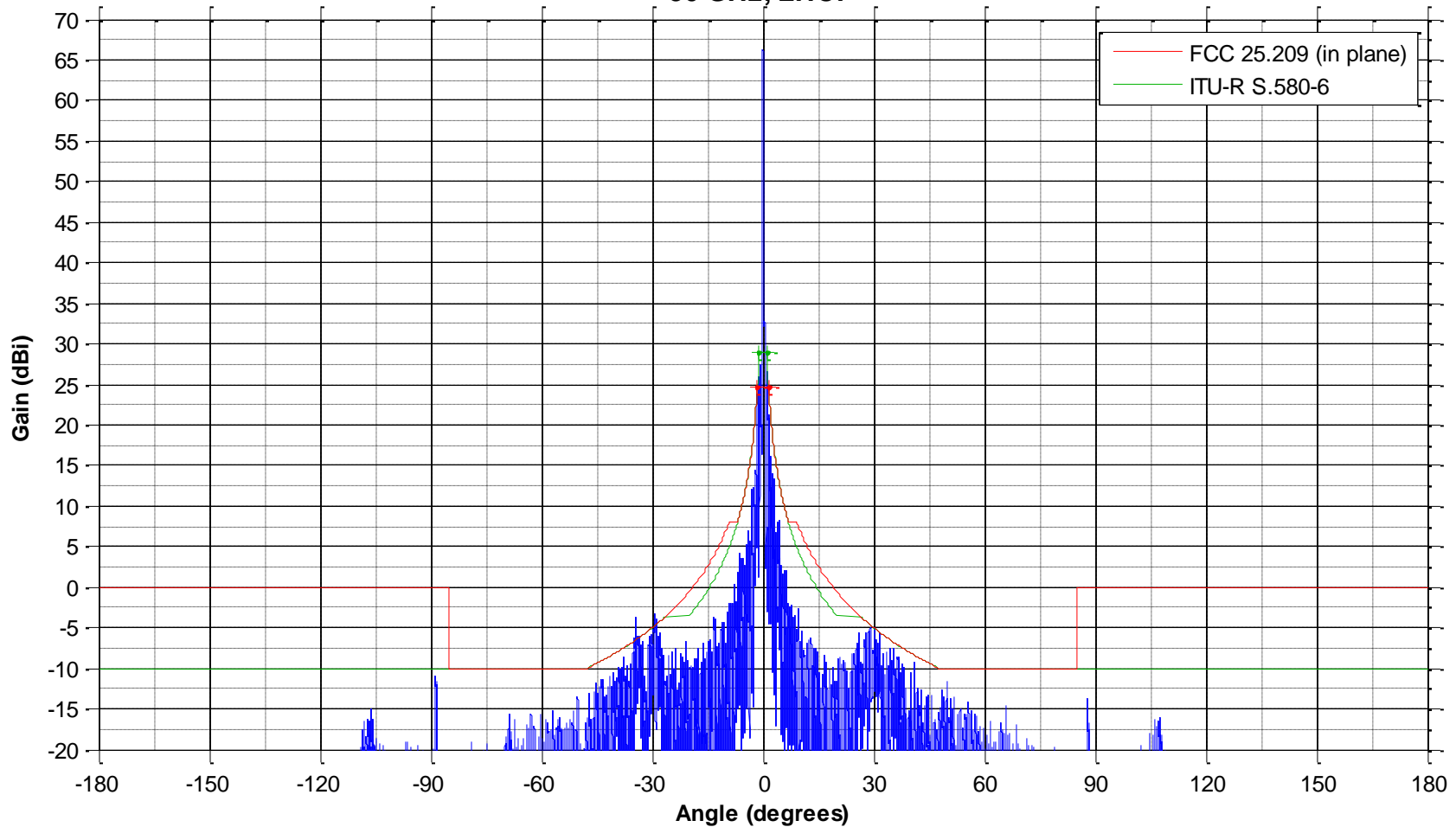
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±10°
30 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX2_30000MHZ
Plot: 3.77b

Gain: 66.29 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.10°
Excursions: 0.1% (FCC), 0.1% (ITU)
FCC Max. over: 2.69 dB at -34.33°
ITU Max. over: 2.69 dB at -34.33°

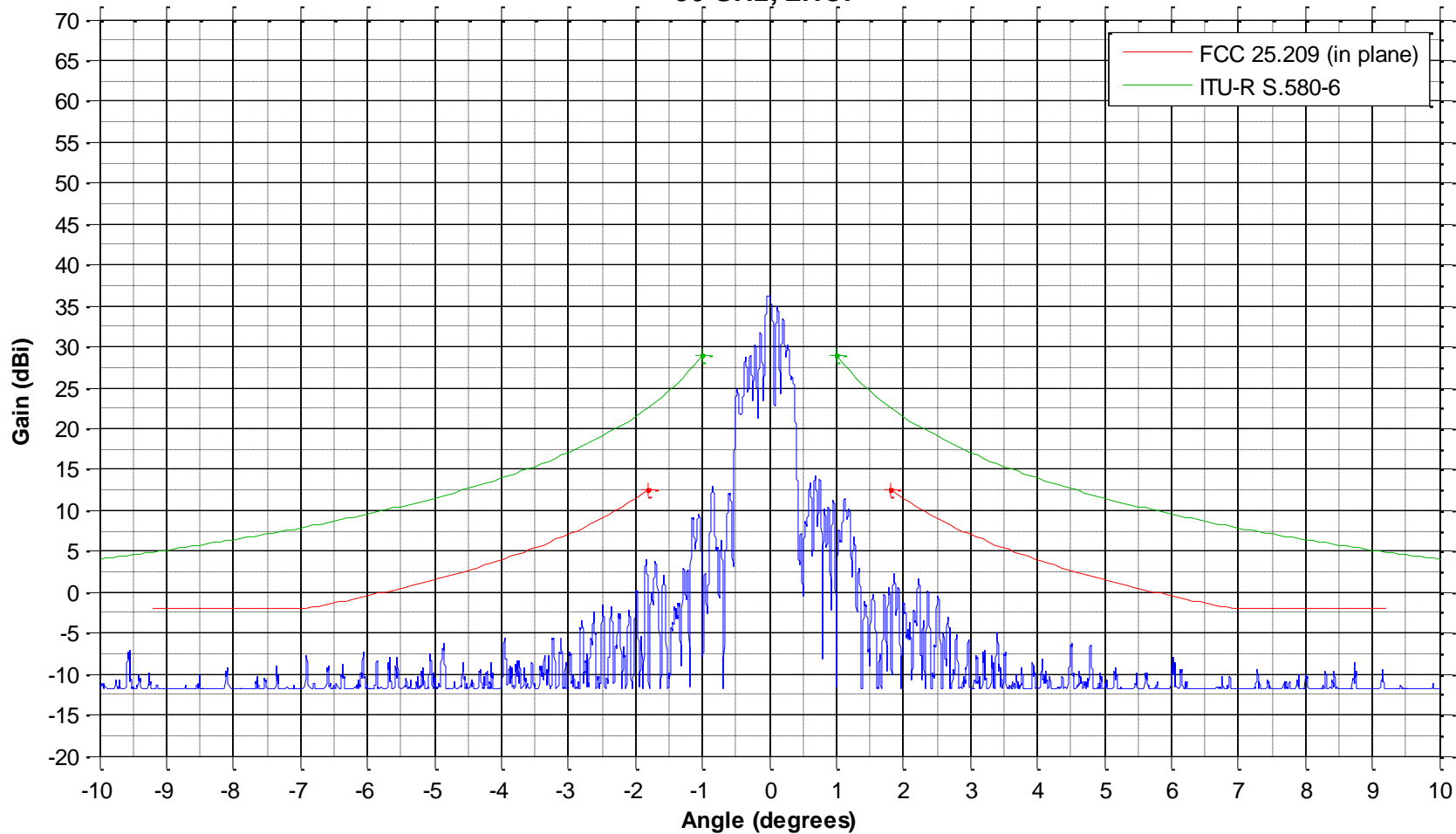
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
30 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX2_30000MHZ_CROSSPOL
Plot: 3.78

Gain: 66.29 dBi

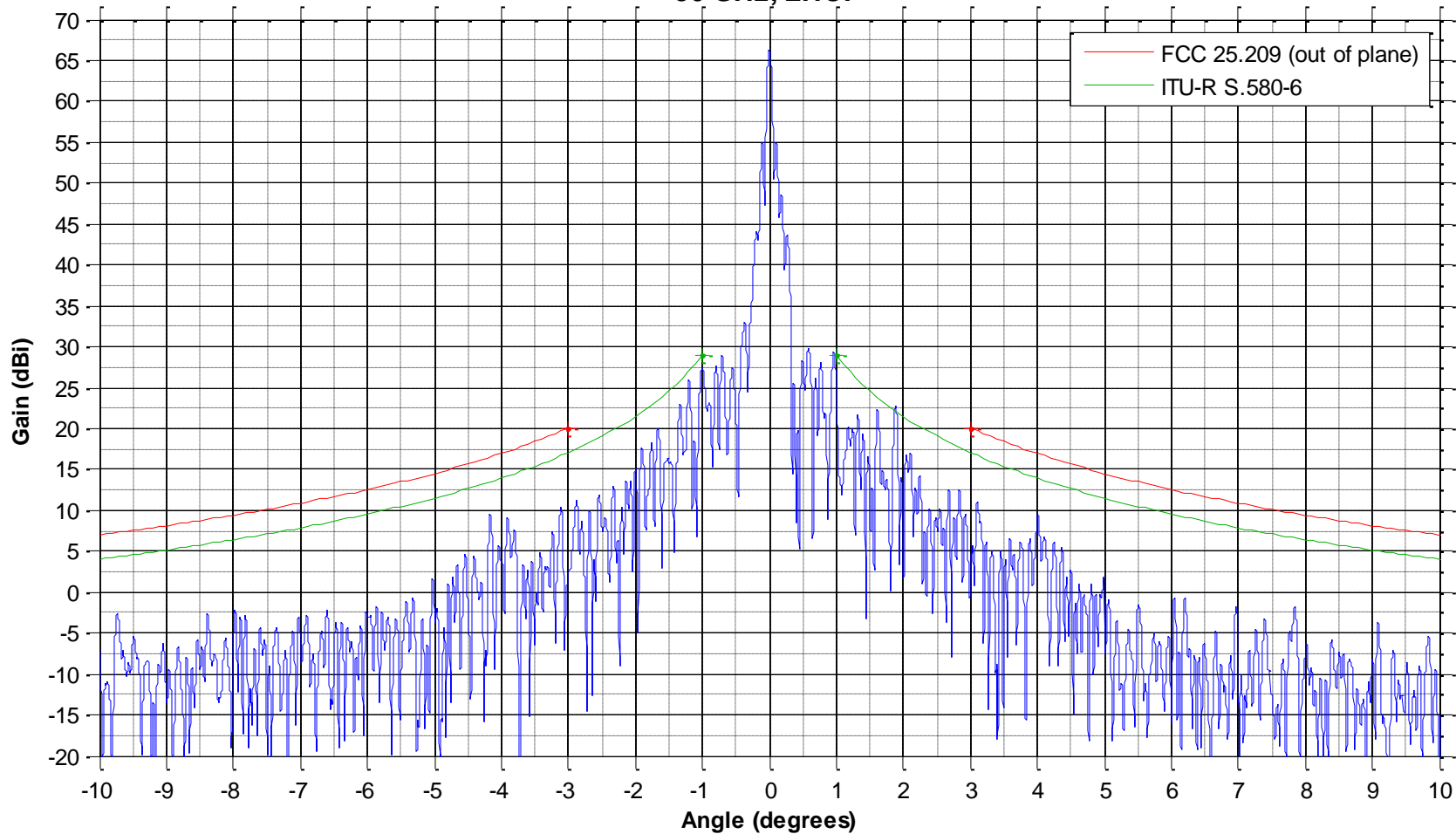
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, $\pm 10^\circ$
30 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX2_30000MHZ
Plot: 3.79a

Gain: 66.29 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.11°

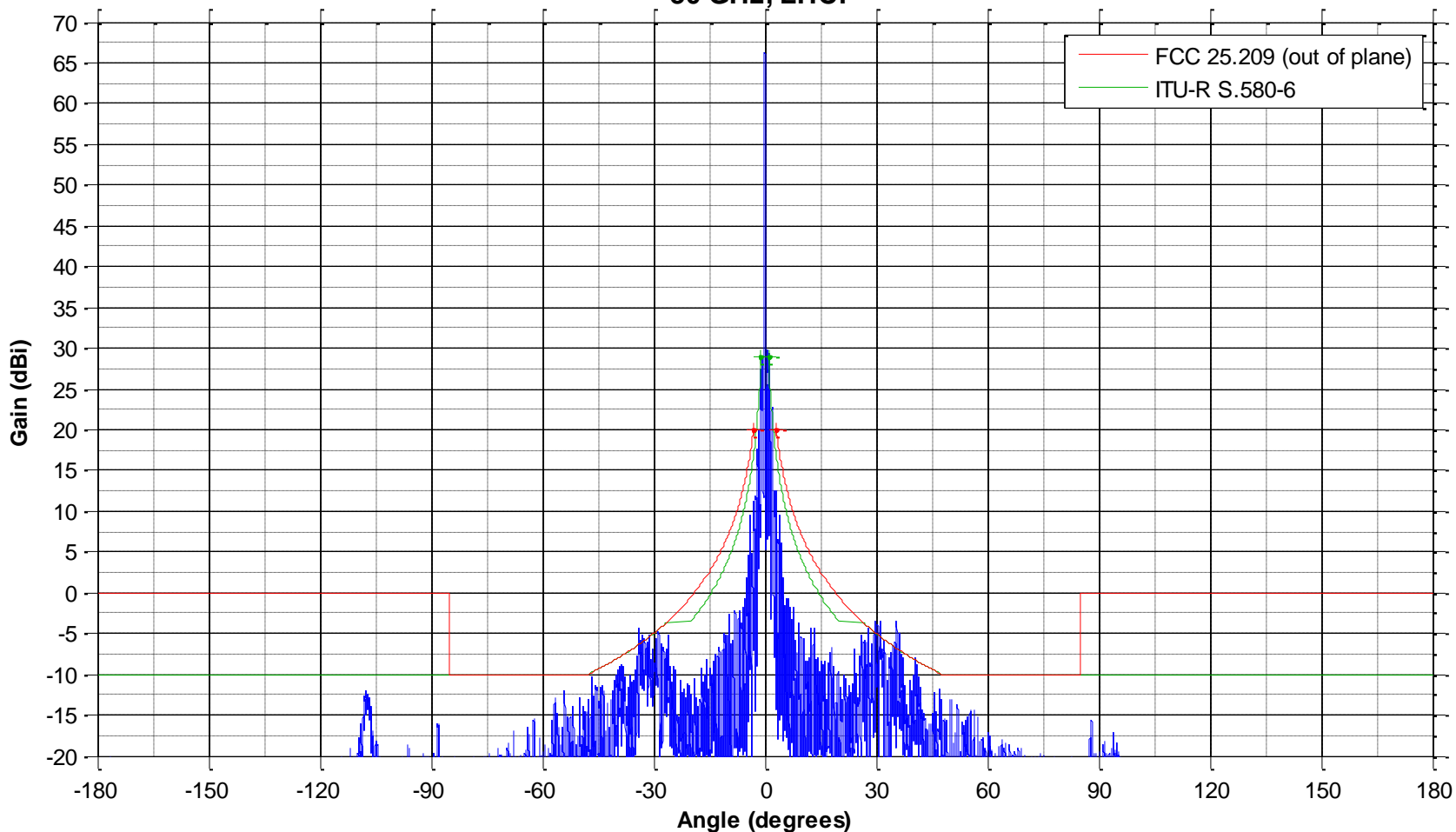
9.4m Ka-Band Earth Station Antenna Co-Pol Elevation Radiation Pattern, ±10° 30 GHz, LHCP



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX2_30000MHZ
Plot: 3.79b

Gain: 66.29 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.11°
Excursions: 0.3% (FCC), 0.3% (ITU)
FCC Max. over: 3.24 dB at 35.60°
ITU Max. over: 3.24 dB at 35.60°

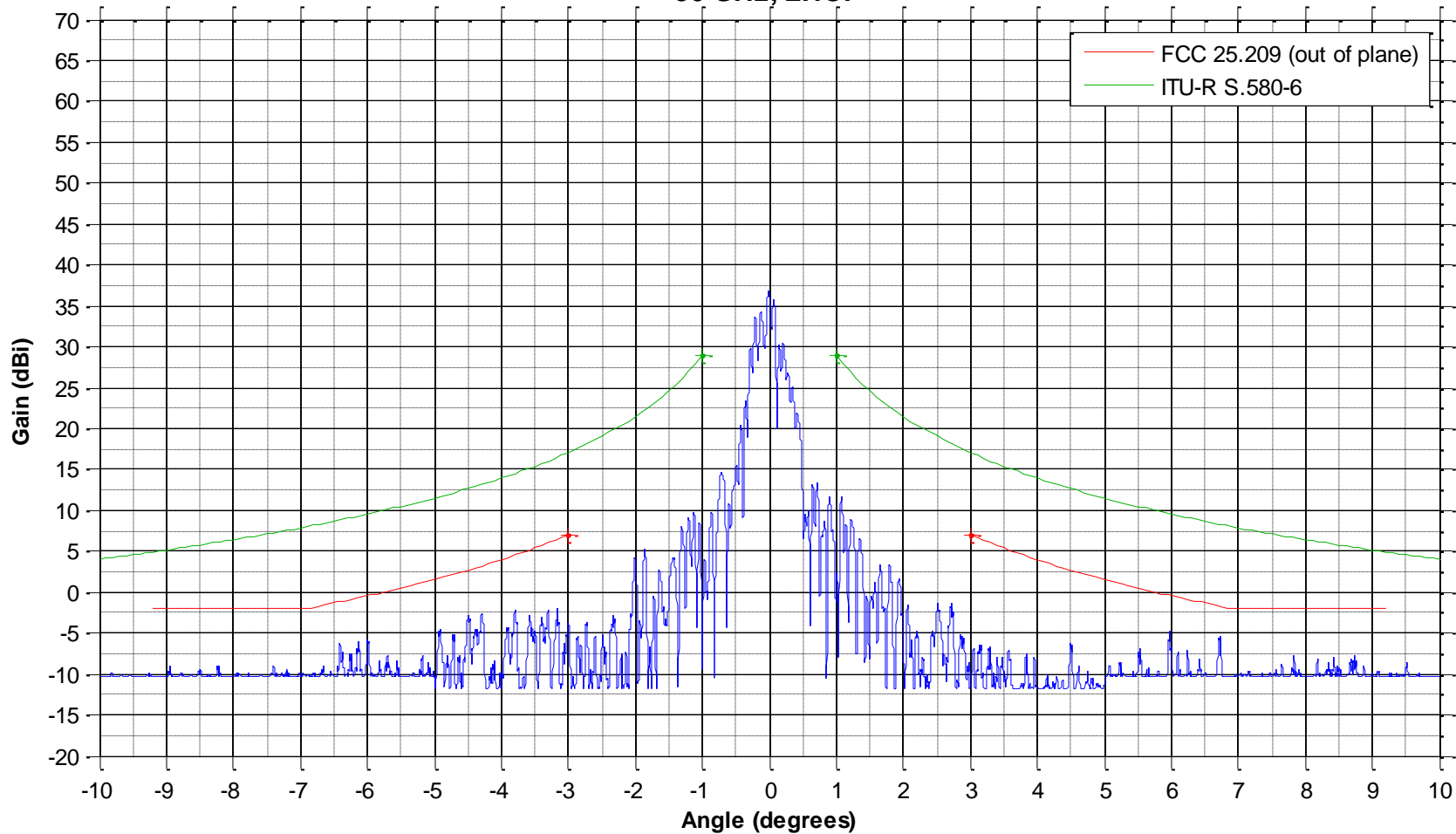
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
30 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX2_30000MHZ_CROSSPOL
Plot: 3.80

Gain: 66.29 dBi

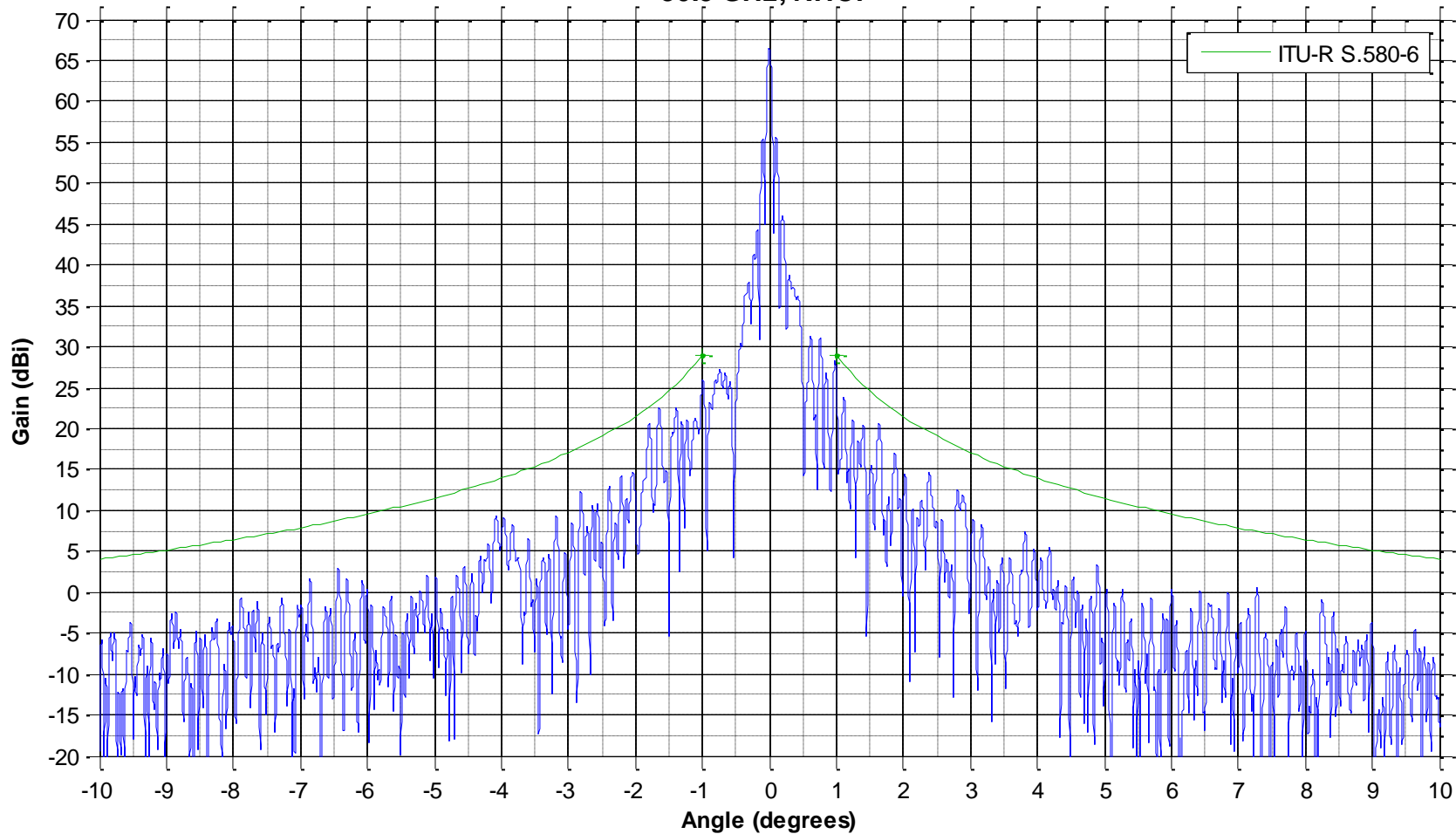
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, $\pm 10^\circ$
30 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX1_30500MHZ
Plot: 3.81a

Gain: 66.39 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.10°

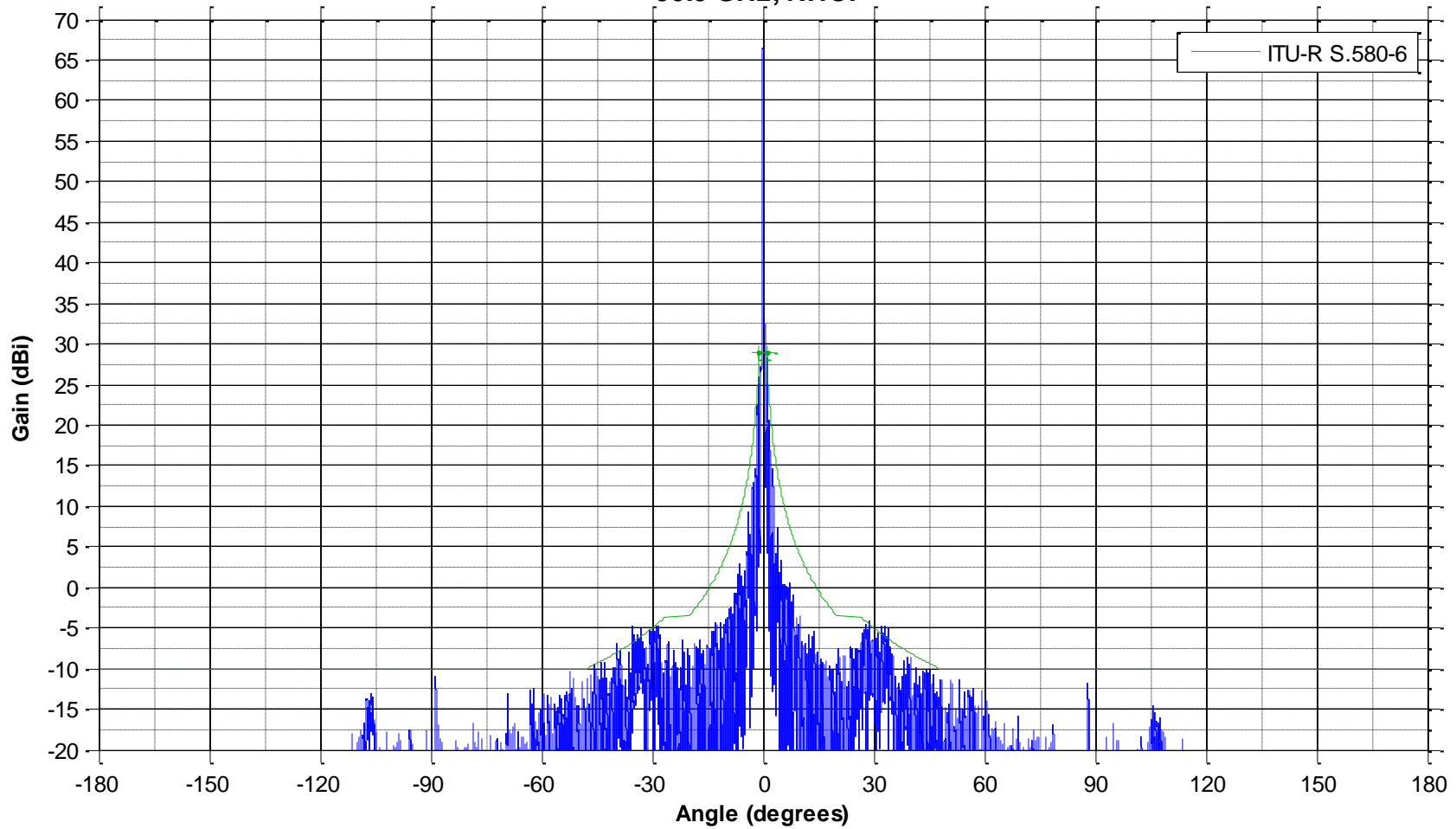
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±10°
30.5 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX1_30500MHZ
Plot: 3.81b

Gain: 66.39 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.10°
Excursions: 0.2%
Max. over: 1.92 dB at -35.53°

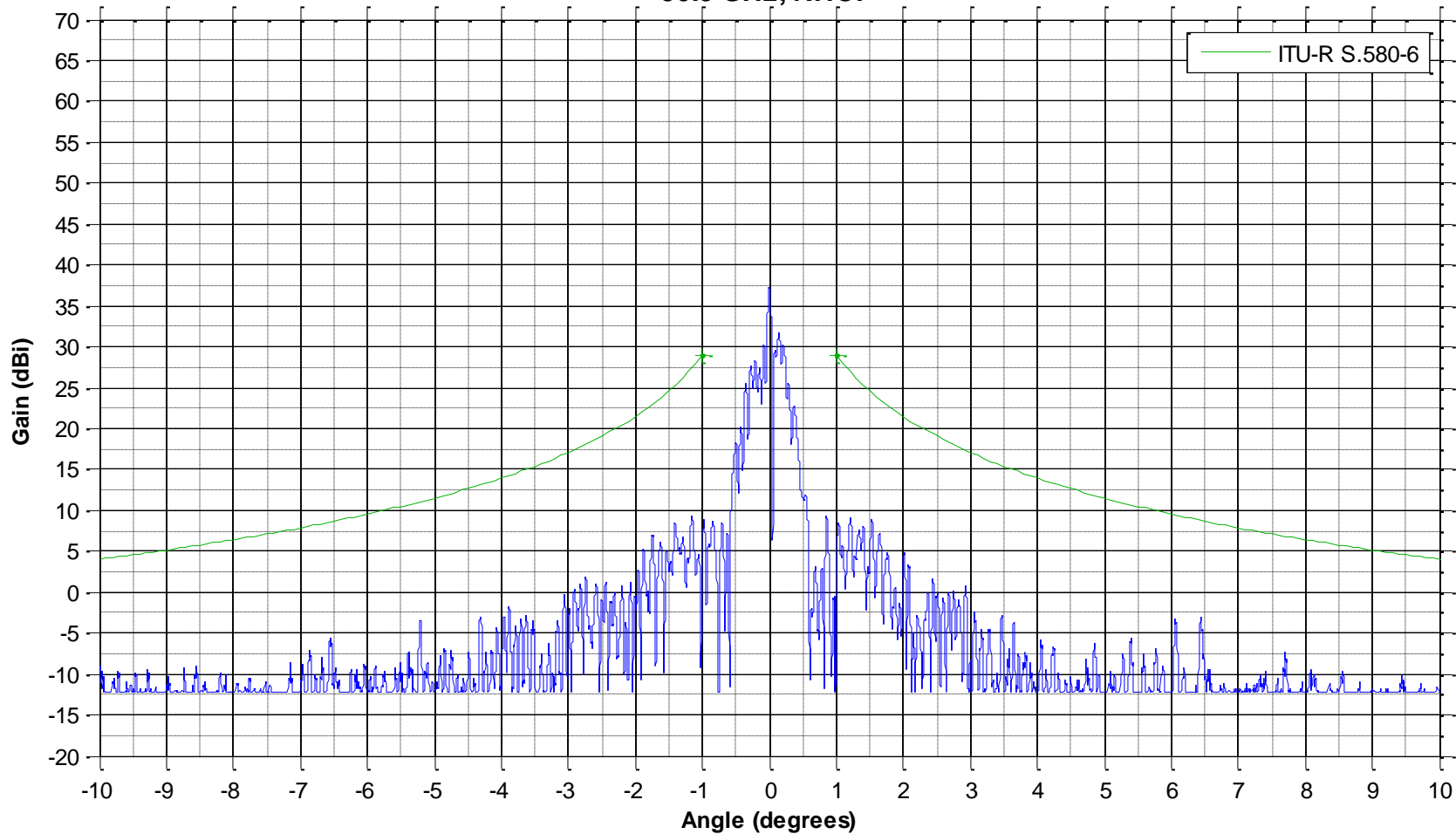
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
30.5 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX1_30500MHZ_CROSSPOL
Plot: 3.82

Gain: 66.39 dBi

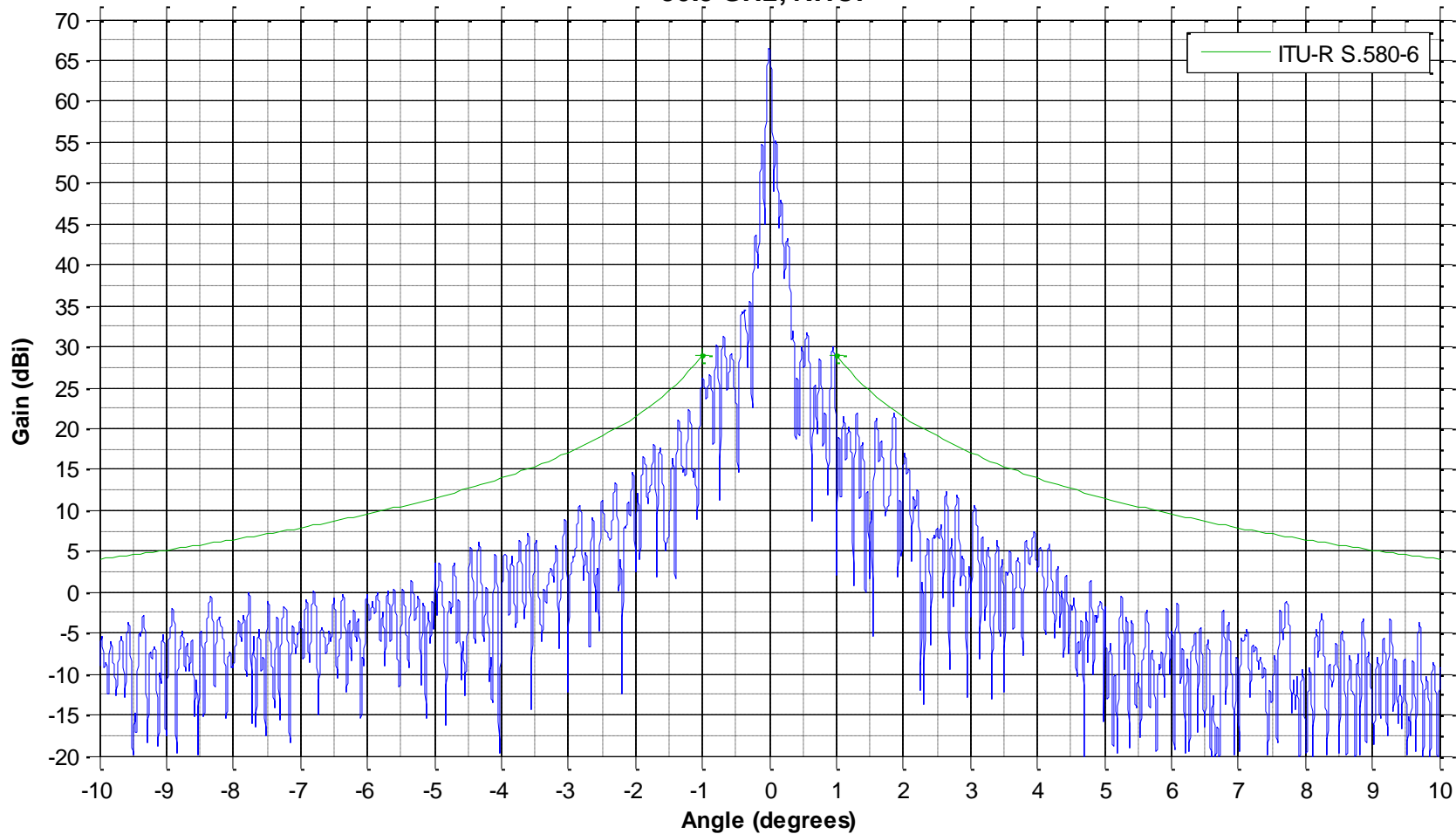
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, $\pm 10^\circ$
30.5 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX1_30500MHZ
Plot: 3.83a

Gain: 66.39 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.10°

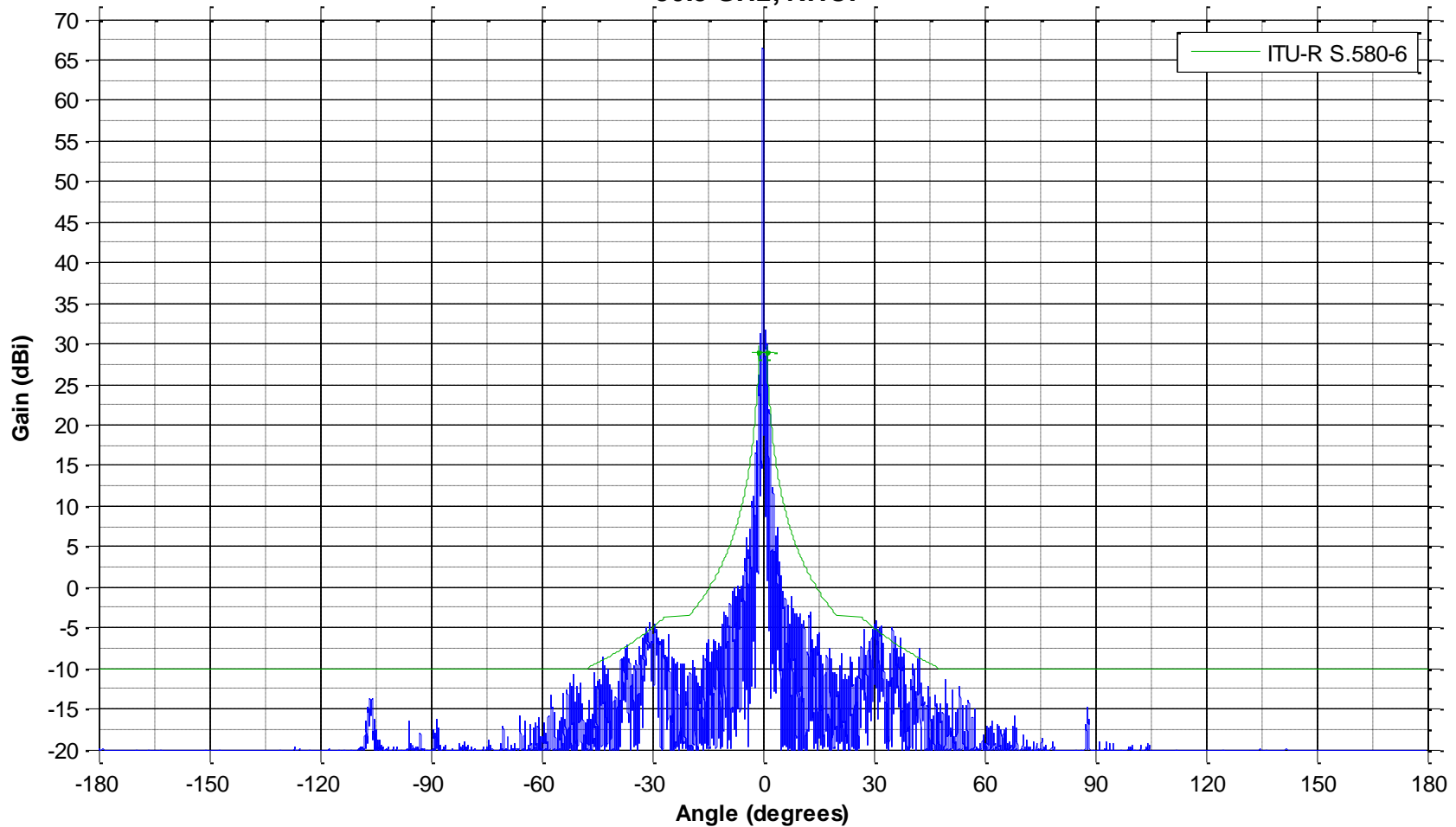
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±10°
30.5 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX1_30500MHZ
Plot: 3.83b

Gain: 66.39 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.10°
Excursions: 0.2%
Max. over: 1.77 dB at 35.13°

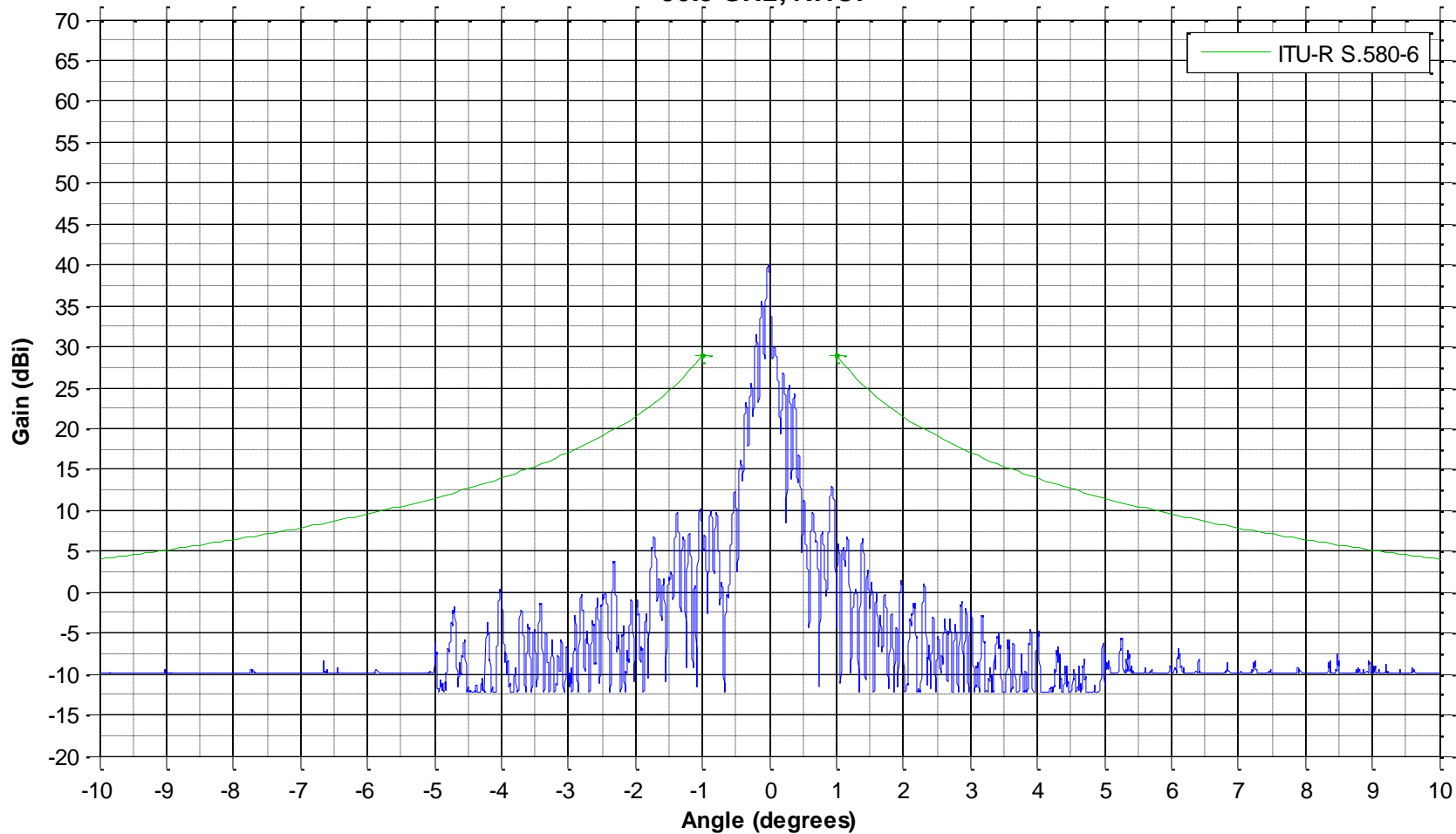
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
30.5 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX1_30500MHZ_CROSSPOL
Plot: 3.84

Gain: 66.39 dBi

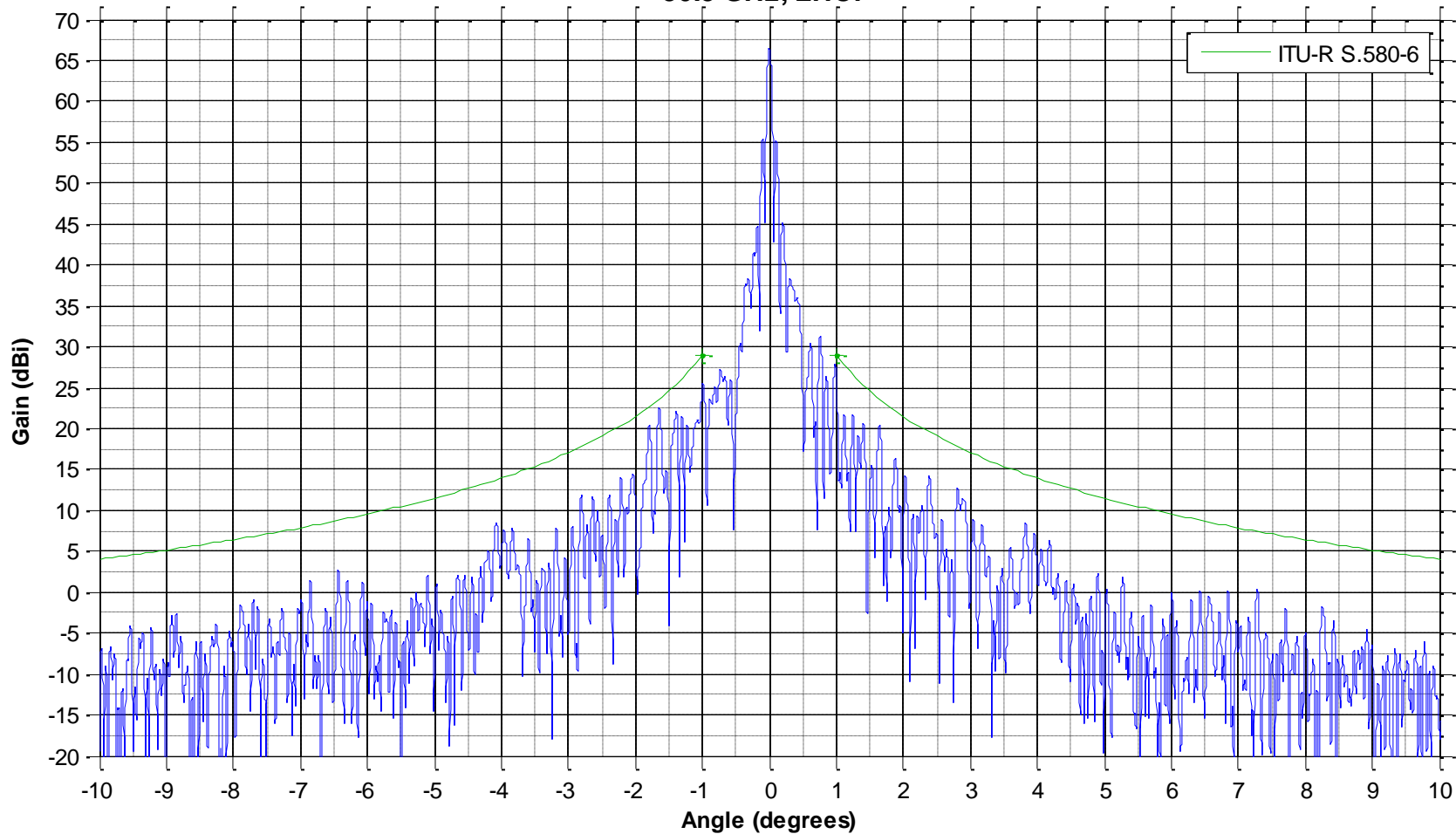
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, $\pm 10^\circ$
30.5 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX2_30500MHZ
Plot: 3.85a

Gain: 66.39 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.10°

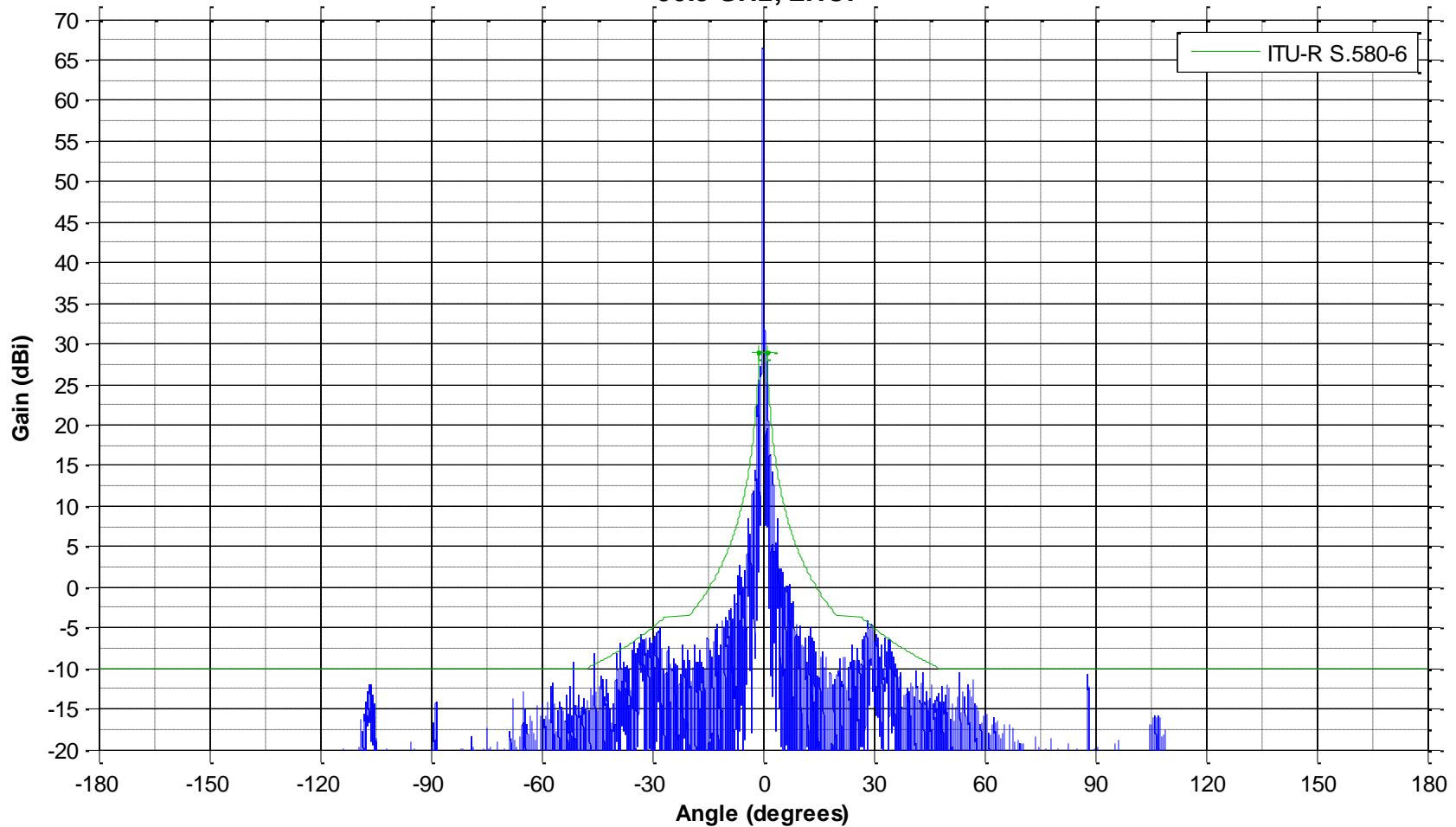
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±10°
30.5 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX2_30500MHZ
Plot: 3.85b

Gain: 66.39 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.10°
Excursions: 0.1%
Max. over: 1.23 dB at -45.53°

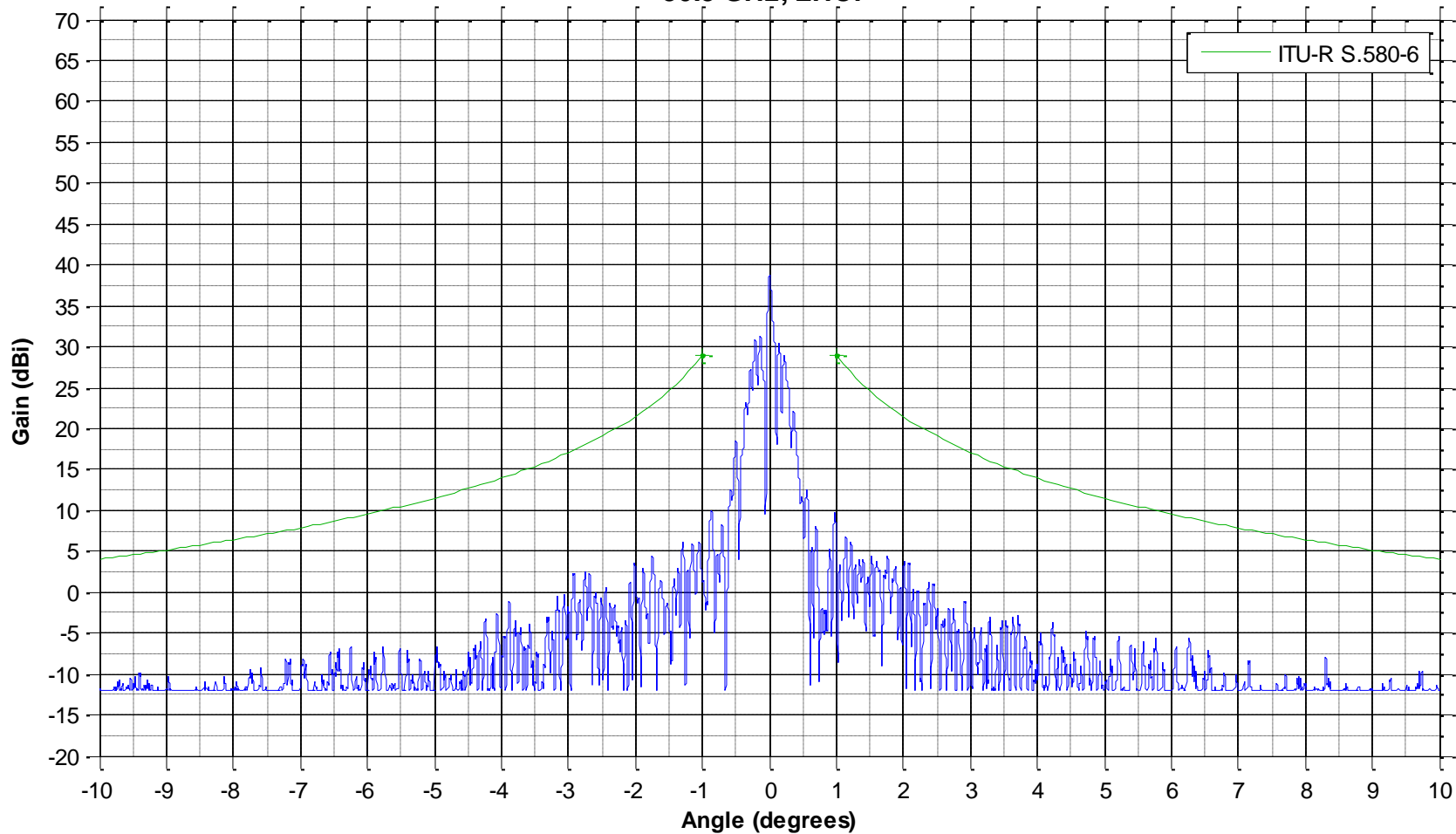
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
30.5 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX2_30500MHZ_CROSSPOL
Plot: 3.86

Gain: 66.39 dBi

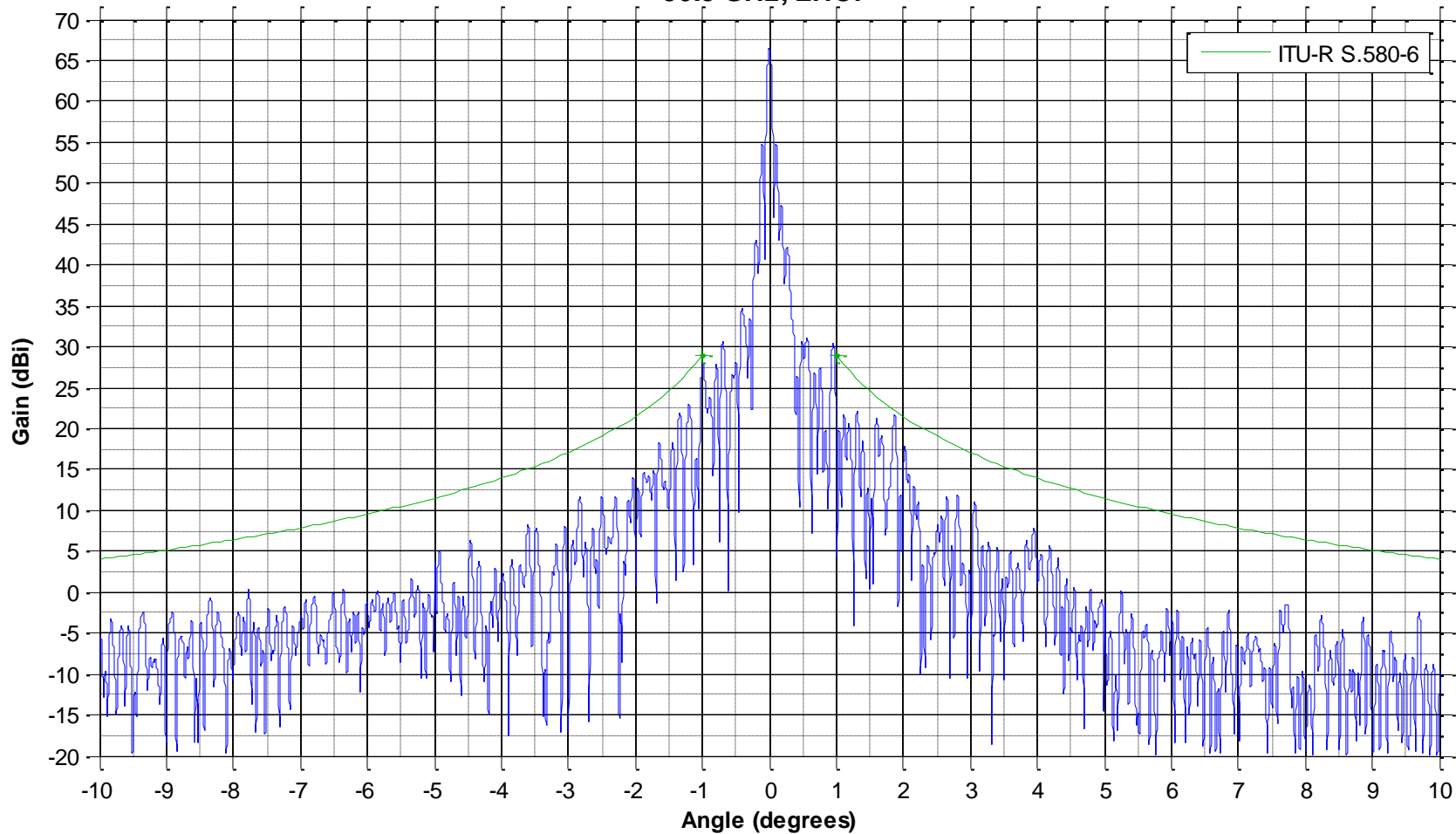
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, ±10°
30.5 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX2_30500MHZ
Plot: 3.87a

Gain: 66.39 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.10°

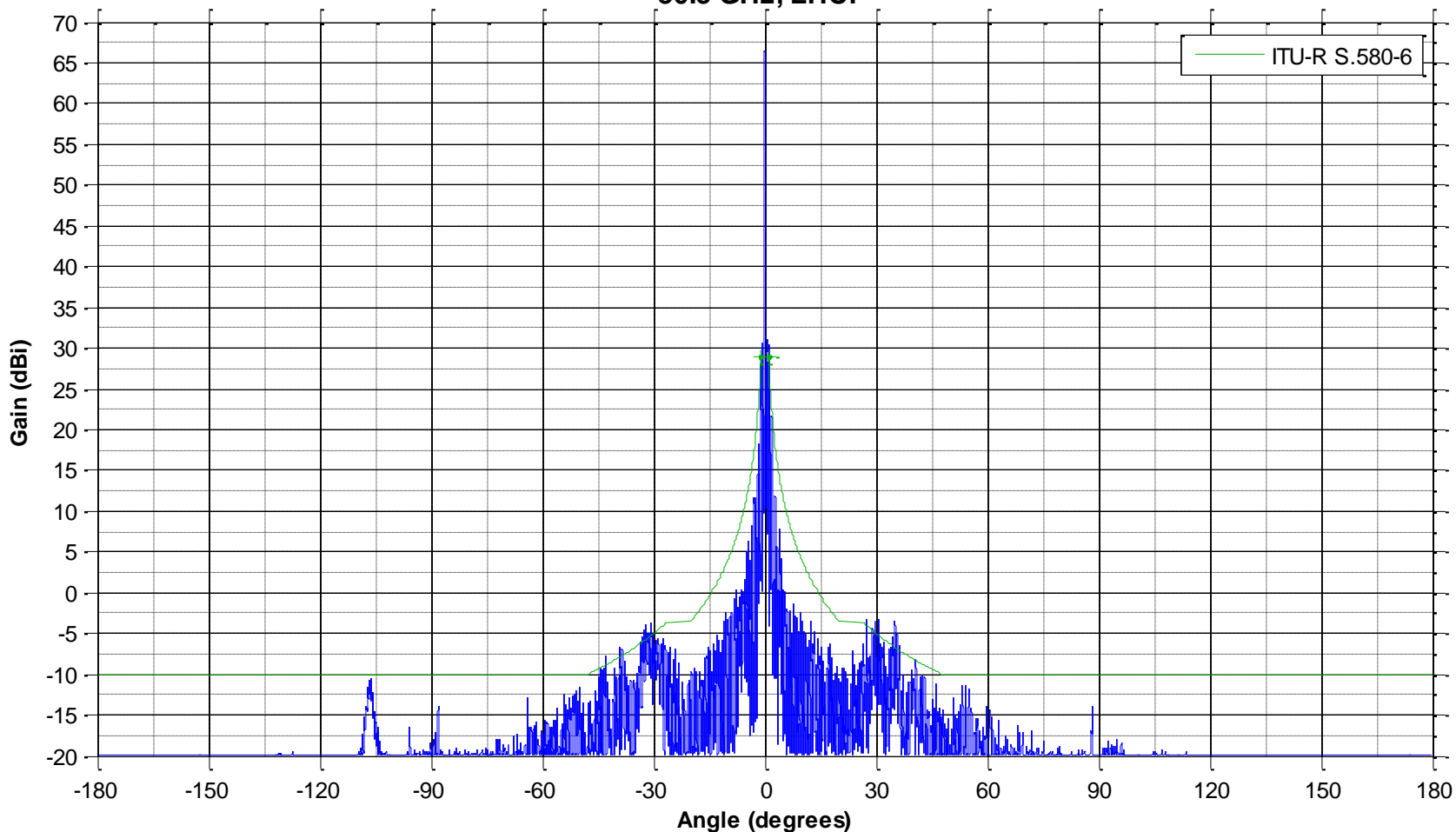
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±10°
30.5 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX2_30500MHZ
Plot: 3.87b

Gain: 66.39 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.10°
Excursions: 0.4%
Max. over: 3.15 dB at 35.12°

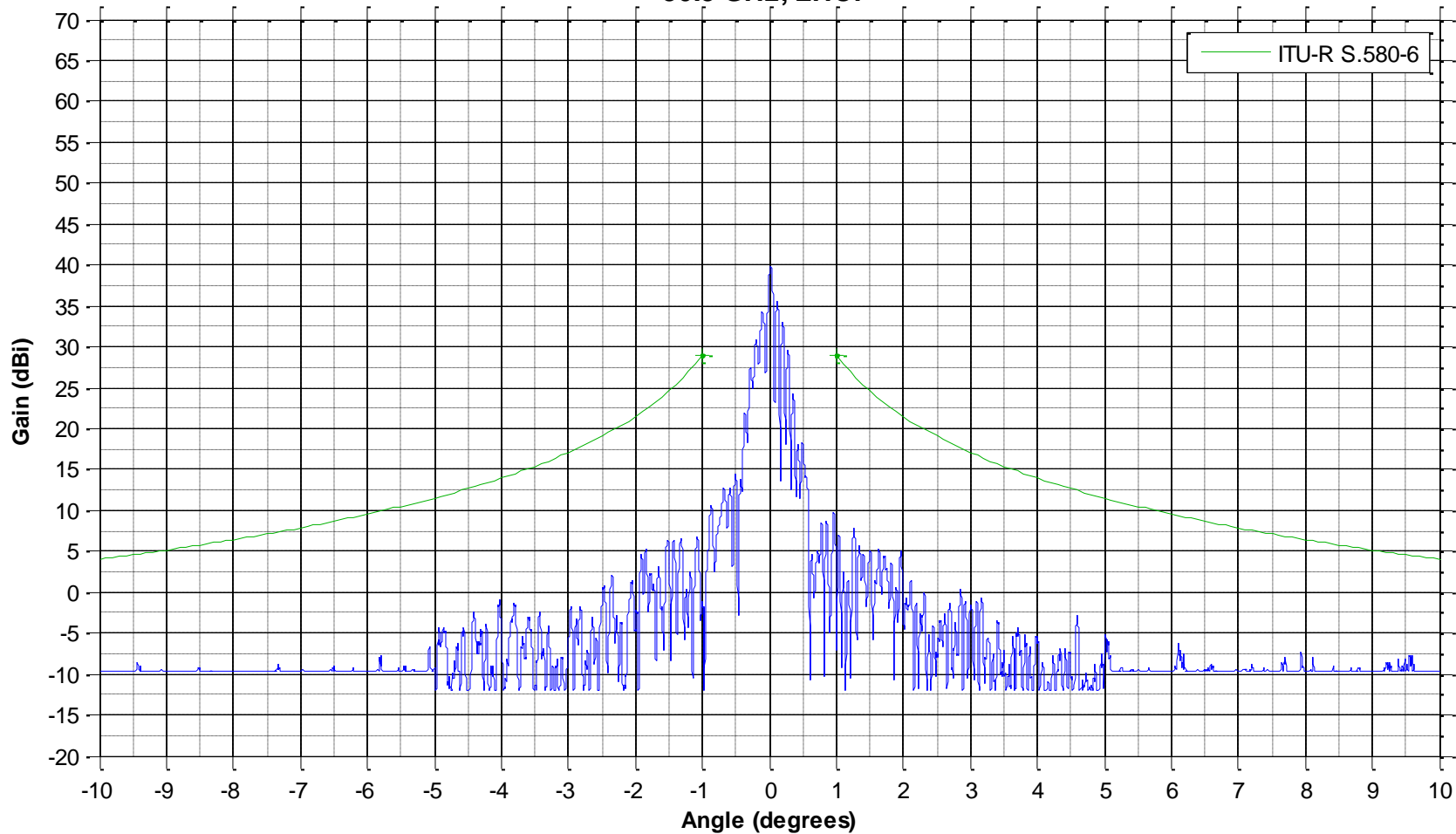
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
30.5 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX2_30500MHZ_CROSSPOL
Plot: 3.88

Gain: 66.39 dBi

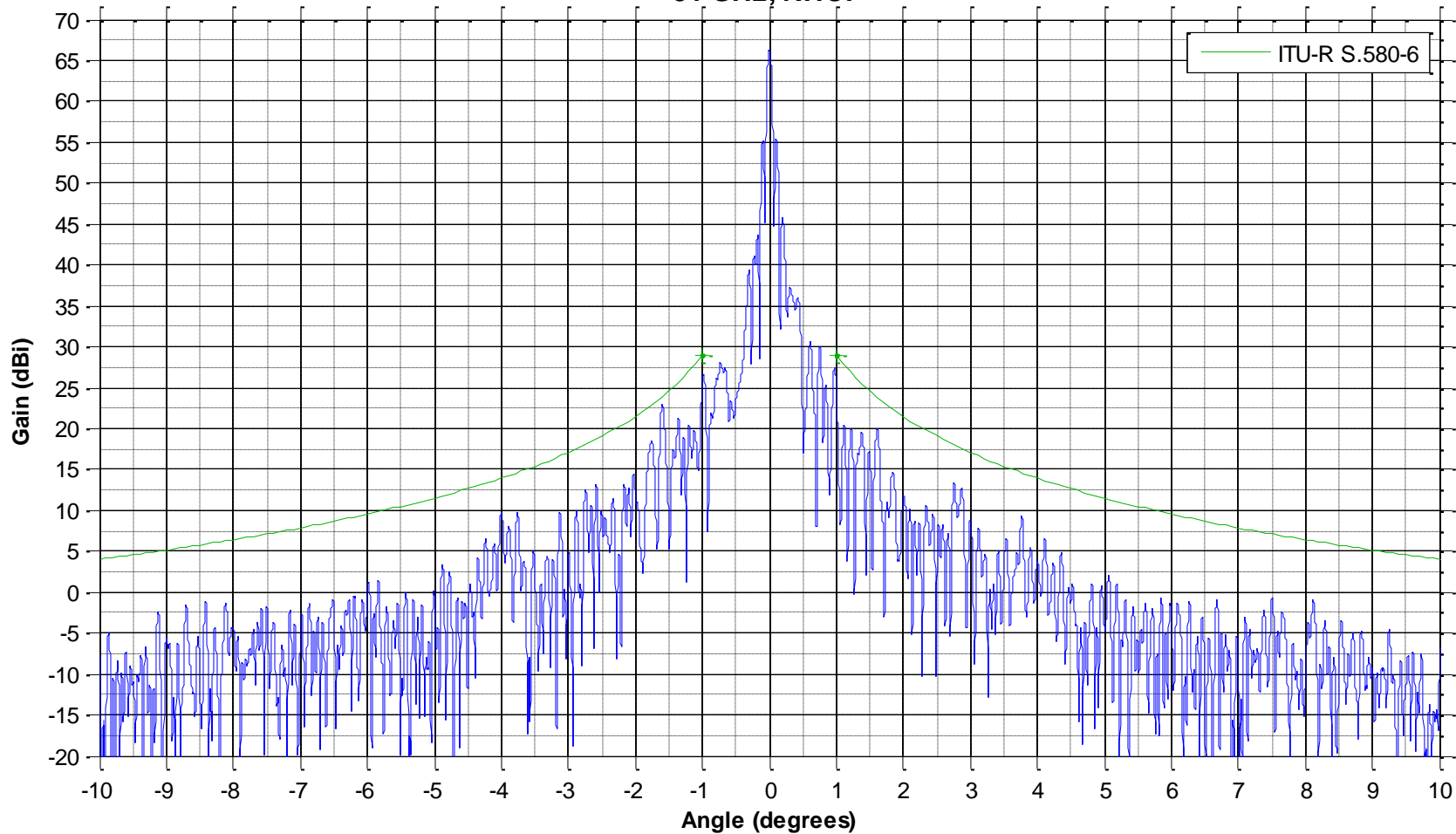
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, $\pm 10^\circ$
30.5 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX1_31000MHZ
Plot: 3.89a

Gain: 66.24 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.10°

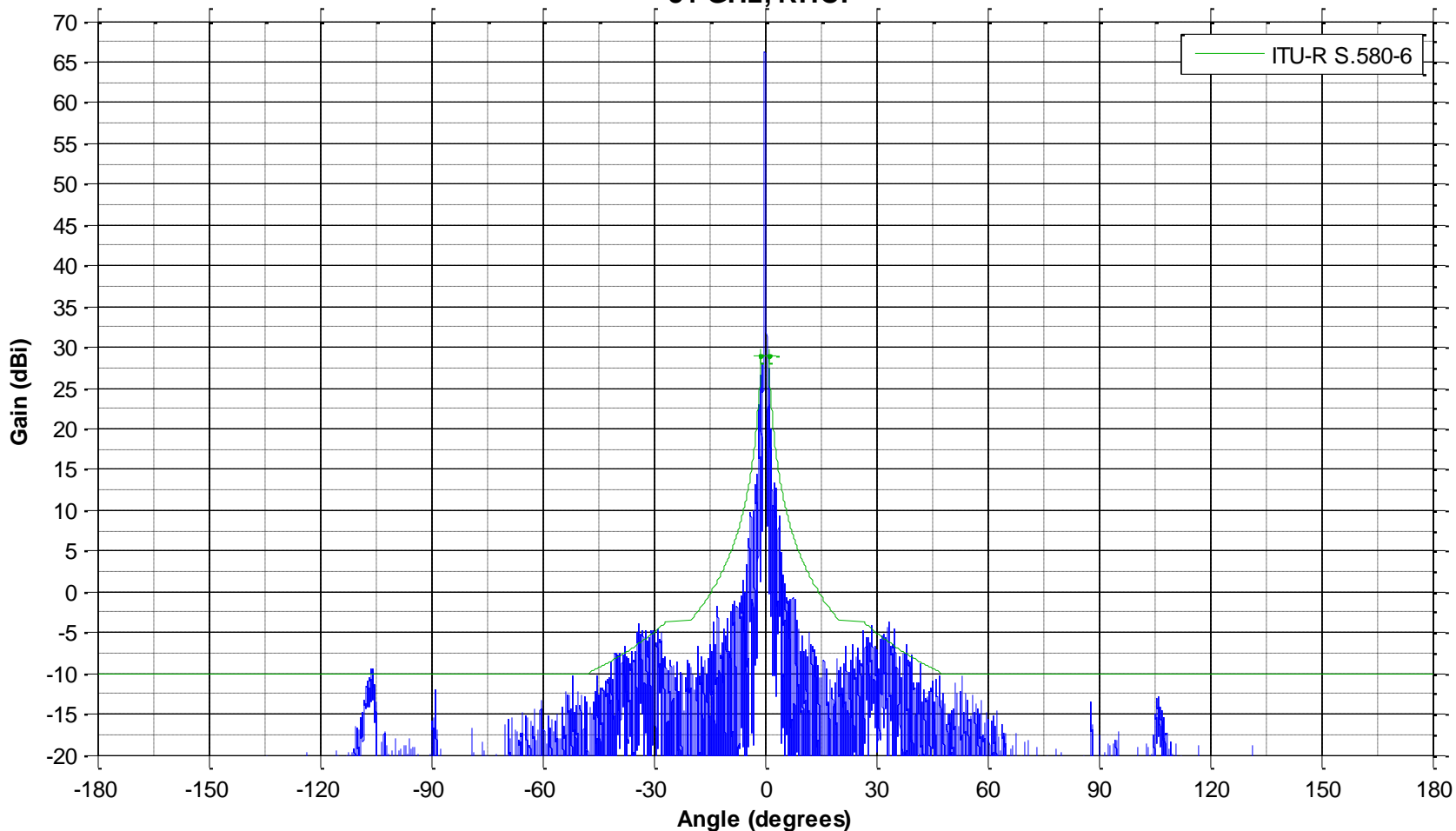
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±10°
31 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX1_31000MHZ
Plot: 3.89b

Gain: 66.24 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.10°
Excursions: 0.4%
Max. over: 2.45 dB at -33.87°

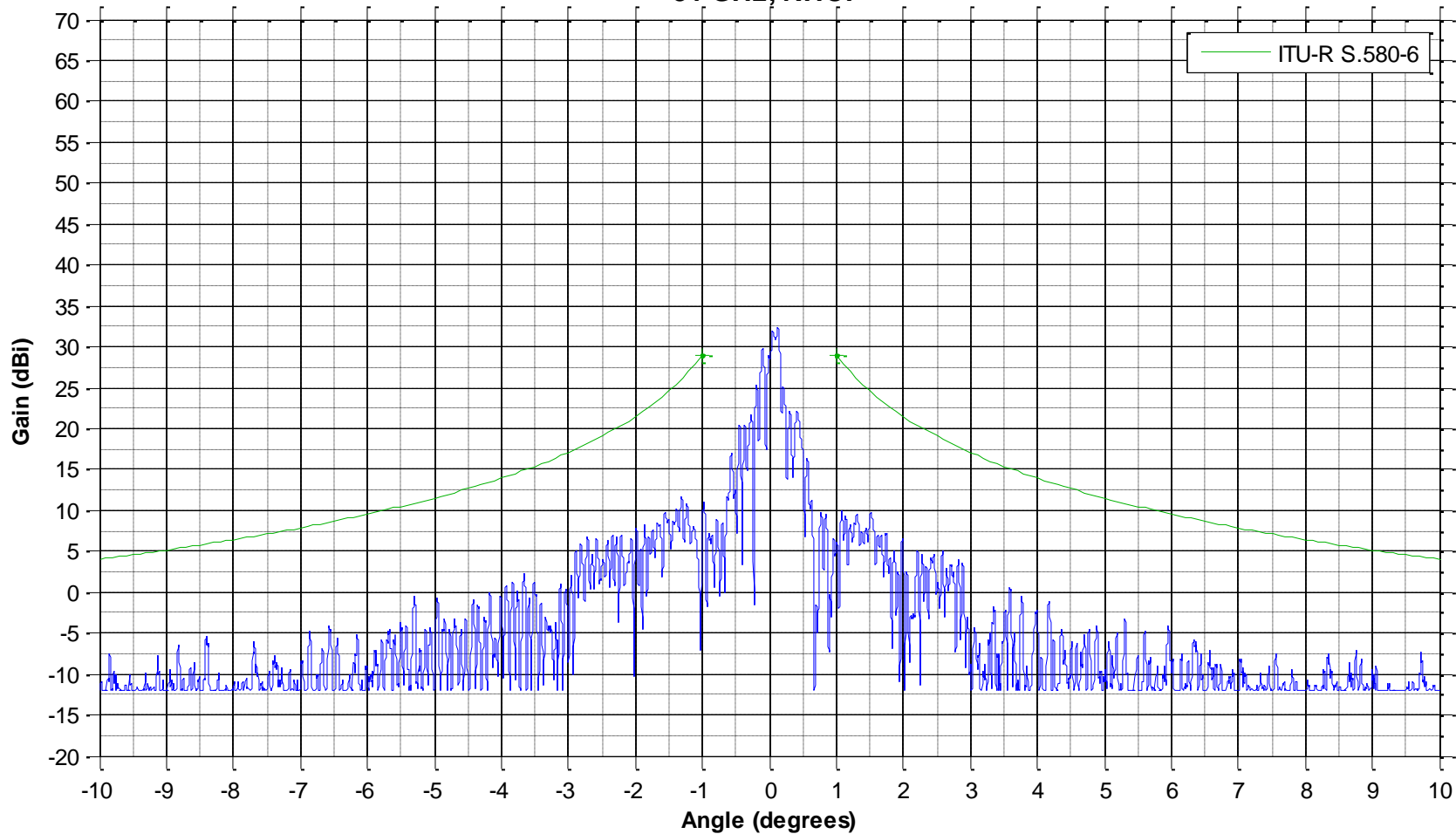
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
31 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX1_31000MHZ_CROSSPOL
Plot: 3.90

Gain: 66.24 dBi

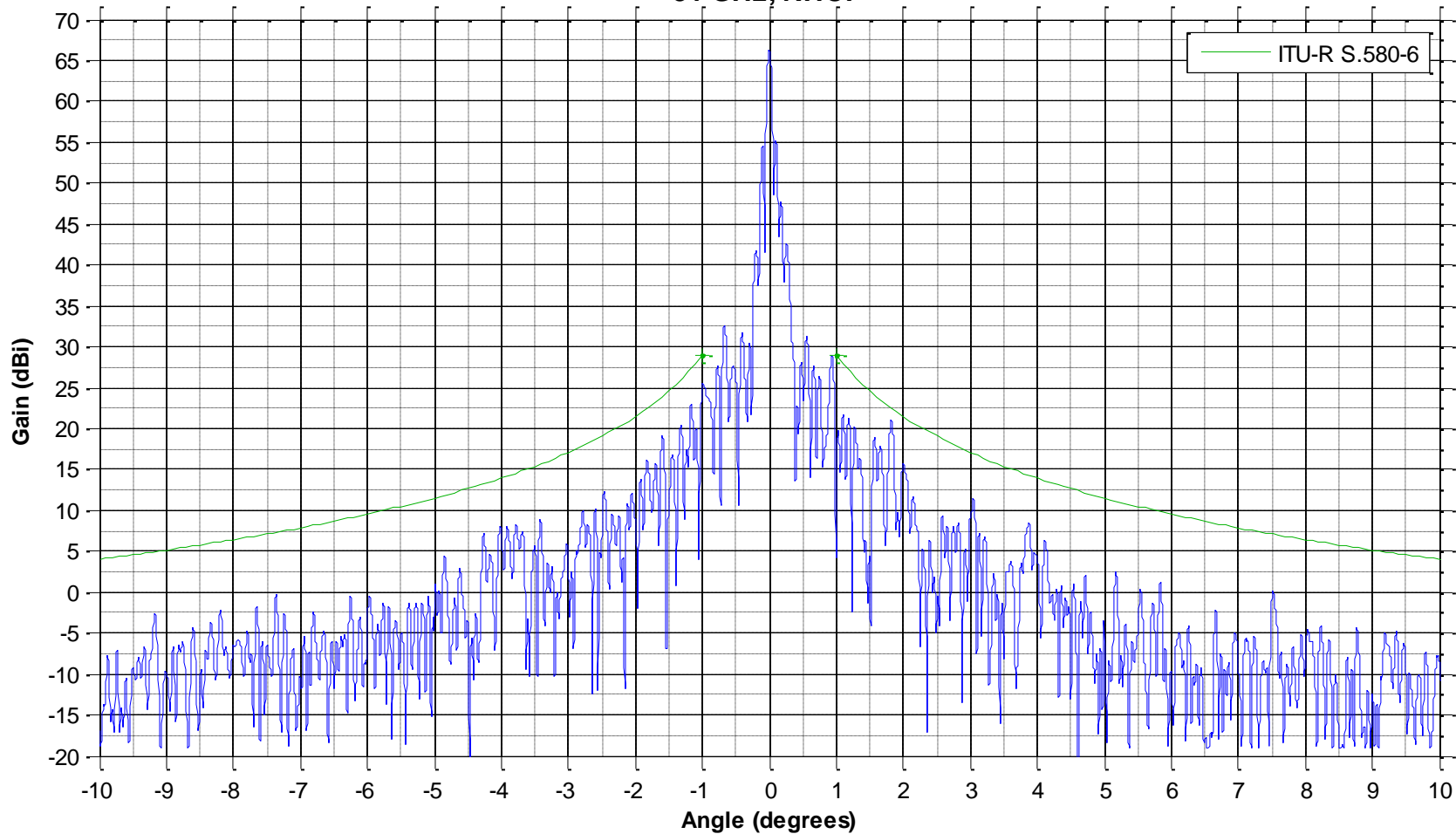
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, ±10°
31 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX1_31000MHZ
Plot: 3.91a

Gain: 66.24 dBi
-3 dB BW: 0.07°
-10 dB BW: 0.10°

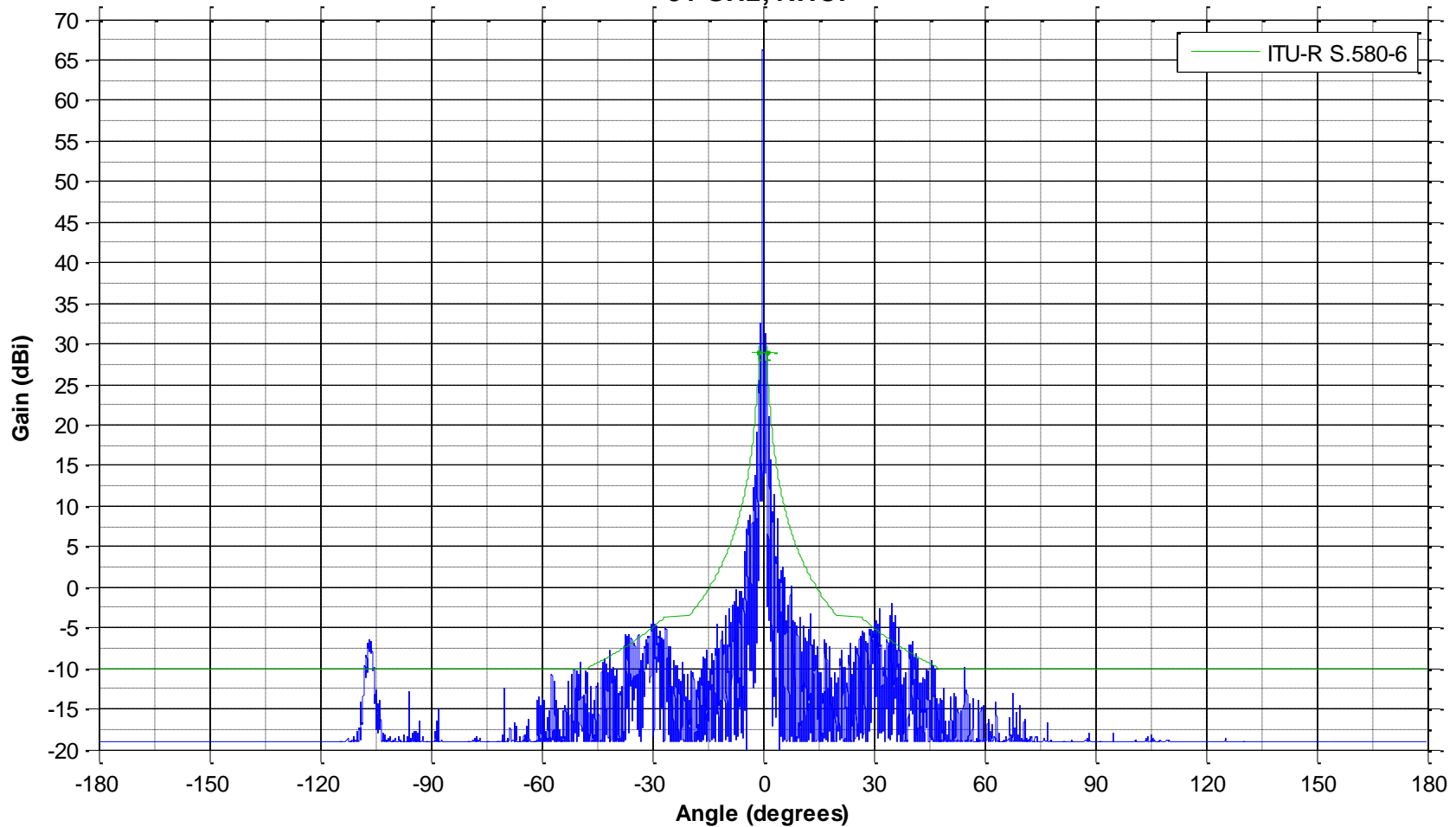
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±10°
31 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX1_31000MHZ
Plot: 3.91b

Gain: 66.24 dBi
-3 dB BW: 0.07°
-10 dB BW: 0.10°
Excursions: 1.1%
Max. over: 4.53 dB at 34.97°

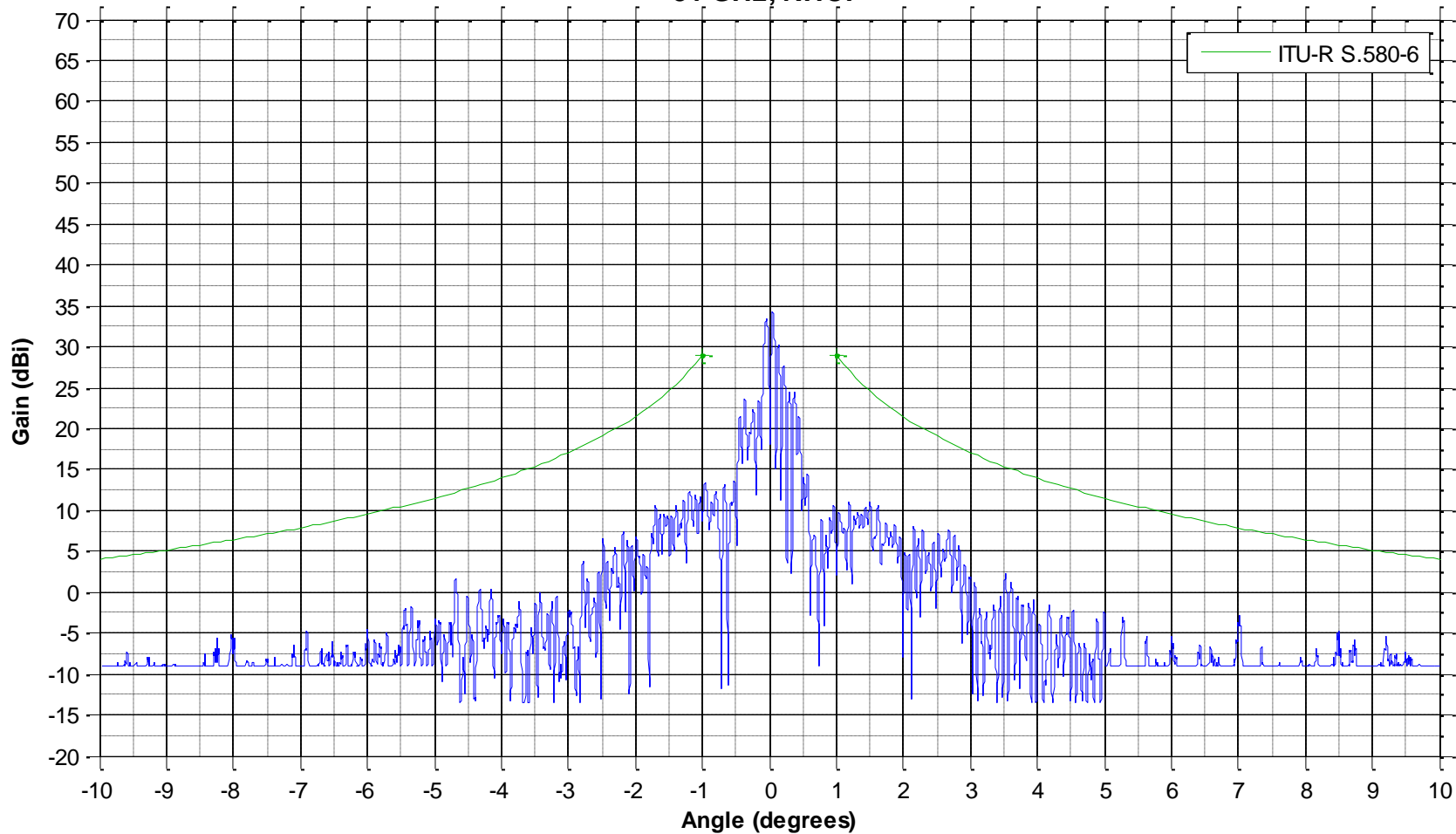
**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
31 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX1_31000MHZ_CROSSPOL
Plot: 3.92

Gain: 66.24 dBi

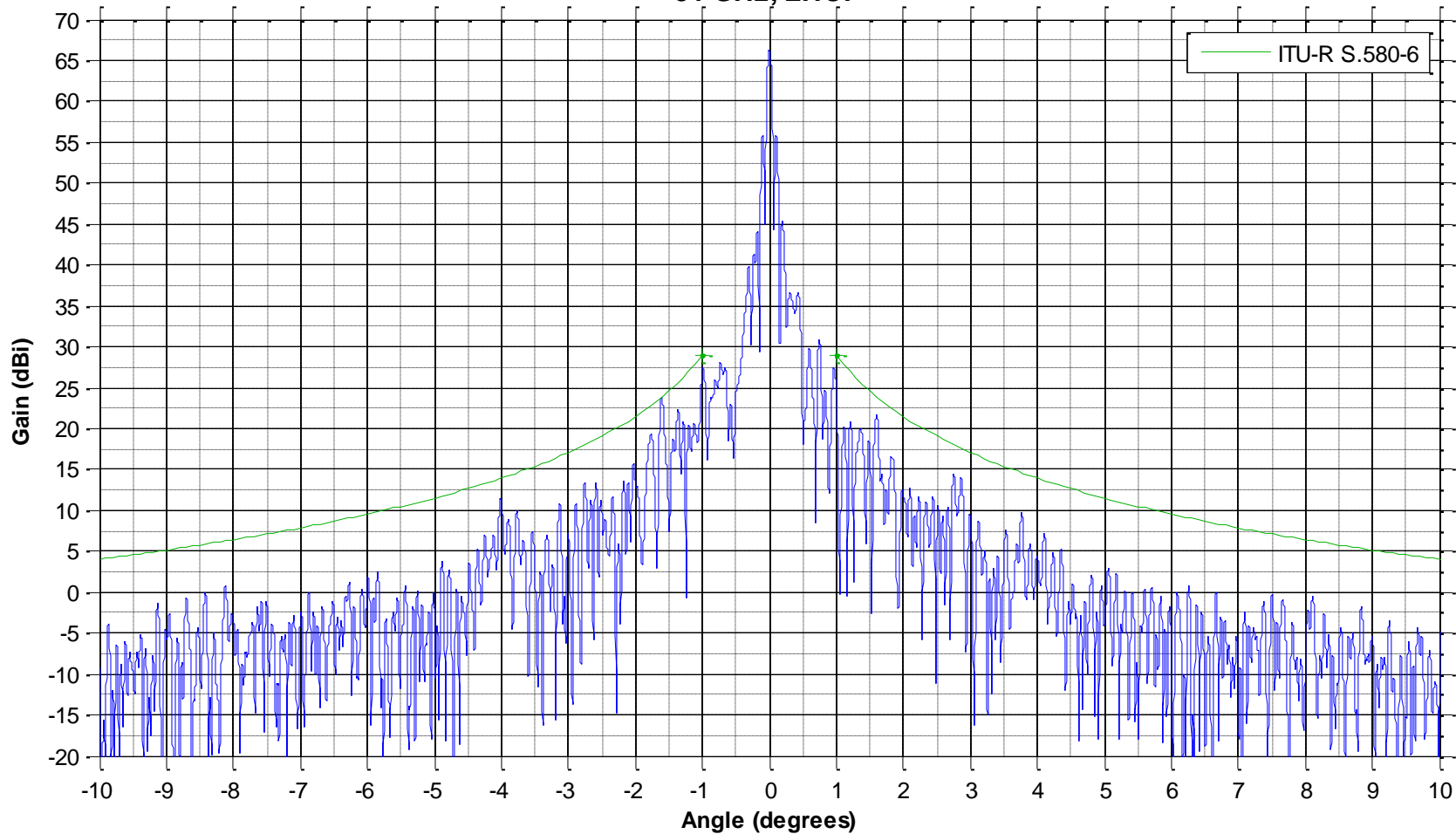
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, ±10°
31 GHz, RHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX2_31000MHZ
Plot: 3.93a

Gain: 66.24 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.10°

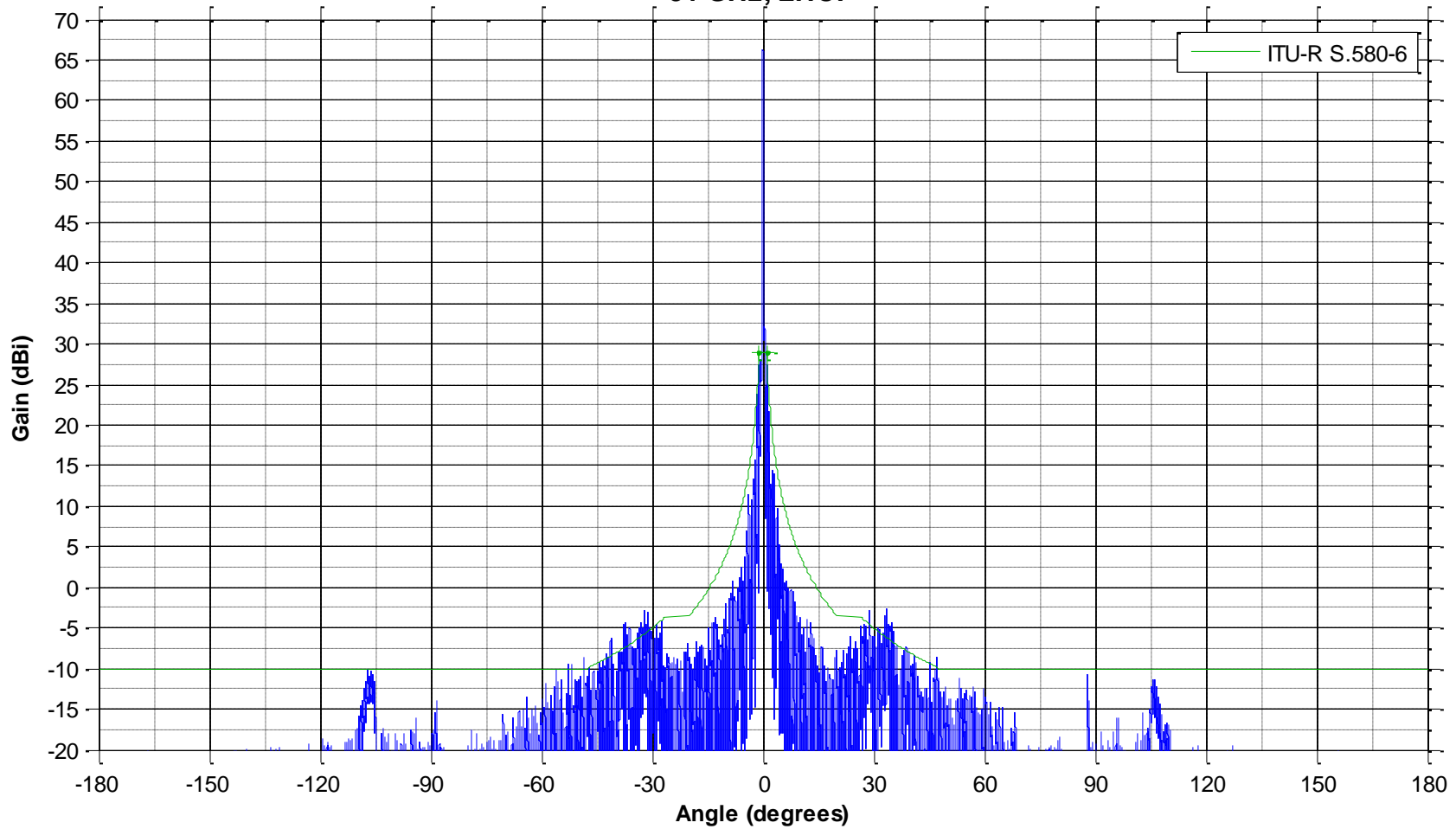
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±10°
31 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX2_31000MHZ
Plot: 3.93b

Gain: 66.24 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.10°
Excursions: 0.7%
Max. over: 3.38 dB at 33.42°

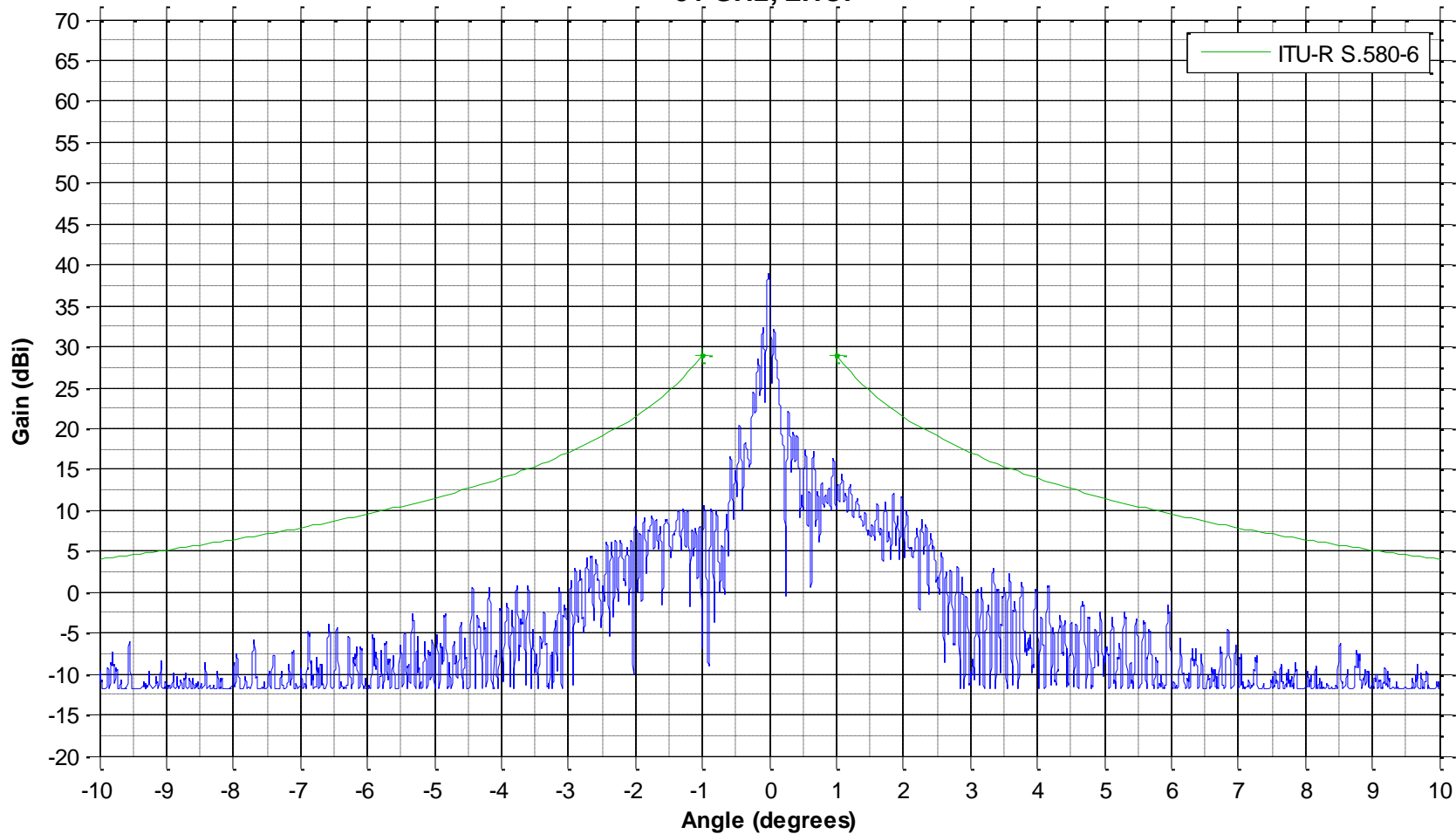
**9.4m Ka-Band Earth Station Antenna
Co-Pol Azimuth Radiation Pattern, ±180°
31 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: AZ_TX2_31000MHZ_CROSSPOL
Plot: 3.94

Gain: 66.24 dBi

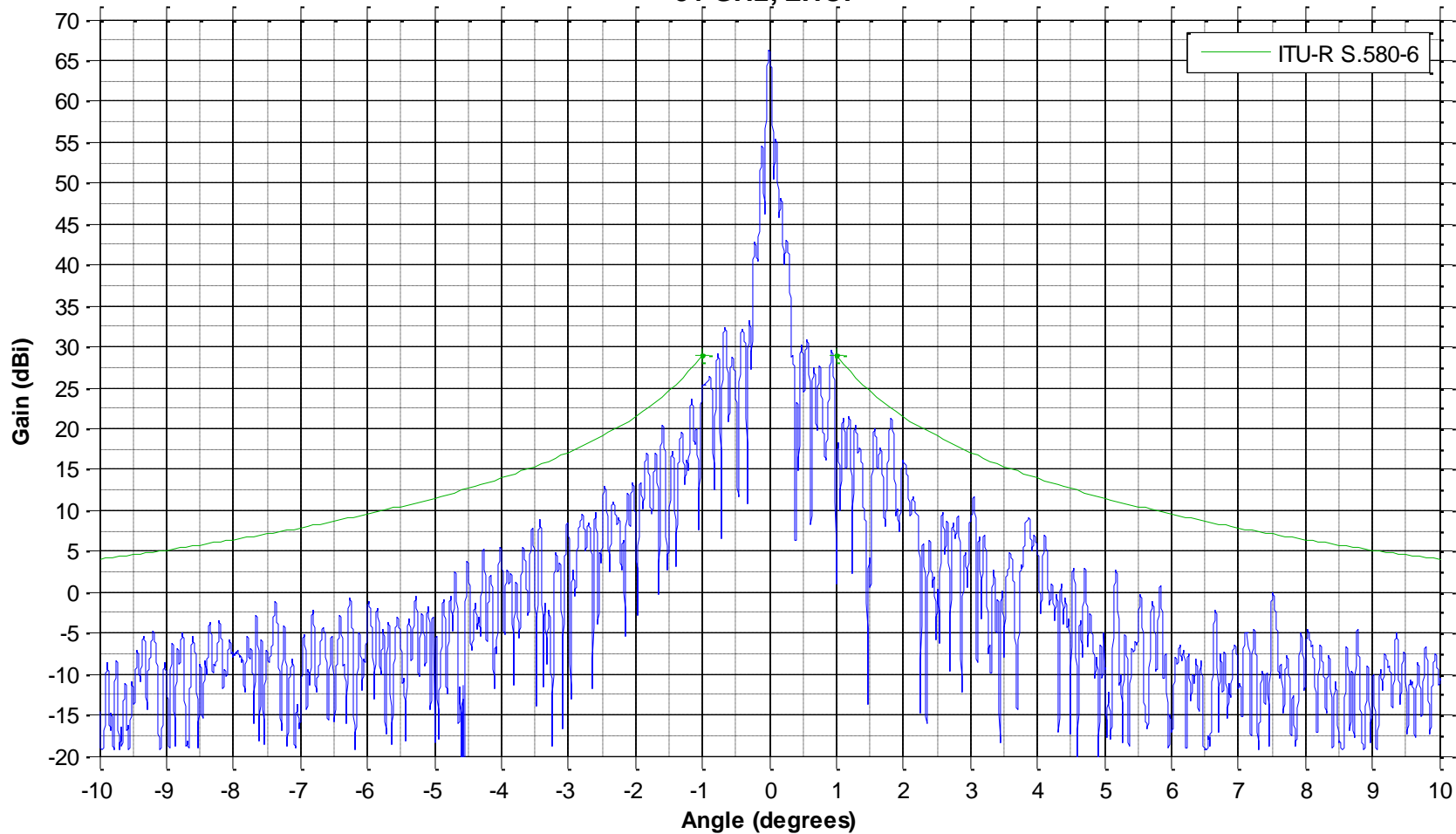
**9.4m Ka-Band Earth Station Antenna
Cross-Pol Azimuth Radiation Pattern, $\pm 10^\circ$
31 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX2_31000MHZ
Plot: 3.95a

Gain: 66.24 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.11°

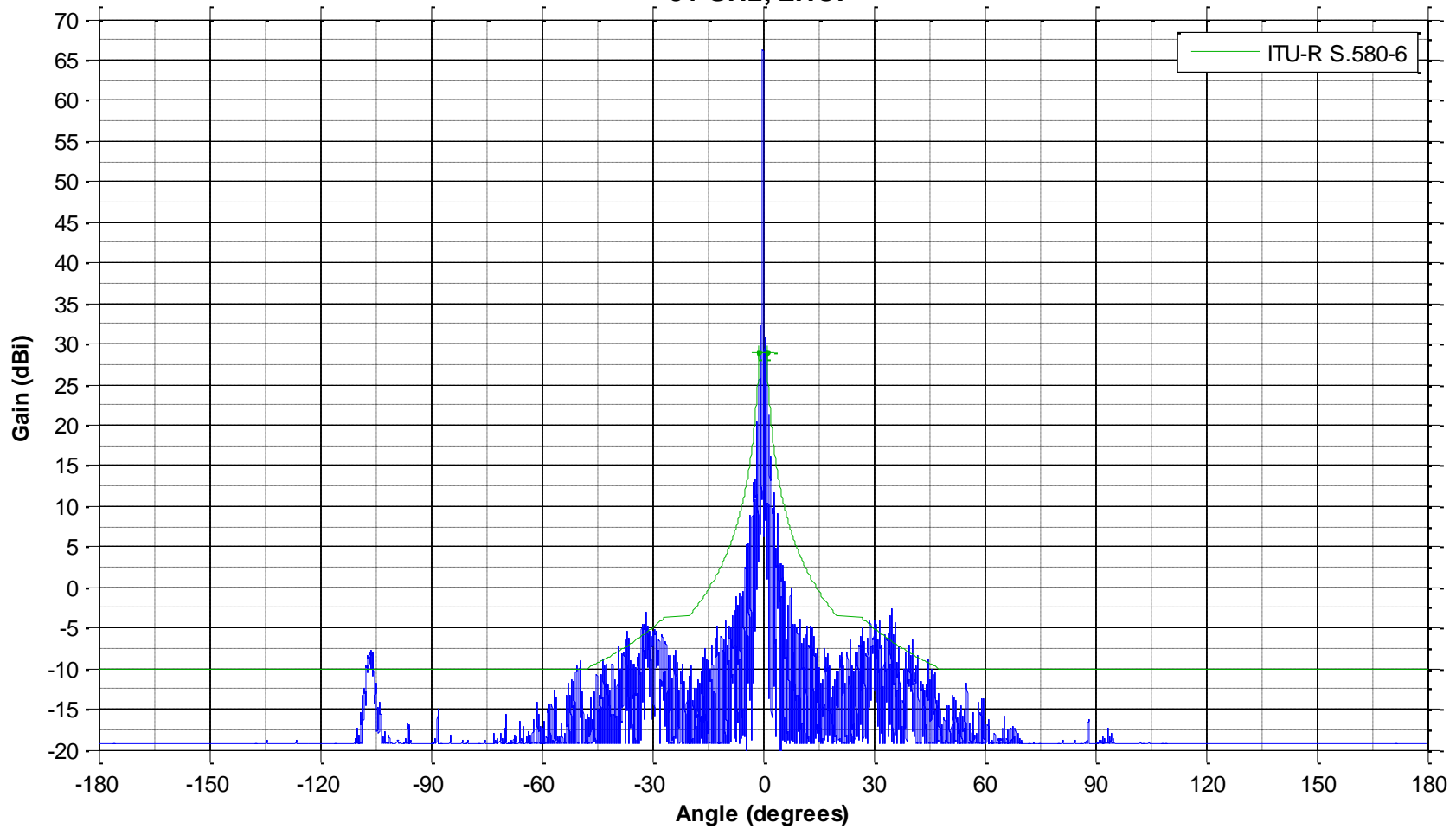
9.4m Ka-Band Earth Station Antenna Co-Pol Elevation Radiation Pattern, ±10° 31 GHz, LHCP



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX2_31000MHZ
Plot: 3.95b

Gain: 66.24 dBi
-3 dB BW: 0.06°
-10 dB BW: 0.11°
Excursions: 0.9%
Max. over: 4.05 dB at 34.96°

**9.4m Ka-Band Earth Station Antenna
Co-Pol Elevation Radiation Pattern, ±180°
31 GHz, LHCP**



Reflector: ES94MPEXKA-1 (SN: 15W174)
Feed: 4CPWWKA-94-206 (SN: 15WF270)
File: EL_TX2_31000MHZ_CROSSPOL
Plot: 3.96

Gain: 66.24 dBi

**9.4m Ka-Band Earth Station Antenna
Cross-Pol Elevation Radiation Pattern, $\pm 10^\circ$
31 GHz, LHCP**

