

REGARDING MODIFICATION OF LICENSE TO ADD EARTH STATION ON VESSELS AUTHORITY TO COMMUNICATE WITH SEATEL ANTENNAS

I. Introduction

Telesat Network Services, Inc. ("Telesat") is filing the instant application to modify its existing authorization for a Ku-band transmit/receive earth station under Call Sign KA399, in order to add earth stations on vessels ("ESV") operations using the SeaTel 4012GX antenna type.

II. Compliance with Part 25 of the Commission's Rules

Telesat is herein seeking authority to license the SeaTel 4012GX antenna type ESV units, which do not strictly conform to the antenna pattern specified in Section 25.209 of the Commission's Rules.

The instant application requests authority for the remote antennas to communicate via any satellite on the Permitted Space Station List to provide ESV service. These remote ESVs will be located on vessels traveling in U.S. and international waters. They will operate with hub antennas that have already been licensed by the Commission and will be utilized to provide ESV service as previously authorized by the Commission. As with the other antennas previously authorized for ESV service, operation of these antennas will be in full compliance with the requirements of the Commission's ESV regulations as set forth in Part 25 of the Commission's Rules.

Telesat's showing of compliance with Part 25 of the Commission's Rules follows herewith and the exhibits required by Section 25.222 are included as attachments to this Exhibit.

Also submitted with the instant request is a declaration provided to Telesat by Cobham/SeaTel, manufacturer of the 4012GX series of antennas, attesting that the antennas meet the spectral density envelope set forth in Section 25.222(a)(1)-(4) of the Commission's Rules, when the devices are limited to input power levels equal to or less than those identified in Schedule B to the instant application.

III. Waiver of Section 25.222(a) in order to receive in 12500-12750 MHz band

Telesat's ESV services are provided using capacity in multiple coverage beams on Telstar 11N (Call Sign S2357). Telstar 11N provides coverage of Europe, the northern Atlantic Ocean, portions of Africa, portions of the Continental United States (CONUS), and the Gulf of Mexico.

By the instant amendment application, Telesat seeks to add receive frequencies to its license for the subject antenna types, inclusive of the use of the 12500-12750 MHz band, which band is required for communication with vessels of U.S. registry as well as to non-U.S. registered vessels travelling in waters around the Telstar 11N Europe and Africa beams. Telesat hereby respectfully requests waiver of Section 25.222(a) to permit it to receive in that frequency band exclusively in the Europe and Africa regions.¹

Grant of the instant waiver requests is in the public interest in that it will permit the Commission to grant Telesat's pending application and to begin immediately providing service to various customers who rely upon and are awaiting expanded ESV services.

IV. Summary and Certifications

Telesat certifies that it will limit its pointing error to 0.5°.

Telesat further certifies that, pursuant to Section 25.222(b)(3) of the Commission's rules, the ESV antennas conform to the gain pattern criteria of 25.209(a) and (b) and that, combined with the input power density entered in Schedule B, the off-axis EIRP spectral density envelope in 25.222(a)(1) through (a)(4) will be met.

Telesat acknowledges that its proposed antenna will be protected from radio interference caused by other space stations only to the degree to which harmful interference would not be expected to be caused to an earth station employing an antenna conforming to the referenced patterns defined in Section 25.209.

For the foregoing reasons, Telesat respectfully requests that the modification application for new ESV authority be granted.

¹ The Commission previously granted Telesat such a waiver request when it granted a previous modification application for KA399 to operate SeaTel 4003A antennas and SeaTel 4006 antennas. *See* SES-MOD-20090206-00154.

SHOWING OF COMPLIANCE WITH PART 25 OF THE COMMISSION'S RULES§25.222 (a)(1)(i)(A-C) SPECTRAL DENSITY LIMITS

The transmitters have off-axis EIRP spectral densities less than or equal to the levels in paragraph 25.222(a)(1)(i)(A) and meet the requirements of 25.222 (a)(1)(i)(A-C), with an N value of 1. *See Attachment C, Declaration of Conformity.*

The 4012GX's radiation pattern meets the FCC EIRP spectral density mask when the input power's spectral density is -16.66 dBW/4 kHz, which is also the value identified on the accompanying FCC Form 312. *See Attachment C, Declaration of Conformity.*

All are circular ESV antennas so 25.222 (a)(1)(i)(D) is not applicable.

§25.222 (a)(1)(ii)(A) ANTENNA POINTING ERROR

The 4012GX will maintain a stabilization pointing accuracy of better than 0.2 degrees under specified ship motion conditions. *See Attachment C, Declaration of Conformity.*

§25.222 (a)(1)(iii)(A) AUTOMATIC SHUT-OFF

The 4012GX will automatically cease the transmission with a mute command to the modem within 100 milliseconds if the pointing error should exceed 0.5 degrees and will not resume transmissions until the error drops below 0.2 degrees. *See Attachment C, Declaration of Conformity.*

§25.222 (a)(2) OFF-AXIS EIRP SPECTRAL DENSITIES

Not applicable.

§25.222 (a)(3) U.S. CONTACT INFORMATION

Telesat has authority and ability to cease all emissions from ESVs through the facilities of its Mt. Jackson teleport located at 1305 Industrial Park Road, Mount Jackson (Shenandoah), VA. This point of contact is available 24 hours a day, seven days a week at 570-226-6688.

§ 25.222 (a)(4) VESSEL TRACKING

Telesat certifies that it will keep a record of the ship location (i.e. latitude/longitude), transmit frequency, channel bandwidth and satellite used shall be time annotated and that this information will be maintained for a period of not less than 1 year. Records will be recorded at time intervals no greater than every 20 minutes while the ESV is transmitting.

Telesat will make this data available upon request to a coordinator, fixed system operator, fixed-satellite system operator, NTIA, or the Commission within 24 hours of the request. *See* above response to Section 25.222(a)(3) for contact details.

§25.222 (a)(5) VESSELS OF FOREIGN REGISTRY

In the event Telesat must operate foreign-registered ESVs, it will maintain detailed information on each vessel as well as a point of contact for the relevant administration responsible for licensing the ESV.

§25.222 (a)(6) U.S. CONTROL OF ESV HUB EARTH STATION

All ESV hub operations are handled by Telesat's Mt. Jackson teleport located at 1305 Industrial Park Road, Mount Jackson (Shenandoah), VA.

§25.222 (a)(7) 10.95-11.2 GHz

Telesat will not claim protection from interference in the 10.95-11.2GHz from any authorized terrestrial stations to which frequencies are already assigned or may be assigned in the future.

§25.222 (b)(1)(i) EIRP DENSITY TABLES

Telesat has provided spectral density tables. Such tables have been generated by SeaTel for the 4012GX antenna. *See* Attachment B, EIRP Density Tables and Radiation Pattern Report.

§25.222 (b)(1)(ii) TELESAT CERTIFICATION

See Section III of Exhibit 1.

§25.222 (b)(1)(iii) MANUFACTURER CERTIFICATION

See Attachment C, Declaration of Conformity.

§25.222 (b)(3) ESV GEOGRAPHIC AREA OF OPERATION

The geographic area where the ESVs will operate is in U.S. channels and waterways, around Europe, the northern Atlantic Ocean, portions of Africa, and the Gulf of Mexico.

§25.222 (b)(4) POINT OF CONTACT

See above response to Section 25.222(a)(3) for contact details.

§25.222 (b)(5) RADIATION EXPOSURE LIMITS

See Exhibit 2, Radiation Hazard Report.

§25.222 (c) FREQUENCY COORDINATION

The ESV units will not operate within 125 km of the NASA TDRSS facilities specified in Section 25.222(c) of the Commission's Rules. *See* Exhibit 3, regarding such compliance.

§25.222 (d) FREQUENCY COORDINATION

The ESV units will not operate within 48 km of the radio observatory on St. Croix; within 125 km of the radio observatory on Mauna Kea; or within 90 km of the Arecibo observatory on Puerto Rico. ESVs operated by Telesat will operate in U.S. channels and waterways, around Europe, the northern Atlantic Ocean, portions of Africa, and the Gulf of Mexico, as described above.

EIRP DENSITY TABLES AND RADIATION PATTERN REPORT

Cobham SATCOM, SeaTel Products

1.06m EIRPsd Data Table
Azimuth Co-Pol 14.25GHz @ -16.6dBW/4KHz

Angle	EIRPsd	Mask
Degrees	dBW/4KHz	dBW/4KHz
-178.0	-47.4	-14.0
-177.0	-47.4	-14.0
-176.0	-38.8	-14.0
-175.0	-38.5	-14.0
-174.0	-42.3	-14.0
-173.0	-42.7	-14.0
-172.0	-44.1	-14.0
-171.0	-40.9	-14.0
-170.0	-45.9	-14.0
-169.0	-41.6	-14.0
-168.0	-56.3	-14.0
-167.0	-46.0	-14.0
-166.0	-44.2	-14.0
-165.0	-49.7	-14.0
-164.0	-43.4	-14.0
-163.0	-48.0	-14.0
-162.0	-47.3	-14.0
-161.0	-61.9	-14.0
-160.0	-57.5	-14.0
-159.0	-61.9	-14.0
-158.0	-59.8	-14.0
-157.0	-55.0	-14.0
-156.0	-47.7	-14.0
-155.0	-44.4	-14.0
-154.0	-44.0	-14.0
-153.0	-48.6	-14.0
-152.0	-45.9	-14.0
-151.0	-51.1	-14.0
-150.0	-48.1	-14.0
-149.0	-47.5	-14.0
-148.0	-48.1	-14.0
-147.0	-44.8	-14.0
-146.0	-44.3	-14.0
-145.0	-42.7	-14.0
-144.0	-47.2	-14.0
-143.0	-48.6	-14.0
-142.0	-60.2	-14.0
-141.0	-44.1	-14.0
-140.0	-42.2	-14.0
-139.0	-41.2	-14.0
-138.0	-44.7	-14.0
-137.0	-50.6	-14.0
-136.0	-42.9	-14.0
-135.0	-40.1	-14.0
-134.0	-41.1	-14.0
-133.0	-44.8	-14.0
-132.0	-42.3	-14.0
-131.0	-44.0	-14.0
-130.0	-39.8	-14.0
-129.0	-37.0	-14.0

Angle	EIRPsd	Mask
Degrees	dBW/4KHz	dBW/4KHz
0.1	25.2	
0.2	25.0	
0.3	24.7	
0.4	24.2	
0.5	23.6	
0.6	22.9	
0.7	22.0	
0.8	20.9	
0.9	19.7	
1.0	18.3	
1.1	16.5	
1.2	14.5	
1.3	12.0	
1.4	8.9	
1.5	5.0	10.6
1.6	0.2	9.9
1.7	-2.6	9.2
1.8	0.0	8.6
1.9	2.5	8.0
2.0	4.1	7.5
2.1	4.9	6.9
2.2	5.1	6.4
2.3	5.0	6.0
2.4	4.5	5.5
2.5	3.8	5.0
2.6	2.8	4.6
2.7	1.8	4.2
2.8	0.7	3.8
2.9	-0.4	3.4
3.0	-1.4	3.1
3.1	-2.4	2.7
3.2	-3.4	2.4
3.3	-4.4	2.0
3.4	-5.6	1.7
3.5	-7.0	1.4
3.6	-8.5	1.1
3.7	-10.2	0.8
3.8	-11.6	0.5
3.9	-12.0	0.2
4.0	-11.3	-0.1
4.1	-9.8	-0.3
4.2	-8.7	-0.6
4.3	-7.8	-0.8
4.4	-7.4	-1.1
4.5	-7.2	-1.3
4.6	-7.2	-1.6
4.7	-7.3	-1.8
4.8	-7.5	-2.0
4.9	-7.8	-2.3
5.0	-8.1	-2.5

-128.0	-38.8	-14.0
-127.0	-38.9	-14.0
-126.0	-38.5	-14.0
-125.0	-38.4	-14.0
-124.0	-39.2	-14.0
-123.0	-35.0	-14.0
-122.0	-34.5	-14.0
-121.0	-34.6	-14.0
-120.0	-33.3	-14.0
-119.0	-31.7	-14.0
-118.0	-31.7	-14.0
-117.0	-31.4	-14.0
-116.0	-31.6	-14.0
-115.0	-30.1	-14.0
-114.0	-29.1	-14.0
-113.0	-28.6	-14.0
-112.0	-27.5	-14.0
-111.0	-26.1	-14.0
-110.0	-25.3	-14.0
-109.0	-25.0	-14.0
-108.0	-24.7	-14.0
-107.0	-23.0	-14.0
-106.0	-23.2	-14.0
-105.0	-22.7	-14.0
-104.0	-22.1	-14.0
-103.0	-23.0	-14.0
-102.0	-23.1	-14.0
-101.0	-23.3	-14.0
-100.0	-24.0	-14.0
-99.0	-23.3	-14.0
-98.0	-24.0	-14.0
-97.0	-23.2	-14.0
-96.0	-21.8	-14.0
-95.0	-21.7	-14.0
-94.0	-20.6	-14.0
-93.0	-21.5	-14.0
-92.0	-22.1	-14.0
-91.0	-22.2	-14.0
-90.0	-22.2	-14.0
-89.0	-21.7	-14.0
-88.0	-20.9	-14.0
-87.0	-22.4	-14.0
-86.0	-20.9	-14.0
-85.0	-24.9	-24.0
-84.0	-23.2	-24.0
-83.0	-23.7	-24.0
-82.0	-23.4	-24.0
-81.0	-23.9	-24.0
-80.0	-24.1	-24.0
-79.0	-24.1	-24.0
-78.0	-25.4	-24.0
-77.0	-26.8	-24.0
-76.0	-27.7	-24.0
-75.0	-29.7	-24.0
-74.0	-30.9	-24.0
-73.0	-31.4	-24.0
-72.0	-30.7	-24.0

5.1	-8.4	-2.7
5.2	-8.7	-2.9
5.3	-9.0	-3.1
5.4	-9.5	-3.3
5.5	-10.1	-3.5
5.6	-10.9	-3.7
5.7	-12.1	-3.9
5.8	-13.7	-4.1
5.9	-15.9	-4.3
6.0	-19.1	-4.5
6.1	-24.0	-4.6
6.2	-33.0	-4.8
6.3	-32.3	-5.0
6.4	-25.4	-5.2
6.5	-22.5	-5.3
6.6	-21.3	-5.5
6.7	-21.1	-5.7
6.8	-21.8	-5.8
6.9	-23.3	-6.0
7.0	-26.0	-6.1
7.1	-30.4	-6.0
7.2	-31.5	-6.0
7.3	-27.2	-6.0
7.4	-23.7	-6.0
7.5	-21.6	-6.0
7.6	-20.4	-6.0
7.7	-20.0	-6.0
7.8	-20.3	-6.0
7.9	-21.3	-6.0
8.0	-23.1	-6.0
8.1	-25.5	-6.0
8.2	-26.9	-6.0
8.3	-25.0	-6.0
8.4	-21.9	-6.0
8.5	-19.3	-6.0
8.6	-17.4	-6.0
8.7	-16.0	-6.0
8.8	-15.1	-6.0
8.9	-14.5	-6.0
9.0	-14.2	-6.0
9.1	-14.3	-6.0
9.2	-14.6	-6.1
9.3	-15.3	-6.2
9.4	-16.2	-6.3
9.5	-17.3	-6.4
9.6	-18.7	-6.6
9.7	-20.1	-6.7
9.8	-21.5	-6.8
9.9	-22.2	-6.9
10.0	-22.3	-7.0
11.0	-16.1	-8.0
12.0	-10.3	-9.0
13.0	-21.1	-9.8
14.0	-18.2	-10.7
15.0	-11.8	-11.4
16.0	-26.1	-12.1
17.0	-22.7	-12.8

-71.0	-31.9	-24.0
-70.0	-32.5	-24.0
-69.0	-28.8	-24.0
-68.0	-28.5	-24.0
-67.0	-30.1	-24.0
-66.0	-28.4	-24.0
-65.0	-27.8	-24.0
-64.0	-28.4	-24.0
-63.0	-30.2	-24.0
-62.0	-29.1	-24.0
-61.0	-29.0	-24.0
-60.0	-33.1	-24.0
-59.0	-29.4	-24.0
-58.0	-30.3	-24.0
-57.0	-34.3	-24.0
-56.0	-31.7	-24.0
-55.0	-28.6	-24.0
-54.0	-27.1	-24.0
-53.0	-27.8	-24.0
-52.0	-29.1	-24.0
-51.0	-23.1	-24.0
-50.0	-23.2	-24.0
-49.0	-24.4	-24.0
-48.0	-25.0	-24.0
-47.0	-26.5	-23.8
-46.0	-23.1	-23.6
-45.0	-24.6	-23.3
-44.0	-29.5	-23.1
-43.0	-31.4	-22.8
-42.0	-31.3	-22.6
-41.0	-23.7	-22.3
-40.0	-25.7	-22.1
-39.0	-28.2	-21.8
-38.0	-27.1	-21.5
-37.0	-26.6	-21.2
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-35.0	-27.2	-20.6
-34.0	-26.5	-20.3
-33.0	-23.4	-20.0
-32.0	-25.2	-19.6
-31.0	-21.8	-19.3
-30.0	-22.8	-18.9
-29.0	-25.8	-18.6
-28.0	-22.3	-18.2
-27.0	-33.9	-17.8
-26.0	-17.6	-17.4
-25.0	-18.2	-16.9
-24.0	-30.3	-16.5
-23.0	-21.7	-16.0
-22.0	-17.8	-15.6
-21.0	-23.3	-15.1
-20.0	-13.9	-14.5
-19.0	-14.2	-14.0
-18.0	-18.8	-13.4
-17.0	-26.0	-12.8
-16.0	-26.7	-12.1
-15.0	-10.7	-11.4

18.0	-17.1	-13.4
19.0	-11.3	-14.0
20.0	-13.2	-14.5
21.0	-18.7	-15.1
22.0	-13.8	-15.6
23.0	-17.4	-16.0
24.0	-27.1	-16.5
25.0	-25.2	-16.9
26.0	-20.1	-17.4
27.0	-22.0	-17.8
28.0	-30.0	-18.2
29.0	-22.3	-18.6
30.0	-27.0	-18.9
31.0	-29.7	-19.3
32.0	-37.8	-19.6
33.0	-31.8	-20.0
34.0	-36.6	-20.3
35.0	-37.9	-20.6
36.0	-31.8	-20.9
37.0	-30.7	-21.2
38.0	-29.0	-21.5
39.0	-28.4	-21.8
40.0	-28.7	-22.1
41.0	-26.9	-22.3
42.0	-34.0	-22.6
43.0	-32.6	-22.8
44.0	-34.0	-23.1
45.0	-27.7	-23.3
46.0	-28.1	-23.6
47.0	-39.3	-23.8
48.0	-42.3	-24.0
49.0	-40.4	-24.0
50.0	-35.0	-24.0
51.0	-37.8	-24.0
52.0	-26.1	-24.0
53.0	-24.3	-24.0
54.0	-24.3	-24.0
55.0	-23.4	-24.0
56.0	-22.9	-24.0
57.0	-21.5	-24.0
58.0	-22.4	-24.0
59.0	-23.6	-24.0
60.0	-22.4	-24.0
61.0	-21.9	-24.0
62.0	-22.7	-24.0
63.0	-23.4	-24.0
64.0	-22.8	-24.0
65.0	-22.1	-24.0
66.0	-23.6	-24.0
67.0	-24.3	-24.0
68.0	-23.3	-24.0
69.0	-22.7	-24.0
70.0	-23.2	-24.0
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73.0	-22.3	-24.0
74.0	-22.9	-24.0

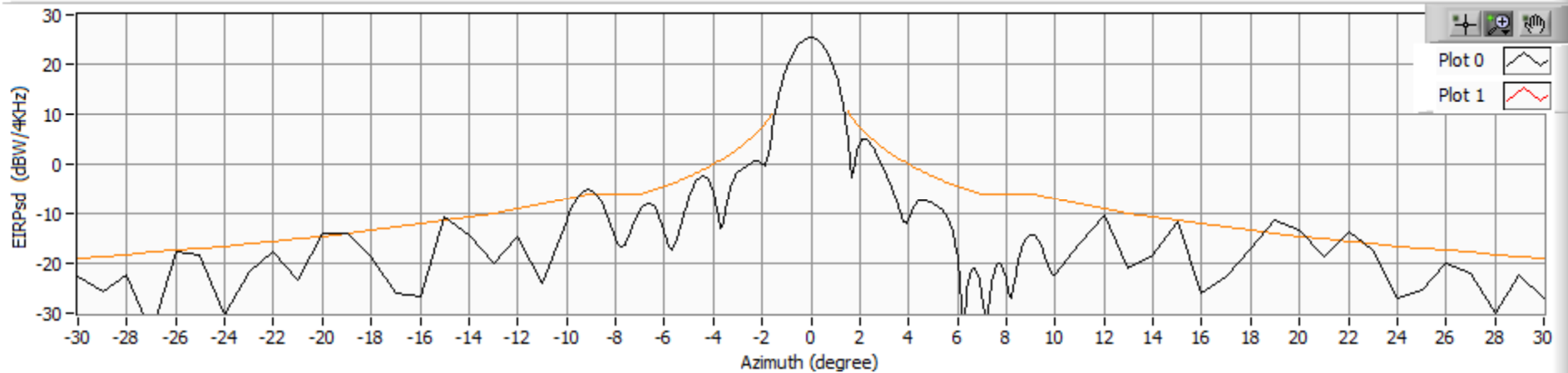
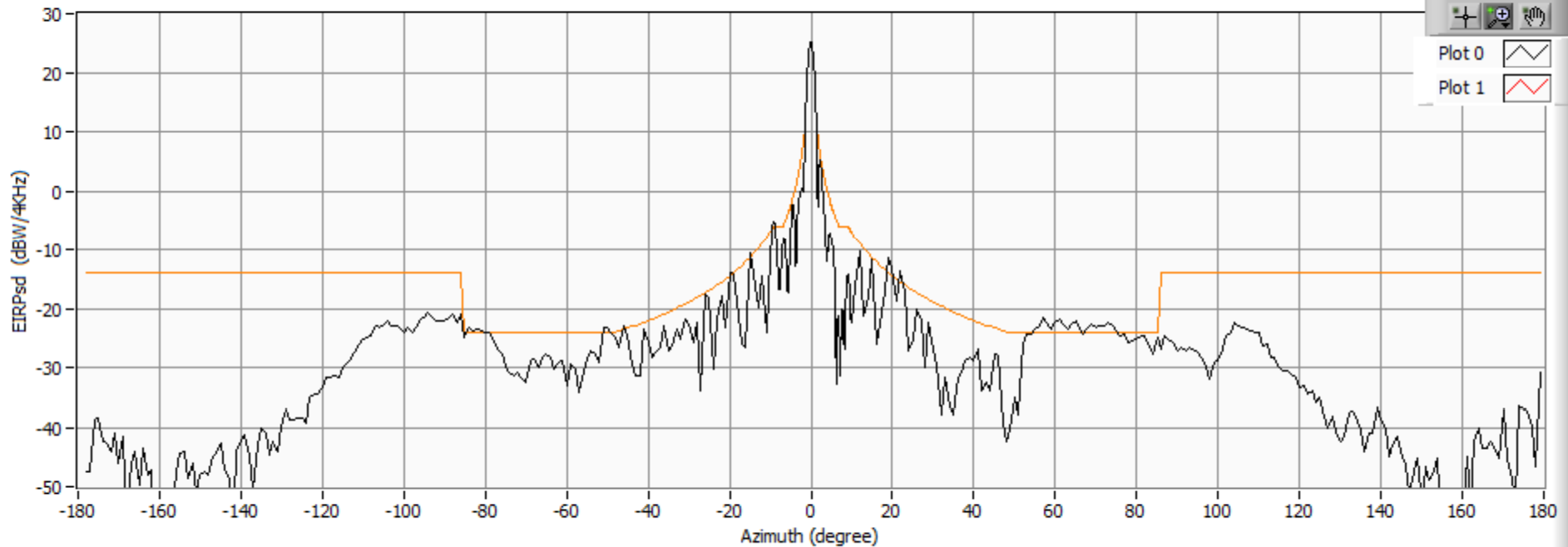
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-13.0	-19.9	-9.8
-12.0	-14.6	-9.0
-11.0	-24.0	-8.0
-10.0	-11.2	-7.0
-9.9	-9.9	-6.9
-9.8	-8.8	-6.8
-9.7	-7.8	-6.7
-9.6	-7.0	-6.6
-9.5	-6.4	-6.4
-9.4	-5.9	-6.3
-9.3	-5.5	-6.2
-9.2	-5.2	-6.0
-9.1	-5.2	-6.0
-9.0	-5.3	-6.0
-8.9	-5.6	-6.0
-8.8	-6.0	-6.0
-8.7	-6.6	-6.0
-8.6	-7.4	-6.0
-8.5	-8.5	-6.0
-8.4	-9.5	-6.0
-8.3	-10.9	-6.0
-8.2	-12.3	-6.0
-8.1	-13.8	-6.0
-8.0	-15.1	-6.0
-7.9	-16.2	-6.0
-7.8	-16.8	-6.0
-7.7	-16.8	-6.0
-7.6	-16.2	-6.0
-7.5	-15.2	-6.0
-7.4	-13.9	-6.0
-7.3	-12.6	-6.0
-7.2	-11.4	-6.0
-7.1	-10.4	-6.0
-7.0	-9.5	-6.1
-6.9	-8.8	-6.0
-6.8	-8.3	-5.8
-6.7	-8.0	-5.7
-6.6	-8.1	-5.5
-6.5	-8.3	-5.3
-6.4	-8.8	-5.2
-6.3	-9.6	-5.0
-6.2	-10.7	-4.8
-6.1	-12.1	-4.6
-6.0	-13.6	-4.5
-5.9	-15.3	-4.3
-5.8	-16.7	-4.1
-5.7	-17.3	-3.9
-5.6	-16.7	-3.7
-5.5	-15.3	-3.5
-5.4	-13.6	-3.3
-5.3	-11.8	-3.1
-5.2	-10.0	-2.9
-5.1	-8.3	-2.7
-5.0	-6.8	-2.5
-4.9	-5.5	-2.3
-4.8	-4.4	-2.0

75.0	-23.7	-24.0
76.0	-24.6	-24.0
77.0	-24.2	-24.0
78.0	-25.9	-24.0
79.0	-25.6	-24.0
80.0	-25.2	-24.0
81.0	-24.6	-24.0
82.0	-24.5	-24.0
83.0	-26.5	-24.0
84.0	-27.8	-24.0
85.0	-25.1	-24.0
86.0	-27.0	-14.0
87.0	-24.6	-14.0
88.0	-25.5	-14.0
89.0	-25.6	-14.0
90.0	-27.2	-14.0
91.0	-26.6	-14.0
92.0	-27.1	-14.0
93.0	-26.5	-14.0
94.0	-27.1	-14.0
95.0	-27.5	-14.0
96.0	-28.2	-14.0
97.0	-29.6	-14.0
98.0	-32.1	-14.0
99.0	-29.2	-14.0
100.0	-29.0	-14.0
101.0	-26.9	-14.0
102.0	-24.6	-14.0
103.0	-24.2	-14.0
104.0	-22.5	-14.0
105.0	-23.0	-14.0
106.0	-23.4	-14.0
107.0	-23.4	-14.0
108.0	-23.9	-14.0
109.0	-24.2	-14.0
110.0	-24.2	-14.0
111.0	-26.4	-14.0
112.0	-26.2	-14.0
113.0	-28.3	-14.0
114.0	-28.4	-14.0
115.0	-30.1	-14.0
116.0	-30.6	-14.0
117.0	-30.5	-14.0
118.0	-31.0	-14.0
119.0	-31.8	-14.0
120.0	-33.4	-14.0
121.0	-33.2	-14.0
122.0	-34.5	-14.0
123.0	-34.0	-14.0
124.0	-35.9	-14.0
125.0	-35.2	-14.0
126.0	-38.1	-14.0
127.0	-40.1	-14.0
128.0	-38.1	-14.0
129.0	-40.8	-14.0
130.0	-42.5	-14.0
131.0	-41.7	-14.0

-4.7	-3.5	-1.8
-4.6	-2.9	-1.6
-4.5	-2.5	-1.3
-4.4	-2.4	-1.1
-4.3	-2.6	-0.8
-4.2	-3.1	-0.6
-4.1	-4.1	-0.3
-4.0	-5.5	0.0
-3.9	-7.6	0.2
-3.8	-10.3	0.5
-3.7	-12.9	0.8
-3.6	-12.2	1.1
-3.5	-9.2	1.4
-3.4	-6.6	1.7
-3.3	-4.6	2.0
-3.2	-3.3	2.4
-3.1	-2.3	2.7
-3.0	-1.7	3.1
-2.9	-1.3	3.4
-2.8	-1.0	3.8
-2.7	-0.8	4.2
-2.6	-0.5	4.6
-2.5	-0.1	5.1
-2.4	0.3	5.5
-2.3	0.5	6.0
-2.2	0.5	6.4
-2.1	0.3	6.9
-2.0	-0.1	7.5
-1.9	-0.2	8.0
-1.8	0.9	8.6
-1.7	3.3	9.2
-1.6	6.3	9.9
-1.5	9.1	10.6
-1.4	11.6	
-1.3	13.9	
-1.2	15.9	
-1.1	17.5	
-1.0	19.0	
-0.9	20.3	
-0.8	21.4	
-0.7	22.4	
-0.6	23.2	
-0.5	23.9	
-0.4	24.4	
-0.3	24.8	
-0.2	25.1	
-0.1	25.2	
0.0	25.3	

132.0	-37.5	-14.0
133.0	-37.4	-14.0
134.0	-38.3	-14.0
135.0	-40.5	-14.0
136.0	-44.1	-14.0
137.0	-40.9	-14.0
138.0	-41.1	-14.0
139.0	-36.8	-14.0
140.0	-38.6	-14.0
141.0	-40.1	-14.0
142.0	-44.9	-14.0
143.0	-43.1	-14.0
144.0	-41.5	-14.0
145.0	-44.2	-14.0
146.0	-46.5	-14.0
147.0	-51.3	-14.0
148.0	-47.5	-14.0
149.0	-45.2	-14.0
150.0	-53.3	-14.0
151.0	-46.6	-14.0
152.0	-48.8	-14.0
153.0	-47.5	-14.0
154.0	-45.1	-14.0
155.0	-61.0	-14.0
156.0	-52.8	-14.0
157.0	-52.8	-14.0
158.0	-59.8	-14.0
159.0	-59.8	-14.0
160.0	-55.5	-14.0
161.0	-45.1	-14.0
162.0	-53.5	-14.0
163.0	-42.5	-14.0
164.0	-40.3	-14.0
165.0	-43.5	-14.0
166.0	-43.6	-14.0
167.0	-42.3	-14.0
168.0	-43.9	-14.0
169.0	-45.3	-14.0
170.0	-37.2	-14.0
171.0	-45.6	-14.0
172.0	-47.5	-14.0
173.0	-52.1	-14.0
174.0	-36.5	-14.0
175.0	-37.0	-14.0
176.0	-37.4	-14.0
177.0	-40.0	-14.0
178.0	-46.7	-14.0
179.0	-30.9	-14.0

14250 MHz Azimuth HH Pin=-16.6 (dBW/4KHz)



Source File	Freq(MHz)	Scan	Pol	EIRPsd	Over%	a=	a~7	7~9.2	9.2~48	48~85	85~180
M:\TestData\DataBase\4012Ku_2012_0330_MI_FCC\All_FCC_Data\04182012\14250_AZ_HH.s	14250	AZ	HH	25.26	9.29	1.50	0.00	0.83	2.64	2.52	0.00

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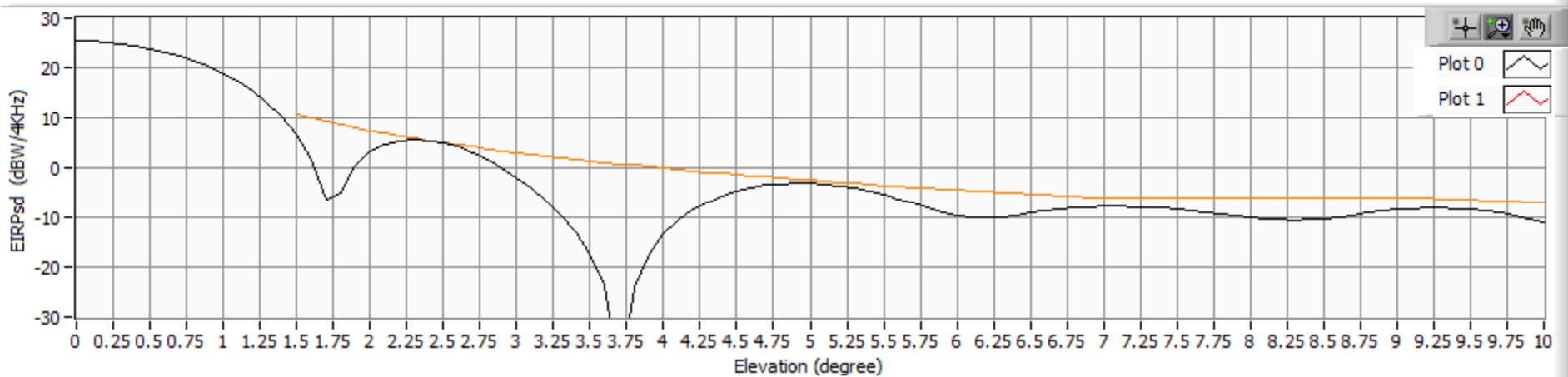
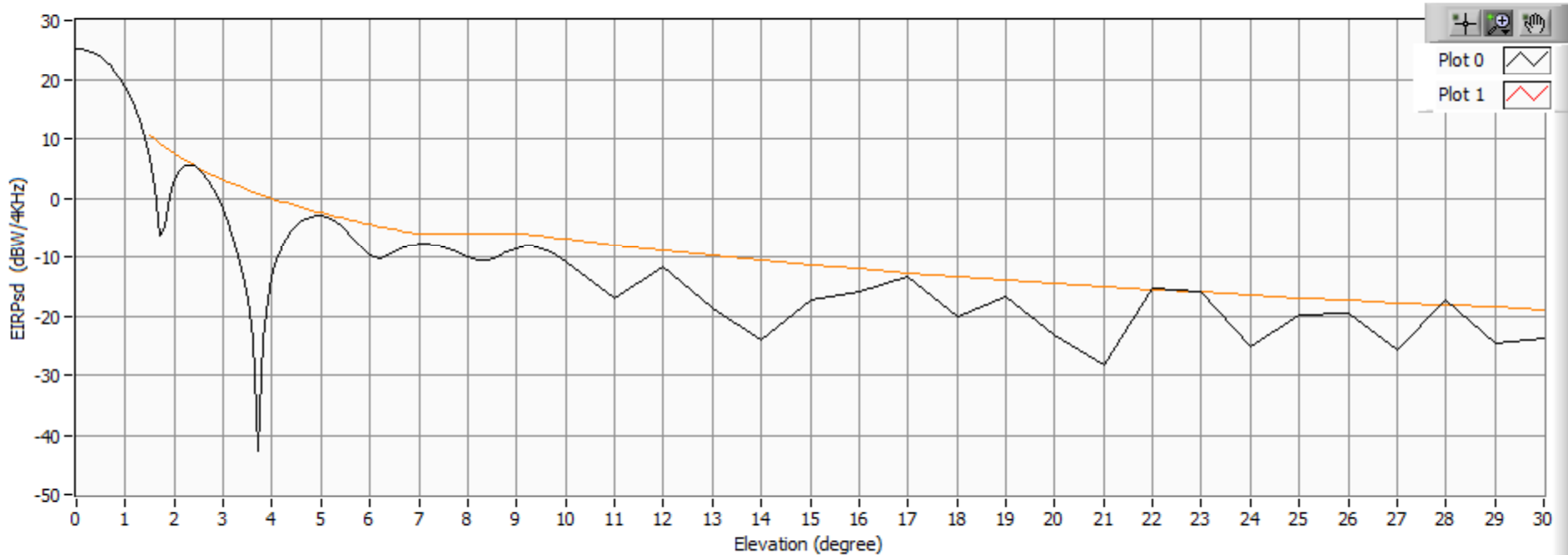
1.06m EIRPsd Data Table
Elevation Co-Pol 14.25GHz @ -16.6dBW/4KHz

Angle	EIRPsd	Mask
Degrees	dBW/4KHz	dBW/4KHz
0.0	25.2	
0.1	25.2	
0.2	25.0	
0.3	24.7	
0.4	24.3	
0.5	23.8	
0.6	23.1	
0.7	22.3	
0.8	21.4	
0.9	20.2	
1.0	18.8	
1.1	17.2	
1.2	15.4	
1.3	13.1	
1.4	10.3	
1.5	6.8	10.6
1.6	1.7	9.9
1.7	-6.3	9.2
1.8	-5.0	8.6
1.9	0.4	8.0
2.0	3.2	7.5
2.1	4.6	6.9
2.2	5.4	6.4
2.3	5.6	6.0
2.4	5.4	5.5
2.5	4.9	5.1
2.6	4.2	4.6
2.7	3.0	4.2
2.8	1.7	3.8
2.9	0.1	3.4
3.0	-1.9	3.1
3.1	-4.2	2.7
3.2	-6.8	2.4
3.3	-9.8	2.0
3.4	-13.2	1.7
3.5	-17.3	1.4
3.6	-23.7	1.1
3.7	-42.7	0.8
3.8	-24.0	0.5
3.9	-17.4	0.2
4.0	-13.3	-0.1
4.1	-10.5	-0.3
4.2	-8.5	-0.6
4.3	-6.9	-0.8
4.4	-5.6	-1.1
4.5	-4.6	-1.3
4.6	-3.9	-1.6
4.7	-3.4	-1.8
4.8	-3.2	-2.0
4.9	-3.0	-2.3

5.0	-3.1	-2.5
5.1	-3.2	-2.7
5.2	-3.6	-2.9
5.3	-4.1	-3.1
5.4	-4.7	-3.3
5.5	-5.4	-3.5
5.6	-6.2	-3.7
5.7	-7.1	-3.9
5.8	-8.1	-4.1
5.9	-9.0	-4.3
6.0	-9.7	-4.5
6.1	-10.1	-4.6
6.2	-10.2	-4.8
6.3	-9.9	-5.0
6.4	-9.5	-5.2
6.5	-9.1	-5.3
6.6	-8.7	-5.5
6.7	-8.3	-5.7
6.8	-8.1	-5.8
6.9	-7.9	-6.0
7.0	-7.8	-6.0
7.1	-7.8	-6.0
7.2	-7.8	-6.0
7.3	-7.9	-6.0
7.4	-8.1	-6.0
7.5	-8.3	-6.0
7.6	-8.5	-6.0
7.7	-8.9	-6.0
7.8	-9.2	-6.0
7.9	-9.6	-6.0
8.0	-10.0	-6.0
8.1	-10.3	-6.0
8.2	-10.5	-6.0
8.3	-10.6	-6.0
8.4	-10.5	-6.0
8.5	-10.3	-6.0
8.6	-9.9	-6.0
8.7	-9.5	-6.0
8.8	-9.1	-6.0
8.9	-8.8	-6.0
9.0	-8.5	-6.0
9.1	-8.3	-6.0
9.2	-8.2	-6.1
9.3	-8.2	-6.2
9.4	-8.3	-6.3
9.5	-8.5	-6.4
9.6	-8.8	-6.6
9.7	-9.2	-6.7
9.8	-9.7	-6.8
9.9	-10.2	-6.9
10.0	-10.9	-7.0
11.0	-17.1	-8.0
12.0	-11.6	-9.0
13.0	-18.8	-9.8
14.0	-24.0	-10.7
15.0	-17.3	-11.4
16.0	-15.8	-12.1

17.0	-13.5	-12.8
18.0	-20.2	-13.4
19.0	-16.7	-14.0
20.0	-23.2	-14.5
21.0	-28.4	-15.1
22.0	-15.2	-15.6
23.0	-15.8	-16.0
24.0	-25.3	-16.5
25.0	-19.9	-16.9
26.0	-19.6	-17.4
27.0	-25.7	-17.8
28.0	-17.4	-18.2
29.0	-24.7	-18.6
30.0	-23.9	-18.9

14250 MHz Elevation HH Pin=-16.6 (dBW/4KHz)



Source File	Freq(MHz)	Scan	Pol	EIRPsd	Over%	a=	a~7	7~9.2	9.2~48	48~85	85~180
M:\TestData\DataBase\4012Ku_2012_0330_MI_FCC\All_FCC_Data\04182012\14250_EL_HH.s	14250	EL	HH	25.24	9.55	1.50	0.00	0.00	1.51	0.00	0.00

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1.06m EIRPsd Data Table

Azimuth X-Pol 14.25GHz @ -16.6dBW/4KHz

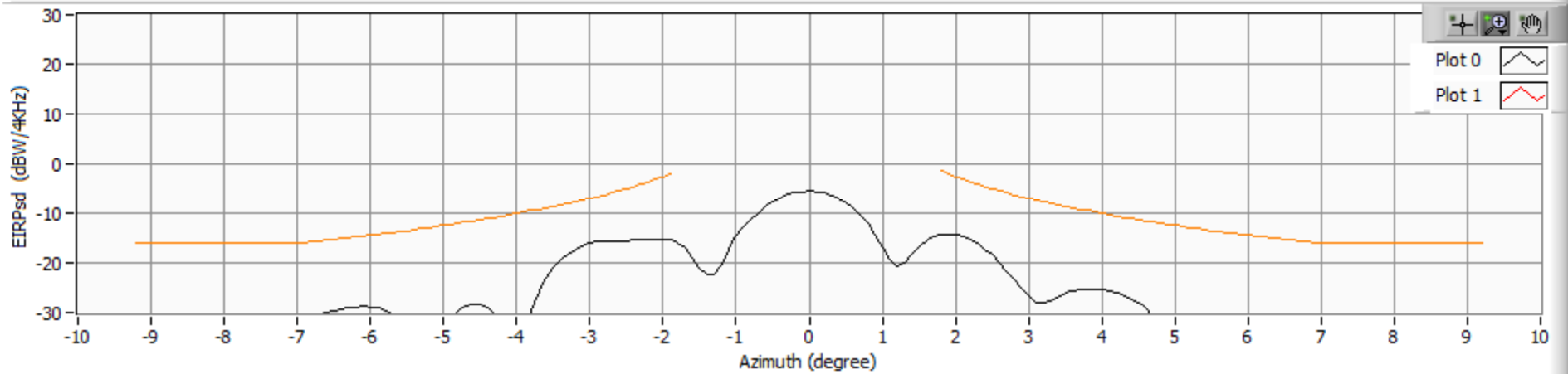
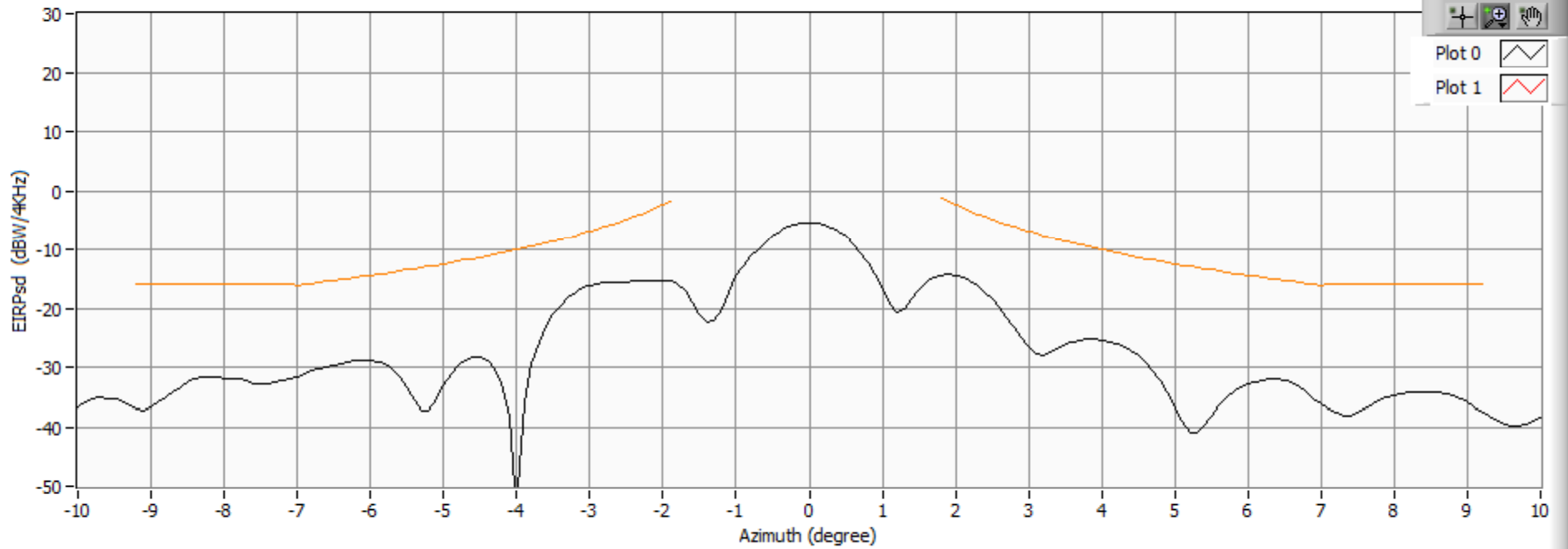
Angle	EIRPsd	Mask
Degrees	dBW/4KHz	dBW/4KHz
-10.0	-36.6	
-9.9	-35.8	
-9.8	-35.3	
-9.7	-35.2	
-9.6	-35.3	
-9.5	-35.5	
-9.4	-35.8	
-9.3	-36.4	
-9.2	-36.9	-16.0
-9.1	-37.2	-16.0
-9.0	-36.8	-16.0
-8.9	-35.9	-16.0
-8.8	-35.0	-16.0
-8.7	-34.1	-16.0
-8.6	-33.4	-16.0
-8.5	-32.6	-16.0
-8.4	-32.1	-16.0
-8.3	-31.7	-16.0
-8.2	-31.6	-16.0
-8.1	-31.8	-16.0
-8.0	-31.9	-16.0
-7.9	-32.0	-16.0
-7.8	-32.1	-16.0
-7.7	-32.3	-16.0
-7.6	-32.7	-16.0
-7.5	-32.9	-16.0
-7.4	-32.9	-16.0
-7.3	-32.6	-16.0
-7.2	-32.3	-16.0
-7.1	-31.9	-16.0
-7.0	-31.6	-16.1
-6.9	-31.1	-16.0
-6.8	-30.7	-15.8
-6.7	-30.3	-15.7
-6.6	-30.0	-15.5
-6.5	-29.8	-15.3
-6.4	-29.4	-15.2
-6.3	-29.1	-15.0
-6.2	-28.9	-14.8
-6.1	-28.8	-14.6
-6.0	-28.8	-14.5
-5.9	-29.1	-14.3
-5.8	-29.5	-14.1
-5.7	-30.4	-13.9
-5.6	-31.7	-13.7
-5.5	-33.5	-13.5
-5.4	-35.6	-13.3
-5.3	-37.4	-13.1
-5.2	-37.4	-12.9
-5.1	-35.3	-12.7

Angle	EIRPsd	Mask
Degrees	dBW/4KHz	dBW/4KHz
0.0	-5.5	
0.1	-5.6	
0.2	-5.8	
0.3	-6.2	
0.4	-6.9	
0.5	-7.9	
0.6	-9.0	
0.7	-10.4	
0.8	-12.2	
0.9	-14.3	
1.0	-16.9	
1.1	-19.4	
1.2	-20.8	
1.3	-20.1	
1.4	-18.3	
1.5	-16.7	
1.6	-15.6	
1.7	-14.8	
1.8	-14.4	-1.4
1.9	-14.3	-2.0
2.0	-14.4	-2.5
2.1	-14.8	-3.1
2.2	-15.4	-3.6
2.3	-16.1	-4.0
2.4	-17.2	-4.5
2.5	-18.4	-5.0
2.6	-19.9	-5.4
2.7	-21.5	-5.8
2.8	-23.2	-6.2
2.9	-25.0	-6.6
3.0	-26.7	-6.9
3.1	-27.8	-7.3
3.2	-28.1	-7.6
3.3	-27.6	-8.0
3.4	-26.9	-8.3
3.5	-26.2	-8.6
3.6	-25.7	-8.9
3.7	-25.4	-9.2
3.8	-25.3	-9.5
3.9	-25.3	-9.8
4.0	-25.4	-10.1
4.1	-25.6	-10.3
4.2	-26.1	-10.6
4.3	-26.6	-10.8
4.4	-27.3	-11.1
4.5	-28.1	-11.3
4.6	-29.1	-11.6
4.7	-30.5	-11.8
4.8	-32.2	-12.0
4.9	-34.2	-12.3

-5.0	-33.1	-12.5
-4.9	-31.2	-12.3
-4.8	-29.7	-12.0
-4.7	-28.7	-11.8
-4.6	-28.3	-11.6
-4.5	-28.4	-11.3
-4.4	-28.9	-11.1
-4.3	-30.3	-10.8
-4.2	-32.9	-10.6
-4.1	-38.3	-10.3
-4.0	-54.1	-10.0
-3.9	-35.9	-9.8
-3.8	-29.6	-9.5
-3.7	-25.7	-9.2
-3.6	-23.0	-8.9
-3.5	-21.1	-8.6
-3.4	-19.4	-8.3
-3.3	-18.2	-8.0
-3.2	-17.2	-7.6
-3.1	-16.5	-7.3
-3.0	-16.1	-6.9
-2.9	-15.8	-6.6
-2.8	-15.6	-6.2
-2.7	-15.6	-5.8
-2.6	-15.6	-5.4
-2.5	-15.6	-4.9
-2.4	-15.5	-4.5
-2.3	-15.4	-4.0
-2.2	-15.3	-3.6
-2.1	-15.4	-3.1
-2.0	-15.4	-2.5
-1.9	-15.4	-2.0
-1.8	-15.8	
-1.7	-17.0	
-1.6	-18.9	
-1.5	-21.1	
-1.4	-22.4	
-1.3	-22.2	
-1.2	-20.3	
-1.1	-17.2	
-1.0	-14.5	
-0.9	-12.7	
-0.8	-11.3	
-0.7	-10.0	
-0.6	-8.8	
-0.5	-7.8	
-0.4	-6.9	
-0.3	-6.2	
-0.2	-5.7	
-0.1	-5.5	

5.0	-36.7	-12.5
5.1	-39.1	-12.7
5.2	-40.9	-12.9
5.3	-40.9	-13.1
5.4	-39.7	-13.3
5.5	-38.2	-13.5
5.6	-36.5	-13.7
5.7	-35.0	-13.9
5.8	-34.1	-14.1
5.9	-33.3	-14.3
6.0	-32.8	-14.5
6.1	-32.5	-14.6
6.2	-32.3	-14.8
6.3	-32.1	-15.0
6.4	-32.0	-15.2
6.5	-32.2	-15.3
6.6	-32.6	-15.5
6.7	-33.4	-15.7
6.8	-34.2	-15.8
6.9	-35.3	-16.0
7.0	-36.2	-16.1
7.1	-37.0	-16.0
7.2	-37.7	-16.0
7.3	-38.2	-16.0
7.4	-38.1	-16.0
7.5	-37.6	-16.0
7.6	-36.9	-16.0
7.7	-36.2	-16.0
7.8	-35.6	-16.0
7.9	-35.2	-16.0
8.0	-34.7	-16.0
8.1	-34.5	-16.0
8.2	-34.2	-16.0
8.3	-34.1	-16.0
8.4	-34.1	-16.0
8.5	-34.1	-16.0
8.6	-34.3	-16.0
8.7	-34.5	-16.0
8.8	-34.9	-16.0
8.9	-35.3	-16.0
9.0	-36.0	-16.0
9.1	-36.7	-16.0
9.2	-37.6	-16.0
9.3	-38.2	
9.4	-39.1	
9.5	-39.7	
9.6	-39.9	
9.7	-39.8	
9.8	-39.4	
9.9	-39.0	
10.0	-38.5	

14250 MHz Azimuth VH Pin=-16.6 (dBW/4KHz)



Source File	Freq(MHz)	Scan	Pol	EIRPsd	Over%	a=	a~7	7~9.2
M:\TestData\DataBase\4012Ku_2012_0330_MI_FCC\All_FCC_Data\04182012\14250_AZ_VH.s	14250	AZ	VH	-5.46	0.00	1.80	0.00	0.00

DECLARATION OF CONFORMITY



Sea Tel Inc.
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F: +1 (925) 798-7986

FCC Declaration of Conformity

1. Sea Tel, Inc. designs, develops, manufactures and services marine stabilized antenna systems for satellite communication at sea. These products are in turn used by our customers as part of their Ku-band Earth Station on Vessels (ESV) networks.
2. FCC regulation 47 C.F.R. § 25.222 defines the provisions for blanket licensing of ESV antennas operating in the Ku Band. This declaration covers the requirements for meeting § 25.222 (a)(1) by the demonstrations outlined in paragraphs (b)(1)(i) and (b)(1)(iii). The requirements for meeting § 25.222 (a)(3)-(a)(7) are left to the applicant. The paragraph numbers in this declaration refer to the 2009 version of FCC 47 C.F.R. § 25.222.
3. Sea Tel hereby declares that the antennas listed below will meet the off-axis EIRP spectral density requirements of § 25.222 (a)(1)(i) with an N value of 1, when the following Input Power spectral density limitations are met:

*0.6 Meter Ku Band, Models 2406 and USAT-24 are limited to	-21.6 dBW/4kHz
*0.75 Meter Ku Band, Models 3011 and USAT-30 are limited to	-21.6 dBW/4kHz
0.9 Meter Ku Band, Model 3612 is limited to	-20.3 dBW/4kHz
1.0 Meter Ku Band, Models 4003/4006/4009/4010 are limited to	-16.3 dBW/4kHz
1.0 Meter Ku Band Model 4012 is limited to	-16.6 dBW/4kHz
1.2 Meter Ku Band, Models 4996/5009/5010/5012 are limited to	-14.0 dBW/4kHz
1.5 Meter Ku Band, Models 6006/6009/6012 are limited to	-14.0 dBW/4kHz
2.4 Meter Ku Band, Models 9797 and 9711QOR are limited to	-14.0 dBW/4kHz
4. Sea Tel hereby declares that the antennas referenced in paragraph 3 above, will maintain a stabilization pointing accuracy of better than 0.2 degrees under specified ship motion conditions, thus meeting the requirements of § 25.222 (a)(1)(ii)(A). Those antennas marked with * will maintain a stabilization pointing accuracy of better than 0.3 degrees. The Input Power spectral density limits for these antenna have been adjusted to meet the requirements of § 25.222 (a)(1)(ii)(B).
5. Sea Tel hereby declares that the antennas referenced in paragraph 3 above, will automatically cease transmission within 100 milliseconds if the pointing error should exceed 0.5 degrees and will not resume transmission until the error drops below 0.2 degrees, thus meeting the requirements of § 25.222 (a)(1)(iii).
6. Sea Tel maintains all relevant test data, which is available upon request, to verify these declarations.

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