

EXHIBIT 2

KVH Industries, Inc.
Application for License Modification
Exhibit 2

1. Off-Axis EIRP Analysis

The data rates transmitted from the terminal will vary from 32 kbits/s to 512 kbits/s. Additionally, the ESVs will transmit using CRMA spreading¹ over either an 18 MHz, a 27 MHz, or a 36 MHz channel bandwidth. KVH acknowledges that the small diameter Ku-100 antenna does not meet the FCC 25.209 antenna pattern, by a very small margin. However, KVH certifies that the aggregate EIRP levels do not exceed the limits specified for Ku-band ESVs in Section 25.222 of the Commission's rules.

The co-pol off-axis EIRP spectral density levels of the KVH ESV terminal are shown in Figures 1 through 6, below. Note that a calculated aggregate EIRP considers N=7 users for the 18 MHz channel, N=10 for the 27 MHz channel and, N=14 users for the 36 MHz channel. This represents a worst case operational scenario for this terminal type. Figure 7 below shows the Ku-100 worst case cross-pol off-axis EIRP density plots versus the FCC §25.222 mask.

¹ CRMA, or Code Reuse Multiple Access, is a ViaSat proprietary spread spectrum technique, similar to CDMA, used in the ArcLight satellite system.

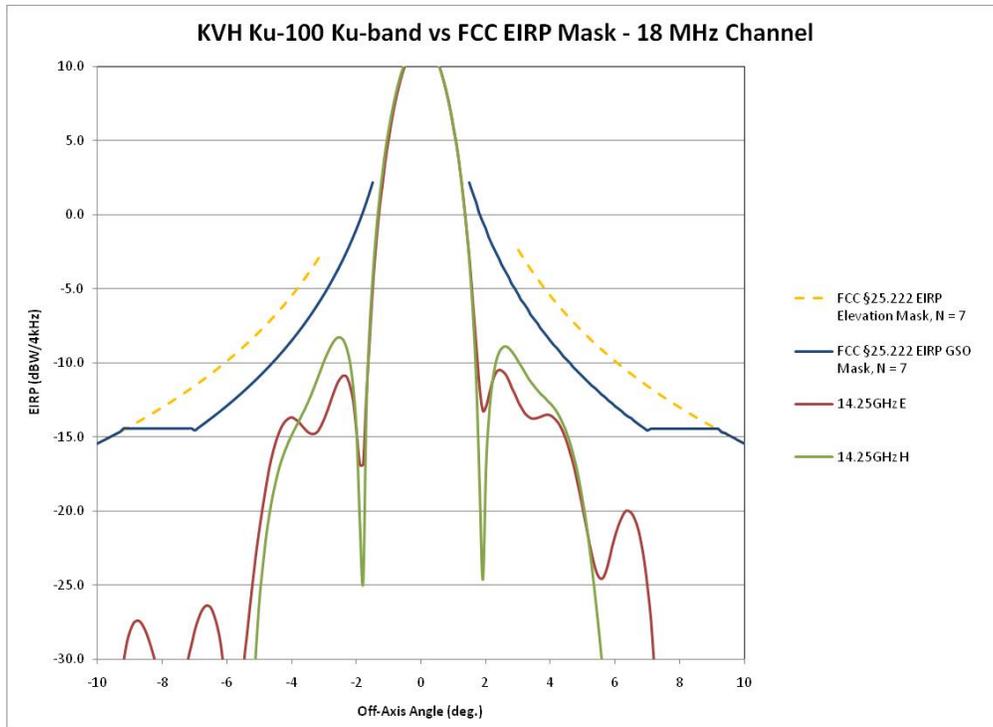


Figure 1 – Off-Axis EIRP Spectral Density 18 MHz Channel (+/- 10 deg.)

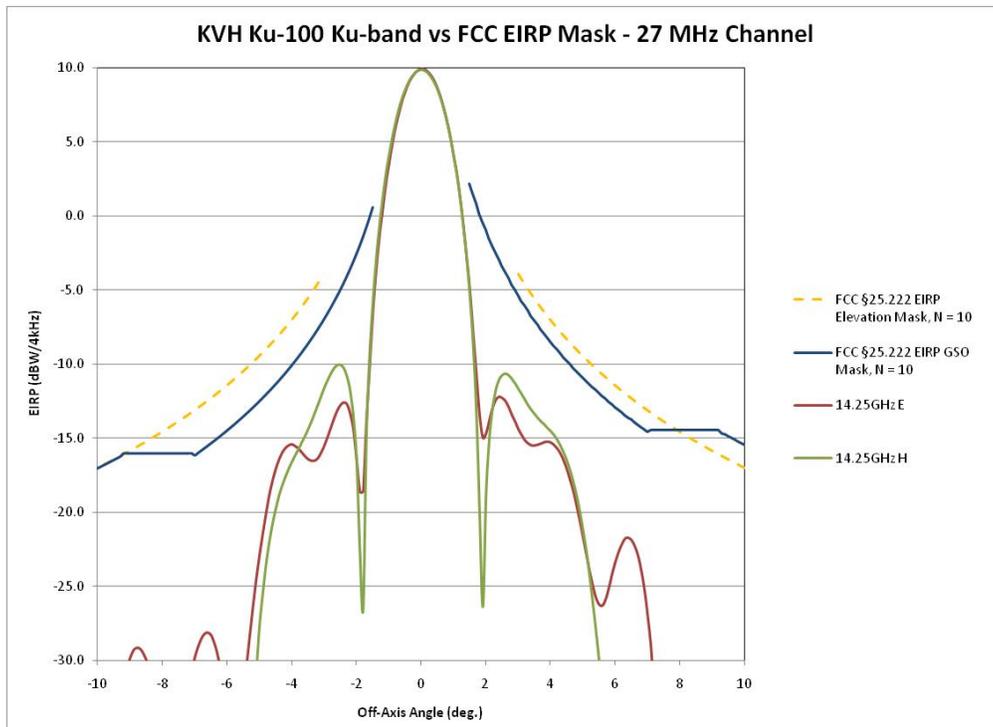


Figure 2 - Off-Axis EIRP Spectral Density 27 MHz Channel +/- 10 degrees

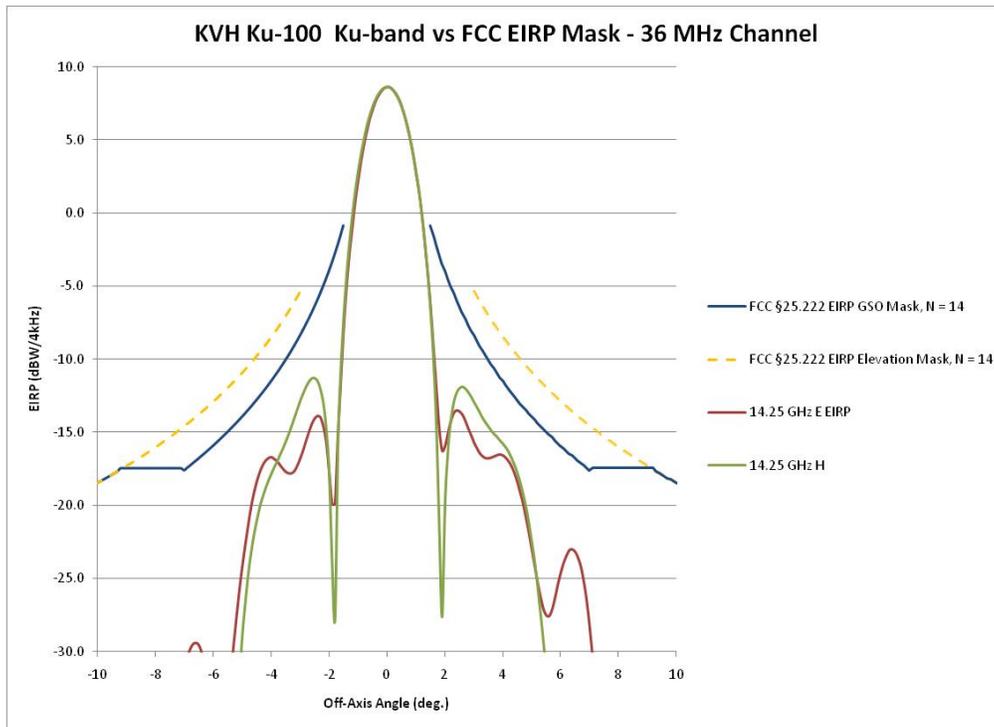


Figure 3 - Off-Axis EIRP Spectral Density 36 MHz Channel +/- 10 degrees

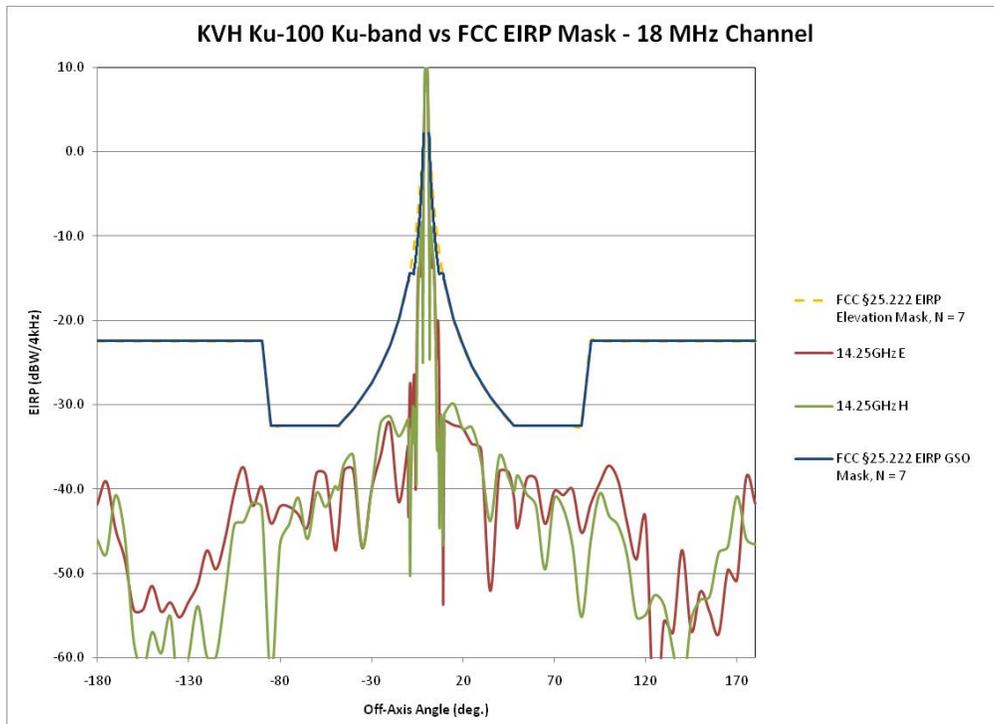


Figure 4 – 18 MHz Off-Axis EIRP Spectral Density +/- 180 degrees

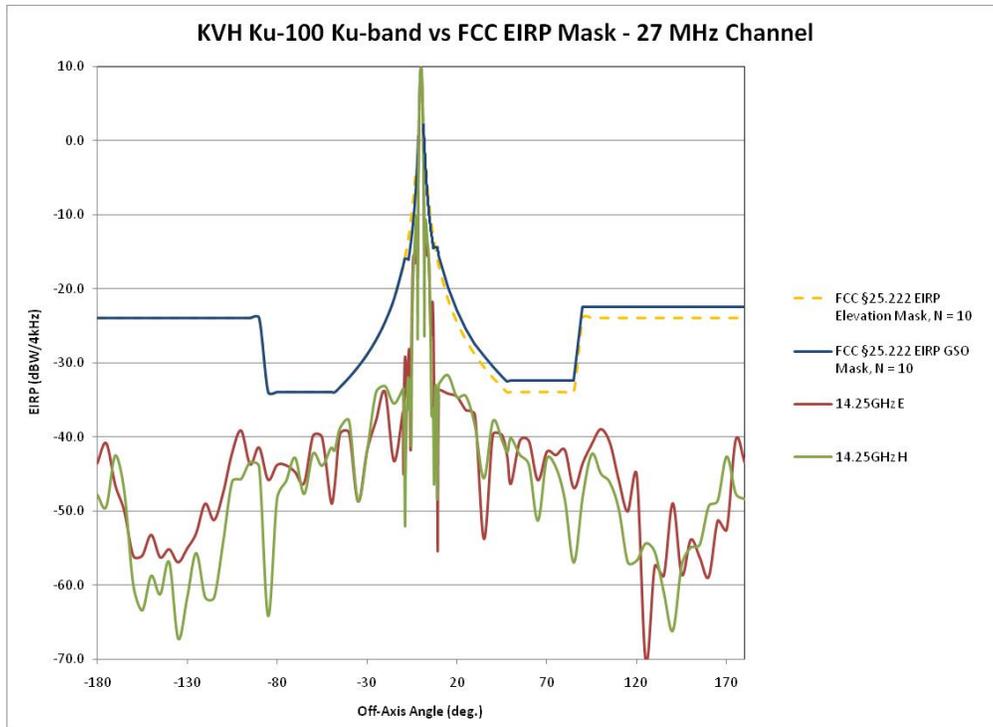


Figure 5 – 27 MHz Channel Off-Axis EIRP Spectral Density +/- 180 degrees

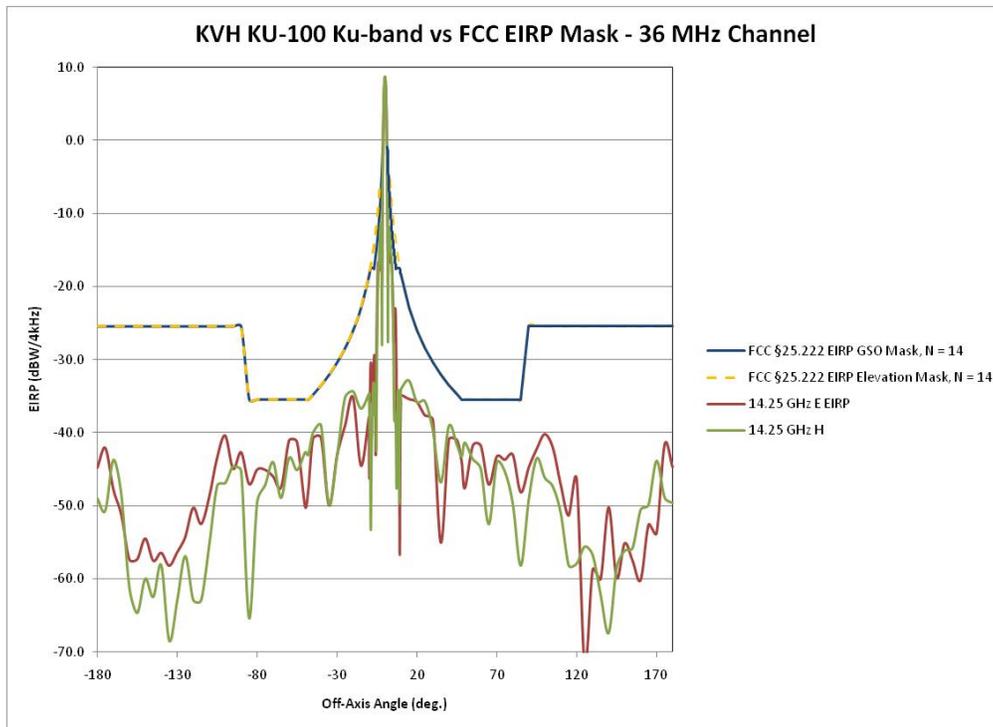


Figure 6 – 36 MHz Channel Off-Axis EIRP Spectral Density +/- 180 degrees

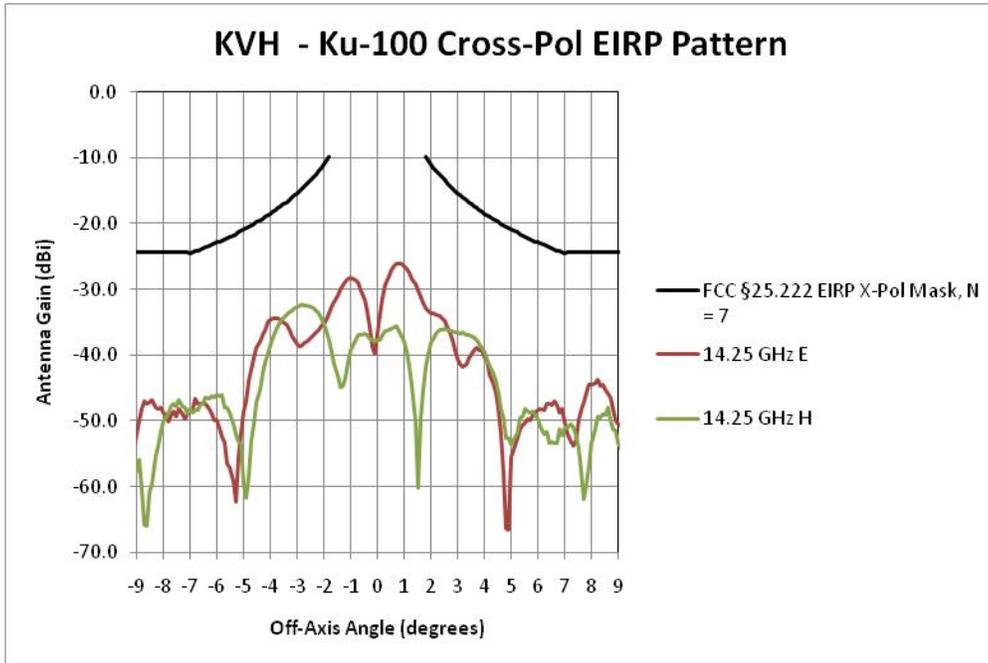


Figure 7 – 18 MHz Channel Cross-Pol Off-Axis EIRP Spectral Density

Per Section 25.222(b)(1)(i) of the Commission’s rules, Table 1 below provides the co-pol the E and H plane antenna patterns for the Ku-100 antenna, as well as the E and H plane worst case EIRP charts, and the FCC GSO and Elevation masks, as shown in Figures 1 to 4 above. Table 2 below provides the cross-polarization E and H plane antenna gain and EIRP charts versus the FCC mask, shown in Figure 7. The antenna gain patterns are included in Section 4 below.

Table 1 – Ku-100 ESV Co-Pol Antenna Gain and EIRP Values

Table 1	Antenna Gain (dBi)					ESV EIRP (dBW/4 kHz)			
Off-Axis Angle	14.25 GHz E	14.25GHz H	Off-Axis Angle	FCC §25.209	FCC §25.222 EIRP GSO Mask, N = 7	FCC §25.222 EIRP Elevation Mask, N = 7	14.25GHz E	14.25GHz H	Meets Mask
-180	-12.53	-16.68	-180	0.0	-22.5	-22.5	-41.8	-46.0	Y
-175	-9.806	-18.32	-175	0.0	-22.5	-22.5	-39.1	-47.6	Y
-170	-15.44	-11.41	-170	0.0	-22.5	-22.5	-44.7	-40.7	Y
-165	-18.94	-16.13	-165	0.0	-22.5	-22.5	-48.2	-45.4	Y
-160	-25.02	-28.78	-160	0.0	-22.5	-22.5	-54.3	-58.1	Y
-155	-25.01	-32.31	-155	0.0	-22.5	-22.5	-54.3	-61.6	Y
-150	-22.19	-27.64	-150	0.0	-22.5	-22.5	-51.5	-56.9	Y
-145	-25.23	-30.13	-145	0.0	-22.5	-22.5	-54.5	-59.4	Y
-140	-24.14	-25.79	-140	0.0	-22.5	-22.5	-53.4	-55.1	Y
-135	-25.91	-36.1	-135	0.0	-22.5	-22.5	-55.2	-65.4	Y
-130	-24.05	-30.62	-130	0.0	-22.5	-22.5	-53.3	-59.9	Y
-125	-21.98	-24.56	-125	0.0	-22.5	-22.5	-51.3	-53.9	Y
-120	-17.99	-30.53	-120	0.0	-22.5	-22.5	-47.3	-59.8	Y
-115	-20.19	-30.56	-115	0.0	-22.5	-22.5	-49.5	-59.9	Y
-110	-16.52	-23.11	-110	0.0	-22.5	-22.5	-45.8	-52.4	Y
-105	-11.13	-14.93	-105	0.0	-22.5	-22.5	-40.4	-44.2	Y
-100	-8.106	-14.58	-100	0.0	-22.5	-22.5	-37.4	-43.9	Y
-95	-12.66	-12.3	-95	0.0	-22.5	-22.5	-42.0	-41.6	Y
-90	-10.4	-12.89	-90	0.0	-22.5	-22.5	-39.7	-42.2	Y
-85	-14.74	-33.04	-85	-10.0	-32.5	-32.5	-44.0	-62.3	Y
-80	-12.76	-17.2	-80	-10.0	-32.5	-32.5	-42.1	-46.5	Y
-75	-12.79	-14.88	-75	-10.0	-32.5	-32.5	-42.1	-44.2	Y
-70	-13.7	-11.71	-70	-10.0	-32.5	-32.5	-43.0	-41.0	Y
-65	-15.19	-16.59	-65	-10.0	-32.5	-32.5	-44.5	-45.9	Y
-60	-8.786	-11.14	-60	-10.0	-32.5	-32.5	-38.1	-40.4	Y
-55	-9.006	-12.79	-55	-10.0	-32.5	-32.5	-38.3	-42.1	Y
-50	-17.79	-10.37	-50	-10.0	-32.5	-32.5	-47.1	-39.7	Y
-48	-15.61	-10.72	-48	-10.0	-32.5	-32.5	-44.9	-40.0	Y
-45	-8.526	-7.686	-45	-9.3	-31.8	-31.8	-37.8	-37.0	Y
-40	-8.406	-6.696	-40	-8.1	-30.5	-30.5	-37.7	-36.0	Y
-35	-17.67	-17.5	-35	-6.6	-29.1	-29.1	-47.0	-46.8	Y
-30	-10.87	-10.89	-30	-4.9	-27.4	-27.4	-40.2	-40.2	Y
-25	-6.766	-2.896	-25	-2.9	-25.4	-25.4	-36.1	-32.2	Y
-20	-2.866	-2.026	-20	-0.5	-23.0	-23.0	-32.2	-31.3	Y
-15	-12.23	-4.396	-15	2.6	-19.9	-19.9	-41.5	-33.7	Y
-10	-5.596	-2.386	-10	7.0	-15.5	-15.5	-34.9	-31.7	Y
-9.9	-8.406	-3.046	-9.9	7.1	-15.3	-15.3	-37.7	-32.3	Y
-9.8	-13.01	-3.846	-9.8	7.2	-15.2	-15.2	-42.3	-33.1	Y

-9.7	-13.96	-4.846	-9.7	7.3	-15.1	-15.1	-43.3	-34.1	Y
-9.6	-10.18	-5.776	-9.6	7.4	-15.0	-15.0	-39.5	-35.1	Y
-9.5	-6.426	-7.156	-9.5	7.6	-14.9	-14.9	-35.7	-36.5	Y
-9.4	-4.006	-8.496	-9.4	7.7	-14.8	-14.8	-33.3	-37.8	Y
-9.3	-2.006	-9.656	-9.3	7.8	-14.7	-14.7	-31.3	-39.0	Y
-9.2	-0.736	-11.36	-9.2	8.0	-14.5	-14.5	-30.0	-40.7	Y
-9.1	0.474	-13.18	-9.1	8.0	-14.5	-14.4	-28.8	-42.5	Y
-9	1.234	-16.87	-9	8.0	-14.5	-14.3	-28.1	-46.2	Y
-8.9	1.724	-20.22	-8.9	8.0	-14.5	-14.2	-27.6	-49.5	Y
-8.8	1.894	-20.93	-8.8	8.0	-14.5	-14.1	-27.4	-50.2	Y
-8.7	1.834	-18.08	-8.7	8.0	-14.5	-13.9	-27.5	-47.4	Y
-8.6	1.524	-14.55	-8.6	8.0	-14.5	-13.8	-27.8	-43.8	Y
-8.5	1.044	-12.47	-8.5	8.0	-14.5	-13.7	-28.3	-41.8	Y
-8.4	0.414	-10.9	-8.4	8.0	-14.5	-13.6	-28.9	-40.2	Y
-8.3	-0.316	-9.696	-8.3	8.0	-14.5	-13.4	-29.6	-39.0	Y
-8.2	-1.106	-8.676	-8.2	8.0	-14.5	-13.3	-30.4	-38.0	Y
-8.1	-1.796	-7.786	-8.1	8.0	-14.5	-13.2	-31.1	-37.1	Y
-8	-2.376	-6.916	-8	8.0	-14.5	-13.0	-31.7	-36.2	Y
-7.9	-3.016	-5.876	-7.9	8.0	-14.5	-12.9	-32.3	-35.2	Y
-7.8	-3.406	-4.916	-7.8	8.0	-14.5	-12.8	-32.7	-34.2	Y
-7.7	-3.566	-3.636	-7.7	8.0	-14.5	-12.6	-32.9	-32.9	Y
-7.6	-3.616	-2.846	-7.6	8.0	-14.5	-12.5	-32.9	-32.1	Y
-7.5	-3.376	-2.016	-7.5	8.0	-14.5	-12.3	-32.7	-31.3	Y
-7.4	-2.576	-1.496	-7.4	8.0	-14.5	-12.2	-31.9	-30.8	Y
-7.3	-1.756	-1.026	-7.3	8.0	-14.5	-12.0	-31.1	-30.3	Y
-7.2	-0.566	-0.866	-7.2	8.0	-14.5	-11.9	-29.9	-30.2	Y
-7.1	0.344	-0.846	-7.1	8.0	-14.5	-11.7	-29.0	-30.1	Y
-7	1.284	-1.076	-7	7.9	-14.6	-11.6	-28.0	-30.4	Y
-6.9	1.984	-1.666	-6.9	8.0	-14.4	-11.4	-27.3	-31.0	Y
-6.8	2.524	-2.366	-6.8	8.2	-14.3	-11.3	-26.8	-31.7	Y
-6.7	2.844	-3.246	-6.7	8.3	-14.1	-11.1	-26.5	-32.5	Y
-6.6	2.914	-4.456	-6.6	8.5	-13.9	-10.9	-26.4	-33.8	Y
-6.5	2.734	-5.246	-6.5	8.7	-13.8	-10.8	-26.6	-34.5	Y
-6.4	2.194	-5.166	-6.4	8.8	-13.6	-10.6	-27.1	-34.5	Y
-6.3	1.404	-4.666	-6.3	9.0	-13.4	-10.4	-27.9	-34.0	Y
-6.2	0.244	-3.566	-6.2	9.2	-13.3	-10.3	-29.1	-32.9	Y
-6.1	-1.666	-2.436	-6.1	9.4	-13.1	-10.1	-31.0	-31.7	Y
-6	-3.806	-1.606	-6	9.5	-12.9	-9.9	-33.1	-30.9	Y
-5.9	-7.116	-1.176	-5.9	9.7	-12.7	-9.7	-36.4	-30.5	Y
-5.8	-10.73	-1.246	-5.8	9.9	-12.5	-9.5	-40.0	-30.5	Y
-5.7	-10.74	-1.896	-5.7	10.1	-12.3	-9.3	-40.0	-31.2	Y
-5.6	-4.596	-3.506	-5.6	10.3	-12.2	-9.2	-33.9	-32.8	Y
-5.5	-1.466	-5.886	-5.5	10.5	-12.0	-9.0	-30.8	-35.2	Y
-5.4	0.804	-10.15	-5.4	10.7	-11.8	-8.8	-28.5	-39.4	Y
-5.3	2.854	-8.166	-5.3	10.9	-11.6	-8.6	-26.4	-37.5	Y
-5.2	4.804	-3.426	-5.2	11.1	-11.4	-8.4	-24.5	-32.7	Y
-5.1	6.634	0.424	-5.1	11.3	-11.1	-8.1	-22.7	-28.9	Y
-5	8.214	3.504	-5	11.5	-10.9	-7.9	-21.1	-25.8	Y

-4.9	9.654	5.664	-4.9	11.7	-10.7	-7.7	-19.6	-23.6	Y
-4.8	10.994	7.594	-4.8	12.0	-10.5	-7.5	-18.3	-21.7	Y
-4.7	12.234	9.094	-4.7	12.2	-10.3	-7.3	-17.1	-20.2	Y
-4.6	13.194	10.314	-4.6	12.4	-10.0	-7.0	-16.1	-19.0	Y
-4.5	13.984	11.314	-4.5	12.7	-9.8	-6.8	-15.3	-18.0	Y
-4.4	14.604	12.204	-4.4	12.9	-9.5	-6.5	-14.7	-17.1	Y
-4.3	15.074	12.894	-4.3	13.2	-9.3	-6.3	-14.2	-16.4	Y
-4.2	15.384	13.484	-4.2	13.4	-9.0	-6.0	-13.9	-15.8	Y
-4.1	15.554	14.014	-4.1	13.7	-8.8	-5.8	-13.7	-15.3	Y
-4	15.624	14.484	-4	13.9	-8.5	-5.5	-13.7	-14.8	Y
-3.9	15.494	14.914	-3.9	14.2	-8.2	-5.2	-13.8	-14.4	Y
-3.8	15.334	15.324	-3.8	14.5	-7.9	-4.9	-14.0	-14.0	Y
-3.7	15.074	15.774	-3.7	14.8	-7.7	-4.7	-14.2	-13.5	Y
-3.6	14.824	16.204	-3.6	15.1	-7.4	-4.4	-14.5	-13.1	Y
-3.5	14.614	16.684	-3.5	15.4	-7.1	-4.1	-14.7	-12.6	Y
-3.4	14.514	17.194	-3.4	15.7	-6.7	-3.7	-14.8	-12.1	Y
-3.3	14.524	17.754	-3.3	16.0	-6.4	-3.4	-14.8	-11.5	Y
-3.2	14.684	18.324	-3.2	16.4	-6.1	-3.1	-14.6	-11.0	Y
-3.1	15.064	18.904	-3.1	16.7	-5.7	-2.7	-14.2	-10.4	Y
-3	15.544	19.484	-3	17.1	-5.4	-2.4	-13.8	-9.8	Y
-2.9	16.114	19.974	-2.9	17.4	-5.0		-13.2	-9.3	Y
-2.8	16.744	20.424	-2.8	17.8	-4.6		-12.6	-8.9	Y
-2.7	17.364	20.784	-2.7	18.2	-4.2		-11.9	-8.5	Y
-2.6	17.914	21.004	-2.6	18.6	-3.8		-11.4	-8.3	Y
-2.5	18.274	21.014	-2.5	19.1	-3.4		-11.0	-8.3	Y
-2.4	18.444	20.794	-2.4	19.5	-3.0		-10.9	-8.5	Y
-2.3	18.324	20.214	-2.3	20.0	-2.5		-11.0	-9.1	Y
-2.2	17.684	19.234	-2.2	20.4	-2.0		-11.6	-10.1	Y
-2.1	16.594	17.464	-2.1	20.9	-1.5		-12.7	-11.8	Y
-2	14.534	14.434	-2	21.5	-1.0		-14.8	-14.9	Y
-1.9	12.404	8.394	-1.9	22.0	-0.4		-16.9	-20.9	Y
-1.8	12.454	4.564	-1.8	22.6	0.2		-16.8	-24.7	Y
-1.7	17.114	16.154	-1.7	23.2	0.8		-12.2	-13.1	Y
-1.6	20.864	21.644	-1.6	23.9	1.4		-8.4	-7.7	Y
-1.5	24.514	25.264	-1.5	24.6	2.1		-4.8	-4.0	Y
-1.4	27.324	28.104	-1.4				-2.0	-1.2	Y
-1.3	29.624	30.354	-1.3				0.3	1.1	Y
-1.2	31.404	32.204	-1.2				2.1	2.9	Y
-1.1	33.174	33.854	-1.1				3.9	4.6	Y
-1	34.574	35.194	-1				5.3	5.9	Y
-0.9	35.894	36.364	-0.9				6.6	7.1	Y
-0.8	37.014	37.384	-0.8				7.7	8.1	Y
-0.7	37.934	38.274	-0.7				8.6	9.0	Y
-0.6	38.774	39.014	-0.6				9.5	9.7	Y
-0.5	39.404	39.604	-0.5				10.1	10.3	Y
-0.4	39.974	40.094	-0.4				10.7	10.8	Y
-0.3	40.364	40.464	-0.3				11.1	11.2	Y
-0.2	40.664	40.724	-0.2				11.4	11.4	Y

-0.1	40.864	40.884	-0.1				11.6	11.6	Y
0	40.944	40.944	0				11.6	11.6	Y
0.1	40.924	40.884	0.1				11.6	11.6	Y
0.2	40.754	40.724	0.2				11.5	11.4	Y
0.3	40.504	40.444	0.3				11.2	11.1	Y
0.4	40.144	40.074	0.4				10.8	10.8	Y
0.5	39.624	39.594	0.5				10.3	10.3	Y
0.6	39.014	38.974	0.6				9.7	9.7	Y
0.7	38.224	38.244	0.7				8.9	8.9	Y
0.8	37.334	37.364	0.8				8.0	8.1	Y
0.9	36.304	36.324	0.9				7.0	7.0	Y
1	35.034	35.144	1				5.7	5.8	Y
1.1	33.824	33.824	1.1				4.5	4.5	Y
1.2	32.214	32.244	1.2				2.9	2.9	Y
1.3	30.324	30.384	1.3				1.0	1.1	Y
1.4	28.254	28.214	1.4				-1.0	-1.1	Y
1.5	25.974	25.644	1.5	24.6	2.1		-3.3	-3.7	Y
1.6	23.154	22.324	1.6	23.9	1.4		-6.1	-7.0	Y
1.7	20.344	17.914	1.7	23.2	0.8		-9.0	-11.4	Y
1.8	17.624	11.034	1.8	22.6	0.2		-11.7	-18.3	Y
1.9	16.074	4.684	1.9	22.0	-0.4		-13.2	-24.6	Y
2	16.364	12.284	2	21.5	-1.0		-12.9	-17.0	Y
2.1	17.224	16.004	2.1	20.9	-1.5		-12.1	-13.3	Y
2.2	18.074	18.084	2.2	20.4	-2.0		-11.2	-11.2	Y
2.3	18.624	19.324	2.3	20.0	-2.5		-10.7	-10.0	Y
2.4	18.824	20.004	2.4	19.5	-3.0		-10.5	-9.3	Y
2.5	18.744	20.324	2.5	19.1	-3.4		-10.6	-9.0	Y
2.6	18.534	20.424	2.6	18.6	-3.8		-10.8	-8.9	Y
2.7	18.124	20.304	2.7	18.2	-4.2		-11.2	-9.0	Y
2.8	17.594	20.064	2.8	17.8	-4.6		-11.7	-9.2	Y
2.9	17.144	19.754	2.9	17.4	-5.0		-12.2	-9.5	Y
3	16.634	19.384	3	17.1	-5.4	-2.4	-12.7	-9.9	Y
3.1	16.244	19.034	3.1	16.7	-5.7	-2.7	-13.1	-10.3	Y
3.2	15.894	18.664	3.2	16.4	-6.1	-3.1	-13.4	-10.6	Y
3.3	15.684	18.284	3.3	16.0	-6.4	-3.4	-13.6	-11.0	Y
3.4	15.554	17.974	3.4	15.7	-6.7	-3.7	-13.7	-11.3	Y
3.5	15.544	17.694	3.5	15.4	-7.1	-4.1	-13.8	-11.6	Y
3.6	15.594	17.424	3.6	15.1	-7.4	-4.4	-13.7	-11.9	Y
3.7	15.674	17.184	3.7	14.8	-7.7	-4.7	-13.6	-12.1	Y
3.8	15.764	16.994	3.8	14.5	-7.9	-4.9	-13.5	-12.3	Y
3.9	15.804	16.744	3.9	14.2	-8.2	-5.2	-13.5	-12.6	Y
4	15.744	16.534	4	13.9	-8.5	-5.5	-13.6	-12.8	Y
4.1	15.574	16.274	4.1	13.7	-8.8	-5.8	-13.7	-13.0	Y
4.2	15.334	15.954	4.2	13.4	-9.0	-6.0	-14.0	-13.3	Y
4.3	14.994	15.554	4.3	13.2	-9.3	-6.3	-14.3	-13.7	Y
4.4	14.514	15.074	4.4	12.9	-9.5	-6.5	-14.8	-14.2	Y
4.5	13.924	14.524	4.5	12.7	-9.8	-6.8	-15.4	-14.8	Y
4.6	13.194	13.864	4.6	12.4	-10.0	-7.0	-16.1	-15.4	Y

4.7	12.434	13.064	4.7	12.2	-10.3	-7.3	-16.9	-16.2	Y
4.8	11.454	12.174	4.8	12.0	-10.5	-7.5	-17.8	-17.1	Y
4.9	10.434	11.074	4.9	11.7	-10.7	-7.7	-18.9	-18.2	Y
5	9.324	9.804	5	11.5	-10.9	-7.9	-20.0	-19.5	Y
5.1	8.194	8.444	5.1	11.3	-11.1	-8.1	-21.1	-20.9	Y
5.2	7.054	6.764	5.2	11.1	-11.4	-8.4	-22.2	-22.5	Y
5.3	6.054	4.934	5.3	10.9	-11.6	-8.6	-23.2	-24.4	Y
5.4	5.244	2.994	5.4	10.7	-11.8	-8.8	-24.1	-26.3	Y
5.5	4.804	0.914	5.5	10.5	-12.0	-9.0	-24.5	-28.4	Y
5.6	4.754	-1.296	5.6	10.3	-12.2	-9.2	-24.5	-30.6	Y
5.7	5.194	-3.186	5.7	10.1	-12.3	-9.3	-24.1	-32.5	Y
5.8	5.974	-4.846	5.8	9.9	-12.5	-9.5	-23.3	-34.1	Y
5.9	6.914	-5.876	5.9	9.7	-12.7	-9.7	-22.4	-35.2	Y
6	7.714	-6.126	6	9.5	-12.9	-9.9	-21.6	-35.4	Y
6.1	8.384	-6.036	6.1	9.4	-13.1	-10.1	-20.9	-35.3	Y
6.2	8.894	-5.876	6.2	9.2	-13.3	-10.3	-20.4	-35.2	Y
6.3	9.264	-5.456	6.3	9.0	-13.4	-10.4	-20.0	-34.8	Y
6.4	9.314	-5.056	6.4	8.8	-13.6	-10.6	-20.0	-34.4	Y
6.5	9.144	-5.036	6.5	8.7	-13.8	-10.8	-20.2	-34.3	Y
6.6	8.724	-5.156	6.6	8.5	-13.9	-10.9	-20.6	-34.5	Y
6.7	8.084	-5.486	6.7	8.3	-14.1	-11.1	-21.2	-34.8	Y
6.8	7.074	-6.176	6.8	8.2	-14.3	-11.3	-22.2	-35.5	Y
6.9	5.744	-7.346	6.9	8.0	-14.4	-11.4	-23.6	-36.6	Y
7	3.964	-9.106	7	7.9	-14.6	-11.6	-25.3	-38.4	Y
7.1	1.854	-11.52	7.1	8.0	-14.5	-11.7	-27.4	-40.8	Y
7.2	-1.286	-14.47	7.2	8.0	-14.5	-11.9	-30.6	-43.8	Y
7.3	-4.726	-15.28	7.3	8.0	-14.5	-12.0	-34.0	-44.6	Y
7.4	-7.736	-12.69	7.4	8.0	-14.5	-12.2	-37.0	-42.0	Y
7.5	-11.82	-9.226	7.5	8.0	-14.5	-12.3	-41.1	-38.5	Y
7.6	-9.526	-6.536	7.6	8.0	-14.5	-12.5	-38.8	-35.8	Y
7.7	-8.036	-4.786	7.7	8.0	-14.5	-12.6	-37.3	-34.1	Y
7.8	-7.236	-3.416	7.8	8.0	-14.5	-12.8	-36.5	-32.7	Y
7.9	-7.206	-2.476	7.9	8.0	-14.5	-12.9	-36.5	-31.8	Y
8	-7.726	-2.046	8	8.0	-14.5	-13.0	-37.0	-31.3	Y
8.1	-8.686	-1.916	8.1	8.0	-14.5	-13.2	-38.0	-31.2	Y
8.2	-10.04	-1.856	8.2	8.0	-14.5	-13.3	-39.3	-31.2	Y
8.3	-11.78	-2.316	8.3	8.0	-14.5	-13.4	-41.1	-31.6	Y
8.4	-13.11	-3.076	8.4	8.0	-14.5	-13.6	-42.4	-32.4	Y
8.5	-13.32	-4.156	8.5	8.0	-14.5	-13.7	-42.6	-33.5	Y
8.6	-12.17	-5.826	8.6	8.0	-14.5	-13.8	-41.5	-35.1	Y
8.7	-11.38	-8.076	8.7	8.0	-14.5	-13.9	-40.7	-37.4	Y
8.8	-10.95	-10.92	8.8	8.0	-14.5	-14.1	-40.2	-40.2	Y
8.9	-11.21	-14.59	8.9	8.0	-14.5	-14.2	-40.5	-43.9	Y
9	-12.2	-17.36	9	8.0	-14.5	-14.3	-41.5	-46.7	Y
9.1	-14.13	-14.14	9.1	8.0	-14.5	-14.4	-43.4	-43.4	Y
9.2	-18.45	-11.25	9.2	8.0	-14.5	-14.5	-47.7	-40.5	Y
9.3	-24.41	-8.636	9.3	7.8	-14.7	-14.7	-53.7	-37.9	Y
9.4	-17.41	-6.556	9.4	7.7	-14.8	-14.8	-46.7	-35.9	Y

9.5	-12.66	-4.966	9.5	7.6	-14.9	-14.9	-42.0	-34.3	Y
9.6	-8.926	-3.836	9.6	7.4	-15.0	-15.0	-38.2	-33.1	Y
9.7	-6.576	-3.016	9.7	7.3	-15.1	-15.1	-35.9	-32.3	Y
9.8	-4.866	-2.246	9.8	7.2	-15.2	-15.2	-34.2	-31.5	Y
9.9	-3.466	-1.906	9.9	7.1	-15.3	-15.3	-32.8	-31.2	Y
10	-2.596	-1.716	10	7.0	-15.5	-15.5	-31.9	-31.0	Y
15	-3.106	-0.556	15	2.6	-19.9	-19.9	-32.4	-29.9	Y
20	-3.516	-3.506	20	-0.5	-23.0	-23.0	-32.8	-32.8	Y
25	-5.346	-3.386	25	-2.9	-25.4	-25.4	-34.6	-32.7	Y
30	-5.986	-7.366	30	-4.9	-27.4	-27.4	-35.3	-36.7	Y
35	-22.75	-14.48	35	-6.6	-29.1	-29.1	-52.0	-43.8	Y
40	-8.656	-6.766	40	-8.1	-30.5	-30.5	-38.0	-36.1	Y
45	-8.676	-9.316	45	-9.3	-31.8	-31.8	-38.0	-38.6	Y
48	-11.69	-10.93	48	-10.0	-32.5	-32.5	-41.0	-40.2	Y
50	-15.29	-9.046	50	-10.0	-32.5	-32.5	-44.6	-38.3	Y
55	-9.466	-11.32	55	-10.0	-32.5	-32.5	-38.8	-40.6	Y
60	-9.506	-12.64	60	-10.0	-32.5	-32.5	-38.8	-41.9	Y
65	-14.81	-20.19	65	-10.0	-32.5	-32.5	-44.1	-49.5	Y
70	-10.97	-11.79	70	-10.0	-32.5	-32.5	-40.3	-41.1	Y
75	-11.41	-12.99	75	-10.0	-32.5	-32.5	-40.7	-42.3	Y
80	-10.71	-17.37	80	-10.0	-32.5	-32.5	-40.0	-46.7	Y
85	-15.87	-25.85	85	-10.0	-32.5	-32.5	-45.2	-55.1	Y
90	-12.47	-16.84	90	0.0	-22.5	-22.5	-41.8	-46.1	Y
95	-9.926	-11.2	95	0.0	-22.5	-22.5	-39.2	-40.5	Y
100	-7.906	-13.84	100	0.0	-22.5	-22.5	-37.2	-43.1	Y
105	-9.716	-15.03	105	0.0	-22.5	-22.5	-39.0	-44.3	Y
110	-14.83	-18.67	110	0.0	-22.5	-22.5	-44.1	-48.0	Y
115	-19.03	-25.82	115	0.0	-22.5	-22.5	-48.3	-55.1	Y
120	-14.18	-25.58	120	0.0	-22.5	-22.5	-43.5	-54.9	Y
125	-39.35	-23.25	125	0.0	-22.5	-22.5	-68.6	-52.5	Y
130	-26.44	-24.4	130	0.0	-22.5	-22.5	-55.7	-53.7	Y
135	-27.72	-29.83	135	0.0	-22.5	-22.5	-57.0	-59.1	Y
140	-17.93	-35.05	140	0.0	-22.5	-22.5	-47.2	-64.3	Y
145	-27.57	-26.16	145	0.0	-22.5	-22.5	-56.9	-55.5	Y
150	-22.85	-23.81	150	0.0	-22.5	-22.5	-52.1	-53.1	Y
155	-25.25	-23.42	155	0.0	-22.5	-22.5	-54.5	-52.7	Y
160	-27.86	-18.24	160	0.0	-22.5	-22.5	-57.2	-47.5	Y
165	-20.28	-17.5	165	0.0	-22.5	-22.5	-49.6	-46.8	Y
170	-21.46	-11.54	170	0.0	-22.5	-22.5	-50.8	-40.8	Y
175	-9.356	-16.53	175	0.0	-22.5	-22.5	-38.7	-45.8	Y
180	-12.41	-17.28	180	0.0	-22.5	-22.5	-41.7	-46.6	Y

Table 2 – Ku-100 ESV Antenna Cross-Polarization Gain and EIRP Values

Table 2	Gain					EIRP/4kHz			
Off Axis Angle (degree)	14.25 GHz E	14.25 GHz H	Off Axis Angle (degree)	FCC 25.209(b)(1)	FCC §25.222 EIRP X-Pol Mask, N = 10	14.25 GHz E	14.25 GHz H	Worst case EIRP Exceedance (dB)	Meets Mask
-9.2	-27.3	-24.0	-9.2	-2.0	-26.0	-56.6	-53.3	27.3	Y
-9.1	-24.8	-26.2	-9.1	-2.0	-26.0	-54.1	-55.5	28.1	Y
-9.0	-22.7	-28.3	-9.0	-2.0	-26.0	-52.0	-57.6	26.0	Y
-8.9	-20.6	-26.7	-8.9	-2.0	-26.0	-49.9	-56.0	23.9	Y
-8.8	-18.9	-31.0	-8.8	-2.0	-26.0	-48.2	-60.3	22.2	Y
-8.7	-17.7	-36.6	-8.7	-2.0	-26.0	-47.0	-65.9	21.0	Y
-8.6	-18.2	-36.6	-8.6	-2.0	-26.0	-47.5	-65.9	21.5	Y
-8.5	-17.9	-31.6	-8.5	-2.0	-26.0	-47.2	-60.9	21.2	Y
-8.4	-17.5	-30.4	-8.4	-2.0	-26.0	-46.8	-59.7	20.8	Y
-8.3	-18.7	-25.9	-8.3	-2.0	-26.0	-48.0	-55.2	22.0	Y
-8.2	-18.8	-24.6	-8.2	-2.0	-26.0	-48.1	-53.9	22.1	Y
-8.1	-18.7	-22.4	-8.1	-2.0	-26.0	-48.0	-51.7	22.0	Y
-8.0	-19.4	-20.8	-8.0	-2.0	-26.0	-48.7	-50.1	22.7	Y
-7.9	-19.9	-20.2	-7.9	-2.0	-26.0	-49.2	-49.5	23.2	Y
-7.8	-20.7	-19.5	-7.8	-2.0	-26.0	-50.0	-48.8	22.8	Y
-7.7	-19.9	-18.5	-7.7	-2.0	-26.0	-49.2	-47.8	21.8	Y
-7.6	-19.3	-18.0	-7.6	-2.0	-26.0	-48.6	-47.3	21.3	Y
-7.5	-20.0	-18.5	-7.5	-2.0	-26.0	-49.3	-47.8	21.8	Y
-7.4	-19.0	-17.5	-7.4	-2.0	-26.0	-48.3	-46.8	20.8	Y
-7.3	-19.6	-18.5	-7.3	-2.0	-26.0	-48.9	-47.8	21.8	Y
-7.2	-20.4	-18.7	-7.2	-2.0	-26.0	-49.7	-48.0	22.0	Y
-7.1	-19.6	-19.6	-7.1	-2.0	-26.0	-48.9	-48.9	22.9	Y
-7.0	-19.3	-18.8	-7.0	-2.1	-26.1	-48.6	-48.1	22.0	Y
-6.9	-18.8	-19.4	-6.9	-2.0	-26.0	-48.1	-48.7	22.2	Y
-6.8	-17.4	-19.0	-6.8	-1.8	-25.8	-46.7	-48.3	20.9	Y
-6.7	-18.1	-19.0	-6.7	-1.7	-25.7	-47.4	-48.3	21.7	Y
-6.6	-18.1	-18.3	-6.6	-1.5	-25.5	-47.4	-47.6	21.9	Y
-6.5	-18.0	-18.0	-6.5	-1.3	-25.3	-47.3	-47.3	22.0	Y
-6.4	-18.2	-17.1	-6.4	-1.2	-25.2	-47.5	-46.4	21.2	Y
-6.3	-18.8	-17.4	-6.3	-1.0	-25.0	-48.1	-46.7	21.7	Y
-6.2	-19.6	-16.9	-6.2	-0.8	-24.8	-48.9	-46.2	21.4	Y
-6.1	-20.7	-17.2	-6.1	-0.6	-24.6	-50.0	-46.5	21.8	Y
-6.0	-20.5	-16.8	-6.0	-0.5	-24.5	-49.8	-46.1	21.7	Y
-5.9	-21.7	-16.9	-5.9	-0.3	-24.3	-51.0	-46.2	21.9	Y
-5.8	-23.1	-16.7	-5.8	-0.1	-24.1	-52.4	-46.0	21.9	Y
-5.7	-23.9	-18.6	-5.7	0.1	-23.9	-53.2	-47.9	24.0	Y
-5.6	-27.2	-18.8	-5.6	0.3	-23.7	-56.5	-48.1	24.3	Y
-5.5	-27.8	-19.4	-5.5	0.5	-23.5	-57.1	-48.7	25.2	Y
-5.4	-29.8	-21.2	-5.4	0.7	-23.3	-59.1	-50.5	27.1	Y
-5.3	-32.9	-22.7	-5.3	0.9	-23.1	-62.2	-52.0	28.9	Y
-5.2	-26.1	-23.9	-5.2	1.1	-22.9	-55.4	-53.2	30.3	Y

-5.1	-22.6	-24.2	-5.1	1.3	-22.7	-51.9	-53.5	29.3	Y
-5.0	-19.2	-30.3	-5.0	1.5	-22.5	-48.5	-59.6	26.0	Y
-4.9	-17.7	-32.5	-4.9	1.7	-22.3	-47.0	-61.8	24.7	Y
-4.8	-14.7	-29.1	-4.8	2.0	-22.0	-44.0	-58.4	21.9	Y
-4.7	-12.9	-23.8	-4.7	2.2	-21.8	-42.2	-53.1	20.4	Y
-4.6	-11.1	-21.1	-4.6	2.4	-21.6	-40.4	-50.4	18.8	Y
-4.5	-9.7	-17.8	-4.5	2.7	-21.3	-39.0	-47.1	17.6	Y
-4.4	-8.6	-15.9	-4.4	2.9	-21.1	-37.9	-45.2	16.8	Y
-4.3	-7.7	-13.4	-4.3	3.2	-20.8	-37.0	-42.7	16.1	Y
-4.2	-6.8	-11.8	-4.2	3.4	-20.6	-36.1	-41.1	15.6	Y
-4.1	-5.8	-10.5	-4.1	3.7	-20.3	-35.1	-39.8	14.7	Y
-4.0	-5.4	-9.1	-4.0	3.9	-20.1	-34.7	-38.4	14.6	Y
-3.9	-5.1	-8.0	-3.9	4.2	-19.8	-34.4	-37.3	14.7	Y
-3.8	-5.1	-7.1	-3.8	4.5	-19.5	-34.4	-36.4	14.9	Y
-3.7	-5.1	-6.3	-3.7	4.8	-19.2	-34.4	-35.6	15.2	Y
-3.6	-5.4	-5.6	-3.6	5.1	-18.9	-34.7	-34.9	15.8	Y
-3.5	-5.7	-5.2	-3.5	5.4	-18.6	-35.0	-34.5	15.9	Y
-3.4	-6.2	-4.6	-3.4	5.7	-18.3	-35.5	-33.9	15.6	Y
-3.3	-6.8	-4.2	-3.3	6.0	-18.0	-36.1	-33.5	15.5	Y
-3.2	-7.8	-3.9	-3.2	6.4	-17.6	-37.1	-33.2	15.5	Y
-3.1	-8.4	-3.6	-3.1	6.7	-17.3	-37.7	-32.9	15.6	Y
-3.0	-8.9	-3.4	-3.0	7.1	-16.9	-38.2	-32.7	15.8	Y
-2.9	-9.3	-3.2	-2.9	7.4	-16.6	-38.6	-32.5	16.0	Y
-2.8	-9.3	-3.0	-2.8	7.8	-16.2	-38.6	-32.3	16.2	Y
-2.7	-8.9	-3.2	-2.7	8.2	-15.8	-38.2	-32.5	16.8	Y
-2.6	-8.5	-3.1	-2.6	8.6	-15.4	-37.8	-32.4	17.1	Y
-2.5	-8.1	-3.4	-2.5	9.1	-14.9	-37.4	-32.7	17.7	Y
-2.4	-7.6	-3.5	-2.4	9.5	-14.5	-36.9	-32.8	18.3	Y
-2.3	-7.2	-4.0	-2.3	10.0	-14.0	-36.5	-33.3	19.2	Y
-2.2	-6.9	-4.4	-2.2	10.4	-13.6	-36.2	-33.7	20.1	Y
-2.1	-6.3	-5.2	-2.1	10.9	-13.1	-35.6	-34.5	21.5	Y
-2.0	-5.9	-6.0	-2.0	11.5	-12.5	-35.2	-35.3	22.7	Y
-1.9	-5.3	-7.1	-1.9	12.0	-12.0	-34.6	-36.4	22.6	Y
-1.8	-4.4	-8.4	-1.8	12.6	-11.4	-33.7	-37.7	22.4	Y
-1.7	-3.3	-10.1	-1.7			-32.6	-39.4		Y
-1.6	-2.6	-12.1	-1.6			-31.9	-41.4		Y
-1.5	-1.7	-13.8	-1.5			-31.0	-43.1		Y
-1.4	-0.7	-15.5	-1.4			-30.0	-44.8		Y
-1.3	-0.1	-15.3	-1.3			-29.4	-44.6		Y
-1.2	0.5	-14.0	-1.2			-28.8	-43.3		Y
-1.1	0.9	-11.8	-1.1			-28.4	-41.1		Y
-1.0	1.2	-9.9	-1.0			-28.1	-39.2		Y
-0.9	0.9	-9.2	-0.9			-28.4	-38.5		Y
-0.8	0.7	-8.4	-0.8			-28.6	-37.7		Y
-0.7	0.2	-7.6	-0.7			-29.1	-36.9		Y
-0.6	-0.8	-7.7	-0.6			-30.1	-37.0		Y
-0.5	-2.1	-7.5	-0.5			-31.4	-36.8		Y
-0.4	-3.9	-7.7	-0.4			-33.2	-37.0		Y

-0.3	-6.5	-8.2	-0.3			-35.8	-37.5		Y
-0.2	-9.5	-8.4	-0.2			-38.8	-37.7		Y
-0.1	-10.6	-8.6	-0.1			-39.9	-37.9		Y
0.0	-7.5	-8.4	0.0			-36.8	-37.7		Y
0.1	-4.5	-8.4	0.1			-33.8	-37.7		Y
0.2	-2.0	-7.7	0.2			-31.3	-37.0		Y
0.3	0.0	-7.1	0.3			-29.3	-36.4		Y
0.4	1.3	-6.9	0.4			-28.0	-36.2		Y
0.5	2.1	-6.6	0.5			-27.2	-35.9		Y
0.6	2.8	-6.5	0.6			-26.5	-35.8		Y
0.7	3.1	-6.3	0.7			-26.2	-35.6		Y
0.8	3.2	-7.0	0.8			-26.1	-36.3		Y
0.9	3.2	-7.8	0.9			-26.1	-37.1		Y
1.0	2.9	-8.6	1.0			-26.4	-37.9		Y
1.1	2.4	-10.2	1.1			-26.9	-39.5		Y
1.2	1.8	-12.3	1.2			-27.5	-41.6		Y
1.3	0.9	-15.3	1.3			-28.4	-44.6		Y
1.4	0.0	-20.7	1.4			-29.3	-50.0		Y
1.5	-0.9	-30.8	1.5			-30.2	-60.1		Y
1.6	-1.9	-20.5	1.6			-31.2	-49.8		Y
1.7	-2.8	-15.9	1.7			-32.1	-45.2		Y
1.8	-3.5	-12.5	1.8	12.6	-11.4	-32.8	-41.8	21.4	Y
1.9	-4.0	-10.5	1.9	12.0	-12.0	-33.3	-39.8	21.3	Y
2.0	-4.3	-8.8	2.0	11.5	-12.5	-33.6	-38.1	21.1	Y
2.1	-4.4	-8.3	2.1	10.9	-13.1	-33.7	-37.6	20.6	Y
2.2	-4.5	-7.4	2.2	10.4	-13.6	-33.8	-36.7	20.3	Y
2.3	-4.8	-6.9	2.3	10.0	-14.0	-34.1	-36.2	20.0	Y
2.4	-5.1	-6.9	2.4	9.5	-14.5	-34.4	-36.2	19.9	Y
2.5	-5.6	-6.6	2.5	9.1	-14.9	-34.9	-35.9	19.9	Y
2.6	-6.5	-6.9	2.6	8.6	-15.4	-35.8	-36.2	20.4	Y
2.7	-7.2	-7.0	2.7	8.2	-15.8	-36.5	-36.3	20.5	Y
2.8	-8.5	-7.0	2.8	7.8	-16.2	-37.8	-36.3	20.2	Y
2.9	-10.0	-7.2	2.9	7.4	-16.6	-39.3	-36.5	20.0	Y
3.0	-11.3	-7.3	3.0	7.1	-16.9	-40.6	-36.6	19.6	Y
3.1	-12.1	-7.5	3.1	6.7	-17.3	-41.4	-36.8	19.5	Y
3.2	-12.5	-7.3	3.2	6.4	-17.6	-41.8	-36.6	19.0	Y
3.3	-12.0	-7.6	3.3	6.0	-18.0	-41.3	-36.9	18.9	Y
3.4	-11.2	-7.7	3.4	5.7	-18.3	-40.5	-37.0	18.7	Y
3.5	-10.5	-7.8	3.5	5.4	-18.6	-39.8	-37.1	18.5	Y
3.6	-9.9	-8.0	3.6	5.1	-18.9	-39.2	-37.3	18.4	Y
3.7	-9.5	-8.5	3.7	4.8	-19.2	-38.8	-37.8	18.6	Y
3.8	-10.0	-9.0	3.8	4.5	-19.5	-39.3	-38.3	18.8	Y
3.9	-9.9	-9.6	3.9	4.2	-19.8	-39.2	-38.9	19.1	Y
4.0	-10.9	-10.1	4.0	3.9	-20.1	-40.2	-39.4	19.4	Y
4.1	-11.5	-11.3	4.1	3.7	-20.3	-40.8	-40.6	20.3	Y
4.2	-13.6	-12.2	4.2	3.4	-20.6	-42.9	-41.5	21.0	Y
4.3	-15.0	-13.4	4.3	3.2	-20.8	-44.3	-42.7	21.9	Y
4.4	-16.3	-14.7	4.4	2.9	-21.1	-45.6	-44.0	22.9	Y

4.5	-18.9	-16.4	4.5	2.7	-21.3	-48.2	-45.7	24.4	Y
4.6	-22.8	-18.8	4.6	2.4	-21.6	-52.1	-48.1	26.5	Y
4.7	-28.5	-20.2	4.7	2.2	-21.8	-57.8	-49.5	27.7	Y
4.8	-37.1	-23.4	4.8	2.0	-22.0	-66.4	-52.7	30.7	Y
4.9	-37.2	-23.3	4.9	1.7	-22.3	-66.5	-52.6	30.3	Y
5.0	-26.2	-24.3	5.0	1.5	-22.5	-55.5	-53.6	31.1	Y
5.1	-25.0	-23.6	5.1	1.3	-22.7	-54.3	-52.9	30.2	Y
5.2	-23.4	-22.5	5.2	1.1	-22.9	-52.7	-51.8	28.9	Y
5.3	-21.9	-20.3	5.3	0.9	-23.1	-51.2	-49.6	26.5	Y
5.4	-21.4	-20.0	5.4	0.7	-23.3	-50.7	-49.3	26.0	Y
5.5	-21.0	-18.9	5.5	0.5	-23.5	-50.3	-48.2	24.7	Y
5.6	-20.3	-19.3	5.6	0.3	-23.7	-49.6	-48.6	24.8	Y
5.7	-20.6	-19.4	5.7	0.1	-23.9	-49.9	-48.7	24.8	Y
5.8	-19.9	-19.2	5.8	-0.1	-24.1	-49.2	-48.5	24.4	Y
5.9	-19.5	-19.8	5.9	-0.3	-24.3	-48.8	-49.1	24.6	Y
6.0	-19.1	-20.5	6.0	-0.5	-24.5	-48.4	-49.8	23.9	Y
6.1	-18.9	-21.6	6.1	-0.6	-24.6	-48.2	-50.9	23.6	Y
6.2	-19.1	-22.7	6.2	-0.8	-24.8	-48.4	-52.0	23.5	Y
6.3	-18.1	-22.4	6.3	-1.0	-25.0	-47.4	-51.7	22.5	Y
6.4	-18.0	-24.0	6.4	-1.2	-25.2	-47.3	-53.3	22.1	Y
6.5	-18.4	-24.0	6.5	-1.3	-25.3	-47.7	-53.3	22.3	Y
6.6	-17.7	-24.1	6.6	-1.5	-25.5	-47.0	-53.4	21.5	Y
6.7	-18.3	-24.2	6.7	-1.7	-25.7	-47.6	-53.5	21.9	Y
6.8	-19.4	-22.1	6.8	-1.8	-25.8	-48.7	-51.4	22.9	Y
6.9	-18.9	-23.0	6.9	-2.0	-26.0	-48.2	-52.3	22.2	Y
7.0	-20.8	-21.8	7.0	-2.1	-26.1	-50.1	-51.1	24.0	Y
7.1	-22.6	-21.7	7.1	-2.0	-26.0	-51.9	-51.0	25.0	Y
7.2	-24.0	-21.3	7.2	-2.0	-26.0	-53.3	-50.6	24.6	Y
7.3	-24.5	-21.8	7.3	-2.0	-26.0	-53.8	-51.1	25.1	Y
7.4	-23.7	-22.9	7.4	-2.0	-26.0	-53.0	-52.2	26.2	Y
7.5	-20.6	-24.8	7.5	-2.0	-26.0	-49.9	-54.1	23.9	Y
7.6	-19.0	-28.4	7.6	-2.0	-26.0	-48.3	-57.7	22.3	Y
7.7	-17.9	-32.6	7.7	-2.0	-26.0	-47.2	-61.9	21.2	Y
7.8	-16.5	-30.5	7.8	-2.0	-26.0	-45.8	-59.8	19.8	Y
7.9	-15.2	-27.7	7.9	-2.0	-26.0	-44.5	-57.0	18.5	Y
8.0	-15.2	-24.1	8.0	-2.0	-26.0	-44.5	-53.4	18.5	Y
8.1	-15.0	-21.9	8.1	-2.0	-26.0	-44.3	-51.2	18.3	Y
8.2	-14.5	-20.1	8.2	-2.0	-26.0	-43.8	-49.4	17.8	Y
8.3	-15.3	-20.2	8.3	-2.0	-26.0	-44.6	-49.5	18.6	Y
8.4	-15.1	-19.7	8.4	-2.0	-26.0	-44.4	-49.0	18.4	Y
8.5	-16.0	-19.8	8.5	-2.0	-26.0	-45.3	-49.1	19.3	Y
8.6	-16.6	-18.7	8.6	-2.0	-26.0	-45.9	-48.0	19.9	Y
8.7	-17.2	-20.6	8.7	-2.0	-26.0	-46.5	-49.9	20.5	Y
8.8	-18.9	-21.9	8.8	-2.0	-26.0	-48.2	-51.2	22.2	Y
8.9	-20.7	-22.1	8.9	-2.0	-26.0	-50.0	-51.4	24.0	Y
9.0	-21.3	-24.2	9.0	-2.0	-26.0	-50.6	-53.5	24.6	Y
9.1	-21.5	-25.3	9.1	-2.0	-26.0	-50.8	-54.6	24.8	Y
9.2	-23.3	-25.4	9.2	-2.0	-26.0	-52.6	-54.7	26.6	Y

2. Pointing Accuracy

The pointing accuracy for the Ku-100 will comply with the ESV specifications contained in Section 25.222(b)(1)(iii) of the Commission's rules for Ku-band terminals. The accuracy will be maintained to 0.2° or less. When the tracking accuracy exceeds this threshold, the transmission will be stopped within 100 ms. Transmission will resume within 200 ms after accuracy returns to 0.2° or less.

3. Summary of Technical Parameters

The return link channel will support data rates for of 32 kbit/s, 64 kbit/s, 128 kbit/s, 256 kbit/s, and 512 kbit/s. The forward channel will be operated with data rates of 3-10 Mbits/s aggregate with individual end user rates between 512- 2Mbit/s. A summary of the Ku-100 operating parameters is shown in the tables below:

Antenna diameter	100 cm
Type of Antenna	Parabolic rear-fed
Peak Power (SSPA)	8 watts
Transmit Bandwidth	18, 27, 36 MHz
Transmit Gain	41.8 dBi at 14.25 GHz
EIRP	49 dBW (does not include 0.7 dB radome loss)
Transmit Data Rate	32 kbps to 512 Mbps
Transmit Polarization	Horizontal or Vertical
Transmit Azimuth, Elevation Beamwidth	1.35 degrees
Receive G/T	19.5 dB/K minimum
Receive Bandwidth	500 MHz
Receive Polarization	Dual Vertical and Horizontal

Table 3 – Ku-100 ESV Terminal Parameters

Azimuth	continuous coverage over full 360°
Elevation	10 to 90° antenna elevation
Position accuracy	Static pointing error 0.2° RMS (AZ)
Dynamic Tracking capability	Meets: Roll: +/-25° at 8 second period Pitch: +/-15° at 5 second period Yaw: +/-8° at 50 second period Azimuth Turn rate: 12°/s and 15°/s ² acceleration

Table 4 – Ku-100 Antenna Control Parameters

18 MHz Channel Calculations		
Power a feed Flange	5.29	W
Channel; Bandwidth	18	MHz
RF Power Density at Flange	-29.3	dBW/4kHz
Maximum Horizon EIRP Density (10° Elevation Angle)	1.68	dBW/MHz*
Maximum Horizon EIRP	14.23	dBW*
Maximum Number Simultaneous Users N	7	

Table 5 – Ku-100 Uplink Transmission Parameters - 36 MHz Channel

27 MHz Channel Calculations		
Power a feed Flange	5.29	W
Channel; Bandwidth	27	MHz
RF Power Density at Flange	-31.1	dBW/4kHz
Maximum Horizon EIRP Density (10° Elevation Angle)	-0.08	dBW/MHz*
Maximum Horizon EIRP	14.23	dBW*
Maximum Number Simultaneous Users N	10	

Table 6 – Ku-100 Uplink Transmission Parameters - 27 MHz Channel

36 MHz Channel Calculations		
Power a feed Flange	5.29	W
Channel; Bandwidth	36	MHz
RF Power Density at Flange	-32.3	dBW/4,kHz
Maximum Horizon EIRP Density (10° Elevation Angle)	-1.33	dBW/MHz*
Maximum Horizon EIRP	14.23	dBW*
Maximum Number Simultaneous Users N	14	

Table 7 – Ku-100 Uplink Transmission Parameters - 18 MHz Channel

Resolution 902. KVH will comply with the ESV emission limitations specified for the Ku-band in Annex 2 to Resolution 902. For each ESV terminal the maximum EIRP density toward the horizon will not exceed 1.68 dBW/MHz and the maximum EIRP toward the horizon will be 14.23 dBW.²

4. Antenna Gain Data

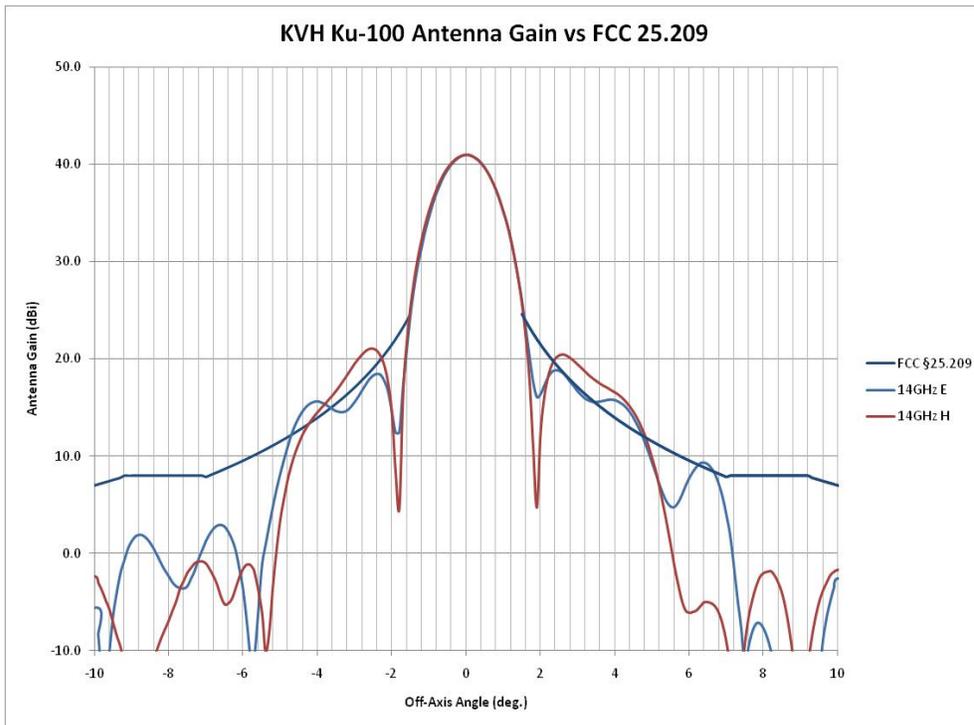


Figure 8 – Ku-100 Co-Pol Gain +/- 10 degrees

² Resolution 902 Annex 2 specifies a maximum of 12.5 dBW/MHz Horizon EIRP density and 16.3 dBW Horizon EIRP for ESVs operating in the 14.0-14.5 GHz band.

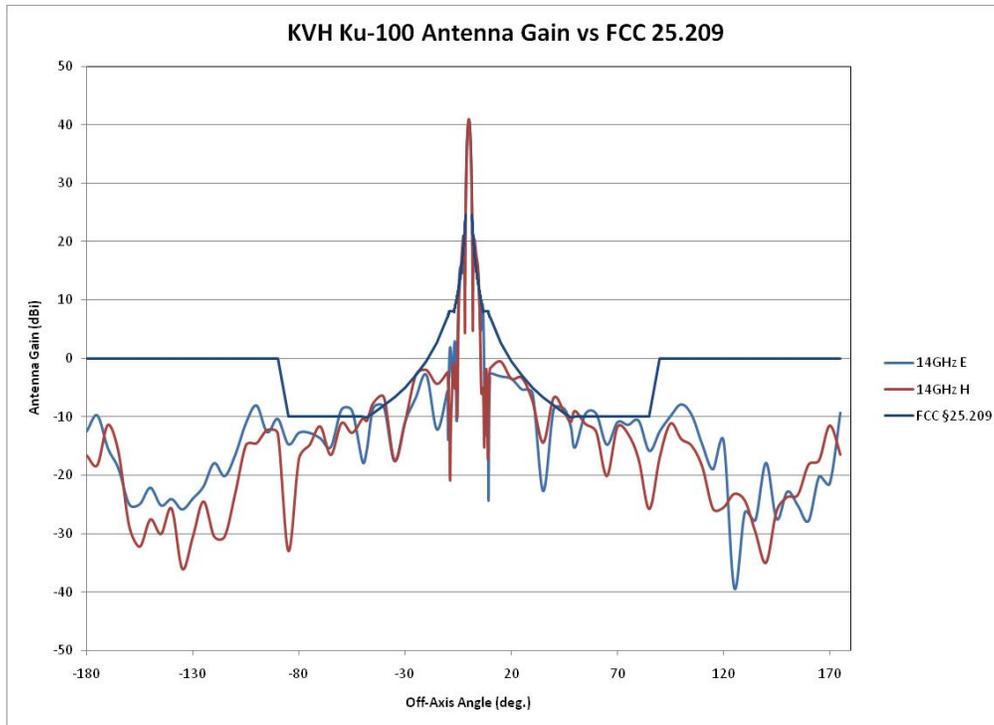


Figure 9 – Ku-100 Co-Pol Gain +/- 180 dgres

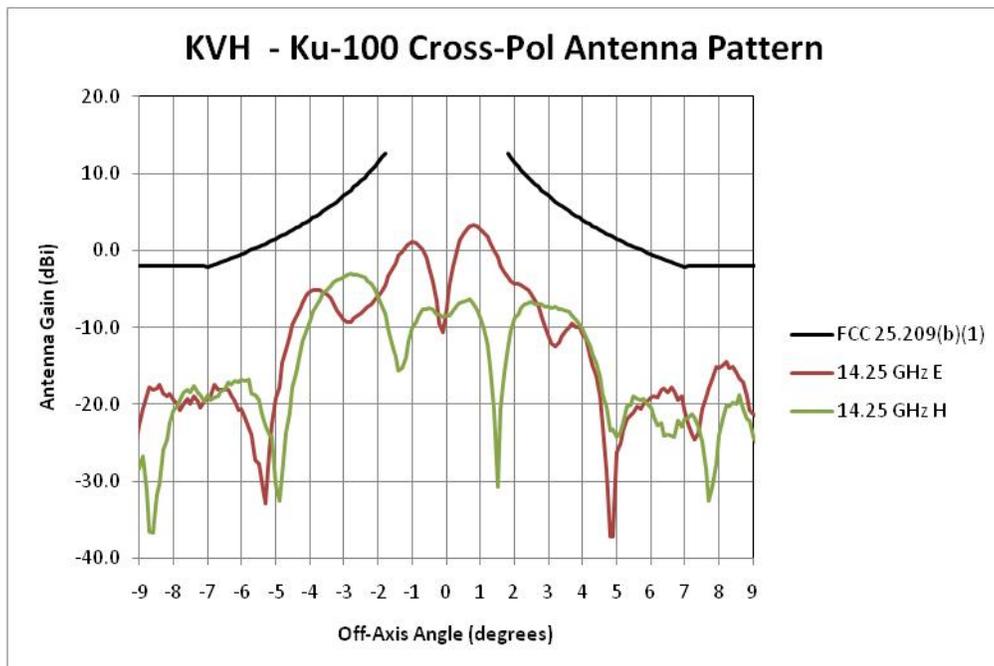


Figure 10 – Ku-100 Cross-pol Gain Pattern +/- 9 degrees

5. FCC §25.222 Compliance Matrix for the Ku-100 Terminal

	FCC Part 25 Earth Station on Vessels (ESV) Rules for Ku-Band	Complies	Comments
§ 25.222	§ 25.222 Blanket Licensing provisions for Earth Stations on Vessels (ESVs) receiving in the 10.95–11.2 GHz (space-to- Earth), 11.45–11.7 GHz (space-to-Earth), 11.7–12.2 GHz (space-to-Earth) frequency bands and transmitting in the 14.0–14.5 GHz (Earth-to-space) frequency band, operating with Geostationary Orbit (GSO) Satellites in the Fixed-Satellite Service.		
§ 25.222(a)	(a) The following ongoing requirements govern all ESV licensees and operations in the 10.95–11.2 GHz (space-to-Earth), 11.45–11.7 GHz (space-to-Earth), 11.7–12.2 GHz (space-to- Earth) frequency bands and 14.0–14.5 GHz (Earth-to-space) bands transmitting to GSO satellites in the fixed-satellite service. ESV licensees must comply with the requirements in either paragraph (a)(1) or (a)(2) of this section and all of the requirements set forth in paragraphs (a)(3) through (a)(7) of this section. Paragraph (b) of this section identifies items that must be included in the application for ESV operations to demonstrate that these ongoing requirements will be met.	Complies	Complies with (a)(1) and remaining provisions
§ 25.222(a)(1)	(1) The following requirements shall apply to an ESV that uses transmitters with off axis effective isotropically radiated power (EIRP) spectral-densities lower than or equal to the levels in paragraph (a)(1)(i)(A) of this section. An ESV, or ESV system, operating under this section shall provide a detailed demonstration as described in paragraph (b)(1) of this section. The ESV transmitter also must comply with the antenna pointing and cessation of emission requirements in paragraphs (a)(1)(ii) and (a)(1)(iii) of this section.		
§ 25.222(a)(1)(i)	(i) An ESV system shall not exceed the off axis EIRP spectral-density limits and conditions defined in paragraphs (a)(1)(i)(A) through (a)(1)(i)(D) of this section.		
§ 25.222(a)(1)(i)(A)	(A) The off-axis EIRP spectral-density emitted from the ESV, in the plane of the GSO as it appears at the particular earth station location, shall not exceed the following values:	Complies	Narrative, Section I.D.1. and Exhibit 2, Section 1
	15-10log(N)-25logq dBW/4 kHz for 1.5° ≤ q ≤ 7°		
	-6 -10log(N) dBW/4 kHz for 7° < q ≤ 9.2°		
	18 -10log(N)-25logq dBW/4 kHz for 9.2° < q ≤ 48°		
	-24 -10log(N) dBW/4 kHz for 48° < q ≤ 85°		
	-14 -10log(N) dBW/4 kHz for 85° < q ≤ 180°		
	Where theta (q) is the angle in degrees from the line connecting the focal point of the antenna to the orbital location of the target satellite, the plane of the GSO is determined by the focal point of the antenna and the line tangent to the arc of the GSO at the orbital location of the target satellite. For ESV networks using frequency division multiple access (FDMA) or time division multiple access (TDMA) techniques, N is equal to one. For ESV networks using multiple co-frequency transmitters that have the same EIRP, N is the maximum expected number of co-frequency simultaneously transmitting ESV earth stations in the same satellite receiving beam. For the purpose of this section, the peak EIRP of an individual sidelobe may not exceed the envelope defined above for q between 1.5° and 7.0°. For q greater		

	than 7.0°, the envelope may be exceeded by no more than 10% of the sidelobes, provided no individual sidelobe exceeds the envelope given above by more than 3 dB.		
§ 25.222(a)(1)(i)(B)	(B) In all directions other than along the GSO, the off-axis EIRP spectral-density for co-polarized signals emitted from the ESV shall not exceed the following values:	Complies	Narrative, Section I.D.1. and Exhibit 2, Section 1
	18-10log(N)-25logq dBW/4 kHz for 3.0° ≤ q ≤ 48°		
	-24-10log(N) dBW/4 kHz for 48° < q ≤ 85°		
	-14-10log(N) dBW/4 kHz for 85° < q ≤ 180°		
	Where q and N are defined in paragraph (a)(1)(i)(A) of this section. This off-axis EIRP spectral-density applies in any plane that includes the line connecting the focal point of the antenna to the orbital location of the target satellite with the exception of the plane of the GSO as defined in paragraph (a)(1)(i)(A) of this section. For the purpose of this section, the envelope may be exceeded by no more than 10% of the sidelobes provided no individual sidelobe exceeds the gain envelope given above by more than 6 dB. The region of the main reflector spillover energy is to be interpreted as a single lobe and shall not exceed the envelope by more than 6 dB.	Complies	Narrative, Section I.D.1. and Exhibit 2, Section 1
§ 25.222(a)(1)(i)(C)	(C) In all directions, the off-axis EIRP spectral-density for cross-polarized signals emitted from the ESV shall not exceed the following values:	Complies	Narrative, Section I.D.1. and Exhibit 2, Section 1
	5-10log(N)-25logq dBW/4 kHz for 1.8° ≤ q ≤ 7.0°		
	-16-10log(N) dBW/4 kHz for 7.0° < q ≤ 9.2°		
	Where q and N are defined as set forth in paragraph (a)(1)(i)(A) of this section. This EIRP spectral-density applies in any plane that includes the line connecting the focal point of the antenna to the target satellite.		
§ 25.222(a)(1)(i)(D)	(D) For non-circular ESV antennas, the major axis of the antenna will be aligned with the tangent to the arc of the GSO at the orbital location of the target satellite, to the extent required to meet the specified off-axis EIRP spectral-density criteria.	N/A	
§ 25.222(a)(1)(ii)	(ii) Each ESV transmitter must meet one of the following antenna pointing requirements:		
§ 25.222(a)(1)(ii)(A)	(A) Each ESV transmitter shall maintain a pointing error of less than or equal to 0.2° between the orbital location of the target satellite and the axis of the main lobe of the ESV antenna, or	Complies	Narrative, Section I.D.2., Exhibit 2, Section 2
§ 25.222(a)(1)(ii)(B)	(B) Each ESV transmitter shall declare a maximum antenna pointing error that may be greater than 0.2° provided that the ESV does not exceed the off-axis EIRP spectral density limits in paragraph (a)(1)(i) of this section, taking into account the antenna pointing error.		
§ 25.222(a)(1)(iii)	(iii) Each ESV transmitter must meet one of the following cessation of emission requirements:		
§ 25.222(a)(1)(iii)(A)	(A) For ESVs operating under paragraph (a)(1)(ii)(A) of this section, all emissions from the ESV shall automatically cease within 100 milliseconds if the angle between the orbital location of the target satellite and the axis of the main lobe of the ESV antenna exceeds 0.5°, and transmission will not resume until such angle is less than or equal to 0.2°, or	Complies	Narrative, Section I.D.2., Exhibit 2, Section 2

§ 25.222(a)(1)(iii)(B)	(B) For ESV transmitters operating under paragraph (a)(1)(ii)(B) of this section, all emissions from the ESV shall automatically cease within 100 milliseconds if the angle between the orbital location of the target satellite and the axis of the main lobe of the ESV antenna exceeds the declared maximum antenna pointing error and shall not resume transmissions until such angle is less than or equal to the declared maximum antenna pointing error.		
§ 25.222(a)(2)	(2) The following requirements shall apply to an ESV that uses off-axis EIRP spectral densities in excess of the levels in paragraph (a)(1)(i) of this section. An ESV, or ESV system, operating under this section shall file certifications and provide a detailed demonstration as described in paragraph (b)(2) of this section.	N/A	
§ 25.222(a)(2)(i)	(i) The ESV shall transmit only to the target satellite system(s) referred to in the certifications required by paragraph (b)(2) of this section.		
§ 25.222(a)(2)(ii)	(ii) If a good faith agreement cannot be reached between the target satellite operator and the operator of a future satellite that is located within 6 degrees longitude of the target satellite, the ESV operator shall accept the power-density levels that would accommodate that adjacent satellite.		
§ 25.222(a)(2)(iii)	(iii) The ESV shall operate in accordance with the off-axis EIRP spectral-densities that the ESV supplied to the target satellite operator in order to obtain the certifications listed in paragraph (b)(2) of this section. The ESV shall automatically cease emissions within 100 milliseconds if the ESV transmitter exceeds the off-axis EIRP spectral densities supplied to the target satellite operator.		
§ 25.222(a)(3)	(3) There shall be a point of contact in the United States, with phone number and address, available 24 hours a day, seven days a week, with authority and ability to cease all emissions from the ESVs, either directly or through the facilities of a U.S. Hub or a Hub located in another country with which the United States has a bilateral agreement that enables such cessation of emissions.	Complies	Narrative, Section I.D.3.
§ 25.222(a)(4)	(4) For each ESV transmitter, a record of the ship location (<i>i.e.</i> , latitude/longitude), transmit frequency, channel bandwidth and satellite used shall be time annotated and 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. The ESV operator 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.	Complies	Narrative, Section I.D.3.
§ 25.222(a)(5)	(5) ESV operators communicating with vessels of foreign registry must maintain detailed information on each vessel's country of registry and a point of contact for the relevant administration responsible for licensing ESVs.	Complies	Narrative, Section I.D.3.
§ 25.222(a)(6)	(6) ESV operators shall control all ESVs by a Hub earth station located in the United States, except that an ESV on U.S.-registered vessels may operate under control of a Hub earth station location outside the United States provided the ESV operator maintains a point of contact within the United States that will have the capability and authority to cause an ESV on a U.S.-registered vessel to cease transmitting if necessary.	Complies	Narrative, Section I.B.
§ 25.222(a)(7)	(7) In the 10.95–11.2 GHz (space-to-Earth) and 11.45–11.7 GHz (space-to-Earth) frequency bands ESVs shall not claim protection from interference from any authorized terrestrial stations to which frequencies are either already assigned, or may be assigned in the future.	Complies	Narrative, Section I.B.
§ 25.222(b)	(b) Applications for ESV operation in the 14.0–14.5 GHz (Earth-to-space) band to GSO satellites in the fixed-satellite service must include, in addition to the particulars of operation identified on Form 312, and associated Schedule B, the applicable technical		

	demonstrations in paragraphs (b)(1) or (b)(2) of this section and the documentation identified in paragraphs (b)(3) through (b)(5) of this section.		
§ 25.222(b)(1)	(1) An ESV applicant proposing to implement a transmitter under paragraph (a)(1) of this section must demonstrate that the transmitter meets the off-axis EIRP spectral- density limits contained in paragraph (a)(1)(i) of this section. To provide this demonstration, the application shall include the tables described in paragraph (b)(1)(i) of this section or the certification described in paragraph (b)(1)(ii) of this section. The ESV applicant also must provide the value N described in paragraph (a)(1)(i)(A) of this section. An ESV applicant proposing to implement a transmitter under paragraph (a)(1)(ii)(A) of this section must provide the certifications identified in paragraph (b)(1)(iii) of this section. An ESV applicant proposing to implement a transmitter under paragraph (a)(1)(ii)(B) of this section must provide the demonstrations identified in paragraph (b)(1)(iv) of this section.	Complies	Narrative, Section I.D.1. and Exhibit 2, Section 1
§ 25.222(b)(1)(i)	(i) Any ESV applicant filing an application pursuant to paragraph (a)(1) of this section must file three tables showing the off-axis EIRP level of the proposed earth station antenna in the direction of the plane of the GSO; the co-polarized EIRP in the elevation plane, that is, the plane perpendicular to the plane of the GSO; and cross polarized EIRP. In each table, the EIRP level must be provided at increments of 0.1° for angles between 0° and 10° off-axis, and at increments of 5° for angles between 10° and 180° off-axis.	Complies	Narrative, Section I.D.1. and Exhibit 2, Section 1
§ 25.222(b)(1)(i)(A)	(A) For purposes of the off-axis EIRP table in the plane of the GSO, the off-axis angle is the angle in degrees from the line connecting the focal point of the antenna to the orbital location of the target satellite, and the plane of the GSO is determined by the focal point of the antenna and the line tangent to the arc of the GSO at the orbital position of the target satellite.		
§ 25.222(b)(1)(i)(B)	(B) For purposes of the off-axis co-polarized EIRP table in the elevation plane, the off-axis angle is the angle in degrees from the line connecting the focal point of the antenna to the orbital location of the target satellite, and the elevation plane is defined as the plane perpendicular to the plane of the GSO defined in paragraph (b)(1)(i)(A) of this section.		
§ 25.222(b)(1)(i)(C)	(C) For purposes of the cross-polarized EIRP table, the off-axis angle is the angle in degrees from the line connecting the focal point of the antenna to the orbital location of the target satellite and the plane of the GSO as defined in paragraph (b)(1)(i)(A) of this section will be used.		
§ 25.222(b)(1)(ii)	(ii) A certification, in Schedule B, that the ESV antenna conforms to the gain pattern criteria of § 25.209(a) and (b), that, combined with the maximum input power density calculated from the EIRP density less the antenna gain, which is entered in Schedule B, demonstrates that the off-axis EIRP spectral density envelope set forth in paragraphs (a)(1)(i)(A) through (a)(1)(i)(C) of this section will be met under the assumption that the antenna is pointed at the target satellite.	N/A	Demonstration provided under § 25.222(b)(1)(i)
§ 25.222(b)(1)(iii)	(iii) An ESV applicant proposing to implement a transmitter under paragraph (a)(1)(ii)(A) of this section, must provide a certification from the equipment manufacturer stating that the antenna tracking system will maintain a pointing error of less than or equal to 0.2 between the orbital location of the target satellite and the axis of the main lobe of the ESV antenna and that the antenna tracking system is capable of ceasing emissions within 100 milliseconds if the angle between the orbital location of the target satellite and the axis of the main lobe of the ESV antenna exceeds 0.5°.	Complies	Narrative, Section I.D.2., Exhibit 2, Section 2
§ 25.222(b)(1)(iv)	(iv) An ESV applicant proposing to implement a transmitter under paragraph (a)(1)(ii)(B) of this section must:		

§ 25.222(b)(1)(iv)(A)	(A) Declare, in their application, a maximum antenna pointing error and demonstrate that the maximum antenna pointing error can be achieved without exceeding the off-axis EIRP spectral-density limits in paragraph (a)(1)(A) of this section; and		
§ 25.222(b)(1)(iv)(B)	(B) Demonstrate that the ESV transmitter can detect if the transmitter exceeds the declared maximum antenna pointing error and can cease transmission within 100 milliseconds if the angle between the orbital location of the target satellite and the axis of the main lobe of the ESV antenna exceeds the declared maximum antenna pointing error, and will not resume transmissions until the angle between the orbital location of the target satellite and the axis of the main lobe of the ESV antenna is less than or equal to the declared maximum antenna pointing error.		
§ 25.222(b)(2)	(2) An ESV applicant proposing to implement a transmitter under paragraph (a)(2) of this section and using off-axis EIRP spectral densities in excess of the levels in paragraph (a)(1)(i) of this section shall provide the following certifications and demonstration as exhibits to its earth station application:	N/A	
§ 25.222(b)(2)(i)	(i) A statement from the target satellite operator certifying that the proposed operation of the ESV has the potential to create harmful interference to satellite networks adjacent to the target satellite(s) that may be unacceptable.		
§ 25.222(b)(2)(ii)	(ii) A statement from the target satellite operator certifying that the power-density levels that the ESV applicant provided to the target satellite operator are consistent with the existing coordination agreements between its satellite(s) and the adjacent satellite systems within 6° of orbital separation from its satellite(s).		
§ 25.222(b)(2)(iii)	(iii) A statement from the target satellite operator certifying that it will include the power-density levels of the ESV applicant in all future coordination agreements.		
§ 25.222(b)(2)(iv)	(iv) A demonstration from the ESV operator that the ESV system is capable of detecting and automatically ceasing emissions within 100 milliseconds when the transmitter exceeds the off-axis EIRP spectral-densities supplied to the target satellite operator.		
§ 25.222(b)(3)	(3) There shall be an exhibit included with the application describing the geographic area(s) in which the ESVs will operate.	Complies	Narrative, Section I.D.3.
§ 25.222(b)(4)	(4) The point of contact referred to in paragraph (a)(3) of this section and, if applicable paragraph (a)(6) of this section, must be included in the application.	Complies	Narrative, Section I.D.3.
§ 25.222(b)(5)	(5) ESVs that exceed the radiation guidelines of § 1.1310 of this chapter, Radiofrequency radiation exposure limits, must provide, with their environmental assessment, a plan for mitigation of radiation exposure to the extent required to meet those guidelines.	Complies	Exhibit 3, Radiation Hazard Study
§ 25.222(c)	(c) Operations of ESVs in the 14.0–14.2 GHz (Earth-to-space) frequency band within 125 km of the NASA TDRSS facilities on Guam (located at latitude: 13°36'55" N, longitude 144°51'22" E) or White Sands, New Mexico (latitude: 32°20'59" N, longitude 106°36'31" W and latitude: 32°32'40" N, longitude 106°36'48" W) are subject to coordination through the National Telecommunications and Information Administration (NTIA) Interdepartment Radio Advisory Committee (IRAC). When NTIA seeks to provide similar protection to future TDRSS sites that have been coordinated through the IRAC Frequency Assignment Subcommittee process, NTIA will notify the Commission that the site is nearing operational status. Upon public notice from the Commission, all Ku-band ESV operators must cease operations in the 14.0–14.2 GHz band within 125 km of the new TDRSS site until after NTIA/IRAC coordination for the new TDRSS facility is complete. ESV operations will then again be permitted to operate in the 14.0–14.2 GHz band within 125 km of the new TDRSS site, subject to any operational constraints developed in the	Complies	Narrative, Section I.D.4.

	coordination process.		
§ 25.222(d)	(d) Operations of ESVs in the 14.47–14.5 GHz (Earth-to-space) frequency band within (a) 45 km of the radio observatory on St. Croix, Virgin Islands (latitude 17°46' N, longitude 64°35' W); (b) 125 km of the radio observatory on Mauna Kea, Hawaii (at latitude 19°48' N, longitude 155°28' W); and (c) 90 km of the Arecibo Observatory on Puerto Rico (latitude 18°20'46" W, longitude 66°45'11" N) are subject to coordination through the National Telecommunications and Information Administration (NTIA) Interdepartment Radio Advisory Committee (IRAC).	Complies	Narrative, Section I.D.4.

6. Link Analysis

KVH KM-100

6/ 8/2011

KENR

FROM: MIAMI

TO: MIAMI

REQUIREMENTS

*Availability (%) : 99.500
 *Required Eb/No (dB) : 2.25
 *Bit Error Rate : E-3
 *Modulation Type : QPSK
 *Info. Rate (Kbps) : 256.00
 *FEC Rate : 0.33
 *Spread Spectrum Factor : 32.00
 *Modem Step Size (kHz) : 1.00

TRANSMIT E/S

North Lat: 26.0 West Long: 80.2
 Frequency (GHz) : 14.25
 *Satellite G/T (dB/K) : 4.00
 *Antenna Diameter (m) : 0.6
 *Antenna Gain (dBi) : 41.80
 Antenna Elevation (Deg) : 32.35
 Carrier EIRP (dBW) : 42.01
 *Power Control (dB) : 1.00
 *Output Circuit Loss (dB) : 1.50
 Path Loss (dB) : 207.24
 *Other Losses (dB) : 1.40
 (other loss = atm,pol,RADOME, point)

INTERFERENCE

*C/Io Adj Sat U (dB-Hz) : 79.10
 *C/Io Adj Sat D (dB-Hz) : 94.57
 *C/Io Crosspol (dB-Hz) : 74.20
 *C/Io PCMA (dB-Hz) : 84.85
 *C/Io CRMA (dB-Hz) : 62.40
 C/Io Microwave (dB-Hz) : N/A

SATELLITE

*Satellite : AMC-21
 Satellite West Long : 125.0
 *Transponder : LTWTA
 !Usable Trnspndr BW (MHz) : 36.00
 !SFD @ 0 dB/K (dBW/M^2) : -93.00
 *Transponder Atten (dB) : 3.0

RECEIVE E/S

North Lat: 26.0 West Long: 80.2
 Frequency (GHz) : 11.95
 *Satellite EIRP (dBW) : 49.50
 *Antenna Diameter (m) : 7.6
 *Antenna Gain (dBi) : 58.00
 Antenna Elevation (Deg) : 32.35
 LNA Noise Temp (K) : 111.35
 *Loss betw.LNA & Ant.(dB) : 0.30
 System Noise Temp. (K) : 185.05
 *Station G/T (dB/K) : 35.33
 Path Loss (dB) : 205.71
 *Other Losses (dB) : 0.60

C/Io Total (dB-Hz) : 61.62
 C/No Thermal Up (dB-Hz) : 64.97
 C/No Thermal Dn (dB-Hz) : 80.99
 C/No Therm Total (dB-Hz) : 64.86
 C/No Total (dB-Hz) : 59.93

RAIN ATTENUATION

Overall Link Margin (dB) : 3.60 *Rain Model : CRANE
 Uplink Availability (%) : 99.512
 Rain Margin (dB) : 4.60 *Uplink Rain Zone : E
 Dnlink Availability (%) : 99.973
 Rain Margin (dB) : 18.14 *Dnlink Rain Zone : E
 G/T Degradation (dB) : 4.05

TRANSPONDER

*Number of Carriers : MULTIPLE
 *Total OPBO (dB) : 3.00
 Total IPBO (dB) : 5.97
 Carrier OPBO (dB) : 26.13
 Carrier IPBO (dB) : 29.10

H.P.A

*Number of Carriers : 1.0
 *Total HPA OPBO : 0.00
 HPA Power/Carrier (dBm) : 31.71
 Required HPA Size (dBW) : 1.71
 Required HPA Size (W) : 1.48

FCC Req: 1) Uplink Flange Density (dBW/4kHz) : -34.71 File: KVHKLMLB1
 (@50.5) 2) Downlink EIRP Density (dBW/4kHz) : -10.54

Transponder BW Used Per Carrier (x1.43) (%) : 49.31 # = deltas used
 Transponder Power Used Per Carrier (%) : 0.49 ! = modif. default
 Transponder Bandwidth Allocation (MHz) : 17.750 * = user's input
 Number of transponder users: 14 in two stacks of 7 each