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K220A Displacement
State Board Of Directors For Ed Tv

REFERENCE CH# 204D - 88.7 MHz, Pwr= 0.033 kW DA, HAAT= 444.7 M, COR= 2159 M DISPLAY DATES
44 19 38.0 N. Average Protected F(50-50)= 16.45 km DATA 02-16-11
103 50 06.0 W. Standard Directional SEARCH 02-16-11

CH CITY	CALL	TYPE STATE	ANT <--	AZI	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*OUT* (Overlap in km)
202C Rapid City	KLMP	LIC SD	_CX	28.1 208.1	0.1 BLED20050415ACE	44 19 42.0 103 50 03.0	63.000 522	9.9 2232	72.9 Bethesda Christian Broadca	-73.0*
06ZT Gillette	K06JM	LI WY	D_N	267.6 86.3	148.2 BLTVA20031223ACO	44 15 24.0 105 41 40.0	3.000 150	0.3 1525	22.3 0.0R Duhamel Broadcasting Enter	148.2M
206A Spearfish	KBHU-FM	LIC SD	_HN	351.6 171.5	19.0 BLED19940930KD	44 29 48.0 103 52 13.0	0.100 -106	0.7 1128	5.6 Black Hills State Universi	13.2
204D Rapid City	K204FB	LIC SD	DV_	116.4 296.9	52.7 BLFT20070413AGG	44 06 52.0 103 14 36.0	0.034	12.3 1232	1.7 Lakota Communications, Inc	13.6
201D Belle Fourche	K201AP	LIC SD	_HN	358.5 178.5	36.6 BLFT19860625TN	44 39 24.0 103 50 49.0	0.009 -11	0.2 977	3.1 State Board Of Directors F	33.3
207C3 Rapid City	KBHE-FM	LIC SD	_CN	122.7 303.2	56.2 BLED19840416CB	44 03 09.0 103 14 38.0	9.800 125	3.8 1228	22.3 South Dakota Board Of Dire	33.6
205C1 Wasta	KVSD	CP SD	_VX	104.7 285.8	120.3 BNPED20071012ABK	44 02 34.0 102 22 46.0	100.000 142	87.3 941	57.8 Vcy America Inc.	41.8
202D Rapid City	KLMP-FM1	LIC SD	DC_	119.0 299.4	53.6 BLFTB20050906ACM	44 05 33.0 103 14 53.0	2.300	1.8 1198	10.7 Bethesda Christian Broadca	42.5
203D Pringle	K203BN	LIC SD	DHN	156.2 336.5	70.6 BLFT19920827TB	43 44 43.0 103 28 50.0	0.047 407	2.4 1930	1.4 State Board Of Directors F	68.2
201D Hot Springs	K201AQ	LIC SD	?HN	162.8 343.0	102.9 BLFT19860129TB	43 26 34.0 103 27 27.0	0.047 171	0.5 1323	6.2 State Board Of Directors F	96.6
205A Gillette	KLOF	LIC WY	_CX	264.8 83.7	130.6 BLED20071012ASG	44 12 34.0 105 28 04.0	0.440 121	25.3 1549	17.0 Educational Media Foundati	110.1
201A Gillette	KGLL	LIC WY	_VX	265.8 84.7	130.0 BLED20100421AAQ	44 13 50.0 105 27 45.0	0.200 85	1.0 1508	12.6 American Family Associatio	117.3

Terrain database is FCC NGDC 30 Sec , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM
In & Out distances between contours are shown at closest points. Reference zone= West Zone, Co to 3rd adjacent.
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
Incoming contour overlap is ignored.
"*"affixed to 'IN' or 'OUT' values = site inside protected contour.

HOW TO READ THE FM COMPUTER PRINT-OUT

Translator Reference Station

The computer printout should be self-explanatory for the most part. The parameters of the station being checked, (reference station) are printed in the heading. The 60 dBu protected contour is predicted from the Commission's F(50-50) table. Contour distances are in kilometers and are predicted using the Commission's TVFMINT FORTRAN subroutine. When interference contour distances are less than 16 kilometers the F(50-50) tables are used. If signal contour distances are less than 1.6 km the free-space equation is used.

All distances are derived by the method detailed in Sec. 73.208 of the Rules and Regulations as amended in Docket 80-90. The column labeled "* OUT *" shows the greatest distance in kilometers of overlap (or smallest distance of clearance) between the reference station's interference contour and the database station's protected contour. Negative distance figures in this column indicate outgoing contour overlap. Since translators are able to receive interference there is no “In” or incoming column in this report.

Listed antenna heights and power are the specific antenna heights and power from the FCC database.

Under the "AZI" column, the first row of numbers indicate the True North azimuths from the reference station toward the database stations, while the numbers in the second row indicate the reverse bearings from the database stations to the reference station. Bearings are calculated using spherical trigonometry.

The columns labeled "INT" and "PRO" contain the distance in kilometers of the appropriate interference contour and the protected contour of a data base station.

For I.F. relationships the minimum spacings the "IN" and "OUT" columns change their significance. The letter "R" stands for the minimum **required** distance in kilometers, while the letter "M" in the next column follows the **available clear space** separation in kilometers. Minimum separation distances when displayed are taken from Sec 73.207 of the rules as amended. Canadian and Mexican separation distances, U/D ratios and protected contour values are from the US/Mexican Working Agreement and the US/Canada Working Agreement".

The first three letters of the "TYPE" column identify the current FCC status of the stations. The fourth letter will be a "D" if the facility is directional. “Z” indicates a 73.215 directional. An “N” indicates it is a 73.215 station that operates with an omni-directional antenna. The fifth letter will be an E, H or V depending on the type of antenna polarization. The sixth letter will be a "Y" if the antenna uses beam tilt or an “X” if the commission is not sure, otherwise it will be an “N” or left blank.

K220BA (204) Translator Field Strength Study
From Zero Meters to 250 Meters from translator site to specified maximum distance.
Translator Licensed Maximum ERP = 0.033kW
Translator Antenna Height AG = 17 Meters
Vertical Elevation Field Pattern - 1 bay CLFM
Protected Station= KLMP, 63.00 kW, 2232 Meters COR AMSL

Azimuth From Translator Site = 28.1°

Translator K220BA (204)						Protected KLMP					
Depression Angle (°)	Horz-dist (m)	V-Field at Angle	ERP (kw)	Antenna to Ground Angle Distance (m)	Signal (dBu)	ERP (kW)	Azimuth (°T)	Distance (km)	HAAT (m)	Signal (dBu)	Delta (dBu)
86.6	1	0.0312	0.00003	17.0	97.36	63	208.1	0.1	370.6	142.1	-44.7
83.3	2	0.0523	0.00009	17.1	101.80	63	208.1	0.1	370.6	142.2	-40.4
80.0	3	0.0771	0.00020	17.3	105.10	63	208.1	0.1	370.6	142.3	-37.2
76.8	4	0.1064	0.00037	17.5	107.80	63	208.1	0.1	370.6	142.5	-34.7
73.6	5	0.1389	0.00064	17.7	109.99	63	208.1	0.1	370.6	142.6	-32.6
70.6	6	0.1743	0.00100	18.0	111.81	63	208.1	0.1	370.6	142.7	-30.9
67.6	7	0.2106	0.00146	18.4	113.28	63	208.1	0.1	370.6	142.9	-29.6
64.8	8	0.2478	0.00203	18.8	114.51	63	208.1	0.1	370.6	143.0	-28.5
62.1	9	0.2864	0.00271	19.2	115.56	63	208.1	0.1	370.6	143.2	-27.6
59.5	10	0.3235	0.00345	19.7	116.40	63	208.1	0.1	370.6	143.3	-26.9
57.1	11	0.3607	0.00429	20.2	117.12	63	208.1	0.1	370.6	143.4	-26.3
54.8	12	0.3970	0.00520	20.8	117.72	63	208.1	0.1	370.6	143.6	-25.9
52.6	13	0.4315	0.00614	21.4	118.20	63	208.1	0.1	370.6	143.7	-25.5
50.5	14	0.4646	0.00712	22.0	118.59	63	208.1	0.1	370.6	143.9	-25.3
48.6	15	0.4958	0.00811	22.7	118.90	63	208.1	0.1	370.6	144.1	-25.2
46.7	16	0.5252	0.00910	23.3	119.15	63	208.1	0.1	370.6	144.2	-25.1
45.0	17	0.5540	0.01013	24.0	119.36	63	208.1	0.1	370.6	144.4	-25.0
43.4	18	0.5802	0.01111	24.8	119.50	63	208.1	0.1	370.6	144.5	-25.0
41.8	19	0.6039	0.01203	25.5	119.60	63	208.1	0.1	370.6	144.7	-25.1
40.4	20	0.6272	0.01298	26.2	119.67	63	208.1	0.1	370.6	144.9	-25.2
39.0	21	0.6481	0.01386	27.0	119.71	63	208.1	0.1	370.6	145.1	-25.3
37.7	22	0.6683	0.01474	27.8	119.72	63	208.1	0.1	370.6	145.2	-25.5
36.5	23	0.6874	0.01559	28.6	119.72	63	208.1	0.1	370.6	145.4	-25.7
35.3	24	0.7040	0.01636	29.4	119.69	63	208.1	0.1	370.6	145.6	-25.9
34.2	25	0.7200	0.01711	30.2	119.64	63	208.1	0.1	370.6	145.8	-26.1

Translator K220BA (204)						Protected KLMP					
Depression Angle (°)	Horz-dist (m)	V-Field at Angle	ERP (kw)	Antenna to Ground Angle Distance (m)	Signal (dBu)	ERP (kW)	Azimuth (°T)	Distance (km)	HAAT (m)	Signal (dBu)	Delta (dBu)
33.2	26	0.7355	0.01785	31.1	119.59	63	208.1	0.1	370.6	146.0	-26.4
32.2	27	0.7493	0.01853	31.9	119.52	63	208.1	0.1	370.6	146.2	-26.7
31.3	28	0.7623	0.01918	32.8	119.44	63	208.1	0.1	370.6	146.4	-26.9
30.4	29	0.7747	0.01980	33.6	119.36	63	208.1	0.1	370.6	146.6	-27.2
29.5	30	0.7855	0.02036	34.5	119.26	63	208.1	0.1	370.6	146.8	-27.5
28.7	31	0.7961	0.02092	35.4	119.16	63	208.1	0.1	370.6	147.0	-27.9
28.0	32	0.8062	0.02145	36.2	119.05	63	208.1	0.1	370.6	147.2	-28.2
27.3	33	0.8154	0.02194	37.1	118.94	63	208.1	0.1	370.6	147.5	-28.5
26.6	34	0.8242	0.02242	38.0	118.83	63	208.1	0.1	370.6	147.7	-28.9
25.9	35	0.8321	0.02285	38.9	118.71	63	208.1	0.1	370.6	148.0	-29.3
25.3	36	0.8397	0.02327	39.8	118.59	63	208.1	0.1	370.6	148.2	-29.6
24.7	37	0.8469	0.02367	40.7	118.47	63	208.1	0.1	370.6	148.5	-30.0
24.1	38	0.8538	0.02405	41.6	118.34	63	208.1	0.1	370.6	148.7	-30.4
23.6	39	0.8595	0.02438	42.5	118.21	63	208.1	0.1	370.6	149.0	-30.8
23.0	40	0.8657	0.02473	43.5	118.09	63	208.1	0.1	370.6	149.3	-31.2
22.5	41	0.8708	0.02502	44.4	117.96	63	208.1	0.1	370.6	149.6	-31.6
22.0	42	0.8766	0.02536	45.3	117.84	63	208.1	0.1	370.6	149.9	-32.0
21.6	43	0.8813	0.02563	46.2	117.71	63	208.1	0.1	370.6	150.2	-32.5
21.1	44	0.8858	0.02589	47.2	117.58	63	208.1	0.1	370.6	150.5	-32.9
20.7	45	0.8900	0.02614	48.1	117.45	63	208.1	0.1	370.6	150.9	-33.4
20.3	46	0.8942	0.02639	49.0	117.32	63	208.1	0.1	370.6	151.2	-33.9
19.9	47	0.8981	0.02662	50.0	117.20	63	208.1	0.1	370.6	151.6	-34.4
19.5	48	0.9020	0.02685	50.9	117.07	63	208.2	0.1	370.6	152.0	-34.9
19.1	49	0.9057	0.02707	51.9	116.95	63	208.2	0.1	370.6	152.4	-35.4
18.8	50	0.9092	0.02728	52.8	116.82	63	208.2	0.1	370.6	152.8	-36.0
18.4	51	0.9125	0.02748	53.8	116.70	63	208.2	0.1	370.6	153.2	-36.5
18.1	52	0.9152	0.02764	54.7	116.57	63	208.2	0.1	370.6	153.7	-37.1
17.8	53	0.9182	0.02782	55.7	116.45	63	208.2	0.1	370.6	154.2	-37.7
17.5	54	0.9212	0.02800	56.6	116.33	63	208.2	0.1	370.6	154.7	-38.4
17.2	55	0.9236	0.02815	57.6	116.21	63	208.2	0.1	370.6	155.2	-39.0
16.9	56	0.9259	0.02829	58.5	116.09	63	208.2	0.1	370.6	155.8	-39.7
16.6	57	0.9281	0.02843	59.5	115.97	63	208.2	0.1	370.6	156.5	-40.5
16.3	58	0.9303	0.02856	60.4	115.85	63	208.2	0.1	370.6	157.2	-41.3
16.1	59	0.9324	0.02869	61.4	115.73	63	208.2	0.1	370.6	157.9	-42.2

Translator K220BA (204)						Protected KLMP					
Depression Angle (°)	Horz-dist (m)	V-Field at Angle	ERP (kw)	Antenna to Ground Angle Distance (m)	Signal (dBu)	ERP (kW)	Azimuth (°T)	Distance (km)	HAAT (m)	Signal (dBu)	Delta (dBu)
15.8	60	0.9344	0.02882	62.4	115.62	63	208.2	0.1	370.6	158.7	-43.1
15.6	61	0.9364	0.02894	63.3	115.50	63	208.2	0.1	370.6	159.6	-44.1
15.3	62	0.9383	0.02906	64.3	115.39	63	208.2	0.1	370.6	160.6	-45.2
15.1	63	0.9402	0.02917	65.3	115.28	63	208.2	0.1	370.6	161.7	-46.5
14.9	64	0.9420	0.02928	66.2	115.17	63	208.2	0.1	370.6	163.0	-47.9
14.7	65	0.9437	0.02939	67.2	115.06	63	208.2	0.1	370.6	164.5	-49.5
14.4	66	0.9454	0.02950	68.2	114.95	63	208.2	0.1	370.6	166.4	-51.5
14.2	67	0.9471	0.02960	69.1	114.84	63	208.2	0.1	370.6	168.8	-53.9
14.0	68	0.9487	0.02970	70.1	114.73	63	208.2	0.1	370.6	172.0	-57.3
13.8	69	0.9500	0.02978	71.1	114.63	63	208.2	0.1	370.6	177.2	-62.6
13.7	70	0.9511	0.02985	72.0	114.52	63	208.2	0.1	370.6	192.3	-77.8
13.5	71	0.9523	0.02993	73.0	114.41	63	208.2	0.1	370.6	192.3	-77.9
13.3	72	0.9537	0.03002	74.0	114.31	63	208.2	0.1	370.6	192.3	-78.0
13.1	73	0.9551	0.03010	75.0	114.21	63	208.2	0.1	370.6	192.3	-78.1
12.9	74	0.9564	0.03018	75.9	114.11	63	208.2	0.1	370.6	192.3	-78.2
12.8	75	0.9574	0.03025	76.9	114.01	63	208.2	0.1	370.6	192.3	-78.3
12.6	76	0.9583	0.03031	77.9	113.91	63	208.2	0.1	370.6	192.3	-78.4
12.5	77	0.9593	0.03037	78.9	113.81	63	208.2	0.1	370.6	192.3	-78.5
12.3	78	0.9602	0.03043	79.8	113.71	63	208.2	0.1	370.6	192.3	-78.6
12.1	79	0.9611	0.03048	80.8	113.61	63	208.2	0.1	370.6	192.3	-78.7
12.0	80	0.9620	0.03054	81.8	113.52	63	208.2	0.1	370.6	192.3	-78.8
11.9	81	0.9629	0.03060	82.8	113.42	63	208.2	0.1	370.6	192.3	-78.9
11.7	82	0.9637	0.03065	83.7	113.33	63	208.2	0.1	370.6	192.3	-79.0
11.6	83	0.9645	0.03070	84.7	113.23	63	208.2	0.1	370.6	192.3	-79.1
11.4	84	0.9654	0.03075	85.7	113.14	63	208.2	0.1	370.6	192.3	-79.2
11.3	85	0.9661	0.03080	86.7	113.05	63	208.2	0.1	370.6	192.3	-79.2
11.2	86	0.9669	0.03085	87.7	112.96	63	208.2	0.1	370.6	192.3	-79.3
11.1	87	0.9677	0.03090	88.6	112.87	63	208.2	0.1	370.6	192.3	-79.4
10.9	88	0.9684	0.03095	89.6	112.78	63	208.3	0.1	370.6	192.3	-79.5
10.8	89	0.9691	0.03099	90.6	112.69	63	208.3	0.1	370.6	192.3	-79.6
10.7	90	0.9698	0.03104	91.6	112.60	63	208.3	0.1	370.6	192.3	-79.7
10.6	91	0.9705	0.03108	92.6	112.52	63	208.3	0.0	370.6	192.3	-79.8
10.5	92	0.9712	0.03113	93.6	112.43	63	208.3	0.0	370.6	192.3	-79.9
10.4	93	0.9718	0.03117	94.5	112.34	63	208.3	0.0	370.6	192.3	-80.0

Translator K220BA (204)						Protected KLMP					
Depression Angle (°)	Horz-dist (m)	V-Field at Angle	ERP (kw)	Antenna to Ground Angle Distance (m)	Signal (dBu)	ERP (kW)	Azimuth (°T)	Distance (km)	HAAT (m)	Signal (dBu)	Delta (dBu)
10.3	94	0.9725	0.03121	95.5	112.26	63	208.3	0.0	370.6	192.3	-80.0
10.1	95	0.9731	0.03125	96.5	112.18	63	208.3	0.0	370.6	192.3	-80.1
10.0	96	0.9737	0.03129	97.5	112.09	63	208.3	0.0	370.6	192.3	-80.2
9.9	97	0.9742	0.03132	98.5	112.01	63	208.3	0.0	370.6	192.3	-80.3
9.8	98	0.9746	0.03135	99.5	111.93	63	208.3	0.0	370.6	192.3	-80.4
9.7	99	0.9750	0.03137	100.4	111.85	63	208.3	0.0	370.6	192.3	-80.4
9.6	100	0.9754	0.03140	101.4	111.77	63	208.3	0.0	370.6	192.3	-80.5
9.6	101	0.9758	0.03142	102.4	111.68	63	208.3	0.0	370.6	192.3	-80.6
9.5	102	0.9762	0.03144	103.4	111.60	63	208.3	0.0	370.6	192.3	-80.7
9.4	103	0.9765	0.03147	104.4	111.53	63	208.3	0.0	370.6	192.3	-80.8
9.3	104	0.9769	0.03149	105.4	111.45	63	208.4	0.0	370.6	192.3	-80.8
9.2	105	0.9774	0.03153	106.4	111.37	63	208.4	0.0	370.6	192.3	-80.9
9.1	106	0.9781	0.03157	107.4	111.30	63	208.4	0.0	370.6	192.3	-81.0
9.0	107	0.9788	0.03161	108.3	111.22	63	208.4	0.0	370.6	192.3	-81.1
8.9	108	0.9792	0.03164	109.3	111.15	63	208.4	0.0	370.6	192.3	-81.1
8.9	109	0.9795	0.03166	110.3	111.07	63	208.4	0.0	370.6	192.3	-81.2
8.8	110	0.9799	0.03168	111.3	111.00	63	208.4	0.0	370.6	192.3	-81.3
8.7	111	0.9802	0.03170	112.3	110.92	63	208.4	0.0	370.6	192.3	-81.4
8.6	112	0.9805	0.03172	113.3	110.85	63	208.5	0.0	370.6	192.3	-81.4
8.6	113	0.9808	0.03174	114.3	110.78	63	208.5	0.0	370.6	192.3	-81.5
8.5	114	0.9811	0.03176	115.3	110.71	63	208.5	0.0	370.6	192.3	-81.6
8.4	115	0.9814	0.03178	116.2	110.63	63	208.5	0.0	370.6	192.3	-81.7
8.3	116	0.9817	0.03180	117.2	110.56	63	208.5	0.0	370.6	192.3	-81.7
8.3	117	0.9819	0.03182	118.2	110.49	63	208.5	0.0	370.6	192.3	-81.8
8.2	118	0.9822	0.03184	119.2	110.42	63	208.6	0.0	370.6	192.3	-81.9
8.1	119	0.9825	0.03185	120.2	110.35	63	208.6	0.0	370.6	192.3	-81.9
8.1	120	0.9827	0.03187	121.2	110.28	63	208.6	0.0	370.6	192.3	-82.0
8.0	121	0.9830	0.03189	122.2	110.22	63	208.7	0.0	370.6	192.3	-82.1
7.9	122	0.9833	0.03190	123.2	110.15	63	208.7	0.0	370.6	192.3	-82.1
7.9	123	0.9835	0.03192	124.2	110.08	63	208.7	0.0	370.6	192.3	-82.2
7.8	124	0.9838	0.03194	125.2	110.01	63	208.8	0.0	370.6	192.3	-82.3
7.7	125	0.9840	0.03195	126.2	109.95	63	208.8	0.0	370.6	192.3	-82.3
7.7	126	0.9843	0.03197	127.1	109.88	63	208.9	0.0	370.6	192.3	-82.4
7.6	127	0.9845	0.03199	128.1	109.82	63	208.9	0.0	370.6	192.3	-82.5

Translator K220BA (204)						Protected KLMP					
Depression Angle (°)	Horz-dist (m)	V-Field at Angle	ERP (kw)	Antenna to Ground Angle Distance (m)	Signal (dBu)	ERP (kW)	Azimuth (°T)	Distance (km)	HAAT (m)	Signal (dBu)	Delta (dBu)
7.6	128	0.9847	0.03200	129.1	109.75	63	209.0	0.0	370.6	192.3	-82.5
7.5	129	0.9850	0.03202	130.1	109.69	63	209.1	0.0	370.6	192.3	-82.6
7.5	130	0.9852	0.03203	131.1	109.62	63	209.2	0.0	370.6	192.3	-82.7
7.4	131	0.9854	0.03205	132.1	109.56	63	209.3	0.0	370.6	192.3	-82.7
7.3	132	0.9856	0.03206	133.1	109.50	63	209.5	0.0	370.6	192.3	-82.8
7.3	133	0.9859	0.03207	134.1	109.43	63	209.7	0.0	370.6	192.3	-82.9
7.2	134	0.9861	0.03209	135.1	109.37	63	209.9	0.0	370.6	192.3	-82.9
7.2	135	0.9863	0.03210	136.1	109.31	63	210.3	0.0	370.6	192.3	-83.0
7.1	136	0.9865	0.03212	137.1	109.25	63	210.8	0.0	370.6	192.3	-83.0
7.1	137	0.9867	0.03213	138.1	109.19	63	211.6	0.0	370.6	192.3	-83.1
7.0	138	0.9869	0.03214	139.0	109.13	63	213.1	0.0	370.6	192.3	-83.2
7.0	139	0.9871	0.03215	140.0	109.07	63	216.6	0.0	370.6	192.3	-83.2
6.9	140	0.9873	0.03217	141.0	109.01	63	234.8	0.0	370.6	192.3	-83.3
6.9	141	0.9875	0.03218	142.0	108.95	63	7.5	0.0	370.6	192.3	-83.3
6.8	142	0.9877	0.03219	143.0	108.89	63	20.2	0.0	370.6	192.3	-83.4
6.8	143	0.9879	0.03221	144.0	108.83	63	23.2	0.0	370.6	192.3	-83.5
6.7	144	0.9881	0.03222	145.0	108.77	63	24.6	0.0	370.6	192.3	-83.5
6.7	145	0.9883	0.03223	146.0	108.72	63	25.3	0.0	370.6	192.3	-83.6
6.6	146	0.9884	0.03224	147.0	108.66	63	25.8	0.0	370.6	192.3	-83.6
6.6	147	0.9886	0.03225	148.0	108.60	63	26.1	0.0	370.6	192.3	-83.7
6.6	148	0.9888	0.03226	149.0	108.55	63	26.4	0.0	370.6	192.3	-83.7
6.5	149	0.9890	0.03228	150.0	108.49	63	26.6	0.0	370.6	192.3	-83.8
6.5	150	0.9891	0.03229	151.0	108.43	63	26.7	0.0	370.6	192.3	-83.9
6.4	151	0.9893	0.03230	152.0	108.38	63	26.9	0.0	370.6	192.3	-83.9
6.4	152	0.9895	0.03231	152.9	108.32	63	27.0	0.0	370.6	192.3	-84.0
6.3	153	0.9896	0.03232	153.9	108.27	63	27.0	0.0	370.6	192.3	-84.0
6.3	154	0.9898	0.03233	154.9	108.21	63	27.1	0.0	370.6	192.3	-84.1
6.3	155	0.9900	0.03234	155.9	108.16	63	27.2	0.0	370.6	192.3	-84.1
6.2	156	0.9900	0.03234	156.9	108.10	63	27.2	0.0	370.6	192.3	-84.2
6.2	157	0.9900	0.03234	157.9	108.05	63	27.3	0.0	370.6	192.3	-84.2
6.1	158	0.9900	0.03234	158.9	107.99	63	27.3	0.0	370.6	192.3	-84.3
6.1	159	0.9900	0.03234	159.9	107.94	63	27.4	0.0	370.6	192.3	-84.4
6.1	160	0.9900	0.03234	160.9	107.89	63	27.4	0.0	370.6	192.3	-84.4
6.0	161	0.9900	0.03234	161.9	107.83	63	27.4	0.0	370.6	192.3	-84.5

Translator K220BA (204)						Protected KLMP					
Depression Angle (°)	Horz-dist (m)	V-Field at Angle	ERP (kw)	Antenna to Ground Angle Distance (m)	Signal (dBu)	ERP (kW)	Azimuth (°T)	Distance (km)	HAAT (m)	Signal (dBu)	Delta (dBu)
6.0	162	0.9900	0.03235	162.9	107.78	63	27.4	0.0	370.6	192.3	-84.5
6.0	163	0.9902	0.03236	163.9	107.73	63	27.5	0.0	370.6	192.3	-84.6
5.9	164	0.9903	0.03236	164.9	107.68	63	27.5	0.0	370.6	192.3	-84.6
5.9	165	0.9905	0.03237	165.9	107.63	63	27.5	0.0	370.6	192.3	-84.7
5.8	166	0.9906	0.03238	166.9	107.58	63	27.5	0.0	370.6	192.3	-84.7
5.8	167	0.9908	0.03239	167.9	107.53	63	27.6	0.0	370.6	192.3	-84.8
5.8	168	0.9909	0.03240	168.9	107.48	63	27.6	0.0	370.6	192.3	-84.8
5.7	169	0.9910	0.03241	169.9	107.43	63	27.6	0.0	370.6	192.3	-84.9
5.7	170	0.9912	0.03242	170.8	107.38	63	27.6	0.0	370.6	192.3	-84.9
5.7	171	0.9913	0.03243	171.8	107.33	63	27.6	0.0	370.6	192.3	-85.0
5.6	172	0.9914	0.03244	172.8	107.28	63	27.6	0.0	370.6	192.3	-85.0
5.6	173	0.9916	0.03244	173.8	107.23	63	27.6	0.0	370.6	192.3	-85.1
5.6	174	0.9917	0.03245	174.8	107.18	63	27.7	0.0	370.6	192.3	-85.1
5.5	175	0.9918	0.03246	175.8	107.13	63	27.7	0.0	370.6	192.3	-85.2
5.5	176	0.9919	0.03247	176.8	107.08	63	27.7	0.0	370.6	192.3	-85.2
5.5	177	0.9921	0.03248	177.8	107.04	63	27.7	0.0	370.6	192.3	-85.3
5.5	178	0.9922	0.03249	178.8	106.99	63	27.7	0.0	370.6	192.3	-85.3
5.4	179	0.9923	0.03249	179.8	106.94	63	27.7	0.0	370.6	192.3	-85.4
5.4	180	0.9924	0.03250	180.8	106.90	63	27.7	0.0	370.6	192.3	-85.4
5.4	181	0.9925	0.03251	181.8	106.85	63	27.7	0.0	370.6	192.3	-85.4
5.3	182	0.9927	0.03252	182.8	106.80	63	27.7	0.0	370.6	192.3	-85.5
5.3	183	0.9928	0.03252	183.8	106.76	63	27.7	0.0	370.6	192.3	-85.5
5.3	184	0.9929	0.03253	184.8	106.71	63	27.7	0.0	370.6	192.3	-85.6
5.3	185	0.9930	0.03254	185.8	106.66	63	27.7	0.0	370.6	192.3	-85.6
5.2	186	0.9930	0.03254	186.8	106.62	63	27.7	0.0	370.6	192.3	-85.7
5.2	187	0.9930	0.03254	187.8	106.57	63	27.8	0.0	370.6	192.3	-85.7
5.2	188	0.9930	0.03254	188.8	106.53	63	27.8	0.0	370.6	192.3	-85.8
5.1	189	0.9930	0.03254	189.8	106.48	63	27.8	0.0	370.6	192.3	-85.8
5.1	190	0.9930	0.03254	190.8	106.43	63	27.8	0.0	370.6	192.3	-85.9
5.1	191	0.9930	0.03254	191.8	106.39	63	27.8	0.1	370.6	192.3	-85.9
5.1	192	0.9930	0.03254	192.8	106.34	63	27.8	0.1	370.6	192.3	-86.0
5.0	193	0.9930	0.03254	193.7	106.30	63	27.8	0.1	370.6	192.3	-86.0
5.0	194	0.9930	0.03254	194.7	106.25	63	27.8	0.1	370.6	192.3	-86.0
5.0	195	0.9931	0.03254	195.7	106.21	63	27.8	0.1	370.6	192.3	-86.1

Translator K220BA (204)						Protected KLMP					
Depression Angle (°)	Horz-dist (m)	V-Field at Angle	ERP (kw)	Antenna to Ground Angle Distance (m)	Signal (dBu)	ERP (kW)	Azimuth (°T)	Distance (km)	HAAT (m)	Signal (dBu)	Delta (dBu)
5.0	196	0.9932	0.03255	196.7	106.17	63	27.8	0.1	370.6	192.3	-86.1
4.9	197	0.9933	0.03256	197.7	106.13	63	27.8	0.1	370.6	192.3	-86.2
4.9	198	0.9934	0.03256	198.7	106.08	63	27.8	0.1	370.6	192.3	-86.2
4.9	199	0.9935	0.03257	199.7	106.04	63	27.8	0.1	370.6	192.3	-86.3
4.9	200	0.9936	0.03258	200.7	106.00	63	27.8	0.1	370.6	192.3	-86.3
4.8	201	0.9937	0.03258	201.7	105.96	63	27.8	0.1	370.6	192.3	-86.3
4.8	202	0.9938	0.03259	202.7	105.91	63	27.8	0.1	370.6	192.3	-86.4
4.8	203	0.9939	0.03260	203.7	105.87	63	27.8	0.1	370.6	192.3	-86.4
4.8	204	0.9939	0.03260	204.7	105.83	63	27.8	0.1	370.6	192.3	-86.5
4.7	205	0.9940	0.03261	205.7	105.79	63	27.8	0.1	370.6	192.3	-86.5
4.7	206	0.9941	0.03261	206.7	105.75	63	27.8	0.1	370.6	192.3	-86.5
4.7	207	0.9942	0.03262	207.7	105.71	63	27.8	0.1	370.6	192.3	-86.6
4.7	208	0.9943	0.03263	208.7	105.67	63	27.8	0.1	370.6	192.3	-86.6
4.7	209	0.9944	0.03263	209.7	105.62	63	27.8	0.1	370.6	192.3	-86.7
4.6	210	0.9945	0.03264	210.7	105.58	63	27.8	0.1	370.6	192.3	-86.7
4.6	211	0.9946	0.03264	211.7	105.54	63	27.8	0.1	370.6	192.3	-86.8
4.6	212	0.9947	0.03265	212.7	105.50	63	27.8	0.1	370.6	192.3	-86.8
4.6	213	0.9947	0.03265	213.7	105.46	63	27.8	0.1	370.6	192.3	-86.8
4.5	214	0.9948	0.03266	214.7	105.42	63	27.8	0.1	370.6	192.3	-86.9
4.5	215	0.9949	0.03267	215.7	105.39	63	27.9	0.1	370.6	192.3	-86.9
4.5	216	0.9950	0.03267	216.7	105.35	63	27.9	0.1	370.6	192.3	-86.9
4.5	217	0.9950	0.03267	217.7	105.31	63	27.9	0.1	370.6	192.3	-87.0
4.5	218	0.9950	0.03267	218.7	105.27	63	27.9	0.1	370.6	192.3	-87.0
4.4	219	0.9950	0.03267	219.7	105.23	63	27.9	0.1	370.6	192.3	-87.1
4.4	220	0.9950	0.03267	220.7	105.19	63	27.9	0.1	370.6	192.3	-87.1
4.4	221	0.9950	0.03267	221.7	105.15	63	27.9	0.1	370.6	192.3	-87.1
4.4	222	0.9950	0.03267	222.6	105.11	63	27.9	0.1	370.6	192.3	-87.2
4.4	223	0.9950	0.03267	223.6	105.07	63	27.9	0.1	370.6	192.3	-87.2
4.3	224	0.9950	0.03267	224.6	105.03	63	27.9	0.1	370.6	192.3	-87.3
4.3	225	0.9950	0.03267	225.6	104.99	63	27.9	0.1	370.6	192.3	-87.3
4.3	226	0.9950	0.03267	226.6	104.95	63	27.9	0.1	370.6	192.3	-87.3
4.3	227	0.9950	0.03267	227.6	104.92	63	27.9	0.1	370.6	192.3	-87.4
4.3	228	0.9950	0.03267	228.6	104.88	63	27.9	0.1	370.6	192.3	-87.4
4.2	229	0.9950	0.03267	229.6	104.84	63	27.9	0.1	370.6	192.3	-87.5

Translator K220BA (204)						Protected KLMP					
Depression Angle (°)	Horz-dist (m)	V-Field at Angle	ERP (kw)	Antenna to Ground Angle Distance (m)	Signal (dBu)	ERP (kW)	Azimuth (°T)	Distance (km)	HAAT (m)	Signal (dBu)	Delta (dBu)
4.2	230	0.9951	0.03268	230.6	104.80	63	27.9	0.1	370.6	192.3	-87.5
4.2	231	0.9952	0.03268	231.6	104.77	63	27.9	0.1	370.6	192.3	-87.5
4.2	232	0.9952	0.03269	232.6	104.73	63	27.9	0.1	370.6	192.3	-87.6
4.2	233	0.9953	0.03269	233.6	104.69	63	27.9	0.1	370.6	192.3	-87.6
4.2	234	0.9954	0.03270	234.6	104.66	63	27.9	0.1	370.6	192.3	-87.6
4.1	235	0.9954	0.03270	235.6	104.62	63	27.9	0.1	370.6	192.3	-87.7
4.1	236	0.9955	0.03270	236.6	104.59	63	27.9	0.1	370.6	192.3	-87.7
4.1	237	0.9956	0.03271	237.6	104.55	63	27.9	0.1	370.6	192.3	-87.7
4.1	238	0.9957	0.03271	238.6	104.51	63	27.9	0.1	370.6	192.3	-87.8
4.1	239	0.9957	0.03272	239.6	104.48	63	27.9	0.1	370.6	192.3	-87.8
4.1	240	0.9958	0.03272	240.6	104.44	63	27.9	0.1	370.6	192.3	-87.9
4.0	241	0.9959	0.03273	241.6	104.41	63	27.9	0.1	370.6	192.3	-87.9
4.0	242	0.9959	0.03273	242.6	104.37	63	27.9	0.1	370.6	192.3	-87.9
4.0	243	0.9960	0.03274	243.6	104.34	63	27.9	0.1	370.6	192.3	-88.0
4.0	244	0.9960	0.03274	244.6	104.30	63	27.9	0.1	370.6	192.3	-88.0
4.0	245	0.9960	0.03274	245.6	104.27	63	27.9	0.1	370.6	192.3	-88.0
4.0	246	0.9960	0.03274	246.6	104.23	63	27.9	0.1	370.6	192.3	-88.1
3.9	247	0.9960	0.03274	247.6	104.20	63	27.9	0.1	370.6	192.3	-88.1
3.9	248	0.9960	0.03274	248.6	104.16	63	27.9	0.1	370.6	192.3	-88.1
3.9	249	0.9960	0.03274	249.6	104.13	63	27.9	0.1	370.6	192.3	-88.2
3.9	250	0.9960	0.03274	250.6	104.09	63	27.9	0.1	370.6	192.3	-88.2