

Valley Community Broadcasting, licensee of KAPY-LP, requests a second adjacent channel waiver for 104.5 MHz. KCMS(105.3) has a predicted signal strength at the transmitter site of 83 dBu. KLSW(104.5) has a predicted signal strength of 74 dBu and is used for this calculation since it represents worst case.

Calculation method

The KLSW 74 dBu interference contour F(50,10) was calculated by using the FCC provided HAAT calculator and the FCC FM contour calculator. HAAT was first determined for the vector extending from the KLSW transmitter site to KAPY-LP. The HAAT value was then entered into the FCC's F(50,10) prediction calculator tool along with other site parameters to determine the KLSW signal strength at the KAPY-LP location. This value is 74 dBu.

Free space pathloss is used for the calculation from the KAPY transmitter and is adjusted to take the KAPY vertical antenna pattern into account. A protection of +40 dB is used and the KAPY contour is calculated to 114 dBuV/m or $74 + 40\text{dB}$.

2nd adjacent calculation

KLSW 104.5 signal strength = 74 dBuV/m at KAPY tower
F(50,10) used for calculation

40 dB protection + 74 dBu = 114 dBuV/m interference contour

Path length free space pathloss formula used:

$$D1 = (7.01 * \sqrt{P}) / E$$

P:	90	watts EIRP
E dB:	114.34	dBuV/m
E:	0.521195	Volts/m
D1:	127.6	Meters to 117 dBuV/m at 100w (free space path length)

** At vertical angle 0 to 9 degrees below horizon:*

level => 117 dBuV/m at 117 meters from KAPY tower

KLSW file: BLED-20160509ABE

KLSW to KAPY: 32 deg 28.18 KM

KLSW HAAT @ 32deg = 415.6 M

KLSW ERP: 6.7 KW

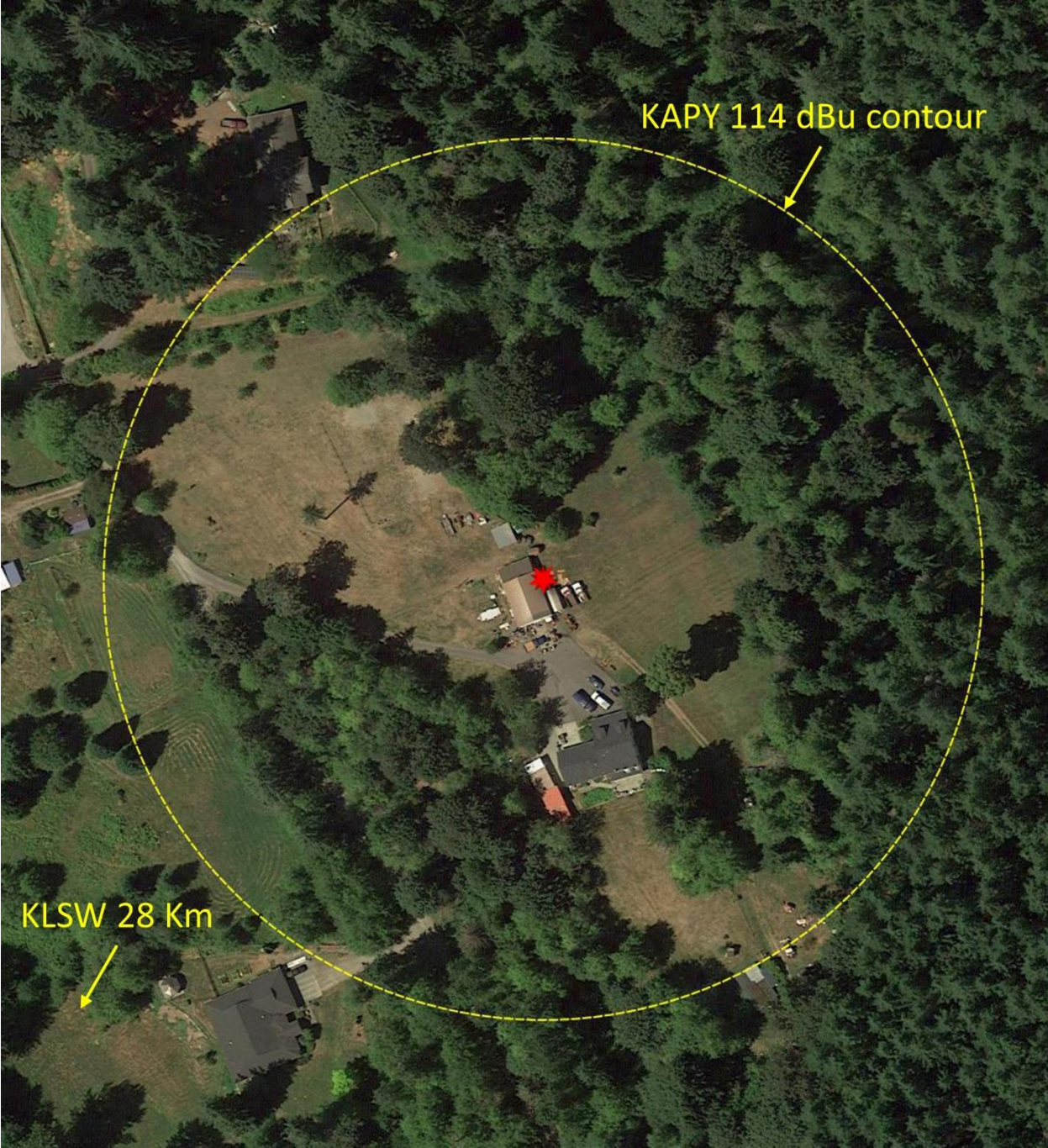
Calculated level = 74.351 dBu

Ant AGL: Meters

El angle	Jampro JLLP-1 Relative field	M adjusted	Sin(angle)	Meters radio path to ground	Meters on ground from tower	117 dBuV/m Reaches ground?
0	1	127.60	0.00			
-1	1	127.60	0.02	1031.38	1031.22	No
-2	0.999	127.47	0.03	515.77	515.45	No
-3	0.998	127.34	0.05	343.93	343.46	No
-4	0.996	127.09	0.07	258.04	257.41	No
-5	0.994	126.83	0.09	206.53	205.74	No
-6	0.9914	126.50	0.10	172.20	171.26	No
-7	0.988	126.07	0.12	147.70	146.60	No
-8	0.984	125.56	0.14	129.34	128.08	No
-9	0.98	125.04	0.16	115.06	113.65	Yes
-10	0.975	124.41	0.17	103.66	102.08	Yes
-11	0.97	123.77	0.19	94.34	92.60	Yes
-12	0.96	122.49	0.21	86.58	84.68	Yes
-13	0.96	122.49	0.22	80.02	77.97	Yes
-14	0.95	121.22	0.24	74.40	72.19	Yes
-15	0.94	119.94	0.26	69.55	67.18	Yes
-16	0.94	119.94	0.28	65.30	62.77	Yes
-17	0.93	118.66	0.29	61.57	58.88	Yes
-18	0.93	118.66	0.31	58.25	55.40	Yes
-19	0.92	117.39	0.33	55.29	52.28	Yes
-20	0.91	116.11	0.34	52.63	49.45	Yes
-21	0.9	114.84	0.36	50.23	46.89	Yes
-22	0.9	114.84	0.37	48.05	44.55	Yes
-23	0.89	113.56	0.39	46.07	42.41	Yes
-24	0.88	112.29	0.41	44.25	40.43	Yes
-25	0.88	112.29	0.42	42.59	38.60	Yes
-26	0.87	111.01	0.44	41.06	36.91	Yes

-27	0.86	109.73	0.45	39.65	35.33	Yes
-28	0.86	109.73	0.47	38.34	33.85	Yes
-29	0.85	108.46	0.48	37.13	32.47	Yes
-30	0.84	107.18	0.50	36.00	31.18	Yes
-31	0.83	105.91	0.52	34.95	29.96	Yes
-32	0.81	103.35	0.53	33.97	28.81	Yes
-33	0.8	102.08	0.54	33.05	27.72	Yes
-34	0.79	100.80	0.56	32.19	26.69	Yes
-35	0.77	98.25	0.57	31.38	25.71	Yes
-36	0.76	96.97	0.59	30.62	24.77	Yes
-37	0.75	95.70	0.60	29.91	23.89	Yes
-38	0.73	93.15	0.62	29.24	23.04	Yes
-39	0.72	91.87	0.63	28.60	22.23	Yes
-40	0.71	90.59	0.64	28.00	21.45	Yes
-41	0.7	89.32	0.66	27.44	20.71	Yes
-42	0.69	88.04	0.67	26.90	19.99	Yes
-43	0.67	85.49	0.68	26.39	19.30	Yes
-44	0.66	84.21	0.69	25.91	18.64	Yes
-45	0.65	82.94	0.71	25.46	18.00	Yes
-46	0.64	81.66	0.72	25.02	17.38	Yes
-47	0.63	80.39	0.73	24.61	16.79	Yes
-48	0.62	79.11	0.74	24.22	16.21	Yes
-49	0.61	77.83	0.75	23.85	15.65	Yes
-50	0.6	76.56	0.77	23.50	15.10	Yes
-51	0.58	74.01	0.78	23.16	14.58	Yes
-52	0.57	72.73	0.79	22.84	14.06	Yes
-53	0.55	70.18	0.80	22.54	13.56	Yes
-54	0.54	68.90	0.81	22.25	13.08	Yes
-55	0.52	66.35	0.82	21.97	12.60	Yes
-56	0.51	65.07	0.83	21.71	12.14	Yes
-57	0.49	62.52	0.84	21.46	11.69	Yes
-58	0.48	61.25	0.85	21.23	11.25	Yes
-59	0.46	58.69	0.86	21.00	10.82	Yes
-60	0.45	57.42	0.87	20.78	10.39	Yes
-61	0.43	54.87	0.87	20.58	9.98	Yes
-62	0.42	53.59	0.88	20.39	9.57	Yes
-63	0.41	52.31	0.89	20.20	9.17	Yes
-64	0.4	51.04	0.90	20.03	8.78	Yes
-65	0.38	48.49	0.91	19.86	8.39	Yes
-66	0.37	47.21	0.91	19.70	8.01	Yes
-67	0.36	45.93	0.92	19.55	7.64	Yes
-68	0.34	43.38	0.93	19.41	7.27	Yes
-69	0.33	42.11	0.93	19.28	6.91	Yes

-70	0.32	40.83	0.94	19.16	6.55	Yes
-71	0.3	38.28	0.95	19.04	6.20	Yes
-72	0.29	37.00	0.95	18.93	5.85	Yes
-73	0.27	34.45	0.96	18.82	5.50	Yes
-74	0.26	33.18	0.96	18.73	5.16	Yes
-75	0.25	31.90	0.97	18.63	4.82	Yes
-76	0.23	29.35	0.97	18.55	4.49	Yes
-77	0.22	28.07	0.97	18.47	4.16	Yes
-78	0.21	26.80	0.98	18.40	3.83	Yes
-79	0.19	24.24	0.98	18.34	3.50	Yes
-80	0.18	22.97	0.98	18.28	3.17	Yes
-81	0.17	21.69	0.99	18.22	2.85	Yes
-82	0.16	20.42	0.99	18.18	2.53	Yes
-83	0.15	19.14	0.99	18.14	2.21	Yes
-84	0.15	19.14	0.99	18.10	1.89	Yes
-85	0.14	17.86	1.00	18.07	1.57	No
-86	0.13	16.59	1.00	18.04	1.26	No
-87	0.12	15.31	1.00	18.02	0.94	No
-88	0.12	15.31	1.00	18.01	0.63	No
-89	0.11	14.04	1.00	18.00	0.31	No
-90	0.1	12.76	1.00	18.00	0.00	No



KAPY 114 dBu contour

KLSW 28 Km



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ELEVATION PLOT

