

KPEA-LP - MINOR CHANGE

SPACING

World Peace Through Technology

REFERENCE		CLASS = L1	DISPLAY DATES
37 52 17.80 N.			DATA 01-20-20
122 32 03.00 W.	Current	Spacings to 2nd Adj.	SEARCH 01-28-20
----- Channel 241 - 96.1 MHz -----			

Call		Channel	Location		Azi	Dist	FCC	Margin
*ALLO	USE	243B	San Francisco	CA	150.9	14.76	66.5	-51.7
*KOIT	LIC	243B	San Francisco	CA	151.1	14.77	66.5	-51.7
*ALLO	USE	239B	San Francisco	CA	157.2	21.90	66.5	-44.6
*KGMZ-FM	LIC	239B	San Francisco	CA	157.2	21.91	66.5	-44.6
KPEA-LP	LIC	241L1	San Francisco	CA	102.9	3.35	23.5	-20.2
**K241DC	CP -D	241D	San Francisco	CA	156.9	22.24	38.5	-16.3
KEXU-LP	CP	241L1	Oakland	CA	110.5	27.97	23.5	4.5
KEXU-LP	CP	241L1	Oakland	CA	110.5	27.97	23.5	4.5
KEXU-LP	LIC	241L1	Oakland	CA	110.5	27.97	23.5	4.5
KJTZ-LP	LIC	241L1	Alameda	CA	115.2	28.21	23.5	4.7
KACR-LP	LIC	241L1	Alameda	CA	115.2	28.21	23.5	4.7
ALLO	USE	241B	Sacramento	CA	44.9	120.63	111.5	9.1
KYMX	LIC	241B	Sacramento	CA	44.9	120.63	111.5	9.1
KSQQ	LIC	241A	Morgan Hill	CA	139.7	100.01	66.5	33.5
ALLO	USE	240A	Healdsburg	CA	337.5	91.18	55.5	35.7
KRSH	LIC	240A	Healdsburg	CA	344.1	99.77	55.5	44.3
ALLO	USE	241A	Morgan Hill	CA	136.5	113.49	66.5	47.0

All separation margins include rounding

* See Second Adj Waiver

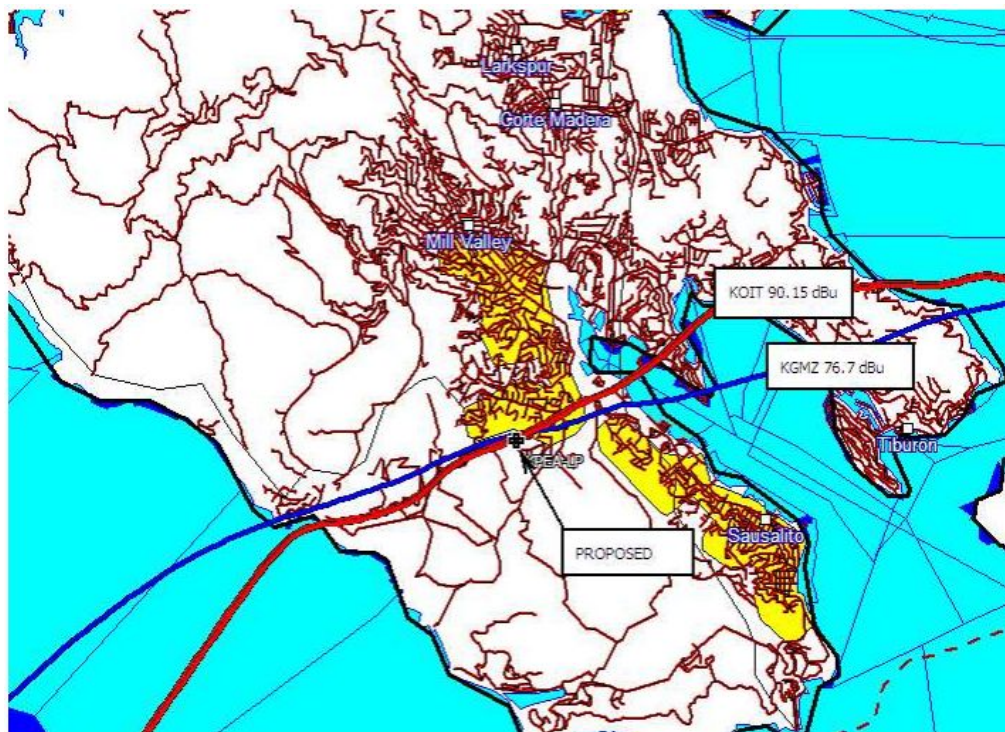
** Grandfather short-space at 20.45 km. 22.24 km > 20.45 km, passes.

3.35 km move complies with minor change rule. Site complies with TOWAIR.

REQUEST FOR SECOND ADJACENT WAIVER

License respectfully requests a "second adjacent channel waiver" with regards to Section 47 C.F.R. Section 73.807 of the FCC rules based upon the "Living Way" precedence (Living Way Ministries, Inc., Memorandum Opinion and Order, 17 FCC Red 17054, 17056, ¶ 5 (2002), recon. denied 23 FCC Red 15070 (2008)). This will be accomplished by used Free Space methodology of calculation. Using U/D methodology, at the proposed KPEA-LP transmitter location KOIT has a signal strength of 90.15 dBu and KGMZ has a signal strength of 76.7 dBu. Interference will occur when the lesser signal strength (KGMZ) interfering signal

exceeds the desired signal by 40 dbu. So the area of predicted interference would then be bounded by the 116.7 dBu contour.



HAAT Validation

Input Data

Latitude 37° 52' 17.5" North
Longitude 122° 32' 6.9" West (NAD 83)
Height of antenna radiation center above mean sea level: 145 meters AMSL
Number of Evenly Spaced Radials = 8 0° is referenced to True North

Results

Calculated HAAT = 76 meters

Antenna Height Above Average Terrain calculated
using 1 km GLOBE terrain data

Individual "Radial HAAT" Values, in meters

0°	90.1 m
45°	127.6 m
90°	133.1 m
135°	72.0 m
180°	123.6 m
225°	139.4 m
270°	123.9 m
315°	-200.9 m

At 145 m AMSL (center of radiation), the HAAT is 76 m. Maximum ERP at 76 m HAAT with 5.64 km contour 60 dBu contour is 0.0155 kW. Minimum 60 dBu contour is 4.709 km radius. At 76 m HAAT, that wattage is 0.0075 kW.

The distance to this contour, using free space method:

$D = (7.01 \cdot P^{1/2}) / E$, where P is power (watts), E is field strength (v/m), and D is distance to contour (meters):

P = 7.5 w, E = 116.7 dBu

D = 28 meters

However, the field strength of the proposed LPFM's antenna system falls quickly at depression angles below the horizon. Using elevation pattern data for Norwalk Dominator antenna, the distance to the 116.7 dBu contour at various depression angles is tabulated below. The data shows that the lowest point at which the signal strength rises to 116.7 dBu is 11.2 meters below the center of radiation of the antenna system, or 2.8 meters above the ground. Therefore, this is sufficient clearance, and the interference area encompasses zero population. The table below show that the lowest elevation point of the 116.7 dBu F(50,10) interfering contour is 2.8 meters above the ground. Site is on top of a hill on private property. Due to zero population within this radiation radius, this meets the "Living Way" Criteria to qualify for a Waiver of 47 C.F.R. Section 73.807. Thus, the applicant requests second adjacent waiver based upon evidence no interference is proposed.

MAX ERP	DEPRESSION ANGLE BELOW HORIZON	RELATIVE FIELD	dB FROM RELATIVE	ERP	ANGULAR DISTANCE TO 116.7 dBu CONTOUR	VERTICAL DISTANCE (below antenna)	HORIZONTAL DISTANCE TO 116.7 dBu CONTOUR	CLEARANCE OF CONTOUR ABOVE GROUND
7.5	5	0.989	-0.096	7.34	27.7	2.4	27.5	11.6
7.5	10	0.966	-0.300	7.00	27.1	4.7	26.6	9.3
7.5	15	0.931	-0.621	6.50	26.1	6.7	25.2	7.3
7.5	20	0.885	-1.061	5.87	24.8	8.4	23.3	5.6
7.5	25	0.829	-1.629	5.15	23.2	9.8	21	4.2
7.5	30	0.766	-2.315	4.40	21.5	10.7	18.6	3.3
7.5	35	0.687	-3.261	3.54	19.2	11	15.7	3

7.5	40	0.625	-4.082	2.93	17.5	11.2	13.4	2.8
7.5	45	0.551	-5.177	2.28	15.4	10.8	10.8	3.2
7.5	50	0.477	-6.430	1.71	13.3	10.1	8.5	3.9
7.5	55	0.406	-7.829	1.24	11.3	9.2	6.4	4.8
7.5	60	0.338	-9.422	0.86	9.4	8.1	4.7	5.9
7.5	65	0.275	-11.213	0.57	7.7	6.9	3.2	7.1
7.5	70	0.216	-13.311	0.35	6	5.6	2	8.4
7.5	75	0.161	-15.863	0.19	4.5	4.3	1.1	9.7
7.5	80	0.107	-19.412	0.09	3	2.9	0.5	11.1
7.5	85	0.051	-25.849	0.02	1.4	1.3	0.1	12.7
7.5	90	0.03	-30.458	0.01	0.8	0.7	0	13.3