

Environmental Effects

Educational Media Foundation (“EMF”) certifies that KLAG complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments.

The RF worksheet in the Instructions to form 303-S was unusable to determine compliance for this facility because of the “worst case” nature of the worksheet. Therefore, EMF used RFHAZ, a commercial software package created by V-Soft Communications, to determine compliance for this site.

According to LMS, the site is shared with several FM and TV broadcast facilities on several towers. The individual towers were treated as a single tower for the sake of simplicity. Each facility was evaluated using the RFHAZ software. The results are as follows:

Call	Channel	COR AGL Meters	ERP	EPA Antenna used	Max Controlled ($\mu\text{W}/\text{cm}^2$)	Max	% of Max Controlled
KLAG	219	27	1.4kw	ERI rototiller*	200	18.42	9.21
K203EZ	203	17	.01kw	Vertical dipole*	200	.358	.179
K212BB	212	15	.011kw	Antenna VEP Data*	200	.432	.216
KZZX	287	15	.91kw	Double V EPA Type 2*	200	41.98	20.99
K208AS	208	15	.053kw	“Ring Stub” EPA-Type 1*	200	9.47	4.735
K216EA	216	5	.01kw	Antenna VEP Data*	200	2.94	1.47
KYCM	210	15	.8	Double V EPA Type 2*	200	44.52	22.26
KNMA	240	20	2.25	Shively 6800 series*	200	17.46	8.73
KZHM	201	20	3.34kw	Vertical Dipole Type 1*	200	30.5	15.25
K24CT-D	24	21	15kw	Power Density Equation**	355	5.0	1.4
K27HP-D	27	15	.374kw	Power Density Equation**	367	0.00	-
K28HB	28	21	1.893kw	Power Density Equation**	371	1.5	-
K49FX-D	32	21	.42kw	Power Density Equation**	387	0.00	-
KAPT-LP	29	7	1.86	Power Density Equation**	375	5.57	1.49
K31GJ-D	31	12	.17	Power Density Equation**	383	.17	.05
K34CR-D	34	12	1kw	Power Density Equation**	395	1.02	.25
KKNJ-LP	36	8	1.6	Vertical Dipole Type 1	403	3.67	.91
Totals						183.01	87.14

* In the interest of simplicity, these are appropriate worst case antennas. Since the site complies using these worst case values, no more detailed evaluation was performed.

**Since the antennas are mounted at different elevations and have a different number of bays, the maximum RF levels will not fall at the same distance from the tower. However, in the interest of simplicity, the maximum values were simply added. Since the site complies using this over-simplified math, no more detailed evaluation was performed.

**Power Density Equations Per OET Bulletin 65

$S = (33.4(F2)[0.4ERP_V + ERPA]) / (R^2)$ - Television Broadcast

$S = (33.4(F2)[ERP_H + V]) / (R^2)$ - FM Broadcast

S = power density in microwatts/sq. cm ($\mu\text{W}/\text{cm}^2$)

F = relative field factor in the downward direction of interest (-60° to -90° elevation)

ERP_V - total peak visual ERP in watts

ERPA = total aural ERP in watts

ERP_H+V = horizontal and vertical ERP components for FM broadcast

R = distance above ground to center of radiation in meters

Based on this evaluation, the site is currently approximately 87% of the uncontrolled site exposure limits, therefore fully complies with the FCC's maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments.