



## ENVIRONMENTAL AND RADIO FREQUENCY SAFETY

The licensee of KATU is committed to the protection of station personnel and/or tower contractors working in the vicinity of the KATU antenna, and is committed to reducing power or ceasing operation during times of maintenance of the transmission systems, when necessary, to ensure protection to personnel.

The predicted emissions of KATU must be considered, in addition to predicted emissions from any other proposed or existing stations at the site. For KATU, which will operate on television Channel 24 (530-536 MHz), the MPE is 355.33 microwatts per centimeter squared ( $\mu\text{W}/\text{cm}^2$ ) in an “uncontrolled” environment and  $2,016.7 \mu\text{W}/\text{cm}^2$  in a “controlled” environment. The proposed KATU facility will operate with a maximum ERP of 1000 kW from an elliptically polarized non-directional transmitting antenna with a centerline height of 291 meters above ground level (AGL). Considering a conservative predicted vertical plane relative field factor of 0.300 the KATU facility is predicted to produce a power density at two meters above ground level of  $71.98 \mu\text{W}/\text{cm}^2$ , which is 20.26% of the FCC guideline value for an “uncontrolled” environment, and 4.052% of the FCC’s guideline value for “controlled” environments. There are three other full-power DTV facilities, one LPTV DTV facility, two LPFM facilities and six FM stations that are located at the KATU site. The total estimated percentage of the ANSI value at the proposed site, including the cumulative radiation from all authorizations located within the relevant proximity, is 74.68% of the limit applicable to “uncontrolled” environments, and 14.936% of the limit for “controlled” environments. (See Appendix A)

**SUMMARY OF RADIOFREQUENCY  
RADIATION STUDY**  
KATU, Portland, Oregon  
CHANNEL 24, 1000 kW ERP, 524 m HAAT  
OCTOBER, 2017

<u>CALL</u>	<u>SERVICE</u>	<u>CHANNEL</u>	<u>FREQUENCY</u>	<u>POLARIZATION</u>	<u>ANTENNA HEIGHT ** mAGL</u>	<u>ERP (kW)</u>	<u>VERT. RELATIVE FIELD FACTOR</u>	<u>PREDICTED POWER DENSITY (mW/cm<sup>2</sup>)</u>	<u>FCC UNCONTROLLED LIMIT (mW/cm<sup>2</sup>)</u>	<u>PERCENT OF UNCONTROLLED LIMIT</u>
KBVM	FM	202	88.1	H & V	203	3.500	1.000	0.00568	0.200	2.84%
KMHD	FM	206	89.1	H & V	203	7.900	1.000	0.01281	0.200	6.40%
KQAC	FM	210	89.9	H & V	204	5.900	1.000	0.00947	0.200	4.74%
K224DL	FM	224	92.7	H & V	230	0.099	1.000	0.00013	0.200	0.06%
K240CZ	FM	240	95.9	H & V	104	0.019	1.000	0.00012	0.200	0.06%
KUPL	FM	254	98.7	H & V	269	24.000	<note 1>	0.00298	0.200	1.49%
KXL-FM	FM	266	101.1	H & V	269	97.000	<note 1>	0.01206	0.200	6.03%
KINK	FM	270	101.9	H & V	269	99.000	<note 1>	0.01230	0.200	6.15%
KATU	DT	24	533	H & V	289	1000.000	0.300	0.07198	0.355	20.26%
KRCW-LP	DT	5	79	H	181.5	0.300	0.300	0.00003	0.200	0.01%
KRCW-TV	DT	33	587	H	288.6	750.000	0.300	0.02707	0.391	6.92%
KOIN	DT	25	539	H	288.6	734.000	0.300	0.02649	0.359	7.37%
KNMT	DT	32	581	H	221	777.000	0.300	0.04782	0.387	12.35%
<b>TOTAL PERCENTAGE OF ANSI VALUE=</b>										<b>74.68%</b>

*note 1: Use of the FM dipole antenna (EPA Type 1) in this instance allows for a worst-case RFR analysis*

*\*\* The antenna heights indicated above are 2 meters less than the actual antenna heights*

*so that the predicted power densities consider the 2 meter human height allowance.*

*This evaluation includes facilities collocated at the site, and facilities located within 315 meters.*