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Prepared for The University of Utah & Calvary Chapel Cedar City

# FIELD MEASUREMENTS OF RADIOFREQUENCY ELECTROMAGNETIC POWER DENSITY
# KUQU-AUX, ENOCH, UTAH &
# KCHG-AUX, CEDAR CITY, UTAH

This office was retained by The University of Utah and Cavalry Chapel Cedar City to measure the ambient radiofrequency electromagnetic field attributable to the auxiliary antenna facilities of FM stations KUQU and KCHG and to assess the stations' compliance with the Maximum Permissible Exposure ("MPE") standards for human exposure to radiofrequency electromagnetic fields as outlined in FCC Office of Engineering and Technology Bulletin 65, Edition 97-01 and 47CFR1.1310. Measurement of these fields is stipulated as conditions in BPED-20171127AAV and BPED-20190716AAW.

KUQU-Aux operates with an ERP of 18.7kilowatts, horizontally polarized, using a Jampro JFHD-4/2 (8)-R, side mounted at the 58 meter level of an existing 108 meter antenna support structure. KCHG-Aux operates with a power of 15 KW, horizontally polarized sharing the antenna used by KUQU-Aux. Both stations were operating at their full licensed powers at the time these measurements were made.

The KUQU/KCHG antenna support structure is located near the apex of Pine Springs Knoll, Iron County, Utah. The site is accessible to the general public. The point of closest approach to the antenna is directly beneath it.

Measurements were made using a Narda Model 8715 (S/N 19006) Electromagnetic Radiation Monitor coupled to E-Field Probe Model 8722 (S/N 03027), in current calibration. This probe has a frequency response that is shaped to the ANSI C95.1-1991

Occupational/Controlled MPE standard and reads directly in percent of standard. At the frequencies of interest in these measurements, the General Public/Uncontrolled MPE standard is equal to one fifth of the Occupational/Controlled MPE standard. For simplicity's sake, all radio frequency power densities are reported as percent of the General Public/Uncontrolled MPE standard in this report.

The measurement protocols outlined in ANSI/IEEE Standards C95.1-1991 and C95.3-1991 were followed. No measurements were made closer than 20 cm to conducting surfaces and all measurements were spatially averaged over a volume representing the volume occupied by an adult male.

A series of four radials centered on the tower were traversed to a distance of 100 meters or until terrain made access impractical. The highest measured radiofrequency power density was found to be 0.4% of the Occupational/Controlled MPE standard, which occurred approximately 10 meters from the base of the antenna support structure. This equates to 2.0% of the General Public/Uncontrolled MPE standard.

Because the field at all locations is well below 5% of the General Public/Uncontrolled MPE standard, the contributions of KUQU and KCHG need not be considered in any studies concerning radiofrequency radiation at the site, nor would either station be responsible for participating in any remediation efforts that might be necessitated by the operation of others.

In light of these measurements, it is my belief that the ambient radiofrequency electromagnetic field in the vicinity of the KUQU/KCHG transmitter site does not exceed either the General Public/Uncontrolled or the Occupational/Controlled MPE standards set out in 47CFR1.1310, and that KUQU and KCHG are in complete compliance with the provisions of 47CFR1.1307 as regards human exposure to radiofrequency electromagnetic fields.

I, Gray Frierson Haertig, hereby affirm that:

I have been retained by The University of Utah and Calvary Chapel Cedar City, to prepare this report and make the underlying measurements;

I am principal of Gray Frierson Haertig & Assoc.;

I have a particular interest and expertise in the measurement and assessment of radiofrequency electromagnetic fields;

This report and its underlying measurements have been prepared by myself;

All statements made herein are true to the best of my knowledge and reflect the actual facts of the matter;

I am a broadcast engineer of 54 years' experience and;

My credentials are a matter of record with the Commission.

Respectfully submitted this 24th day of October 2020,


Gray Frierson Haertig