

NON-IONIZING ELECTROMAGNETIC FIELD  
SURVEY AND RF EXPOSURE ANALYSIS

KQBI (FM)  
Encinal, TX.

July, 2013

## INTRODUCTION

Goldman Engineering Management, LLC. (“GEM”) recently surveyed the radiofrequency (RF) exposure conditions in areas surrounding the KQBI antenna site for compliance with current Federal Communications Commission (FCC) rules and guidelines regarding public exposure to RF electromagnetic fields. The survey was completed on July 1, 2013, after the installation of the new KQBI FM broadcasting facility.

On the day of the survey the weather was clear and warm, with temperatures in the low 90s. The KQBI transmitter was operating at full power. There are no other non-excluded facilities on the KQBI tower.

## SURVEY EQUIPMENT AND PROCEDURE

A NARDA model 8718B Electromagnetic Radiation Survey Meter with a model B8742D Isotropic Shaped Electric Field Probe was used during the survey to make RF exposure measurements. This meter / probe combination provides a measurement range of 0.6 to 600% of the general public standard.

The meter-and-probe combination is a broadband instrument that measures RF power densities and exposure conditions over a wide spectrum as required by IEEE Std. C95.3-2002, ***“IEEE Recommended Practice for Measurements and Computations of Radio Frequency Electromagnetic Fields With Respect to Human Exposure to Such Fields, 100 kHz-300 GHz,”*** (IEEE International Committee on Electromagnetic Safety, Standards Coordinating Committee 28 on Non-Ionizing Radiation, December 11, 2002).

The diodes in the B8742D probe are biased to operate in the square law region and provide readings proportional to the square of the measured electric field. This results in an RMS depiction of the RF exposure from multiple sources of emission. The isotropic response of the NARDA B8742D probe is +/-0.75dB.

Procedures outlined in *OET BULLETIN 65, Edition 97-01, August 1997*, *“Evaluating Compliance With FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields,”* August 1997, and *IEEE Std. C95.3-2002* (cited earlier), and *NCRP Report No. 119, “A Practical Guide to the Determination of Human Exposure to Radiofrequency Fields”* were used for the survey at the site.

The site was scanned with the measurement probe over an area equivalent to that of the human body (one meter by two meters) to find the location of the highest exposure conditions. Spatially-averaged measurements were made at the locations of the highest peak exposure conditions.

#### **RESULTS OF THE MEASUREMENT SURVEY**

The highest spatially averaged measured exposure condition was 54% of the FCC Public MPE limit of  $200 \mu\text{W}/\text{cm}^2$ . This measurement was directly underneath the KQBI antenna. All other measured locations less than 40% of the FCC Public MPE limit.

**The results of the survey indicate that there are no excessive public RF exposure conditions in the area surrounding the KQBI antenna. Thus the transmitting facility for KQBI does not have a significant environmental impact, as defined by the FCC Public MPE limits.**

Signed,

A handwritten signature in dark ink, appearing to read 'Bertram Goldman', with a stylized, flowing script.

Bertram Goldman  
Goldman Engineering Mgmt.  
7219 Highland Heather Lane  
Dallas, TX. 75248