

**WPBQ ENGINEERING STA**

WPBQ ENGINEERING STA FOR DIGITAL

POWER INCREASE (-10 DBC)

*KINGSLAND, GEORGIA*

*(GEORGIA PUBLIC TELECOMMUNICATIONS COMMISSION)*

**ENGINEERING TECHNICAL STATEMENT PREPARED BY WILLIAM T. GODFREY, JR.  
OF THE FIRM KESSLER AND GEHMAN ASSOCIATES, INC., TELECOMMUNICATIONS  
CONSULTING ENGINEERS IN CONNECTION WITH A REQUEST FOR SPECIAL  
TEMPORARY AUTHORITY (STA) FOR DIGITAL RADIO OPERATION AT INCREASED  
POWER LEVEL FOR THE WPBQ CHANNEL 212 (90.3 MHZ) FULL-SERVICE, NCE-FM  
FACILITY SERVING KINGSLAND, GA (FILE NO. 0000206818 / FACILITY ID 765572).**

The firm Kessler and Gehman Associates, Inc. (KGA) was retained by Georgia Public Telecommunications Commission (GPTC), licensee of noncommercial educational radio station WPBQ, Kingsland, GA, to prepare engineering studies and the engineering portion of a Special Temporary Authority (STA) respectfully requesting to operate with an increased digital power in excess of -14 dBc pursuant to the FCC Order *In the Matter of Digital Audio Broadcasting Systems And Their Impact on the Terrestrial Radio Broadcast Service*, MM Docket No. 99-325, DA 10-208, released January 29, 2010 (“Order”). GPTC hereby requests authorization to increase the WPBQ FM digital power level to -10 dBc on its upper and lower sidebands (symmetrical) pursuant to paragraphs 17 through 20 of the Order.

**REQUESTED DIGITAL PARAMETERS**

- Digital power requested:
  - 10% of analog ERP (10 dB below analog ERP, i.e., -10 dBc)
  - See attached showings (Exhibits 1 and 2)
  - Super-Powered Status: N/A
- Technical point of Contact (in the event of interference problem):
  - Chris Allen
  - Director of Field Engineering
  - 770-543-8915
  - [callen@gpb.org](mailto:callen@gpb.org)
- Analog, Digital & Combined Transmitter :
  - Low-level combined

- Analog, Digital & Combined Transmitter Power Outputs (TPO):

Analog TPO: 3.10 kW

Digital TPO: 0.31 kW

Combined TPO: 3.41 kW

- Technical Specifications Compliance:

Applicant certifies that, with the exception of the digital power level requested, the proposed digital operation will comply with the technical specifications set forth in Appendix B of the First Report and Order in MM Docket No. 99-325.

### **PROTECTION OF 1<sup>ST</sup>-ADJACENT STATION'S 60 DBU CONTOURS**

Pursuant to the "Order", a licensee desiring FM Digital ERP in excess of -14 dBc is required to calculate the station's analog F(50,10) field strength at all points on the protected 60 dBu F(50,50) contour of a potentially affected first-adjacent channel analog FM station. This calculation must be done using the station's licensed analog facilities and the standard FCC contour prediction methodology. Once the most restrictive analog F(50,10) field strength of the proponent station has been determined, the licensee will use the following table to determine the proponent station's maximum permissible FM Digital ERP:

Proponent Analog F(50,10) Field Strength at Protected Analog 60 dBu F(50,50) Contour	Maximum Permissible FM Digital ERP
51.2 dBμ and above	-14 dBc
50.7 dBμ - 51.1 dBμ	-13 dBc
50.3 dBμ - 50.6 dBμ	-12 dBc
49.6 dBμ - 50.2 dBμ	-11 dBc
49.5 dBμ or less	-10 dBc

Exhibits 1 and 2 demonstrate that the proposed WPBQ F(50,10) 49.5 dBu interfering contour will not have prohibited contour overlap with any surrounding licensed or authorized 1<sup>st</sup>-adjacent channel F(50,50) 60.0 dBu protected contour. Exhibit 1 is a spacing study which

identifies the licensed and authorized 1<sup>st</sup>-adjacent channel stations that could potentially be affected and Exhibit 2 is a contour study which plots all the potentially affected 1st-adjacent channel station's F(50,50) 60 dBu protected contour (green contours) and the proposed hybrid facility's F(50,10) 49.5 dBu contour (red contour). Referring to Exhibit 2, it can be seen that the proposed hybrid facility's F(50,10) 49.5 dBu contour does not overlap any potentially affected 1st-adjacent channel station's F(50,50) 60 dBu protected contour in any azimuthal direction. Therefore, since the most restrictive F(50,10) 49.5 dBu interfering contour for the proposed hybrid facility does not cause prohibited overlap with any licensed or authorized 1<sup>st</sup>-adjacent station, it has been established using the approved expeditious "go-no go" mechanism in the "Order" that the proposed facility qualifies to operate with a digital power level of -10 dBc.

### **ENVIRONMENTAL IMPACT**

The proposed WPBQ Channel 212 (90.3 MHz) full-service FM broadcast station operating with an increased digital power level of -10 dBc will have no significant environmental impact as defined in §1.1307 of the FCC Rules. The proposed hybrid facility shall operate with an analog ERP of 8.7 kW (circular polarization) and a digital ERP of 0.87 kW. With the proposed 3-bay full-wavelength spaced antenna designed for 90.3 MHz and an antenna height radiation center of 396 ft AGL at the proposed transmitter site (ASRN 1234856), it was determined that the maximum lobe of radiation will occur at 199.2 feet from the base of the tower (438.8 ft radial distance from the antenna center). At 199.2 feet from the base of the tower, the depression angle of the main lobe will be approximately 63° below the horizontal. At that point, the relative field will be 0.370 and the power density six feet above the ground will be 0.00489 mW/cm<sup>2</sup>. This equates to only 0.49% of the Maximum Permissible Exposure (MPE) limits for Occupational/Controlled Exposure and only 2.45% of the MPE limits for General Population/Uncontrolled Exposure authorized by the American National Standards Institute (ANSI). Since operation of the proposed WPBQ Channel 212 (90.3 MHz) full-service broadcast facility will not exceed 5.0% of the MPE limit for Occupational/Controlled Exposure or General Population/Uncontrolled Exposure at any point on the ground, the proposed hybrid facility is not considered a "significant contributor" to the RF exposure environment

pursuant to OET Bulletin 65, Edition 97-01. Therefore, contributions of exposure from other sources were not accounted for in this analysis. It is safe to conclude that the emissions would be insignificant and well within the maximum allowable requirements.

If other antennas are placed on the tower in the future, the licensee will cooperate with those users by reducing or completely terminating the power to the antenna when maintenance workers are in danger from the electromagnetic radiation emanating from the antenna. It is also understood that additional antennas on the support structure could increase the overall RF exposure levels and it is the responsibility of each licensee to ensure that the total RF exposure resulting from the operation of all antennas on the support structure do not exceed the MPE level at any point on the ground.

#### **CERTIFICATION**

This engineering technical statement was prepared by William T. Godfrey, Jr., with the professional firm Kessler and Gehman Associates, Inc., Telecommunications Consulting Engineers having offices in Gainesville, Florida, and has been working with the firm in the field of television and radio broadcast consulting since 1998 and his qualifications are a matter of record with the Federal Communications Commission. Mr. Godfrey is a Graduate from the University of North Florida and a Distinguished Military Graduate from the University of Florida. As a Professional in the field of Telecommunications he states under penalty of perjury that the information contained in this report is true and correct to the best of his knowledge and belief.

A handwritten signature in blue ink that reads 'William T. Godfrey, Jr.'.

WILLIAM T. GODFREY, JR., CBT  
Kessler and Gehman Associates, Inc.  
Consulting Engineers

February 2, 2023