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# *RF Appendix 1*

## *Compliance with Radiofrequency Radiation Guidelines*

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**Explanation of Study.** The proposed facility complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments as set forth under §1.1310 of the Commission's rules and the guidelines for RF radiation protection as set forth in OET Bulletin No. 65 (Edition 97-01), and the accompanying Supplement A, (Edition 97-01). The site is intended to house multiple transmitters.

Concerning FM contributions, the potential for human exposure to non-ionizing radiofrequency radiation has been evaluated with regard to §1.1310 utilizing the Commission's own *FM Model* web-based software application. The use and implementation of this FCC sanctioned software is a matter of record before the Commission. To ensure complete protection, each maximum FM contribution has been assumed without regard to any restricted access fencing distance. The maximum permissible uncontrolled limit for FM stations is  $200 \mu\text{W}/\text{cm}^2$ . The maximum permissible controlled limit is  $1000 \mu\text{W}/\text{cm}^2$ . Therefore, sum contributions of  $\leq 200 \mu\text{W}/\text{cm}^2$  remain within the tolerances as allowed by §1.1310 and its governing OET Bulletin No. 65 (Edition 97-01) for the more restrictive of these two protections.

**Summary of Stations.** The proposed W298CA.P - Greenfield, MA analog FM Translator (Facility ID: 25008) will operate on CH298D (107.5 MHz) with 0.250 kW ERP (Vertical Only Polarization). The proposed operation will broadcast from an antenna COR mounted 69 meters above ground level (AGL). The facility will operate with a one-bay, Scala CL-FM(V)-1DA log periodic antenna employing an EPA Type 1 element as defined by the Commission's own FM Model - Appendix B (issued March 31, 2016). This facility will not operate with HD/IBOC facilities at this time.

The proposed WPVQ(FM).P - Greenfield, MA analog FM Station (Facility ID: 54780) will operate on CH237A (95.3 MHz) with 0.610 kW ERP circular polarization (H&V). This facility will operate with an antenna COR mounted 79 meters above ground level (AGL). This facility employs a two bay, Jampro JMPC-2R-RFR "Penetrator" antenna, employing EPA Type 2 "Opposed V Dipole" elements as defined by the Commission's own FM Model - Appendix B (issued March 31, 2016). The antenna elements are spaced 0.5 wavelength ( $\lambda$ ) apart. WPVQ(FM).P will operate with HD/IBOC facilities identified as -12 dBc power (0.038 kW ERP) circular polarization (H&V) (or  $\text{Log}[0.063]*10 = -12 \text{ dBc}$ ) from the main antenna mounted 79 meters AGL. Therefore, a combined power of 0.648 kW (H&V) has been assumed for this contribution.

The results of the evaluation for each FM station have been shown at the end of this RF compliance discussion.

The facility is, or will be, properly marked with signs. Entry is, or will be, restricted by means of fencing with locked doors or gates. Furthermore, coordination with other users of the site will be secured to reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic fields in excess of FCC guidelines.

**Results of Study.** The sum of each individual contribution, as a percentage of its each maximum permissible uncontrolled limit, has been provided below. As the resulting sum contribution is less than 100%, the combined exposure has been calculated to be within the guidelines of OET Bulletin No. 65 (Edition 97-01) for the more restrictive uncontrolled environment, as defined by locations accessible by the general public.

# RF Appendix 1

## Compliance with Radiofrequency Radiation Guidelines 2

<u>Contributing Station</u>	<u>Maximum Contribution</u>	<u>Individual Uncontrolled Limit</u>	<u>Percent of Individual Uncontrolled Limit</u>
W298CA,P (analog)	1.773 $\mu\text{W}/\text{cm}^2$	200 $\mu\text{W}/\text{cm}^2$	0.89%
WPVQ(FM).P (analog & HD)	0.768 $\mu\text{W}/\text{cm}^2$	200 $\mu\text{W}/\text{cm}^2$	0.38%
<b>Total of uncontrolled Limit:</b>			<b>1.27%</b>

As the sum exposure is less than 100% for the uncontrolled environment, the operation of the combined transmitting plants is in compliance with the provisions of OET Bulletin No. 65 (Edition 97-01). As stated before, protection of the uncontrolled environment implies protection of the controlled environment. There are no other broadcast sources of radiofrequency non-ionizing radiation present at this site.

The results of the evaluation for each station have been shown at the end of this RF compliance discussion. As stated before, the facility is, or will be, properly marked with signs. Entry is, or will be, restricted by means of fencing with locked doors or gates. Furthermore, coordination with other users of the site will be secured to reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic fields in excess of FCC guidelines.

