
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 guidelines as set forth in OET Bulletin No. 65 (Edition 97-01), and the accompanying Supplement A, (Edition 97-01) for all sources of RF radiation within 315 meters of this multiple use transmitter site.

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, total site 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 W232BW.P - Amherst, MA analog FM Translator (Facility ID: 84372) will operate on CH232D (94.3 MHz) with 0.250 kW ERP circular polarization (H&V). This facility will be diplexed with a proposed W268CZ.P - Northampton, MA analog FM Translator (Facility ID: 200012) which will operate on CH268D (101.5 MHz) with 0.175 kW ERP circular polarization (H&V). Separate horizontal and vertical elements will be employed. The common antenna COR is mounted 27 meters above ground level (AGL) for the horizontal element and 24 meters above ground level (AGL) for the vertical element. For purposes of this RF Compliance Study, a worst case one bay EPA Type 1 element as defined by the Commission's own FM Model - Appendix B (issued March 31, 2016) has been assumed with the combined power of 0.425 kW from the lower 24 meter AGL element. Neither facility will operate with HD/IBOC facilities at this time.

The licensed WFCR(FM).L - Amherst, MA analog FM Station (Facility ID: 69304) operates on CH203B (88.5 MHz) with 13.0 kW ERP circular polarization (H&V). The facility broadcasts from an antenna COR mounted 101 meters above ground level (AGL). For purpose of this RF Compliance Study, a worst case EPA Type 1 element as defined by the Commission's own FM Model - Appendix B (issued March 31, 2016) has been assumed. WFCR(FM).L operates with HD/IBOC facilities as outlined under BDNE-20041015AEQ. CDBS records do not indicate an operational HD/IBOC power, therefore -10 dBc power (1.3 kW ERP) circular polarization (H&V) (or $\text{Log}[0.1] \times 10 = -10 \text{ dBc}$) has been assumed from the main antenna mounted 101 meters AGL. Therefore, a combined power of 14.3 kW (H&V) has been assumed for this contribution.

The licensed WAMH(FM).L - Amherst, MA analog FM Station (Facility ID: 68222) operates on CH207A (89.3 MHz) with 0.130 kW ERP circular polarization (H&V). The facility broadcasts from an antenna COR mounted 38 meters above ground level (AGL). For purpose of this RF Compliance Study, a worst case EPA Type 1 element as defined by the Commission's own FM Model - Appendix B (issued March 31, 2016) has been assumed. This facility does not operate with HD/IBOC facilities at this time.

The results of the evaluation for each FM station have been shown at the end of this RF compliance discussion. To ensure complete protection, the maximum FM contribution has been assumed without regard to any restricted access fencing distance. In addition, 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 contribution(s) as a whole is less than 100% of 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.

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Contributing Station	Maximum Contribution	Individual Uncontrolled Limit	Percent of Individual Uncontrolled Limit
W232BW.P/W268CZ.P (analog)	35.309 $\mu\text{W}/\text{cm}^2$	200 $\mu\text{W}/\text{cm}^2$	17.65%
WFCR(FM).L (analog & digital)	58.669 $\mu\text{W}/\text{cm}^2$	200 $\mu\text{W}/\text{cm}^2$	29.33%
WAMH(FM).L (analog)	4.033 $\mu\text{W}/\text{cm}^2$	200 $\mu\text{W}/\text{cm}^2$	2.02%
Total of uncontrolled Limit:			49.00%

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.

