Engineering Report
Exhibit 12 Page 1
W224CW, Franklin Township, NJ
Minor Change to top of tower
March 2016

This application is to relocate the W224CW antenna to the top of the authorized structure to permit pole mounting, as it was difficult to fabricate a directional antenna meeting specifications on the large cross section tower at the previously authorized height. The translator power has been decreased to compensate for the greater height, and the directional antenna modified, as well as reducing the number of bays needed to provide second/third channel protection.
This exhibit shows compliance with FCC Rules and Regulations § 74.1204. This rule requires that FM Translators cause no interference to FM Broadcast Stations and Existing FM Translator Stations. This is established by showing that there is no overlap between the service contours of protected stations and the potentially interfering contours of the proposed translator.

Interference Analysis
Co-Channel allocations are shown in Exhibit 13 Figure 1. This map shows the 60 dbμV F(50,50) contours of CoChannel Class A stations WQBU-FM, Garden City, NY; WOBM-FM Toms River,NJ; WRRV Middletown, NY. The proposed 40 dbμV F(50,10) contour and the 60 dbμV F(50,50) contours of these stations do not overlap.

The 60 dbμV F(50,50) and 40 dbμV F(50,10) contours of FM translator W224AS Washington, NJ; W224AU Allentown, PA and Boosters WQBU-FM1 New York, NY and WQBU-FM2 Brooklyn, NY are also shown. The proposed 40 dbμV F(50,10) and the 60 dbμV F(50,50) of the proposal and these stations do not overlap.

Figure 2 shows first adjacent stations. The F(50,50) 54 dbμV contour of first Adjacent channel station WXTU, Philadelphia, PA is shown in orange, along with the proposed F(50,10) 48 dbμV contour, showing no overlap.

There are no other cochannel or first adjacent channel stations with possible channel allocations consideration.

Second and Third Adjacent channel allocations are also shown in Exhibit 13 Figure 3. There are two second adjacent channel stations in the vicinity, The translator is located within the

protected 54 dbμV F(50,50) contours of class B stations WPAT-FM Paterson, NJ, and WBMP, New York, NY. It is well removed from the third adjacent channel WMMR, Philadelphia, PA 54 dbμV F(50,50) contour.

In a letter granting Jersey Shore Broadcasting Corporation's application BPFT-950830TD (September 26, 1996 1800B3-JDB) the FCC stated that the Ratio method is suitable for translator applicants to demonstrate lack of interference for application purposes.

The 54 dbμV F(50,50) contour of both WPAT-FM and WBMP (dark blue) is shown extending well beyond the proposed facility, the WPAT-FM 62 dbμV F(50,50) contour and the WBMP 60.5 dbμV F(50,50) contour is shown in light blue, extending beyond the W224CW transmitter site. The second and third adjacent channel protection ratio is 40 db, so it is required that the 60.5 dbμV contour of WBMP be protected from the proposed 100.5 dbμV (aqua) contour of the translator.

Since the distance to this contour is below the minimum distances for the F(50,10) and F(50,50) curves the signal level existing on the ground in the vicinity of the translator was calculated using inverse distance, with an adjustment for ground reflections, as has been accepted by the FCC in recent applications. Exhibit 13 Figure 4 is a tabulation and chart of these calculations showing the location above ground at which the proposed W224CW will produce an interfering contour. This table and chart shows that there is no location where this signal reaches within 2 meters of the ground.

Exhibit 13 Figure 3B is a satellite photograph showing the translator tower location, and its surroundings. The area in the vicinity of W224CW contains no multi-story buildings.

Class B station WKTU, Lake Success, NY is the closest IF spaced station. It is 51.1 km distant from the proposed translator location, well in excess of the spacing requirement of 16 km of Section 73.207 of the rules.

In conclusion, the proposed translator meets all the overlap requirements of § 74.1204 of the FCC rules and regulations.

Fill In Translator

W224CW proposes to serve as a fill in translator for WPRB, Princeton NJ and meets the requirements of §74.1235(b). Exhibit 10 is a map showing the service contour of WPRB encompasses the 60 dbμV contour of W224CW as proposed.

Engineer's Statement

This is to certify that this report has been prepared by myself. It is correct and accurate of my own knowledge, except were stated otherwise, and where that is so, the information is correct to the best of my knowledge and belief.

I further certify that I am a Licensed Professional Engineer in the State of New Jersey, and the Commonwealth of Pennsylvania with a BSEE degree from the Newark College of Engineering of NJIT, and that I am, and have been for over thirty years, regularly engaged in the practice of radio engineering with the firm of Radiotechniques Engineering, LLC, with offices at 402 Tenth Avenue, Haddon Heights, NJ. I am a member of the AFCCE, Senior member of the IEEE and SBE and hold a FCC General Radiotelephone Operator License. My qualifications are a matter of record with the FCC.

17 March 2016

Edward A. Schober, PE