

## EXHIBIT 12 (Rev. B)

### Interference Considerations

#### Introduction

The operation of the proposed FM translator conforms with the requirements of Section 74.1204 of the Commission's Rules for a Class D station on Channel 227 with respect to overlap of predicted contours with the licensed operation of any FM station, LPFM station or FM translator, and the operation of any such facilities specified in a construction permit or pending application, on the same channel, the first adjacent channels, and the third adjacent channels, as shown in this Exhibit. The proposed FM translator site is located within the predicted protected contours of one existing station and one pending application on second adjacent channels. This Exhibit also demonstrates that, under Section 74.1204(d) of the Rules, no objectionable interference will be caused to either of these stations. The proposed FM translator therefore would not result in objectionable interference to any station.

#### Description of Composite Directional Antenna Array

The antenna system for the proposed FM translator is a composite antenna array comprised of two Scala Model CA2-FM/CP Antennas mounted in a vertical line and spaced 0.5 wavelength between antennas, with both antennas oriented in the same direction in the horizontal plane. The Scala CA2-FM/CP Antenna is a circularly polarized two-element yagi antenna. The antenna array will be side-mounted on an existing tower, with the radiation center of the array located 122 meters above ground.

Table A of this Exhibit shows the relative vertical angle radiation of the composite antenna array, for the main lobe of radiation in the horizontal plane. Data for Table A was provided by the antenna manufacturer, Kathrein Inc., Scala Division, Medford, Oregon. The horizontal plane radiation pattern for the composite antenna array is the same as that for a single Scala Model CA2-FM/CP Antenna.

#### Allocation Study

A detailed allocation study shows that the proposed FM translator conforms with the requirements of Section 74.1204 of the Commission's Rules.

Figure 1 of this Exhibit shows the pertinent predicted contours for the proposed FM translator and the nearby co-channel FM allotment.

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There are no nearby FM stations, LPFM stations or FM translators on the first adjacent channels that require consideration with respect to overlap of contours with the proposed FM translator.

Figure 2 of this Exhibit depicts the location of the proposed FM translator site with respect to the predicted protected contours of the nearby FM stations and the pending application on the second and third adjacent channels. As shown in Figure 2, the proposed site is located within the 60 dBu F(50,50) contours of Class C station WEZF(FM), Burlington, Vermont, on Channel 225C; and the pending application, File Number BPH-20030429AAE, of Class C3 station WXAL-FM, Addison Vermont, on Channel 229C3.

The potential for interference from the proposed FM translator to WEZF(FM) and the proposed operation of WXAL-FM was evaluated by determining the three-dimensional volume about the translator antenna array in which the ratio of undesired to desired signal between the proposed translator and each of these stations equals or exceeds 40 dB, using free space propagation calculations for the translator signal.

With respect to WEZF(FM), the predicted F(50,50) signal of WEZF(FM) at the proposed FM translator site is 87.5 dBu and, to a very close approximation, interference to WEZF(FM) would occur where the translator signal is greater than 127.5 dBu (2370 mV/m). For the proposed operation of WXAL-FM, the predicted F(50,50) signal of WXAL-FM at the proposed translator site is 66.2 dBu and, again to a very close approximation, interference to the proposed operation of WXAL-FM would occur where the translator signal is greater than 106.2 dBu (204 mV/m).

Computations show that radiation from the proposed antenna array would produce a signal of 106.2 dBu at a maximum horizontal distance of 242 meters from the array. As a result of the height of the proposed antenna array above ground and the vertical radiation pattern of the array, signal levels of 106.2 dBu or greater would be developed only at heights of 40 meters or more above ground.

Figure 3 of this Exhibit is a topographic map that shows the area in the vicinity of the proposed FM translator site. The area in the vicinity of the proposed site is vacant land; there are no tall buildings in the area. This application conforms with the requirements of Section 74.1204(d) of the Commission's Rules, as the volume within which interference may be expected does not include any populated areas or any streets and highways, and the proposed FM translator would therefore not result in objectionable interference to either WEZF(FM) or the proposed operation of WXAL-FM.

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The predicted contours shown in this Exhibit were determined in accordance with the requirements of Section 73.313 of the Commission's Rules, from computerized calculations based on the NGDC 30-second terrain database, and Figures 1 and 1a of Section 73.333 of the Rules. Distances to the contours were calculated at azimuthal increments of five degrees.

Fred W. Volken  
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Sierra Madre, California

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TABLE A

Relative Vertical Plane Radiation  
for Composite Antenna Array

Description of composite antenna array:

Two Scala Model CA2-FM/CP Antennas oriented to same azimuth with vertical spacing of 0.5 wavelength

Vertical angle (degrees)	Relative radiation
0	1.000
-5	0.981
-10	0.943
-15	0.875
-20	0.790
-25	0.690
-30	0.586
-35	0.479
-40	0.380
-45	0.287
-50	0.205
-55	0.136
-60	0.081
-65	0.043
-70	0.018
-75	0.010
-80	0.010
-85	0.010
-90	0.010