

## **Non-Interference Compliance**

Regarding Facility id 151707

Channel 286

### **Description of Exhibit 13 Contents**

This exhibit demonstrates that the proposed facility complies with contour overlap and interference protection provisions in all of the applicable rule sections and that this application for a construction permit is in full compliance with 47 C.F.R. § 74.1204.

**Let it be noted that should any actual real world interference occur, the applicant acknowledges that it will promptly suspend operation of this translator in accordance with 47 C.F.R. § 74.1203.**

Page 2 of this exhibit is an explanation of the method used to demonstrate compliance with contour overlap and interference provisions based on 47 C.F.R. § 74.1204(d), which states:

*[A]n application otherwise precluded by this section will be accepted if it can be demonstrated that no actual interference will occur due to intervening terrain, lack of population or such other factors as may be applicable.*

Page 3 contains a tabulation of the vertical radiation pattern of the proposed antenna and the minimum ground clearance of the interfering contour based on this pattern.

Pages 4 through 5 include a tabulation of the vertical radiation pattern for the proposed antenna provided by the antenna manufacturer.

Page 6 of this exhibit contains the tabulated data from the interference analysis, which shows all stations whose protected contours come within 50 km of the 34 dBμ F(50,10) contour of the proposed translator. These tabulated values were calculated using data from the FCC's CDBS files and 30 arc second terrain data. The column labeled "Adj" shows the number of channels difference between the entry and the proposed translator. The column labeled "Dist" shows the distance in km. The column labeled "Overlap" shows the area of contour overlap in square kilometers.

Page 7 of this exhibit is a portion of a USGS 1:24,000 scale 7.5 minute quadrangle at full scale with the calculated area of interference overlaid. The sheet includes the quadrangle name and measurement scale at the bottom-left corner (note: "Mt" refers to meters). The area of interference was calculated using the free space equation and 120 radials.

Page 8 of this exhibit is an aerial photo of the vicinity surrounding the proposed translator's tower site.

**Note: The tallest buildings within the zone of predicted interference are 20ft (6.1m) or less. This proposal provides 11.8m (38.7ft) of ground clearance so a lack of population has been demonstrated within the area of interference and this application is therefore in full compliance with 47 C.F.R. § 74.1204.**

### Compliance with 47 C.F.R. § 74.1204(d)

All authorized second and third adjacent stations with which the proposed translator has contour overlap are tabulated below. Column four show the station's signal level at the proposed translator's tower site, and column five gives the minimum value within the entire standard interfering contour of the proposed translator (100 dBμ for most classes, 94 for class B, 97 for class B1). The minimum second or third adjacent F(50,50) contour within the proposed translator's standard interfering contour was used to calculate the proposed translator's actual "worst-case" interfering contour.

Application_id	File Number	Callsign	Contour at Tower	Min. Contour
1158031	BMLH20061114ABQ	KIKX	62	62
Minimum F(50,50) Contour of Adjacent Station within Proposed Translator's Standard Interfering Contour				<b>62</b>

FCC 02-244 at Section II.A.5 states that "when demonstrating that 'no actual interference will occur due to . . . other factors,' pursuant to Section 74.1204(d), an applicant may use the undesired-to-desired signal ratio method." The undesired-to-desired ratio for second and third adjacent stations required by § 74.1204(a) is 40 dB. Since the minimum protected contour strength within the proposed translator's standard interference contour is **62 dBμ**, this makes the proposed translator's worst-case interfering contour **102 dBμ**. By the free-space equation, this contour is calculated to extend a maximum of **881 m** from the transmit antenna.

The maximum horizontal plane of the interfering contour was calculated for 120 radials and plotted on the pertinent portion of a USGS quadrangle (page 7 of this exhibit). However, the field strength of the proposed translator's antenna varies with angle of depression from horizontal. The antenna relative fields are tabulated on the following page at 5 degree increments, starting at 5 degrees below horizontal. Antenna relative field strength data was provided and certified by the manufacturer of the proposed antenna. Using a free-space calculation that neglects any loss due to reflection, the vertical ground clearance of the proposed translator's interference contour has been tabulated. As shown on the following page, the area of interference clears the tower ground level (TGL) by **11.8 m** at the lowest point. The applicant has taken into account USGS quadrangles and relevant aerial photography in stating that no structures, except possibly tower support structures, puncture the area of interference.

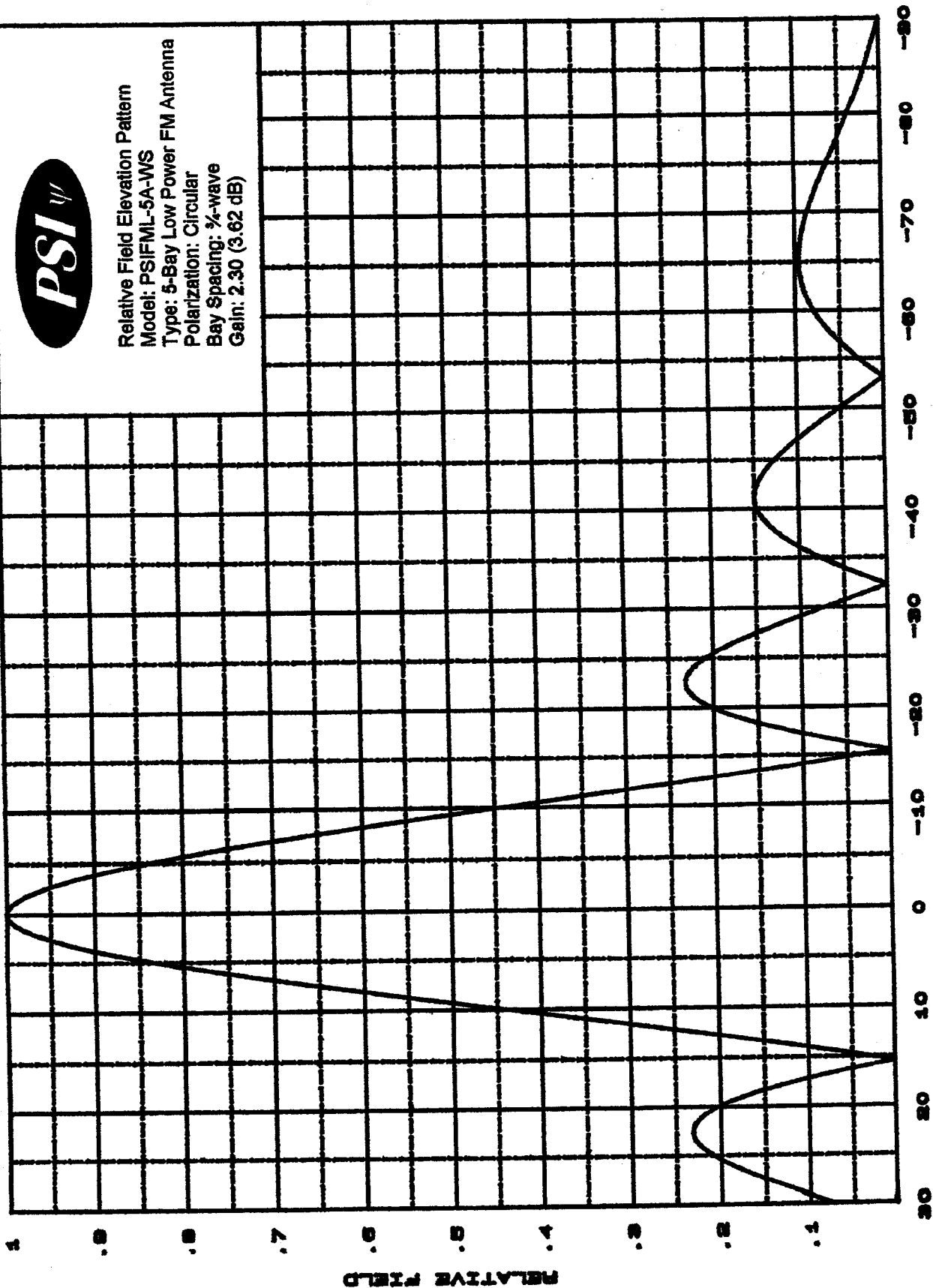
**Note: The tallest buildings within the zone of predicted interference are 20ft (6.1m) or less. This proposal provides 11.8m (38.7ft) of ground clearance so a lack of population has been demonstrated within the area of interference and this application is therefore in full compliance with 47 C.F.R. § 74.1204.**

<b>Antenna Manufacturer:</b>	<b>PSI</b>
<b>Antenna Model:</b>	<b>FML-5(.75)</b>
<b>CORAGL:</b>	<b>95 m</b>
<b>Maximum ERP:</b>	<b>0.25 kW</b>
<b>Interfering Contour:</b>	<b>102 dBμ</b>
<b>Max Int. Contour Distance:</b>	<b>881 m</b>
<b>Min Ground Clearance:</b>	<b>11.8 m</b>

Depression Angle Below Horizontal	Antenna Relative Field	ERP (watts)	Distance to Interfering Contour from Antenna (m)	Horizontal Distance of Interfering Contour from Tower (m)	Vertical Clearance of Interfering Contour above TGL (m)
5	.836	174.7	736.5	733.7	30.8
10	.440	48.4	387.6	381.7	27.7
15	.031	0.2	27.3	26.4	87.9
20	.202	10.2	178.0	167.2	34.1
25	.208	10.8	183.2	166.1	17.6
30	.071	1.3	62.6	54.2	63.7
35	.077	1.5	67.8	55.6	56.1
40	.147	5.4	129.5	99.2	11.8
45	.128	4.1	112.8	79.7	15.3
50	.051	0.7	44.9	28.9	60.6
55	.028	0.2	24.7	14.1	74.8
60	.079	1.6	69.6	34.8	34.7
65	.095	2.3	83.7	35.4	19.1
70	.085	1.8	74.9	25.6	24.6
75	.063	1.0	55.5	14.4	41.4
80	.039	0.4	34.4	6.0	61.2
85	.018	0.1	15.9	1.4	79.2
90	.001	0.0	0.9	0.0	94.1
Minimum Clearance above TGL:					<b>11.8 m</b>



Relative Field Elevation Pattern  
Model: PSIFML-5A-WS  
Type: 5-Bay Low Power FM Antenna  
Polarization: Circular  
Bay Spacing:  $\frac{1}{4}$ -wave  
Gain: 2.30 (3.62 dB)



DEGREES BELOW HORIZONTAL



Propagation Systems Inc.  
Elevation Pattern Tabulation  
Antenna: PSIFML-5 Special  
Bay spacing: 3/4 wave

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-90.0	0.001	-80.000	-50.0	0.051	-25.838	-10.0	0.440	-7.134
-89.0	0.003	-49.156	-49.0	0.068	-23.365	-9.0	0.528	-5.552
-88.0	0.007	-43.136	-48.0	0.084	-21.505	-8.0	0.613	-4.248
-87.0	0.010	-39.614	-47.0	0.100	-20.040	-7.0	0.694	-3.170
-86.0	0.014	-37.021	-46.0	0.114	-18.890	-6.0	0.769	-2.280
-85.0	0.018	-34.953	-45.0	0.126	-17.988	-5.0	0.836	-1.558
-84.0	0.022	-33.224	-44.0	0.136	-17.316	-4.0	0.893	-0.984
-83.0	0.026	-31.782	-43.0	0.144	-16.846	-3.0	0.939	-0.549
-82.0	0.030	-30.458	-42.0	0.148	-16.566	-2.0	0.972	-0.243
-81.0	0.034	-29.270	-41.0	0.150	-16.487	-1.0	0.993	-0.061
-80.0	0.039	-28.226	-40.0	0.147	-16.629	0.0	1.000	0.000
-79.0	0.043	-27.233	-39.0	0.141	-17.003	1.0	0.993	-0.061
-78.0	0.048	-26.342	-38.0	0.131	-17.651	2.0	0.972	-0.243
-77.0	0.053	-25.510	-37.0	0.117	-18.650	3.0	0.939	-0.549
-76.0	0.058	-24.727	-36.0	0.099	-20.106	4.0	0.893	-0.984
-75.0	0.063	-24.030	-35.0	0.077	-22.291	5.0	0.836	-1.557
-74.0	0.068	-23.385	-34.0	0.052	-25.736	6.0	0.769	-2.280
-73.0	0.073	-22.784	-33.0	0.023	-32.584	7.0	0.694	-3.168
-72.0	0.077	-22.257	-32.0	0.007	-43.327	8.0	0.613	-4.246
-71.0	0.081	-21.791	-31.0	0.039	-28.226	9.0	0.528	-5.549
-70.0	0.085	-21.396	-30.0	0.071	-22.930	10.0	0.440	-7.131
-69.0	0.089	-21.048	-29.0	0.104	-19.690	11.0	0.352	-9.074
-68.0	0.091	-20.785	-28.0	0.135	-17.413	12.0	0.265	-11.535
-67.0	0.093	-20.585	-27.0	0.163	-15.747	13.0	0.182	-14.822
-66.0	0.095	-20.473	-26.0	0.188	-14.515	14.0	0.103	-19.741
-65.0	0.095	-20.432	-25.0	0.208	-13.631	15.0	0.031	-30.241
-64.0	0.094	-20.501	-24.0	0.222	-13.056	16.0	0.034	-29.464
-63.0	0.092	-20.684	-23.0	0.230	-12.771	17.0	0.090	-20.930
-62.0	0.089	-20.989	-22.0	0.229	-12.788	18.0	0.137	-17.277
-61.0	0.085	-21.427	-21.0	0.220	-13.140	19.0	0.174	-15.169
-60.0	0.079	-22.054	-20.0	0.202	-13.888	20.0	0.202	-13.888
-59.0	0.072	-22.912	-19.0	0.174	-15.169	21.0	0.220	-13.140
-58.0	0.063	-24.051	-18.0	0.137	-17.268	22.0	0.229	-12.788
-57.0	0.052	-25.609	-17.0	0.090	-20.915	23.0	0.230	-12.771
-56.0	0.041	-27.796	-16.0	0.034	-29.425	24.0	0.222	-13.056
-55.0	0.028	-31.142	-15.0	0.031	-30.241	25.0	0.208	-13.631
-54.0	0.013	-37.403	-14.0	0.103	-19.753	26.0	0.188	-14.515
-53.0	0.002	-55.563	-13.0	0.182	-14.822	27.0	0.163	-15.747
-52.0	0.018	-35.102	-12.0	0.265	-11.540	28.0	0.135	-17.413
-51.0	0.034	-29.309	-11.0	0.352	-9.077	29.0	0.104	-19.690

file: FML 5-bay elevation tabulation

revision:

Date: 9/12/2011

# **Adjacent Channel Study** **For Station K286CH, Facility\_id: 151707**

## **Co-channel through third adjacent:**

App_id	Fac_id	File_Number	Call	Licensee	Class	City	State	Status	ERP	RCAMSL	Chan	Adj	Dist	Overlap
1158031	28217	BMLH-20061114ABQ	KIKX	LOCALLY OWNED RADIO, LLC	C	KETCHUM	ID	LIC	97	2000	284	2	85.7	1.4918
1569031	138129	BNPFT-20130830AAU	K286CE	SO. IDAHO CORP. OF 7TH-DAY ADVENTISTS DB	D	SUN VALLEY	ID	CP	0.01	2753	286	0	122.7	0
1060973	6329	BMLH-20050511ABI	KJOT	JOURNAL BROADCAST CORPORATION	C	BOISE	ID	LIC	53	2188	286	0	183	0

## **Intermediate Frequencies (53 and 54 channels difference):**

App_id	Fac_id	File_Number	Call	Licensee	Class	City	State	Status	ERP	RCAMSL	Channel	Adj	Dist	Clr
1645606	146174	BMPFT-20140729ADG	K232EQ	EDGEWATER BROADCASTING, INC.	D	KIMBERLY	ID	APP	0.25	1377	232	54	21.4	11.4

