

## **Non-Interference Compliance**

Regarding Facility id 151080

Channel 266

### **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.

Page 4 includes a tabulation of the vertical radiation pattern for the proposed antenna provided by the antenna manufacturer.

Page 5 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 6 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 7 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 12ft (3.7m) or less. This proposal provides 4.6m (15.1ft) 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.

<b>Application_id</b>	<b>File Number</b>	<b>Callsign</b>	<b>Contour at Tower</b>	<b>Min. Contour</b>
164018	BLH19910819KA	KLSZ-FM	75.5	75.5
	Minimum F(50,50) Contour of Adjacent Station within Proposed Translator's Standard Interfering Contour			<b>75.5</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 **75.5 dBμ**, this makes the proposed translator's worst-case interfering contour **115.5 dBμ**. By the free-space equation, this contour is calculated to extend a maximum of **186.2 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 6 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 **4.6 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 12ft (3.7m) or less. This proposal provides 4.6m (15.1ft) 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-2(.75)</b>
<b>CORAGL:</b>	<b>46 m</b>
<b>Maximum ERP:</b>	<b>0.25 kW</b>
<b>Interfering Contour:</b>	<b>115.5 dBμ</b>
<b>Max Int. Contour Distance:</b>	<b>186.2 m</b>
<b>Min Ground Clearance:</b>	<b>4.6 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	.975	237.7	181.5	180.9	30.2
10	.903	203.9	168.1	165.6	16.8
15	.792	156.8	147.5	142.4	7.8
20	.650	105.6	121.0	113.7	4.6
25	.493	60.8	91.8	83.2	7.2
30	.331	27.4	61.6	53.4	15.2
35	.178	7.9	33.1	27.1	27.0
40	.043	0.5	8.0	6.1	40.9
45	.068	1.2	12.7	9.0	37.0
50	.149	5.6	27.7	17.8	24.7
55	.202	10.2	37.6	21.6	15.2
60	.227	12.9	42.3	21.1	9.4
65	.226	12.8	42.1	17.8	7.9
70	.205	10.5	38.2	13.1	10.1
75	.168	7.1	31.3	8.1	15.8
80	.118	3.5	22.0	3.8	24.4
85	.061	0.9	11.4	1.0	34.7
90	.001	0.0	0.2	0.0	45.8
Minimum Clearance above TGL:					<b>4.6 m</b>

**Propagation Systems Inc.**

Elevation Pattern Tabulation

Antenna: PSIFML-2 Special

Bay spacing: 3/4 wave

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-90.00	0.001	-60.000	-50.00	0.149	-16.513	-10.00	0.903	-0.883
-89.00	0.012	-38.221	-49.00	0.135	-17.364	-9.00	0.921	-0.713
-88.00	0.025	-32.201	-48.00	0.120	-18.405	-8.00	0.937	-0.561
-87.00	0.037	-28.679	-47.00	0.104	-19.677	-7.00	0.952	-0.429
-86.00	0.049	-26.207	-46.00	0.086	-21.289	-6.00	0.964	-0.315
-85.00	0.061	-24.285	-45.00	0.068	-23.404	-5.00	0.975	-0.219
-84.00	0.073	-22.748	-44.00	0.048	-26.425	-4.00	0.984	-0.139
-83.00	0.085	-21.443	-43.00	0.027	-31.481	-3.00	0.991	-0.079
-82.00	0.096	-20.349	-42.00	0.005	-46.848	-2.00	0.996	-0.036
-81.00	0.107	-19.378	-41.00	0.018	-34.664	-1.00	0.999	-0.009
-80.00	0.118	-18.538	-40.00	0.043	-27.417	0.00	1.000	0.000
-79.00	0.129	-17.792	-39.00	0.068	-23.365	1.00	0.999	-0.009
-78.00	0.139	-17.125	-38.00	0.094	-20.529	2.00	0.996	-0.036
-77.00	0.149	-16.522	-37.00	0.121	-18.329	3.00	0.991	-0.079
-76.00	0.159	-15.984	-36.00	0.149	-16.531	4.00	0.984	-0.139
-75.00	0.168	-15.508	-35.00	0.178	-14.998	5.00	0.975	-0.219
-74.00	0.176	-15.072	-34.00	0.207	-13.669	6.00	0.964	-0.315
-73.00	0.184	-14.685	-33.00	0.237	-12.489	7.00	0.952	-0.429
-72.00	0.192	-14.335	-32.00	0.268	-11.431	8.00	0.937	-0.561
-71.00	0.199	-14.026	-31.00	0.299	-10.475	9.00	0.921	-0.713
-70.00	0.205	-13.752	-30.00	0.331	-9.602	10.00	0.903	-0.882
-69.00	0.211	-13.518	-29.00	0.363	-8.801	11.00	0.884	-1.072
-68.00	0.216	-13.315	-28.00	0.395	-8.061	12.00	0.863	-1.279
-67.00	0.220	-13.146	-27.00	0.428	-7.377	13.00	0.841	-1.508
-66.00	0.224	-13.009	-26.00	0.460	-6.742	14.00	0.817	-1.757
-65.00	0.226	-12.904	-25.00	0.493	-6.151	15.00	0.792	-2.029
-64.00	0.228	-12.834	-24.00	0.525	-5.599	16.00	0.765	-2.322
-63.00	0.229	-12.800	-23.00	0.557	-5.083	17.00	0.738	-2.639
-62.00	0.229	-12.794	-22.00	0.589	-4.603	18.00	0.710	-2.979
-61.00	0.228	-12.829	-21.00	0.620	-4.154	19.00	0.680	-3.344
-60.00	0.227	-12.898	-20.00	0.650	-3.736	20.00	0.650	-3.736
-59.00	0.224	-13.009	-19.00	0.680	-3.344	21.00	0.620	-4.154
-58.00	0.220	-13.158	-18.00	0.710	-2.979	22.00	0.589	-4.603
-57.00	0.215	-13.351	-17.00	0.738	-2.639	23.00	0.557	-5.083
-56.00	0.209	-13.600	-16.00	0.765	-2.323	24.00	0.525	-5.599
-55.00	0.202	-13.894	-15.00	0.792	-2.029	25.00	0.493	-6.151
-54.00	0.194	-14.260	-14.00	0.817	-1.759	26.00	0.460	-6.742
-53.00	0.184	-14.685	-13.00	0.840	-1.510	27.00	0.428	-7.377
-52.00	0.174	-15.192	-12.00	0.863	-1.281	28.00	0.395	-8.061
-51.00	0.162	-15.795	-11.00	0.884	-1.072	29.00	0.363	-8.801
						30.00	0.331	-9.602

# **Adjacent Channel Study** **For Station K266BS, Facility\_id: 151080**

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

App_id	Fac_id	File_Number	Call	Licensee	Class	City	State	Status	ERP	RCAMSL	Char	Adj	Dist	Overlap
164018	23869	BLH-19910819KA	KLSZ-FM	CUMULUS LICENSING LLC	C2	FORT SMITH	AR	LIC	50	311	264	2	24.7	1.4918
1497930	88358	BLH-20120430ACF	KFMD-FM	HOG RADIO, INC.	C3	GREENLAND	AR	LIC	5.5	717.7	268	2	55.8	0
1175298	140516	BLFT-20070305ABV	K263AM	EDUCATIONAL MEDIA FOUNDAT	D	TAHLEQUAH	OK	LIC	0.17	374	263	3	76.1	0
1596956	56622	BPH-20140702ADJ	KTFX-FM	K95.5, INC	C3	WARNER	OK	APP	25	276	269	3	77.8	0
1153566	56622	BLH-20061117AAY	KTFX-FM	K95.5, INC	C3	WARNER	OK	LIC	25	262	269	3	77.8	0
1636543	31470	BLED-20140514AAT	KLAB	JOHN BROWN UNIVERSITY	C3	SILOAM SPRINGS	AR	LIC	7.7	474	266	0	84.7	0
978840	134109	BLL-20040220AAV	KRMN-LP	MENA PUBLIC SCHOOL BOARD	L1	MENA	AR	LIC	0	396	266	0	93.8	0
1569762	157298	BNPFT-20130830ALZ	K266BU	K95.5, INC.	D	MUSKOGEE	OK	CP	0.25	219	266	0	97	0
1569665	139216	BNPFT-20130820ABI	K264BT	COMMUNITY BROADCASTING, IN	D	MUSKOGEE	OK	CP	0.08	268	264	2	103.7	0
175720	31884	BLH-19920731KB	KWKK	EAB OF RUSSELLVILLE, LLC	A	RUSSELLVILLE	AR	LIC	6	259	265	1	109.1	0
1392103	48520	BLH-20100728ACI	KESA	NORTHEAST OKLAHOMA BROAD	A	EUREKA SPRING	AR	LIC	2	538	265	1	117.6	0
260294	78267	BLH-19980112KD	KARV-FM	KERM INC	A	OLA	AR	LIC	0.74	435	267	1	117.8	0
1204437	37777	BLH-20070914ABN	KMCO	SOUTHEASTERN OKLAHOMA RA	C1	WILBURTON	OK	LIC	100	391	267	1	131.9	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
1034233	93775	BLED-20050408ABK	KLFS	EDUCATIONAL MEDIA FOUNDAT	A	VAN BUREN	AR	LIC	2.4	249	212	54	18	8







