

Non-Interference Compliance

Regarding Facility id 154008

Channel 282

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 20ft (6.1m) in height. This proposal provides 22.8m (75ft) 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
169874	BLH19920211KA	WPZZ	64.6	64.6
63170	BLH19831117BF	WURV	87.3	84.6
Minimum F(50,50) Contour of Adjacent Station within Proposed Translator's Standard Interfering Contour				64.6

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 **64.6 dBμ**, this makes the proposed translator's worst-case interfering contour **104.6 dBμ**. By the free-space equation, this contour is calculated to extend a maximum of **653.1 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 **22.8 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) in height. This proposal provides 22.8m (75ft) 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.

Antenna Manufacturer:	PSI
Antenna Model:	FML-2(.75)
CORAGL:	168 m
Maximum ERP:	0.25 kW
Interfering Contour:	104.6 dBμ
Max Int. Contour Distance:	653.1 m
Min Ground Clearance:	22.8 m

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	636.8	634.3	112.5
10	.903	203.9	589.7	580.8	65.6
15	.792	156.8	517.2	499.6	34.1
20	.650	105.6	424.5	398.9	22.8
25	.493	60.8	322.0	291.8	31.9
30	.331	27.4	216.2	187.2	59.9
35	.178	7.9	116.2	95.2	101.3
40	.043	0.5	28.1	21.5	149.9
45	.068	1.2	44.4	31.4	136.6
50	.149	5.6	97.3	62.5	93.5
55	.202	10.2	131.9	75.7	59.9
60	.227	12.9	148.3	74.1	39.6
65	.226	12.8	147.6	62.4	34.2
70	.205	10.5	133.9	45.8	42.2
75	.168	7.1	109.7	28.4	62.0
80	.118	3.5	77.1	13.4	92.1
85	.061	0.9	39.8	3.5	128.3
90	.001	0.0	0.7	0.0	167.3
Minimum Clearance above TGL:					22.8 m

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 W281BF, Facility_id: 154008**

Co-channel through third adjacent:

App_id	Fac_id	File_Number	Call	Licensee	Class	City	State	Status	ERP	RCAMSL	Chan	Adj	Dist	Overlap
63170	37230	BLH-19831117BF	WURV	SM-WURV, LLC	B	RICHMOND	VA	LIC	20	325	279	3	12.9	4.2911
169874	321	BLH-19920211KA	WPZZ	RADIO ONE LICENSES, LLC	C1	CREWE	VA	LIC	100	399	284	2	62.7	1.4918
1437287	139555	BLFT-20110727AAG	W281AW	LIBERTY UNIVERSITY, INC.	D	PETERSBURG	VA	LIC	0.006	105	281	1	44.5	0
565575	62205	BLH-20010522AAM	WGRX	TELEMEDIA BROADCASTING, INC.	A	FALMOUTH	VA	LIC	2.7	219	283	1	73.5	0
1089626	81122	BLFT-20051003CDY	W285EF	MONTICELLO MEDIA LLC	D	CHARLOTTESVILLE	VA	LIC	0.046	219	285	3	97.2	0
1216818	72904	BLH-20070820ACF	WIGO-FM	TWO RIVERS COMMUNICATIONS, INC.	A	WHITE STONE	VA	LIC	4.1	127.1	285	3	99.7	0
1006577	40755	BMLH-20040816AAN	WNVZ	ENTERCOM LICENSE, LLC	B	NORFOLK	VA	LIC	49	148	283	1	124.5	0
1194957	74212	BMLH-20070809ABE	WPRS-FM	RADIO ONE LICENSES, LLC	B	WALDORF	MD	LIC	20	295	281	1	126.2	0
1635077	5110	BMLED-20140501ABA	WYFT	BIBLE BROADCASTING NETWORK, INC.	A	LURAY	VA	LIC	6	558	280	2	137.7	0
170787	41811	BLH-19920218KC	WKCY-FM	CAPSTAR TX LLC	B	HARRISONBURG	VA	LIC	50	787	282	0	166.8	0
1498881	24931	BLH-20120508AAW	WFXK	RADIO ONE LICENSES, LLC	C1	BUNN	NC	LIC	100	375	282	0	181.8	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
259065	16583	BLH-19971210KE	WBBC-FM	DENBAR COMMUNICATIONS, INC.	C3	BLACKSTONE	VA	LIC	17.5	230	228	54	76.7	64.7

5559 III NW
(YELLOW TAVERN)



