

## **Non-Interference Compliance**

Regarding Facility id 139037

Channel 251

### **Description of Exhibit 12 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 6 include a plot and a tabulation of the vertical radiation pattern for the proposed antenna provided by the antenna manufacturer.

Page 7 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 8 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 9 of this exhibit is a high resolution aerial photo of the vicinity surrounding the proposed translator's tower site provided by the U.S. Geological Survey's National Aerial Photography Program. It has been included to provide clarification of the nature of the buildings in the vicinity.

### 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.

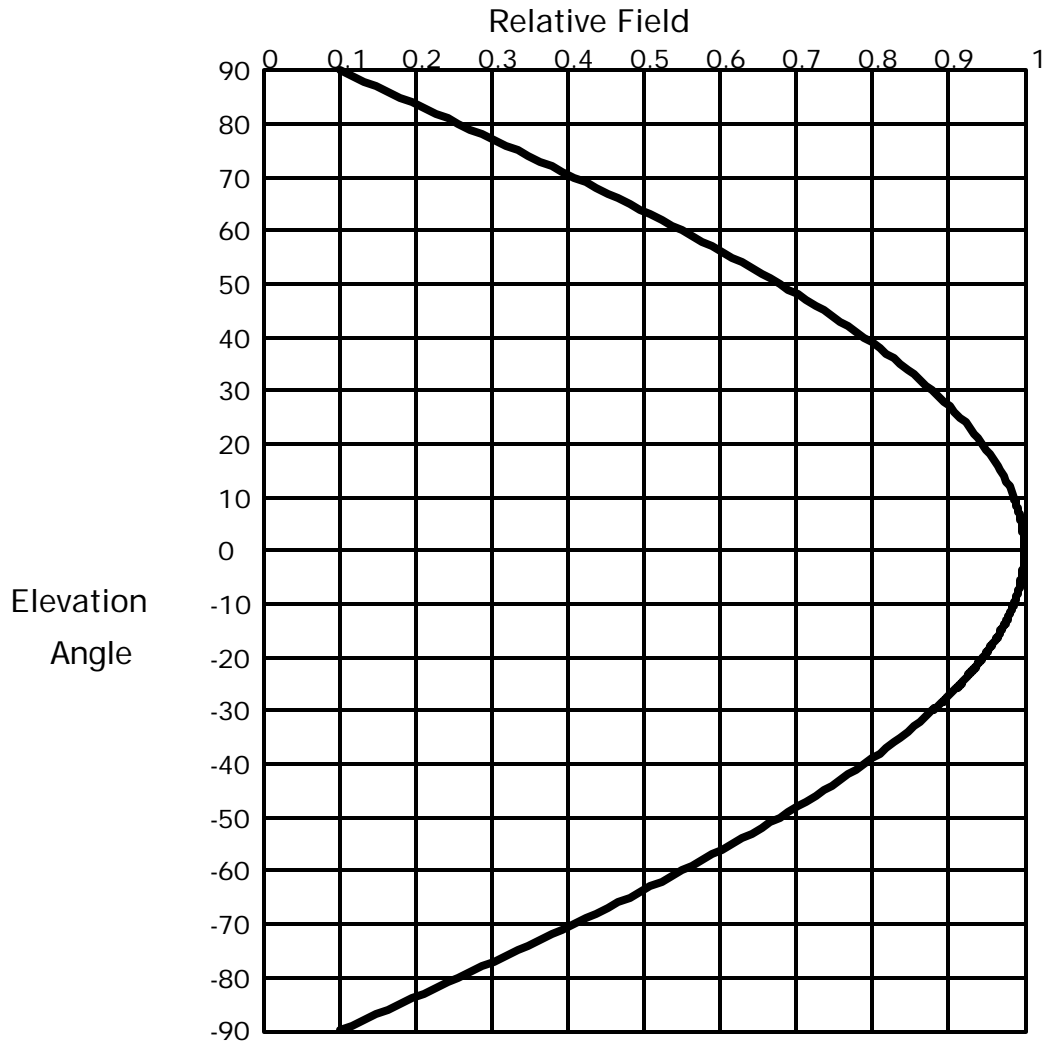
Application_id	File Number	Callsign	Contour at Tower	Min. Contour
421749	BLH19990927ABS	WUSV	102.7	87.1
492179	BLH20000120ABH	WTLQ-FM	86.8	83.2
Minimum F(50,50) Contour of Adjacent Station within Proposed Translator's Standard Interfering Contour				<b>83.2</b>

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 **83.2 dBμ**, this makes the proposed translator's worst-case interfering contour **123.2 dBμ**. By the free-space equation, this contour is calculated to extend a maximum of **43.4 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 8 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 **26.4 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. Hence, in accordance with 47 C.F.R. § 74.1204(d) and the clarification provided by the FCC in the decision *Re: Living Way Ministries* (FCC 02-244), 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>SWR</b>
<b>Antenna Model:</b>	<b>FM1</b>
<b>CORAGL:</b>	<b>49 m</b>
<b>Maximum ERP:</b>	<b>0.08 kW</b>
<b>Interfering Contour:</b>	<b>123.2 dBμ</b>
<b>Max Int. Contour Distance:</b>	<b>43.4 m</b>
<b>Min Ground Clearance:</b>	<b>26.4 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	.997	79.5	43.3	43.1	45.2
10	.986	77.8	42.8	42.1	41.6
15	.969	75.1	42.1	40.6	38.1
20	.946	71.6	41.1	38.6	35.0
25	.916	67.1	39.8	36.0	32.2
30	.879	61.8	38.2	33.0	29.9
35	.837	56.0	36.3	29.8	28.2
40	.789	49.8	34.2	26.2	27.0
45	.736	43.3	31.9	22.6	26.4
50	.679	36.9	29.5	18.9	26.4
55	.616	30.4	26.7	15.3	27.1
60	.550	24.2	23.9	11.9	28.3
65	.480	18.4	20.8	8.8	30.1
70	.408	13.3	17.7	6.1	32.4
75	.333	8.9	14.5	3.7	35.0
80	.256	5.2	11.1	1.9	38.1
85	.178	2.5	7.7	0.7	41.3
90	.100	0.8	4.3	0.0	44.7
Minimum Clearance above TGL:					<b>26.4 m</b>



## Elevation Pattern

Scale: Linear

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Units: Field, Relative

CLIENT: *General*

Date: 11/10/03

ANTENNA TYPE: FM1/1

FREQUENCY: 98.1

PATTERN POL.: Circular

DIRECTIVITY(Peak): 0.883/-0.539 dBd

Beam Tilt (Deg.) : 0

DIRECTIVITY(Horiz): 0.883/-0.539 dBd

Null Fill(s)(%) : 0, 0, 0

# Relative Field Tabulation

Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)
3.2	.999 (-0.012)	-4.4	.997 (-0.023)	-12.0	.98 (-0.173 )
3.0	.999 (-0.011)	-4.6	.997 (-0.025)	-12.2	.98 (-0.178 )
2.8	.999 (-0.009)	-4.8	.997 (-0.027)	-12.4	.979 (-0.184 )
2.6	.999 (-0.008)	-5.0	.997 (-0.03)	-12.6	.978 (-0.19 )
2.4	.999 (-0.007)	-5.2	.996 (-0.032)	-12.8	.978 (-0.196 )
2.2	.999 (-0.006)	-5.4	.996 (-0.035)	-13.0	.977 (-0.203 )
2.0	.999 (-0.005)	-5.6	.996 (-0.037)	-13.2	.976 (-0.209 )
1.8	1.00 (-0.004)	-5.8	.995 (-0.04)	-13.4	.975 (-0.215 )
1.6	1.00 (-0.003)	-6.0	.995 (-0.043)	-13.6	.975 (-0.222 )
1.4	1.00 (-0.002)	-6.2	.995 (-0.046)	-13.8	.974 (-0.229 )
1.2	1.00 (-0.002)	-6.4	.994 (-0.049)	-14.0	.973 (-0.235 )
1.0	1.00 (-0.001)	-6.6	.994 (-0.052)	-14.2	.973 (-0.242 )
.8	1.00 (-0.001)	-6.8	.994 (-0.055)	-14.4	.972 (-0.249 )
.6	1.00 (0)	-7.0	.993 (-0.058)	-14.6	.971 (-0.256 )
.4	1.00 (0)	-7.2	.993 (-0.062)	-14.8	.97 (-0.263 )
.2	1.00 (0)	-7.4	.993 (-0.065)	-15.0	.969 (-0.271 )
.0	1.00 (0)	-7.6	.992 (-0.069)	-15.2	.969 (-0.278 )
-.2	1.00 (0)	-7.8	.992 (-0.073)	-15.4	.968 (-0.285 )
-.4	1.00 (0)	-8.0	.991 (-0.076)	-15.6	.967 (-0.293 )
-.6	1.00 (0)	-8.2	.991 (-0.08)	-15.8	.966 (-0.3 )
-.8	1.00 (-0.001)	-8.4	.99 (-0.084)	-16.0	.965 (-0.308 )
-1.0	1.00 (-0.001)	-8.6	.99 (-0.088)	-16.2	.964 (-0.316 )
-1.2	1.00 (-0.002)	-8.8	.989 (-0.093)	-16.4	.963 (-0.324 )
-1.4	1.00 (-0.002)	-9.0	.989 (-0.097)	-16.6	.962 (-0.332 )
-1.6	1.00 (-0.003)	-9.2	.988 (-0.101)	-16.8	.962 (-0.34 )
-1.8	1.00 (-0.004)	-9.4	.988 (-0.106)	-17.0	.961 (-0.348 )
-2.0	.999 (-0.005)	-9.6	.987 (-0.11)	-17.2	.96 (-0.357 )
-2.2	.999 (-0.006)	-9.8	.987 (-0.115)	-17.4	.959 (-0.365 )
-2.4	.999 (-0.007)	-10.0	.986 (-0.12)	-17.6	.958 (-0.374 )
-2.6	.999 (-0.008)	-10.2	.986 (-0.124)	-17.8	.957 (-0.383 )
-2.8	.999 (-0.009)	-10.4	.985 (-0.129)	-18.0	.956 (-0.391 )
-3.0	.999 (-0.011)	-10.6	.985 (-0.134)	-18.2	.955 (-0.4 )
-3.2	.999 (-0.012)	-10.8	.984 (-0.14)	-18.4	.954 (-0.409 )
-3.4	.998 (-0.014)	-11.0	.983 (-0.145)	-18.6	.953 (-0.418 )
-3.6	.998 (-0.015)	-11.2	.983 (-0.15)	-18.8	.952 (-0.427 )
-3.8	.998 (-0.017)	-11.4	.982 (-0.156)	-19.0	.951 (-0.437 )
-4.0	.998 (-0.019)	-11.6	.982 (-0.161)	-19.2	.95 (-0.446 )
-4.2	.998 (-0.021)	-11.8	.981 (-0.167)	-19.4	.949 (-0.456 )

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# Relative Field Tabulation

Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)
-19.6	.948 (-0.465)	-27.2	.90 (-0.911)	-54.0	.629 (-4.027 )
-19.8	.947 (-0.475)	-27.4	.899 (-0.924)	-55.0	.616 (-4.205 )
-20.0	.946 (-0.485)	-27.6	.898 (-0.939)	-56.0	.603 (-4.39 )
-20.2	.945 (-0.495)	-27.8	.896 (-0.953)	-57.0	.59 (-4.58 )
-20.4	.944 (-0.505)	-28.0	.895 (-0.967)	-58.0	.577 (-4.778 )
-20.6	.942 (-0.515)	-28.2	.893 (-0.981)	-59.0	.564 (-4.982 )
-20.8	.941 (-0.525)	-28.4	.892 (-0.996)	-60.0	.55 (-5.193 )
-21.0	.94 (-0.535)	-28.6	.89 (-1.01)	-61.0	.536 (-5.411 )
-21.2	.939 (-0.546)	-28.8	.889 (-1.025)	-62.0	.523 (-5.638 )
-21.4	.938 (-0.556)	-29.0	.887 (-1.04)	-63.0	.509 (-5.873 )
-21.6	.937 (-0.567)	-29.2	.886 (-1.055)	-64.0	.495 (-6.116 )
-21.8	.936 (-0.578)	-29.4	.884 (-1.07)	-65.0	.48 (-6.369 )
-22.0	.934 (-0.589)	-29.6	.883 (-1.085)	-66.0	.466 (-6.631 )
-22.2	.933 (-0.6)	-29.8	.881 (-1.101)	-67.0	.452 (-6.904 )
-22.4	.932 (-0.611)	-30.0	.879 (-1.116)	-68.0	.437 (-7.187 )
-22.6	.931 (-0.622)	-31.0	.871 (-1.195)	-69.0	.423 (-7.483 )
-22.8	.93 (-0.633)	-32.0	.863 (-1.277)	-70.0	.408 (-7.791 )
-23.0	.928 (-0.645)	-33.0	.855 (-1.363)	-71.0	.393 (-8.112 )
-23.2	.927 (-0.656)	-34.0	.846 (-1.451)	-72.0	.378 (-8.448 )
-23.4	.926 (-0.668)	-35.0	.837 (-1.543)	-73.0	.363 (-8.799 )
-23.6	.925 (-0.68)	-36.0	.828 (-1.638)	-74.0	.348 (-9.167 )
-23.8	.923 (-0.692)	-37.0	.819 (-1.737)	-75.0	.333 (-9.553 )
-24.0	.922 (-0.704)	-38.0	.809 (-1.839)	-76.0	.318 (-9.959 )
-24.2	.921 (-0.716)	-39.0	.799 (-1.944)	-77.0	.302 (-10.387 )
-24.4	.92 (-0.728)	-40.0	.789 (-2.054)	-78.0	.287 (-10.839 )
-24.6	.918 (-0.74)	-41.0	.779 (-2.167)	-79.0	.272 (-11.317 )
-24.8	.917 (-0.753)	-42.0	.769 (-2.283)	-80.0	.256 (-11.826 )
-25.0	.916 (-0.765)	-43.0	.758 (-2.404)	-81.0	.241 (-12.367 )
-25.2	.914 (-0.778)	-44.0	.747 (-2.529)	-82.0	.225 (-12.946 )
-25.4	.913 (-0.791)	-45.0	.736 (-2.658)	-83.0	.21 (-13.569 )
-25.6	.912 (-0.803)	-46.0	.725 (-2.791)	-84.0	.194 (-14.241 )
-25.8	.91 (-0.816)	-47.0	.714 (-2.928)	-85.0	.178 (-14.97 )
-26.0	.909 (-0.83)	-48.0	.702 (-3.071)	-86.0	.163 (-15.768 )
-26.2	.908 (-0.843)	-49.0	.69 (-3.217)	-87.0	.147 (-16.648 )
-26.4	.906 (-0.856)	-50.0	.679 (-3.369)	-88.0	.131 (-17.627 )
-26.6	.905 (-0.87)	-51.0	.666 (-3.525)	-89.0	.116 (-18.733 )
-26.8	.903 (-0.883)	-52.0	.654 (-3.687)	-90.0	.10 (-20 )
-27.0	.902 (-0.897)	-53.0	.642 (-3.854)	90.0	.00 (-50 )

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Beam Tilt (Deg.) : 0

DIRECTIVITY(Horiz): 0.883/-0.539 dBd

Null Fill(s)(%) : 0, 0, 0

# **Adjacent Channel Study** **For Station W251AL, Facility\_id: 139037**

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

Application_id	Facility_id	Prefix	ARN	Call	Licensee	Class	City	State	Status	ERP	RCAMSL	Channel	Adj	Dist	Overlap
421749	58276	BLH	19990927ABS	WDEO-FM	RUTH COMMUNICATIONS CORPORATION	C3	SAN CARLOS PARK	FL	LIC	18.5	114	253	2	3.4	0.4774
492179	28901	BLH	20000120ABH	WTLQ-FM	INTERMART BROADCASTING GULF COAST, INC.	C3	PUNTA RASSA	FL	LIC	14.5	131	249	2	8.7	0.4774
1170629	138791	BMPFT	20070129AMK	W251BF	REACH COMMUNICATIONS, INC.	D	PUNTA GORDA	FL	CP MOD	0.17	39	251	0	44.8	0
671386	139429	BNPFT	20030828BCG	W248AU	BROADCAST TOWERS, INC.	D	EVERGLADES CITY	FL	CP	0.08	50	248	3	85.3	0
283349	72687	BLH	19990330KA	WWRZ	HALL COMMUNICATIONS INC	C2	FORT MEADE	FL	LIC	26	240	252	1	123.5	0
80803	20436	BLH	19850806KQ	WRMF	JAMES CRYSTAL LICENSES, L.L.C.	C	PALM BEACH	FL	LIC	100	412	250	1	160.9	0

