

## **Non-Interference Compliance**

Regarding Facility id 153233

Channel 289

### **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 and 5 include a plot and 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.

The second tabulation on page 6 shows all stations in the vicinity of the proposed translator operating on intermediate frequencies to the proposed translator. The column labeled "Clr" shows the station's clearance in km of the minimum separation distance required by 47 C.F.R. § 74.1204(g) and § 73.207.

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.

### 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>
88774	BLH19860602KH	KQLL-FM	80.5	79.9
Minimum F(50,50) Contour of Adjacent Station within Proposed Translator's Standard Interfering Contour				<b>79.9</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 **79.9 dBμ**, this makes the proposed translator's worst-case interfering contour **119.9 dBμ**. By the free-space equation, this contour is calculated to extend a maximum of **112.2 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 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 **8.1 m** at the lowest point. The applicant has taken into account USGS quadrangles 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>SHIVELY</b>
<b>Antenna Model:</b>	<b>6812B-2</b>
<b>CORAGL:</b>	<b>39.9 m</b>
<b>Maximum ERP:</b>	<b>0.25 kW</b>
<b>Interfering Contour:</b>	<b>119.9 dBμ</b>
<b>Max Int. Contour Distance:</b>	<b>112.2 m</b>
<b>Min Ground Clearance:</b>	<b>8.1 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)
30	.228	13.0	25.6	22.2	27.1
90	.000	0.0	0.0	0.0	39.9
5	.971	235.7	108.9	108.5	30.4
10	.886	196.2	99.4	97.9	22.6
15	.755	142.5	84.7	81.8	18.0
25	.410	42.0	46.0	41.7	20.5
35	.060	0.9	6.7	5.5	36.0
40	.083	1.7	9.3	7.1	33.9
45	.195	9.5	21.9	15.5	24.4
80	.157	6.2	17.6	3.1	22.6
55	.316	25.0	35.5	20.3	10.9
60	.327	26.7	36.7	18.3	8.1
65	.312	24.3	35.0	14.8	8.2
70	.276	19.0	31.0	10.6	10.8
75	.222	12.3	24.9	6.4	15.8
50	.272	18.5	30.5	19.6	16.5
20	.591	87.3	66.3	62.3	17.2
85	.082	1.7	9.2	0.8	30.7
Minimum Clearance above TGL:					<b>8.1 m</b>

Antenna Mfg.: Shively Labs

Date: 11/11/2004

Antenna Type: 6812B-2

Station: Reference Elevation

Beam Tilt 0

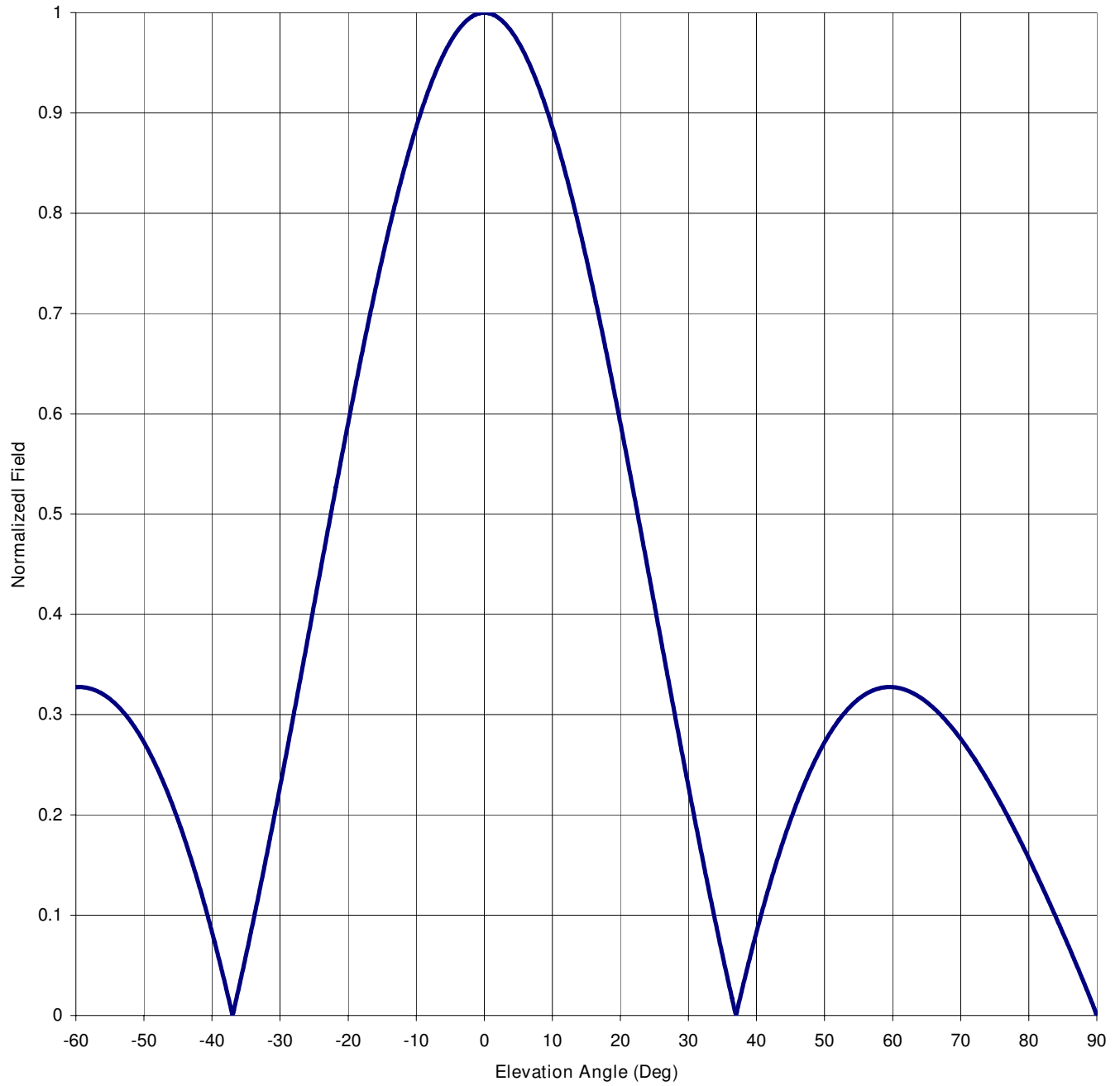
Frequency: 98.1

Gain (Max) 0.991 -0.038 dB

Channel #: 251

Gain (Horizon) 0.991 -0.038 dB

Figure: Reference



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-0.038 dB

Channel #: 251

Gain (Horizon) 0.991

-0.038 dB

Figure: Reference

Angle of Depression (Deg)	Relative Field	Angle of Depression (Deg)	Relative Field	Angle of Depression (Deg)	Relative Field	Angle of Depression (Deg)	Relative Field
-90	0.000	-44	0.175	0	1.000	46	0.213
-89	0.018	-43	0.154	1	0.999	47	0.230
-88	0.034	-42	0.132	2	0.995	48	0.246
-87	0.051	-41	0.108	3	0.989	49	0.260
-86	0.067	-40	0.083	4	0.981	50	0.272
-85	0.082	-39	0.057	5	0.971	51	0.284
-84	0.098	-38	0.029	6	0.958	52	0.294
-83	0.113	-37	0.001	7	0.943	53	0.302
-82	0.128	-36	0.029	8	0.926	54	0.310
-81	0.143	-35	0.060	9	0.907	55	0.316
-80	0.157	-34	0.092	10	0.886	56	0.320
-79	0.171	-33	0.125	11	0.863	57	0.324
-78	0.184	-32	0.159	12	0.838	58	0.326
-77	0.197	-31	0.193	13	0.812	59	0.327
-76	0.210	-30	0.228	14	0.784	60	0.327
-75	0.222	-29	0.264	15	0.755	61	0.326
-74	0.234	-28	0.300	16	0.724	62	0.324
-73	0.245	-27	0.336	17	0.692	63	0.321
-72	0.256	-26	0.373	18	0.659	64	0.317
-71	0.266	-25	0.410	19	0.625	65	0.312
-70	0.276	-24	0.447	20	0.591	66	0.307
-69	0.285	-23	0.483	21	0.555	67	0.300
-68	0.293	-22	0.519	22	0.519	68	0.293
-67	0.300	-21	0.555	23	0.483	69	0.285
-66	0.307	-20	0.591	24	0.447	70	0.276
-65	0.312	-19	0.625	25	0.410	71	0.266
-64	0.317	-18	0.659	26	0.373	72	0.256
-63	0.321	-17	0.692	27	0.336	73	0.245
-62	0.324	-16	0.724	28	0.300	74	0.234
-61	0.326	-15	0.755	29	0.264	75	0.222
-60	0.327	-14	0.784	30	0.228	76	0.210
-59	0.327	-13	0.812	31	0.193	77	0.197
-58	0.326	-12	0.838	32	0.159	78	0.184
-57	0.324	-11	0.863	33	0.125	79	0.171
-56	0.320	-10	0.886	34	0.092	80	0.157
-55	0.316	-9	0.907	35	0.060	81	0.143
-54	0.310	-8	0.926	36	0.029	82	0.128
-53	0.302	-7	0.943	37	0.001	83	0.113
-52	0.294	-6	0.958	38	0.029	84	0.098
-51	0.284	-5	0.971	39	0.057	85	0.082
-50	0.272	-4	0.981	40	0.083	86	0.067
-49	0.260	-3	0.989	41	0.108	87	0.051
-48	0.246	-2	0.995	42	0.132	88	0.034
-47	0.230	-1	0.999	43	0.154	89	0.018
-46	0.213	0	1.000	44	0.175	90	0.000
-45	0.195			45	0.195		

# Adjacent Channel Study

## For Station NEW, Facility\_id: 153233

### Co-channel through third adjacent:

Application_id	Facility_id	Prefix	ARN	Call	Licensee	Class	City	State	Status	ERP	RCAMSL	Channel	Adj	Dist	Overlap
88774	68294	BLH	19860602KH	KQLL-FM	CLEAR CHANNEL BROADCASTING LICENSES,	C	OWASSO	OK	LIC	100	606	291	2	34.7	1.4918
646478	153264	BNPFT	20030317FOD	NEW	EDGEWATER BROADCASTING, INC.	D	TULSA	OK	APP	0.041	445.8	289	0	67.1	0
633796	142049	BNPFT	20030312AEI	NEW	COMMUNITY BROADCASTING, INC.	D	NEODESHA	KS	APP	0.25	355	286	3	83.7	0
227673	35015	BLH	19960606KD	KJMM	KJMM, INC.	C2	BIXBY	OK	LIC	10	465	287	2	97.7	0
649717	156433	BNPFT	20030317HQN	NEW	E-STRING WIRELESS, LTD	D	PONCA CITY	OK	APP	0.25	350	289	0	100.9	0
630033	139219	BNPFT	20030312AHI	NEW	COMMUNITY BROADCASTING, INC.	D	PONCA CITY	OK	APP	0.25	392	289	0	108.9	0
646471	153257	BNPFT	20030317FNO	NEW	EDGEWATER BROADCASTING, INC.	D	OKMULGEE	OK	APP	0.062	406.8	289	0	110.7	0
270071	22267	BMLH	19980618KA	KGFY	MAHAFFEY ENTERPRISES, INC.	A	STILLWATER	OK	LIC	4.9	404	288	1	113.2	0
222987	48291	BMLH	19960403KA	KKOY-FM	SOUTHEAST KANSAS BROADCASTING COMPAN	A	CHANUTE	KS	LIC	4.3	340	288	1	115.3	0

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

Application_id	Facility_id	Prefix	ARN	Call	Licensee	Class	City	State	Status	ERP	RCAMSL	Channel	Adj	Dist	Clr
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