

# Exhibit 12

## Interference Analysis Overlap Requirements

According to CFR 47 §74.1204(a), translators are required to protect all existing FM stations from interference due to overlap of the protected contours of the existing stations with the interfering contours of the new translators.

### US Stations

In the attached tabular printout, only WBLM, W272BV and WPOR all have outgoing contour overlaps from the proposed translator, so no interference to other stations is anticipated.

WBLM and WPOR are third and second adjacent to the proposed translator, and, according to §74.1204(d),

**"The provisions of this section concerning prohibited overlap will not apply where the area of such overlap lies entirely over water. In addition, an application otherwise precluded by this section will be accepted if it can be demonstrated that no actual interference will occur due to ... lack of population ... ."**

The F(50,50) signal from WBLM at the proposed site is 90.0 dBu, computed from the 100 kW ERP and 442.0 meter HAAT in the direction toward the reference 21.7 km away. A 40 dB ratio of undesired to desired signal strength gives an allowable interfering F(50,10) field strength of 130.0 dBu. With 250 Watts ERP and a 4-bay half wave spaced Shively 6812-2HW antenna, the attached spreadsheet shows that the interfering contour reaches down to at most 16.47 meters (54 feet) above the ground, so **this contour does not reach the ground.**

Similar arguments apply to the other entries in the search listing, and all are summarized below:

Call	Dist km	ERP Kw	HAAT meters	F(50,50) dBu	F(50,10) dBu	dBu at ground	dBu tolerance	Dist above ground m
WBLM	21.7	100	442.0	90.0	130.0	125.57	4.43	8.00
WPOR	10.04	33	180.9	91.0	131.0	125.57	5.43	9.30

There are no habitable buildings in the area which would reach up to intersect these interfering contours. Hence §74.1204(d) applies, and the predicted area of interference is acceptable to the Commission.

W272BV is the current application, and need not be protected.

No other entries are sufficiently close to the proposed translator to require analysis.

### IF Separation

WSJBFM is 18.78 km from the proposed site and the site is required to be over 10 km distant. Similarly WRBC is 30.16 km from the proposed site and the site is required to be over 10 km distant.

### Channel 6 Television Stations

Since this is an application for a commercial band translator, TV6 considerations do not apply.

## **MERP Evaluation**

The pattern is designed to provide the maximum ERP for each radial consistent with CFR 47 73.1235(b)(1). This is demonstrated in detail in the Terrain and Contour Data printout.

### **Canadian Consideration**

The proposed translator is 163.72 km from the nearest point in Canada, within the 320 km limit established by treaty. The 0.250 kW ERP does not exceed the maximum 250 Watts, and the maximum 35.6 km F(50,10) 34 dBu contour (see data printout) does not exceed the statutory 60 km. No Canadian stations were found in the above search. Because the 34 dBu F(50,10) contour does not cross the common border (35.6 km maximum contour distance is less than the 163.72 km minimum distance to Canada), no Canadian concurrence is required. The relevant document for this analysis is the July 9, 1997 modification to the February 25, 1991 agreement.

Exhibit 12  
Light of Life

REFERENCE  
43 50 07 N.  
70 15 04 W.

CH# 272D - 102.3 MHz, Pwr= 0.25 kw, HAAT=42.9 M, COR= 98 M  
Average Protected F(50-50)= 8.5 km  
Ave. F(50-10) 40 dBu= 28.2 54 dBu= 12.0 80 dBu= 2.7 100 dBu= 1.1

DISPLAY DATES  
DATA 06-17-06  
SEARCH 06-23-06

CH CITY	CALL	TYPE STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kw) HAAT(M)	COR(M) INT(km)	PRO(km) LICENSEE	*OUT* (Overlap in km)
275C Portland	WBLM	LIC ME CX	297.4 117.2	21.72 BLH20030224ABB	43 55 29 70 29 29	100.000 442	551 12.1	82.9 Citadel Broadcasting Compa	-62.24*<
272D Yarmouth	W272BV	CP ME C	293.5 113.5	4.43 BNPFT20030827ANQ	43 51 04 70 18 06	0.010 178	210 26.1	7.7 Light of Life Ministries,	-27.08*<
270B Portland	WPOR	LIC ME CN	216.3 36.2	10.04 BLH19960619KB	43 45 45 70 19 30	33.000 181	236 5.8	52.0 Saga Communications Of New	-44.22*<
218A Standish	WSJBFM	LIC ME CN	266.8 86.6	18.78 BLED19840405BX	43 49 32 70 29 03	0.360 31	129 7.9	7.9 10.0R Trustees Of Saint Joshph's	8.8M
218A Lewiston	WRBC	LIC ME CN	6.4 186.4	30.16 BLED19820720AC	44 06 18 70 12 32	0.120 23	95 5.9	5.9 10.0R President & Trustees Of Ba	20.2M
273D Biddeford	W273AX	CP ME C	209.6 29.4	41.66 BNPFT20030821AGB	43 30 33 70 30 22	0.010 138	168 9.6	6.8 Edgewater Broadcasting, In	24.75
273B Camden	WQSS	LIC ME CN	64.2 245.0	97.54 BMLH19910123KB	44 12 40 69 09 06	7.900 394	445 79.8	53.7 Cc Licenses, Llc	34.20

Terrain database is NGDC 30 SEC  
ERP and HAAT are on direct line to and from reference station.  
Incoming contour overlap is ignored.  
"\*"affixed to 'IN' or 'Out' values = site inside protected contour. "<" = contour overlap

## HOW TO READ THE FM COMPUTER PRINT-OUT

The computer print-out should be self-explanatory for the most part. The parameters of the station being checked, (reference station) are printed in the heading. The 60 dBu protected contour is predicted from the Commission's F(50-50) table, while the 40, 54, 80 and 100 dBu contours are interference contours derived from the Commission's F(50-10) table. Contour distances are in kilometers and are predicted using spline interpolation from data points identical to those published in Report No. RS 76-01 by Gary C. Kalagian. Critical contour distances are determined using the Commission's TVFMINT FORTRAN subroutine. When interference contour distances are less than 16 kilometers the F(50-50) tables are used. If signal contour distances are less than 1.6 km the free-space equation is used.

The column listed "\* IN \*" is the sum of the reference station's 60 dBu protected contour and the data file station's interference contour subtracted from the distance between the stations. (All distances are derived by the method detailed in Sec. 73.208 of the Rules and Regulations as amended in Docket 80-90.) Therefore, the column is a measure of incoming interference. Negative distances in this column indicate the presence of interference. Listed antenna heights are the average heights of eight standard radials as found in the Commission's records unless otherwise noted, in which case the specific antenna heights along the azimuths between the reference station and the database station are used and visa versa. The column labeled "\* OUT \*" shows the distance of kilometers of overlap or clearance between the reference station's interference contour and the database station's protected contour. Negative distance figures in this column indicate outgoing interference.

For I.F., commercial, international and other spacing based relationships, the "IN" and "OUT" columns change their significance. The letter "R" stands for the minimum required distance in kilometers, while the letter "M" in the next column follows the available clear space separation in kilometers or "Margin". Minimum commercial separation distances were taken from Sec 73.207 of the rules as amended. This procedure is also used for all Canadian and Mexican spacing. Canadian separation distances were derived from the "Canadian/American Working Agreement".

Under the "BEARING" column, the first row of numbers indicate the bearings from true north of the data base stations in relationship with the reference station, while the numbers in the second row indicate the reverse bearings from the database station to the reference station.

The columns labeled "INT" and "PRO" hold the distance in kilometers of the appropriate interference contour and the protected contour of a data base station.

The first three letters of the "TYPE" column identify the current F.C.C. status of the stations. The fourth letter will be a "D" or "Z" (Sec. 73.215) if the facility is directional. The fifth letter will be an E, H or V depending on the type of antenna polarization. The sixth letter will be a 'Y' if the antenna uses beam tilt.

# Shively Labs<sup>®</sup>

Antenna Mfr.: Shively Labs

Date: 12/30/2004

Antenna Type: 6812B or 6602B 2-Bay, 1/2-wave spaced

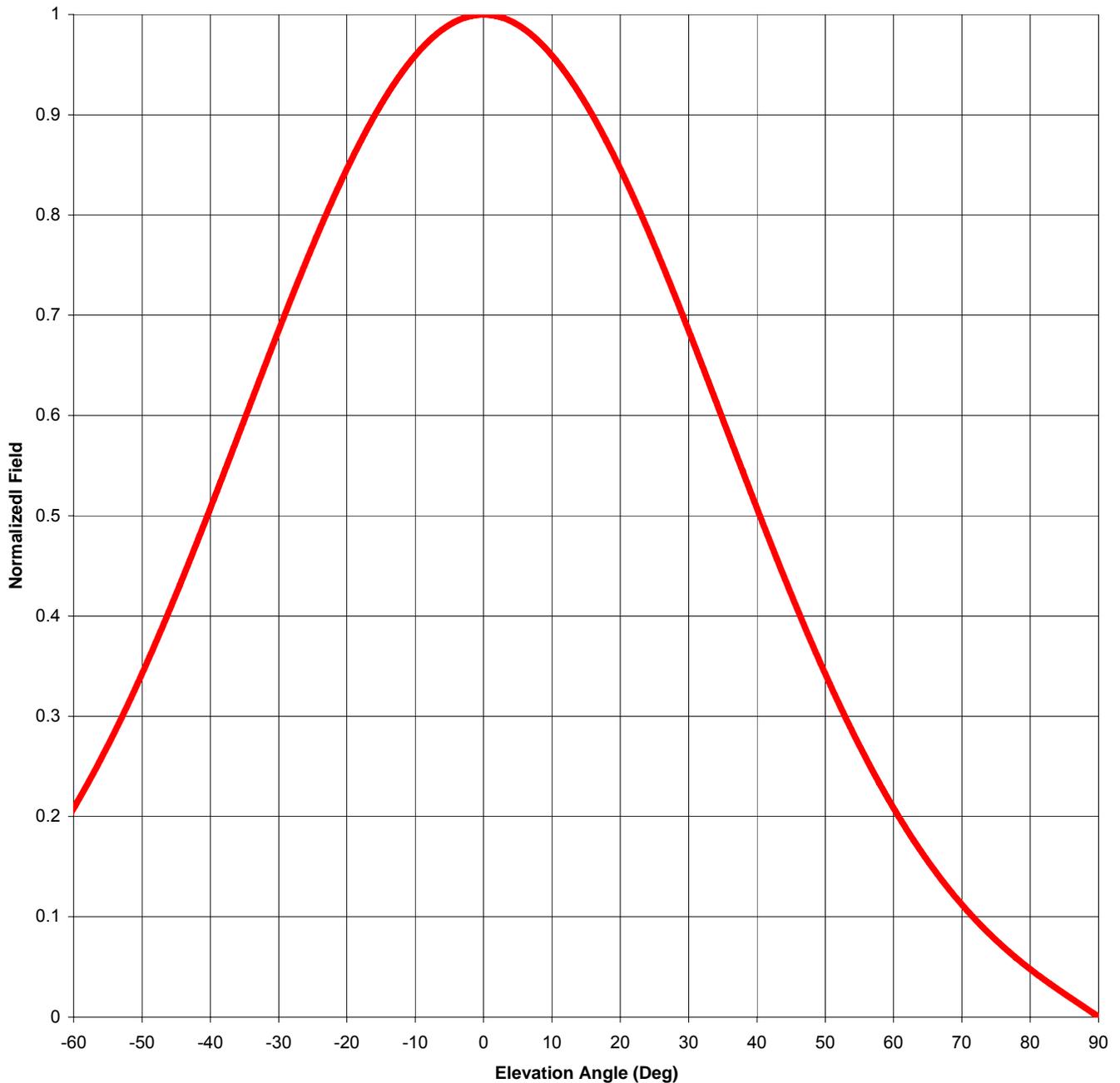
Frequency: 98.1

6812B Gain (Max) 0.63

-1.97 dB

6602B Gain (Max) 1.26

1.03 dB



## Elevation Pattern Tabulation, 6602B and 6812B 2-Bay Half-Wave-Spaced

Relative Field at 0° Depression = 1.000

Degrees	Rel. Field
1	1.000
2	0.998
3	0.996
4	0.993
5	0.990
6	0.985
7	0.980
8	0.974
9	0.967
10	0.959
11	0.951
12	0.942
13	0.932
14	0.921
15	0.910
16	0.899
17	0.886
18	0.873

Degrees	Rel. Field
19	0.860
20	0.846
21	0.832
22	0.817
23	0.801
24	0.786
25	0.770
26	0.753
27	0.736
28	0.720
29	0.702
30	0.685
31	0.667
32	0.650
33	0.632
34	0.614
35	0.596
36	0.578

Degrees	Rel. Field
37	0.561
38	0.543
39	0.525
40	0.508
41	0.490
42	0.473
43	0.456
44	0.439
45	0.422
46	0.405
47	0.389
48	0.373
49	0.358
50	0.342
51	0.327
52	0.313
53	0.298
54	0.284

Degrees	Rel. Field
55	0.271
56	0.258
57	0.245
58	0.232
59	0.220
60	0.208
61	0.197
62	0.186
63	0.176
64	0.165
65	0.156
66	0.146
67	0.137
68	0.128
69	0.120
70	0.112
71	0.104
72	0.097

Degrees	Rel. Field
73	0.090
74	0.083
75	0.077
76	0.070
77	0.064
78	0.059
79	0.053
80	0.048
81	0.043
82	0.038
83	0.033
84	0.028
85	0.023
86	0.019
87	0.014
88	0.009
89	0.005
90	0.000

## Exhibit 12

### ME Yarmouth vs WBLM

*Freespace Interference Study based on Vertical Radiation Pattern  
SHI 6812-2H 2 Bay Half Wave Spaced Antenna*

Depression Angle from Antenna	Antenna Relative Field	ERP Watts	ERP dBk	Distance to Ground from Antenna (m)	Free Space Signal (dBu)	dB Loss for Reflection	Signal Strength at Ground (dBu)	Circular Distance From Tower (m)	Distance to Contour using Free Space (m)	Height of Contour above Ground (m)
90	0.000	0.000	-86.02	20.01	54.87	0	54.87	0.00	0.00	20.01
85	0.023	0.132	-38.79	20.09	102.08	0	102.08	1.75	0.81	19.21
80	0.043	0.462	-33.35	20.32	107.41	0	107.41	3.53	1.51	18.52
75	0.077	1.482	-28.29	20.72	112.30	0	112.30	5.36	2.70	17.40
70	0.112	3.136	-25.04	21.29	115.32	0	115.32	7.28	3.93	16.32
65	0.156	6.084	-22.16	22.08	117.88	0	117.88	9.33	5.47	15.05
60	0.208	10.816	-19.66	23.11	119.99	0	119.99	11.55	7.30	13.69
55	0.271	18.360	-17.36	24.43	121.80	0	121.80	14.01	9.50	12.22
50	0.342	29.241	-15.34	26.12	123.24	0	123.24	16.79	11.99	10.82
45	0.422	44.521	-13.51	28.30	124.37	0	124.37	20.01	14.80	9.54
40	0.508	64.516	-11.90	31.13	125.15	0	125.15	23.85	17.82	8.56
35	0.596	88.804	-10.52	34.89	125.55	0	125.55	28.58	20.90	8.02
30	0.685	117.306	-9.31	40.02	125.57	0	125.57	34.66	24.02	8.00
25	0.770	148.225	-8.29	47.35	125.12	0	125.12	42.91	27.01	8.60
20	0.846	178.929	-7.47	58.51	124.10	0	124.10	54.98	29.67	9.86
15	0.910	207.025	-6.84	77.31	122.32	0	122.32	74.68	31.92	11.75
10	0.959	229.920	-6.38	115.23	119.30	0	119.30	113.48	33.63	14.17
5	0.990	245.025	-6.11	229.59	113.59	0	113.59	228.72	34.72	16.98

Distance to Ground Level assumes flat ground or a site where the site level is above average terrain in all azimuths.

Maximum ERP	250	watts	Max dBu at Ground Level	125.57	Lowest Height of Contour (m)	8.00
Radiation Center AG	20	m				
Radiation Center AG		66 ft.				
Maximum ERP		-6.02 dBk				
Protected dBu	90	dBu				
Interfering dBu		130.0 dBu				
Free Space Distance		35.07 m				

# Exhibit 12

## ME Yarmouth vs WPOR

### *Freespace Interference Study based on Vertical Radiation Pattern SHI 6812-2H 2 Bay Half Wave Spaced Antenna*

Depression Angle from Antenna	Antenna Relative Field	ERP Watts	ERP dBk	Distance to Ground from Antenna (m)	Free Space Signal (dBu)	dB Loss for Reflection	Signal Strength at Ground (dBu)	Circular Distance From Tower (m)	Distance to Contour using Free Space (m)	Height of Contour above Ground (m)
90	0.000	0.000	-86.02	20.01	54.87	0	54.87	0.00	0.00	20.01
85	0.023	0.132	-38.79	20.09	102.08	0	102.08	1.75	0.72	19.29
80	0.043	0.462	-33.35	20.32	107.41	0	107.41	3.53	1.34	18.69
75	0.077	1.482	-28.29	20.72	112.30	0	112.30	5.36	2.41	17.69
70	0.112	3.136	-25.04	21.29	115.32	0	115.32	7.28	3.50	16.72
65	0.156	6.084	-22.16	22.08	117.88	0	117.88	9.33	4.88	15.59
60	0.208	10.816	-19.66	23.11	119.99	0	119.99	11.55	6.50	14.38
55	0.271	18.360	-17.36	24.43	121.80	0	121.80	14.01	8.47	13.07
50	0.342	29.241	-15.34	26.12	123.24	0	123.24	16.79	10.69	11.82
45	0.422	44.521	-13.51	28.30	124.37	0	124.37	20.01	13.19	10.68
40	0.508	64.516	-11.90	31.13	125.15	0	125.15	23.85	15.88	9.80
35	0.596	88.804	-10.52	34.89	125.55	0	125.55	28.58	18.63	9.32
30	0.685	117.306	-9.31	40.02	125.57	0	125.57	34.66	21.41	9.30
25	0.770	148.225	-8.29	47.35	125.12	0	125.12	42.91	24.07	9.84
20	0.846	178.929	-7.47	58.51	124.10	0	124.10	54.98	26.44	10.97
15	0.910	207.025	-6.84	77.31	122.32	0	122.32	74.68	28.45	12.65
10	0.959	229.920	-6.38	115.23	119.30	0	119.30	113.48	29.98	14.80
5	0.990	245.025	-6.11	229.59	113.59	0	113.59	228.72	30.95	17.31

Distance to Ground Level assumes flat ground or a site where the site level is above average terrain in all azimuths.

Maximum ERP	250 watts	Max dBu at Ground Level	125.57	Lowest Height of Contour (m)	9.30
Radiation Center AG	20 m				
Radiation Center AG	66 ft.				
Maximum ERP	-6.02 dBk				
Protected dBu	91 dBu				
Interfering dBu	131.0 dBu				
Free Space Distance	31.26 m				

Exhibit 12  
 Canadian Terrain and Contour Data  
 W272BV Yarmouth, ME

ERP .250 kW  
 N. Lat. 43 50 7  
 W. Lon. 70 15 4  
 Center of Radiation 98.00 m AMSL

Az. Deg	Avg Elev Effective		ERP kWatts	Distance to Contour (km)				
	3-16 km T. M AMSL	Ant Ht M AAT		60.0 dBu F(50,50)	54.0 dBu F(50,10)	48.0 dBu F(50,10)	40.0 dBu F(50,10)	34.0 dBu F(50,10)
0	62.8	35.2	0.170	6.9	9.9	13.8	23.2	34.1
30	53.7	44.3	0.120	7.1	10.2	14.2	23.9	34.9
60	45.8	52.2	0.080	7.0	10.1	14.0	23.5	34.0
90	24.8	73.2	0.038	6.9	9.8	13.7	23.0	32.8
120	9.9	88.1	0.027	7.0	9.9	13.8	23.2	33.1
150	13.9	84.1	0.027	6.8	9.7	13.5	22.7	32.2
180	24.3	73.7	0.038	6.9	9.9	13.7	23.1	33.0
210	62.2	35.8	0.170	7.0	10.0	13.9	23.4	34.4
240	73.8	24.2	0.250	7.1	10.1	14.1	23.8	35.6<--
270	98.4	-0.4	0.250	7.1	10.1	14.1	23.8	35.6<--
300	101.5	-3.5	0.250	7.1	10.1	14.1	23.8	35.6<--
330	71.6	26.4	0.250	7.1	10.1	14.1	23.8	35.6<--

Average 53.558 44.442<--HAAT m

Area (sq. km.)	153.53	314.42	610.53	1721.75	3688.42
2000 Grouped Population	15,228	24,855	52,682	188,541	360,348