

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 WQRC and WPLM have outgoing contour overlaps from the proposed translator, so no interference to other stations is anticipated. Incoming overlap is not prohibited.

WQRC and WPLM are both 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 WQRC at the transmit site is 73.8 dBu and the signal from WPLM at the proposed site is 74.1 dBu. The weaker and thus more fragile station is WQRC, so protection sufficient for it will suffice for WPLM. A 40 dB ratio of undesired to desired signal strength gives an allowable interfering F(50,10) field strength of 104.1 dBu. The attached spreadsheet shows that this contour is at the lowest 7 m AGL. The transmitter building is 1 story (3 meters) so the signal is about 4 meters (13 ft) above the rooftop. The data sheet and tabulated pattern from the manufacturer's software is also provided for the Commission's convenience.

Hence §74.1204(d) applies, and the predicted area of interference is acceptable to the Commission.

A map is attached to demonstrate protection for WCRB.

All other facilities have over 45 km outgoing contour overlap clearance.

Exhibit 16

Horizon Christian Fellowship

Reference 258Tr ERP 0.010 kW HAAT 85 m COR 93 m AMSL
 413653 N 99.5 MHz Average protected F(50,50) 5.4 km
 703633 W Sandwich, MA

ChnCl	Call	Stat	Azi	Dist	FacId	Lat	*IN*	*OUT*
	Pwr	COR	HAAT		ARN	Lon		
	Owner			City		St		
260B	WQRC	LIC	69	23.33	58948	414119	13.05	-36.12
	50.000	125	116	BLH19820607AO		702049		
	Sandab Communication			Barnstable		MA		
256B	WPLM-F	LIC	349	39.89	52838	415802	28.98	-21.07
	50.000	159	131	BLH7410		704204		
	Plymouth Rock Broadc			Plymouth		MA		
258Tr	W258BH	CP	11	9.30	138873	414149	-14.84	-11.74
	0.027	88	72	BNPFT20030829AH		703516		
	Horizon Christian Fe			Sandwich		MA		
258B	WCRB	LIC	336	125.90	23441	423914	-11.84	33.79
	27.000	238	199	BLH19990310KE		711302		
	Nassau Broadcasting			Lowell		MA		

Channel 258Tr Analysis

W258BH Sandwich, MA
 N Lat 413653 W Lon 703633
 Site 43m
 COR AMSL 93m AGL 50m
 HAAT 85m ERP 0.010 kW

ChanCl	Call	Signal	*Out*	Az
		dBu	km	degr
256B	WPLM-F	64.1	-21.1	349
258B	WCRB	31.2	33.8	336
260B	WQRC	73.8	-36.0	69

258 co 31.2dBu 1st 27.8dBu Co ifce 33.8km WPLM- 64.1dBu, FS ERP 1.309W

Exhibit 12

MA Sandwich

Freespace Interference Study based on Vertical Radiation Pattern ERI 100-2HW 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	-87.96	50.00	44.98	0	44.98	0.00	0.06	49.94
85	0.001	0.000	-80.00	50.19	52.91	0	52.91	4.37	0.14	49.86
80	0.007	0.000	-63.10	50.77	69.71	0	69.71	8.82	0.97	49.05
75	0.019	0.004	-54.42	51.76	78.21	0	78.21	13.40	2.63	47.46
70	0.040	0.016	-47.96	53.21	84.44	0	84.44	18.20	5.53	44.80
65	0.073	0.053	-42.73	55.17	89.35	0	89.35	23.32	10.10	40.85
60	0.120	0.144	-38.42	57.74	93.27	0	93.27	28.87	16.60	35.62
55	0.176	0.310	-35.09	61.04	96.12	0	96.12	35.01	24.35	30.05
50	0.247	0.610	-32.15	65.27	98.48	0	98.48	41.95	34.17	23.82
45	0.330	1.089	-29.63	70.71	100.30	0	100.30	50.00	45.66	17.72
40	0.423	1.789	-27.47	77.79	101.63	0	101.63	59.59	58.52	12.38
35	0.523	2.735	-25.63	87.17	102.48	0	102.48	71.41	72.36	8.50
30	0.624	3.894	-24.10	100.00	102.82	0	102.82	86.60	86.33	6.83
25	0.723	5.227	-22.82	118.31	102.64	0	102.64	107.23	100.03	7.72
20	0.814	6.626	-21.79	146.19	101.83	0	101.83	137.37	112.62	11.48
15	0.891	7.939	-21.00	193.19	100.20	0	100.20	186.60	123.28	18.09
10	0.950	9.025	-20.45	287.94	97.29	0	97.29	283.56	131.44	27.18
5	0.987	9.742	-20.11	573.69	91.63	0	91.63	571.50	136.56	38.10

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

Maximum ERP	10	watts	Max dBu at Ground Level	102.82	Lowest Height of Contour (m)	6.83
Radiation Center AG	50	m			(ft)	22.41
Radiation Center AG	164	ft.				
Maximum ERP	-20.00	dBk				
Protected dBu	64.1	dBu				
Interfering dBu	104.1	dBu				
Free Space Distance	138.36	m				
	453.84	feet				

100 Series Circularly Polarized FM Antenna

The 100 Series antenna is the latest development in ERI's famous Rototiller® style FM antenna. The 100 Series antenna is designed for non-pressurized, low power applications. This antenna is also available in half-wave configuration which will limit RFI problems by reducing downward and upward radiation.

Like all ERI antennas, the 100 Series antenna is constructed of meticulously machined and highly conductive copper and brass members. All structural connections are TIG welded. RF connectors are silver plated and have ultra low loss gold plated inner conductors.

Mounting brackets and attachment hardware suitable for round members up to 4" diameter are included. Radomes and stand-off pole mounting brackets, and antenna input jumper cables are also available. Specify field tuning option when ordering.



ELECTRICAL SPECIFICATIONS

Applications:	Low Power FM
Translator or Booster:	500 to 2,000 Watts
Frequency Range:	88 to 108 MHz, single frequency
Polarization:	Circular (Clockwise)
RF Input:	See chart
Azimuth Pattern Circularity:	± 2 dB in free space, horizontal
VSWR at Input:	1.07:1 or less (with field matching) 1.5:1 or less, (without field matching); 1.7:1 ± 2 MHz

Features

- Circular polarization
- Light weight and low wind load design
- Economically priced



100 Series Circularly Polarized FM Antenna

ELECTRICAL SPECIFICATIONS

100 Series Circularly Polarized FM Antenna

Full Wave Spaced Elements

Model	Power Gain	dB Gain	Female 50 Ohm Input	Input Feed	Input Power Rating kW ¹
100-1(*)	0.4150	-3.820	Type N	End	600W
100-2(*)	0.8970	-0.472	Type N	End	600W
100-4(*)	1.9200	2.833	Type N	End	600W
101-1(*)	0.4150	-3.820	7/16 DIN	End	1000W
101-2(*)	0.8970	-0.472	7/16 DIN	End	1000W
101-4(*)	1.9200	2.833	7/16 DIN	End	1000W
102-1(*)	0.4150	-3.820	7/16 DIN	End	2000W
102-2(*)	0.8970	-0.472	7/16 DIN	End	2000W
102-4(*)	1.9200	2.833	7/16 DIN	End	2000W

100 Series Circularly Polarized FM Antenna

Half Wave Spaced Elements

Model	Power Gain	dB Gain	Female 50 Ohm Input	Input Feed	Input Power Rating kW
100-2(*)HW	0.6320	-1.994	Type N	End	600W
100-4(*)HW	1.1760	0.705	Type N	End	600W
101-2(*)HW	0.6320	-1.994	7/16 DIN	End	1000W
101-2(*)-HW	0.8970	-0.472	7/16 DIN	End	1000W
101-4(*)HW	1.1760	0.705	7/16 DIN	End	1000W
102-2(*)HW	0.6320	-1.994	7/16 DIN	End	2000W
102-4(*)HW	1.1720	0.705	7/16 DIN	End	2000W

(*) Specify M for male input or F for female input

(1) Rated at 2000 feet elevation

MECHANICAL SPECIFICATIONS

100 Series Circularly Polarized FM Antenna

Full Wave Spaced Elements

Model	Antenna Weight (pounds)		Antenna CaAa (square feet)	
	With Antenna Only	With 1/2-inch of Radial Ice	With Antenna Only	With 1/2-inch of Radial Ice
100-1(*)	16		1.60	
100-2(*)	34		3.26	
100-4(*)	70		6.54	
101-1(*)	16		1.60	
101-2(*)	34		3.26	
101-4(*)	70		6.54	
102-1(*)	16		1.60	
102-2(*)	34		3.26	
102-4(*)	70		6.54	

NOTE: (1) Antenna weight and wind load are approximate values for a typical structure assuming no top load. Final design loads will vary for specific projects and should be verified by an ERI representative.

(2) Wind loads are calculated in accordance with the ANSI/TIA/EIA 222-F standard. Weight and effective wind area (CaAc) includes antenna, inner transmission feed and typical support mast and mounting brackets with no ice.

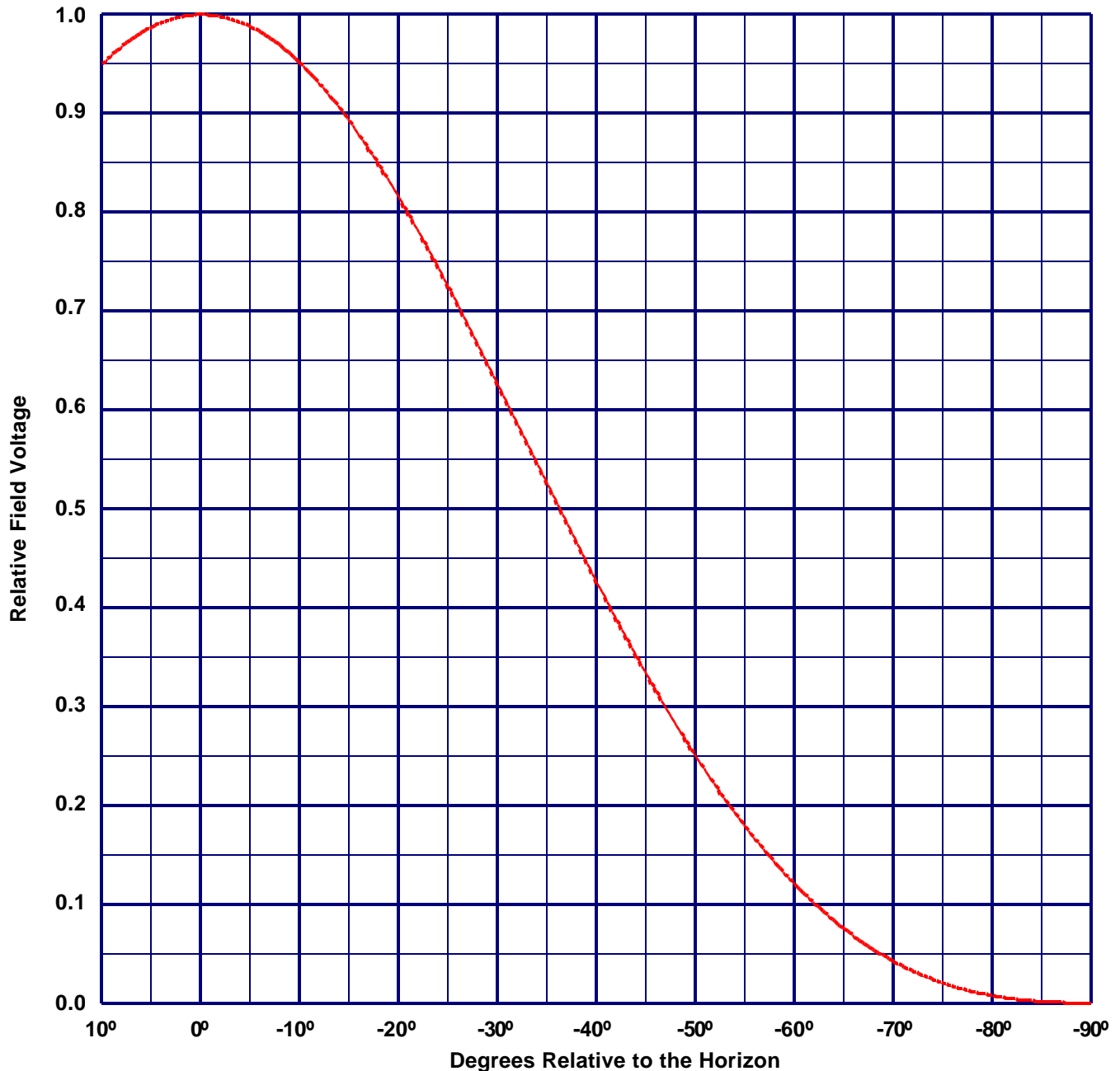


Vertical Plane Relative Field Pattern

ERI TYPE SHP, SHPX, MP, MPX, LP OR LPX ELEMENTS

A 2 level, .5 wave-length spaced non directional antenna

with 0° beam tilt, 0% null fill and a H/V maximum power ratio of 1.000



Vertical Polarization Gain:

Maximum: 0.702 (-1.535 dB)

Horizontal Plane: 0.702 (-1.535 dB)

Horizontal Polarization Gain:

Maximum: 0.702 (-1.535 dB)

Horizontal Plane: 0.702 (-1.535 dB)

CallChan 99.5

W258BH258

Class 0. E ERP 5.4 km

TrW0.010

SiteTop~AGL

4310250

COR AMSLHAAT

9385

LatitudeMapLongitude

413653703633

Owner

Horizon Christian Fellow

Owner Lat. Owner Lon.

Cities^VState

SandwichMA

City Lat. dBu City Lon.

Find

Eval

GatherPlotStations

Pop60Area

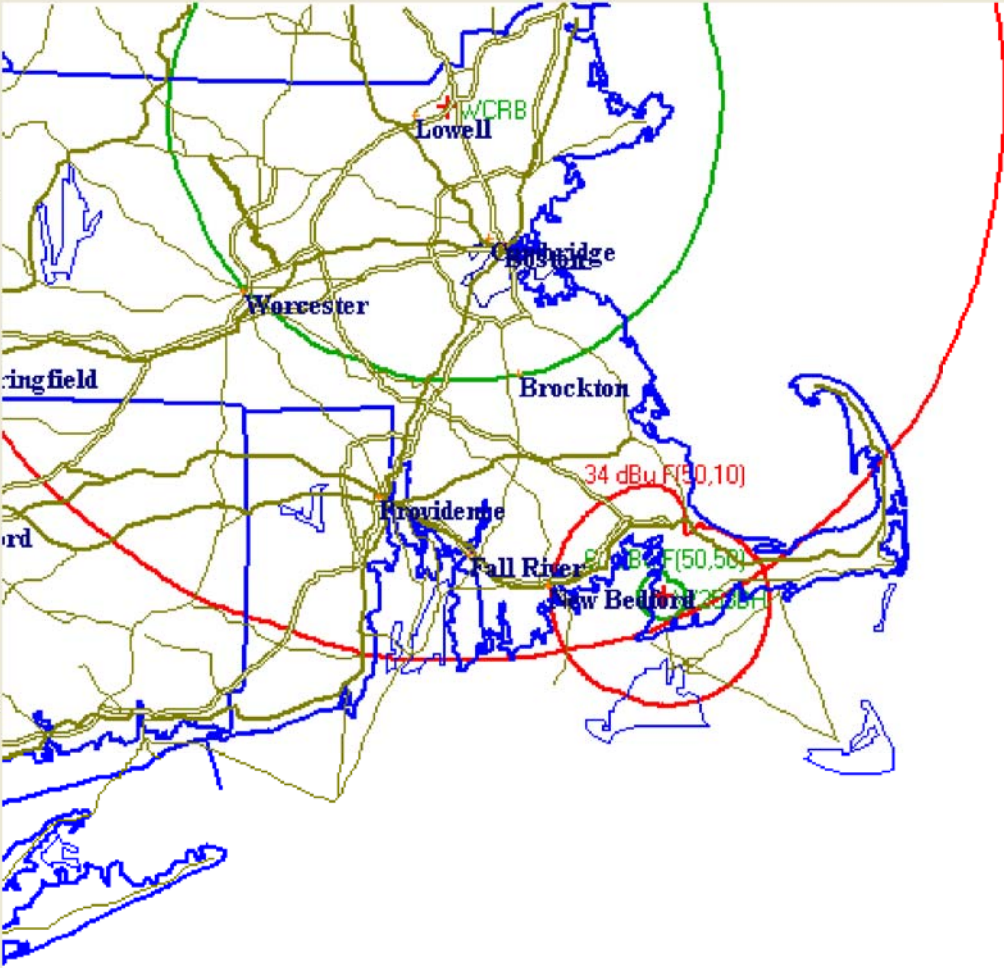
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ARN

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☒ 360 Rad ☐ 40.234 ☐ Plot 60 ☒ DLG ☒ Pops ☐ Twrs ☐ Trm ASR 1204108 <- Clear X

Call	Chan	St...	Dist	Az	City	St	*IN*	*OUT*	MaxPwr	Margin	HAAT	ERP kW	Owner
WQRC	260B	LIC	23.33	69	Barnstable	MA	13.1	-36.1	0.000		116	50.000	Sandab Commun
WPLM-F	256B	LIC	39.89	349	Plymouth	MA	29.0	-21.1	0.000		131	50.000	Plymouth Rock B
W258BH	258Tr	CP	9.30	11	Sandwich	MA	-14.8	-11.7	0.000		72	0.027	Horizon Christian
WCRB	258B	LIC	125.90	336	Lowell	MA	-11.8	33.8	0.000		199	27.000	Nassau Broadcas
WSKO-F	259A	LIC	85.40	267	Wakefield...	RI	47.3	55.7	35.947		163	2.3000	Citadel Broadcast
WJZS	257A	LIC	94.22	239	Block Island	RI	49.4	60.9	51.257		78	6.000	Astro Tele-comm.
WJMF.A	204B1	APP	84.31	294	Smithfield	RI				72.81	56	8.5000	Bryant University
WJMF	204A	LIC	84.56	294	Smithfield	RI				75.06	40	0.225	Bryant University
WERS	205B1	LIC	89.93	336	Boston	MA				78.43	186	4.000	Emerson College
WHHB	260D	LIC	95.84	314	Holliston	MA	90.0	89.1	100.000		62	0.017	Holliston High Sc