Non-Interference Compliance
K209FO, Olympia, WA FAC# 8964

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 created by V-soft XField.

Page 4 includes a tabulation of the vertical radiation pattern for the proposed antenna provided by the antenna manufacturer.

Pages 5 and 6 of this exhibit is an adjacent channel study created by ComStudy 2,2

Page 7 of this exhibit is a Google Earth photo of the vicinity surrounding the proposed translator's tower site with the plotted zone of predicted interference.

Note: The tallest building in the zone of predicted interference is less than 15ft (4.6m). This application provides 6.95m (22.8ft) of ground clearance, so 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.

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.

File Number	Call Sign	Contour at Tower (dBµ)
BLED-20011228AAN	**KAOS**	**83.6**
BLED-20060913AAF	**KPLI**	**71.6**

Minimum F(50,50) contour of Adjacent Station within Proposed Translator's Standard Interfering Contour	**71.6**

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 dBµ. Since the minimum protected contour strength within the proposed translator's standard interference contour is **71.6 dBµ**, this makes the proposed translator's worst-case interfering contour **111.6 dBµ.** By the free-space equation, this contour is calculated to extend a maximum of **99.95 m** from the transmit antenna.

The vertical ground clearance of the proposed translator's interference contour has been calculated using V-Soft, XField. As shown on the following page, the area of interference clears the tower ground level (Height Above Ground) by **6.96 m** at the lowest point.

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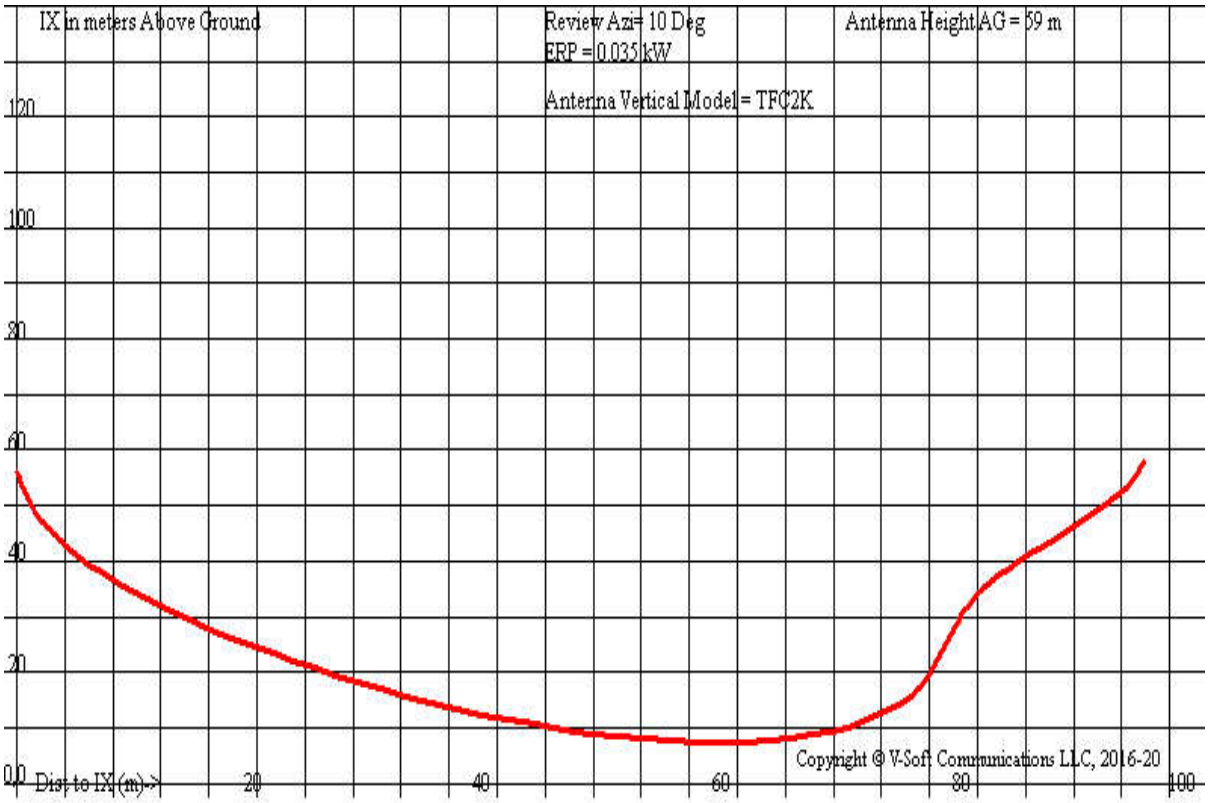
Antenna Manufacturer:	**BEX**
Antenna Model:	**TFC2K @ 120°**
CORAGL:	**49 m**
Maximum ERP:	**.035 kW**
Interfering Contour:	**111.6 dBµ**
Max Int. Contour Distance:	**99.95 m**
Min Ground Clearance:	**6.96 m**



K209FO Olympia , WA, Showing Protection to KPLI , Channel: 211
Geographic Coordinates: N. 47 02 36.30 W. 122 51 52.50
74.1204(d) Study - Using FCC 30 SEC Terrain Database
Translator or LPFM Maximum Antenna ERP = 0.035 kW, Channel: 209
Translator or LPFM Antenna Height AG = 49 meters
K209FO Antenna Azimuth Model = TFC2K.PAT, Vertical Model = TFC2K

Protected Station's Contour = 71.64042 dBu
Translator's or LPFM's full Interference contour 111.64042

Review Azimuth = 10 Degrees True
Relative Field on the horizontal at Review Azimuth = 0.780
Translator/LPFM ERP on the horizontal at Review Azimuth = 0.021 kW
Distance between stations = 2.9 km
Protected Station= KPLI, .1 kW, 44 M meters COR AMSL

Depression Angle From Horiz. (Deg)	Vertical Relative Field	Horizontal Relative Field	ERP (kw)	Dist to IX Contour Along Dep. Angle(m)	Dist to IX Contour From Tower Base(m)	Height IX Above Ground (m)
00.0	1.0	0.78	0.0273	095.9534	095.9534	049.000
05.0	0.976	0.78	0.0260	093.6745	093.3180	048.836
10.0	0.934	0.78	0.0238	089.6205	088.2589	043.438
15.0	0.900	0.78	0.0221	086.3101	083.3691	036.661
20.0	0.890	0.78	0.0216	085.3985	080.2484	029.792
25.0	0.902	0.78	0.0222	086.5212	078.4148	022.435
30.0	0.914	0.78	0.0228	087.7014	075.9516	015.149
35.0	0.898	0.78	0.0220	086.1312	070.5546	009.597
40.0	0.844	0.78	0.0194	080.9655	062.0231	006.956
45.0	0.754	0.78	0.0155	072.3314	051.1460	007.854
50.0	0.642	0.78	0.0112	061.5829	039.5847	011.825
55.0	0.525	0.78	0.0075	050.3755	028.8942	017.735
60.0	0.423	0.78	0.0049	040.5534	020.2767	023.880
65.0	0.334	0.78	0.0030	032.0484	013.5443	029.954
70.0	0.259	0.78	0.0018	024.8903	008.5130	035.611
75.0	0.195	0.78	0.0010	018.7109	004.8427	040.927
80.0	0.133	0.78	0.0005	012.7810	002.2194	046.413
85.0	0.073	0.78	0.0001	007.0046	000.6105	047.022
90.0	0.073	0.78	0.0001	007.0046	000.0000	048.995

Frequency: 99.10 MHz

Vertical diagram at an azimuth of 0°

Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)
0.0	100.0	0.5	120.0	34.7	0.1	240.0	36.8	0.1
2.0	98.9	0.5	122.0	33.8	0.1	242.0	37.3	0.1
4.0	96.3	0.5	124.0	32.5	0.1	244.0	37.2	0.1
6.0	92.7	0.4	126.0	30.7	0.0	246.0	36.6	0.1
8.0	87.9	0.4	128.0	28.5	0.0	248.0	35.5	0.1
10.0	82.6	0.4	130.0	26.0	0.0	250.0	33.8	0.1
12.0	76.9	0.3	132.0	23.1	0.0	252.0	31.7	0.1
14.0	71.0	0.3	134.0	20.0	0.0	254.0	29.2	0.0
16.0	65.0	0.2	136.0	16.7	0.0	256.0	26.4	0.0
18.0	59.1	0.2	138.0	13.1	0.0	258.0	23.2	0.0
20.0	53.1	0.1	140.0	9.3	0.0	260.0	19.9	0.0
22.0	47.0	0.1	142.0	5.2	0.0	262.0	16.3	0.0
24.0	40.7	0.1	144.0	0.9	0.0	264.0	12.7	0.0
26.0	34.1	0.1	146.0	3.7	0.0	266.0	9.1	0.0
28.0	27.2	0.0	148.0	8.7	0.0	268.0	5.9	0.0
30.0	20.1	0.0	150.0	14.1	0.0	270.0	3.4	0.0
32.0	12.9	0.0	152.0	19.7	0.0	272.0	4.5	0.0
34.0	5.6	0.0	154.0	25.6	0.0	274.0	6.7	0.0
36.0	1.4	0.0	156.0	31.7	0.1	276.0	9.2	0.0
38.0	7.9	0.0	158.0	37.8	0.1	278.0	11.7	0.0
40.0	13.8	0.0	160.0	43.7	0.1	280.0	14.3	0.0
42.0	18.9	0.0	162.0	49.3	0.1	282.0	16.8	0.0
44.0	23.1	0.0	164.0	54.4	0.2	284.0	19.2	0.0
46.0	26.4	0.0	166.0	58.9	0.2	286.0	21.6	0.0
48.0	28.7	0.0	168.0	62.7	0.2	288.0	23.9	0.0
50.0	30.2	0.0	170.0	65.8	0.2	290.0	26.2	0.0
52.0	30.9	0.0	172.0	68.1	0.2	292.0	28.4	0.0
54.0	30.9	0.0	174.0	69.8	0.3	294.0	30.5	0.0
56.0	30.4	0.0	176.0	70.9	0.3	296.0	32.5	0.1
58.0	29.5	0.0	178.0	71.4	0.3	298.0	34.2	0.1
60.0	28.3	0.0	180.0	71.4	0.3	300.0	35.8	0.1
62.0	26.9	0.0	182.0	71.2	0.3	302.0	36.9	0.1
64.0	25.4	0.0	184.0	70.6	0.3	304.0	37.6	0.1
66.0	23.8	0.0	186.0	69.5	0.3	306.0	37.7	0.1
68.0	22.2	0.0	188.0	67.9	0.2	308.0	37.2	0.1
70.0	20.5	0.0	190.0	65.8	0.2	310.0	35.9	0.1
72.0	18.8	0.0	192.0	63.0	0.2	312.0	33.6	0.1
74.0	17.1	0.0	194.0	59.6	0.2	314.0	30.5	0.0
76.0	15.3	0.0	196.0	55.4	0.2	316.0	26.3	0.0
78.0	13.5	0.0	198.0	50.6	0.1	318.0	21.3	0.0
80.0	11.5	0.0	200.0	45.2	0.1	320.0	15.3	0.0
82.0	9.5	0.0	202.0	39.4	0.1	322.0	8.7	0.0
84.0	7.5	0.0	204.0	33.3	0.1	324.0	1.5	0.0
86.0	5.4	0.0	206.0	27.0	0.0	326.0	6.1	0.0
88.0	3.7	0.0	208.0	20.9	0.0	328.0	13.8	0.0
90.0	3.0	0.0	210.0	14.9	0.0	330.0	21.4	0.0
92.0	5.6	0.0	212.0	9.2	0.0	332.0	28.8	0.0
94.0	8.5	0.0	214.0	4.0	0.0	334.0	36.0	0.1
96.0	11.8	0.0	216.0	0.9	0.0	336.0	42.8	0.1
98.0	15.1	0.0	218.0	5.5	0.0	338.0	49.3	0.1
100.0	18.3	0.0	220.0	9.7	0.0	340.0	55.6	0.2
102.0	21.5	0.0	222.0	13.7	0.0	342.0	61.8	0.2
104.0	24.4	0.0	224.0	17.4	0.0	344.0	67.9	0.2
106.0	27.0	0.0	226.0	20.9	0.0	346.0	73.9	0.3
108.0	29.4	0.0	228.0	24.1	0.0	348.0	79.8	0.3
110.0	31.4	0.1	230.0	27.1	0.0	350.0	85.3	0.4
112.0	33.0	0.1	232.0	29.9	0.0	352.0	90.4	0.4
114.0	34.2	0.1	234.0	32.3	0.1	354.0	94.6	0.5
116.0	34.9	0.1	236.0	34.3	0.1	356.0	97.8	0.5
118.0	35.0	0.1	238.0	35.8	0.1	358.0	99.6	0.5

Adjacent Channel Study
K209FO, Olympia, WA FAC# 89649
6/29/2023

Callsign	State	City	Channel	ERP (W)	Class	Status	Distance (km)	Clr
K209FO	WA	OLYMPIA	209	70	D	LIC	0	-51.94 dB
KAOS	WA	OLYMPIA	207	1250	A	LIC	5.03	-25.59 dB
KPLI	WA	OLYMPIA	211	100	A	LIC	2.88	-18.35 dB
KGHP	WA	GIG HARBOR	210	1350	A	LIC	23.02	-4.49 dB
CE-MXG-221-AM	WA	MCCLEARY	209	70	A	CP MOD	22.22	0.39 dB
KWFJ	WA	ROY	209	1000	A	LIC	25.41	1.31 dB
K209FQ	WA	SHELTON	209	250	D	LIC	24.52	3.60 dB
NCE-MXG-221	WA	BAINBRIDGE ISLAND	209	100000	C	DEL	64.93	5.19 dB
NCE-MXG-221	WA	CENTRALIA	209	990	A	DEL	38.95	8.88 dB
NCE-MXG-221	WA	CHEHALIS	209	500	A	DEL	45.97	10.26 dB
KNHC	WA	SEATTLE	208	8500	C1	LIC	79.73	13.78 dB
NCE-MXG-221	WA	BAINBRIDGE ISLAND	211	100000	C	DEL	64.93	13.33 dB
NCE-MXG-221	WA	BAINBRIDGE ISLAND	206	100000	C	DEL	64.95	13.33 dB
CE-MXG-221-AM	WA	WINLOCK	209	250	A	CP MOD	56.36	14.56 dB
NCE-MXG-221	WA	BAINBRIDGE ISLAND	207	50000	C	DEL	64.93	16.34 dB
KNHC	WA	SEATTLE	208	15000	C2	LIC	83.73	17.63 dB
NCE-MXG-221	WA	WILKESON	209	110	A	CP	62.95	18.29 dB
K210ES	WA	ABERDEEN	210	115	D	LIC	67.06	22.95 dB
K262CY	WA	OLYMPIA	262	250	D	CP MOD	23.51	23.5
K262CY	WA	OLYMPIA	262	250	D	LIC	23.51	23.5
NCE-MXG-221	WA	EATONVILLE	211	400	A	CP	43.69	23.74 dB
KHOD	WA	HOODSPORT	211	2300	A	CP MOD	43.3	24.97 dB
K211FH	WA	SHELTON	211	50	D	LIC	24.52	25.64 dB
K207AZ	WA	GIG HARBOR	207	32.5	D	LIC	29.77	25.54 dB
KUPS	WA	TACOMA	211	100	A	LIC	38.15	25.42 dB
KGHE	WA	MONTESANO	206	255	A	LIC	55.95	25.88 dB
KEXP-FM	WA	SEATTLE	212	4700	C3	LIC	76.26	26.55 dB
KGRG-FM	WA	AUBURN	210	230	A	LIC	54.32	26.86 dB
K206DM	WA	BREMERTON	206	13	D	LIC	56.57	27.26 dB
KEXP-FM	WA	SEATTLE	212	560	A	LIC	76.26	28.83 dB
K211AP	WA	CENTRALIA	211	19	D	LIC	56.3	28.19 dB
KBSG	WA	RAYMOND	211	440	A	LIC	79.31	28.06 dB
KOAC-FM	OR	ASTORIA	209	180	A	LIC	116.88	28.47 dB
NCE-MXG-221	WA	PACKWOOD	206	500	C3	CP	121.92	29.90 dB
KOAC-FM	OR	ASTORIA	209	80	A	APP	116.88	29.15 dB
CE-MXG-221-AM	WA	MOSSYROCK	211	10	A	CP MOD	54.52	31.57 dB
NCE-MXG-221	WA	CATHLAMET	207	370	C3	CP	83.32	34.37 dB
KASB	WA	BELLEVUE	210	60	D	LIC	80.12	34.30 dB

NEW	BC	VICTORIA	209	3600	B		179.83	34.78 dB
K206CJ	WA	ISSAQUAH	206	9	D	LIC	84.84	35.67 dB
NCE-MXG-221	WA	OCEAN PARK	207	950	C3	DEL	79.3	35.70 dB
KXIR	WA	FREELAND	210	1800	A	LIC	115.39	35.95 dB
KLWO	WA	LONGVIEW	212	400	A	LIC	97.88	36.78 dB
KMWS	WA	MOUNT VERNON	209	1500	A	LIC	171.92	36.95 dB
K207AP	WA	SUMNER & LAKE TAPPS	207	70	D	LIC	49.08	37.49 dB
KJVH	WA	LONGVIEW	208	100	A	LIC	97.73	37.60 dB
KQAC	OR	PORTLAND	210	5900	C1	LIC	170.08	38.09 dB
KMHD	OR	GRESHAM	206	7900	C1	APP	170.07	38.33 dB
KMHD	OR	GRESHAM	206	7900	C1	LIC	170.08	38.34 dB
KILU	WA	ABERDEEN	208	100	A	CP MOD	71.83	38.62 dB
KQAC	OR	PORTLAND	210	3200	C1	LIC	169.32	39.93 dB

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Google Earth Photo of Zone of Predicted Interference