

December 2019
FM Translator W292FZ
Gardiner, Maine Channel 262D
Allocation Study

Non-Adjacent Channel Change

This application proposes a non-adjacent channel change from Channel 292D to Channel 262D, at the authorized W292FZ transmitter site. The justification for this channel change is the interference complaint which is pending against the W292FZ license application number 0000086683, in which it is alleged that W292FZ causes interference to over-the-air reception by listeners of WHXR 292A Scarborough.

In light of the interference complaint, it is believed that the § 74.1233(a)(1) requirement of a “showing of interference to or from any other broadcast station” (for qualification as a minor change application) has been functionally satisfied.

Expedited processing of this application is requested, in the interests of resolving this matter as promptly as possible.

Allocation Study

The attached spacing study shows the spacing between the proposed translator site and the location of cochannel and adjacent channel stations and proposals. This study was made with the Commission's Class A spacing requirements, and individual situations were examined to determine the lack of prohibited contour overlap per the requirements of §74.1204 of the Rules. The attached allocation study maps demonstrate compliance with the Commission's Rules for protection of FM broadcast stations and FM translators as outlined in §74.1204.

The spacing study demonstrates compliance with §73.207 of the Commission's Rules regarding spacing restrictions to stations which are 53 or 54 channels removed from the proposed operation.

WTHT 260B Auburn

The proposed translator transmitter site is located within the 54 dBu protected contour of second-adjacent channel station WTHT 260B Auburn. The following calculation, performed using the

Living Way methodology, demonstrates interference protection to that station.

Protected Station	Distance & Bearing to Proposal	Station ERP and HAAT on that azimuth	Station Field Strength at Proposal	Corresponding Translator Interfering Contour	Distance to Translator Interfering Contour
WTHT 260B	32.09 km 46 deg True	28.5 kW 214 meters	71.0 dBu F(50,50)	111.0 dBu	see following

Given that the transmitting antenna will be installed at a height of 152 meters above ground, and taking into consideration the vertical plane pattern of the PSI FML-1A-DA antenna, the attached Free Space calculations demonstrate that the interference area will not reach ground level. There is no population within this contour. Therefore, the proposed facility satisfies the requirements of §74.1204(d) with respect to WTHT.

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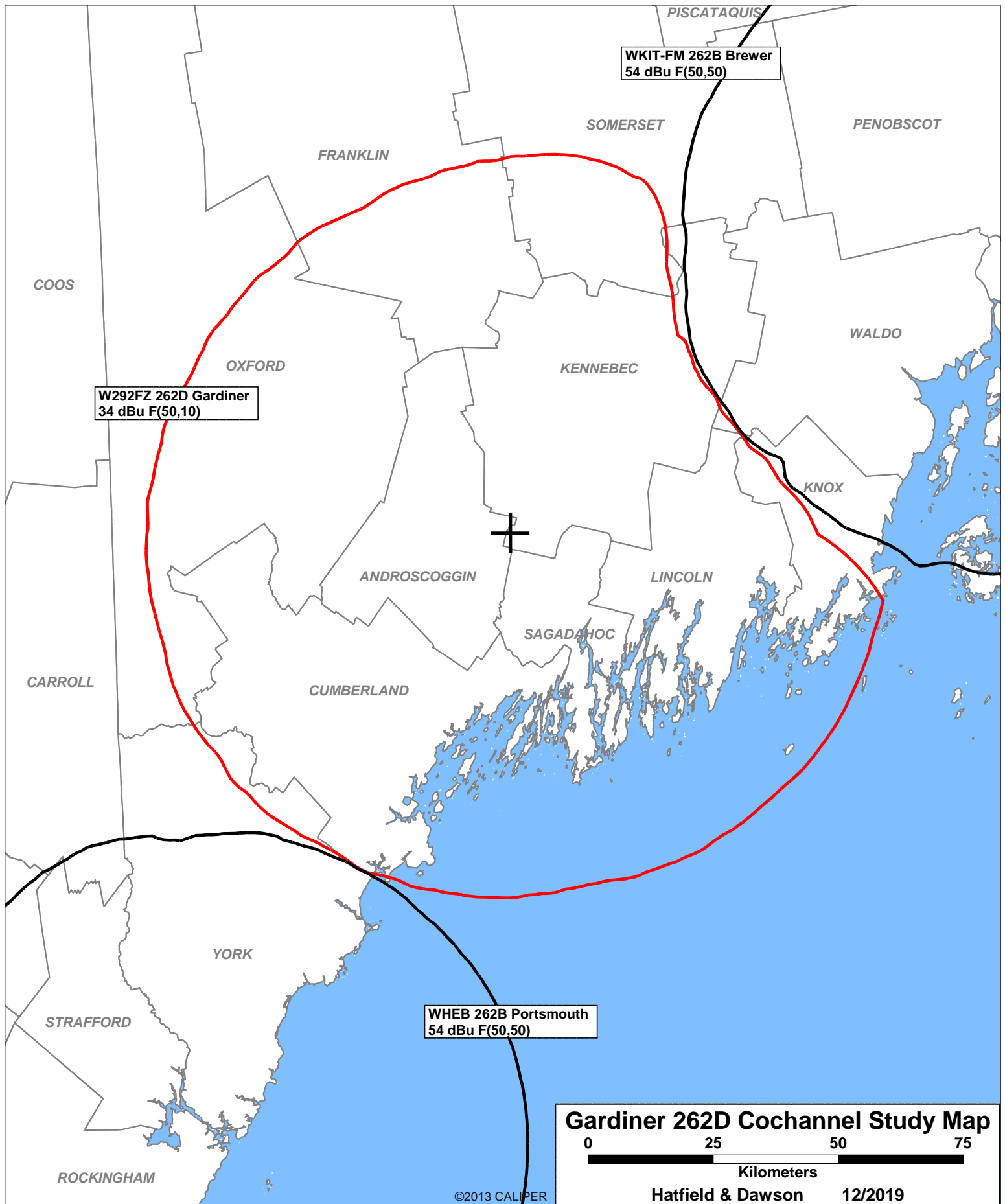
SEARCH PARAMETERS

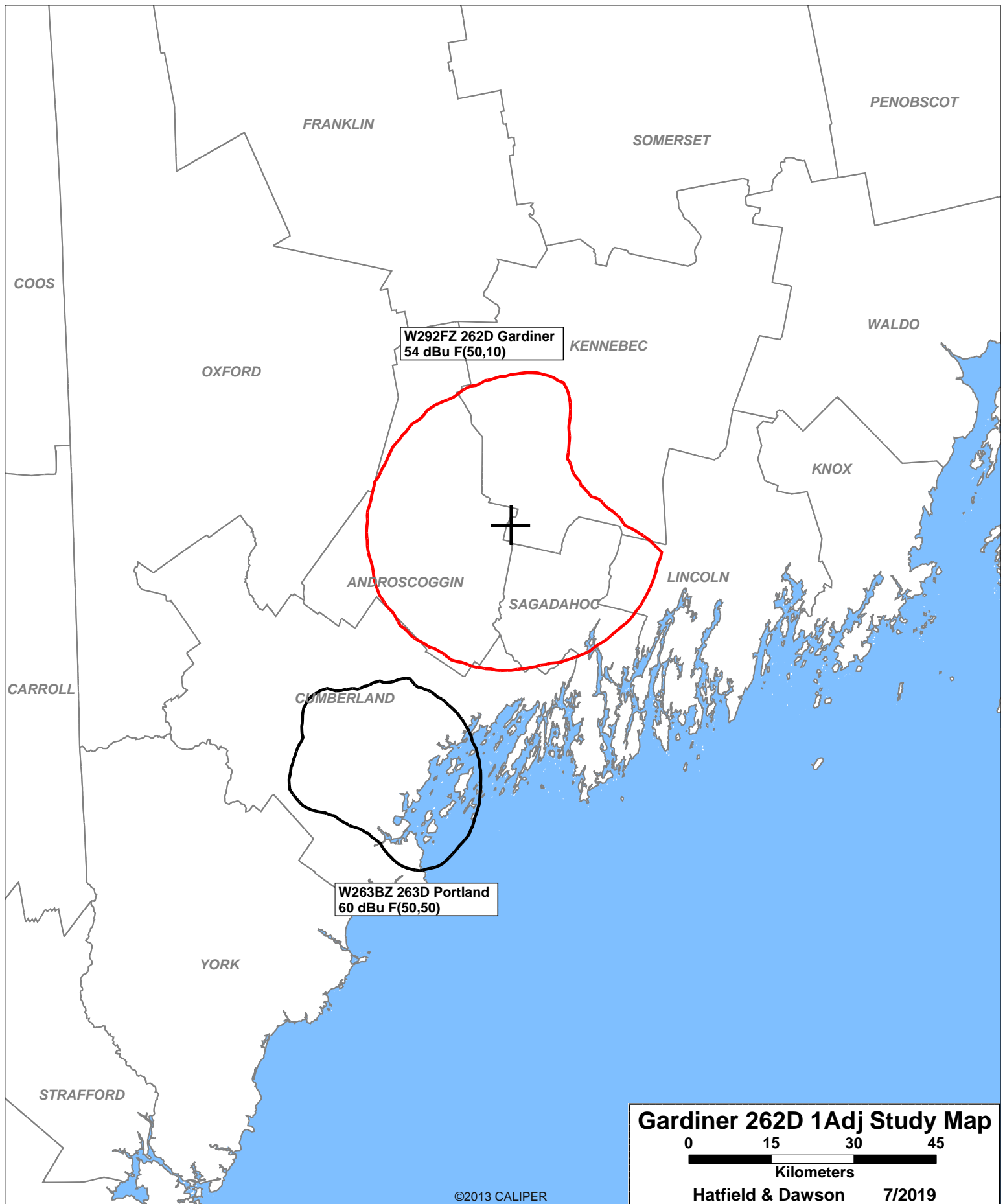
Channel: 262A 100.3 MHz
 Latitude: 44 9 15 (NAD27)
 Longitude: 70 0 37
 Safety Zone: 50 km
 Job Title: oak hill 262

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Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
WWTP LIC	AUGUSTA ME	BMLD-80510AAE	208A 89.5	0.480 108.7	44-21-07 069-39-30	51.8	35.68 25.68	10 CLEAR
WTBP LIC	BATH ME	BLD-60617AAB	209B1 89.7	10.500 87.9	43-52-45 069-37-35	134.8	43.37 31.37	12 CLEAR
WMHB LIC	WATERVILLE ME	BLD-00627AFW	209A 89.7	0.110 32.0	44-33-57 069-39-49	30.9	53.44 43.44	10 CLEAR
W259BY LIC	WATERVILLE ME	BLFT-51102AKI	259D 99.7	0.190 157.0	44-29-21 069-39-07	37.3	46.93 0.00	0 TRANS
WTHT LIC	AUBURN ME	BLH-980825KD	260B 99.9	28.500 196.0	43-57-07 070-17-46	225.5	32.09 -36.91	69 SHORT
WKIT-FM LIC	BREWER ME	BMLH-40625AEJ	262B 100.3	16.000 269.0	44-40-39 068-45-15	59.3	115.72 -62.28	178 SHORT
WHEB LIC	PORTSMOUTH NH	BLH-910307KE	262B 100.3	50.000 140.0	43-03-11 070-46-04	206.7	136.77 -41.23	178 SHORT
W263BZ LIC	PORTLAND ME	BLFT-60314AAI	263D 100.5	0.250 256.0	43-44-38 070-20-01	209.7	52.46 0.00	0 TRANS
WOXO-FM LIC	MEXICO ME	BLH-20611AAK	264C3 100.7	0.850 388.0	44-34-56 070-37-59	314.1 SS	68.75 26.75	42 CLEAR
WTNP-LP LIC	WATERVILLE ME	BLL-50223ACG	264L1 100.7	0.076 34.4	44-34-57 069-38-16	31.7	56.10 27.10	29 CLEAR
W265DP LIC	AUGUSTA ME	BLFT-80511AAU	265D 100.9	0.060 0.0	44-18-35 069-49-41	39.9	22.60 0.00	0 TRANS
WYNZ LIC	SOUTH PORTLAND ME	BLH-90916AAQ	265B1 100.9	25.000 93.0	43-41-26 070-19-05	205.7 SS	57.14 9.14	48 CLOSE

===== END OF FM SPACING STUDY FOR CHANNEL 262 =====





Gardiner 262D Free Space Interference Area Calculator

Interference Area to WTHT 260B Auburn

Antenna Height: 152 meters AGL
 Contour Level: 111 dBu equals 0.4 V/m
 ERP in Watts: 123 Watts

Maximum distance
 to interfering contour is: 718.9 feet equals 219.1 meters

Antenna: PSIFML-1

Depression Angle (degrees)	PSI PSIFML-1 Relative Field	Adjusted ERP (Watts)	Free Space Distance To 111 dBu Contour Along the depression angle	Horizontal Distance (meters)	Contour AGL (meters)
-90	0.001	0.0	0.2 meters	0	151.8
-89	0.017	0.0	3.7	0.1	148.3
-88	0.035	0.2	7.7	0.3	144.3
-87	0.052	0.3	11.4	0.6	140.6
-86	0.070	0.6	15.3	1.1	136.7
-85	0.087	0.9	19.1	1.7	133.0
-84	0.104	1.3	22.8	2.4	129.3
-83	0.122	1.8	26.7	3.3	125.5
-82	0.139	2.4	30.5	4.2	121.8
-81	0.156	3.0	34.2	5.3	118.2
-80	0.174	3.7	38.1	6.6	114.5
-79	0.191	4.5	41.9	8.0	110.9
-78	0.208	5.3	45.6	9.5	107.4
-77	0.225	6.2	49.3	11.1	104.0
-76	0.242	7.2	53.0	12.8	100.5
-75	0.259	8.3	56.8	14.7	97.2
-74	0.276	9.4	60.5	16.7	93.9
-73	0.292	10.5	64.0	18.7	90.8
-72	0.309	11.7	67.7	20.9	87.6
-71	0.325	13.0	71.2	23.2	84.7
-70	0.342	14.4	74.9	25.6	81.6
-69	0.358	15.8	78.4	28.1	78.8
-68	0.375	17.3	82.2	30.8	75.8
-67	0.391	18.8	85.7	33.5	73.1
-66	0.407	20.4	89.2	36.3	70.5
-65	0.423	22.0	92.7	39.2	68.0
-64	0.438	23.6	96.0	42.1	65.7
-63	0.454	25.4	99.5	45.2	63.4
-62	0.469	27.1	102.8	48.2	61.3
-61	0.485	28.9	106.3	51.5	59.0
-60	0.500	30.8	109.6	54.8	57.1
-59	0.515	32.6	112.9	58.1	55.3
-58	0.530	34.6	116.1	61.5	53.5
-57	0.545	36.5	119.4	65.0	51.8
-56	0.559	38.4	122.5	68.5	50.4
-55	0.573	40.4	125.6	72.0	49.1
-54	0.588	42.5	128.8	75.7	47.8
-53	0.602	44.6	131.9	79.4	46.6
-52	0.616	46.7	135.0	83.1	45.6
-51	0.629	48.7	137.8	86.7	44.9
-50	0.643	50.9	140.9	90.6	44.1
-49	0.656	52.9	143.7	94.3	43.5

-48	0.669	55.1	146.6	98.1	43.1
-47	0.682	57.2	149.4	101.9	42.7
-46	0.695	59.4	152.3	105.8	42.4
-45	0.707	61.5	154.9	109.5	42.5
-44	0.719	63.6	157.6	113.3	42.6
-43	0.731	65.7	160.2	117.1	42.8
-42	0.743	67.9	162.8	121.0	43.1
-41	0.755	70.1	165.4	124.9	43.5
-40	0.766	72.2	167.9	128.6	44.1
-39	0.777	74.3	170.3	132.3	44.9
-38	0.788	76.4	172.7	136.1	45.7
-37	0.798	78.3	174.9	139.7	46.8
-36	0.809	80.5	177.3	143.4	47.8
-35	0.819	82.5	179.5	147.0	49.1
-34	0.829	84.5	181.7	150.6	50.4
-33	0.839	86.6	183.8	154.2	51.9
-32	0.848	88.4	185.8	157.6	53.5
-31	0.857	90.3	187.8	161.0	55.3
-30	0.866	92.2	189.8	164.3	57.1
-29	0.875	94.2	191.7	167.7	59.0
-28	0.883	95.9	193.5	170.8	61.2
-27	0.891	97.6	195.2	174.0	63.4
-26	0.899	99.4	197.0	177.1	65.6
-25	0.906	101.0	198.5	179.9	68.1
-24	0.913	102.5	200.1	182.8	70.6
-23	0.920	104.1	201.6	185.6	73.2
-22	0.927	105.7	203.1	188.3	75.9
-21	0.933	107.1	204.4	190.9	78.7
-20	0.940	108.7	206.0	193.6	81.6
-19	0.945	109.8	207.1	195.8	84.6
-18	0.951	111.2	208.4	198.2	87.6
-17	0.956	112.4	209.5	200.3	90.8
-16	0.961	113.6	210.6	202.4	94.0
-15	0.966	114.8	211.7	204.5	97.2
-14	0.970	115.7	212.6	206.2	100.6
-13	0.974	116.7	213.4	208.0	104.0
-12	0.978	117.6	214.3	209.6	107.4
-11	0.982	118.6	215.2	211.2	110.9
-10	0.985	119.3	215.8	212.6	114.5
-9	0.988	120.1	216.5	213.8	118.1
-8	0.990	120.6	216.9	214.8	121.8
-7	0.992	121.0	217.4	215.8	125.5
-6	0.994	121.5	217.8	216.6	129.2
-5	0.996	122.0	218.3	217.4	133.0
-4	0.997	122.3	218.5	217.9	136.8
-3	0.998	122.5	218.7	218.4	140.6
-2	0.999	122.8	218.9	218.8	144.4
-1	1.000	123.0	219.1	219.1	148.2
0	1.000	123.0	219.1	219.1	152.0

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RF Exposure Study

Facilities Proposed

The proposed operation will be on Channel 262D (100.3 MHz) with a maximum lobe effective radiated power of 123 watts. Operation is proposed with a one-element directional antenna to be mounted on an existing tower on Oak Hill, with FCC Antenna Structure Registration Number 1205322.

RF Exposure Calculations

OET Bulletin 65 Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields (Edition 97-01) states in part that:

When performing an evaluation for compliance with the FCC's RF guidelines all significant contributors to the ambient RF environment should be considered. . . For purposes of such consideration, significance can be taken to mean any transmitter producing more than 5% of the applicable exposure limit (in terms of power density or the square of the electric or magnetic field strength) at accessible locations.

As will be demonstrated below, the proposed operation of W292FZ will produce less than 5% of the applicable exposure limit for both controlled and uncontrolled environments. Thus, the proposed facility is categorically excluded from the requirement of further study. Therefore, pursuant to §1.1307(b)(3) of the Commission's Rules no calculations are required for the other FM and TV facilities in the vicinity, and precise calculations are made only with regard to the levels from this proposal.

The power density calculations shown below were made using the techniques outlined in OET Bulletin No. 65. "Ground level" calculations in this report have been made at a reference height of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on the ground in the vicinity of the tower. The equation shown below was used to calculate the ground level power density figures from each antenna.

$$S(\mu W / cm^2) = \frac{33.40981 \times AdjERP(Watts)}{D^2}$$

Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

D is the distance in meters from the center of radiation to the calculation point.

Calculations of the power density produced by the W292FZ antenna system have been made assuming that the antenna will radiate 100% power straight down to a point 2 meters above ground at the base of the tower (150 meters below the antenna). Under this worst-case assumption, the highest calculated ground level power density from W292FZ occurs at the base of the antenna support structure. At this point the power density is calculated to be 0.4 $\mu W/cm^2$, which is 0.04% of 1000 $\mu W/cm^2$ (the FCC standard for controlled environments) and 0.2% of 200 $\mu W/cm^2$ (the FCC standard for uncontrolled environments).

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation of W292FZ alone is less than 5% of the applicable FCC exposure limit at all locations between 1 and 500 meters from the base of the antenna support structure. Section 1.1307(b)(3) of the Commission's Rules excludes applications for new facilities or modifications to existing facilities from the requirement of preparing an environmental assessment when the calculated emissions from the applicants proposed facility are predicted to be less than 5% of the applicable FCC exposure limit. Therefore, the proposed facility is in compliance with Section 1.1301 *et seq* and no further analysis of RF exposure at this site is required in this application.

The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency exposure in excess of FCC guidelines.

