

Technical Report W273DS.CP Minor Modification

This technical report is submitted for a minor modification to W273DS.CP at Meriden, CT, FCC facility I.D. 202641. A change in the model of the directional antenna is submitted. The translator will continue to serve as a fill-in facility for WBOM(AM) 1470 kHz at Meriden, CT, FCC facility I.D. 1220.

W273DS.CP Modification Analysis:

An overlap study in exhibit E-1 shows the W273DS.CP modification is within the WDRC-FM 275B and WAQY(FM) 271B second-adjacent protected contours. The +40 122.3 F(50-10) dBu contour within the WDRC-FM protected contour (exhibit E-2) does not encompass any population, buildings or major roads. Using the vertical pattern of the Dielectric DCRC-4E-ORD, four bay, 0.5 wavelength-spaced antenna, the +40 102.3 F(50-10) dBu contour within the WAQY(FM) protected contour (exhibit E-3) lowest point = 12.8 meters above the site elevation, which does not reach any population, buildings or major roads (exhibit E-4), per *Living Way Ministries, Inc.* (FCC-08-242). The 60 dBu contour overlaps the licensed 60 dBu contour and is contained within the 25 mile/40 km radius of the WBOM(AM) daytime site (exhibit E-5).

Antenna System:

The W273DS.CP modification will be located on the current tower, ASR 1041624, at coordinates:

41 42 13.0N 072 49 55.0W NAD 83.

A Dielectric DCRC-4E-ORD four bay, 0.5 wavelength-spaced, directional antenna (exhibit E-6) will be mounted at a COR AGL of 147.0 meters, 363.4 meters AMSL,

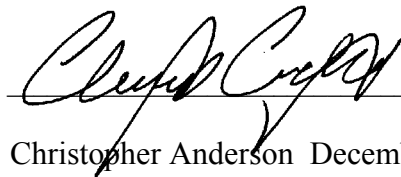
266.5 meters HAAT (exhibit E-7) and operate at 0.250 kW.

RF Exposure Calculation:

The RF contribution was calculated using FM Model (exhibit E-8). The RF = $0.017 \mu\text{W}/\text{cm}^2$ at a distance of 138 meters from the base of the tower, which is below 5% of the $200 \mu\text{W}/\text{cm}^2$ maximum permissible for uncontrolled general public exposure, allowing exclusion from consideration.

Conclusion:

It is concluded that the W273DS.CP modification complies with all Commission rules and policies.



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E-1 W273DS.CP Mod. Overlap Study

REFERENCE		CH#	273D - 102.5 MHz, Pwr= 0.25 kW DA, HAAT= 266.5 M, COR= 363.4 M				DISPLAY DATES			
41 42 13.00 N.			Average Protected F(50-50)= 21.31 km				DATA 12-21-23			
72 49 55.00 W.			Standard Directional				SEARCH 12-21-23			
CH CITY	CALL	TYPE STATE	ANT AZI <--	DI ST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
273D Meriden	W273DS	LIC DCN CT	0.0 0.0	0.00 0000145218	41 42 13.00 72 49 55.00	0.250		---Reference--- Red Wolf Broadcasting Corp		
273D Meriden	W273DS	CP DCN CT	0.0 0.0	0.00 0000178791	41 42 13.00 72 49 55.00	0.250		---Reference--- Red Wolf Broadcasting Corp		
275B Hartford	WDRF-FM	LIC ZEN CT	183.7 3.6	15.73 BLH20140929AGJ	41 33 44.40 72 50 38.40	19.540 247	5.4 345	62.9 Red Wolf Broadcasting Corp	-9.7*	-49.2*(1)
271B Springfield	WAQY	LIC _CN MA	14.0 194.1	43.53 BMLH19930514KA	42 05 00.30 72 42 14.30	17.000 238	5.1 317	60.2 Saga Communications Of New	15.7	-18.1*(2)
273A Bridgehampton	WBAZ	LIC _CN NY	157.2 337.5	96.89 BLH19960604KB	40 53 58.30 72 23 04.30	4.800 106	84.6 111	27.9 Lrs Radio, LLC	-10.3	1.7
273A Rhinebeck	WHVC	LIC _CN NY	279.4 98.7	97.23 BLED20180820AAJ	41 50 27.70 73 59 24.20	1.350 214	82.2 306	28.8 Redeemer Broadcasting, Inc	-3.2	10.9
273B Walham	WKLK-FM	LIC NCN MA	62.4 243.4	148.04 BLH20090515ABT	42 18 37.40 71 14 12.20	14.000 276	123.4 320	63.4 Beasley Media Group Licens	2.3	0.5
273D Westport	W273EB	LIC DHN CT	225.4 45.0	72.92 0000203276	41 14 29.30 73 27 11.40	0.250	16.8 193	3.0 Sun Signal s LLC	35.9	0.8
273L1 Springfield	WZCS-LP	LIC _CN MA	20.7 200.9	51.47 BLL20150409ABL	42 08 11.30 72 36 40.30	0.100 17	73	8.6 Catol i caspri ngfi el d. Com		1.4
272D New Haven	W272DO	LIC DCN CT	196.6 16.5	41.06 BLFT20170724AAO	41 20 58.30 72 58 20.40	0.250	5.3 191	3.2 Red Wolf Broadcasting Corp	13.0	1.9
270D Milford	W270DL	LIC DCN CT	196.6 16.5	41.04 0000082854	41 20 59.30 72 58 21.40	0.250	0.9 201	10.6 K. W. Dolmar Broadcasting	17.4	29.1
271D Shelton	W271DS/W2	CP DCN CT	212.0 31.8	55.62 0000206702	41 16 44.30 73 11 06.40	0.250	0.2 224	5.3 Sun Signal s LLC	32.7	47.5
272A Stonington	WMOS	LIC _CN CT	111.4 292.1	89.12 BLH19931021KC	41 24 23.30 71 50 13.20	3.000 100	33.4 137	20.6 Radio Li cense Hol di ng Cbc,	33.1	32.8
272A Stonington	WMOS	STA _CN CT	111.4 292.1	89.12 0000212644	41 24 23.30 71 50 13.20	3.000 100	33.4 137	20.6 Radio Li cense Hol di ng Cbc,	33.1	32.8
274B New York	WNEW-FM	LIC _CN NY	222.6 41.9	143.47 BLH19940204KH	40 44 54.30 73 59 08.50	6.000 415	78.5 429	65.9 Audacy Li cense, LLC	42.9	33.0
219B1 Storrs	WHUS	LIC DEN CT	75.3 255.7	49.15 BLED19990413KA	41 48 50.40 72 15 34.30	4.400 150	44.9 313	12.6 The Board Of Trustees, The	11.5R	37.7M
220A Springfield	WAIC	LIC _CN MA	26.6 206.7	50.86 BLED20170710ACD	42 06 45.30 72 33 22.30	0.200 22	44.9 95	12.6 American International Col	9.5R	41.4M
220A Sharon	WHDD-FM	LIC ZCN CT	292.3 111.9	55.78 BLED20110114ABG	41 53 32.30 73 27 14.40	0.650 -19	44.9 279	12.6 Tri -State Public Communica	9.5R	46.3M
272A Babylon	WBAB	LIC NCN NY	202.9 22.5	108.95 BLH19990312KB	40 47 58.30 73 20 06.40	6.000 82	39.5 116	25.3 Cmg Ny/texas Radi o, LLC	46.9	49.2

Terrain database is FCC 30 meter , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM
In & Out distances between contours are shown at closest points. Reference zone= East Zone, Co to 3rd adjacent.
All separation margins (if shown) include rounding.
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
***affixed to 'IN' or 'OUT' values = site inside restricted contour.
« = Station meets FCC minimum distance spacing for its class.
Reference station has protected zone issue: AM tower

- (1) The +40 122.3 F(50-10) dBu contour within the WDRF-FM 275B second-adjacent protected contour (exhibit E-2) does not encompass any population, buildings major roads (exhibit E-4).
- (2) The +40 102.3 F(50-10) dBu contour within the WAQY(FM) 271B second-adjacent protected contour (exhibit E-3) lowest point = 12.8 meters above the site elevation, which does not reach any population, buildings or major roads (exhibit E-4).

E-2 W273DS.CP Mod. +40 F(50-10) dBu Calculation Within WDRC-FM 275B

W273DS.C Meriden, CT, Showing Protection to WDRC-FM, Channel: 275

Geographic Coordinates: N. 41 42 13.00 W. 72 49 55.00

74.1204(d) Study - Using FCC 30 SEC Terrain Database

Translator or LPFM Maximum Licensed ERP = 0.25 kW, Channel: 273

Translator or LPFM Antenna Height AG = 147 meters

W273DS.C Antenna Model = DCR-C-4E-ORD

Protected Station's Contour = 82.34097 dBu

Translator's or LPFM's full Interference contour 122.34097

Review Azimuth = 0 Degrees True

Horizontal Relative Field at Review Azimuth = 1.000

Translator/LPFM ERP on the horizontal at Review Azimuth = 0.25 kW

Distance between stations = 15.7 km

Protected Station= WDRC-FM, 19.54 kW, 345 M meters COR AMSL

Depression Angle From Degree(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)
00.00	1.000	1.0	0.2500	084.7074	084.7074	147.000
05.00	0.950	1.0	0.2256	080.4721	080.1658	139.986
10.00	0.809	1.0	0.1636	068.5283	067.4872	135.100
15.00	0.607	1.0	0.0921	051.4174	049.6654	133.692
20.00	0.381	1.0	0.0363	032.2735	030.3272	135.962
25.00	0.170	1.0	0.0072	014.4003	013.0511	140.914
30.00	0.000	1.0	0.0000	000.0085	000.0073	146.996
35.00	0.114	1.0	0.0032	009.6566	007.9103	141.461
40.00	0.171	1.0	0.0073	014.4850	011.0961	137.689
45.00	0.183	1.0	0.0084	015.5015	010.9612	136.039
50.00	0.164	1.0	0.0067	013.8920	008.9296	136.358
55.00	0.129	1.0	0.0042	010.9273	006.2676	138.049
60.00	0.091	1.0	0.0021	007.7084	003.8542	140.324
65.00	0.057	1.0	0.0008	004.8283	002.0405	142.624
70.00	0.031	1.0	0.0002	002.6259	000.8981	144.532
75.00	0.014	1.0	0.0000	001.1859	000.3069	145.855
80.00	0.005	1.0	0.0000	000.4235	000.0735	146.583
85.00	0.001	1.0	0.0000	000.0847	000.0074	146.916
90.00	0.000	1.0	0.0000	000.0085	000.0000	146.992

E-3 W273DS.CP Mod. +40 F(50-10) dBu Tabulation Within WAQY(FM) 271B

W273DS.C Meriden, CT, Showing Protection to WAQY, Channel: 271

Geographic Coordinates: N. 41 42 13.00 W. 72 49 55.00

74.1204(d) Study - Using FCC 30 SEC Terrain Database

Translator or LPFM Maximum Licensed ERP = 0.25 kW, Channel: 273

Translator or LPFM Antenna Height AG = 147 meters

W273DS.C Antenna Model = DCRC-4E-ORD

Protected Station's Contour = 62.27908 dBu

Translator's or LPFM's full Interference contour 102.27908

Review Azimuth = 0 Degrees True

Horizontal Relative Field at Review Azimuth = 1.000

Translator/LPFM ERP on the horizontal at Review Azimuth = 0.25 kW

Distance between stations = 43.5 km

Protected Station= WAQY, 17 kW, 317 M meters COR AMSL

Depression Angle From Degree(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)(1)
00.00	1.000	1.0	0.2500	853.1316	853.1316	147.000
01.00	0.998	1.0	0.2490	851.4253	851.2956	132.141
02.00	0.992	1.0	0.2460	846.3065	845.7909	117.464
03.00	0.982	1.0	0.2411	837.7752	836.6270	103.154
04.00	0.968	1.0	0.2343	825.8313	823.8197	089.393
05.00	0.950	1.0	0.2256	810.4750	807.3909	076.362
06.00	0.928	1.0	0.2153	791.7061	787.3690	064.244
07.00	0.903	1.0	0.2039	770.3778	764.6355	053.115
08.00	0.875	1.0	0.1914	746.4901	739.2253	043.109
09.00	0.843	1.0	0.1777	719.1899	710.3355	034.494
10.00	0.809	1.0	0.1636	690.1834	679.6980	027.151
11.00	0.772	1.0	0.1490	658.6176	646.5169	021.330
12.00	0.733	1.0	0.1343	625.3454	611.6801	016.983
13.00	0.693	1.0	0.1201	591.2202	576.0672	014.004
14.00	0.650	1.0	0.1056	554.5355	538.0634	012.846(1)
15.00	0.607	1.0	0.0921	517.8508	500.2055	012.970
16.00	0.562	1.0	0.0790	479.4599	460.8864	014.843
17.00	0.517	1.0	0.0668	441.0690	421.7964	018.044
18.00	0.472	1.0	0.0557	402.6781	382.9696	022.566
19.00	0.426	1.0	0.0454	363.4340	343.6336	028.677
20.00	0.381	1.0	0.0363	325.0431	305.4406	035.829
21.00	0.337	1.0	0.0284	287.5053	268.4094	043.967
22.00	0.293	1.0	0.0215	249.9676	231.7659	053.361
23.00	0.250	1.0	0.0156	213.2829	196.3279	063.664
24.00	0.209	1.0	0.0109	178.3045	162.8893	074.477
25.00	0.170	1.0	0.0072	145.0324	131.4440	085.707
26.00	0.132	1.0	0.0044	112.6134	101.2162	097.634
27.00	0.096	1.0	0.0023	081.9006	072.9740	109.818
28.00	0.062	1.0	0.0010	052.8942	046.7028	122.168
29.00	0.030	1.0	0.0002	025.5939	022.3850	134.592

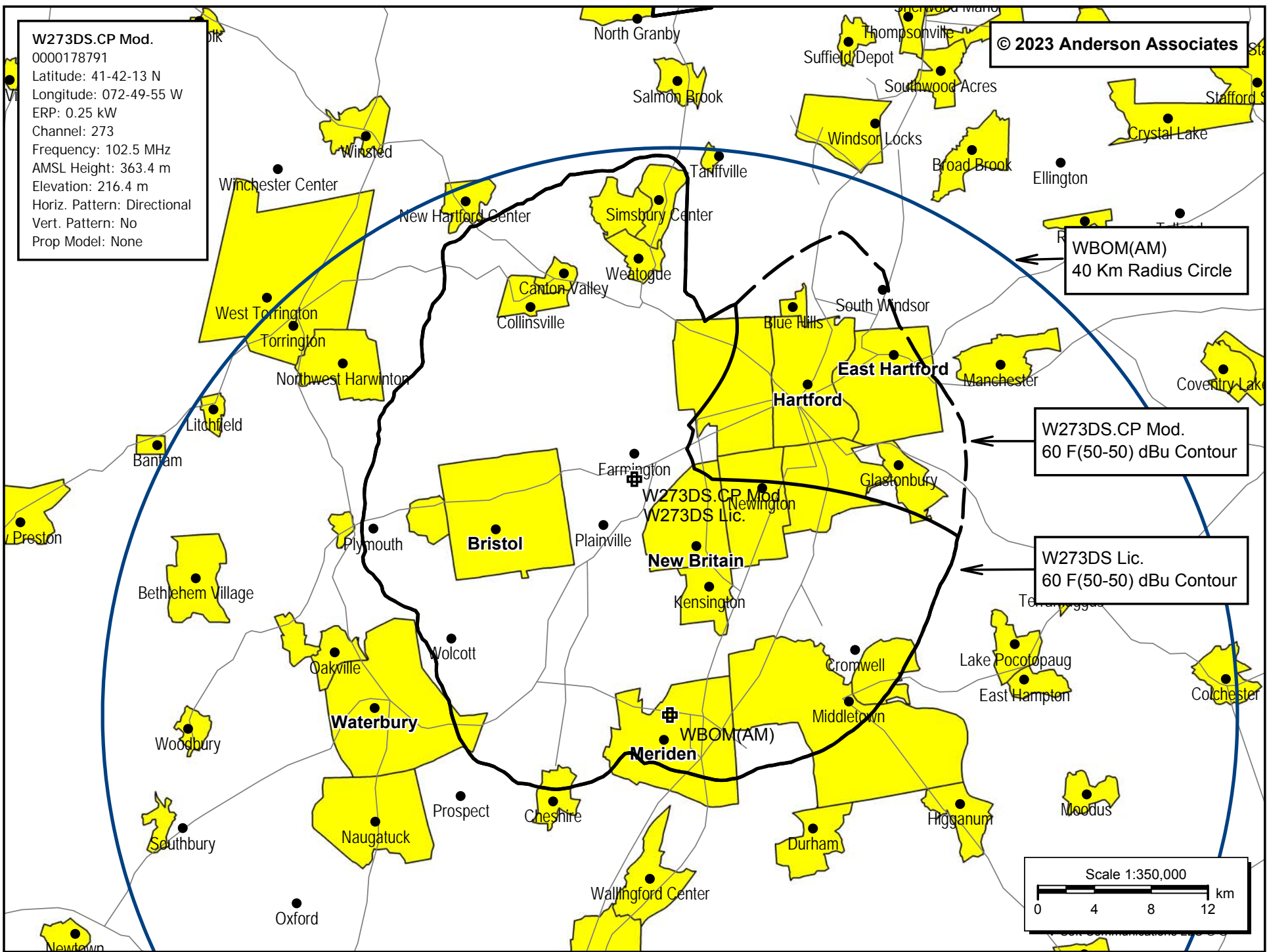
Depression Angle From Degree(Deg)	Vertical Relative Field	Horizontal Relative Field	ERP (kw)	Dist to IX Contour Along Dep. Angle(m)	Dist to IX Contour From Tower Base(m)	Height IX Above Ground (m)
30.00	0.000	1.0	0.0000	000.0853	000.0739	146.957
31.00	0.027	1.0	0.0002	023.0346	019.7445	135.136
32.00	0.052	1.0	0.0007	044.3628	037.6218	123.491
33.00	0.075	1.0	0.0014	063.9849	053.6622	112.151
34.00	0.096	1.0	0.0023	081.9006	067.8987	101.202
35.00	0.114	1.0	0.0032	097.2570	079.6683	091.216
36.00	0.129	1.0	0.0042	110.0540	089.0355	082.312
37.00	0.143	1.0	0.0051	121.9978	097.4318	073.580
38.00	0.154	1.0	0.0059	131.3823	103.5306	066.113
39.00	0.164	1.0	0.0067	139.9136	108.7333	058.950
40.00	0.171	1.0	0.0073	145.8855	111.7548	053.227
41.00	0.177	1.0	0.0078	151.0043	113.9644	047.932
42.00	0.181	1.0	0.0082	154.4168	114.7541	043.675
43.00	0.183	1.0	0.0084	156.1231	114.1812	040.524
44.00	0.184	1.0	0.0085	156.9762	112.9192	037.955
45.00	0.183	1.0	0.0084	156.1231	110.3957	036.604
46.00	0.181	1.0	0.0082	154.4168	107.2669	035.922
47.00	0.178	1.0	0.0079	151.8574	103.5665	035.939
48.00	0.174	1.0	0.0076	148.4449	099.3290	036.684
49.00	0.170	1.0	0.0072	145.0324	095.1498	037.543
50.00	0.164	1.0	0.0067	139.9136	089.9347	039.820
51.00	0.158	1.0	0.0062	134.7948	084.8291	042.245
52.00	0.151	1.0	0.0057	128.8229	079.3113	045.486
53.00	0.144	1.0	0.0052	122.8509	073.9335	048.887
54.00	0.137	1.0	0.0047	116.8790	068.6998	052.443
55.00	0.129	1.0	0.0042	110.0540	063.1244	056.849
56.00	0.122	1.0	0.0037	104.0821	058.2019	060.712
57.00	0.114	1.0	0.0032	097.2570	052.9700	065.433
58.00	0.106	1.0	0.0028	090.4319	047.9216	070.309
59.00	0.099	1.0	0.0025	084.4600	043.5001	074.604
60.00	0.091	1.0	0.0021	077.6350	038.8175	079.766
61.00	0.084	1.0	0.0018	071.6630	034.7429	084.322
62.00	0.077	1.0	0.0015	065.6911	030.8401	088.998
63.00	0.070	1.0	0.0012	059.7192	027.1120	093.790
64.00	0.063	1.0	0.0010	053.7473	023.5613	098.692
65.00	0.057	1.0	0.0008	048.6285	020.5513	102.928
66.00	0.051	1.0	0.0007	043.5097	017.6970	107.252
67.00	0.046	1.0	0.0005	039.2441	015.3339	110.876
68.00	0.041	1.0	0.0004	034.9784	013.1031	114.569
69.00	0.036	1.0	0.0003	030.7127	011.0065	118.327
70.00	0.031	1.0	0.0002	026.4471	009.0454	122.148
71.00	0.027	1.0	0.0002	023.0346	007.4993	125.220
72.00	0.024	1.0	0.0001	020.4752	006.3272	127.527
73.00	0.020	1.0	0.0001	017.0626	004.9886	130.683
74.00	0.017	1.0	0.0001	014.5032	003.9976	133.059
75.00	0.014	1.0	0.0000	011.9438	003.0913	135.463
76.00	0.012	1.0	0.0000	010.2376	002.4767	137.067
77.00	0.010	1.0	0.0000	008.5313	001.9191	138.687

Depression Angle From Degree(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)
78.00	0.008	1.0	0.0000	006.8251	001.4190	140.324
79.00	0.005	1.0	0.0000	004.2657	000.8139	142.813
80.00	0.005	1.0	0.0000	004.2657	000.7407	142.799
81.00	0.004	1.0	0.0000	003.4125	000.5338	143.629
82.00	0.003	1.0	0.0000	002.5594	000.3562	144.466
83.00	0.002	1.0	0.0000	001.7063	000.2079	145.306
84.00	0.001	1.0	0.0000	000.8531	000.0892	146.152
85.00	0.001	1.0	0.0000	000.8531	000.0744	146.150
86.00	0.001	1.0	0.0000	000.8531	000.0595	146.149
87.00	0.000	1.0	0.0000	000.0853	000.0045	146.915
88.00	0.000	1.0	0.0000	000.0853	000.0030	146.915
89.00	0.000	1.0	0.0000	000.0853	000.0015	146.915
90.00	0.000	1.0	0.0000	000.0853	000.0000	146.915

(1) The +40 102.3 F(50-10) dBu contour within the WAQY(FM) 271B second-adjacent protected contour lowest point = 12.8 meters, which does not reach any population, buildings or roads (exhibit E-4).

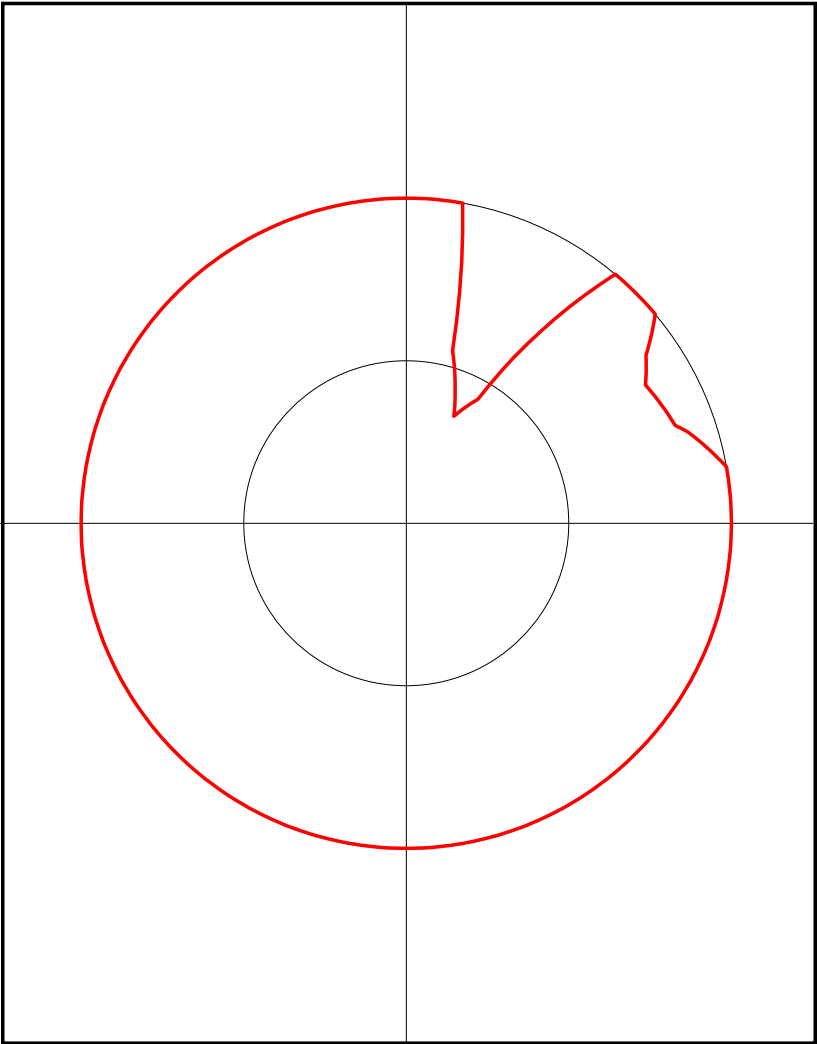


E-5 W273DS.CP Mod. 60 F(50-50) dBu Contour Plot



E-6 W273DS.CP Antenna Pattern

Azimuth (deg)	Relative Field
0.0	1.0
10.0	1.0
15.0	0.55
20.0	0.44
24.0	0.36
30.0	0.44
40.0	1.0
50.0	1.0
55.0	0.9
60.0	0.85
70.0	0.88
72.0	0.91
80.0	1.0
90.0	1.0
100.0	1.0
110.0	1.0
120.0	1.0
130.0	1.0
140.0	1.0
150.0	1.0
160.0	1.0
170.0	1.0
180.0	1.0
190.0	1.0
200.0	1.0
210.0	1.0
220.0	1.0
230.0	1.0
240.0	1.0
250.0	1.0
260.0	1.0
270.0	1.0
280.0	1.0
290.0	1.0
300.0	1.0
310.0	1.0
320.0	1.0
330.0	1.0
340.0	1.0
350.0	1.0



E-7 W273DS.CP Mod. HAAT

N. Lat. = 414213.0 W. Lng. = 724955.0

HAAT and Distance to Contour,

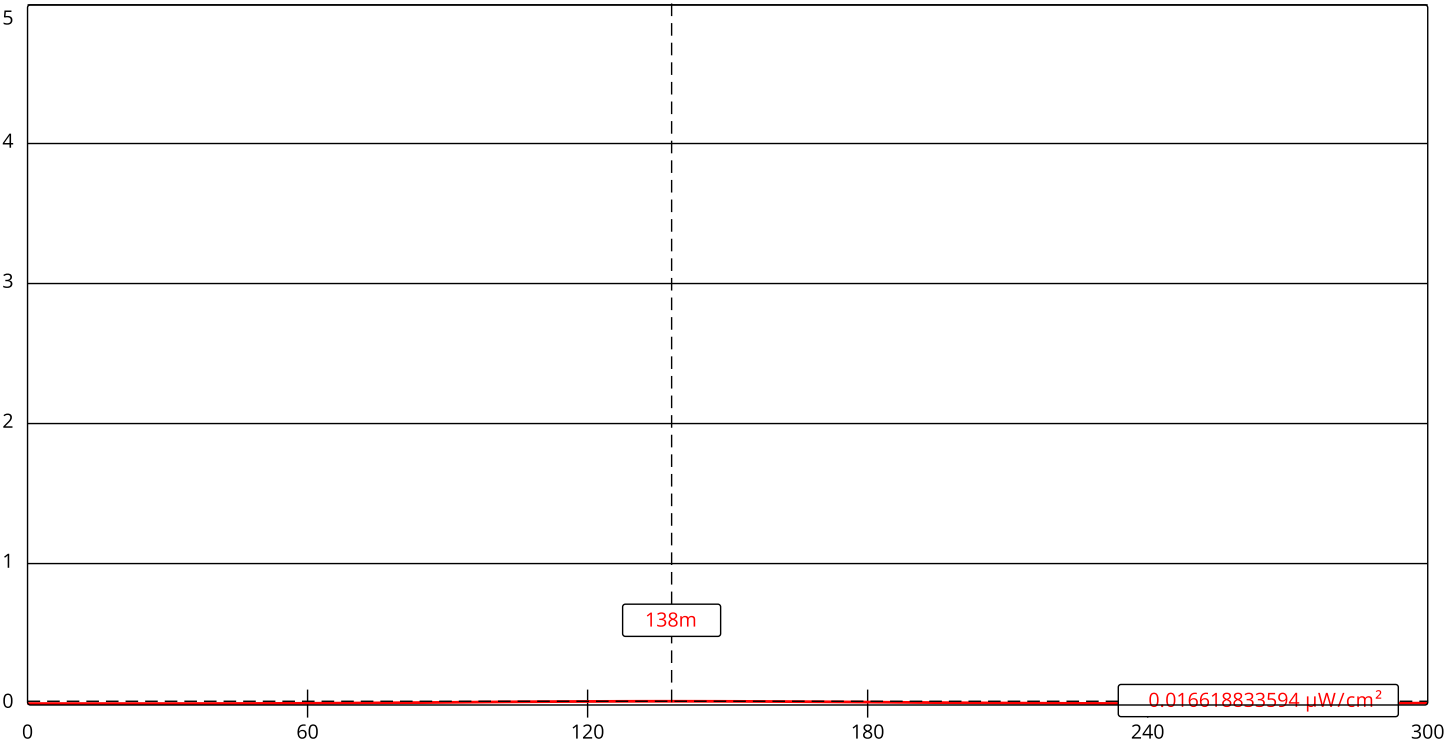
FCC, FM 2-10 Mi, 51 pts Method - FCC 30 Meter

Azi.	AV EL	HAAT	ERP kW	60-F(50-50)
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000	62.7	300.7	0.2500	22.58
030	88.0	275.4	0.0484	14.25
060	42.4	321.0	0.1806	21.57
090	42.3	321.1	0.2500	23.31
120	49.0	314.4	0.2500	23.08
150	55.4	308.0	0.2500	22.85
180	144.8	218.6	0.2500	19.36
210	58.9	304.5	0.2500	22.72
240	169.8	193.6	0.2500	18.24
270	155.0	208.4	0.2500	18.91
300	190.8	172.6	0.2500	17.25
330	103.3	260.1	0.2500	21.07

Ave El= 96.87 M HAAT= 266.53 M AMSL= 363.4

E-8 W273DS.CP Mod. RF Calculation



Channel Selection	Channel 250 (97.9 MHz) ▾		
Antenna Type +	EPA Type 4: Two-Piece Spiral ▾		
Height (m)	147.0	Distance (m)	300
ERP-H (W)	250	ERP-V (W)	250
Num of Elements	4	λ	0.5
Num of Points	500		

Registration 1041624**Registration Detail**

Reg Number	1041624	Status	Constructed
File Number	A0978219	Constructed	09/01/1984
EMI	No	Dismantled	
NEPA	No		

Antenna Structure

Structure Type

Location (in NAD83 Coordinates)

Lat/Long	41-42-13.0 N 072-49-55.0 W	Address	200 COLT HIGHWAY RT. 6
City, State	FARMINGTON , CT		
Zip	06032	County	HARTFORD
Center of AM Array		Position of Tower in Array	

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
216.4	408.1
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
624.5	393.8

Painting and Lighting Specifications

FAA Chapters 4, 6, 9

Paint and Light in Accordance with FAA Circular Number 70/7460-1F

FAA Notification

FAA Study	83-ANE-0395-OE	FAA Issue Date	01/17/1984
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Owner & Contact Information

FRN	0005172838	Owner Entity Type	Limited Liability Partnership
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Owner

COMMUNICATIONS SITE MANAGEMENT, LLC
 Attention To: ARNOLD CHASE
 225 Asylum Street, 29th Floor
 HARTFORD , CT 06103-1538

P: (860)293-4318
 F:
 E: achase@chaseenterprises.com

Contact

EMERY , DAVE
 225 Asylum Street., 29th Floor
 Hartford , CT 06103-1538

P: (860)676-0630
 F:
 E: comsite1@comcast.net

Last Action Status

Status	Constructed	Received	08/24/2015
Purpose	Admin Update	Entered	08/24/2015
Mode	Interactive		

Related Applications

08/24/2015	A0978219 - Admin Update (AU)
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