

Cary, North Carolina  
Application for Minor Modification of  
FM Translator W253CY  
On Channel 252  
by  
First State Communications, Inc.

Technical Exhibit

September 2020

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Declaration

I declare, under penalty of perjury, that I am a technical consultant to broadcasting and other communications systems, that I have over twenty-five years of experience in the engineering of broadcast and other communications systems, that I am familiar with the Federal Communications Commission's Rules found in the Code of Federal Regulations Title 47, that I am a Professional Engineer registered in North Carolina, that I have prepared or supervised the preparation of the attached Technical Exhibit for First State Communications, Inc., and that all of the facts therein, except for facts of which the Federal Communications Commission may take official notice, are true to the best of my knowledge and belief.



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11 September 2020

### Narrative

This Exhibit supports a minor modification application for FM translator W253CY, on Channel 252 in Cary, North Carolina. Allocation details are provided in this exhibit. This proposal complies fully with the requirements of 47 C.F.R. §74.1204(a). The proposed modified facilities create no mutual exclusivities with any licensed facilities, construction permits, or applications as shown in the allocation table in this exhibit.

Figure 1 shows the proposed 60 dBu F(50,50) coverage area, and the licensed coverage area. Figure 1 shows fill-in status confirmation.

The changes are a change of channel to a first adjacent channel, and a new directional antenna pattern.

The minor modification complies with the requirements of Sections 74.1204, 74.1205, 74.1232, and 74.1234.

### Contingent Application

This application is contingent upon grant and licensing of an application filed for W251CA, Rolesville, North Carolina, by Eastern Airwaves, LLC, which has common ownership with this applicant, First State Communications, Inc. That application is file number 0000121182.

### Licensing Management System Differences

The licensed W253CY facilities, file number BLFT-20190522AAI, were authorized under the Consolidated Data Base System (CDBS) using NAD 27 coordinates to the nearest

second and elevations to the nearest meter. The Licensing Management System (LMS) uses NAD83 coordinates to the nearest tenth of a second and elevations to the nearest tenth of a meter. In LMS, the NAD83 coordinates from the Antenna Structure Registration Number are used for this application, while for existing facilities, the original NAD27 coordinates are converted to NAD83. This results in minor changes in allocations, even though there are no physical changes in the actual facilities.

### Allocations

This application proposes service to Cary, North Carolina, on channel 252. An updated Table 1: Allocations is included in this exhibit with a list of the stations, construction permits, allocations, and applications studied. All are protected under §74.1204(a) contour protection by this application. The allocations table was prepared using the GLOBE 30 terrain database which is described below.

Where the outgoing protection is provided by interference contours with a separation of less than 3.2 kilometers (2 miles), the lack of overlap is plotted in figures in this exhibit, and the output of the FM Over program is provided. For this application, there are four (4) facilities for which additional detail is provided.

Table and Figure	Call Sign	Location	Channel, class and relationship
3	WLUS-FM	Clarksville, Virginia	252C3, co-channel
4	WQSM	Fayetteville, North Carolina	251C1, first adjacent
5	W250AZ	Raleigh, North Carolina	250D, second adjacent
6	W251CA	Rolesville, North Carolina	251D, first adjacent

Table 1: Allocations

Allocation Study											
First State Communications, Inc.											
REFERENCE		CH# 252D - 98.3 MHz, Pwr= 0.15 kW DA, HAAT= 169.0 M, COR= 285 M								DISPLAY DATES	
35 47 36.0 N.		Average Protected F(50-50)= 14.8 km								DATA 09-11-20	
78 45 37.0 W.		Standard Directional								SEARCH 09-11-20	
CH CITY	CALL	TYPE STATE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
252C3 Clarksville	WLUS-FM	LIC Z	VA	13.3 193.4	80.28 BLH20011017ACH	36 29 45.50 78 33 15.00	17.500 119	103.8 236	34.2 Lakes Media, LLC	-36.4*	1.2
253D Cary	W253CY!	LIC D	NC	0.0 0.0	0.00 BLFT20190522AAI	35 47 35.50 78 45 37.00	0.150	285	---Reference--- First State Communications		
251C1 Fayetteville	WQSM	LIC	NC	191.2 11.1	80.87 BLH19871125KA	35 04 46.50 78 55 57.00	100.000 253	98.1 307	66.6 Cumulus Licensing LLC	-27.2*	0.2
250D Raleigh	W250AZ	CP D	NC	84.7 264.8	12.35 BMPFT20180718ABB	35 48 12.50 78 37 26.00	0.250	0.8 189	8.1 Pmc Broadcasting, LLC	-3.9*	3.1
250D Raleigh	W250AZ	LIC D	NC	84.6 264.7	12.35 BLFT20170831BCC	35 48 13.50 78 37 26.00	0.200	0.7 189	7.5 Pmc Broadcasting, LLC	-3.8*	3.5
251D Rolesville	W251CA	LIC D	NC	57.1 237.3	30.16 BLFT20151112LPM	35 56 25.50 78 28 44.00	0.250	22.4 249	12.5 Eastern Airwaves, LLC	-2.7	-1.2
The instant application is contingent on w251CA application 0000121182, below.											
251D Rolesville	W251CA	APP D	NC	57.1 237.2	30.17 0000121182	35 56 26.00 78 28 44.00	0.250	20.9 249	12.4 Eastern Airwaves, LLC	-1.2	0.2
255D Raleigh	W255AM	LIC D	NC	61.0 241.1	12.08 BLFT20120709AGC	35 50 45.50 78 38 35.00	0.099 84	0.6 182	7.0 Radio Training Network, In	-0.8*	3.9
254D Clayton	W254BV	LIC D	NC	122.5 302.7	24.10 BLFT20121011AAU	35 40 35.60 78 32 07.00	0.250 194	0.0 274	1.1 Radio Training Network, In	8.9	21.4
255D Fuquay-Varina	W255BE	LIC	NC	179.7 359.7	21.75 BLFT20050509ABF	35 35 51.50 78 45 32.00	0.055 48	0.5 147	4.8 Bible Broadcasting Network	10.8	16.4
253C3 Rocky Mount	WDWG	LIC	NC	80.7 261.3	84.44 BLH19951122KA	35 54 43.60 77 50 04.90	16.000 125	56.9 163	37.3 First Media Radio, LLC	11.9	23.6
250D Chapel Hill	W250BP	LIC D	NC	283.6 103.4	37.12 BLFT20120815ABB	35 52 16.50 79 09 39.00	0.250 331	1.1 472	23.9 Chapel Hill Media Group, L	20.6	12.3
254D Rolesville	W254AS	LIC D	NC	57.0 237.2	30.18 BLFT20151112LPR	35 56 26.50 78 28 44.00	0.250	0.1 257	5.6 Fm 102.9 LLC	16.3	21.3
254C0 Greensboro	WSMW	LIC N	NC	280.0 99.3	100.70 BLH20031229AAZ	35 56 42.50 79 51 44.10	100.000 375	11.3 613	77.9 Entercom License, LLC	74.1	21.9
252D Goldsboro	W252CL	LIC	NC	124.3 304.8	82.16 BLFT20160810AAD	35 22 27.60 78 00 42.00	0.250 73	35.3 110	10.5 Eastern Airwaves LLC	31.7	22.8
252A Thomasville	WIST-FM	LIC	NC	279.6 98.9	116.49 BLH19880804LH	35 57 41.50 80 02 12.10	1.700 128	74.0 382	24.5 Weam Quality Radio Corp.	27.2	42.0
251D Rocky Mount	W251CX	CP	NC	80.7 261.3	84.44 BNPFT20180314ACZ	35 54 43.60 77 50 04.90	0.250	18.2 143	12.3 First Media Radio, LLC	50.6	48.6
251D Rocky Mount	W251CX	LIC	NC	80.7 261.3	84.44 0000120248	35 54 43.60 77 50 04.90	0.250	18.2 143	12.3 First Media Radio, LLC	50.6	48.6

Terrain database is GLOBE 30 Sec, 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 adj.  
 All separation margins (if shown) include rounding. Call signs with exclamation marks need not be protected.  
 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.  
 Reference station has protected zone issue: AM tower

AM Site

This translator is licensed and proposed on the daytime nondirectional tower of its primary station, WPTF, Raleigh, North Carolina. The site is also used for AM station WPLW, Raleigh, North Carolina, and is authorized for modified facilities for AM station WPTK, Raleigh, North Carolina. No change is proposed in the coax or location of the antenna. Minor modification to the translator antenna will be required.

Source of Data

Transmitter location, effective radiated power, directional antenna pattern, and elevation data are extracted from the Commission's CDBS (converted to NAD 83) or LMS. All contours for existing and proposed facilities are calculated using height above average terrain calculated at one degree horizontal increments.

The contours were evaluated using terrain extracted from the GLOBE 30 arcsecond terrain database, formatted by V-Soft Communications to work with its allocation and mapping programs.

Table 3: FMOver Protection of WLUS-FM

09-11-2020 Terrain Data: GLOBE 30 Sec FMOver Analysis

WLUS-FM BLH20011017ACH

W253CY

Channel = 252C3

Channel = 252D

Max ERP = 17.5 kw

Max ERP = 0.15 kw

RCAMSL = 236 m

RCAMSL = 284.96 m

N. Lat. 36 29 45.50

N. Lat. 35 47 36.00

W. Lng. 78 33 15.00

W. Lng. 78 45 37.00

Protected  
60 dBuInterfering  
40 dBu

Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
133.0	007.3710	0112.8	031.4	036.1	000.0632	0169.9	070.3	28.45	
134.0	007.3710	0112.0	031.3	036.0	000.0634	0169.8	069.8	28.64	
135.0	007.3710	0111.3	031.2	035.8	000.0637	0169.8	069.2	28.83	
136.0	007.3710	0110.4	031.1	035.7	000.0640	0169.8	068.7	29.03	
137.0	007.3710	0109.5	031.0	035.5	000.0644	0169.9	068.2	29.22	
138.0	007.3710	0108.6	030.8	035.3	000.0648	0170.0	067.7	29.42	
139.0	007.3710	0107.9	030.7	035.1	000.0651	0170.1	067.2	29.61	
140.0	007.3710	0107.6	030.7	035.0	000.0654	0170.2	066.7	29.81	
141.0	007.7041	0107.5	031.0	035.1	000.0652	0170.1	066.1	29.99	
142.0	008.0445	0107.5	031.3	035.2	000.0649	0170.0	065.5	30.17	
143.0	008.3922	0107.3	031.6	035.3	000.0647	0169.9	064.9	30.36	
144.0	008.7474	0107.1	031.9	035.4	000.0645	0169.9	064.3	30.55	
145.0	009.1098	0106.8	032.2	035.5	000.0644	0169.9	063.6	30.75	
146.0	009.4797	0106.6	032.5	035.5	000.0643	0169.9	063.0	30.96	
147.0	009.8569	0106.2	032.7	035.6	000.0642	0169.9	062.4	31.17	
148.0	010.2414	0105.5	032.9	035.5	000.0643	0169.9	061.8	31.38	
149.0	010.6334	0104.9	033.1	035.5	000.0643	0169.9	061.2	31.61	
150.0	011.0326	0104.7	033.4	035.5	000.0643	0169.9	060.5	31.83	
151.0	011.4534	0104.8	033.7	035.5	000.0643	0169.9	059.9	32.07	
152.0	011.8821	0104.9	034.0	035.6	000.0642	0169.9	059.2	32.30	
153.0	012.3186	0105.1	034.3	035.6	000.0642	0169.9	058.5	32.55	
154.0	012.7630	0104.9	034.5	035.5	000.0643	0169.9	057.9	32.80	
155.0	013.2153	0104.3	034.7	035.4	000.0646	0169.9	057.3	33.05	
156.0	013.6755	0103.9	034.9	035.3	000.0648	0170.0	056.6	33.30	
157.0	014.1435	0103.9	035.2	035.2	000.0650	0170.0	056.0	33.56	
158.0	014.6194	0104.1	035.5	035.1	000.0652	0170.1	055.3	33.83	
159.0	015.1032	0104.2	035.8	035.0	000.0654	0170.2	054.6	34.11	
160.0	015.5949	0104.3	036.0	034.8	000.0657	0170.3	054.0	34.39	
161.0	015.7805	0104.5	036.2	034.5	000.0663	0170.6	053.4	34.66	
162.0	015.9671	0104.5	036.2	034.2	000.0669	0171.0	052.8	34.94	
163.0	016.1549	0103.9	036.2	033.8	000.0678	0171.6	052.3	35.22	
164.0	016.3438	0102.5	036.1	033.2	000.0689	0172.5	051.9	35.48	
165.0	016.5337	0101.0	036.0	032.6	000.0701	0173.3	051.6	35.74	
166.0	016.7248	0099.8	035.9	032.1	000.0713	0173.9	051.2	35.99	
167.0	016.9169	0098.9	035.8	031.5	000.0724	0174.3	050.8	36.23	
168.0	017.1102	0098.1	035.8	031.0	000.0735	0174.4	050.4	36.46	
169.0	017.3045	0097.2	035.7	030.4	000.0747	0174.3	050.0	36.67	
170.0	017.5000	0096.6	035.7	029.9	000.0758	0174.0	049.6	36.88	
171.0	017.5000	0096.2	035.6	029.3	000.0767	0173.5	049.3	37.03	
172.0	017.5000	0095.8	035.5	028.6	000.0777	0172.9	048.9	37.18	
173.0	017.5000	0095.5	035.5	028.0	000.0786	0172.3	048.6	37.33	
174.0	017.5000	0094.8	035.4	027.3	000.0797	0171.8	048.4	37.46	
175.0	017.5000	0094.3	035.3	026.6	000.0807	0171.5	048.1	37.60	
176.0	017.5000	0093.8	035.2	026.0	000.0818	0171.4	047.9	37.74	
177.0	017.5000	0093.5	035.2	025.3	000.0828	0171.4	047.6	37.90	
178.0	017.5000	0093.2	035.1	024.6	000.0839	0171.2	047.4	38.04	
179.0	017.5000	0092.9	035.0	023.9	000.0850	0170.8	047.2	38.16	
180.0	017.5000	0092.5	035.0	023.2	000.0861	0170.1	047.0	38.26	
181.0	017.5000	0092.8	035.0	022.5	000.0872	0169.4	046.7	38.39	
182.0	017.5000	0093.1	035.1	021.8	000.0883	0168.8	046.4	38.53	
183.0	017.5000	0093.3	035.1	021.1	000.0894	0168.2	046.2	38.65	
184.0	017.5000	0093.2	035.1	020.4	000.0906	0167.2	046.0	38.72	
185.0	017.5000	0093.2	035.1	019.7	000.0919	0165.9	045.9	38.79	
186.0	017.5000	0093.2	035.1	018.9	000.0935	0164.2	045.7	38.85	
187.0	017.5000	0093.1	035.1	018.2	000.0951	0162.4	045.6	38.88	
188.0	017.5000	0092.8	035.0	017.4	000.0968	0160.5	045.5	38.89	
189.0	017.5000	0092.2	034.9	016.6	000.0985	0158.7	045.5	38.86	
190.0	017.5000	0091.2	034.7	015.8	000.1002	0157.1	045.7	38.81	



191.0	017.5000	0090.2	034.5	015.1	000.1019	0155.8	045.8	38.76
192.0	017.5000	0089.4	034.4	014.3	000.1036	0154.6	045.9	38.73
193.0	017.5000	0088.7	034.3	013.6	000.1053	0153.6	046.0	38.70
194.0	017.5000	0087.8	034.1	012.8	000.1070	0152.5	046.2	38.64
195.0	017.5000	0086.8	033.9	012.1	000.1087	0151.2	046.4	38.56
196.0	017.5000	0085.9	033.7	011.4	000.1103	0150.2	046.6	38.49
197.0	017.5000	0085.8	033.7	010.7	000.1120	0149.3	046.7	38.47
198.0	017.5000	0086.5	033.9	009.9	000.1137	0148.7	046.6	38.53
199.0	017.5000	0087.9	034.1	009.1	000.1151	0148.3	046.4	38.64
200.0	017.5000	0089.8	034.5	008.3	000.1166	0148.2	046.2	38.79
201.0	017.5000	0091.8	034.8	007.5	000.1181	0149.0	046.0	38.98
202.0	017.5000	0093.7	035.2	006.7	000.1197	0150.2	045.8	39.17
203.0	017.5000	0095.2	035.4	005.8	000.1213	0151.5	045.7	39.32
204.0	017.5000	0096.2	035.6	005.0	000.1228	0152.9	045.7	39.44
205.0	017.5000	0096.8	035.7	004.2	000.1243	0153.9	045.9	39.49
206.0	017.5000	0096.8	035.7	003.5	000.1257	0154.7	046.1	39.49
207.0	017.5000	0096.6	035.7	002.8	000.1270	0155.5	046.4	39.47
208.0	017.5000	0096.4	035.7	002.1	000.1283	0156.3	046.7	39.43
209.0	017.5000	0096.2	035.6	001.5	000.1296	0156.7	047.0	39.37
210.0	017.5000	0096.0	035.6	000.8	000.1309	0157.1	047.3	39.30
211.0	017.5000	0095.7	035.5	000.2	000.1321	0157.4	047.6	39.22
212.0	017.5000	0095.6	035.5	359.6	000.1332	0157.8	048.0	39.14
213.0	017.5000	0095.7	035.5	359.0	000.1343	0158.3	048.3	39.08
214.0	017.5000	0096.0	035.6	358.3	000.1354	0158.5	048.6	39.00
215.0	017.5000	0096.1	035.6	357.7	000.1364	0158.8	049.0	38.92
216.0	017.5000	0096.3	035.6	357.1	000.1374	0159.0	049.3	38.82
217.0	017.5000	0096.7	035.7	356.5	000.1385	0159.1	049.7	38.72
218.0	017.5000	0097.3	035.8	355.9	000.1395	0159.0	050.0	38.62
219.0	017.5000	0097.5	035.8	355.4	000.1405	0158.8	050.4	38.49
220.0	017.5000	0097.1	035.8	354.9	000.1413	0158.9	050.9	38.33
221.0	017.5000	0096.5	035.7	354.5	000.1420	0159.1	051.4	38.16
222.0	017.5000	0095.8	035.5	354.1	000.1426	0159.3	051.9	37.98
223.0	017.5000	0095.0	035.4	353.8	000.1432	0159.4	052.5	37.80
224.0	017.5000	0094.2	035.3	353.5	000.1438	0159.6	053.1	37.61
225.0	017.5000	0093.6	035.2	353.2	000.1444	0159.9	053.6	37.43
226.0	017.5000	0093.1	035.1	352.8	000.1449	0160.2	054.1	37.26
227.0	017.5000	0093.3	035.1	352.4	000.1457	0160.6	054.6	37.12
228.0	017.5000	0094.3	035.3	351.9	000.1466	0161.1	055.0	37.02
229.0	017.5000	0095.6	035.5	351.4	000.1476	0161.8	055.4	36.93
230.0	017.5000	0096.9	035.7	350.8	000.1485	0162.5	055.8	36.84
231.0	017.5000	0097.8	035.9	350.4	000.1493	0163.0	056.3	36.72
232.0	017.5000	0098.1	035.9	350.0	000.1500	0163.4	056.8	36.56
233.0	017.5000	0098.0	035.9	349.7	000.1500	0163.7	057.4	36.36
234.0	017.5000	0097.5	035.8	349.5	000.1500	0164.0	058.0	36.15
235.0	017.5000	0097.1	035.8	349.3	000.1500	0164.2	058.6	35.94
236.0	017.5000	0097.2	035.8	349.1	000.1500	0164.5	059.1	35.75
237.0	017.5000	0097.8	035.9	348.8	000.1500	0164.8	059.7	35.57
238.0	017.5000	0098.7	036.0	348.4	000.1500	0165.1	060.2	35.40
239.0	017.5000	0099.7	036.2	348.1	000.1500	0165.4	060.7	35.22
240.0	017.5000	0100.8	036.4	347.7	000.1500	0165.7	061.3	35.04
241.0	017.5000	0102.0	036.6	347.4	000.1500	0166.0	061.8	34.86
242.0	017.5000	0103.2	036.8	347.0	000.1500	0166.2	062.4	34.67
243.0	017.5000	0104.2	036.9	346.7	000.1500	0166.3	063.0	34.47
244.0	017.5000	0105.4	037.1	346.4	000.1500	0166.3	063.6	34.28
245.0	017.5000	0106.8	037.3	346.1	000.1500	0166.4	064.2	34.08
246.0	017.5000	0108.5	037.6	345.8	000.1500	0166.4	064.8	33.88
247.0	017.5000	0110.1	037.8	345.5	000.1500	0166.5	065.4	33.68
248.0	017.5000	0111.2	038.0	345.3	000.1500	0166.4	066.0	33.46
249.0	017.5000	0111.6	038.0	345.2	000.1500	0166.4	066.7	33.25
250.0	017.5000	0111.0	037.9	345.2	000.1500	0166.4	067.3	33.02
251.0	017.5000	0109.9	037.8	345.3	000.1500	0166.4	068.0	32.80
252.0	017.5000	0108.6	037.6	345.4	000.1500	0166.5	068.7	32.58

Table 4: FMOver Protection of WQSM

09-11-2020 Terrain Data: GLOBE 30 Sec FMOver Analysis

WQSM BLH19871125KA

W253CY

Channel = 251C1  
 Max ERP = 100 kW  
 RCAMSL = 307 m  
 N. Lat. 35 04 46.50  
 W. Lng. 78 55 57.00  
 Protected  
 60 dBu

Channel = 252D  
 Max ERP = 0.15 kW  
 RCAMSL = 284.96 m  
 N. Lat. 35 47 36.00  
 W. Lng. 78 45 37.00  
 Interfering  
 54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
311.0	100.0000	0222.4	065.9	241.1	000.1500	0159.1	074.6	30.30	
312.0	100.0000	0223.1	066.0	241.5	000.1500	0159.4	073.5	30.65	
313.0	100.0000	0224.6	066.1	241.9	000.1500	0159.7	072.5	31.01	
314.0	100.0000	0226.3	066.2	242.3	000.1500	0159.9	071.4	31.35	
315.0	100.0000	0227.7	066.4	242.7	000.1500	0160.0	070.4	31.70	
316.0	100.0000	0228.8	066.5	243.0	000.1500	0159.9	069.3	32.05	
317.0	100.0000	0229.6	066.5	243.3	000.1500	0159.8	068.2	32.41	
318.0	100.0000	0230.4	066.6	243.7	000.1500	0159.7	067.1	32.76	
319.0	100.0000	0230.9	066.6	244.0	000.1500	0159.5	066.0	33.12	
320.0	100.0000	0230.7	066.6	244.2	000.1500	0159.4	064.9	33.49	
321.0	100.0000	0230.3	066.6	244.4	000.1500	0159.3	063.7	33.87	
322.0	100.0000	0229.9	066.6	244.6	000.1500	0159.2	062.6	34.25	
323.0	100.0000	0229.7	066.5	244.8	000.1500	0159.1	061.5	34.65	
324.0	100.0000	0229.5	066.5	245.0	000.1500	0159.0	060.3	35.05	
325.0	100.0000	0229.2	066.5	245.2	000.1500	0159.0	059.2	35.46	
326.0	100.0000	0228.7	066.4	245.4	000.1500	0158.9	058.0	35.88	
327.0	100.0000	0228.0	066.4	245.5	000.1500	0158.9	056.9	36.31	
328.0	100.0000	0227.6	066.4	245.6	000.1500	0158.9	055.7	36.74	
329.0	100.0000	0227.7	066.4	245.8	000.1500	0158.8	054.6	37.18	
330.0	100.0000	0228.4	066.4	246.0	000.1500	0158.9	053.4	37.62	
331.0	100.0000	0229.4	066.5	246.2	000.1500	0158.9	052.3	38.06	
332.0	100.0000	0230.4	066.6	246.4	000.1500	0158.9	051.1	38.51	
333.0	100.0000	0230.8	066.6	246.5	000.1500	0159.0	050.0	38.96	
334.0	100.0000	0230.6	066.6	246.6	000.1500	0159.0	048.8	39.41	
335.0	100.0000	0229.7	066.5	246.5	000.1500	0159.0	047.6	39.86	
336.0	100.0000	0228.3	066.4	246.4	000.1500	0159.0	046.5	40.32	
337.0	100.0000	0226.9	066.3	246.2	000.1500	0158.9	045.3	40.79	
338.0	100.0000	0225.9	066.2	246.1	000.1500	0158.9	044.2	41.28	
339.0	100.0000	0225.6	066.2	246.0	000.1500	0158.9	043.0	41.78	
340.0	100.0000	0226.3	066.2	245.9	000.1500	0158.9	041.8	42.30	
341.0	100.0000	0227.4	066.3	245.9	000.1500	0158.9	040.7	42.83	
342.0	100.0000	0228.2	066.4	245.9	000.1500	0158.9	039.5	43.37	
343.0	100.0000	0229.0	066.5	245.8	000.1500	0158.8	038.4	43.92	
344.0	100.0000	0230.0	066.6	245.7	000.1500	0158.9	037.2	44.49	
345.0	100.0000	0230.8	066.6	245.5	000.1500	0158.9	036.0	45.06	
346.0	100.0000	0231.3	066.7	245.2	000.1500	0158.9	034.9	45.65	
347.0	100.0000	0231.7	066.7	244.9	000.1500	0159.1	033.7	46.24	
348.0	100.0000	0231.5	066.7	244.4	000.1500	0159.3	032.6	46.83	
349.0	100.0000	0231.3	066.7	243.9	000.1500	0159.6	031.5	47.44	
350.0	100.0000	0230.9	066.6	243.2	000.1500	0159.9	030.4	48.09	
351.0	100.0000	0231.7	066.7	242.7	000.1500	0160.0	029.3	48.76	
352.0	100.0000	0232.5	066.8	242.0	000.1500	0159.8	028.1	49.45	
353.0	100.0000	0232.9	066.8	241.2	000.1500	0159.2	027.0	50.13	
354.0	100.0000	0232.7	066.8	240.2	000.1500	0158.1	026.0	50.79	
355.0	100.0000	0233.0	066.8	239.2	000.1460	0157.0	024.9	51.35	
356.0	100.0000	0233.5	066.9	238.0	000.1406	0156.3	023.8	51.91	
357.0	100.0000	0234.2	066.9	236.7	000.1348	0155.6	022.8	52.46	
358.0	100.0000	0234.8	067.0	235.3	000.1282	0154.1	021.8	52.93	
359.0	100.0000	0235.1	067.0	233.6	000.1207	0152.0	020.8	53.29	
000.0	100.0000	0235.4	067.0	231.6	000.1125	0149.7	019.8	53.59	
001.0	100.0000	0235.7	067.1	229.5	000.1030	0147.5	018.9	53.80	
002.0	100.0000	0234.9	067.0	226.8	000.0897	0146.9	018.1	53.81	
003.0	100.0000	0233.6	066.9	223.8	000.0756	0149.3	017.4	53.80	
004.0	100.0000	0232.2	066.8	220.5	000.0616	0151.8	016.8	53.60	
005.0	100.0000	0231.3	066.7	217.0	000.0545	0154.8	016.2	53.74	
006.0	100.0000	0230.9	066.6	213.3	000.0487	0157.1	015.6	53.85	
007.0	100.0000	0231.0	066.7	209.4	000.0434	0155.6	015.1	53.68	
008.0	100.0000	0231.1	066.7	205.2	000.0414	0152.4	014.7	53.55	

009.0	100.0000	0230.9	066.6	200.8	000.0394	0148.9	014.5	53.41
010.0	100.0000	0230.8	066.6	196.2	000.0379	0145.6	014.3	53.23
011.0	100.0000	0230.8	066.6	191.5	000.0365	0152.4	014.2	53.58
012.0	100.0000	0230.8	066.6	186.8	000.0360	0154.8	014.3	53.61
013.0	100.0000	0230.9	066.6	182.2	000.0360	0157.5	014.4	53.60
014.0	100.0000	0231.2	066.7	177.8	000.0380	0152.3	014.7	53.23
015.0	100.0000	0231.7	066.7	173.5	000.0420	0156.0	015.0	53.66
016.0	100.0000	0232.3	066.8	169.4	000.0459	0159.2	015.5	53.87
017.0	100.0000	0233.0	066.8	165.6	000.0491	0160.8	016.0	53.83
018.0	100.0000	0233.6	066.9	162.1	000.0522	0163.2	016.6	53.73
019.0	100.0000	0234.0	066.9	158.9	000.0581	0163.3	017.3	53.64
020.0	100.0000	0234.5	066.9	156.0	000.0694	0160.7	018.0	53.63
021.0	100.0000	0234.8	067.0	153.4	000.0804	0161.4	018.8	53.64
022.0	100.0000	0235.0	067.0	151.1	000.0908	0162.1	019.7	53.50
023.0	100.0000	0235.0	067.0	149.1	000.1005	0163.1	020.7	53.27
024.0	100.0000	0235.1	067.0	147.2	000.1097	0165.8	021.6	53.06
025.0	100.0000	0235.6	067.0	145.6	000.1185	0166.9	022.6	52.72
026.0	100.0000	0236.2	067.1	144.0	000.1268	0167.5	023.6	52.30
027.0	100.0000	0236.8	067.2	142.7	000.1344	0168.5	024.6	51.87
028.0	100.0000	0237.5	067.2	141.4	000.1414	0169.7	025.6	51.42
029.0	100.0000	0238.1	067.3	140.4	000.1478	0170.4	026.7	50.91
030.0	100.0000	0238.7	067.3	139.4	000.1500	0170.3	027.8	50.26
031.0	100.0000	0239.4	067.4	138.6	000.1500	0169.9	028.9	49.54
032.0	100.0000	0240.4	067.4	137.7	000.1500	0169.5	030.0	48.84
033.0	100.0000	0241.4	067.5	137.0	000.1500	0169.1	031.1	48.18
034.0	100.0000	0242.3	067.6	136.4	000.1500	0168.8	032.2	47.55
035.0	100.0000	0243.2	067.7	135.9	000.1500	0168.6	033.4	46.94
036.0	100.0000	0244.4	067.8	135.4	000.1500	0168.5	034.5	46.34
037.0	100.0000	0246.0	067.9	134.9	000.1500	0168.4	035.7	45.74
038.0	100.0000	0247.3	068.0	134.5	000.1500	0168.3	036.9	45.16
039.0	100.0000	0247.7	068.1	134.2	000.1500	0168.3	038.0	44.57
040.0	100.0000	0247.6	068.0	134.1	000.1500	0168.3	039.2	44.00
041.0	100.0000	0247.5	068.0	134.0	000.1500	0168.3	040.4	43.44
042.0	100.0000	0247.7	068.0	133.9	000.1500	0168.3	041.6	42.89
043.0	100.0000	0248.1	068.1	133.8	000.1500	0168.3	042.8	42.36
044.0	100.0000	0248.6	068.1	133.8	000.1500	0168.2	044.0	41.84
045.0	100.0000	0249.4	068.2	133.7	000.1500	0168.2	045.2	41.33
046.0	100.0000	0250.5	068.3	133.7	000.1500	0168.2	046.3	40.83
047.0	100.0000	0251.8	068.4	133.6	000.1500	0168.2	047.5	40.35
048.0	100.0000	0253.3	068.5	133.6	000.1500	0168.2	048.7	39.89
049.0	100.0000	0254.6	068.6	133.5	000.1500	0168.2	049.9	39.42
050.0	100.0000	0255.6	068.7	133.6	000.1500	0168.2	051.1	38.96
051.0	100.0000	0256.2	068.8	133.7	000.1500	0168.2	052.3	38.50
052.0	100.0000	0256.6	068.8	133.8	000.1500	0168.3	053.5	38.04
053.0	100.0000	0257.0	068.8	134.0	000.1500	0168.3	054.7	37.59
054.0	100.0000	0257.4	068.9	134.2	000.1500	0168.3	055.9	37.14
055.0	100.0000	0258.0	068.9	134.3	000.1500	0168.3	057.1	36.69
056.0	100.0000	0258.5	069.0	134.5	000.1500	0168.4	058.3	36.25
057.0	100.0000	0259.0	069.0	134.7	000.1500	0168.4	059.5	35.82
058.0	100.0000	0259.3	069.0	135.0	000.1500	0168.4	060.7	35.39
059.0	100.0000	0259.4	069.0	135.2	000.1500	0168.5	061.8	34.98
060.0	100.0000	0259.4	069.0	135.5	000.1500	0168.5	063.0	34.58
061.0	100.0000	0259.5	069.0	135.8	000.1500	0168.6	064.2	34.18
062.0	100.0000	0259.5	069.0	136.1	000.1500	0168.7	065.3	33.80
063.0	100.0000	0259.5	069.0	136.3	000.1500	0168.8	066.5	33.41
064.0	100.0000	0259.6	069.0	136.6	000.1500	0168.9	067.6	33.04
065.0	100.0000	0259.7	069.1	136.9	000.1500	0169.1	068.8	32.66
066.0	100.0000	0259.8	069.1	137.3	000.1500	0169.2	069.9	32.29
067.0	100.0000	0259.9	069.1	137.6	000.1500	0169.4	071.1	31.92
068.0	100.0000	0259.9	069.1	137.9	000.1500	0169.6	072.2	31.56
069.0	100.0000	0260.2	069.1	138.2	000.1500	0169.7	073.3	31.19
070.0	100.0000	0260.8	069.1	138.5	000.1500	0169.9	074.5	30.83

Table 5: FMOver Protection of W250AZ

09-11-2020 Terrain Data: GLOBE 30 Sec FMOver Analysis

W250AZ BMPFT20180718ABB

W253CY

Channel = 250D  
 Max ERP = 0.25 kw  
 RCAMSL = 189 m  
 N. Lat. 35 48 12.50  
 W. Lng. 78 37 26.00  
 Protected  
 60 dBu

Channel = 252D  
 Max ERP = 0.15 kw  
 RCAMSL = 284.96 m  
 N. Lat. 35 47 36.00  
 W. Lng. 78 45 37.00  
 Interfering  
 100 dBu

Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
205.0	000.2340	0086.1	011.8	142.5	000.1354	0168.7	012.0	63.23	
206.0	000.2372	0086.1	011.8	143.1	000.1318	0168.1	011.9	63.33	
207.0	000.2403	0086.5	011.9	143.8	000.1278	0167.6	011.7	63.40	
208.0	000.2435	0086.2	011.9	144.4	000.1248	0167.3	011.5	63.56	
209.0	000.2468	0085.2	011.9	144.7	000.1231	0167.2	011.3	63.81	
210.0	000.2500	0083.9	011.8	145.0	000.1217	0167.1	011.1	64.08	
211.0	000.2500	0083.3	011.8	145.2	000.1205	0167.0	010.9	64.37	
212.0	000.2500	0083.1	011.8	145.6	000.1183	0166.9	010.7	64.60	
213.0	000.2500	0083.2	011.8	146.0	000.1159	0166.7	010.6	64.82	
214.0	000.2500	0082.9	011.8	146.4	000.1141	0166.5	010.4	65.07	
215.0	000.2500	0082.5	011.7	146.7	000.1126	0166.3	010.2	65.34	
216.0	000.2500	0081.7	011.7	146.8	000.1119	0166.2	009.9	65.68	
217.0	000.2500	0080.2	011.6	146.7	000.1125	0166.3	009.7	66.11	
218.0	000.2500	0078.3	011.5	146.4	000.1142	0166.5	009.5	66.60	
219.0	000.2500	0076.6	011.3	146.1	000.1158	0166.7	009.3	67.09	
220.0	000.2500	0075.3	011.3	145.9	000.1167	0166.8	009.1	67.53	
221.0	000.2500	0074.2	011.2	145.8	000.1173	0166.9	008.8	67.94	
222.0	000.2500	0073.3	011.1	145.7	000.1178	0166.9	008.6	68.36	
223.0	000.2500	0072.3	011.1	145.6	000.1185	0166.9	008.4	68.78	
224.0	000.2500	0071.4	011.0	145.4	000.1193	0167.0	008.2	69.20	
225.0	000.2500	0070.7	010.9	145.3	000.1197	0167.0	008.0	69.61	
226.0	000.2500	0070.3	010.9	145.4	000.1195	0167.0	007.8	70.00	
227.0	000.2500	0069.9	010.9	145.4	000.1193	0167.0	007.7	70.41	
228.0	000.2500	0069.5	010.9	145.4	000.1194	0167.0	007.5	70.84	
229.0	000.2500	0069.1	010.8	145.3	000.1197	0167.0	007.3	71.30	
230.0	000.2500	0069.0	010.8	145.4	000.1192	0167.0	007.1	71.73	
231.0	000.2500	0069.2	010.8	145.7	000.1179	0166.9	006.9	72.14	
232.0	000.2500	0069.0	010.8	145.7	000.1177	0166.9	006.7	72.61	
233.0	000.2500	0068.4	010.8	145.4	000.1192	0167.0	006.5	73.16	
234.0	000.2500	0067.6	010.7	144.9	000.1218	0167.1	006.3	73.76	
235.0	000.2500	0066.8	010.7	144.5	000.1243	0167.3	006.1	74.36	
236.0	000.2500	0066.1	010.6	144.0	000.1272	0167.5	006.0	74.98	
237.0	000.2500	0065.0	010.5	143.1	000.1320	0168.1	005.8	75.68	
238.0	000.2500	0063.5	010.4	141.9	000.1391	0169.4	005.6	76.46	
239.0	000.2500	0061.7	010.3	140.3	000.1484	0170.4	005.4	77.26	
240.0	000.2500	0060.0	010.2	138.6	000.1500	0170.0	005.3	77.74	
241.0	000.2500	0058.7	010.1	137.1	000.1500	0169.2	005.1	78.15	
242.0	000.2500	0057.6	010.0	135.6	000.1500	0168.6	005.0	78.55	
243.0	000.2500	0056.6	009.9	134.0	000.1500	0168.3	004.8	78.96	
244.0	000.2500	0055.7	009.8	132.4	000.1500	0168.0	004.7	79.36	
245.0	000.2500	0054.9	009.7	130.8	000.1500	0168.1	004.6	79.76	
246.0	000.2500	0054.1	009.7	129.0	000.1500	0168.0	004.5	80.16	
247.0	000.2500	0053.5	009.6	127.4	000.1500	0167.7	004.3	80.55	
248.0	000.2500	0053.0	009.6	125.6	000.1500	0168.2	004.2	80.97	
249.0	000.2500	0052.6	009.5	123.9	000.1500	0169.7	004.1	81.43	
250.0	000.2500	0052.3	009.5	122.1	000.1500	0172.4	004.0	81.93	
251.0	000.2416	0051.9	009.4	119.3	000.1500	0177.0	003.9	82.27	
252.0	000.2333	0051.3	009.2	116.2	000.1500	0181.2	003.9	82.48	
253.0	000.2252	0050.8	009.1	113.1	000.1500	0181.7	003.9	82.50	
254.0	000.2172	0050.3	009.0	110.1	000.1500	0181.2	003.9	82.47	
255.0	000.2093	0049.9	008.8	107.1	000.1500	0180.7	003.9	82.37	
256.0	000.2016	0049.6	008.7	104.4	000.1500	0179.2	004.0	82.26	
257.0	000.1940	0049.7	008.6	101.9	000.1500	0175.7	004.0	82.14	
258.0	000.1866	0050.0	008.6	099.5	000.1500	0172.5	004.0	82.02	
259.0	000.1794	0050.2	008.5	097.2	000.1500	0172.1	004.0	81.95	
260.0	000.1722	0050.4	008.4	094.8	000.1500	0174.1	004.0	81.90	
261.0	000.1614	0050.9	008.3	092.5	000.1500	0178.7	004.1	81.84	
262.0	000.1509	0051.8	008.3	090.3	000.1500	0184.0	004.1	81.84	

263.0	000.1408	0052.9	008.2	088.3	000.1500	0187.8	004.2	81.81
264.0	000.1310	0054.0	008.1	086.3	000.1500	0185.8	004.2	81.57
265.0	000.1216	0055.0	008.0	084.4	000.1500	0183.5	004.3	81.21
266.0	000.1126	0055.8	007.9	082.6	000.1500	0183.7	004.4	80.87
267.0	000.1038	0057.0	007.9	080.9	000.1500	0185.7	004.5	80.63
268.0	000.0955	0058.7	007.8	079.3	000.1470	0186.8	004.6	80.34
269.0	000.0875	0060.4	007.7	077.8	000.1408	0187.1	004.7	79.87
270.0	000.0798	0062.1	007.6	076.4	000.1353	0187.6	004.8	79.37
271.0	000.0766	0063.0	007.6	075.0	000.1296	0187.9	004.9	79.00
272.0	000.0734	0063.3	007.5	073.7	000.1249	0187.5	005.0	78.52
273.0	000.0704	0063.6	007.5	072.6	000.1205	0186.7	005.1	78.03
274.0	000.0673	0064.1	007.4	071.5	000.1162	0186.3	005.2	77.57
275.0	000.0644	0065.3	007.4	070.2	000.1117	0186.0	005.2	77.20
276.0	000.0615	0066.3	007.4	069.1	000.1055	0185.8	005.3	76.70
277.0	000.0587	0067.3	007.3	068.0	000.0992	0185.4	005.4	76.17
278.0	000.0559	0068.9	007.3	066.9	000.0926	0184.6	005.5	75.65
279.0	000.0532	0070.7	007.3	065.7	000.0862	0183.5	005.5	75.12
280.0	000.0506	0072.7	007.3	064.6	000.0800	0182.2	005.6	74.57
281.0	000.0493	0074.3	007.4	063.4	000.0737	0180.2	005.7	73.99
282.0	000.0480	0075.5	007.4	062.3	000.0684	0178.4	005.7	73.40
283.0	000.0467	0076.6	007.4	061.3	000.0635	0177.3	005.8	72.81
284.0	000.0454	0078.1	007.4	060.2	000.0587	0176.8	005.9	72.24
285.0	000.0441	0079.9	007.4	059.1	000.0564	0176.6	005.9	71.87
286.0	000.0428	0081.7	007.5	058.0	000.0548	0176.7	006.0	71.55
287.0	000.0416	0083.2	007.5	057.1	000.0534	0177.1	006.1	71.22
288.0	000.0404	0084.0	007.5	056.4	000.0525	0177.7	006.2	70.87
289.0	000.0392	0084.3	007.4	056.0	000.0519	0178.2	006.3	70.50
290.0	000.0380	0084.3	007.4	055.7	000.0515	0178.6	006.5	70.13
291.0	000.0402	0083.9	007.5	054.5	000.0498	0179.9	006.5	69.88
292.0	000.0424	0083.2	007.5	053.4	000.0482	0180.7	006.6	69.59
293.0	000.0447	0082.8	007.6	052.2	000.0466	0181.2	006.7	69.28
294.0	000.0471	0082.9	007.7	050.8	000.0448	0181.9	006.8	68.97
295.0	000.0495	0083.7	007.9	049.3	000.0446	0182.5	006.8	68.82
296.0	000.0520	0085.2	008.0	047.4	000.0467	0180.9	006.9	68.81
297.0	000.0545	0086.8	008.2	045.6	000.0489	0177.6	006.9	68.70
298.0	000.0571	0088.2	008.4	043.8	000.0510	0175.7	007.0	68.59
299.0	000.0598	0089.4	008.6	042.3	000.0530	0175.0	007.1	68.47
300.0	000.0625	0090.1	008.7	040.9	000.0546	0174.2	007.3	68.29
301.0	000.0638	0090.3	008.8	040.3	000.0554	0173.6	007.4	68.00
302.0	000.0650	0089.8	008.8	040.0	000.0559	0173.4	007.5	67.69
303.0	000.0663	0088.7	008.8	039.9	000.0560	0173.3	007.7	67.36
304.0	000.0676	0087.4	008.7	039.9	000.0559	0173.3	007.8	67.03
305.0	000.0689	0086.5	008.7	039.9	000.0560	0173.3	008.0	66.72
306.0	000.0702	0085.8	008.7	039.8	000.0562	0173.2	008.2	66.43
307.0	000.0716	0085.2	008.8	039.6	000.0565	0173.0	008.3	66.14
308.0	000.0729	0084.5	008.8	039.6	000.0566	0172.9	008.5	65.85
309.0	000.0743	0083.8	008.8	039.5	000.0567	0172.9	008.6	65.56
310.0	000.0756	0083.2	008.8	039.5	000.0568	0172.8	008.8	65.27
311.0	000.0770	0082.7	008.8	039.4	000.0569	0172.8	008.9	64.99
312.0	000.0784	0082.1	008.8	039.3	000.0570	0172.7	009.1	64.70
313.0	000.0798	0081.5	008.8	039.4	000.0570	0172.7	009.2	64.42
314.0	000.0812	0080.5	008.8	039.5	000.0567	0172.9	009.4	64.12
315.0	000.0827	0079.2	008.8	039.8	000.0562	0173.2	009.5	63.83
316.0	000.0841	0077.5	008.7	040.3	000.0555	0173.6	009.7	63.53
317.0	000.0856	0075.3	008.6	040.9	000.0547	0174.1	009.8	63.25
318.0	000.0870	0072.9	008.5	041.6	000.0538	0174.6	009.9	62.96
319.0	000.0885	0070.8	008.4	042.2	000.0531	0174.9	010.1	62.67
320.0	000.0900	0069.7	008.4	042.5	000.0527	0175.0	010.2	62.40
321.0	000.0909	0069.7	008.4	042.5	000.0527	0175.0	010.4	62.15
322.0	000.0918	0070.4	008.5	042.2	000.0530	0174.9	010.5	61.90
323.0	000.0927	0071.3	008.5	041.9	000.0534	0174.8	010.7	61.66
324.0	000.0936	0072.1	008.6	041.7	000.0536	0174.7	010.9	61.41

**Table 6: FMOver Protection of W251CA**

09-11-2020 Terrain Data: GLOBE 30 Sec FMOver Analysis

w251CA 0000121182

w253CY

Channel = 251D  
 Max ERP = 0.25 kw  
 RCAMSL = 249 m  
 N. Lat. 35 56 26.00  
 W. Lng. 78 28 44.00  
 Protected  
 60 dBu

Channel = 252D  
 Max ERP = 0.15 kw  
 RCAMSL = 284.96 m  
 N. Lat. 35 47 36.00  
 W. Lng. 78 45 37.00  
 Interfering  
 54 dBu

Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
177.0	000.0296	0148.9	009.3	074.6	000.1283	0187.8	026.8	51.07	
178.0	000.0282	0150.2	009.2	074.4	000.1274	0187.8	026.7	51.13	
179.0	000.0269	0151.5	009.2	074.2	000.1266	0187.7	026.5	51.20	
180.0	000.0256	0152.9	009.1	074.0	000.1257	0187.6	026.4	51.25	
181.0	000.0245	0154.3	009.1	073.7	000.1249	0187.5	026.2	51.31	
182.0	000.0234	0155.9	009.0	073.5	000.1240	0187.4	026.1	51.37	
183.0	000.0224	0157.5	008.9	073.3	000.1232	0187.2	026.0	51.43	
184.0	000.0213	0159.1	008.9	073.1	000.1223	0187.1	025.9	51.47	
185.0	000.0203	0160.5	008.8	072.8	000.1213	0186.9	025.7	51.51	
186.0	000.0193	0161.8	008.8	072.5	000.1202	0186.7	025.6	51.55	
187.0	000.0184	0162.5	008.7	072.2	000.1190	0186.5	025.5	51.56	
188.0	000.0174	0163.3	008.6	071.9	000.1177	0186.4	025.4	51.58	
189.0	000.0165	0164.0	008.5	071.5	000.1164	0186.3	025.3	51.59	
190.0	000.0156	0164.8	008.4	071.1	000.1151	0186.2	025.3	51.59	
191.0	000.0150	0165.6	008.3	070.9	000.1141	0186.1	025.2	51.62	
192.0	000.0144	0166.7	008.2	070.6	000.1130	0186.1	025.1	51.64	
193.0	000.0138	0167.8	008.2	070.3	000.1119	0186.0	025.0	51.66	
194.0	000.0132	0168.9	008.1	070.0	000.1108	0186.0	024.9	51.67	
195.0	000.0127	0169.7	008.0	069.6	000.1088	0185.9	024.8	51.65	
196.0	000.0121	0170.5	008.0	069.3	000.1067	0185.9	024.8	51.61	
197.0	000.0116	0171.2	007.9	069.0	000.1047	0185.8	024.7	51.57	
198.0	000.0110	0171.9	007.8	068.6	000.1027	0185.7	024.6	51.52	
199.0	000.0105	0172.7	007.7	068.3	000.1006	0185.6	024.6	51.47	
200.0	000.0100	0173.5	007.6	067.9	000.0986	0185.4	024.5	51.40	
201.0	000.0102	0173.9	007.7	067.8	000.0978	0185.3	024.4	51.46	
202.0	000.0104	0173.7	007.7	067.7	000.0969	0185.2	024.3	51.51	
203.0	000.0106	0173.0	007.8	067.5	000.0959	0185.0	024.2	51.53	
204.0	000.0108	0172.1	007.8	067.3	000.0947	0184.8	024.1	51.55	
205.0	000.0110	0171.4	007.8	067.1	000.0936	0184.7	023.9	51.57	
206.0	000.0112	0171.1	007.8	066.9	000.0925	0184.5	023.8	51.59	
207.0	000.0114	0170.7	007.9	066.7	000.0913	0184.3	023.7	51.61	
208.0	000.0117	0170.0	007.9	066.4	000.0900	0184.1	023.6	51.62	
209.0	000.0119	0169.2	007.9	066.2	000.0887	0183.9	023.5	51.62	
210.0	000.0121	0168.6	007.9	066.0	000.0874	0183.7	023.4	51.62	
211.0	000.0133	0168.1	008.1	066.0	000.0873	0183.7	023.2	51.79	
212.0	000.0145	0167.9	008.3	065.9	000.0872	0183.6	023.0	51.95	
213.0	000.0158	0167.8	008.5	065.9	000.0869	0183.6	022.7	52.12	
214.0	000.0172	0168.0	008.7	065.8	000.0866	0183.5	022.5	52.28	
215.0	000.0186	0168.3	008.9	065.7	000.0861	0183.4	022.2	52.43	
216.0	000.0200	0168.7	009.0	065.6	000.0855	0183.3	022.0	52.58	
217.0	000.0215	0169.0	009.2	065.5	000.0848	0183.2	021.8	52.72	
218.0	000.0231	0169.2	009.4	065.3	000.0839	0183.0	021.5	52.84	
219.0	000.0247	0169.4	009.6	065.1	000.0829	0182.8	021.3	52.95	
220.0	000.0264	0169.7	009.7	064.9	000.0818	0182.6	021.1	53.06	
221.0	000.0290	0170.2	010.0	064.8	000.0809	0182.4	020.8	53.23	
222.0	000.0317	0170.7	010.2	064.6	000.0800	0182.2	020.5	53.40	
223.0	000.0345	0170.9	010.4	064.4	000.0787	0181.9	020.2	53.53	
224.0	000.0374	0170.4	010.6	064.1	000.0772	0181.4	020.0	53.62	
225.0	000.0405	0169.3	010.8	063.7	000.0754	0180.8	019.8	53.67	
226.0	000.0437	0167.7	010.9	063.3	000.0734	0180.1	019.6	53.68	
227.0	000.0470	0166.1	011.1	062.9	000.0713	0179.4	019.4	53.67	
228.0	000.0504	0164.9	011.2	062.5	000.0691	0178.7	019.2	53.65	
229.0	000.0539	0164.2	011.4	062.0	000.0669	0178.0	019.0	53.64	
230.0	000.0576	0163.6	011.5	061.5	000.0646	0177.5	018.8	53.62	
231.0	000.0613	0163.0	011.7	061.0	000.0621	0177.1	018.6	53.58	
232.0	000.0650	0162.2	011.8	060.4	000.0596	0176.9	018.4	53.52	
233.0	000.0689	0161.3	012.0	059.8	000.0574	0176.7	018.3	53.48	
234.0	000.0729	0160.2	012.1	059.2	000.0565	0176.6	018.1	53.52	

235.0	000.0770	0158.7	012.2	058.6	000.0556	0176.6	018.0	53.54
236.0	000.0812	0156.8	012.2	057.9	000.0546	0176.7	017.9	53.55
237.0	000.0856	0155.2	012.3	057.2	000.0536	0177.0	017.8	53.56
238.0	000.0900	0154.3	012.4	056.5	000.0526	0177.6	017.7	53.60
239.0	000.0946	0153.9	012.6	055.8	000.0516	0178.5	017.6	53.65
240.0	000.0992	0153.4	012.7	055.1	000.0505	0179.3	017.5	53.70
241.0	000.1034	0152.6	012.8	054.3	000.0495	0180.0	017.4	53.70
242.0	000.1076	0151.2	012.9	053.6	000.0485	0180.6	017.4	53.66
243.0	000.1119	0150.1	012.9	052.8	000.0474	0181.0	017.4	53.61
244.0	000.1163	0149.3	013.0	052.0	000.0464	0181.3	017.3	53.56
245.0	000.1208	0148.4	013.1	051.2	000.0453	0181.7	017.3	53.50
246.0	000.1253	0147.4	013.2	050.4	000.0443	0182.2	017.3	53.43
247.0	000.1300	0146.5	013.2	049.6	000.0442	0182.6	017.3	53.44
248.0	000.1347	0145.9	013.3	048.8	000.0451	0182.4	017.3	53.54
249.0	000.1395	0145.8	013.4	047.9	000.0461	0181.6	017.3	53.61
250.0	000.1444	0145.6	013.5	047.1	000.0471	0180.3	017.2	53.65
251.0	000.1482	0145.4	013.6	046.3	000.0481	0178.8	017.3	53.65
252.0	000.1521	0145.3	013.7	045.4	000.0491	0177.4	017.3	53.65
253.0	000.1560	0145.5	013.8	044.6	000.0501	0176.3	017.3	53.66
254.0	000.1600	0145.3	013.9	043.7	000.0511	0175.6	017.4	53.68
255.0	000.1640	0144.9	013.9	043.0	000.0521	0175.3	017.4	53.68
256.0	000.1681	0144.6	014.0	042.2	000.0531	0174.9	017.5	53.69
257.0	000.1722	0144.8	014.1	041.3	000.0541	0174.5	017.6	53.70
258.0	000.1764	0145.7	014.2	040.4	000.0553	0173.7	017.6	53.72
259.0	000.1806	0147.1	014.4	039.4	000.0568	0172.8	017.6	53.77
260.0	000.1849	0148.2	014.6	038.5	000.0586	0171.8	017.7	53.81
261.0	000.1884	0148.7	014.6	037.7	000.0601	0171.0	017.8	53.79
262.0	000.1918	0148.9	014.7	036.9	000.0616	0170.3	017.9	53.77
263.0	000.1954	0148.8	014.8	036.2	000.0630	0169.9	018.0	53.73
264.0	000.1989	0148.0	014.8	035.6	000.0642	0169.9	018.2	53.66
265.0	000.2025	0147.6	014.9	034.9	000.0655	0170.2	018.4	53.63
266.0	000.2061	0148.0	015.0	034.2	000.0669	0171.0	018.5	53.65
267.0	000.2098	0148.6	015.1	033.4	000.0684	0172.1	018.7	53.70
268.0	000.2134	0149.2	015.2	032.7	000.0700	0173.2	018.8	53.72
269.0	000.2172	0149.2	015.2	032.1	000.0713	0173.9	019.0	53.70
270.0	000.2209	0148.8	015.3	031.5	000.0724	0174.3	019.2	53.62
271.0	000.2237	0148.4	015.3	031.1	000.0734	0174.4	019.4	53.51
272.0	000.2266	0148.0	015.3	030.6	000.0743	0174.4	019.6	53.39
273.0	000.2294	0148.2	015.4	030.1	000.0755	0174.1	019.8	53.29
274.0	000.2323	0149.1	015.5	029.5	000.0764	0173.7	020.0	53.16
275.0	000.2352	0150.7	015.7	028.7	000.0775	0173.0	020.2	53.04
276.0	000.2381	0152.2	015.8	028.0	000.0786	0172.3	020.4	52.91
277.0	000.2411	0152.6	015.9	027.6	000.0793	0171.9	020.6	52.75
278.0	000.2440	0153.7	016.0	027.0	000.0802	0171.6	020.9	52.61
279.0	000.2470	0154.8	016.2	026.4	000.0811	0171.5	021.1	52.47
280.0	000.2500	0156.5	016.3	025.8	000.0821	0171.4	021.3	52.35
281.0	000.2500	0157.8	016.4	025.3	000.0827	0171.4	021.6	52.18
282.0	000.2500	0158.2	016.4	025.1	000.0831	0171.3	021.8	51.99
283.0	000.2500	0157.0	016.3	025.1	000.0831	0171.3	022.1	51.77
284.0	000.2500	0154.7	016.2	025.3	000.0827	0171.4	022.4	51.51
285.0	000.2500	0152.5	016.1	025.6	000.0824	0171.4	022.7	51.27
286.0	000.2500	0150.8	015.9	025.7	000.0822	0171.4	023.0	51.04
287.0	000.2500	0150.3	015.9	025.7	000.0822	0171.4	023.3	50.83
288.0	000.2500	0150.0	015.9	025.6	000.0823	0171.4	023.6	50.63
289.0	000.2500	0149.6	015.9	025.6	000.0823	0171.4	023.9	50.43
290.0	000.2500	0149.2	015.8	025.6	000.0824	0171.4	024.1	50.22
291.0	000.2500	0149.3	015.8	025.5	000.0825	0171.4	024.4	50.03
292.0	000.2500	0149.9	015.9	025.4	000.0827	0171.4	024.7	49.85
293.0	000.2500	0150.2	015.9	025.3	000.0828	0171.4	025.0	49.65
294.0	000.2500	0149.9	015.9	025.3	000.0828	0171.4	025.2	49.46
295.0	000.2500	0149.1	015.8	025.4	000.0826	0171.4	025.5	49.25
296.0	000.2500	0148.1	015.8	025.5	000.0824	0171.4	025.8	49.05

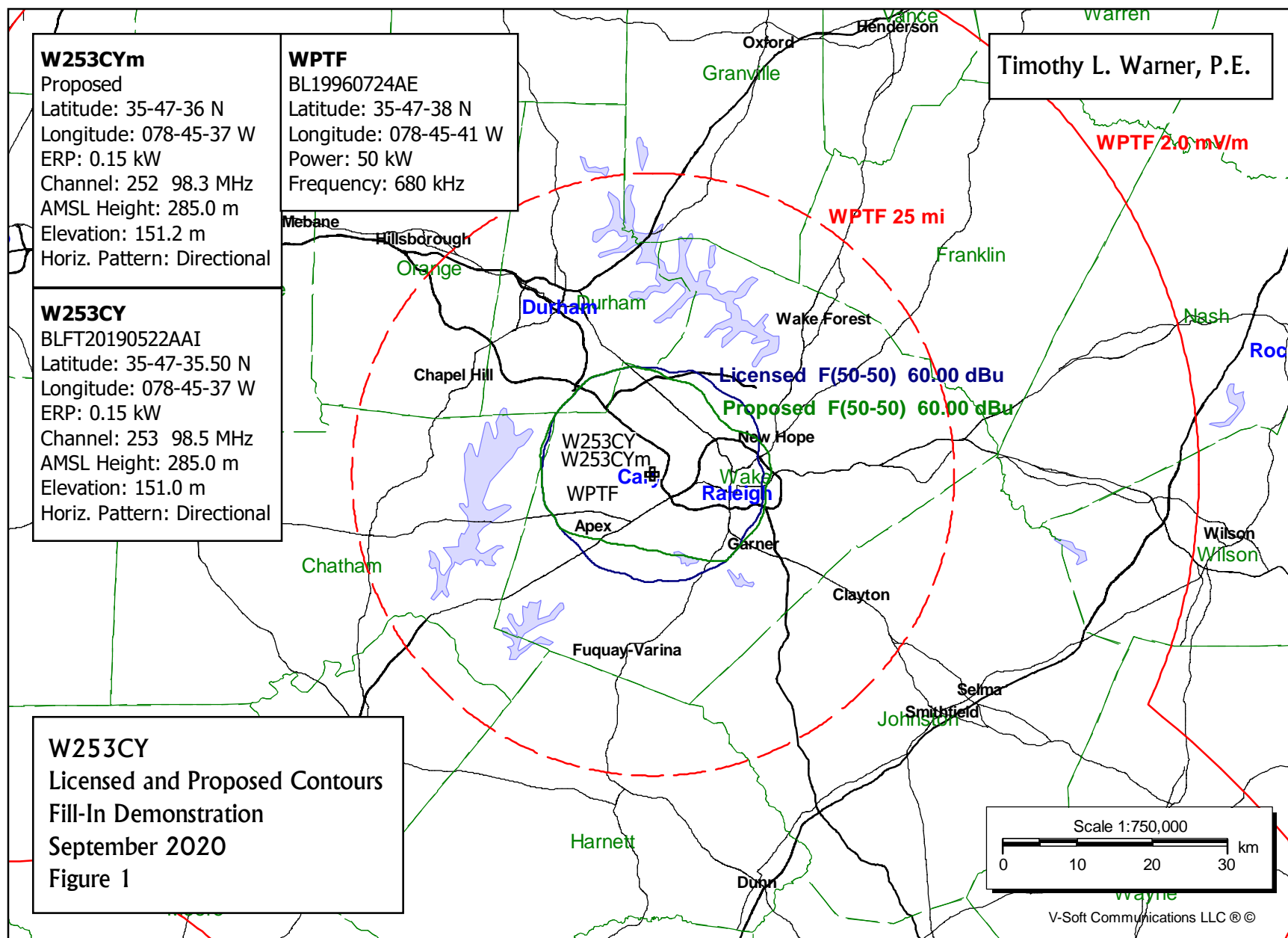




Figure 2: Directional Pattern  
Pre-Rotation Antenna Pattern....

Azimuth (deg)	Relative Field
0.0	0.94
10.0	0.87
20.0	0.78
30.0	0.71
40.0	0.61
50.0	0.54
60.0	0.62
70.0	0.86
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	0.8
160.0	0.6
170.0	0.55
180.0	0.49
190.0	0.49
200.0	0.51
210.0	0.54
220.0	0.63
230.0	0.84
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

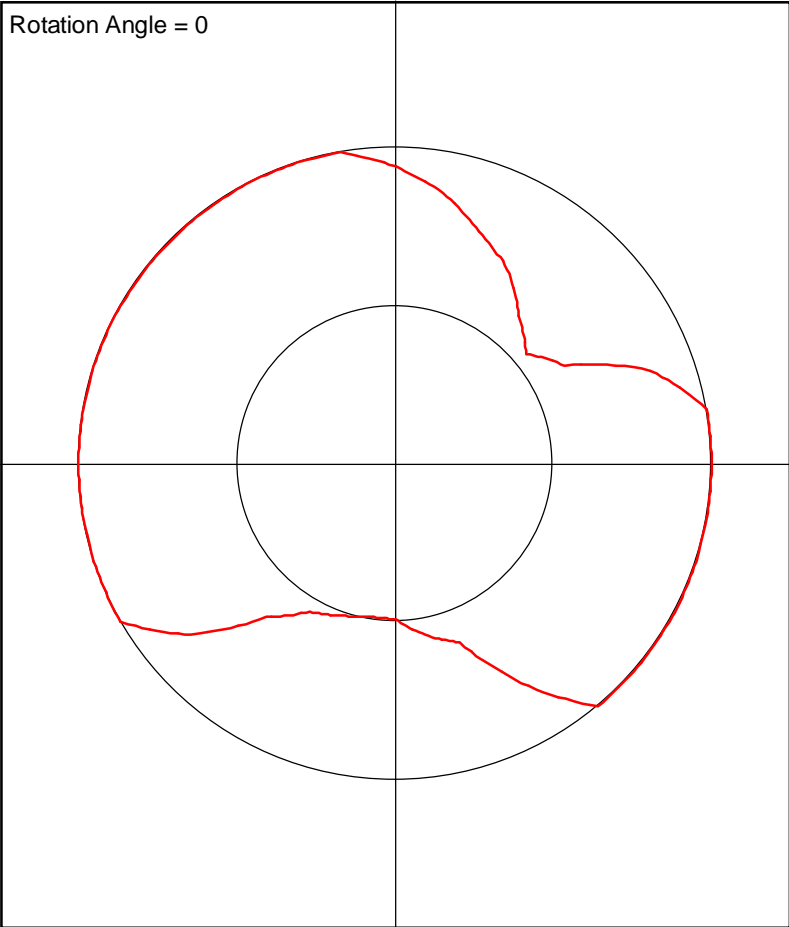


Figure 3: Allocation Study: WLUS-FM  
First State Communications, Inc.

FMCommander Single Allocation Study - 09-11-2020 - GLOBE 30 Sec  
W253CY's Overlaps (In= -36.44 km, Out= 1.21 km)

W253CY CH 252 D DA

Lat= 35 47 36.00, Lng= 78 45 37.00

0.15 kW 169 m HAAT, 285 m COR

Prot.= 60 dBu, Intef.= 40 dBu

WLUS-FM CH 252 C3 73.215 Z BLH20011017ACH

Lat= 36 29 45.50, Lng= 78 33 15.00

17.5 kW 119 m HAAT, 236 m COR

Prot.= 60 dBu, Intef.= 40 dBu

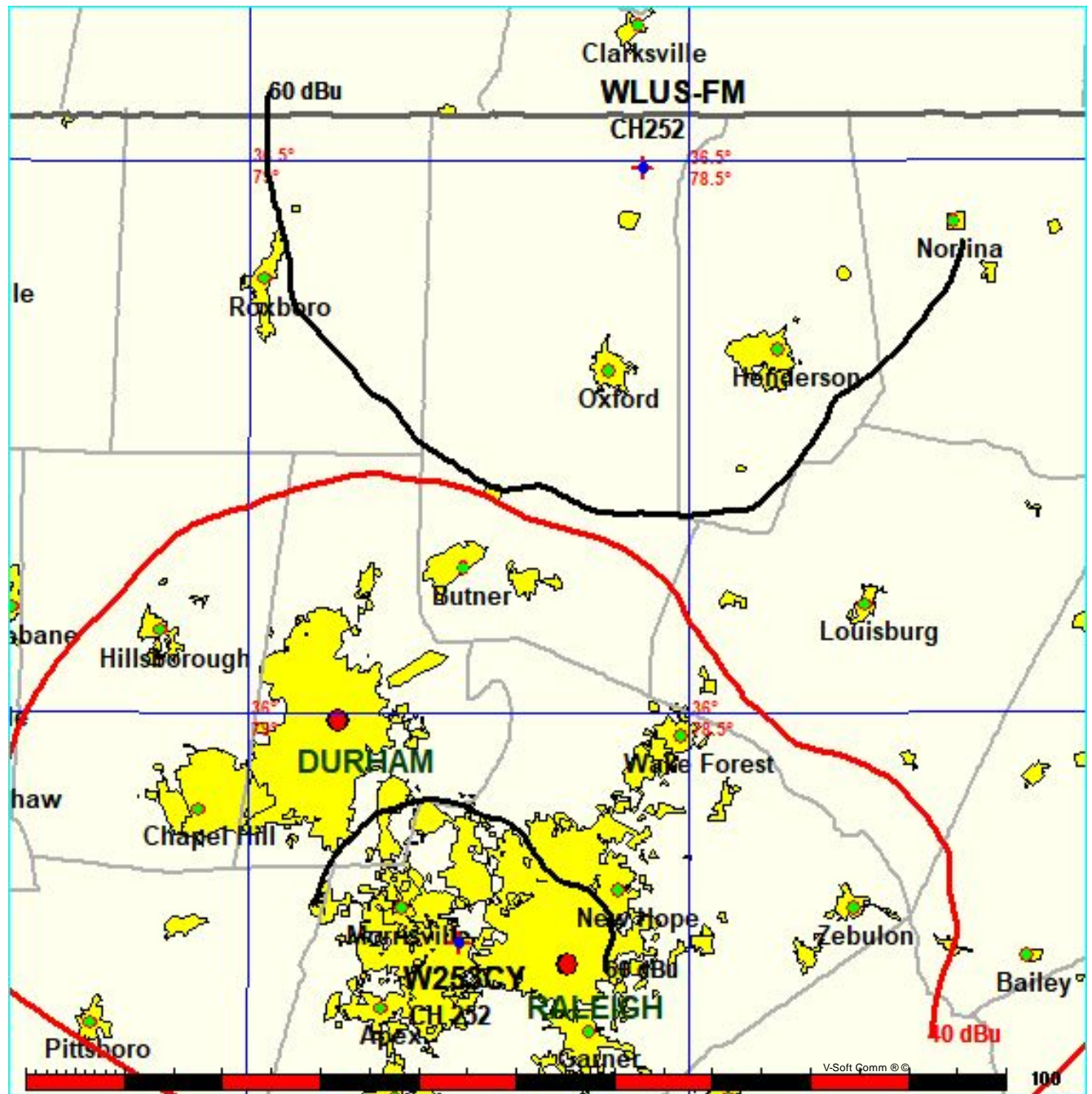


Figure 4: Allocation Study: WQSM  
First State Communications, Inc.

FMCommander Single Allocation Study - 09-11-2020 - GLOBE 30 Sec  
W253CY's Overlaps (In= -27.25 km, Out= 0.15 km)

W253CY CH 252 D DA  
Lat= 35 47 36.00, Lng= 78 45 37.00  
0.15 kW 169 m HAAT, 285 m COR  
Prot.= 60 dBu, Intef.= 54 dBu

WQSM CH 251 C1 BLH19871125KA  
Lat= 35 04 46.50, Lng= 78 55 57.00  
100.0 kW 253 m HAAT, 307 m COR  
Prot.= 60 dBu, Intef.= 54 dBu

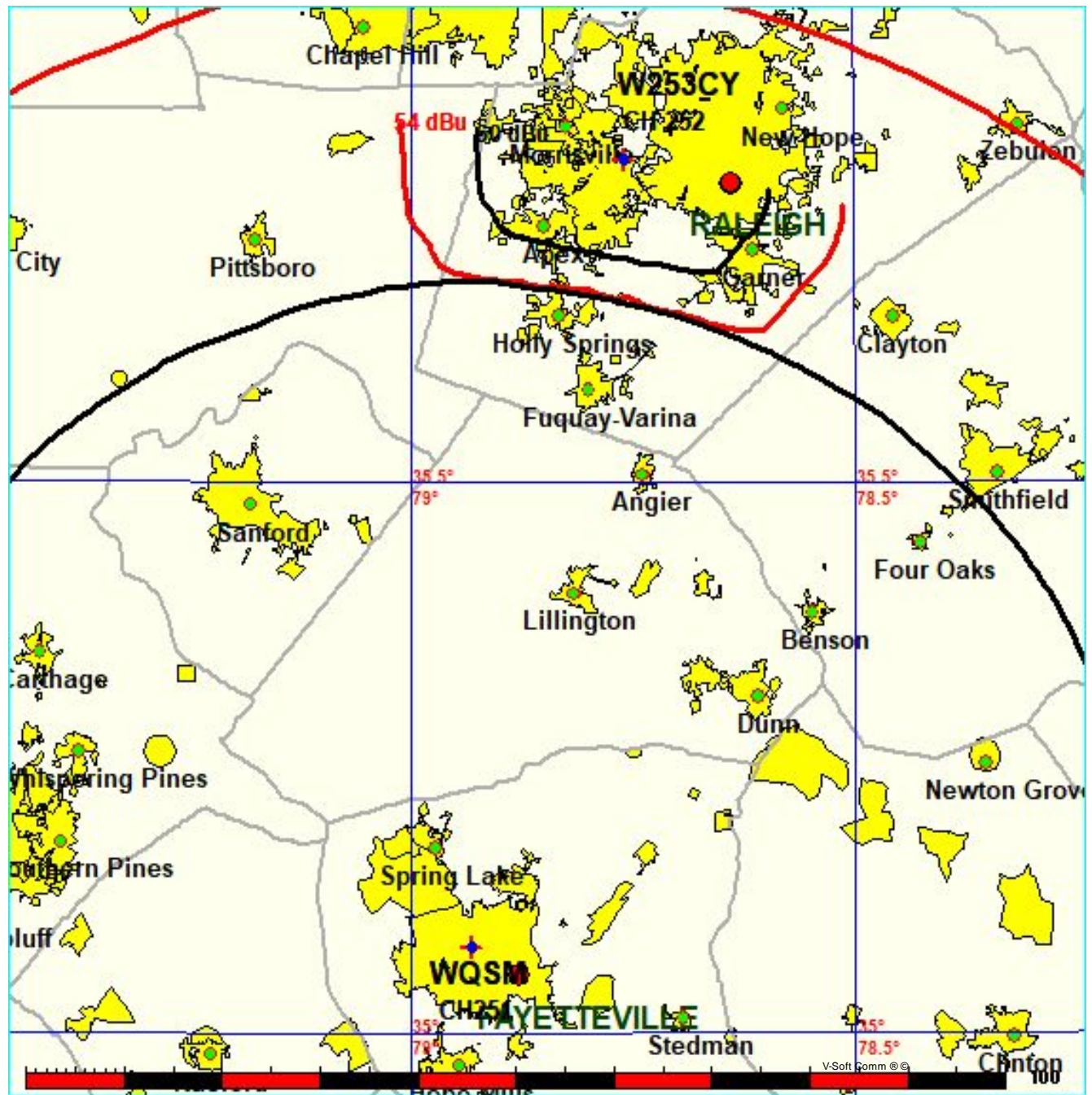


Figure 4A: Allocation Study: WQSM Detail  
First State Communications, Inc.

FMCommander Single Allocation Study - 09-11-2020 - GLOBE 30 Sec  
W253CY's Overlaps (In= -27.25 km, Out= 0.15 km)

W253CY CH 252 D DA  
Lat= 35 47 36.00, Lng= 78 45 37.00  
0.15 kW 169 m HAAT, 285 m COR  
Prot.= 60 dBu, Intef.= 54 dBu

WQSM CH 251 C1 BLH19871125KA  
Lat= 35 04 46.50, Lng= 78 55 57.00  
100.0 kW 253 m HAAT, 307 m COR  
Prot.= 60 dBu, Intef.= 54 dBu

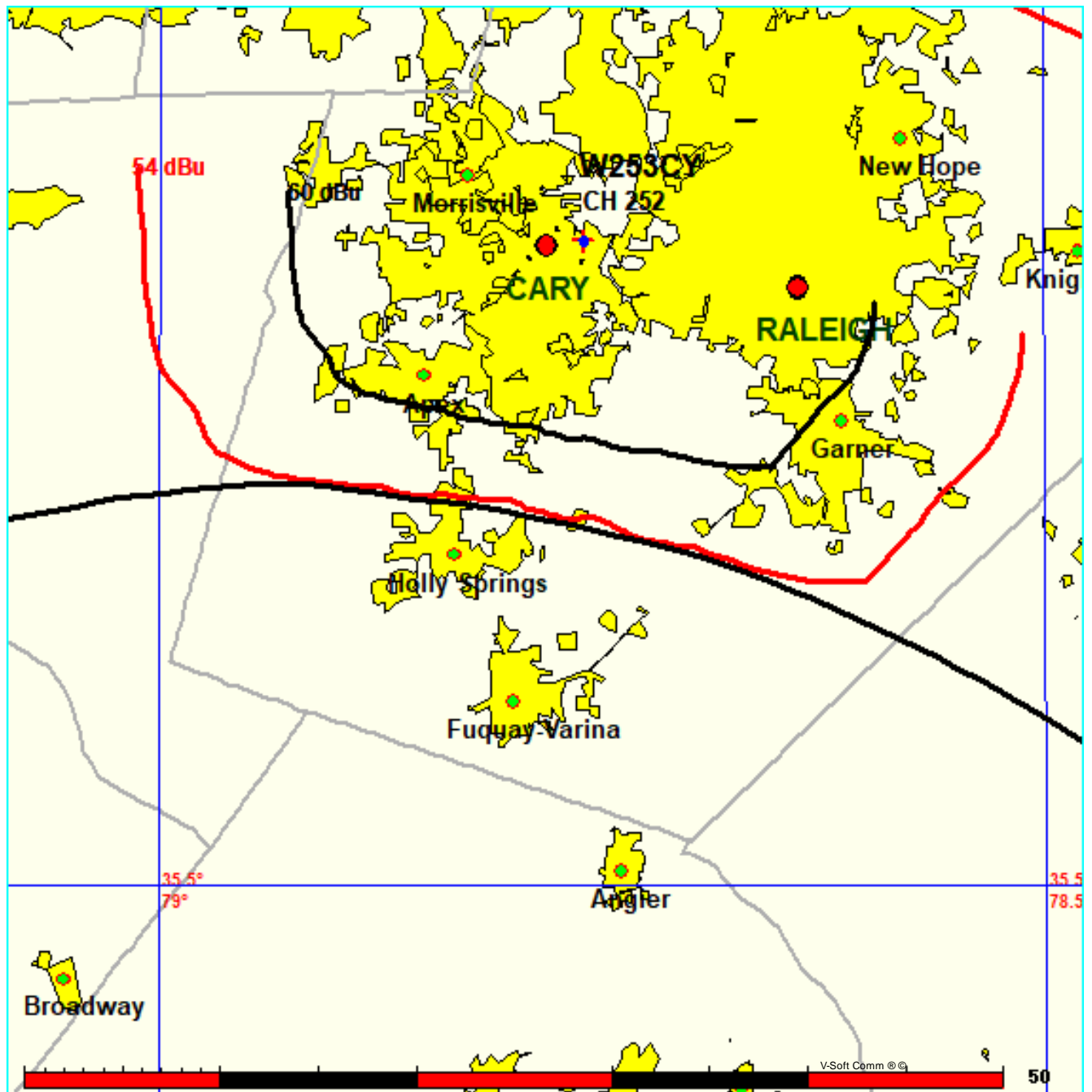




Figure 5: Allocation Study: W250AZ  
First State Communications, Inc.

FMCommander Single Allocation Study - 09-11-2020 - GLOBE 30 Sec  
W253CY's Overlaps (In= -3.93 km, Out= 3.06 km)

W253CY CH 252 D DA  
Lat= 35 47 36.00, Lng= 78 45 37.00  
0.15 kW 169 m HAAT, 285 m COR  
Prot.= 60 dBu, Intef.= 100 dBu

W250AZ CH 250 D DA BMPFT20180718ABB  
Lat= 35 48 12.50, Lng= 78 37 26.00  
0.25 kW 0 m HAAT, 189 m COR  
Prot.= 60 dBu, Intef.= 100 dBu

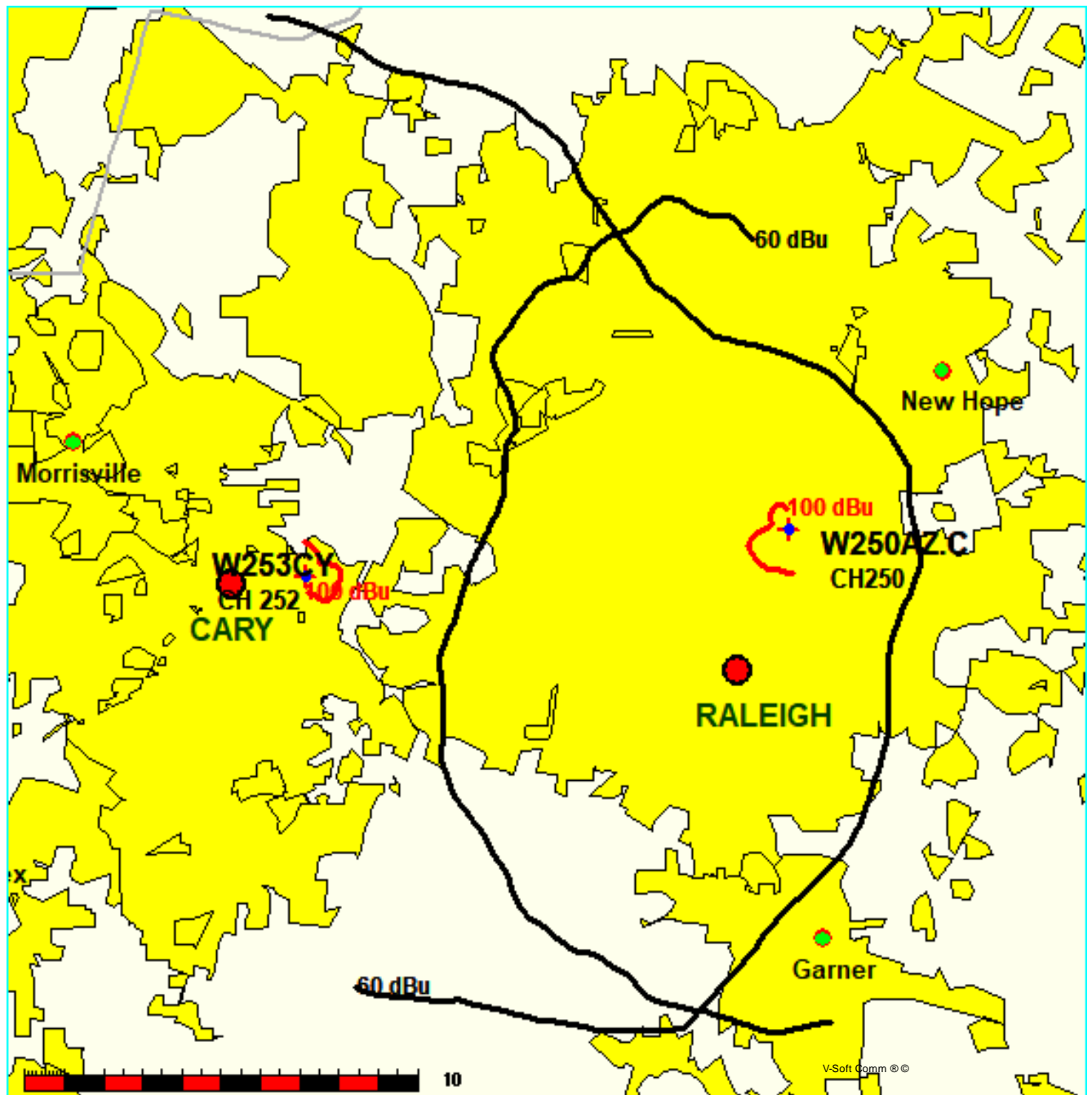


Figure 6: Allocation Study: W251CA  
First State Communications, Inc.

FMCommander Single Allocation Study - 09-11-2020 - GLOBE 30 Sec  
W253CY's Overlaps (In= -1.24 km, Out= 0.23 km)

W253CY CH 252 D DA  
Lat= 35 47 36.00, Lng= 78 45 37.00  
0.15 kW 169 m HAAT, 285 m COR  
Prot.= 60 dBu, Intef.= 54 dBu

W251CA CH 251 D DA 0000121182  
Lat= 35 56 26.00, Lng= 78 28 44.00  
0.25 kW 0 m HAAT, 249 m COR  
Prot.= 60 dBu, Intef.= 54 dBu

