

Doug Vernier, Telecommunications Consultants  
1600 Picturesque Dr., Cedar Falls, IA 50613

Contour-to-Contour Channel Study K237GC

University Of Northern Iowa

REFERENCE  
41 39 29.5 N.  
91 32 41.3 W.

CH# 237D - 95.3 MHz, Pwr= 0.25 kW, HAAT= 33.0 M, COR= 254.9 M  
Average Protected F(50-50)= 7.09 km  
Omni-directional

DISPLAY DATES  
DATA 05-07-18  
SEARCH 05-07-18

CH CITY	CALL	TYPE STATE	ANT STATE	AZI <--	DI ST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*OUT* (Overlap in km)
237D Iowa City	K237GD	CP IA	C_	263.8 83.8	5.58 BNPFT20151215AAP	41 39 10.0 91 36 42.0	0.080		---Reference---	
239C3 Anamosa	KOSY-FM	LIC IA	ZCX	0.2 180.2	44.76 BLH20150710ABF	42 03 39.0 91 32 35.4	18.000 118	4.3 373	40.9 Citicasters Licenses, Inc.	2.5
236D Cedar Rapids	K236AA	LIC IA	C_	342.0 161.9	29.35 BLFT20161117ABI	41 54 33.0 91 39 17.0	0.230	20.9 355	13.7 Kzia, Inc.	4.9
236D Muscatine	K236CF	LIC IA	DC_	121.4 301.7	45.78 BLFT20141021ABL	41 26 34.0 91 04 33.0	0.250	15.2 286	10.7 Kaskaskia Broadcasting, In	23.3
291C3 Washington	KCII-FM	LIC IA	NCX	199.4 19.3	41.58 BLH20170509AAG	41 18 18.0 91 42 36.0	6.200 91	19.4 316	4.8 Home Broadcasting, Inc.	11.5R 30.1M
237A Maquoketa	R11715	ADD IA	---	57.3 237.9	89.79	42 05 26.0 90 37 43.0	6.000 100	88.2 340	29.3 Km Radio Of Independence,	36.5
238A Belle Plaine	KZAT-FM	LIC IA	CN	294.4 113.9	77.44 BLH19970605KA	41 56 35.0 92 23 51.0	4.400 117	43.9 382	28.7 Grupo Roble, LI c	37.3
237C1 Keokuk	KOKX-FM	LIC IA	CX	181.4 1.4	139.89 BMLED20160302ADE	40 24 01.0 91 35 09.0	100.000 245	165.7 424	66.9 Educational Media Foundati	38.3
237A Independence	KQMG-FM	LIC IA	CN	343.5 163.2	94.84 BLH19950605KB	42 28 32.0 91 52 26.0	2.900 125	80.3 418	26.7 Km Radio Of Independence,	43.4

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= West 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)  
Incoming contour overlap is ignored.  
"\*"affixed to 'IN' or 'OUT' values = site inside restricted contour.  
« = Station meets FCC minimum distance spacing for its class.

## HOW TO READ THE FM COMPUTER PRINT-OUT

### Translator Reference Station

The computer printout should be self-explanatory for the most part. The parameters of the station being checked, (reference station) are printed in the heading. The 60 dBu protected contour is predicted from the Commission's F(50-50) table. Contour distances are in kilometers and are predicted using the Commission's TVFMINT FORTRAN subroutine. When interference contour distances are less than 16 kilometers the F(50-50) tables are used. If signal contour distances are less than 1.6 km the free-space equation is used.

All distances are derived by the method detailed in Sec. 73.208 of the Rules and Regulations as amended in Docket 80-90. The column labeled "\* OUT \*" shows the greatest distance in kilometers of overlap (or smallest distance of clearance) between the reference station's interference contour and the database station's protected contour. Negative distance figures in this column indicate outgoing contour overlap. Since translators are able to receive interference there is no "In" or incoming column in this report.

Listed antenna heights and power are the specific antenna heights and power from the FCC database.

Under the "AZI" column, the first row of numbers indicate the True North azimuths from the reference station toward the database stations, while the numbers in the second row indicate the reverse bearings from the database stations to the reference station. Bearings are calculated using spherical trigonometry.

The columns labeled "INT" and "PRO" contain the distance in kilometers of the appropriate interference contour and the protected contour of a data base station.

For I.F. relationships the minimum spacings the "OUT" columns change its significance. The letter "R" stands for the minimum **required** distance in kilometers, while the letter "M" in the next column displays the **available clear space** separation in kilometers. Minimum separation distances when displayed are taken from Sec 73.207 of the rules as amended. Canadian and Mexican separation distances, U/D ratios and protected contour values are from the US/Mexican Working Agreement and the US/Canada Working Agreement".

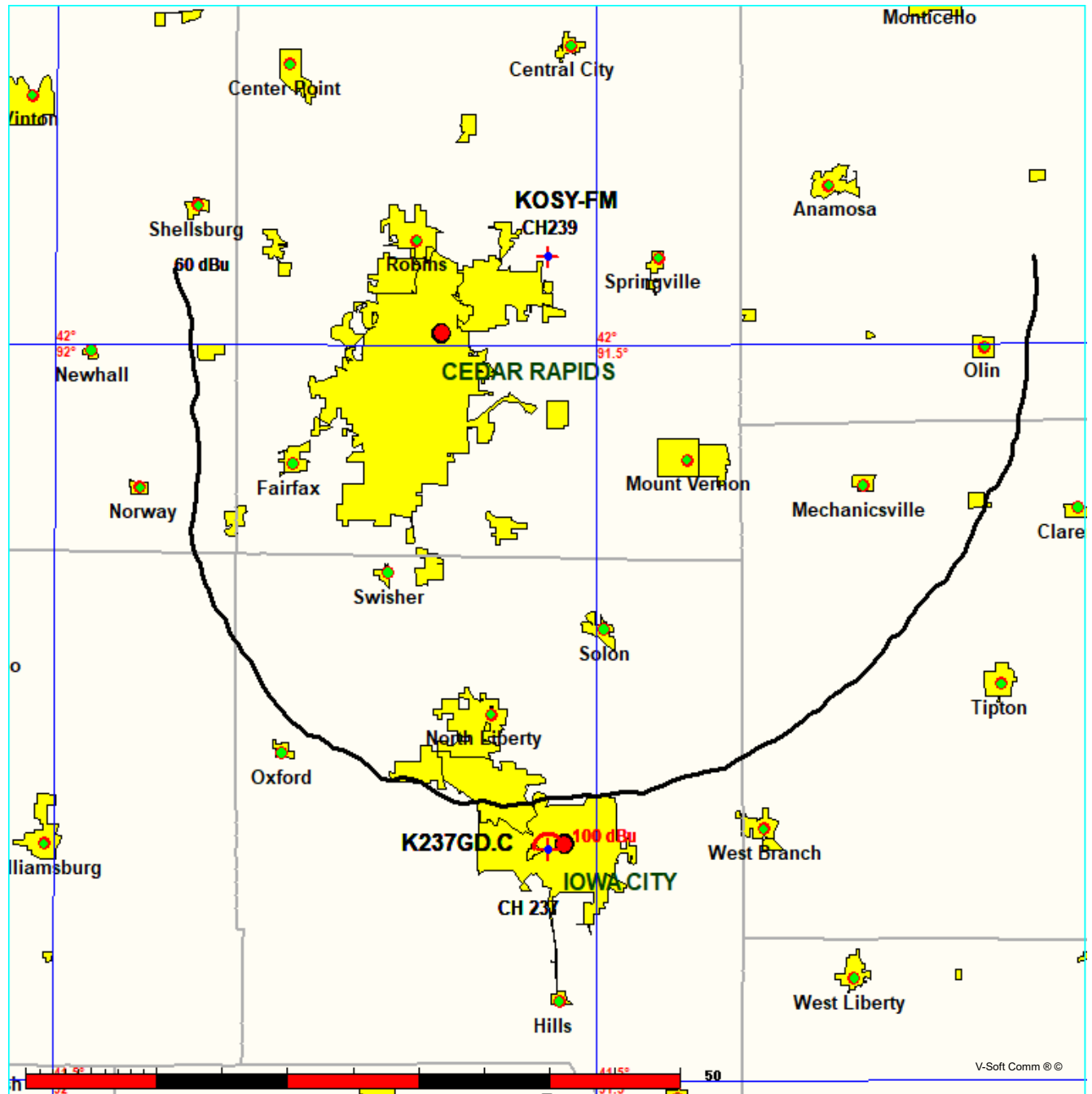
The first three letters of the "TYPE" column identify the current FCC status of the stations. The fourth letter will be a "D" if the facility is directional. "Z" indicates a 73.215 directional. An "N" indicates it is a 73.215 station that operates with an omni-directional antenna. The fifth letter will be an E, H or V depending on the type of antenna polarization. The sixth letter will be a "Y" if the antenna uses beam tilt or an "X" if the commission is not sure, otherwise it will be an "N" or left blank.

Contour-to-Contour Channel Study K237GC vs KOSY-FM  
University Of Northern Iowa

FMCommander Single Allocation Study - 05-07-2018 - FCC 30 meter  
K237GD.C's Overlaps (In= 32.97 km, Out= 2.55 km)

K237GD.C CH 237 D  
Lat= 41 39 29.5, Lng= 91 32 41.3  
0.25 kW 33 m HAAT, 254.9 m COR  
Prot.= 60 dBu, Intef.= 100 dBu

KOSY-FM CH 239 C3 73.215 Z BLH20150710ABF  
Lat= 42 03 39.0, Lng= 91 32 35.4  
18.0 kW 118 m HAAT, 373 m COR  
Prot.= 60 dBu, Intef.= 100 dBu



05-07-2018

Terrain Data: FCC 30 meter

FMOver Analysis

KOSY-FM BLH20150710ABF

K237GD.C

Channel = 239C3

Max ERP = 18 kW

RCAMSL = 373 m

N. Lat. 42 03 39.0

W. Lng. 91 32 35.4

Protected

60 dBu

Channel = 237D

Max ERP = 0.25 kW

RCAMSL = 254.92 m

N. Lat. 41 39 29.5

W. Lng. 91 32 41.3

Interfering

100 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
120.0	018.0000	0112.7	038.4	052.6	000.2500	0021.6	042.1	31.88	
121.0	018.0000	0112.7	038.4	052.9	000.2500	0021.0	041.4	32.07	
122.0	018.0000	0112.3	038.3	053.2	000.2500	0020.2	040.8	32.26	
123.0	018.0000	0113.5	038.5	053.7	000.2500	0018.5	040.2	32.44	
124.0	018.0000	0114.2	038.6	054.2	000.2500	0017.1	039.6	32.63	
125.0	018.0000	0115.3	038.8	054.8	000.2500	0017.1	039.0	32.82	
126.0	018.0000	0116.0	038.9	055.2	000.2500	0017.6	038.4	33.02	
127.0	018.0000	0115.6	038.8	055.5	000.2500	0017.7	037.8	33.24	
128.0	018.0000	0116.3	038.9	055.9	000.2500	0019.0	037.2	33.45	
129.0	018.0000	0117.1	039.0	056.4	000.2500	0019.3	036.5	33.66	
130.0	018.0000	0115.2	038.7	056.3	000.2500	0019.2	035.8	33.92	
131.0	018.0000	0113.9	038.6	056.4	000.2500	0019.2	035.1	34.17	
132.0	018.0000	0114.6	038.7	056.8	000.2500	0019.7	034.5	34.40	
133.0	018.0000	0113.7	038.5	056.9	000.2500	0019.7	033.8	34.65	
134.0	018.0000	0114.9	038.7	057.4	000.2500	0020.0	033.2	34.88	
135.0	018.0000	0115.6	038.8	057.8	000.2500	0019.4	032.6	35.13	
136.0	018.0000	0117.1	039.0	058.4	000.2500	0018.3	031.9	35.37	
137.0	018.0000	0118.1	039.1	058.9	000.2500	0018.1	031.3	35.63	
138.0	018.0000	0116.5	038.9	058.8	000.2500	0017.9	030.6	35.95	
139.0	018.0000	0118.5	039.2	059.5	000.2500	0018.4	030.0	36.24	
140.0	018.0000	0119.7	039.3	060.1	000.2500	0018.3	029.3	36.56	
141.0	018.0000	0120.4	039.4	060.4	000.2500	0017.3	028.7	36.91	
142.0	018.0000	0121.9	039.6	061.0	000.2500	0016.8	028.0	37.27	
143.0	018.0000	0123.0	039.7	061.5	000.2500	0016.5	027.4	37.66	
144.0	018.0000	0122.6	039.7	061.7	000.2500	0016.3	026.7	38.08	
145.0	018.0000	0122.2	039.6	061.7	000.2500	0016.1	026.0	38.51	
146.0	018.0000	0122.4	039.7	061.9	000.2500	0015.8	025.3	38.96	
147.0	018.0000	0122.5	039.7	062.1	000.2500	0015.7	024.6	39.42	
148.0	018.0000	0123.7	039.8	062.6	000.2500	0015.4	023.9	39.89	
149.0	018.0000	0125.4	040.0	063.3	000.2500	0015.6	023.2	40.37	
150.0	018.0000	0124.8	040.0	063.2	000.2500	0015.6	022.5	40.88	
151.0	018.0000	0126.0	040.1	063.7	000.2500	0015.7	021.8	41.40	
152.0	018.0000	0126.7	040.2	063.9	000.2500	0015.7	021.1	41.93	
153.0	018.0000	0127.4	040.3	064.2	000.2500	0015.0	020.4	42.48	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
154.0	018.0000	0128.3	040.4	064.6	000.2500	0014.5	019.7	43.03
155.0	018.0000	0128.9	040.5	064.8	000.2500	0014.4	019.0	43.60
156.0	018.0000	0128.4	040.4	064.6	000.2500	0014.5	018.3	44.18
157.0	018.0000	0128.8	040.5	064.7	000.2500	0014.4	017.6	44.76
158.0	018.0000	0130.0	040.6	065.1	000.2500	0014.1	016.9	45.36
159.0	018.0000	0130.4	040.7	065.1	000.2500	0014.1	016.2	45.96
160.0	018.0000	0131.5	040.8	065.5	000.2500	0013.8	015.5	46.58
161.0	018.0000	0133.2	041.0	066.0	000.2500	0014.2	014.8	47.26
162.0	018.0000	0132.0	040.9	065.1	000.2500	0014.1	014.1	48.10
163.0	018.0000	0131.3	040.8	064.4	000.2500	0014.8	013.4	49.00
164.0	018.0000	0130.9	040.7	063.7	000.2500	0015.7	012.7	49.97
165.0	018.0000	0131.0	040.7	063.1	000.2500	0015.6	012.0	51.01
166.0	018.0000	0131.3	040.8	062.5	000.2500	0015.5	011.3	52.11
167.0	018.0000	0131.7	040.8	061.8	000.2500	0016.0	010.6	53.27
168.0	018.0000	0133.1	041.0	061.7	000.2500	0016.2	009.8	54.54
169.0	018.0000	0133.5	041.0	060.7	000.2500	0016.9	009.1	55.80
170.0	018.0000	0134.7	041.2	060.1	000.2500	0018.3	008.4	57.16
171.0	018.0000	0133.1	041.0	056.9	000.2500	0019.7	007.8	58.32
172.0	018.0000	0132.4	040.9	053.8	000.2500	0018.3	007.2	59.67
173.0	018.0000	0132.0	040.9	050.5	000.2500	0019.6	006.6	61.17
174.0	018.0000	0132.6	040.9	047.4	000.2500	0026.7	006.0	62.88
175.0	018.0000	0133.3	041.0	043.6	000.2500	0022.1	005.4	64.76
176.0	018.0000	0131.7	040.8	036.4	000.2500	0013.9	005.0	65.89
177.0	018.0000	0132.5	040.9	030.3	000.2500	0016.0	004.5	67.65
178.0	018.0000	0133.1	041.0	022.4	000.2500	0018.8	004.1	69.26
179.0	018.0000	0132.8	041.0	012.6	000.2500	0021.9	003.9	70.17
180.0	018.0000	0132.7	040.9	002.0	000.2500	0029.2	003.8	70.52
181.0	018.0000	0133.7	041.1	351.1	000.2500	0032.6	003.7	71.59
182.0	018.0000	0136.1	041.4	339.0	000.2500	0026.3	003.7	71.34
183.0	018.0000	0136.5	041.4	329.1	000.2500	0022.9	004.0	69.95
184.0	018.0000	0137.9	041.6	319.6	000.2500	0020.0	004.3	68.60
185.0	018.0000	0138.7	041.7	312.6	000.2500	0023.0	004.8	66.80
186.0	018.0000	0137.7	041.6	309.0	000.2500	0024.1	005.4	64.66
187.0	018.0000	0137.1	041.5	306.0	000.2500	0027.0	006.1	62.65
188.0	018.0000	0138.2	041.6	301.9	000.2500	0037.8	006.7	62.90
189.0	018.0000	0140.0	041.9	297.9	000.2500	0039.2	007.3	61.74
190.0	018.0000	0139.9	041.9	296.4	000.2500	0038.9	008.0	60.14
191.0	018.0000	0138.7	041.7	296.0	000.2500	0038.5	008.7	58.64
192.0	018.0000	0137.0	041.5	296.2	000.2500	0038.6	009.5	57.27
193.0	018.0000	0134.7	041.2	296.9	000.2500	0039.7	010.2	56.15
194.0	018.0000	0132.7	040.9	297.3	000.2500	0039.4	011.0	54.82
195.0	018.0000	0132.2	040.9	296.8	000.2500	0039.7	011.7	53.73
196.0	018.0000	0132.7	040.9	295.9	000.2500	0038.3	012.4	52.37
197.0	018.0000	0136.5	041.4	293.3	000.2500	0034.5	013.0	50.55
198.0	018.0000	0137.1	041.5	292.6	000.2500	0034.6	013.7	49.62
199.0	018.0000	0135.0	041.2	293.5	000.2500	0035.0	014.5	48.79
200.0	018.0000	0132.3	040.9	294.6	000.2500	0038.2	015.2	48.85
201.0	018.0000	0130.4	040.7	295.3	000.2500	0037.7	016.0	48.08
202.0	018.0000	0130.4	040.6	295.1	000.2500	0037.6	016.7	47.45
203.0	018.0000	0129.8	040.6	295.3	000.2500	0037.6	017.4	46.86
204.0	018.0000	0130.9	040.7	294.8	000.2500	0038.2	018.1	46.40

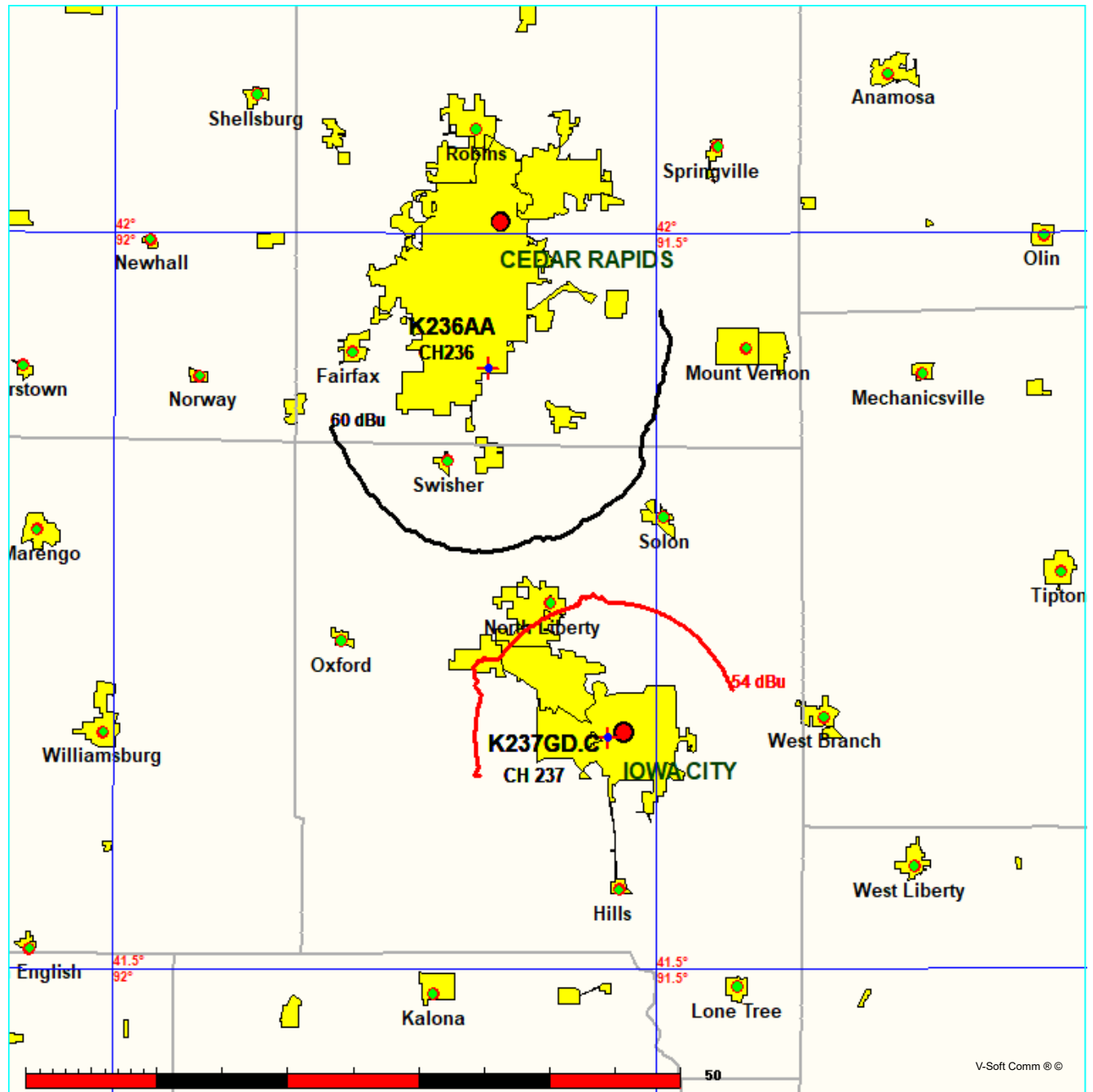
Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
205.0	018.0000	0129.3	040.5	295.4	000.2500	0037.7	018.8	45.69
206.0	018.0000	0129.0	040.5	295.5	000.2500	0037.8	019.5	45.14
207.0	018.0000	0130.5	040.7	295.0	000.2500	0037.8	020.2	44.56
208.0	018.0000	0128.9	040.5	295.6	000.2500	0037.8	020.9	44.01
209.0	018.0000	0128.3	040.4	295.9	000.2500	0038.3	021.6	43.57
210.0	018.0000	0127.3	040.3	296.3	000.2500	0038.8	022.3	43.15
211.0	017.5350	0126.5	040.0	297.2	000.2500	0039.6	023.0	42.82
212.0	017.0762	0126.5	039.7	297.9	000.2500	0039.3	023.7	42.26
213.0	016.6234	0126.9	039.6	298.4	000.2500	0038.4	024.3	41.57
214.0	016.1767	0125.9	039.2	299.3	000.2500	0039.1	025.0	41.25
215.0	015.7361	0125.0	038.9	300.2	000.2500	0039.1	025.7	40.83
216.0	015.3015	0123.5	038.5	301.2	000.2500	0036.8	026.3	39.88
217.0	014.8731	0122.5	038.1	302.1	000.2500	0037.1	026.9	39.57
218.0	014.4507	0124.1	038.1	302.3	000.2500	0036.2	027.6	38.95
219.0	014.0344	0124.2	037.9	302.9	000.2500	0034.8	028.2	38.26
220.0	013.6242	0124.7	037.7	303.4	000.2500	0033.0	028.9	37.51
221.0	013.0847	0125.7	037.5	303.9	000.2500	0031.6	029.5	36.84
222.0	012.5561	0124.9	037.1	304.9	000.2500	0029.8	030.1	36.19
223.0	012.0383	0126.9	037.0	305.2	000.2500	0028.3	030.7	35.89
224.0	011.5315	0129.3	036.9	305.5	000.2500	0027.4	031.3	35.62
225.0	011.0356	0129.8	036.6	306.2	000.2500	0027.0	031.9	35.37
226.0	010.5506	0130.4	036.3	306.9	000.2500	0027.0	032.5	35.14
227.0	010.0765	0131.8	036.1	307.4	000.2500	0025.2	033.1	34.92
228.0	009.6132	0132.3	035.8	308.1	000.2500	0024.7	033.7	34.70
229.0	009.1609	0132.6	035.5	308.9	000.2500	0024.2	034.2	34.50
230.0	008.7195	0134.7	035.3	309.3	000.2500	0023.7	034.8	34.28
231.0	008.3796	0136.1	035.2	309.8	000.2500	0023.6	035.4	34.08
232.0	008.0465	0136.0	034.8	310.5	000.2500	0022.6	035.9	33.88
233.0	007.7201	0135.0	034.4	311.4	000.2500	0021.5	036.4	33.71
234.0	007.4005	0132.5	033.8	312.5	000.2500	0023.1	036.9	33.55
235.0	007.0876	0130.6	033.2	313.6	000.2500	0024.3	037.3	33.39
236.0	006.7815	0129.5	032.7	314.4	000.2500	0024.0	037.8	33.23
237.0	006.4822	0128.3	032.2	315.3	000.2500	0023.3	038.3	33.08
238.0	006.1896	0127.3	031.7	316.2	000.2500	0022.6	038.7	32.93
239.0	005.9037	0126.7	031.3	317.0	000.2500	0022.6	039.2	32.78

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University Of Northern Iowa

FMCommander Single Allocation Study - 05-07-2018 - FCC 30 meter  
K237GD.C's Overlaps (In= 1.09 km, Out= 4.92 km)

K237GD.C CH 237 D  
Lat= 41 39 29.5, Lng= 91 32 41.3  
0.25 kW 33 m HAAT, 254.9 m COR  
Prot.= 60 dBu, Intef.= 54 dBu

K236AA CH 236 D BLFT20161117ABI  
Lat= 41 54 33.0, Lng= 91 39 17.0  
0.23 kW 0 m HAAT, 355 m COR  
Prot.= 60 dBu, Intef.= 54 dBu



05-07-2018

Terrain Data: FCC 30 meter

FMOver Analysis

K236AA BLFT20161117ABI

K237GD.C

Channel = 236D

Max ERP = 0.23 kW

RCAMSL = 355 m

N. Lat. 41 54 33.0

W. Lng. 91 39 17.0

Protected

60 dBu

Channel = 237D

Max ERP = 0.25 kW

RCAMSL = 254.92 m

N. Lat. 41 39 29.5

W. Lng. 91 32 41.3

Interfering

54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
102.0	000.2300	0108.6	013.1	008.5	000.2500	0026.6	025.4	38.85	
103.0	000.2300	0110.9	013.3	008.7	000.2500	0025.8	025.2	39.01	
104.0	000.2300	0108.6	013.1	008.4	000.2500	0026.8	025.0	39.15	
105.0	000.2300	0109.4	013.2	008.4	000.2500	0026.7	024.8	39.31	
106.0	000.2300	0108.7	013.1	008.2	000.2500	0027.1	024.5	39.46	
107.0	000.2300	0109.4	013.2	008.3	000.2500	0027.1	024.3	39.62	
108.0	000.2300	0108.1	013.1	008.0	000.2500	0027.3	024.1	39.77	
109.0	000.2300	0106.7	013.0	007.7	000.2500	0027.4	023.9	39.92	
110.0	000.2300	0104.3	012.9	007.3	000.2500	0027.6	023.7	40.05	
111.0	000.2300	0107.3	013.0	007.5	000.2500	0027.5	023.4	40.24	
112.0	000.2300	0105.5	012.9	007.2	000.2500	0027.7	023.2	40.38	
113.0	000.2300	0105.3	012.9	007.0	000.2500	0027.9	023.0	40.53	
114.0	000.2300	0104.7	012.9	006.7	000.2500	0027.4	022.8	40.68	
115.0	000.2300	0105.1	012.9	006.6	000.2500	0027.3	022.6	40.85	
116.0	000.2300	0108.5	013.1	006.9	000.2500	0027.8	022.3	41.05	
117.0	000.2300	0108.8	013.1	006.8	000.2500	0027.5	022.1	41.22	
118.0	000.2300	0109.4	013.2	006.6	000.2500	0027.3	021.9	41.39	
119.0	000.2300	0111.4	013.3	006.7	000.2500	0027.4	021.6	41.59	
120.0	000.2300	0114.7	013.5	006.9	000.2500	0027.8	021.3	41.80	
121.0	000.2300	0119.8	013.8	007.4	000.2500	0027.5	021.0	42.06	
122.0	000.2300	0122.9	013.9	007.5	000.2500	0027.5	020.7	42.29	
123.0	000.2300	0124.0	014.0	007.4	000.2500	0027.5	020.4	42.48	
124.0	000.2300	0125.1	014.0	007.2	000.2500	0027.6	020.2	42.67	
125.0	000.2300	0125.4	014.1	006.9	000.2500	0027.9	020.0	42.85	
126.0	000.2300	0126.8	014.1	006.8	000.2500	0027.6	019.7	43.05	
127.0	000.2300	0126.5	014.1	006.4	000.2500	0027.5	019.5	43.22	
128.0	000.2300	0125.6	014.1	005.9	000.2500	0027.6	019.3	43.37	
129.0	000.2300	0125.8	014.1	005.5	000.2500	0027.4	019.1	43.54	
130.0	000.2300	0125.6	014.1	005.1	000.2500	0027.9	018.9	43.70	
131.0	000.2300	0126.1	014.1	004.7	000.2500	0028.4	018.7	43.88	
132.0	000.2300	0126.1	014.1	004.3	000.2500	0027.1	018.5	44.04	
133.0	000.2300	0126.4	014.1	003.8	000.2500	0027.6	018.3	44.20	
134.0	000.2300	0126.7	014.1	003.4	000.2500	0028.0	018.1	44.37	
135.0	000.2300	0123.8	014.0	002.5	000.2500	0028.3	018.0	44.43	



Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
136.0	000.2300	0122.8	013.9	001.8	000.2500	0028.5	017.9	44.55
137.0	000.2300	0122.7	013.9	001.2	000.2500	0026.7	017.7	44.69
138.0	000.2300	0122.2	013.9	000.6	000.2500	0028.6	017.6	44.81
139.0	000.2300	0120.7	013.8	359.8	000.2500	0028.7	017.5	44.89
140.0	000.2300	0119.5	013.7	359.1	000.2500	0030.5	017.4	45.10
141.0	000.2300	0121.0	013.8	358.6	000.2500	0032.1	017.2	45.69
142.0	000.2300	0123.2	013.9	358.2	000.2500	0032.7	016.9	46.06
143.0	000.2300	0121.7	013.9	357.4	000.2500	0033.3	016.8	46.27
144.0	000.2300	0121.2	013.8	356.7	000.2500	0032.5	016.7	46.15
145.0	000.2300	0121.7	013.9	356.0	000.2500	0031.9	016.6	46.12
146.0	000.2300	0119.2	013.7	355.0	000.2500	0033.6	016.6	46.55
147.0	000.2300	0119.2	013.7	354.3	000.2500	0034.3	016.5	46.84
148.0	000.2300	0117.8	013.7	353.4	000.2500	0033.9	016.4	46.75
149.0	000.2300	0118.2	013.7	352.7	000.2500	0032.9	016.3	46.62
150.0	000.2300	0121.2	013.8	352.2	000.2500	0033.1	016.1	46.87
151.0	000.2300	0121.4	013.9	351.4	000.2500	0033.3	016.0	47.01
152.0	000.2300	0123.3	014.0	350.7	000.2500	0033.4	015.8	47.17
153.0	000.2300	0123.7	014.0	349.8	000.2500	0033.2	015.7	47.22
154.0	000.2300	0123.9	014.0	349.0	000.2500	0033.8	015.6	47.44
155.0	000.2300	0122.9	013.9	348.1	000.2500	0031.1	015.6	46.75
156.0	000.2300	0123.0	013.9	347.2	000.2500	0029.6	015.6	46.52
157.0	000.2300	0122.8	013.9	346.3	000.2500	0030.3	015.5	46.63
158.0	000.2300	0121.4	013.9	345.4	000.2500	0029.5	015.6	46.51
159.0	000.2300	0121.7	013.9	344.5	000.2500	0028.2	015.5	46.55
160.0	000.2300	0117.8	013.7	343.6	000.2500	0026.4	015.7	46.38
161.0	000.2300	0115.8	013.5	342.7	000.2500	0026.2	015.8	46.29
162.0	000.2300	0118.6	013.7	341.8	000.2500	0028.1	015.7	46.43
163.0	000.2300	0114.7	013.5	341.0	000.2500	0024.9	015.9	46.23
164.0	000.2300	0112.3	013.3	340.2	000.2500	0024.7	016.0	46.11
165.0	000.2300	0111.9	013.3	339.4	000.2500	0026.0	016.1	46.07
166.0	000.2300	0114.8	013.5	338.5	000.2500	0025.1	015.9	46.19
167.0	000.2300	0114.7	013.5	337.6	000.2500	0026.5	016.0	46.15
168.0	000.2300	0114.9	013.5	336.8	000.2500	0026.0	016.0	46.13
169.0	000.2300	0115.6	013.5	335.9	000.2500	0025.9	016.0	46.12
170.0	000.2300	0117.2	013.6	335.0	000.2500	0025.3	016.0	46.14
171.0	000.2300	0119.0	013.7	334.1	000.2500	0024.3	016.0	46.17
172.0	000.2300	0119.1	013.7	333.3	000.2500	0023.5	016.0	46.11
173.0	000.2300	0119.6	013.8	332.5	000.2500	0024.3	016.1	46.07
174.0	000.2300	0120.0	013.8	331.6	000.2500	0024.1	016.1	46.01
175.0	000.2300	0120.2	013.8	330.8	000.2500	0023.7	016.2	45.94
176.0	000.2300	0121.7	013.9	329.9	000.2500	0023.0	016.3	45.91
177.0	000.2300	0121.8	013.9	329.2	000.2500	0022.9	016.4	45.82
178.0	000.2300	0121.9	013.9	328.4	000.2500	0022.9	016.5	45.73
179.0	000.2300	0123.3	014.0	327.6	000.2500	0023.1	016.5	45.68
180.0	000.2300	0124.2	014.0	326.8	000.2500	0023.1	016.6	45.60
181.0	000.2300	0124.1	014.0	326.1	000.2500	0022.8	016.8	45.48
182.0	000.2300	0122.7	013.9	325.6	000.2500	0022.0	017.0	45.31
183.0	000.2300	0122.2	013.9	325.0	000.2500	0021.2	017.1	45.17
184.0	000.2300	0123.8	014.0	324.2	000.2500	0019.7	017.2	45.10
185.0	000.2300	0123.4	014.0	323.6	000.2500	0019.0	017.4	44.95
186.0	000.2300	0123.3	014.0	323.0	000.2500	0018.8	017.6	44.81

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
187.0	000.2300	0122.6	013.9	322.5	000.2500	0018.8	017.8	44.65
188.0	000.2300	0123.2	013.9	321.9	000.2500	0018.8	017.9	44.52
189.0	000.2300	0122.3	013.9	321.5	000.2500	0019.3	018.1	44.35
190.0	000.2300	0123.0	013.9	320.9	000.2500	0019.7	018.3	44.22
191.0	000.2300	0124.6	014.0	320.2	000.2500	0020.1	018.4	44.11
192.0	000.2300	0124.4	014.0	319.8	000.2500	0020.0	018.6	43.95
193.0	000.2300	0123.2	013.9	319.5	000.2500	0020.1	018.8	43.76
194.0	000.2300	0121.5	013.9	319.3	000.2500	0020.5	019.1	43.56
195.0	000.2300	0121.5	013.9	318.8	000.2500	0020.8	019.3	43.40
196.0	000.2300	0121.8	013.9	318.4	000.2500	0021.1	019.5	43.24
197.0	000.2300	0122.3	013.9	318.0	000.2500	0021.7	019.7	43.08
198.0	000.2300	0122.6	013.9	317.6	000.2500	0022.2	019.9	42.92
199.0	000.2300	0121.9	013.9	317.3	000.2500	0022.3	020.1	42.74
200.0	000.2300	0121.6	013.9	317.1	000.2500	0022.5	020.3	42.56
201.0	000.2300	0120.2	013.8	317.0	000.2500	0022.6	020.6	42.37
202.0	000.2300	0119.7	013.8	316.7	000.2500	0022.5	020.8	42.19
203.0	000.2300	0118.5	013.7	316.6	000.2500	0022.3	021.1	42.00
204.0	000.2300	0117.4	013.6	316.5	000.2500	0022.4	021.3	41.81
205.0	000.2300	0118.1	013.7	316.2	000.2500	0022.6	021.5	41.65
206.0	000.2300	0119.2	013.7	315.8	000.2500	0022.9	021.7	41.50
207.0	000.2300	0120.3	013.8	315.5	000.2500	0023.2	021.9	41.34
208.0	000.2300	0120.3	013.8	315.3	000.2500	0023.3	022.2	41.17
209.0	000.2300	0119.2	013.7	315.3	000.2500	0023.3	022.4	40.98
210.0	000.2300	0118.6	013.7	315.2	000.2500	0023.5	022.6	40.81
211.0	000.2300	0115.5	013.5	315.4	000.2500	0023.2	022.9	40.61
212.0	000.2300	0113.8	013.4	315.5	000.2500	0023.2	023.2	40.42
213.0	000.2300	0113.9	013.4	315.4	000.2500	0023.2	023.4	40.26
214.0	000.2300	0113.6	013.4	315.3	000.2500	0023.3	023.6	40.09
215.0	000.2300	0112.5	013.3	315.4	000.2500	0023.3	023.9	39.92
216.0	000.2300	0112.2	013.3	315.3	000.2500	0023.3	024.1	39.76
217.0	000.2300	0112.7	013.4	315.2	000.2500	0023.5	024.3	39.60
218.0	000.2300	0111.7	013.3	315.2	000.2500	0023.4	024.6	39.44
219.0	000.2300	0110.7	013.2	315.3	000.2500	0023.3	024.8	39.28
220.0	000.2300	0109.4	013.2	315.4	000.2500	0023.2	025.0	39.12
221.0	000.2300	0108.6	013.1	315.5	000.2500	0023.2	025.3	38.97