

Doug Vernier - Telecommunications Consultants  
401 Main St., Suite 213, Cedar Falls, IA 50613

Contour-to-Contour Channel Study KNBX

Kcbx, Inc.

REFERENCE  
35 57 04.4 N.  
121 00 02.6 W.

CH# 219B - 91.7 MHz, Pwr= 3.07 kW, HAAT= 532.9 M, COR= 879 M  
Average Protected F(50-50)= 52.48 km  
Omni-directional

DISPLAY DATES  
DATA 08-15-14  
SEARCH 08-15-14

CH CITY	CALL	TYPE STATE	ANT AZI <--	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
219B San Ardo	KNBX	LIC _C_ CA	349.0 169.0	0.05 BLED20010110AAB	35 57 06.0 121 00 03.0	2.700 543	129.1 889	53.4 Kcbx, Inc.	-181.4*	-181.4*
217A King City	KDRH	LIC _V_ CA	340.4 160.3	30.12 BLED20130115ACG	36 12 23.0 121 06 49.0	0.450 -108	1.5 141	8.3 The Association For Commun	-21.0*	17.7 **
219A Wasco	KFHL	LIC _CX CA	110.0 291.0	170.33 BLED20050815ADD	35 24 55.0 119 14 01.0	6.000 73	84.4 180	26.4 Mary V. Harris Foundation	32.6	16.4
217A San Luis Obispo	KCPR	LIC DCX CA	154.5 334.7	72.68 BLED20071017AGL	35 21 38.0 120 39 21.0	0.310 432	1.2 803	25.7 Kcpr-fm	18.0	43.0
220A Pebble Beach	KSPB	LIC _CN CA	310.8 130.2	108.69 BML2019881216KF	36 35 11.0 121 55 21.0	1.000 148	27.2 245	16.6 Robert Louis Stevenson Sch	39.0	22.1
217A Pai cines	NEW	CP DCX CA	346.7 166.5	77.26 BNPED20071022BQY	36 37 38.0 121 12 02.0	0.310 93	0.2 649	7.3 Cal i f o r n i a A s s o c i a t i o n F o r	24.2	64.5
218B Fresno	KSJV	LIC _CN CA	66.9 248.1	199.54 BLED19800806AB	36 38 15.0 118 56 35.0	16.000 265	119.1 1608	79.2 Radio Bilingue, Inc.	26.0	35.2
218B1 Lompoc	KRQZ	LIC ZCX CA	156.2 336.5	135.40 BLED20080821AAI	34 50 08.0 120 24 06.0	4.000 238	37.0 410	24.5 Spir it C o m m u n i c a t i o n s , I n c	44.2	30.5
220B1 Tulare	KPSV-FM	LIC ZH_ CA	86.0 266.9	132.11 BLED20130911AAB	36 01 31.0 119 32 06.0	25.000 54	24.8 107	16.8 South Valley Peace Center	52.2	33.4
217A Carmel Valley	KZBV	LIC _CX CA	311.6 131.2	80.70 BLED20130416ABG	36 25 52.0 121 40 32.0	0.100 14	0.7 555	5.6 Aware Fm, Inc.	35.0	71.9
218B1 Cupertino	KKUP	LIC _CN CA	330.0 149.5	149.31 BLED19831114AD	37 06 40.0 121 50 36.0	0.200 787	52.0 1180	35.0 Assurance Science Foundati	49.5	44.2
220B Santa Barbara	KCSB-FM	LIC _CN CA	148.9 329.5	184.65 BLED19840928DF	34 31 31.0 119 57 29.0	0.620 879	74.7 1239	50.3 Uni v e r s i t y O f C a l i f o r n i a	57.0	59.3
219B Groveland	KXSR	LIC DCX CA	15.7 196.2	244.13 BML20121119AOT	38 03 46.0 120 14 45.0	4.000 485	117.1 1543	46.5 Cal i f o r n i a S t a t e U n i v e r s i t	70.6	61.0
218A Atwater	KZCF	LIC _C_ CA	12.0 192.2	164.40 BLED20121004ABV	37 23 49.0 120 36 49.0	0.500 32	13.9 82	10.0 Common Frequency, Inc.	94.4	71.5
220A Turlock	KCSS	LIC DCX CA	4.1 184.2	175.59 BLED20121127BAM	37 31 35.0 120 51 25.0	6.000 32	25.9 63	17.6 Cal i f o r n i a S t a t e U n i v e r s i t	94.4	75.6
273B Salinas	KDON-FM«	LIC _CX CA	333.5 153.2	100.00 BLH20040723ABH	36 45 23.0 121 30 05.0	15.000 723	0.0 1018	0.0 C c L i c e n s e s , L I c	20.0R	80.0M
222B San Jose	KSJO«	LIC _CX CA	333.9 153.5	155.78 BLH20080214ABH	37 12 32.0 121 46 27.0	32.000 136	6.0 394	62.5 Uni v e r s a l M e d i a A c c e s s - K	74.0R	81.8M

Terrain database is USGS 03 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= - Zone 1A, Co to 3rd adjacent.  
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 protected contour.  
« = Station meets FCC minimum distance spacing for its class.  
\*\* New U/D interference area is smaller than existing - see exhibit maps

## HOW TO READ THE FM COMPUTER PRINT-OUT

### Full Service Stations

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. 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.

The column listed "IN " is the difference in kilometers between of the reference station's protected contour and the data file station's interference contour at the closest point between the contours. (All distances are derived by the method detailed in Sec. 73.208 of the Rules and Regulations as amended in Docket 80-90.) Therefore, "IN" column is a measure of incoming interference. Negative distances in this column indicate the presence of contour overlap. Listed antenna heights and power are those given in the FCC database. The column labeled "OUT " shows the greatest distance in kilometers of overlap or smallest 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.

Under the "AZI" column, the first row of numbers indicate the True North bearings 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.

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, some channel-six TV relationships and relationships with commercial channel stations providing clearance the minimum spacings values the "IN" and "OUT" columns can change their significance. The letter "R" stands for the minimum **required** distance in kilometers, while the letter "M" in the next column follows the **available clear space** (or lack of it) 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 call letters of stations meeting the minimum separation distances under the rules will be flagged by the characters "<<" appended to the right-hand side of the call sign. The "^" character appended to the call sign means the station has been "max-classed" according to the provisions of section 73.525 of the Rules.

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.

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## KNBX Proposed Interference from 2nd Adjacent KDRH

### KNBX

BLED20010110AAB

Latitude: 35-57-04.40 N

Longitude: 121-00-02.60 W

ERP: 3.07 kW

Channel: 219

Frequency: 91.7 MHz

AMSL Height: 879.0 m

Elevation: 839.88 m

Horiz. Pattern: Omni

Vert. Pattern: No

Prop Model: FCC Model

Loc. Variability: 50.0%

Time Variability: 50.0%

HAAT Mthd: FCC

### KDRH

BLED20130115ACG

Latitude: 36-12-23 N

Longitude: 121-06-49 W

ERP: 0.45 kW

Channel: 217

Frequency: 91.3 MHz

AMSL Height: 141.0 m


Elevation: 116.0 m

Horiz. Pattern: Omni

Vert. Pattern: No

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Interference area based on FCC U/D  
Covers a Smaller Area than under Current License

 < -40.0 dB

277 people, 0.73 sq km

 KDRH

Scale 1:20,000

 0 0.27 0.53 0.8 km

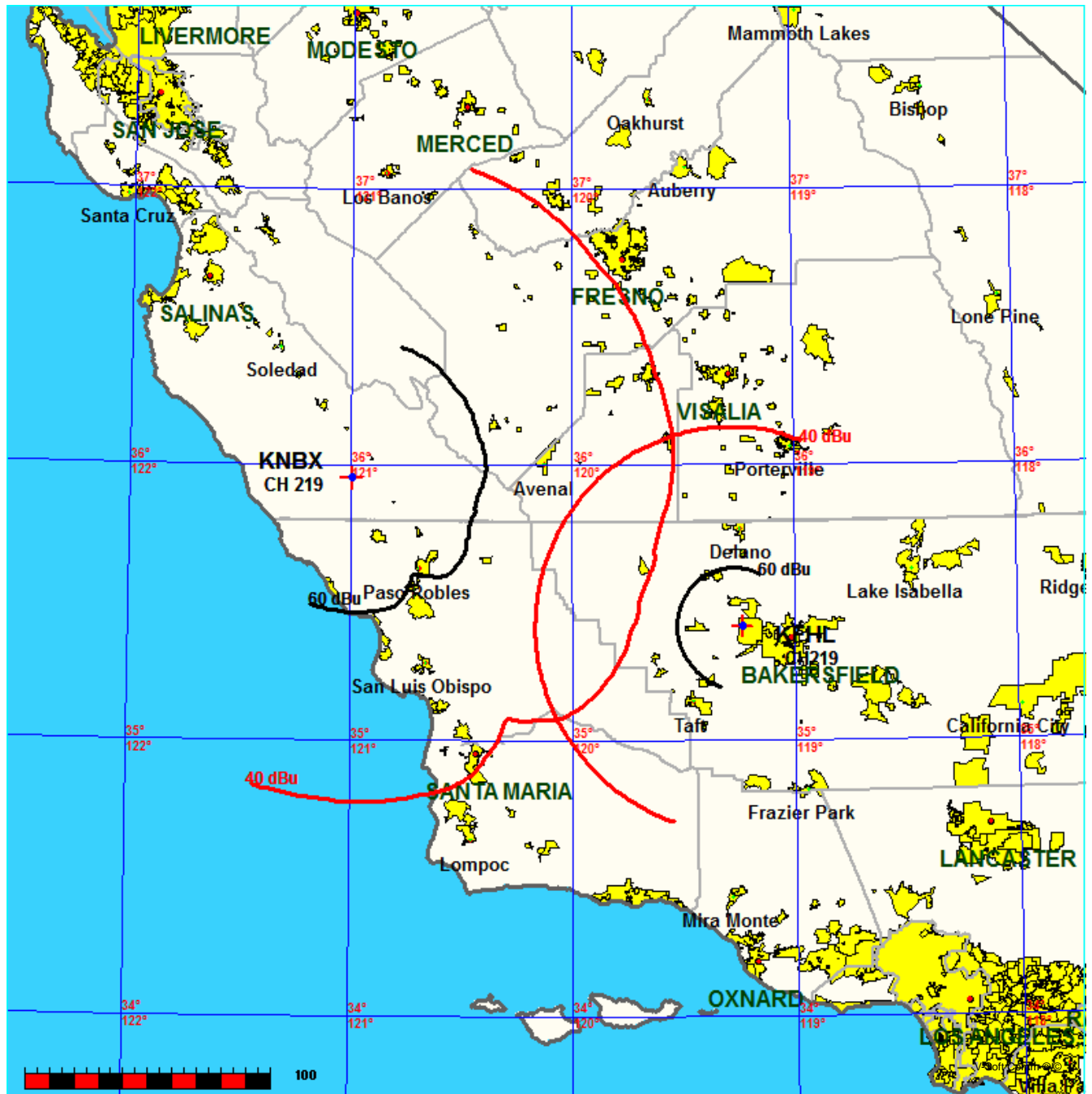
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KNBX vs KFHL Contour-to-Contour Map  
Kcbx, Inc.

FMCommander Single Allocation Study - 08-19-2014 - USGS 03 SEC  
KNBX's Overlaps (In= 32.6 km, Out= 16.38 km)

KNBX CH 219 B  
Lat= 35 57 04.4, Lng= 121 00 02.6  
3.07 kW 532.9 M HAAT, 879 M COR  
Prot.= 60 dBu, Intef.= 40 dBu

KFHL CH 219 A BLED20050815ADD  
Lat= 35 24 55.0, Lng= 119 14 01.0  
6.0 kW 73 M HAAT, 179.5 M COR  
Prot.= 60 dBu, Intef.= 40 dBu



08-19-2014

Terrain Data: USGS 03 SEC

FMOver Analysis

KNBX

KFHL BLED20050815ADD

Channel = 219B

Max ERP = 3.07 kW

RCAMSL = 879 M

N. Lat. 35 57 04.4

W. Lng. 121 00 02.6

Protected

60 dBu

Channel = 219A

Max ERP = 6 kW

RCAMSL = 179.5 M

N. Lat. 35 24 55.0

W. Lng. 119 14 01.0

Interfering

40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
050.0	003.0700	0601.8	055.6	309.7	006.0000	0082.6	150.4	26.54	
051.0	003.0700	0607.8	055.8	309.7	006.0000	0082.6	149.4	26.71	
052.0	003.0700	0611.7	056.0	309.6	006.0000	0082.6	148.4	26.88	
053.0	003.0700	0613.2	056.0	309.6	006.0000	0082.6	147.5	27.05	
054.0	003.0700	0615.5	056.1	309.5	006.0000	0082.6	146.5	27.22	
055.0	003.0700	0614.6	056.1	309.4	006.0000	0082.7	145.6	27.38	
056.0	003.0700	0608.7	055.9	309.2	006.0000	0082.7	144.7	27.54	
057.0	003.0700	0600.6	055.6	309.0	006.0000	0082.8	143.9	27.70	
058.0	003.0700	0596.3	055.4	308.8	006.0000	0082.8	143.0	27.86	
059.0	003.0700	0601.0	055.6	308.7	006.0000	0082.8	142.0	28.04	
060.0	003.0700	0602.6	055.7	308.6	006.0000	0082.9	141.1	28.21	
061.0	003.0700	0602.0	055.6	308.4	006.0000	0082.9	140.2	28.38	
062.0	003.0700	0601.9	055.6	308.2	006.0000	0082.9	139.3	28.55	
063.0	003.0700	0598.7	055.5	308.0	006.0000	0083.0	138.5	28.71	
064.0	003.0700	0590.1	055.2	307.7	006.0000	0083.0	137.8	28.85	
065.0	003.0700	0584.2	054.9	307.4	006.0000	0083.1	137.1	29.00	
066.0	003.0700	0583.3	054.9	307.2	006.0000	0083.2	136.3	29.16	
067.0	003.0700	0582.4	054.9	307.0	006.0000	0083.2	135.4	29.31	
068.0	003.0700	0583.2	054.9	306.8	006.0000	0083.2	134.6	29.47	
069.0	003.0700	0580.2	054.8	306.5	006.0000	0083.3	133.9	29.62	
070.0	003.0700	0575.0	054.6	306.2	006.0000	0083.3	133.2	29.75	
071.0	003.0700	0573.1	054.5	306.0	006.0000	0083.4	132.5	29.89	
072.0	003.0700	0575.2	054.6	305.8	006.0000	0083.4	131.7	30.05	
073.0	003.0700	0579.7	054.8	305.6	006.0000	0083.5	130.8	30.21	
074.0	003.0700	0583.4	054.9	305.4	006.0000	0083.5	130.0	30.37	
075.0	003.0700	0586.0	055.0	305.1	006.0000	0083.6	129.2	30.52	
076.0	003.0700	0585.0	055.0	304.8	006.0000	0083.6	128.5	30.65	
077.0	003.0700	0583.0	054.9	304.5	006.0000	0083.7	127.8	30.77	
078.0	003.0700	0585.2	055.0	304.2	006.0000	0083.8	127.1	30.91	
079.0	003.0700	0589.1	055.1	304.0	006.0000	0083.9	126.3	31.06	
080.0	003.0700	0590.9	055.2	303.7	006.0000	0083.9	125.6	31.19	
081.0	003.0700	0592.1	055.3	303.4	006.0000	0084.0	124.9	31.31	
082.0	003.0700	0593.5	055.3	303.0	006.0000	0084.1	124.2	31.43	
083.0	003.0700	0589.7	055.2	302.7	006.0000	0084.2	123.7	31.52	
084.0	003.0700	0588.0	055.1	302.3	006.0000	0084.3	123.2	31.62	
085.0	003.0700	0589.9	055.2	301.9	006.0000	0084.3	122.6	31.73	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
086.0	003.0700	0586.3	055.0	301.5	006.0000	0084.4	122.1	31.81
087.0	003.0700	0580.0	054.8	301.1	006.0000	0084.5	121.8	31.87
088.0	003.0700	0577.9	054.7	300.7	006.0000	0084.6	121.4	31.95
089.0	003.0700	0571.4	054.4	300.2	006.0000	0084.6	121.1	31.99
090.0	003.0700	0564.9	054.1	299.8	006.0000	0084.7	120.9	32.03
091.0	003.0700	0561.3	054.0	299.3	006.0000	0084.8	120.6	32.08
092.0	003.0700	0557.8	053.8	298.9	006.0000	0084.8	120.3	32.13
093.0	003.0700	0552.2	053.5	298.5	006.0000	0085.0	120.2	32.16
094.0	003.0700	0546.0	053.2	298.0	006.0000	0085.1	120.1	32.18
095.0	003.0700	0540.6	052.9	297.5	006.0000	0085.2	120.0	32.20
096.0	003.0700	0532.8	052.5	297.0	006.0000	0085.3	120.1	32.19
097.0	003.0700	0526.7	052.1	296.6	006.0000	0085.4	120.1	32.19
098.0	003.0700	0524.8	052.0	296.1	006.0000	0085.4	119.9	32.22
099.0	003.0700	0525.4	052.0	295.7	006.0000	0085.5	119.7	32.27
100.0	003.0700	0523.9	052.0	295.3	006.0000	0085.6	119.5	32.30
101.0	003.0700	0521.7	051.8	294.9	006.0000	0085.7	119.4	32.32
102.0	003.0700	0519.6	051.7	294.4	006.0000	0085.7	119.3	32.33
103.0	003.0700	0519.5	051.7	294.0	006.0000	0085.8	119.2	32.36
104.0	003.0700	0527.3	052.2	293.6	006.0000	0085.9	118.6	32.47
105.0	003.0700	0530.8	052.4	293.2	006.0000	0086.0	118.3	32.53
106.0	003.0700	0529.8	052.3	292.7	006.0000	0086.1	118.2	32.54
107.0	003.0700	0526.7	052.1	292.3	006.0000	0086.2	118.3	32.52
108.0	003.0700	0524.4	052.0	291.8	006.0000	0086.2	118.4	32.51
109.0	003.0700	0526.0	052.1	291.4	006.0000	0086.3	118.3	32.54
110.0	003.0700	0525.4	052.0	291.0	006.0000	0086.4	118.3	32.54
111.0	003.0700	0524.2	052.0	290.5	006.0000	0086.5	118.4	32.52
112.0	003.0700	0524.3	052.0	290.1	006.0000	0086.5	118.4	32.52
113.0	003.0700	0527.7	052.2	289.6	006.0000	0086.6	118.3	32.55
114.0	003.0700	0537.1	052.7	289.2	006.0000	0086.6	117.8	32.63
115.0	003.0700	0548.2	053.3	288.7	006.0000	0086.7	117.3	32.71
116.0	003.0700	0553.3	053.6	288.2	006.0000	0086.7	117.2	32.74
117.0	003.0700	0552.6	053.5	287.8	006.0000	0086.9	117.4	32.71
118.0	003.0700	0553.5	053.6	287.3	006.0000	0087.0	117.5	32.69
119.0	003.0700	0558.9	053.8	286.9	006.0000	0087.0	117.5	32.70
120.0	003.0700	0570.7	054.4	286.3	006.0000	0087.0	117.2	32.75
121.0	003.0700	0580.1	054.8	285.8	006.0000	0087.0	117.1	32.77
122.0	003.0700	0588.1	055.1	285.4	006.0000	0087.1	117.0	32.78
123.0	003.0700	0593.9	055.3	284.9	006.0000	0087.2	117.1	32.77
124.0	003.0700	0598.6	055.5	284.4	006.0000	0087.3	117.3	32.74
125.0	003.0700	0602.2	055.6	283.9	006.0000	0087.3	117.5	32.71
126.0	003.0700	0605.8	055.8	283.5	006.0000	0087.3	117.8	32.66
127.0	003.0700	0607.9	055.9	283.0	006.0000	0087.4	118.1	32.61
128.0	003.0700	0607.6	055.8	282.6	006.0000	0087.3	118.5	32.53
129.0	003.0700	0607.5	055.8	282.2	006.0000	0087.3	119.0	32.45
130.0	003.0700	0606.6	055.8	281.8	006.0000	0087.3	119.5	32.36
131.0	003.0700	0604.6	055.7	281.4	006.0000	0087.3	120.0	32.27
132.0	003.0700	0599.7	055.5	281.0	006.0000	0087.2	120.7	32.15
133.0	003.0700	0595.7	055.4	280.7	006.0000	0087.3	121.3	32.04
134.0	003.0700	0590.0	055.2	280.4	006.0000	0087.3	122.0	31.92
135.0	003.0700	0583.5	054.9	280.1	006.0000	0087.3	122.8	31.78
136.0	003.0700	0572.1	054.4	279.9	006.0000	0087.3	123.8	31.62

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
137.0	003.0700	0561.1	053.9	279.6	006.0000	0087.3	124.7	31.45
138.0	003.0700	0548.4	053.3	279.5	006.0000	0087.3	125.8	31.26
139.0	003.0700	0533.1	052.5	279.4	006.0000	0087.3	127.0	31.04
140.0	003.0700	0514.4	051.4	279.4	006.0000	0087.3	128.4	30.78
141.0	003.0700	0499.7	050.6	279.4	006.0000	0087.3	129.7	30.55
142.0	003.0700	0483.4	049.7	279.4	006.0000	0087.3	130.9	30.32
143.0	003.0700	0471.1	049.0	279.3	006.0000	0087.3	132.0	30.11
144.0	003.0700	0457.1	048.2	279.3	006.0000	0087.3	133.2	29.89
145.0	003.0700	0438.3	047.2	279.4	006.0000	0087.3	134.4	29.64
146.0	003.0700	0423.0	046.4	279.4	006.0000	0087.3	135.6	29.42
147.0	003.0700	0421.0	046.3	279.2	006.0000	0087.3	136.3	29.29
148.0	003.0700	0436.2	047.1	278.7	006.0000	0087.4	136.4	29.27
149.0	003.0700	0451.9	047.9	278.2	006.0000	0087.4	136.5	29.25
150.0	003.0700	0468.7	048.8	277.7	006.0000	0087.5	136.6	29.23
151.0	003.0700	0475.5	049.2	277.4	006.0000	0087.5	137.1	29.14
152.0	003.0700	0487.7	049.9	276.9	006.0000	0087.5	137.4	29.08
153.0	003.0700	0497.6	050.5	276.5	006.0000	0087.5	137.8	28.99
154.0	003.0700	0507.6	051.0	276.1	006.0000	0087.5	138.3	28.91
155.0	003.0700	0520.5	051.8	275.7	006.0000	0087.6	138.7	28.83
156.0	003.0700	0533.1	052.5	275.2	006.0000	0087.6	139.1	28.75
157.0	003.0700	0545.1	053.1	274.8	006.0000	0087.7	139.6	28.65
158.0	003.0700	0553.6	053.6	274.5	006.0000	0087.8	140.3	28.53
159.0	003.0700	0563.8	054.1	274.1	006.0000	0087.8	140.9	28.41
160.0	003.0700	0570.1	054.3	273.9	006.0000	0087.9	141.7	28.27
161.0	003.0700	0573.5	054.5	273.7	006.0000	0087.9	142.5	28.11
162.0	003.0700	0575.7	054.6	273.5	006.0000	0087.9	143.4	27.95
163.0	003.0700	0575.6	054.6	273.4	006.0000	0088.0	144.3	27.79
164.0	003.0700	0575.5	054.6	273.3	006.0000	0088.0	145.2	27.63
165.0	003.0700	0574.9	054.6	273.2	006.0000	0088.0	146.1	27.46
166.0	003.0700	0572.5	054.5	273.1	006.0000	0088.0	147.0	27.30
167.0	003.0700	0571.9	054.4	273.0	006.0000	0088.0	148.0	27.14
168.0	003.0700	0570.7	054.4	272.9	006.0000	0088.0	148.9	26.97
169.0	003.0700	0568.2	054.3	272.9	006.0000	0088.0	149.8	26.81



08-19-2014

Terrain Data: USGS 03 SEC

FMOver Analysis

KFHL BLED20050815ADD

KNBX

Channel = 219A

Max ERP = 6 kW

RCAMSL = 179.5 M

N. Lat. 35 24 55.0

W. Lng. 119 14 01.0

Protected

60 dBu

Channel = 219B

Max ERP = 3.07 kW

RCAMSL = 879 M

N. Lat. 35 57 04.4

W. Lng. 121 00 02.6

Interfering

40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
231.0	006.0000	0085.1	026.2	118.2	003.0700	0554.2	158.9	32.61	
232.0	006.0000	0085.1	026.2	118.1	003.0700	0554.0	158.4	32.71	
233.0	006.0000	0085.2	026.2	118.1	003.0700	0553.7	158.0	32.80	
234.0	006.0000	0085.3	026.2	118.0	003.0700	0553.5	157.6	32.90	
235.0	006.0000	0085.4	026.3	117.9	003.0700	0553.2	157.2	33.00	
236.0	006.0000	0085.6	026.3	117.9	003.0700	0552.9	156.7	33.09	
237.0	006.0000	0085.7	026.3	117.8	003.0700	0552.7	156.3	33.19	
238.0	006.0000	0086.1	026.4	117.7	003.0700	0552.4	155.9	33.29	
239.0	006.0000	0086.4	026.4	117.6	003.0700	0552.2	155.5	33.39	
240.0	006.0000	0086.7	026.4	117.6	003.0700	0552.1	155.1	33.49	
241.0	006.0000	0087.0	026.5	117.5	003.0700	0552.0	154.6	33.59	
242.0	006.0000	0087.3	026.5	117.4	003.0700	0552.0	154.2	33.69	
243.0	006.0000	0087.6	026.6	117.3	003.0700	0552.0	153.8	33.78	
244.0	006.0000	0087.8	026.6	117.2	003.0700	0552.1	153.4	33.88	
245.0	006.0000	0087.8	026.6	117.1	003.0700	0552.3	153.1	33.98	
246.0	006.0000	0087.7	026.6	117.0	003.0700	0552.6	152.7	34.07	
247.0	006.0000	0087.6	026.6	116.9	003.0700	0552.7	152.3	34.16	
248.0	006.0000	0087.5	026.6	116.8	003.0700	0552.9	152.0	34.25	
249.0	006.0000	0087.5	026.6	116.7	003.0700	0553.1	151.6	34.34	
250.0	006.0000	0087.6	026.6	116.6	003.0700	0553.3	151.3	34.43	
251.0	006.0000	0087.6	026.6	116.5	003.0700	0553.4	150.9	34.51	
252.0	006.0000	0087.6	026.6	116.3	003.0700	0553.3	150.6	34.59	
253.0	006.0000	0087.7	026.6	116.2	003.0700	0553.3	150.3	34.67	
254.0	006.0000	0087.8	026.6	116.1	003.0700	0553.3	149.9	34.76	
255.0	006.0000	0087.9	026.6	116.0	003.0700	0553.3	149.6	34.84	
256.0	006.0000	0088.0	026.6	115.8	003.0700	0553.1	149.3	34.91	
257.0	006.0000	0088.1	026.6	115.7	003.0700	0552.8	149.0	34.98	
258.0	006.0000	0088.2	026.7	115.6	003.0700	0552.3	148.7	35.05	
259.0	006.0000	0088.2	026.7	115.4	003.0700	0551.5	148.4	35.11	
260.0	006.0000	0088.4	026.7	115.3	003.0700	0550.7	148.1	35.17	
261.0	006.0000	0088.4	026.7	115.1	003.0700	0549.6	147.8	35.22	
262.0	006.0000	0088.4	026.7	115.0	003.0700	0548.1	147.6	35.26	
263.0	006.0000	0088.3	026.7	114.8	003.0700	0546.5	147.3	35.29	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
264.0	006.0000	0088.2	026.7	114.7	003.0700	0544.8	147.1	35.32
265.0	006.0000	0088.3	026.7	114.5	003.0700	0543.1	146.8	35.35
266.0	006.0000	0088.4	026.7	114.4	003.0700	0541.3	146.6	35.38
267.0	006.0000	0088.5	026.7	114.2	003.0700	0539.5	146.3	35.41
268.0	006.0000	0088.4	026.7	114.1	003.0700	0537.6	146.1	35.42
269.0	006.0000	0088.1	026.7	113.9	003.0700	0535.9	146.0	35.43
270.0	006.0000	0088.1	026.6	113.7	003.0700	0534.1	145.8	35.44
271.0	006.0000	0088.0	026.6	113.5	003.0700	0532.4	145.6	35.46
272.0	006.0000	0088.0	026.6	113.4	003.0700	0530.7	145.4	35.47
273.0	006.0000	0088.0	026.6	113.2	003.0700	0529.1	145.2	35.48
274.0	006.0000	0087.9	026.6	113.0	003.0700	0527.9	145.1	35.49
275.0	006.0000	0087.7	026.6	112.9	003.0700	0526.8	145.0	35.50
276.0	006.0000	0087.6	026.6	112.7	003.0700	0525.8	144.8	35.51
277.0	006.0000	0087.5	026.6	112.5	003.0700	0525.4	144.7	35.54
278.0	006.0000	0087.4	026.6	112.3	003.0700	0525.2	144.6	35.56
279.0	006.0000	0087.3	026.5	112.1	003.0700	0524.7	144.5	35.58
280.0	006.0000	0087.3	026.5	112.0	003.0700	0524.3	144.4	35.60
281.0	006.0000	0087.2	026.5	111.8	003.0700	0524.0	144.3	35.62
282.0	006.0000	0087.3	026.5	111.6	003.0700	0523.9	144.2	35.64
283.0	006.0000	0087.4	026.5	111.4	003.0700	0523.9	144.1	35.66
284.0	006.0000	0087.3	026.5	111.2	003.0700	0524.0	144.0	35.68
285.0	006.0000	0087.2	026.5	111.1	003.0700	0524.2	144.0	35.70
286.0	006.0000	0087.1	026.5	110.9	003.0700	0524.4	144.0	35.71
287.0	006.0000	0087.0	026.5	110.7	003.0700	0524.8	143.9	35.73
288.0	006.0000	0086.8	026.5	110.5	003.0700	0524.9	143.9	35.73
289.0	006.0000	0086.6	026.4	110.3	003.0700	0525.0	143.9	35.73
290.0	006.0000	0086.5	026.4	110.1	003.0700	0525.2	143.9	35.74
291.0	006.0000	0086.4	026.4	110.0	003.0700	0525.4	143.9	35.74
292.0	006.0000	0086.2	026.4	109.8	003.0700	0525.7	144.0	35.74
293.0	006.0000	0086.0	026.4	109.6	003.0700	0526.0	144.0	35.73
294.0	006.0000	0085.8	026.3	109.4	003.0700	0526.3	144.1	35.72
295.0	006.0000	0085.6	026.3	109.2	003.0700	0526.3	144.1	35.71
296.0	006.0000	0085.5	026.3	109.0	003.0700	0526.1	144.2	35.69
297.0	006.0000	0085.3	026.2	108.9	003.0700	0525.8	144.3	35.66
298.0	006.0000	0085.1	026.2	108.7	003.0700	0525.3	144.4	35.63
299.0	006.0000	0084.8	026.2	108.5	003.0700	0524.9	144.5	35.59
300.0	006.0000	0084.7	026.2	108.3	003.0700	0524.5	144.6	35.55
301.0	006.0000	0084.5	026.1	108.2	003.0700	0524.3	144.7	35.52
302.0	006.0000	0084.3	026.1	108.0	003.0700	0524.4	144.8	35.49
303.0	006.0000	0084.1	026.1	107.8	003.0700	0524.5	144.9	35.46
304.0	006.0000	0083.9	026.0	107.6	003.0700	0524.9	145.1	35.43
305.0	006.0000	0083.6	026.0	107.5	003.0700	0525.4	145.2	35.40
306.0	006.0000	0083.4	026.0	107.3	003.0700	0525.9	145.4	35.37
307.0	006.0000	0083.2	025.9	107.1	003.0700	0526.4	145.6	35.33
308.0	006.0000	0083.0	025.9	107.0	003.0700	0526.8	145.8	35.30
309.0	006.0000	0082.8	025.9	106.8	003.0700	0527.2	145.9	35.26
310.0	006.0000	0082.5	025.8	106.7	003.0700	0527.6	146.1	35.21
311.0	006.0000	0082.3	025.8	106.5	003.0700	0527.9	146.4	35.17
312.0	006.0000	0082.0	025.8	106.3	003.0700	0528.5	146.6	35.12
313.0	006.0000	0081.8	025.7	106.2	003.0700	0529.0	146.8	35.08
314.0	006.0000	0081.5	025.7	106.0	003.0700	0529.6	147.0	35.03

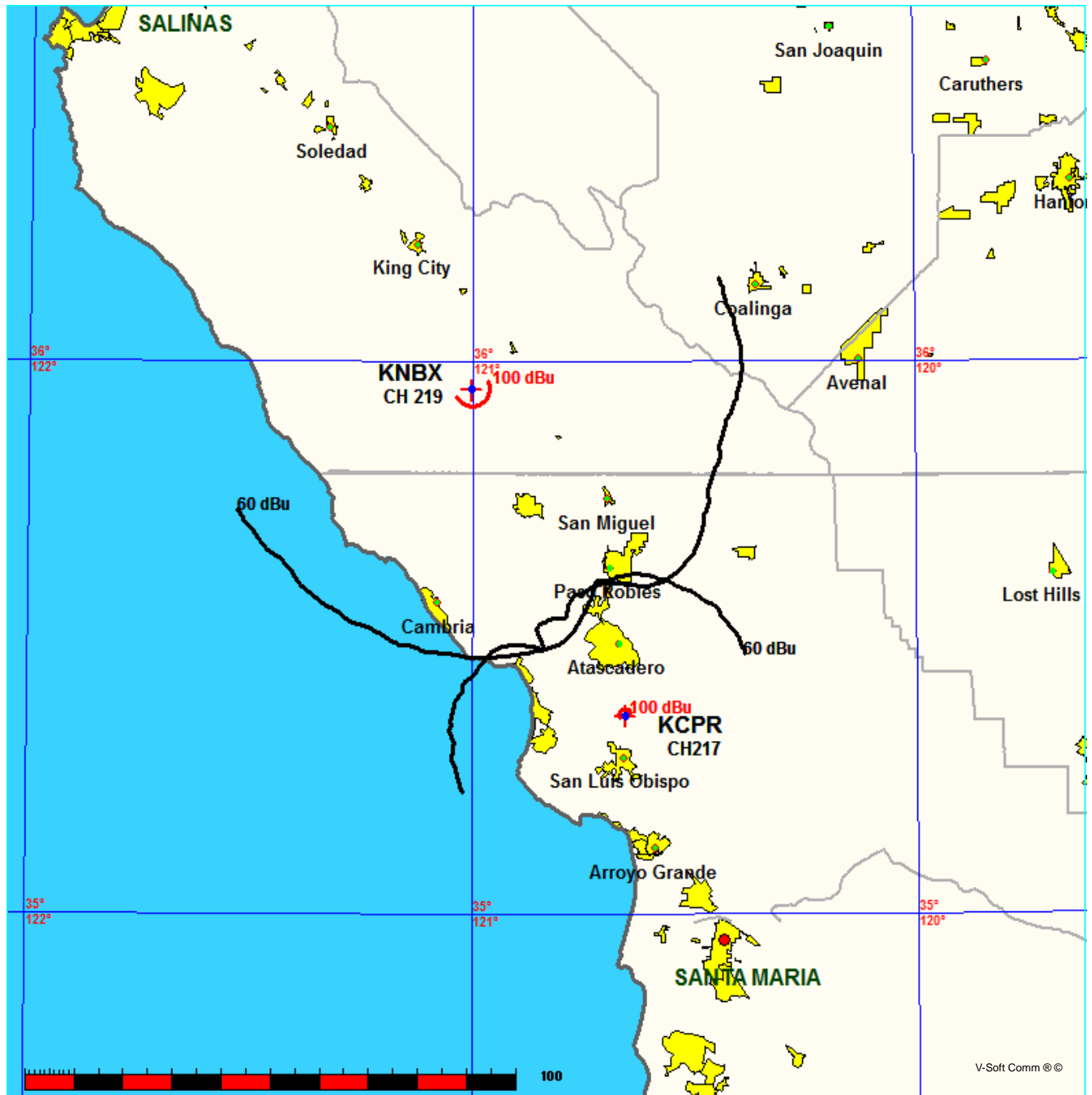
Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
315.0	006.0000	0081.2	025.7	105.9	003.0700	0530.2	147.3	34.98
316.0	006.0000	0080.9	025.6	105.7	003.0700	0530.4	147.5	34.92
317.0	006.0000	0080.5	025.6	105.6	003.0700	0530.8	147.8	34.86
318.0	006.0000	0080.2	025.5	105.5	003.0700	0531.0	148.1	34.80
319.0	006.0000	0079.9	025.5	105.3	003.0700	0531.0	148.3	34.73
320.0	006.0000	0079.6	025.4	105.2	003.0700	0531.0	148.6	34.66
321.0	006.0000	0079.2	025.4	105.1	003.0700	0530.9	148.9	34.59
322.0	006.0000	0078.9	025.3	104.9	003.0700	0530.7	149.2	34.51
323.0	006.0000	0078.5	025.2	104.8	003.0700	0530.5	149.5	34.43
324.0	006.0000	0078.1	025.2	104.7	003.0700	0530.2	149.8	34.35
325.0	006.0000	0077.9	025.2	104.6	003.0700	0529.9	150.1	34.27
326.0	006.0000	0077.4	025.1	104.5	003.0700	0529.4	150.5	34.18
327.0	006.0000	0077.1	025.0	104.4	003.0700	0528.8	150.8	34.09
328.0	006.0000	0076.8	025.0	104.2	003.0700	0528.4	151.1	34.00
329.0	006.0000	0076.5	025.0	104.1	003.0700	0528.0	151.5	33.91
330.0	006.0000	0076.2	024.9	104.0	003.0700	0527.5	151.8	33.82
331.0	006.0000	0075.8	024.8	103.9	003.0700	0526.9	152.1	33.73
332.0	006.0000	0075.4	024.8	103.8	003.0700	0526.1	152.5	33.63
333.0	006.0000	0075.0	024.7	103.7	003.0700	0525.4	152.9	33.53
334.0	006.0000	0074.7	024.7	103.6	003.0700	0524.7	153.2	33.43
335.0	006.0000	0074.3	024.6	103.6	003.0700	0523.8	153.6	33.33
336.0	006.0000	0073.9	024.6	103.5	003.0700	0523.0	154.0	33.23
337.0	006.0000	0073.7	024.5	103.4	003.0700	0522.2	154.3	33.13
338.0	006.0000	0073.3	024.5	103.3	003.0700	0521.5	154.7	33.02
339.0	006.0000	0073.0	024.4	103.2	003.0700	0520.9	155.1	32.93
340.0	006.0000	0072.6	024.4	103.2	003.0700	0520.3	155.4	32.83
341.0	006.0000	0072.2	024.3	103.1	003.0700	0519.9	155.8	32.73
342.0	006.0000	0071.9	024.3	103.0	003.0700	0519.6	156.2	32.63
343.0	006.0000	0071.5	024.2	103.0	003.0700	0519.3	156.6	32.54
344.0	006.0000	0071.1	024.2	102.9	003.0700	0519.1	157.0	32.44
345.0	006.0000	0070.8	024.1	102.8	003.0700	0518.9	157.4	32.35
346.0	006.0000	0070.4	024.0	102.8	003.0700	0518.8	157.8	32.26
347.0	006.0000	0070.1	024.0	102.7	003.0700	0518.7	158.2	32.16
348.0	006.0000	0069.7	023.9	102.7	003.0700	0518.7	158.6	32.07
349.0	006.0000	0069.3	023.9	102.6	003.0700	0518.7	159.0	31.97
350.0	006.0000	0069.0	023.8	102.6	003.0700	0518.7	159.4	31.88

Contour-to-Contour Map Study KNBX vs KCPR  
Kcbx, Inc.

FMCommander Single Allocation Study - 08-19-2014 - USGS 03 SEC  
KNBX's Overlaps (In= 18.02 km, Out= 43.03 km)

KNBX CH 219 B  
Lat= 35 57 04.4, Lng= 121 00 02.6  
3.07 kW 532.9 M HAAT, 879 M COR  
Prot.= 60 dBu, Intef.= 100 dBu

KCPR CH 217 A DA BLED20071017AGL  
Lat= 35 21 38.0, Lng= 120 39 21.0  
0.31 kW 432 M HAAT, 803 M COR  
Prot.= 60 dBu, Intef.= 100 dBu



08-19-2014

Terrain Data: USGS 03 SEC

FMOver Analysis

KNBX

KCPR BLED20071017AGL

Channel = 219B

Max ERP = 3.07 kW

RCAMSL = 879 M

N. Lat. 35 57 04.4

W. Lng. 121 00 02.6

Protected

60 dBu

Channel = 217A

Max ERP = 0.31 kW

RCAMSL = 803 M

N. Lat. 35 21 38.0

W. Lng. 120 39 21.0

Interfering

100 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
095.0	003.0700	0540.6	052.9	019.6	000.3100	0434.5	064.7	46.22	
096.0	003.0700	0532.8	052.5	019.4	000.3100	0434.9	063.7	46.57	
097.0	003.0700	0526.7	052.1	019.2	000.3100	0435.4	062.7	46.92	
098.0	003.0700	0524.8	052.0	019.3	000.3100	0435.1	061.8	47.23	
099.0	003.0700	0525.4	052.0	019.5	000.3100	0434.6	060.9	47.54	
100.0	003.0700	0523.9	052.0	019.6	000.3100	0434.4	060.0	47.86	
101.0	003.0700	0521.7	051.8	019.6	000.3100	0434.4	059.1	48.20	
102.0	003.0700	0519.6	051.7	019.6	000.3100	0434.4	058.2	48.53	
103.0	003.0700	0519.5	051.7	019.7	000.3100	0434.1	057.3	48.86	
104.0	003.0700	0527.3	052.2	020.2	000.3100	0432.2	056.4	49.13	
105.0	003.0700	0530.8	052.4	020.5	000.3100	0430.9	055.5	49.44	
106.0	003.0700	0529.8	052.3	020.6	000.3100	0430.8	054.6	49.78	
107.0	003.0700	0526.7	052.1	020.4	000.3100	0431.2	053.7	50.14	
108.0	003.0700	0524.4	052.0	020.3	000.3100	0431.7	052.8	50.50	
109.0	003.0700	0526.0	052.1	020.5	000.3100	0431.1	051.9	50.83	
110.0	003.0700	0525.4	052.0	020.4	000.3100	0431.2	051.0	51.18	
111.0	003.0700	0524.2	052.0	020.4	000.3100	0431.6	050.1	51.53	
112.0	003.0700	0524.3	052.0	020.3	000.3100	0431.7	049.1	51.88	
113.0	003.0700	0527.7	052.2	020.5	000.3100	0430.9	048.2	52.21	
114.0	003.0700	0537.1	052.7	021.1	000.3100	0429.1	047.3	52.52	
115.0	003.0700	0548.2	053.3	021.8	000.3100	0427.2	046.3	52.85	
116.0	003.0700	0553.3	053.6	022.0	000.3100	0426.7	045.4	53.21	
117.0	003.0700	0552.6	053.5	021.9	000.3100	0427.0	044.5	53.59	
118.0	003.0700	0553.5	053.6	021.8	000.3100	0427.2	043.5	53.98	
119.0	003.0700	0558.9	053.8	022.0	000.3100	0426.7	042.6	54.37	
120.0	003.0700	0570.7	054.4	022.6	000.3100	0425.6	041.6	54.77	
121.0	003.0700	0580.1	054.8	022.9	000.3100	0425.9	040.6	55.20	
122.0	003.0700	0588.1	055.1	023.2	000.3100	0426.4	039.6	55.65	
123.0	003.0700	0593.9	055.3	023.3	000.3100	0426.6	038.6	56.09	
124.0	003.0700	0598.6	055.5	023.3	000.3100	0426.6	037.6	56.54	
125.0	003.0700	0602.2	055.6	023.2	000.3100	0426.4	036.6	56.98	
126.0	003.0700	0605.8	055.8	023.1	000.3100	0426.2	035.6	57.42	
127.0	003.0700	0607.9	055.9	022.8	000.3100	0425.6	034.7	57.86	
128.0	003.0700	0607.6	055.8	022.4	000.3100	0425.8	033.7	58.31	
129.0	003.0700	0607.5	055.8	021.9	000.3100	0427.0	032.8	58.78	
130.0	003.0700	0606.6	055.8	021.3	000.3100	0428.7	031.9	59.26	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
131.0	003.0700	0604.6	055.7	020.6	000.3100	0430.8	031.0	59.76
132.0	003.0700	0599.7	055.5	019.6	000.3100	0434.4	030.2	60.30
133.0	003.0700	0595.7	055.4	018.6	000.3100	0437.6	029.3	60.83
134.0	003.0700	0590.0	055.2	017.3	000.3100	0439.2	028.6	61.32
135.0	003.0700	0583.5	054.9	016.0	000.3100	0435.4	027.8	61.68
136.0	003.0700	0572.1	054.4	014.1	000.3100	0434.0	027.3	62.01
137.0	003.0700	0561.1	053.9	012.1	000.3100	0439.4	026.7	62.46
138.0	003.0700	0548.4	053.3	009.8	000.3100	0443.6	026.4	62.80
139.0	003.0700	0533.1	052.5	007.1	000.3100	0441.2	026.2	62.86
140.0	003.0700	0514.4	051.4	004.1	000.3100	0441.2	026.3	62.79
141.0	003.0700	0499.7	050.6	001.4	000.3100	0433.2	026.3	62.60
142.0	003.0700	0483.4	049.7	358.7	000.3100	0423.6	026.5	62.27
143.0	003.0700	0471.1	049.0	356.3	000.3100	0416.8	026.6	62.06
144.0	003.0700	0457.1	048.2	353.9	000.3100	0404.5	026.8	61.62
145.0	003.0700	0438.3	047.2	351.4	000.3100	0393.3	027.3	61.01
146.0	003.0700	0423.0	046.4	349.1	000.3100	0387.5	027.7	60.62
147.0	003.0700	0421.0	046.3	347.5	000.3100	0385.7	027.5	60.70
148.0	003.0700	0436.2	047.1	346.4	000.3100	0382.5	026.4	61.28
149.0	003.0700	0451.9	047.9	345.2	000.3100	0377.6	025.4	61.86
150.0	003.0700	0468.7	048.8	343.8	000.3100	0371.5	024.3	62.47
151.0	003.0700	0475.5	049.2	342.0	000.3100	0362.0	023.8	62.62
152.0	003.0700	0487.7	049.9	340.2	000.3100	0358.5	022.9	63.13
153.0	003.0700	0497.6	050.5	338.2	000.3100	0367.1	022.3	63.84
154.0	003.0700	0507.6	051.0	335.9	000.3100	0365.0	021.7	64.25
155.0	003.0700	0520.5	051.8	333.5	000.3100	0345.3	020.9	64.33
156.0	003.0700	0533.1	052.5	330.9	000.3100	0310.6	020.3	63.95
157.0	003.0700	0545.1	053.1	328.0	000.3100	0283.2	019.7	63.62
158.0	003.0700	0553.6	053.6	325.1	000.3100	0297.2	019.5	64.22
159.0	003.0700	0563.8	054.1	322.0	000.3100	0318.0	019.3	64.95
160.0	003.0700	0570.1	054.3	319.1	000.3100	0328.6	019.3	65.19
161.0	003.0700	0573.5	054.5	316.4	000.3100	0340.6	019.5	65.31
162.0	003.0700	0575.7	054.6	313.8	000.3100	0329.2	019.9	64.74
163.0	003.0700	0575.6	054.6	311.4	000.3100	0276.3	020.4	62.91
164.0	003.0700	0575.5	054.6	309.2	000.3100	0242.9	020.9	61.44
165.0	003.0700	0574.9	054.6	307.2	000.3100	0261.8	021.5	61.58
166.0	003.0700	0572.5	054.5	305.4	000.3100	0303.8	022.2	62.28
167.0	003.0700	0571.9	054.4	303.7	000.3100	0345.0	022.8	62.88
168.0	003.0700	0570.7	054.4	302.1	000.3100	0379.9	023.5	63.25
169.0	003.0700	0568.2	054.3	300.8	000.3100	0407.2	024.3	63.38
170.0	003.0700	0569.1	054.3	299.3	000.3100	0436.7	025.0	63.58
171.0	003.0700	0567.9	054.3	298.0	000.3100	0458.7	025.8	63.48
172.0	003.0700	0568.0	054.3	296.8	000.3100	0472.6	026.5	63.21
173.0	003.0700	0568.2	054.3	295.7	000.3100	0481.8	027.3	62.86
174.0	003.0700	0568.0	054.3	294.7	000.3100	0488.2	028.1	62.47
175.0	003.0700	0568.3	054.3	293.7	000.3100	0491.0	028.9	62.04
176.0	003.0700	0566.7	054.2	293.0	000.3100	0493.3	029.8	61.59
177.0	003.0700	0563.7	054.1	292.4	000.3100	0495.6	030.7	61.14
178.0	003.0700	0564.1	054.1	291.7	000.3100	0499.4	031.6	60.78
179.0	003.0700	0565.1	054.1	291.0	000.3100	0501.8	032.4	60.42
180.0	003.0700	0565.0	054.1	290.4	000.3100	0505.3	033.3	60.07
181.0	003.0700	0563.3	054.0	290.0	000.3100	0508.0	034.2	59.71

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
182.0	003.0700	0560.4	053.9	289.7	000.3100	0510.2	035.2	59.33
183.0	003.0700	0556.8	053.7	289.5	000.3100	0511.7	036.1	58.93
184.0	003.0700	0553.7	053.6	289.3	000.3100	0513.1	037.1	58.55
185.0	003.0700	0553.0	053.6	289.0	000.3100	0515.6	038.0	58.20
186.0	003.0700	0553.3	053.6	288.7	000.3100	0518.2	038.9	57.86
187.0	003.0700	0553.6	053.6	288.4	000.3100	0520.0	039.8	57.51
188.0	003.0700	0553.7	053.6	288.2	000.3100	0521.6	040.7	57.16
189.0	003.0700	0554.6	053.6	287.9	000.3100	0523.7	041.6	56.83
190.0	003.0700	0556.2	053.7	287.6	000.3100	0525.3	042.5	56.50
191.0	003.0700	0554.5	053.6	287.6	000.3100	0525.6	043.5	56.13
192.0	003.0700	0550.0	053.4	287.7	000.3100	0524.7	044.4	55.74
193.0	003.0700	0546.6	053.2	287.8	000.3100	0524.0	045.4	55.37
194.0	003.0700	0548.1	053.3	287.7	000.3100	0525.0	046.3	55.05
195.0	003.0700	0551.8	053.5	287.4	000.3100	0526.5	047.2	54.75
196.0	003.0700	0553.8	053.6	287.2	000.3100	0527.0	048.2	54.42
197.0	003.0700	0551.7	053.5	287.3	000.3100	0526.6	049.1	54.09
198.0	003.0700	0548.4	053.3	287.5	000.3100	0525.7	050.0	53.74
199.0	003.0700	0543.4	053.1	287.9	000.3100	0523.9	050.9	53.38
200.0	003.0700	0539.6	052.9	288.1	000.3100	0521.9	051.9	53.01
201.0	003.0700	0536.5	052.7	288.3	000.3100	0520.3	052.8	52.65
202.0	003.0700	0534.6	052.6	288.5	000.3100	0519.4	053.7	52.30
203.0	003.0700	0533.8	052.5	288.6	000.3100	0518.7	054.6	51.96
204.0	003.0700	0533.3	052.5	288.7	000.3100	0517.9	055.5	51.62
205.0	003.0700	0532.7	052.5	288.9	000.3100	0516.9	056.4	51.27
206.0	003.0700	0534.8	052.6	288.9	000.3100	0517.0	057.3	50.94
207.0	003.0700	0538.7	052.8	288.8	000.3100	0517.7	058.3	50.63
208.0	003.0700	0541.3	052.9	288.8	000.3100	0517.7	059.2	50.30
209.0	003.0700	0541.9	053.0	288.9	000.3100	0516.8	060.1	49.95
210.0	003.0700	0538.1	052.8	289.3	000.3100	0513.9	061.0	49.57
211.0	003.0700	0533.2	052.5	289.7	000.3100	0510.4	061.8	49.18
212.0	003.0700	0532.5	052.5	289.9	000.3100	0508.7	062.7	48.83
213.0	003.0700	0534.5	052.6	290.0	000.3100	0508.1	063.7	48.49
214.0	003.0700	0537.7	052.7	290.0	000.3100	0507.8	064.6	48.17

08-19-2014

Terrain Data: USGS 03 SEC

FMOver Analysis

KCPR BLED20071017AGL

KNBX

Channel = 217A

Max ERP = 0.31 kW

RCAMSL = 803 M

N. Lat. 35 21 38.0

W. Lng. 120 39 21.0

Protected

60 dBu

Channel = 219B

Max ERP = 3.07 kW

RCAMSL = 879 M

N. Lat. 35 57 04.4

W. Lng. 121 00 02.6

Interfering

100 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
275.0	000.3100	0613.2	034.5	182.8	003.0700	0557.4	062.8	59.92	
276.0	000.3100	0602.2	034.2	182.5	003.0700	0558.6	062.2	60.14	
277.0	000.3100	0594.2	033.9	182.3	003.0700	0559.6	061.6	60.35	
278.0	000.3100	0584.2	033.6	181.9	003.0700	0560.6	061.1	60.56	
279.0	000.3100	0582.4	033.6	181.8	003.0700	0561.0	060.5	60.76	
280.0	000.3100	0585.6	033.7	181.8	003.0700	0560.9	059.9	60.96	
281.0	000.3100	0579.1	033.5	181.5	003.0700	0561.8	059.4	61.16	
282.0	000.3100	0571.2	033.2	181.2	003.0700	0562.8	058.8	61.36	
283.0	000.3100	0556.6	032.7	180.6	003.0700	0564.2	058.4	61.54	
284.0	000.3100	0539.1	032.1	179.9	003.0700	0565.1	058.0	61.69	
285.0	000.3100	0528.3	031.6	179.3	003.0700	0565.4	057.5	61.85	
286.0	000.3100	0527.4	031.6	179.1	003.0700	0565.3	057.0	62.03	
287.0	000.3100	0527.6	031.6	179.0	003.0700	0565.1	056.5	62.21	
288.0	000.3100	0522.8	031.4	178.6	003.0700	0564.7	056.0	62.36	
289.0	000.3100	0516.0	031.2	178.2	003.0700	0564.2	055.6	62.50	
290.0	000.3100	0507.8	030.9	177.7	003.0700	0563.7	055.2	62.63	
291.0	000.3100	0501.6	030.6	177.2	003.0700	0563.4	054.8	62.76	
292.0	000.3100	0497.9	030.5	176.9	003.0700	0564.1	054.4	62.92	
293.0	000.3100	0493.2	030.3	176.5	003.0700	0565.3	054.0	63.09	
294.0	000.3100	0490.4	030.2	176.1	003.0700	0566.3	053.5	63.25	
295.0	000.3100	0486.4	030.1	175.7	003.0700	0567.3	053.1	63.40	
296.0	000.3100	0479.3	029.8	175.2	003.0700	0568.2	052.8	63.53	
297.0	000.3100	0470.9	029.5	174.6	003.0700	0568.3	052.5	63.63	
298.0	000.3100	0459.2	029.1	174.0	003.0700	0568.0	052.3	63.70	
299.0	000.3100	0441.6	028.5	173.1	003.0700	0568.0	052.2	63.73	
300.0	000.3100	0422.2	027.9	172.2	003.0700	0568.3	052.2	63.74	
301.0	000.3100	0401.9	027.3	171.4	003.0700	0567.3	052.2	63.72	
302.0	000.3100	0381.8	026.7	170.5	003.0700	0568.9	052.3	63.73	
303.0	000.3100	0359.8	025.9	169.6	003.0700	0568.7	052.4	63.67	
304.0	000.3100	0337.8	025.1	168.6	003.0700	0568.7	052.7	63.59	
305.0	000.3100	0314.1	024.3	167.6	003.0700	0571.5	053.0	63.52	
306.0	000.3100	0289.6	023.3	166.6	003.0700	0571.9	053.4	63.38	
307.0	000.3100	0265.6	022.4	165.7	003.0700	0573.3	053.9	63.24	



Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
308.0	000.3100	0249.0	021.7	164.9	003.0700	0574.9	054.2	63.16
309.0	000.3100	0242.6	021.5	164.4	003.0700	0575.2	054.2	63.17
310.0	000.3100	0247.5	021.7	164.2	003.0700	0575.3	053.8	63.31
311.0	000.3100	0265.5	022.4	164.3	003.0700	0575.3	053.0	63.59
312.0	000.3100	0292.4	023.4	164.6	003.0700	0575.1	051.9	63.98
313.0	000.3100	0314.6	024.3	164.7	003.0700	0575.0	050.9	64.31
314.0	000.3100	0332.4	024.9	164.7	003.0700	0575.0	050.1	64.58
315.0	000.3100	0339.8	025.2	164.4	003.0700	0575.2	049.7	64.75
316.0	000.3100	0340.5	025.2	163.9	003.0700	0575.6	049.5	64.84
317.0	000.3100	0340.1	025.2	163.5	003.0700	0576.0	049.3	64.91
318.0	000.3100	0336.6	025.1	163.0	003.0700	0575.5	049.2	64.93
319.0	000.3100	0329.8	024.8	162.4	003.0700	0575.3	049.2	64.91
320.0	000.3100	0322.8	024.6	161.8	003.0700	0575.6	049.3	64.89
321.0	000.3100	0321.2	024.5	161.3	003.0700	0574.3	049.2	64.91
322.0	000.3100	0318.1	024.4	160.8	003.0700	0573.0	049.2	64.90
323.0	000.3100	0314.5	024.3	160.3	003.0700	0571.5	049.2	64.87
324.0	000.3100	0307.2	024.0	159.7	003.0700	0568.5	049.3	64.77
325.0	000.3100	0298.1	023.7	159.1	003.0700	0565.0	049.5	64.63
326.0	000.3100	0292.3	023.4	158.6	003.0700	0560.1	049.6	64.51
327.0	000.3100	0287.3	023.2	158.1	003.0700	0554.7	049.8	64.37
328.0	000.3100	0283.2	023.1	157.6	003.0700	0550.8	049.8	64.27
329.0	000.3100	0285.5	023.2	157.2	003.0700	0547.1	049.7	64.26
330.0	000.3100	0296.2	023.6	156.8	003.0700	0542.5	049.2	64.33
331.0	000.3100	0312.7	024.2	156.4	003.0700	0537.9	048.5	64.47
332.0	000.3100	0327.3	024.8	155.9	003.0700	0532.1	048.0	64.55
333.0	000.3100	0340.8	025.2	155.4	003.0700	0526.2	047.5	64.61
334.0	000.3100	0349.2	025.5	154.9	003.0700	0519.3	047.1	64.58
335.0	000.3100	0357.0	025.8	154.4	003.0700	0512.3	046.9	64.54
336.0	000.3100	0365.3	026.1	153.8	003.0700	0505.2	046.6	64.49
337.0	000.3100	0367.2	026.2	153.2	003.0700	0499.6	046.5	64.38
338.0	000.3100	0367.3	026.2	152.7	003.0700	0494.8	046.6	64.27
339.0	000.3100	0364.5	026.1	152.1	003.0700	0489.4	046.7	64.10
340.0	000.3100	0359.3	025.9	151.6	003.0700	0481.7	047.0	63.83
341.0	000.3100	0357.6	025.8	151.1	003.0700	0475.9	047.1	63.66
342.0	000.3100	0361.9	026.0	150.5	003.0700	0472.4	047.0	63.60
343.0	000.3100	0367.5	026.2	149.9	003.0700	0467.8	046.9	63.53
344.0	000.3100	0372.4	026.3	149.3	003.0700	0458.1	046.9	63.33
345.0	000.3100	0376.7	026.5	148.7	003.0700	0447.2	046.9	63.08
346.0	000.3100	0381.1	026.6	148.1	003.0700	0438.3	046.9	62.86
347.0	000.3100	0384.6	026.7	147.6	003.0700	0429.2	046.9	62.63
348.0	000.3100	0386.5	026.8	147.0	003.0700	0420.9	047.0	62.39
349.0	000.3100	0387.4	026.8	146.4	003.0700	0420.1	047.2	62.31
350.0	000.3100	0387.8	026.8	145.9	003.0700	0423.8	047.3	62.34
351.0	000.3100	0391.5	027.0	145.3	003.0700	0431.5	047.4	62.49
352.0	000.3100	0396.2	027.1	144.8	003.0700	0443.7	047.5	62.75
353.0	000.3100	0400.4	027.2	144.2	003.0700	0454.5	047.6	62.96
354.0	000.3100	0404.9	027.4	143.6	003.0700	0462.4	047.7	63.11
355.0	000.3100	0410.0	027.5	143.0	003.0700	0470.9	047.8	63.26
356.0	000.3100	0415.4	027.7	142.4	003.0700	0478.0	047.9	63.38
357.0	000.3100	0419.2	027.8	141.9	003.0700	0485.5	048.1	63.49
358.0	000.3100	0421.6	027.9	141.3	003.0700	0493.9	048.3	63.60

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
359.0	000.3100	0425.1	028.0	140.8	003.0700	0503.3	048.5	63.73
000.0	000.3100	0428.0	028.1	140.3	003.0700	0510.5	048.8	63.81
001.0	000.3100	0431.3	028.2	139.8	003.0700	0518.1	049.0	63.89
002.0	000.3100	0435.6	028.3	139.2	003.0700	0528.7	049.2	64.04
003.0	000.3100	0438.7	028.4	138.7	003.0700	0538.1	049.5	64.14
004.0	000.3100	0441.1	028.5	138.3	003.0700	0545.3	049.8	64.18
005.0	000.3100	0442.9	028.6	137.8	003.0700	0550.8	050.1	64.17
006.0	000.3100	0442.5	028.6	137.4	003.0700	0555.9	050.5	64.13
007.0	000.3100	0441.2	028.5	137.1	003.0700	0559.9	050.9	64.06
008.0	000.3100	0441.9	028.5	136.7	003.0700	0564.0	051.3	64.00
009.0	000.3100	0442.2	028.6	136.4	003.0700	0567.6	051.7	63.93
010.0	000.3100	0443.5	028.6	136.0	003.0700	0572.0	052.0	63.87
011.0	000.3100	0441.9	028.5	135.7	003.0700	0575.6	052.5	63.77
012.0	000.3100	0439.8	028.5	135.5	003.0700	0578.8	052.9	63.66
013.0	000.3100	0434.4	028.3	135.4	003.0700	0580.4	053.4	63.50
014.0	000.3100	0433.9	028.3	135.1	003.0700	0582.8	053.9	63.38
015.0	000.3100	0434.3	028.3	134.8	003.0700	0584.8	054.3	63.26
016.0	000.3100	0435.4	028.3	134.5	003.0700	0586.6	054.7	63.14
017.0	000.3100	0437.7	028.4	134.2	003.0700	0588.5	055.1	63.02
018.0	000.3100	0439.0	028.4	133.9	003.0700	0590.4	055.5	62.90
019.0	000.3100	0436.2	028.4	133.8	003.0700	0591.3	056.0	62.74
020.0	000.3100	0433.2	028.3	133.7	003.0700	0592.1	056.5	62.57
021.0	000.3100	0429.5	028.1	133.6	003.0700	0592.6	057.0	62.40
022.0	000.3100	0426.8	028.1	133.5	003.0700	0593.2	057.5	62.24
023.0	000.3100	0426.0	028.0	133.3	003.0700	0594.0	057.9	62.08
024.0	000.3100	0427.2	028.1	133.1	003.0700	0595.1	058.4	61.94
025.0	000.3100	0427.4	028.1	133.0	003.0700	0595.8	058.9	61.78
026.0	000.3100	0427.2	028.1	132.9	003.0700	0596.3	059.3	61.63
027.0	000.3100	0430.8	028.2	132.6	003.0700	0597.2	059.8	61.49
028.0	000.3100	0433.8	028.3	132.4	003.0700	0598.1	060.2	61.34
029.0	000.3100	0434.0	028.3	132.3	003.0700	0598.5	060.7	61.18
030.0	000.3100	0432.0	028.2	132.2	003.0700	0598.7	061.2	61.01
031.0	000.3100	0432.7	028.2	132.1	003.0700	0599.2	061.7	60.85
032.0	000.3100	0432.8	028.3	132.0	003.0700	0599.6	062.1	60.69
033.0	000.3100	0431.7	028.2	132.0	003.0700	0599.8	062.6	60.53
034.0	000.3100	0429.0	028.1	132.0	003.0700	0599.7	063.1	60.36

Contour-to-Contour Map Study KNBX vs KSPB  
Kcbx, Inc.

FMCommander Single Allocation Study - 08-19-2014 - USGS 03 SEC  
KNBX's Overlaps (In= 38.99 km, Out= 22.15 km)

KNBX CH 219 B

Lat= 35 57 04.4, Lng= 121 00 02.6

3.07 kW 532.9 M HAAT, 879 M COR

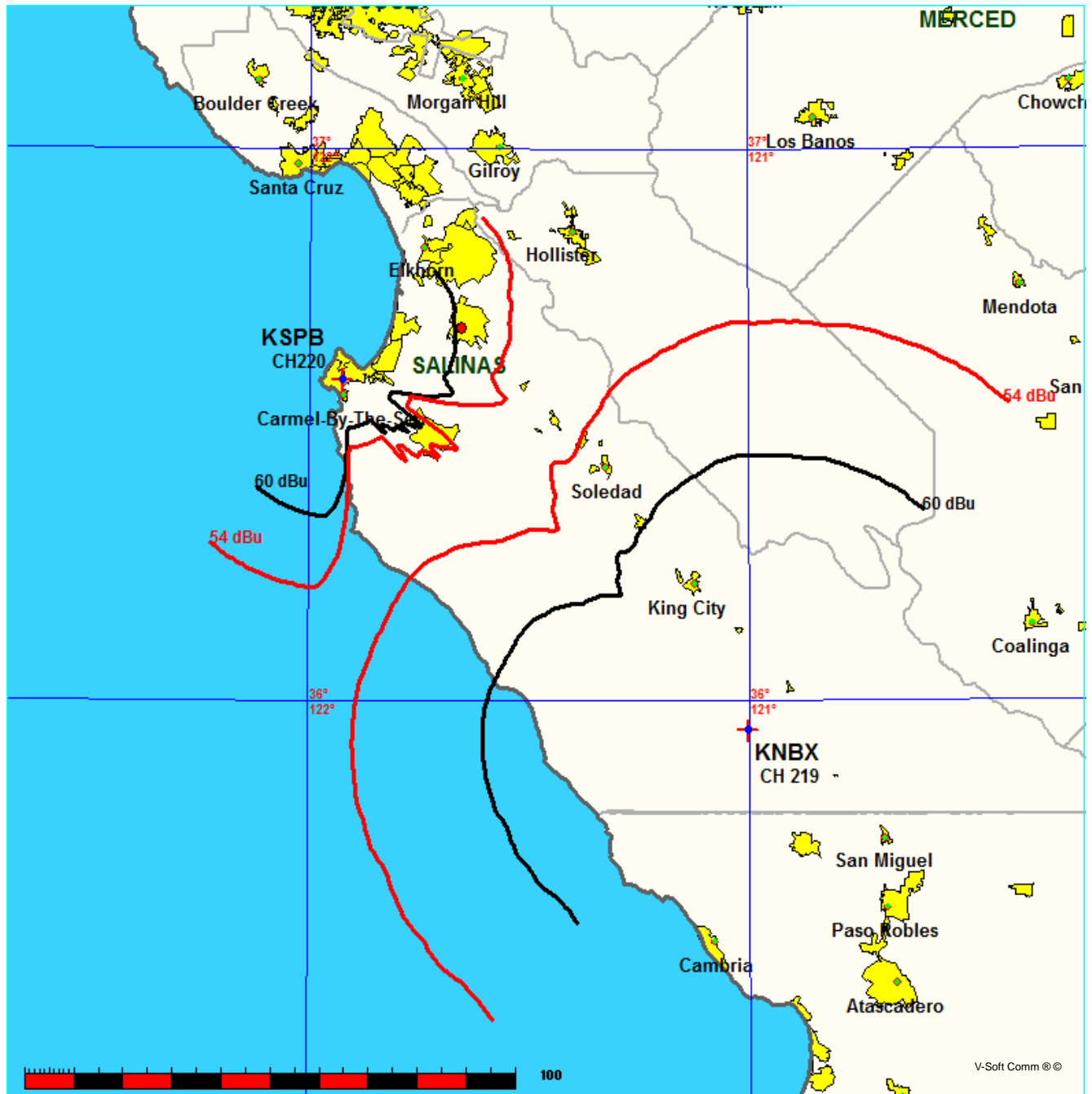
Prot.= 60 dBu, Intef.= 54 dBu

KSPB CH 220 A BMLED19881216KF

Lat= 36 35 11.0, Lng= 121 55 21.0

1.0 kW 148 M HAAT, 245 M COR

Prot.= 60 dBu, Intef.= 54 dBu



08-19-2014

Terrain Data: USGS 03 SEC

FMOver Analysis

KNBX

KSPB BMLED19881216KF

Channel = 219B

Max ERP = 3.07 kW

RCAMSL = 879 M

N. Lat. 35 57 04.4

W. Lng. 121 00 02.6

Protected

60 dBu

Channel = 220A

Max ERP = 1 kW

RCAMSL = 245 M

N. Lat. 36 35 11.0

W. Lng. 121 55 21.0

Interfering

54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
251.0	003.0700	0558.7	053.8	159.9	001.0000	-0050.5	093.9	27.21	
252.0	003.0700	0564.7	054.1	160.1	001.0000	-0053.8	093.0	27.40	
253.0	003.0700	0568.0	054.3	160.2	001.0000	-0055.1	092.0	27.60	
254.0	003.0700	0569.5	054.3	160.2	001.0000	-0055.3	091.1	27.79	
255.0	003.0700	0568.8	054.3	160.1	001.0000	-0054.2	090.1	27.99	
256.0	003.0700	0569.0	054.3	160.1	001.0000	-0053.4	089.2	28.18	
257.0	003.0700	0570.0	054.3	160.0	001.0000	-0052.7	088.3	28.38	
258.0	003.0700	0572.5	054.5	160.0	001.0000	-0052.6	087.3	28.57	
259.0	003.0700	0574.5	054.5	160.0	001.0000	-0052.0	086.3	28.77	
260.0	003.0700	0575.5	054.6	159.9	001.0000	-0050.6	085.4	28.97	
261.0	003.0700	0575.6	054.6	159.8	001.0000	-0048.3	084.5	29.16	
262.0	003.0700	0575.7	054.6	159.7	001.0000	-0045.9	083.5	29.35	
263.0	003.0700	0575.3	054.6	159.6	001.0000	-0043.4	082.6	29.54	
264.0	003.0700	0574.9	054.6	159.4	001.0000	-0041.5	081.7	29.72	
265.0	003.0700	0574.0	054.5	159.2	001.0000	-0039.5	080.8	29.91	
266.0	003.0700	0573.2	054.5	159.0	001.0000	-0038.1	079.9	30.09	
267.0	003.0700	0572.7	054.5	158.8	001.0000	-0037.7	079.0	30.27	
268.0	003.0700	0572.8	054.5	158.5	001.0000	-0038.3	078.0	30.44	
269.0	003.0700	0571.8	054.4	158.3	001.0000	-0039.5	077.2	30.61	
270.0	003.0700	0570.5	054.4	158.0	001.0000	-0041.2	076.3	30.77	
271.0	003.0700	0568.9	054.3	157.7	001.0000	-0042.1	075.4	30.93	
272.0	003.0700	0567.4	054.2	157.3	001.0000	-0040.1	074.6	31.08	
273.0	003.0700	0565.6	054.1	157.0	001.0000	-0037.7	073.8	31.23	
274.0	003.0700	0563.9	054.1	156.6	001.0000	-0036.2	073.0	31.38	
275.0	003.0700	0561.5	054.0	156.2	001.0000	-0032.0	072.2	31.52	
276.0	003.0700	0558.8	053.8	155.7	001.0000	-0026.5	071.4	31.66	
277.0	003.0700	0555.6	053.7	155.2	001.0000	-0020.1	070.7	31.79	
278.0	003.0700	0550.8	053.4	154.7	001.0000	-0012.1	070.0	31.91	
279.0	003.0700	0545.0	053.1	154.0	001.0000	-0006.2	069.4	32.02	
280.0	003.0700	0539.4	052.8	153.4	001.0000	-0003.4	068.8	32.12	
281.0	003.0700	0535.0	052.6	152.8	001.0000	-0001.5	068.2	32.23	
282.0	003.0700	0531.5	052.4	152.1	001.0000	0002.5	067.7	32.34	
283.0	003.0700	0527.8	052.2	151.5	001.0000	0007.0	067.1	32.44	
284.0	003.0700	0523.2	051.9	150.8	001.0000	0010.9	066.6	32.53	
285.0	003.0700	0518.5	051.6	150.1	001.0000	0014.7	066.1	32.62	
286.0	003.0700	0513.8	051.4	149.4	001.0000	0018.0	065.7	32.70	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
287.0	003.0700	0510.0	051.2	148.7	001.0000	0018.4	065.2	32.78
288.0	003.0700	0507.4	051.0	148.0	001.0000	0020.5	064.8	32.87
289.0	003.0700	0505.1	050.9	147.3	001.0000	0024.4	064.3	32.96
290.0	003.0700	0501.5	050.7	146.6	001.0000	0029.1	063.9	33.03
291.0	003.0700	0498.5	050.5	145.9	001.0000	0034.5	063.5	33.64
292.0	003.0700	0495.8	050.4	145.1	001.0000	0042.4	063.1	34.60
293.0	003.0700	0491.8	050.1	144.3	001.0000	0051.2	062.9	35.57
294.0	003.0700	0485.0	049.7	143.5	001.0000	0058.9	062.7	36.28
295.0	003.0700	0478.7	049.4	142.6	001.0000	0057.3	062.6	36.18
296.0	003.0700	0473.0	049.1	141.8	001.0000	0048.3	062.5	35.38
297.0	003.0700	0467.4	048.8	141.0	001.0000	0043.4	062.4	34.88
298.0	003.0700	0457.1	048.2	140.1	001.0000	0044.5	062.6	34.96
299.0	003.0700	0445.3	047.6	139.1	001.0000	0044.7	062.9	34.91
300.0	003.0700	0434.3	047.0	138.3	001.0000	0050.1	063.1	35.39
301.0	003.0700	0425.2	046.5	137.4	001.0000	0054.2	063.3	35.72
302.0	003.0700	0414.4	046.0	136.6	001.0000	0062.8	063.7	36.33
303.0	003.0700	0400.8	045.3	135.7	001.0000	0067.0	064.1	36.51
304.0	003.0700	0384.9	044.5	134.9	001.0000	0065.8	064.7	36.26
305.0	003.0700	0367.9	043.7	134.1	001.0000	0063.6	065.4	35.92
306.0	003.0700	0351.6	042.8	133.3	001.0000	0062.8	066.1	35.68
307.0	003.0700	0337.4	042.0	132.6	001.0000	0064.5	066.8	35.62
308.0	003.0700	0331.9	041.7	132.0	001.0000	0066.1	067.0	35.66
309.0	003.0700	0324.4	041.3	131.3	001.0000	0068.8	067.4	35.75
310.0	003.0700	0317.3	040.9	130.7	001.0000	0075.1	067.8	36.06
311.0	003.0700	0311.0	040.6	130.1	001.0000	0083.2	068.1	36.48
312.0	003.0700	0304.4	040.2	129.5	001.0000	0086.8	068.5	36.60
313.0	003.0700	0293.2	039.6	129.0	001.0000	0085.0	069.2	36.30
314.0	003.0700	0279.8	038.8	128.5	001.0000	0078.1	070.0	35.65
315.0	003.0700	0263.4	037.8	128.0	001.0000	0069.8	071.0	34.84
316.0	003.0700	0256.3	037.4	127.5	001.0000	0066.2	071.5	34.49
317.0	003.0700	0277.1	038.6	126.8	001.0000	0068.6	070.4	34.93
318.0	003.0700	0299.3	039.9	126.1	001.0000	0073.2	069.3	35.54
319.0	003.0700	0310.9	040.6	125.4	001.0000	0078.2	068.8	35.98
320.0	003.0700	0317.3	040.9	124.8	001.0000	0079.6	068.6	36.12
321.0	003.0700	0338.2	042.1	123.9	001.0000	0084.4	067.7	36.68
322.0	003.0700	0361.3	043.3	123.0	001.0000	0092.3	066.7	37.46
323.0	003.0700	0377.3	044.1	122.1	001.0000	0098.9	066.2	38.01
324.0	003.0700	0377.3	044.1	121.5	001.0000	0100.1	066.5	38.00
325.0	003.0700	0366.7	043.6	121.1	001.0000	0097.7	067.3	37.61
326.0	003.0700	0360.0	043.3	120.6	001.0000	0093.3	067.9	37.17
327.0	003.0700	0362.1	043.4	120.0	001.0000	0087.4	068.1	36.74
328.0	003.0700	0369.2	043.7	119.3	001.0000	0073.7	068.2	35.87
329.0	003.0700	0382.9	044.4	118.5	001.0000	0060.1	067.9	35.01
330.0	003.0700	0394.6	045.0	117.6	001.0000	0051.8	067.9	34.39
331.0	003.0700	0405.7	045.5	116.8	001.0000	0046.6	067.8	33.95
332.0	003.0700	0413.5	045.9	116.1	001.0000	0039.7	067.9	33.26
333.0	003.0700	0420.5	046.3	115.4	001.0000	0032.1	068.1	32.47
334.0	003.0700	0427.1	046.6	114.7	001.0000	0026.6	068.4	32.21
335.0	003.0700	0435.4	047.1	113.9	001.0000	0025.3	068.5	32.18
336.0	003.0700	0447.1	047.7	113.0	001.0000	0023.1	068.6	32.16
337.0	003.0700	0458.9	048.3	112.2	001.0000	0019.7	068.7	32.14

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
338.0	003.0700	0467.9	048.8	111.4	001.0000	0018.5	069.0	32.09
339.0	003.0700	0474.3	049.2	110.7	001.0000	0017.2	069.4	32.03
340.0	003.0700	0481.0	049.5	110.0	001.0000	0014.5	069.8	31.95
341.0	003.0700	0487.5	049.9	109.3	001.0000	0011.5	070.2	31.87
342.0	003.0700	0493.6	050.2	108.6	001.0000	0010.3	070.7	31.79
343.0	003.0700	0498.8	050.5	108.0	001.0000	0011.6	071.2	31.69
344.0	003.0700	0502.8	050.7	107.5	001.0000	0014.1	071.8	31.59
345.0	003.0700	0508.4	051.1	106.9	001.0000	0016.1	072.4	31.48
346.0	003.0700	0515.5	051.5	106.2	001.0000	0019.7	072.9	31.38
347.0	003.0700	0520.8	051.8	105.7	001.0000	0026.5	073.6	31.27
348.0	003.0700	0524.5	052.0	105.2	001.0000	0034.6	074.3	31.52
349.0	003.0700	0530.8	052.4	104.6	001.0000	0043.8	074.9	32.12
350.0	003.0700	0538.6	052.8	104.0	001.0000	0053.5	075.6	32.65
351.0	003.0700	0545.4	053.2	103.5	001.0000	0061.4	076.2	32.98
352.0	003.0700	0552.7	053.5	103.0	001.0000	0069.6	077.0	33.28
353.0	003.0700	0559.9	053.9	102.5	001.0000	0078.6	077.7	33.58
354.0	003.0700	0565.5	054.1	102.1	001.0000	0086.9	078.5	33.81
355.0	003.0700	0570.1	054.3	101.7	001.0000	0094.3	079.4	33.96
356.0	003.0700	0575.1	054.6	101.4	001.0000	0101.2	080.2	34.07
357.0	003.0700	0580.5	054.8	101.0	001.0000	0106.7	081.1	34.10
358.0	003.0700	0584.3	054.9	100.8	001.0000	0110.3	082.0	34.02
359.0	003.0700	0584.5	055.0	100.6	001.0000	0112.2	082.9	33.85
000.0	003.0700	0583.4	054.9	100.5	001.0000	0113.5	083.8	33.64
001.0	003.0700	0581.8	054.8	100.4	001.0000	0114.5	084.8	33.41
002.0	003.0700	0584.2	054.9	100.3	001.0000	0117.1	085.7	33.26
003.0	003.0700	0587.3	055.1	100.1	001.0000	0120.1	086.7	33.13
004.0	003.0700	0589.9	055.2	100.0	001.0000	0122.9	087.6	32.99
005.0	003.0700	0591.8	055.2	099.8	001.0000	0125.2	088.6	32.81
006.0	003.0700	0593.3	055.3	099.8	001.0000	0127.0	089.5	32.62
007.0	003.0700	0596.4	055.4	099.6	001.0000	0129.2	090.5	32.45
008.0	003.0700	0599.0	055.5	099.5	001.0000	0130.9	091.4	32.25
009.0	003.0700	0600.1	055.6	099.5	001.0000	0131.6	092.4	32.01
010.0	003.0700	0599.5	055.5	099.5	001.0000	0131.5	093.4	31.74

08-19-2014

Terrain Data: USGS 03 SEC

FMOver Analysis

KSPB BMLD19881216KF

KNBX

Channel = 220A

Max ERP = 1 kW

RCAMSL = 245 M

N. Lat. 36 35 11.0

W. Lng. 121 55 21.0

Protected

60 dBu

Channel = 219B

Max ERP = 3.07 kW

RCAMSL = 879 M

N. Lat. 35 57 04.4

W. Lng. 121 00 02.6

Interfering

54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
070.0	001.0000	0172.6	024.1	323.0	003.0700	0377.1	099.0	43.27	
071.0	001.0000	0169.5	023.9	322.8	003.0700	0374.8	098.6	43.29	
072.0	001.0000	0166.1	023.7	322.6	003.0700	0371.8	098.3	43.28	
073.0	001.0000	0164.7	023.6	322.5	003.0700	0369.5	098.0	43.31	
074.0	001.0000	0163.4	023.5	322.3	003.0700	0367.2	097.6	43.33	
075.0	001.0000	0162.6	023.4	322.2	003.0700	0365.2	097.3	43.37	
076.0	001.0000	0160.2	023.3	322.0	003.0700	0361.9	096.9	43.36	
077.0	001.0000	0158.4	023.2	321.9	003.0700	0358.5	096.6	43.34	
078.0	001.0000	0155.5	023.0	321.7	003.0700	0354.0	096.4	43.28	
079.0	001.0000	0151.7	022.7	321.4	003.0700	0348.7	096.1	43.19	
080.0	001.0000	0148.5	022.5	321.2	003.0700	0342.9	095.9	43.07	
081.0	001.0000	0145.7	022.3	321.0	003.0700	0337.1	095.6	42.97	
082.0	001.0000	0143.4	022.1	320.8	003.0700	0332.0	095.4	42.88	
083.0	001.0000	0140.4	021.9	320.5	003.0700	0326.9	095.2	42.79	
084.0	001.0000	0138.9	021.8	320.3	003.0700	0323.3	094.9	42.76	
085.0	001.0000	0137.7	021.7	320.2	003.0700	0320.0	094.7	42.74	
086.0	001.0000	0135.2	021.5	319.9	003.0700	0316.6	094.5	42.69	
087.0	001.0000	0131.6	021.3	319.7	003.0700	0314.0	094.3	42.65	
088.0	001.0000	0127.1	020.9	319.4	003.0700	0312.5	094.2	42.63	
089.0	001.0000	0122.1	020.6	319.1	003.0700	0311.3	094.2	42.61	
090.0	001.0000	0121.2	020.5	318.9	003.0700	0310.2	094.0	42.64	
091.0	001.0000	0124.8	020.8	318.9	003.0700	0310.0	093.5	42.78	
092.0	001.0000	0127.5	021.0	318.8	003.0700	0309.5	093.1	42.89	
093.0	001.0000	0129.5	021.1	318.7	003.0700	0308.7	092.8	42.98	
094.0	001.0000	0132.7	021.4	318.7	003.0700	0308.2	092.3	43.10	
095.0	001.0000	0136.3	021.6	318.6	003.0700	0307.6	091.9	43.22	
096.0	001.0000	0142.2	022.0	318.6	003.0700	0307.7	091.3	43.40	
097.0	001.0000	0146.7	022.4	318.5	003.0700	0307.2	090.8	43.54	
098.0	001.0000	0145.9	022.3	318.3	003.0700	0304.6	090.6	43.52	
099.0	001.0000	0139.3	021.8	318.0	003.0700	0298.7	090.7	43.30	
100.0	001.0000	0122.1	020.6	317.3	003.0700	0284.2	091.5	42.60	
101.0	001.0000	0107.4	019.3	316.7	003.0700	0267.4	092.3	41.83	
102.0	001.0000	0088.6	017.4	315.8	003.0700	0256.1	093.8	41.03	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
103.0	001.0000	0069.1	015.1	314.9	003.0700	0264.4	095.5	40.74
104.0	001.0000	0053.9	013.5	314.3	003.0700	0275.1	096.8	40.67
105.0	001.0000	0037.8	011.3	313.6	003.0700	0286.0	098.6	40.45
106.0	001.0000	0021.9	010.2	313.2	003.0700	0291.1	099.5	40.32
107.0	001.0000	0015.8	010.2	313.1	003.0700	0292.1	099.4	40.37
108.0	001.0000	0011.7	010.2	313.0	003.0700	0293.1	099.4	40.43
109.0	001.0000	0010.6	010.2	312.9	003.0700	0294.1	099.3	40.48
110.0	001.0000	0014.6	010.2	312.8	003.0700	0295.3	099.2	40.54
111.0	001.0000	0018.1	010.2	312.7	003.0700	0296.5	099.2	40.60
112.0	001.0000	0019.0	010.2	312.6	003.0700	0297.6	099.1	40.65
113.0	001.0000	0023.0	010.2	312.5	003.0700	0298.7	099.0	40.71
114.0	001.0000	0025.6	010.2	312.4	003.0700	0299.9	099.0	40.76
115.0	001.0000	0028.7	010.2	312.3	003.0700	0301.0	098.9	40.81
116.0	001.0000	0038.8	011.4	312.4	003.0700	0299.9	097.7	41.17
117.0	001.0000	0047.7	012.7	312.5	003.0700	0299.0	096.4	41.54
118.0	001.0000	0054.4	013.5	312.5	003.0700	0299.0	095.5	41.81
119.0	001.0000	0068.7	015.1	312.6	003.0700	0298.1	094.0	42.27
120.0	001.0000	0087.2	017.2	312.7	003.0700	0296.8	091.8	42.90
121.0	001.0000	0096.9	018.3	312.6	003.0700	0297.4	090.7	43.27
122.0	001.0000	0099.6	018.6	312.5	003.0700	0299.4	090.4	43.44
123.0	001.0000	0092.3	017.8	312.2	003.0700	0302.6	091.1	43.31
124.0	001.0000	0084.0	016.8	311.9	003.0700	0304.9	092.0	43.11
125.0	001.0000	0079.1	016.3	311.7	003.0700	0306.2	092.5	42.98
126.0	001.0000	0073.9	015.7	311.5	003.0700	0307.5	093.1	42.84
127.0	001.0000	0067.6	015.0	311.3	003.0700	0308.8	093.8	42.67
128.0	001.0000	0069.7	015.2	311.2	003.0700	0309.8	093.5	42.77
129.0	001.0000	0085.1	017.0	311.0	003.0700	0310.8	091.7	43.37
130.0	001.0000	0084.6	016.9	310.8	003.0700	0312.1	091.8	43.39
131.0	001.0000	0072.0	015.4	310.7	003.0700	0313.3	093.3	42.97
132.0	001.0000	0066.0	014.8	310.5	003.0700	0314.5	093.9	42.80
133.0	001.0000	0063.4	014.5	310.4	003.0700	0315.5	094.2	42.74
134.0	001.0000	0063.3	014.5	310.2	003.0700	0316.4	094.2	42.76
135.0	001.0000	0066.1	014.8	310.0	003.0700	0317.2	094.0	42.87
136.0	001.0000	0066.0	014.8	309.9	003.0700	0317.9	094.0	42.88
137.0	001.0000	0058.2	014.0	309.8	003.0700	0318.3	094.8	42.63
138.0	001.0000	0051.3	013.1	309.7	003.0700	0318.7	095.7	42.38
139.0	001.0000	0045.2	012.3	309.7	003.0700	0319.0	096.5	42.13
140.0	001.0000	0044.6	012.2	309.6	003.0700	0319.8	096.7	42.12
141.0	001.0000	0043.4	012.1	309.5	003.0700	0320.5	096.9	42.08
142.0	001.0000	0050.0	013.0	309.2	003.0700	0322.4	096.0	42.39
143.0	001.0000	0059.3	014.1	308.9	003.0700	0325.3	095.0	42.80
144.0	001.0000	0054.6	013.5	308.9	003.0700	0325.8	095.6	42.63
145.0	001.0000	0043.8	012.1	309.0	003.0700	0324.8	097.0	42.16
146.0	001.0000	0033.4	010.6	309.1	003.0700	0323.3	098.5	41.66
147.0	001.0000	0026.5	010.2	309.1	003.0700	0323.5	099.0	41.50
148.0	001.0000	0020.5	010.2	309.0	003.0700	0324.5	099.1	41.52
149.0	001.0000	0018.9	010.2	308.9	003.0700	0325.4	099.1	41.53
150.0	001.0000	0015.2	010.2	308.8	003.0700	0326.3	099.2	41.54
151.0	001.0000	0009.6	010.2	308.7	003.0700	0327.1	099.3	41.54
152.0	001.0000	0003.5	010.2	308.6	003.0700	0327.9	099.3	41.55
153.0	001.0000	-0002.6	010.2	308.5	003.0700	0328.8	099.4	41.55



Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
154.0	001.0000	-0006.0	010.2	308.4	003.0700	0329.6	099.5	41.56
155.0	001.0000	-0016.9	010.2	308.3	003.0700	0330.2	099.6	41.55
156.0	001.0000	-0029.6	010.2	308.3	003.0700	0330.7	099.6	41.55
157.0	001.0000	-0037.8	010.2	308.2	003.0700	0331.2	099.7	41.54
158.0	001.0000	-0041.2	010.2	308.1	003.0700	0331.6	099.8	41.52
159.0	001.0000	-0038.2	010.2	308.0	003.0700	0332.0	099.9	41.51
160.0	001.0000	-0051.9	010.2	307.9	003.0700	0332.3	100.0	41.49
161.0	001.0000	-0071.0	010.2	307.8	003.0700	0332.7	100.1	41.47
162.0	001.0000	-0077.8	010.2	307.7	003.0700	0333.0	100.2	41.45
163.0	001.0000	-0074.4	010.2	307.6	003.0700	0333.4	100.3	41.43
164.0	001.0000	-0067.7	010.2	307.6	003.0700	0333.7	100.4	41.41
165.0	001.0000	-0059.2	010.2	307.5	003.0700	0334.0	100.5	41.39
166.0	001.0000	-0054.2	010.2	307.4	003.0700	0334.2	100.6	41.36
167.0	001.0000	-0051.3	010.2	307.3	003.0700	0334.6	100.7	41.34
168.0	001.0000	-0049.3	010.2	307.3	003.0700	0335.1	100.9	41.32
169.0	001.0000	-0045.3	010.2	307.2	003.0700	0335.6	101.0	41.31
170.0	001.0000	-0036.3	010.2	307.1	003.0700	0336.3	101.1	41.29
171.0	001.0000	-0027.1	010.2	307.0	003.0700	0337.0	101.2	41.28
172.0	001.0000	-0015.9	010.2	307.0	003.0700	0337.9	101.3	41.27
173.0	001.0000	-0003.0	010.2	306.9	003.0700	0338.7	101.5	41.26
174.0	001.0000	0007.2	010.2	306.8	003.0700	0339.6	101.6	41.26
175.0	001.0000	0018.8	010.2	306.8	003.0700	0340.5	101.7	41.25
176.0	001.0000	0036.9	011.2	306.3	003.0700	0347.7	101.2	41.65
177.0	001.0000	0061.2	014.3	304.8	003.0700	0371.7	099.5	42.96
178.0	001.0000	0084.3	016.9	303.5	003.0700	0393.5	098.1	44.02
179.0	001.0000	0106.2	019.2	302.2	003.0700	0411.3	097.1	44.87
180.0	001.0000	0130.7	021.2	301.1	003.0700	0423.9	096.4	45.48
181.0	001.0000	0152.7	022.8	300.2	003.0700	0432.6	095.9	45.89
182.0	001.0000	0171.7	024.0	299.4	003.0700	0440.5	095.7	46.21
183.0	001.0000	0186.5	024.9	298.8	003.0700	0447.4	095.7	46.43
184.0	001.0000	0202.4	025.8	298.2	003.0700	0454.6	095.7	46.65
185.0	001.0000	0219.0	026.8	297.6	003.0700	0462.2	095.8	46.87
186.0	001.0000	0230.7	027.5	297.1	003.0700	0466.8	095.9	46.95
187.0	001.0000	0237.7	027.9	296.8	003.0700	0469.2	096.3	46.92
188.0	001.0000	0241.5	028.1	296.5	003.0700	0470.4	096.7	46.84
189.0	001.0000	0243.0	028.2	296.4	003.0700	0471.1	097.1	46.72