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Contour-to-Contour Channel Study - Proposed Translator

DBS RADIO, INC.

REFERENCE CH# 260D - 99.9 MHz, Pwr= 0.06 kW DA, HAAT= 327.3 M, COR= 377.7 M DISPLAY DATES
18 19 05.6 N. Average Protected F(50-50)= 16.49 km DATA 12-22-17
67 10 50.0 W. Standard Directional SEARCH 12-27-17

CH CITY	CALL	TYPE STATE	ANT STATE	AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*OUT* (Overlap in km)
262B Aguadilla	WIVA-FM	CP	_CY PR	132.6 312.7	27.47 BMPH20161031AAB	18 09 03.0 66 59 21.0	23.000 633	8.5 927	93.4 Arso Radio Corporation	-66.4*
258B Quebradillas	WIDI	LIC	_C_ PR	131.9 312.0	27.99 BLH20090610AAN	18 09 00.0 66 59 00.0	22.400 640	8.4 946	93.6 Aa Broadcast, Inc.	-66.2*
262B Aguadilla	WIVA-FM	LIC	_C_ PR	132.2 312.2	27.51 BMLH19990817KA	18 09 07.0 66 59 15.0	22.000 614	8.3 913	92.5 Arso Radio Corporation	-65.5*
260B San Juan	WIOA	LIC	_CX PR	91.6 272.0	140.16 BMLH20050914AAS	18 16 44.0 65 51 12.0	31.000 560	172.5 787	92.0 International Broadcasting	0.0

Terrain database is FCC 30 meter , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM
In & Out distances between contours are shown at closest points. Reference zone= East Zone, Co to 3rd adjacent.
All separation margins (if shown) include rounding.
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
Incoming contour overlap is ignored.
"*"affixed to 'IN' or 'OUT' values = site inside restricted contour.
Reference station has protected zone issue: Arecibo
WIVA-FM (CP), WIDI and WIVA-FM are protected using U to D. Please see XField studies

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.

WWNA-XL Aguadilla, PR, Showing Protection to WIVA-FM.C
 74.1204(d) Study - Using FCC 30 meter Terrain Database
 Translator or LPFM Maximum Licensed ERP = 0.06
 Translator or LPFM Antenna Height AG = 45.7 Meters
 WWNA-XL Antenna Model = HDCA-5CP_RM

Protected Station's Contour = 83.3538 dBu
 Translator's or LPFM's full Interference contour 123.3538

Review Azimuth = 180 Degrees True
 Relative Field on the horizon at Review Azimuth = 1.000
 Translator/LPFM ERP on the horizon at Review Azimuth = 0.06 kw
 Distance between stations = 27.5 km
 Protected Station= WIVA-FM.C, 23 kw, 927 M Meters COR AMSL

Depression Angle From Horizon(Deg)	Vertical Relative Field	Horizontal Relative Field	ERP (kw)	Dist to IX Contour Along Dep. Angle(m)	Dist to IX Contour From Tower Base(m)	Height IX Above Ground (m)
00.00	1.0	1.0	0.0600	036.9305	036.9305	045.700
05.00	0.98	1.0	0.0576	036.1919	036.0542	042.546
10.00	0.96	1.0	0.0553	035.4533	034.9147	039.544
15.00	0.915	1.0	0.0502	033.7914	032.6400	036.954
20.00	0.87	1.0	0.0454	032.1296	030.1919	034.711
25.00	0.793	1.0	0.0377	029.2675	026.5253	033.331
30.00	0.715	1.0	0.0307	026.4053	022.8677	032.497
35.00	0.622	1.0	0.0233	022.9893	018.8317	032.514
40.00	0.53	1.0	0.0169	019.5732	014.9939	033.119
45.00	0.44	1.0	0.0116	016.2494	011.4901	034.210
50.00	0.35	1.0	0.0073	012.9257	008.3085	035.798
55.00	0.28	1.0	0.0047	010.3406	005.9311	037.230
60.00	0.21	1.0	0.0026	007.7554	003.8777	038.984
65.00	0.18	1.0	0.0019	006.6475	002.8094	039.675
70.00	0.15	1.0	0.0014	005.5396	001.8946	040.494
75.00	0.155	1.0	0.0014	005.7242	001.4815	040.171
80.00	0.16	1.0	0.0015	005.9089	001.0261	039.881
85.00	0.215	1.0	0.0028	007.9401	000.6920	037.790
90.00	0.27	1.0	0.0044	009.9712	000.0000	035.729

WWNA-XL Aguadilla, PR, Showing Protection to WIVA-FM License
 74.1204(d) Study - Using FCC 30 meter Terrain Database
 Translator or LPFM Maximum Licensed ERP = 0.06
 Translator or LPFM Antenna Height AG = 45.7 Meters
 WWNA-XL Antenna Model = HDCA-5CP_RM

Protected Station's Contour = 83.00421 dBu
 Translator's or LPFM's full Interference contour 123.00421

Review Azimuth = 180 Degrees True
 Relative Field on the horizon at Review Azimuth = 1.000
 Translator/LPFM ERP on the horizon at Review Azimuth = 0.06 kw
 Distance between stations = 27.5 km
 Protected Station= WIVA-FM, 22 kw, 913 M Meters COR AMSL

Depression Angle From Horizon(Deg)	Vertical Relative Field	Horizontal Relative Field	ERP (kw)	Dist to IX Contour Along Dep. Angle(m)	Dist to IX Contour From Tower Base(m)	Height IX Above Ground (m)
00.00	1.0	1.0	0.0600	038.4472	038.4472	045.700
05.00	0.98	1.0	0.0576	037.6783	037.5349	042.416
10.00	0.96	1.0	0.0553	036.9093	036.3486	039.291
15.00	0.915	1.0	0.0502	035.1792	033.9805	036.595
20.00	0.87	1.0	0.0454	033.4491	031.4319	034.260
25.00	0.793	1.0	0.0377	030.4694	027.6147	032.823
30.00	0.715	1.0	0.0307	027.4898	023.8068	031.955
35.00	0.622	1.0	0.0233	023.9334	019.6051	031.972
40.00	0.53	1.0	0.0169	020.3770	015.6097	032.602
45.00	0.44	1.0	0.0116	016.9168	011.9620	033.738
50.00	0.35	1.0	0.0073	013.4565	008.6497	035.392
55.00	0.28	1.0	0.0047	010.7652	006.1747	036.882
60.00	0.21	1.0	0.0026	008.0739	004.0370	038.708
65.00	0.18	1.0	0.0019	006.9205	002.9247	039.428
70.00	0.15	1.0	0.0014	005.7671	001.9725	040.281
75.00	0.155	1.0	0.0014	005.9593	001.5424	039.944
80.00	0.16	1.0	0.0015	006.1516	001.0682	039.642
85.00	0.215	1.0	0.0028	008.2662	000.7204	037.465
90.00	0.27	1.0	0.0044	010.3808	000.0000	035.319

WWNA-XL Aguadilla, PR, Showing Protection to WIDI
 74.1204(d) Study - Using FCC 30 meter Terrain Database
 Translator or LPFM Maximum Licensed ERP = 0.06
 Translator or LPFM Antenna Height AG = 45.7 Meters
 WWNA-XL Antenna Model = HDCA-5CP_RM

Protected Station's Contour = 83.11129 dBu
 Translator's or LPFM's full Interference contour 123.11129

Review Azimuth = 180 Degrees True
 Relative Field on the horizon at Review Azimuth = 1.000
 Translator/LPFM ERP on the horizon at Review Azimuth = 0.06 kw
 Distance between stations = 28.0 km
 Protected Station= WIDI, 22.4 kw, 946 M Meters COR AMSL

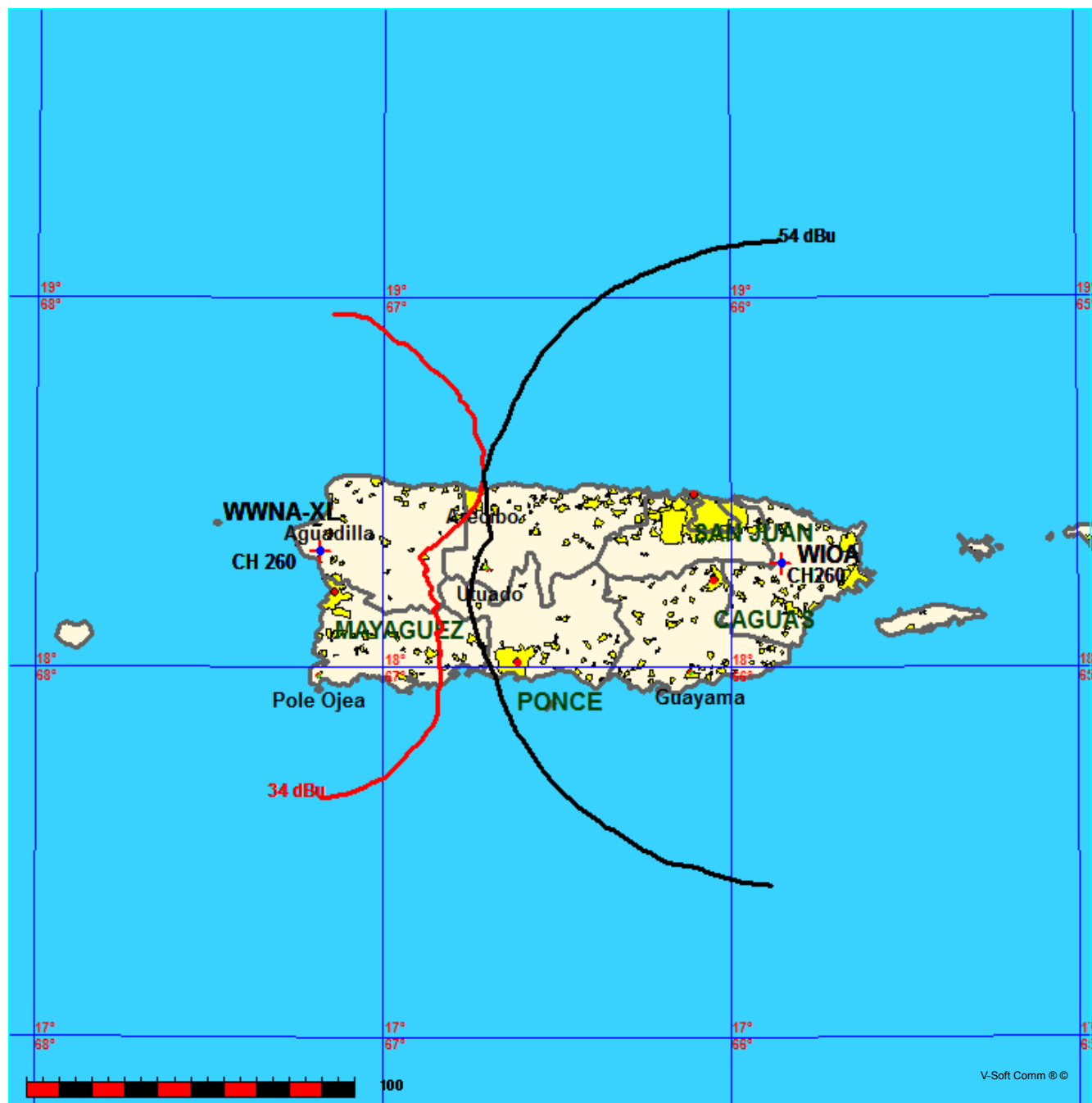
Depression Angle From Horizon(Deg)	Vertical Relative Field	Horizontal Relative Field	ERP (kw)	Dist to IX Contour Along Dep. Angle(m)	Dist to IX Contour From Tower Base(m)	Height IX Above Ground (m)
00.00	1.0	1.0	0.0600	037.9762	037.9762	045.700
05.00	0.98	1.0	0.0576	037.2166	037.0750	042.456
10.00	0.96	1.0	0.0553	036.4571	035.9033	039.369
15.00	0.915	1.0	0.0502	034.7482	033.5642	036.707
20.00	0.87	1.0	0.0454	033.0393	031.0468	034.400
25.00	0.793	1.0	0.0377	030.0961	027.2763	032.981
30.00	0.715	1.0	0.0307	027.1530	023.5152	032.124
35.00	0.622	1.0	0.0233	023.6402	019.3649	032.141
40.00	0.53	1.0	0.0169	020.1274	015.4185	032.762
45.00	0.44	1.0	0.0116	016.7095	011.8154	033.885
50.00	0.35	1.0	0.0073	013.2917	008.5437	035.518
55.00	0.28	1.0	0.0047	010.6333	006.0990	036.990
60.00	0.21	1.0	0.0026	007.9750	003.9875	038.793
65.00	0.18	1.0	0.0019	006.8357	002.8889	039.505
70.00	0.15	1.0	0.0014	005.6964	001.9483	040.347
75.00	0.155	1.0	0.0014	005.8863	001.5235	040.014
80.00	0.16	1.0	0.0015	006.0762	001.0551	039.716
85.00	0.215	1.0	0.0028	008.1649	000.7116	037.566
90.00	0.27	1.0	0.0044	010.2536	000.0000	035.446

Contour-to-Contour Channel Study - WIOA
DBS RADIO, INC.

FMCommander Single Allocation Study - 12-30-2017 - FCC 30 meter
WWNA-XL's Overlaps (In= -40.07 km, Out= 0.03 km)

WWNA-XL CH 260 D DA
Lat= 18 19 05.6, Lng= 67 10 50.0
0.06 kW 327.3 m HAAT, 377.7 m COR
Prot.= 60 dBu, Intef.= 34 dBu

WIOA CH 260 B BMLH20050914AAS
Lat= 18 16 44.0, Lng= 65 51 12.0
31.0 kW 560 m HAAT, 787 m COR
Prot.= 54 dBu, Intef.= 40 dBu



12-30-2017

Terrain Data: FCC 30 meter

FMOver Analysis

WIOA BMLH20050914AAS

WWNA-XL

Channel = 260B

Max ERP = 31 kW

RCAMSL = 787 m

N. Lat. 18 16 44.0

W. Lng. 65 51 12.0

Protected

54 dBu

Channel = 260D

Max ERP = 0.06 kW

RCAMSL = 377.7 m

N. Lat. 18 19 05.6

W. Lng. 67 10 50.0

Interfering

34 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
212.0	031.0000	0630.6	095.2	133.3	000.0153	0271.4	123.9	10.47	
213.0	031.0000	0629.6	095.2	133.4	000.0155	0273.2	122.3	10.89	
214.0	031.0000	0632.6	095.3	133.6	000.0156	0273.8	120.7	11.30	
215.0	031.0000	0632.4	095.3	133.7	000.0158	0273.0	119.1	11.67	
216.0	031.0000	0633.0	095.3	133.9	000.0159	0272.3	117.4	12.05	
217.0	031.0000	0633.6	095.3	134.0	000.0160	0272.1	115.8	12.45	
218.0	031.0000	0634.4	095.3	134.1	000.0161	0272.2	114.1	12.87	
219.0	031.0000	0638.4	095.5	134.3	000.0163	0273.8	112.5	13.35	
220.0	031.0000	0638.1	095.5	134.3	000.0164	0274.5	110.8	13.81	
221.0	031.0000	0638.6	095.5	134.4	000.0165	0275.2	109.2	14.29	
222.0	031.0000	0639.0	095.5	134.5	000.0165	0275.7	107.5	14.77	
223.0	031.0000	0639.2	095.5	134.5	000.0166	0276.0	105.8	15.27	
224.0	031.0000	0638.4	095.5	134.5	000.0166	0276.0	104.2	15.76	
225.0	031.0000	0642.0	095.6	134.6	000.0167	0276.7	102.5	16.30	
226.0	031.0000	0643.0	095.7	134.6	000.0167	0276.8	100.8	16.82	
227.0	031.0000	0643.5	095.7	134.6	000.0167	0276.7	099.2	17.33	
228.0	031.0000	0639.5	095.5	134.5	000.0165	0275.7	097.5	17.78	
229.0	031.0000	0635.9	095.4	134.3	000.0164	0274.4	095.8	18.21	
230.0	031.0000	0636.4	095.4	134.3	000.0163	0273.7	094.2	18.69	
231.0	031.0000	0637.4	095.5	134.2	000.0162	0272.8	092.5	19.16	
232.0	031.0000	0635.5	095.4	134.0	000.0160	0272.0	090.9	19.60	
233.0	031.0000	0629.5	095.1	133.7	000.0157	0273.2	089.3	20.07	
234.0	031.0000	0627.1	095.1	133.5	000.0155	0273.8	087.6	20.53	
235.0	031.0000	0625.5	095.0	133.2	000.0153	0270.5	086.0	20.88	
236.0	031.0000	0625.7	095.0	133.0	000.0151	0268.7	084.4	21.28	
237.0	031.0000	0627.3	095.1	132.8	000.0148	0269.0	082.8	21.75	
238.0	031.0000	0628.1	095.1	132.5	000.0146	0269.7	081.2	22.22	
239.0	031.0000	0626.2	095.0	132.1	000.0142	0271.2	079.6	22.68	
240.0	031.0000	0624.8	095.0	131.7	000.0139	0272.6	078.0	23.12	
241.0	031.0000	0615.9	094.6	131.1	000.0132	0274.0	076.6	23.45	
242.0	031.0000	0612.1	094.5	130.6	000.0128	0275.8	075.1	23.85	
243.0	031.0000	0611.7	094.4	130.1	000.0123	0277.4	073.5	24.27	
244.0	031.0000	0609.7	094.4	129.5	000.0119	0274.5	072.1	24.52	
245.0	031.0000	0601.8	094.1	128.7	000.0112	0271.4	070.7	24.65	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
246.0	031.0000	0599.5	094.0	128.1	000.0107	0270.2	069.3	24.89
247.0	031.0000	0589.7	093.6	127.1	000.0099	0270.7	068.0	25.03
248.0	031.0000	0587.4	093.5	126.4	000.0094	0274.7	066.7	25.38
249.0	031.0000	0586.1	093.5	125.6	000.0088	0270.9	065.3	25.45
250.0	031.0000	0590.8	093.6	124.9	000.0083	0271.0	063.8	25.75
251.0	031.0000	0592.1	093.7	124.1	000.0079	0287.4	062.5	26.58
252.0	031.0000	0600.9	094.0	123.4	000.0076	0302.3	061.0	27.45
253.0	031.0000	0605.4	094.2	122.5	000.0071	0303.9	059.6	27.78
254.0	031.0000	0610.6	094.4	121.6	000.0067	0299.6	058.2	27.88
255.0	031.0000	0615.1	094.6	120.7	000.0062	0291.8	056.9	27.82
256.0	031.0000	0620.7	094.8	119.6	000.0058	0287.7	055.6	27.89
257.0	031.0000	0624.9	095.0	118.5	000.0053	0280.2	054.3	27.79
258.0	031.0000	0626.0	095.0	117.2	000.0048	0282.7	053.2	27.89
259.0	031.0000	0628.6	095.1	115.8	000.0044	0314.7	052.1	28.93
260.0	031.0000	0632.4	095.3	114.4	000.0041	0302.5	051.0	28.64
261.0	031.0000	0639.4	095.5	113.0	000.0039	0283.6	049.8	28.37
262.0	031.0000	0644.8	095.8	111.5	000.0038	0275.9	048.8	28.40
263.0	031.0000	0643.7	095.7	109.7	000.0037	0278.2	048.0	28.63
264.0	031.0000	0639.2	095.5	107.8	000.0036	0270.4	047.5	28.53
265.0	031.0000	0630.4	095.2	105.8	000.0035	0250.8	047.1	27.90
266.0	031.0000	0618.4	094.7	103.7	000.0035	0240.8	047.0	27.56
267.0	031.0000	0607.3	094.3	101.6	000.0035	0231.7	047.0	27.22
268.0	031.0000	0594.9	093.8	099.6	000.0035	0236.5	047.1	27.39
269.0	031.0000	0585.3	093.4	097.5	000.0036	0216.9	047.1	26.61
270.0	031.0000	0575.4	093.0	095.5	000.0037	0205.0	047.3	26.07
271.0	031.0000	0563.3	092.5	093.5	000.0038	0200.9	047.7	25.87
272.0	031.0000	0553.9	092.0	091.6	000.0040	0210.6	048.2	26.33
273.0	031.0000	0537.8	091.1	089.7	000.0042	0212.5	049.1	26.28
274.0	031.0000	0519.8	090.0	088.0	000.0048	0225.6	050.3	26.95
275.0	031.0000	0501.8	088.9	086.4	000.0054	0233.2	051.6	27.26
276.0	031.0000	0501.0	088.8	084.7	000.0060	0234.9	051.9	27.70
277.0	031.0000	0511.2	089.5	082.9	000.0069	0237.9	051.6	28.52
278.0	031.0000	0523.6	090.2	081.0	000.0079	0249.7	051.3	29.65
279.0	031.0000	0527.0	090.4	079.2	000.0089	0263.5	051.6	30.55
280.0	031.0000	0534.3	090.9	077.4	000.0103	0276.2	051.7	31.55
281.0	031.0000	0539.5	091.2	075.7	000.0117	0277.5	052.1	32.01
282.0	031.0000	0549.2	091.8	073.8	000.0133	0285.3	052.3	32.73
283.0	031.0000	0556.2	092.1	072.1	000.0150	0286.9	052.8	33.10
284.0	031.0000	0563.0	092.5	070.4	000.0166	0287.6	053.3	33.35
285.0	031.0000	0584.0	093.4	068.5	000.0188	0278.9	053.5	33.54
286.0	031.0000	0603.6	094.1	066.6	000.0211	0280.1	053.9	33.93
287.0	031.0000	0611.7	094.4	065.0	000.0231	0280.1	054.7	33.99
288.0	031.0000	0609.2	094.4	063.8	000.0245	0278.5	055.9	33.71
289.0	031.0000	0611.4	094.4	062.6	000.0260	0271.4	057.0	33.30
290.0	031.0000	0609.9	094.4	061.5	000.0273	0271.1	058.2	33.01
291.0	031.0000	0613.8	094.5	060.4	000.0288	0276.1	059.4	32.97
292.0	031.0000	0613.2	094.5	059.4	000.0299	0280.8	060.7	32.80
293.0	031.0000	0608.2	094.3	058.6	000.0308	0278.6	062.1	32.31
294.0	031.0000	0593.5	093.7	058.2	000.0313	0276.7	063.8	31.70
295.0	031.0000	0594.7	093.8	057.3	000.0322	0274.2	065.1	31.27
296.0	031.0000	0594.2	093.8	056.6	000.0331	0267.1	066.5	30.65

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)		Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
297.0	031.0000	0594.0	093.8		055.9	000.0339	0268.7	067.9	30.31
298.0	031.0000	0593.3	093.7		055.3	000.0346	0267.3	069.4	29.85
299.0	031.0000	0603.7	094.1		054.4	000.0356	0257.4	070.7	29.20
300.0	031.0000	0608.3	094.3		053.7	000.0363	0264.0	072.1	29.02
301.0	031.0000	0618.5	094.7		052.9	000.0371	0263.5	073.5	28.64
302.0	031.0000	0615.3	094.6		052.5	000.0375	0264.9	075.0	28.20
303.0	031.0000	0617.7	094.7		052.0	000.0380	0268.2	076.6	27.85
304.0	031.0000	0628.8	095.1		051.3	000.0387	0273.4	078.0	27.62
305.0	031.0000	0635.3	095.4		050.8	000.0393	0276.9	079.5	27.29
306.0	031.0000	0637.2	095.5		050.4	000.0397	0278.6	081.1	26.86
307.0	031.0000	0638.5	095.5		050.1	000.0400	0280.2	082.7	26.43
308.0	031.0000	0637.9	095.5		049.8	000.0402	0281.7	084.3	25.97
309.0	031.0000	0649.3	095.9		049.3	000.0407	0284.5	085.9	25.62
310.0	031.0000	0659.0	096.3		048.9	000.0412	0282.7	087.4	25.11
311.0	031.0000	0663.5	096.5		048.6	000.0414	0281.3	089.1	24.58
312.0	031.0000	0665.3	096.6		048.4	000.0416	0280.8	090.7	24.05
313.0	031.0000	0663.3	096.5		048.3	000.0416	0280.8	092.4	23.53
314.0	031.0000	0657.9	096.3		048.4	000.0416	0280.7	094.1	23.00
315.0	031.0000	0660.1	096.4		048.2	000.0417	0281.0	095.8	22.50
316.0	031.0000	0665.6	096.6		048.1	000.0419	0280.4	097.5	21.98
317.0	031.0000	0670.2	096.8		047.9	000.0420	0279.6	099.1	21.44
318.0	031.0000	0670.6	096.8		047.9	000.0420	0279.5	100.8	20.92
319.0	031.0000	0670.9	096.8		047.9	000.0420	0279.5	102.5	20.40
320.0	031.0000	0673.3	096.9		047.9	000.0421	0279.3	104.2	19.89
321.0	031.0000	0674.9	097.0		047.9	000.0421	0279.3	105.9	19.39
322.0	031.0000	0673.3	096.9		047.9	000.0420	0279.6	107.6	18.91
323.0	031.0000	0666.6	096.6		048.2	000.0418	0281.0	109.3	18.47
324.0	031.0000	0669.0	096.7		048.2	000.0418	0281.0	110.9	18.02
325.0	031.0000	0673.5	096.9		048.2	000.0418	0281.0	112.6	17.59
326.0	031.0000	0676.8	097.1		048.2	000.0417	0281.0	114.3	17.17
327.0	031.0000	0676.5	097.0		048.3	000.0416	0280.8	116.0	16.76
328.0	031.0000	0677.0	097.1		048.4	000.0415	0280.8	117.7	16.37
329.0	031.0000	0676.0	097.0		048.6	000.0414	0281.3	119.4	16.00
330.0	031.0000	0672.0	096.9		048.8	000.0412	0282.5	121.0	15.66
331.0	031.0000	0668.5	096.7		049.0	000.0410	0283.5	122.6	15.31