

Exhibit 13.1 - Copy of Existing Antenna Structure Registration



Registration Detail

Reg Number	1029963	Status	Constructed
File Number	A0887727	Constructed	01/01/1988
EMI	No	Dismantled	
NEPA	No		

Antenna Structure

Structure Type TOWER - Free standing or Guyed Structure used for Commu

Location (in NAD83 Coordinates)

Lat/Long	26-41-30.0 N 081-52-50.7 W	Address	2050 QUEEN ST
City, State	NORTH FORT MYERS , FL		
Zip	33917	County	LEE
Center of AM Array		Position of Tower in Array	

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
4.0	163.1
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
167.1	160.3

Painting and Lighting Specifications

FAA Chapters 3, 4, 5, 12
Paint and Light in Accordance with FAA Circular Number 70/7460-1K

FAA Notification

FAA Study	2007-aso-107-oe	FAA Issue Date	02/02/2007
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Owner & Contact Information

FRN	0023254592	Owner Entity Type	Limited Liability Company
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Owner

CCATT LLC
2000 Corporate Drive
Canonsburg , PA 15317

P: (724)416-2000
F:
E: Regulatory.Department@Crownncastle.com

Contact

Verre , Christine
Attention To: FCC GROUP
2000 Corporate Drive
Canonsbugr , PA 15317

P: (336)643-2524
F:
E: Christine.Verre@Crownncastle.com

Last Action Status

Status	Constructed	Received	01/31/2014
Purpose	Admin Update	Entered	01/31/2014
Mode	Interactive		

Related Applications

01/31/2014	A0887727 - Admin Update (AU)
01/09/2014	A0870940 - Change Owner (OC)
11/25/2012	A0795172 - Admin Update (AU)

Related applications (18)

Comments

Comments

None

History

Date	Event
02/01/2014	Registration Printed
01/31/2014	ASR Application receipt email sent: Tower email
01/31/2014	Administrative Update Received

All History (47)

Automated Letters

02/01/2014	Authorization, Reference
01/10/2014	Authorization, Reference
01/10/2014	Ownership Change, Reference 781407

All letters (18)

Exhibit 13.2

Vertical Plan of Antenna System

The site is located 2050 Queen Street;
the city of North Fort Myers, Lee County, Florida.

Site Location (NAD 27)

NL: 26° 41' 29"

WL: 81° 52' 51"

(26-41-30.0NL; 81-52-50.7WL NAD1983)

NOTE: Existing Tower Construction

Antenna Structure Registration No.

1029963

Proposed Antenna
COR: 109 meters AMSL
max HAAT: N/A (Fill-In Status)

167.1 meters AMSL

163.1 meters AGL

105 meters

Ground Elevation = 4.0 m AMSL

Drawing is not to Scale

MUNN-REESE, INC.

Broadcast Engineering Consultants
Coldwater, MI 49036

Terrain
0 14 m

USGS 03 SEC Terrain Database
U.S. Census 2010 PL Database

Proposed 60 dBμ F(50:50) Contour

Exhibit 13.3 Present vs. Proposed Service Contour Study

CH282D.P
Fort Myers, FL
Proposed Operation
Facility ID: 139201
Latitude: 26-41-29 N
Longitude: 081-52-51 W
ERP: 0.25 kW
Channel: 282D
Frequency: 104.3 MHz
AMSL Height: 109.0 m
Horiz. Pattern: Directional

60 dBμ Contour
Total Population: 204,708
Total Area: 522 sq. km

Present 60 dBμ F(50:50) Contour

CH282D.P

North Fort Myers

Fort Myers

W284CK.C

W284CK.C
Fort Myers, FL
BNPFT20130826AEA
Facility ID: 139201
Latitude: 26-37-51 N
Longitude: 081-51-40 W
ERP: 0.25 kW
Channel: 284D
Frequency: 104.7 MHz
AMSL Height: 51.0 m
Horiz. Pattern: Directional

60 dBμ Contour
Total Population: 92,448
Total Area: 170 sq. km

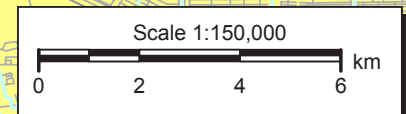


Exhibit 13.4 Proposed vs. Primary Service Contour Study

Primary 60 dBμ F(50:50) Contour

Proposed 60 dBμ F(50:50) Contour

CH282D.P



Fort Myers

WOLZ(FM)



CH282D.P
Fort Myers, FL
Proposed Operation
Facility ID: 139201
Latitude: 26-41-29 N
Longitude: 081-52-51 W
ERP: 0.25 kW
Channel: 282D
Frequency: 104.3 MHz
AMSL Height: 109.0 m
Horiz. Pattern: Directional

WOLZ(FM)
Fort Myers, FL
BMLH20100128AAF
Facility ID: 13898
Latitude: 26-30-18 N
Longitude: 081-51-14 W
ERP: 79.00 kW
Channel: 237C1
Frequency: 95.3 MHz
AMSL Height: 146.0 m
Horiz. Pattern: Omni

USGS 03 SEC Terrain Database
U.S. Census 2010 PL Database

Terrain
-1 64 m

Scale 1:625,000
0 8 16 24 km

V-Soft Communications LLC ©



Exhibit 13.5

Tabulation of Proposed Translator Allocation Study

REFERENCE 26 41 29.0 N. 81 52 51.0 W.		CH# 282D - 104.3 MHz, Pwr= 0.25 kW DA, HAAT= 104.3 M, COR= 109 M Average Protected F(50-50)= 7.09 km Standard Directional						DISPLAY DATES DATA 03-17-14 SEARCH 03-19-14		
CH CITY	CALL	TYPE ANT STATE	AZI ---	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT* (in km)
280C Cape Coral	WXKB	LIC NC FL	140.1 320.2	38.89 BLH20000928ABN	26 25 22.0 81 37 49.0	100.000 341	10.7 343	75.2 Wxkb License Limited Partn	15.0	-37.4*<
282C3 Sarasota	WKZM	LIC NCX FL	317.6 137.3	88.05 BLED20130607AAV	27 16 30.0 82 28 54.0	25.000 81	110.2 84	35.6 The Moody Bible Institute	-33.5*<	13.9
283D Fort Myers	W284CK	APP DC FL	0.0 0.0	0.00 BMPFT20140214AAD	26 41 29.0 81 52 51.0	0.250	18.8 109	12.6 University Of Northwestern	-31.4*<	-31.4*<
284D Fort Myers	W284CK	CP DC FL	163.8 343.8	7.01 BNPFT20130826AEA	26 37 51.0 81 51 40.0	0.250 49	0.4 51	5.0 University Of Northwestern	-6.6*<	0.9
285A Solana	WCVU	LIC NCX FL	323.2 143.1	28.11 BLH20120525AAE	26 53 37.5 82 03 02.7	6.000 97	2.7 98	27.2 Citicasters Licenses, Inc.	14.2	0.1
282C1 Miramar	WAXY-FM	LIC _CX FL	114.6 295.4	185.51 BLH20130819AFA	25 59 09.0 80 11 37.0	100.000 283	170.1 284	70.8 Lincoln Financial Media Co	2.1	69.3
229C2 Santibel	WXNX	LIC NCX FL	172.6 352.6	20.89 BLH20100119ABA	26 30 18.0 81 51 14.0	43.000 145	17.1 146	5.2 Sun Broadcasting Inc	15.0R	5.9M
229C2 Santibel	AL8348	RSV-A FL	223.5 43.4	29.29 RM11207	26 30 00.0 82 05 00.0	50.000 150	17.1 150	5.2	15.0R	14.3M
284C2 Naples	WSGL	LIC NC FL	165.8 345.9	64.79 BLH20000105AAP	26 07 35.0 81 43 17.0	20.000 132	4.3 132	41.5 Renda Broadcasting Corpora	47.2	22.2
283D Arcadia	W283AM	LIC _C FL	1.8 181.8	61.18 BLFT20070228AAK	27 14 29.0 81 51 40.0	0.027 91	10.1 106	7.1 Azure Media, LIc	38.4	35.1
279D Punta Gorda Beach	W279CJ	CP _C FL	298.4 118.2	48.45 BNPFT20130826ABO	26 53 52.0 82 18 39.0	0.038 76	0.4 76	6.9 Calvary Chapel Church, Inc	36.2	40.6
284D Venice	W284CJ	CP _C FL	310.3 130.0	67.16 BNPFT20130826ABQ	27 04 51.0 82 23 55.0	0.019 74	0.3 77	5.9 Calvary Chapel Church, Inc	55.6	60.5

Terrain database is USGS 03 SEC , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM
Contour distances are on direct line to and from reference station. Reference zone= East Zone, 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.
< = Contour Overlap

Green Text denotes the W284CK.C - Fort Myers, FL facility to be modified by this Form 349 filing. This facility need not be protected.

Blue Highlighted Text denotes supplemental contour protection studies toward select facilities as included in **Exhibit(s) 13.6**.

Yellow Highlighted text denotes a \$74.1204(d) waiver request for Second Adjacent Channel Given Interference toward WXKB(FM) - Cape Coral, FL (CH280C). as included in **Exhibit 13.7**. Full protection will be afforded the facility as the calculated interference area will not reach the ground nor a 7 meter artificial plane representing a standard two story building when taking into account the downward radiation characteristics of the antenna as supplied by the antenna manufacturer. A copy of the antenna manufacturer specifications have been included in **Exhibit 13.8**.

Exhibit 13.6

Contour Protection Studies Toward WCVU.L - Solana, FL

FMCommander Single Allocation Study - 03-19-2014 - USGS 03 SEC
CH282D.P's Overlaps (In= 14.15 km, Out= 0.05 km)

CH282D.P CH 282 D DA
Lat= 26 41 29.0, Lng= 81 52 51.0
0.25 kW 104.3 M HAAT, 109 M COR
Prot.= 60 dBu, Intef.= 100 dBu

WCVU CH 285 A 73.215 N BLH20120525AAE
Lat= 26 53 37.5, Lng= 82 03 02.7
6.0 kW 97 M HAAT, 98 M COR
Prot.= 60 dBu, Intef.= 100 dBu

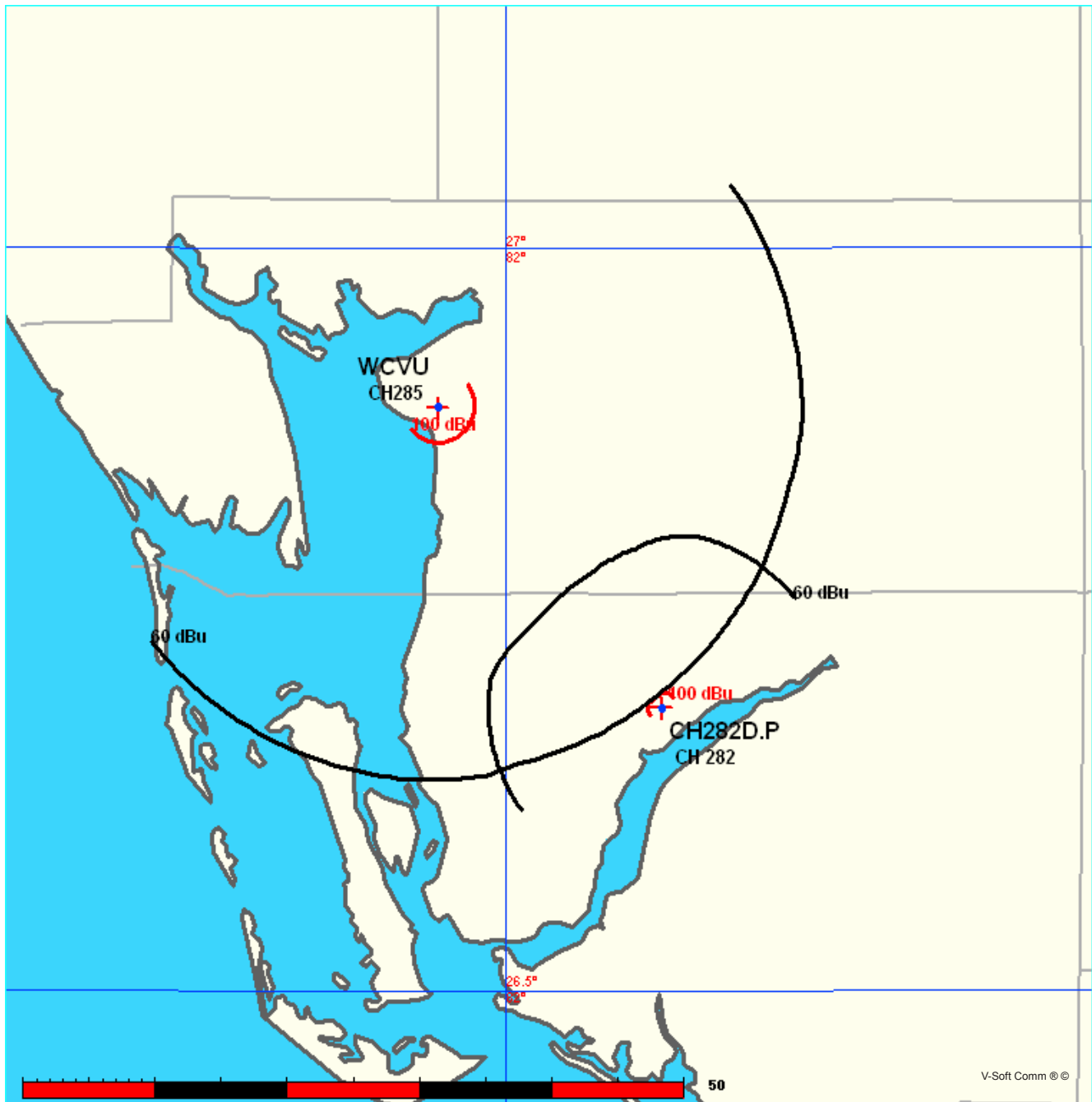


Exhibit 13.6

Contour Protection Studies Toward WCVU.L - Solana, FL

03-19-2014

Terrain Data: USGS 03 SEC

FMOVer Analysis

CH282D.P

WCVU BLH20120525AAE

Channel = 282D

Max ERP = 0.25 kW

RCAMSL = 109 M

N. Lat. 26 41 29.0

W. Lng. 81 52 51.0

Protected

60 dBu

Channel = 285A

Max ERP = 6 kW

RCAMSL = 98 M

N. Lat. 26 53 37.5

W. Lng. 82 03 02.7

Interfering

100 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
278.0	000.2500	0104.4	013.1	169.4	006.0000	0094.5	021.0	65.81	
279.0	000.2500	0104.4	013.1	169.2	006.0000	0094.4	020.8	65.97	
280.0	000.2500	0104.4	013.1	169.0	006.0000	0094.2	020.6	66.12	
281.0	000.2500	0104.3	013.1	168.7	006.0000	0094.1	020.4	66.28	
282.0	000.2500	0104.3	013.1	168.5	006.0000	0094.0	020.2	66.43	
283.0	000.2500	0104.1	013.1	168.2	006.0000	0093.9	020.0	66.59	
284.0	000.2500	0104.1	013.1	167.9	006.0000	0093.8	019.8	66.75	
285.0	000.2500	0104.0	013.1	167.6	006.0000	0093.7	019.6	66.90	
286.0	000.2500	0103.9	013.1	167.3	006.0000	0093.7	019.4	67.06	
287.0	000.2500	0103.8	013.1	166.9	006.0000	0093.6	019.2	67.22	
288.0	000.2500	0103.7	013.1	166.5	006.0000	0093.6	019.0	67.37	
289.0	000.2500	0103.6	013.1	166.2	006.0000	0093.6	018.8	67.53	
290.0	000.2500	0103.5	013.1	165.8	006.0000	0093.6	018.6	67.68	
291.0	000.2500	0103.3	013.1	165.3	006.0000	0093.5	018.4	67.82	
292.0	000.2500	0103.2	013.1	164.9	006.0000	0093.5	018.2	67.97	
293.0	000.2500	0103.1	013.1	164.4	006.0000	0093.4	018.1	68.11	
294.0	000.2500	0103.0	013.0	163.9	006.0000	0093.4	017.9	68.24	
295.0	000.2500	0102.8	013.0	163.4	006.0000	0093.3	017.7	68.38	
296.0	000.2500	0102.6	013.0	162.9	006.0000	0093.3	017.6	68.51	
297.0	000.2500	0102.4	013.0	162.4	006.0000	0093.3	017.4	68.64	
298.0	000.2500	0102.2	013.0	161.8	006.0000	0093.3	017.3	68.76	
299.0	000.2500	0102.1	013.0	161.2	006.0000	0093.3	017.1	68.89	
300.0	000.2500	0102.1	013.0	160.7	006.0000	0093.3	017.0	69.01	
301.0	000.2500	0102.0	013.0	160.1	006.0000	0093.3	016.8	69.13	
302.0	000.2500	0102.0	013.0	159.5	006.0000	0093.3	016.7	69.25	
303.0	000.2500	0102.0	013.0	158.8	006.0000	0093.3	016.5	69.36	
304.0	000.2500	0102.0	013.0	158.2	006.0000	0093.2	016.4	69.47	
305.0	000.2500	0102.0	013.0	157.5	006.0000	0093.2	016.3	69.57	
306.0	000.2500	0102.0	013.0	156.8	006.0000	0093.2	016.2	69.67	
307.0	000.2500	0102.0	013.0	156.1	006.0000	0093.1	016.1	69.76	
308.0	000.2500	0102.0	013.0	155.4	006.0000	0093.1	016.0	69.85	
309.0	000.2500	0102.0	013.0	154.7	006.0000	0093.1	015.8	69.94	
310.0	000.2500	0102.0	013.0	153.9	006.0000	0093.1	015.8	70.02	
311.0	000.2500	0102.0	013.0	153.2	006.0000	0093.0	015.7	70.09	
312.0	000.2500	0102.0	013.0	152.4	006.0000	0093.0	015.6	70.16	
313.0	000.2500	0102.0	013.0	151.6	006.0000	0092.9	015.5	70.21	

Exhibit 13.6**Contour Protection Studies Toward WCVU.L - Solana, FL**

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
314.0	000.2500	0102.0	013.0	150.8	006.0000	0092.8	015.4	70.26
315.0	000.2500	0102.0	013.0	150.0	006.0000	0092.8	015.4	70.31
316.0	000.2500	0102.0	013.0	149.2	006.0000	0092.7	015.3	70.35
317.0	000.2500	0102.0	013.0	148.4	006.0000	0092.6	015.3	70.39
318.0	000.2500	0102.0	013.0	147.5	006.0000	0092.5	015.2	70.42
319.0	000.2500	0102.0	013.0	146.7	006.0000	0092.5	015.2	70.44
320.0	000.2500	0102.0	013.0	145.8	006.0000	0092.4	015.2	70.46
321.0	000.2500	0102.0	013.0	145.0	006.0000	0092.3	015.1	70.47
322.0	000.2500	0102.0	013.0	144.1	006.0000	0092.3	015.1	70.47
323.0	000.2500	0102.0	013.0	143.3	006.0000	0092.2	015.1	70.47
324.0	000.2500	0102.0	013.0	142.4	006.0000	0092.2	015.1	70.47
325.0	000.2500	0102.0	013.0	141.6	006.0000	0092.2	015.1	70.46
326.0	000.2500	0102.0	013.0	140.7	006.0000	0092.2	015.2	70.45
327.0	000.2500	0102.0	013.0	139.8	006.0000	0092.3	015.2	70.43
328.0	000.2500	0102.0	013.0	139.0	006.0000	0092.2	015.2	70.40
329.0	000.2500	0102.0	013.0	138.2	006.0000	0092.2	015.3	70.36
330.0	000.2500	0102.0	013.0	137.3	006.0000	0092.1	015.3	70.32
331.0	000.2500	0102.0	013.0	136.5	006.0000	0092.2	015.4	70.27
332.0	000.2500	0102.0	013.0	135.7	006.0000	0092.2	015.4	70.23
333.0	000.2500	0102.0	013.0	134.9	006.0000	0092.2	015.5	70.17
334.0	000.2500	0102.0	013.0	134.1	006.0000	0092.2	015.6	70.10
335.0	000.2500	0102.0	013.0	133.3	006.0000	0092.2	015.6	70.03
336.0	000.2500	0102.0	013.0	132.6	006.0000	0092.2	015.7	69.96
337.0	000.2500	0102.0	013.0	131.8	006.0000	0092.2	015.8	69.88
338.0	000.2500	0102.0	013.0	131.1	006.0000	0092.2	015.9	69.79
339.0	000.2500	0102.0	013.0	130.3	006.0000	0092.2	016.0	69.71
340.0	000.2500	0102.0	013.0	129.6	006.0000	0092.2	016.1	69.61
341.0	000.2500	0102.0	013.0	129.0	006.0000	0092.2	016.2	69.51
342.0	000.2500	0102.0	013.0	128.3	006.0000	0092.2	016.4	69.41
343.0	000.2500	0102.0	013.0	127.6	006.0000	0092.2	016.5	69.30
344.0	000.2500	0102.0	013.0	127.0	006.0000	0092.2	016.6	69.19
345.0	000.2500	0102.0	013.0	126.4	006.0000	0092.2	016.8	69.07
346.0	000.2500	0102.0	013.0	125.8	006.0000	0092.2	016.9	68.95
347.0	000.2500	0102.0	013.0	125.2	006.0000	0092.2	017.1	68.83
348.0	000.2500	0102.0	013.0	124.7	006.0000	0092.2	017.2	68.70
349.0	000.2500	0101.9	013.0	124.1	006.0000	0092.2	017.4	68.56
350.0	000.2500	0101.9	013.0	123.6	006.0000	0092.2	017.5	68.42
351.0	000.2500	0101.8	013.0	123.1	006.0000	0092.2	017.7	68.28
352.0	000.2500	0101.7	013.0	122.6	006.0000	0092.2	017.9	68.14
353.0	000.2500	0101.7	013.0	122.2	006.0000	0092.2	018.1	67.99
354.0	000.2500	0101.6	013.0	121.8	006.0000	0092.2	018.2	67.84
355.0	000.2500	0101.6	013.0	121.3	006.0000	0092.2	018.4	67.69
356.0	000.2500	0101.5	013.0	120.9	006.0000	0092.2	018.6	67.54
357.0	000.2500	0101.4	013.0	120.6	006.0000	0092.2	018.8	67.38
358.0	000.2500	0101.3	012.9	120.2	006.0000	0092.2	019.0	67.22
359.0	000.2500	0101.3	012.9	119.8	006.0000	0092.2	019.2	67.07

Exhibit 13.6

Contour Protection Studies Toward WCVU.L - Solana, FL

03-19-2014

Terrain Data: USGS 03 SEC

FMOver Analysis

WCVU BLH20120525AAE

CH282D.P

Channel = 285A

Max ERP = 6 kW

RCAMSL = 98 M

N. Lat. 26 53 37.5

W. Lng. 82 03 02.7

Protected

60 dBu

Channel = 282D

Max ERP = 0.25 kW

RCAMSL = 109 M

N. Lat. 26 41 29.0

W. Lng. 81 52 51.0

Interfering

100 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
098.0	006.0000	0093.0	027.3	028.7	000.2500	0101.6	021.3	52.48	
099.0	006.0000	0092.7	027.3	029.1	000.2500	0101.5	020.8	52.84	
100.0	006.0000	0092.3	027.2	029.4	000.2500	0101.5	020.4	53.20	
101.0	006.0000	0092.0	027.2	029.7	000.2500	0101.5	019.9	53.57	
102.0	006.0000	0091.8	027.2	030.0	000.2500	0101.5	019.4	53.94	
103.0	006.0000	0091.7	027.2	030.4	000.2500	0101.4	019.0	54.30	
104.0	006.0000	0091.6	027.1	030.8	000.2500	0101.4	018.5	54.68	
105.0	006.0000	0091.5	027.1	031.2	000.2500	0101.4	018.1	55.06	
106.0	006.0000	0091.4	027.1	031.6	000.2500	0101.4	017.6	55.43	
107.0	006.0000	0091.4	027.1	031.9	000.2500	0101.4	017.1	55.81	
108.0	006.0000	0091.4	027.1	032.3	000.2500	0101.4	016.7	56.20	
109.0	006.0000	0091.4	027.1	032.7	000.2500	0101.4	016.2	56.58	
110.0	006.0000	0091.5	027.1	033.2	000.2500	0101.4	015.8	56.96	
111.0	006.0000	0091.5	027.1	033.6	000.2500	0101.4	015.3	57.35	
112.0	006.0000	0091.6	027.2	034.0	000.2500	0101.4	014.8	57.64	
113.0	006.0000	0091.7	027.2	034.5	000.2500	0101.4	014.4	58.17	
114.0	006.0000	0091.9	027.2	034.9	000.2500	0101.4	013.9	58.72	
115.0	006.0000	0091.9	027.2	035.3	000.2500	0101.4	013.5	59.31	
116.0	006.0000	0092.0	027.2	035.7	000.2500	0101.4	013.0	59.93	
117.0	006.0000	0092.1	027.2	036.1	000.2500	0101.4	012.5	60.58	
118.0	006.0000	0092.1	027.2	036.5	000.2500	0101.4	012.1	61.27	
119.0	006.0000	0092.1	027.2	036.8	000.2500	0101.4	011.6	61.99	
120.0	006.0000	0092.2	027.2	037.1	000.2500	0101.4	011.1	62.74	
121.0	006.0000	0092.2	027.2	037.4	000.2500	0101.3	010.6	63.52	
122.0	006.0000	0092.2	027.2	037.7	000.2500	0101.3	010.2	64.33	
123.0	006.0000	0092.2	027.2	038.0	000.2500	0101.3	009.7	65.18	
124.0	006.0000	0092.2	027.2	038.2	000.2500	0101.3	009.2	66.06	
125.0	006.0000	0092.2	027.2	038.4	000.2500	0101.3	008.8	66.96	
126.0	006.0000	0092.2	027.2	038.5	000.2500	0101.2	008.3	67.90	
127.0	006.0000	0092.2	027.2	038.7	000.2500	0101.2	007.8	68.88	
128.0	006.0000	0092.2	027.2	038.7	000.2500	0101.2	007.3	70.00	
129.0	006.0000	0092.2	027.2	038.7	000.2500	0101.2	006.9	71.24	
130.0	006.0000	0092.2	027.2	038.7	000.2500	0101.2	006.4	72.54	

Exhibit 13.6**Contour Protection Studies Toward WCVU.L - Solana, FL**

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
131.0	006.0000	0092.2	027.2	038.5	000.2500	0101.3	005.9	73.92
132.0	006.0000	0092.2	027.2	038.2	000.2500	0101.3	005.4	75.38
133.0	006.0000	0092.2	027.2	037.8	000.2500	0101.3	005.0	76.89
134.0	006.0000	0092.2	027.2	037.2	000.2500	0101.4	004.5	78.50
135.0	006.0000	0092.2	027.2	036.4	000.2500	0101.4	004.0	80.29
136.0	006.0000	0092.2	027.2	035.2	000.2500	0101.4	003.5	82.27
137.0	006.0000	0092.1	027.2	033.2	000.2500	0101.4	003.1	84.42
138.0	006.0000	0092.2	027.2	030.8	000.2500	0101.4	002.6	87.00
139.0	006.0000	0092.2	027.2	027.2	000.2500	0101.6	002.2	89.96
140.0	006.0000	0092.3	027.2	021.3	000.2500	0102.0	001.7	93.08
141.0	006.0000	0092.2	027.2	011.3	000.2500	0102.0	001.3	98.32
142.0	006.0000	0092.3	027.2	354.0	000.1980	0101.6	001.0	99.63
143.0	006.0000	0092.2	027.2	326.6	000.1406	0102.0	000.9	99.47
144.0	006.0000	0092.3	027.2	297.5	000.1703	0102.3	001.0	99.45
145.0	006.0000	0092.3	027.2	277.7	000.2500	0104.5	001.3	98.89
146.0	006.0000	0092.4	027.3	266.1	000.2500	0104.7	001.6	93.95
147.0	006.0000	0092.5	027.3	259.3	000.2500	0104.8	002.1	90.88
148.0	006.0000	0092.6	027.3	255.1	000.2500	0104.6	002.5	87.90
149.0	006.0000	0092.7	027.3	252.2	000.2500	0104.6	003.0	85.25
150.0	006.0000	0092.7	027.3	250.3	000.2500	0104.6	003.4	83.03
151.0	006.0000	0092.8	027.3	249.0	000.2500	0104.5	003.9	81.01
152.0	006.0000	0092.9	027.3	247.9	000.2500	0104.5	004.4	79.17
153.0	006.0000	0093.0	027.3	247.3	000.2500	0104.4	004.8	77.52
154.0	006.0000	0093.1	027.3	246.9	000.2500	0104.4	005.3	76.00
155.0	006.0000	0093.1	027.4	246.7	000.2500	0104.4	005.8	74.53
156.0	006.0000	0093.1	027.4	246.6	000.2500	0104.4	006.3	73.13
157.0	006.0000	0093.2	027.4	246.5	000.2500	0104.4	006.8	71.80
158.0	006.0000	0093.2	027.4	246.5	000.2500	0104.4	007.2	70.55
159.0	006.0000	0093.3	027.4	246.6	000.2500	0104.4	007.7	69.39
160.0	006.0000	0093.3	027.4	246.8	000.2500	0104.4	008.2	68.37
161.0	006.0000	0093.3	027.4	247.0	000.2500	0104.4	008.7	67.42
162.0	006.0000	0093.3	027.4	247.2	000.2500	0104.4	009.1	66.49
163.0	006.0000	0093.4	027.4	247.4	000.2500	0104.5	009.6	65.61
164.0	006.0000	0093.4	027.4	247.7	000.2500	0104.5	010.1	64.75
165.0	006.0000	0093.5	027.4	247.9	000.2500	0104.5	010.6	63.92
166.0	006.0000	0093.6	027.4	248.2	000.2500	0104.5	011.0	63.13
167.0	006.0000	0093.6	027.4	248.5	000.2500	0104.5	011.5	62.37
168.0	006.0000	0093.8	027.5	248.7	000.2500	0104.5	012.0	61.63
169.0	006.0000	0094.2	027.5	248.8	000.2500	0104.5	012.5	60.92
170.0	006.0000	0094.9	027.6	248.8	000.2500	0104.5	013.0	60.24
171.0	006.0000	0095.8	027.7	248.7	000.2500	0104.5	013.5	59.58
172.0	006.0000	0096.4	027.8	248.8	000.2500	0104.5	014.0	58.96
173.0	006.0000	0096.7	027.9	249.1	000.2500	0104.5	014.4	58.38
174.0	006.0000	0096.9	027.9	249.5	000.2500	0104.6	014.9	57.85
175.0	006.0000	0096.9	027.9	250.0	000.2500	0104.6	015.4	57.57
176.0	006.0000	0097.0	027.9	250.4	000.2500	0104.6	015.9	57.17
177.0	006.0000	0097.1	027.9	250.8	000.2500	0104.6	016.3	56.77

WXKB(FM) - 76.85 dBμ F(50:50)

CH282D.P

Exhibit 13.7

§74.1204(d) 2nd Adjacent Channel Given Interference Waiver Request Study Toward WXKB(FM)

USGS 03 SEC Terrain Database
U.S. Census 2010 PL Database

Terrain

0 10 m

Scale 1:165,000

0 2 4 6 km

CH282D.P

Fort Myers, FL

Proposed Operation

Facility ID: 139201

Latitude: 26-41-29 N

Longitude: 081-52-51 W

ERP: 0.25 kW

Channel: 282D

Frequency: 104.3 MHz

AMSL Height: 109.0 m

Horiz. Pattern: Directional

WXKB(FM)

Cape Coral, FL

BLH2000928ABN

Facility ID: 73933

Latitude: 26-25-22 N

Longitude: 081-37-49 W

ERP: 100.00 kW

Channel: 280C

Frequency: 103.9 MHz

AMSL Height: 343.0 m

Horiz. Pattern: Omni

WXKB(FM)

+

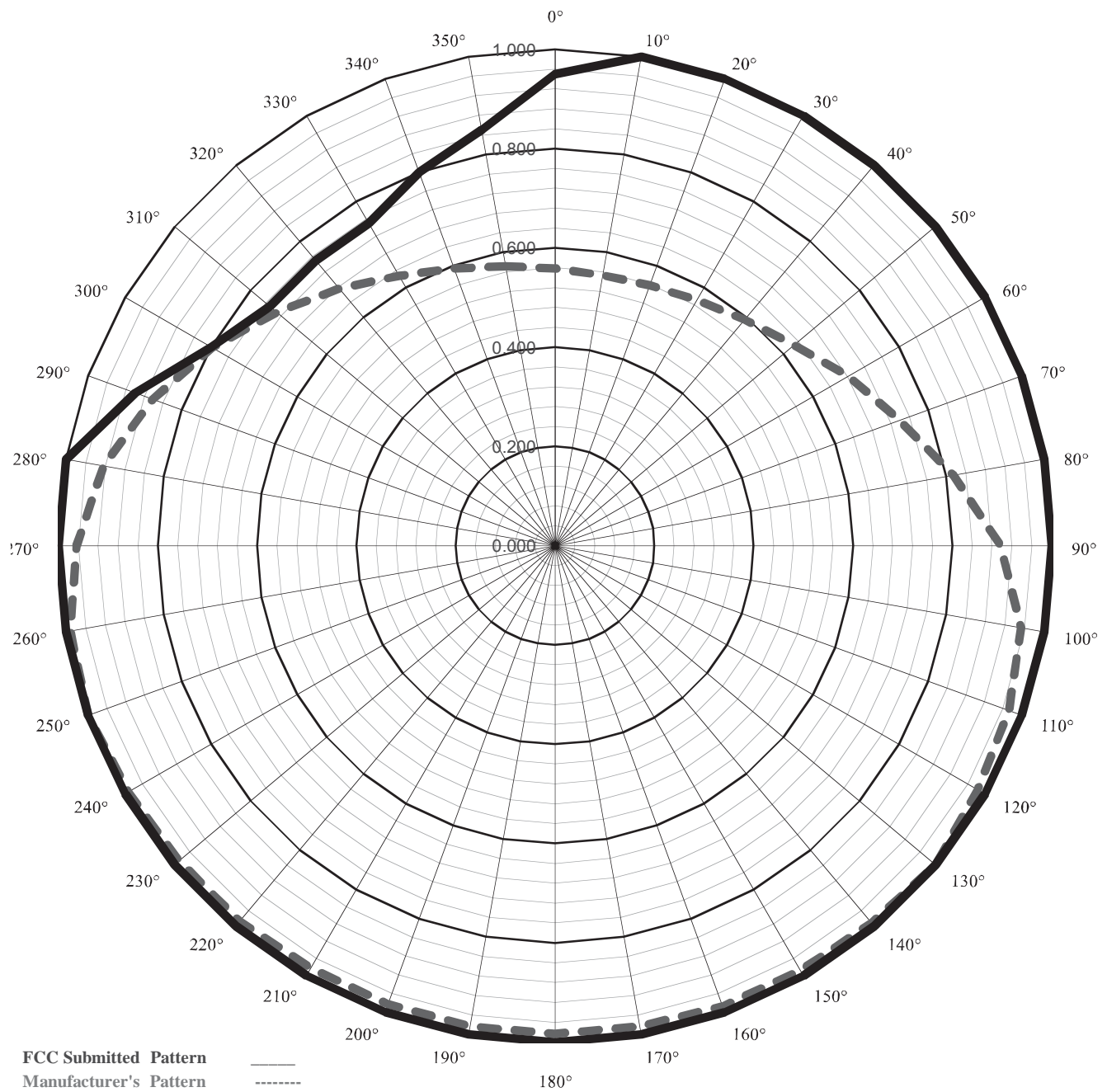
The Interference Contour corresponding to the WXKB(FM) - Cape Coral, FL 76.85 dBμ F(50:50) Protected Contour at the proposed Translator site has been calculated to be no less than the 116.85 dBμ F(50:10) Interference Contour. This represents the proposed interference contour which falls wholly within the 40:1 dBμ ratio. As seen on the map and associated vertical protection study, full protection will be afforded the WXKB(FM) facility as the calculated interference area will not reach the ground nor a 7 meter artificial plane representing a standard two story building when taking into account the downward radiation characteristics of the antenna as supplied by the antenna manufacturer. A copy of the antenna manufacturer's vertical radiation pattern has been included in **Exhibit 13.8**.



Exhibit 13.8 Directional Antenna Study (FCC vs. Manufacturer's Pattern)



Measured Composite Pattern in Relative Field



FCC Submitted Pattern
Manufacturer's Pattern

Call Sign: CH282D.P

Channel: 282D

Max ERP: 0.250 kW (V)
0.250 kW (H)

Antenna Make: Nicom USA Inc.

Model: BKG77/2DA(0.9wl)

Licensee: University Of Northwestern-St. Paul

Munn-Reese, Inc.
Broadcast Engineering Consultants
Coldwater, MI 49036

Exhibit 13.8

Directional Antenna Study

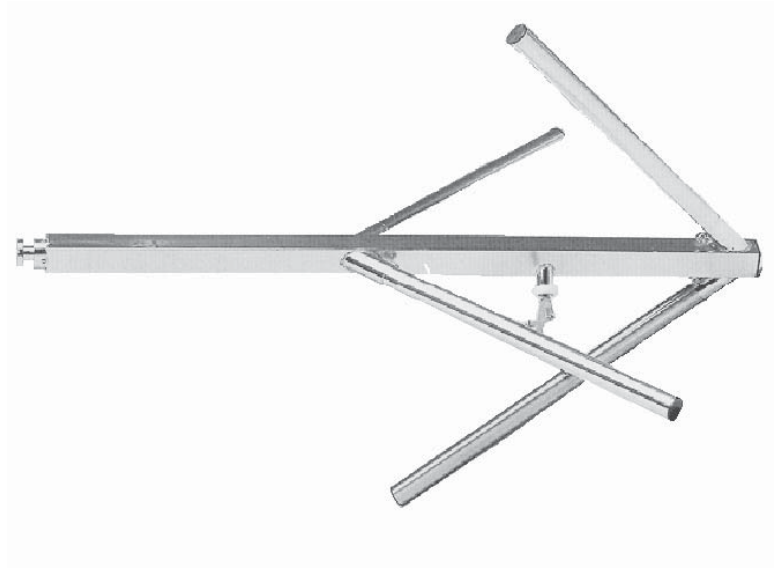
(FCC vs. Manufacturer's Pattern)



MEASURED PATTERN (from manufacturer)							SUBMITTED PATTERN (to FCC)						
Enter	Measured	Calculated			Measured	Relative	Enter	Submitted	Calculated			Submitted	Relative
Max ERP	Relative	dB			Equiv	Field	Max ERP	Relative	dB			Equiv	Field
(kW)	° True	Field	Change	Suppression	Power	Field ²	(kW)	° True	Field	Change	Suppression	Power	Field ²
0.25	0°	0.558	-0.20	-5.07	0.078	0.31	0.250	0°	0.950	0.97	-0.45	0.226	0.90
	10°	0.553	-0.08	-5.15	0.076	0.31		10°	1.000	0.45	0.00	0.250	1.00
	20°	0.558	0.08	-5.07	0.078	0.31		20°	1.000	0.00	0.00	0.250	1.00
	30°	0.571	0.20	-4.87	0.082	0.33		30°	1.000	0.00	0.00	0.250	1.00
	40°	0.594	0.34	-4.52	0.088	0.35		40°	1.000	0.00	0.00	0.250	1.00
	50°	0.628	0.48	-4.04	0.099	0.39		50°	1.000	0.00	0.00	0.250	1.00
	60°	0.682	0.72	-3.32	0.116	0.47		60°	1.000	0.00	0.00	0.250	1.00
	70°	0.738	0.69	-2.64	0.136	0.54		70°	1.000	0.00	0.00	0.250	1.00
	80°	0.815	0.86	-1.78	0.166	0.66		80°	1.000	0.00	0.00	0.250	1.00
	90°	0.897	0.83	-0.94	0.201	0.80		90°	1.000	0.00	0.00	0.250	1.00
	100°	0.953	0.53	-0.42	0.227	0.91		100°	1.000	0.00	0.00	0.250	1.00
	110°	0.973	0.18	-0.24	0.237	0.95		110°	1.000	0.00	0.00	0.250	1.00
	120°	0.983	0.09	-0.15	0.242	0.97		120°	1.000	0.00	0.00	0.250	1.00
	130°	1.000	0.15	0.00	0.250	1.00		130°	1.000	0.00	0.00	0.250	1.00
	140°	0.992	-0.07	-0.07	0.246	0.98		140°	1.000	0.00	0.00	0.250	1.00
	150°	0.988	-0.04	-0.10	0.244	0.98		150°	1.000	0.00	0.00	0.250	1.00
	160°	0.988	0.00	-0.10	0.244	0.98		160°	1.000	0.00	0.00	0.250	1.00
	170°	0.983	-0.04	-0.15	0.242	0.97		170°	1.000	0.00	0.00	0.250	1.00
	180°	0.983	0.00	-0.15	0.242	0.97		180°	1.000	0.00	0.00	0.250	1.00
	190°	0.983	0.00	-0.15	0.242	0.97		190°	1.000	0.00	0.00	0.250	1.00
	200°	0.983	0.00	-0.15	0.242	0.97		200°	1.000	0.00	0.00	0.250	1.00
	210°	0.983	0.00	-0.15	0.242	0.97		210°	1.000	0.00	0.00	0.250	1.00
	220°	0.988	0.04	-0.10	0.244	0.98		220°	1.000	0.00	0.00	0.250	1.00
	230°	0.988	0.00	-0.10	0.244	0.98		230°	1.000	0.00	0.00	0.250	1.00
	240°	0.992	0.04	-0.07	0.246	0.98		240°	1.000	0.00	0.00	0.250	1.00
	250°	1.000	0.07	0.00	0.250	1.00		250°	1.000	0.00	0.00	0.250	1.00
	260°	0.991	-0.08	-0.08	0.246	0.98		260°	1.000	0.00	0.00	0.250	1.00
	270°	0.963	-0.25	-0.33	0.232	0.93		270°	1.000	0.00	0.00	0.250	1.00
	280°	0.923	-0.37	-0.70	0.213	0.85		280°	1.000	0.00	0.00	0.250	1.00
	290°	0.862	-0.59	-1.29	0.186	0.74		290°	0.900	-0.92	-0.92	0.203	0.81
	300°	0.797	-0.68	-1.97	0.159	0.64		300°	0.800	-1.02	-1.94	0.160	0.64
	310°	0.731	-0.75	-2.72	0.134	0.53		310°	0.750	-0.56	-2.50	0.141	0.56
	320°	0.676	-0.68	-3.40	0.114	0.46		320°	0.750	0.00	-2.50	0.141	0.56
	330°	0.628	-0.64	-4.04	0.099	0.39		330°	0.750	0.00	-2.50	0.141	0.56
	340°	0.594	-0.48	-4.52	0.088	0.35		340°	0.800	0.56	-1.94	0.160	0.64
	350°	0.571	-0.34	-4.87	0.082	0.33		350°	0.850	0.53	-1.41	0.181	0.72

Percentage of
Allocated Pattern:
88.58%

Exhibit 13.8 - Copy of Manufacturer's Directional Antenna Pattern Data (Actual Pattern Rotated to 190°T)



NICOM
BKG77

Low Power

**Broadband
FM Circular
Polarization
Antenna**
*Antena de
FM Banda Ancha
Polarizacion Circular*

This antenna, constructed completely of stainless steel, offers circular polarization for better coverage especially in urban areas. In order to facilitate and decrease shipping costs, this model is simple to break down and reassemble when ready to be installed. It is insulated with Teflon, and with the appropriate connector has a maximum input of 0.5 kw.

Esta antena, fabricada completamente de acero inoxidable, le ofrece polarización circular para mejor alcance, especialmente en zonas urbanas. Para facilitar y disminuir los costos de transportación, este modelo es fácil de desarmar y volver a montar tan pronto que la quiera instalar. Está aislada con Teflon, y con el conector apropiado tiene una entrada máxima de 0.5 kw.



TECHNICAL SPECIFICATIONS (per bay)

Antenna type	circular polarization dipole	Front-to-back ratio	3 dB
Frequency range	87.5 - 108 MHz	Lightening protection	all parts grounded
Bandwidth	500 kHz max	Max wind velocity	119 mph (190 km/h)
Impedance	50 ohms	Wind load	8 Lbs (3.6 kg)
Connectors	N type (0.5 kw)	Wind surface	0.3 ft ² (0.04 m ²)
Power rating	500 Watts max	Materials (external)	stainless steel
VSWR	< 1.1:1	Mounting	from 2" to 4"
Polarization	vertical and horizontal	Weight	7.7 Lbs (3.5 kg)
Gain	- 3 dBd (referred to half-wave dipole)	Dimensions	58"×32"×32" (1450×800×800mm)
H plane	omnidirectional ±1.5 dB (with a 4" mast)	Packing	72"×6"×6" (1500×152×152mm)
V plane	omnidirectional ±3 dB (with a 4" mast)		

Exhibit 13.8 - Copy of Manufacturer's Directional Antenna Pattern Data (Actual Pattern Rotated to 190°T)



Date: 29/04/2013

BKG77SINGLE.PRJ

TX station: BKG77-1

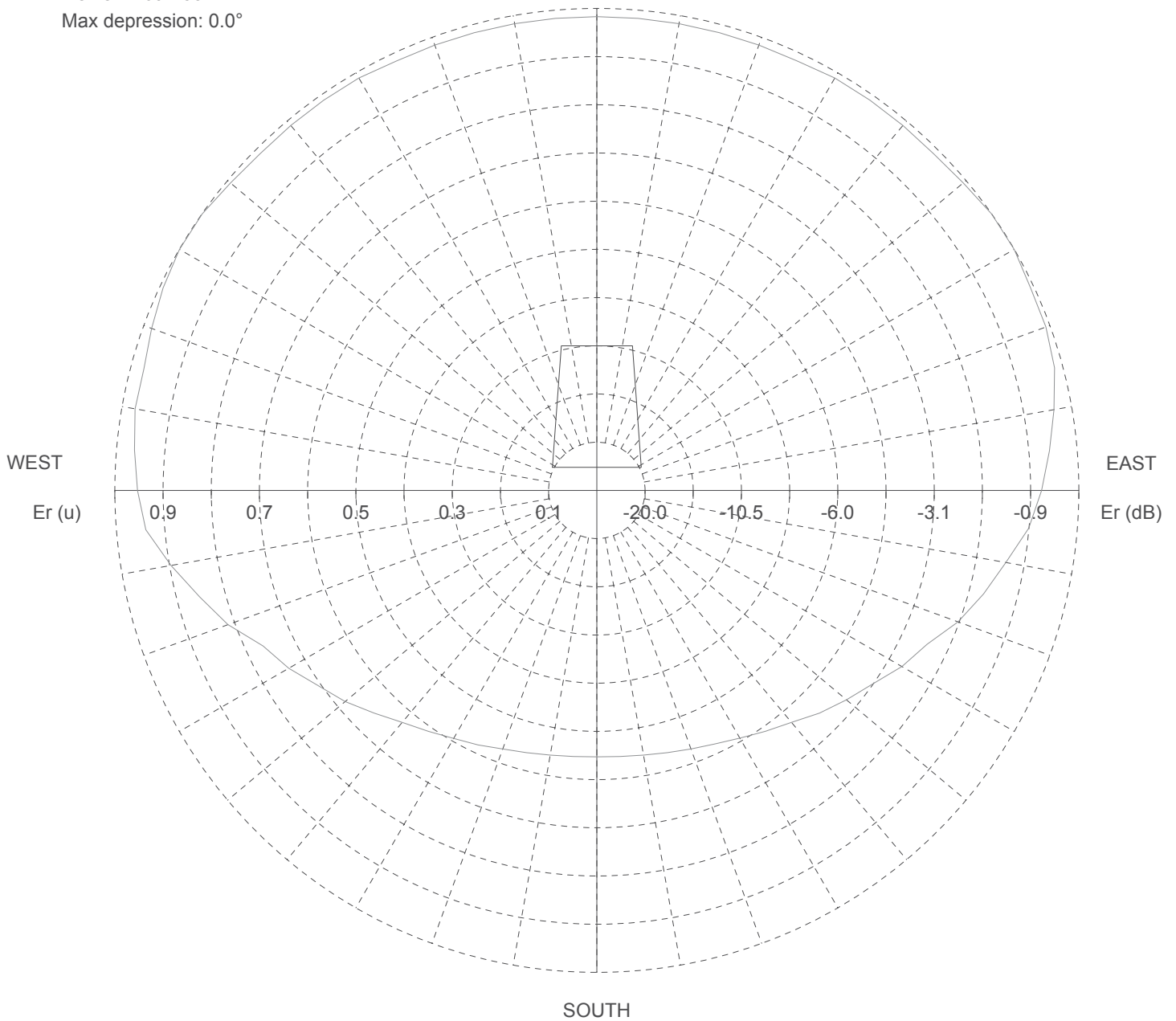
Site name:

Frequency: 100.00 MHz

Horizontal diagram of Maxima

Max azimuth: 60°
Max depression: 0.0°

NORTH



—— 0.0° depres. (Total antenna), Gain (dBd): -3.03 ERP T.max (KW): 0.498

ERP E.max (KW): 0.387

NicomUsa, Inc

Exhibit 13.8 - Copy of Manufacturer's Directional Antenna Pattern Data (Actual Pattern Rotated to 190°T)



Date: 29/04/2013

BKG77SINGLE.PRJ

TX station: BKG77-1

Site name:

Frequency: 100.00 MHz

Horizontal diagram of Maxima

Az (°)	Dep (°)	Er (%)	ERP (W)	Az (°)	Dep (°)	Er (%)	ERP (W)	Az (°)	Dep (°)	Er (%)	ERP (W)
0.0	0.0	98.3	373.6	120.0	0.0	73.1	206.6	240.0	0.0	73.8	210.7
5.0	0.0	98.3	373.6	125.0	0.0	69.9	189.2	245.0	0.0	76.4	225.7
10.0	0.0	98.3	373.6	130.0	0.0	67.6	176.7	250.0	0.0	81.5	256.6
15.0	0.0	98.3	373.6	135.0	0.0	65.3	165.1	255.0	0.0	85.3	281.6
20.0	0.0	98.3	373.6	140.0	0.0	62.8	152.7	260.0	0.0	89.7	311.1
25.0	0.0	98.3	373.6	145.0	0.0	61.0	144.0	265.0	0.0	93.9	341.1
30.0	0.0	98.8	377.5	150.0	0.0	59.4	136.3	270.0	0.0	95.3	351.1
35.0	0.0	98.8	377.5	155.0	0.0	58.0	130.3	275.0	0.0	96.3	358.5
40.0	0.0	98.8	377.5	160.0	0.0	57.1	126.1	280.0	0.0	97.3	366.1
45.0	0.0	98.8	377.5	165.0	0.0	56.3	122.8	285.0	0.0	97.3	366.1
50.0	0.0	99.2	380.8	170.0	0.0	55.8	120.3	290.0	0.0	98.3	373.6
55.0	0.0	100.0	386.5	175.0	0.0	55.4	118.7	295.0	0.0	99.3	381.4
60.0	0.0	100.0	386.7	180.0	0.0	55.3	118.2	300.0	0.0	100.0	386.7
65.0	0.0	99.3	381.4	185.0	0.0	55.4	118.7	305.0	0.0	100.0	386.5
70.0	0.0	99.1	380.0	190.0	0.0	55.8	120.3	310.0	0.0	99.2	380.8
75.0	0.0	98.3	373.6	195.0	0.0	56.3	122.8	315.0	0.0	98.8	377.5
80.0	0.0	96.3	358.5	200.0	0.0	57.1	126.1	320.0	0.0	98.8	377.5
85.0	0.0	94.3	343.8	205.0	0.0	58.3	131.4	325.0	0.0	98.8	377.5
90.0	0.0	92.3	329.3	210.0	0.0	59.4	136.5	330.0	0.0	98.8	377.5
95.0	0.0	90.0	312.9	215.0	0.0	61.0	144.0	335.0	0.0	98.3	373.6
100.0	0.0	86.2	287.1	220.0	0.0	62.8	152.7	340.0	0.0	98.3	373.6
105.0	0.0	83.0	266.7	225.0	0.0	65.3	165.1	345.0	0.0	98.3	373.6
110.0	0.0	79.7	245.9	230.0	0.0	68.2	179.6	350.0	0.0	98.3	373.6
115.0	0.0	75.6	221.0	235.0	0.0	70.6	192.7	355.0	0.0	98.3	373.6

**Exhibit 13.8 - Copy of Manufacturer's
Directional Antenna Pattern Data
(Actual Pattern Rotated to 190°T)**



Plot of Vertical Radiation Pattern

Manufacturer: NicomUSA, Inc.
Make/Model: BKG77/2-DA
Polarization: Circular
Inter Bay Spacing: 0.9λ (Wavelength)
Antenna Gain: -0.1 dBd

Frequency: 87.5 MHz - 108.0 MHz
Weight: 14 kg
Max Power: 1.0 kW
Return Loss: -27.1 dB
R.C. Phase: -89°

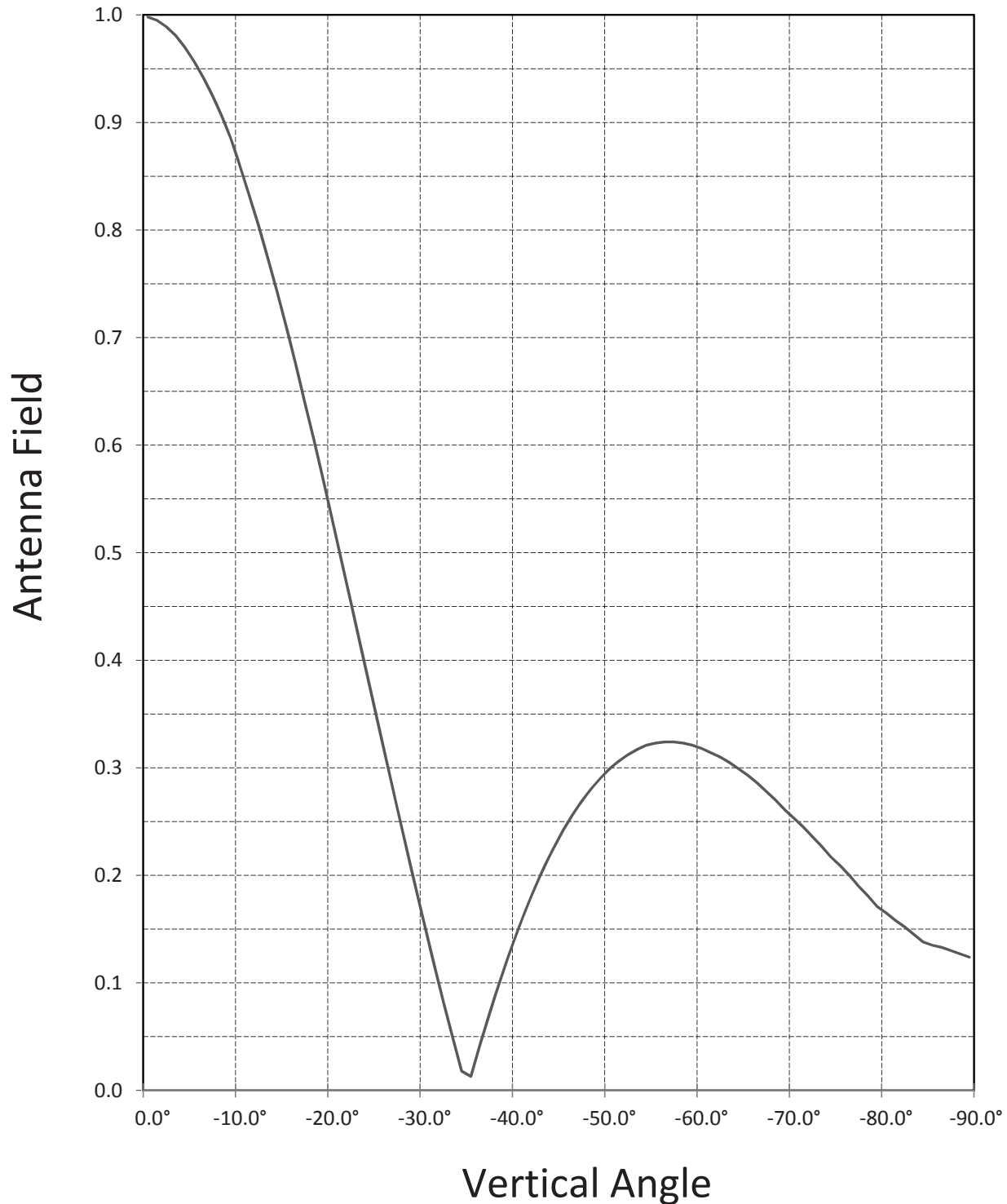


Exhibit 13.8 - Copy of Manufacturer's Directional Antenna Pattern Data (Actual Pattern Rotated to 190°T)



Tabulation of Vertical Radiation Pattern

Manufacturer: NicomUSA, Inc.
Make/Model: BKG77/2-DA
Polarization: Circular
Inter Bay Spacing: 0.9 λ (Wavelength)
Antenna Gain: -0.1 dBd

Frequency: 87.5 MHz - 108.0 MHz
Weight: 14 Kg
Max Power: 1.0 kW
Return Loss: -27.1 dB
R.C. Phase: -89°

Vertical Azimuth	Field (%)	Field dB	Vertical Azimuth	Field (%)	Field dB	Vertical Azimuth	Field (%)	Field dB
0.0°	1.000	0.00	-30.0°	0.189	-7.24	-60.0°	0.321	-4.93
-1.0°	0.998	-0.01	-31.0°	0.153	-8.15	-61.0°	0.318	-4.98
-2.0°	0.995	-0.02	-32.0°	0.118	-9.28	-62.0°	0.314	-5.03
-3.0°	0.989	-0.05	-33.0°	0.083	-10.81	-63.0°	0.310	-5.09
-4.0°	0.981	-0.08	-34.0°	0.050	-13.01	-64.0°	0.305	-5.16
-5.0°	0.970	-0.13	-35.0°	0.018	-17.45	-65.0°	0.299	-5.24
-6.0°	0.957	-0.19	-36.0°	0.013	-18.86	-66.0°	0.293	-5.33
-7.0°	0.942	-0.26	-37.0°	0.043	-13.67	-67.0°	0.286	-5.44
-8.0°	0.925	-0.34	-38.0°	0.071	-11.49	-68.0°	0.278	-5.56
-9.0°	0.906	-0.43	-39.0°	0.098	-10.09	-69.0°	0.270	-5.69
-10.0°	0.885	-0.53	-40.0°	0.123	-9.10	-70.0°	0.261	-5.83
-11.0°	0.859	-0.66	-41.0°	0.147	-8.33	-71.0°	0.253	-5.97
-12.0°	0.832	-0.80	-42.0°	0.169	-7.72	-72.0°	0.245	-6.11
-13.0°	0.804	-0.95	-43.0°	0.190	-7.21	-73.0°	0.236	-6.27
-14.0°	0.774	-1.11	-44.0°	0.209	-6.80	-74.0°	0.227	-6.44
-15.0°	0.743	-1.29	-45.0°	0.226	-6.46	-75.0°	0.217	-6.64
-16.0°	0.710	-1.49	-46.0°	0.242	-6.16	-76.0°	0.209	-6.80
-17.0°	0.676	-1.70	-47.0°	0.256	-5.92	-77.0°	0.200	-6.99
-18.0°	0.640	-1.94	-48.0°	0.269	-5.70	-78.0°	0.190	-7.21
-19.0°	0.605	-2.18	-49.0°	0.280	-5.53	-79.0°	0.181	-7.42
-20.0°	0.568	-2.46	-50.0°	0.290	-5.38	-80.0°	0.171	-7.67
-21.0°	0.530	-2.76	-51.0°	0.299	-5.24	-81.0°	0.165	-7.83
-22.0°	0.492	-3.08	-52.0°	0.306	-5.14	-82.0°	0.158	-8.01
-23.0°	0.454	-3.43	-53.0°	0.312	-5.06	-83.0°	0.152	-8.18
-24.0°	0.415	-3.82	-54.0°	0.317	-4.99	-84.0°	0.145	-8.39
-25.0°	0.377	-4.24	-55.0°	0.321	-4.93	-85.0°	0.138	-8.60
-26.0°	0.339	-4.70	-56.0°	0.323	-4.91	-86.0°	0.135	-8.70
-27.0°	0.301	-5.21	-57.0°	0.324	-4.89	-87.0°	0.133	-8.76
-28.0°	0.263	-5.80	-58.0°	0.324	-4.89	-88.0°	0.130	-8.86
-29.0°	0.226	-6.46	-59.0°	0.323	-4.91	-89.0°	0.127	-8.96
						-90.0°	0.124	-9.07