

Technical Report Supporting a Form 349 Application for a New FM Translator Station

Pursuant to 47 C.F.R. Section 74:

for

*CH280D.P - Atlanta, TX
CH280D (103.9 MHz)*

"New FM Translator Operation"

as a

*Commercial, Fill-In Translator
for Class D AM Station
KPYN(AM) - Atlanta, TX*

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Explanation of Technical Report

1

EXPLANATION OF PROPOSAL: This Form 349 Filing and accompanying technical report supports an Original Construction Permit Application for a new FM Translator facility for CH280D.P - Atlanta, TX. This FCC Form 349 Filing requests a new CH280D (103.9 MHz) operation with a power of 0.250 kW ERP (circular polarization). The FM Translator will operate from a COR of 134 meters AMSL utilizing a directional antenna. This Form 349 Filing will specify rebroadcast of Class D, AM Primary Station KPYN(AM) - Atlanta, TX (900 kHz); Facility ID No. 2766. The Translator will be licensed to the community of Atlanta, TX.

FACILITY COMPLIANCE SHOWINGS: A map of the proposed 60 dBμ service contour has been included in **Exhibit 1**. The proposed 60 dBμ contour of the Translator lies wholly inside the larger of the AM primary daytime 2.0 mV/m contour or a 25 mile radius around the AM site. The primary station service contour relationship has been plotted in **Exhibit 2**.

The applicant would like to note KPYN(AM) is presently rebroadcast on co-owned AM Fill-In Translator K238BF.L - Atlanta, TX (Facility ID: 150324) and will serve substantially the same area as this AM Fill-In Translator proposal. Concurrent with, or prior to the commencement of operations of the future Translator operation, K238BF.L will be reassigned to an alternate Primary Station.

The proposed facility will be located on the tower bearing Antenna Structure Registration Number 1022028. In support of this filing, a copy of the existing ASRN has been included in **Exhibit 3**. A depiction of the tower and antenna configuration has been included in **Exhibit 4**. Further notification to the FAA or ASR governing authorities is not required as this proposal will not increase the overall tower height.

The applicant would like to note use of the NED 03 second terrain database for all allocation, contour and HAAT showings contained herein. A copy of the proposed HAAT calculation has been included in **Exhibit 5**.

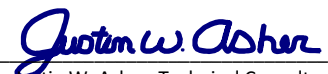
ALLOCATION COMPLIANCE SHOWINGS: The proposed Translator remains in compliance with 47 C.F.R. Section 74.1204 toward all allocation protection concerns. A general allocation study for this proposal is found in **Exhibit 6**. There is one additional facility, existing or proposed, close enough to merit further study. Therefore, a supplemental contour protection study has been provided toward this facility as included in **Exhibit 7**. It is believed sufficient clearance exists, precluding the need for additional contour protection showings. A copy of the antenna manufacturer specifications has been included in **Exhibit 8**.

Regarding protection of international concerns, the facility is, and will remain, more than 320 km from the common border between the United States and Canada or Mexico. As a result, no further international protection showings are believed required.

ENVIRONMENTAL COMPLIANCE SHOWINGS: The proposed facility complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments as set forth under §1.1310 and/or §1.1307(b)(3) of the Commission's rules and the guidelines for RF radiation protection guidelines as set forth in OET Bulletin No. 65 (Edition 97-01), and the accompanying Supplement A, (Edition 97-01). Compliance has been demonstrated in the attached **RF Appendix 1** of this filing. The facility is, or will be, properly marked with signs. Entry is, or will be, restricted by means of fencing with locked doors or gates. In addition, coordination with other users of the site will be secured to reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic fields in excess of FCC guidelines.

Regarding compliance with the NEPA, Nationwide Programmatic Agreement and NHPA Section 106 for tower co-location, compliance with the Agreement is not required where no new tower construction is being proposed and the tower is not being substantially altered. Specifically, compliance is not necessary where only an antenna is being added to an existing structure, as here. However, should the Commission determine compliance is necessary, upon notification to the applicant, the applicant will file FCC Form 621.

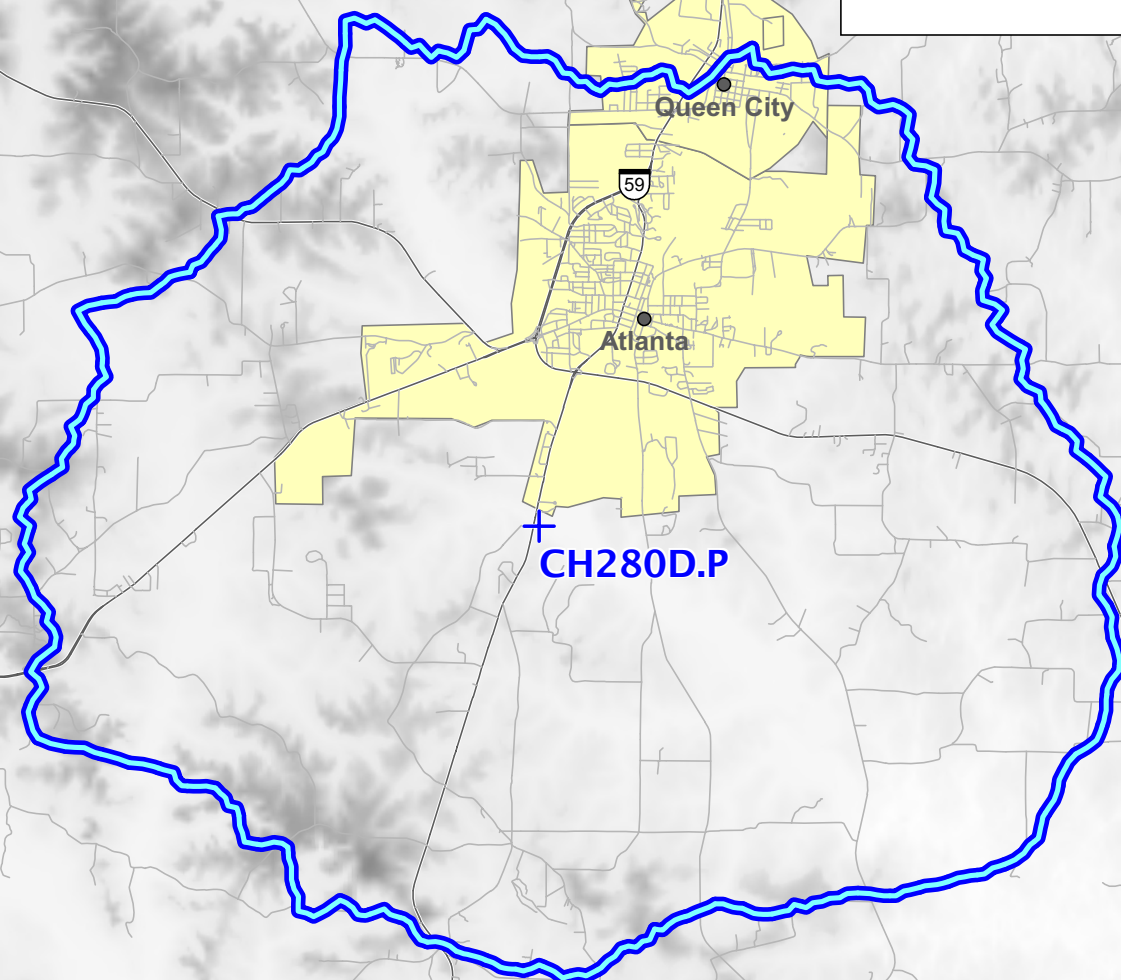
CERTIFICATION OF TECHNICAL CONSULTANT: *I declare, under penalty of perjury, that the contents of this report are true and accurate to the best of my knowledge and belief. I further certify I have over eighteen years of experience as a broadcast technical consultant before the Federal Communications Commission ("the FCC"); and am familiar with the Code of Federal Regulations Title 47 ("the Rules") as pertaining to this report and its contents herein. The underlying data utilized in this report was taken directly from FCC databases or indirectly through third party software vendors securing data directly from FCC databases. This firm cannot be held liable for errors or omissions resulting from the underlying data. The information contained herein is believed accurate to the date reported below.*



Justin W. Asher, Technical Consultant
March 01, 2018

Exhibit 1
Service Contour Study:
Present vs Proposed Operations

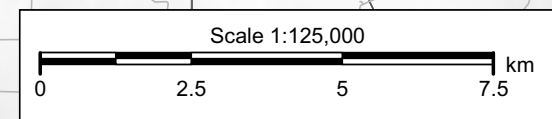
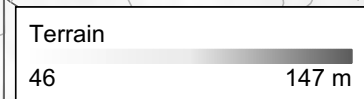
Proposed 60 dBμ F(50:50) Contour



CH280D.P
Atlanta, TX
Proposed Operation
Facility ID: NEW
Latitude: 33-04-58 N
Longitude: 094-10-58 W
ERP: 0.25 kW
Channel: 280D (103.9 MHz)
AMS Height: 134.0 m
Horiz. Pattern: Directional

60 dBμ F(50:50) Contour
Total Population: 9,466
Total Area: 206.3 sq. km

NED 03 SEC Terrain Database
US Census 2010 PL Database



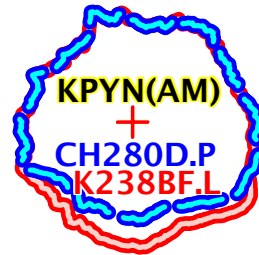
Asher Broadcast Consulting LLC
justinasher@consultant.com
1 (202) 875-2986

Exhibit 2

Service Contour Study: Proposed vs Primary Operations

25 mile Radius from AM Site
Primary 2 mV/m Daytime Contour

Proposed 60 dBμ F(50:50) Contour
Licensed 60 dBμ F(50:50) Contour



KPYN 900 kHz
Atlanta, Texas
Station Class: D
Region 2 Class: B
Facility ID: 2766
File Number: BL-19991027ADL
33-04-58.0 N 94-10-58.0 W (NAD 27)
33-04-58.5 N 94-10-58.7 W (NAD 83)
Power: 1 kW, Non-Directional
Hours: Daytime
Pattern Type: Theoretical
Towers: 1 Augmentations: 0
Tower Elec Height: 80.7 Deg; 74.67 m
RMS Theoretical: 299.34 mV/meter

CH280D.P
Atlanta, TX
Proposed Operation
Facility ID: NEW
Latitude: 33-04-58 N
Longitude: 094-10-58 W
ERP: 0.25 kW
Channel: 280D (103.9 MHz)
AMSL Height: 134.0 m
Horiz. Pattern: Directional

K238BF.L
Atlanta, TX
BLFT20090616ACI
Facility ID: 150324
Latitude: 33-04-58 N
Longitude: 094-10-58 W
ERP: 0.185 kW
Channel: 238D (95.5 MHz)
AMSL Height: 140.0 m
Horiz. Pattern: Omni

Asher Broadcast Consulting LLC
justinasher@consultant.com
1 (202) 875-2986

The applicant would like to note KPYN(AM) is presently rebroadcast on co-owned AM Fill-In Translator K238BF.L - Atlanta, TX (Facility ID: 150324) and will serve substantially the same area as this CH280D.P AM Fill In Translator proposal. Concurrent with, or prior to the commencement of operations of the future CH280D.P Translator, K238BF.L will be reassigned to an alternate Primary Station.

NED 03 SEC Terrain Database
US Census 2010 PL Database

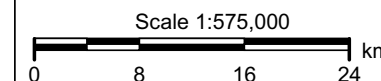


Exhibit 3

Copy of Existing Antenna Structure Registration

(public record copy)

Registration Detail

Reg Number	1022028	Status	Granted
File Number	A0100620	Constructed	01/01/1948
EMI	No	Dismantled	
NEPA	No		

Antenna Structure

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

Location (in NAD83 Coordinates)

Lat/Long	33-04-58.4 N 094-10-58.6 W	Address	3.86 km South of Atlanta on Bivins Highway
City, State	Atlanta , TX		
Zip	75551	County	CASS
Center of AM Array		Position of Tower in Array	

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
70.7	75.6
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
146.3	75.6

Painting and Lighting Specifications

FAA Chapters 3, 4, 5, 13
Paint and Light in Accordance with FAA Circular Number 70/7460-1J

FAA Notification

FAA Study	97-ASW-1072-OE	FAA Issue Date	05/07/1997
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Owner & Contact Information

FRN	0006165468	Owner Entity Type	
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Owner

Ark-La-Tex BROADCASTING CO.
Attention To: David Wommack
P.O. Box 1166
Atlanta , TX 75551

P: (903)796-2817
F:
E: kpyn@clover.cleaf.com

Contact

P:
F:
E:

Last Action Status

Status	Granted	Received	10/19/1999
Purpose	Modification	Entered	10/22/1999
Mode	Mail In (Manual)		

Related Applications

10/19/1999	A0100620 - Modification (MD)
05/19/1997	A0026311 - New (NE)

Comments

Comments

None

History

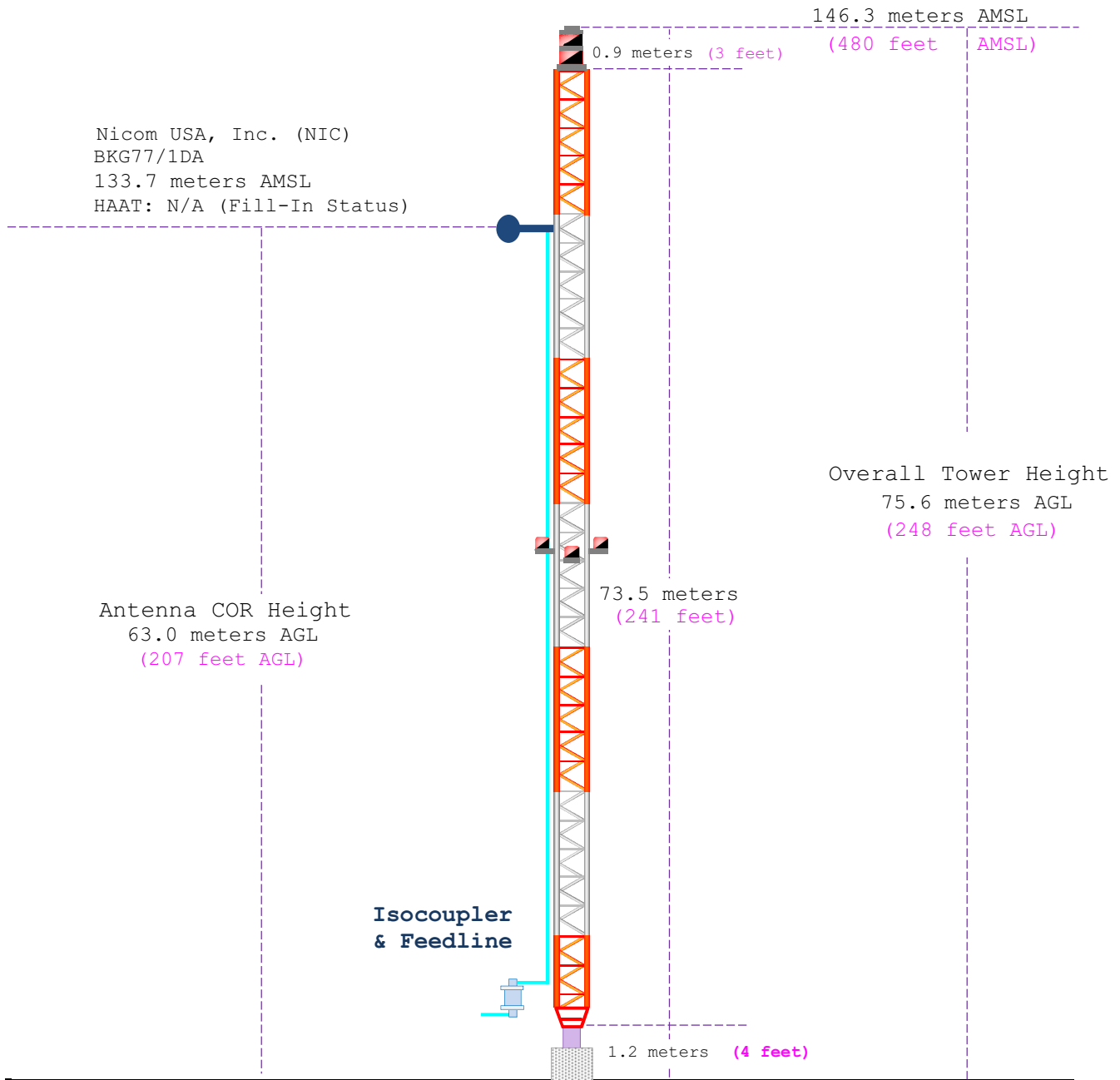
Date	Event
10/30/2000	Construction Reminder Letter Sent
10/25/1999	Registration Printed
10/22/1999	Modification Received

Automated Letters

10/30/2000	Construction Reminder, Reference 79812
10/25/1999	Authorization, Reference 27140

Exhibit 4

Vertical Plan of Antenna System



Ground Elevation: 70.7 meters AMSL (232 feet AMSL)		
Address: 3.86 km south of Atlanta, TX; on Bivins Highway.		
City: Atlanta	Latitude (D M S) Longitude (D M S)	
County: Cass	NAD 27 datum values: 33 04 57.92711 94 10 57.92633	
State: Texas	NAD 83 datum values: 33 04 58.40000 94 10 58.60000	
Antenna Structure Registration 1022028	Drawing Is Not To Scale	Asher Broadcast Consulting, LLC justinasher@consultant.com 1(202)875-2986

Exhibit 5

HAAT and Miscellaneous Coordinate Information

HAAT Calculation (1927):

N. Lat. = 330458.0 W. Lng. = 941058.0
 HAAT and Distance to Contour,
 FCC, FM 2-10 Mi, 51 pts Method - NED 03 SEC

Azi.	AV EL	HAAT	ERP kW	dBk	Field	60-F5
000	97.6	36.4	0.2500	-6.02	1.000	7.76
030	89.3	44.7	0.2500	-6.02	1.000	8.70
060	91.6	42.4	0.2500	-6.02	1.000	8.44
090	80.7	53.3	0.2500	-6.02	1.000	9.60
120	66.2	67.8	0.1600	-7.96	0.800	9.62
150	86.7	47.3	0.1225	-9.12	0.700	7.41
180	81.3	52.7	0.0900	-10.46	0.600	7.25
210	86.2	47.8	0.1225	-9.12	0.700	7.45
240	88.0	46.0	0.1600	-7.96	0.800	7.82
270	91.8	42.2	0.2500	-6.02	1.000	8.42
300	98.3	35.7	0.2500	-6.02	1.000	7.68
330	103.5	30.5	0.2500	-6.02	1.000	7.14

Ave El= 88.43 M HAAT= 45.57 M AMSL= 134.0

NAD 1983 to NAD 1927 Conversion:

	<u>Latitude</u>	<u>Longitude</u>
NAD 27 datum values:	33 04 57.92711	94 10 57.92633
NAD 83 datum values:	33 04 58.40000	94 10 58.60000

Various Coordinate Conversion Calculations (NAD 1983):

Position Type	Lat Lon
Degrees Lat Long	33.0828889°, -094.1829444°
Degrees Minutes	33°04.97333', -094°10.97667'
Degrees Minutes Seconds	33°04'58.4000", -094°10'58.6000"
UTM	15S 389594mE 3661098mN
UTM centimeter	15S 389594.50mE 3661098.25mN
MGRS	15SUS8959461098
Grid North	-0.6°
GARS	172LG47
Maidenhead	EM23VB89BV14
GEOREF	FJLD49020497

Exhibit 6

Tabulation of Proposed Allocation

Blue Text indicates contour protection studies toward select station(s) as included in **Exhibit 7**.

Freed Am Corporation											
REFERENCE		CH#	280D	-	103.9 MHz,	Pwr= 0.25 kW	DA,	HAAT= 45.6 M,	COR= 134 M	DISPLAY DATES	
33 04 58.0 N.		Average Protected F(50-50)= 8.8 km								DATA 03-01-18	
94 10 58.0 W.		Standard Directional								SEARCH 03-01-18	
CH	CALL	TYPE	ANT	AZI	DIST	LAT	PWR (kW)	INT (km)	PRO (km)	*IN*	*OUT*
CITY	STATE			<--	FILE #	LNG	HAAT (M)	COR (M)	LICENSEE	(Overlap	in km)
280A	KPGG	LIC_CN		9.6	58.51	33 36 06.0	5.100	85.1	28.0	-34.0*<	5.6
Ashdown		AR		189.7	BMLH19900716KD	94 04 38.0	108	198	American Media Investments		
280D	1772353	APP DC_		0.0	0.00	33 04 58.0	0.250	0.00	0.00	64.5R	-64.5M
Atlanta		TX		0.0	BNPFT20170802ACV	94 10 58.0		134	Freed Am Corporation		
280A	KMHT-FM	LIC_CX		195.3	59.79	32 33 50.0	1.850	74.0	24.4	-21.4*<	11.5
Marshall		TX		15.2	BMLH20100514AJJ	94 21 04.0	129	227	Hanszen Broadcast Group, I		
278C2	KZRB	LIC_CN		311.4	56.04	33 24 54.0	50.000	6.1	53.4	42.8	1.5
New Boston		TX		131.1	BLH19961216KA	94 38 10.0	150	252	B & H Broadcasting Systems		
281D	1763621	APP_C_		137.1	27.40	32 54 07.5	0.250	16.7	11.5	2.4	4.1
Vivian		LA		317.2	BNPFT20170801AGZ	93 58 58.3		156	Mls Broadcasting, Inc.		
283A	KJTX	CP_CN		223.5	39.74	32 49 22.6	2.500	2.5	28.1	30.1	10.9
Jefferson		TX		43.3	BPH20160323AAB	94 28 31.3	157	243	Wisdom Ministries, Inc.		
283A	KJTX	LIC_CX		223.5	39.74	32 49 23.0	4.400	2.7	28.1	30.0	10.9
Jefferson		TX		43.3	BLH20100427ACH	94 28 32.0	117	203	Wisdom Ministries, Inc.		
282A	KPOS	LIC_CN		46.4	43.36	33 21 05.0	5.000	2.7	28.7	31.9	13.6
Fouke		AR		226.6	BMLEDD20031110ABJ	93 50 41.0	110	192	Educational Media Foundati		
279A	KBTT	LIC_CN		136.2	81.34	32 33 11.0	6.000	44.4	28.7	28.5	40.7
Haughton		LA		316.5	BLH19930308KE	93 34 56.0	100	157	Alpha Media Licensee Llc		
277D	1776409	APP DC_		153.0	51.44	32 40 13.0	0.250	1.0	21.7	43.4	29.1
Shreveport		LA		333.1	BNPFT20180129ACQ	93 55 59.0		378	Townsquare Media Shrevepor		
227C3	KMJI	CP NCX		360.0	41.49	33 27 25.0	8.000	29.8	9.0	11.5R	30.0M
Ashdown		AR		180.0	BPH20160815ABL	94 10 59.0	148	242	Townsquare Media Texarkana		
227C3	KMJI	LIC NC_		357.2	46.78	33 30 14.8	7.700	29.8	9.0	11.5R	35.3M
Ashdown		AR		177.2	BLH20140515AGH	94 12 26.3	182	275	Townsquare Media Texarkana		
279D	K279CI	LIC DC_		227.7	80.61	32 35 36.0	0.250	22.7	15.0	51.0	55.7
Longview		TX		47.4	BLFT20170112ABF	94 49 10.0		322	Alpha Media Licensee Llc		
281C2	KKUS	LIC_CX		241.9	137.95	32 29 32.0	50.000	77.3	51.4	52.6	75.0
Tyler		TX		61.2	BLH20150528AGK	95 28 51.0	150	290	Alpha Media Licensee Llc		
277C1	KIXB	LIC NCN		82.1	118.14	33 13 20.0	100.000	7.6	60.9	101.6	56.1
El Dorado		AR		262.8	BLH19930915KC	92 55 28.0	174	243	Noalmark Broadcasting Corp		

Terrain database is NED 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= West Zone, Co to 3rd adjacent.
All separation margins (if shown) include rounding.
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
"*"affixed to 'IN' or 'OUT' values = site inside restricted contour.
< = Contour Overlap
Reference station has protected zone issue: AM tower

Exhibit 7

Contour Protection Studies Toward Select Allocation Concern(s)

Freed Am Corporation

FMCommander Single Allocation Study - 03-01-2018 - NED 03 SEC
1772353's Overlaps (In= 2.37 km, Out= 4.07 km)

1772353 CH 280 D DA
Lat= 33 04 58.0, Lng= 94 10 58.0
0.25 kW 45.6 m HAAT, 134 m COR
Prot.= 60 dBu, Intef.= 54 dBu

1763621 CH 281 D BNPFT20170801AGZ
Lat= 32 54 07.5, Lng= 93 58 58.3
0.25 kW 0 m HAAT, 156 m COR
Prot.= 60 dBu, Intef.= 54 dBu

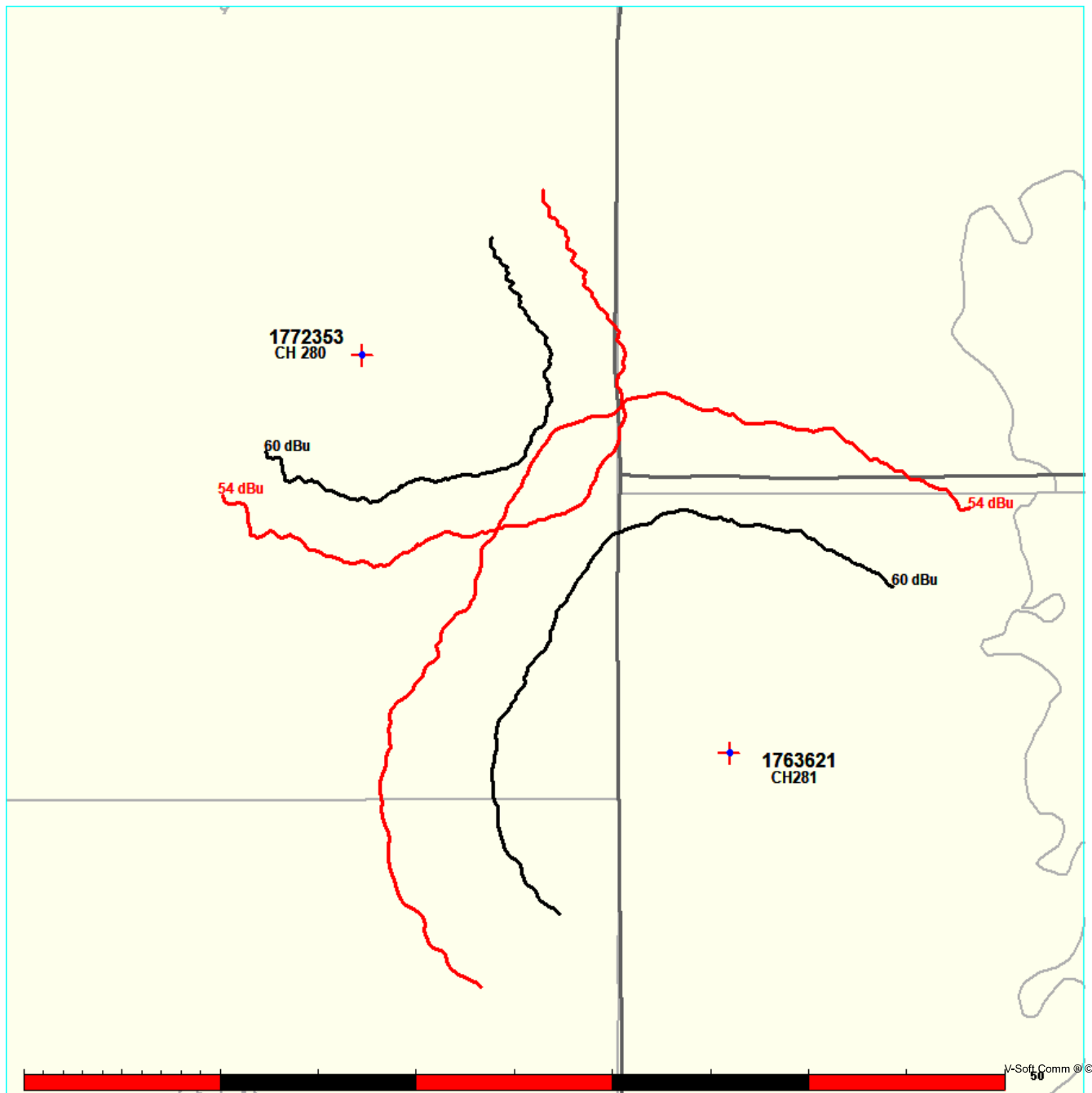


Exhibit 7

Contour Protection Studies Toward Select Allocation Concern(s)

03-01-2018

Terrain Data: NED 03 SEC

FMOver Analysis

1772353

1763621 BNPFT20170801AGZ

Channel = 280D

Max ERP = 0.25 kW

RCAMSL = 134 m

N. Lat. 33 04 58.0

W. Lng. 94 10 58.0

Protected
60 dBu

Channel = 281D

Max ERP = 0.25 kW

RCAMSL = 156 m

N. Lat. 32 54 07.5

W. Lng. 93 58 58.3

Interfering
54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
095.0	000.2500	0050.8	009.4	334.2	000.2254	0092.8	021.4	51.10	
096.0	000.2500	0050.5	009.3	333.9	000.2260	0092.9	021.3	51.21	
097.0	000.2500	0050.5	009.3	333.7	000.2264	0093.0	021.1	51.34	
098.0	000.2500	0052.1	009.5	333.8	000.2262	0092.9	020.9	51.51	
099.0	000.2500	0053.3	009.6	333.8	000.2262	0092.9	020.7	51.67	
100.0	000.2500	0053.4	009.6	333.5	000.2267	0093.2	020.6	51.81	
101.0	000.2500	0054.0	009.7	333.4	000.2270	0093.4	020.4	51.98	
102.0	000.2500	0055.1	009.8	333.3	000.2271	0093.5	020.2	52.14	
103.0	000.2500	0056.0	009.8	333.2	000.2273	0093.6	020.0	52.31	
104.0	000.2500	0056.4	009.9	332.9	000.2278	0093.6	019.9	52.44	
105.0	000.2500	0055.5	009.8	332.4	000.2287	0093.7	019.8	52.53	
106.0	000.2500	0055.2	009.8	332.0	000.2295	0093.8	019.7	52.63	
107.0	000.2500	0055.6	009.8	331.8	000.2300	0093.8	019.5	52.76	
108.0	000.2500	0056.1	009.9	331.5	000.2305	0093.9	019.4	52.91	
109.0	000.2500	0056.4	009.9	331.2	000.2311	0093.9	019.3	53.03	
110.0	000.2500	0056.4	009.9	330.8	000.2318	0093.4	019.1	53.09	
111.0	000.2401	0057.5	009.9	330.4	000.2326	0092.9	019.0	53.14	
112.0	000.2304	0057.5	009.8	329.8	000.2336	0091.9	019.0	53.08	
113.0	000.2209	0057.2	009.6	329.1	000.2344	0091.0	019.0	53.00	
114.0	000.2116	0057.7	009.6	328.6	000.2350	0090.7	019.0	53.02	
115.0	000.2025	0058.9	009.6	328.2	000.2356	0090.5	018.9	53.08	
116.0	000.1936	0060.3	009.6	327.7	000.2361	0089.8	018.8	53.09	
117.0	000.1849	0062.7	009.6	327.4	000.2366	0089.3	018.7	53.15	
118.0	000.1764	0064.7	009.6	327.0	000.2371	0088.7	018.6	53.19	
119.0	000.1681	0066.1	009.6	326.5	000.2377	0088.5	018.5	53.23	
120.0	000.1600	0067.8	009.6	326.0	000.2383	0088.1	018.4	53.26	
121.0	000.1560	0069.6	009.7	325.6	000.2388	0087.6	018.3	53.32	
122.0	000.1521	0071.4	009.7	325.2	000.2394	0086.9	018.2	53.36	
123.0	000.1482	0071.6	009.7	324.6	000.2401	0086.3	018.2	53.32	
124.0	000.1444	0072.5	009.7	324.1	000.2407	0085.3	018.1	53.27	
125.0	000.1406	0072.5	009.6	323.6	000.2414	0085.1	018.1	53.27	
126.0	000.1369	0072.0	009.5	323.0	000.2422	0084.3	018.2	53.15	
127.0	000.1332	0071.2	009.4	322.4	000.2430	0082.9	018.2	52.96	

Exhibit 7

Contour Protection Studies Toward Select Allocation Concern(s)

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
128.0	000.1296	0071.4	009.3	321.8	000.2437	0082.3	018.2	52.90
129.0	000.1260	0069.9	009.2	321.2	000.2444	0081.8	018.4	52.76
130.0	000.1225	0068.9	009.0	320.7	000.2452	0082.1	018.5	52.72
131.0	000.1225	0067.6	009.0	320.1	000.2458	0081.7	018.5	52.65
132.0	000.1225	0066.0	008.9	319.6	000.2462	0080.7	018.6	52.47
133.0	000.1225	0063.9	008.7	319.1	000.2463	0080.4	018.7	52.34
134.0	000.1225	0062.6	008.6	318.6	000.2465	0080.7	018.8	52.32
135.0	000.1225	0061.2	008.5	318.1	000.2467	0080.7	018.9	52.25
136.0	000.1225	0060.6	008.5	317.7	000.2468	0079.9	018.9	52.14
137.0	000.1225	0058.7	008.4	317.2	000.2470	0079.4	019.0	51.97
138.0	000.1225	0056.4	008.2	316.8	000.2471	0078.4	019.2	51.71
139.0	000.1225	0054.6	008.0	316.4	000.2473	0077.8	019.4	51.52
140.0	000.1225	0053.4	007.9	316.0	000.2474	0077.7	019.5	51.42
141.0	000.1225	0053.1	007.9	315.6	000.2475	0077.9	019.5	51.41
142.0	000.1225	0051.9	007.8	315.2	000.2477	0077.7	019.6	51.31
143.0	000.1225	0051.5	007.8	314.9	000.2478	0077.0	019.7	51.18
144.0	000.1225	0050.7	007.7	314.5	000.2479	0076.5	019.8	51.05
145.0	000.1225	0050.6	007.7	314.1	000.2481	0076.5	019.8	51.04
146.0	000.1225	0048.9	007.5	313.8	000.2482	0076.5	020.0	50.89
147.0	000.1225	0049.2	007.6	313.5	000.2483	0076.0	020.0	50.84
148.0	000.1225	0048.6	007.5	313.1	000.2484	0075.6	020.1	50.73
149.0	000.1225	0048.2	007.5	312.8	000.2485	0075.7	020.1	50.68
150.0	000.1225	0047.3	007.4	312.5	000.2486	0075.5	020.3	50.58
151.0	000.1190	0046.9	007.3	312.2	000.2487	0075.3	020.4	50.45
152.0	000.1156	0045.6	007.2	312.1	000.2488	0075.2	020.6	50.28
153.0	000.1122	0045.2	007.1	311.8	000.2489	0075.2	020.7	50.18
154.0	000.1089	0044.4	006.9	311.6	000.2489	0075.2	020.9	50.06
155.0	000.1056	0044.3	006.9	311.4	000.2490	0075.5	021.0	50.01
156.0	000.1024	0045.1	006.9	311.1	000.2491	0075.8	021.0	50.02
157.0	000.0992	0045.7	006.9	310.8	000.2492	0076.1	021.1	50.01
158.0	000.0961	0046.3	006.9	310.5	000.2493	0076.2	021.1	49.98
159.0	000.0930	0047.2	006.9	310.2	000.2494	0076.2	021.2	49.93
160.0	000.0900	0047.7	006.9	309.9	000.2495	0076.1	021.2	49.87
161.0	000.0900	0047.8	006.9	309.7	000.2494	0076.3	021.3	49.85
162.0	000.0900	0048.3	006.9	309.3	000.2493	0076.3	021.3	49.82
163.0	000.0900	0049.0	007.0	309.0	000.2491	0075.8	021.3	49.74
164.0	000.0900	0048.3	006.9	308.8	000.2491	0075.5	021.5	49.62
165.0	000.0900	0050.3	007.1	308.3	000.2489	0074.8	021.4	49.57
166.0	000.0900	0050.2	007.1	308.0	000.2488	0074.1	021.5	49.43
167.0	000.0900	0051.2	007.1	307.7	000.2487	0073.1	021.5	49.29
168.0	000.0900	0050.5	007.1	307.5	000.2486	0072.9	021.6	49.17
169.0	000.0900	0050.7	007.1	307.2	000.2485	0072.5	021.7	49.06
170.0	000.0900	0052.3	007.2	306.8	000.2484	0072.4	021.7	49.05

Exhibit 7

Contour Protection Studies Toward Select Allocation Concern(s)

03-01-2018 Terrain Data: NED 03 SEC FMOver Analysis

1763621 BNPFT20170801AGZ

1772353

Channel = 281D
 Max ERP = 0.25 kW
 RCAMSL = 156 m
 N. Lat. 32 54 07.5
 W. Lng. 93 58 58.3
 Protected
 60 dBu

Channel = 280D
 Max ERP = 0.25 kW
 RCAMSL = 134 m
 N. Lat. 33 04 58.0
 W. Lng. 94 10 58.0
 Interfering
 54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
272.0	000.2500	0084.1	011.8	160.9	000.0900	0047.9	020.8	41.81	
273.0	000.2500	0084.3	011.9	160.7	000.0900	0048.1	020.6	42.01	
274.0	000.2500	0084.7	011.9	160.6	000.0900	0048.1	020.4	42.17	
275.0	000.2500	0084.2	011.9	160.2	000.0900	0047.9	020.3	42.27	
276.0	000.2500	0084.5	011.9	160.0	000.0900	0047.7	020.1	42.40	
277.0	000.2500	0084.6	011.9	159.8	000.0907	0047.6	019.9	42.56	
278.0	000.2500	0083.6	011.8	159.3	000.0920	0047.4	019.7	42.71	
279.0	000.2500	0081.8	011.7	158.7	000.0938	0047.0	019.6	42.82	
280.0	000.2500	0078.9	011.5	157.9	000.0963	0046.3	019.5	42.84	
281.0	000.2500	0077.4	011.4	157.4	000.0981	0045.9	019.4	42.94	
282.0	000.2500	0076.7	011.4	156.9	000.0994	0045.6	019.3	43.05	
283.0	000.2500	0075.9	011.3	156.5	000.1010	0045.2	019.1	43.13	
284.0	000.2500	0074.4	011.2	155.9	000.1028	0045.1	019.0	43.27	
285.0	000.2500	0074.6	011.2	155.5	000.1039	0044.9	018.9	43.41	
286.0	000.2500	0074.0	011.2	155.0	000.1055	0044.3	018.8	43.46	
287.0	000.2500	0072.5	011.1	154.4	000.1076	0044.2	018.7	43.57	
288.0	000.2500	0070.6	010.9	153.7	000.1099	0044.8	018.6	43.85	
289.0	000.2500	0071.4	011.0	153.4	000.1109	0045.2	018.5	44.11	
290.0	000.2500	0073.0	011.1	153.2	000.1115	0045.2	018.3	44.32	
291.0	000.2500	0071.8	011.0	152.6	000.1136	0045.2	018.2	44.45	
292.0	000.2500	0072.3	011.1	152.2	000.1149	0045.4	018.0	44.67	
293.0	000.2500	0073.1	011.1	151.8	000.1161	0045.9	017.9	44.96	
294.0	000.2500	0071.9	011.0	151.2	000.1183	0046.7	017.8	45.27	
295.0	000.2500	0071.3	011.0	150.6	000.1204	0047.3	017.7	45.52	
296.0	000.2500	0070.9	011.0	150.1	000.1223	0047.3	017.6	45.68	
297.0	000.2500	0070.0	010.9	149.4	000.1225	0047.5	017.6	45.77	
298.0	000.2500	0068.3	010.8	148.7	000.1225	0048.3	017.6	45.92	
299.0	000.2500	0067.1	010.7	148.0	000.1225	0048.6	017.6	45.99	
300.0	000.2500	0067.6	010.7	147.6	000.1225	0048.9	017.5	46.15	
301.0	000.2500	0067.5	010.7	147.0	000.1225	0049.2	017.4	46.29	
302.0	000.2500	0067.8	010.7	146.5	000.1225	0048.8	017.3	46.28	
303.0	000.2500	0069.3	010.8	146.0	000.1225	0048.9	017.1	46.46	
304.0	000.2500	0070.8	011.0	145.6	000.1225	0049.7	016.9	46.76	

Exhibit 7

Contour Protection Studies Toward Select Allocation Concern(s)

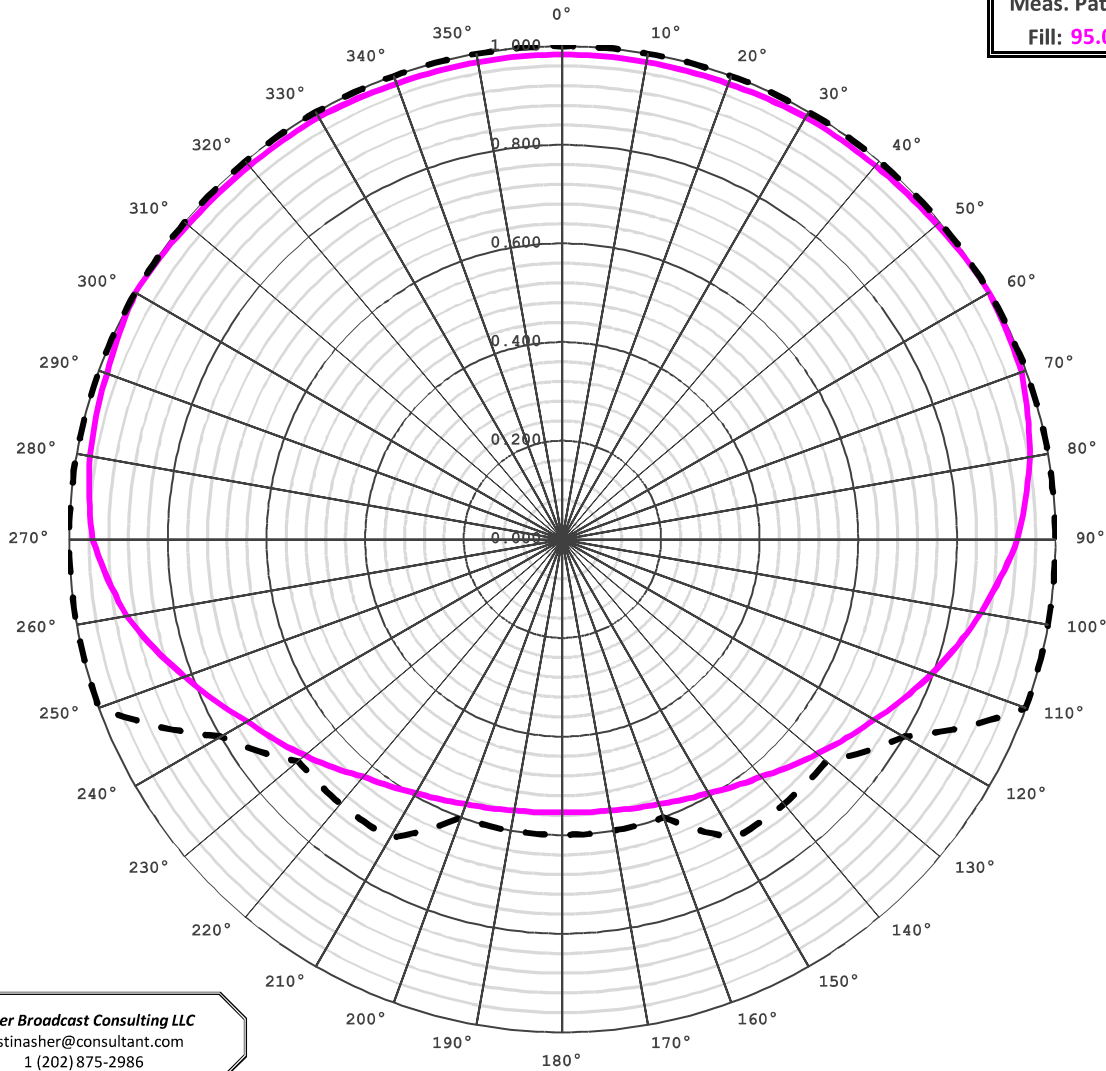
Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
305.0	000.2500	0070.8	010.9	145.0	000.1225	0050.7	016.9	47.00
306.0	000.2500	0071.4	011.0	144.4	000.1225	0050.7	016.8	47.08
307.0	000.2500	0072.4	011.1	143.8	000.1225	0050.9	016.6	47.24
308.0	000.2500	0074.0	011.2	143.3	000.1225	0051.4	016.5	47.47
309.0	000.2500	0075.9	011.3	142.8	000.1225	0051.5	016.3	47.64
310.0	000.2500	0076.1	011.3	142.1	000.1225	0051.7	016.2	47.72
311.0	000.2500	0075.9	011.3	141.4	000.1225	0053.1	016.2	47.99
312.0	000.2500	0075.2	011.2	140.7	000.1225	0053.1	016.2	47.98
313.0	000.2500	0075.6	011.3	140.0	000.1225	0053.3	016.2	48.07
314.0	000.2500	0076.6	011.3	139.3	000.1225	0054.5	016.1	48.34
315.0	000.2500	0077.2	011.4	138.6	000.1225	0055.1	016.0	48.49
316.0	000.2500	0077.7	011.4	137.9	000.1225	0056.5	016.0	48.75
317.0	000.2500	0078.9	011.5	137.2	000.1225	0058.1	015.9	49.06
318.0	000.2500	0080.4	011.6	136.5	000.1225	0059.6	015.8	49.36
319.0	000.2500	0080.5	011.6	135.8	000.1225	0060.8	015.8	49.51
320.0	000.2500	0081.4	011.7	135.0	000.1225	0061.2	015.8	49.59
321.0	000.2500	0081.8	011.7	134.3	000.1225	0062.2	015.8	49.73
322.0	000.2500	0082.5	011.7	133.5	000.1225	0063.1	015.7	49.85
323.0	000.2500	0084.4	011.9	132.7	000.1225	0064.3	015.7	50.07
324.0	000.2500	0085.2	011.9	131.9	000.1225	0066.1	015.6	50.30
325.0	000.2500	0086.7	012.0	131.1	000.1225	0067.4	015.6	50.51
326.0	000.2500	0088.1	012.1	130.2	000.1225	0068.7	015.6	50.68
327.0	000.2500	0088.7	012.1	129.5	000.1244	0069.7	015.6	50.85
328.0	000.2500	0090.2	012.2	128.6	000.1274	0070.6	015.6	51.09
329.0	000.2500	0090.9	012.3	127.8	000.1303	0071.5	015.6	51.25
330.0	000.2500	0092.2	012.4	127.0	000.1334	0071.2	015.6	51.32
331.0	000.2500	0093.8	012.5	126.1	000.1366	0071.9	015.6	51.50
332.0	000.2500	0093.8	012.5	125.4	000.1393	0072.4	015.7	51.57
333.0	000.2500	0093.6	012.5	124.7	000.1418	0072.6	015.8	51.56
334.0	000.2500	0092.8	012.4	124.1	000.1441	0072.5	015.9	51.49
335.0	000.2500	0092.8	012.4	123.4	000.1467	0071.9	016.0	51.41
336.0	000.2500	0092.2	012.4	122.8	000.1488	0071.6	016.2	51.31
337.0	000.2500	0092.6	012.4	122.2	000.1515	0071.6	016.3	51.30
338.0	000.2500	0092.0	012.4	121.6	000.1536	0071.1	016.5	51.17
339.0	000.2500	0091.1	012.3	121.1	000.1555	0070.0	016.6	50.93
340.0	000.2500	0090.3	012.2	120.7	000.1573	0069.1	016.8	50.74
341.0	000.2500	0090.1	012.2	120.2	000.1594	0068.2	016.9	50.56
342.0	000.2500	0091.0	012.3	119.5	000.1642	0066.9	017.0	50.45
343.0	000.2500	0092.7	012.4	118.7	000.1705	0065.6	017.1	50.40
344.0	000.2500	0094.1	012.5	118.0	000.1766	0064.6	017.2	50.35
345.0	000.2500	0094.0	012.5	117.5	000.1806	0063.7	017.4	50.19
346.0	000.2500	0093.7	012.5	117.1	000.1843	0062.7	017.5	50.01
347.0	000.2500	0093.3	012.4	116.7	000.1877	0062.2	017.7	49.87
348.0	000.2500	0093.5	012.4	116.2	000.1918	0060.8	017.9	49.65
349.0	000.2500	0093.6	012.5	115.8	000.1957	0059.9	018.1	49.48

Manufacturer's	Make/Model	Orientation	Power
Element 1:	BKG77	000° True	100.0%
Element 2:			
Element 3:			
Element 4:			

Composite Power: 100%

Exhibit 8 - Copy of Manufacturer's Directional Antenna Pattern Data

Meas. Pattern
Fill: 95.0%



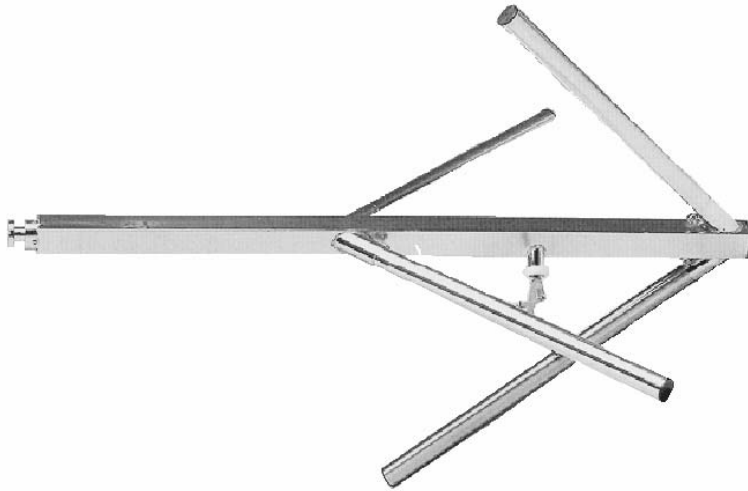
Azimuth ° True	FCC Pattern	Manufacturer's Pattern
0°	1.000	0.983
10°	1.000	0.983
20°	1.000	0.983
30°	1.000	0.988
40°	1.000	0.988
50°	1.000	0.992
60°	1.000	1.000
70°	1.000	0.991
80°	1.000	0.963
90°	1.000	0.923
100°	1.000	0.862
110°	1.000	0.797
120°	0.800	0.731
130°	0.700	0.676
140°	0.700	0.628
150°	0.700	0.594
160°	0.600	0.571
170°	0.600	0.558
180°	0.600	0.553
190°	0.600	0.558
200°	0.600	0.571
210°	0.700	0.594
220°	0.700	0.628
230°	0.700	0.682
240°	0.800	0.738
250°	1.000	0.815
260°	1.000	0.897
270°	1.000	0.953
280°	1.000	0.973
290°	1.000	0.983
300°	1.000	1.000
310°	1.000	0.992
320°	1.000	0.988
330°	1.000	0.988
340°	1.000	0.983
350°	1.000	0.983

Asher Broadcast Consulting LLC
justinasher@consultant.com
1 (202) 875-2986

FCC Pattern: ---
Manufacturer's Pattern: ———

Exhibit 8

Copy of Manufacturer's Directional Antenna Documentation (Actual Antenna Pattern rotated to 000.0°T) (public record copy)



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 8

Copy of Manufacturer's Directional Antenna Documentation (Actual Antenna Pattern rotated to 000.0°T) (public record copy)

Date: 29/04/2013

BKG77SINGLE.PRJ

TX station: BKG77-1

Site name:

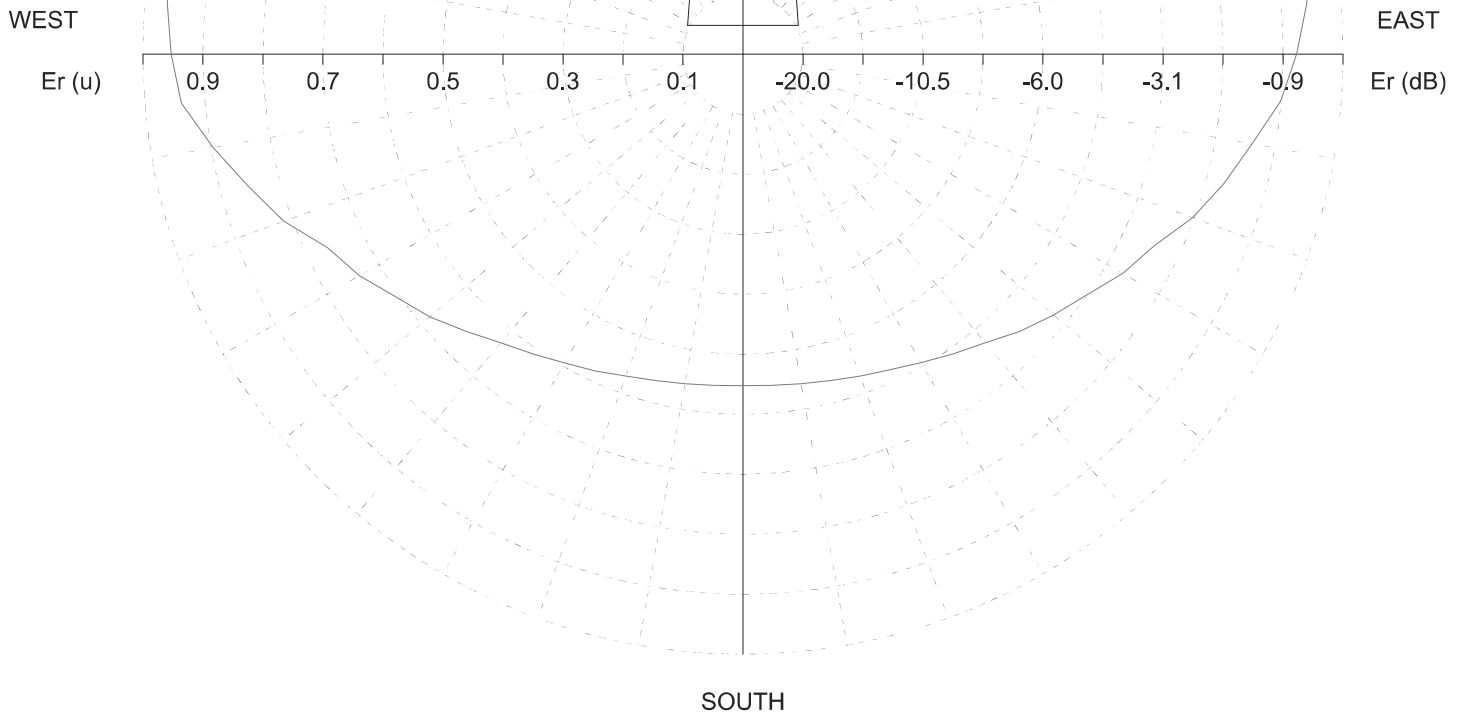
Frequency: 100.00 MHz

Horizontal diagram of Maxima

NORTH

Max azimuth: 60°

Max depression: 0.0°



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

ERP E.max (KW): 0.387

Exhibit 8

Copy of Manufacturer's Directional Antenna Documentation

(Actual Antenna Pattern rotated to 000.0°T) (public record copy)

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 8

Copy of Manufacturer's Directional Antenna Documentation (Actual Antenna Pattern rotated to 000.0°T) (public record copy)

Date: 29/04/2013

BKG77SINGLE.PRJ

TX station: BKG77-1

Site name:

Frequency: 100.00 MHz

Vertical diagram

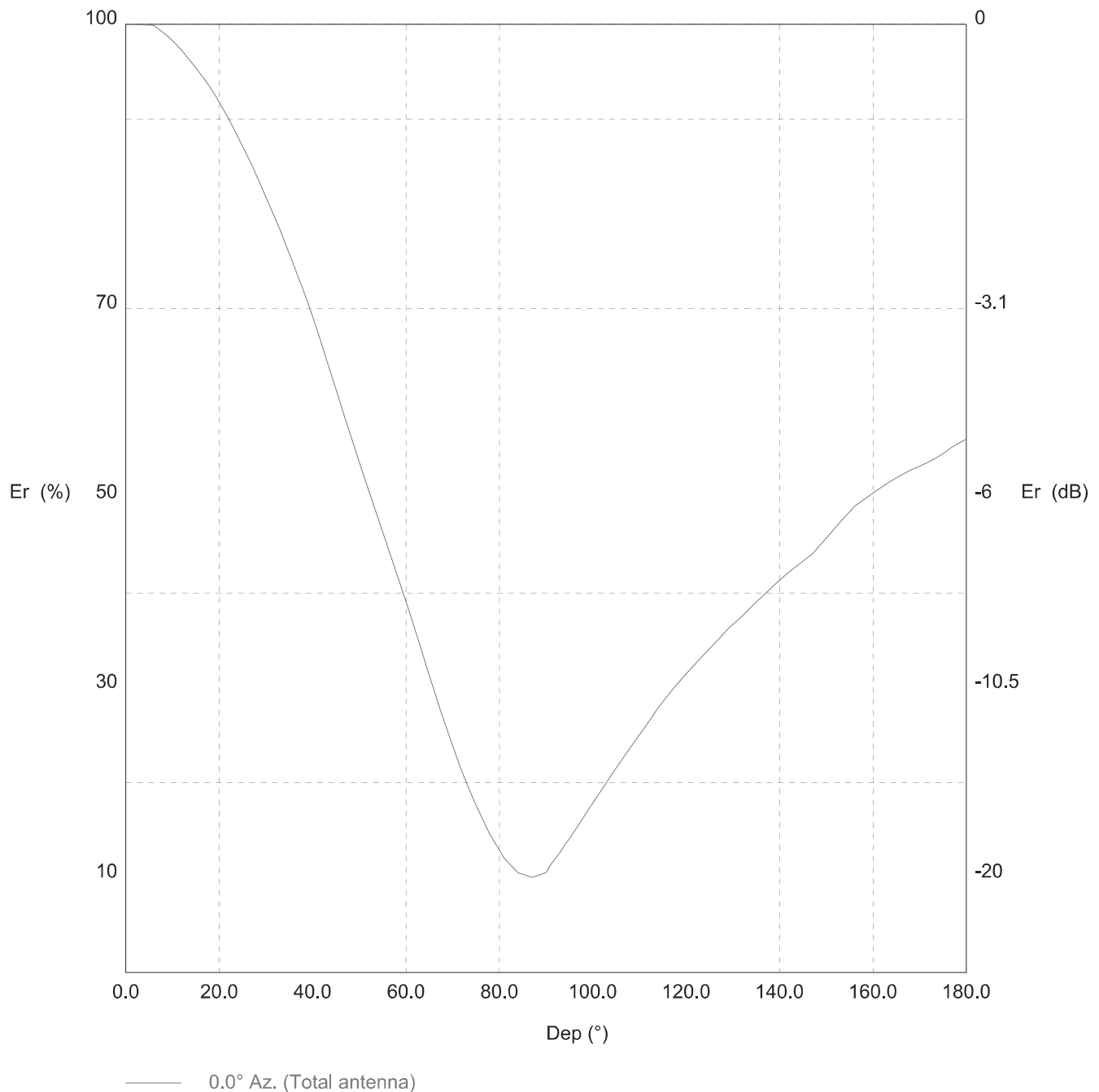


Exhibit 8

Copy of Manufacturer's Directional Antenna Documentation

(Actual Antenna Pattern rotated to 000.0°T) (public record copy)

Date: 29/04/2013

BKG77SINGLE.PRJ

TX station: BKG77-1

Site name:

Frequency: 100.00 MHz

Vertical diagram at an azimuth of 0° degrees

Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)
0.0	100.0	373.6	60.0	39.1	57.2	120.0	31.5	37.0
1.0	100.0	373.5	61.0	37.6	52.8	121.0	32.0	38.3
2.0	100.0	373.4	62.0	36.1	48.6	122.0	32.6	39.6
3.0	99.9	373.3	63.0	34.5	44.6	123.0	33.1	41.0
4.0	99.9	373.1	64.0	32.9	40.5	124.0	33.6	42.2
5.0	99.9	372.9	65.0	31.3	36.6	125.0	34.1	43.5
6.0	99.9	372.8	66.0	29.7	33.0	126.0	34.6	44.7
7.0	99.5	369.9	67.0	28.2	29.8	127.0	35.2	46.2
8.0	99.1	367.0	68.0	26.8	26.8	128.0	35.7	47.6
9.0	98.7	364.1	69.0	25.3	23.9	129.0	36.2	49.1
10.0	98.2	360.5	70.0	23.9	21.3	130.0	36.7	50.3
11.0	97.7	356.9	71.0	22.5	18.9	131.0	37.1	51.5
12.0	97.2	353.3	72.0	21.1	16.6	132.0	37.6	52.7
13.0	96.6	348.9	73.0	19.9	14.8	133.0	38.1	54.1
14.0	96.0	344.5	74.0	18.8	13.2	134.0	38.6	55.6
15.0	95.4	340.1	75.0	17.6	11.6	135.0	39.1	57.0
16.0	94.7	335.4	76.0	16.6	10.2	136.0	39.5	58.4
17.0	94.1	330.8	77.0	15.5	9.0	137.0	40.0	59.7
18.0	93.4	326.1	78.0	14.5	7.8	138.0	40.4	61.1
19.0	92.6	320.4	79.0	13.7	7.0	139.0	40.9	62.5
20.0	91.8	314.7	80.0	12.9	6.2	140.0	41.4	63.9
21.0	91.0	309.1	81.0	12.0	5.4	141.0	41.8	65.3
22.0	90.0	302.7	82.0	11.5	5.0	142.0	42.2	66.5
23.0	89.1	296.5	83.0	11.0	4.5	143.0	42.6	67.8
24.0	88.1	290.3	84.0	10.5	4.1	144.0	43.0	69.0
25.0	87.2	283.8	85.0	10.3	4.0	145.0	43.4	70.3
26.0	86.2	277.4	86.0	10.2	3.9	146.0	43.8	71.6
27.0	85.2	271.1	87.0	10.0	3.7	147.0	44.1	72.8
28.0	84.0	263.9	88.0	10.2	3.9	148.0	44.7	74.7
29.0	82.9	256.8	89.0	10.4	4.0	149.0	45.3	76.5
30.0	81.8	249.8	90.0	10.5	4.1	150.0	45.8	78.4
31.0	80.6	242.9	91.0	11.4	4.8	151.0	46.4	80.3
32.0	79.5	236.1	92.0	12.0	5.4	152.0	46.9	82.3
33.0	78.3	229.3	93.0	12.7	6.0	153.0	47.5	84.3
34.0	77.1	222.0	94.0	13.4	6.7	154.0	48.0	86.2
35.0	75.8	214.7	95.0	14.1	7.4	155.0	48.6	88.2
36.0	74.5	207.6	96.0	14.8	8.2	156.0	49.1	90.2
37.0	73.2	200.4	97.0	15.6	9.1	157.0	49.5	91.5
38.0	71.9	193.3	98.0	16.4	10.0	158.0	49.8	92.8
39.0	70.6	186.3	99.0	17.1	11.0	159.0	50.2	94.1
40.0	69.1	178.6	100.0	17.9	11.9	160.0	50.5	95.4
41.0	67.6	170.9	101.0	18.6	12.9	161.0	50.9	96.8
42.0	66.1	163.5	102.0	19.3	13.9	162.0	51.2	98.1
43.0	64.6	156.0	103.0	20.1	15.0	163.0	51.5	99.2
44.0	63.1	148.7	104.0	20.8	16.2	164.0	51.8	100.4
45.0	61.6	141.6	105.0	21.5	17.3	165.0	52.1	101.6
46.0	60.0	134.4	106.0	22.3	18.5	166.0	52.4	102.7
47.0	58.4	127.5	107.0	23.0	19.7	167.0	52.7	103.7
48.0	56.8	120.7	108.0	23.7	21.0	168.0	53.0	104.8
49.0	55.3	114.4	109.0	24.4	22.2	169.0	53.2	105.7
50.0	53.8	108.2	110.0	25.1	23.5	170.0	53.4	106.5
51.0	52.3	102.2	111.0	25.7	24.8	171.0	53.6	107.4
52.0	50.8	96.6	112.0	26.5	26.2	172.0	53.9	108.4
53.0	49.4	91.1	113.0	27.2	27.6	173.0	54.1	109.4
54.0	47.9	85.8	114.0	27.9	29.0	174.0	54.4	110.5
55.0	46.5	80.7	115.0	28.5	30.4	175.0	54.7	111.9
56.0	45.0	75.7	116.0	29.2	31.8	176.0	55.1	113.3
57.0	43.6	71.0	117.0	29.8	33.1	177.0	55.4	114.7
58.0	42.1	66.2	118.0	30.4	34.4	178.0	55.7	115.9
59.0	40.6	61.6	119.0	30.9	35.7	179.0	56.0	117.0