

Exhibit 13.1 - Antenna Structure Registration

Registration 1003751

 [Map Registration](#)

Registration Detail

| | | | |
|-------------|----------|-------------|-------------|
| Reg Number | 1003751 | Status | Constructed |
| File Number | A0429021 | Constructed | 07/22/1987 |
| EMI | No | Dismantled | |
| NEPA | No | | |

Antenna Structure

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

Location (in NAD83 Coordinates)

| | | | |
|--------------------|----------------------------|----------------------------|-------------------------------------|
| Lat/Long | 45-19-17.0 N 084-52-33.0 W | Address | .2 KM N OF KING RD .6 KM E OF KRAUS |
| City, State | PETOSKEY , MI | | |
| Zip | 49770 | County | EMMET |
| Center of AM Array | | Position of Tower in Array | |

Heights (meters)

| | |
|--|---|
| Elevation of Site Above Mean Sea Level | Overall Height Above Ground (AGL) |
| 380.0 | 174.0 |
| Overall Height Above Mean Sea Level | Overall Height Above Ground w/o Appurtenances |
| 554.0 | 173.1 |

Painting and Lighting Specifications

FAA Chapters 3, 4, 5, 9

Paint and Light in Accordance with FAA Circular Number 70/7460-1G

FAA Notification

| | | | |
|-----------|----------------|----------------|------------|
| FAA Study | 85-AGL-1425-OE | FAA Issue Date | 10/17/1985 |
|-----------|----------------|----------------|------------|

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Owner & Contact Information

| | | | |
|--------------|------------|-------------------|-----------|
| FRN | 0008983033 | Owner Entity Type | |
| Assignor FRN | 0002764900 | Assignor ID | L00086826 |

Owner

MacDonald Garber Broadcasting, Inc.
Attention To: Patricia MacDonald
2095 U.S. 131 South
Petoskey , MI 49770

P: (231)347-8713
F:
E: tmac@106khq.com

Contact

P:
F:
E:

■

Last Action Status

| | | | |
|---------|--------------|----------|------------|
| Status | Constructed | Received | 02/12/2005 |
| Purpose | Change Owner | Entered | 02/12/2005 |
| Mode | Interactive | | |

Related Applications

| | |
|------------|------------------------------|
| 02/12/2005 | A0429021 - Change Owner (OC) |
| 12/29/2004 | A0420535 - Admin Update (AU) |
| 10/11/1996 | A0004304 - New (NE) |

▣

Comments**Comments**

None

▣

History**Date****Event**

| | |
|------------|---------------------------------|
| 02/14/2005 | Registration Printed |
| 02/14/2005 | Change of Ownership Letter Sent |
| 02/12/2005 | Change of Ownership Received |

All History (7)

▣

Automated Letters

| | |
|------------|------------------------------------|
| 02/14/2005 | Ownership Change, Reference 402681 |
| 02/14/2005 | Authorization, Reference 402768 |
| 12/30/2004 | Authorization, Reference 389819 |

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CLOSE WINDOW

Exhibit 13.2 - W284DF Present and Proposed Service Contours vs. AM Contours

Munn-Reese.com

WMBN.L

Latitude: 45-20-50 N
Longitude: 084-58-01 W

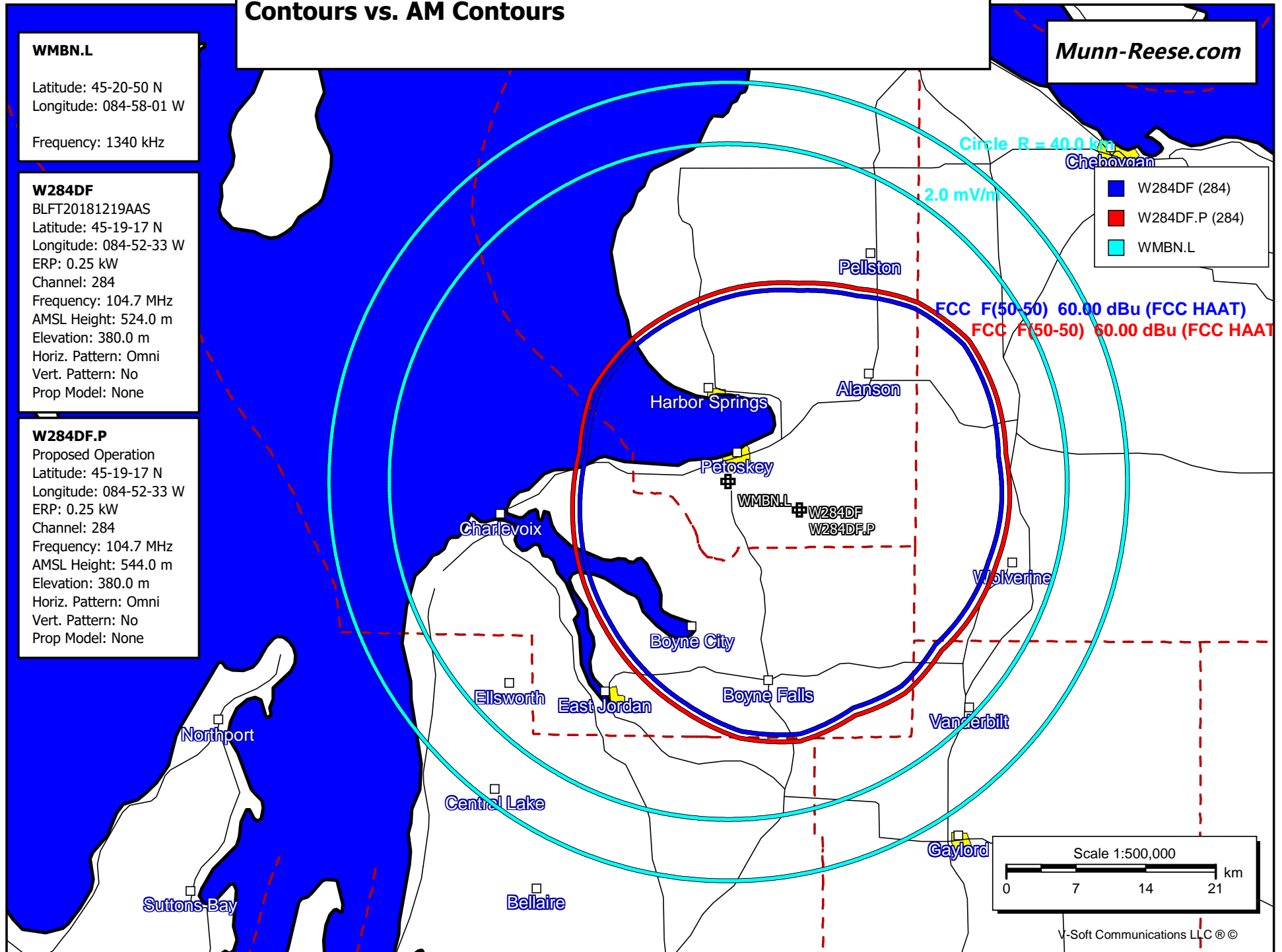
Frequency: 1340 kHz

W284DF

BLFT20181219AAS
Latitude: 45-19-17 N
Longitude: 084-52-33 W
ERP: 0.25 kW
Channel: 284
Frequency: 104.7 MHz
AMSL Height: 524.0 m
Elevation: 380.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

W284DF.P

Proposed Operation
Latitude: 45-19-17 N
Longitude: 084-52-33 W
ERP: 0.25 kW
Channel: 284
Frequency: 104.7 MHz
AMSL Height: 544.0 m
Elevation: 380.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None



| Exhibit 13.3 Macdonald Garber Broadcasting, Inc. | | | | | | | | | | | |
|---|-----------|---|------------|----------------|---------------------------|--------------------------|--------------------|-------------------|---------------------|----------------------------|-----------------|
| REFERENCE | | CH# 284D - 104.7 MHz, Pwr= 0.25 kw, HAAT= 302.2 M, COR= 544 M | | | | | | | DISPLAY DATES | | |
| 45 19 17.0 N. | | Average Protected F(50-50)= 22.64 km | | | | | | | DATA 07-29-19 | | |
| 84 52 33.0 W. | | Omni-directional | | | | | | | SEARCH 08-06-19 | | |
| CH CITY | CALL | TYPE STATE | ANT --- | AZI <--- | DIST FILE # | LAT LNG | PWR(kw) HAAT(M) | INT(km) COR(M) | PRO(km) LICENSEE | *IN* (Overlap | *OUT* in km) |
| 284D Petoskey | W284DF | LIC _C_ MI | | 0.0 0.0 | 0.00 BLFT20181219AAS | 45 19 17.0 84 52 33.0 | 0.250 | 524 | ---Reference--- | Macdonald Garber Broadcast | |
| 286C1 Cheboygan | WGFM | LIC NCX MI | | 149.8 329.9 | 19.45 BLH20080822AAQ | 45 10 12.0 84 45 04.0 | 43.000 295 | 8.5 624 | 66.9 | -10.2* | -48.5* |
| 284C Escanaba | AL1246 | RSV-A ____ MI | | 296.6 114.9 | 197.21 RM9801 | 46 05 31.0 87 09 50.0 | 100.000 600 | 200.0 886 | 93.1 | -26.8* | 32.5 |
| 284C2 Tawas City | WKJC | LIC _CN MI | | 135.1 316.0 | 141.33 BLH19970121KA | 44 24 48.0 83 37 14.0 | 50.000 150 | 136.6 382 | 50.3 | -15.6 | 28.5 |
| 283A Traverse City | WZTC | LIC NCX MI | | 226.6 46.1 | 87.72 BLH20110826AAN | 44 46 36.0 85 41 02.0 | 1.750 187 | 48.3 419 | 32.0 | 16.3 | 21.3 |
| 284C1 Escanaba | WYKX | LIC _CX MI | | 290.8 109.1 | 198.00 BLH20160815AAE | 45 55 45.0 87 16 11.0 | 100.000 105 | 153.2 373 | 57.1 | 21.2 | 70.6 |
| 282C Sault Ste Marie | CJQMFM | OPE _CN ON | | 15.8 196.2 | 147.22 | 46 35 40.0 84 21 00.0 | 100.000 150 | 8.6 426 | 70.0 | 115.4 | 42.2 |
| 285A Lake City | WAIR | LIC ZCX MI | | 196.3 16.0 | 124.13 BLED20170428ABF | 44 14 56.0 85 18 48.0 | 2.800 149 | 39.7 554 | 26.4 | 60.8 | 62.2 |
| 230C2 Mio | WAVC | LIC _CX MI | | 148.2 328.6 | 77.42 BLED20140619ABQ | 44 43 42.0 84 21 37.0 | 50.000 126 | 169.8 477 | 84.6 | 14.5R | 62.9M |
| 230C2 Mio | WAVC | LIC _CX MI | | 148.2 328.6 | 77.42 BMLED20181217AAM | 44 43 42.0 84 21 37.0 | 30.000 132 | 169.8 483 | 84.6 | 14.5R | 62.9M |
| 281D Traverse City | W281CG | LIC _C_ MI | | 225.4 44.8 | 89.02 BLFT20181004ABG | 44 45 22.0 85 40 42.0 | 0.250 | 1.1 461 | 21.6 | 64.7 | 66.1 |
| 284A Elliot Lake | AL9439 | VAC ____ ON | | 55.0 236.6 | 211.68 | 46 23 21.0 82 37 06.0 | 6.000 100 | 86.7 100 | 38.0 | 101.3 | 85.4 |
| 230C2 Newberry | WNBY-FM | LIC _CX MI | | 352.2 172.0 | 126.59 BLH20060420AAV | 46 26 58.0 85 06 04.0 | 50.000 135 | 169.8 368 | 84.6 | 14.5R | 112.1M |
| 285A Spring Bay | CJTH-FM-1 | PRO _VN ON | | 76.2 258.0 | 204.44 20170724CA3 | 45 43 53.0 82 19 27.0 | 0.530 26 | 35.8 232 | 32.9 | 146.3 | 120.4 |
| 282A Manistee | AL5679 | RSV-A ____ MI | | 222.8 41.8 | 166.85 RM11418 | 44 12 40.0 86 17 53.0 | 6.000 100 | 2.7 299 | 27.3 | 140.9 | 136.6 |
| 283B Muskegon | WSNX-FM | LIC _CN MI | | 201.7 20.9 | 252.63 BLH19880930KC | 43 12 16.0 86 01 45.0 | 32.000 189 | 76.0 392 | 64.1 | 153.1 | 139.8 |
| 286A Ephraim | WSBW | LIC _CX WI | | 267.6 86.0 | 173.55 BLH20140617AAM | 45 14 05.0 87 05 27.0 | 3.100 142 | 2.6 323 | 28.5 | 148.2 | 143.9 |
| 285A Alma | WQBX | LIC NCX MI | | 174.2 354.4 | 218.14 BLH20141219ACN | 43 22 08.0 84 36 19.0 | 6.000 100 | 44.4 327 | 28.8 | 150.7 | 157.5 |
| 285C3 Denmark | WPCCK | LIC ZCX WI | | 248.8 66.8 | 245.35 BLH20031110AMW | 44 29 17.0 87 45 40.0 | 10.000 157 | 59.0 396 | 39.8 | 163.5 | 170.4 |
| 281A Linwood | WSAG | LIC NCX MI | | 157.1 337.8 | 192.14 BLH20070522ABZ | 43 43 30.0 83 56 50.0 | 4.600 99 | 2.5 282 | 26.5 | 167.8 | 164.5 |
| 283A Saginaw | WILZ | LIC NCN MI | | 160.2 340.9 | 227.37 BLH19920825KB | 43 23 34.0 83 55 27.0 | 2.900 126 | 40.6 309 | 26.7 | 164.9 | 168.1 |
| 282A Mount Pleasant | WCZY-FM | LIC _CN MI | | 178.8 358.8 | 192.07 BLH19910828KB | 43 35 39.0 84 49 26.0 | 3.000 100 | 2.3 351 | 24.1 | 166.6 | 166.5 |
| 287B Coopersville | AL6792 | RSV-A ____ MI | | 200.1 19.4 | 233.72 RM10545 | 43 20 36.0 85 52 16.0 | 50.000 150 | 5.8 382 | 64.2 | 204.3 | 167.4 |
| 287B Coopersville | WHTS | LIC _CX MI | | 200.6 19.9 | 238.37 BLH20060516ACU | 43 18 35.0 85 54 45.0 | 20.000 242 | 5.7 469 | 64.8 | 209.1 | 171.5 |
| 281A Algoma | WRLU | LIC _C_ WI | | 252.0 70.2 | 210.33 BLH19991012AAW | 44 42 26.0 87 24 26.0 | 2.400 158 | 2.6 354 | 29.4 | 184.9 | 179.8 |

| 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* |
|--------------|---------|---------------|-----|------------|----------------|------------|--------------------|-------------------|----------------------------|-------------------------|--------|
| 230C1 | WDOR-FM | LIC _CN | | 257.6 | 201.68 | 44 54 23.0 | 77.000 | 169.8 | 84.6 | 21.5R | 180.2M |
| Sturgeon Bay | | WI | | 75.9 | BLH19801224AK | 87 22 15.0 | 198 | 396 | Door County Broadcasting C | | |

Terrain database is NED 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= 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)
 "*"affixed to 'IN' or 'OUT' values = site inside restricted contour.
 « = Station meets FCC minimum distance spacing for its class.
 Reference station has protected zone issue: Canada

Exhibit 13.4 - W284DF vs WGFM(FM) in support of a 74.1204(d) Waiver Request

Munn-Reese.com

WMBN.L

Latitude: 45-20-50 N
Longitude: 084-58-01 W

Frequency: 1340 kHz

W284DF.P

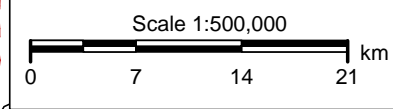
Proposed Operation
Latitude: 45-19-17 N
Longitude: 084-52-33 W
ERP: 0.25 kW
Channel: 284
Frequency: 104.7 MHz
AMSL Height: 544.0 m
Elevation: 380.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

WGFM

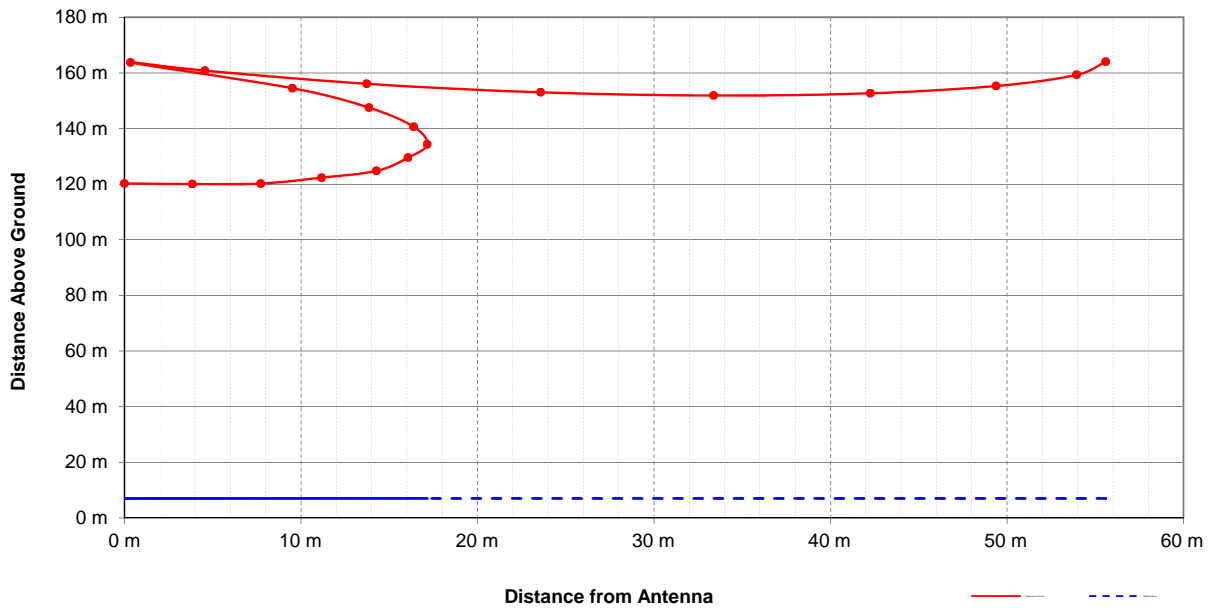
BLH20080822AAQ
Latitude: 45-10-12 N
Longitude: 084-45-04 W
ERP: 43.00 kW
Channel: 286
Frequency: 105.1 MHz
AMSL Height: 624.0 m
Elevation: 468.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

- W284DF.P (284)
- WMBN.L
- WGFM (286)

FCC F(50-50) 86.09 dBu (FCC HAAT)



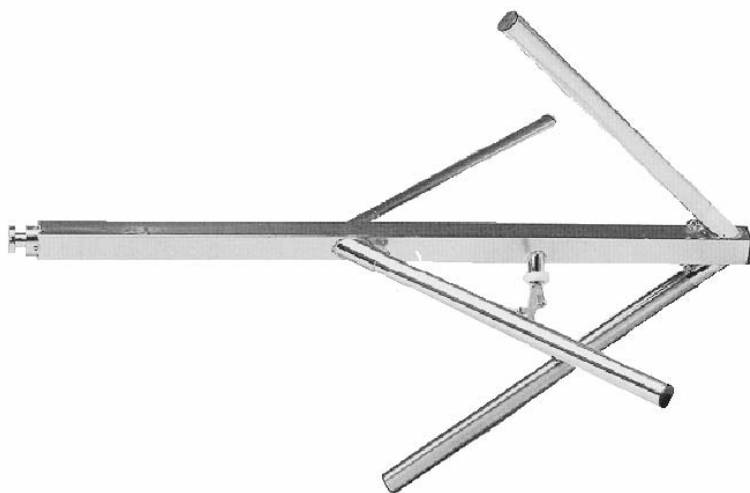
V-Soft Communications LLC. ©



Proposed Antenna: BKG77 2 Bay Fully Spaced
Proposed Power: 0.25 kW
Antenna Height AGL: 164 meters
Interference Contour: 126 dBu f(50:10)
Artificial Ground Plane Height: 7 meters
Distance (Free Space) Equation: $= (10^{((106.92 - [\text{desired dBu}] + [\text{ERP in dBk}]) / 20)) * 1000}$
Field Strength (dBu) Equation $= 106.92 - (20 * (\text{LOG10}[\text{DistMeters} / 1000])) + [\text{ERP in dBk}]$

| Depression | | | | Distance | | | | |
|------------|----------|-------|--------|-----------------|------------------|------------------|-----------------|----------------|
| Angle | Antenna | | | from Ant. | Distance | Field Strength | Distance | Field Strength |
| Below | Relative | ERP | ERP | to Interference | from Ant. to | in dBu @ | from Ant. | in dBu @ |
| Horizon | Field | in kW | in dBk | Contour | Artificial Plane | Artificial Plane | to Ground Level | Ground Level |
| 0° | 1.000 | 0.250 | -6.02 | 55.59 m | infinite | --- | --- | --- |
| -5° | 0.974 | 0.237 | -6.25 | 54.14 m | 1801.37 m | 95.56 dBu | 1881.69 m | 95.18 dBu |
| -10° | 0.902 | 0.203 | -6.92 | 50.14 m | 904.13 m | 100.88 dBu | 944.44 m | 100.50 dBu |
| -15° | 0.787 | 0.155 | -8.10 | 43.75 m | 606.60 m | 103.16 dBu | 633.65 m | 102.78 dBu |
| -20° | 0.639 | 0.102 | -9.91 | 35.52 m | 459.04 m | 103.77 dBu | 479.50 m | 103.39 dBu |
| -25° | 0.468 | 0.055 | -12.62 | 26.01 m | 371.49 m | 102.91 dBu | 388.06 m | 102.53 dBu |
| -30° | 0.285 | 0.020 | -16.92 | 15.84 m | 314.00 m | 100.06 dBu | 328.00 m | 99.68 dBu |
| -35° | 0.100 | 0.003 | -26.02 | 5.56 m | 273.72 m | 92.15 dBu | 285.93 m | 91.77 dBu |
| -40° | 0.008 | 0.000 | -47.96 | 0.44 m | 244.25 m | 71.20 dBu | 255.14 m | 70.83 dBu |
| -45° | 0.242 | 0.015 | -18.34 | 13.45 m | 222.03 m | 101.65 dBu | 231.93 m | 101.27 dBu |
| -50° | 0.388 | 0.038 | -14.24 | 21.57 m | 204.95 m | 106.44 dBu | 214.09 m | 106.06 dBu |
| -55° | 0.514 | 0.066 | -11.80 | 28.57 m | 191.66 m | 109.47 dBu | 200.21 m | 109.09 dBu |
| -60° | 0.617 | 0.095 | -10.21 | 34.30 m | 181.29 m | 111.54 dBu | 189.37 m | 111.16 dBu |
| -65° | 0.684 | 0.117 | -9.32 | 38.02 m | 173.23 m | 112.83 dBu | 180.95 m | 112.45 dBu |
| -70° | 0.751 | 0.141 | -8.51 | 41.75 m | 167.08 m | 113.95 dBu | 174.53 m | 113.58 dBu |
| -75° | 0.776 | 0.151 | -8.22 | 43.14 m | 162.54 m | 114.48 dBu | 169.79 m | 114.10 dBu |
| -80° | 0.800 | 0.160 | -7.96 | 44.47 m | 159.42 m | 114.91 dBu | 166.53 m | 114.53 dBu |
| -85° | 0.794 | 0.158 | -8.02 | 44.14 m | 157.60 m | 114.94 dBu | 164.63 m | 114.57 dBu |
| -90° | 0.787 | 0.155 | -8.10 | 43.75 m | 157.00 m | 114.90 dBu | 164.00 m | 114.52 dBu |

Exhibit 13.5 - Manufacturer's Antenna Specifications



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) | | |

Date: 29/04/2013

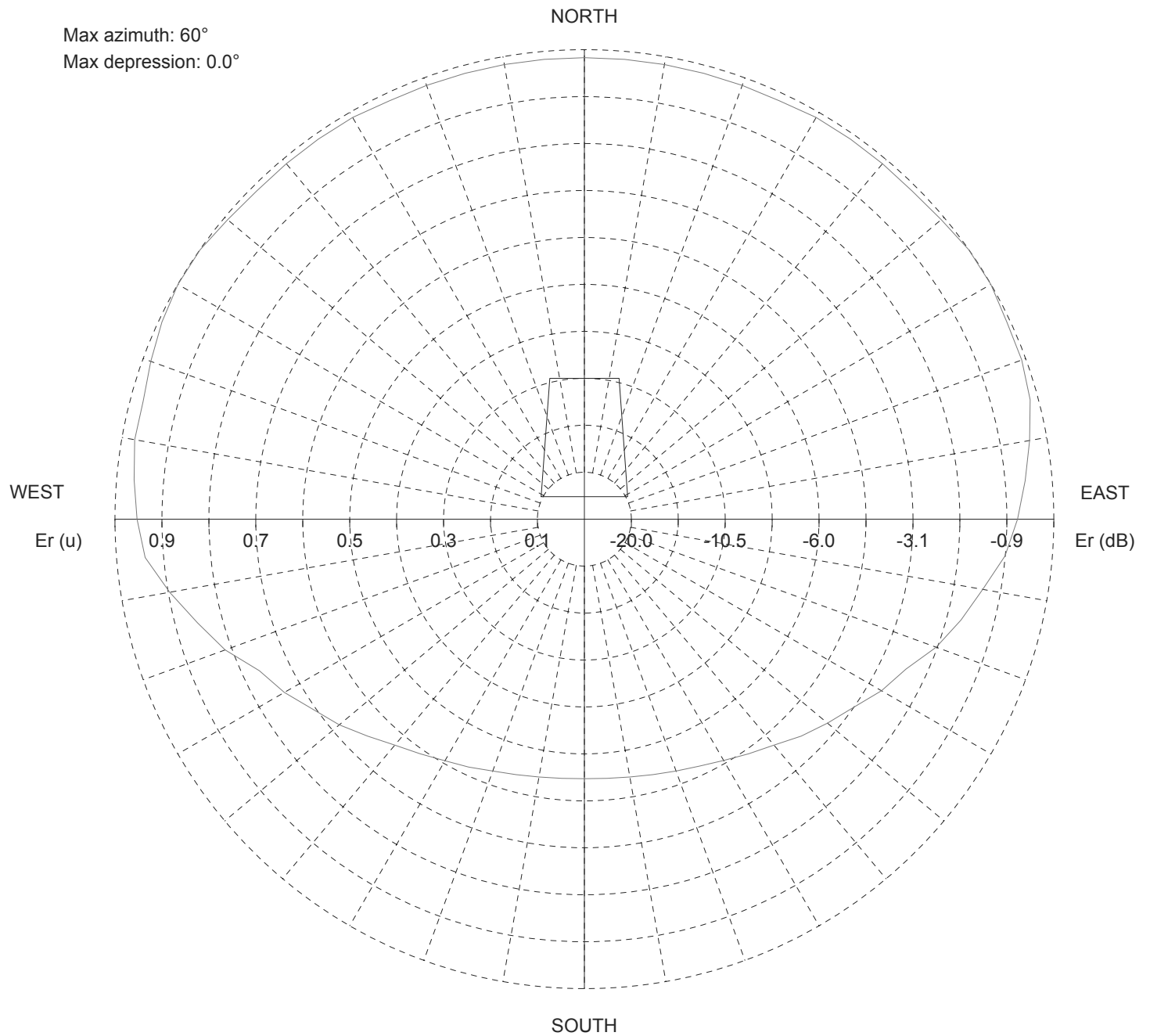
TX station: BKG77/2DA

Site name:

Frequency: 100.00 MHz

Horizontal diagram of Maxima

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

Date: 29/04/2013

TX station: BKG77/2DA

Site name:

Frequency: 100.00 MHz

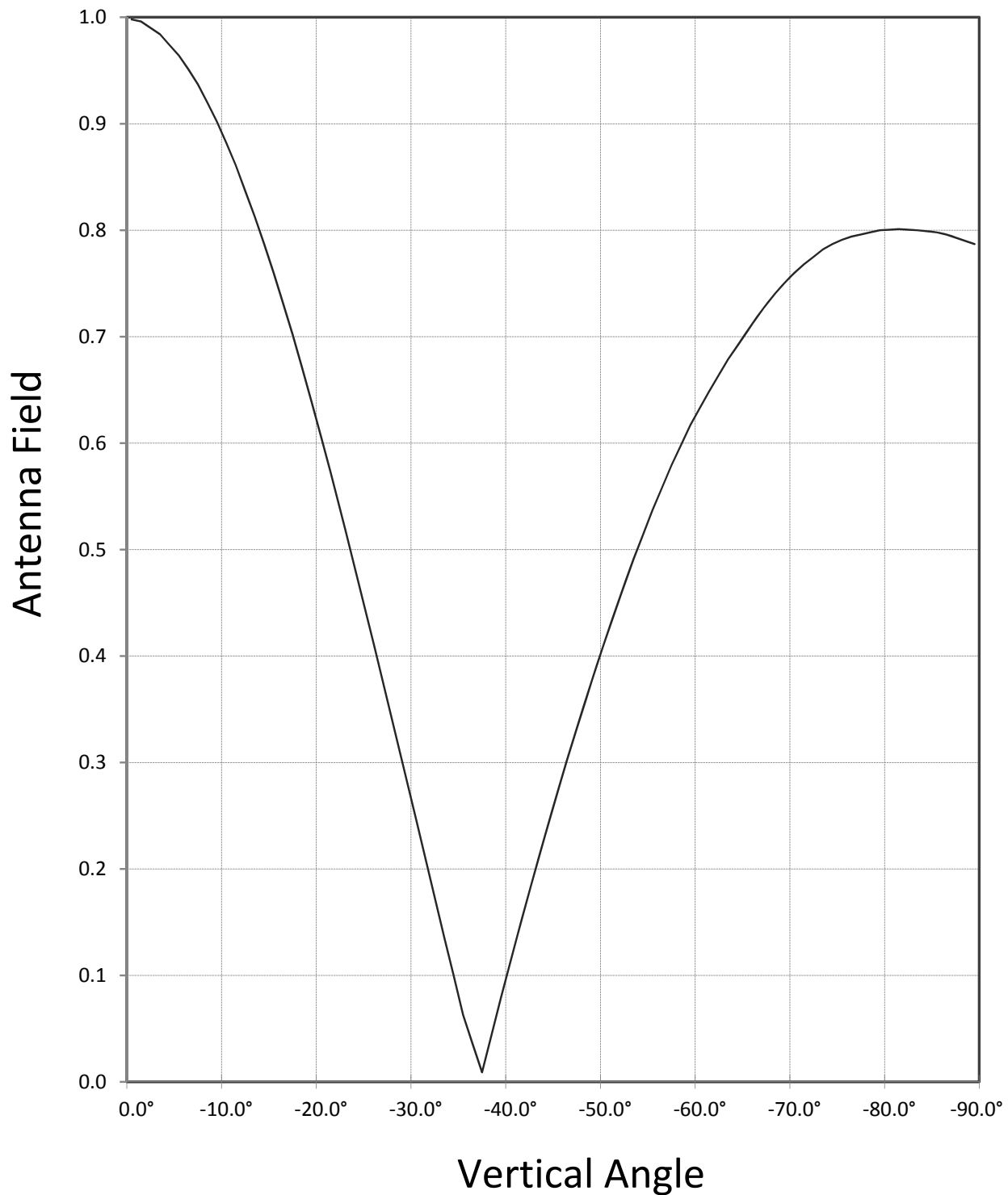
Horizontal diagram of Maxima

| 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 |

Plot of Vertical Radiation Pattern

Manufacturer: NicomUSA, Inc.
Make/Model: BKG77/2-DA
Polarization: Circular
Inter Bay Spacing: 1.0λ (Wavelength)

Frequency: 87.5 MHz - 108.0 MHz
Weight: 14 kg
Max Power: 1.0 kW
Antenna Gain: -0.005 dBd



Tabulation of Vertical Radiation Pattern

Manufacturer: NicomUSA, Inc.

Frequency: 87.5 MHz - 108.0 MHz

Make/Model: BKG77/2-DA

Weight: 14 kg

Polarization: Circular

Max Power: 1 kW

Inter Bay Spacing: 1.0 λ (Wavelength)

Antenna Gain: -0.005 dBd

| Vertical Azimuth | Field (%) | dB | Vertical Azimuth | Field (%) | dB | Vertical Azimuth | Field (%) | dB |
|---------------------|--------------|-------|---------------------|--------------|--------|---------------------|--------------|-------|
| 0.0° | 1.000 | 0.00 | -30.0° | 0.285 | -5.45 | -60.0° | 0.617 | -2.10 |
| -1.0° | 0.998 | -0.01 | -31.0° | 0.248 | -6.06 | -61.0° | 0.633 | -1.99 |
| -2.0° | 0.996 | -0.02 | -32.0° | 0.211 | -6.76 | -62.0° | 0.649 | -1.88 |
| -3.0° | 0.990 | -0.04 | -33.0° | 0.174 | -7.59 | -63.0° | 0.664 | -1.78 |
| -4.0° | 0.984 | -0.07 | -34.0° | 0.136 | -8.66 | -64.0° | 0.679 | -1.68 |
| -5.0° | 0.974 | -0.11 | -35.0° | 0.100 | -10.00 | -65.0° | 0.692 | -1.60 |
| -6.0° | 0.964 | -0.16 | -36.0° | 0.063 | -12.01 | -66.0° | 0.705 | -1.52 |
| -7.0° | 0.951 | -0.22 | -37.0° | 0.036 | -14.44 | -67.0° | 0.718 | -1.44 |
| -8.0° | 0.937 | -0.28 | -38.0° | 0.009 | -20.46 | -68.0° | 0.730 | -1.37 |
| -9.0° | 0.920 | -0.36 | -39.0° | 0.044 | -13.57 | -69.0° | 0.741 | -1.30 |
| -10.0° | 0.902 | -0.45 | -40.0° | 0.079 | -11.02 | -70.0° | 0.751 | -1.24 |
| -11.0° | 0.882 | -0.55 | -41.0° | 0.113 | -9.47 | -71.0° | 0.760 | -1.19 |
| -12.0° | 0.861 | -0.65 | -42.0° | 0.146 | -8.36 | -72.0° | 0.768 | -1.15 |
| -13.0° | 0.837 | -0.77 | -43.0° | 0.179 | -7.47 | -73.0° | 0.775 | -1.11 |
| -14.0° | 0.813 | -0.90 | -44.0° | 0.211 | -6.76 | -74.0° | 0.782 | -1.07 |
| -15.0° | 0.787 | -1.04 | -45.0° | 0.242 | -6.16 | -75.0° | 0.787 | -1.04 |
| -16.0° | 0.760 | -1.19 | -46.0° | 0.273 | -5.64 | -76.0° | 0.791 | -1.02 |
| -17.0° | 0.731 | -1.36 | -47.0° | 0.303 | -5.19 | -77.0° | 0.794 | -1.00 |
| -18.0° | 0.702 | -1.54 | -48.0° | 0.332 | -4.79 | -78.0° | 0.796 | -0.99 |
| -19.0° | 0.671 | -1.73 | -49.0° | 0.360 | -4.44 | -79.0° | 0.798 | -0.98 |
| -20.0° | 0.639 | -1.94 | -50.0° | 0.388 | -4.11 | -80.0° | 0.800 | -0.97 |
| -21.0° | 0.606 | -2.18 | -51.0° | 0.415 | -3.82 | -81.0° | 0.801 | -0.97 |
| -22.0° | 0.573 | -2.42 | -52.0° | 0.441 | -3.56 | -82.0° | 0.801 | -0.96 |
| -23.0° | 0.538 | -2.69 | -53.0° | 0.466 | -3.32 | -83.0° | 0.801 | -0.97 |
| -24.0° | 0.503 | -2.98 | -54.0° | 0.491 | -3.09 | -84.0° | 0.800 | -0.97 |
| -25.0° | 0.468 | -3.30 | -55.0° | 0.514 | -2.89 | -85.0° | 0.799 | -0.97 |
| -26.0° | 0.432 | -3.65 | -56.0° | 0.537 | -2.70 | -86.0° | 0.798 | -0.98 |
| -27.0° | 0.396 | -4.02 | -57.0° | 0.558 | -2.53 | -87.0° | 0.796 | -0.99 |
| -28.0° | 0.359 | -4.45 | -58.0° | 0.579 | -2.37 | -88.0° | 0.793 | -1.01 |
| -29.0° | 0.322 | -4.92 | -59.0° | 0.598 | -2.23 | -89.0° | 0.790 | -1.02 |
| | | | | | | -90.0° | 0.787 | -1.04 |