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TECHNICAL CHARACTERISTICS OF TRANSMIT RECEIVE EARTH STATION

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Company: HOUSTON CHRISTIAN BROADCASTERS

Site Name, State: HOUSTON, TX

Call Sign:

| | | |
|----------------------------------|---------|-----------------|
| Latitude | (NAD83) | 29 43 36.6 N |
| Longitude | (NAD83) | 95 24 57.3 W |
| Elevation AMSL | (ft/m) | 53.00 16.15 |
| Receive Frequency Range | (MHz) | 3700.00 4200.00 |
| Transmit Frequency Range | (MHz) | 5925.00 6425.00 |
| Range of Satellite Orbital Long. | (deg W) | 60 143 |
| Range of Azimuths from North | (deg) | 124.89 245.63 |
| Antenna Centerline | (ft/m) | 8.00 2.44 |
| Antenna Elevation Angles | (deg) | 38.24 28.21 |

| | | | |
|----------------------------------|--------------------------------|----------|----------|
| Equipment Parameters | | 3.95 GHz | 6.17 GHz |
| Antenna Gain, Main Beam | (dbI) | 41.50 | 46.50 |
| 15 DB Half Beamwidth | (deg) | 1.60 | 1.00 |
| Antennas | Receive: PRODELIN 1383 (3.8M) | | |
| | Transmit: PRODELIN 1383 (3.8M) | | |
| Max Transmitter Power | (dbW/4KHz) | | -6.40 |
| Max EIRP Main Beam | (dbW/4KHz) | | 40.10 |
| Modulation / Emission Designator | Digital | 200KG7W | 36M0G7W |

| | | | |
|-----------------------------------|-------|----------|----------|
| Coordination Parameters | | 3.95 GHz | 6.17 GHz |
| Max Greater Circle Distances | (km) | 279.99 | 171.83 |
| Max Rain Scatter Distances | (km) | 397.73 | 100.00 |
| Max Interference Power Long Term | (dbW) | -140.60 | -151.80 |
| Max Interference Power Short Term | (dbW) | -118.40 | -130.80 |
| Rain Zone / Radio Zone | | 2 | A |

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Horizon Angle Horizon Gain Final Contour - 6.17 GHz TRANSMIT
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Company: HOUSTON CHRISTIAN BROADCASTERS

Site Name, State: HOUSTON, TX

Call Sign:

Latitude (NAD83) 29 43 36.6 N Longitude (NAD83) 95 24 57.3 W

| North Azimuth (deg) | Horizon Angle (deg) | Horizon Gain (db) | Final Contour (km) | North Azimuth (deg) | Horizon Angle (deg) | Horizon Gain (db) | Final Contour (km) |
|---------------------------|---------------------------|-------------------------|--------------------------|---------------------------|---------------------------|-------------------------|--------------------------|
| 0 | 0.00 | -15.95 | 152.4 | 180 | 0.05 | -13.00 | 152.4 |
| 5 | 0.00 | -17.35 | 152.4 | 185 | 0.04 | -12.97 | 152.4 |
| 10 | 0.00 | -14.31 | 152.4 | 190 | 0.01 | -12.44 | 152.4 |
| 15 | 0.00 | -11.22 | 152.4 | 195 | 0.00 | -11.58 | 152.4 |
| 20 | 0.00 | -10.00 | 152.4 | 200 | 0.00 | -10.44 | 153.0 |
| 25 | 0.02 | -10.00 | 152.4 | 205 | 0.00 | -10.00 | 155.0 |
| 30 | 0.16 | -10.00 | 152.4 | 210 | 0.02 | -10.00 | 156.8 |
| 35 | 0.10 | -10.00 | 152.4 | 215 | 0.00 | -10.00 | 158.4 |
| 40 | 0.15 | -10.04 | 152.4 | 220 | 0.00 | -10.00 | 159.6 |
| 45 | 0.14 | -11.72 | 152.4 | 225 | 0.00 | -9.44 | 160.4 |
| 50 | 0.12 | -13.00 | 152.4 | 230 | 0.00 | -6.93 | 160.7 |
| 55 | 0.00 | -13.00 | 152.4 | 235 | 0.00 | -5.00 | 160.4 |
| 60 | 0.00 | -13.00 | 152.4 | 240 | 0.01 | -4.65 | 159.7 |
| 65 | 0.00 | -13.00 | 152.4 | 245 | 0.00 | -4.52 | 158.5 |
| 70 | 0.00 | -13.00 | 153.1 | 250 | 0.02 | -4.60 | 156.9 |
| 75 | 0.00 | -13.00 | 156.1 | 255 | 0.02 | -4.89 | 155.1 |
| 80 | 0.00 | -13.00 | 159.2 | 260 | 0.00 | -6.39 | 153.0 |
| 85 | 0.00 | -11.97 | 162.3 | 265 | 0.00 | -8.76 | 152.4 |
| 90 | 0.00 | -10.44 | 165.2 | 270 | 0.07 | -10.00 | 152.4 |
| 95 | 0.00 | -10.00 | 167.9 | 275 | 0.06 | -10.00 | 152.4 |
| 100 | 0.00 | -10.00 | 170.1 | 280 | 0.01 | -10.00 | 152.4 |
| 105 | 0.00 | -10.00 | 171.5 | 285 | 0.09 | -10.00 | 152.4 |
| 110 | 0.00 | -10.00 | 171.8 | 290 | 0.03 | -10.97 | 152.4 |
| 115 | 0.00 | -10.00 | 171.2 | 295 | 0.00 | -12.99 | 152.4 |
| 120 | 0.00 | -10.00 | 169.6 | 300 | 0.01 | -13.00 | 152.4 |
| 125 | 0.00 | -10.00 | 167.3 | 305 | 0.00 | -13.00 | 152.4 |
| 130 | 0.00 | -10.00 | 164.5 | 310 | 0.00 | -13.00 | 152.4 |
| 135 | 0.00 | -10.00 | 161.5 | 315 | 0.00 | -13.00 | 152.4 |
| 140 | 0.00 | -10.00 | 158.4 | 320 | 0.15 | -13.00 | 152.4 |
| 145 | 0.00 | -10.00 | 155.5 | 325 | 0.09 | -12.31 | 152.4 |
| 150 | 0.02 | -10.00 | 153.0 | 330 | 0.03 | -10.42 | 152.4 |
| 155 | 0.00 | -10.00 | 152.4 | 335 | 0.26 | -10.00 | 139.2 |
| 160 | 0.00 | -10.44 | 152.4 | 340 | 0.12 | -10.00 | 152.4 |
| 165 | 0.00 | -11.58 | 152.4 | 345 | 0.00 | -10.00 | 152.4 |
| 170 | 0.00 | -12.45 | 152.4 | 350 | 0.00 | -10.00 | 152.4 |
| 175 | 0.00 | -12.99 | 152.4 | 355 | 0.00 | -12.43 | 152.4 |

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|---------------|--------------|---------------|---|------------------|
| Horizon Angle | Horizon Gain | Final Contour | - | 3.95 GHz RECEIVE |
|---------------|--------------|---------------|---|------------------|

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Company: HOUSTON CHRISTIAN BROADCASTERS

Site Name, State: HOUSTON, TX

Call Sign:

Latitude (NAD83) 29 43 36.6 N Longitude (NAD83) 95 24 57.3 W

| North Azimuth (deg) | Horizon Angle (deg) | Horizon Gain (db) | Final Contour (km) | North Azimuth (deg) | Horizon Angle (deg) | Horizon Gain (db) | Final Contour (km) |
|---------------------|---------------------|-------------------|--------------------|---------------------|---------------------|-------------------|--------------------|
| 0 | 0.00 | -10.66 | 247.3 | 180 | 0.05 | -10.00 | 247.3 |
| 5 | 0.00 | -11.52 | 247.3 | 185 | 0.04 | -10.00 | 247.3 |
| 10 | 0.00 | -9.54 | 247.3 | 190 | 0.01 | -10.00 | 247.3 |
| 15 | 0.00 | -7.00 | 247.3 | 195 | 0.00 | -10.00 | 247.3 |
| 20 | 0.00 | -6.00 | 247.3 | 200 | 0.00 | -10.00 | 248.2 |
| 25 | 0.02 | -6.00 | 247.3 | 205 | 0.00 | -10.00 | 251.5 |
| 30 | 0.16 | -7.01 | 247.3 | 210 | 0.02 | -9.22 | 254.5 |
| 35 | 0.10 | -10.00 | 247.3 | 215 | 0.00 | -8.33 | 257.1 |
| 40 | 0.15 | -10.00 | 247.3 | 220 | 0.00 | -7.46 | 259.1 |
| 45 | 0.14 | -10.00 | 247.3 | 225 | 0.00 | -6.67 | 260.3 |
| 50 | 0.12 | -10.00 | 247.3 | 230 | 0.00 | -6.01 | 260.8 |
| 55 | 0.00 | -10.00 | 247.3 | 235 | 0.00 | -5.50 | 260.4 |
| 60 | 0.00 | -10.00 | 247.3 | 240 | 0.01 | -5.02 | 259.1 |
| 65 | 0.00 | -10.00 | 247.3 | 245 | 0.00 | -4.84 | 257.2 |
| 70 | 0.00 | -10.00 | 248.4 | 250 | 0.02 | -4.95 | 254.6 |
| 75 | 0.00 | -10.00 | 253.3 | 255 | 0.02 | -5.35 | 251.6 |
| 80 | 0.00 | -10.00 | 258.4 | 260 | 0.00 | -5.87 | 248.3 |
| 85 | 0.00 | -10.00 | 263.5 | 265 | 0.00 | -6.50 | 247.3 |
| 90 | 0.00 | -10.00 | 268.2 | 270 | 0.07 | -7.23 | 247.3 |
| 95 | 0.00 | -10.00 | 272.6 | 275 | 0.06 | -8.09 | 247.3 |
| 100 | 0.00 | -9.35 | 276.4 | 280 | 0.01 | -9.03 | 247.3 |
| 105 | 0.00 | -8.78 | 279.2 | 285 | 0.09 | -10.00 | 247.3 |
| 110 | 0.00 | -8.31 | 280.0 | 290 | 0.03 | -10.00 | 247.3 |
| 115 | 0.00 | -7.96 | 278.7 | 295 | 0.00 | -10.00 | 247.3 |
| 120 | 0.00 | -7.75 | 275.3 | 300 | 0.01 | -10.00 | 247.3 |
| 125 | 0.00 | -7.68 | 271.5 | 305 | 0.00 | -10.00 | 247.3 |
| 130 | 0.00 | -7.76 | 267.0 | 310 | 0.00 | -10.00 | 247.3 |
| 135 | 0.00 | -7.98 | 262.1 | 315 | 0.00 | -10.00 | 247.3 |
| 140 | 0.00 | -8.33 | 257.1 | 320 | 0.15 | -10.00 | 247.3 |
| 145 | 0.00 | -8.80 | 252.3 | 325 | 0.09 | -10.00 | 247.3 |
| 150 | 0.02 | -9.38 | 248.2 | 330 | 0.03 | -10.00 | 247.3 |
| 155 | 0.00 | -10.00 | 247.3 | 335 | 0.26 | -10.00 | 229.2 |
| 160 | 0.00 | -10.00 | 247.3 | 340 | 0.12 | -6.96 | 247.3 |
| 165 | 0.00 | -10.00 | 247.3 | 345 | 0.00 | -6.00 | 247.3 |
| 170 | 0.00 | -10.00 | 247.3 | 350 | 0.00 | -6.00 | 247.3 |
| 175 | 0.00 | -10.00 | 247.3 | 355 | 0.00 | -8.00 | 247.3 |

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|----------------------|-------------------|---|-------------------|
| Discrimination Angle | Transmission Loss | - | 6.17 GHz TRANSMIT |
|----------------------|-------------------|---|-------------------|

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Company: HOUSTON CHRISTIAN BROADCASTERS

Site Name, State: HOUSTON, TX

Call Sign:

Latitude (NAD83) 29 43 36.6 N Longitude (NAD83) 95 24 57.3 W

| North Azimuth (deg) | Minimum Discrimination Angle (deg) | Trans Loss (db) | North Azimuth (deg) | Minimum Discrimination Angle (deg) | Trans Loss (db) |
|---------------------|------------------------------------|-----------------|---------------------|------------------------------------|-----------------|
| 0 | 111.326 | 161.68 | 180 | 55.299 | 161.68 |
| 5 | 113.043 | 161.68 | 185 | 54.941 | 161.68 |
| 10 | 109.304 | 161.68 | 190 | 53.880 | 161.68 |
| 15 | 105.499 | 161.68 | 195 | 52.163 | 161.68 |
| 20 | 101.644 | 161.68 | 200 | 49.884 | 161.68 |
| 25 | 97.738 | 161.68 | 205 | 47.152 | 161.84 |
| 30 | 93.742 | 161.68 | 210 | 44.048 | 162.58 |
| 35 | 89.851 | 161.68 | 215 | 40.684 | 163.44 |
| 40 | 85.896 | 161.68 | 220 | 37.386 | 164.36 |
| 45 | 81.989 | 161.68 | 225 | 34.436 | 165.25 |
| 50 | 78.106 | 161.68 | 230 | 31.931 | 166.07 |
| 55 | 74.332 | 161.68 | 235 | 29.987 | 166.76 |
| 60 | 70.529 | 161.68 | 240 | 28.703 | 167.23 |
| 65 | 66.793 | 161.68 | 245 | 28.212 | 167.42 |
| 70 | 63.143 | 161.68 | 250 | 28.491 | 167.31 |
| 75 | 59.599 | 161.68 | 255 | 29.583 | 166.90 |
| 80 | 56.187 | 161.68 | 260 | 31.386 | 166.26 |
| 85 | 52.938 | 161.68 | 265 | 33.761 | 165.47 |
| 90 | 49.887 | 161.68 | 270 | 36.554 | 164.61 |
| 95 | 47.078 | 161.86 | 275 | 39.787 | 163.69 |
| 100 | 44.559 | 162.46 | 280 | 43.323 | 162.76 |
| 105 | 42.386 | 163.00 | 285 | 47.002 | 161.88 |
| 110 | 40.615 | 163.46 | 290 | 50.935 | 161.68 |
| 115 | 39.303 | 163.82 | 295 | 54.983 | 161.68 |
| 120 | 38.499 | 164.04 | 300 | 59.109 | 161.68 |
| 125 | 38.235 | 164.12 | 305 | 63.323 | 161.68 |
| 130 | 38.523 | 164.04 | 310 | 67.594 | 161.68 |
| 135 | 39.351 | 163.81 | 315 | 71.913 | 161.68 |
| 140 | 40.684 | 163.44 | 320 | 76.195 | 161.68 |
| 145 | 42.474 | 162.98 | 325 | 80.605 | 161.68 |
| 150 | 44.650 | 162.43 | 330 | 85.030 | 161.68 |
| 155 | 47.197 | 161.83 | 335 | 89.322 | 161.68 |
| 160 | 49.883 | 161.68 | 340 | 93.796 | 161.68 |
| 165 | 52.163 | 161.68 | 345 | 98.251 | 161.68 |
| 170 | 53.892 | 161.68 | 350 | 102.636 | 161.68 |
| 175 | 54.976 | 161.68 | 355 | 106.997 | 161.68 |

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Discrimination Angle      Transmission Loss    -   3.95 GHz RECEIVE
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Company: HOUSTON CHRISTIAN BROADCASTERS

Site Name, State: HOUSTON, TX

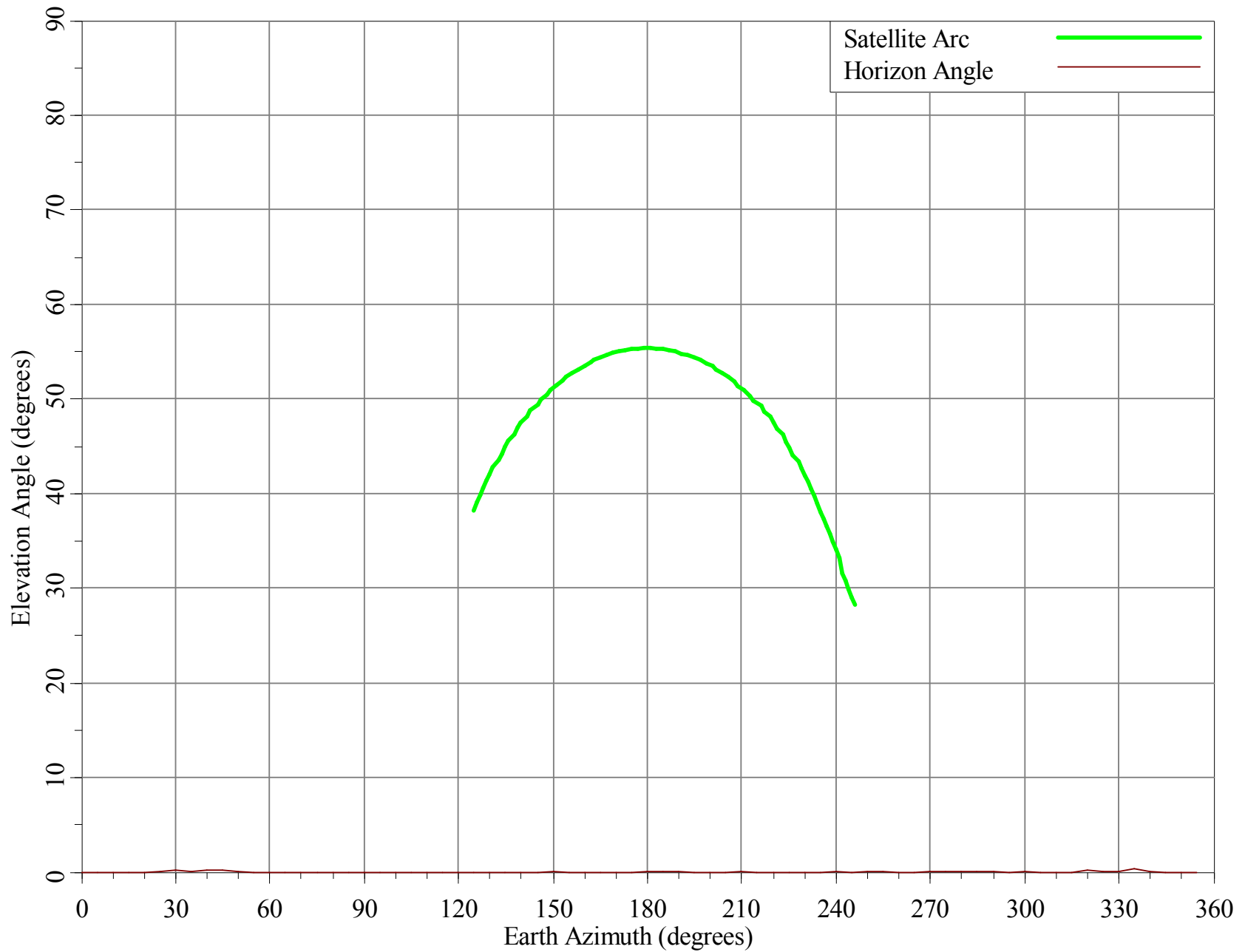
Call Sign:

Latitude (NAD83) 29 43 36.6 N Longitude (NAD83) 95 24 57.3 W

| North Azimuth (deg) | Minimum Discrimination Angle (deg) | Trans Loss (db) | North Azimuth (deg) | Minimum Discrimination Angle (deg) | Trans Loss (db) |
|---------------------|------------------------------------|-----------------|---------------------|------------------------------------|-----------------|
| 0 | 111.326 | 184.96 | 180 | 55.299 | 184.96 |
| 5 | 113.043 | 184.96 | 185 | 54.941 | 184.96 |
| 10 | 109.304 | 184.96 | 190 | 53.880 | 184.96 |
| 15 | 105.499 | 184.96 | 195 | 52.163 | 184.96 |
| 20 | 101.644 | 184.96 | 200 | 49.884 | 184.96 |
| 25 | 97.738 | 184.96 | 205 | 47.152 | 185.12 |
| 30 | 93.742 | 184.96 | 210 | 44.048 | 185.86 |
| 35 | 89.851 | 184.96 | 215 | 40.684 | 186.72 |
| 40 | 85.896 | 184.96 | 220 | 37.386 | 187.64 |
| 45 | 81.989 | 184.96 | 225 | 34.436 | 188.53 |
| 50 | 78.106 | 184.96 | 230 | 31.931 | 189.35 |
| 55 | 74.332 | 184.96 | 235 | 29.987 | 190.04 |
| 60 | 70.529 | 184.96 | 240 | 28.703 | 190.51 |
| 65 | 66.793 | 184.96 | 245 | 28.212 | 190.70 |
| 70 | 63.143 | 184.96 | 250 | 28.491 | 190.59 |
| 75 | 59.599 | 184.96 | 255 | 29.583 | 190.18 |
| 80 | 56.187 | 184.96 | 260 | 31.386 | 189.54 |
| 85 | 52.938 | 184.96 | 265 | 33.761 | 188.75 |
| 90 | 49.887 | 184.96 | 270 | 36.554 | 187.89 |
| 95 | 47.078 | 185.14 | 275 | 39.787 | 186.97 |
| 100 | 44.559 | 185.74 | 280 | 43.323 | 186.04 |
| 105 | 42.386 | 186.28 | 285 | 47.002 | 185.16 |
| 110 | 40.615 | 186.74 | 290 | 50.935 | 184.96 |
| 115 | 39.303 | 187.10 | 295 | 54.983 | 184.96 |
| 120 | 38.499 | 187.32 | 300 | 59.109 | 184.96 |
| 125 | 38.235 | 187.40 | 305 | 63.323 | 184.96 |
| 130 | 38.523 | 187.32 | 310 | 67.594 | 184.96 |
| 135 | 39.351 | 187.09 | 315 | 71.913 | 184.96 |
| 140 | 40.684 | 186.72 | 320 | 76.195 | 184.96 |
| 145 | 42.474 | 186.26 | 325 | 80.605 | 184.96 |
| 150 | 44.650 | 185.71 | 330 | 85.030 | 184.96 |
| 155 | 47.197 | 185.11 | 335 | 89.322 | 184.96 |
| 160 | 49.883 | 184.96 | 340 | 93.796 | 184.96 |
| 165 | 52.163 | 184.96 | 345 | 98.251 | 184.96 |
| 170 | 53.892 | 184.96 | 350 | 102.636 | 184.96 |
| 175 | 54.976 | 184.96 | 355 | 106.997 | 184.96 |

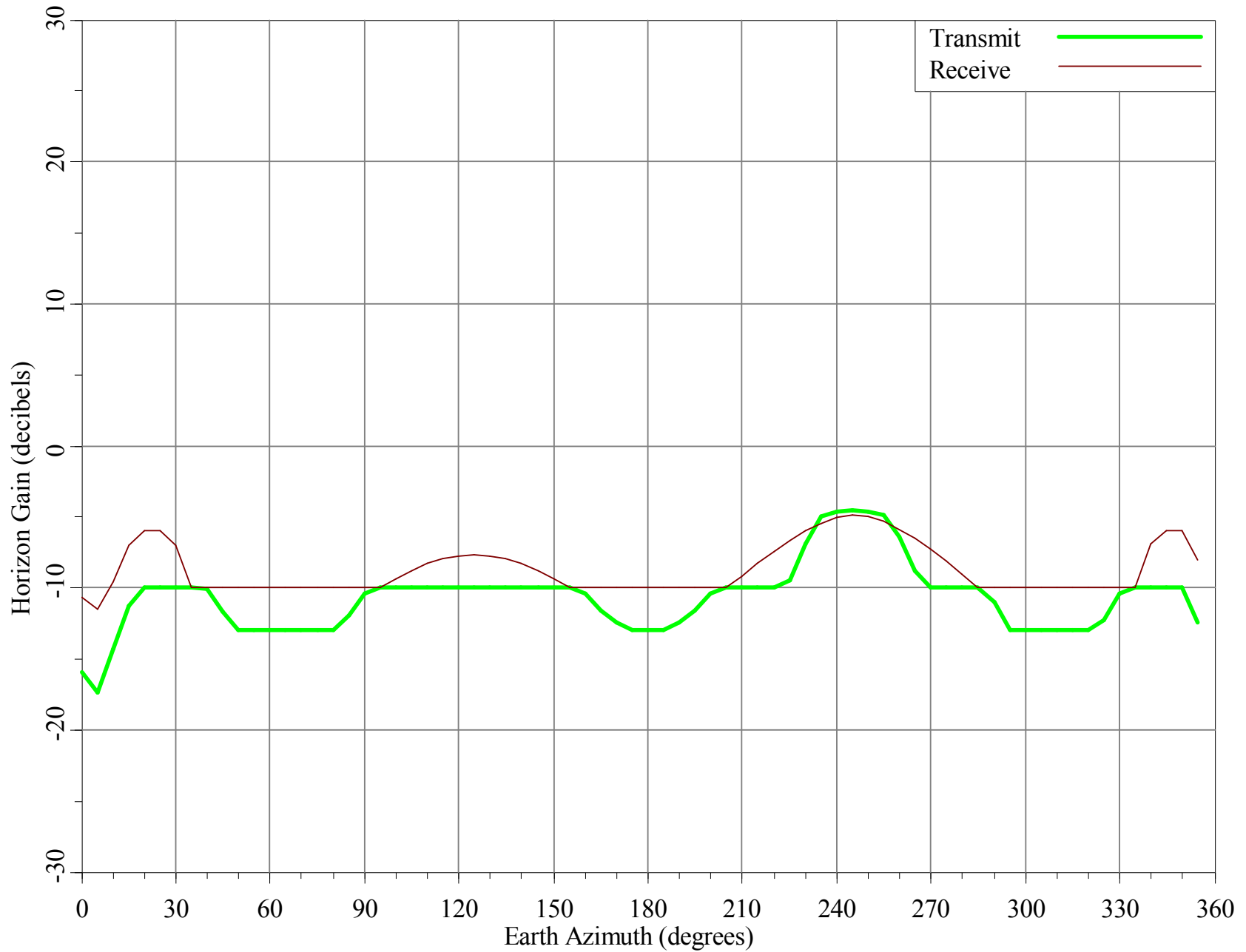
Horizon Angle & Satellite Arc for HOUSTON, TX

Micronet Communications, Inc.

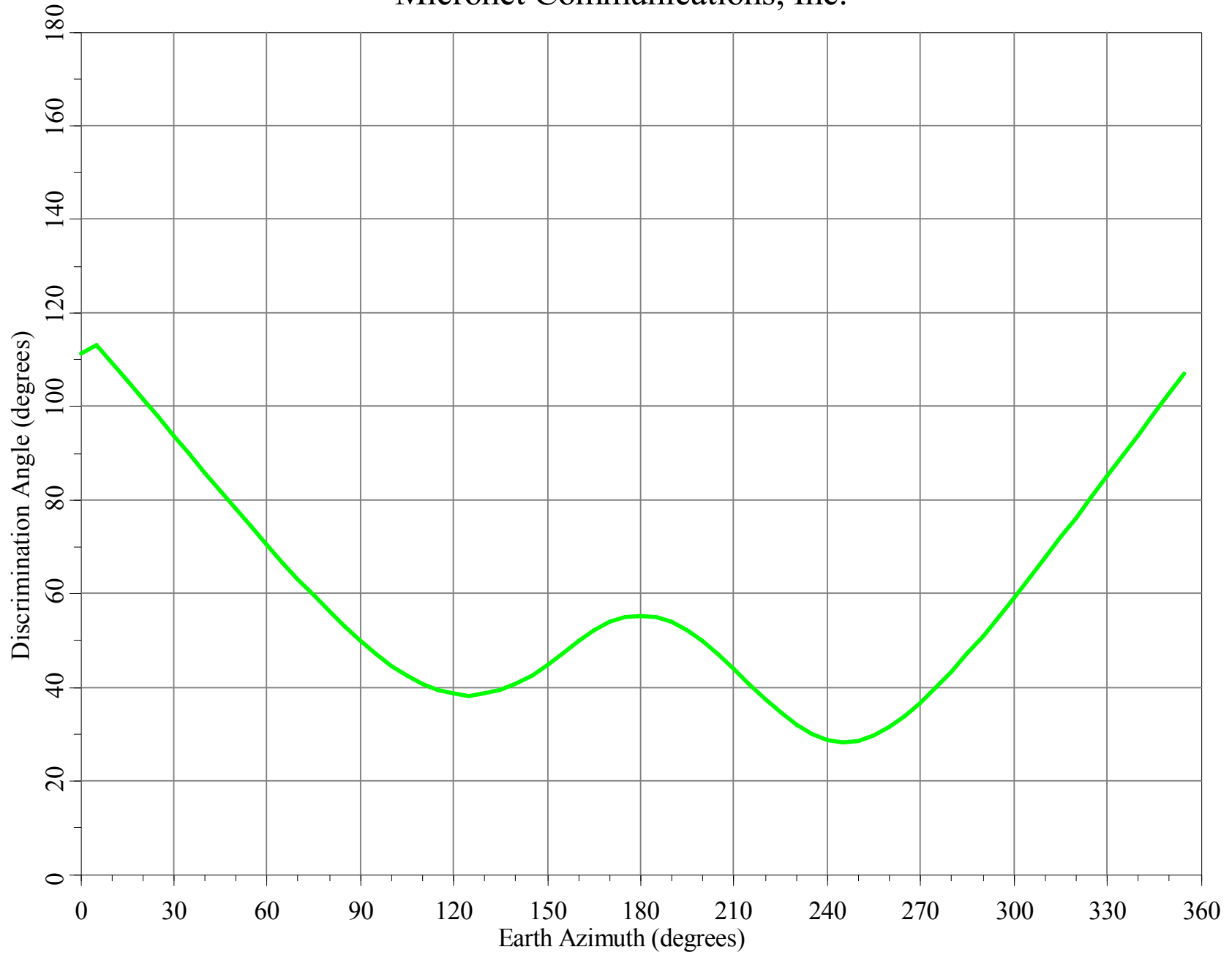


Horizon Gain for HOUSTON, TX

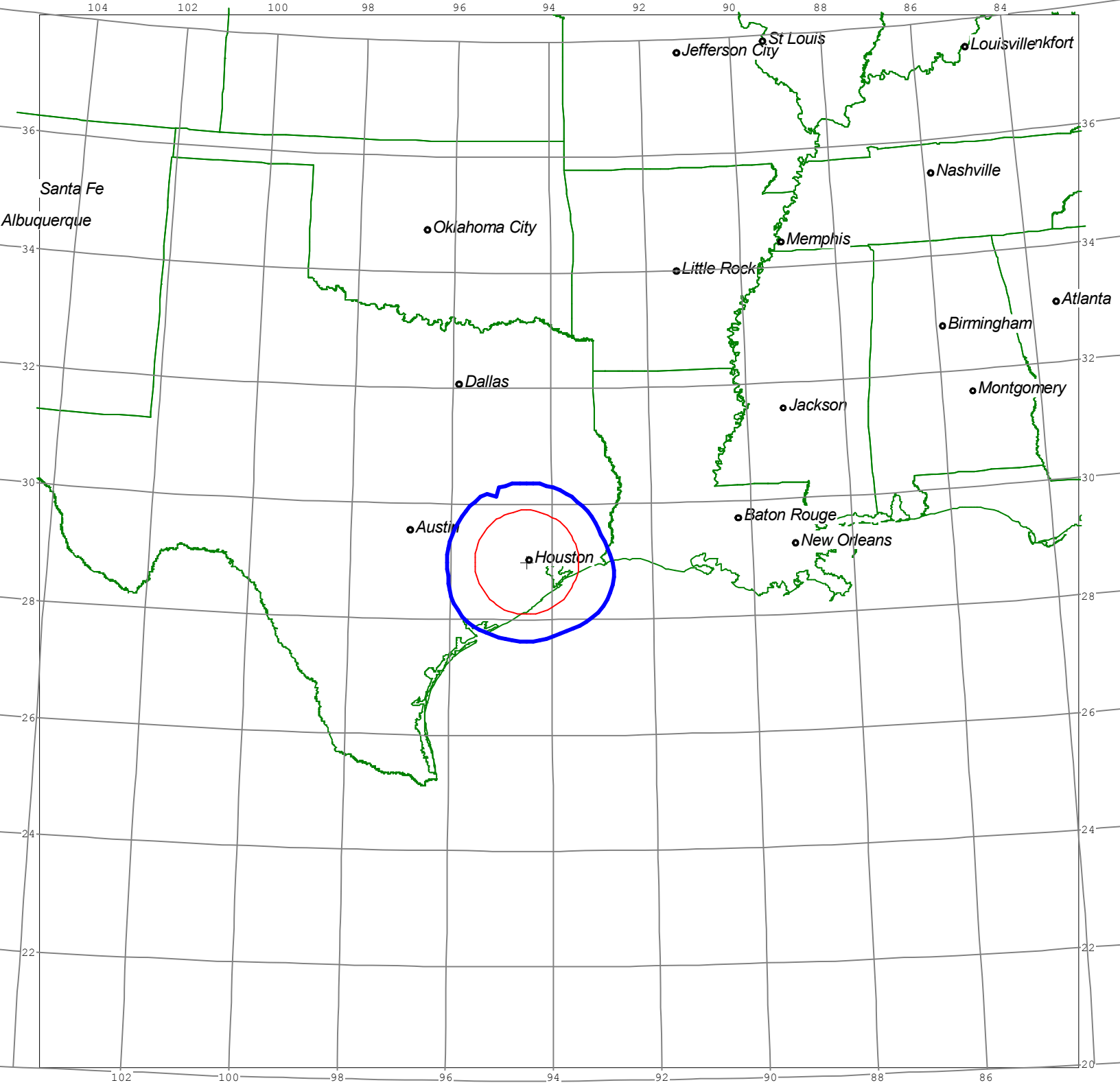
Micronet Communications, Inc.



Minimum Discrimination Angles for HOUSTON, TX
Micronet Communications, Inc.



Final Contour & Rain Scatter for HOUSTON, TX - Transmit



Final Contour & Rain Scatter for HOUSTON, TX - Receive

SCALE - 1:10000000 1 inch = 157.8 miles

