GSM Antenna

MODEL: TH-88C

GSM800/GSM900/DCS1800/PCS1900/3G2170

1. GENERAL DESCRIPTION

Model No
TH88C-SMA(M)

Below is a table summarizing the antenna design specification.

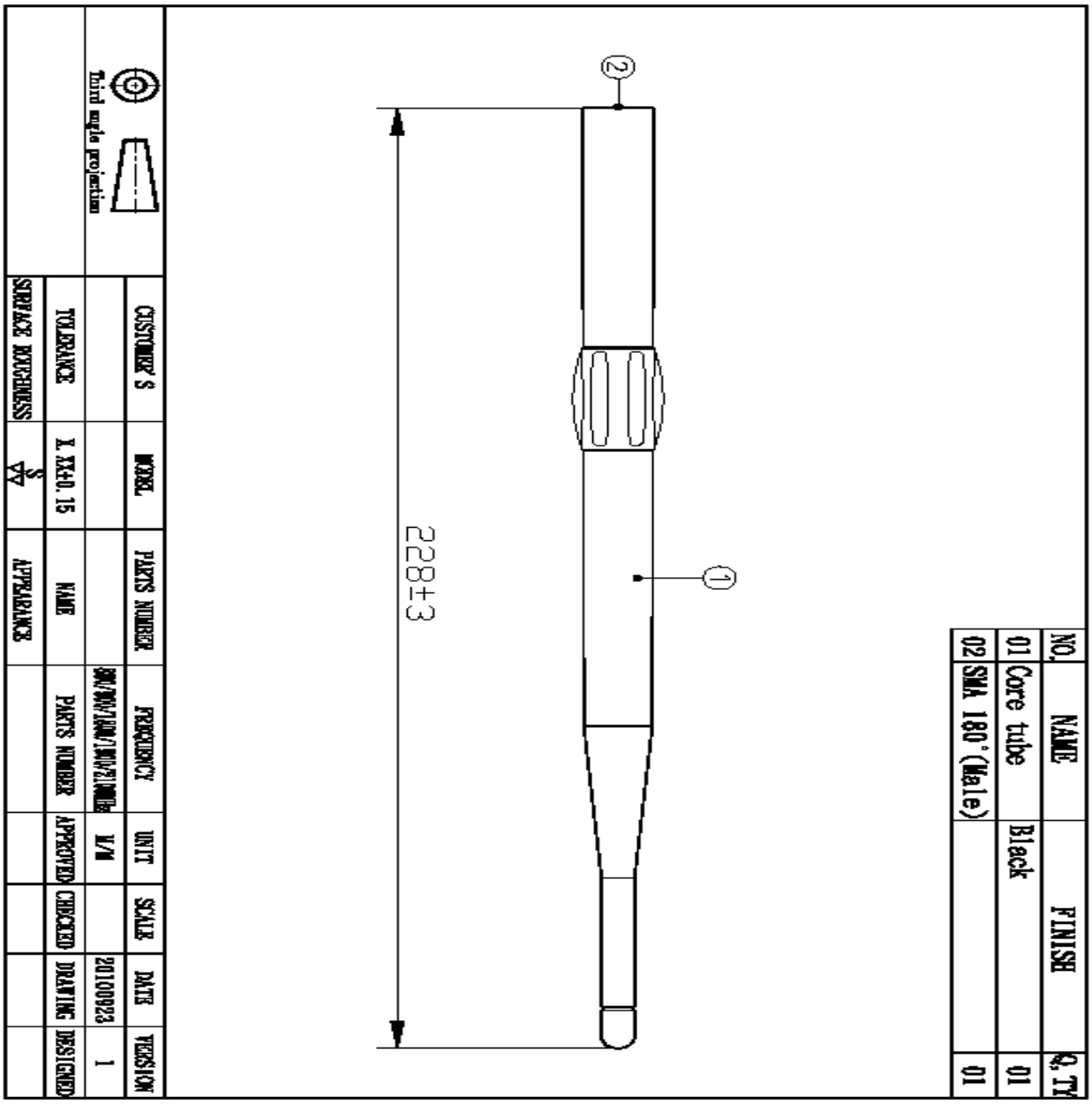
1.1 Electrical Properties

Parameter	Description
Frequency Band	800/900/1800/1900/2100 MHz
Nominal Impedance	50 ohm
Polarization	Vertical
Return Loss	Please See Data-1
V.S.W.R	3.5:1
Note: Gain includes the cable loss	

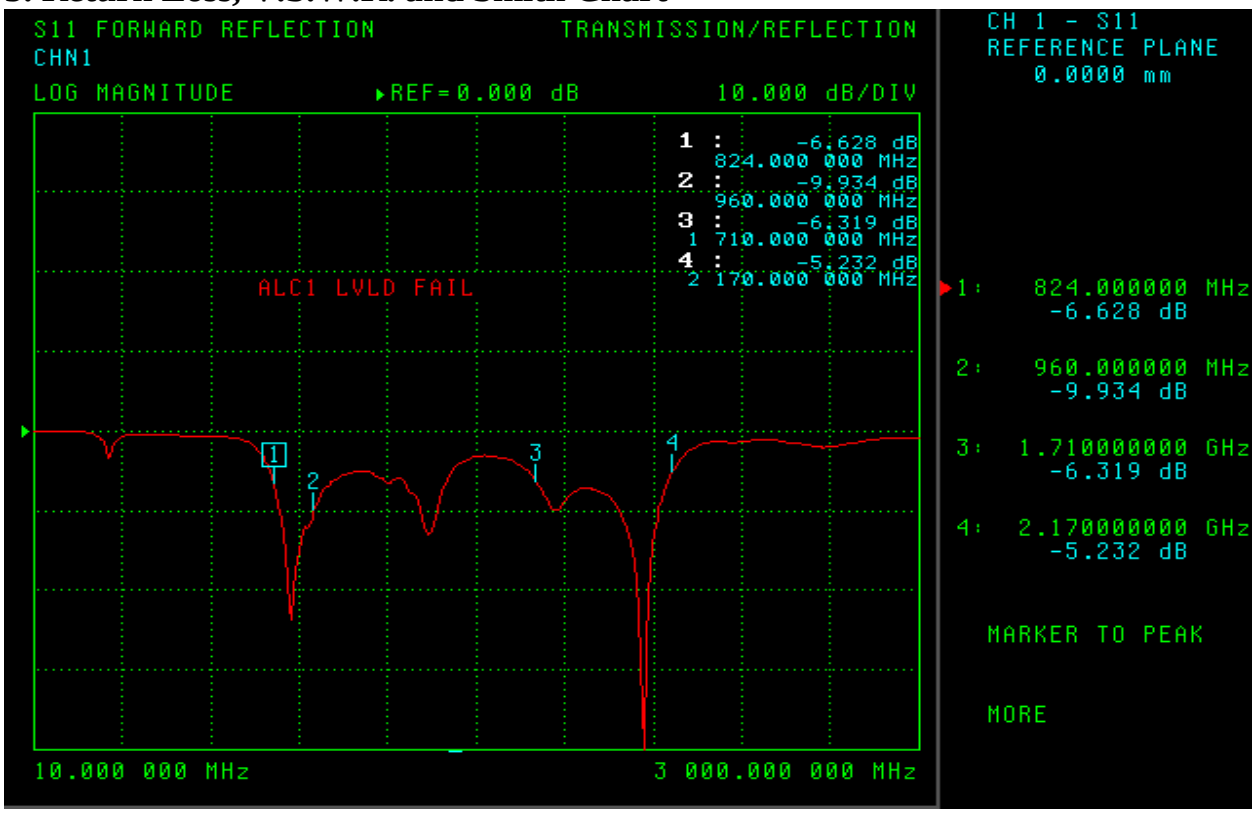
1.2 Mechanical Properties

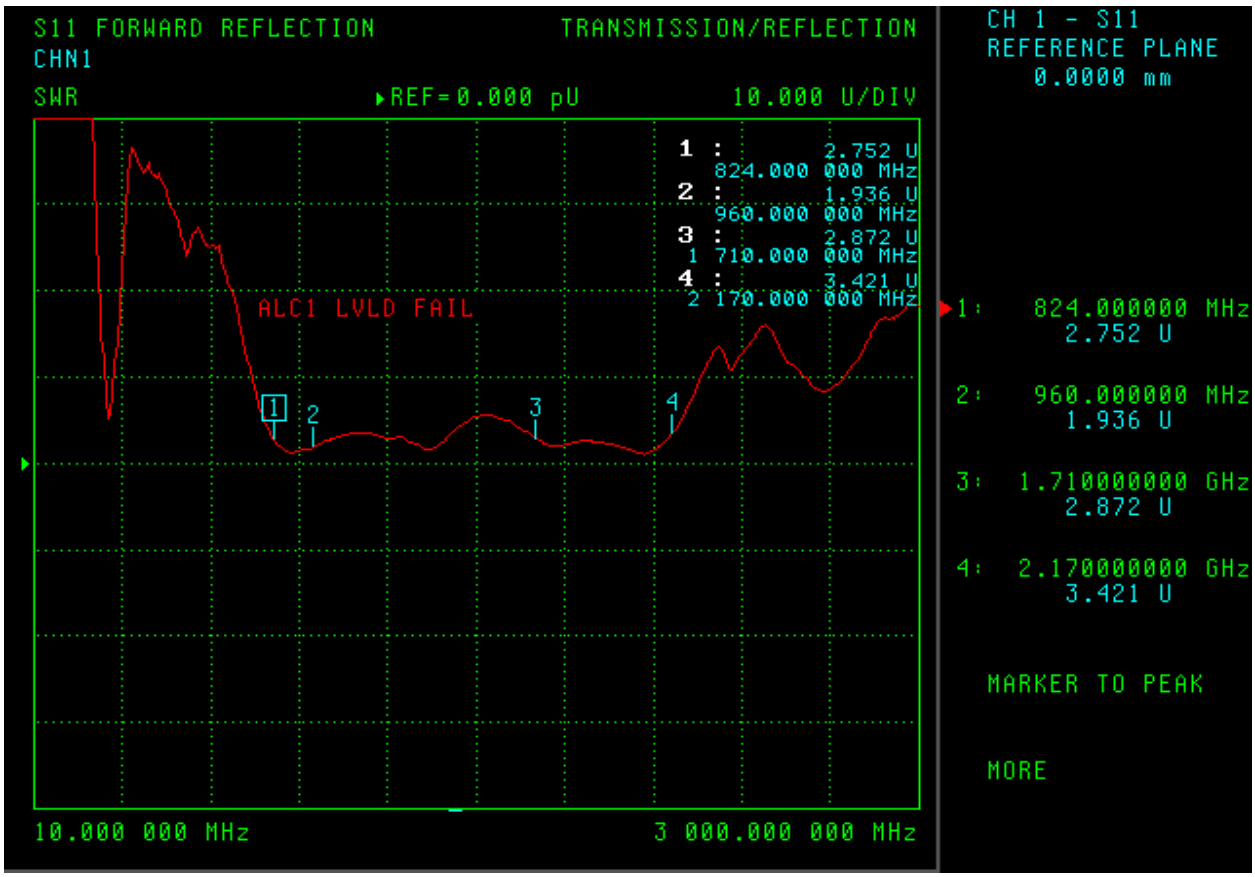
Parameter	Description
Antenna Type	External Antenna
Antenna Cover	TPE
Touch Type	Screw Type
Connector Type	SMA 180°(Male)
Antenna Dimensions	228 mm ±3
Operating Temperature Range	-20°C~+60°C
Storage Temperature Range	-30°C~+70°C

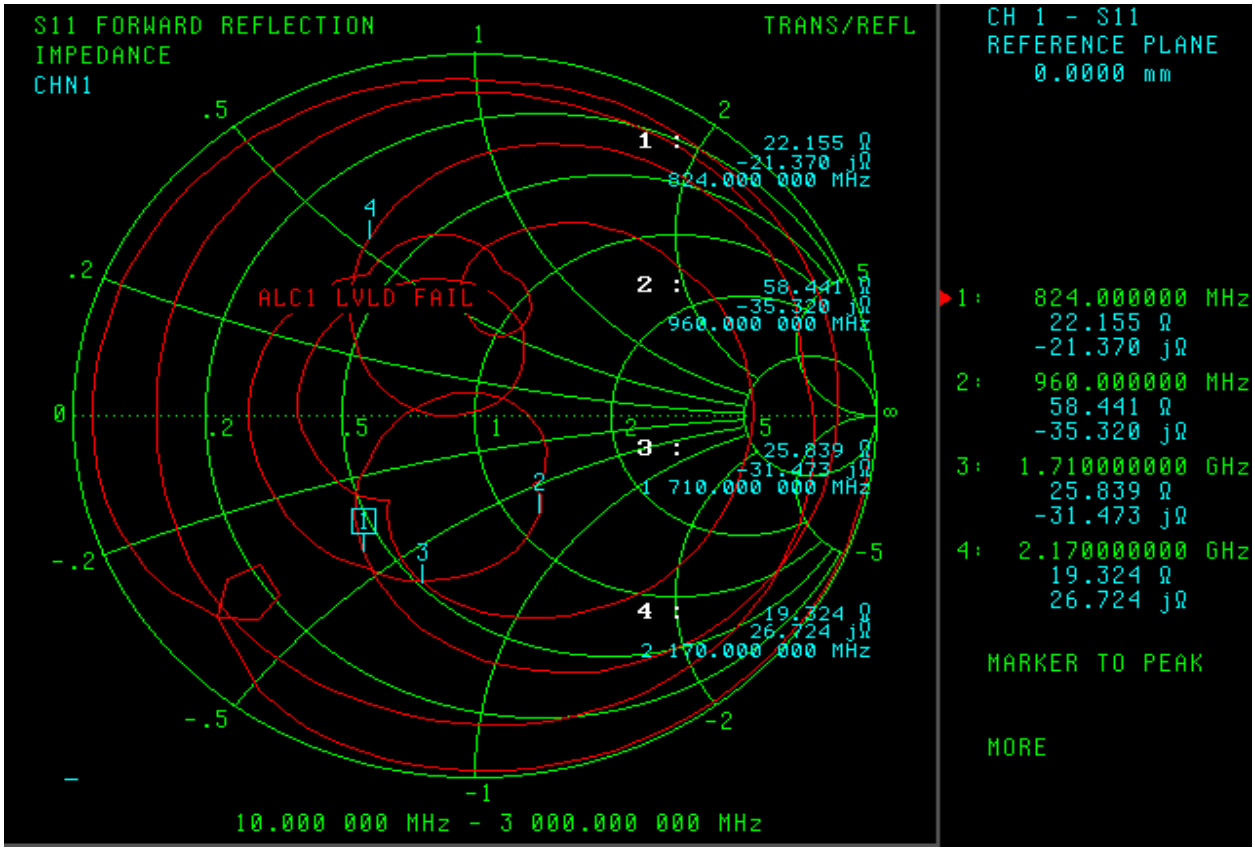
2. **Appearance**



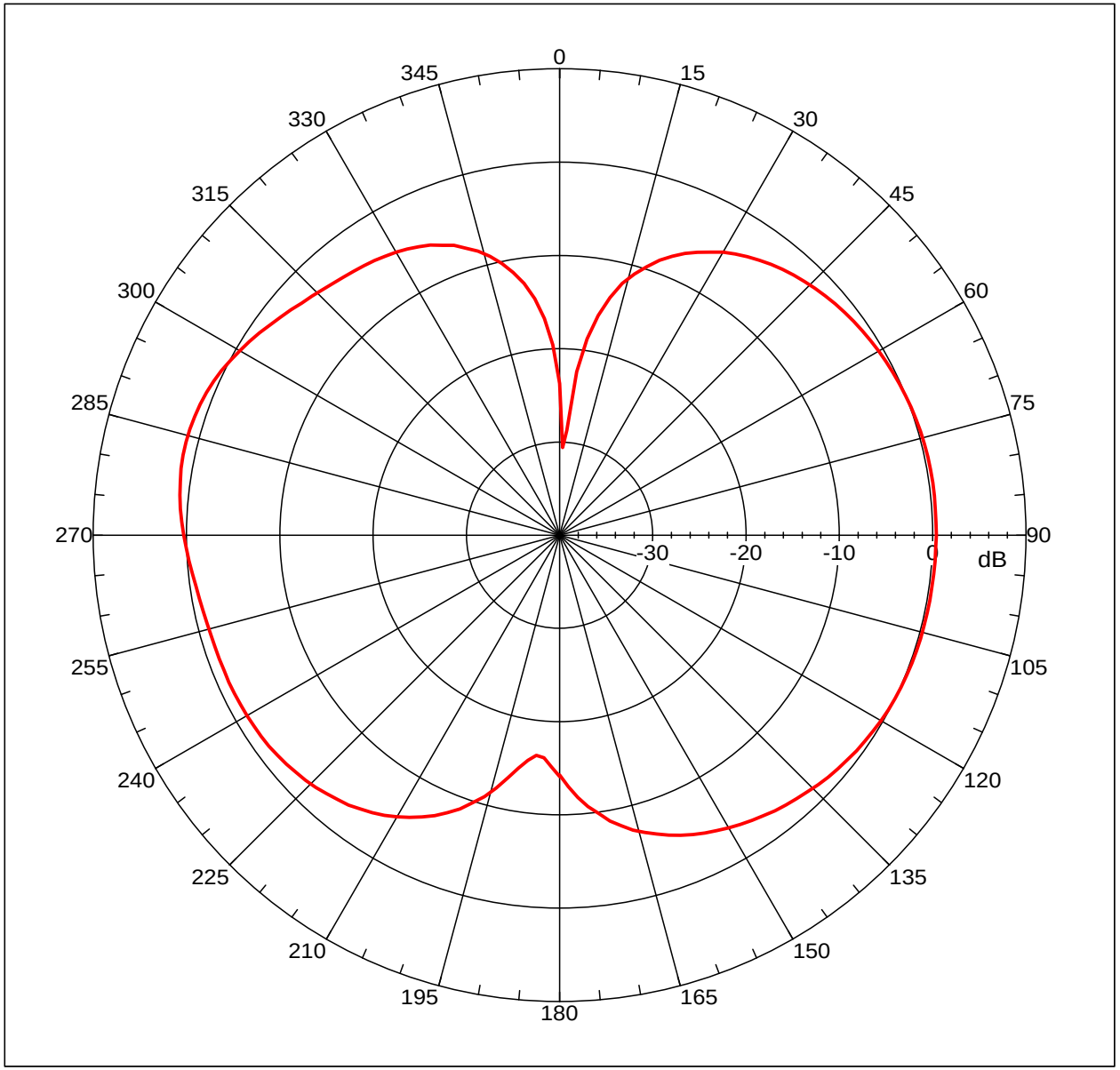
3. Return Loss, V.S.W.R. and Smith Chart






S11 FORWARD REFLECTION
IMPEDANCE
CHN1
TRANS/REFL
1 : 22.155 Ω -21.370 jΩ 824.000 000 MHz
2 : 58.441 Ω -35.320 jΩ 960.000 000 MHz
3 : 25.839 Ω -31.473 jΩ 1 710.000 000 MHz
4 : 19.324 Ω 26.724 jΩ 2 170.000 000 MHz
ALC1 LVLD FAIL
10.000 000 MHz - 3 000.000 000 MHz
CH 1 - S11
REFERENCE PLANE
0.0000 mm
1: 824.000000 MHz
22.155 Ω
-21.370 jΩ
2: 960.000000 MHz
58.441 Ω
-35.320 jΩ
3: 1.710000000 GHz
25.839 Ω
-31.473 jΩ
4: 2.170000000 GHz
19.324 Ω
26.724 jΩ
MARKER TO PEAK
MORE

Far-field amplitude of 20100924 TH-88C 800-2100mhz E-PLANE.nsi



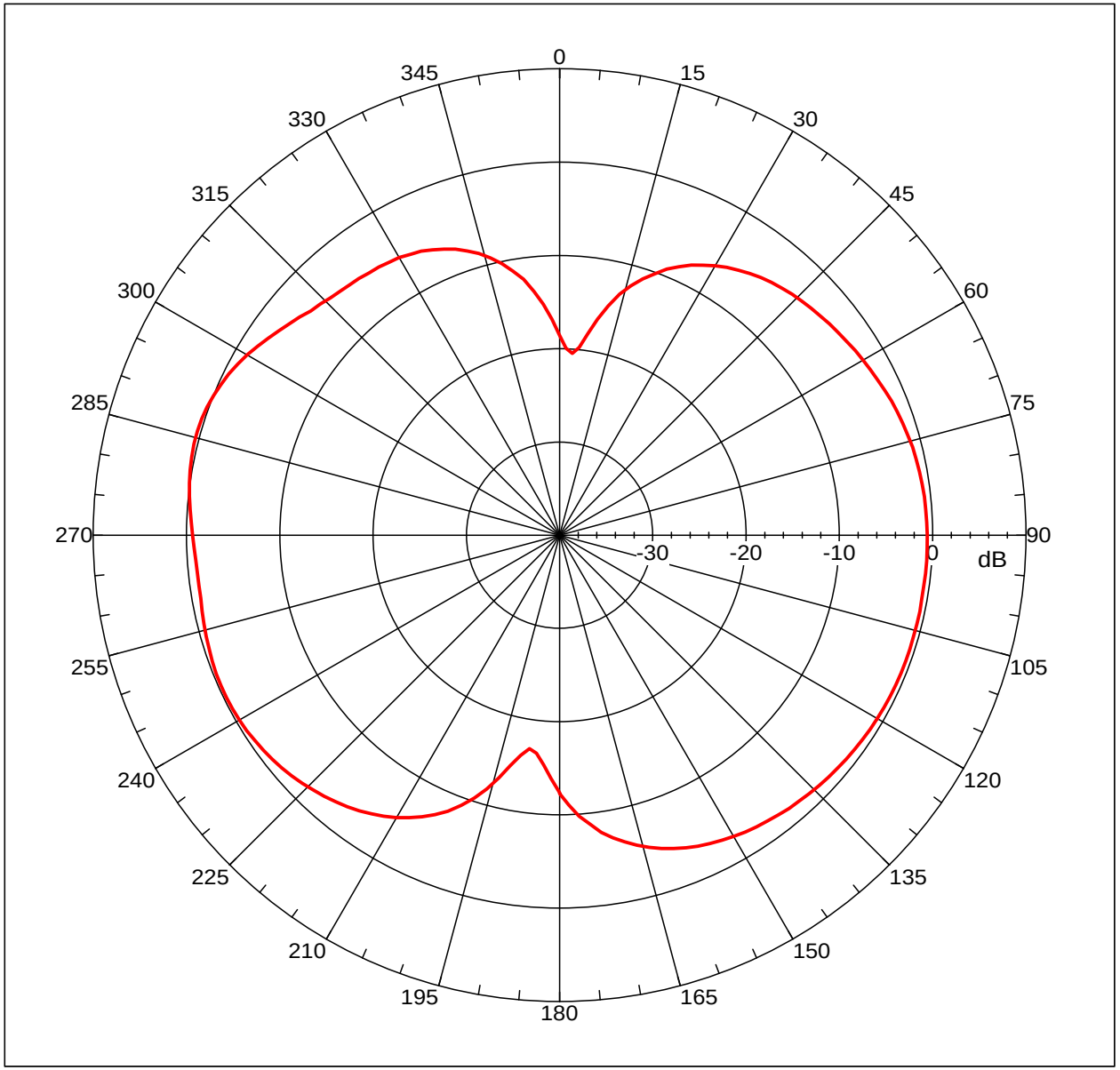

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = 1.25658  dBi
Max far-field (global) = -41.74276  dB, Max far-field (plot) =
-41.74279  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: -76.00001  deg, Vpeak at: 0.000  deg
Plot centering: On

20100924 TH88C  800-2100mhz  E-PLANE

NSI2000 V4.0.124, Filename:C:\nsi2000\Data\20100924 TH88C
800-2100mhz  E-PLANE.nsi
Measurement date/time: 9/24/2010 11:02:28 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -3.048 dB
   -3. dB beam width: 75.93 deg
   -6. dB beam width: 117.29 deg
   -10. dB beam width: 145.69 deg
   Left Sidelobe: Not Found
   Right Sidelobe: -0.87 dB at 85.475  deg
Far-field display setup
   Azimuth (deg)
     Span = 360.00001  deg, Center = 0.000  deg, #pts = 181
     Start= -180.00001  deg, Stop = 180.00001  deg, Delta = 2.000
deg
   Elevation (deg)
     Center = 0.000  deg, #pts = 1

Selected beam(s) 1 of 10
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
1       0.824  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of 20100924 TH-88C 800-2100mhz E-PLANE.nsi



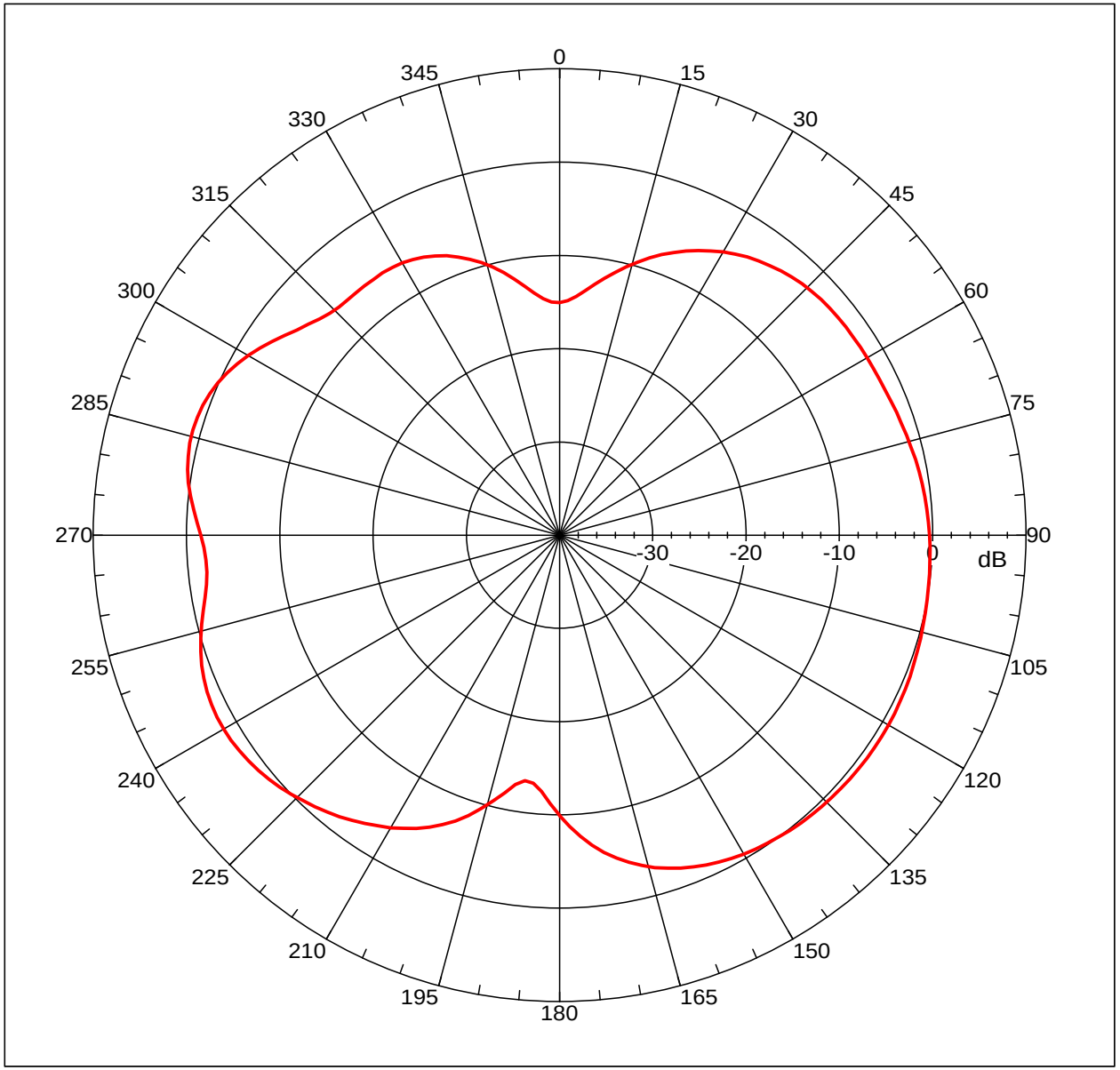

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = 0.38308  dBi
Max far-field (global) = -40.38475  dB, Max far-field (plot) =
-40.38479  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: -74.000  deg, Vpeak at: 0.000  deg
Plot centering: On

20100924 TH88C  800-2100mhz  E-PLANE

NSI2000 V4.0.124, Filename:C:\nsi2000\Data\20100924 TH88C
800-2100mhz  E-PLANE.nsi
Measurement date/time: 9/24/2010 11:02:28 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -3.515 dB
   -3. dB beam width: 85.42 deg
   -6. dB beam width: 122.00 deg
   -10. dB beam width: 148.10 deg
   Left Sidelobe: Not Found
   Right Sidelobe: -0.94 dB at 97.542  deg
Far-field display setup
   Azimuth (deg)
     Span = 360.00001  deg, Center = 0.000  deg, #pts = 181
     Start= -180.00001  deg, Stop = 180.00001  deg, Delta = 2.000
deg
   Elevation (deg)
     Center = 0.000  deg, #pts = 1

Selected beam(s) 1 of 10
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
2       0.860  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of 20100924 TH-88C 800-2100mhz E-PLANE.nsi



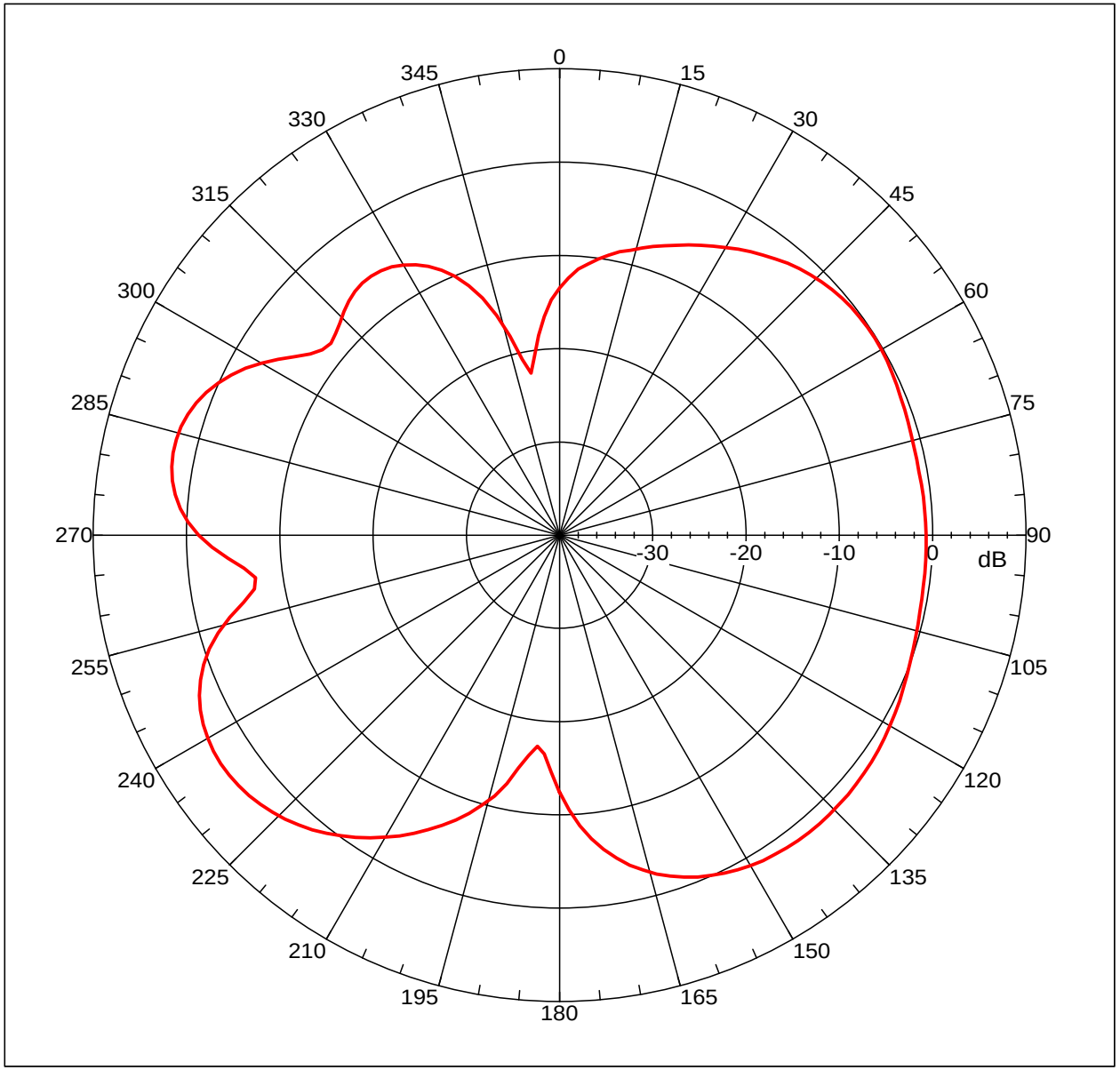

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = 1.56274  dBi
Max far-field (global) = -39.99694  dB, Max far-field (plot) =
-39.99701  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: -118.000  deg, Vpeak at: 0.000  deg
Plot centering: On

20100924 TH88C  800-2100mhz  E-PLANE

NSI2000 V4.0.124, Filename:C:\nsi2000\Data\20100924 TH88C
800-2100mhz  E-PLANE.nsi
Measurement date/time: 9/24/2010 11:02:28 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -2.622 dB
   -3. dB beam width: 41.09 deg
   -6. dB beam width: 101.22 deg
   -10. dB beam width: 143.36 deg
   Left Sidelobe: Not Found
   Right Sidelobe: -0.69 dB at -73.408  deg
Far-field display setup
   Azimuth (deg)
     Span = 360.00001  deg, Center = 0.000  deg, #pts = 181
     Start= -180.00001  deg, Stop = 180.00001  deg, Delta = 2.000
deg
   Elevation (deg)
     Center = 0.000  deg, #pts = 1

Selected beam(s) 1 of 10
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
3       0.900  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of 20100924 TH-88C 800-2100mhz E-PLANE.nsi



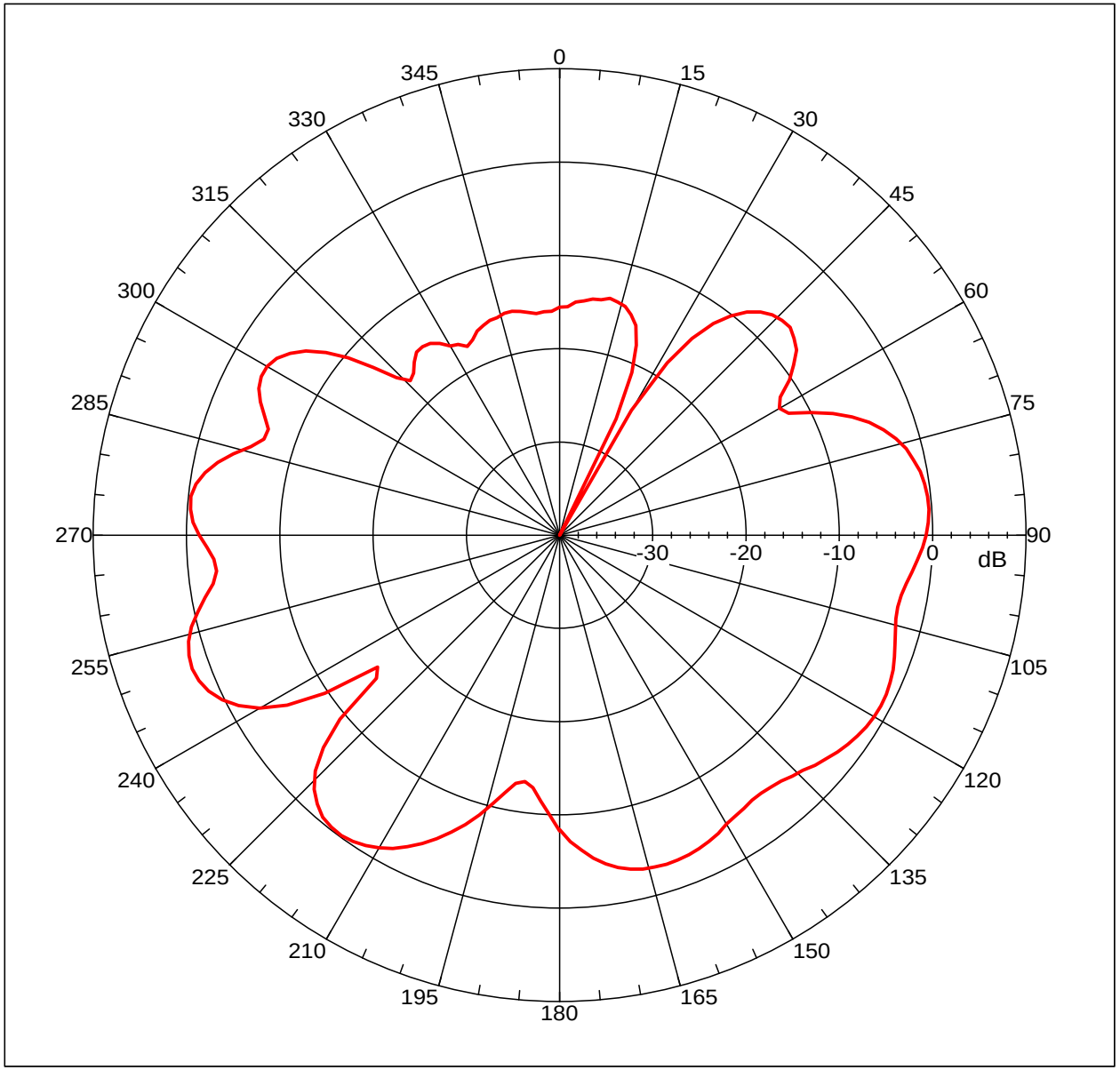

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = 3.80544  dBi
Max far-field (global) = -38.82423  dB, Max far-field (plot) =
-38.82429  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: -124.00001  deg, Vpeak at: 0.000  deg
Plot centering: On

20100924 TH88C  800-2100mhz  E-PLANE

NSI2000 V4.0.124, Filename:C:\nsi2000\Data\20100924 TH88C
800-2100mhz  E-PLANE.nsi
Measurement date/time: 9/24/2010 11:02:28 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -2.156 dB
   -3. dB beam width: 30.93 deg
   -6. dB beam width: 43.61 deg
   -10. dB beam width: 56.94 deg
   Left Sidelobe: Not Found
   Right Sidelobe: -1.46 dB at -77.430  deg
Far-field display setup
   Azimuth (deg)
     Span = 360.00001  deg, Center = 0.000  deg, #pts = 181
     Start= -180.00001  deg, Stop = 180.00001  deg, Delta = 2.000
deg
   Elevation (deg)
     Center = 0.000  deg, #pts = 1

Selected beam(s) 1 of 10
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
4       0.960  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of 20100924 TH-88C 800-2100mhz E-PLANE.nsi



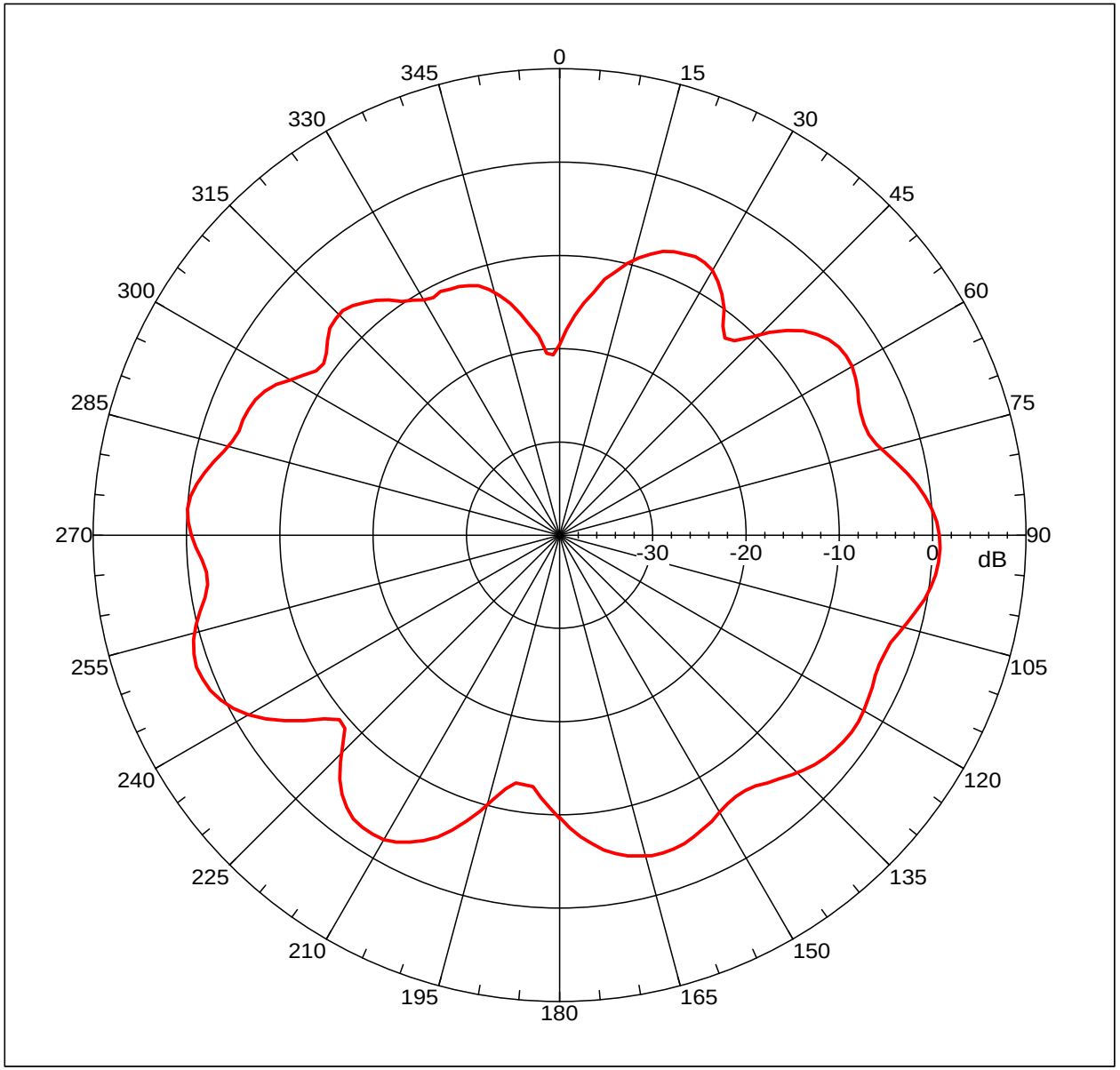

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = 1.89494  dBi
Max far-field (global) = -43.29765  dB, Max far-field (plot) =
-43.29775  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: -110.00001  deg, Vpeak at: 0.000  deg
Plot centering: On

20100924 TH88C  800-2100mhz  E-PLANE

NSI2000 V4.0.124, Filename:C:\nsi2000\Data\20100924 TH88C
800-2100mhz  E-PLANE.nsi
Measurement date/time: 9/24/2010 11:02:28 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -5.330 dB
   -3. dB beam width: 17.55 deg
   -6. dB beam width: 45.33 deg
   -10. dB beam width: 71.50 deg
   Left Sidelobe: -2.10 dB at -143.799  deg
   Right Sidelobe: -2.17 dB at -83.464  deg
Far-field display setup
   Azimuth (deg)
     Span = 360.00001  deg, Center = 0.000  deg, #pts = 181
     Start= -180.00001  deg, Stop = 180.00001  deg, Delta = 2.000
deg
   Elevation (deg)
     Center = 0.000  deg, #pts = 1

Selected beam(s) 1 of 10
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
5       1.710  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of 20100924 TH-88C 800-2100mhz E-PLANE.nsi



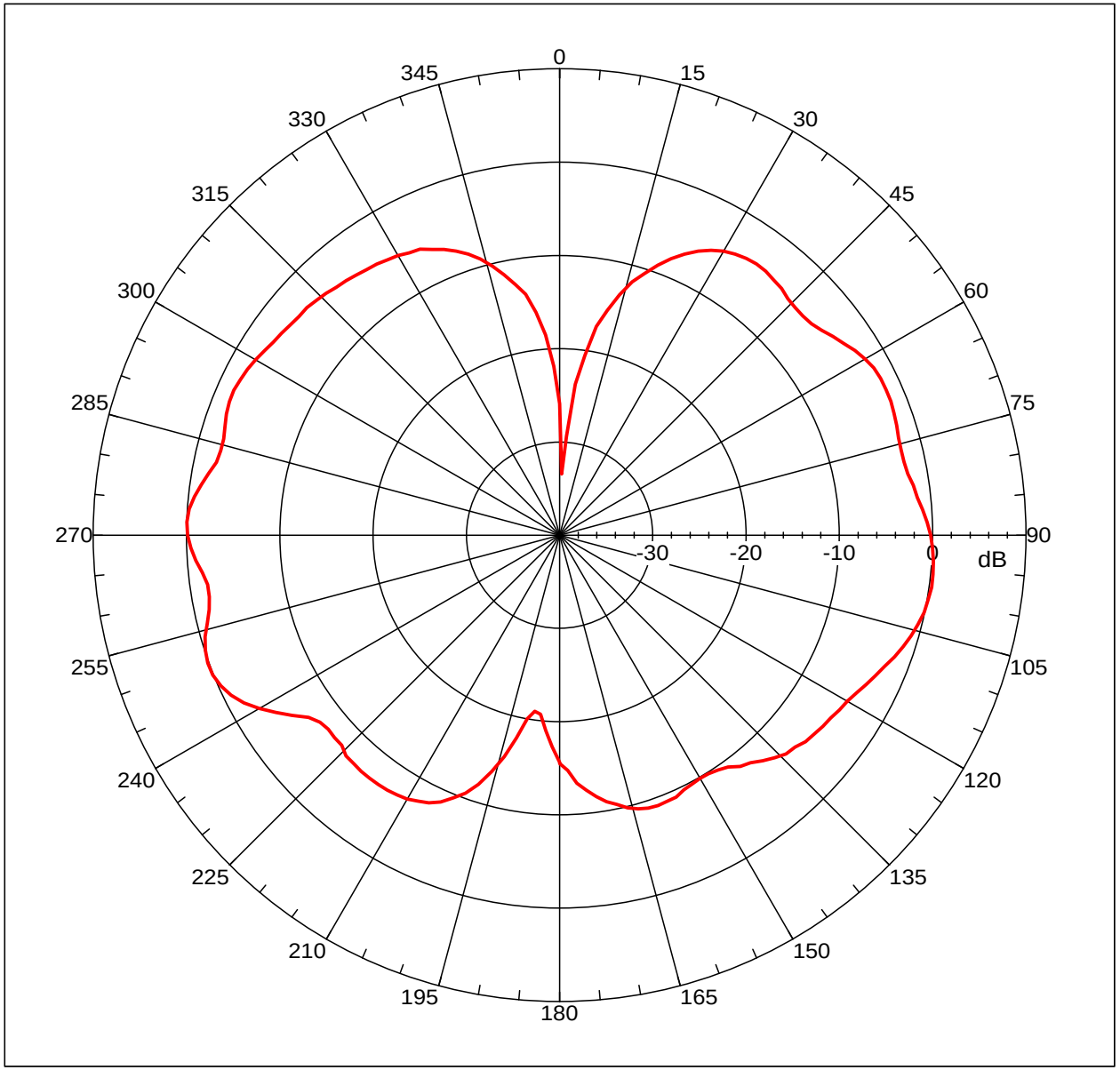

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = 1.39494  dBi
Max far-field (global) = -45.4271  dB, Max far-field (plot) =
-45.42727  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: -110.00001  deg, Vpeak at: 0.000  deg
Plot centering: On

20100924 TH88C  800-2100mhz  E-PLANE

NSI2000 V4.0.124, Filename:C:\nsi2000\Data\20100924 TH88C
800-2100mhz  E-PLANE.nsi
Measurement date/time: 9/24/2010 11:02:28 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -4.894 dB
   -3. dB beam width: 21.02 deg
   -6. dB beam width: 59.61 deg
   -10. dB beam width: 74.11 deg
   Left Sidelobe: -3.59 dB at -147.821  deg
   Right Sidelobe: -1.42 dB at -85.475  deg
Far-field display setup
   Azimuth (deg)
     Span = 360.00001  deg, Center = 0.000  deg, #pts = 181
     Start= -180.00001  deg, Stop = 180.00001  deg, Delta = 2.000
deg
   Elevation (deg)
     Center = 0.000  deg, #pts = 1

Selected beam(s) 1 of 10
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
6       1.800  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of 20100924 TH-88C 800-2100mhz E-PLANE.nsi



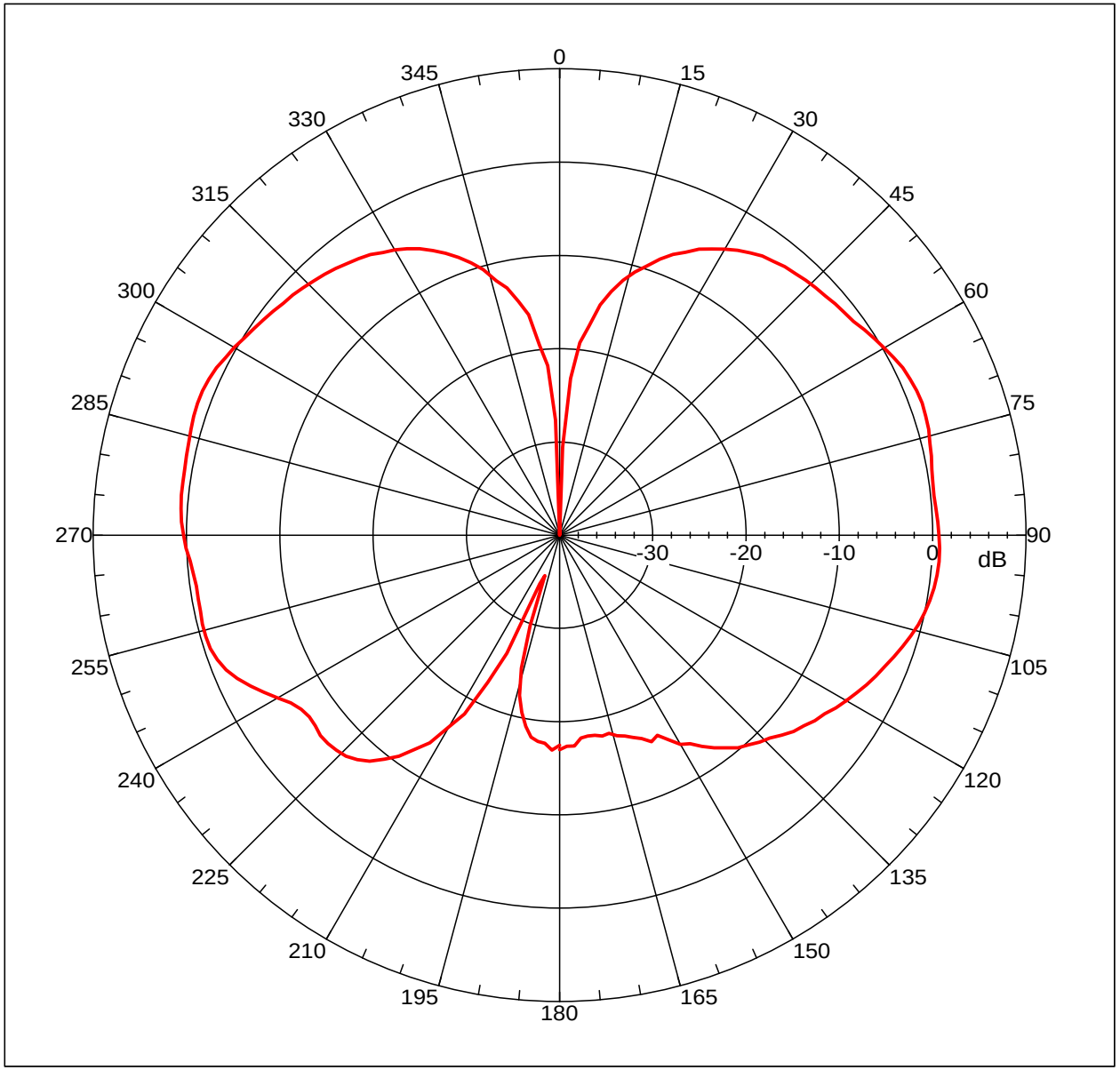

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = 0.27752  dBi
Max far-field (global) = -46.39105  dB, Max far-field (plot) =
-46.39119  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 97.99999  deg, Vpeak at: 0.000  deg
Plot centering: On

20100924 TH88C  800-2100mhz  E-PLANE

NSI2000 V4.0.124, Filename:C:\nsi2000\Data\20100924 TH88C
800-2100mhz  E-PLANE.nsi
Measurement date/time: 9/24/2010 11:02:28 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -5.053 dB
   -3. dB beam width: 55.60 deg
   -6. dB beam width: 104.09 deg
   -10. dB beam width: 128.32 deg
   Left Sidelobe: -2.08 dB at -65.363  deg
   Right Sidelobe: Not Found
Far-field display setup
   Azimuth (deg)
     Span = 360.00001  deg, Center = 0.000  deg, #pts = 181
     Start= -180.00001  deg, Stop = 180.00001  deg, Delta = 2.000
deg
   Elevation (deg)
     Center = 0.000  deg, #pts = 1

Selected beam(s) 1 of 10
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
7       1.880  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of 20100924 TH-88C 800-2100mhz E-PLANE.nsi



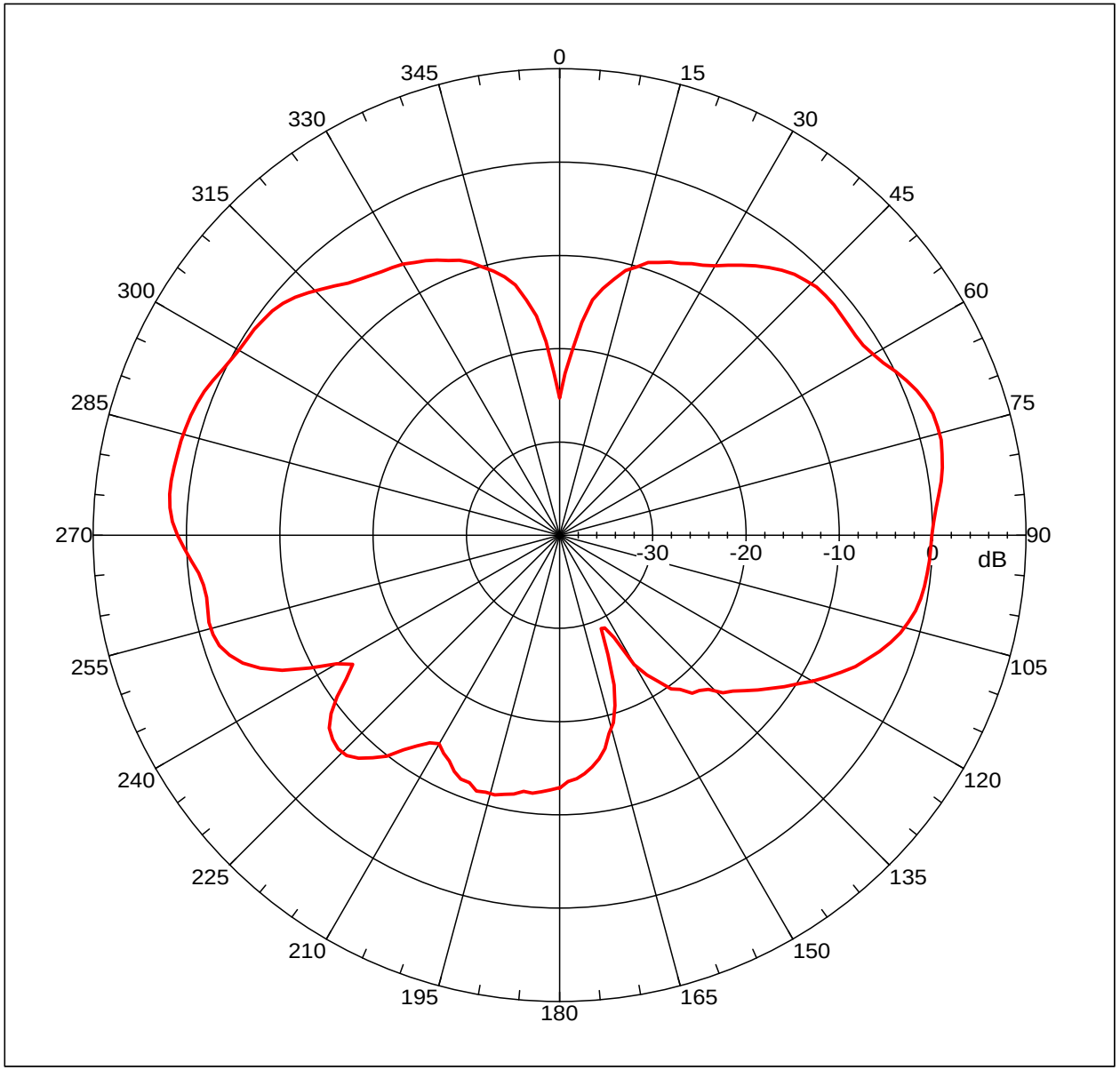

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = 1.35175  dBi
Max far-field (global) = -46.45435  dB, Max far-field (plot) =
-46.45448  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 69.99999  deg, Vpeak at: 0.000  deg
Plot centering: On

20100924 TH88C  800-2100mhz  E-PLANE

NSI2000 V4.0.124, Filename:C:\nsi2000\Data\20100924 TH88C
800-2100mhz  E-PLANE.nsi
Measurement date/time: 9/24/2010 11:02:28 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -4.506 dB
   -3. dB beam width: 61.32 deg
   -6. dB beam width: 91.12 deg
   -10. dB beam width: 114.76 deg
   Left Sidelobe: -0.07 dB at -69.385  deg
   Right Sidelobe: Not Found
Far-field display setup
   Azimuth (deg)
     Span = 360.00001  deg, Center = 0.000  deg, #pts = 181
     Start= -180.00001  deg, Stop = 180.00001  deg, Delta = 2.000
deg
   Elevation (deg)
     Center = 0.000  deg, #pts = 1

Selected beam(s) 1 of 10
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
8       1.990  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of 20100924 TH-88C 800-2100mhz E-PLANE.nsi



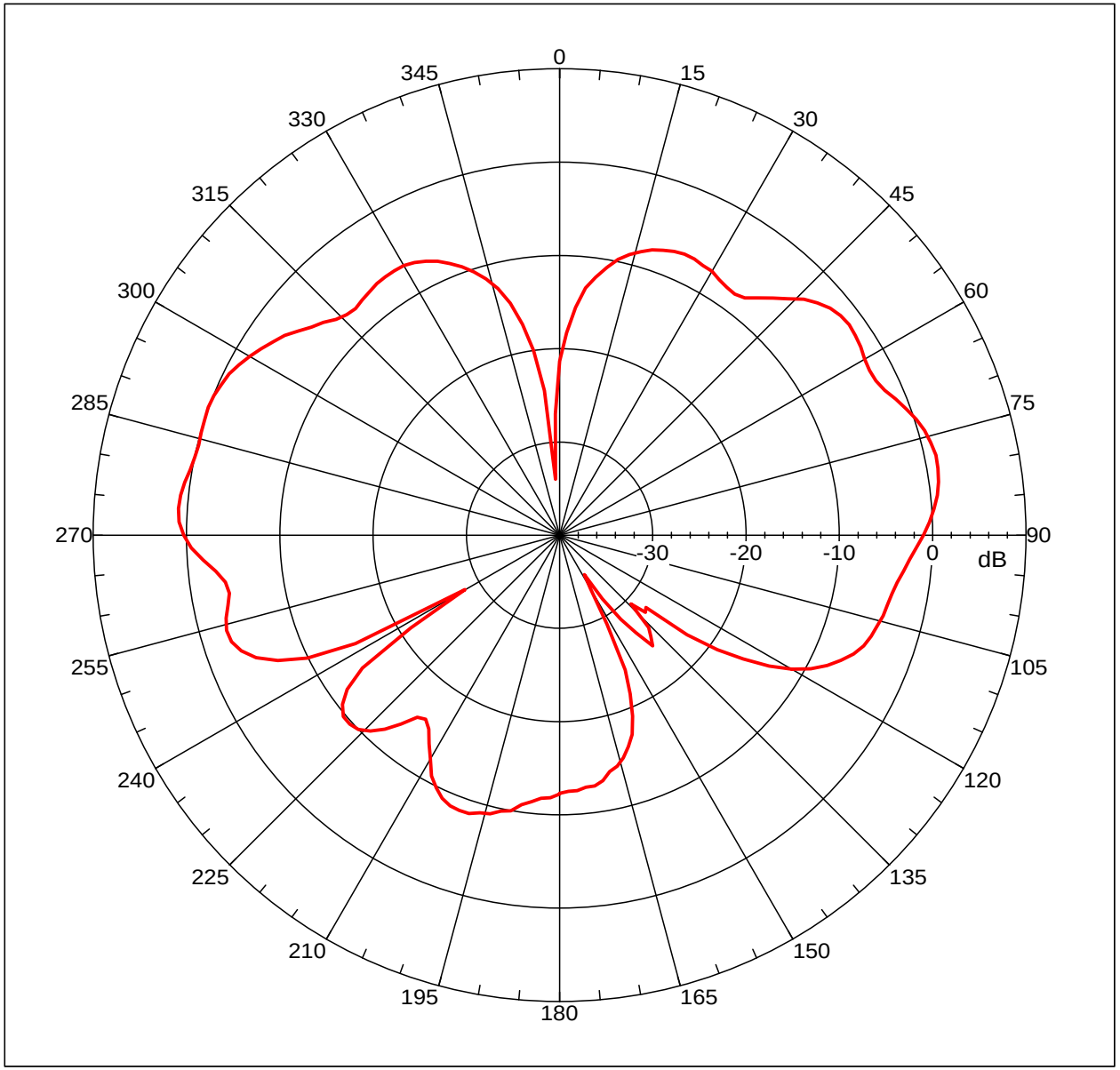

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = 2.15362  dBi
Max far-field (global) = -45.17308  dB, Max far-field (plot) =
-45.17319  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 75.99999  deg, Vpeak at: 0.000  deg
Plot centering: On

20100924 TH88C  800-2100mhz  E-PLANE

NSI2000 V4.0.124, Filename:C:\nsi2000\Data\20100924 TH88C
800-2100mhz  E-PLANE.nsi
Measurement date/time: 9/24/2010 11:02:28 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -5.064 dB
   -3. dB beam width: 39.79 deg
   -6. dB beam width: 73.81 deg
   -10. dB beam width: 93.89 deg
   Left Sidelobe: -0.13 dB at -81.453  deg
   Right Sidelobe: Not Found
Far-field display setup
   Azimuth (deg)
     Span = 360.00001  deg, Center = 0.000  deg, #pts = 181
     Start= -180.00001  deg, Stop = 180.00001  deg, Delta = 2.000
deg
   Elevation (deg)
     Center = 0.000  deg, #pts = 1

Selected beam(s) 1 of 10
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
9       2.100  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of 20100924 TH-88C 800-2100mhz E-PLANE.nsi



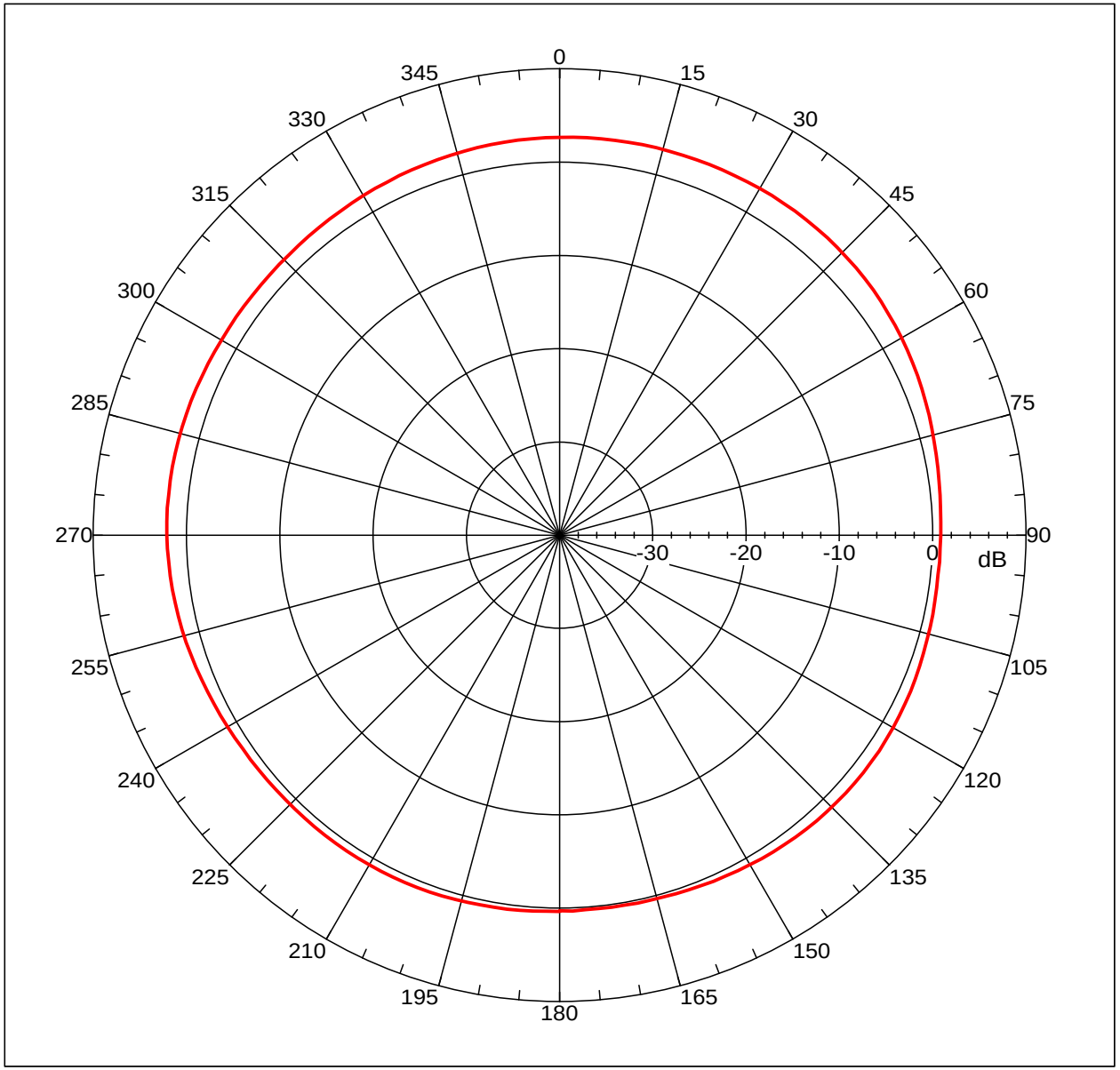

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = 1.23822  dBi
Max far-field (global) = -46.29389  dB, Max far-field (plot) =
-46.29411  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 78.000  deg, Vpeak at: 0.000  deg
Plot centering: On

20100924 TH88C  800-2100mhz  E-PLANE

NSI2000 V4.0.124, Filename:C:\nsi2000\Data\20100924 TH88C
800-2100mhz  E-PLANE.nsi
Measurement date/time: 9/24/2010 11:02:28 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -6.488 dB
   -3. dB beam width: 26.06 deg
   -6. dB beam width: 63.49 deg
   -10. dB beam width: 102.71 deg
   Left Sidelobe: -8.28 dB at 25.140  deg
   Right Sidelobe: -25.74 dB at 141.788  deg
Far-field display setup
   Azimuth (deg)
     Span = 360.00001  deg, Center = 0.000  deg, #pts = 181
     Start= -180.00001  deg, Stop = 180.00001  deg, Delta = 2.000
deg
   Elevation (deg)
     Center = 0.000  deg, #pts = 1

Selected beam(s) 1 of 10
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
10      2.170  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of 20100924 TH-88C 800-2100mhz H-PLANE01.nsi



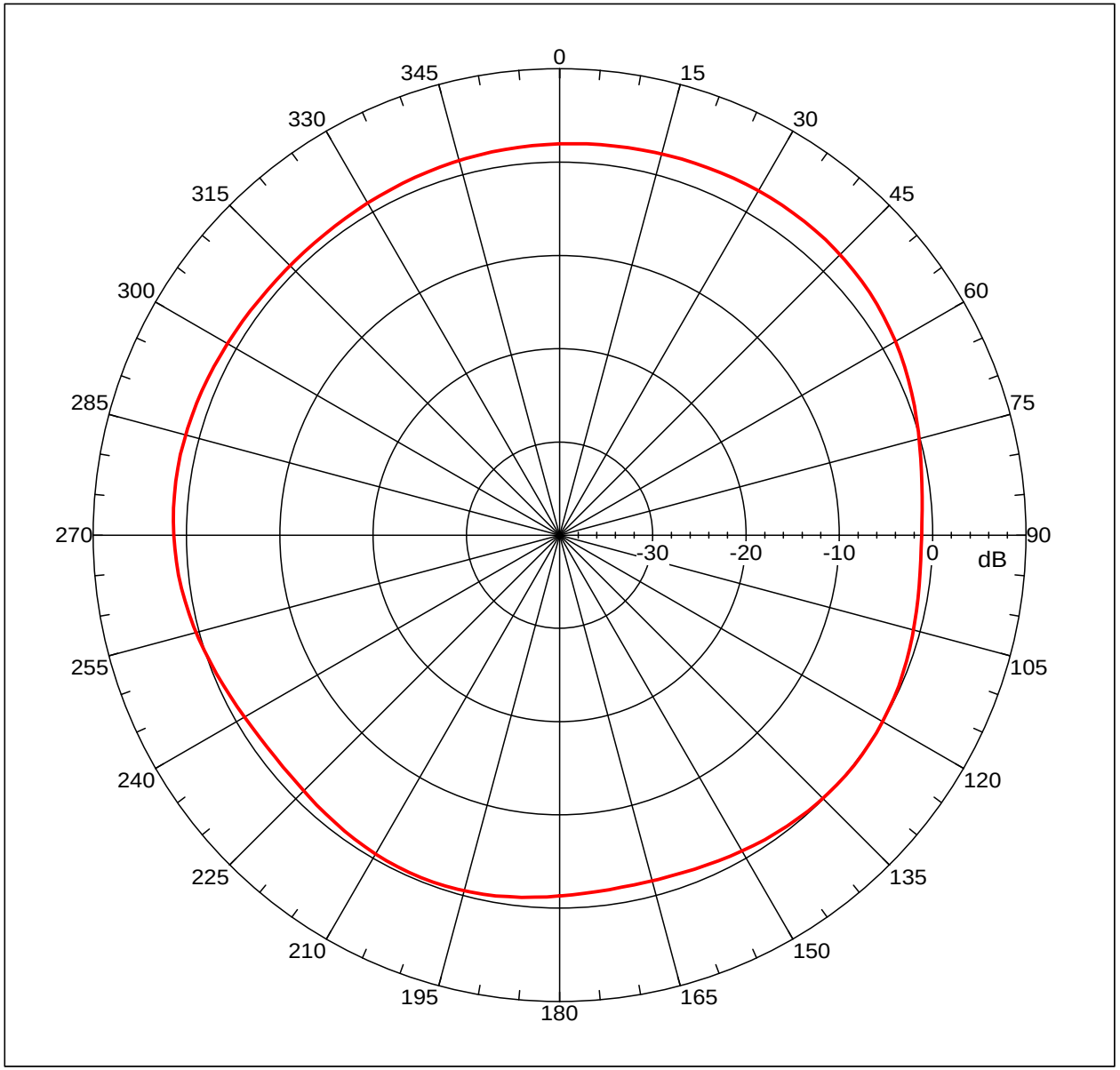

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = 2.92899  dBi
Max far-field (global) = -40.07035  dB, Max far-field (plot) =
-40.07035  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 31.99999  deg, Vpeak at: 0.000  deg
Plot centering: On

20100924 TH88C  800-2100mhz  H-PLANE

NSI2000 V4.0.124, Filename:C:\nsi2000\Data\20100924 TH88C
800-2100mhz  H-PLANE01.nsi
Measurement date/time: 9/24/2010 11:09:25 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: 1.617 dB
   -3. dB beam width: Not Found
   -6. dB beam width: Not Found
   -10. dB beam width: Not Found
   Left Sidelobe: Not Found
   Right Sidelobe: Not Found
Far-field display setup
   Azimuth (deg)
     Span = 360.00001  deg, Center = 0.000  deg, #pts = 181
     Start= -180.00001  deg, Stop = 180.00001  deg, Delta = 2.000
deg
   Elevation (deg)
     Center = 0.000  deg, #pts = 1

Selected beam(s) 1 of 10
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
1       0.824  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of 20100924 TH-88C 800-2100mhz H-PLANE01.nsi



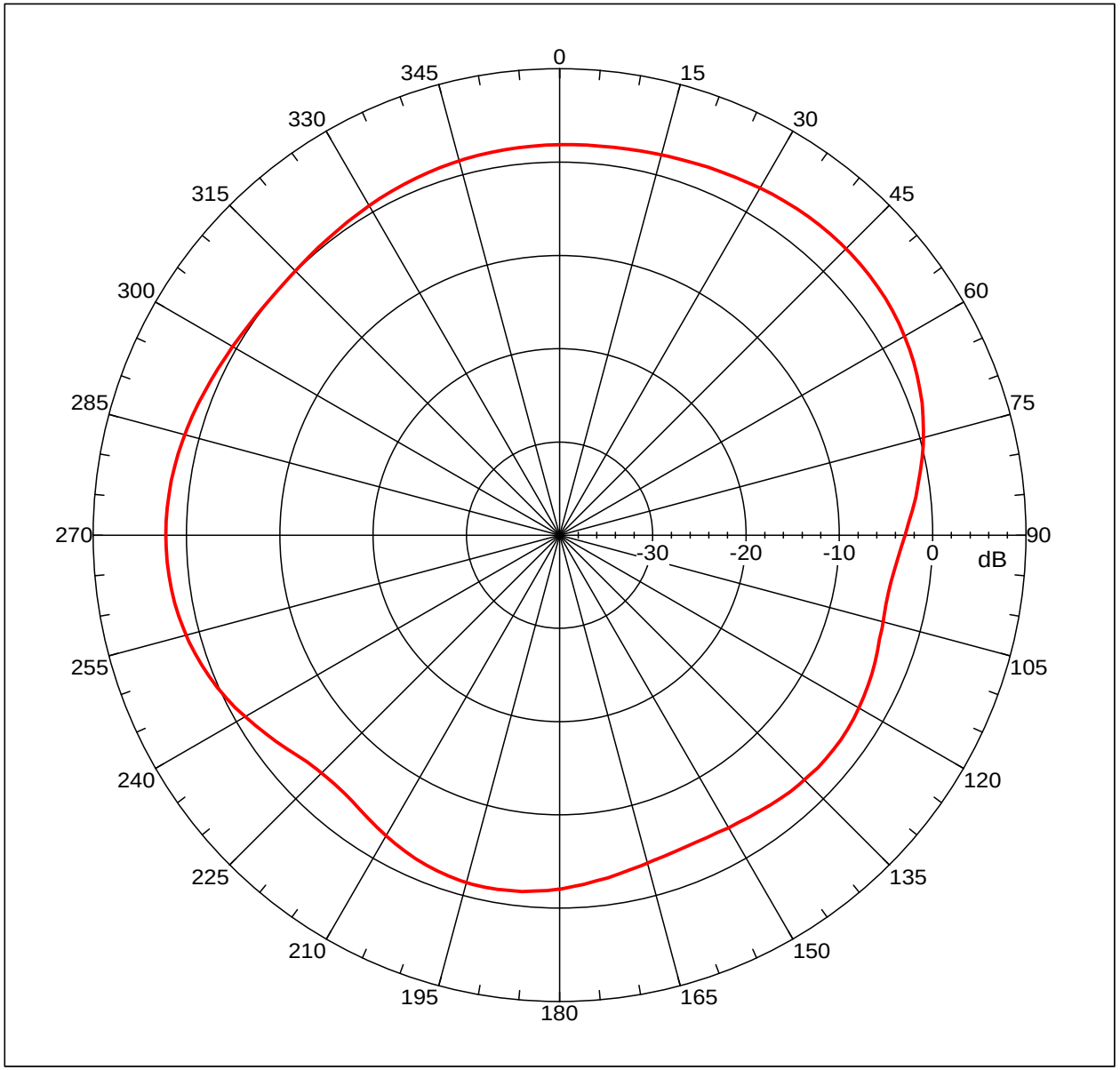

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = 2.6659  dBi
Max far-field (global) = -38.10193  dB, Max far-field (plot) =
-38.10194  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 33.99999  deg, Vpeak at: 0.000  deg
Plot centering: On

20100924 TH88C  800-2100mhz  H-PLANE

NSI2000 V4.0.124, Filename:C:\nsi2000\Data\20100924 TH88C
800-2100mhz  H-PLANE01.nsi
Measurement date/time: 9/24/2010 11:09:25 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: 0.489 dB
   -3. dB beam width: 190.07 deg
   -6. dB beam width: Not Found
   -10. dB beam width: Not Found
   Left Sidelobe: Not Found
   Right Sidelobe: -2.59 dB at 127.710  deg
Far-field display setup
   Azimuth (deg)
     Span = 360.00001  deg, Center = 0.000  deg, #pts = 181
     Start= -180.00001  deg, Stop = 180.00001  deg, Delta = 2.000
deg
   Elevation (deg)
     Center = 0.000  deg, #pts = 1

Selected beam(s) 1 of 10
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
2       0.860  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of 20100924 TH-88C 800-2100mhz H-PLANE01.nsi



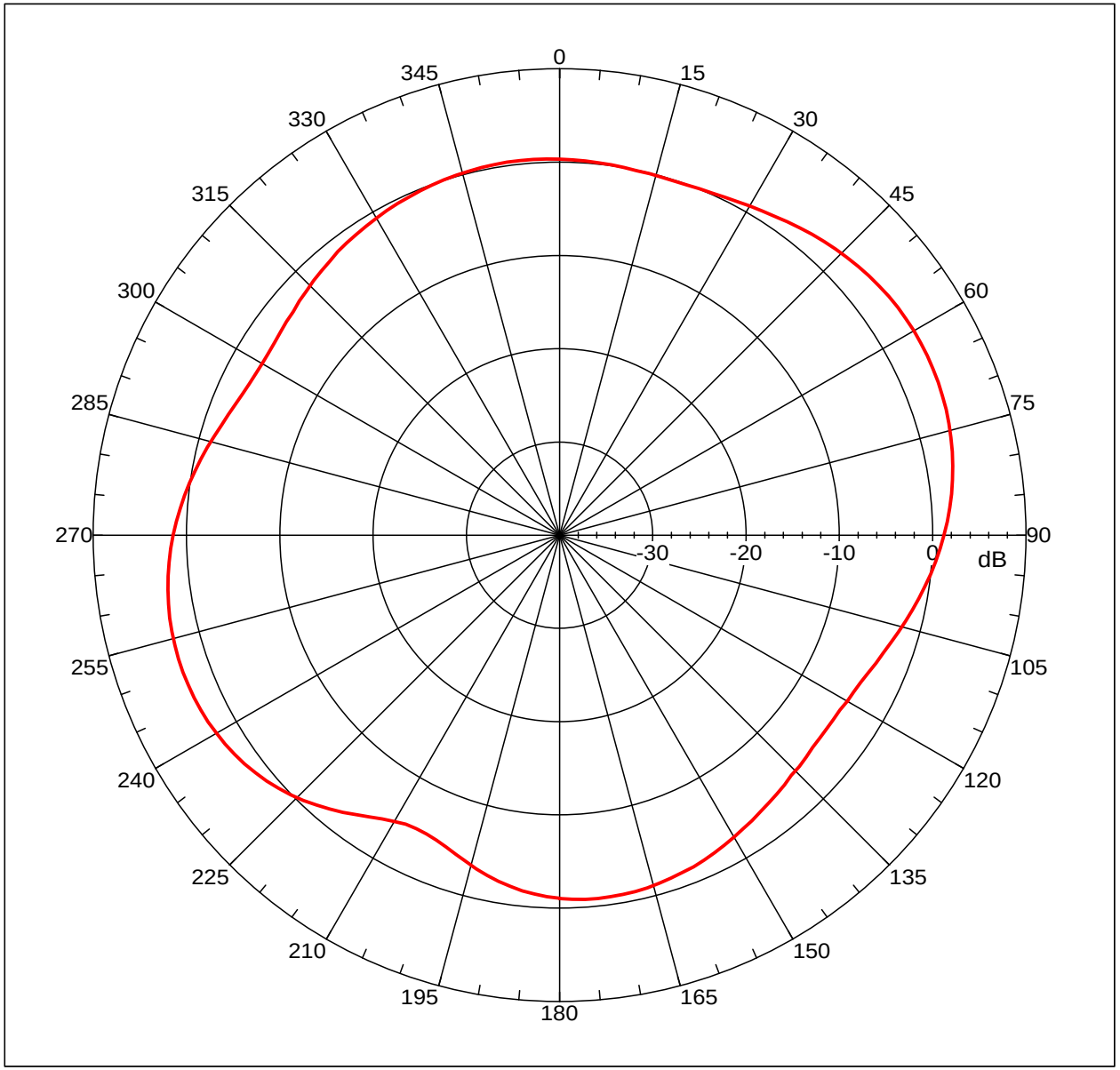

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = 3.41975  dBi
Max far-field (global) = -38.13993  dB, Max far-field (plot) =
-38.13993  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 43.99999  deg, Vpeak at: 0.000  deg
Plot centering: On

20100924 TH88C  800-2100mhz  H-PLANE

NSI2000 V4.0.124, Filename:C:\nsi2000\Data\20100924 TH88C
800-2100mhz  H-PLANE01.nsi
Measurement date/time: 9/24/2010 11:09:25 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -0.082 dB
   -3. dB beam width: 111.36 deg
   -6. dB beam width: 215.99 deg
   -10. dB beam width: Not Found
   Left Sidelobe: -1.23 dB at -89.497  deg
   Right Sidelobe: -6.14 dB at 127.710  deg
Far-field display setup
   Azimuth (deg)
     Span = 360.00001  deg, Center = 0.000  deg, #pts = 181
     Start= -180.00001  deg, Stop = 180.00001  deg, Delta = 2.000
deg
   Elevation (deg)
     Center = 0.000  deg, #pts = 1

Selected beam(s) 1 of 10
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
3       0.900  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of 20100924 TH-88C 800-2100mhz H-PLANE01.nsi



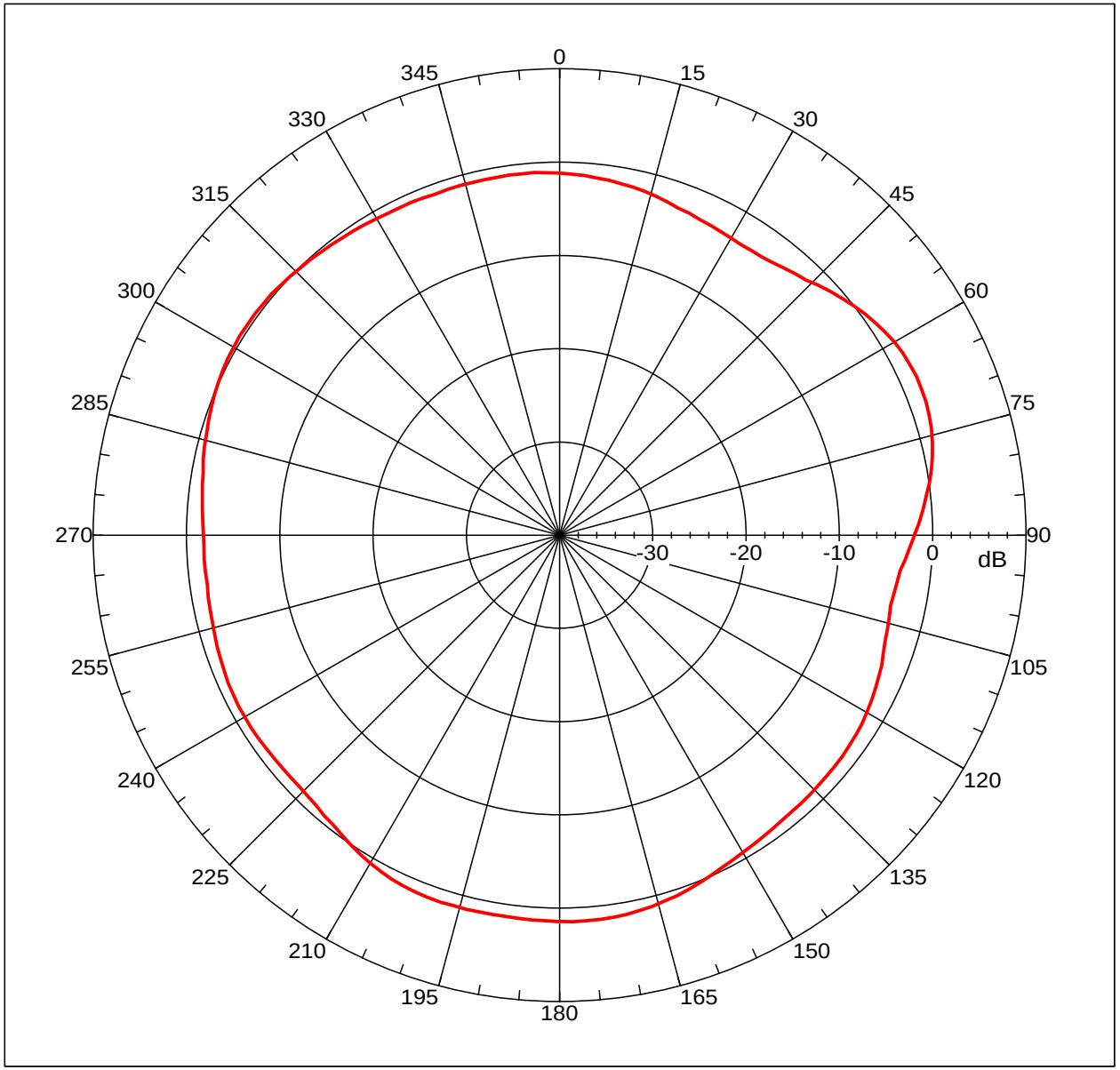

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = 3.86014  dBi
Max far-field (global) = -38.76953  dB, Max far-field (plot) =
-38.76954  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 63.99999  deg, Vpeak at: 0.000  deg
Plot centering: On

20100924 TH88C  800-2100mhz  H-PLANE

NSI2000 V4.0.124, Filename:C:\nsi2000\Data\20100924 TH88C
800-2100mhz  H-PLANE01.nsi
Measurement date/time: 9/24/2010 11:09:25 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -0.157 dB
   -3. dB beam width: 61.13 deg
   -6. dB beam width: 151.03 deg
   -10. dB beam width: Not Found
   Left Sidelobe: -0.91 dB at -109.609  deg
   Right Sidelobe: -4.68 dB at 175.978  deg
Far-field display setup
   Azimuth (deg)
     Span = 360.00001  deg, Center = 0.000  deg, #pts = 181
     Start= -180.00001  deg, Stop = 180.00001  deg, Delta = 2.000
deg
   Elevation (deg)
     Center = 0.000  deg, #pts = 1

Selected beam(s) 1 of 10
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
4       0.960  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of 20100924 TH-88C 800-2100mhz H-PLANE01.nsi



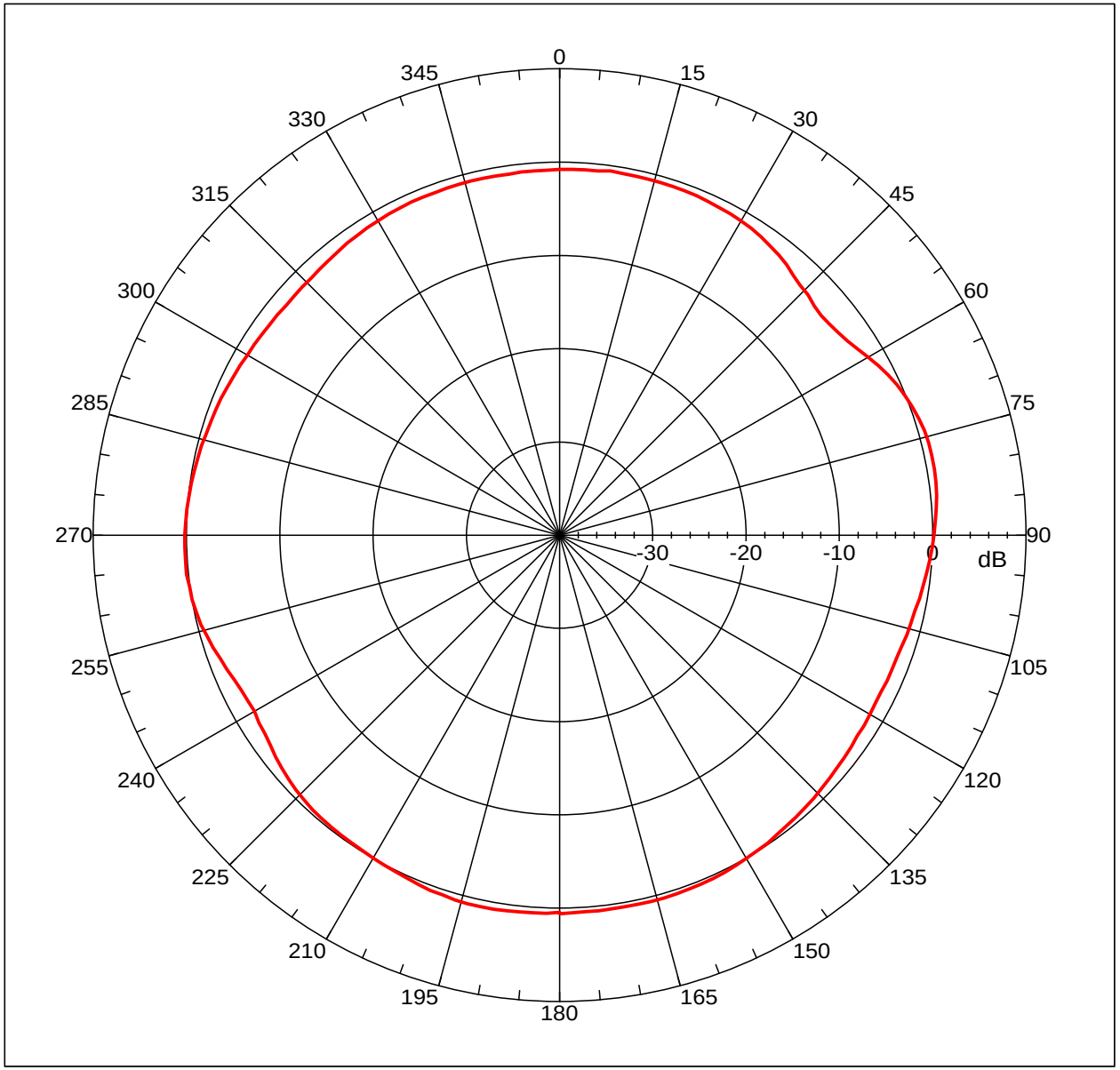

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = 1.86029  dBi
Max far-field (global) = -43.3323  dB, Max far-field (plot) =
-43.33234  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 66.000  deg, Vpeak at: 0.000  deg
Plot centering: On

20100924 TH88C  800-2100mhz  H-PLANE

NSI2000 V4.0.124, Filename:C:\nsi2000\Data\20100924 TH88C
800-2100mhz  H-PLANE01.nsi
Measurement date/time: 9/24/2010 11:09:25 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -0.670 dB
   -3. dB beam width: 39.74 deg
   -6. dB beam width: Not Found
   -10. dB beam width: Not Found
   Left Sidelobe: -2.92 dB at -3.017  deg
   Right Sidelobe: Not Found
Far-field display setup
   Azimuth (deg)
     Span = 360.00001  deg, Center = 0.000  deg, #pts = 181
     Start= -180.00001  deg, Stop = 180.00001  deg, Delta = 2.000
deg
   Elevation (deg)
     Center = 0.000  deg, #pts = 1

Selected beam(s) 1 of 10
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
5       1.710  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of 20100924 TH-88C 800-2100mhz H-PLANE01.nsi



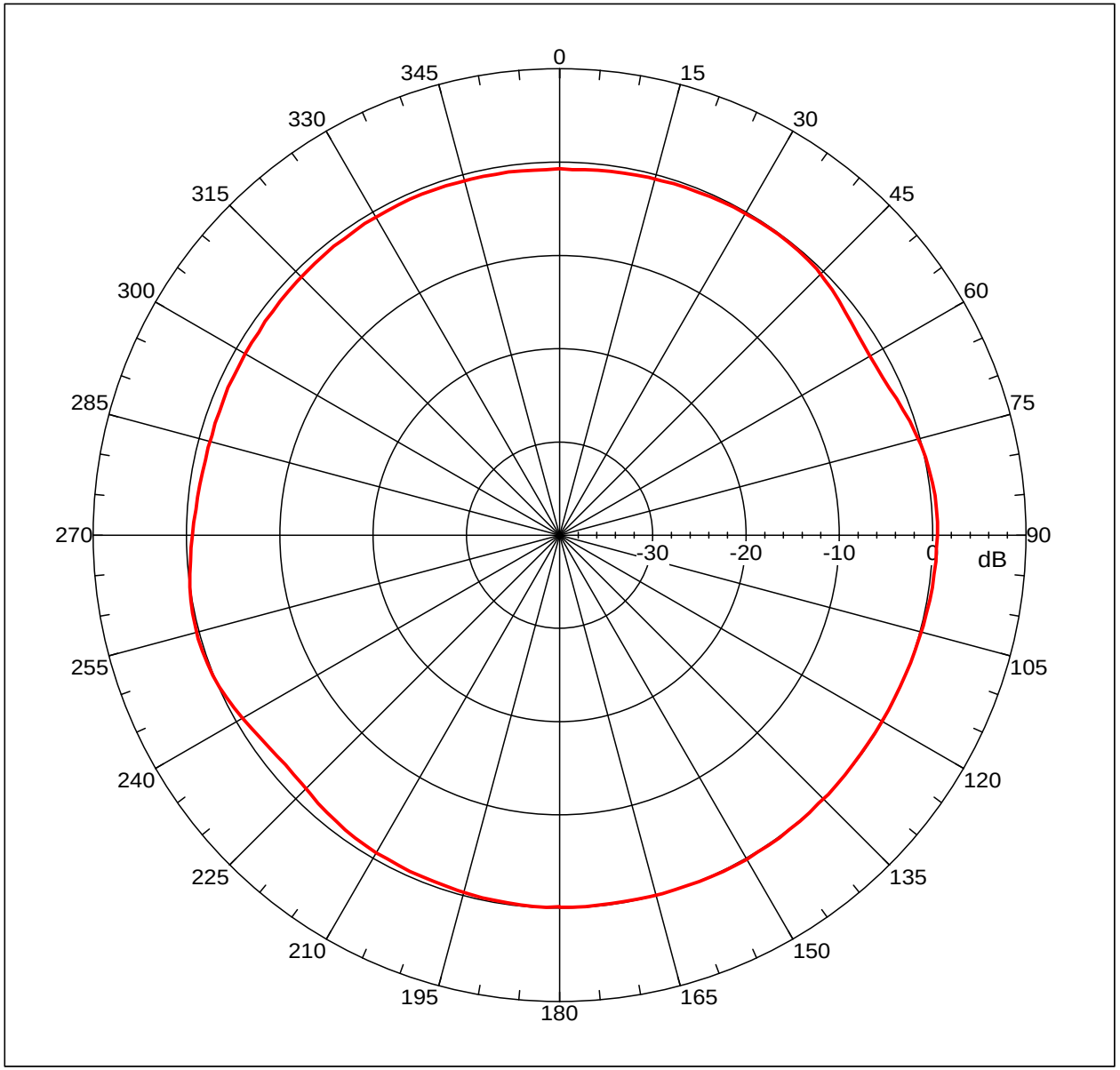

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = 0.78941  dBi
Max far-field (global) = -46.03263  dB, Max far-field (plot) =
-46.03263  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 79.99999  deg, Vpeak at: 0.000  deg
Plot centering: On

20100924 TH88C  800-2100mhz  H-PLANE

NSI2000 V4.0.124, Filename:C:\nsi2000\Data\20100924 TH88C
800-2100mhz  H-PLANE01.nsi
Measurement date/time: 9/24/2010 11:09:25 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -0.672 dB
   -3. dB beam width: Not Found
   -6. dB beam width: Not Found
   -10. dB beam width: Not Found
   Left Sidelobe: -1.47 dB at 17.095  deg
   Right Sidelobe: -0.32 dB at 167.933  deg
Far-field display setup
   Azimuth (deg)
     Span = 360.00001  deg, Center = 0.000  deg, #pts = 181
     Start= -180.00001  deg, Stop = 180.00001  deg, Delta = 2.000
deg
   Elevation (deg)
     Center = 0.000  deg, #pts = 1

Selected beam(s) 1 of 10
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
6       1.800  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of 20100924 TH-88C 800-2100mhz H-PLANE01.nsi



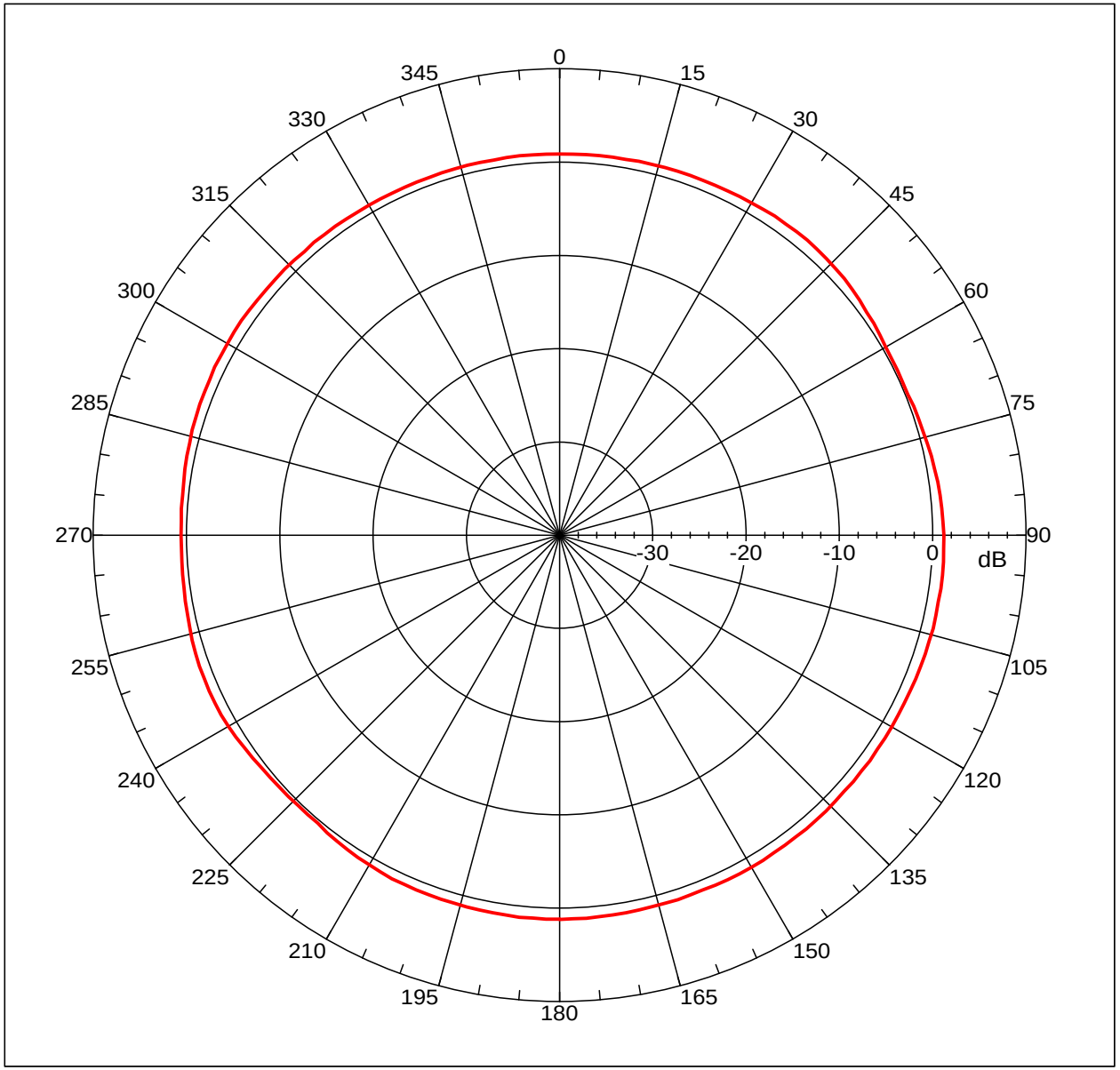

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = 0.53056  dBi
Max far-field (global) = -46.13801  dB, Max far-field (plot) =
-46.13803  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 87.99999  deg, Vpeak at: 0.000  deg
Plot centering: On

20100924 TH88C  800-2100mhz  H-PLANE

NSI2000 V4.0.124, Filename:C:\nsi2000\Data\20100924 TH88C
800-2100mhz  H-PLANE01.nsi
Measurement date/time: 9/24/2010 11:09:25 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -0.460 dB
   -3. dB beam width: Not Found
   -6. dB beam width: Not Found
   -10. dB beam width: Not Found
   Left Sidelobe: -0.65 dB at 37.207  deg
   Right Sidelobe: Not Found
Far-field display setup
   Azimuth (deg)
     Span = 360.00001  deg, Center = 0.000  deg, #pts = 181
     Start= -180.00001  deg, Stop = 180.00001  deg, Delta = 2.000
deg
   Elevation (deg)
     Center = 0.000  deg, #pts = 1

Selected beam(s) 1 of 10
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
7       1.880  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of 20100924 TH-88C 800-2100mhz H-PLANE01.nsi



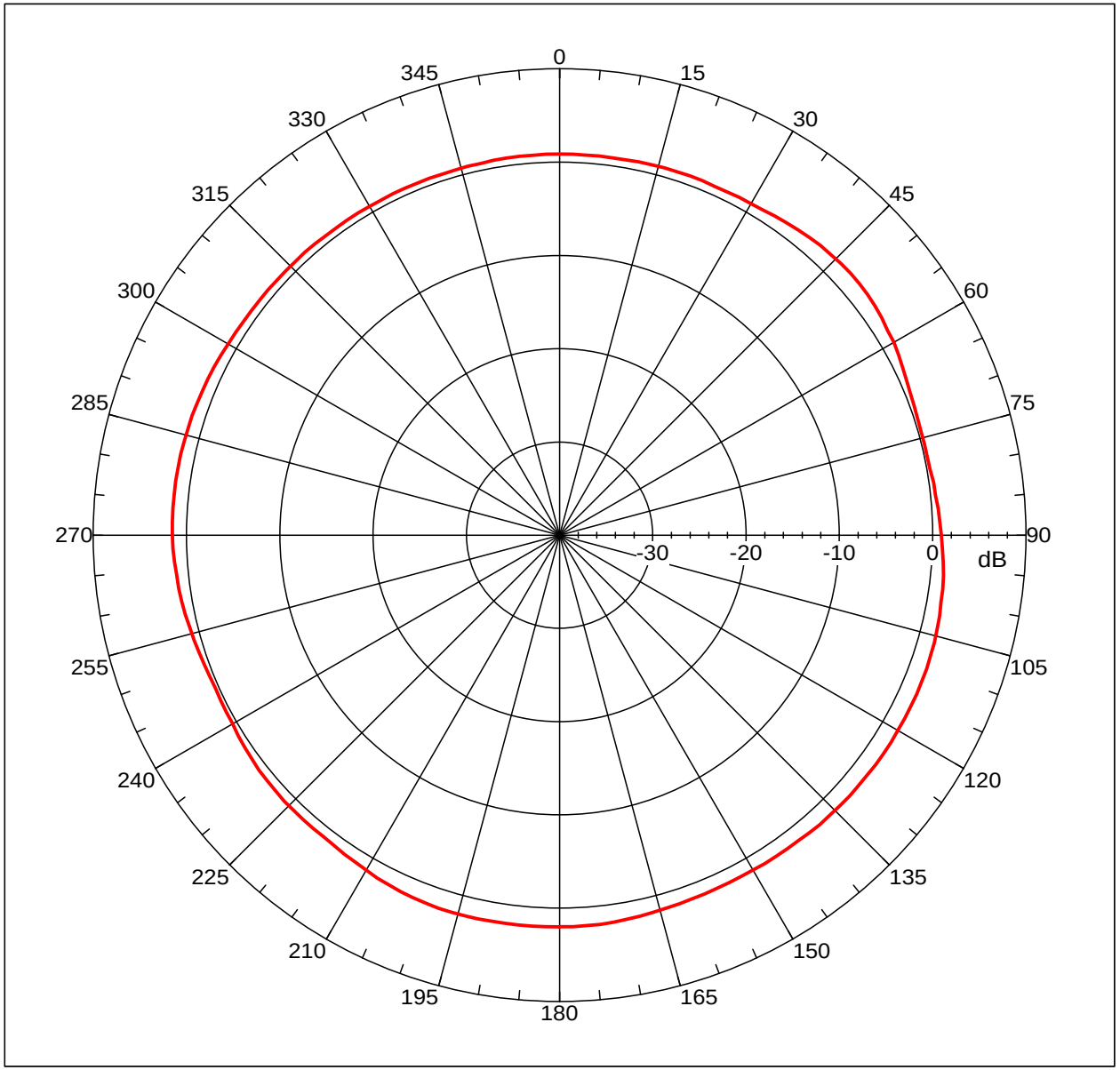

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = 1.28112  dBi
Max far-field (global) = -46.52498  dB, Max far-field (plot) =
-46.52499  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 39.99999  deg, Vpeak at: 0.000  deg
Plot centering: On

20100924 TH88C  800-2100mhz  H-PLANE

NSI2000 V4.0.124, Filename:C:\nsi2000\Data\20100924 TH88C
800-2100mhz  H-PLANE01.nsi
Measurement date/time: 9/24/2010 11:09:25 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: 0.932 dB
   -3. dB beam width: Not Found
   -6. dB beam width: Not Found
   -10. dB beam width: Not Found
   Left Sidelobe: Not Found
   Right Sidelobe: -0.01 dB at 99.553  deg
Far-field display setup
   Azimuth (deg)
     Span = 360.00001  deg, Center = 0.000  deg, #pts = 181
     Start= -180.00001  deg, Stop = 180.00001  deg, Delta = 2.000
deg
   Elevation (deg)
     Center = 0.000  deg, #pts = 1

Selected beam(s) 1 of 10
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
8       1.990  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of 20100924 TH-88C 800-2100mhz H-PLANE01.nsi



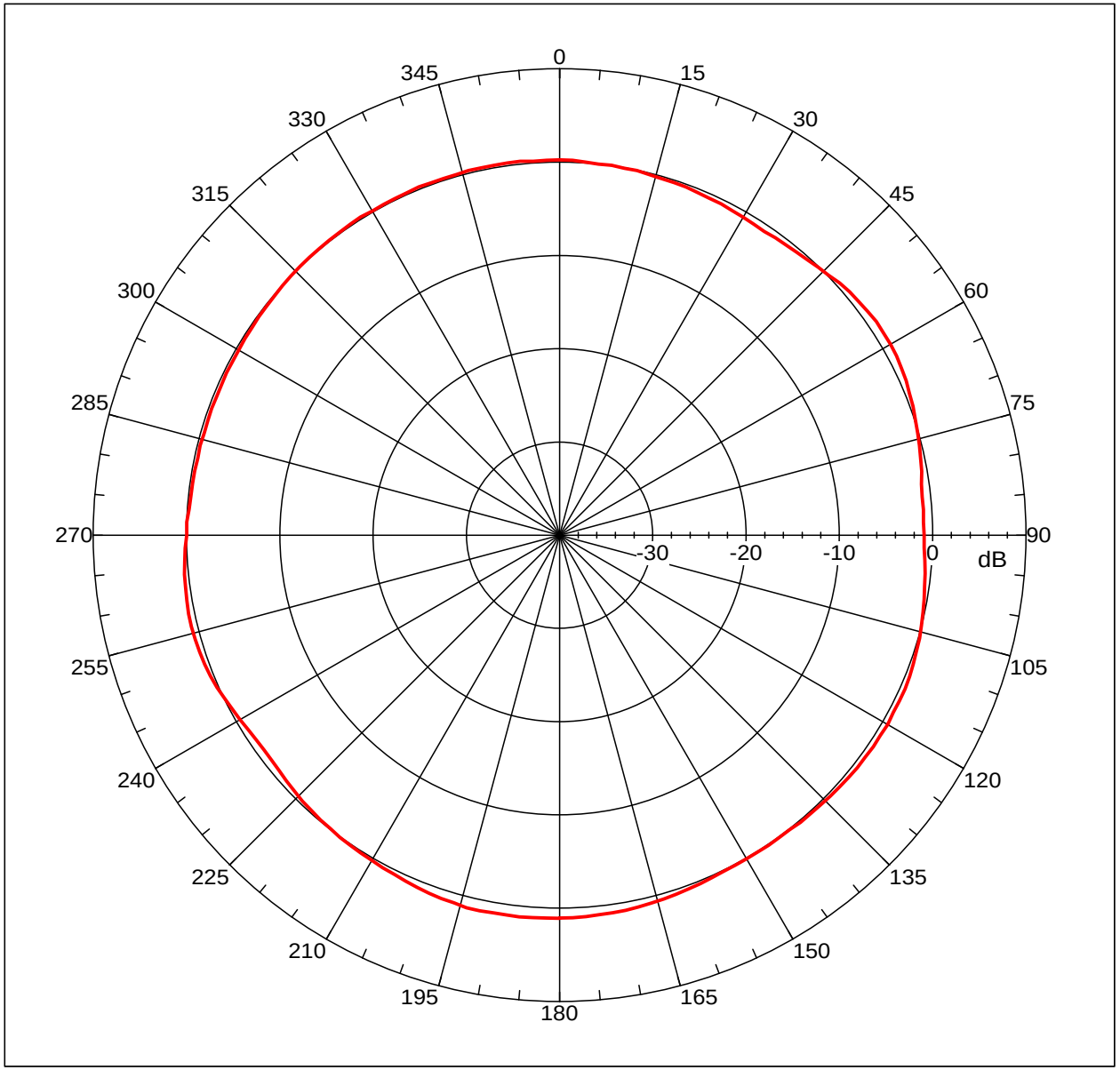

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = 2.06857  dBi
Max far-field (global) = -45.25813  dB, Max far-field (plot) =
-45.25813  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: -168.000  deg, Vpeak at: 0.000  deg
Plot centering: On

20100924 TH88C  800-2100mhz  H-PLANE

NSI2000 V4.0.124, Filename:C:\nsi2000\Data\20100924 TH88C
800-2100mhz  H-PLANE01.nsi
Measurement date/time: 9/24/2010 11:09:25 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: 1.252 dB
   -3. dB beam width: Not Found
   -6. dB beam width: Not Found
   -10. dB beam width: Not Found
   Left Sidelobe: Not Found
   Right Sidelobe: -0.53 dB at -85.475  deg
Far-field display setup
   Azimuth (deg)
     Span = 360.00001  deg, Center = 0.000  deg, #pts = 181
     Start= -180.00001  deg, Stop = 180.00001  deg, Delta = 2.000
deg
   Elevation (deg)
     Center = 0.000  deg, #pts = 1

Selected beam(s) 1 of 10
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
9       2.100  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of 20100924 TH-88C 800-2100mhz H-PLANE01.nsi




```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = 1.18074  dBi
Max far-field (global) = -46.35137  dB, Max far-field (plot) =
-46.35152  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: -166.000  deg, Vpeak at: 0.000  deg
Plot centering: On

20100924 TH88C  800-2100mhz  H-PLANE

NSI2000 V4.0.124, Filename:C:\nsi2000\Data\20100924 TH88C
800-2100mhz  H-PLANE01.nsi
Measurement date/time: 9/24/2010 11:09:25 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: 0.125 dB
   -3. dB beam width: Not Found
   -6. dB beam width: Not Found
   -10. dB beam width: Not Found
   Left Sidelobe: Not Found
   Right Sidelobe: -0.53 dB at -101.564  deg
Far-field display setup
   Azimuth (deg)
     Span = 360.00001  deg, Center = 0.000  deg, #pts = 181
     Start= -180.00001  deg, Stop = 180.00001  deg, Delta = 2.000
deg
   Elevation (deg)
     Center = 0.000  deg, #pts = 1

Selected beam(s) 1 of 10
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
10      2.170  GHz  Azimuth  Elevation  Single-pol
```