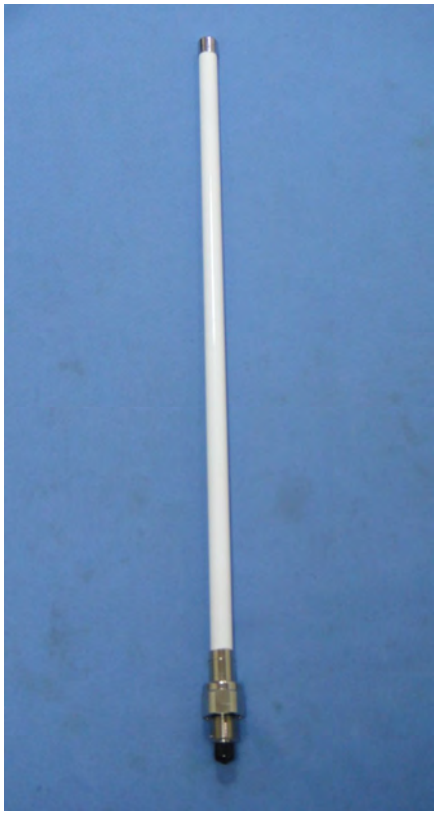
ADS-B Omni Antenna

Model : TH1090



1. GENERAL DESCRIPTION

Model No
TH1090-N(F)

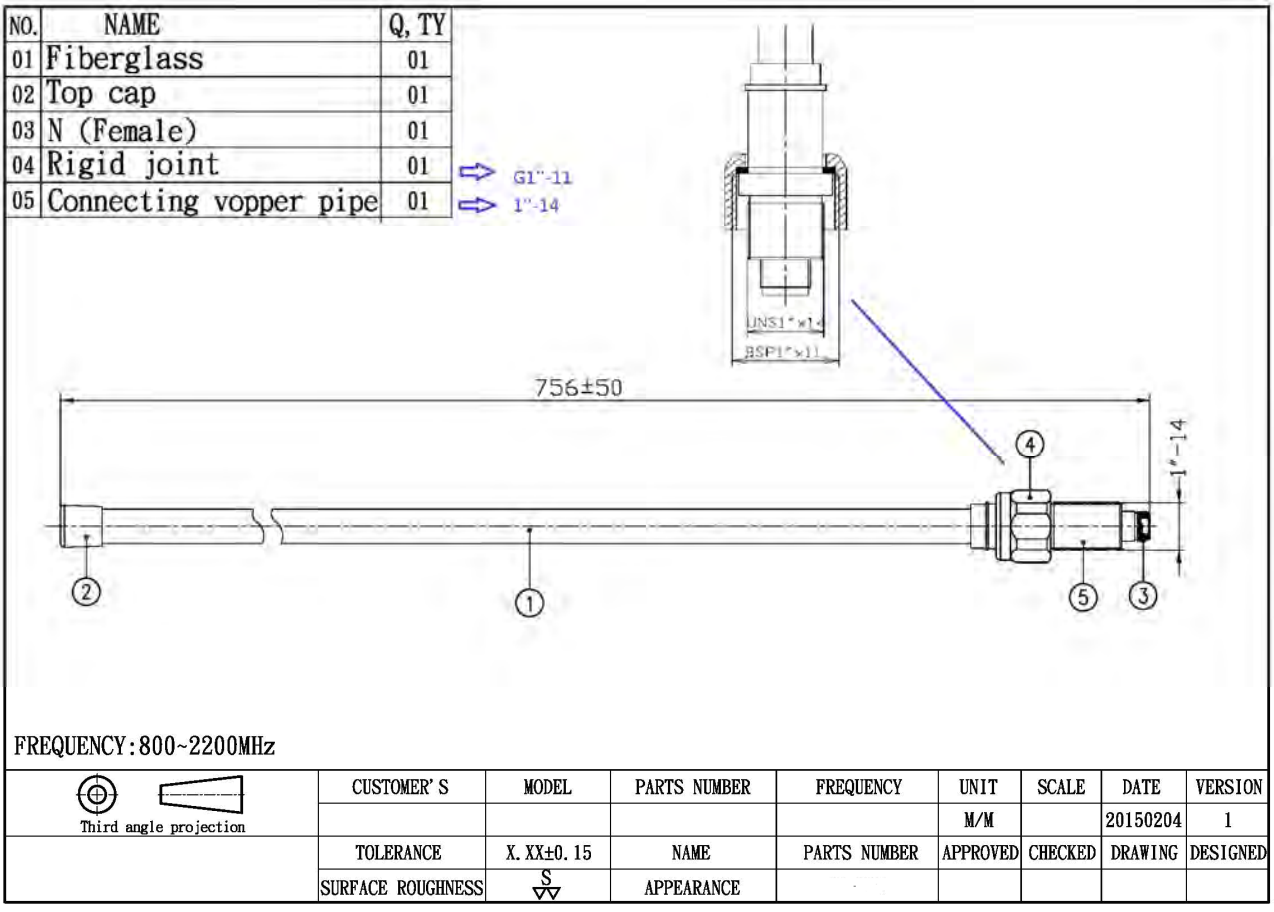
1.1 Electrical Properties

Parameter	Description
Frequency Band	1090±10MHz
Nominal Impedance	50 ohm
Polarization	Vertical
Return Loss	Please See Data-1
V.S.W.R	2.0:1
Gain	3dbi

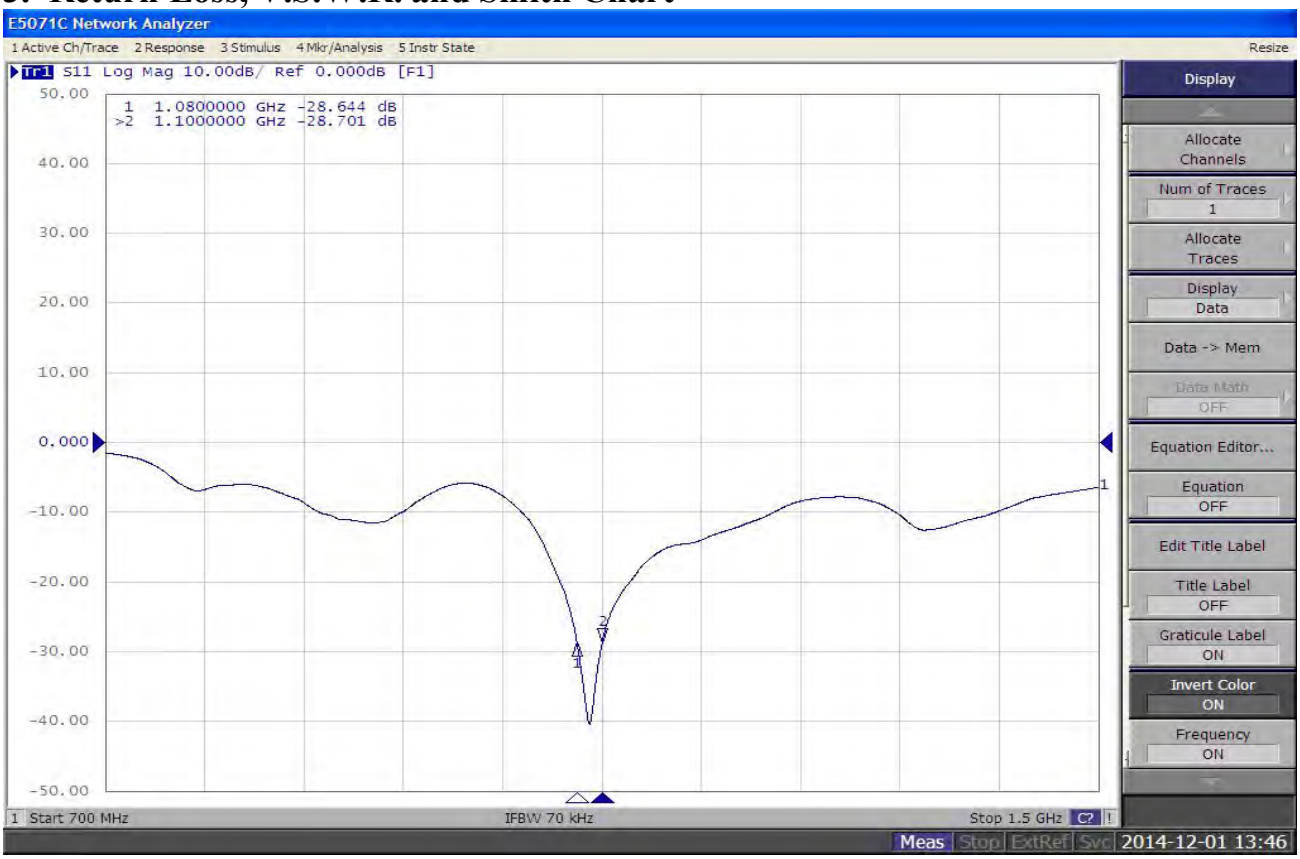
1.2 Mechanical Properties

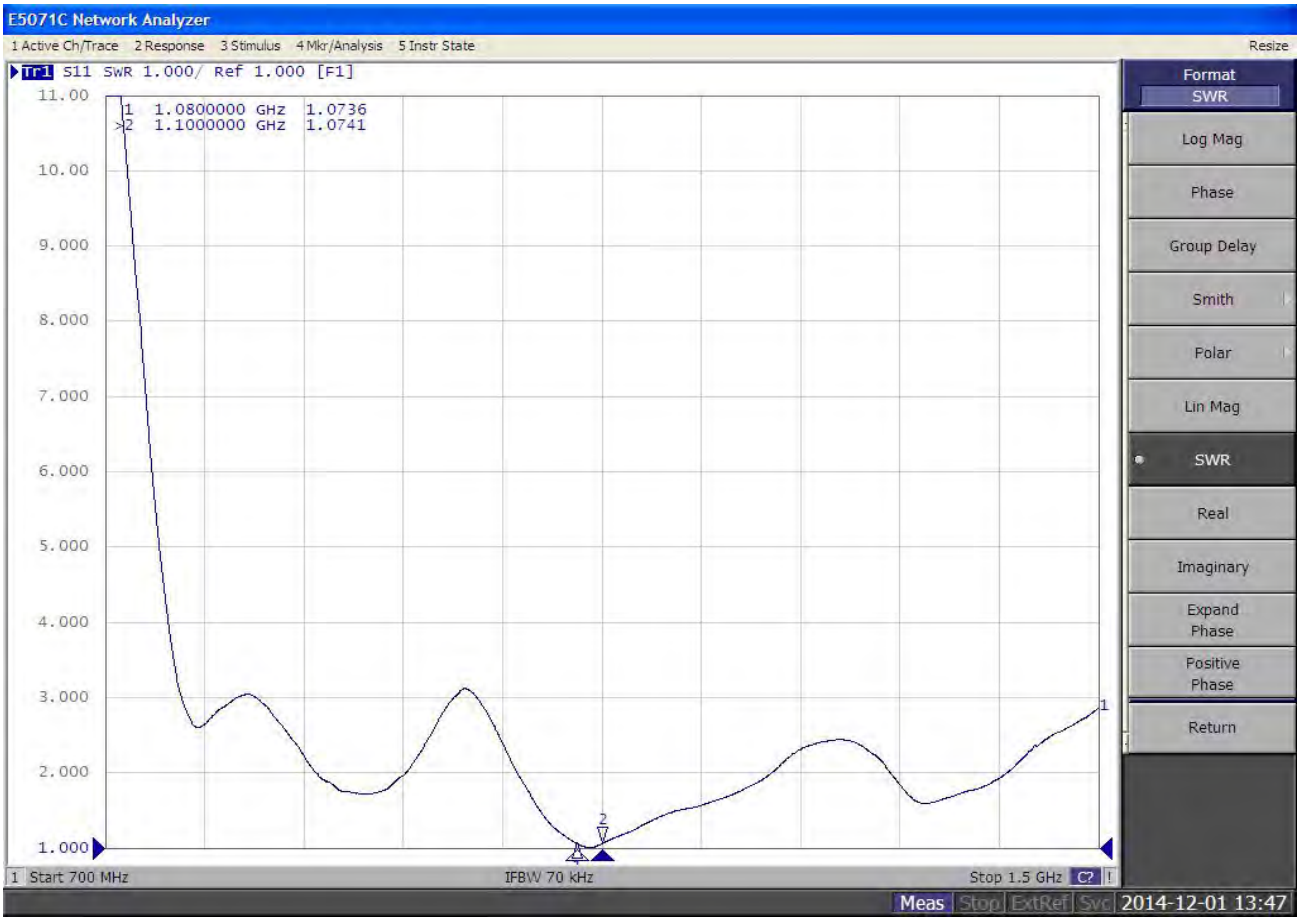
Parameter	Description
Antenna Type	Base Antenna
Antenna Cover	Fiber
Connector Type	N (Female)
Antenna Dimensions	756mm ±50
Antenna Color	White
Operating Temperature Range	-20°C~+60°C
Storage Temperature Range	-30°C~+70°C

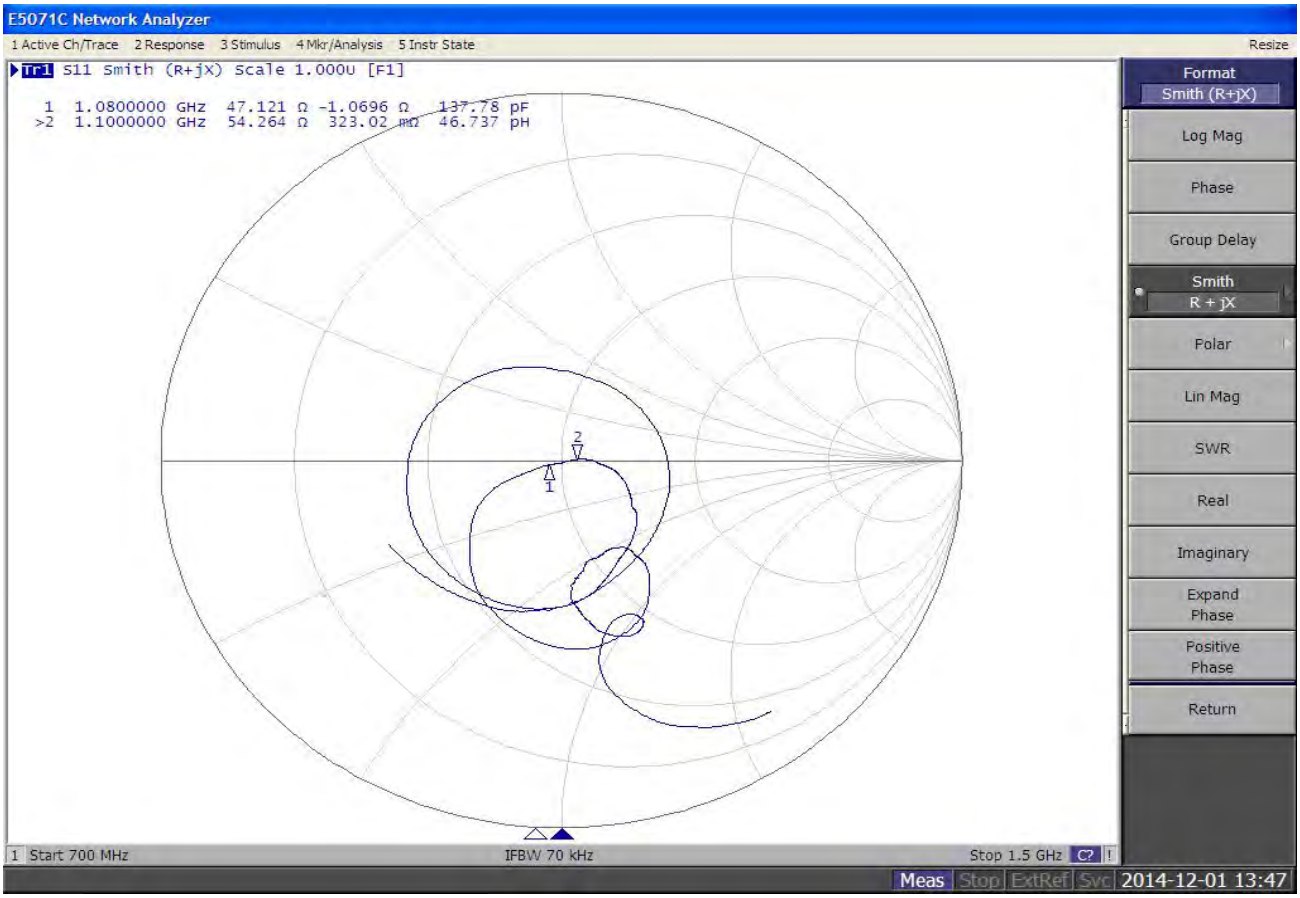
2. Appearance

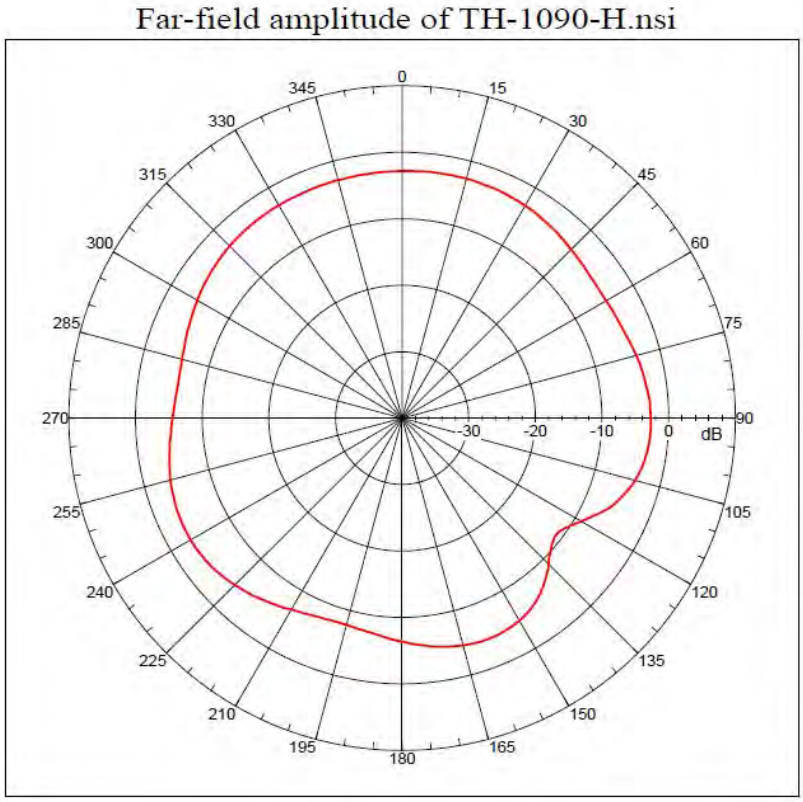


3. Return Loss, V.S.W.R. and Smith Chart







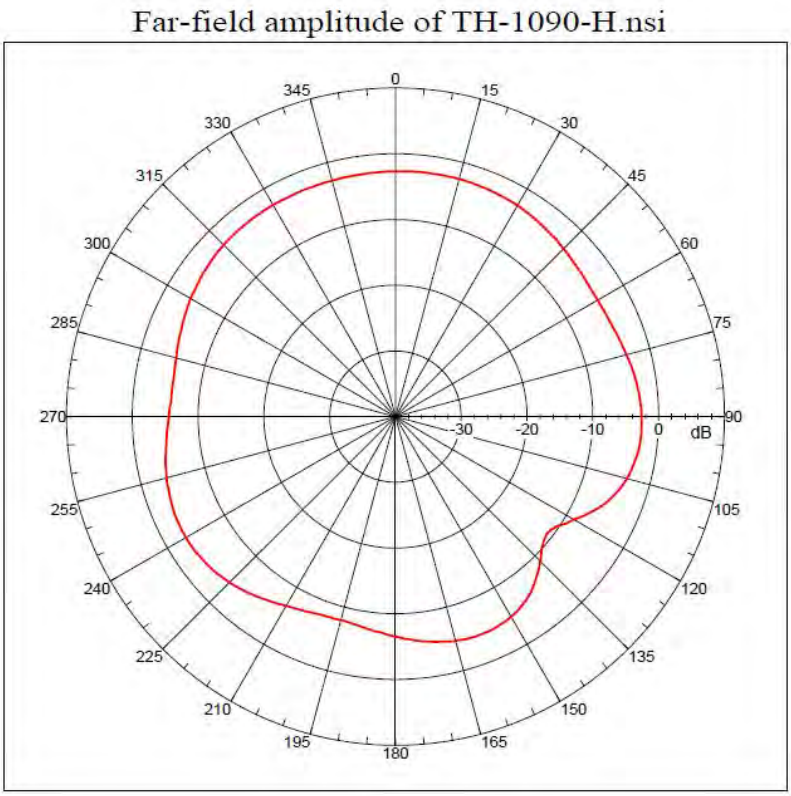



```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = -2.64007  dBi
Max far-field (global) = -45.90821  dB, Max far-field (plot) =
-45.90823  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 91.99999  deg, Vpeak at: 0.000  deg
Plot centering: On.

AIR-Wave FRC-700 800F-10 Measurement System ATP with SG430,
dual-pol test.

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\TH
-1090-H.nsi
Measurement date/time: 3/4/2015 2:07:36 PM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -4.530 dB
   -3. dB beam width: 184.89 deg
   -6. dB beam width: Not Found
   -10. dB beam width: Not Found
   Left Sidelobe: -0.16 dB at 23.129  deg
   Right Sidelobe: -1.70 dB at 161.899  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 4.
Beam    Frequency   Azimuth   Elevation   Pol
----    ---------   -------   ---------   ---
2       1.080  GHz  Azimuth   Elevation   Single-pol
```

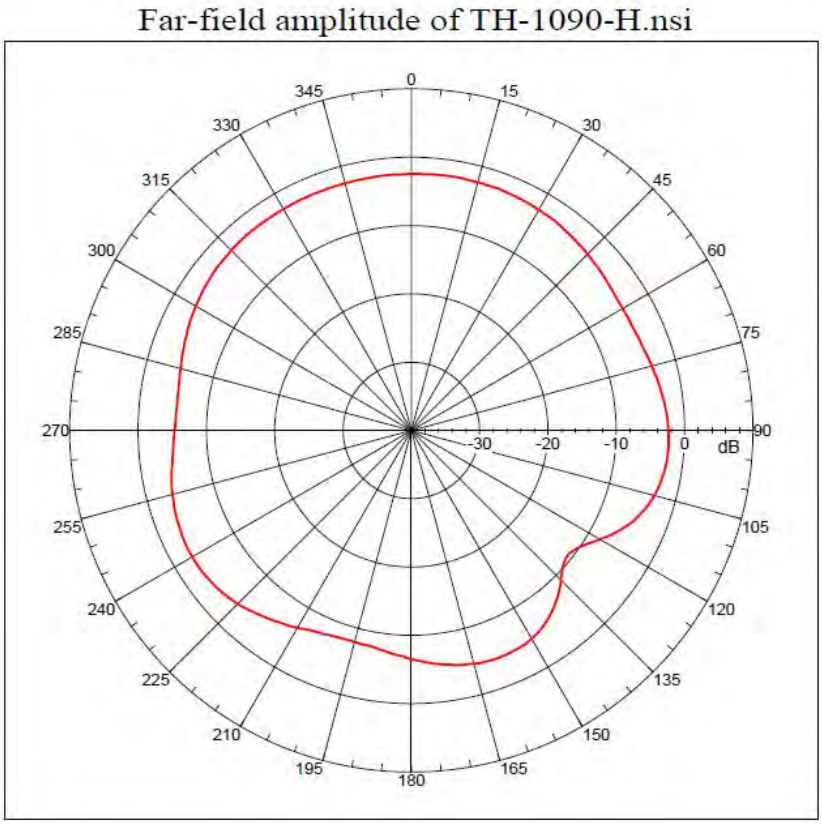



```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = -2.55787  dBi
Max far-field (global) = -46.09031  dB, Max far-field (plot) =
-46.09032  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 93.99999  deg, Vpeak at: 0.000  deg
Plot centering: On

AIR-Wave FFC-700 800F-10 Measurement System ATP with SG430,
dual-pol test.

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\TH
-1090-H.nsi
Measurement date/time: 3/4/2015 2:07:36 PM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -4.407 dB
   -3. dB beam width: 189.41 deg
   -6. dB beam width: Not Found
   -10. dB beam width: Not Found
   Left Sidelobe: -0.10 dB at 23.129  deg
   Right Sidelobe: -1.83 dB at 157.877  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 4
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
3       1.090  GHz  Azimuth  Elevation  Single-pol
```

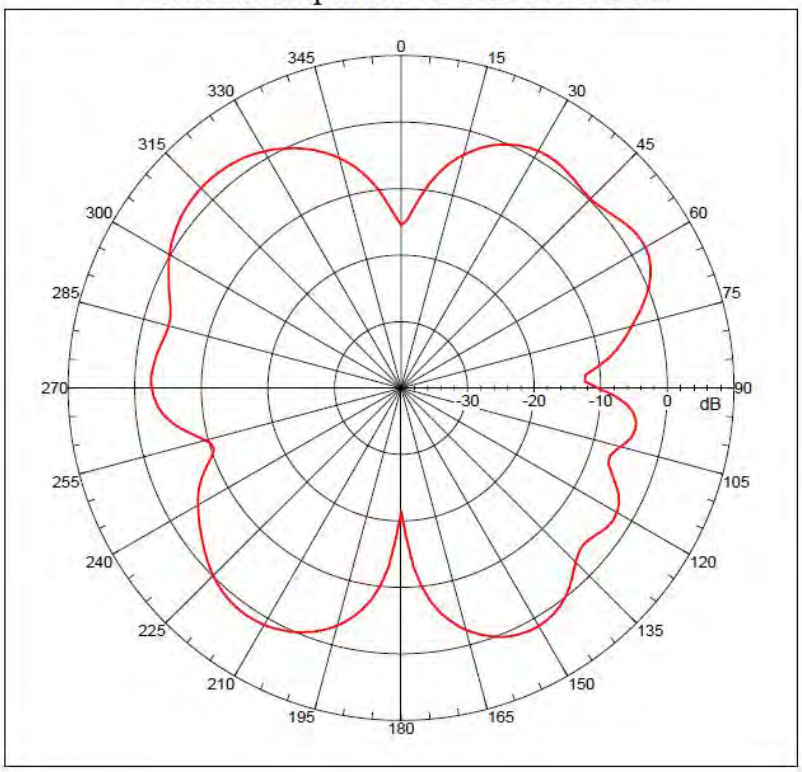



```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = -2.29864  dBi
Max far-field (global) = -46.27538  dB, Max far-field (plot) =
-46.2794  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 93.99999  deg, Vpeak at: 0.000  deg
Plot centering: On

AIR-Wave FFC-700 800F-10 Measurement System ATP with SG430,
dual-pol test.

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\TH
-1090-H.nsi
Measurement date/time: 3/4/2015 2:07:36 PM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -4.183 dB
   -3. dB beam width: 192.42 deg
   -6. dB beam width: Not Found
   -10. dB beam width: Not Found
   Left Sidelobe: -0.51 dB at 35.196  deg
   Right Sidelobe: -2.06 dB at 159.888  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 4
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
4       1.100  GHz  Azimuth  Elevation  Single-pol
```

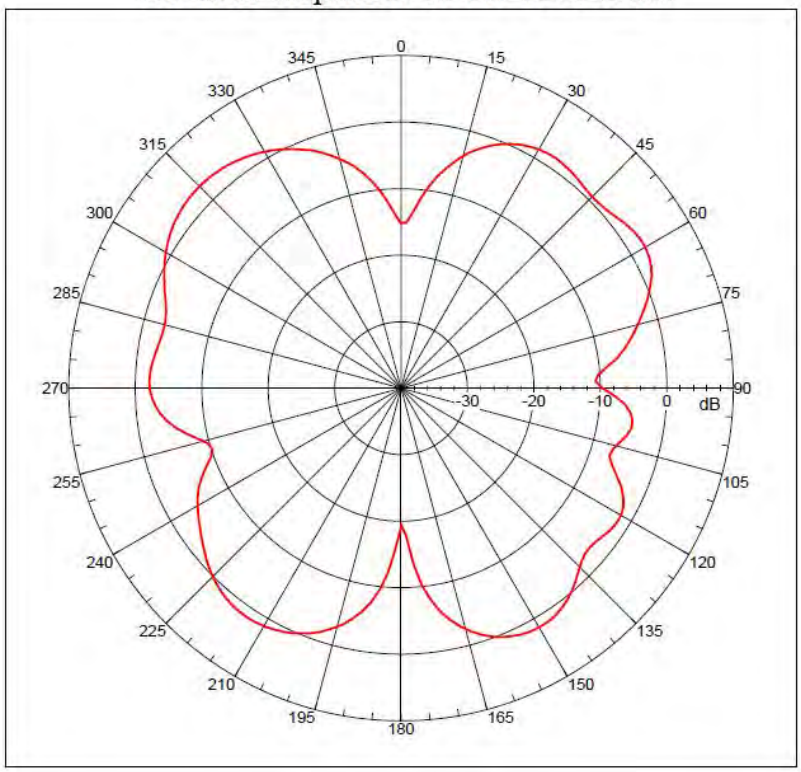



```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = 2.49385  dBi
Max far-field (global) = -40.77433  dB, Max far-field (plot) =
-40.77435  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: -42.000  deg, Vpeak at: 0.000  deg
Plot centering: On

AIR-Wave FFC-700 800F-10 Measurement System ATP with SG430,
dual-pol test.

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\TH
-1090-E.nsi
Measurement date/time: 3/4/2015 2:33:23 PM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -2.214 dB
   -3. dB beam width: 38.20 deg
   -6. dB beam width: 55.37 deg
   -10. dB beam width: 92.87 deg
   Left Sidelobe: -4.93 dB at -87.486  deg
   Right Sidelobe: -1.22 dB at 33.184  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 4
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
2       1.090  GHz  Azimuth  Elevation  Single-pol
```

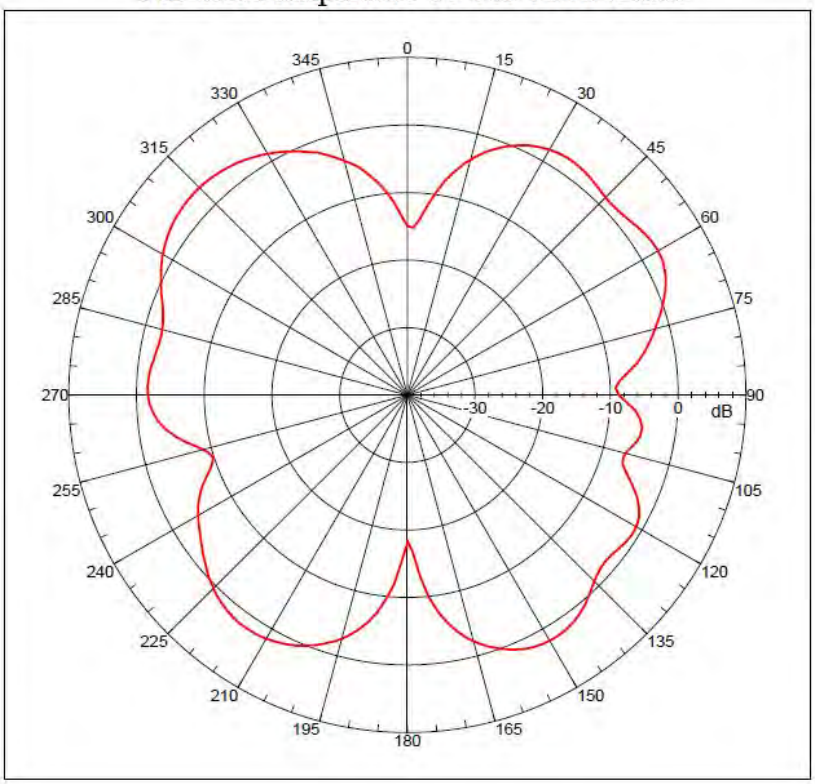



```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = 2.86836  dBi
Max far-field (global) = -40.66408  dB, Max far-field (plot) =
-40.6641  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: -44.00001  deg, Vpeak at: 0.000  deg
Plot centering: On

AIR-Wave FFC-700 800F-10 Measurement System ATP with SG430,
dual-pol test.

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\TH
-1090-E.nsi
Measurement date/time: 3/4/2015 2:33:23 PM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -1.934 dB
   -3. dB beam width: 37.81 deg
   -6. dB beam width: 56.60 deg
   -10. dB beam width: 92.51 deg
   Left Sidelobe: -4.99 dB at -87.486  deg
   Right Sidelobe: -1.26 dB at 33.196  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 4
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
3       1.090  GHz  Azimuth  Elevation  Single-pol
```




```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = 3.42003  dBi
Max far-field (global) = -40.55671  dB, Max far-field (plot) =
-40.55672  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: -46.00001  deg, Vpeak at: 0.000  deg
Plot centering: On

AIR-Wave FFC-700 800F-10 Measurement System ATP with SG430,
dual-pol test.

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\TH
-1090-E.nsi
Measurement date/time: 3/4/2015 2:33:23 PM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -1.430 dB
   -3. dB beam width: 37.37 deg
   -6. dB beam width: 57.70 deg
   -10. dB beam width: 92.23 deg
   Left Sidelobe: -1.50 dB at -143.799  deg
   Right Sidelobe: -1.08 dB at 35.196  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 4
Beam     Frequency   Azimuth  Elevation  Pol
-----    ---------   -------  ---------  ---
4        1.100  GHz  Azimuth  Elevation  Single-pol
```