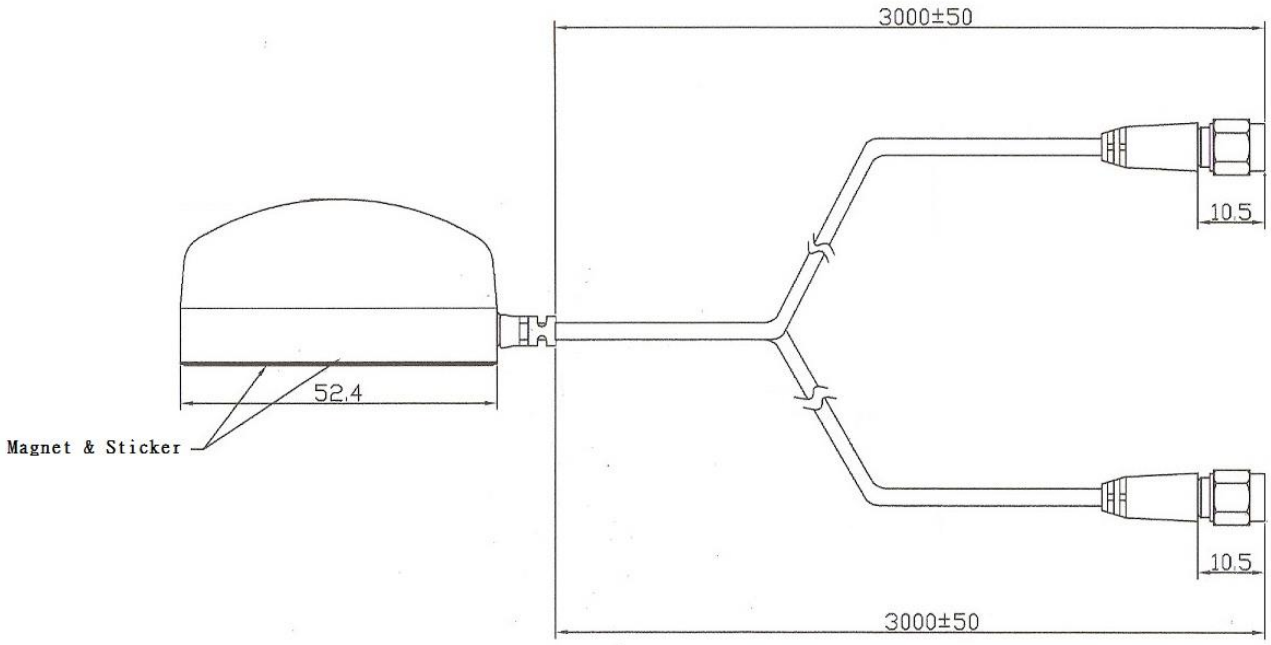
Specification

1.1 Product Type: Combined Antenna for GPS/GLONASS/4G/LTE

1.2 Product's No: R34 series (Magnetic Mount Type)

1.3 Product's Photo:

2.1 Technical Drawing:



GPS/GLONASS Antenna

Frequency	1575.42 / 1602 MHz
Polarization	RHCP(Right Hand Circular Polarization)
Gain	LNA 30 dBi
Impedance	50Ω
VSWR	2.0:1

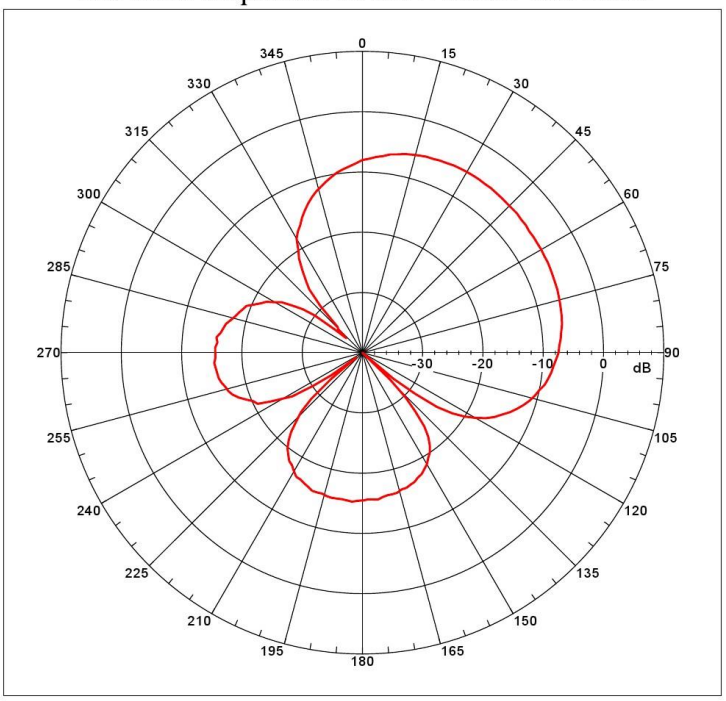
LTE Antenna

Frequency	824~960 / 1710~2170 / 2700 MHz
Gain	0~2 dBi
Impedance	50Ω
VSWR	2.0:1 / 2.3:1 / 2.0:1

2.1 Test Report:

Frequency (MHz)	Return loss (dBi)	VSWR	E-Plane (dBi)	H-Plane (dBi)
1575.42±1.023 (GPS)	-18.2	1.2	36.05	21.24
1597.52~1605.92 (GLONASS)	-12.8	1.5	23.95	16.54
824	-12.39	1.63	-5.35	-3.27
880	-14.26	1.50	-11.39	-10.03
960	-9.80	1.96	-5.69	-8.12
1710	-12.33	1.64	-9.88	-5.99
1880	-11.47	1.73	-10.05	-1.85
2170	-8.91	2.11	-13.35	-4.82
2600	-15.19	1.42	-1.83	-2.94
2700	-15.18	1.42	-----	-----

Far-field amplitude of R34+Cable-3M-E.nsi



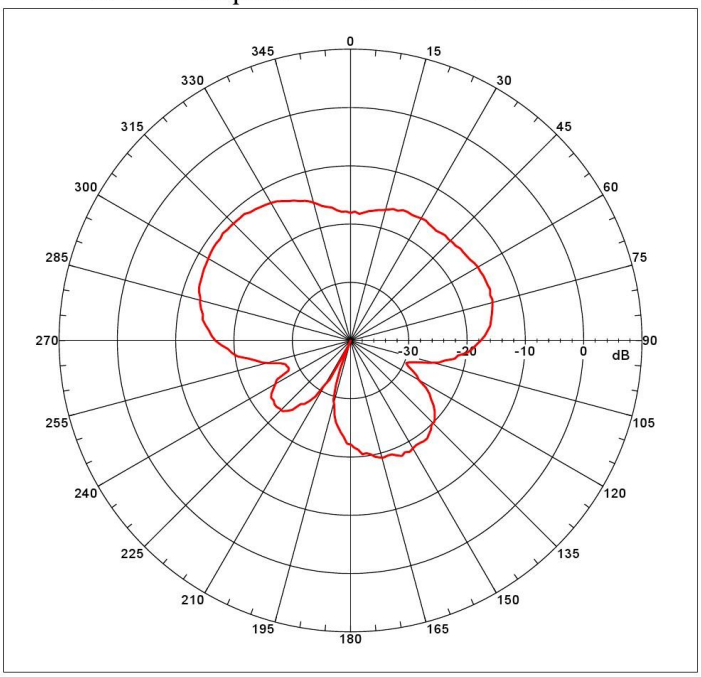

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = -5.35178  dBi
Max far-field (global) = -48.35112  dB, Max far-field (plot) =
-48.35112  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 33.99999  deg, Vpeak at: 0.000  deg
Plot centering: On

R34+Cable-3M-E

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\R3
4+Cable-3M\R34+Cable-3M-E.nsi
Measurement date/time: 2/24/2017 11:41:48 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -12.665 dB
   -3. dB beam width: 96.54 deg
   -6. dB beam width: 120.45 deg
   -10. dB beam width: 135.94 deg
   Left Sidelobe: -10.30 dB at -83.464  deg
   Right Sidelobe: -11.05 dB at 163.911  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 7
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
1       0.824  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of R34+Cable-3M-E.nsi



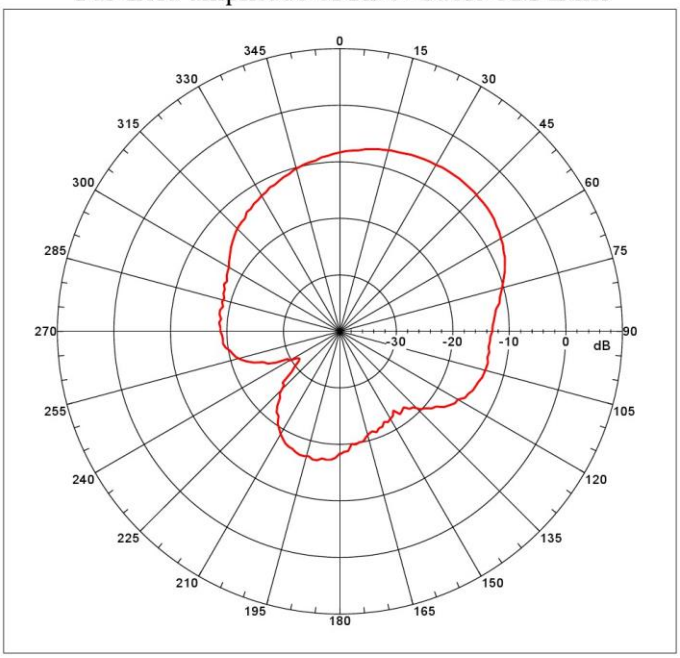

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = -11.39361  dBi
Max far-field (global) = -52.31962  dB, Max far-field (plot) =
-52.31967  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: -50.00001  deg, Vpeak at: 0.000  deg
Plot centering: On

R34+Cable-3M-E

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\R3
4+Cable-3M\R34+Cable-3M-E.nsi
Measurement date/time: 2/24/2017 11:41:48 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -17.752 dB
   -3. dB beam width: 61.67 deg
   -6. dB beam width: 85.23 deg
   -10. dB beam width: 198.20 deg
   Left Sidelobe: -11.81 dB at -125.698  deg
   Right Sidelobe: -4.89 dB at 18.106  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 7
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
2       0.880  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of R34+Cable-3M-E.nsi



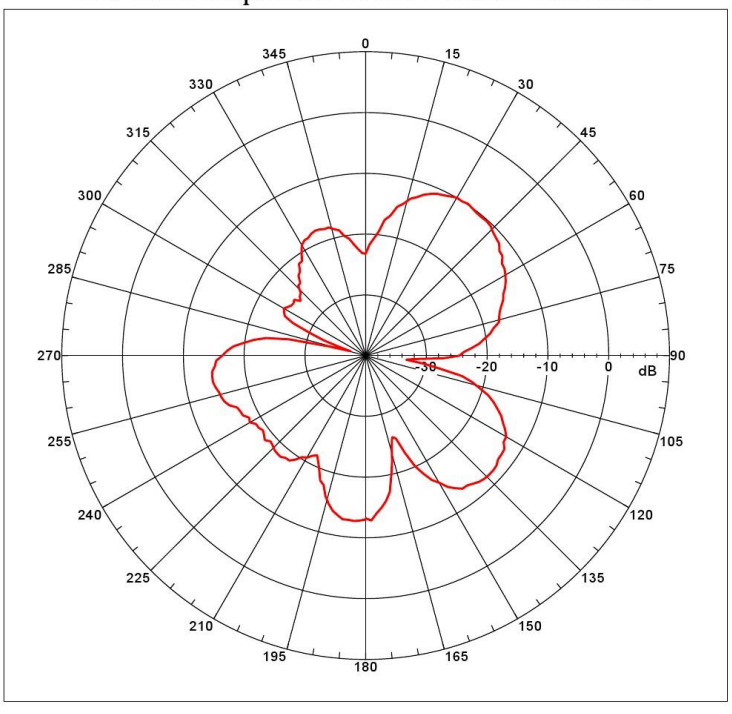

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = -5.69848  dBi
Max far-field (global) = -48.32815  dB, Max far-field (plot) =
-48.32816  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 37.99999  deg, Vpeak at: 0.000  deg
Plot centering: On

R34+Cable-3M-E

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\R3
4+Cable-3M\R34+Cable-3M-E.nsi
Measurement date/time: 2/24/2017 11:41:48 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -13.424 dB
   -3. dB beam width: 72.08 deg
   -6. dB beam width: 107.56 deg
   -10. dB beam width: 173.03 deg
   Left Sidelobe: -11.33 dB at -161.899  deg
   Right Sidelobe: -16.11 dB at 153.855  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 7
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
3       0.960  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of R34+Cable-3M-E.nsi



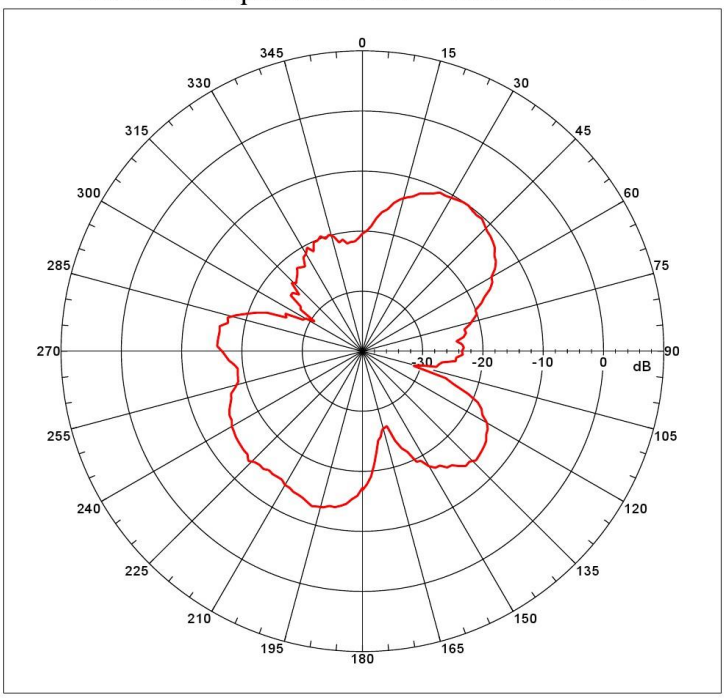

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = -5.88317  dBi
Max far-field (global) = -55.07576  dB, Max far-field (plot) =
-55.0758  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 33.99999  deg, Vpeak at: 0.000  deg
Plot centering: On

R34+Cable-3M-E

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\R3
4+Cable-3M\R34+Cable-3M-E.nsi
Measurement date/time: 2/24/2017 11:41:48 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -16.745 dB
   -3. dB beam width: 39.07 deg
   -6. dB beam width: 58.29 deg
   -10. dB beam width: 76.33 deg
   Left Sidelobe: -8.19 dB at -15.084  deg
   Right Sidelobe: -1.89 dB at 135.754  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 7
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
4       1.710  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of R34+Cable-3M-E.nsi



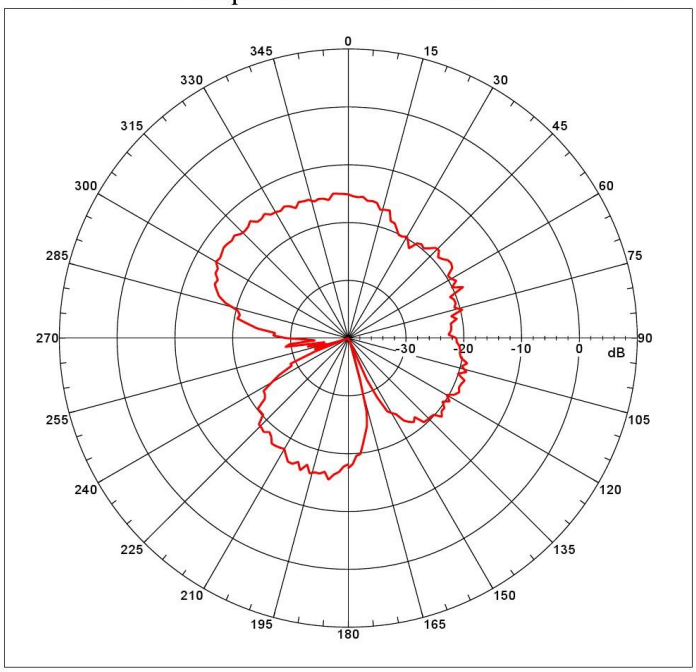

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = -10.05264  dBi
Max far-field (global) = -56.72121  dB, Max far-field (plot) =
-56.72122  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 35.99999  deg, Vpeak at: 0.000  deg
Plot centering: On

R34+Cable-3M-E

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\R3
4+Cable-3M\R34+Cable-3M-E.nsi
Measurement date/time: 2/24/2017 11:41:48 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -17.055 dB
   -3. dB beam width: 37.38 deg
   -6. dB beam width: 53.43 deg
   -10. dB beam width: 70.73 deg
   Left Sidelobe: -5.78 dB at -15.084  deg
   Right Sidelobe: -13.10 dB at 89.497  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 7
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
5       1.880  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of R34+Cable-3M-E.nsi



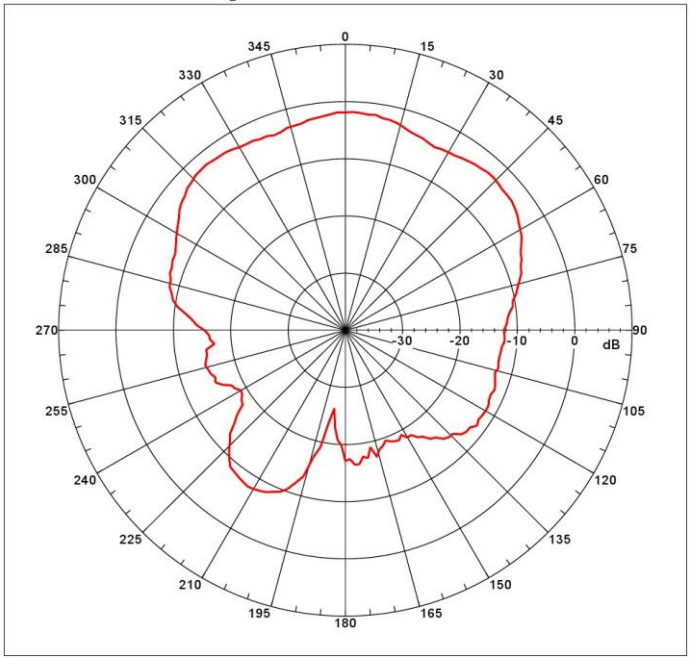

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = -13.35905  dBi
Max far-field (global) = -60.89116  dB, Max far-field (plot) =
-60.8912  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: -54.000  deg, Vpeak at: 0.000  deg
Plot centering: On

R34+Cable-3M-E

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\R3
4+Cable-3M\R34+Cable-3M-E.nsi
Measurement date/time: 2/24/2017 11:41:48 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -18.850 dB
   -3. dB beam width: 84.64 deg
   -6. dB beam width: 99.72 deg
   -10. dB beam width: 230.97 deg
   Left Sidelobe: -15.69 dB at -97.542  deg
   Right Sidelobe: -1.52 dB at -5.028  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 7
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
6       2.170  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of R34+Cable-3M-E.nsi



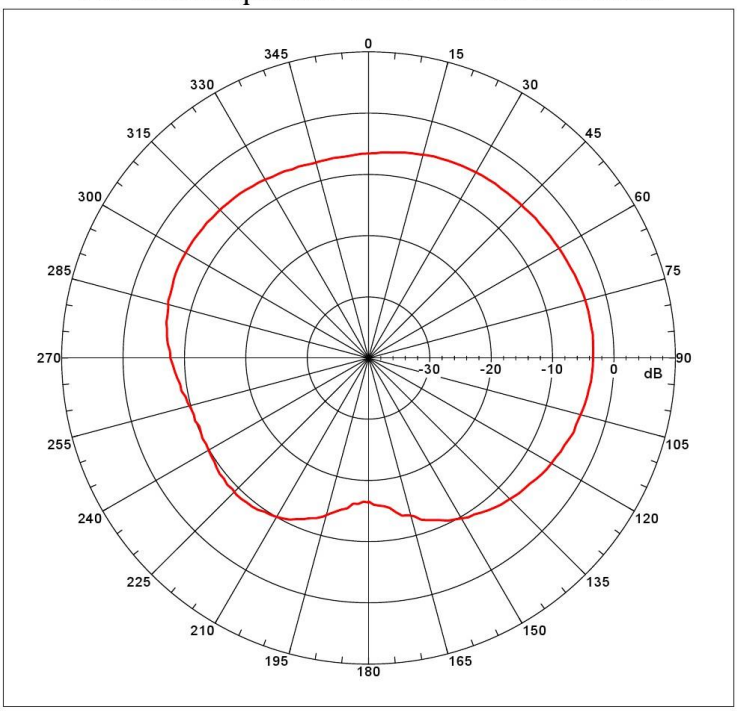

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = -1.83167  dBi
Max far-field (global) = -52.14846  dB, Max far-field (plot) =
-52.14846  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 1.99999  deg, Vpeak at: 0.000  deg
Plot centering: 0n

R34+Cable-3M-E

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\R3
4+Cable-3M\R34+Cable-3M-E.nsi
Measurement date/time: 2/24/2017 11:41:48 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -8.112 dB
   -3. dB beam width: 116.46 deg
   -6. dB beam width: 144.07 deg
   -10. dB beam width: 172.27 deg
   Left Sidelobe: -0.38 dB at -39.218  deg
   Right Sidelobe: -1.03 dB at 45.251  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 7
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
7       2.600  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of R34+Cable-3M-H.nsi



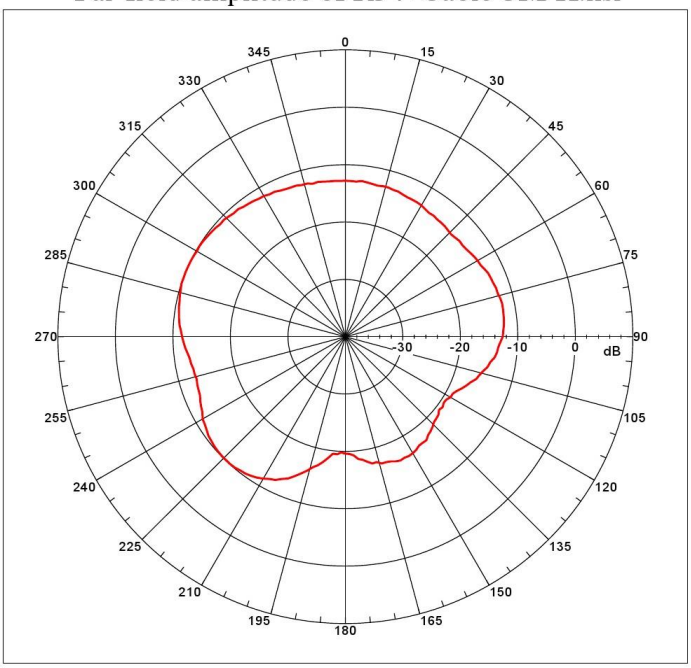

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = -3.27469  dBi
Max far-field (global) = -46.27433  dB, Max far-field (plot) =
-46.27433  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 84.000  deg, Vpeak at: 0.000  deg
Plot centering: 0n

R34+Cable-3M-H

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\R3
4+Cable-3M\R34+Cable-3M-H.nsi
Measurement date/time: 2/24/2017 11:30:36 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -6.570 dB
   -3. dB beam width: 121.30 deg
   -6. dB beam width: 249.80 deg
   -10. dB beam width: 331.20 deg
   Left Sidelobe: -2.50 dB at -45.251  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 7
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
1       0.824  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of R34+Cable-3M-H.nsi



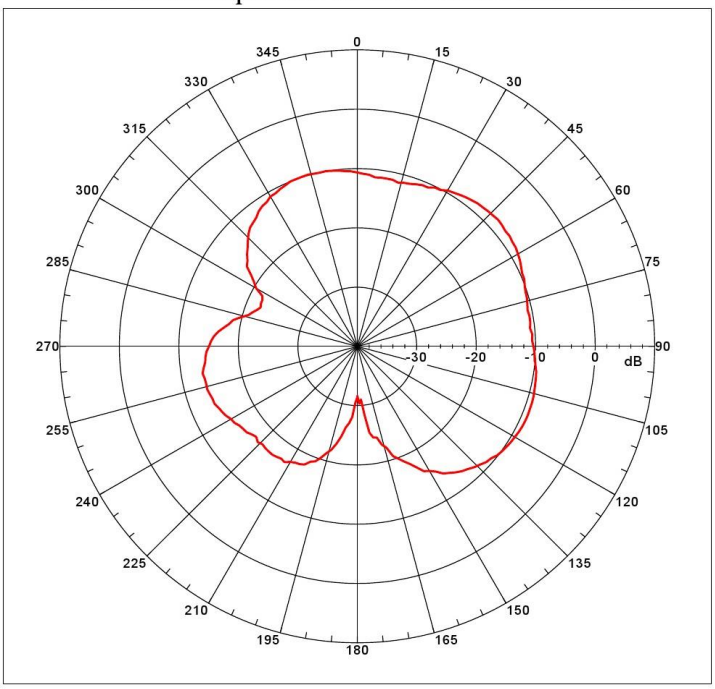

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = -10.03026  dBi
Max far-field (global) = -50.95627  dB, Max far-field (plot) =
-50.95628  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: -68.000  deg, Vpeak at: 0.000  deg
Plot centering: On

R34+Cable-3M-H

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\R3
4+Cable-3M\R34+Cable-3M-H.nsi
Measurement date/time: 2/24/2017 11:30:36 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -13.238 dB
   -3. dB beam width: 116.30 deg
   -6. dB beam width: 274.08 deg
   -10. dB beam width: Not Found
   Left Sidelobe: -0.08 dB at -137.765  deg
   Right Sidelobe: -2.10 dB at 79.441  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 7
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
2       0.880  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of R34+Cable-3M-H.nsi



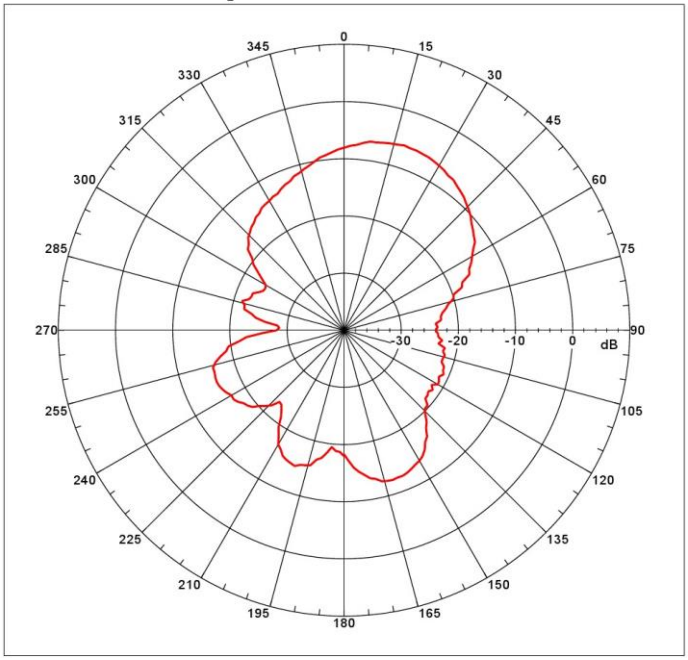

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = -8.1232  dBi
Max far-field (global) = -50.75287  dB, Max far-field (plot) =
-50.75291  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 47.99999  deg, Vpeak at: 0.000  deg
Plot centering: On

R34+Cable-3M-H

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\R3
4+Cable-3M\R34+Cable-3M-H.nsi
Measurement date/time: 2/24/2017 11:30:36 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -13.007 dB
   -3. dB beam width: 115.34 deg
   -6. dB beam width: 152.23 deg
   -10. dB beam width: 212.34 deg
   Left Sidelobe: -1.87 dB at -9.050  deg
   Right Sidelobe: -0.89 dB at 109.609  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 7
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
3       0.960  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of R34+Cable-3M-H.nsi



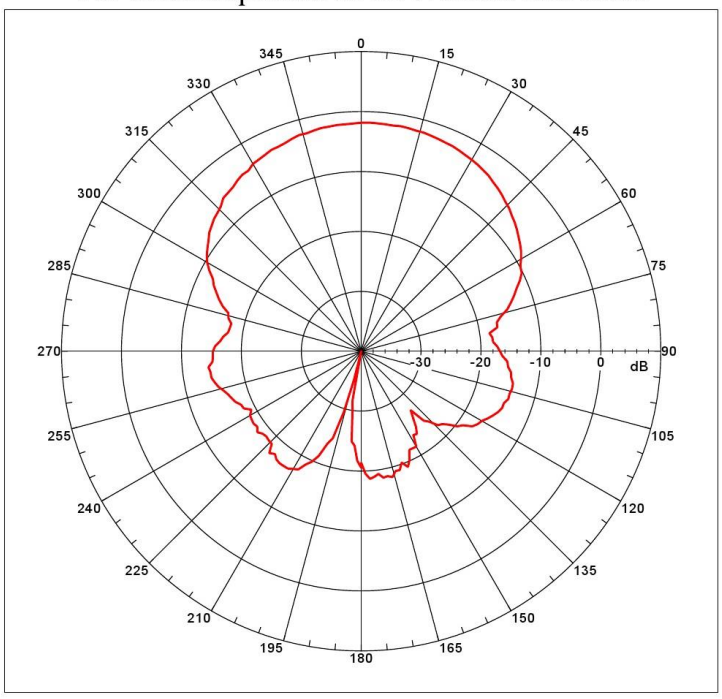

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = -5.99916  dBi
Max far-field (global) = -51.19175  dB, Max far-field (plot) =
-51.19177  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 17.99999  deg, Vpeak at: 0.000  deg
Plot centering: On

R34+Cable-3M-H

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\R3
4+Cable-3M\R34+Cable-3M-H.nsi
Measurement date/time: 2/24/2017 11:30:36 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -14.812 dB
   -3. dB beam width: 48.23 deg
   -6. dB beam width: 73.74 deg
   -10. dB beam width: 109.50 deg
   Left Sidelobe: -16.78 dB at -67.374  deg
   Right Sidelobe: -16.72 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 7
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
4       1.710  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of R34+Cable-3M-H.nsi



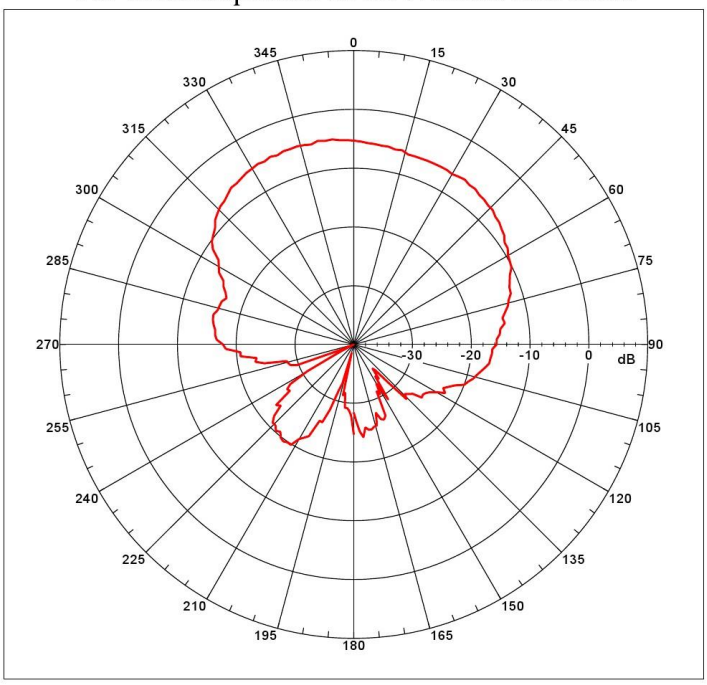

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = -1.85035  dBi
Max far-field (global) = -48.51892  dB, Max far-field (plot) =
-48.51892  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 1.99999  deg, Vpeak at: 0.000  deg
Plot centering: On

R34+Cable-3M-H

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\R3
4+Cable-3M\R34+Cable-3M-H.nsi
Measurement date/time: 2/24/2017 11:30:36 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -10.442 dB
   -3. dB beam width: 78.20 deg
   -6. dB beam width: 107.83 deg
   -10. dB beam width: 131.29 deg
   Left Sidelobe: -12.55 dB at -55.531  deg
   Right Sidelobe: -12.19 dB at 105.587  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 7
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
5       1.880  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of R34+Cable-3M-H.nsi



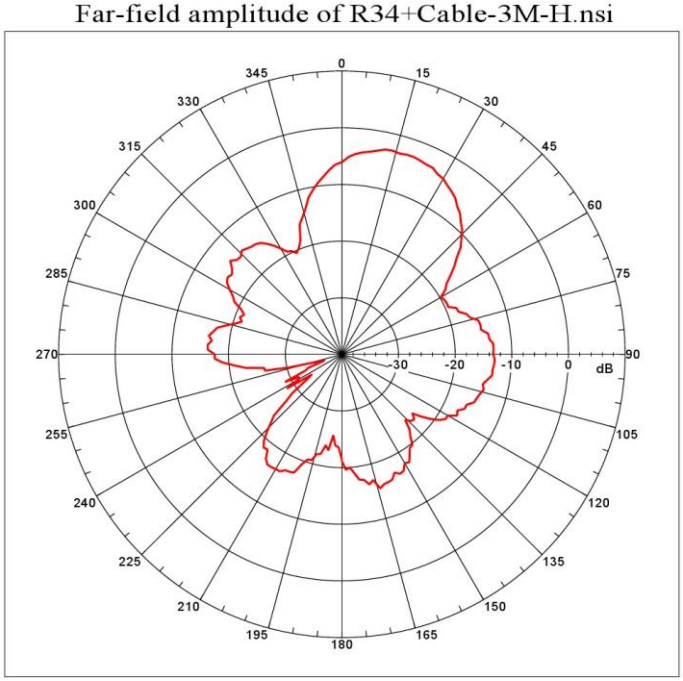

```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = -4.82959  dBi
Max far-field (global) = -52.3617  dB, Max far-field (plot) =
-52.36171  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: -10.00001  deg, Vpeak at: 0.000  deg
Plot centering: On

R34+Cable-3M-H

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\R3
4+Cable-3M\R34+Cable-3M-H.nsi
Measurement date/time: 2/24/2017 11:30:36 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -13.129 dB
   -3. dB beam width: 97.19 deg
   -6. dB beam width: 121.83 deg
   -10. dB beam width: 147.77 deg
   Left Sidelobe: -10.76 dB at -77.430  deg
   Right Sidelobe: -27.94 dB at 145.810  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 7
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
6       2.170  GHz  Azimuth  Elevation  Single-pol
```

Far-field amplitude of R34+Cable-3M-H.nsi

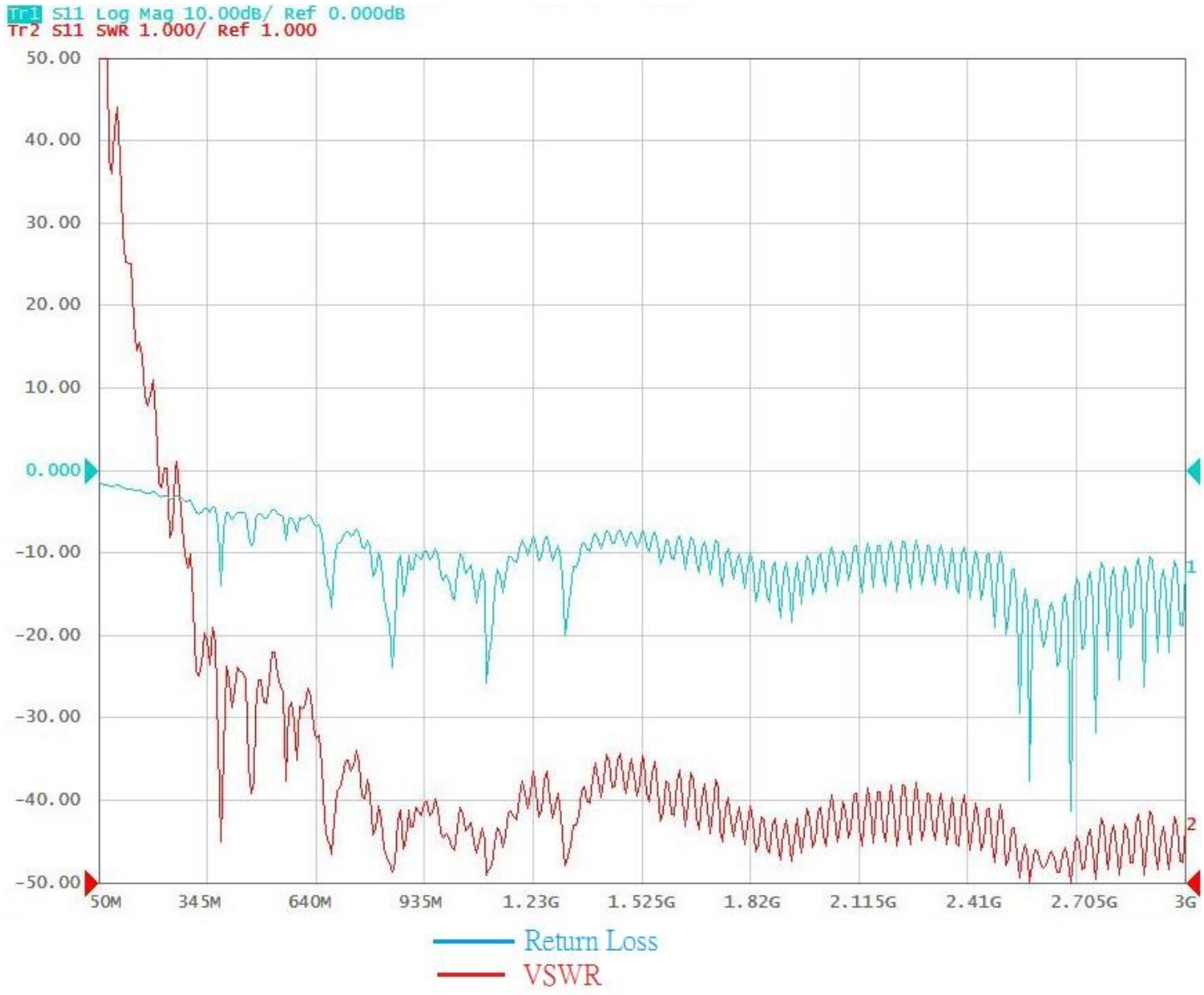



```
Far-field amplitude, Eprincipal: Linear, Tau = 0.000  deg
Gain = -2.94016  dBi
Max far-field (global) = -53.25695  dB, Max far-field (plot) =
-53.25695  dB
Normalization: Reference, Network offset = 0.000  dB
Hpeak at: 15.59595  deg, Vpeak at: 0.000  deg
Plot centering: On

R34+Cable-3M-H

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\R3
4+Cable-3M\R34+Cable-3M-H.nsi
Measurement date/time: 2/24/2017 11:30:36 AM, Filetype: NSI-97
Far-field Cut Analysis:
   Avg value: -14.304 dB
   -3. dB beam width: 35.92 deg
   -6. dB beam width: 45.98 deg
   -10. dB beam width: 63.04 deg
   Left Sidelobe: -11.62 dB at -43.240  deg
   Right Sidelobe: -12.07 dB at 79.441  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 7
Beam    Frequency   Azimuth  Elevation  Pol
----    ---------   -------  ---------  ---
7       2.600  GHz  Azimuth  Elevation  Single-pol
```


Tr1 S11 Log Mag 10.00dB/ Ref 0.000dB
Tr2 S11 SWR 1.000/ Ref 1.000
50.00
40.00
30.00
20.00
10.00
0.000
-10.00
-20.00
-30.00
-40.00
-50.00
50M
345M
640M
935M
1.23G
1.525G
1.82G
2.115G
2.41G
2.705G
3G
1
2
Return Loss
VSWR