

# Specification

#### PART NUMBER:C14

#### 1.0 SCOPE

chinmore customized **Embedded Penta-band Antenna** covers the GSM850 SSM900 DCS 1800 PCS 1900 WCDMA 2100 .

#### 2.0 Name of the product

This product is named Embedded Penta-band Antenna.

#### 3.0 ANTENNA CHARACTERISTICS

#### 3.1 High Temp. Storage

Expose the antenna to +70°C,RH95% for 24hours soak then check it against our specifications.

#### 3.2 Low Temp. Storage

Expose the antenna to -30°C for 24hours soak then check it against our specifications.

#### 3.3 Low-temperature Operation

Expose the specimen to -30°C for 16 hours and then to normal temperature/humidity for 24 hours or more. After that examine the appearance and functions.

#### 3.4 High-temperature Operation

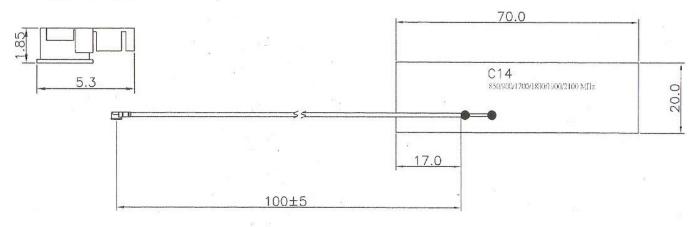
Expose the specimen to +80°C for 16 hours and then to normal temperature/humidity for 24 hours or more. After that examine the appearance and functions.





## Technical Drawing:

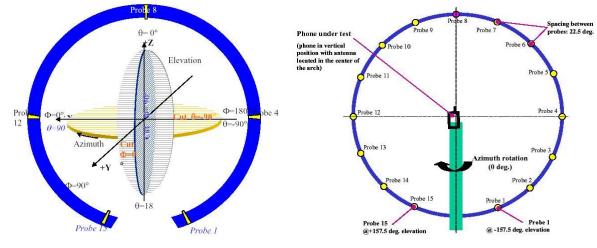
U.FL-LP-088



Parameter	Antenna Efficiency Summary					
Frequency(MHz)	850	900	1700	1800	1900	2100
Average Gain (dBi)	-8.39	-7.85	-2.62	-3.12	-3.17	-2.8
Efficiency(%)	14.48	16.39	54.63	48.66	48.17	52.38
Peak Gain (dBi)	-3.74	-3.11	1.85	1.2	1.3	1.27
Impedance	50 ohm					
VSWR	2.0:1					
Polarization	Linear					
Power Handled	5W					
Operation Temperature	-30°C~+70°C					
Storage Temperature	-30°C~+70°C					
Dimensions	70x20x0.1 mm					
Connector	U.FL(Sliver)					
Cable Standard	1.37					
Cable Length and color	100mm , Grey					
Rohs Compliant	YES					
Adhesive	3M 467					
Material	FPC					

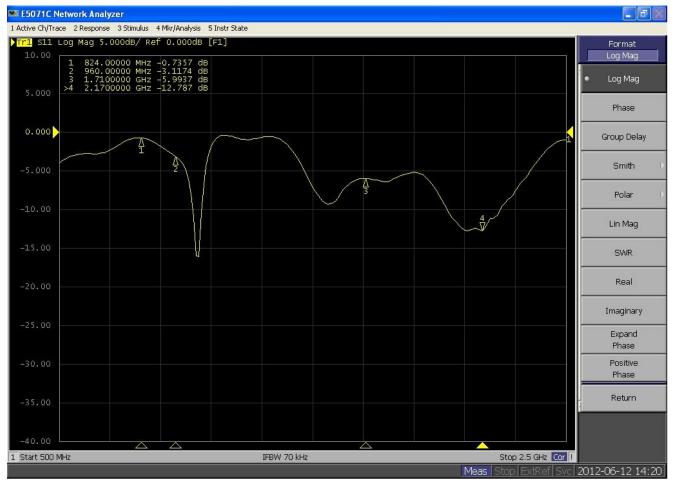


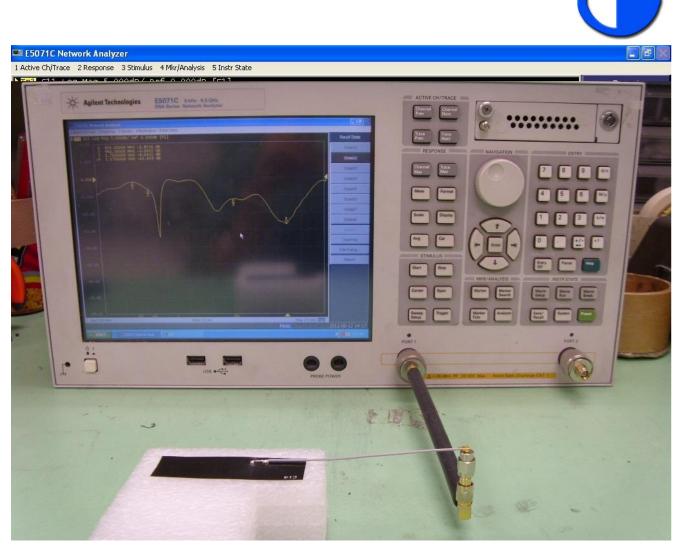
### Test Chart:



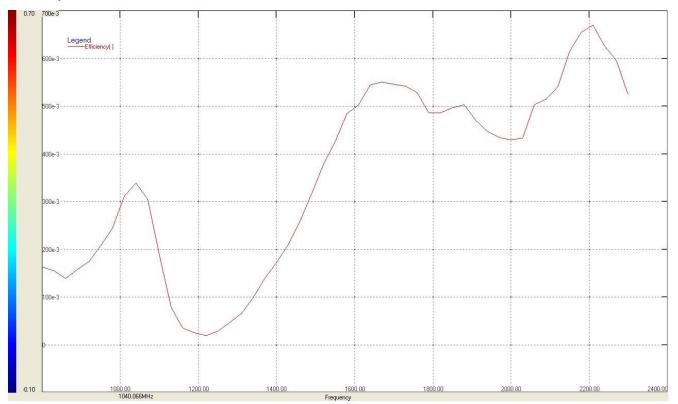
### Test Data:

#### WIFI Antenna In C14 Housing Pattern S11 Return Loss Measurement





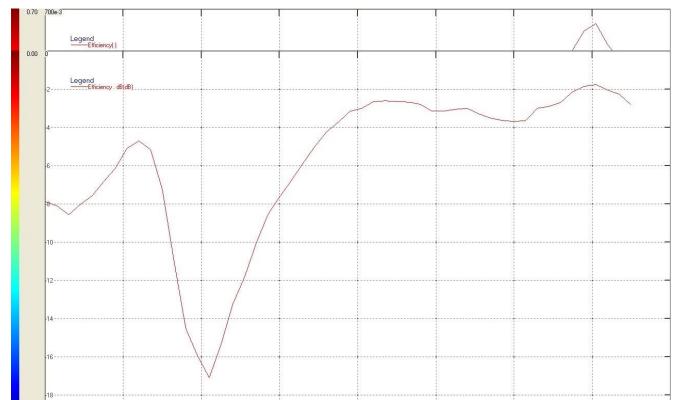
### Efficiency



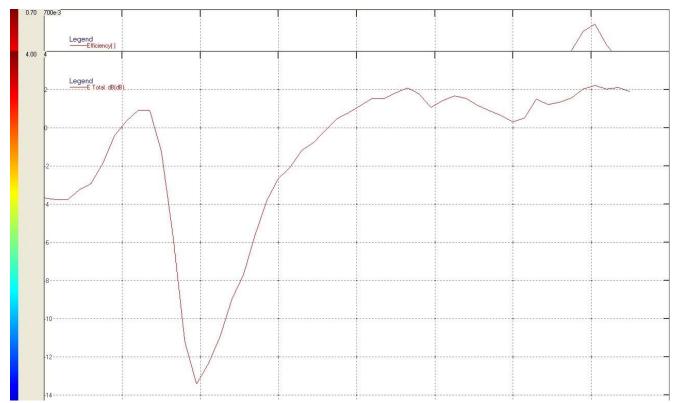
CHIN MORE ®



### Average Gain

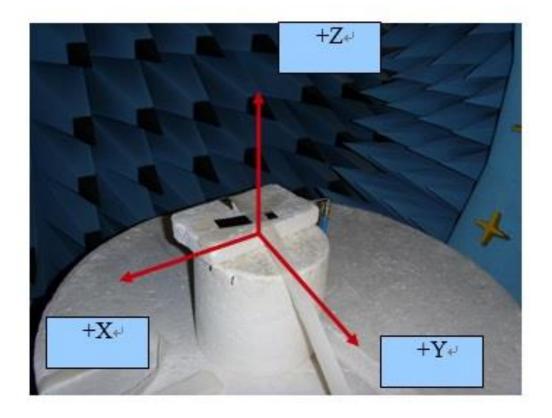


#### Peak Gain





#### **3D Pattern**



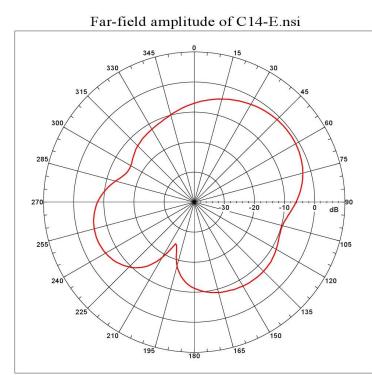
#### Far-field amplitude of C14-E.nsi -10 -30 -20 Ó dB

Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg Gain = -0.89841 dBi Nax far-field (global) = -42.15527 dB, Max far-field (plot) = -42.15528 dB Deference, Nervork offset = 0.000 dB Disalatet 30.59595 deg, Vpeak at: 0.000 deg Flot centering: On C14-E

Cl4-E MSI2000 V4.0.124, Filename:G:\Documents and Settings\MSI\Desktop\20 12 CHORDEC14EC14-E.nat Heaurement date/time:G/13/012 3:34:32 PM, Filetype: MSI-97 Far-Field Cut Analysis A go But: Julk: G.16 deg - 6. dB Deam vidth: 18.83 deg - 10. dB Deam vidth: 18.83 deg - 10. dB Deam vidth: 18.83 deg - 10. dB Deam vidth: 14.67 deg - 10. dB Deam

- Start= -180.00001 deg, juwy a.... deg Elevation (deg) Center = 0.000 deg, ppts = 1 Selected peam(s) 1 of 6 Beam Frequency Arimuth Elevation Pol 1 0.850 GHE Arimuth Elevation Single-pol



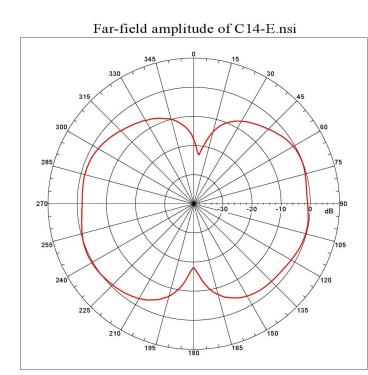


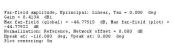
Par-field applitude, Eprincipal: Linear, Tau = 0.000 deg Galm = -2.98911 dBl , wax far-field (plobal) = -42.54759 dB , Max far-field (plot) = -42.540 dB , Noraelitation: Peference, Network offset = 0.000 dB Hoest att S1.5555 deg, Vpeak att 0.000 deg Fiot entering: The C14-E

C14-2 STITODO V40.124, Filmmas::Documents and Settings1MS1/Desktop120 12 CERDERT:(14:S(14-1.nst Neasureance date/time: (4)/32:012 3:34:32 PM, Filetype: NSI-97 Far-field Cut Analysis: -3. dB hear width: 62.71 deg -3. dB hear width: 62.71 deg -10. dB hear width: 62.71 deg -10. dB hear width: 62.71 deg Hight Sidelose: -4.4 dB at -100.60 deg Hight Sidelose: -64.40 dB at 130.777 deg Far-field display setup Span -180.00001 deg, Center - 0.000 deg, Ppts - 181 Statt - 180.00001 deg, Stop = 180.00001 deg, Detta = 2.000 deg

Start= -100.. deg Elevation (deg) Center = 0.000 deg, #pts = 1 - c

Selected beam(s) 1 of 6 Beam Frequency Azimuth Elevation Pol 2 0.900 GHz Azimuth Elevation Single-pol





C14-E

C14-E MSI200 V4.0.124, FlienassiC: Documents and Settings/MSI/Desktop/10 12 CH009X:C14/KJ/L4-Z numl 13 CH009X:C14/KJ/L4-Z numl 14 CH009X:C14/KJ/L4-Z numl 15 Ch009X:C14/KJ/L4-Z numl 15 Ch009X:C14/KJ/L4-Z numl 16 Ch009X:C14/KJ/L4-Z numl 17 CH009X:C

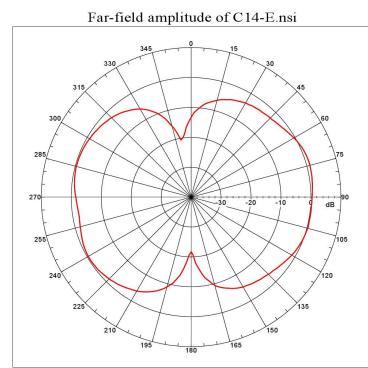
Start-deg Elevation (deg) Center = 0.000 deg, #pts = 1

 Selected beam(s) 1 of 6

 Beam
 Frequency
 Azianth
 Elevation
 Pol

 3
 1.710 GHz
 Azianth
 Elevation
 Single-pol



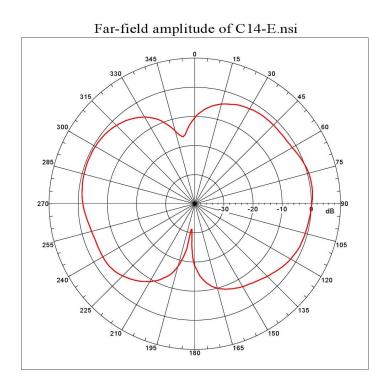


Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg Gain = 1.04550 dBi Hax far-field (global) = -45.77275 dB, Max far-field (plot) = -45.77277 dB Disaklizetion: Beference, Network offset = 0.000 dB Hole centering: On

C14-E C14-E MSI2000 V4.0.124, Fllenase:C:Documents and Settings/MSI/Desktop/20 12 CMD082/C14/E/L4-E.msi Hearmigent dav/Thair (J/J/2012 3:34:32 FM, Filetype: NSI-97 Have value: -3.261 dB -3. dB beas width: 73:0.1 deg -1. dB beas width: 157:21 deg -1. dB beas width: 157:21 deg -1. dB beas width: 157:21 deg Marchine (Second Second Secon

- Start= -100.0\_\_\_ deg Elevation (deg) Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 6 Beam Frequency Arimuth Elevation Pol 4 1.800 GHz Arimuth Elevation Single-pol



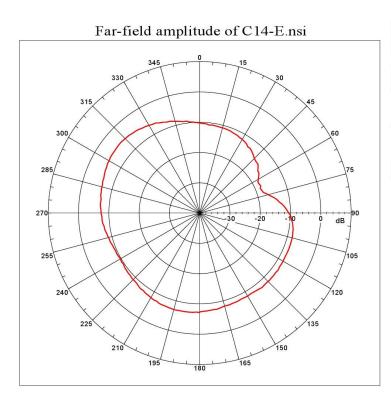
Far-field applitude, Eprincipal: Linear, Tau = 0.000 deg fain = 0.6324 dBl Hax far-field (global) = -46.39462 dB; Max far-field (plot) = -46.38463 dB Horaalization: Reference, Network offset = 0.000 dB Horaatistion: Photostary in Lio construing in

C14-E

C14-E MSIZOD V4.0.124, FlienassiC: Documents and Settings/MSILDesktop/10 12 CHD092:C14/MSIL4-2.msi 13 CHD092:C14/MSIL4-2.msi 14 CHD092:C14/MSIL4-2.msi 15 CHD092:C14/MSIL4-2.msi 15 CHD092:C14/MSIL4-2.msil4 16 CHD092:C14/MSIL4-2.msil4 16 CHD092:C14/MSIL4-2.msil4 16 CHD092:C14/MSIL4-2.msil4 17 CHD092:C14/MSIL4-2.msil4 17 CHD092:C14/MSIL4-2.msil4 18 CHD0

- Start-deg Elevation (deg) Center = 0.000 deg, #pts = 1
- Selected beam(s) 1 of 6 Beam Prequency Aziauth Elevation Pol 5 1.900 GHz Aziauth Elevation Single-pol





Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg Gaim = -5.0631 dBi Max far-field (global) = -52.3880 dB, Max far-field (plot) = -52.38803 dB Normalization: Reference, Network offset = 0.000 dB Hpeak at: -40.000 deg Flot centering: On C14-E

C14-E MSI2000 V4.0.124, Filename:C:Documents and Settings/MSI/Deaktop/10 12 (MDORK)C14/E/C14-E.ent Keasurcent date/tate: 6/13/2012 3:34:32 FM, Filetype: MSI-97 Far-field Cut Analysis: Avg value: -0.816 dB -0.6 Bbeaw vidth: Not Found -10.6 Bbeaw vidth: Not Found 1-0.6 Bbea

- Start- -Acc... deg Elevation (deg) Center = 0.000 deg, #pts = 1
- Selected beam(s) 1 of 6 Beam Frequency Azimuth Elevation Pol 6 2.100 GHz Azimuth Elevation Single-pol

Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg Gala = -0.07606 dB1 Hax far-field (global) = -41.3325 dB, Max far-field (plot) = -41.33264 dB Horsalization; Seference, Herwork offsat = 0.000 dB Horsalization; Sefer deg, Vpeak at: 0.000 deg Hor centering: On

C14-H

120

135

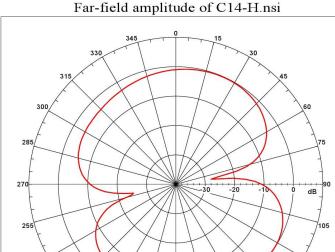
150

165

C14-B MSI2000 Y4.0.124, Flienase:C:\Documents and Settings\NSI\Desktop\20 12 CHRONPC(14)K(14-K.nsi Haurreant classifier(14)K(14-K.nsi Ary value: -4.25) dB -3. dB beas width: 40.0 dgg -10. dB beas width: Not Found 1eft Sichols: -0.00 db cg -10. dB beas width: Not Found 1eft Sichols: -0.00 db cg -10. dB beas width: Not Found 1eft Sichols: -0.00 db cg -10. dB beas width: Not Found 1eft Sichols: -0.00 db cg -10. dB beas width: Not Found 1eft Sichols: -0.00 db cg -10.00 db cg -10.0

Stars-deg Elevation (deg) Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 6 Beam Frequency Azimuth Elevation Pol 1 0.850 GHz Azimuth Elevation Single-pol



180

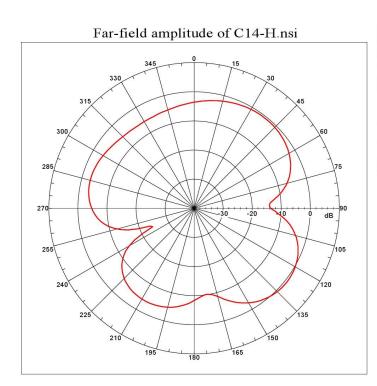
240

225

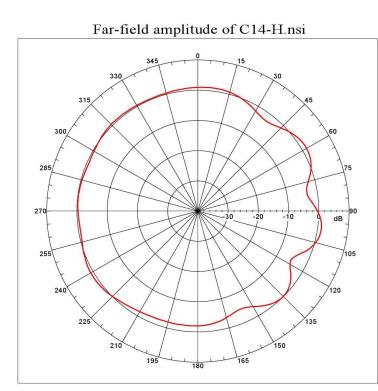
210

195





Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg Gaim = 0.768 dBi Max Tar-field (global) = -40.79168 dB, Max far-field (plot) = Monadization: Peference, Metwork offset = 0.000 dB Hpeak at: 126.000 deg, Vpeak at: 0.000 deg Flot centering: On C14-H C14-H MTI2000 V4.0.124, Fllename:C:Documents and Settings:NSI/Desktop:10 12 CHOOPE:C141W:C14-F.nsi Resurvement devitame: (3/1/2012 3:13:13 PM, Filetype: NSI-67 Far your value: -4.303 dB -3. dB beam vicht: 40:12 deg -10. dB beam vicht: 71.11 deg Left Sidelow: -1.37 dB 4 d5.240 deg Far Side Jaleby Yound Far Side Jaleby Young Span - 360.00001 deg, Center - 0.000 deg, Ppts - 181 Sector - 100.00001 deg, Sept - 180.00001 deg, Data - 2.000 Start= -kuc... deg Elevation (deg) Center = 0.000 deg, #pts = 1 Selected beam (s) 1 of 6 Beam Frequency Azimuth Elevation Pol 2 0.900 GHz Azimuth Elevation Single-pol

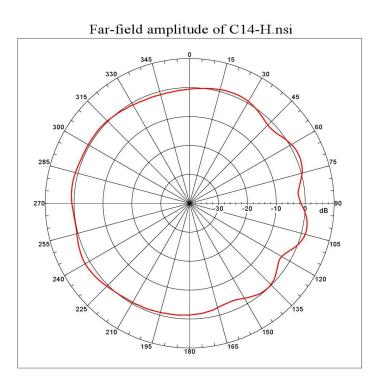


Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg Gain = 1.51359 dBi Hax far-field (global) = -43.6786 dB, Max far-field (plot) = -43.67861 dB Horalization: Reference, Network offset = 0.000 dB Hpeak at: 55.5555 deg, Npeak at: 0.000 deg Flot centering: 0n С14-Н

C14-H
INFIDO V4.0.124, Filename:C:Documents and Settings\NS1\Desktop\20
12 CHDDERC14HC14-A.nai
Heaureant dark-files: (3/2012 3:13:13 PM, Filetype: NSI-97
Far-Eield Cut Analysis
Arg value: -0.657 dB
-3. dB heaw vidth: Dit Frund
-10. dB heaw vidth: Dit Frund
10. dB heaw vid

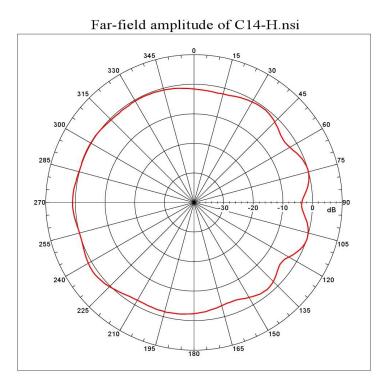
- State-deg Elevation (deg) Center = 0.000 deg, #pts = 1
- Selected beam(s) 1 of 6 Beam Frequency Azimuth Elevation Fol 3 1.710 GHz Azimuth Elevation Single-pol





Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg Gain = 1.74362 dBi Max far-field (global) = -45.07842 dBy Max far-field (plot) = -45.07845 dB Moraalization: Reference, Network offsat = 0.000 dB Mgreak att. = 120.000 Hot construing: On C14-H C14-# NGID00 V4.0.124, Filename:CiDocuments and Settings:NSI/Desttop:20 12 CH00FX:V14/WiCl4-Ensi Neasureant data devitain: (0.13/2012 3:13:13 FM, Filetype: NSI-67 Far yor value: -0.240 dB -3. dB beas videh: 130.0 desg -10. dB beas videh: Not Found Left Sidelar: Not Found Site: -100.00001 deg, Stop - 100.00001 deg, Pits - 121 State: -100.00001 deg, Stop - 100.00001 deg, Dita - 2.000 deg Total Site: -100.00001 deg, Stop - 100.00001 deg, Dita - 2.000 deg Total Site: -100.00001 deg, Stop - 100.00001 deg, Dita - 2.000 deg Total Site: -100.00001 deg, Stop - 100.00001 deg, Dita - 2.000 deg Total Site: -100.00001 deg, Stop -100.00001 deg, Dita - 2.000 deg Total Site: -100.00001 deg, Stop - 100.00001 deg, Dita - 2.000 deg Total Site: -100.00001 deg, Stop - 100.00001 deg, Dita - 2.000 deg Total Site: -100.00001 deg, Stop - 100.00001 deg, Dita - 2.000 deg Total Site: -100.00001 deg Site: -1 Statu-deg Elevation (deg) Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 6 Beam Frequency Azimuth Elevation Pol 4 1.800 GHz Azimuth Elevation Single-pol



Far-field explitude, Eprincipal: linear, Tau = 0.000 deg fain = 1.2605 ddg Mar far-field (global) = -45.67013 dd, Max far-field (plot) = -45.67017 dB Normalizations Reference, Network offset = 0.000 dB Mort articles of the second deg Hort articles of th

#### C14-H

C14-H MSI2000 74.0.124, Flienase:C:\Documents and Settings\NS1\Desktop\20 12 CHOPE:(14)K(14-K.nsi Kenureart data (14)K(14, 15)/2012 3:13:13 FM, Flietype: NSI-67 FM of Value: -1.086 d8 -3. dB beas width: 180: Frang -10. dB beas width: Nor Frang -10. dB beas width: Nor Frang -10. dB beas vidth: Nor Fran

Start= -1000. deg Elevation (deg) Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 6 Beam Frequency Arimuth Elevation Pol 5 1.900 GHz Arimuth Elevation Single-pol



#### Far-field amplitude of C14-H.nsi -30 -20 ό dB

# Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg Gain = -0.08429 dBi Max far-field (global) = -56.21099 dB, Nax far-field (plot) = -56.21106 dB Hormalization: Reference, Network offset = 0.000 dB Hpeak at: 12.195999 deg, Vpeak at: 0.000 deg Plot centering: On C14-H Staro-deg Elevation (deg) Center = 0.000 deg, #pts = 1

- Selected beam(s) 1 of 6

   Beam
   Frequency
   Azimuth
   Elevation
   Pol

   6
   2.100 GHz
   Azimuth
   Elevation
   Single-pol