



中认信通

CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)

ANTENNA TEST REPORT

Manufacture: Shen Zhen Broadwell Technology co. ltd

Address: 719 Mintai Mansion, Minkang Road, Minzhi, Shenzhen,
518000, China

Product Name: 2.4G BT WIFI PCB Antenna

Product Model: ANT-BT-WIFI-06

Report Number: 2403Y63768E-RF

Date Of Issue: 2024/11/1

Reviewed & Approved By: Sun Zhong

Sun Zhong

Title: Manager

Test Laboratory: China Certification ICT Co., Ltd (Dongguan)
No. 113, Pingkang Road, Dalang Town, Dongguan,
Guangdong, China

Tel: +86-769-82016888



Test Facility

The Test site used by China Certification ICT Co., Ltd (Dongguan) to collect test data is located on the No. 113, Pingkang Road, Dalang Town, Dongguan, Guangdong, China.

Declarations

China Certification ICT Co., Ltd (Dongguan) is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol “▲”. Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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Each test item follows the test standard(s) without deviation.

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	2403Y63768E-RF	Original Report	2024/11/1

1.GENERAL INFORMATION

Product Name:	2.4G BT WIFI PCB Antenna
Product Model:	ANT-BT-WIFI-06
Antenna Type:	PCB
Test Items:	VSWR;Gain; Efficiency; Radiation Pattern
Test Frequency (MHz):	2402/2404/2406/2408/2410/2412/2414/2416/2420/2422/2424/2426/2428/2430/2432/2434/2436/2438/2440/2442/2444/2446/2448/2450/2452/2454/2456/2458/2460/2462/2464/2466/2468/2470/2472/2474/2476/2478/2480/2482/2483
Serial Number:	2TPF-1
EUT Received Date:	2024/10/30
EUT Received Status:	Good

2.TEST CONFIGURATIONS

2.1 Test Environment

Temperature (°C)	24.5
Humidity (%RH)	68
Atmospheric Pressure (kPa)	100.6
Tester	Luke Yuan
Test Date	2024/10/30

2.2 Test Equipment

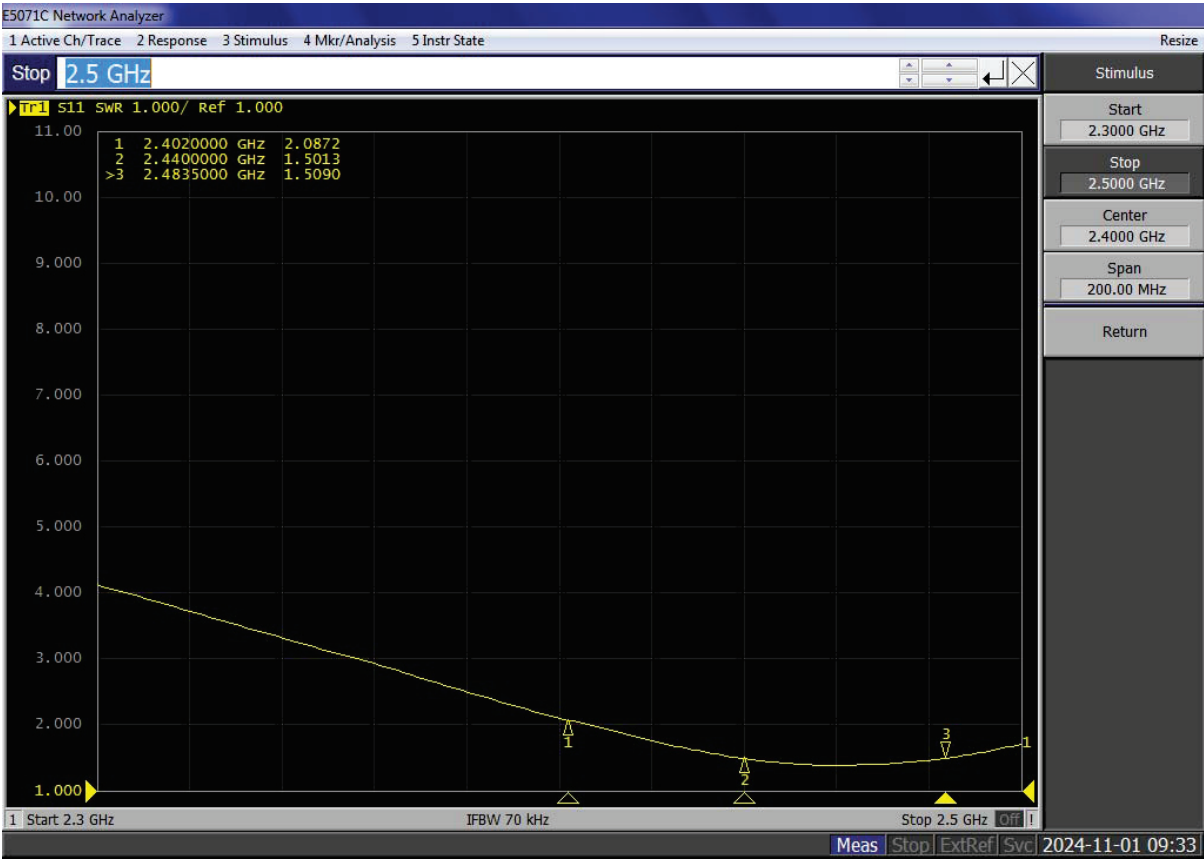
Test Instrument	R&S ZNB8
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3.TEST RESULTS

3.1 Gain and Efficiency

Frequency (MHz)	Efficiency (%)	Peak Gain (dBi)
2402.00	57.54	1.25
2404.00	57.74	1.20
2406.00	57.41	1.44
2408.00	57.63	1.34
2410.00	57.76	1.46
2412.00	58.30	1.60
2414.00	59.18	1.53
2416.00	60.22	1.82
2418.00	60.41	1.67
2420.00	60.57	1.78
2422.00	60.45	1.74
2424.00	60.37	1.72
2426.00	60.44	1.65
2428.00	60.60	1.67
2430.00	60.89	1.74
2432.00	63.14	1.75
2434.00	62.92	1.90
2436.00	64.05	1.71
2438.00	64.64	0.90
2440.00	63.69	0.84
2442.00	63.67	0.91
2444.00	63.89	0.98
2446.00	63.58	0.94
2448.00	63.10	0.87
2450.00	63.33	0.88
2452.00	64.24	0.95
2454.00	65.02	0.77
2456.00	65.77	1.10
2458.00	65.63	1.02
2460.00	64.85	1.06
2462.00	64.76	0.98
2464.00	65.09	1.14
2466.00	65.21	1.07
2468.00	64.99	1.21
2470.00	65.08	0.92
2472.00	65.62	0.84
2474.00	65.60	0.92
2476.00	65.40	1.05
2478.00	64.96	0.77
2480.00	64.92	0.88
2482.00	64.94	0.82
2483.00	65.27	0.65

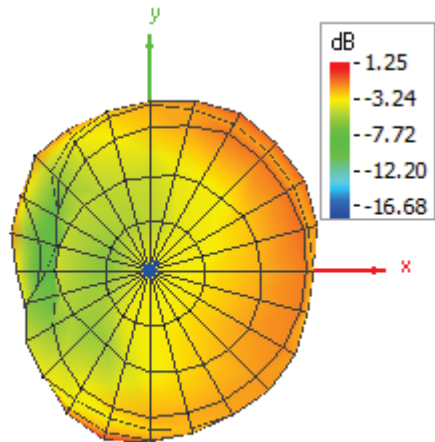
3.2 VSWR



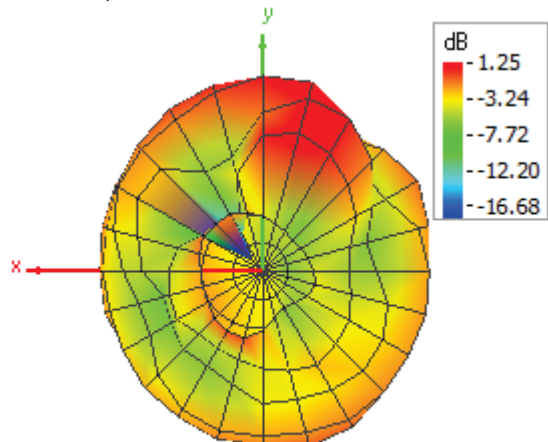
3.3 Radiation Pattern

2402 MHz 3D

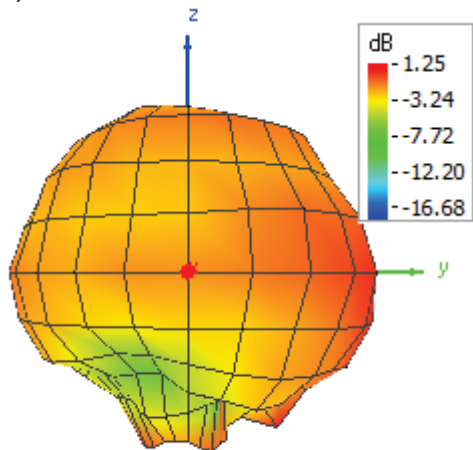
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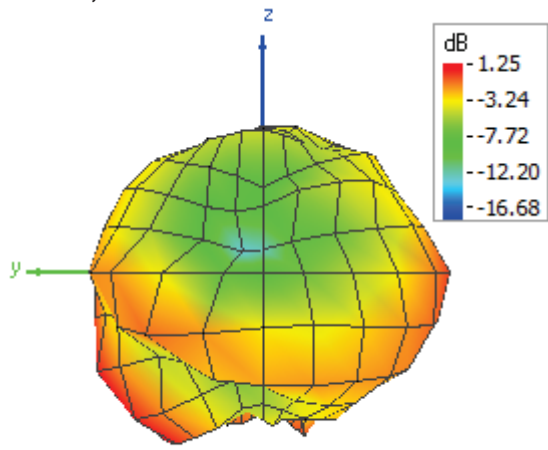
Theta = 180, Phi = 0



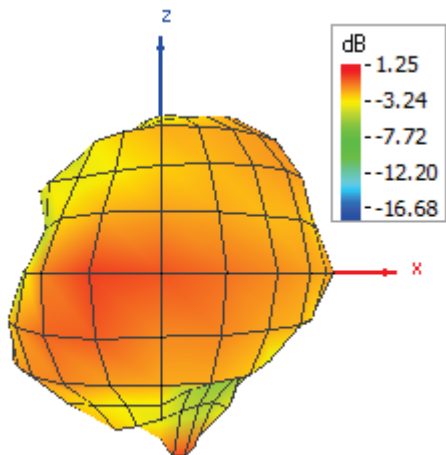
Theta = 90, Phi = 0



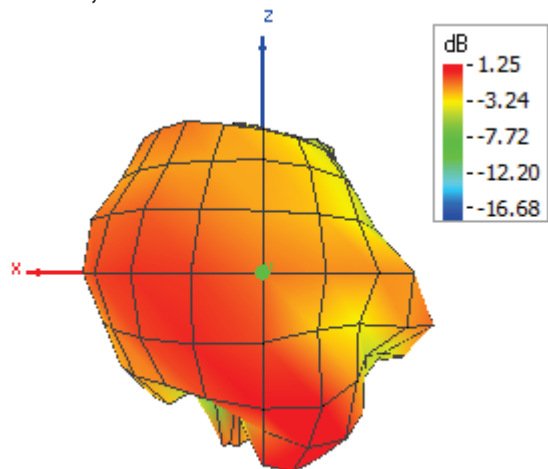
Theta = 90, Phi = 180



Theta = 90, Phi = 270

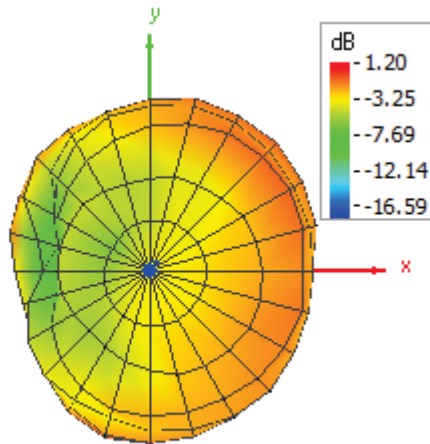


Theta = 90, Phi = 90

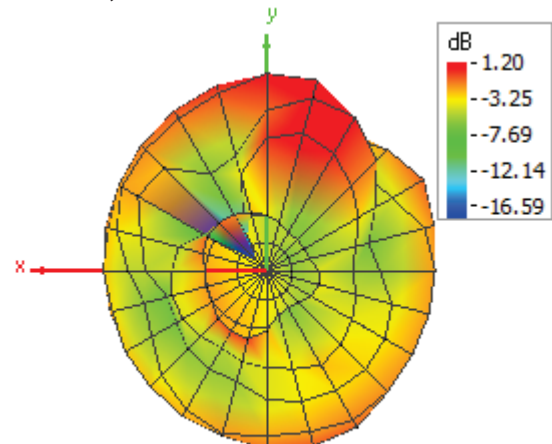


2404 MHz 3D

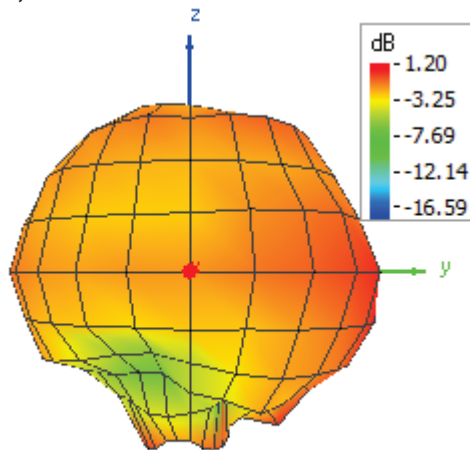
Theta = 0, Phi = 0



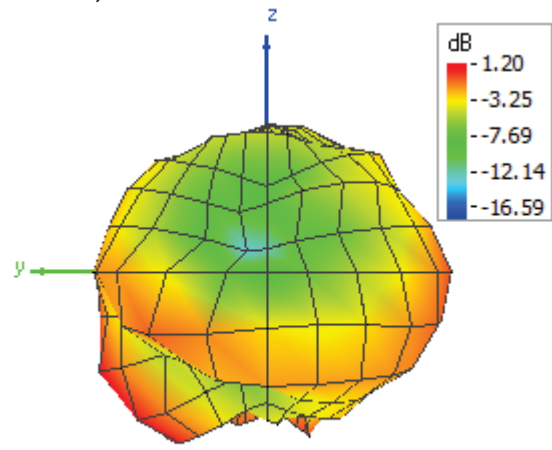
Theta = 180, Phi = 0



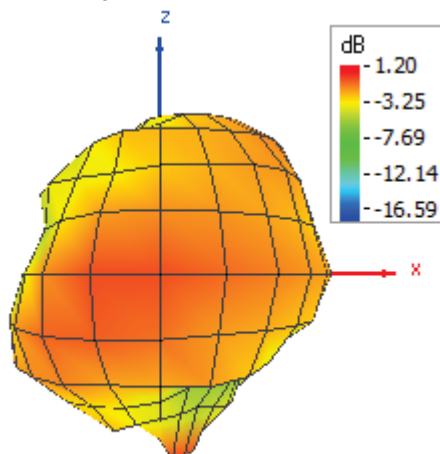
Theta = 90, Phi = 0



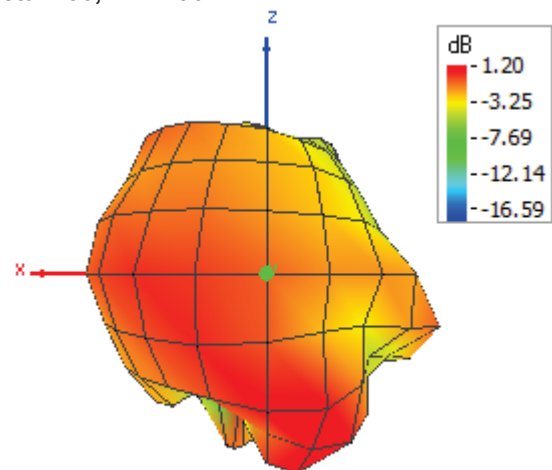
Theta = 90, Phi = 180



Theta = 90, Phi = 270

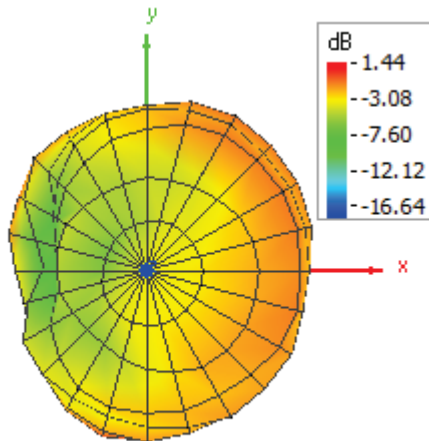


Theta = 90, Phi = 90

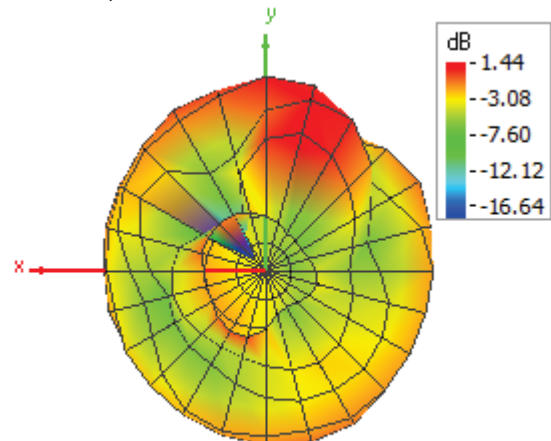


2406 MHz 3D

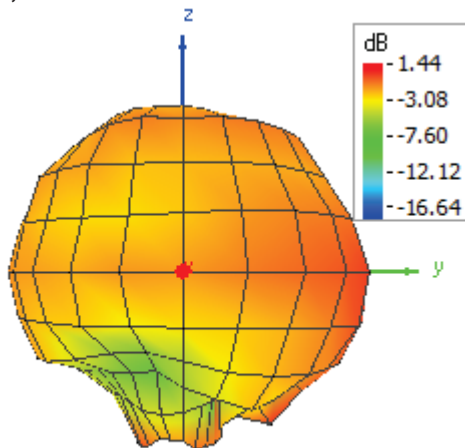
Theta = 0, Phi = 0



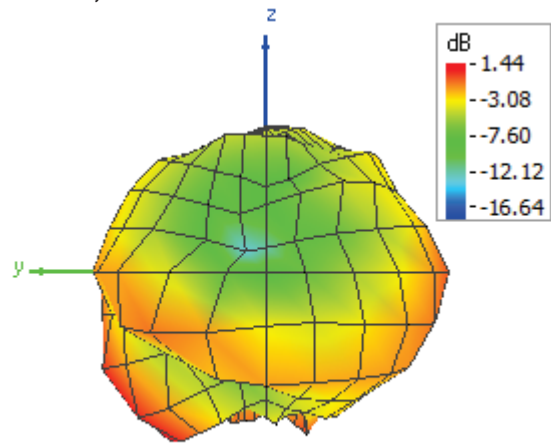
Theta = 180, Phi = 0



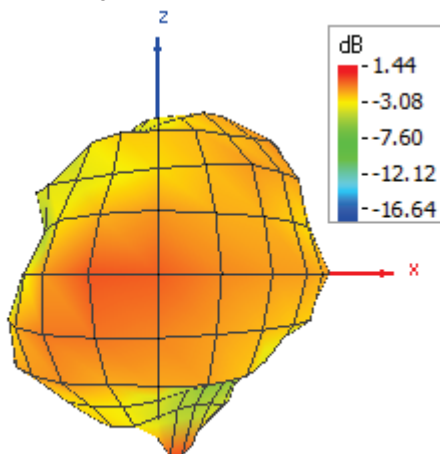
Theta = 90, Phi = 0



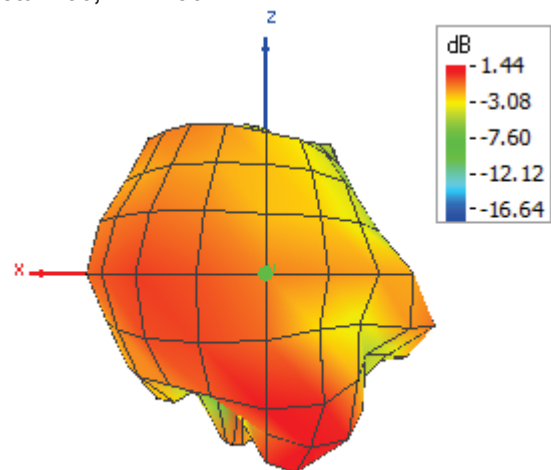
Theta = 90, Phi = 180



Theta = 90, Phi = 270

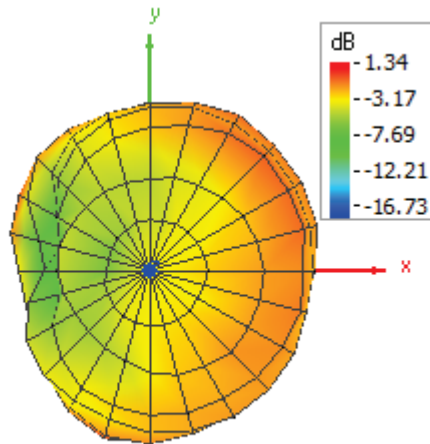


Theta = 90, Phi = 90

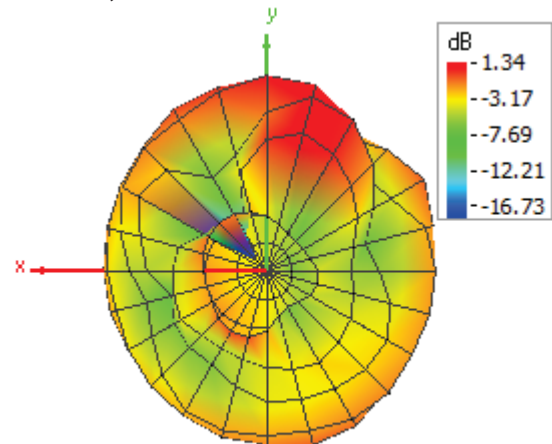


2408 MHz 3D

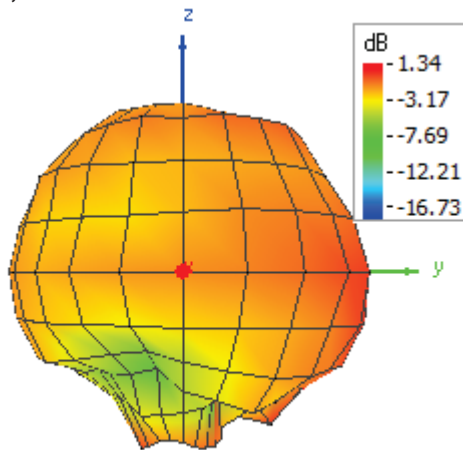
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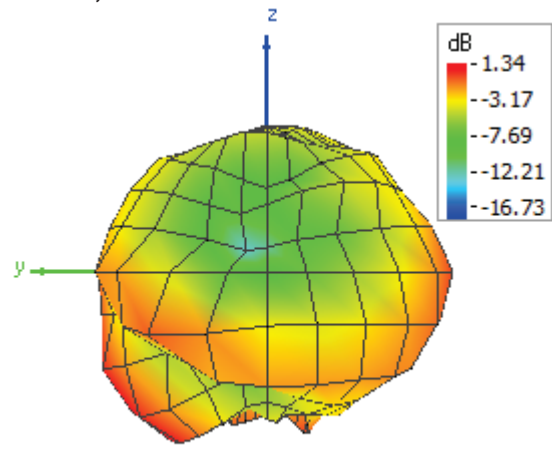
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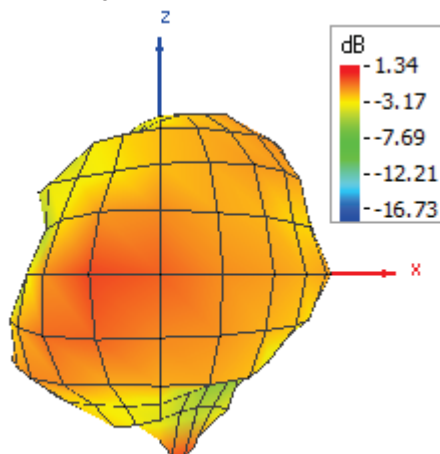
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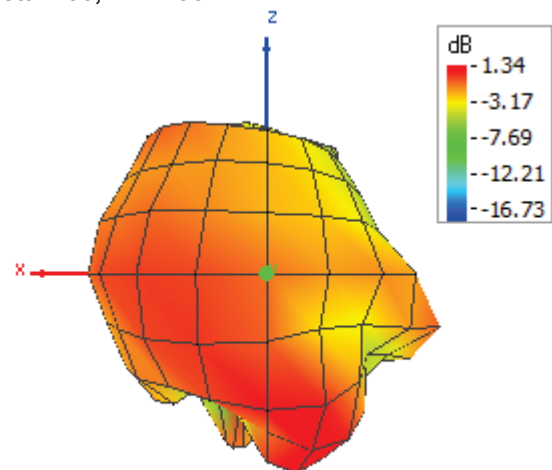
Theta = 90, Phi = 180



Theta = 90, Phi = 270

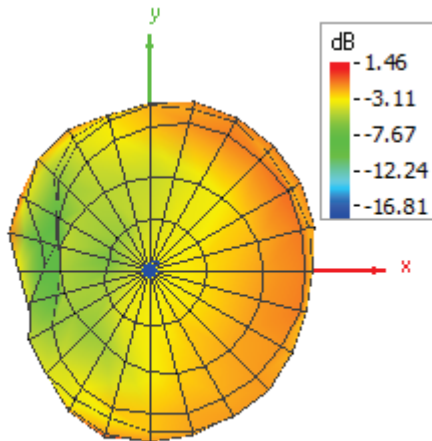


Theta = 90, Phi = 90

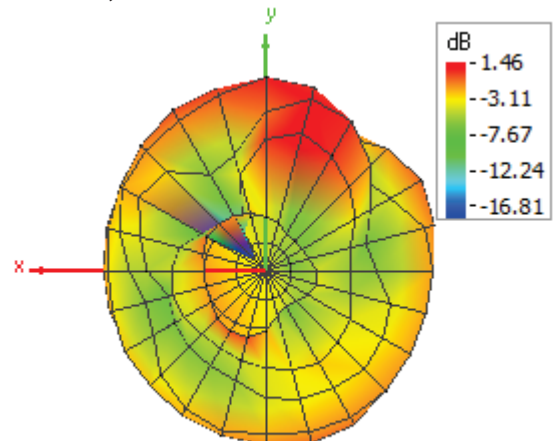


2410 MHz 3D

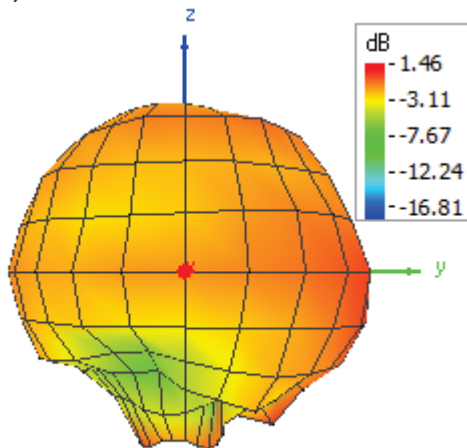
Theta = 0, Phi = 0



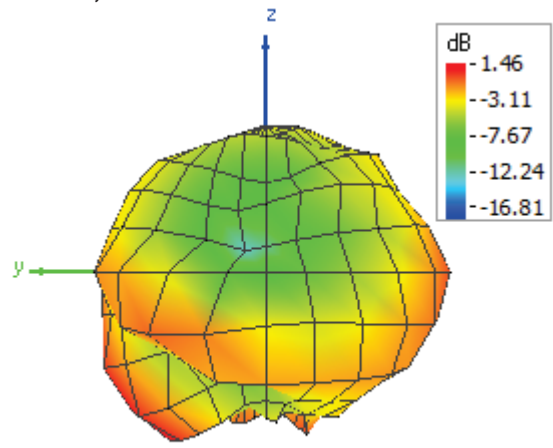
Theta = 180, Phi = 0



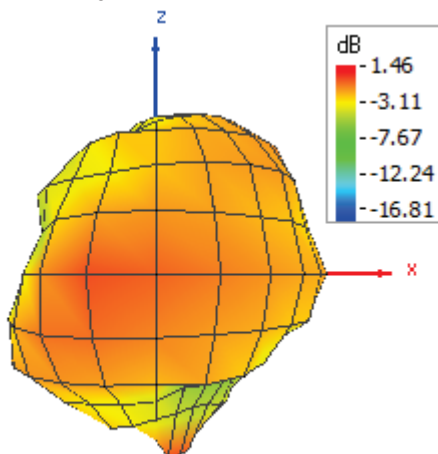
Theta = 90, Phi = 0



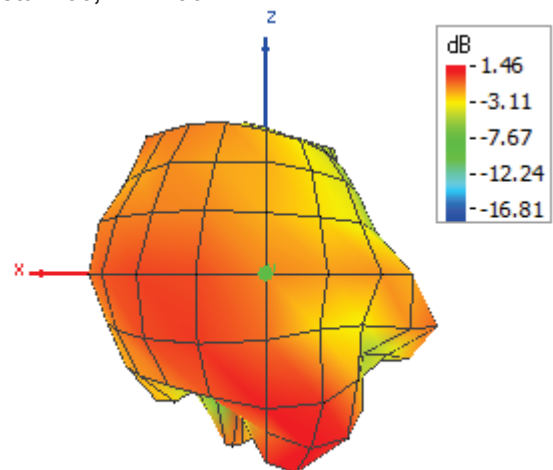
Theta = 90, Phi = 180



Theta = 90, Phi = 270

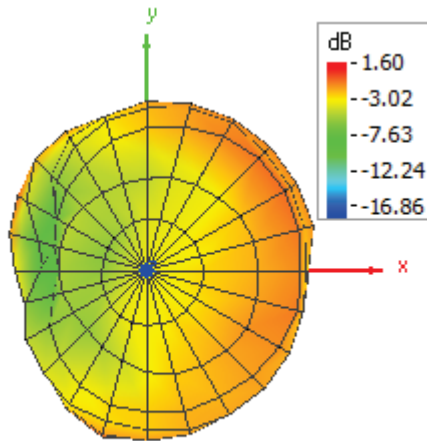


Theta = 90, Phi = 90

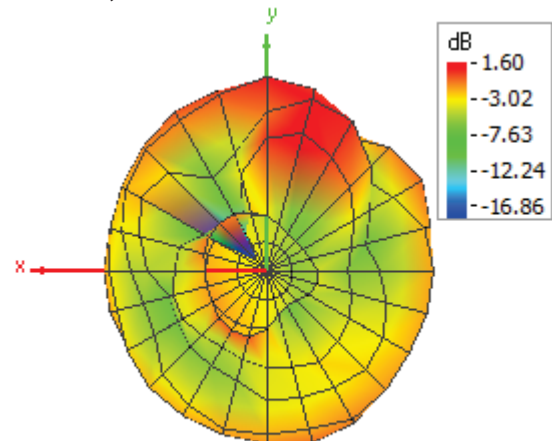


2412 MHz 3D

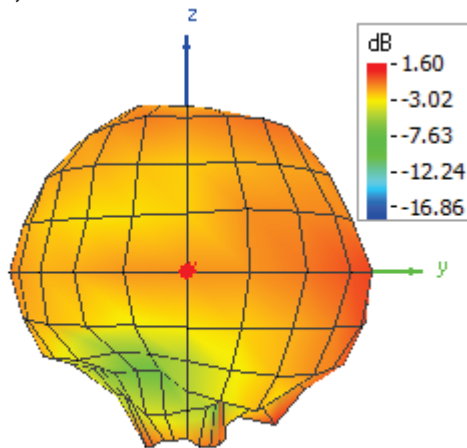
Theta = 0, Phi = 0



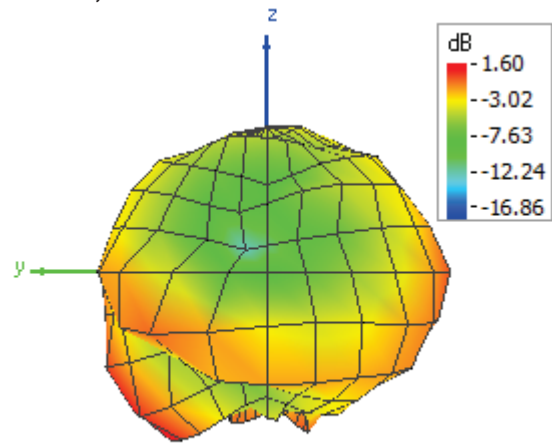
Theta = 180, Phi = 0



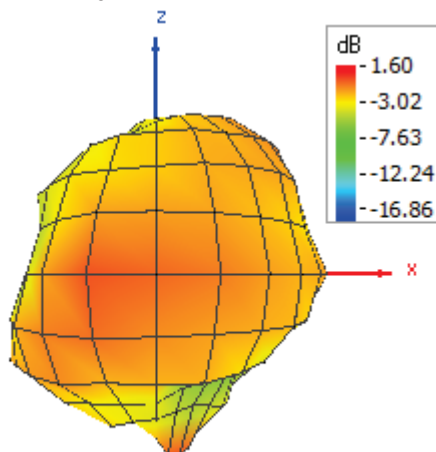
Theta = 90, Phi = 0



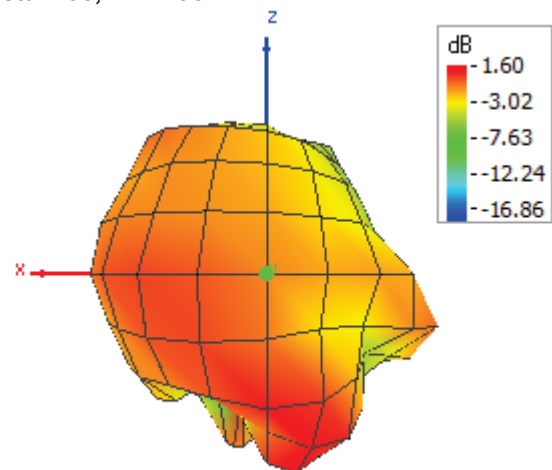
Theta = 90, Phi = 180



Theta = 90, Phi = 270

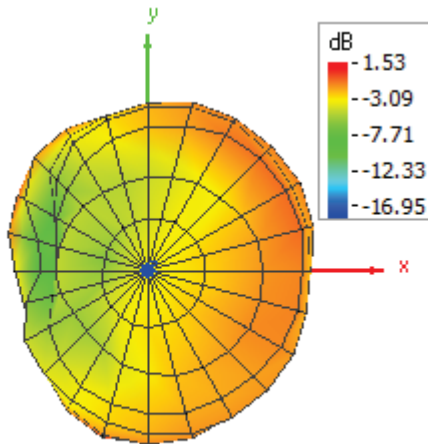


Theta = 90, Phi = 90

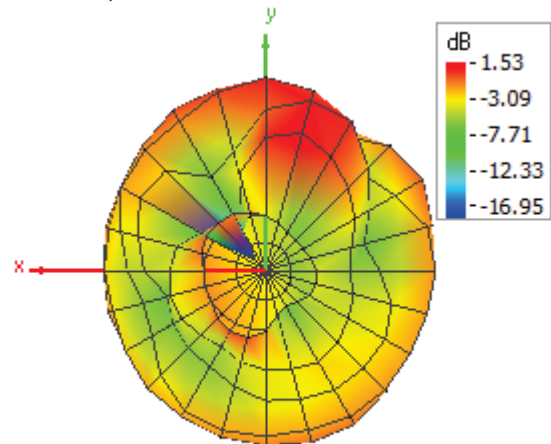


2414 MHz 3D

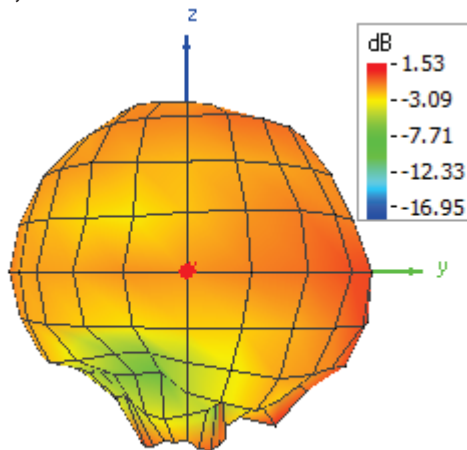
Theta = 0, Phi = 0



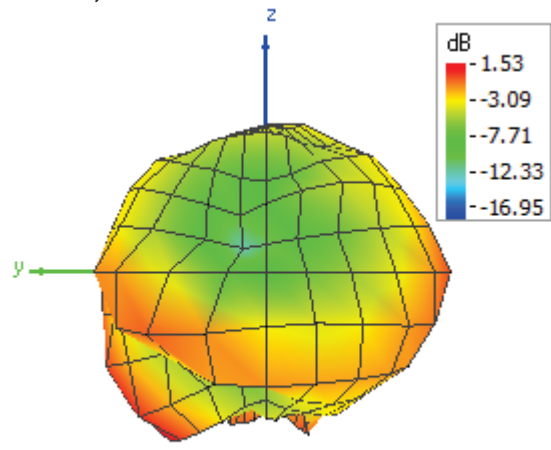
Theta = 180, Phi = 0



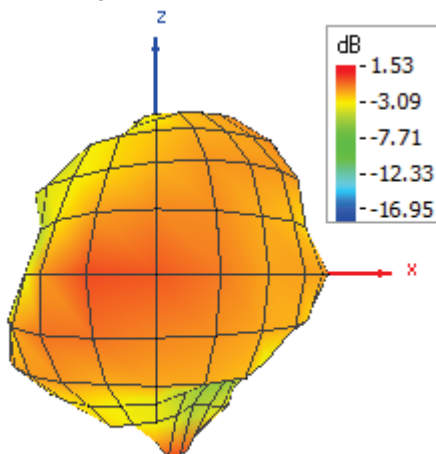
Theta = 90, Phi = 0



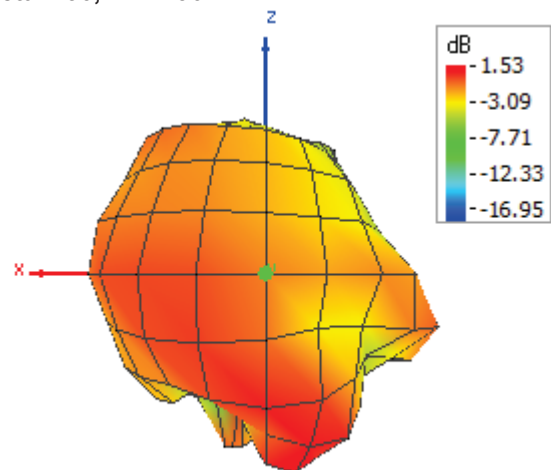
Theta = 90, Phi = 180



Theta = 90, Phi = 270

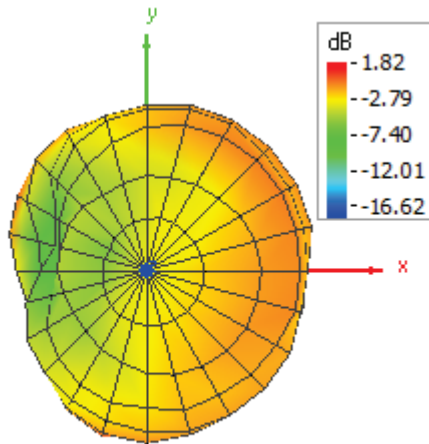


Theta = 90, Phi = 90

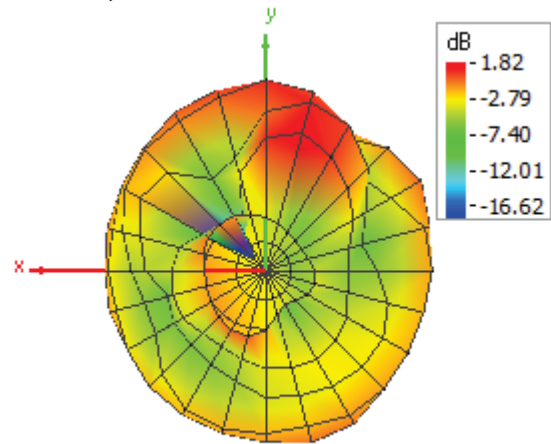


2416 MHz 3D

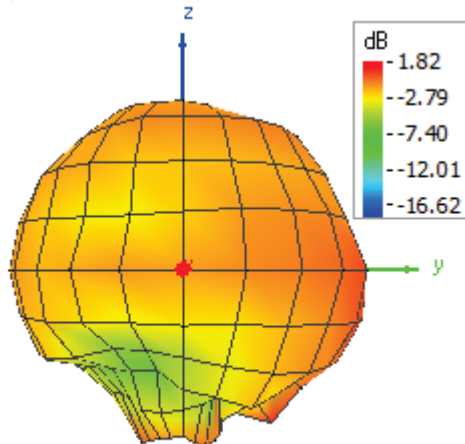
Theta = 0, Phi = 0



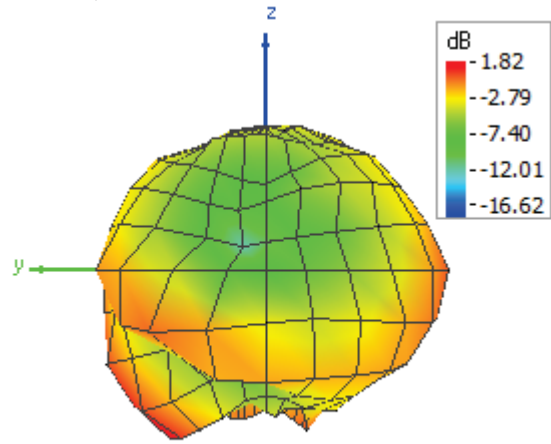
Theta = 180, Phi = 0



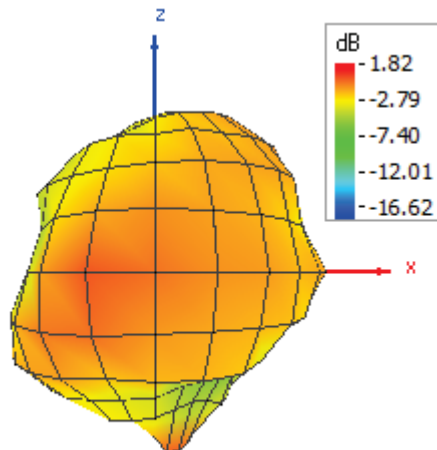
Theta = 90, Phi = 0



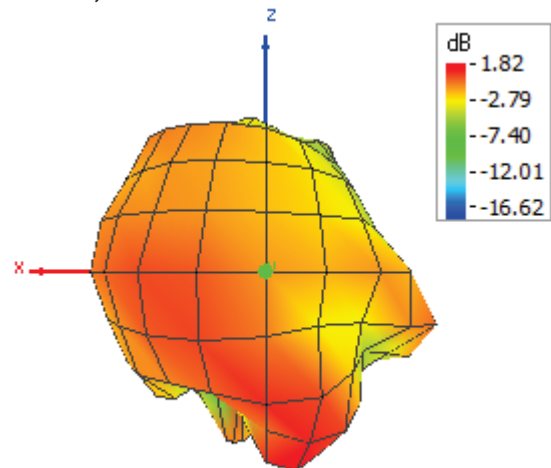
Theta = 90, Phi = 180



Theta = 90, Phi = 270

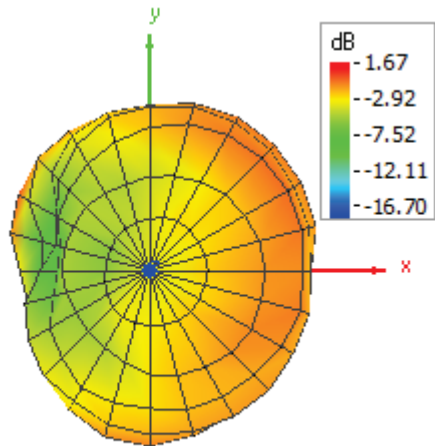


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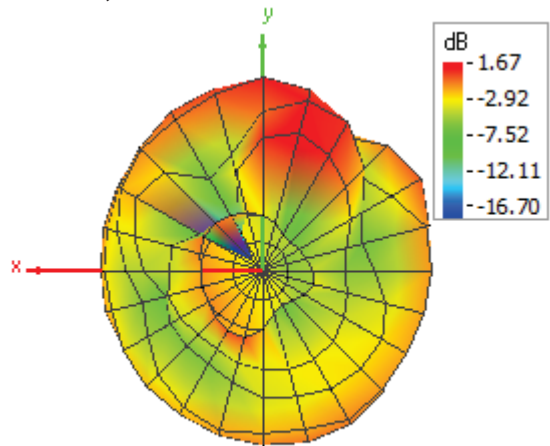


2418 MHz 3D

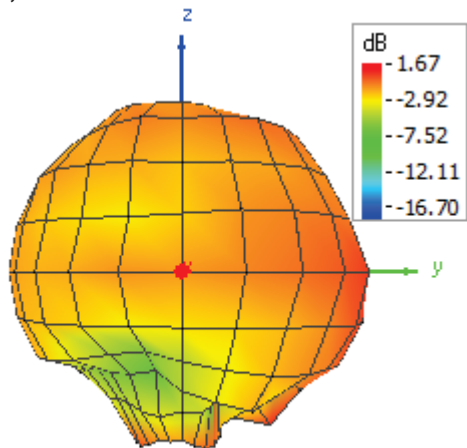
Theta = 0, Phi = 0



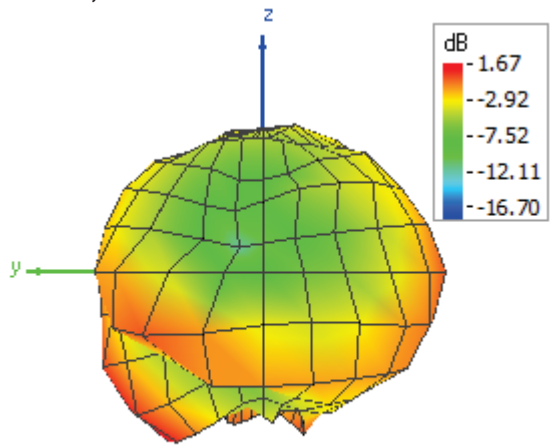
Theta = 180, Phi = 0



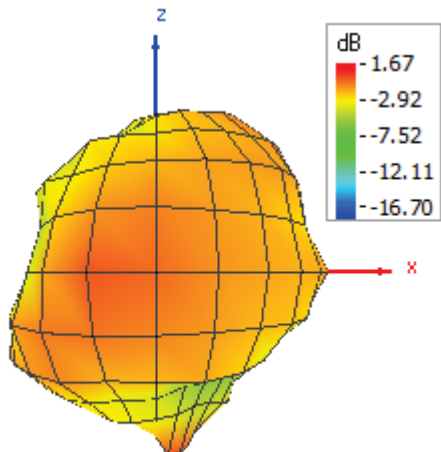
Theta = 90, Phi = 0



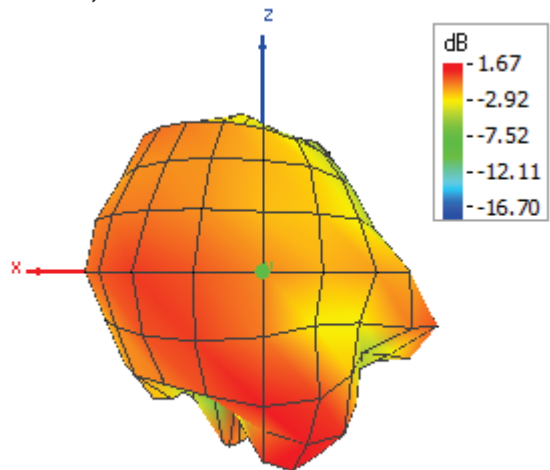
Theta = 90, Phi = 180



Theta = 90, Phi = 270

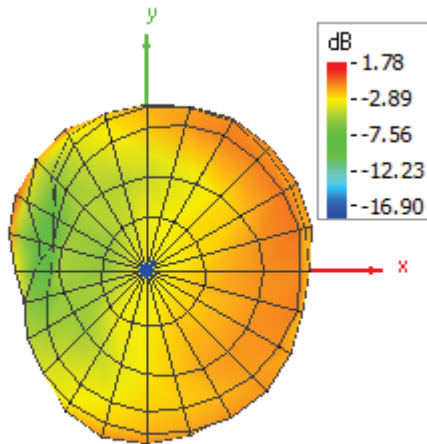


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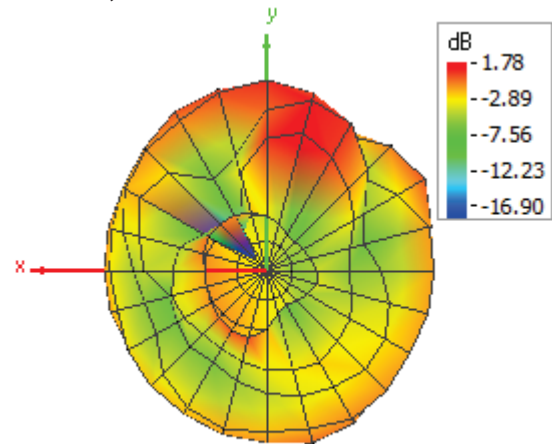


2420 MHz 3D

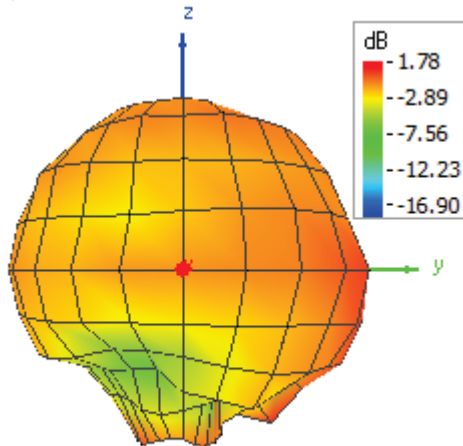
Theta = 0, Phi = 0



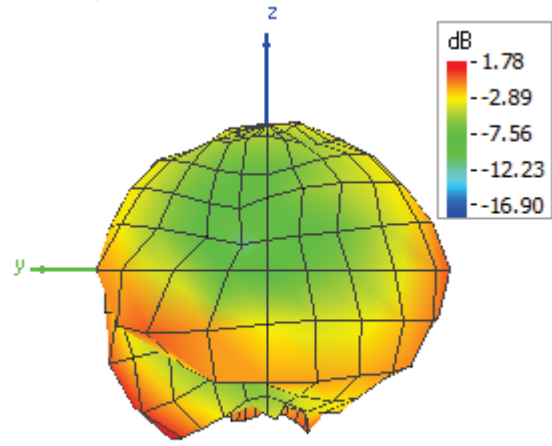
Theta = 180, Phi = 0



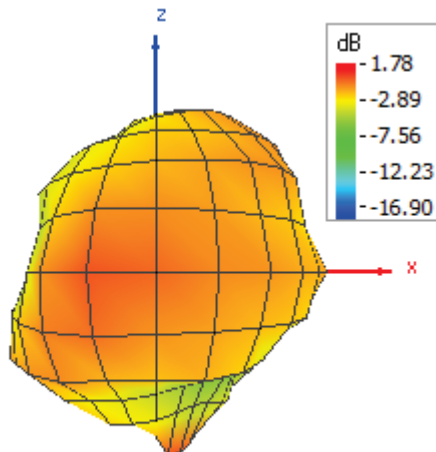
Theta = 90, Phi = 0



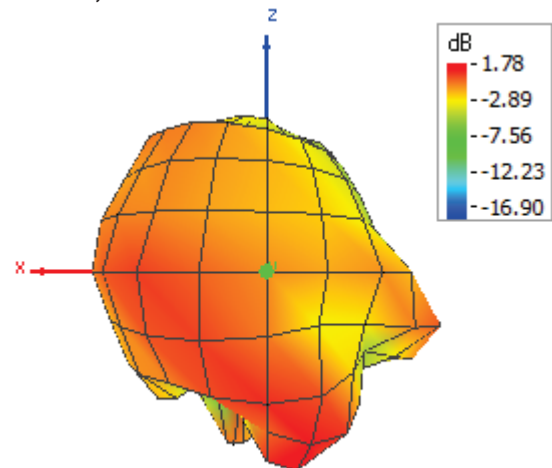
Theta = 90, Phi = 180



Theta = 90, Phi = 270

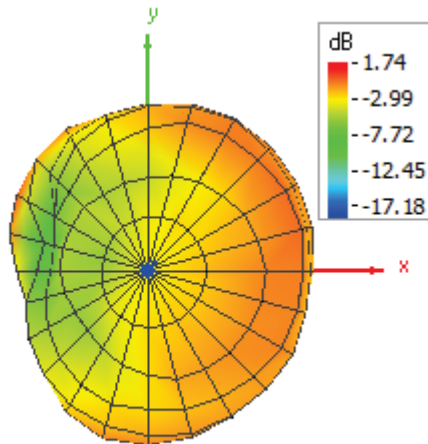


Theta = 90, Phi = 90

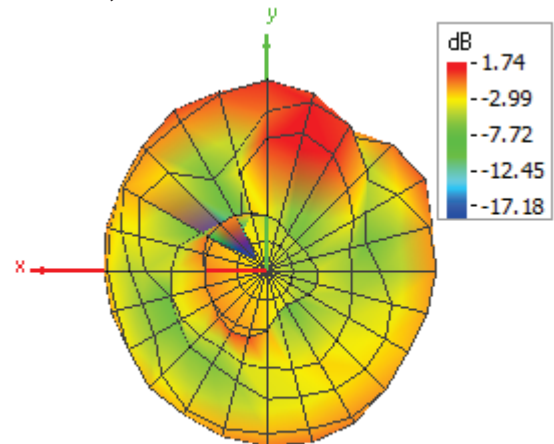


2422 MHz 3D

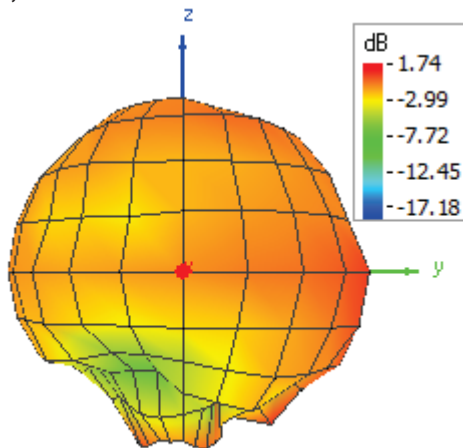
Theta = 0, Phi = 0



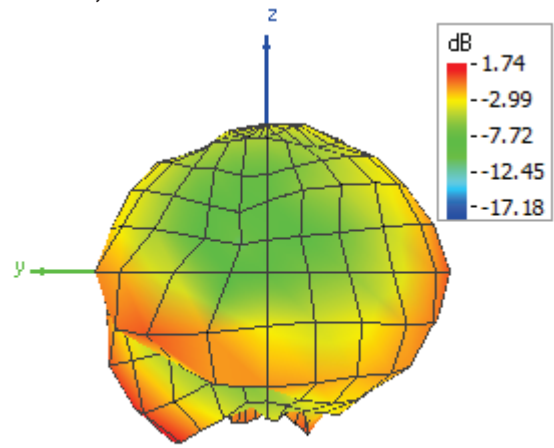
Theta = 180, Phi = 0



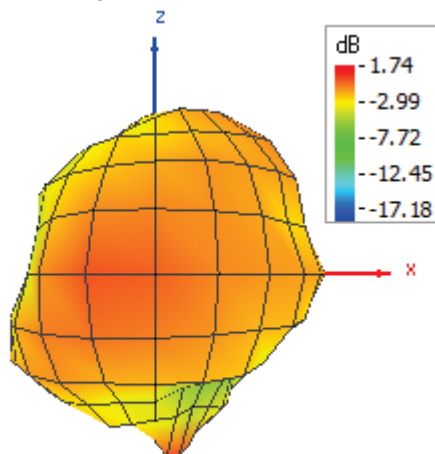
Theta = 90, Phi = 0



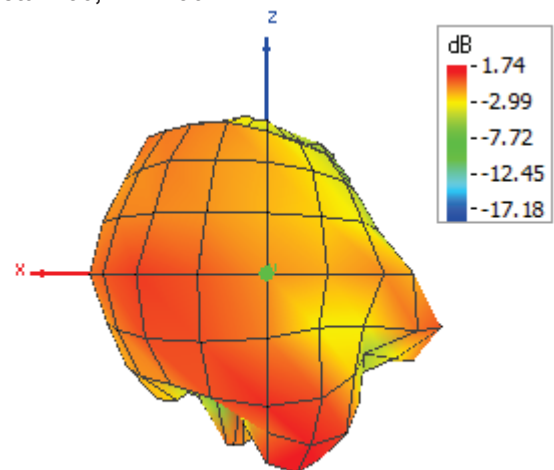
Theta = 90, Phi = 180



Theta = 90, Phi = 270

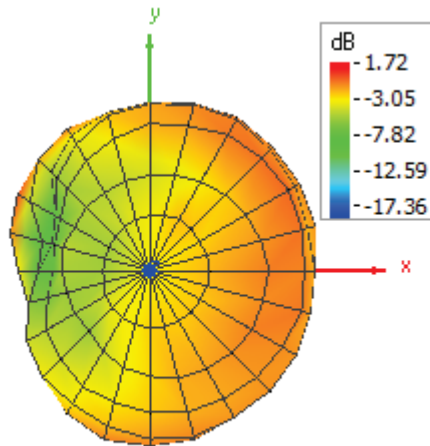


Theta = 90, Phi = 90

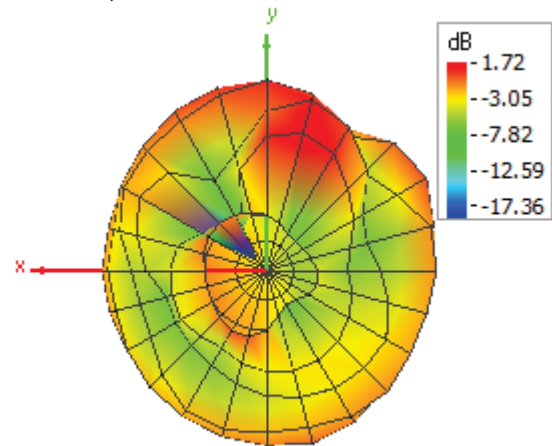


2424 MHz 3D

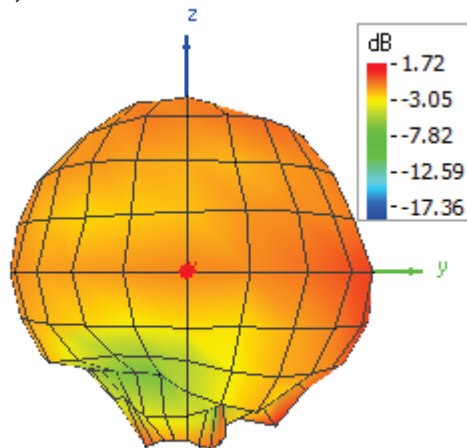
Theta = 0, Phi = 0



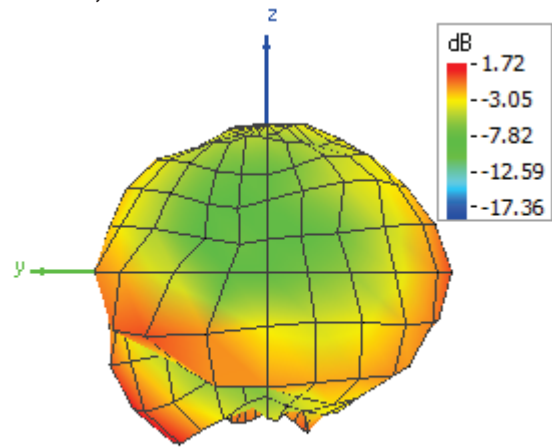
Theta = 180, Phi = 0



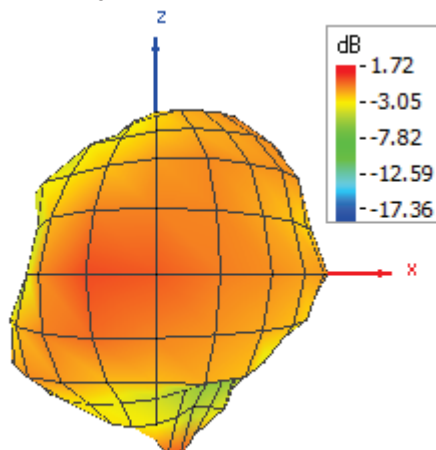
Theta = 90, Phi = 0



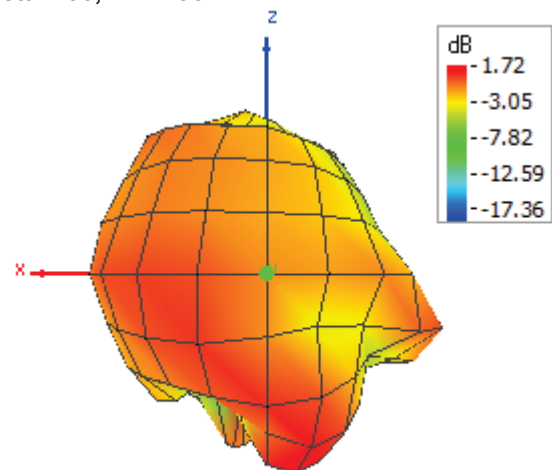
Theta = 90, Phi = 180



Theta = 90, Phi = 270

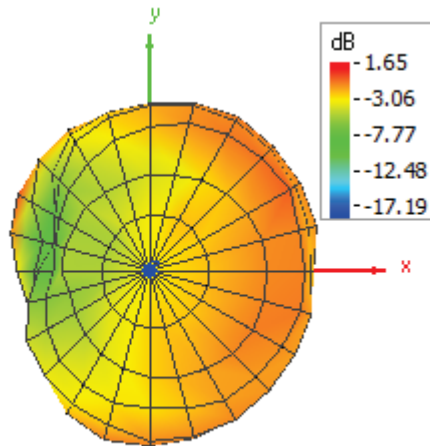


Theta = 90, Phi = 90

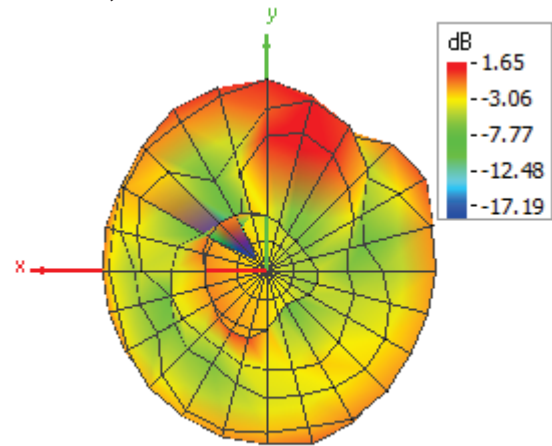


2426 MHz 3D

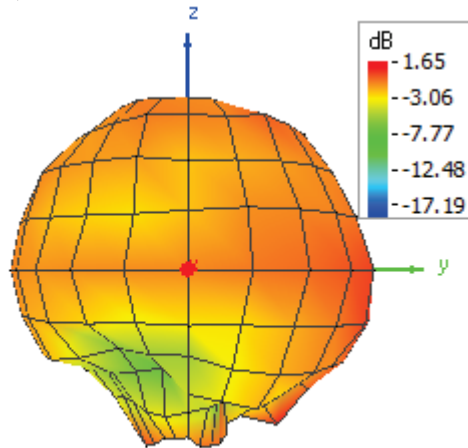
Theta = 0, Phi = 0



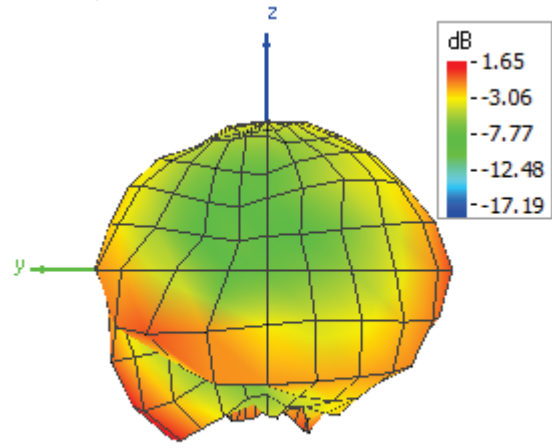
Theta = 180, Phi = 0



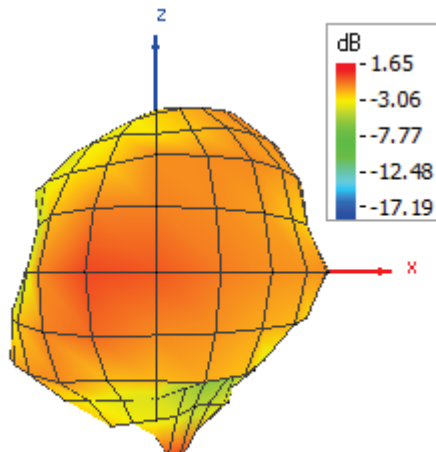
Theta = 90, Phi = 0



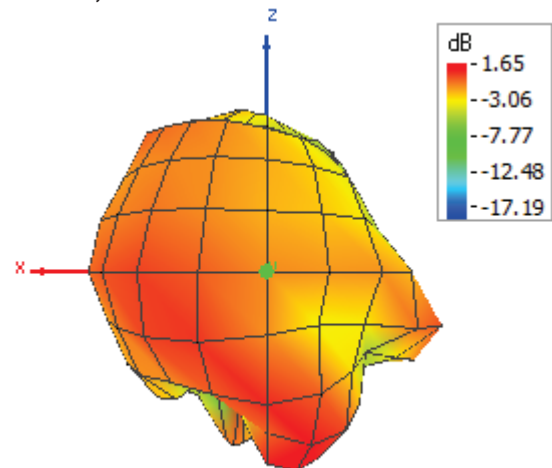
Theta = 90, Phi = 180



Theta = 90, Phi = 270

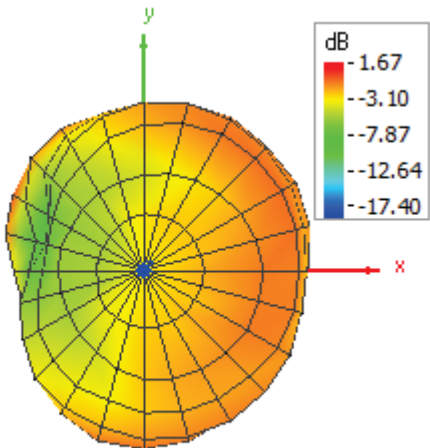


Theta = 90, Phi = 90

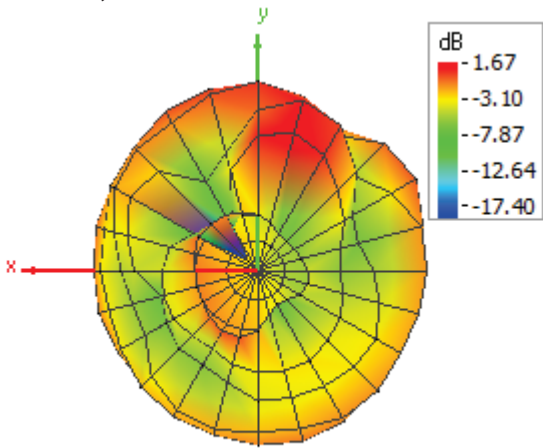


2428 MHz 3D

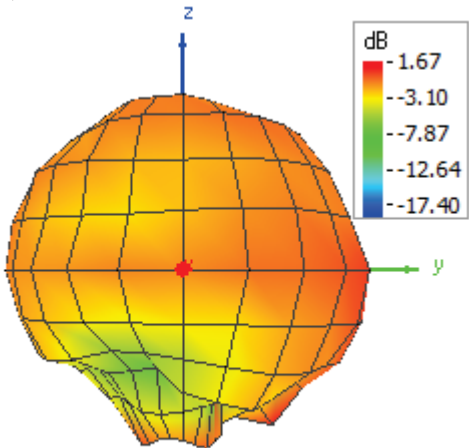
Theta = 0, Phi = 0



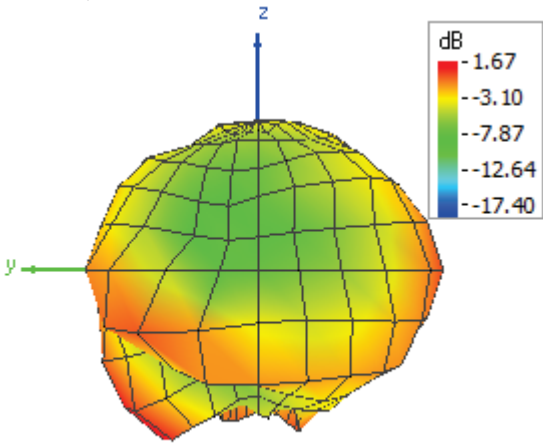
Theta = 180, Phi = 0



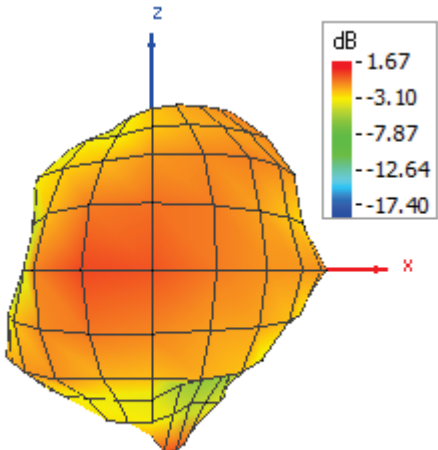
Theta = 90, Phi = 0



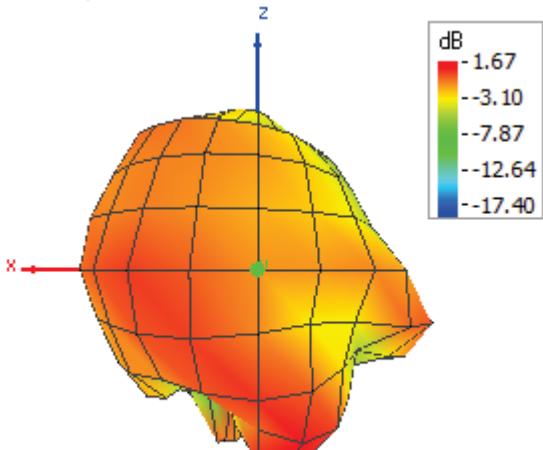
Theta = 90, Phi = 180



Theta = 90, Phi = 270

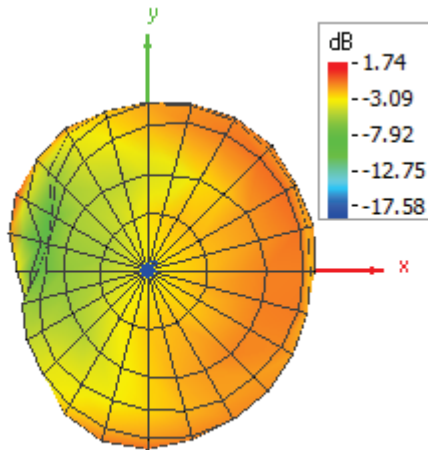


Theta = 90, Phi = 90

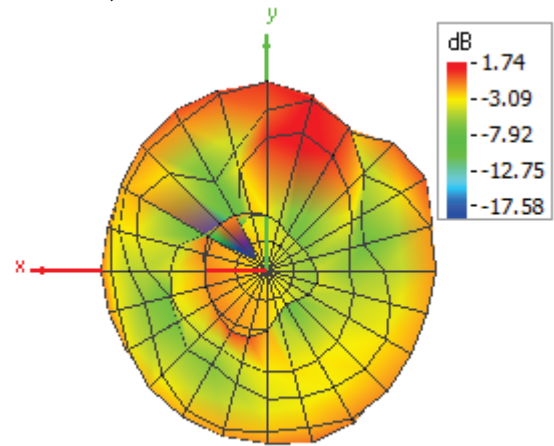


2430 MHz 3D

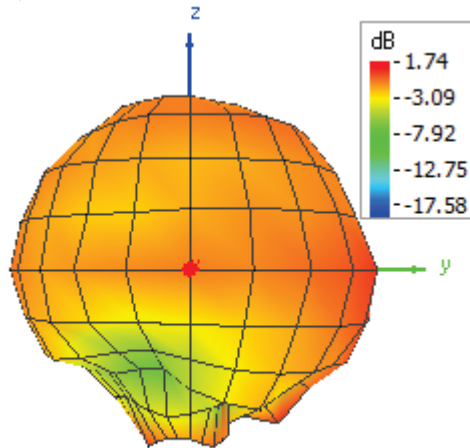
Theta = 0, Phi = 0



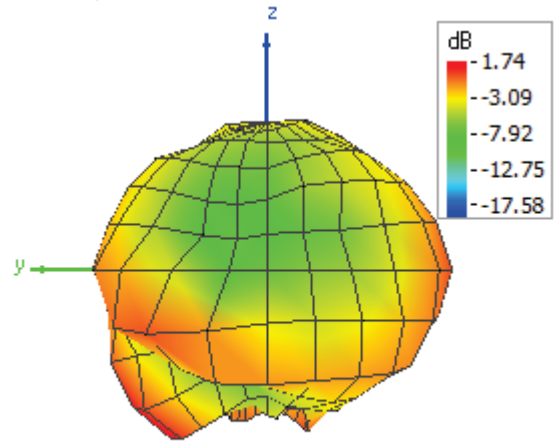
Theta = 180, Phi = 0



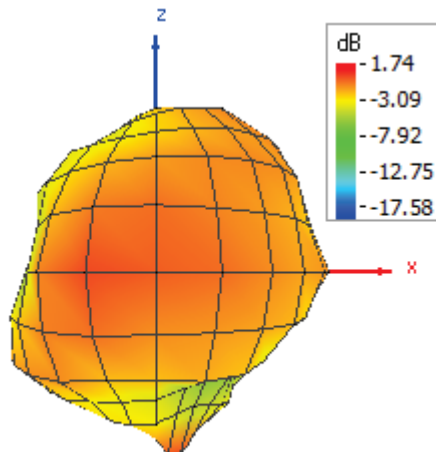
Theta = 90, Phi = 0



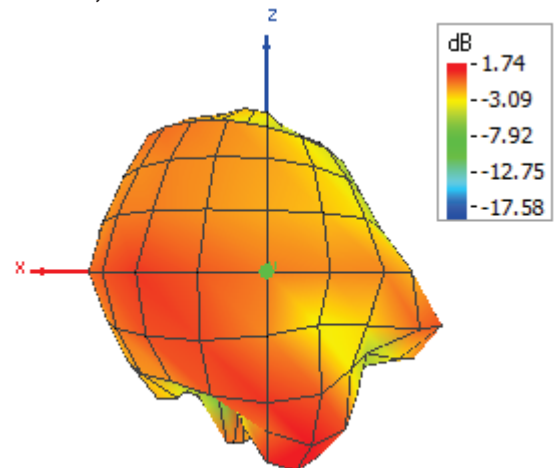
Theta = 90, Phi = 180



Theta = 90, Phi = 270

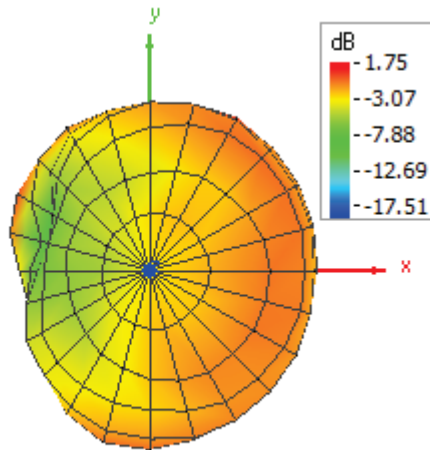


Theta = 90, Phi = 90

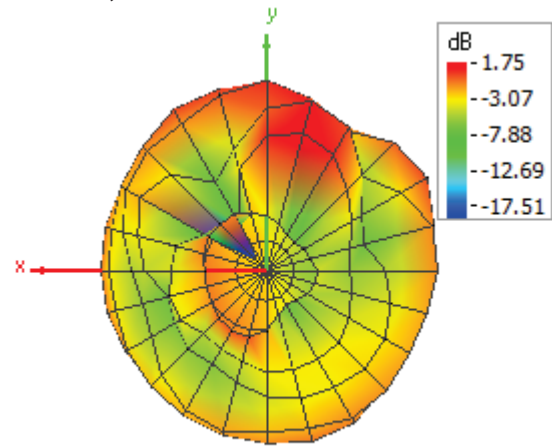


2432 MHz 3D

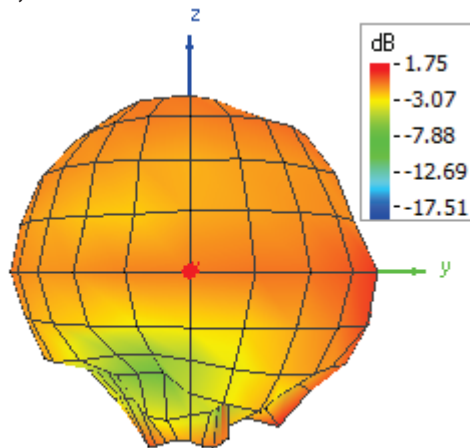
Theta = 0, Phi = 0



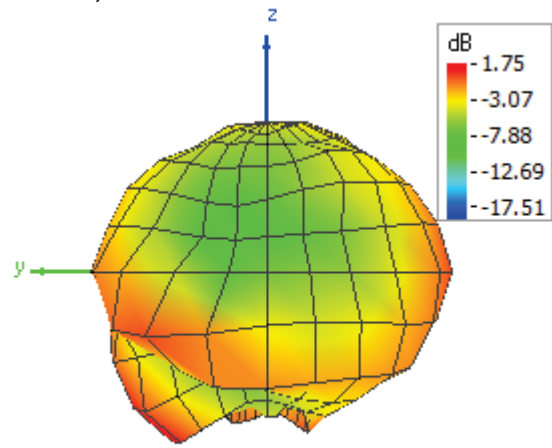
Theta = 180, Phi = 0



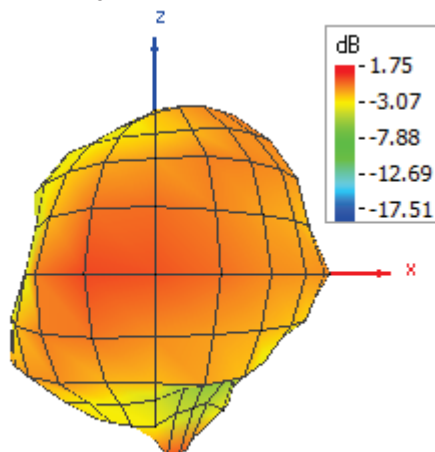
Theta = 90, Phi = 0



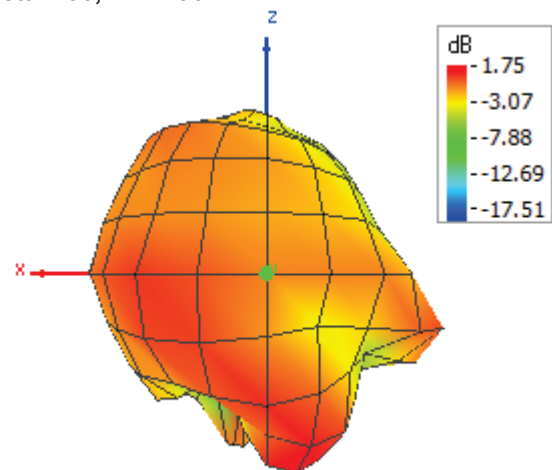
Theta = 90, Phi = 180



Theta = 90, Phi = 270

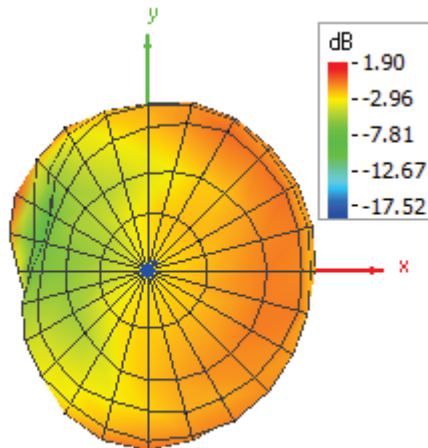


Theta = 90, Phi = 90

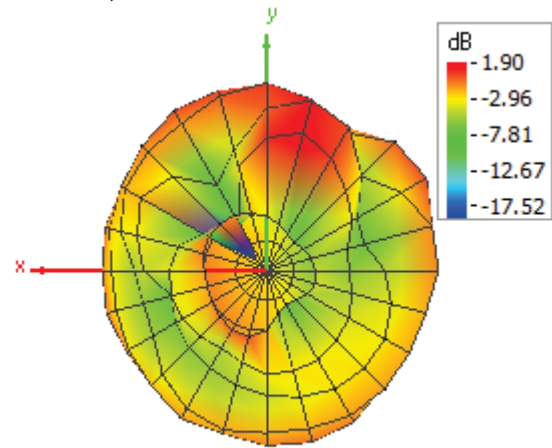


2434 MHz 3D

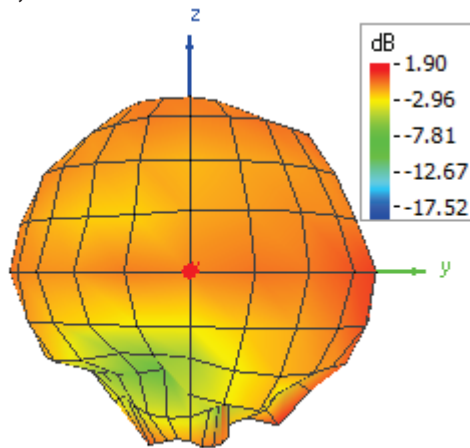
Theta = 0, Phi = 0



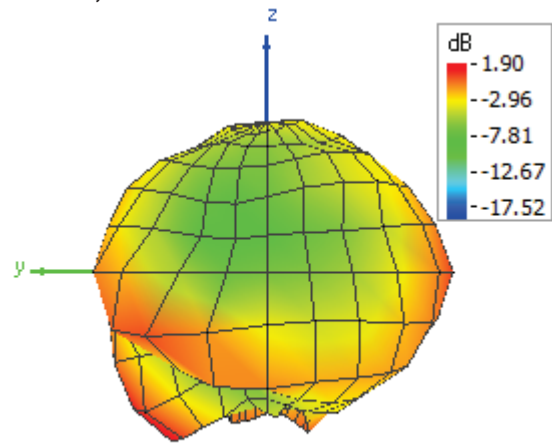
Theta = 180, Phi = 0



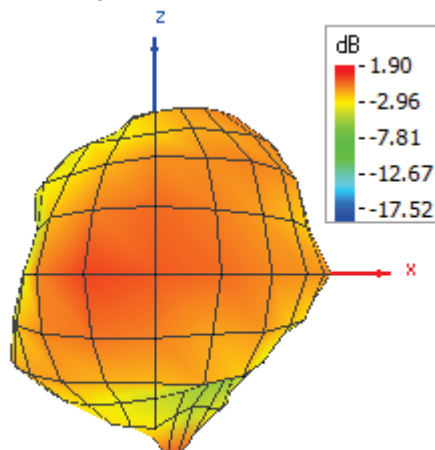
Theta = 90, Phi = 0



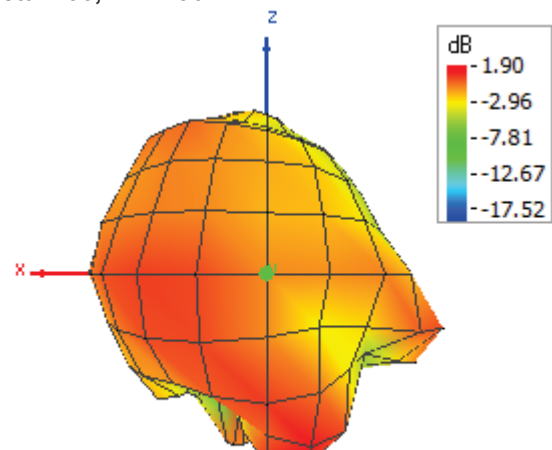
Theta = 90, Phi = 180



Theta = 90, Phi = 270

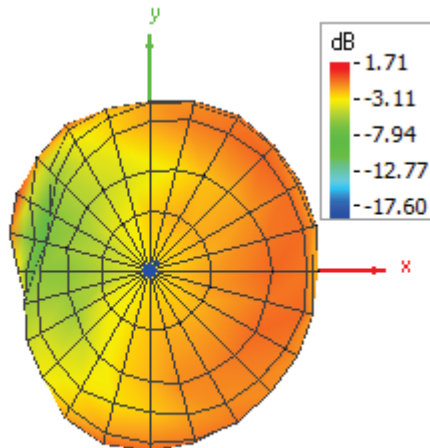


Theta = 90, Phi = 90

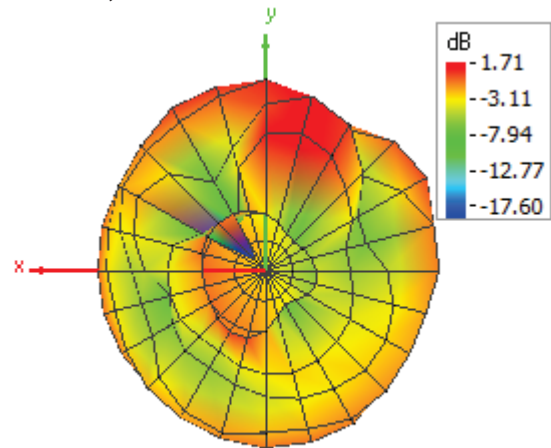


2436 MHz 3D

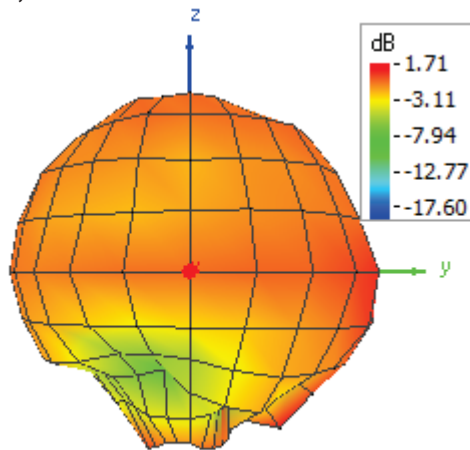
Theta = 0, Phi = 0



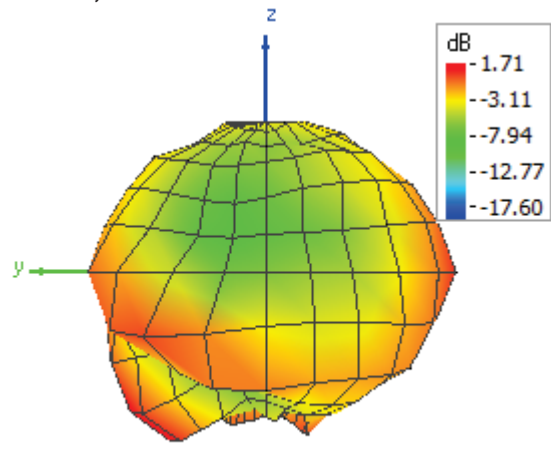
Theta = 180, Phi = 0



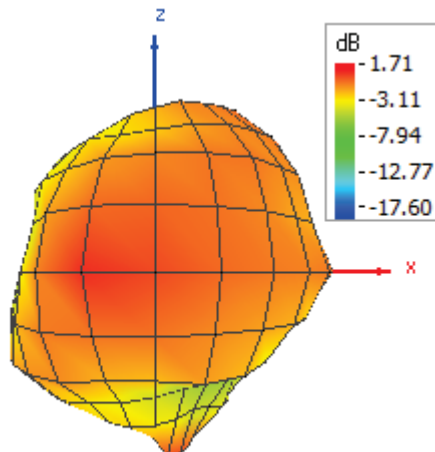
Theta = 90, Phi = 0



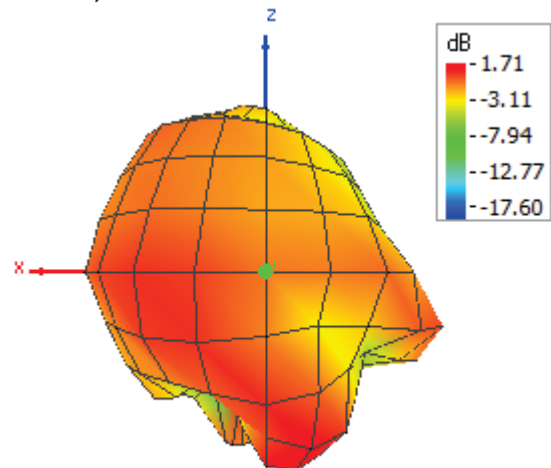
Theta = 90, Phi = 180



Theta = 90, Phi = 270

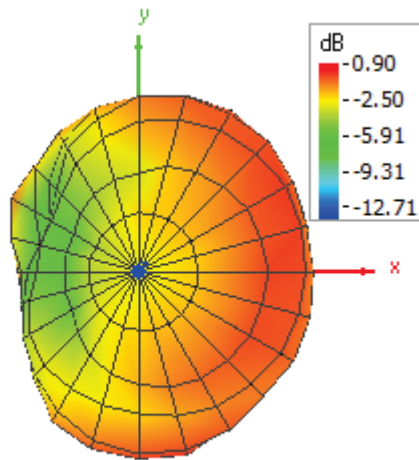


Theta = 90, Phi = 90

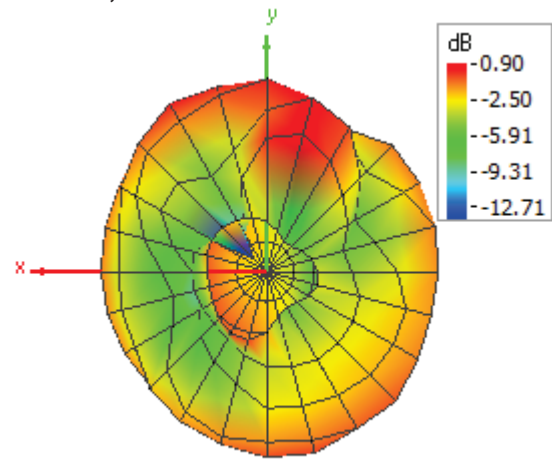


2438 MHz 3D

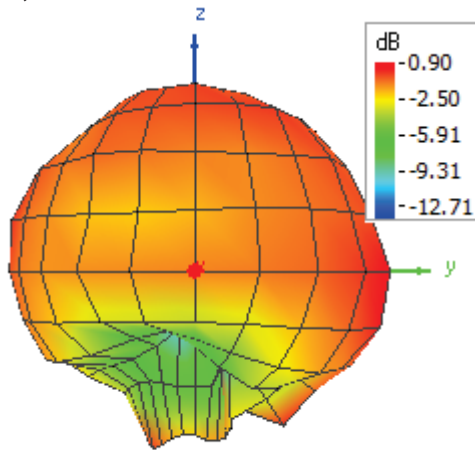
Theta = 0, Phi = 0



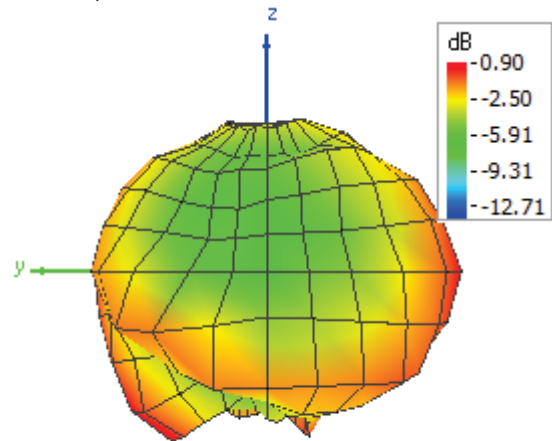
Theta = 180, Phi = 0



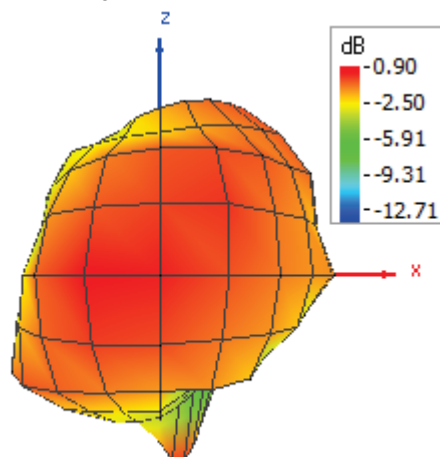
Theta = 90, Phi = 0



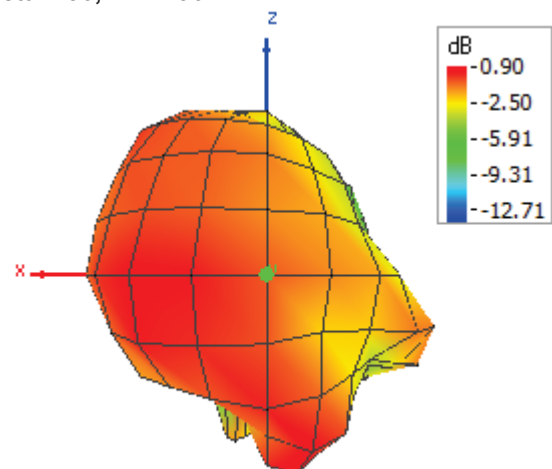
Theta = 90, Phi = 180



Theta = 90, Phi = 270

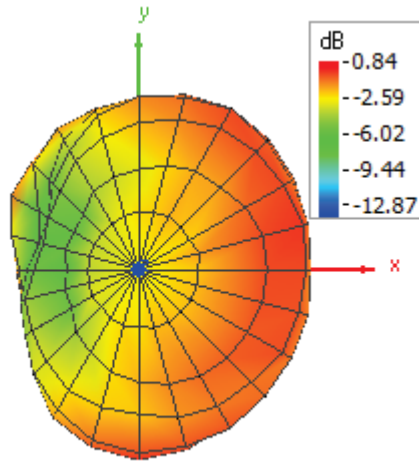


Theta = 90, Phi = 90

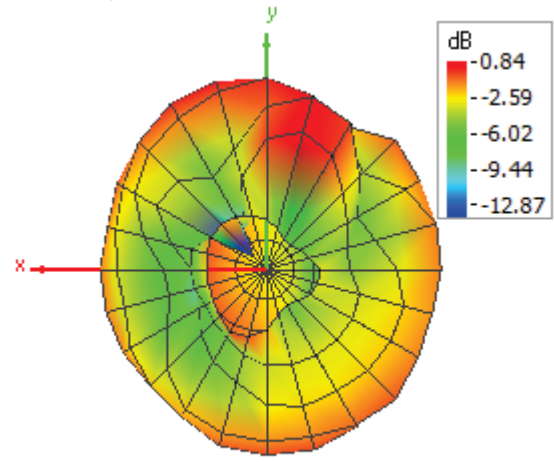


2440 MHz 3D

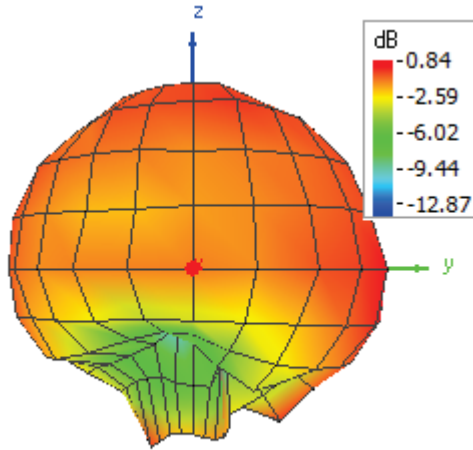
Theta = 0, Phi = 0



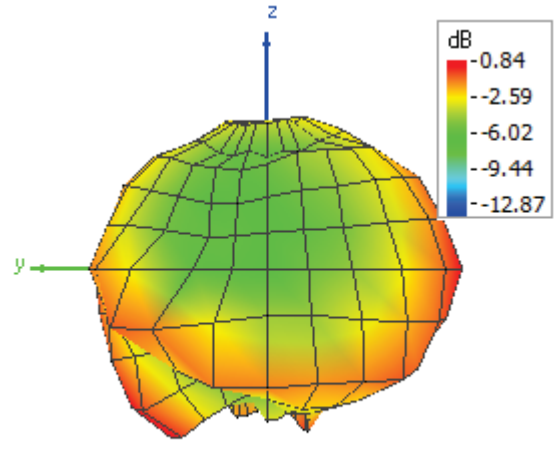
Theta = 180, Phi = 0



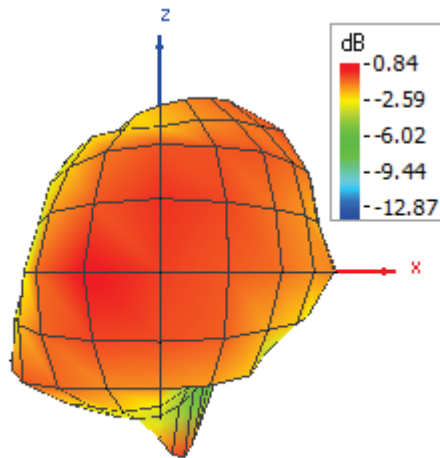
Theta = 90, Phi = 0



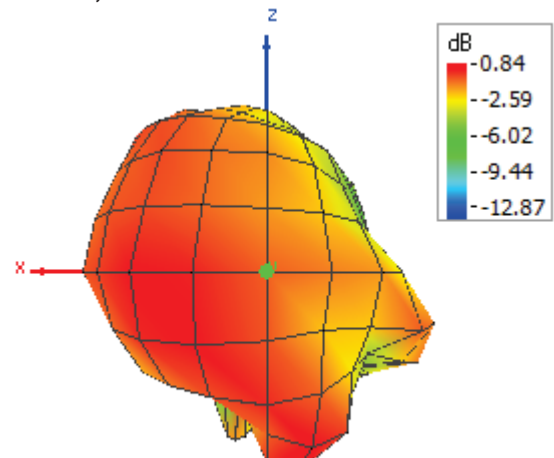
Theta = 90, Phi = 180



Theta = 90, Phi = 270

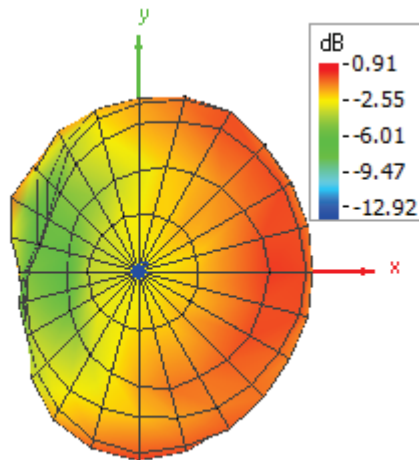


Theta = 90, Phi = 90

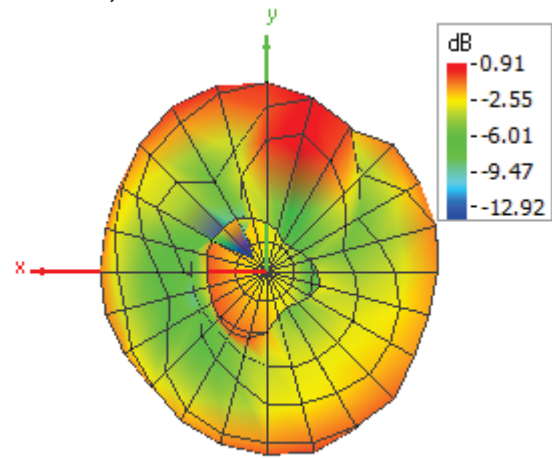


2442 MHz 3D

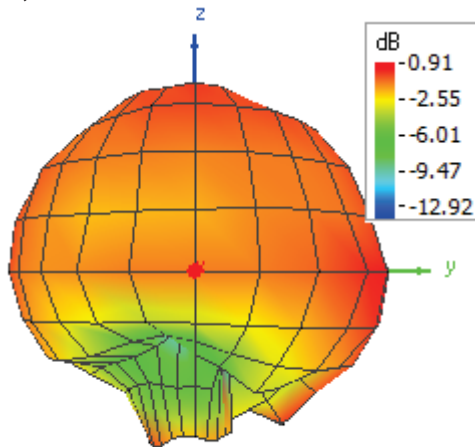
Theta = 0, Phi = 0



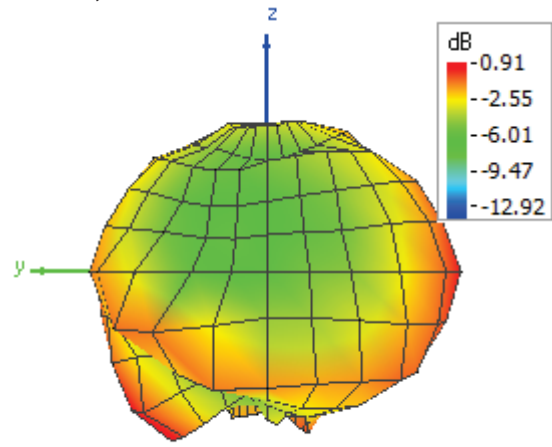
Theta = 180, Phi = 0



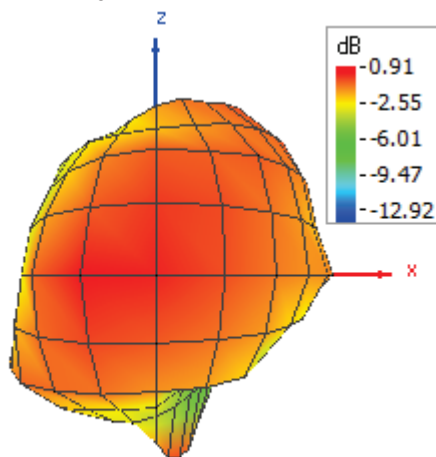
Theta = 90, Phi = 0



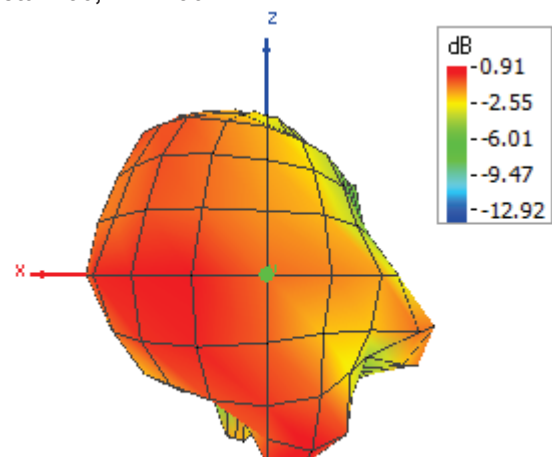
Theta = 90, Phi = 180



Theta = 90, Phi = 270

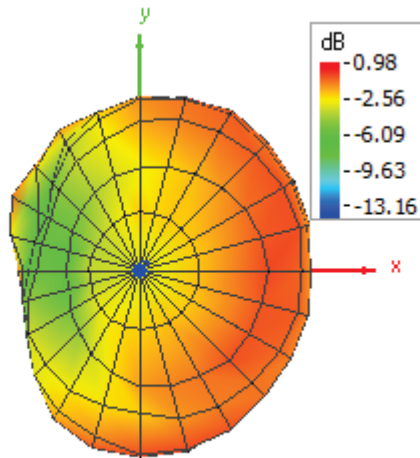


Theta = 90, Phi = 90

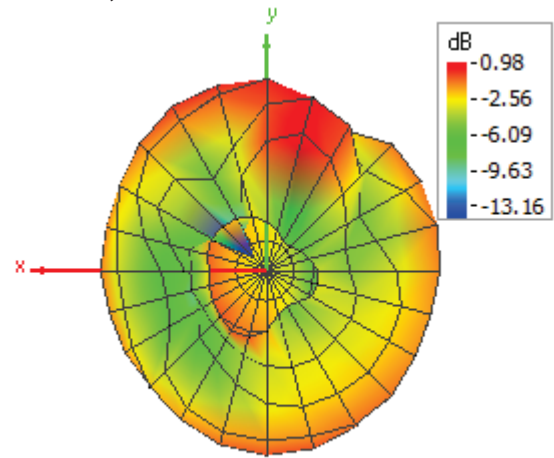


2444 MHz 3D

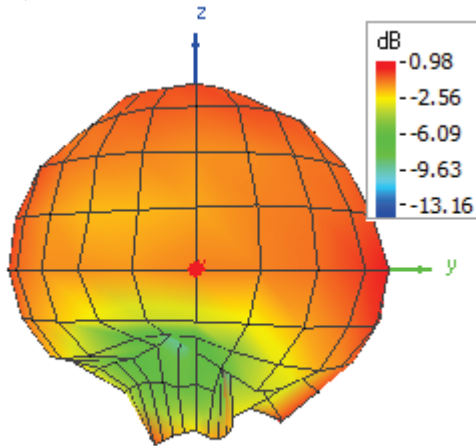
Theta = 0, Phi = 0



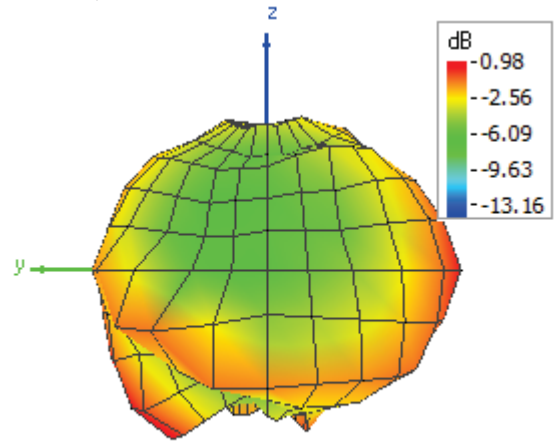
Theta = 180, Phi = 0



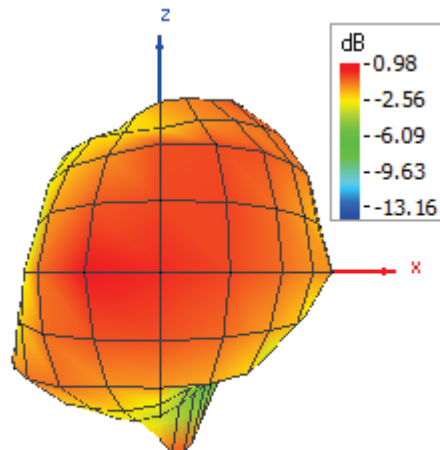
Theta = 90, Phi = 0



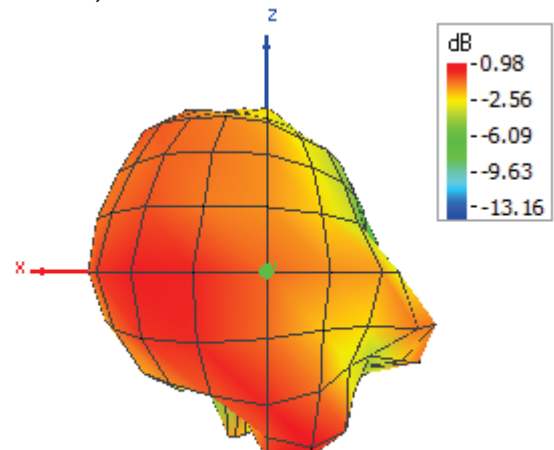
Theta = 90, Phi = 180



Theta = 90, Phi = 270

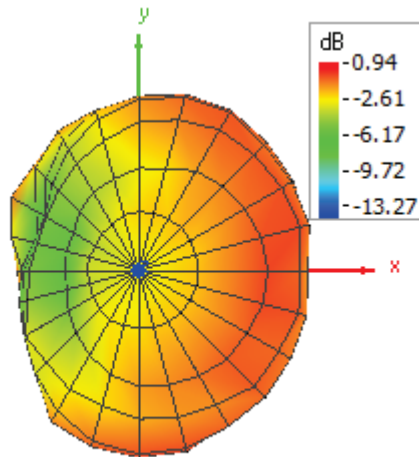


Theta = 90, Phi = 90

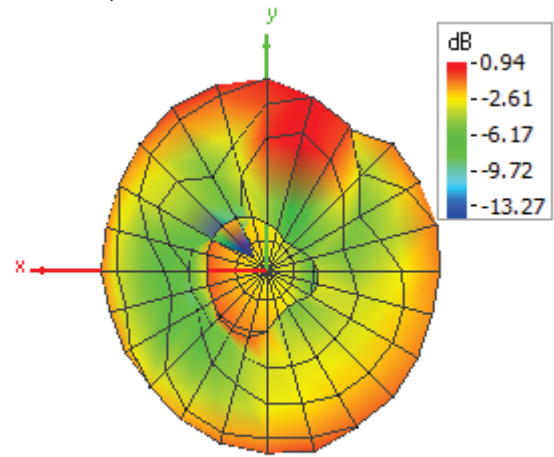


2446 MHz 3D

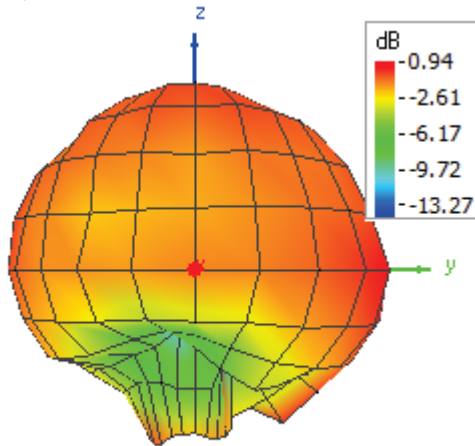
Theta = 0, Phi = 0



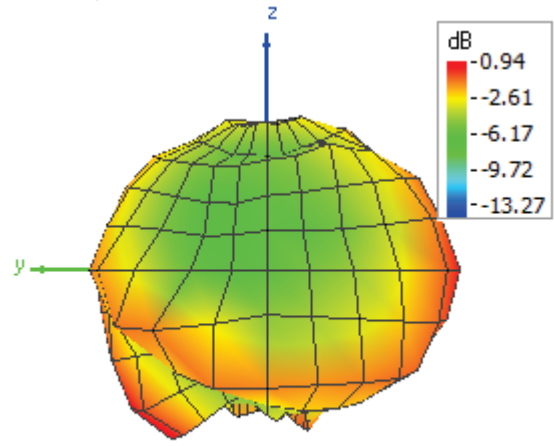
Theta = 180, Phi = 0



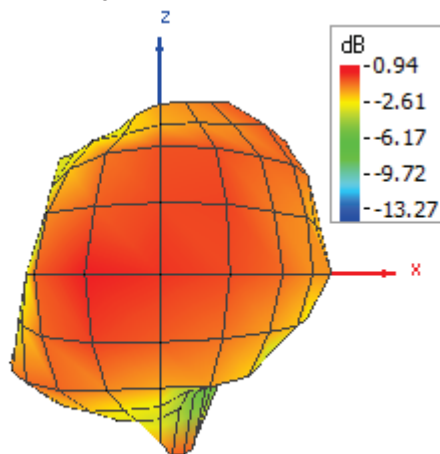
Theta = 90, Phi = 0



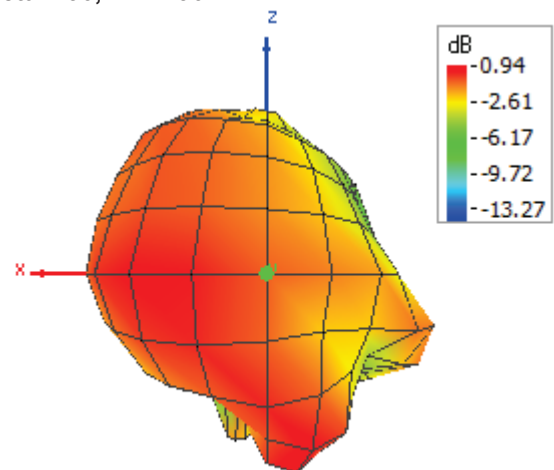
Theta = 90, Phi = 180



Theta = 90, Phi = 270

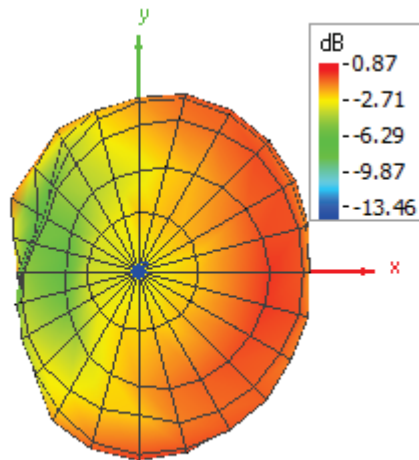


Theta = 90, Phi = 90

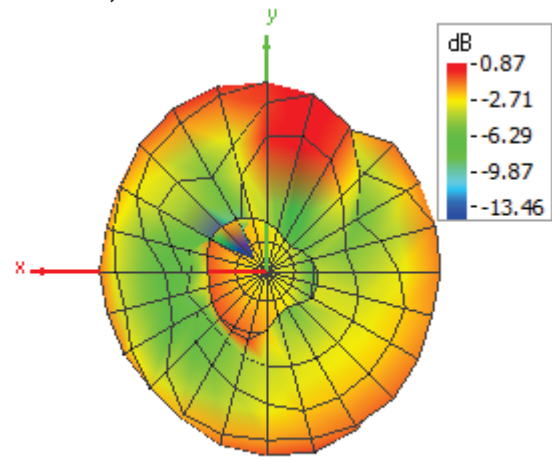


2448 MHz 3D

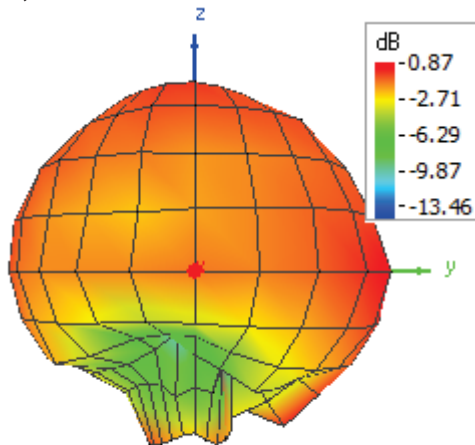
Theta = 0, Phi = 0



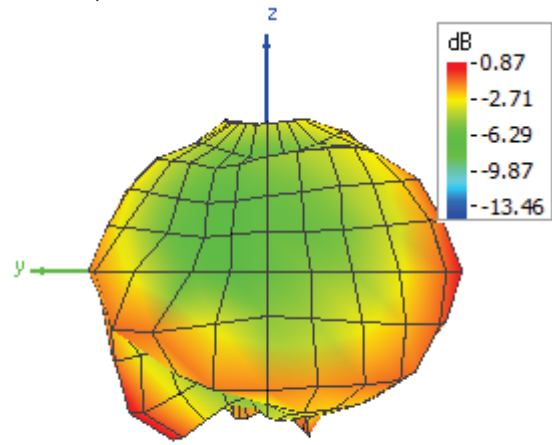
Theta = 180, Phi = 0



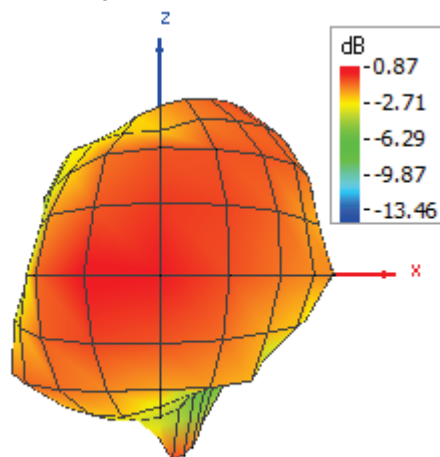
Theta = 90, Phi = 0



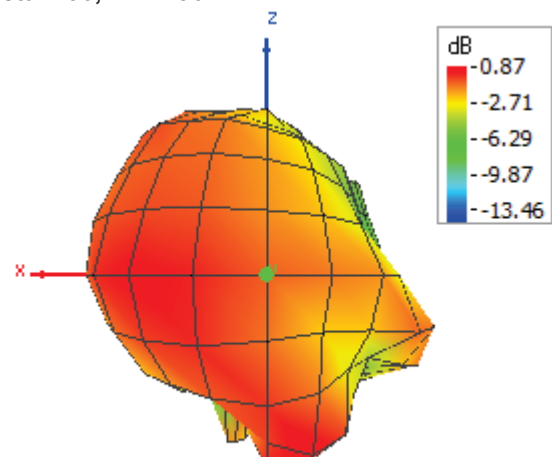
Theta = 90, Phi = 180



Theta = 90, Phi = 270

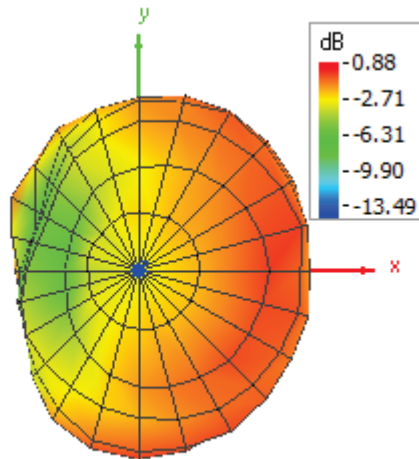


Theta = 90, Phi = 90

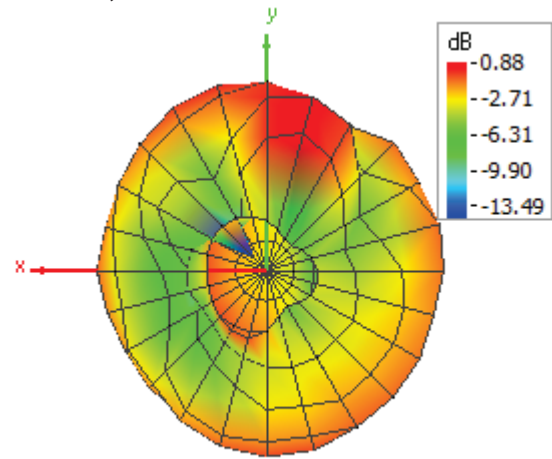


2450 MHz 3D

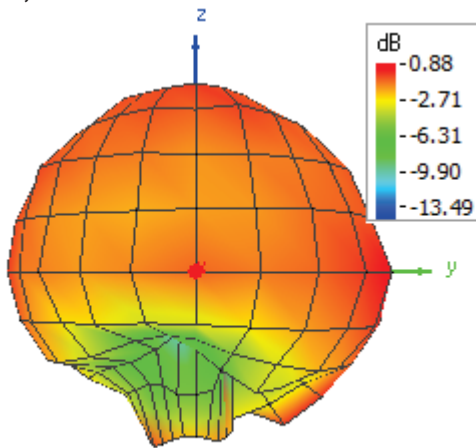
Theta = 0, Phi = 0



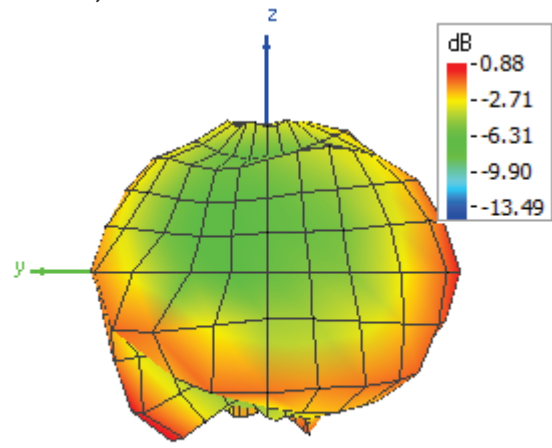
Theta = 180, Phi = 0



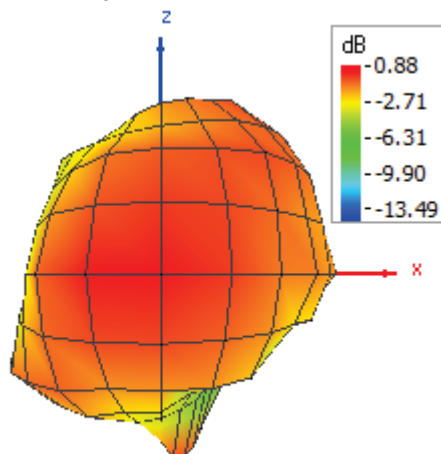
Theta = 90, Phi = 0



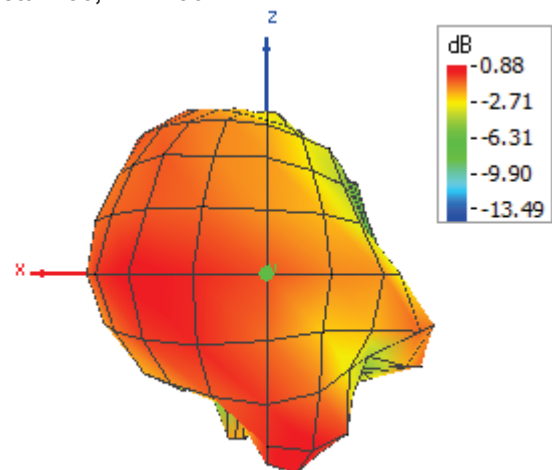
Theta = 90, Phi = 180



Theta = 90, Phi = 270

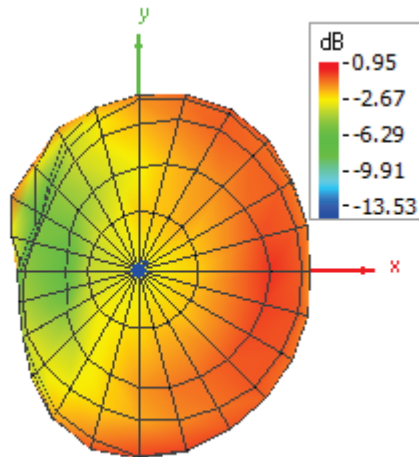


Theta = 90, Phi = 90

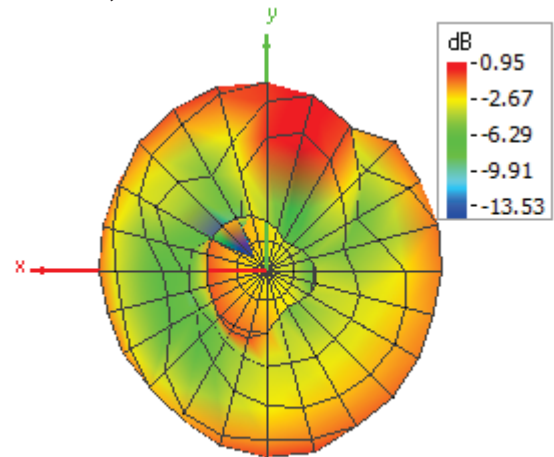


2452 MHz 3D

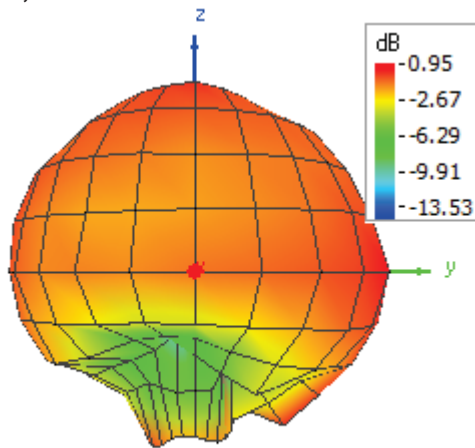
Theta = 0, Phi = 0



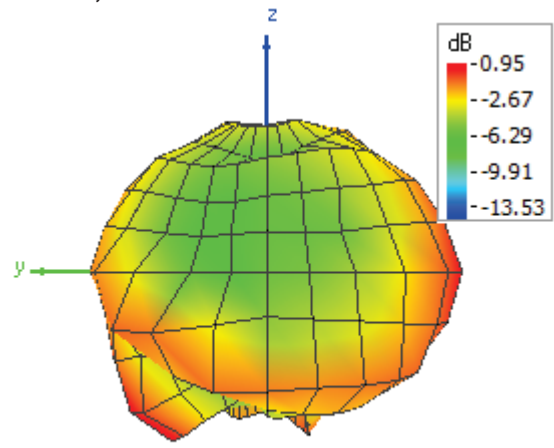
Theta = 180, Phi = 0



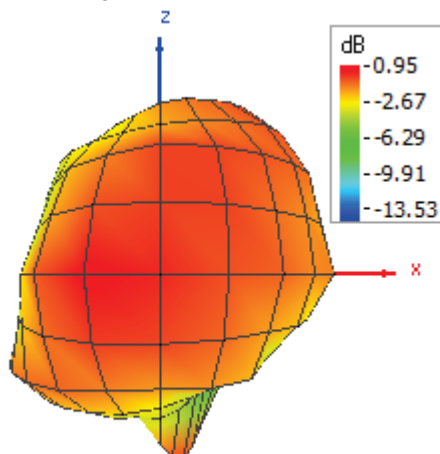
Theta = 90, Phi = 0



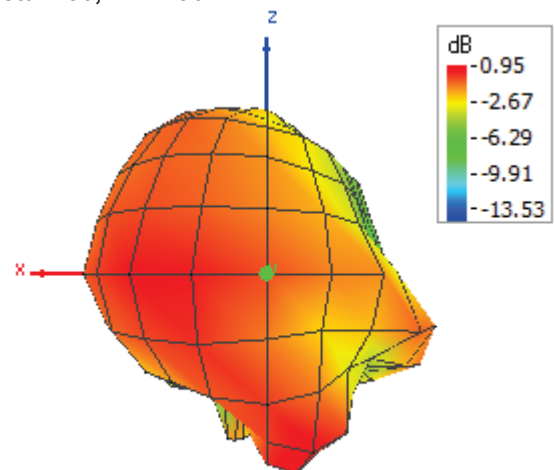
Theta = 90, Phi = 180



Theta = 90, Phi = 270

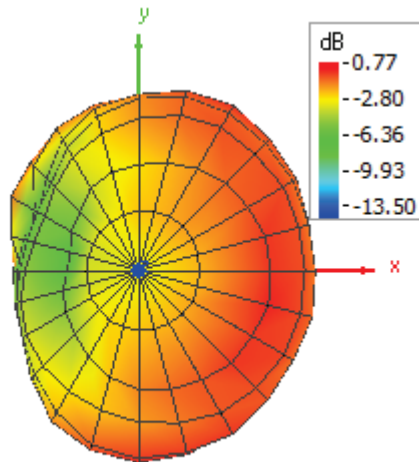


Theta = 90, Phi = 90

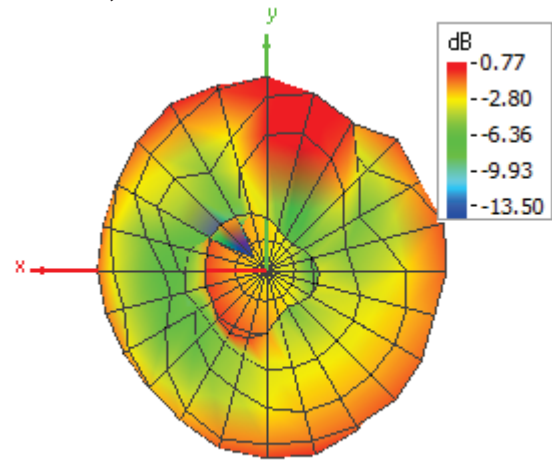


2454 MHz 3D

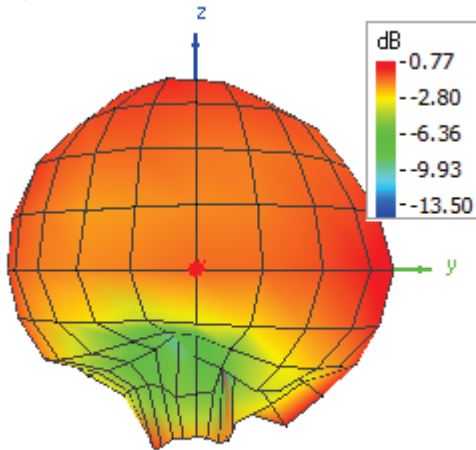
Theta = 0, Phi = 0



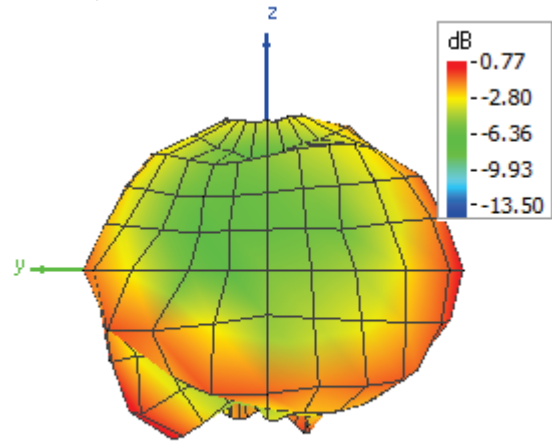
Theta = 180, Phi = 0



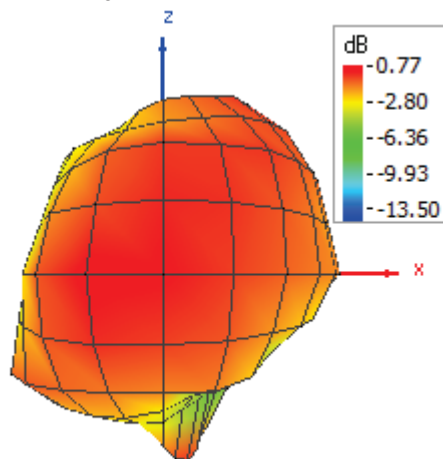
Theta = 90, Phi = 0



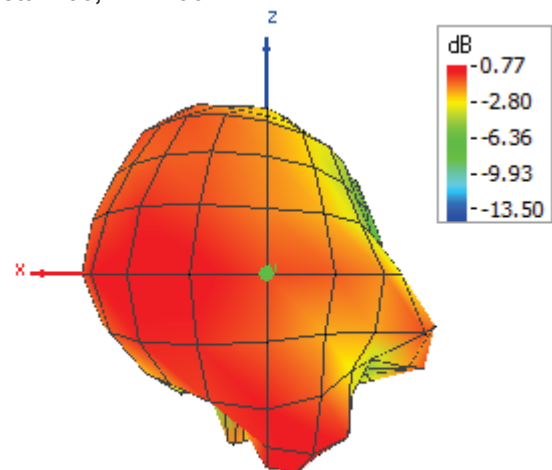
Theta = 90, Phi = 180



Theta = 90, Phi = 270

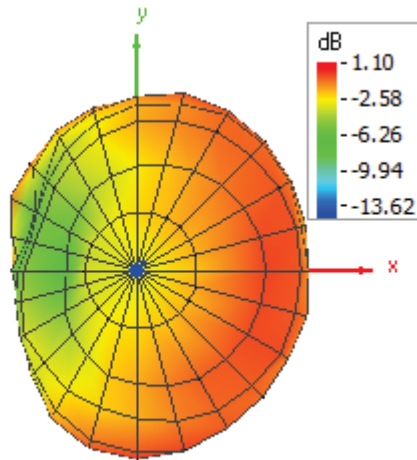


Theta = 90, Phi = 90

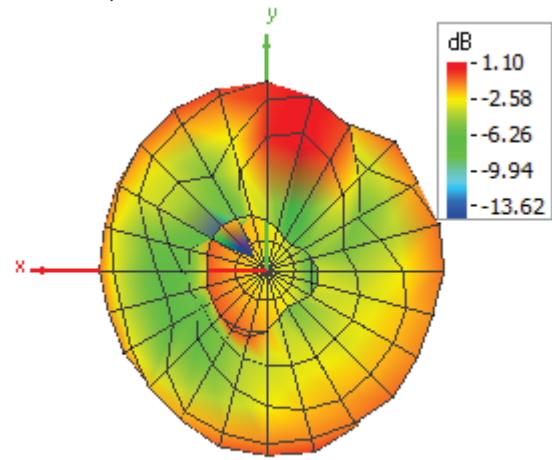


2456 MHz 3D

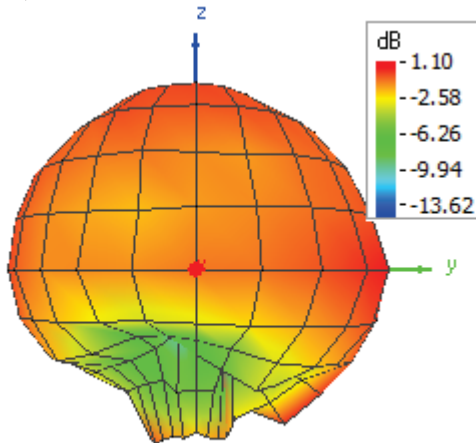
Theta = 0, Phi = 0



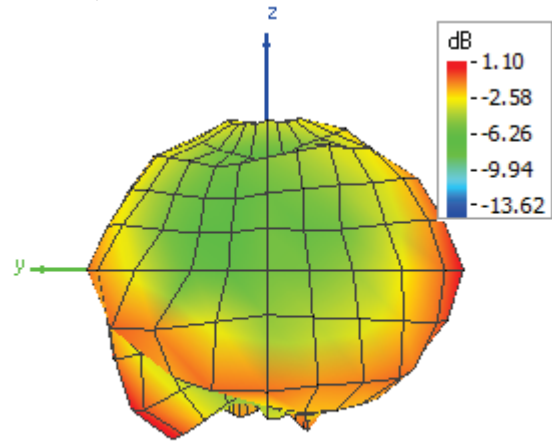
Theta = 180, Phi = 0



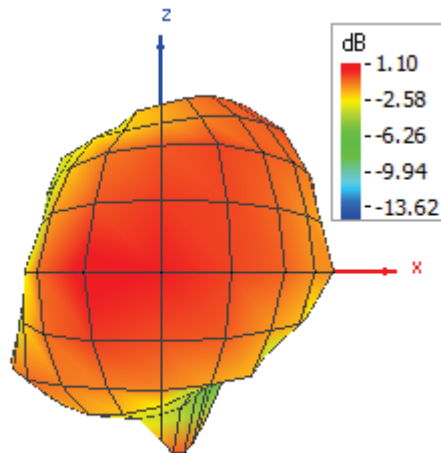
Theta = 90, Phi = 0



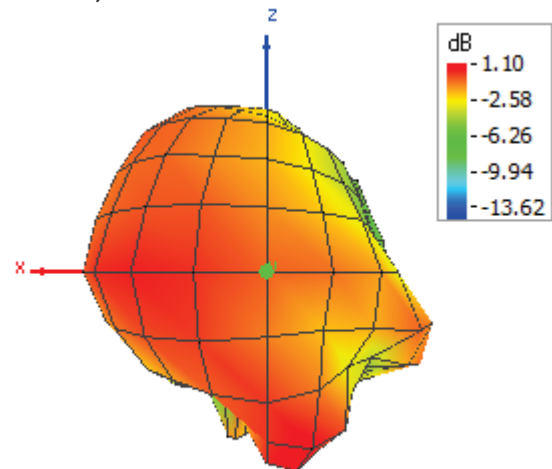
Theta = 90, Phi = 180



Theta = 90, Phi = 270

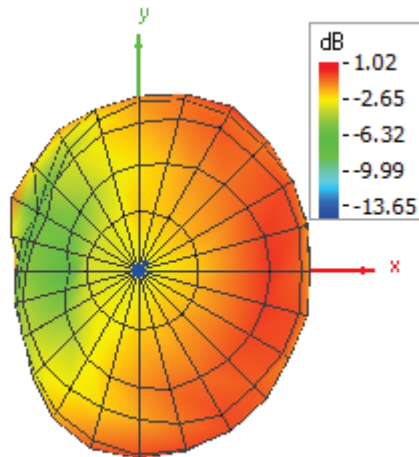


Theta = 90, Phi = 90

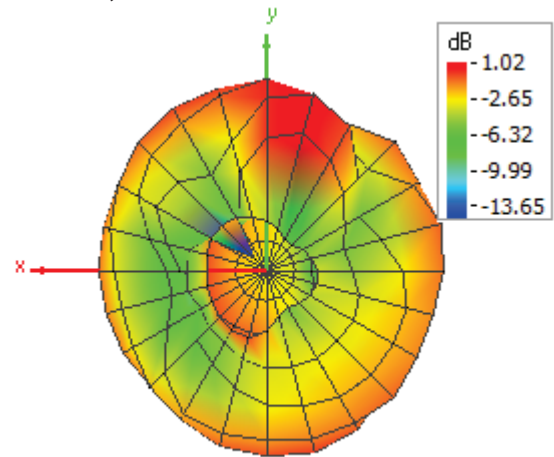


2458 MHz 3D

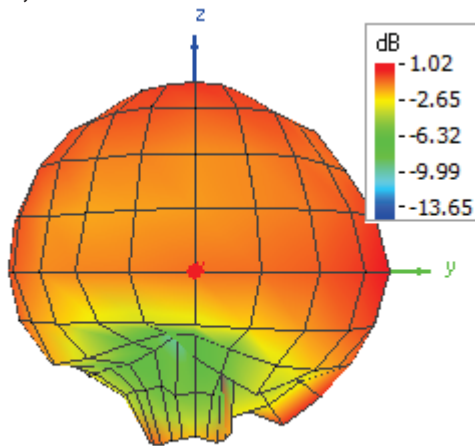
Theta = 0, Phi = 0



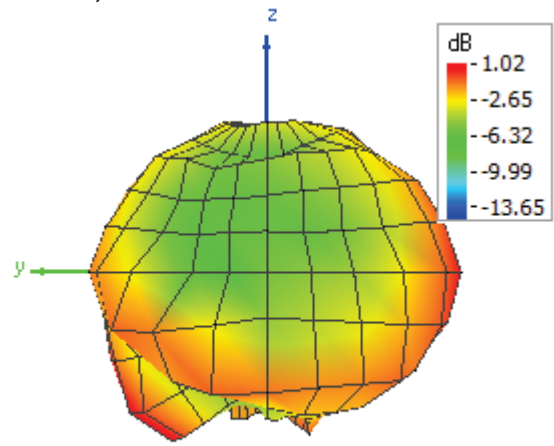
Theta = 180, Phi = 0



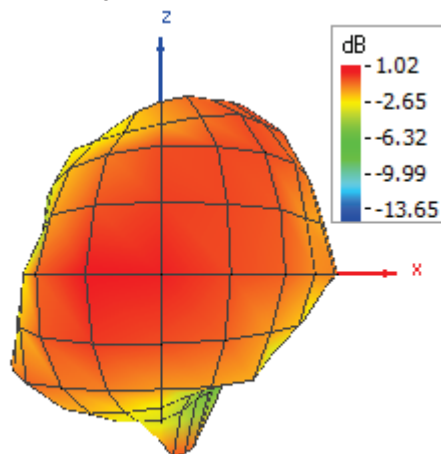
Theta = 90, Phi = 0



Theta = 90, Phi = 180



Theta = 90, Phi = 270



Theta = 90, Phi = 90

