OTA Antenna Performance Data Summary

APPLICANT	:	**ESPRESSIF SYSTEMS (SHANGHAI) CO., LTD**
EQUIPMENT	:	**ESP8684-WROOM-06C**
BRAND NAME	:	**ESPRESSIF**
MODEL NAME	:	**ESP-ANT E**
DEVICE RECEIVING DATE	:	**Aug. 11, 2023**
TEST DATE(S)	:	**Aug. 11, 2023**

Reviewed by:

Feynman Liu

Feynman Liu / Vice Manager

Approved by:

Kevin chu

Kevin Chu / Manager

Sporton International Inc. (Kunshan)

No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300

People's Republic of China

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Revision History

DATA NO.	VERSION	DESCRIPTION	ISSUED DATE
OQ381713	1.0	Initial issue of this report	Jan. 25, 2024
OQ381713	2.0	1. Add General Information 2. Add Test Engineer and Measurement Environment 3. Add Test procedure	Mar. 11, 2024

1. Administration Data

1.1 Testing Laboratory

Test Site	Sporton International Inc. (Kunshan)
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL: +86-0512-5790-0158
Chamber	□ OTA01-KS □ OTA02-KS □ OTA03-KS ■ OTA04-KS □ OTA05-KS
Test Engineer	Emma Zhou

1.2 Applicant

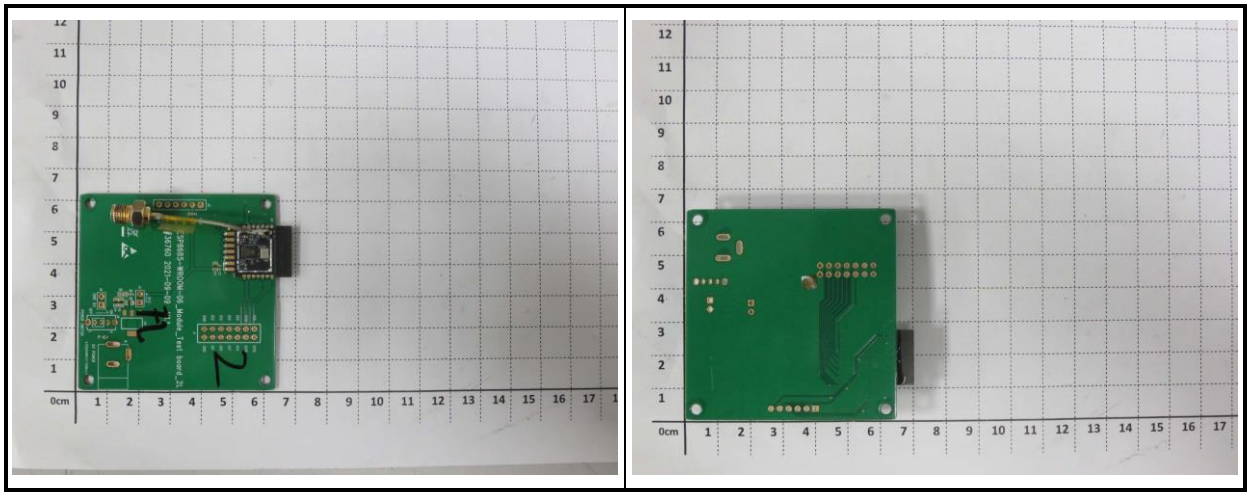
Company Name	ESPRESSIF SYSTEMS (SHANGHAI) CO., LTD
Address	Suite 204, Block 2, 690 Bibo Road, Zhang Jiang Hi-Tech Park, Shanghai, China

2. General Information

2.1 Description of Device Under Test (DUT)

Product Feature & Specification			
Equipment	ESP8684-WROOM-06C		
Brand Name	ESPRESSIF		
Model Name	ESP-ANT E		
DUT Dimension (mm)	L: 15.80	W: 5.57	H: 1.00
Antenna Type	PIFA Antenna		
HW Version	v1.0		
SW Version	v1.0		

2.2 EUT Photographs



3. Measurement Environment

3.1 Ambient Condition

Temperature (°C):	25±5°C	Humidity (%):	<60%

3.2 Test Equipment List

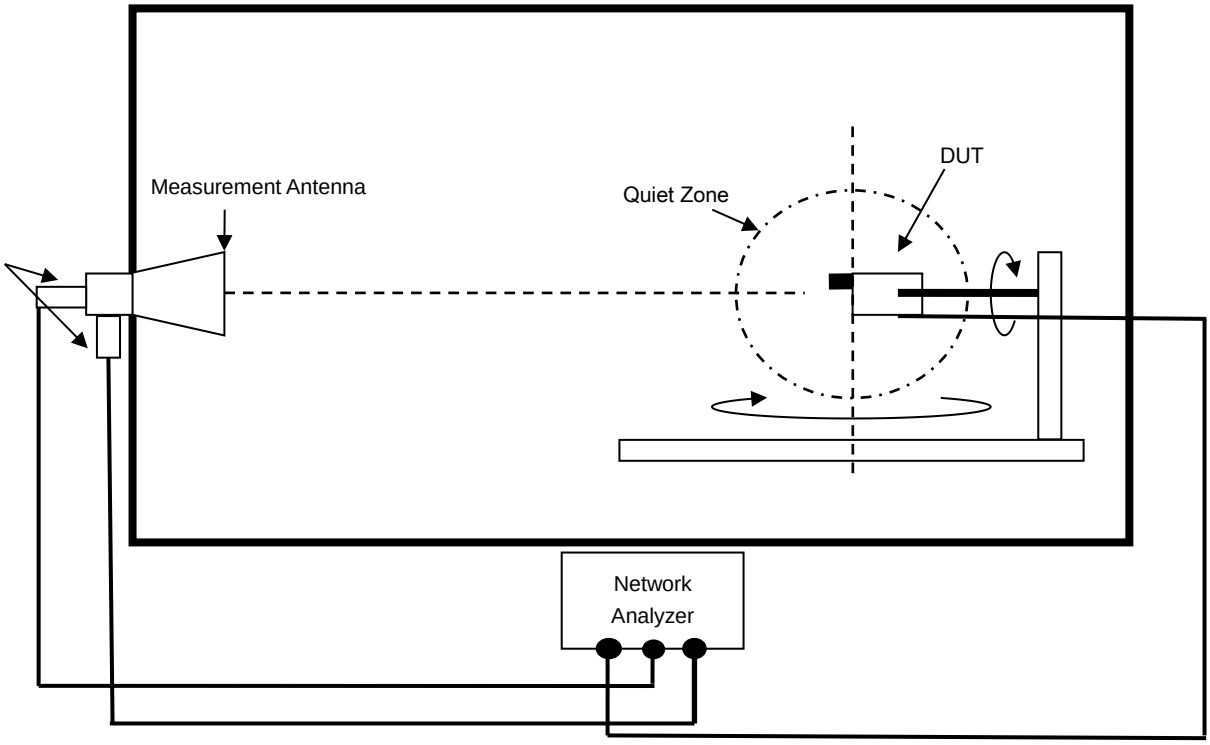
Name	Manufacturer	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
Network Analyzer	Agilent	E5071C	MY46317418	2023/01/05	2024/01/04
Switch Control	ETS-Lindgren	EMCenter	00160100	NCR	NCR
Diagonal Dual Polarized Horn	ETS-Lindgren	3164-08	00099205	NCR	NCR
Multi-Devices Controller	ETS-Lindgren	2090-OPT1	00066604	NCR	NCR
Medium Duty Holder	ETS-Lindgren	2015	N/A	NCR	NCR
Sleeve Dipole Antenna	ETS-Lindgren	EMCO 3126-2500	00203963	2022/10/7	2024/10/6

Note: Antenna gain was measured in the anechoic chamber (Measurement System: ETS-Lindgren AMS-8500, SW Version: EMQuest 100 V1.08).

4. Test procedure

1. Setup for testing facility:

   Connect all the equipments according to the figure below：



2. Run ETS-Lindgren EMQuestTest software script，Hit Run button to execute measurement.

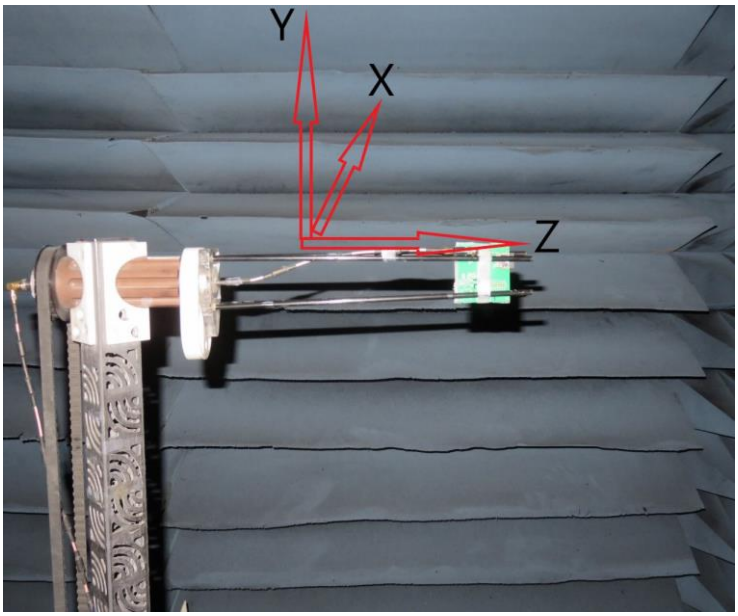
3. Save Measurement result

5. Summary of Test Results

Test / Position	Gain / Free Space																		
Frequency (MHz)	**2397**	**2402**	**2407**	**2412**	**2417**	**2422**	**2427**	**2432**	**2437**	**2442**	**2447**	**2452**	**2457**	**2462**	**2467**	**2472**	**2477**	**2482**	**2487**
Avg Gain	**-1.7**	**-1.7**	**-1.6**	**-1.7**	**-1.6**	**-1.6**	**-1.5**	**-1.5**	**-1.4**	**-1.4**	**-1.3**	**-1.3**	**-1.2**	**-1.2**	**-1.3**	**-1.3**	**-1.4**	**-1.4**	**-1.5**
Peak Gain	1.4	1.5	1.5	1.5	1.6	1.7	1.8	1.9	2.1	2.2	2.3	2.4	2.5	2.6	2.6	2.6	2.7	2.7	2.7
Directivity	3.1	3.1	3.1	3.2	3.2	3.3	3.4	3.4	3.5	3.5	3.6	3.7	3.7	3.8	3.9	4.0	4.1	4.1	4.2
Efficiency	-1.7	-1.7	-1.6	-1.7	-1.6	-1.6	-1.5	-1.5	-1.4	-1.4	-1.3	-1.3	-1.2	-1.2	-1.3	-1.3	-1.4	-1.4	-1.5
Efficiency (%)	**67.3**	**68.0**	**68.5**	**68.3**	**68.5**	**69.5**	**70.1**	**71.0**	**72.4**	**73.1**	**73.9**	**74.4**	**75.3**	**75.1**	**74.2**	**73.7**	**72.3**	**71.6**	**70.6**

6. Photographs of Test Configuration

Placed and fixed with tape shown as below.

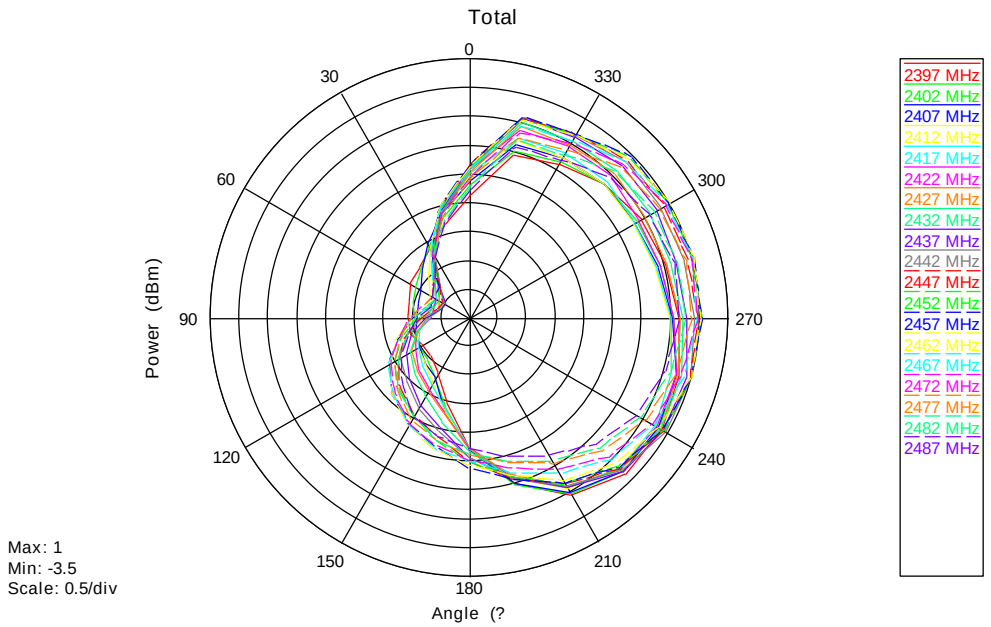


Free Space

7. 2D/3D Free Space Pattern Plots

Please refer to as below.

Cut1



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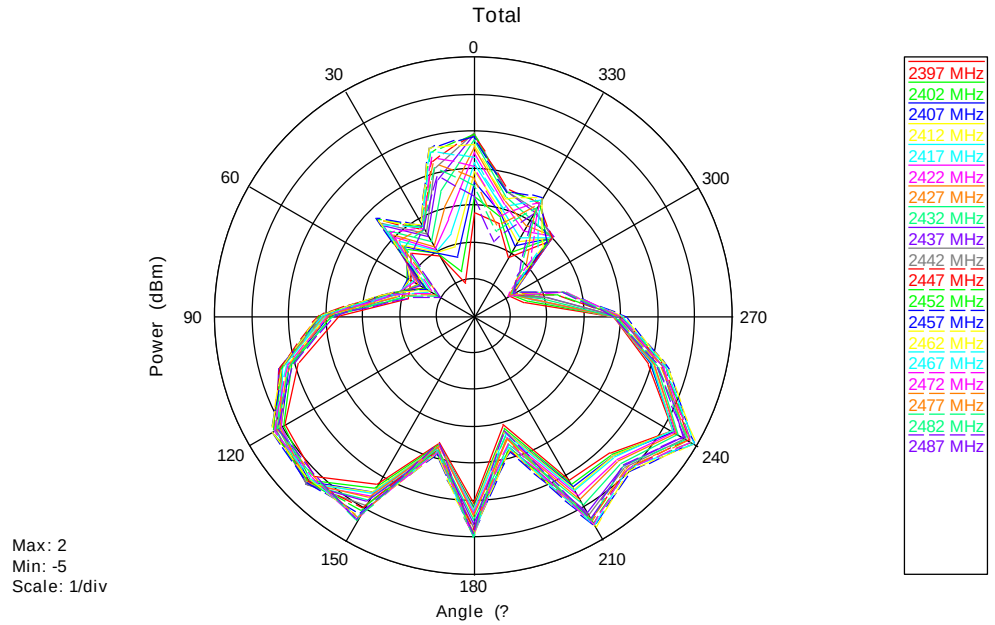

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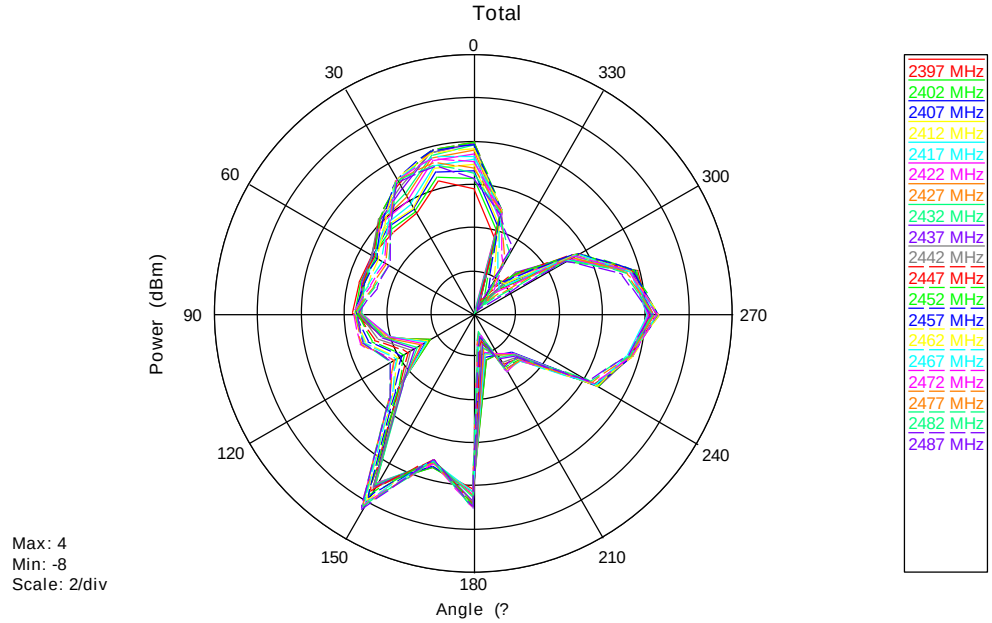
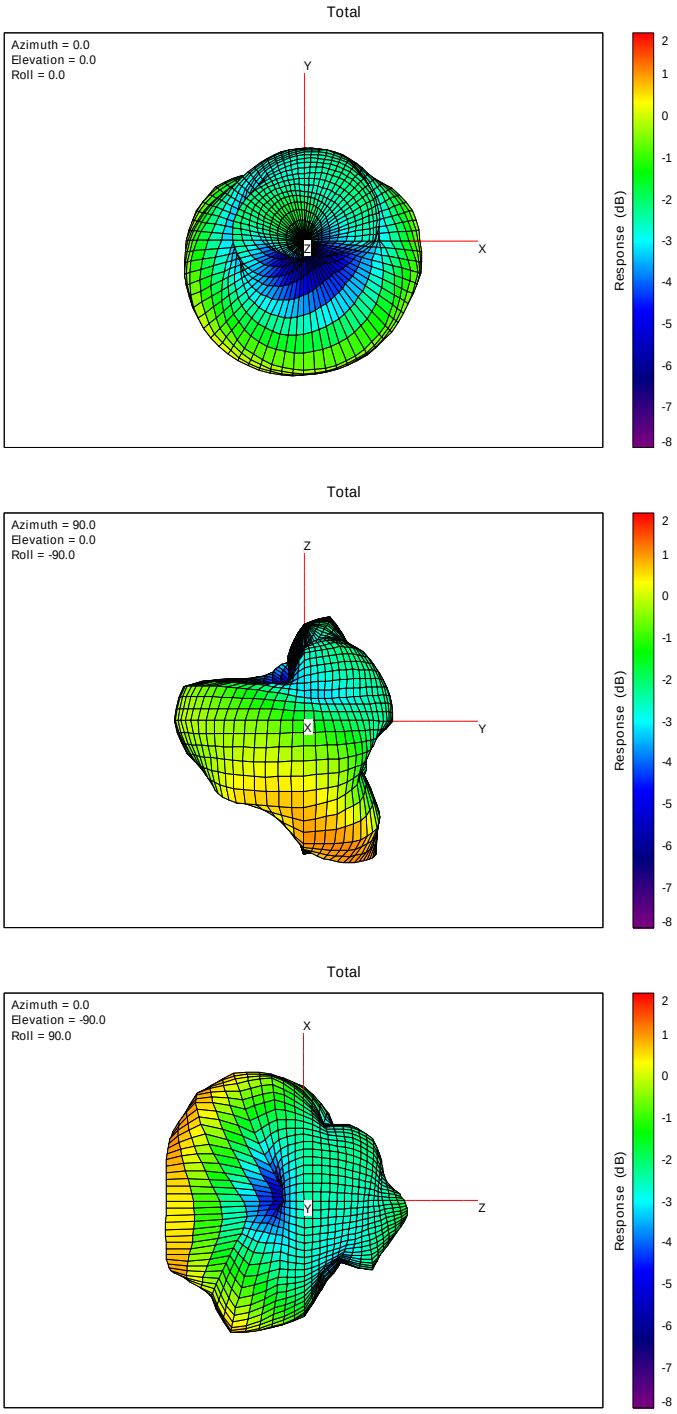
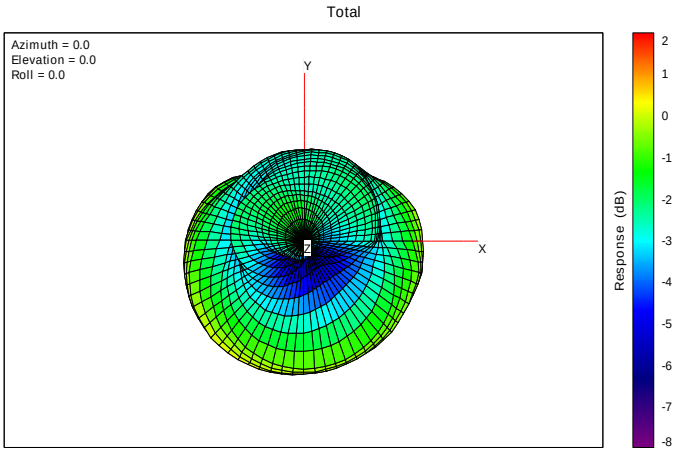


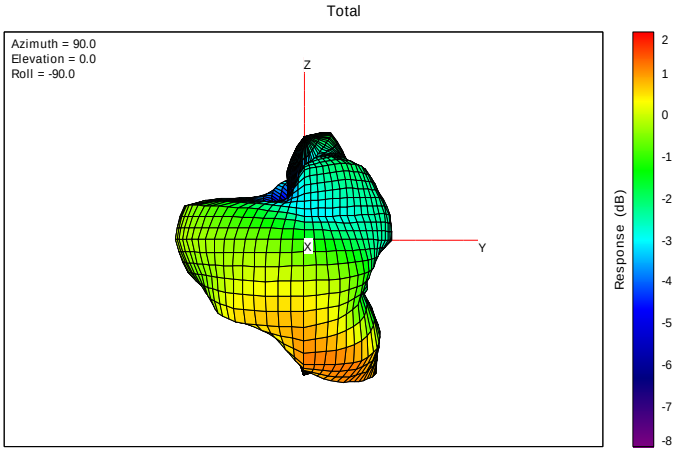
Max: 4
Min: -8
Scale: 2/div

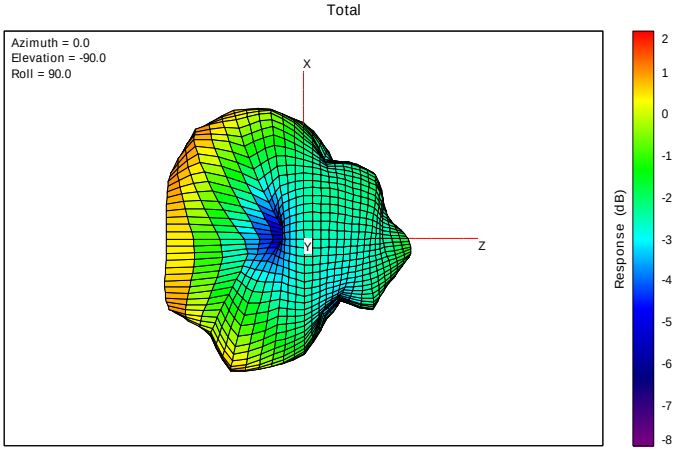
Gain Free Space _2D



Gain Free Space _2397







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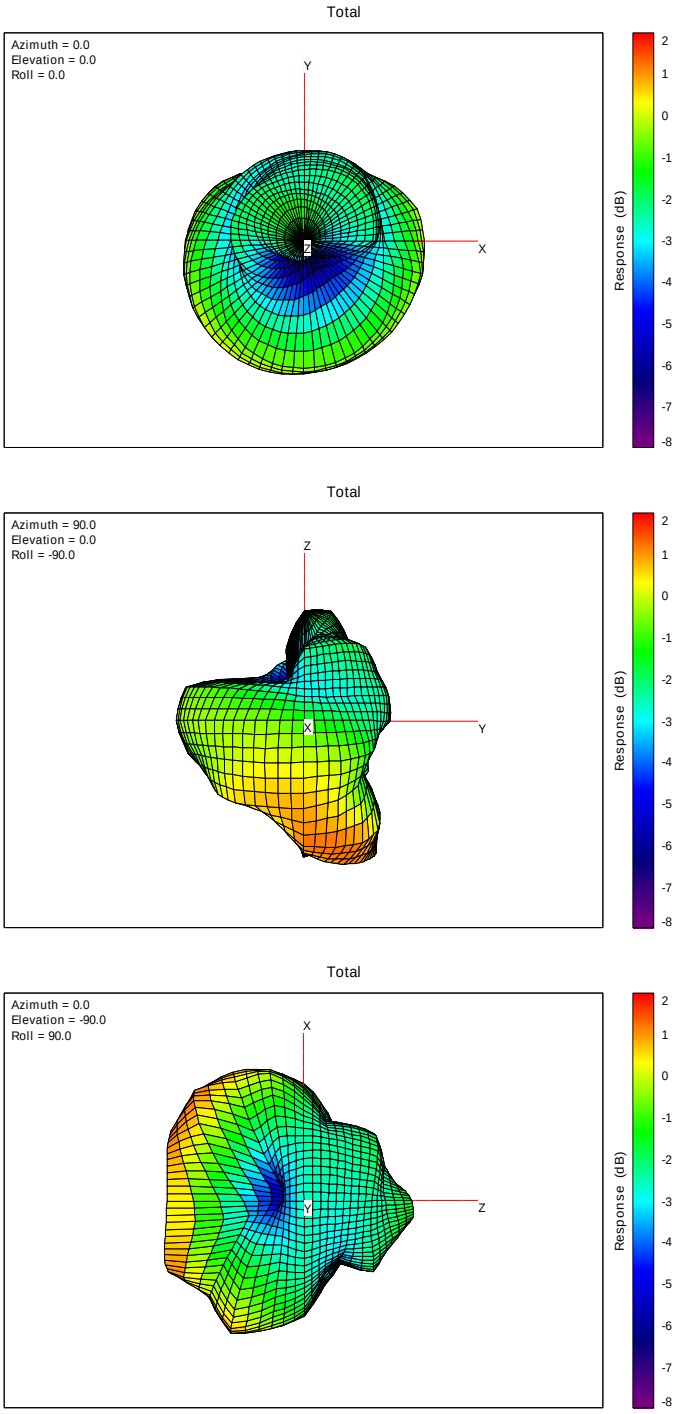

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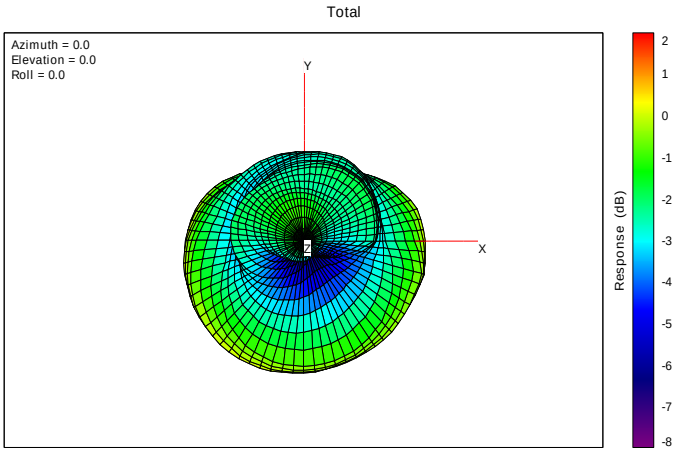

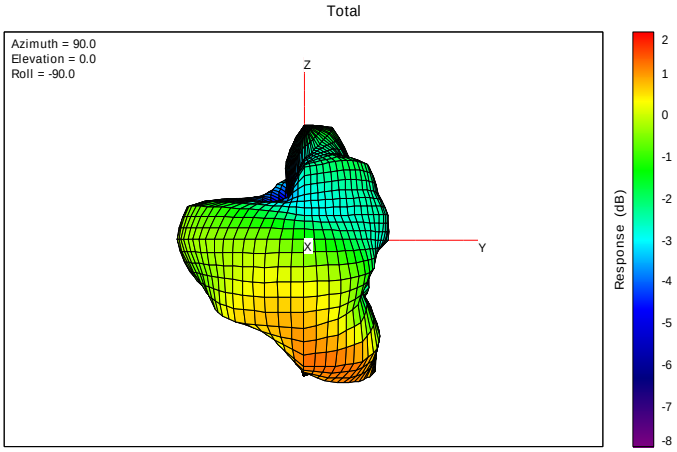

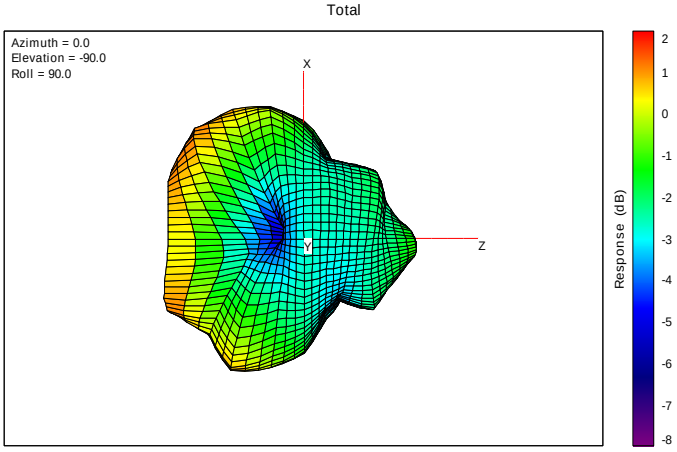

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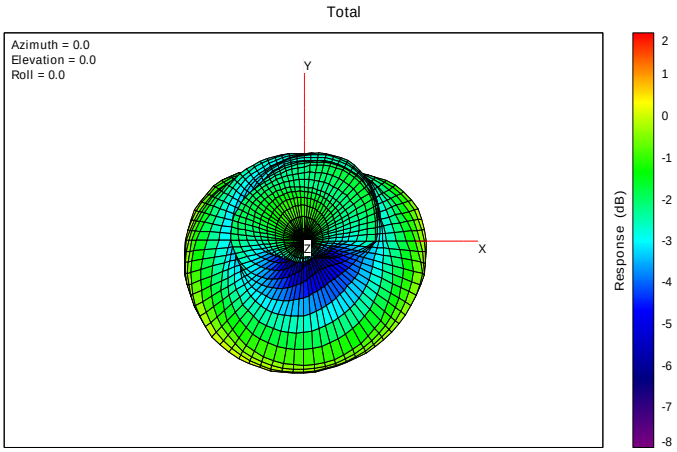

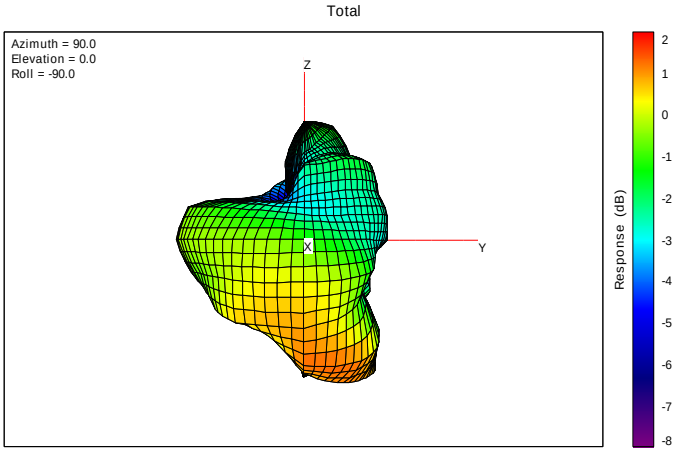

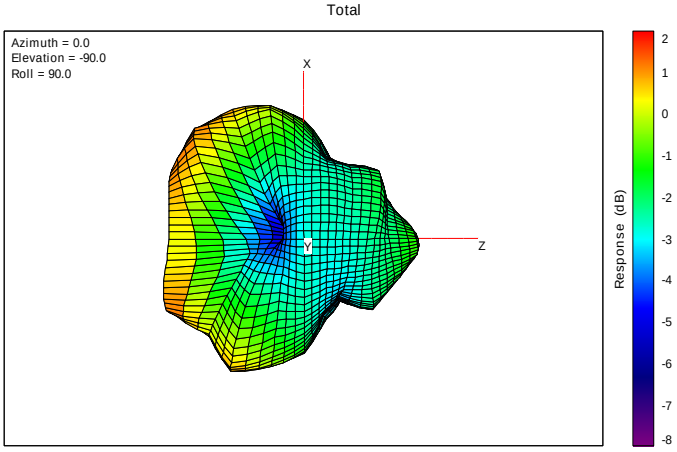

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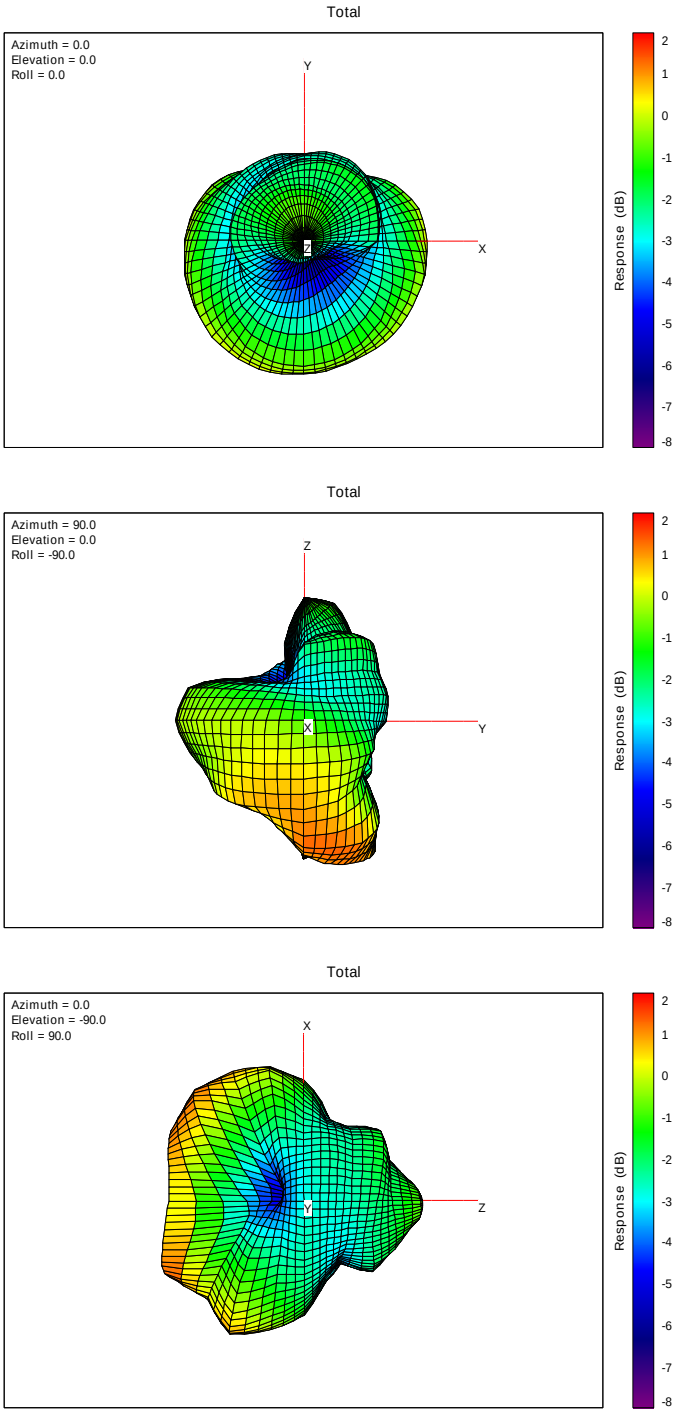

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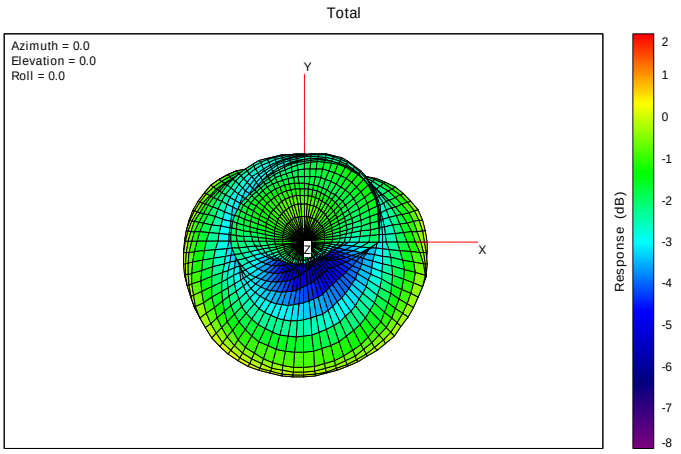

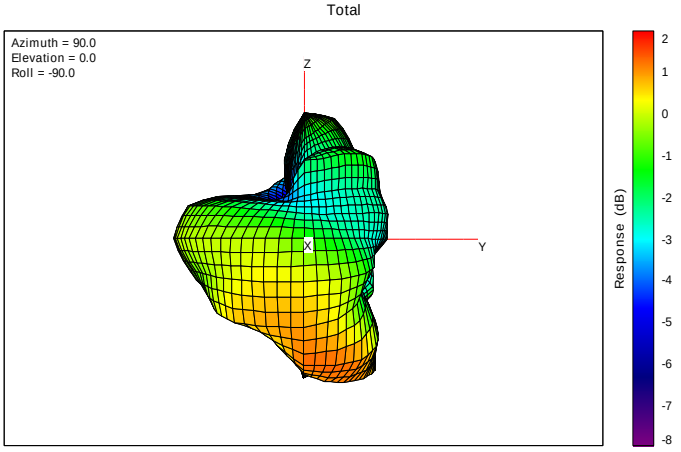

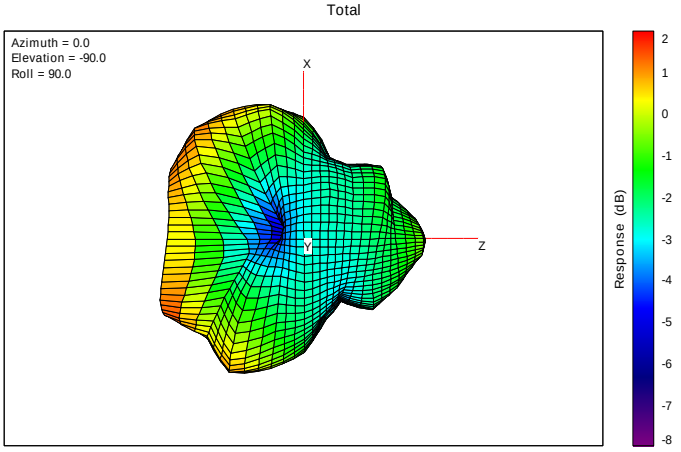

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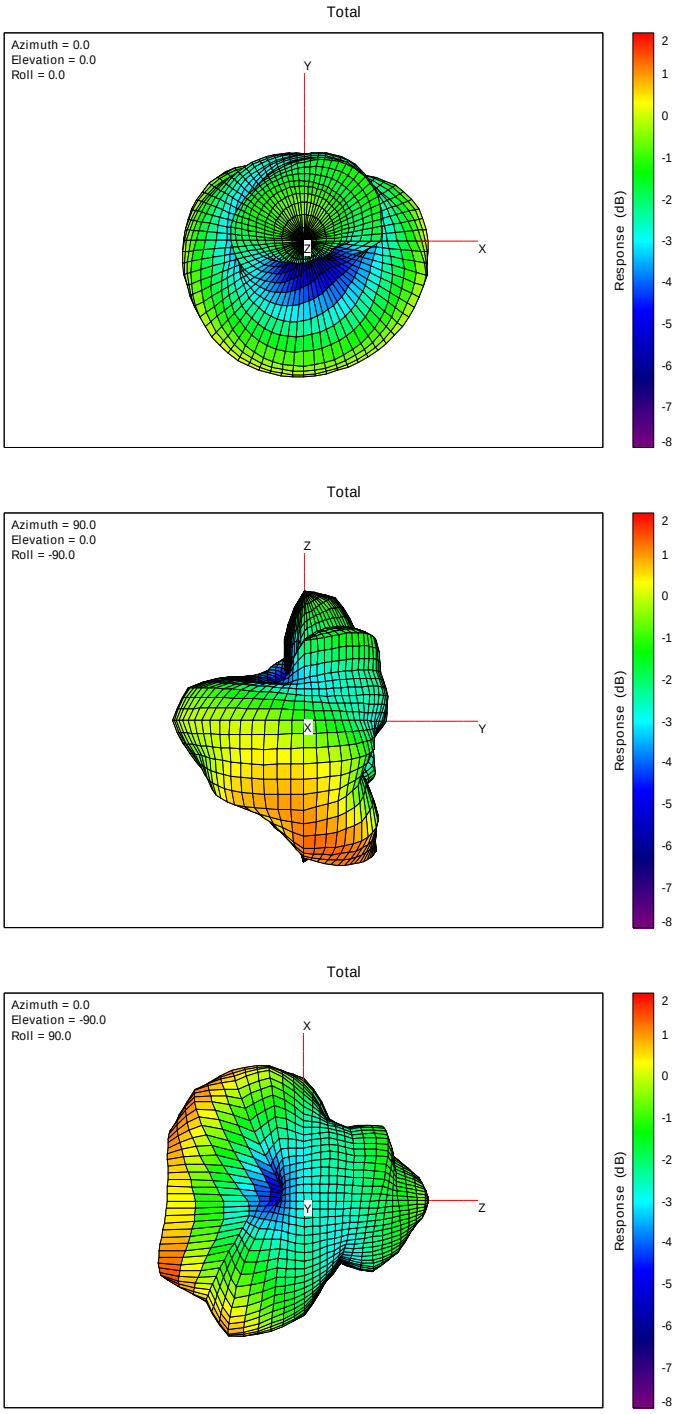

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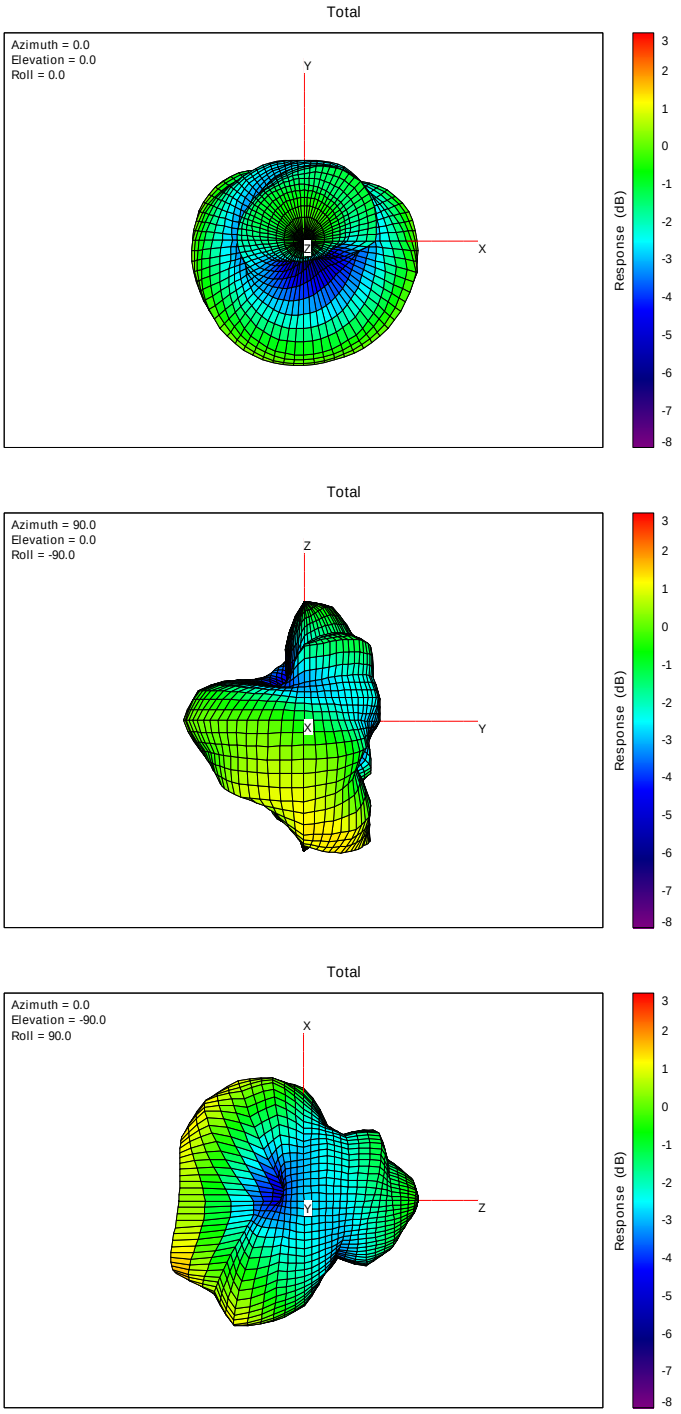
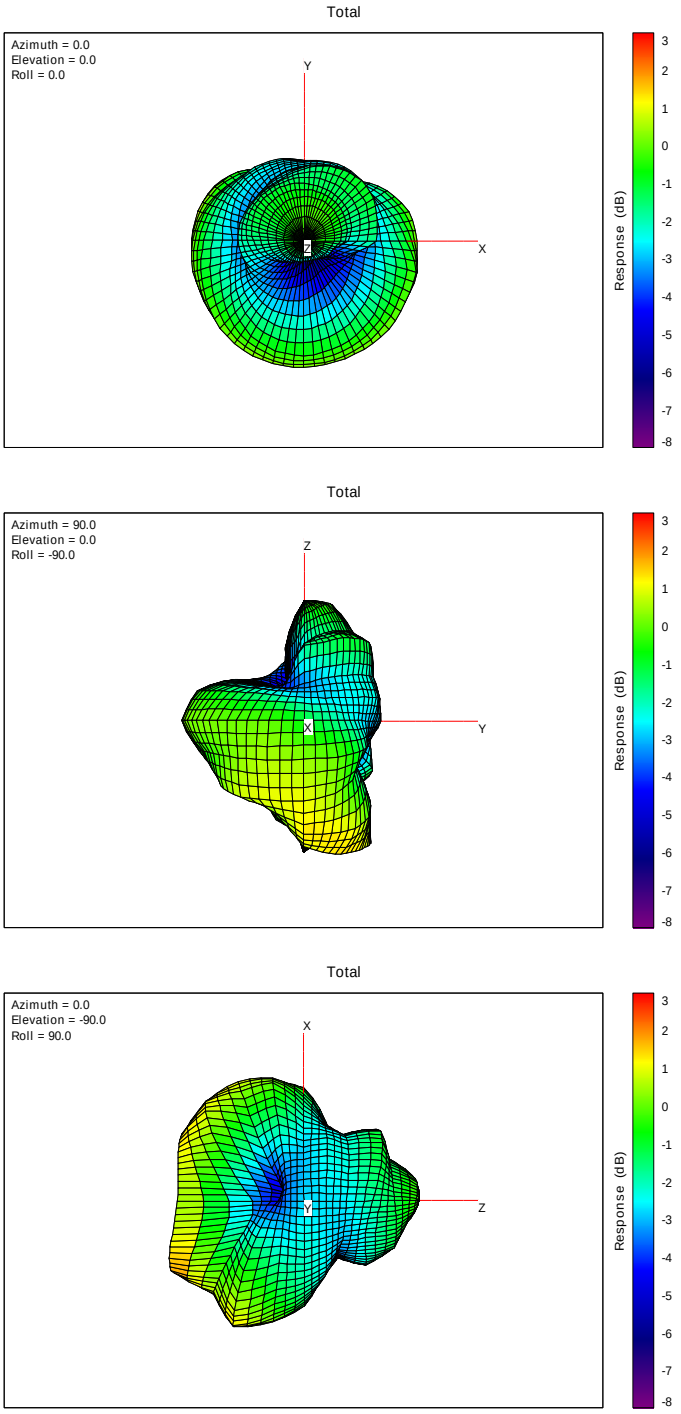


T Gain Free Space _2437



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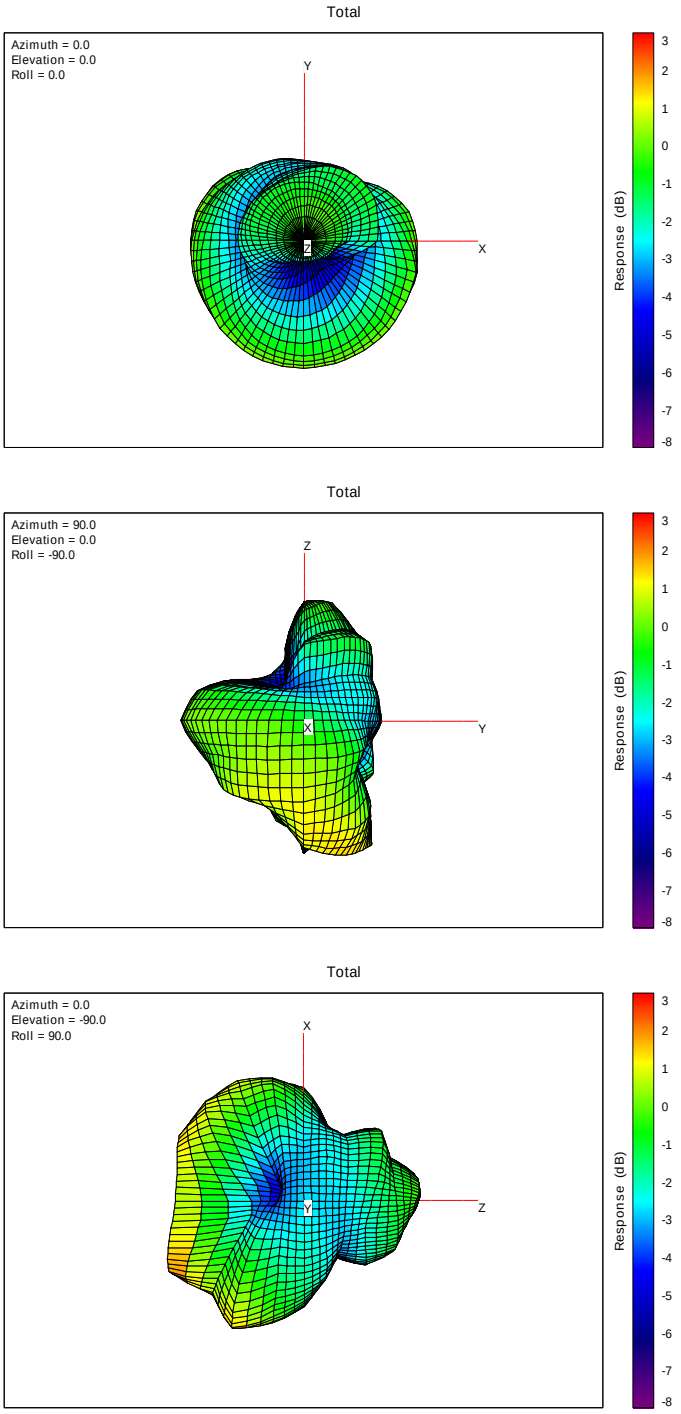

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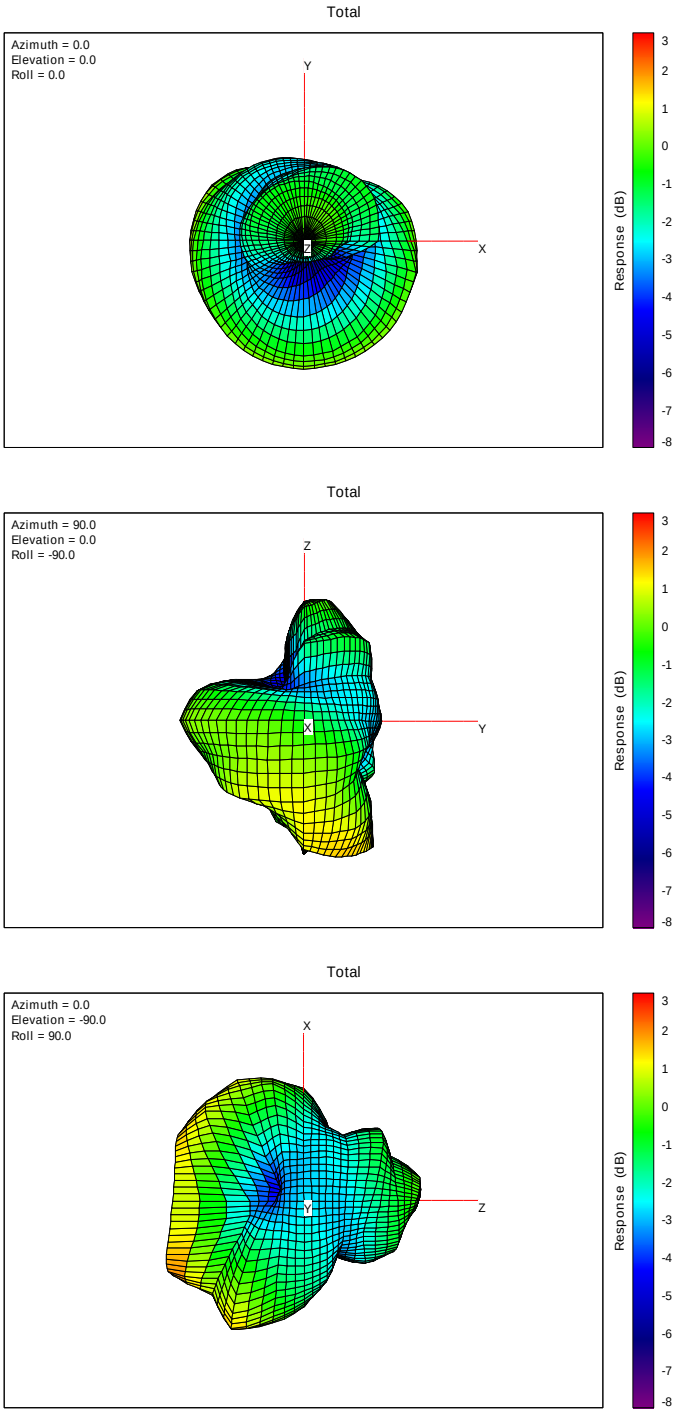

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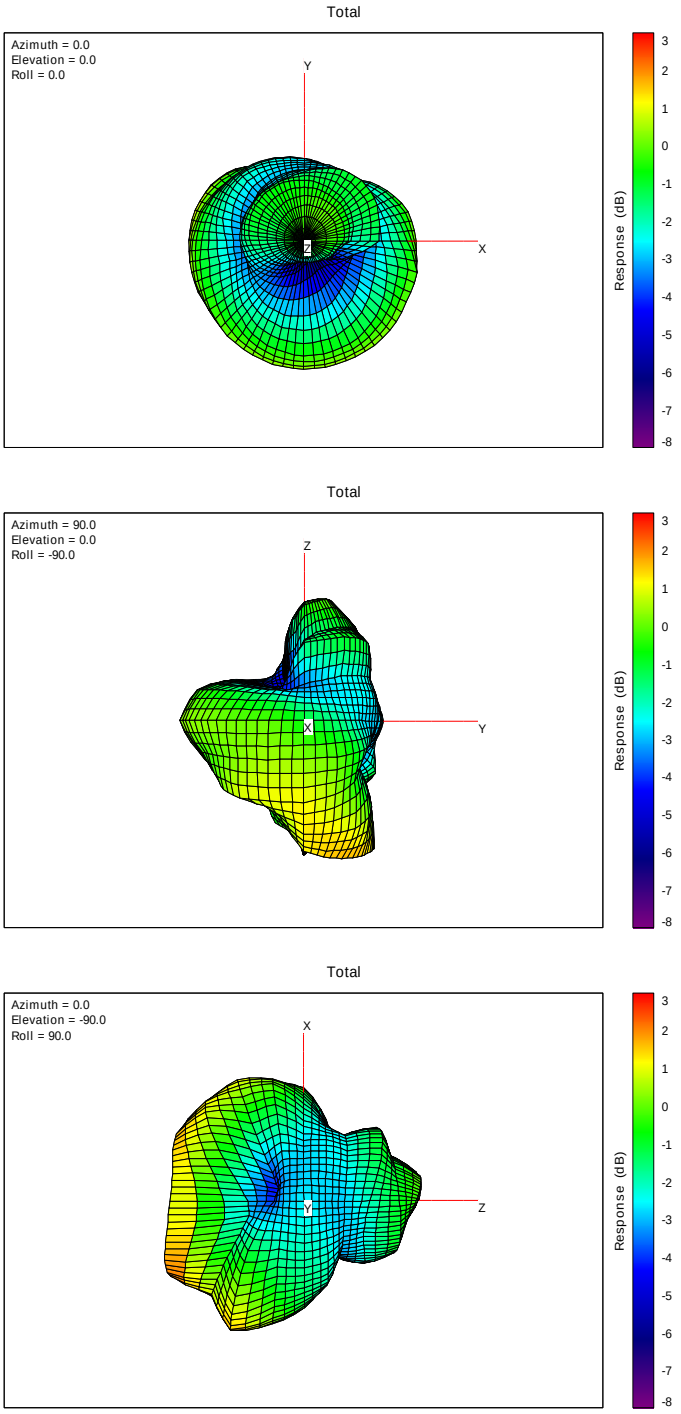

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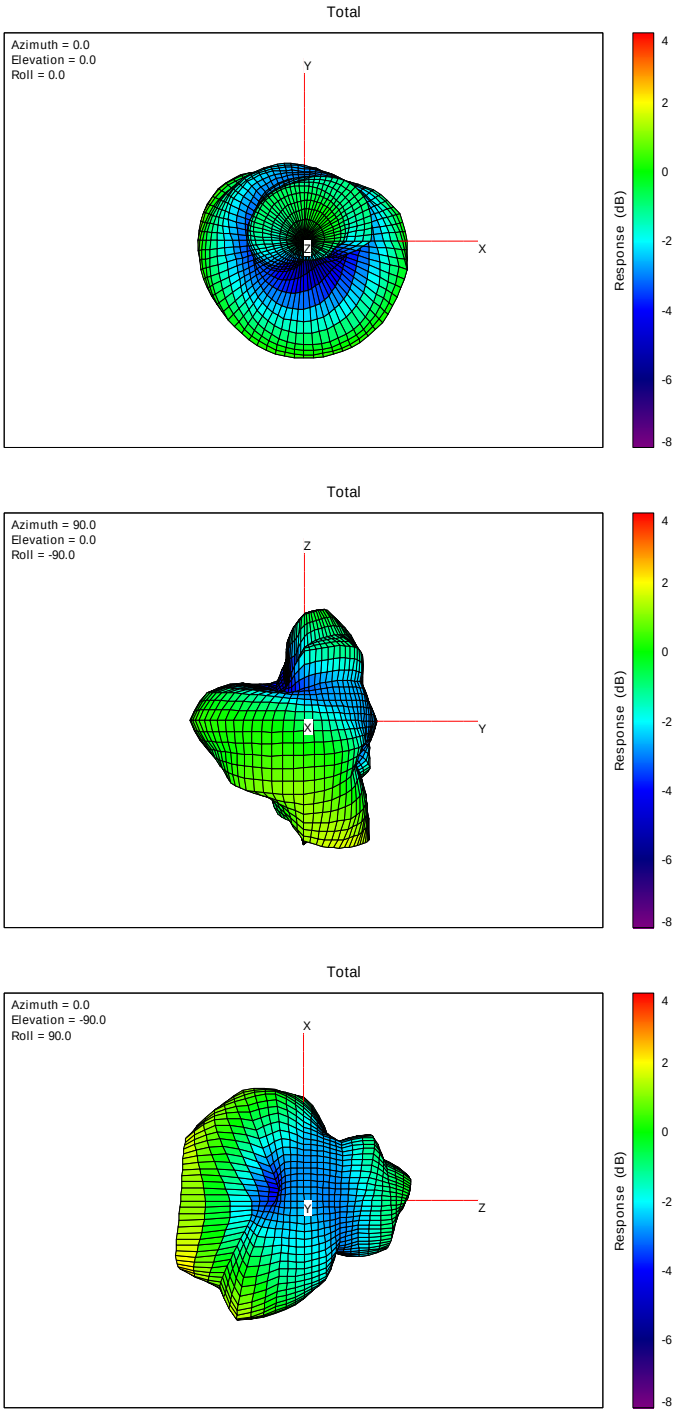

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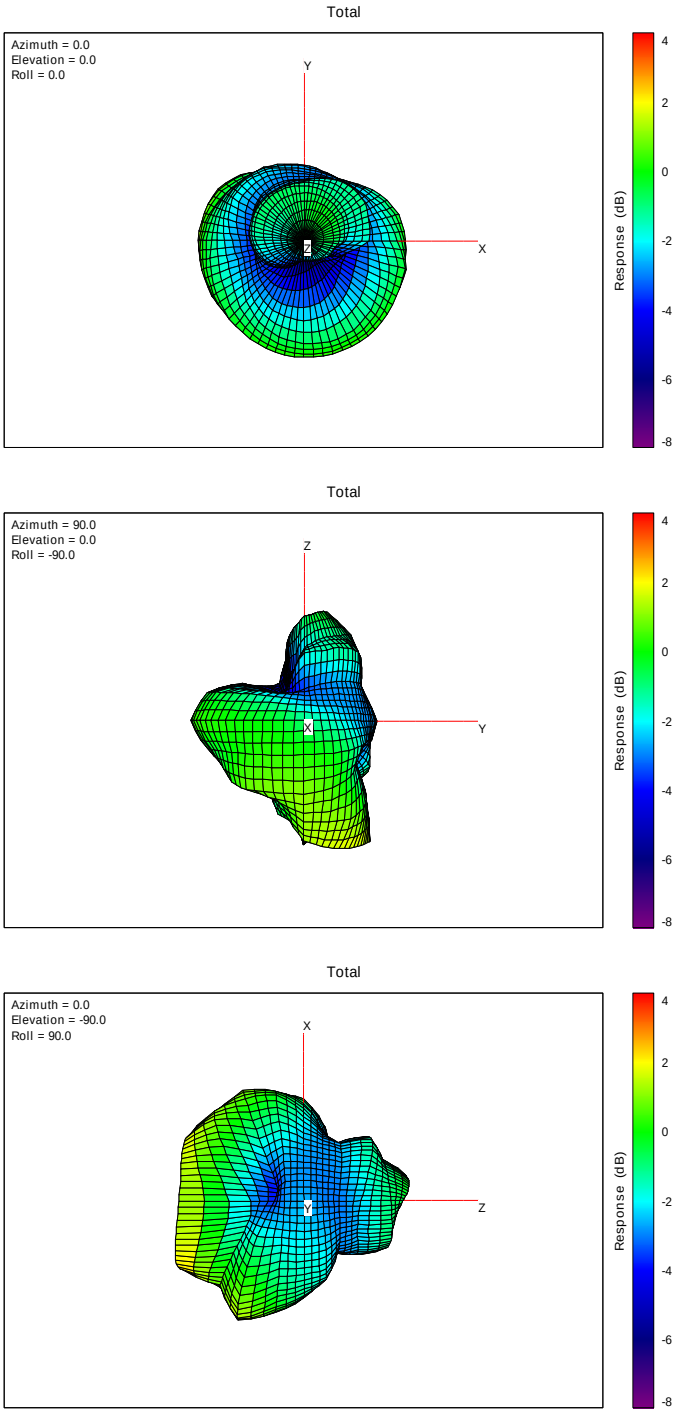

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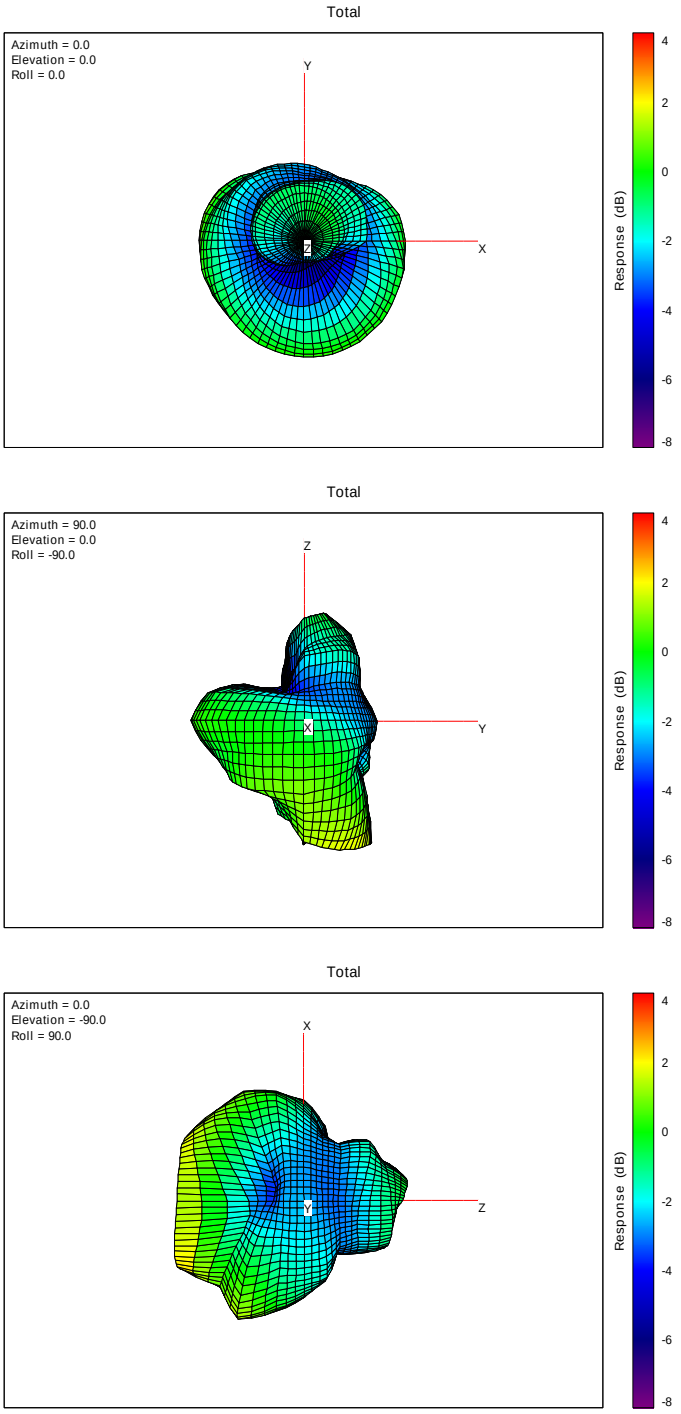

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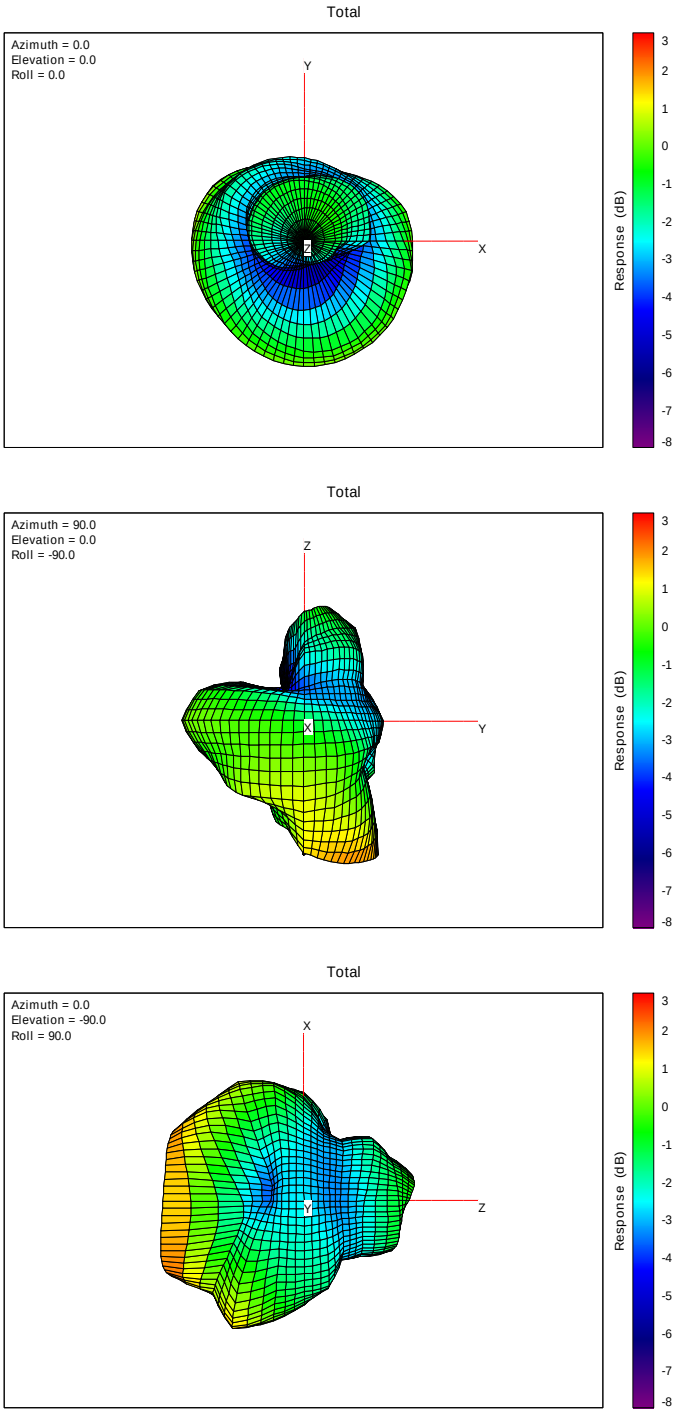

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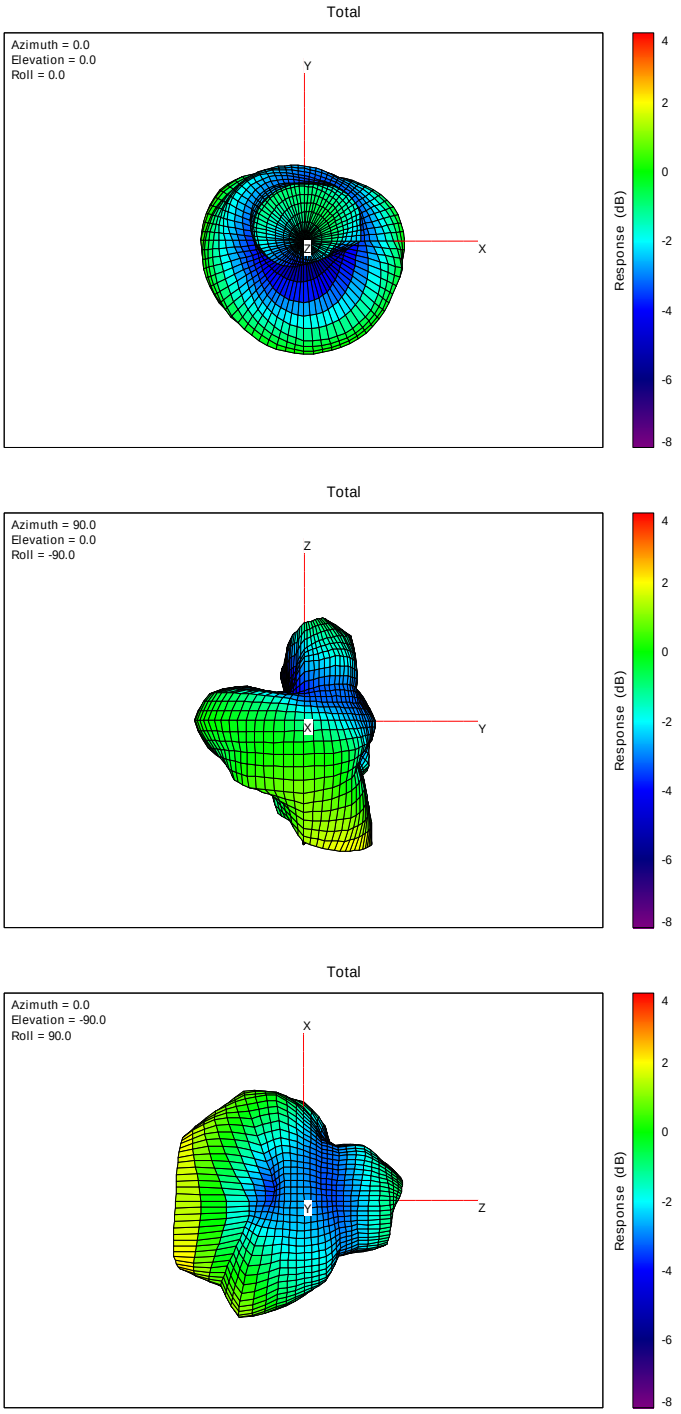

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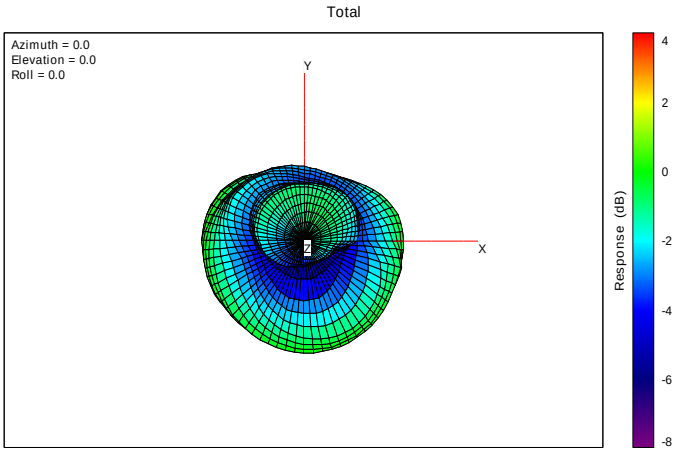

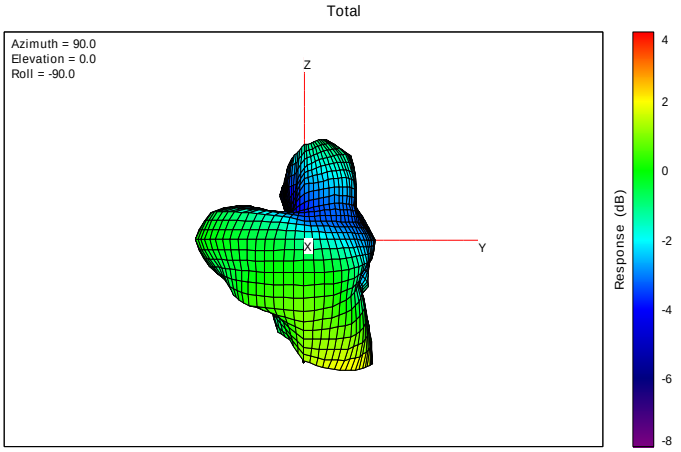

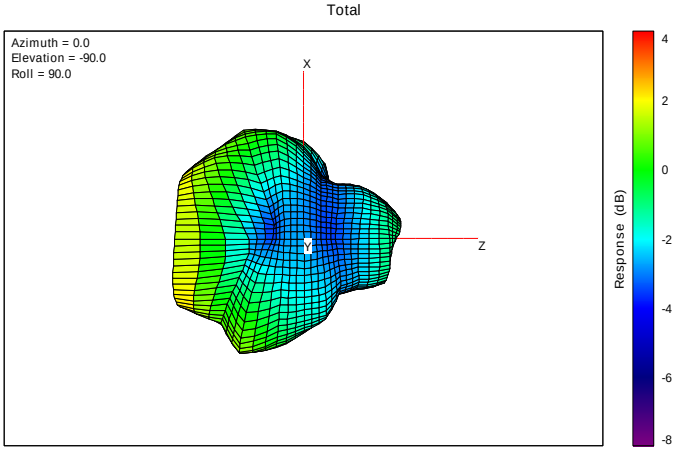

Gain Free Space _2487

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