

## Antenna Test Report

REPORT NO.                   A231001  
APPLICANT                    : Tesla, Inc.  
MANUFACTURER             : Tesla, Inc.  
EQUIPMENT                  : Antenna on PCB  
MODEL NAME                 : 1755080  
DATE OF RECEIPT            : January 6, 2023  
DATE OF TEST                : January 6, 2023  
ISSUE DATE                 : January 17, 2023

Tested by:

Neil Kao

We, SPORTON INTERNATIONAL (USA) INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and shown the compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (USA) INC., the test report shall not be reproduced except in full.

The declared product specification for EUT presented in this report is provided by the manufacturer / applicant, and the manufacturer / applicant takes all the responsibilities for the accuracy of product specification.

**SPORTON INTERNATIONAL (USA) INC.**



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**1. Test Laboratory**

<b>Test Site</b>	Sporton International Inc. <input type="checkbox"/> EMC & Wireless Communications Laboratory <input type="checkbox"/> Wensan Laboratory <input checked="" type="checkbox"/> Sporton International (USA) inc.
<b>Address</b>	Sporton International (USA) inc.: 1175 Montague Expressway, Milpitas, CA 95035 USA
<b>Chamber</b>	Sporton International (USA) inc.: <input type="checkbox"/> OTA01-CA <input checked="" type="checkbox"/> OTA02-CA

: The chamber(s) used to perform the test.



## **2. Client Information**

### **2.1 Applicant**

<b>Company Name</b>	Tesla, Inc.
<b>Address</b>	3500 DEER CREEK ROAD, PALO ALTO, CA 94304
<b>Contact Person</b>	Viraj Andrabadu Kurundu Patabendige

### **2.2 Manufacturer**

<b>Company Name</b>	Tesla, Inc.
<b>Address</b>	3500 DEER CREEK ROAD, PALO ALTO, CA 94304
<b>Contact Person</b>	Viraj Andrabadu Kurundu Patabendige



### **3. Equipment Under test(EUT) Information**

#### **3.1 Description of EUT**

<b>Product Feature &amp; Specification</b>	
<b>EUT Type</b>	Antenna on PCB
<b>Brand Name</b>	Tesla, Inc.
<b>Model Name</b>	1755080
<b>Antenna Type</b>	PCB Antenna



### 4. Measurement Environment

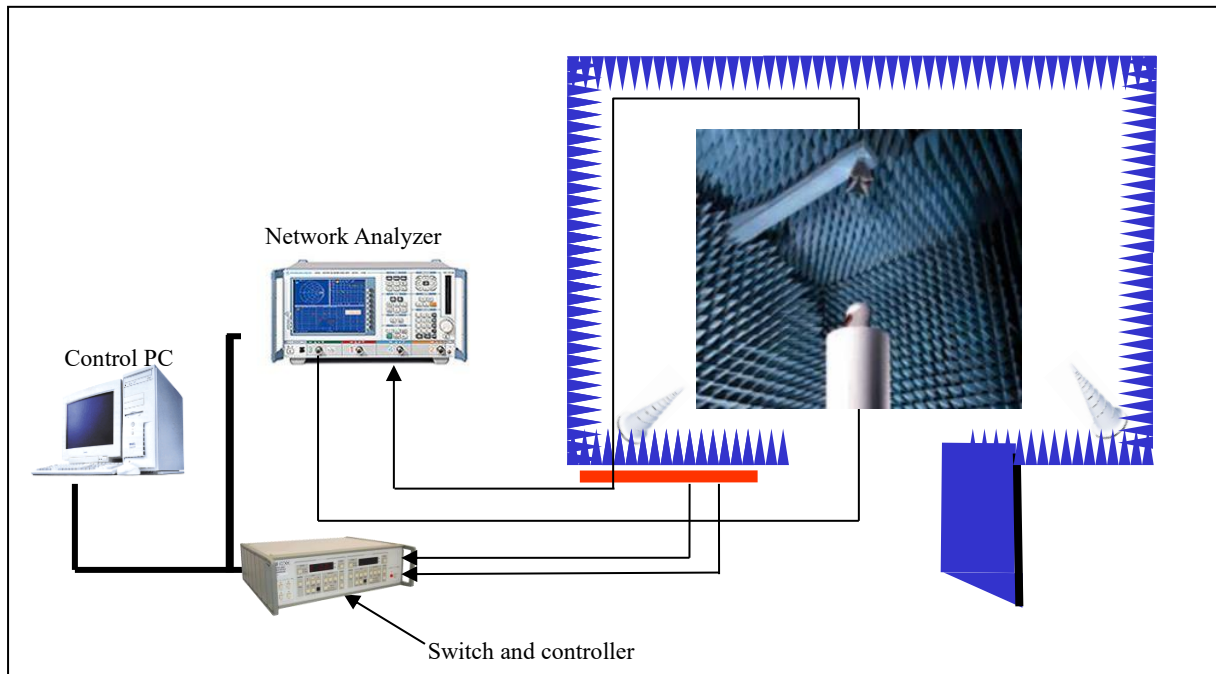
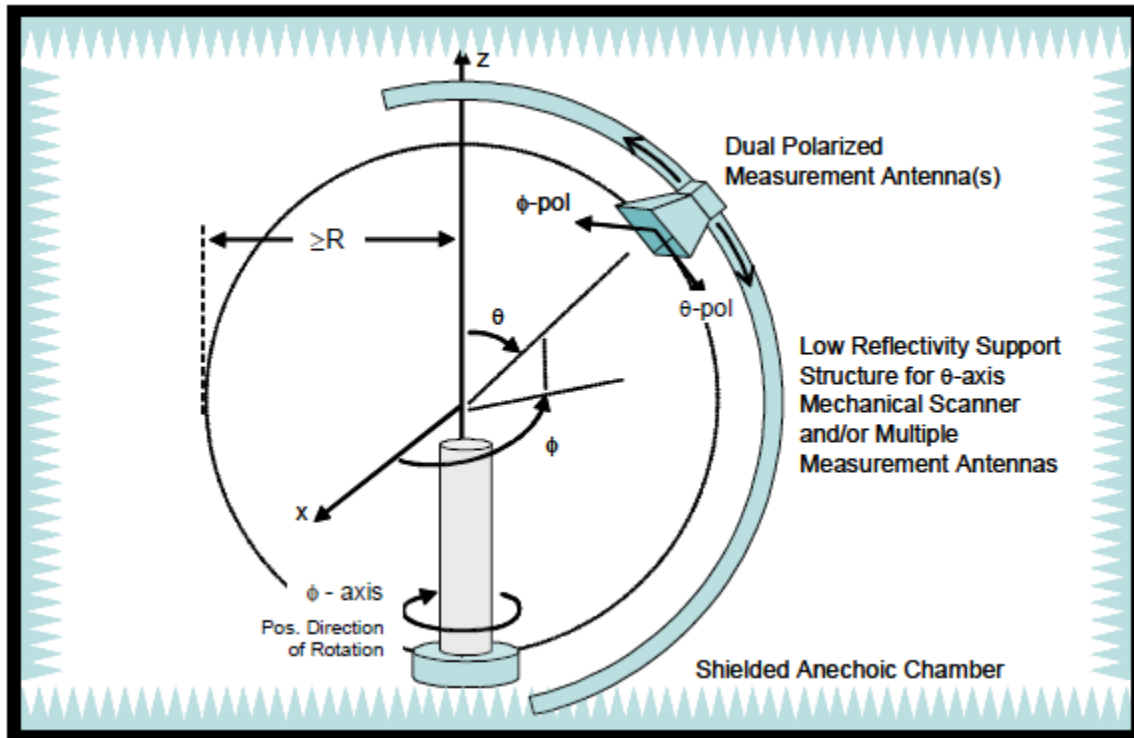
#### Ambient Condition

<b>Temperature (°C):</b>	25°C +/- 5°C	<b>Humidity (%):</b>	<60%
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#### Test Equipment List

Name	Manufacturer	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
ENA Series Network Analyzer	R&S	ZVB8	100110	2022/09/02	2023/09/01
RF Switch	ETS-Lindgren	EMCenter	N/A	NCR	NCR
Multi-Axis Positioner Controller	ETS-Lindgren	2090	N/A	NCR	NCR
Medium-Duty Positioner	ETS-Lindgren	2015	N/A	NCR	NCR
Measurement Horn Antenna	EMCO	3164-08	N/A	NCR	NCR
Test software	ETS-Lindgren	EMQuest	1296	NCR	NCR

Passive measurement setup







## **5. Summary of Test Results**

### **5.1 Declaration**

<b>Declaration of Conformity:</b>
The judgment of conformity in the report is based on the measurement results excluding the measurement uncertainty.
<b>Comments and Explanations:</b>
None

### **5.2 Abbreviations and Definitions**

Please note the following abbreviations in this section:

FS        =        Free Space



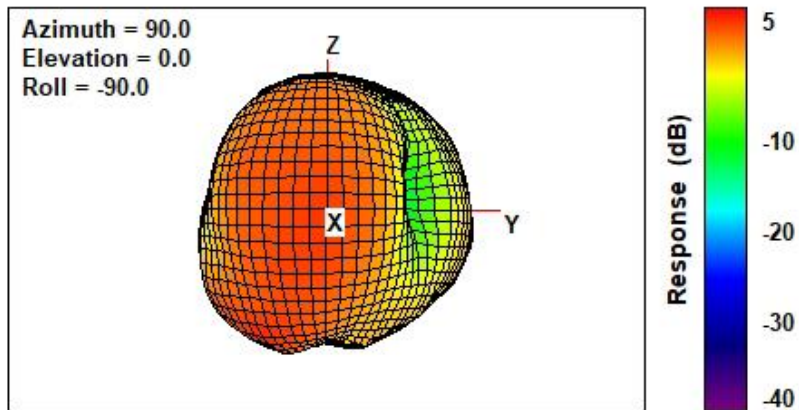
**5.3 Summary Table**

Frequency (MHz)	Ant. Port Input Pwr. (dBm)	Total Radiated Power (dBm)	Gain (dBi)	Directivity (dBi)	Efficiency (dB)	Efficiency (%)
2402.00	0.00	-1.22	4.19	5.41	-1.22	75.53
2412.00	0.00	-1.15	4.09	5.24	-1.15	76.70
2437.00	0.00	-1.08	3.99	5.07	-1.08	78.03
2441.00	0.00	-1.01	3.95	4.96	-1.01	79.16
2462.00	0.00	-0.94	3.77	4.71	-0.94	80.56
2472.00	0.00	-0.90	3.89	4.79	-0.90	81.30
2480.00	0.00	-0.77	4.19	4.96	-0.77	83.77
5180.00	0.00	-3.08	3.05	6.13	-3.08	49.20
5220.00	0.00	-3.12	4.09	7.22	-3.12	48.70
5240.00	0.00	-3.10	4.52	7.63	-3.10	48.92
5260.00	0.00	-3.33	4.20	7.53	-3.33	46.47
5300.00	0.00	-3.31	4.34	7.65	-3.31	46.63
5320.00	0.00	-3.21	4.70	7.91	-3.21	47.75
5500.00	0.00	-2.30	3.42	5.72	-2.30	58.84
5600.00	0.00	-2.07	2.82	4.89	-2.07	62.14
5700.00	0.00	-2.52	2.65	5.18	-2.52	55.92
5745.00	0.00	-2.85	2.61	5.46	-2.85	51.92
5785.00	0.00	-2.90	3.02	5.93	-2.90	51.23
5805.00	0.00	-2.96	3.39	6.35	-2.96	50.57
5825.00	0.00	-2.93	2.94	5.87	-2.93	50.95

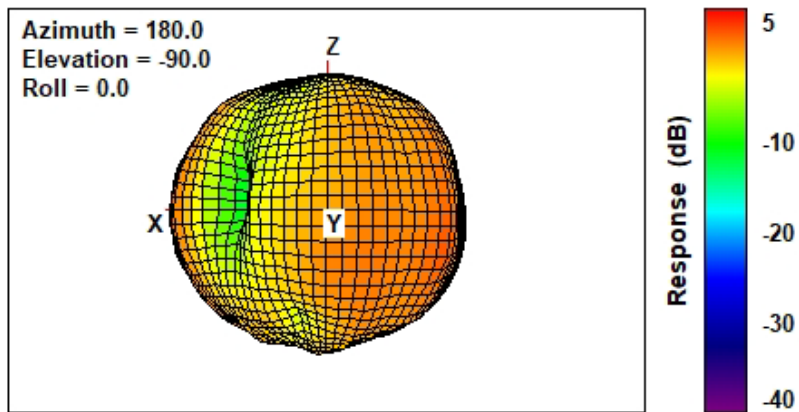


**Appendix A 3D pattern**

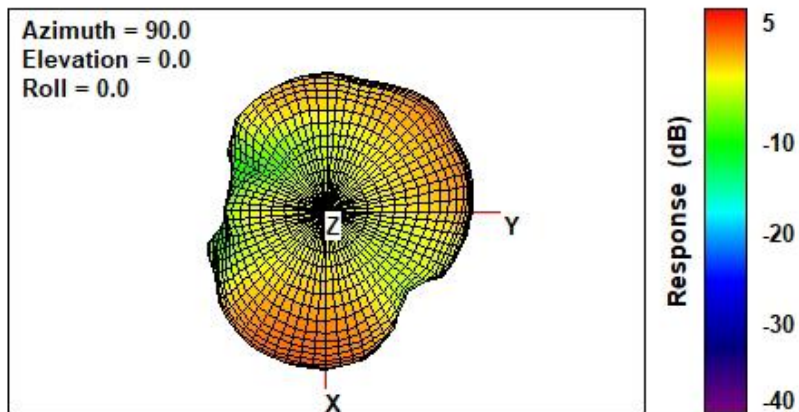
Total - 2402 MHz



Total - 2402 MHz

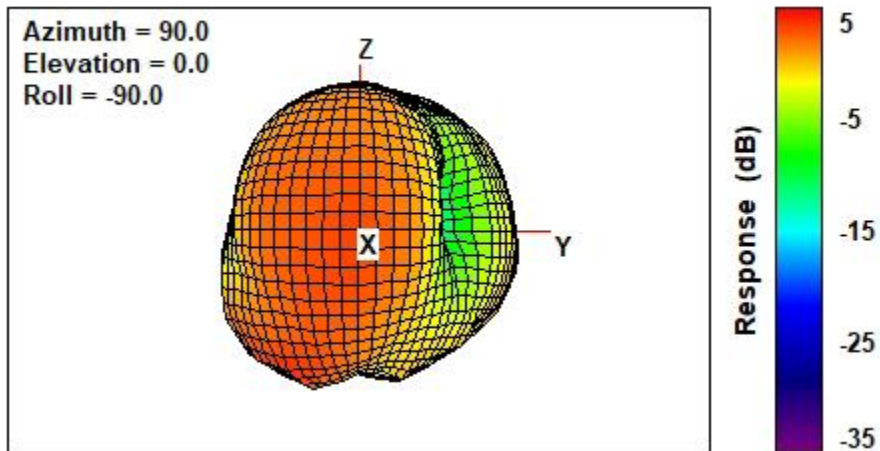


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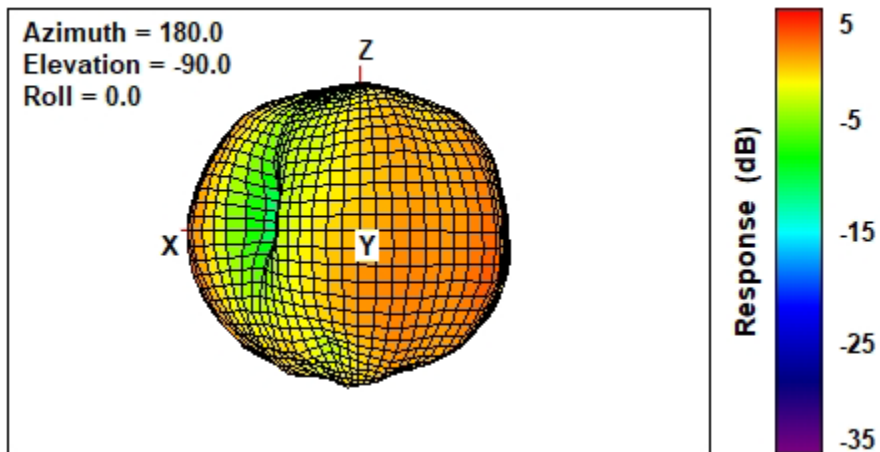


Frequency 2402 MHz

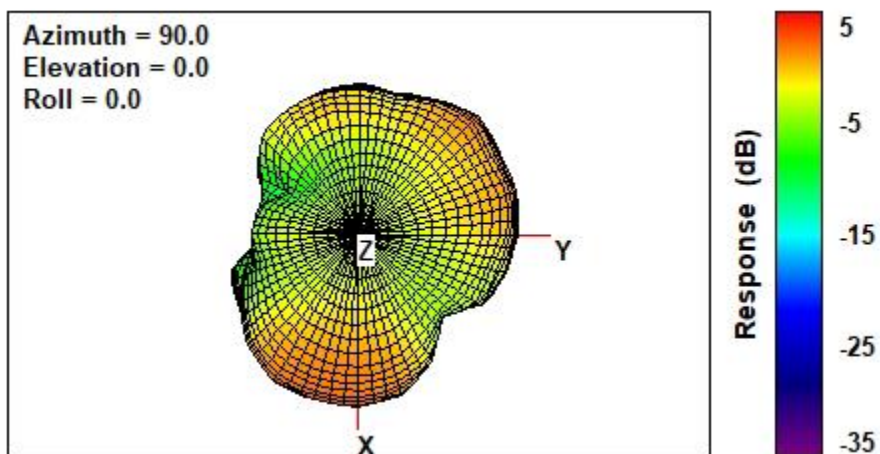
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Total - 2412 MHz

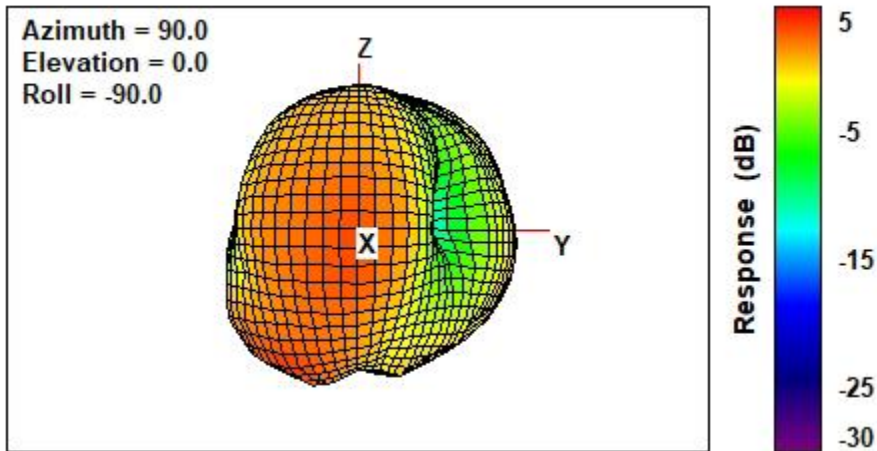


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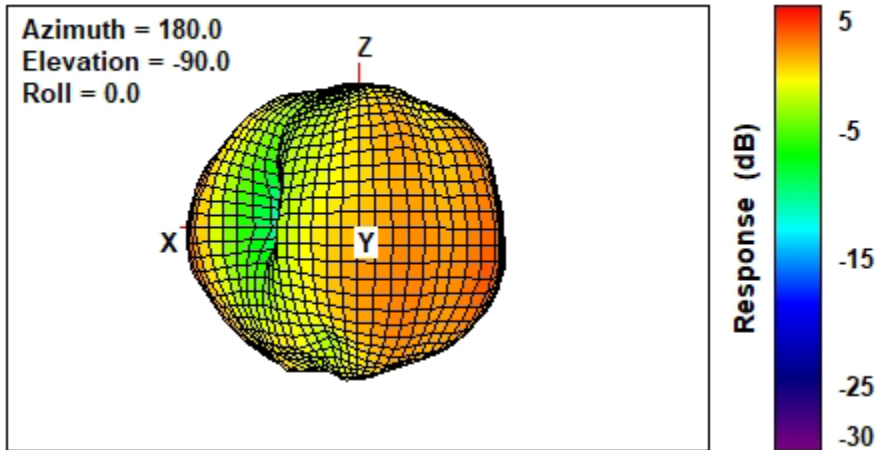


Frequency 2412 MHz

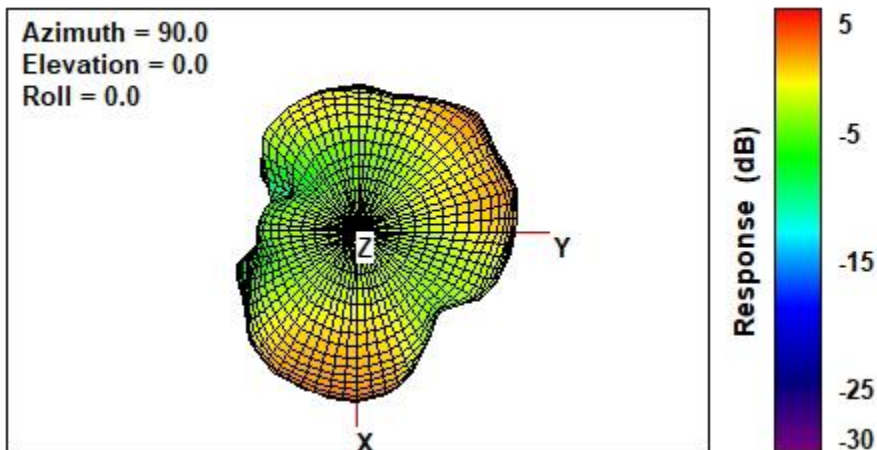
Total - 2437 MHz



Total - 2437 MHz

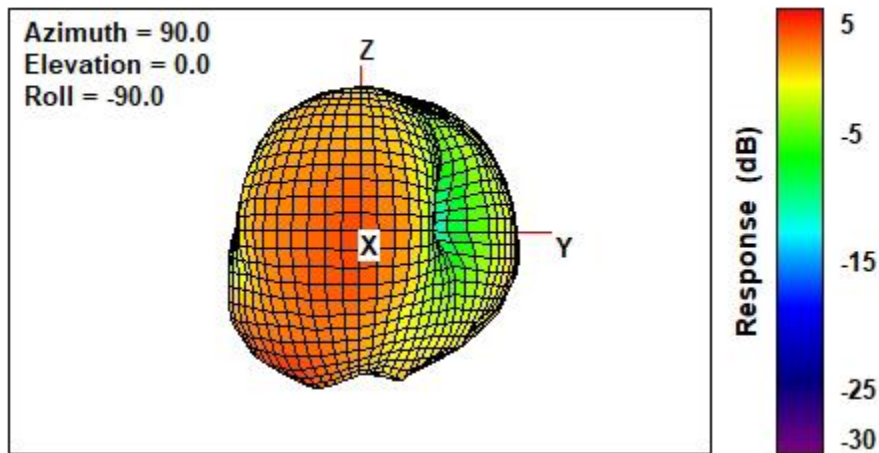


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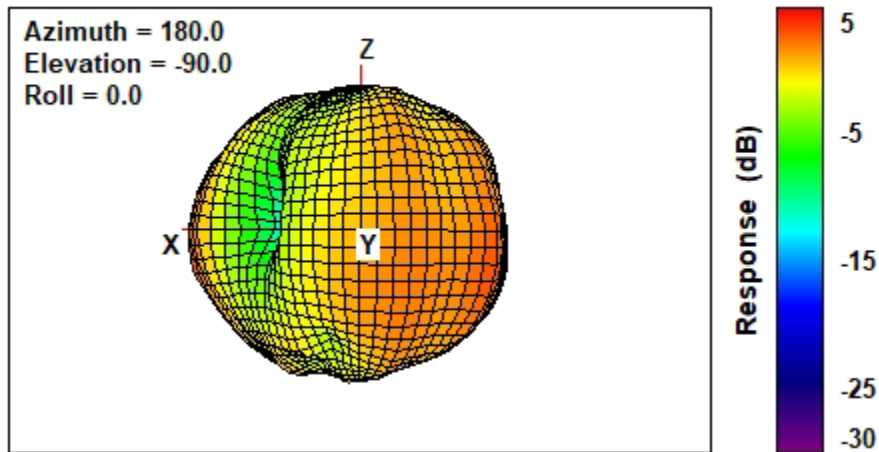


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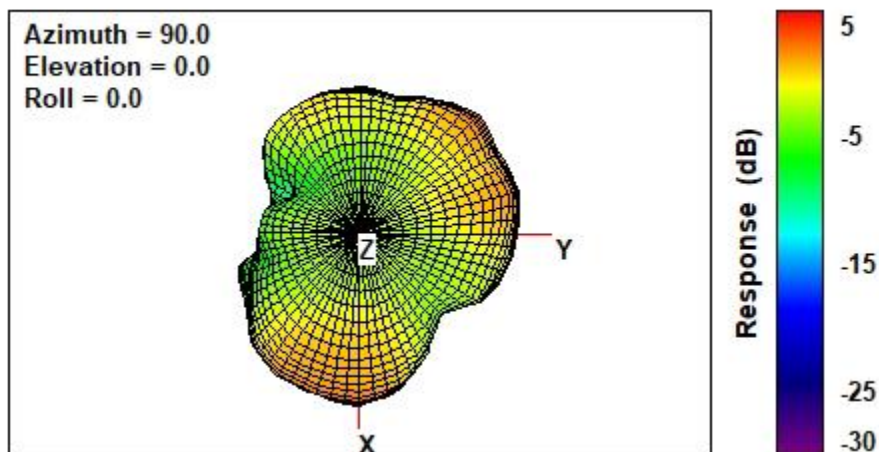
Total - 2441 MHz



Total - 2441 MHz

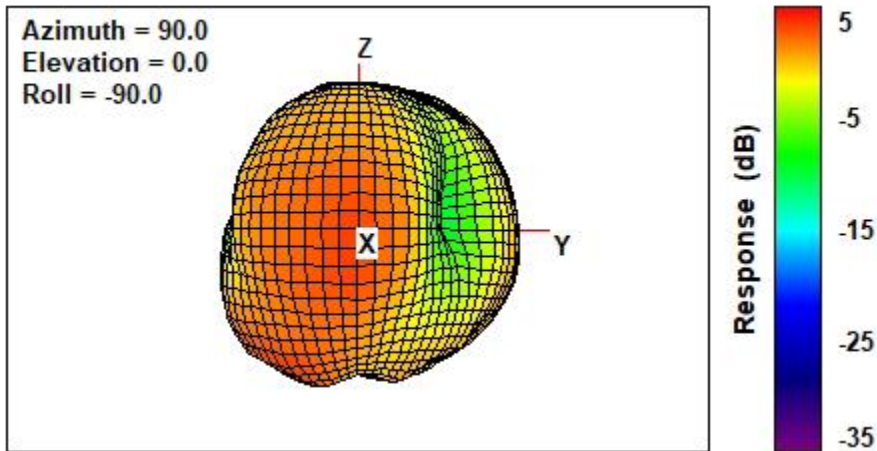


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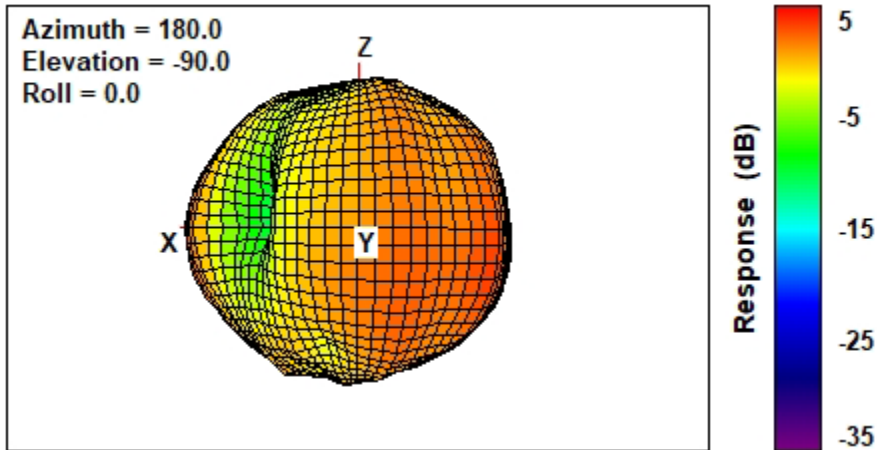


Frequency 2441 MHz

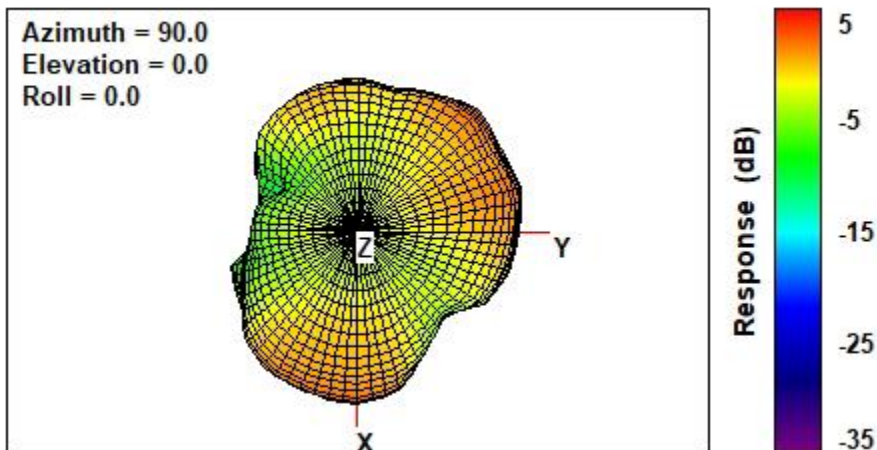
Total - 2462 MHz



Total - 2462 MHz



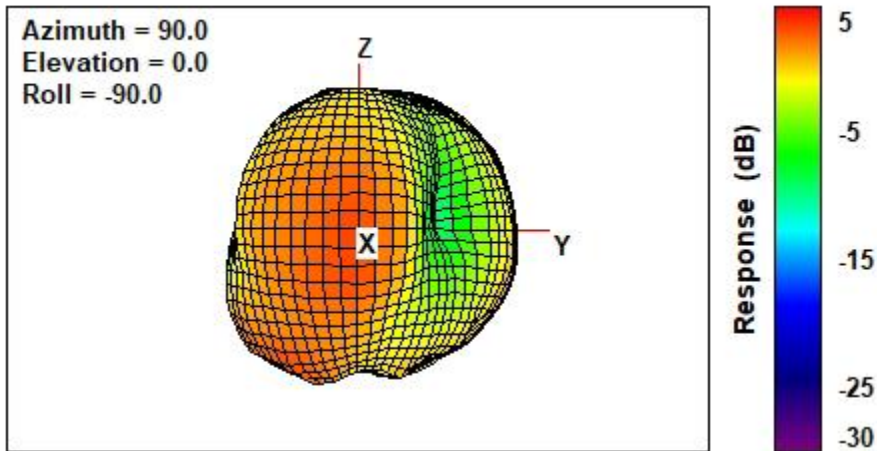
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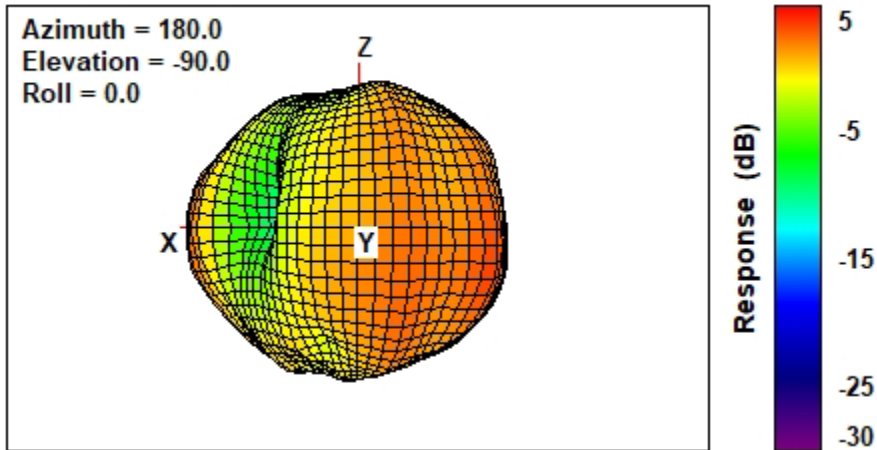
Frequency 2462 MHz



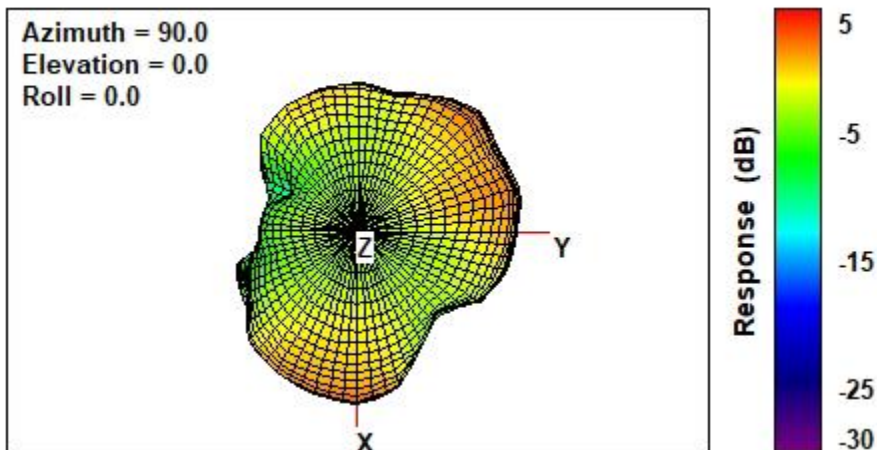
Total - 2472 MHz



Total - 2472 MHz

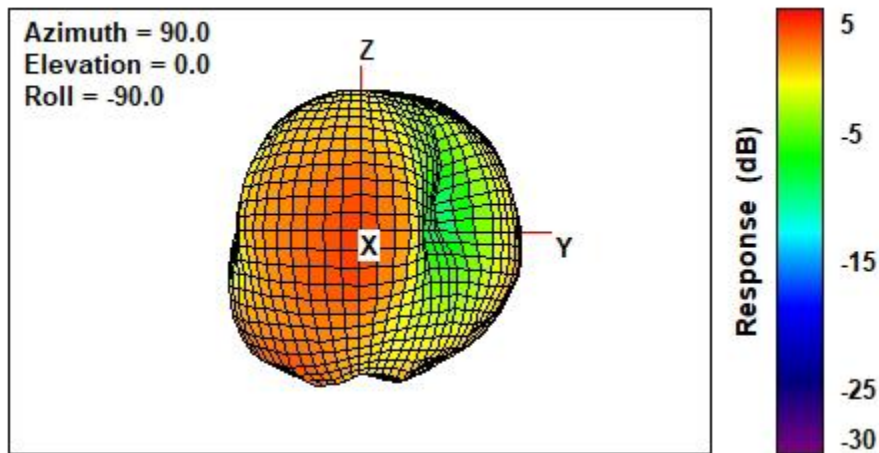


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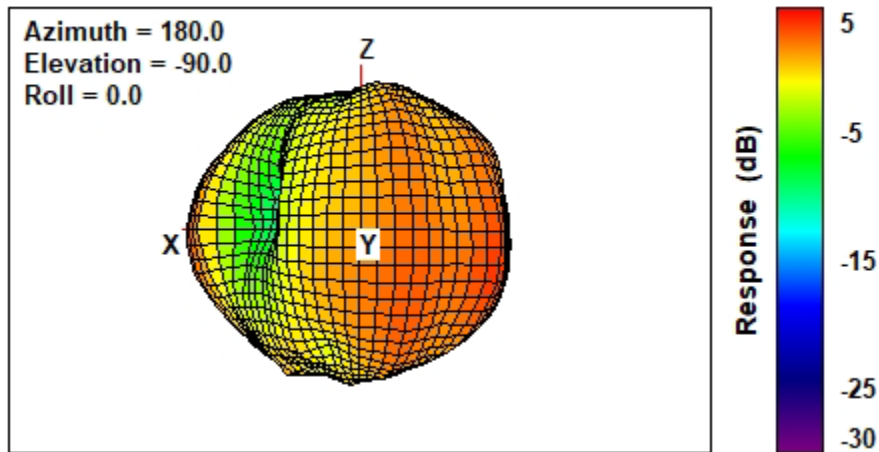


Frequency 2472 MHz

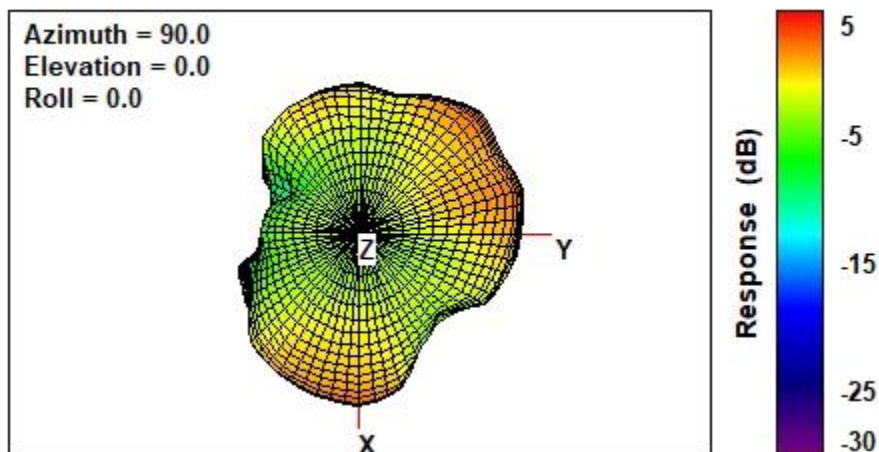
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Total - 2480 MHz

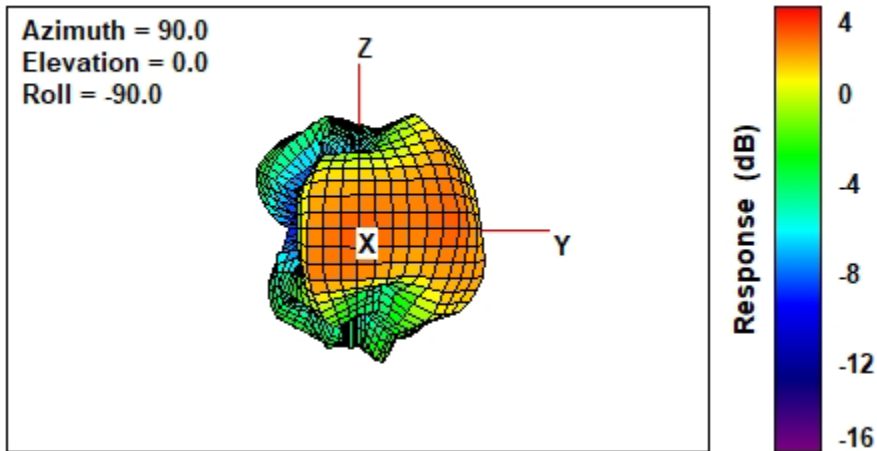


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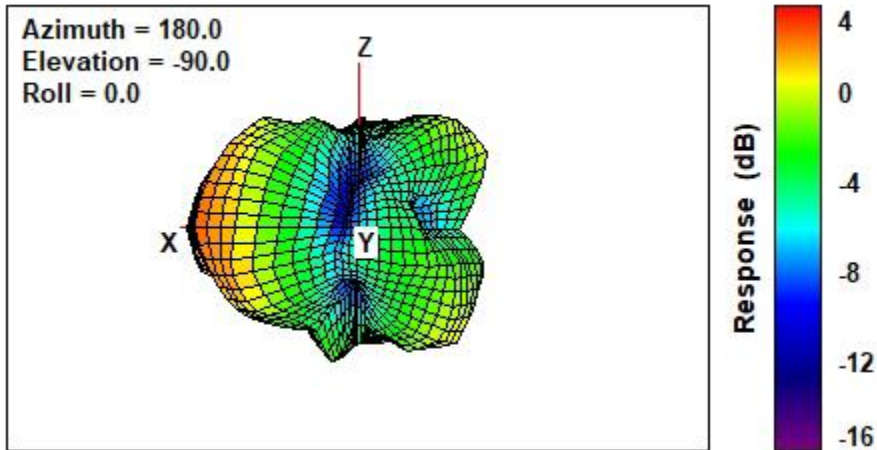


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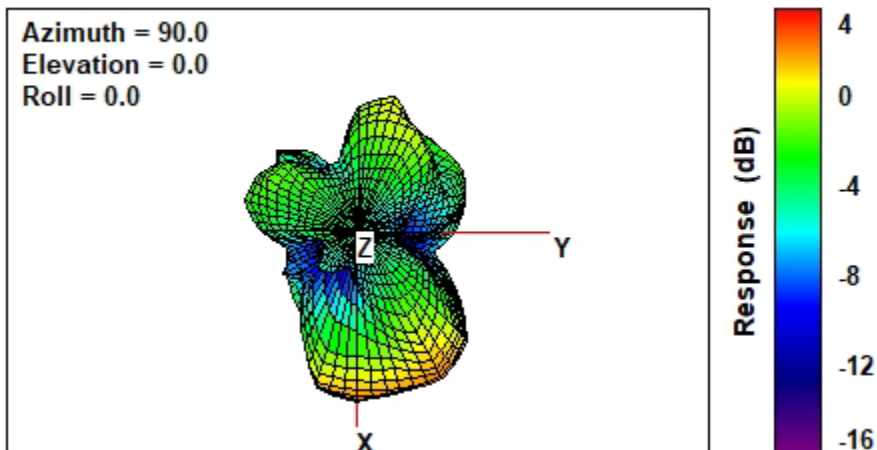
Total - 5180 MHz



Total - 5180 MHz

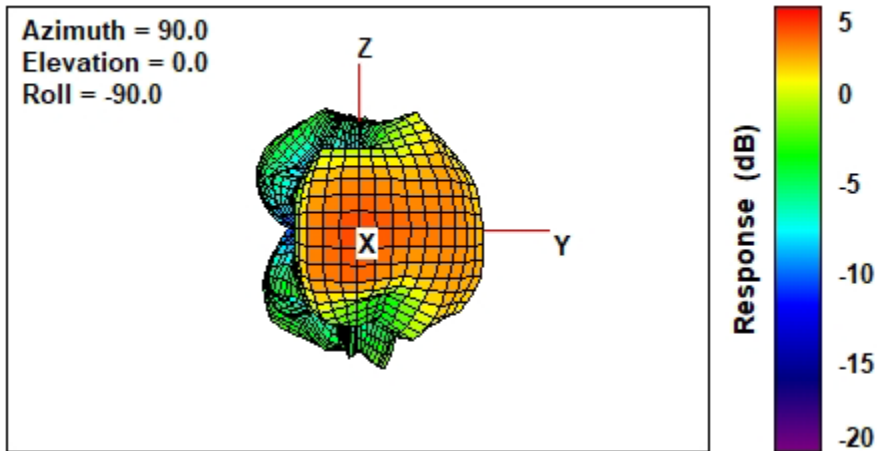


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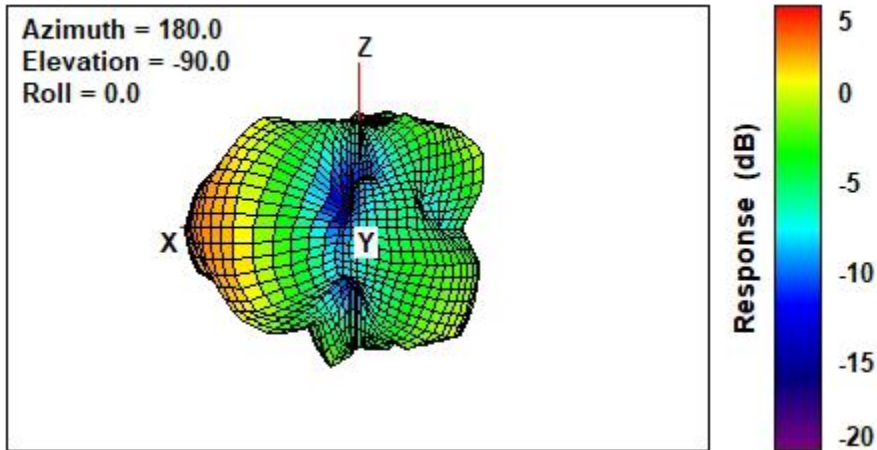


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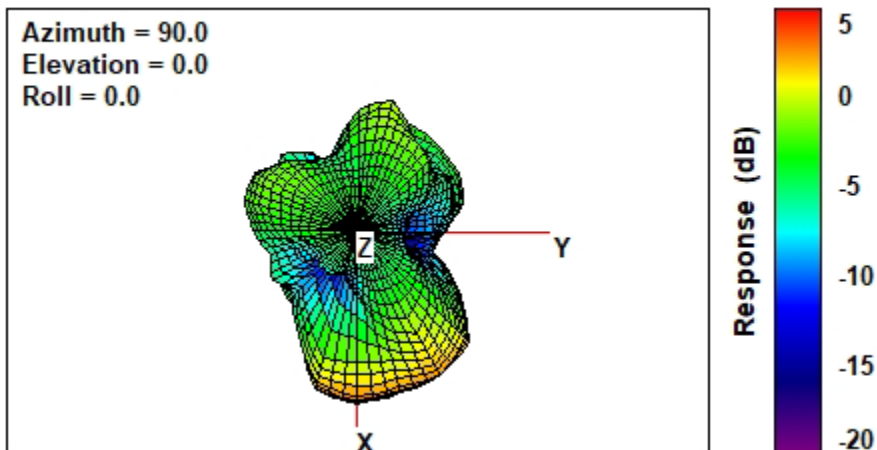
Total - 5220 MHz



Total - 5220 MHz

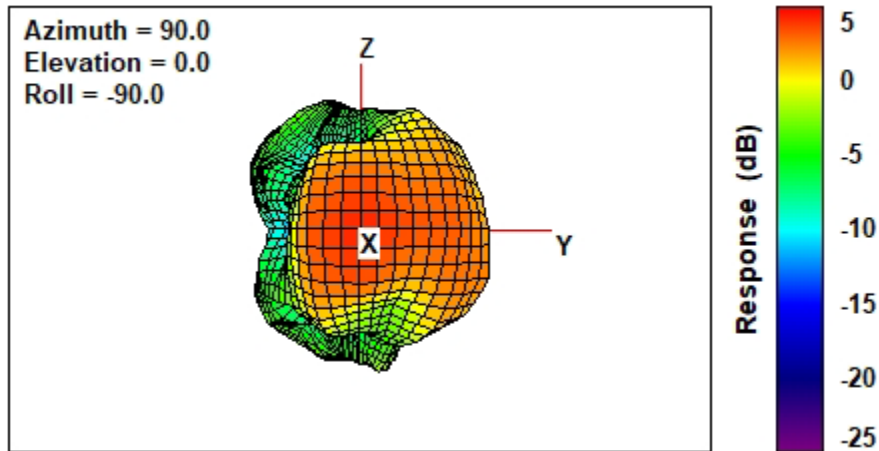


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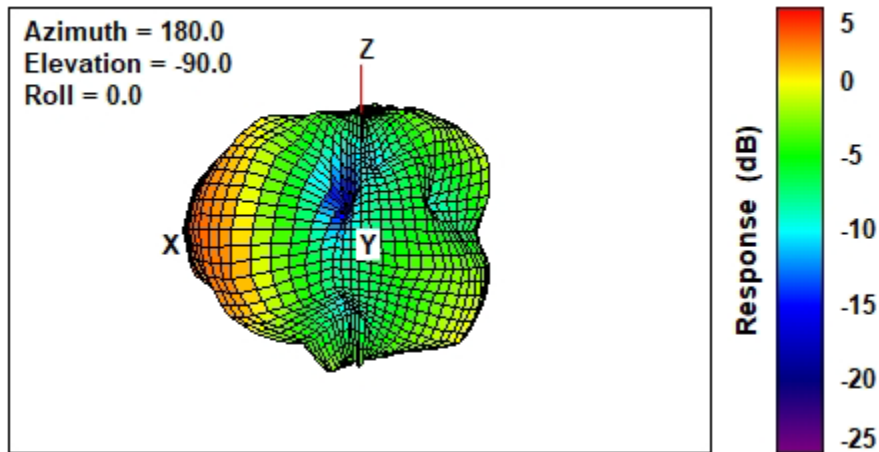


Frequency 5220 MHz

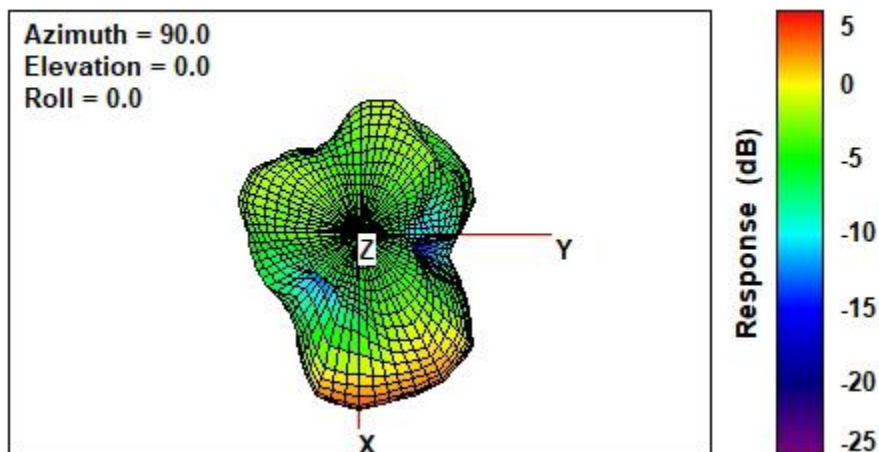
Total - 5240 MHz



Total - 5240 MHz

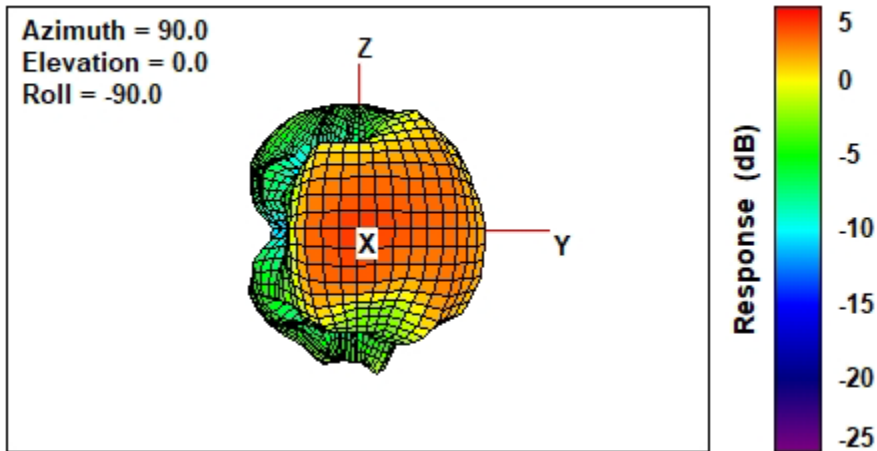


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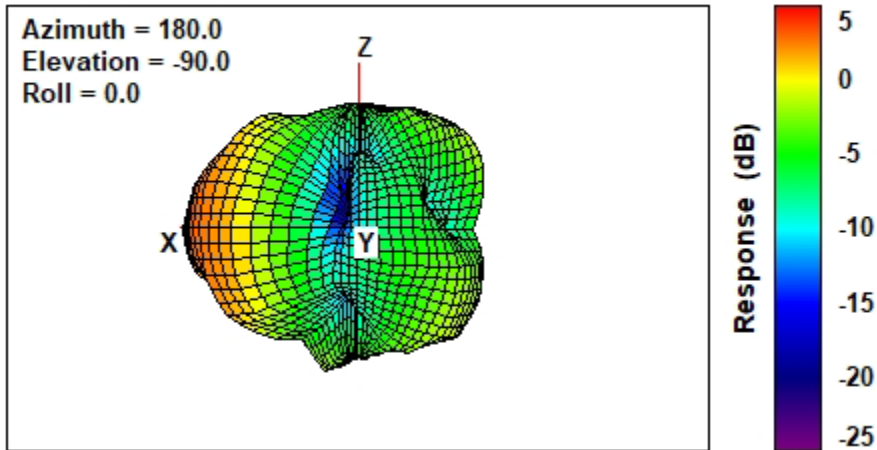


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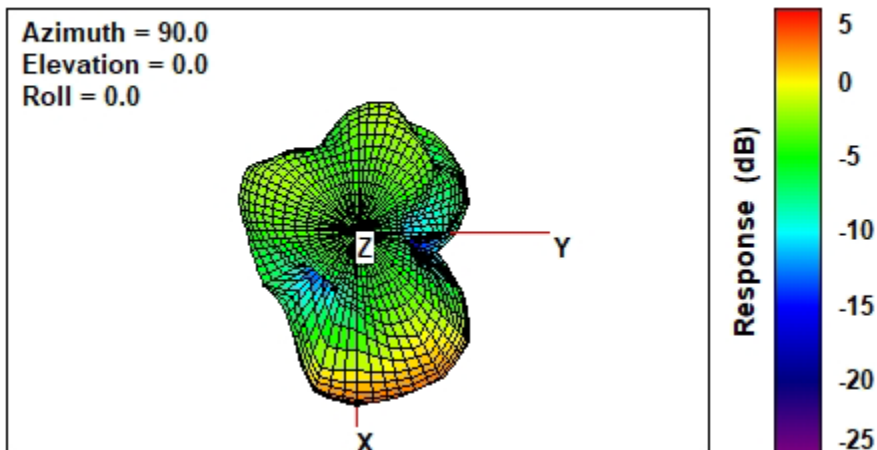
Total - 5260 MHz



Total - 5260 MHz

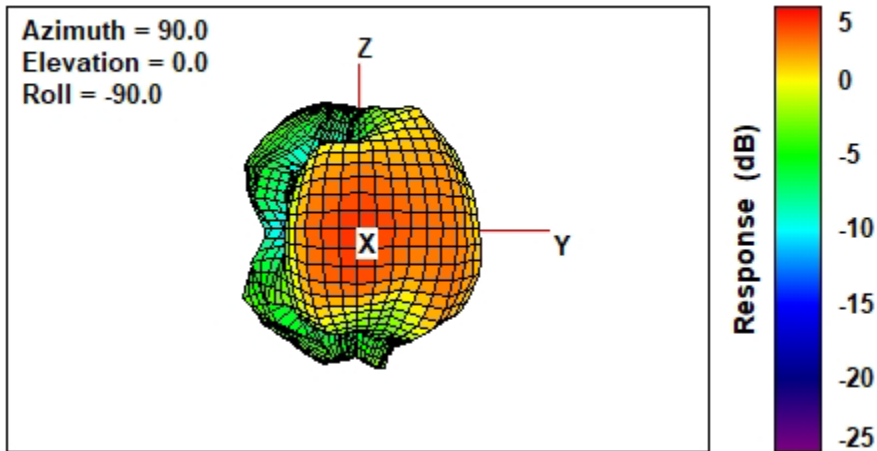


Total - 5260 MHz

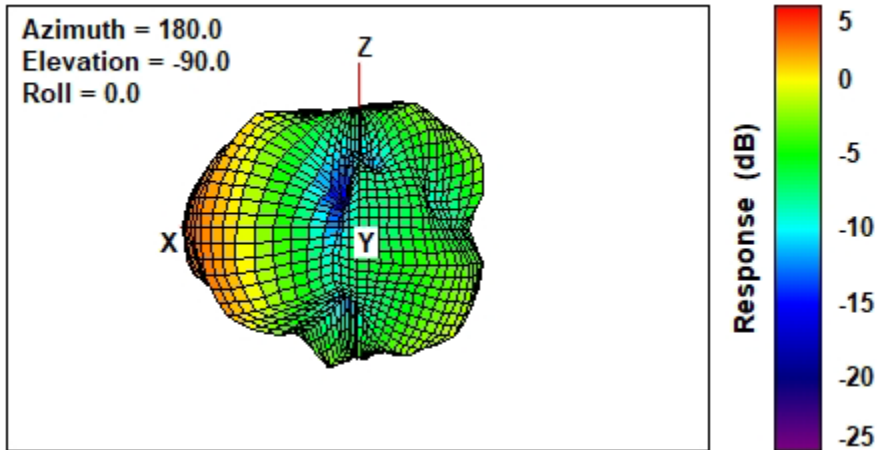


Frequency 5260 MHz

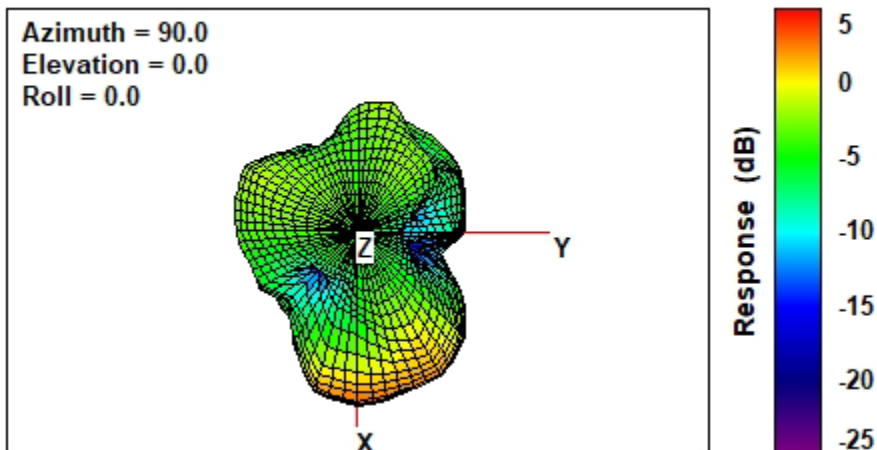
Total - 5300 MHz



Total - 5300 MHz

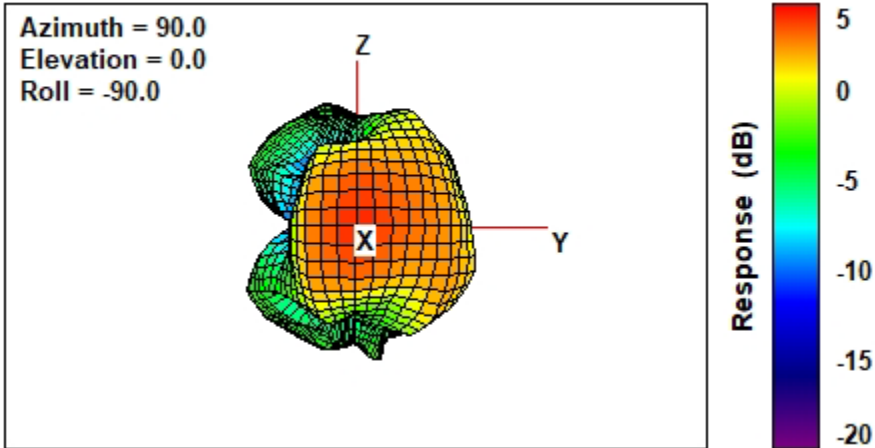


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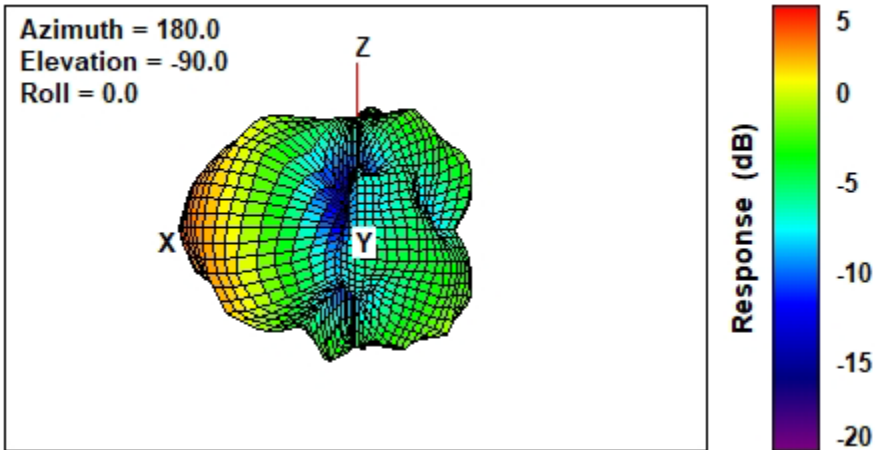


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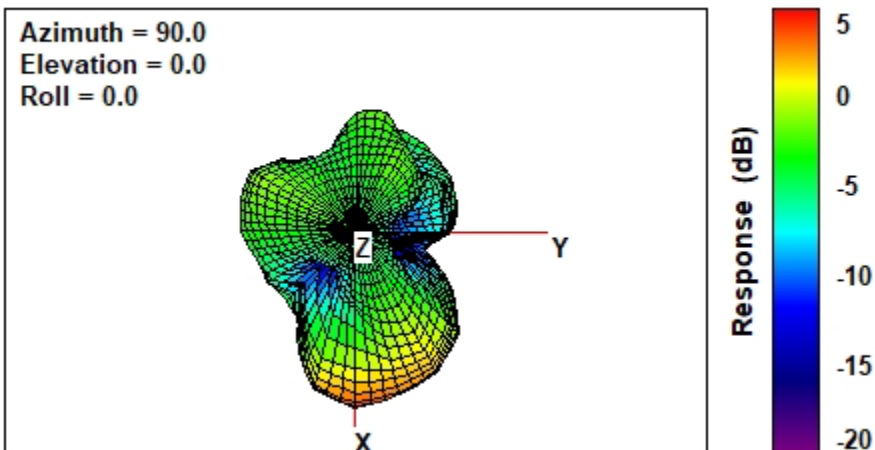
Total - 5320 MHz



Total - 5320 MHz



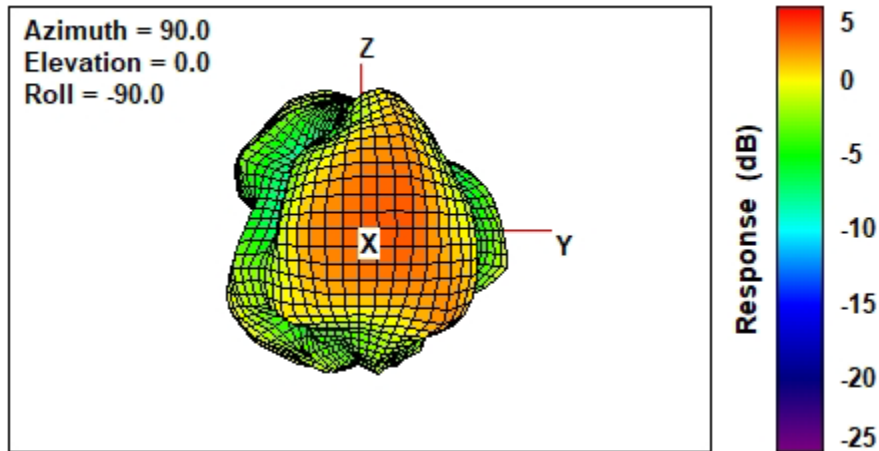
Total - 5320 MHz



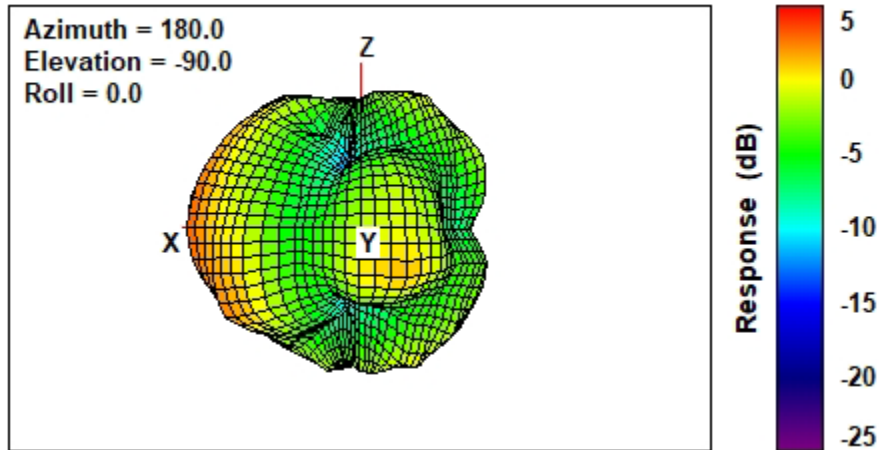
Frequency 5320 MHz



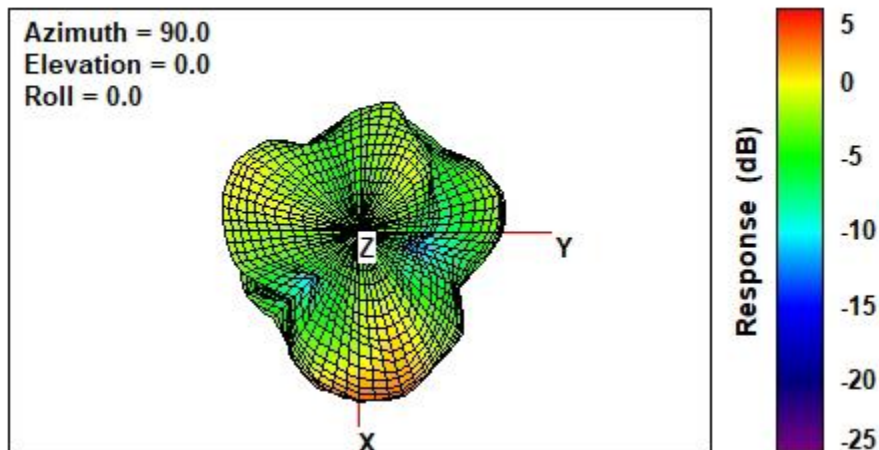
Total - 5500 MHz



Total - 5500 MHz

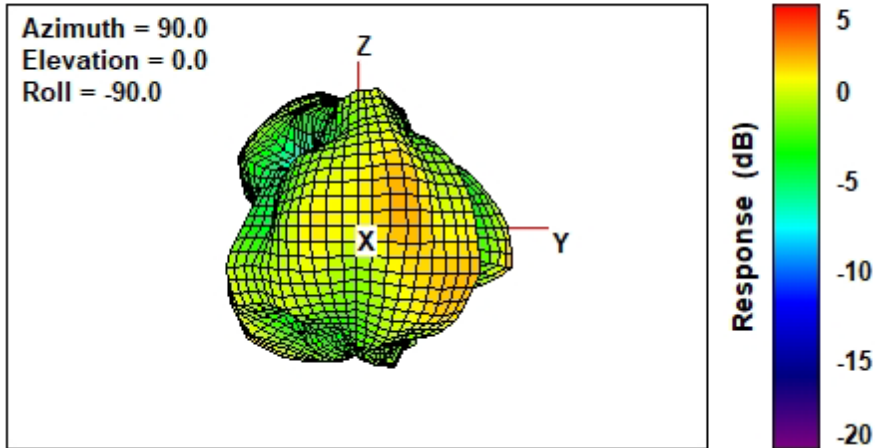


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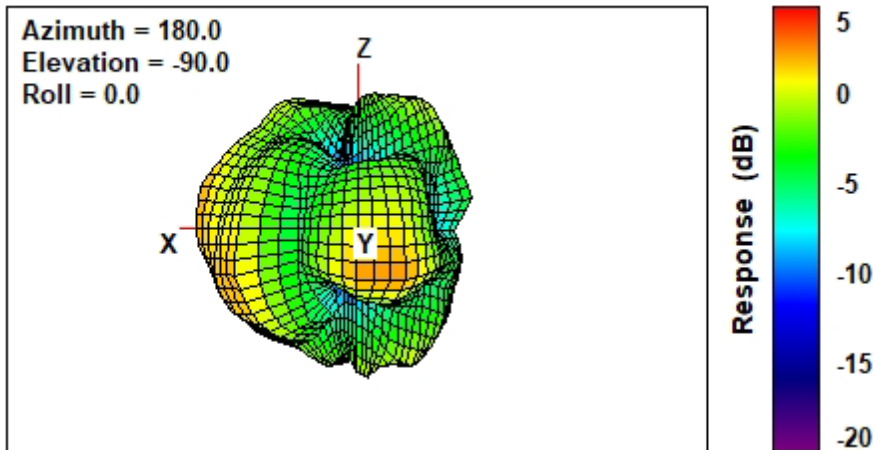


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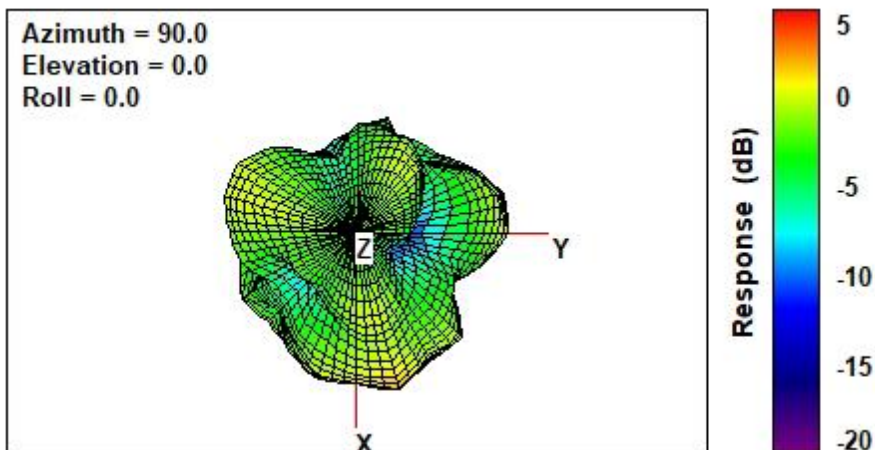
Total - 5600 MHz



Total - 5600 MHz

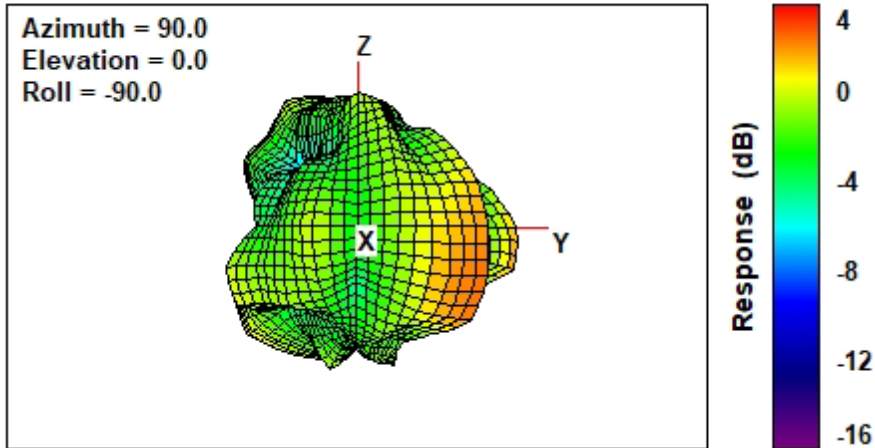


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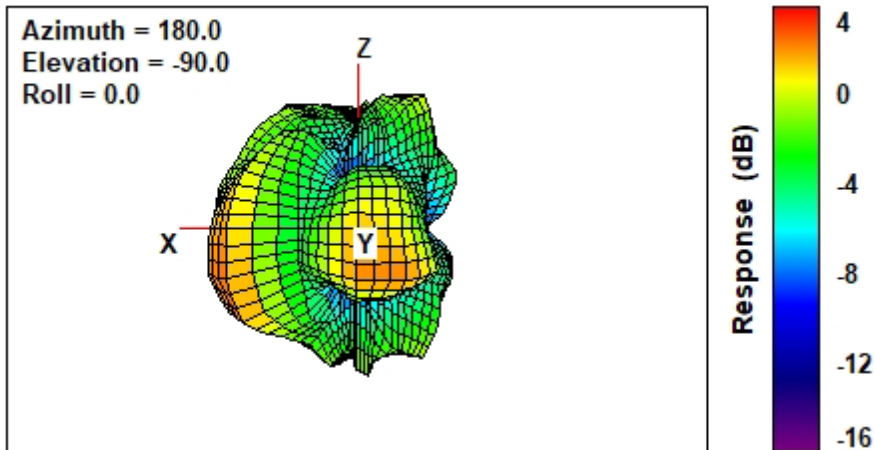


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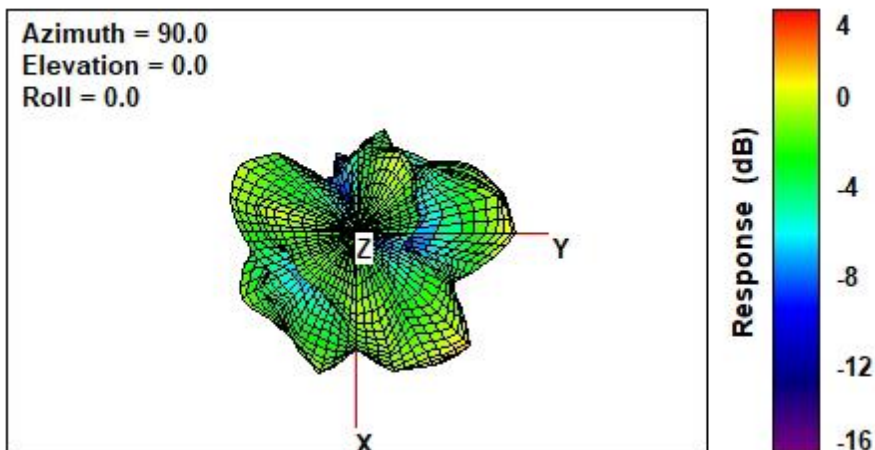
Total - 5700 MHz



Total - 5700 MHz

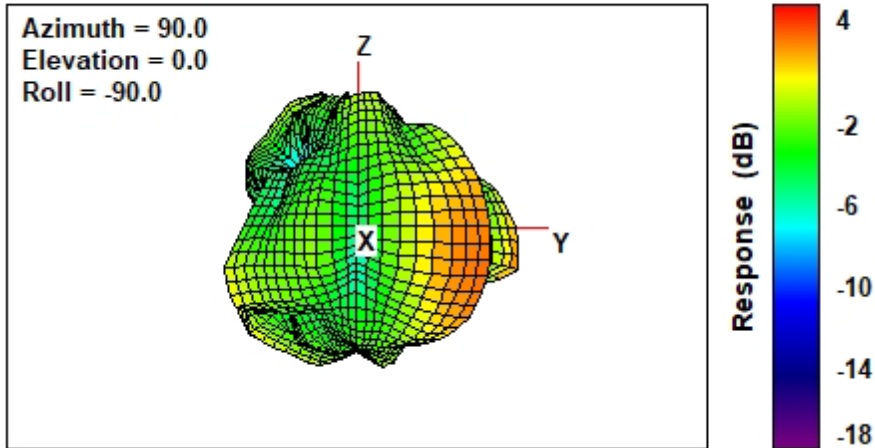


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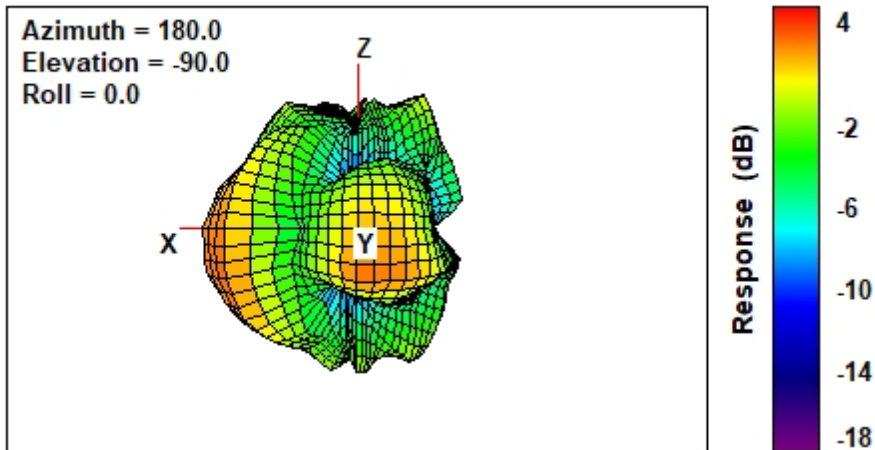


Frequency 5700 MHz

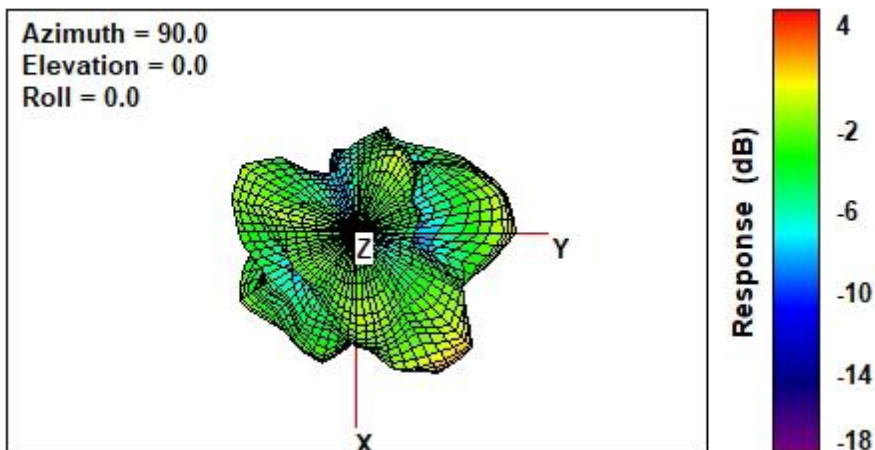
Total - 5745 MHz



Total - 5745 MHz

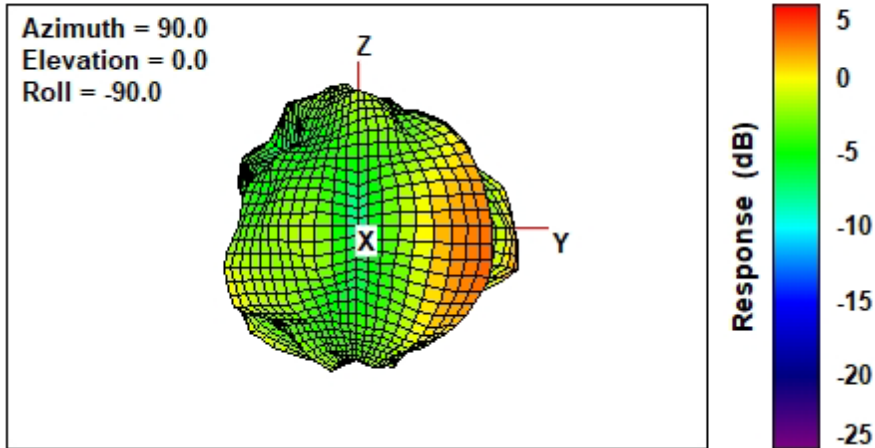


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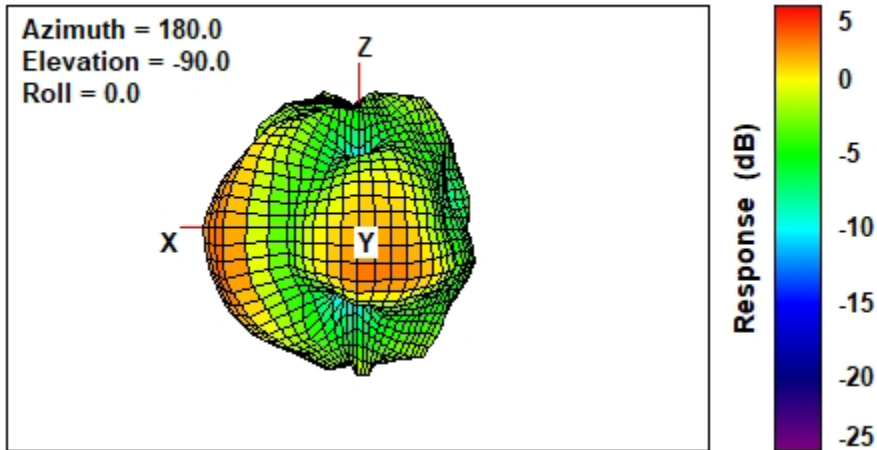


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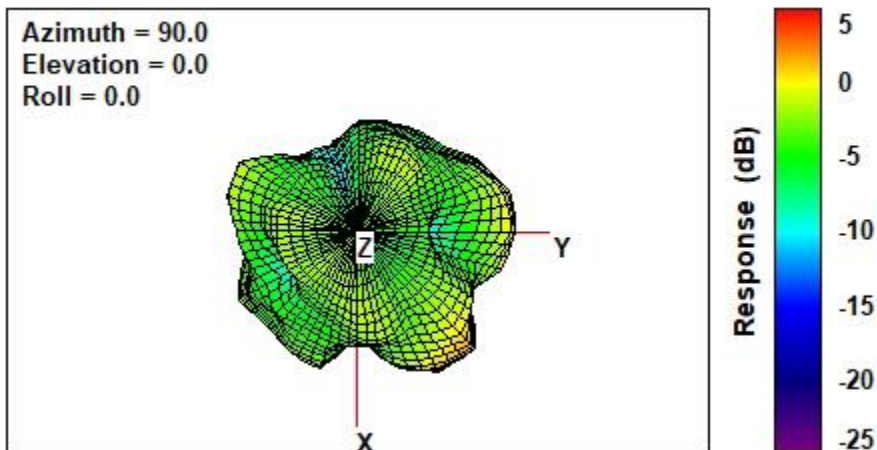
Total - 5805 MHz



Total - 5805 MHz

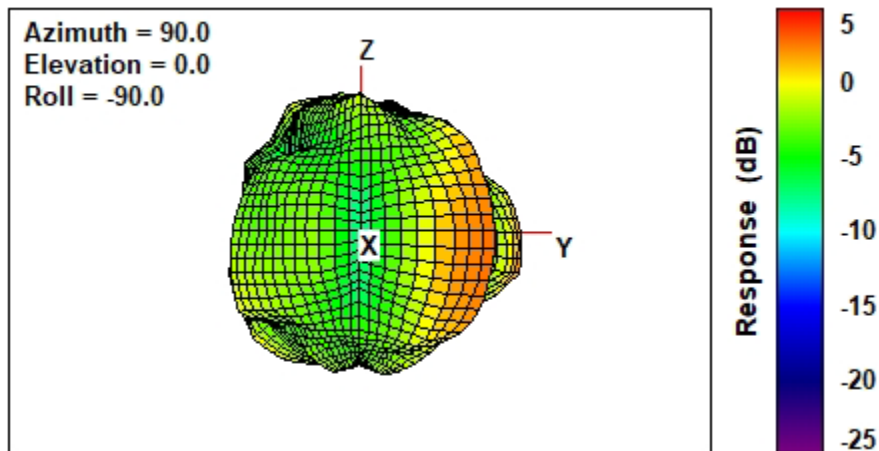


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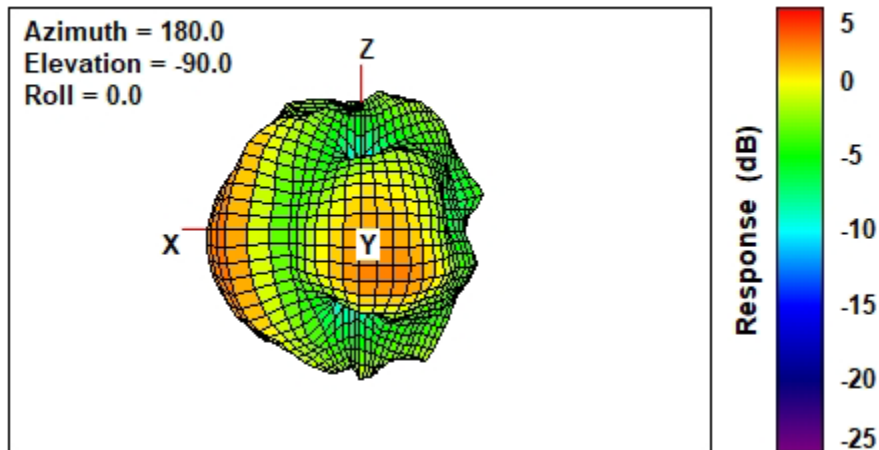


Frequency 5805 MHz

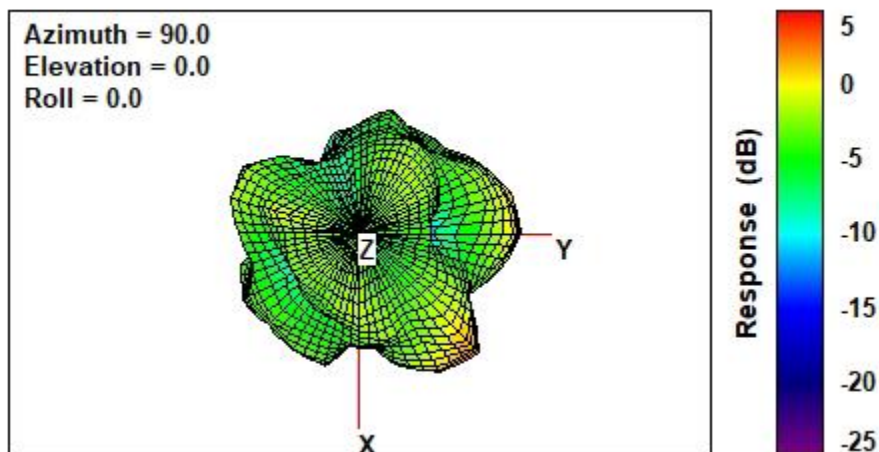
Total - 5825 MHz



Total - 5825 MHz



Total - 5825 MHz



Frequency 5825 MHz