

# Regulatory WWAN Antenna Information

(English Language Required for Intel Regulatory Review / Approval)

**(OEM/ODM or antenna vendor is required to complete this document with platform antenna information.  
Remove Intel references and make this your own document)**

<b>Platform</b>	
Platform Owner	DELL
Brand Name	DELL
Model Name	P166G
ODM	Compal Electronics, Inc.
Target Launch Date	
<b>Antenna</b>	
Manufacturer	WNC
Part Number	<ul style="list-style-type: none"> <li>■ Tx1/Rx1 <a href="#">Antenna</a> WWAN Main: Antenna P/N: 81ELA715.G77 COMPAL P/N: DC33002RJ5L</li> </ul>
	<ul style="list-style-type: none"> <li>■ Rx2 Antenna WWAN Aux : Antenna P/N: 81ELA715.G79 COMPAL P/N: DC33002RJ1L</li> </ul>
	<ul style="list-style-type: none"> <li>■ Tx2/Rx3 <a href="#">Antenna</a> MIMO2: Antenna P/N: 81ELA715.G77 COMPAL P/N: DC33002RJ5L</li> </ul>
	<ul style="list-style-type: none"> <li>■ Rx4 Antenna MIM3 : Antenna P/N: 81ELA715.G82 COMPAL P/N: DC33002RJ7L</li> </ul>
<b>Module</b>	
With WWAN Module	FM-350-GL
(Check Box)	

## Antenna Sample / Antenna Data Requirements for worldwide regulatory approval

Section	Description of Required OEM / ODM Antenna Information	US / IC	EU	Japan	Taiwan	S.Korea
1A	Part Number for Antenna only	Required	Required	Required	Required	Required
1B	Antenna Manufacturer Name	Required	Required	Required	Required	Required
1C	Description of Antenna Type	Required	N/A	N/A	N/A	N/A
1D	Part number of Antenna Assembly / cable impedance, length & diameter.	Required	Desired	Desired	Desired	Desired
1E	Tx1, Tx2 & Tx3 antenna (Peak Gain W/ cable loss) *	Required	Required	Required	Required	Required
	1E OR 1F, 1G, 1H					
1F	Tx1, Tx2 & Tx3 antenna (Peak Gain only) *	Required	Required	Required	Required	Required
1G	VSWR of cable including connector	Required	Required	Required	Required	Required
1H	Tx1, Tx2 & Tx3 antenna (Cable loss W/ connector) *	Required	Required	Required	Required	Required
2	Dimensioned Photographs <u>and</u> Drawings of Tx1, Tx2, and Tx3 (or Rx3) antennas	Required	Required	Required	Required	Required
3	Radiation patterns of antennas loaded in the host platform.	Required	Desired	Required	N/A	Required
4	Platform model name / number - correlated to antenna manufacturer and antenna part number	Required	Required	Desired	Required	Desired
5	Photograph(s) or Drawings showing location of antennas in platform. <u>(S. Korea requires photographs of antennas for approval submission). Taiwan requires pictures of each antenna type shown in the system.</u>	Required	Required	Desired	<u>Required (Photos)</u>	<u>Required (Photos)</u>
6	Mech. drawings / photos with dimensions of antenna locations and distance from end-user (For evaluation of SAR testing requirement).	Required	N/A	N/A	N/A	N/A
7	Photograph(s) or Drawings showing the location of all antennas (WLAN, other) and distance between those transmitting antennas. Information will be used to evaluate whether co-location testing is required.	Required	N/A	N/A	N/A	N/A
8	Local representative contact information for LMA/ PARS process.	Required	N/A	N/A	N/A	N/A

# Antenna Information

## Section 1. Antenna Assembly Specifications (NB mode)

### NB mode

1A Antenna Part Number	1B Manufacture	1C Antenna Type	1D Cable Assembly Part Number and Information	1E *Peak Gain W/ Cable loss (dBi)	1F Peak Gain w/o Cable Loss (dBi)	1G VSWR	1H Cable Loss (dBi)
<b>Tx1/Rx1</b> Antenna WNC P/N: 81ELA715.G77 Compal P/N DC33002RJ5L	<b>WNC</b>	<b>PIFA</b>	Cable length: 162mm diameter: 1.13mm 50 ohm Coaxial Connector P/N: <b>I-PEX MHF4</b>	617-698Hz <b>1.07</b> dBi (peak)	617-698Hz <b>1.32</b> dBi (peak)	617-698Hz <b>3</b> max	617-698Hz <b>0.25</b> dBi (peak)
				698-821MHz <b>2.17</b> dBi (peak)	698-821MHz <b>2.45</b> dBi (peak)	698-821MHz <b>3</b> max	698-821MHz <b>0.28</b> dBi (peak)
				824-960MHz <b>2.49</b> dBi (peak)	824-960MHz <b>2.79</b> dBi (peak)	824-960MHz <b>3</b> max	824-960MHz <b>0.30</b> dBi (peak)
				1425-1515MHz <b>0.93</b> dBi (peak)	1425-1515MHz <b>1.29</b> dBi (peak)	1425-1515MHz <b>3</b> max	1425-1515MHz <b>0.36</b> dBi (peak)
				1710-2200MHz <b>2.72</b> dBi (peak)	1710-2200MHz <b>3.13</b> dBi (peak)	1710-2200MHz <b>3</b> max	1710-2200MHz <b>0.41</b> dBi (peak)
				2300-2690MHz <b>2.22</b> dBi (peak)	2300-2690MHz <b>2.68</b> dBi (peak)	2300-2690MHz <b>3</b> max	2300-2690MHz <b>0.46</b> dBi (peak)
				3400-3800MHz <b>0.90</b> dBi (peak)	3400-3800MHz <b>1.44</b> dBi (peak)	3400-3800MHz <b>3</b> max	3400-3800MHz <b>0.54</b> dBi (peak)
				4200-4700MHz <b>1.70</b> dBi (peak)	4200-4700MHz <b>2.31</b> dBi (peak)	4200-4700MHz <b>3</b> max	4200-4700MHz <b>0.61</b> dBi (peak)
				5150-5925MHz <b>1.26</b> dBi (peak)	5150-5925MHz <b>1.95</b> dBi (peak)	5150-5925MHz <b>3</b> max	5150-5925MHz <b>0.69</b> dBi (peak)
<b>Rx2</b> Antenna WNC P/N: 81ELA715.G79 Compal P/N: DC33002RJ1L	<b>WNC</b>	<b>PIFA</b>	Cable length: 388.5mm diameter: 1.13mm 50 ohm Coaxial Connector P/N: <b>I-PEX MHF4</b>	617-698Hz <b>0.96</b> dBi (peak)	617-698Hz <b>1.59</b> dBi (peak)	617-698Hz <b>3</b> max	617-698Hz <b>0.63</b> dBi (peak)
				717-821MHz <b>2.28</b> dBi (peak)	717-821MHz <b>2.95</b> dBi (peak)	717-821MHz <b>3</b> dBi (peak)	717-821MHz <b>0.67</b> dBi (peak)
				824-960MHz <b>-0.91</b> dBi (peak)	824-960MHz <b>-0.20</b> dBi (peak)	824-960MHz <b>3</b> max	824-960MHz <b>0.71</b> dBi (peak)
				1425-1515MHz <b>-1.14</b> dBi (peak)	1425-1515MHz <b>-0.29</b> dBi (peak)	1425-1515MHz <b>3</b> max	1425-1515MHz <b>0.85</b> dBi (peak)
				1557-1610 MHz <b>-1.06</b> dBi (peak)	1557-1610 MHz <b>-0.19</b> dBi (peak)	1557-1610 MHz <b>3</b> max	1557-1610 MHz <b>0.87</b> dBi (peak)
				1805-2200MHz <b>3.39</b> dBi (peak)	1805-2200MHz <b>4.38</b> dBi (peak)	1805-2200MHz <b>3</b> max	1805-2200MHz <b>0.99</b> dBi (peak)
				2300-2690MHz <b>3.10</b> dBi (peak)	2300-2690MHz <b>4.19</b> dBi (peak)	2300-2690MHz <b>3</b> max	2300-2690MHz <b>1.09</b> dBi (peak)
				3400-3800MHz <b>1.36</b> dBi (peak)	3400-3800MHz <b>2.65</b> dBi (peak)	3400-3800MHz <b>3</b> max	3400-3800MHz <b>1.29</b> dBi (peak)
				4200-4700MHz <b>3.33</b> dBi(peak)	4200-4700MHz <b>4.82</b> dBi(peak)	4200-4700MHz <b>3</b> max	4200-4700MHz <b>1.49</b> dBi (peak)
5150-5925MHz <b>1.04</b> dBi (peak)	5150-5925MHz <b>2.69</b> dBi (peak)	5150-5925MHz <b>3</b> max	5150-5925MHz <b>1.65</b> dBi (peak)				

1A Antenna Part Number	1B Manufacture	1C Antenna Type	1D Cable Assembly Part Number and Information	1E *Peak Gain W/ Cable loss (dBi)	1F Peak Gain w/o Cable Loss (dBi)	1G VSWR	1H Cable Loss (dBi)
<b>Tx2/Rx3</b> Antenna WNC P/N: 81ELA715.G77 Compal P/N DC33002RJ5L	<b>WNC</b>	PIFA	Cable length: 96mm diameter: 0.81mm 50 ohm Coaxial Connector P/N: <b>I-PEX MHF4</b>	1452-1496MHz <b>0.16</b> dBi (peak)	1452-1496MHz <b>0.41</b> dBi (peak)	1452-1496MHz <b>3</b> dBi (peak)	1452-1496MHz <b>0.25</b> dBi (peak)
				1710-2200MHz <b>2.20</b> dBi (peak)	1710-2200MHz <b>2.49</b> dBi (peak)	1710-2200MHz <b>3</b> dBi (peak)	1710-2200MHz <b>0.29</b> dBi (peak)
				2300-2690MHz <b>1.70</b> dBi (peak)	2300-2690MHz <b>2.04</b> dBi (peak)	2300-2690MHz <b>3</b> dBi (peak)	2300-2690MHz <b>0.34</b> dBi (peak)
				3400-3800MHz <b>0.73</b> dBi (peak)	3400-3800MHz <b>1.14</b> dBi (peak)	3400-3800MHz <b>3</b> dBi (peak)	3400-3800MHz <b>0.41</b> dBi (peak)
				4200-5000MHz <b>2.01</b> dBi (peak)	4200-5000MHz <b>2.49</b> dBi (peak)	4200-5000MHz <b>3</b> dBi (peak)	4200-5000MHz <b>0.48</b> dBi (peak)
<b>Rx4</b> Antenna WNC P/N: 81ELA715.G82 Compal P/N: DC33002RJ7L	<b>WNC</b>	PIFA	Cable length: 192mm diameter: 1.13mm 50 ohm Coaxial Connector P/N: <b>I-PEX MHF4</b>	1805-2200MHz <b>1.22</b> dBi (peak)	1805-2200MHz <b>1.70</b> dBi (peak)	1805-2200MHz <b>3</b> dBi (peak)	1805-2200MHz <b>0.48</b> dBi (peak)
				2300-2690MHz <b>1.09</b> dBi (peak)	2300-2690MHz <b>1.62</b> dBi (peak)	2300-2690MHz <b>3</b> dBi (peak)	2300-2690MHz <b>0.53</b> dBi (peak)
				3400-3800MHz <b>2.62</b> dBi (peak)	3400-3800MHz <b>3.26</b> dBi (peak)	3400-3800MHz <b>3</b> dBi (peak)	3400-3800MHz <b>0.64</b> dBi (peak)
				4200-5000MHz <b>1.67</b> dBi (peak)	4200-5000MHz <b>2.42</b> dBi (peak)	4200-5000MHz <b>3</b> dBi (peak)	4200-5000MHz <b>0.75</b> dBi (peak)

- Antenna Peak Gain required being test in system basis.
- 1E frame contend absolutely peak antenna gain include H/V

**Section 1. Antenna Assembly Specifications (TB mode)****TB mode**

1A Antenna Part Number	1B Manufacture	1C Antenna Type	1D Cable Assembly Part Number and Information	1E *Peak Gain W/ Cable loss (dBi)	1F Peak Gain w/o Cable Loss (dBi)	1G VSWR	1H Cable Loss (dBi)
Tx1/Rx1 Antenna WNC P/N: 81ELA715.G77 Compal P/N DC33002RJ5L	WNC	PIFA	Cable length: 162mm diameter: 1.13mm 50 ohm Coaxial Connector P/N: I-PEX MHF4	617-698Hz -12.21 dBi (peak)	617-698Hz -11.96 dBi (peak)	617-698Hz 3 max	617-698Hz 0.25 dBi (peak)
				698-821MHz -6.17 dBi (peak)	698-821MHz -5.89 dBi (peak)	698-821MHz 3 max	698-821MHz 0.28 dBi (peak)
				824-960MHz -4.16 dBi (peak)	824-960MHz -3.86 dBi (peak)	824-960MHz 3 max	824-960MHz 0.30 dBi (peak)
				1425-1515MHz -5.39 dBi (peak)	1425-1515MHz -5.03 dBi (peak)	1425-1515MHz 3 max	1425-1515MHz 0.36 dBi (peak)
				1710-2200MHz -0.80 dBi (peak)	1710-2200MHz -0.39 dBi (peak)	1710-2200MHz 3 max	1710-2200MHz 0.41 dBi (peak)
				2300-2690MHz 0.25 dBi (peak)	2300-2690MHz 0.71 dBi (peak)	2300-2690MHz 3 max	2300-2690MHz 0.46 dBi (peak)
				3400-3800MHz 0.37 dBi (peak)	3400-3800MHz 0.91 dBi (peak)	3400-3800MHz 3 max	3400-3800MHz 0.54 dBi (peak)
				4200-4700MHz 0.32 dBi (peak)	4200-4700MHz 0.93 dBi (peak)	4200-4700MHz 3 max	4200-4700MHz 0.61 dBi (peak)
				5150-5925MHz 1.31 dBi (peak)	5150-5925MHz 2.00 dBi (peak)	5150-5925MHz 3 max	5150-5925MHz 0.69 dBi (peak)
Rx2 Antenna WNC P/N: 81ELA715.G79 Compal P/N: DC33002RJ1L	WNC	PIFA	Cable length: 388.5mm diameter: 1.13mm 50 ohm Coaxial Connector P/N: I-PEX MHF4	617-698Hz -2.51 dBi (peak)	617-698Hz -1.88 dBi (peak)	617-698Hz 3 max	617-698Hz 0.63 dBi (peak)
				717-821MHz -3.65 dBi (peak)	717-821MHz -2.98 dBi (peak)	717-821MHz 3 dBi (peak)	717-821MHz 0.67 dBi (peak)
				824-960MHz -4.02 dBi (peak)	824-960MHz -3.31 dBi (peak)	824-960MHz 3 max	824-960MHz 0.71 dBi (peak)
				1425-1515MHz -4.23 dBi (peak)	1425-1515MHz -3.38 dBi (peak)	1425-1515MHz 3 max	1425-1515MHz 0.85 dBi (peak)
				1557-1610 MHz -3.83 dBi (peak)	1557-1610 MHz -2.96 dBi (peak)	1557-1610 MHz 3 max	1557-1610 MHz 0.87 dBi (peak)
				1805-2200MHz 0.51 dBi (peak)	1805-2200MHz 1.50 dBi (peak)	1805-2200MHz 3 max	1805-2200MHz 0.99 dBi (peak)
				2300-2690MHz 2.15 dBi (peak)	2300-2690MHz 3.24 dBi (peak)	2300-2690MHz 3 max	2300-2690MHz 1.09 dBi (peak)
				3400-3800MHz 0.56 dBi (peak)	3400-3800MHz 1.85 dBi (peak)	3400-3800MHz 3 max	3400-3800MHz 1.29 dBi (peak)
				4200-4700MHz 2.23 dBi(peak)	4200-4700MHz 3.72 dBi(peak)	4200-4700MHz 3 max	4200-4700MHz 1.49 dBi (peak)
5150-5925MHz 1.89 dBi (peak)	5150-5925MHz 3.54 dBi (peak)	5150-5925MHz 3 max	5150-5925MHz 1.65 dBi (peak)				

1A Antenna Part Number	1B Manufacture	1C Antenna Type	1D Cable Assembly Part Number and Information	1E *Peak Gain W/ Cable loss (dBi)	1F Peak Gain w/o Cable Loss (dBi)	1G VSWR	1H Cable Loss (dBi)
<b>Tx2/Rx3</b> Antenna WNC P/N: 81ELA715.G77 Compal P/N DC33002RJ5L	<b>WNC</b>	PIFA	Cable length: 96mm diameter: 0.81mm 50 ohm Coaxial Connector P/N: <b>I-PEX MHF4</b>	1452-1496MHz <b>-2.39</b> dBi (peak)	1452-1496MHz <b>-2.14</b> dBi (peak)	1452-1496MHz <b>3</b> dBi (peak)	1452-1496MHz <b>0.25</b> dBi (peak)
				1710-2200MHz <b>-0.79</b> dBi (peak)	1710-2200MHz <b>-0.50</b> dBi (peak)	1710-2200MHz <b>3</b> dBi (peak)	1710-2200MHz <b>0.29</b> dBi (peak)
				2300-2690MHz <b>0.33</b> dBi (peak)	2300-2690MHz <b>0.67</b> dBi (peak)	2300-2690MHz <b>3</b> dBi (peak)	2300-2690MHz <b>0.34</b> dBi (peak)
				3400-3800MHz <b>0.43</b> dBi (peak)	3400-3800MHz <b>0.84</b> dBi (peak)	3400-3800MHz <b>3</b> dBi (peak)	3400-3800MHz <b>0.41</b> dBi (peak)
				4200-5000MHz <b>0.35</b> dBi (peak)	4200-5000MHz <b>0.83</b> dBi (peak)	4200-5000MHz <b>3</b> dBi (peak)	4200-5000MHz <b>0.48</b> dBi (peak)
<b>Rx4</b> Antenna WNC P/N: 81ELA715.G82 Compal P/N: DC33002RJ7L	<b>WNC</b>	PIFA	Cable length: 192mm diameter: 1.13mm 50 ohm Coaxial Connector P/N: <b>I-PEX MHF4</b>	1805-2200MHz <b>0.52</b> dBi (peak)	1805-2200MHz <b>1.00</b> dBi (peak)	1805-2200MHz <b>3</b> dBi (peak)	1805-2200MHz <b>0.48</b> dBi (peak)
				2300-2690MHz <b>1.93</b> dBi (peak)	2300-2690MHz <b>2.46</b> dBi (peak)	2300-2690MHz <b>3</b> dBi (peak)	2300-2690MHz <b>0.53</b> dBi (peak)
				3400-3800MHz <b>3.35</b> dBi (peak)	3400-3800MHz <b>3.99</b> dBi (peak)	3400-3800MHz <b>3</b> dBi (peak)	3400-3800MHz <b>0.64</b> dBi (peak)
				4200-5000MHz <b>5.87</b> dBi (peak)	4200-5000MHz <b>6.62</b> dBi (peak)	4200-5000MHz <b>3</b> dBi (peak)	4200-5000MHz <b>0.75</b> dBi (peak)

- Antenna Peak Gain required being test in system basis.
- 1E frame contend absolutely peak antenna gain include H/V

**NB mode****Antenna Peak Gain Table:  
Low and middle band**

Frequency (MHz)	Tx1/Rx1 antenna		Rx2 antenna	
	Horizontal (dBi)	Vertical (dBi)	Horizontal (dBi)	Vertical (dBi)
617	-0.83	-3.37	-1.62	-3.03
635	-0.69	-3.54	-1.33	-1.99
652	-0.78	-4.11	-1.28	-1.11
663	-0.85	-4.24	-1.29	-0.55
681	-0.26	-3.41	-1.09	0.65
698	1.07	-2.21	-0.88	0.96
703	1.86	-1.72	-0.45	1.38
707.5	1.71	-1.75	-0.44	1.88
717	2.11	-1.75	-0.94	2.28
725.5	2.05	-1.61	-0.98	1.85
748	2.00	-2.66	-0.89	0.05
756	2.17	-2.40	-0.87	-0.49
768	2.10	-2.07	-0.97	-0.41
777	2.06	-1.97	-1.56	-0.44
782	2.16	-1.97	-1.78	-0.60
787	2.08	-2.22	-2.06	-0.83
814	2.16	-2.81	-3.42	-2.25
824	2.19	-3.16	-3.03	-2.05
832	2.33	-3.05	-2.96	-2.27
836.5	2.40	-2.95	-2.89	-2.37
849	2.15	-3.12	-2.40	-2.07
862	2.38	-3.47	-1.91	-1.57
880	2.49	-4.19	-2.29	-0.91
897.5	2.46	-0.49	-3.00	-1.64
915	2.25	-0.47	-3.36	-2.06
925	2.19	-0.52	-3.87	-2.30
960	2.01	-1.18	-5.28	-3.00
1427.9	0.17	-3.57	-4.05	-6.74
1447.9	0.52	-2.04	-3.27	-5.24
1455.4	0.41	-1.71	-3.11	-4.43
1462.9	0.56	-1.54	-2.84	-3.77
1496	0.70	-1.76	-1.34	-2.27
1510.9	0.93	-1.76	-1.14	-1.88
1557			-1.25	-2.11
1575			-1.84	-2.13
1610			-1.06	-2.16

**High band**

Frequency (MHz)	Tx1/Rx1 antenna		Rx2 antenna	
	Horizontal (dBi)	Vertical (dBi)	Horizontal (dBi)	Vertical (dBi)
1710	2.24	2.09		
1732.5	2.53	2.08		
1747.5	2.63	2.22		
1755	2.62	2.28		
1785	2.14	2.31		
1805	1.97	2.44	-1.04	-1.57
1850	1.90	1.94	-0.07	-1.57
1880	2.51	2.22	1.12	-1.57
1910	2.54	2.39	2.05	-1.73
1920	2.72	2.43	2.19	-1.55
1950	2.48	2.58	2.72	-1.02
1980	1.44	2.21	2.77	-0.79
2110	1.42	1.53	3.39	-1.68
2200	0.91	2.25	2.88	-1.92
2300	2.22	1.80	3.10	-1.43
2305	0.07	0.79	3.06	-1.44
2315	0.94	0.70	2.96	-1.41
2350	0.79	0.24	2.46	-1.45
2400	2.06	0.84	1.87	-2.10
2500	2.03	2.21	1.63	-1.51
2570	1.37	1.44	0.25	-0.51
2595	0.98	1.33	-0.56	-0.80
2620	0.70	1.36	-1.15	-0.86
2690	1.95	0.43	-1.58	-2.11
3400	-1.70	-2.33	1.25	-0.78
3500	0.90	-0.75	1.36	-3.15
3600	-0.24	-2.90	-0.43	-3.79
3700	0.19	-3.03	0.18	-2.54
3800	-0.19	-2.60	-2.30	-3.67
4200	1.28	-1.85	2.63	-1.33
4400	1.70	-0.50	2.86	-1.12
4700	-1.81	-1.16	3.33	-0.34
5150	1.26	-0.92	1.04	-1.70
5537.5	0.00	-0.62	-0.97	-1.92
5925	-0.10	-0.47	-1.82	-2.41



Frequency (MHz)	Tx2/Rx3 antenna		Rx4 antenna	
	Horizontal (dBi)	Vertical (dBi)	Horizontal (dBi)	Vertical (dBi)
1452	0.16	-2.32		
1474	-0.75	-1.22		
1496	-1.38	-0.48		
1710	0.55	0.64		
1732.5	0.92	0.92		
1747.5	0.71	0.44		
1755	0.54	0.26		
1785	-0.08	-0.16		
1805	-0.08	0.10	1.22	-0.40
1850	1.49	0.65	1.01	-1.41
1880	2.14	0.96	0.89	-1.21
1910	2.11	0.78	0.74	-1.14
1920	2.20	0.79	0.66	-1.18
1950	2.01	1.10	0.70	-0.98
1980	2.09	0.91	0.52	-1.57
2110	2.19	-1.18	0.39	-1.00
2200	0.71	-0.95	-0.27	-0.82
2300	0.72	1.39	0.64	-0.51
2305	0.76	0.36	0.58	-0.54
2315	0.83	0.34	0.54	-0.42
2350	0.02	0.29	-0.15	-0.50
2400	1.54	-1.84	0.02	-0.83
2500	1.70	0.21	1.09	-0.87
2570	0.07	-0.44	0.52	0.61
2595	0.12	0.20	-0.16	0.71
2620	0.90	0.39	-0.33	0.64
2690	0.88	-0.58	-0.50	-0.42
3400	0.49	-2.29	2.42	1.62
3500	0.18	-1.92	2.62	1.03
3600	0.73	-0.63	1.74	0.65
3700	0.61	-2.47	2.07	-0.70
3800	0.15	-1.74	1.86	-0.10
4200	-1.28	-2.12	-0.01	0.04
4400	2.01	0.53	1.41	0.39
4700	1.98	1.20	0.59	0.23
5000	1.36	1.58	1.67	0.00

**TB mode****Antenna Peak Gain Table:  
Low and middle band**

Frequency (MHz)	Tx1/Rx1 antenna		Rx2 antenna	
	Horizontal (dBi)	Vertical (dBi)	Horizontal (dBi)	Vertical (dBi)
617	-18.96	-17.71	-6.95	-4.54
635	-17.34	-16.41	-7.04	-3.84
652	-15.72	-15.09	-6.16	-4.07
663	-14.99	-14.55	-5.80	-4.20
681	-14.23	-13.48	-5.64	-3.52
698	-13.01	-12.21	-4.48	-2.51
703	-6.62	-6.18	-3.68	-2.02
707.5	-6.44	-6.24	-3.56	-2.05
717	-6.17	-6.24	-3.72	-3.70
725.5	-6.21	-6.77	-3.69	-3.87
748	-7.50	-6.87	-4.20	-3.92
756	-7.96	-6.60	-4.01	-4.16
768	-8.34	-6.47	-3.74	-4.21
777	-8.67	-6.73	-3.86	-3.79
782	-9.01	-6.96	-3.93	-3.65
787	-9.39	-6.96	-3.66	-3.71
814	-8.49	-6.22	-4.57	-3.65
824	-8.07	-5.67	-4.48	-4.37
832	-7.01	-5.31	-4.13	-4.47
836.5	-6.42	-5.14	-4.21	-4.40
849	-4.78	-5.22	-4.82	-4.80
862	-4.25	-5.64	-4.74	-4.78
880	-5.26	-6.79	-4.80	-4.02
897.5	-5.31	-4.46	-5.43	-4.37
915	-5.28	-4.25	-4.20	-4.85
925	-5.54	-4.16	-4.69	-4.22
960	-4.92	-4.34	-5.18	-5.06
1427.9	-6.67	-9.71	-6.41	-5.52
1447.9	-6.15	-8.71	-7.35	-6.06
1455.4	-6.20	-8.64	-7.91	-5.83
1462.9	-6.20	-8.82	-7.99	-5.20
1496	-5.88	-7.34	-6.65	-4.32
1510.9	-5.39	-7.63	-6.31	-4.23
1557			-4.33	-3.83
1575			-4.02	-4.11
1610			-4.64	-4.22

**High band**

Frequency (MHz)	Tx1/Rx1 antenna		Rx2 antenna	
	Horizontal (dBi)	Vertical (dBi)	Horizontal (dBi)	Vertical (dBi)
1710	-1.86	-3.84		
1732.5	-1.35	-3.63		
1747.5	-1.33	-4.21		
1755	-0.98	-4.07		
1785	-0.80	-4.25		
1805	-1.41	-4.27	-2.08	0.51
1850	-3.43	-4.58	-1.33	-0.40
1880	-3.06	-4.37	-0.77	-2.74
1910	-2.52	-5.09	-0.74	-3.89
1920	-2.51	-5.80	-0.78	-3.98
1950	-2.06	-4.29	-0.99	-2.64
1980	-1.89	-4.35	-1.72	-0.90
2110	-1.37	-3.21	0.46	-0.59
2200	-2.84	-4.64	0.10	0.20
2300	-2.15	-3.18	0.77	-0.82
2305	-2.16	-3.17	0.69	-0.95
2315	-1.98	-3.15	0.50	-1.32
2350	-1.57	-3.45	0.75	-1.71
2400	-0.41	-1.52	0.53	-2.19
2500	-1.72	-2.58	1.76	-2.10
2570	-0.55	-1.09	2.15	-1.62
2595	0.25	-0.83	1.08	-3.00
2620	-0.30	-0.67	0.13	-3.99
2690	-0.87	-2.67	-1.33	-3.19
3400	-0.77	0.13	-0.30	0.56
3500	-0.12	0.37	0.45	0.49
3600	-1.58	-1.64	-0.47	-0.15
3700	-0.40	-3.08	-2.04	-1.01
3800	-1.05	-3.59	-1.83	-4.35
4200	0.32	-1.46	1.92	-0.76
4400	0.19	-2.14	2.18	1.52
4700	-1.18	-0.79	2.23	1.32
5150	0.10	0.99	1.09	1.89
5537.5	-2.34	0.37	-1.91	1.13
5925	0.15	1.31	-0.99	0.61

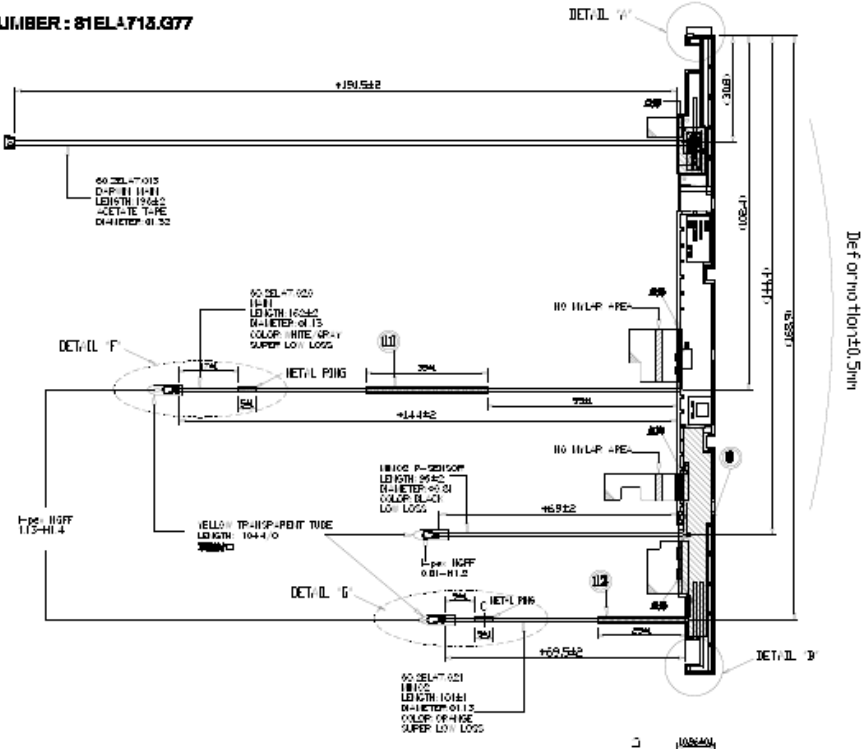
Frequency (MHz)	Tx2/Rx3 antenna		Rx4 antenna	
	Horizontal	Vertical	Horizontal	Vertical
	(dBi)	(dBi)	(dBi)	(dBi)
1452	-2.92	-6.04		
1474	-2.72	-6.05		
1496	-2.39	-5.10		
1710	-1.74	-2.28		
1732.5	-1.75	-2.32		
1747.5	-2.43	-3.15		
1755	-2.84	-3.52		
1785	-3.48	-3.89		
1805	-3.60	-3.35	0.17	-3.90
1850	-2.07	-1.55	-1.54	-4.55
1880	-1.94	-1.98	-1.13	-4.53
1910	-1.38	-1.73	-0.46	-4.48
1920	-1.73	-1.77	-0.36	-4.31
1950	-1.81	-0.79	0.30	-3.91
1980	-1.53	-2.27	0.52	-2.70
2110	-3.00	-2.50	-0.50	-2.34
2200	-2.26	-2.60	-0.05	-0.89
2300	-0.70	-3.23	-0.49	-3.61
2305	-0.63	-3.34	-0.40	-3.56
2315	-0.58	-3.29	-0.30	-3.49
2350	-2.18	-4.72	-0.68	-3.10
2400	-4.91	-4.17	-0.95	-1.87
2500	-3.62	-2.14	1.93	0.24
2570	-1.26	0.02	0.56	0.28
2595	-0.98	0.33	-0.24	0.21
2620	-1.17	0.23	-0.47	0.07
2690	-1.44	-1.30	0.00	-2.79
3400	0.43	-1.50	2.06	2.24
3500	-0.83	-1.22	1.05	1.47
3600	-0.50	-0.56	1.52	1.61
3700	-1.28	-0.70	3.13	0.62
3800	-1.67	-3.45	3.35	-0.18
4200	-0.69	-1.53	4.60	2.14
4400	-0.18	0.35	4.86	2.48
4700	-1.22	-1.04	3.61	2.93
5000	-1.11	-0.19	5.87	3.72

## Section 2. Dimensioned Photos or Drawings of Antennas

Include a dimensioned photo and dimensioned drawing of Main antenna here.

### Tx1/Rx1 & Tx2/Rx3 Antenna Dimensioned Drawing:

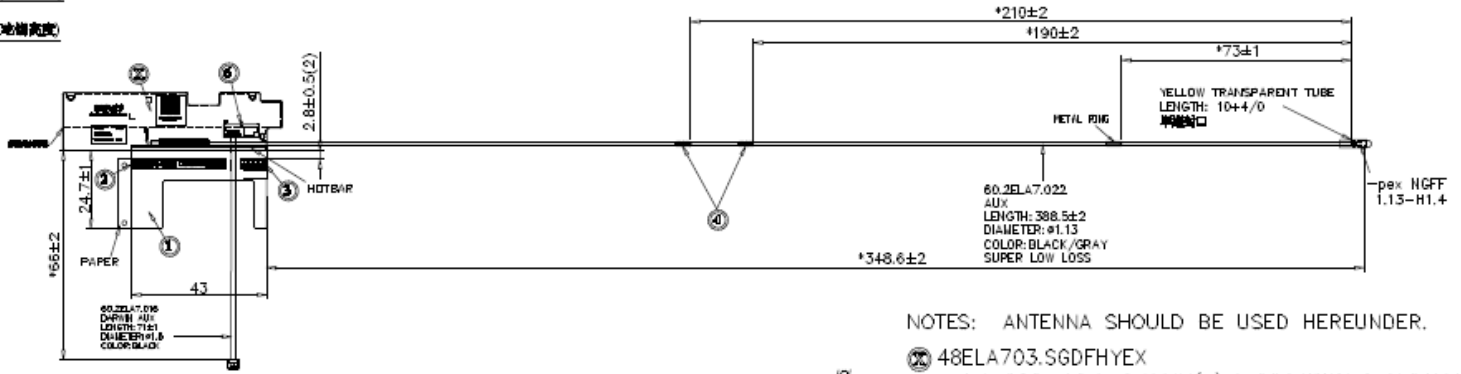
LUMBER : 81ELA713.077



Include a dimensioned photo and dimensioned drawing of Aux antenna here.

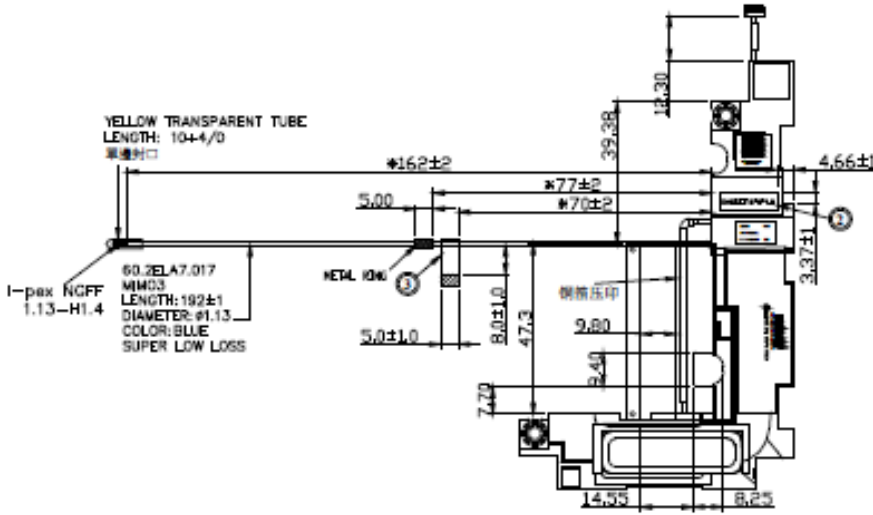
### Rx2 Antenna Dimensioned Drawing:

8 08圖高度



Include a dimensioned photo and dimensioned drawing of Aux antenna here.

**Rx4 Antenna Dimensioned Drawing:**

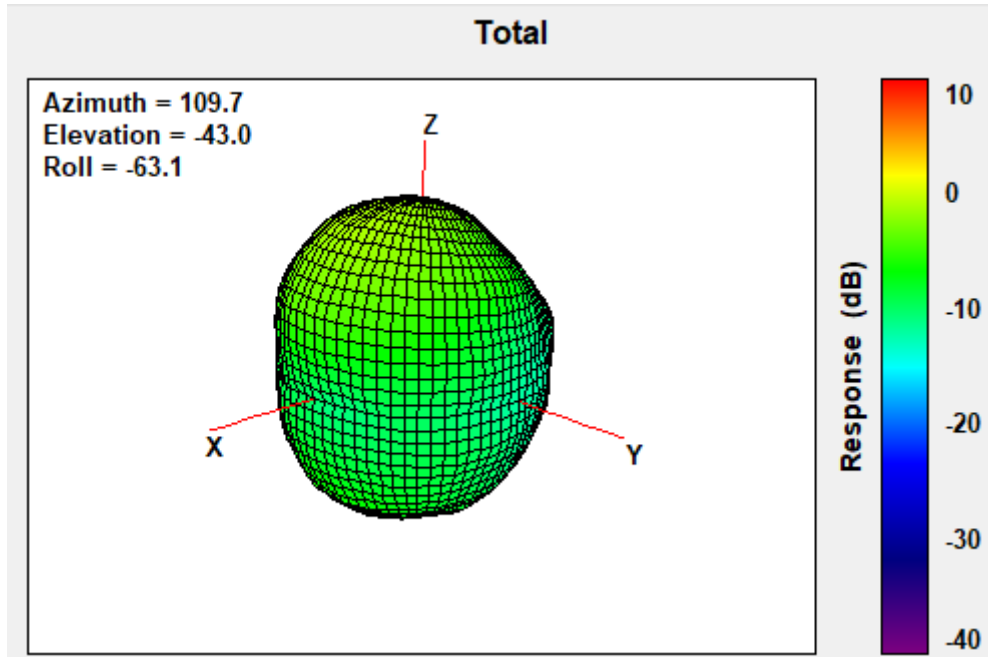


## Section 3. Radiation characteristics of antennae Loaded in Host Platform

NB mode

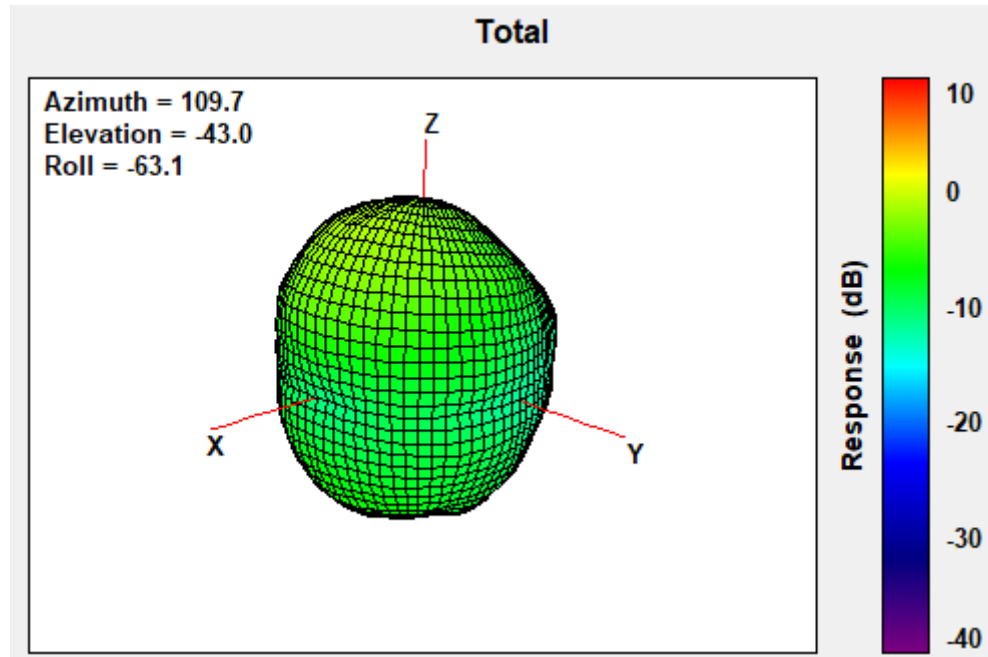
WWAN Main Antenna (Tx1/Rx1)

617MHz



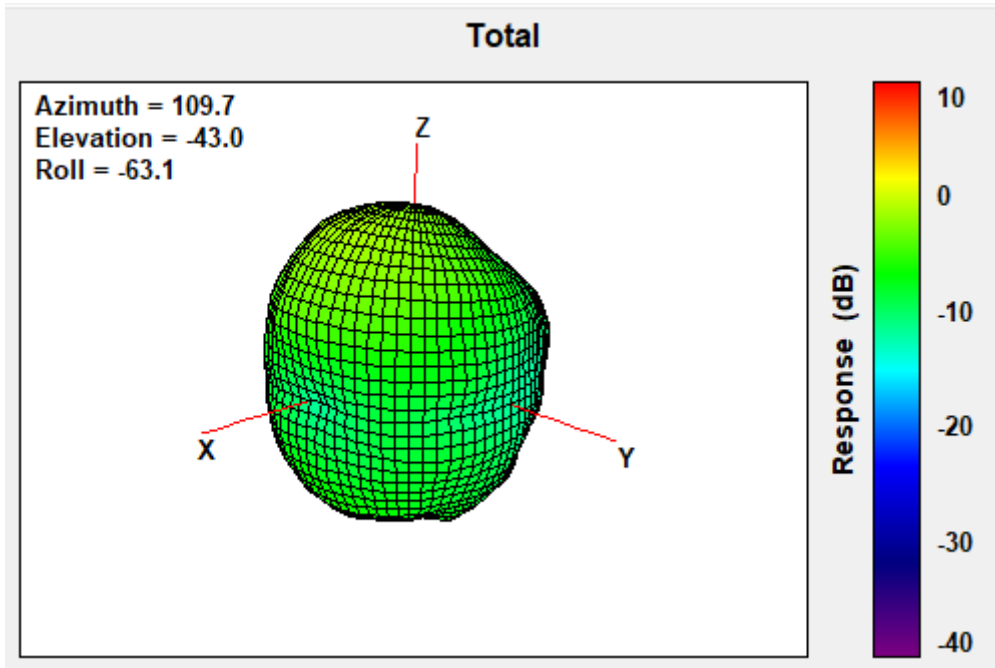
Center Frequency	<b>617 MHz</b>
Horizontal (dBi) peak	-0.83
Vertical (dBi) peak	-3.37

635MHz



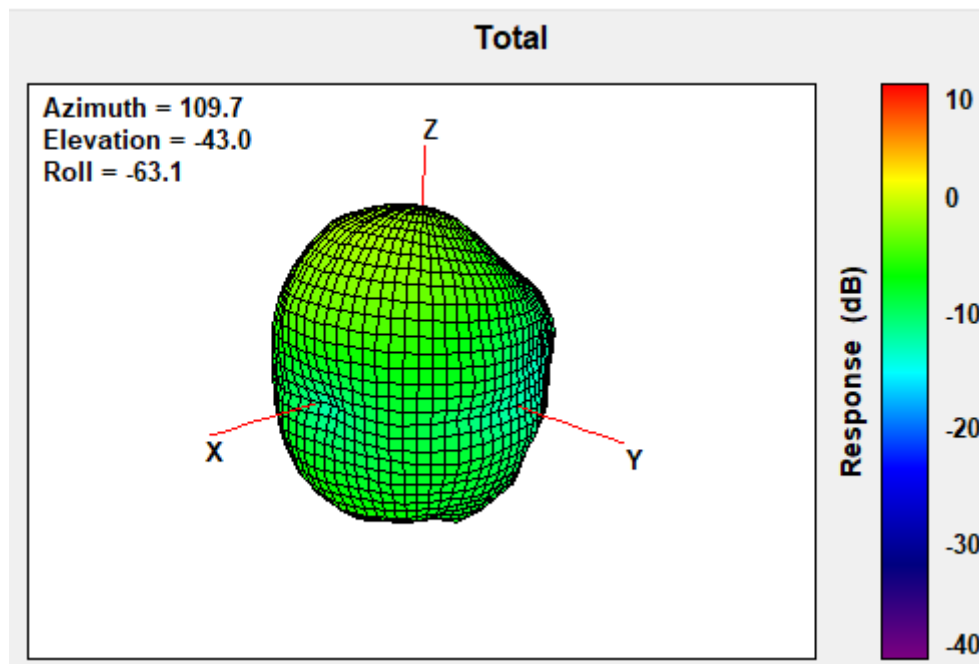
Center Frequency	<b>635 MHz</b>
Horizontal (dBi) peak	-0.69
Vertical (dBi) peak	-3.54

652MHz



Center Frequency	<b>652 MHz</b>
Horizontal (dBi) peak	-0.78
Vertical (dBi) peak	-4.11

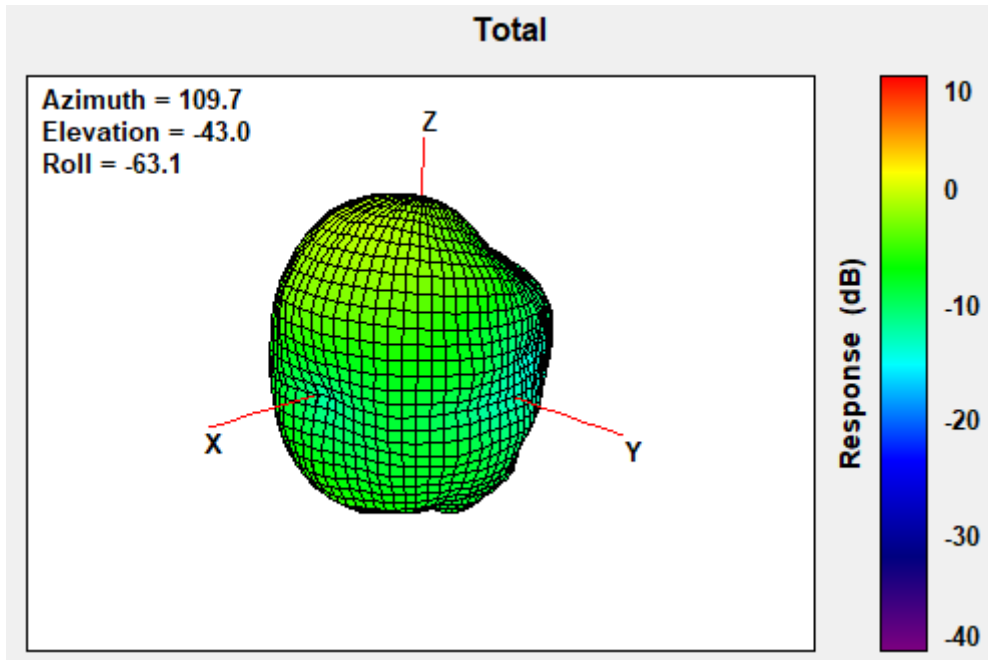
663MHz



Center Frequency	<b>663 MHz</b>
Horizontal (dBi) peak	-0.85
Vertical (dBi) peak	-4.24

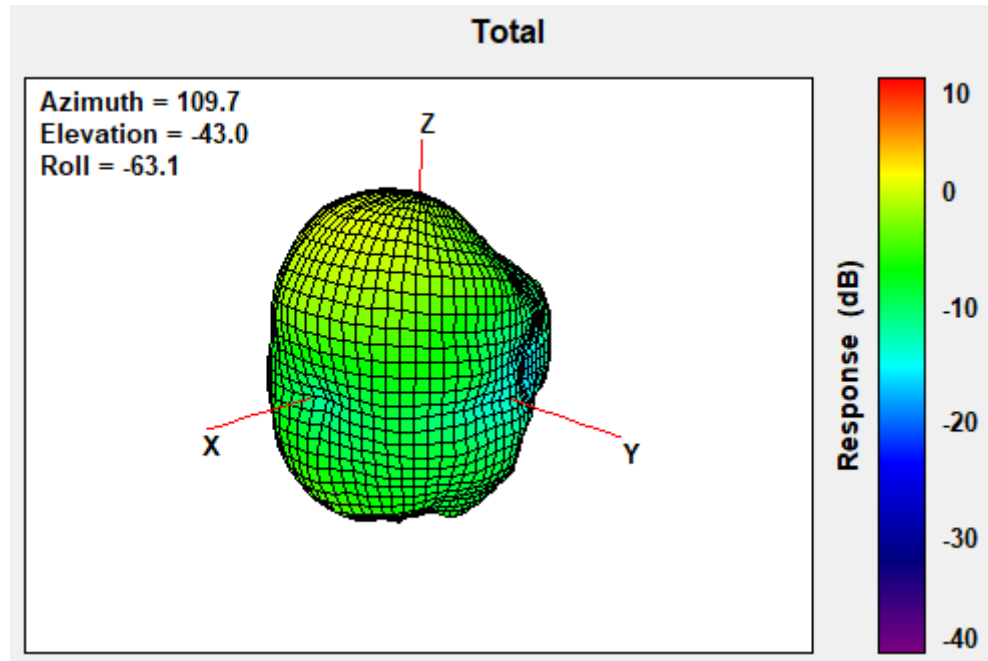


**681MHz**



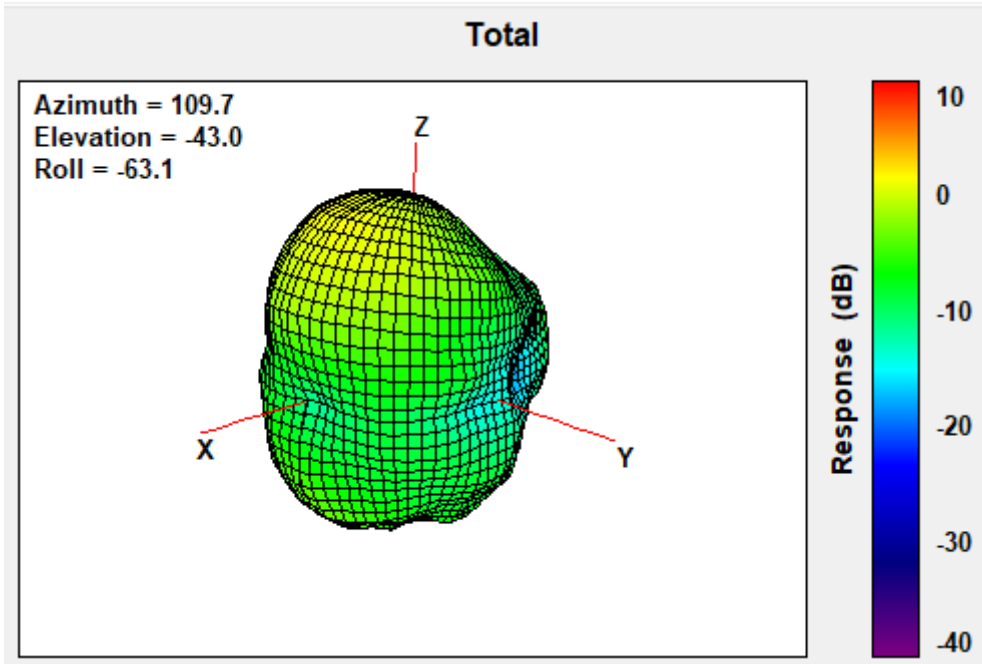
Center Frequency	<b>681 MHz</b>
Horizontal (dBi) peak	-0.26
Vertical (dBi) peak	-3.41

**698MHz**



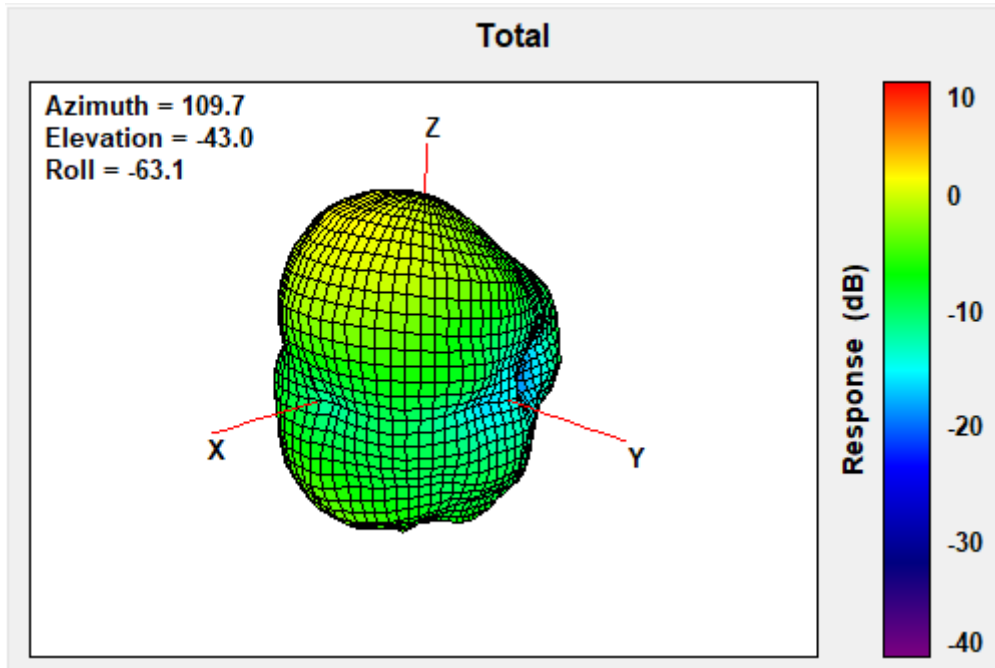
Center Frequency	<b>698 MHz</b>
Horizontal (dBi) peak	1.07
Vertical (dBi) peak	-2.21

**703MHz**



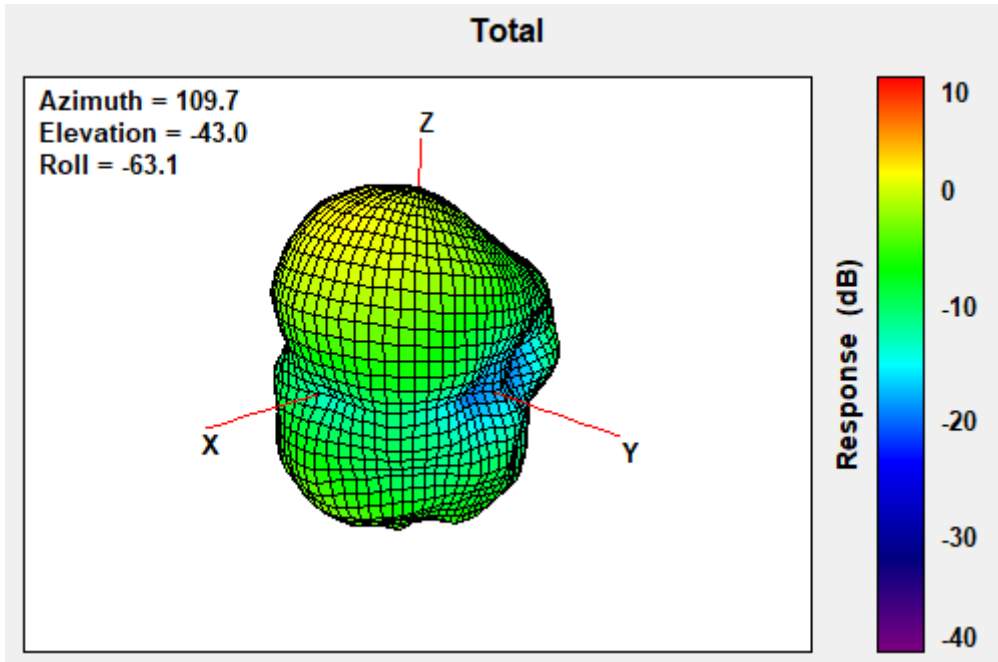
Center Frequency	<b>703MHz</b>
Horizontal (dBi) peak	1.86
Vertical (dBi) peak	-1.72

**707.5MHz**



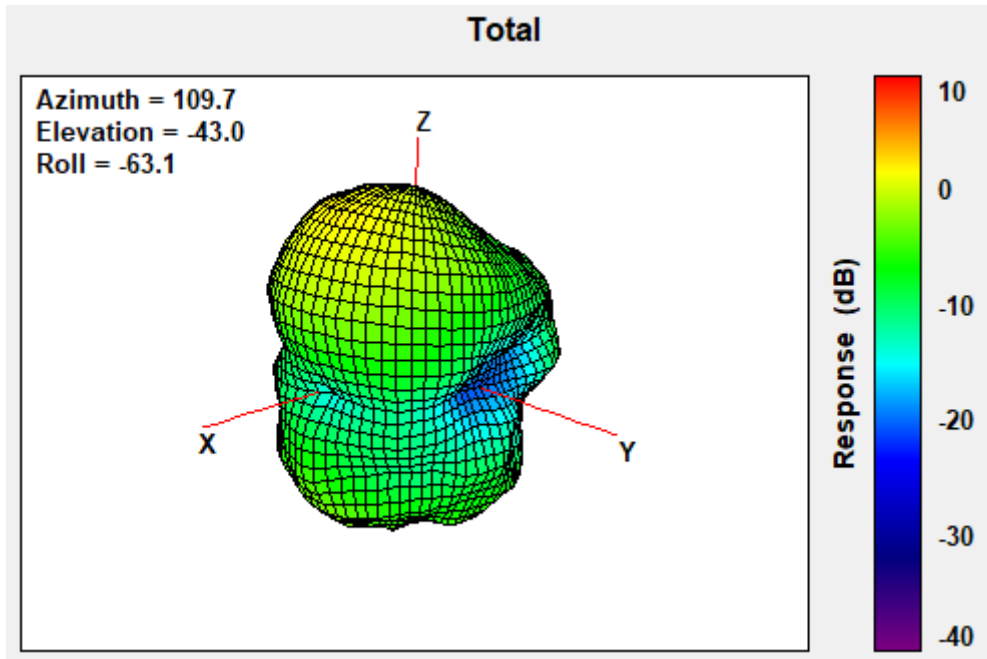
Center Frequency	<b>707.5MHz</b>
Horizontal (dBi) peak	1.71
Vertical (dBi) peak	-1.75

**717MHz**



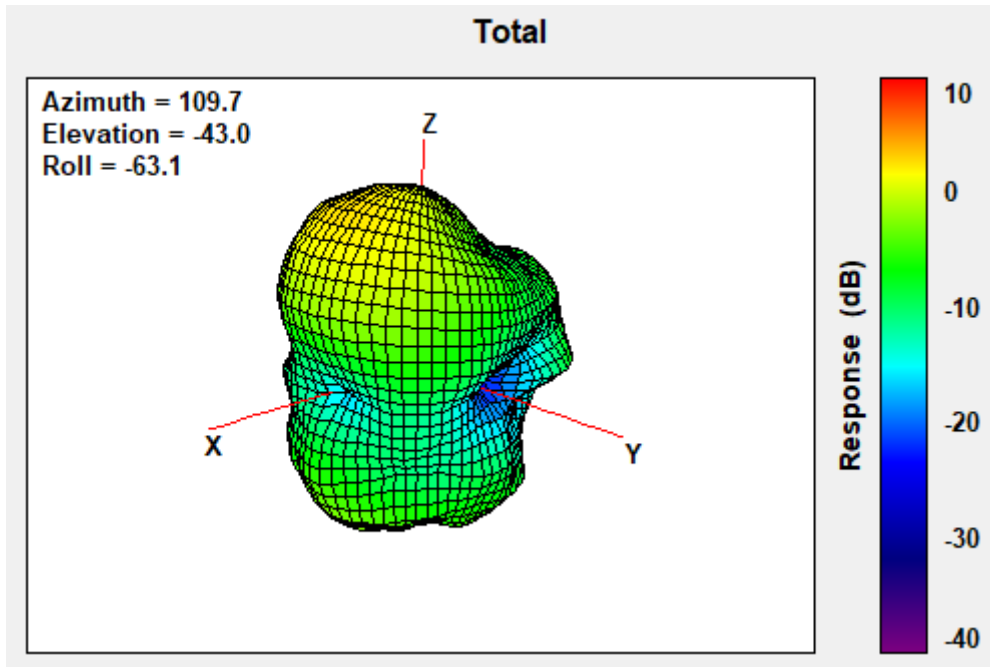
Center Frequency	<b>717MHz</b>
Horizontal (dBi) peak	2.11
Vertical (dBi) peak	-1.75

**725.5MHz**



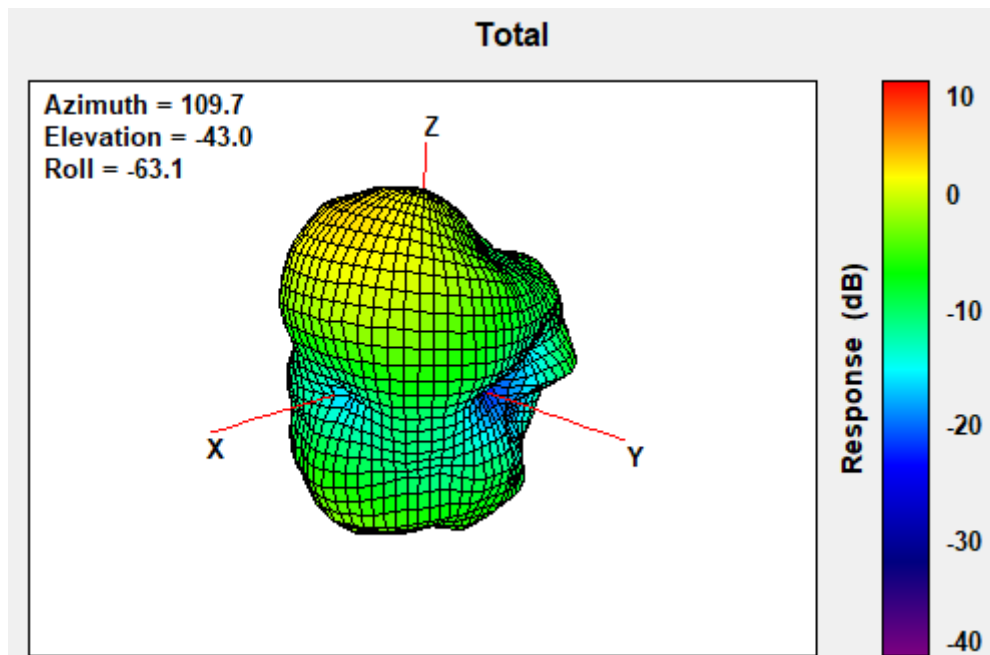
Center Frequency	<b>725.5MHz</b>
Horizontal (dBi) peak	2.05
Vertical (dBi) peak	-1.61

**748MHz**



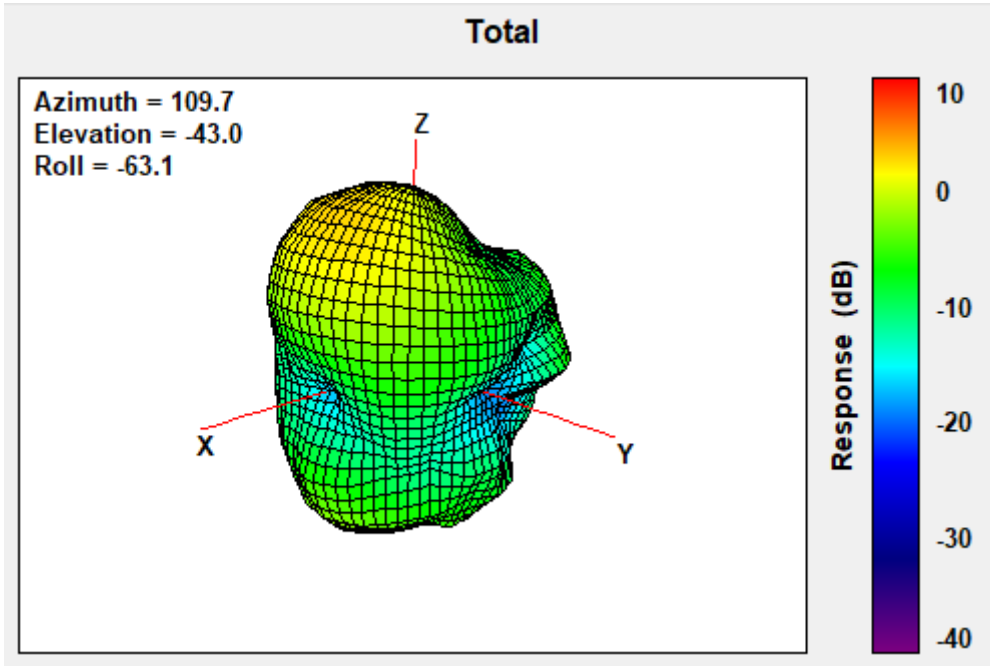
Center Frequency	<b>748MHz</b>
Horizontal (dBi) peak	2.00
Vertical (dBi) peak	-2.66

**756MHz**



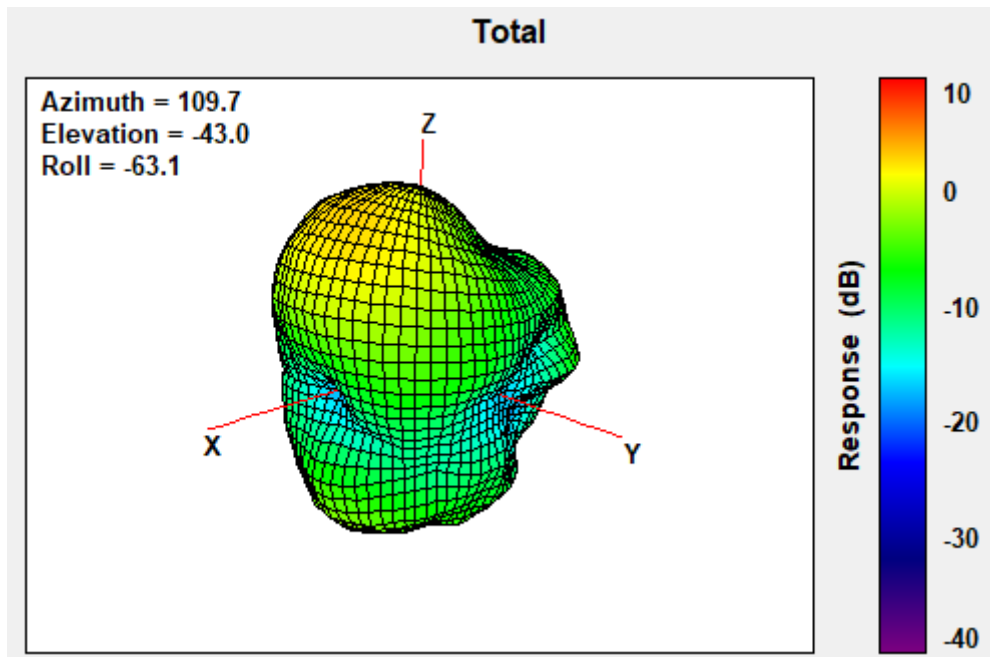
Center Frequency	<b>756MHz</b>
Horizontal (dBi) peak	2.17
Vertical (dBi) peak	-2.40

**768MHz**



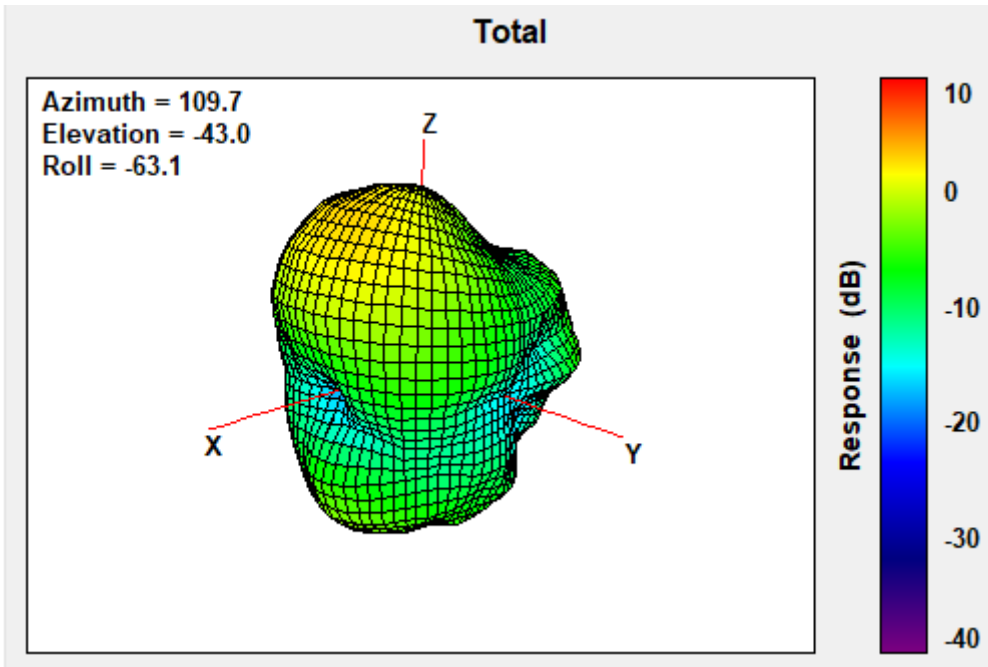
Center Frequency	<b>768MHz</b>
Horizontal (dBi) peak	2.10
Vertical (dBi) peak	-2.07

**777MHz**



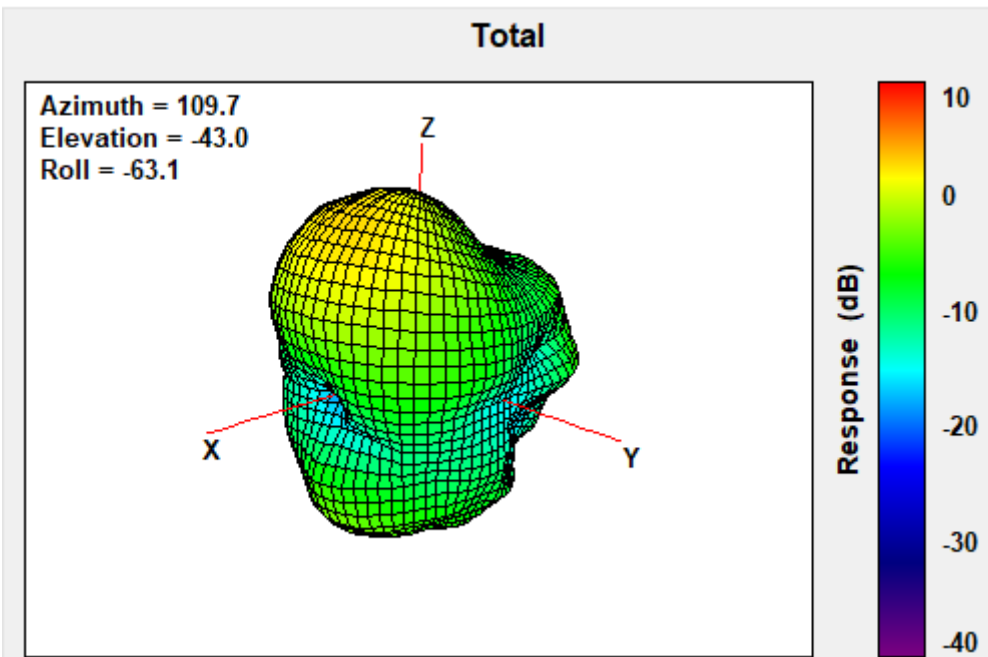
Center Frequency	<b>777MHz</b>
Horizontal (dBi) peak	2.06
Vertical (dBi) peak	-1.97

**782MHz**



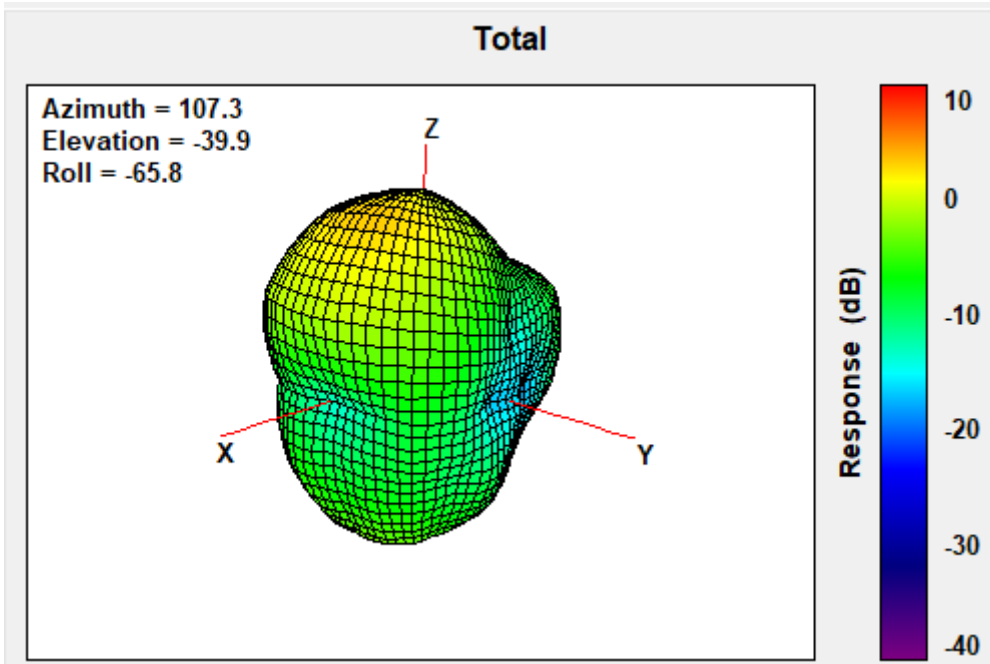
Center Frequency	<b>782MHz</b>
Horizontal (dBi) peak	2.16
Vertical (dBi) peak	-1.97

**787MHz**



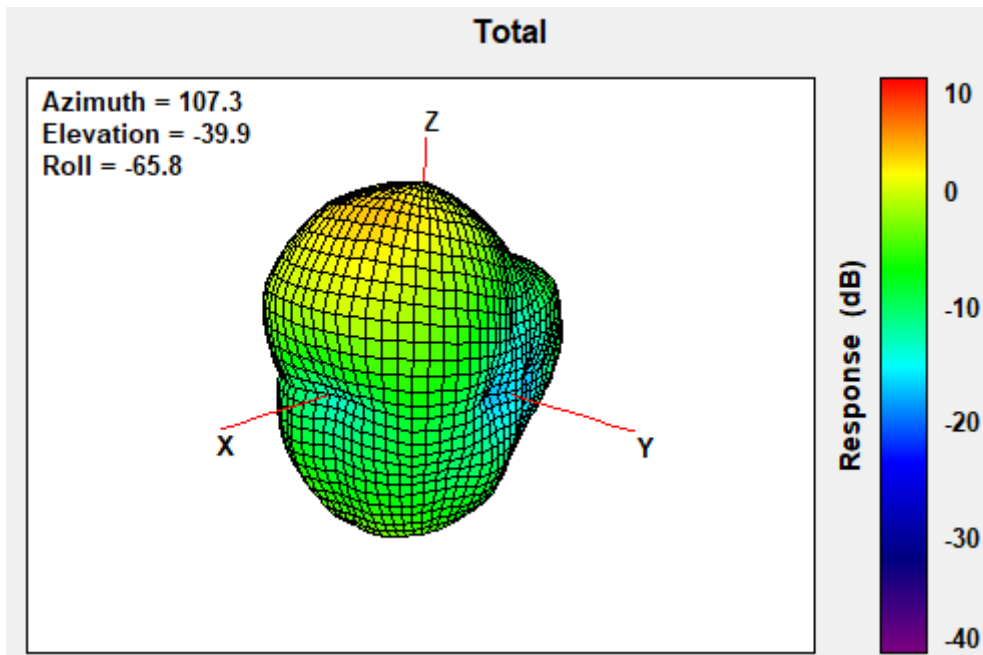
Center Frequency	<b>787MHz</b>
Horizontal (dBi) peak	2.08
Vertical (dBi) peak	-2.22

**814MHz**



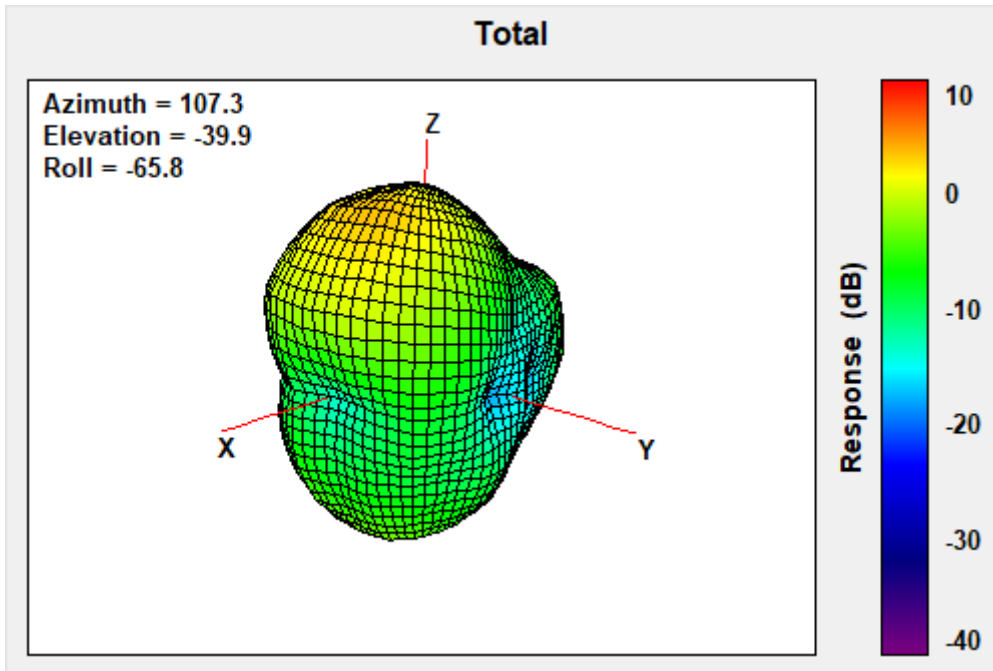
Center Frequency	<b>814MHz</b>
Horizontal (dBi) peak	2.16
Vertical (dBi) peak	-2.81

**824MHz**



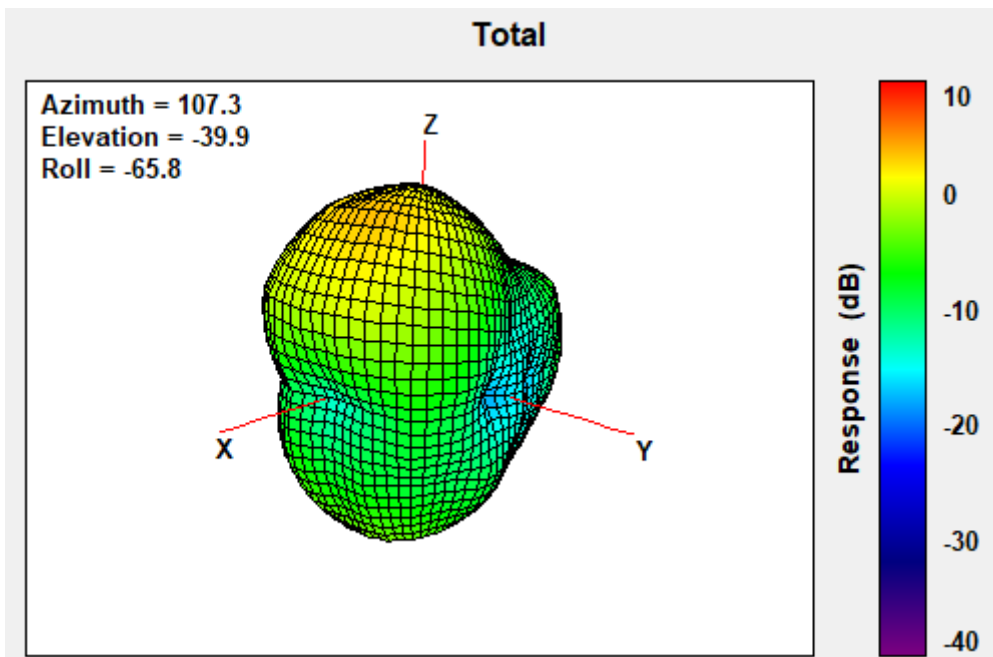
Center Frequency	<b>824MHz</b>
Horizontal (dBi) peak	2.19
Vertical (dBi) peak	-3.16

### 832MHz



Center Frequency	<b>832MHz</b>
Horizontal (dBi) peak	2.33
Vertical (dBi) peak	-3.05

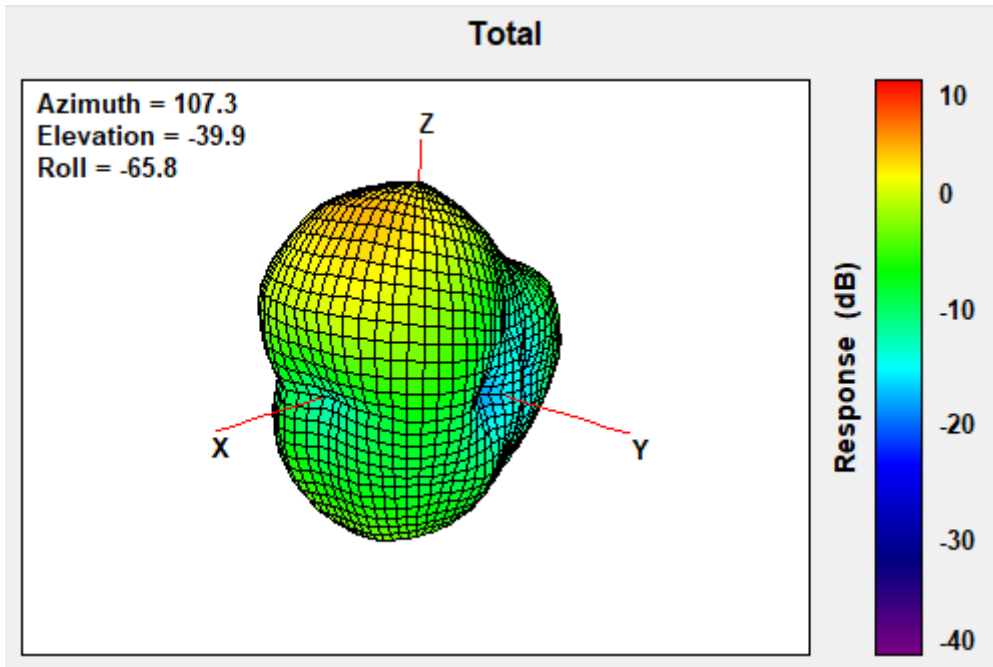
### 836.5MHz



Center Frequency	<b>836.5MHz</b>
Horizontal (dBi) peak	2.40
Vertical (dBi) peak	-2.95

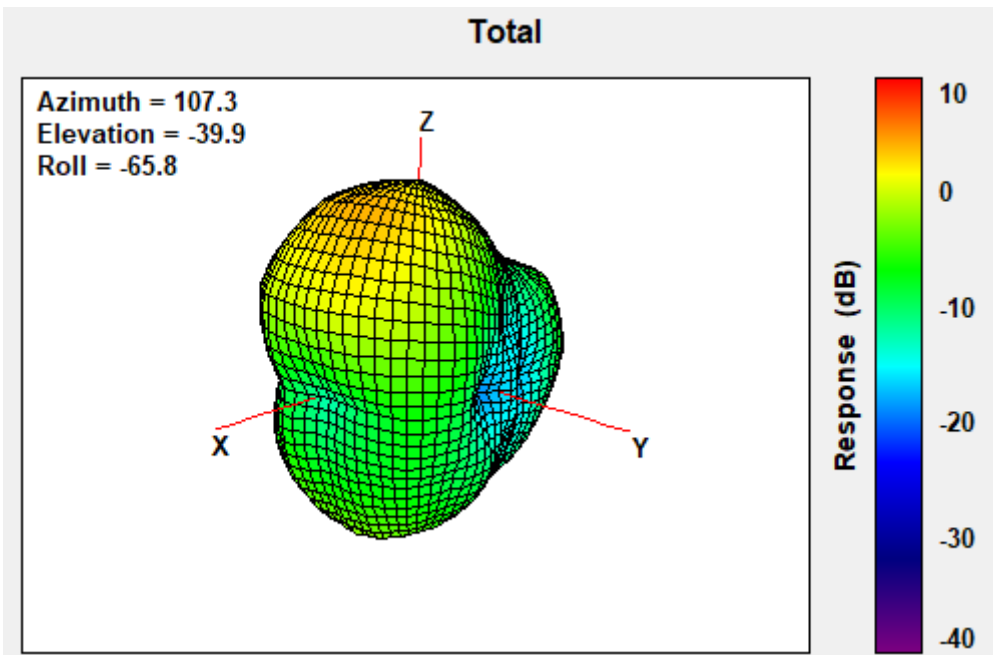


**849MHz**



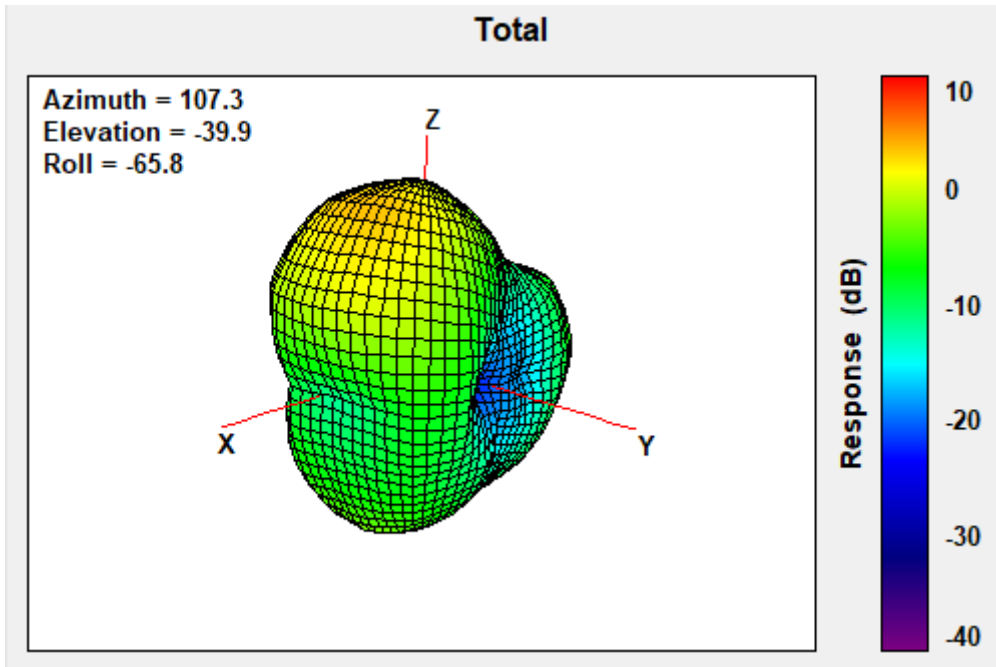
Center Frequency	<b>849MHz</b>
Horizontal (dBi) peak	2.15
Vertical (dBi) peak	-3.12

**862MHz**



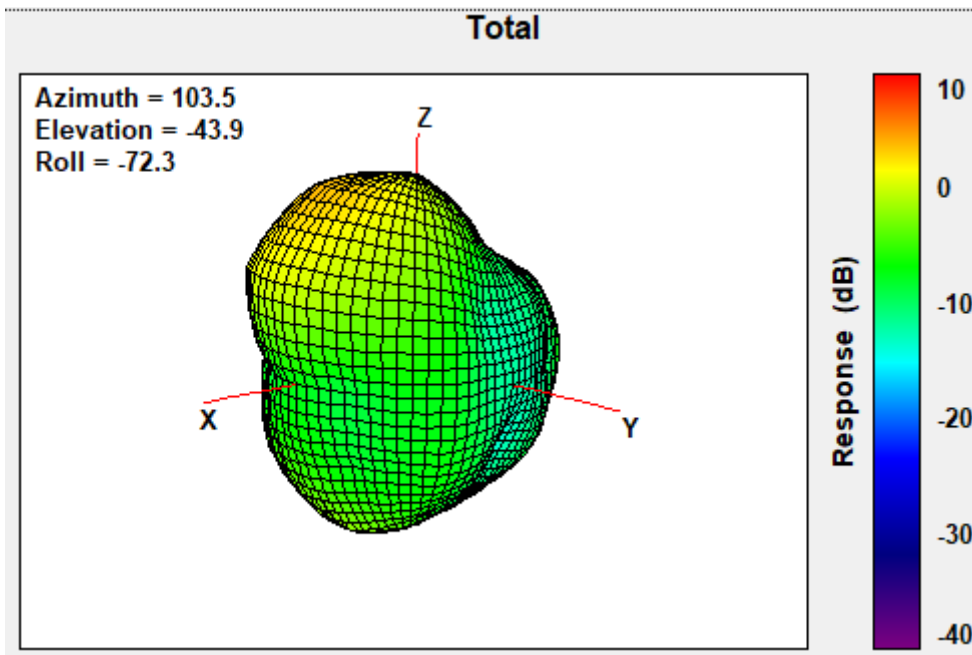
Center Frequency	<b>862MHz</b>
Horizontal (dBi) peak	2.38
Vertical (dBi) peak	-3.47

**880MHz**



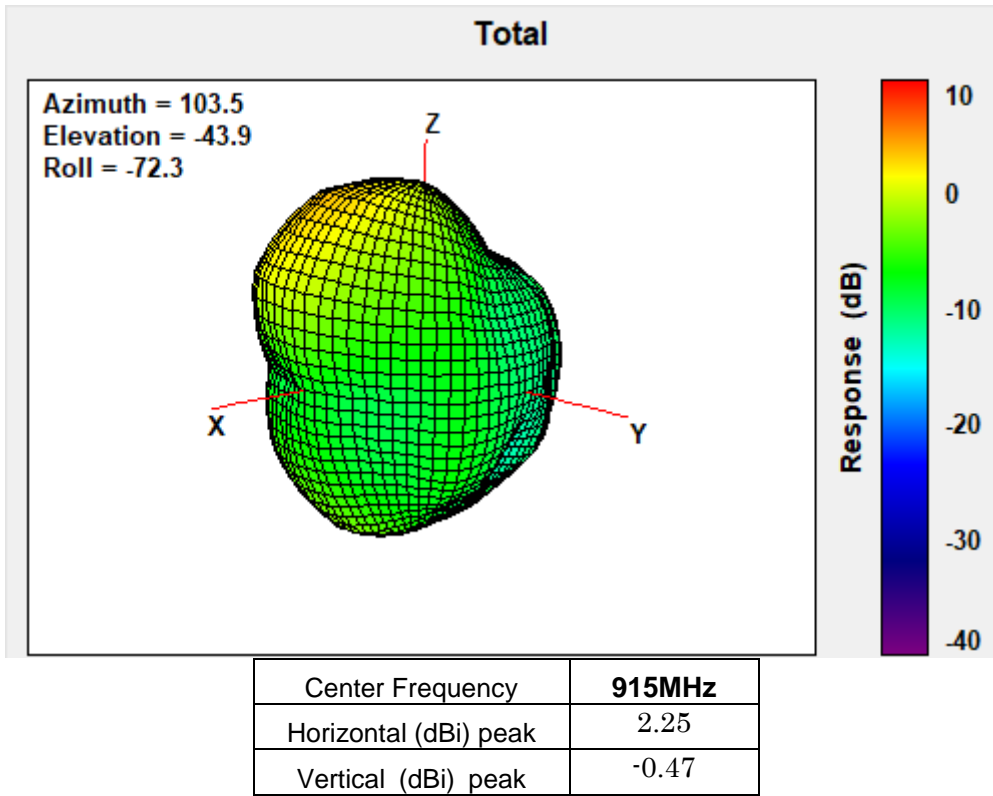
Center Frequency	<b>880MHz</b>
Horizontal (dBi) peak	2.49
Vertical (dBi) peak	-4.19

**897.5MHz**

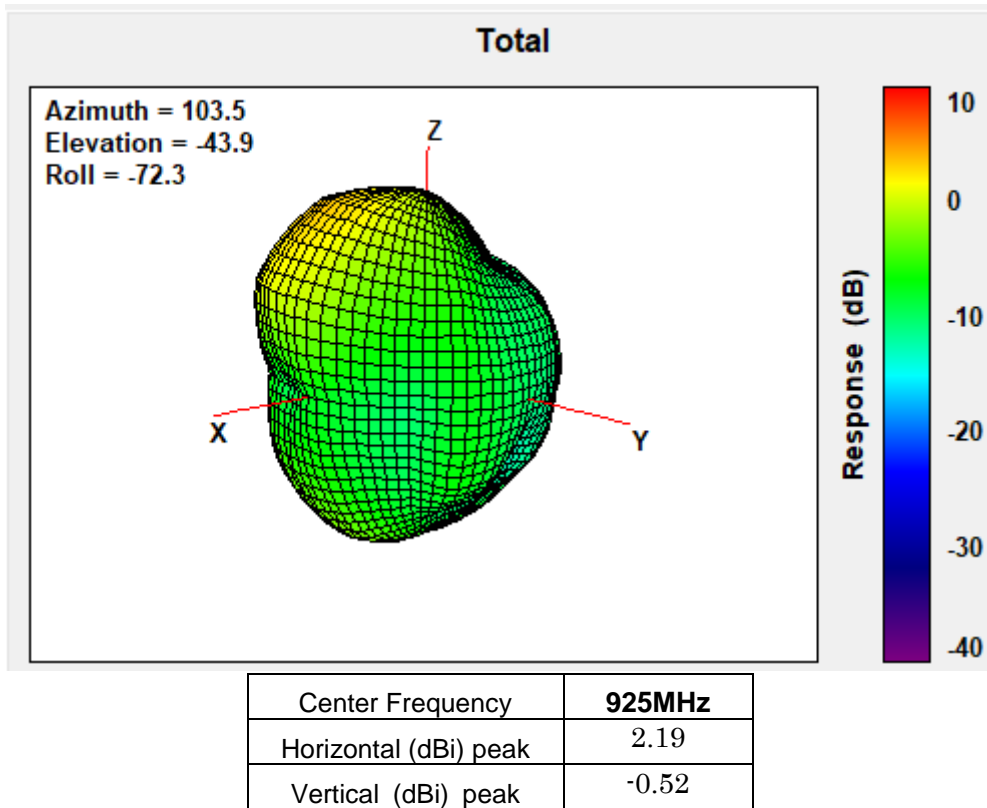


Center Frequency	<b>897.5MHz</b>
Horizontal (dBi) peak	2.46
Vertical (dBi) peak	-0.49

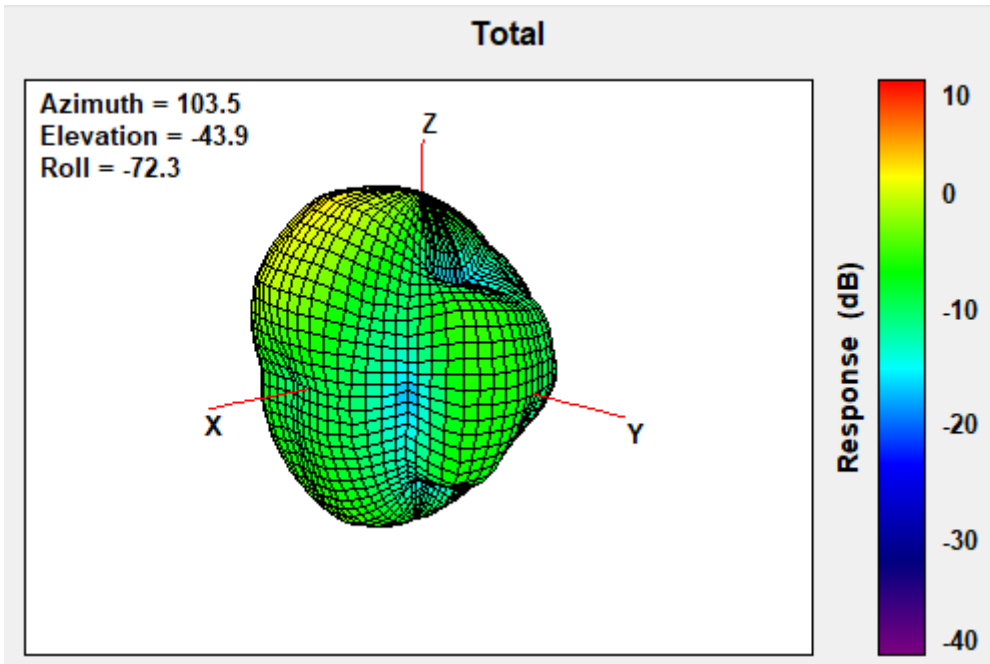
**915MHz**



**925MHz**

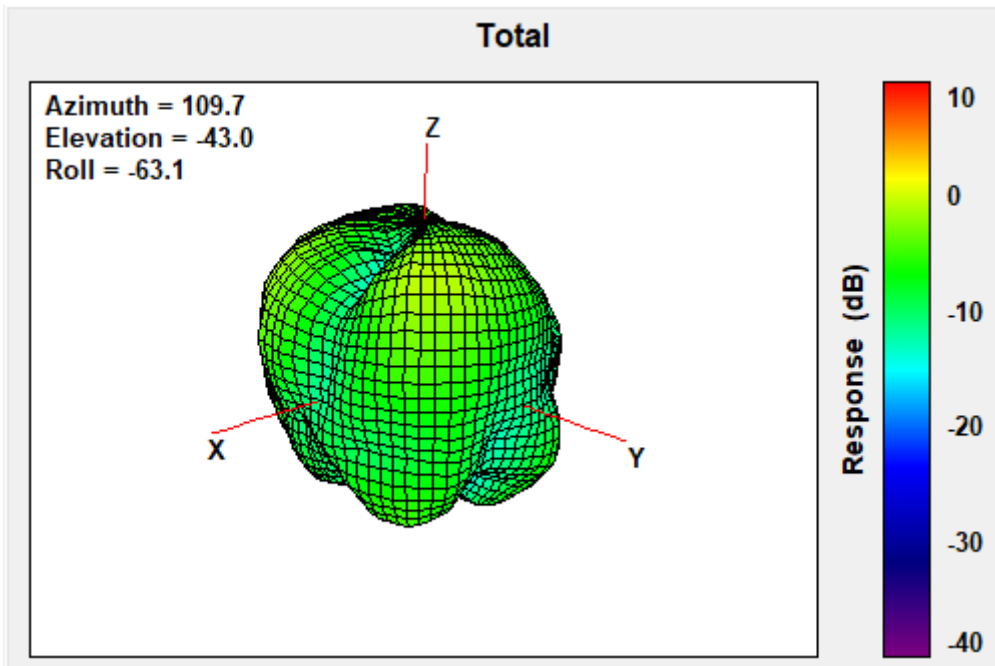


**960MHz**



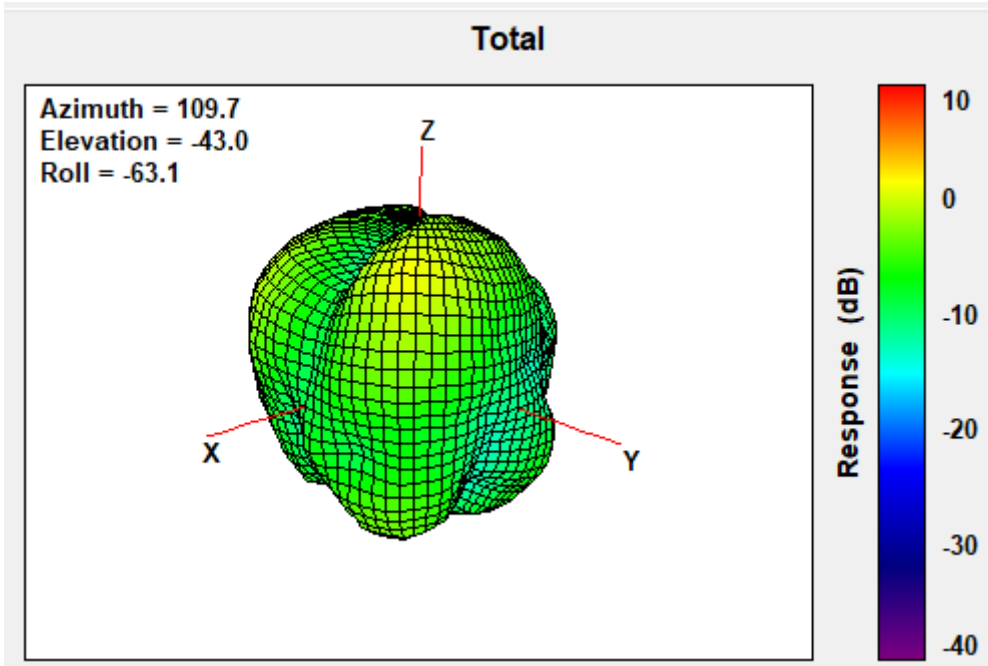
Center Frequency	<b>960MHz</b>
Horizontal (dBi) peak	2.01
Vertical (dBi) peak	-1.18

**1427.9MHz**



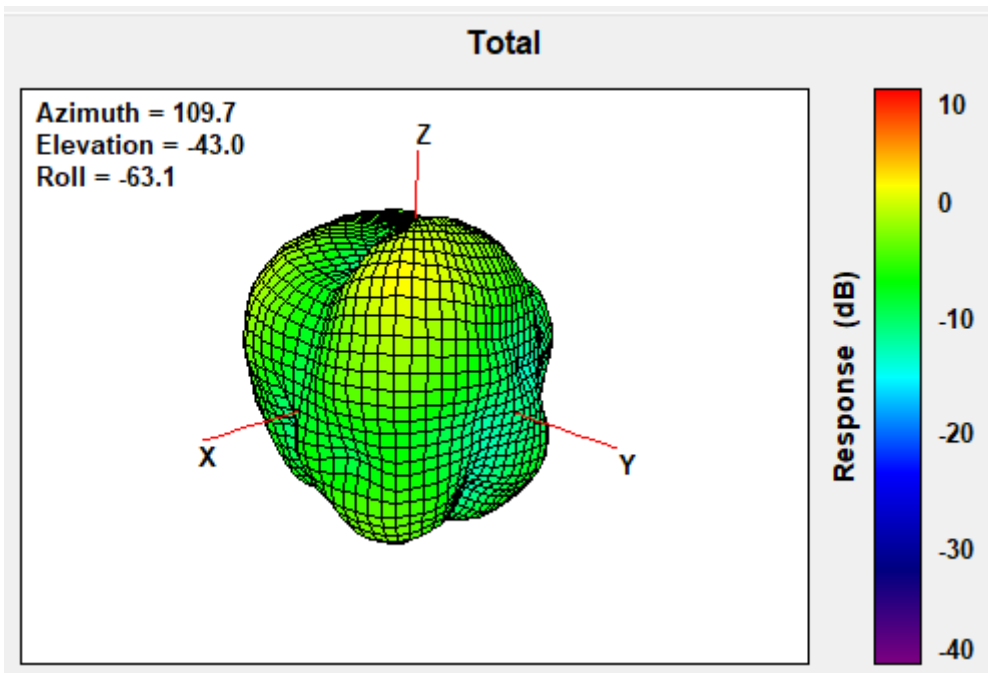
Center Frequency	<b>1427.9MHz</b>
Horizontal (dBi) peak	0.17
Vertical (dBi) peak	-3.57

1447.9MHz



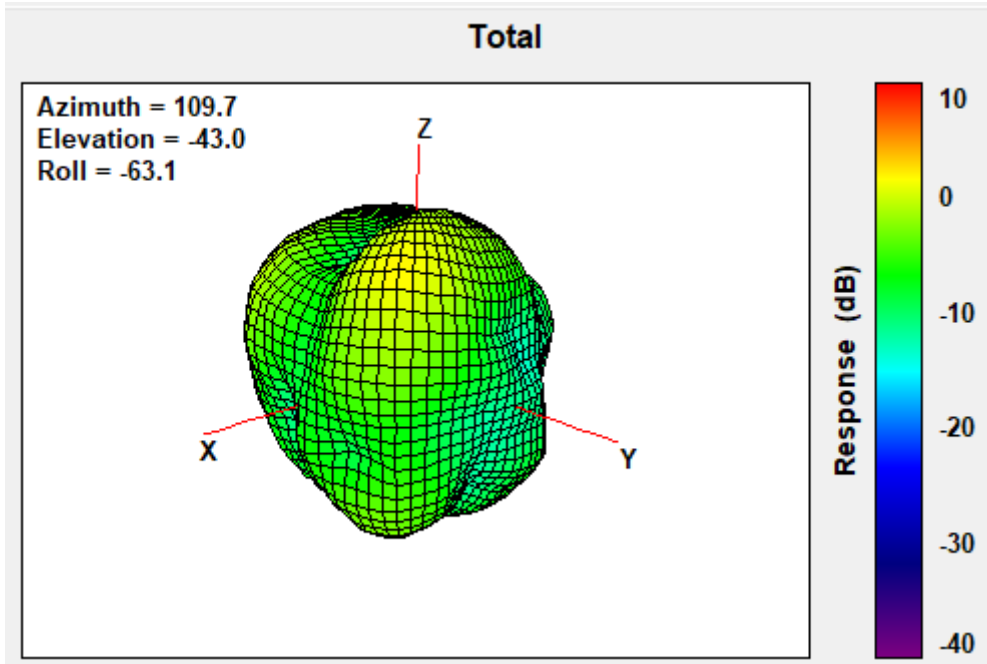
Center Frequency	<b>1447.9MHz</b>
Horizontal (dBi) peak	0.52
Vertical (dBi) peak	-2.04

1455.4MHz



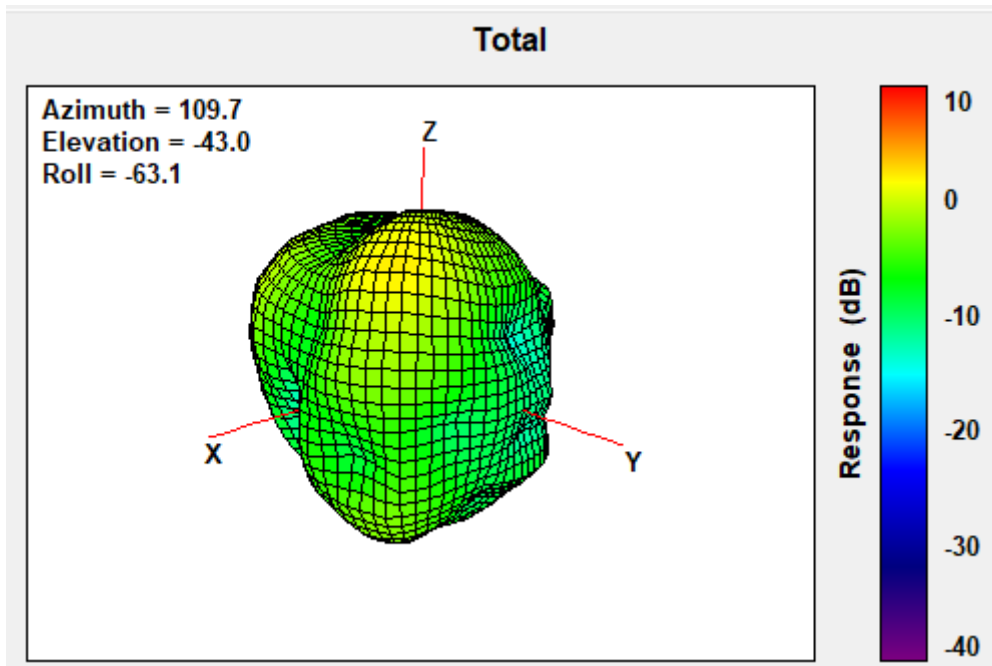
Center Frequency	<b>1455.4MHz</b>
Horizontal (dBi) peak	0.41
Vertical (dBi) peak	-1.71

1462.9MHz



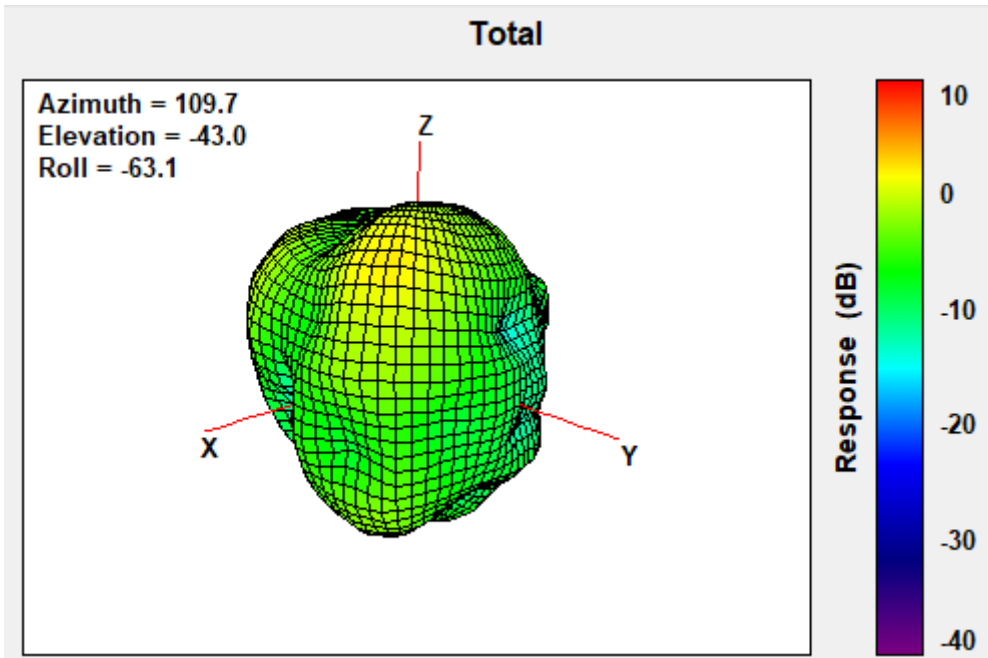
Center Frequency	<b>1462.9MHz</b>
Horizontal (dBi) peak	0.56
Vertical (dBi) peak	-1.54

1496MHz



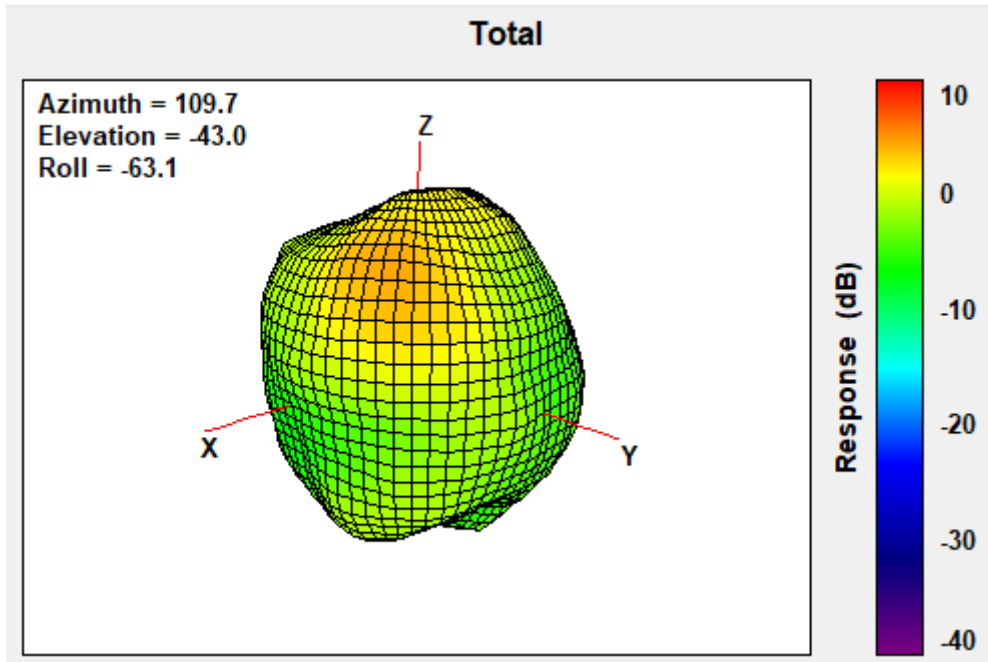
Center Frequency	<b>1496MHz</b>
Horizontal (dBi) peak	0.70
Vertical (dBi) peak	-1.76

**1510.9 MHz**



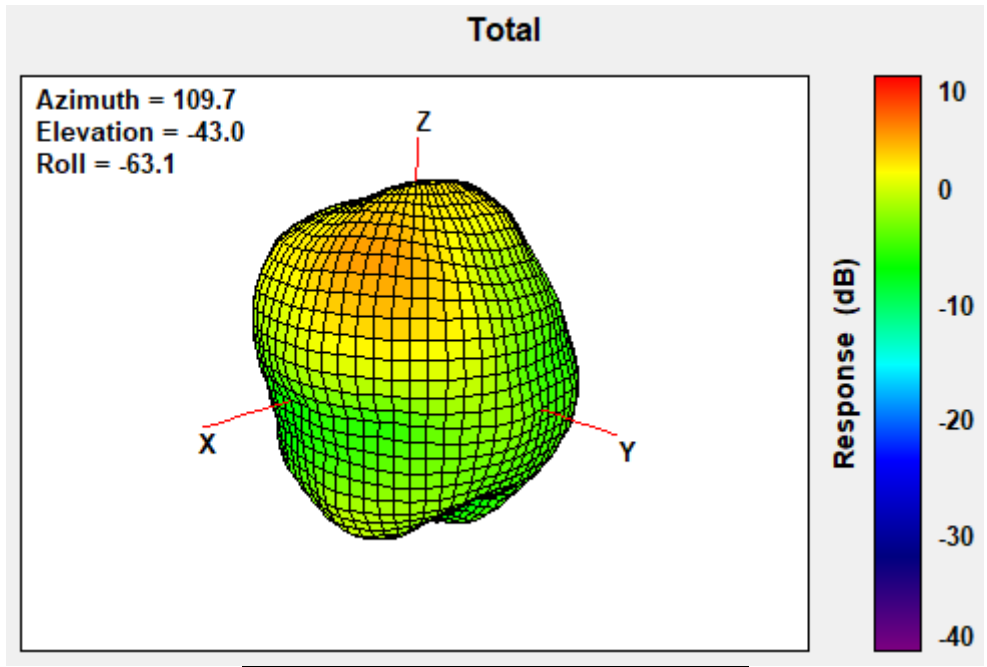
Center Frequency	<b>1510.9 MHz</b>
Horizontal (dBi) peak	0.93
Vertical (dBi) peak	-1.76

**1710 MHz**



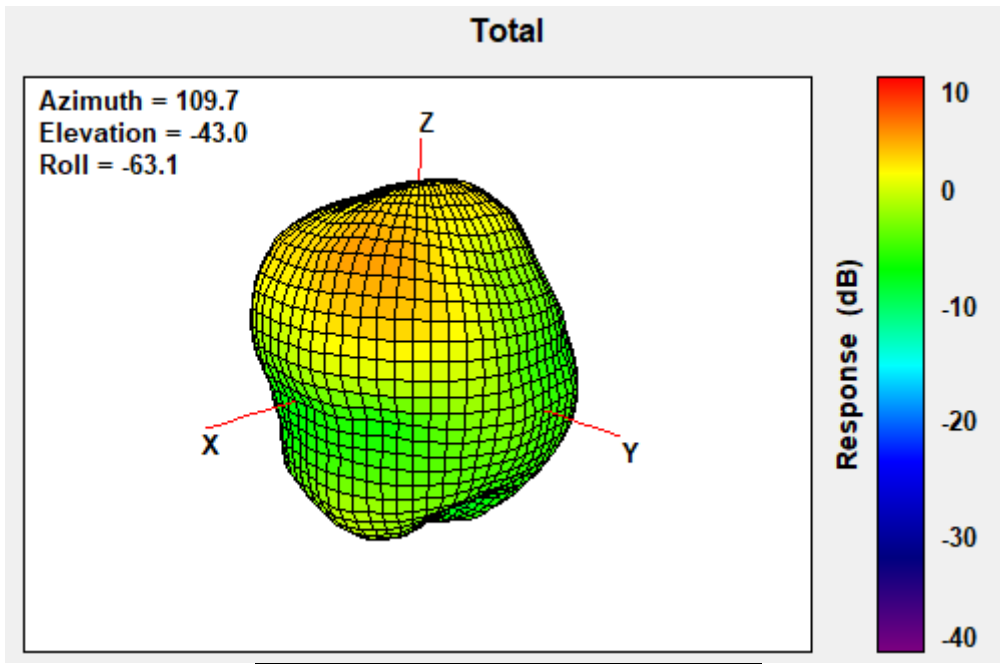
Center Frequency	<b>1710 MHz</b>
Horizontal (dBi) peak	2.24
Vertical (dBi) peak	2.09

1732.5 MHz



Center Frequency	<b>1732.5 MHz</b>
Horizontal (dBi) peak	2.53
Vertical (dBi) peak	2.08

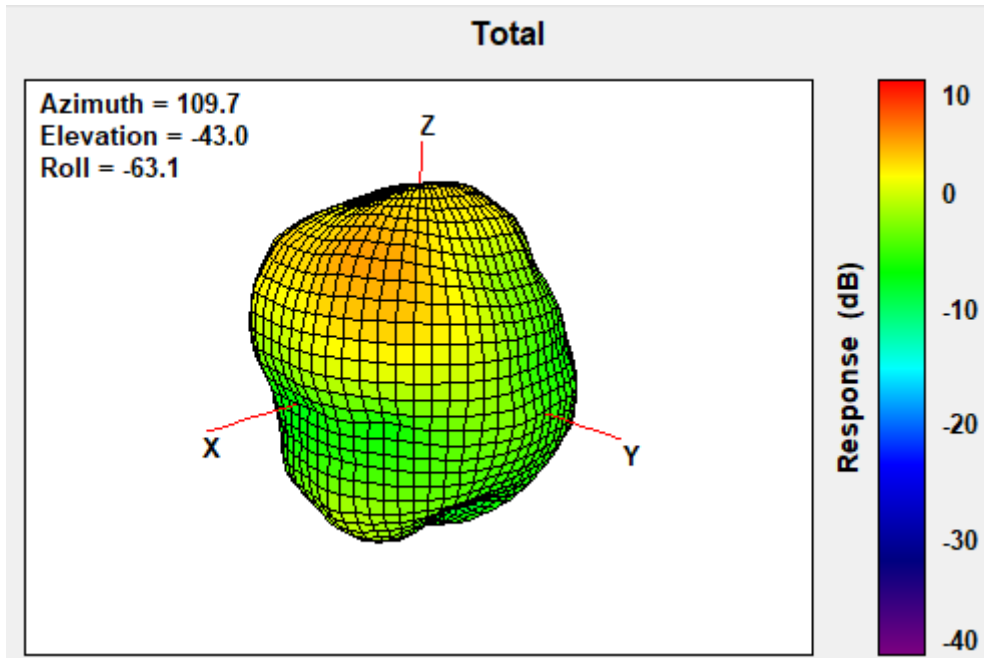
1747.5 MHz



Center Frequency	<b>1747.5 MHz</b>
Horizontal (dBi) peak	2.63
Vertical (dBi) peak	2.22

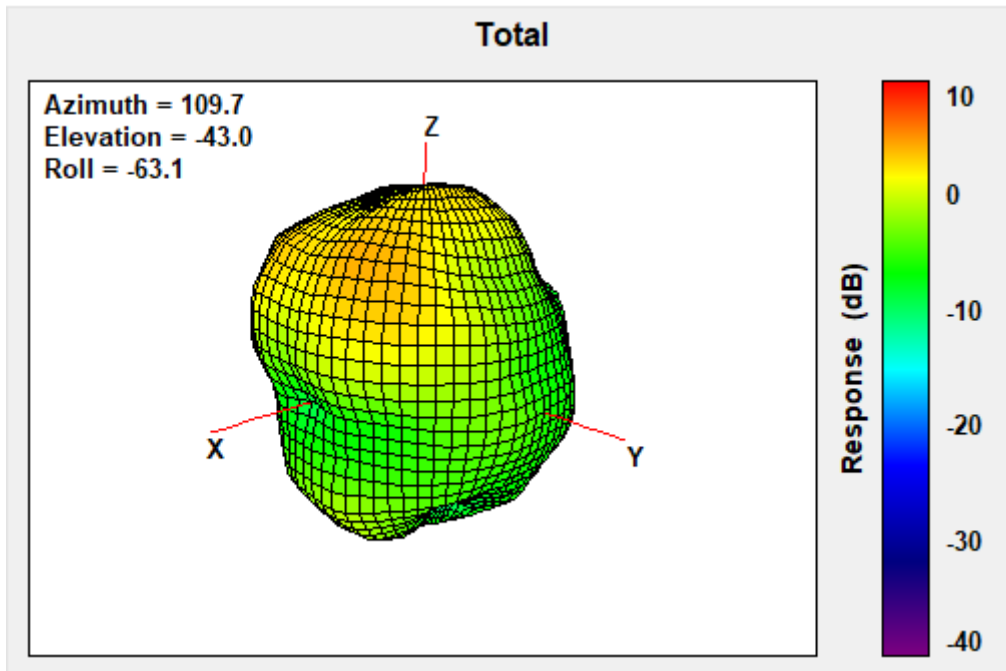


1755 MHz



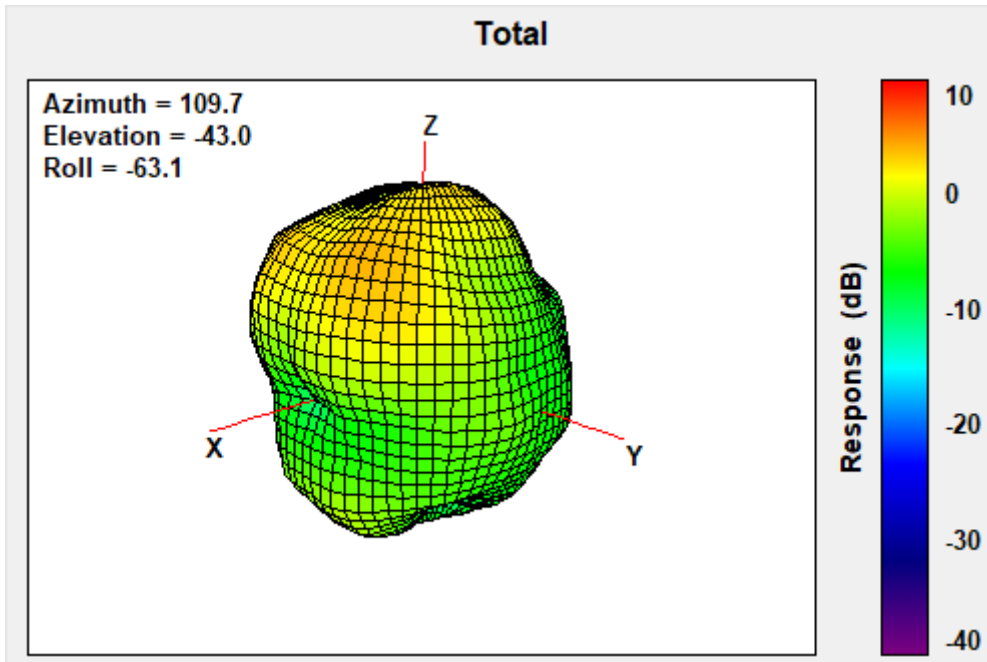
Center Frequency	<b>1755 MHz</b>
Horizontal (dBi) peak	2.62
Vertical (dBi) peak	2.28

1785 MHz



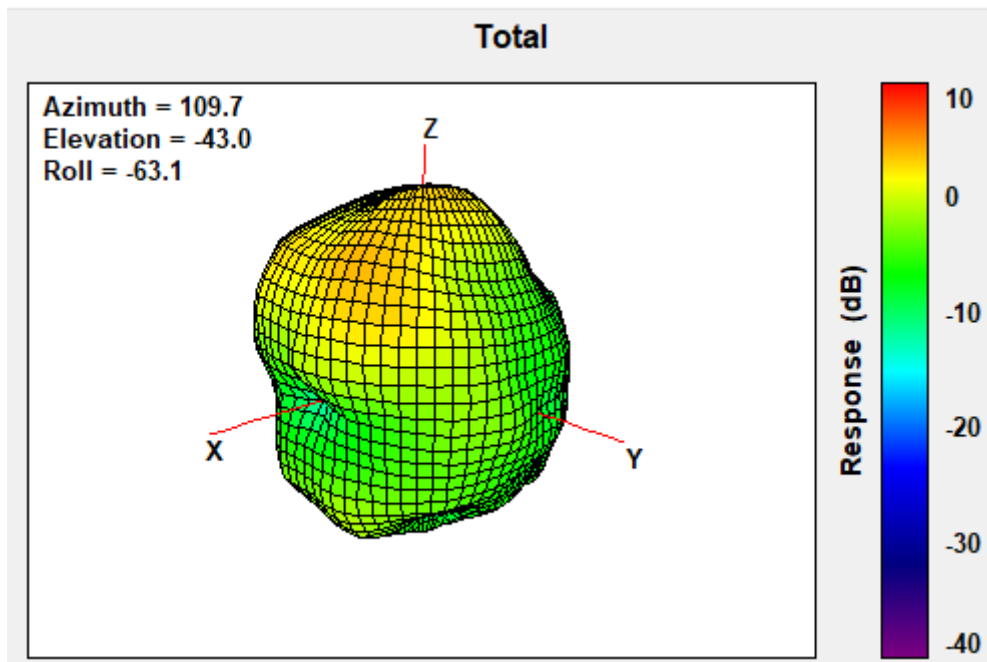
Center Frequency	<b>1785 MHz</b>
Horizontal (dBi) peak	2.14
Vertical (dBi) peak	2.31

**1805 MHz**



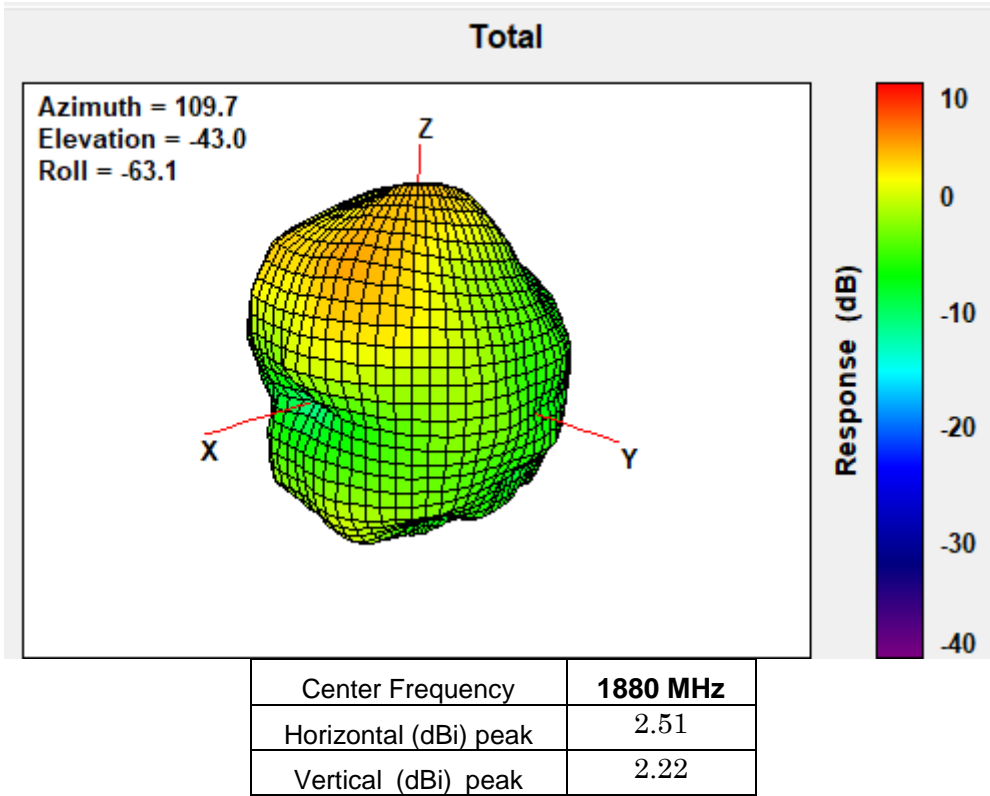
Center Frequency	<b>1805 MHz</b>
Horizontal (dBi) peak	1.97
Vertical (dBi) peak	2.44

**1850 MHz**

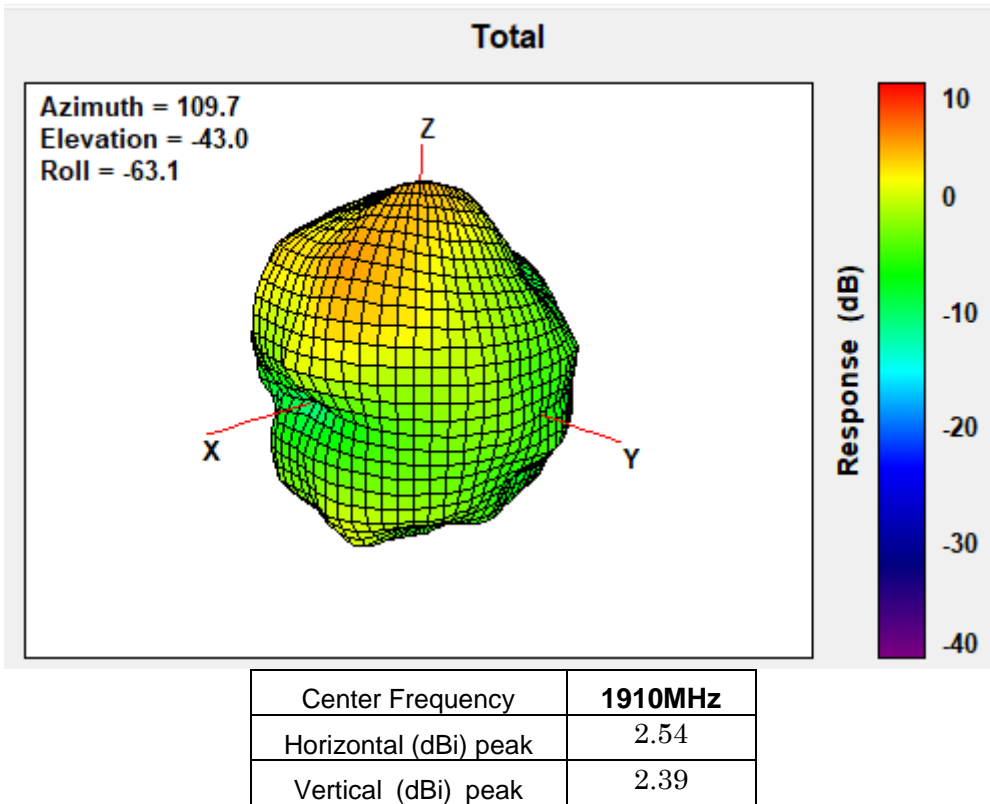


Center Frequency	<b>1850 MHz</b>
Horizontal (dBi) peak	1.90
Vertical (dBi) peak	1.94

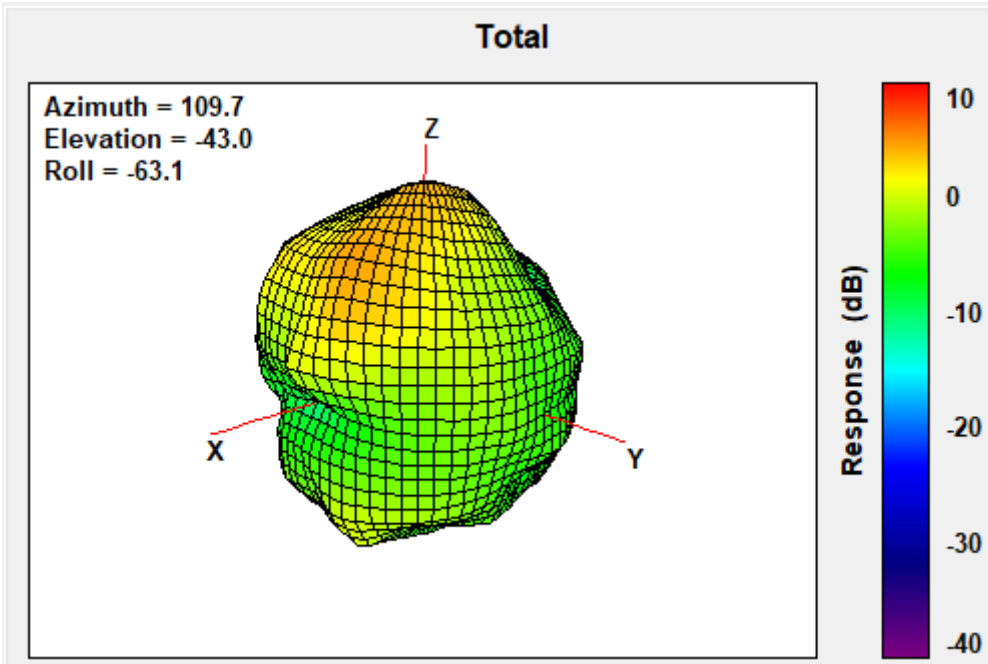
**1880 MHz**



**1910MHz**

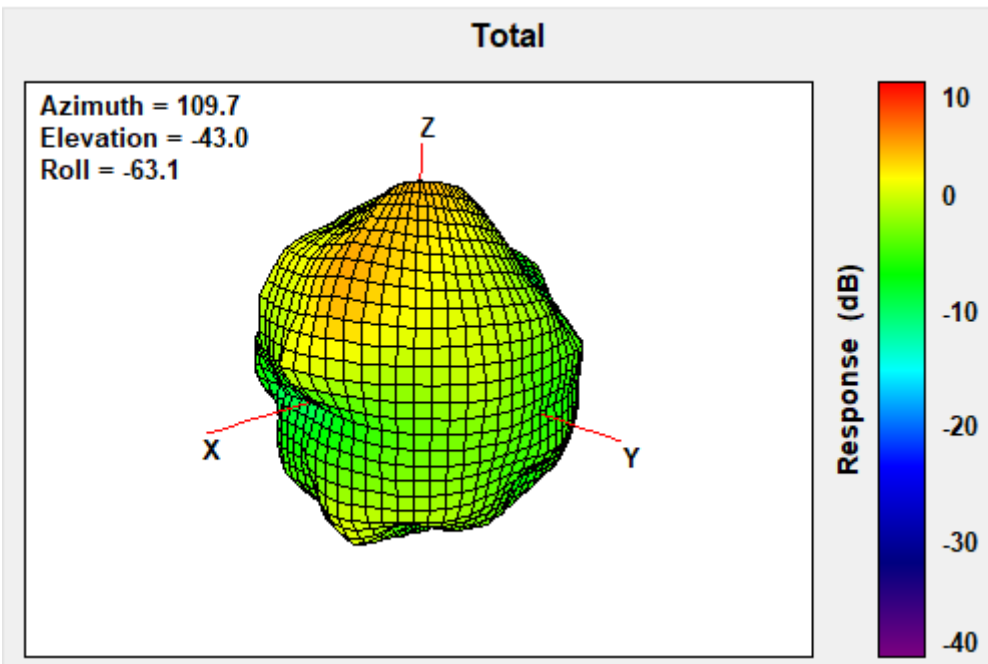


**1920MHz**



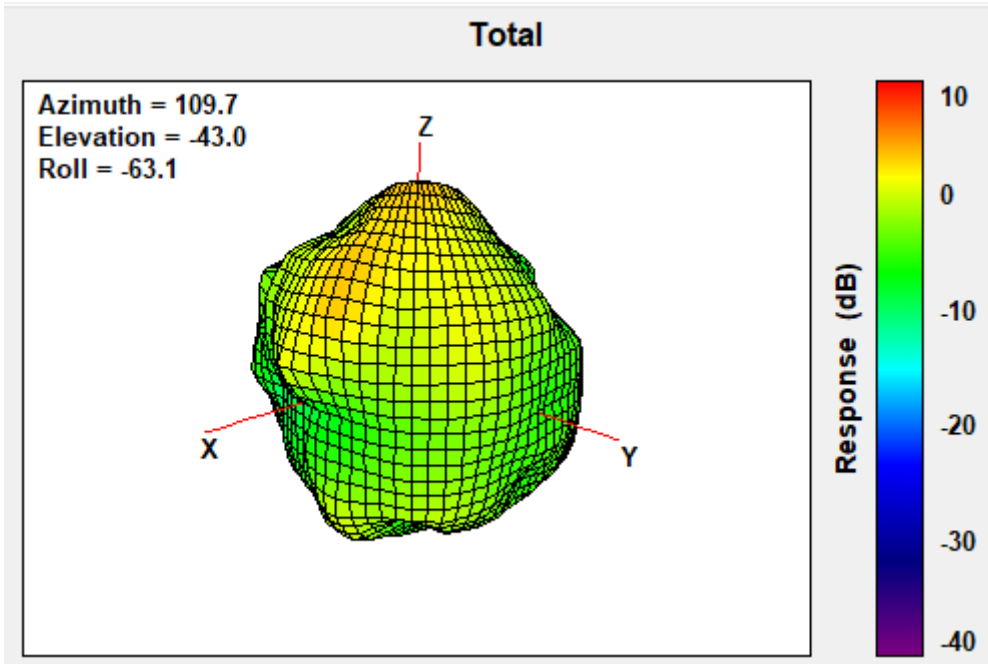
Center Frequency	<b>1920MHz</b>
Horizontal (dBi) peak	2.72
Vertical (dBi) peak	2.43

**1950MHz**



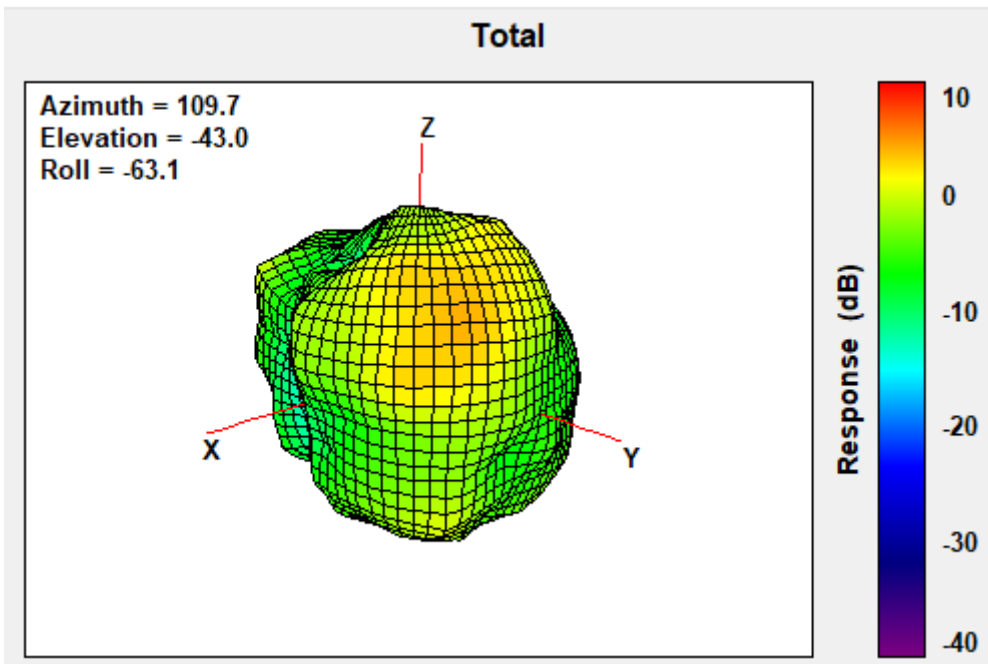
Center Frequency	<b>1950MHz</b>
Horizontal (dBi) peak	2.48
Vertical (dBi) peak	2.58

**1980MHz**



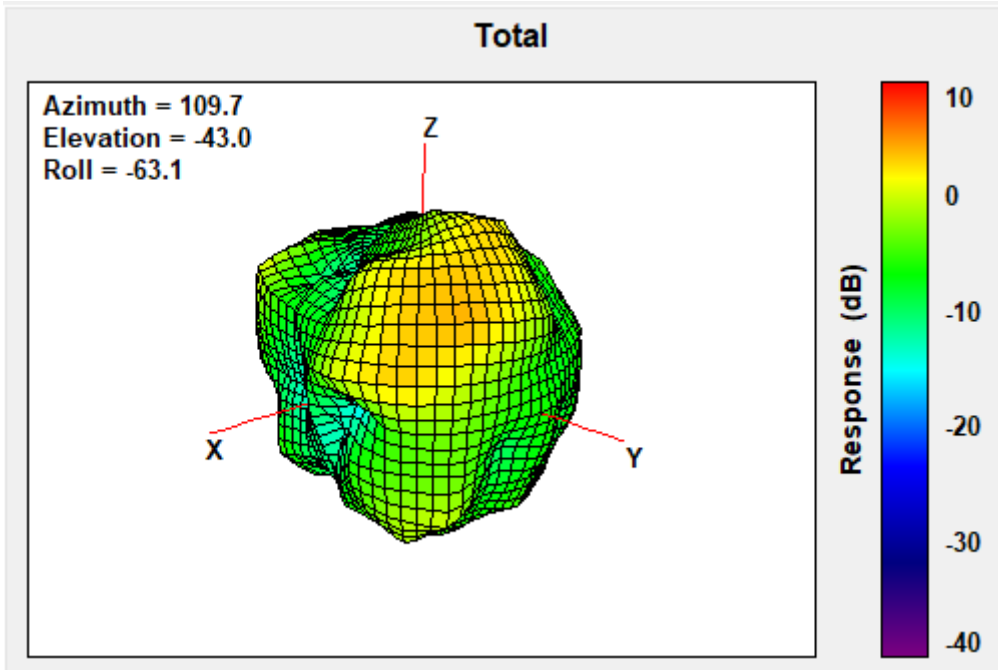
Center Frequency	<b>1980MHz</b>
Horizontal (dBi) peak	1.44
Vertical (dBi) peak	2.21

**2110MHz**



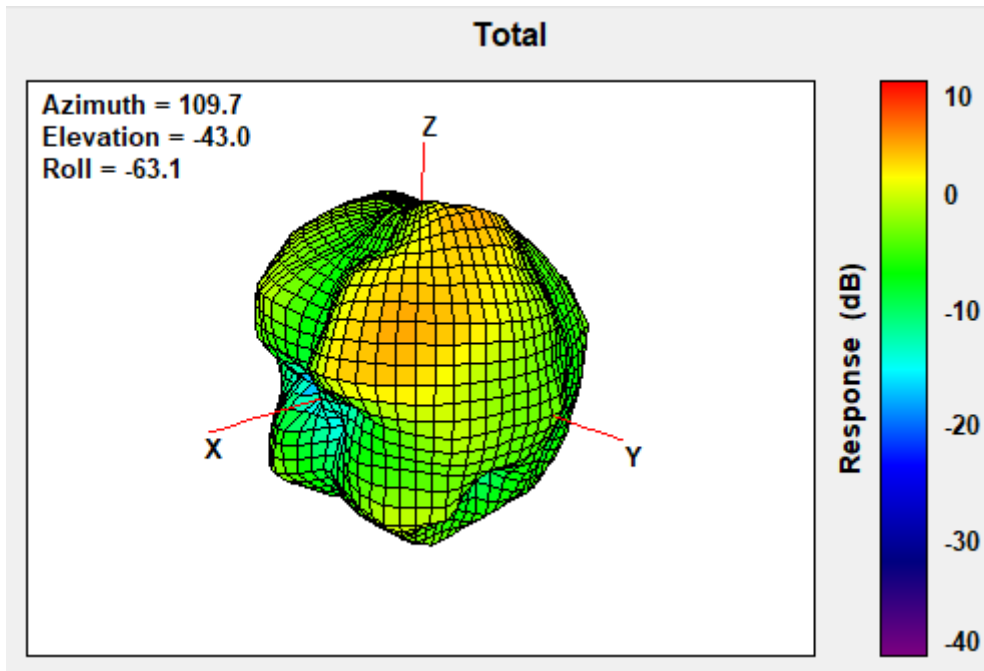
Center Frequency	<b>2110MHz</b>
Horizontal (dBi) peak	1.42
Vertical (dBi) peak	1.53

**2200MHz**



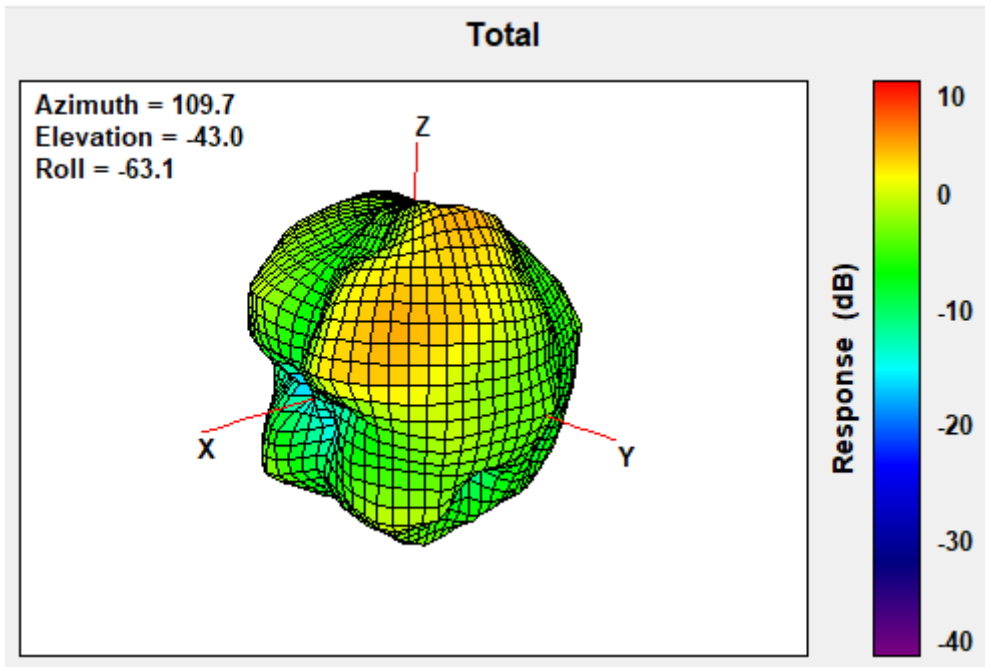
Center Frequency	<b>2200MHz</b>
Horizontal (dBi) peak	0.91
Vertical (dBi) peak	2.25

**2300MHz**



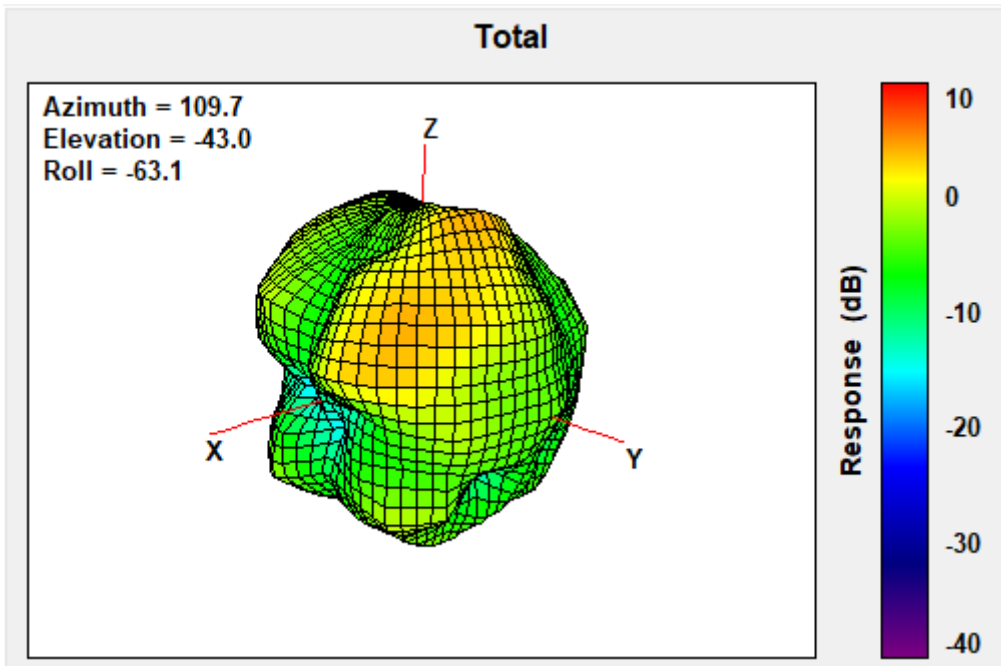
Center Frequency	<b>2300MHz</b>
Horizontal (dBi) peak	2.22
Vertical (dBi) peak	1.80

**2305MHz**



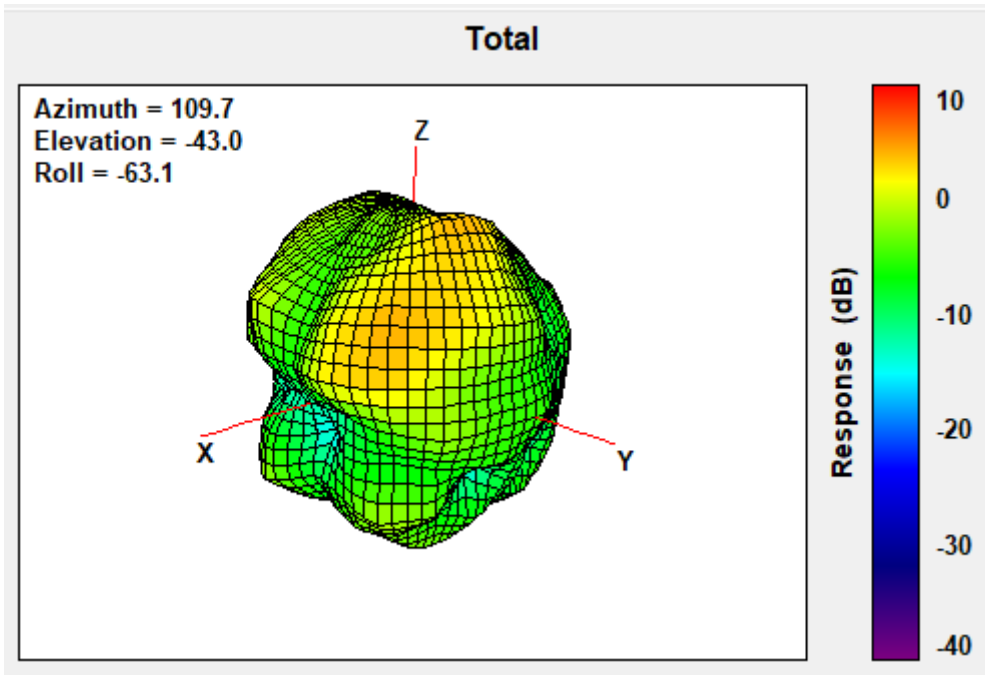
Center Frequency	<b>2305MHz</b>
Horizontal (dBi) peak	0.07
Vertical (dBi) peak	0.79

**2315MHz**



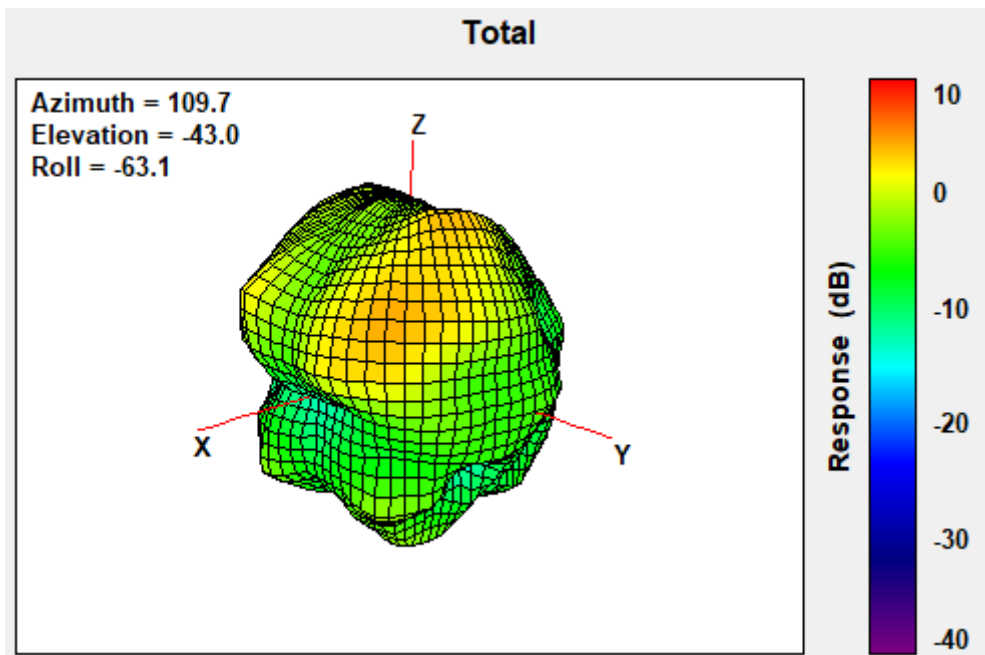
Center Frequency	<b>2315MHz</b>
Horizontal (dBi) peak	0.94
Vertical (dBi) peak	0.70

### 2350MHz



Center Frequency	<b>2350MHz</b>
Horizontal (dBi) peak	0.79
Vertical (dBi) peak	0.24

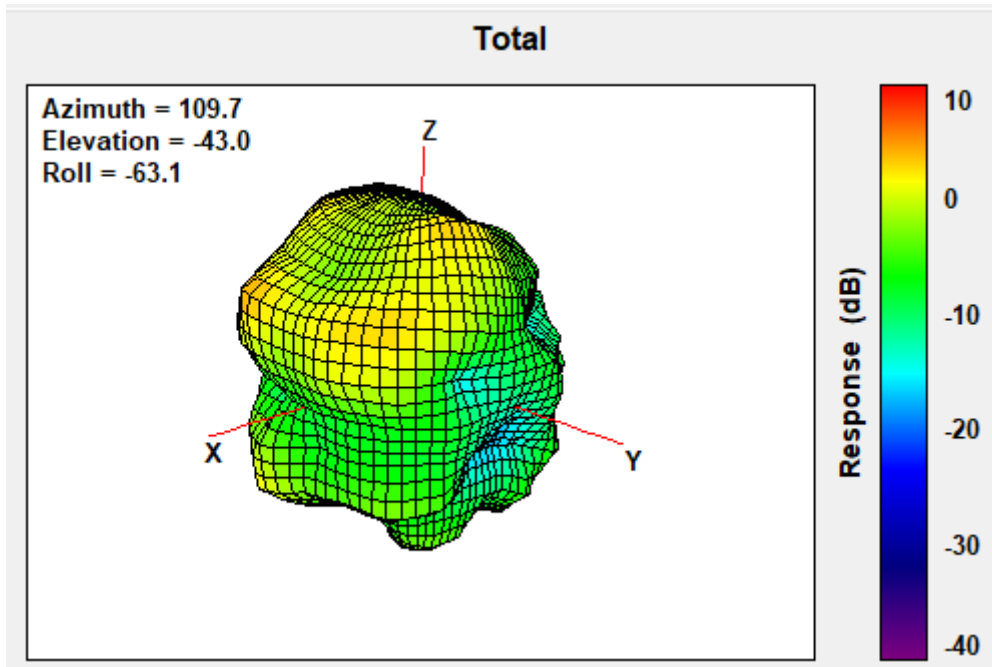
### 2400MHz



Center Frequency	<b>2400MHz</b>
Horizontal (dBi) peak	2.06
Vertical (dBi) peak	0.84

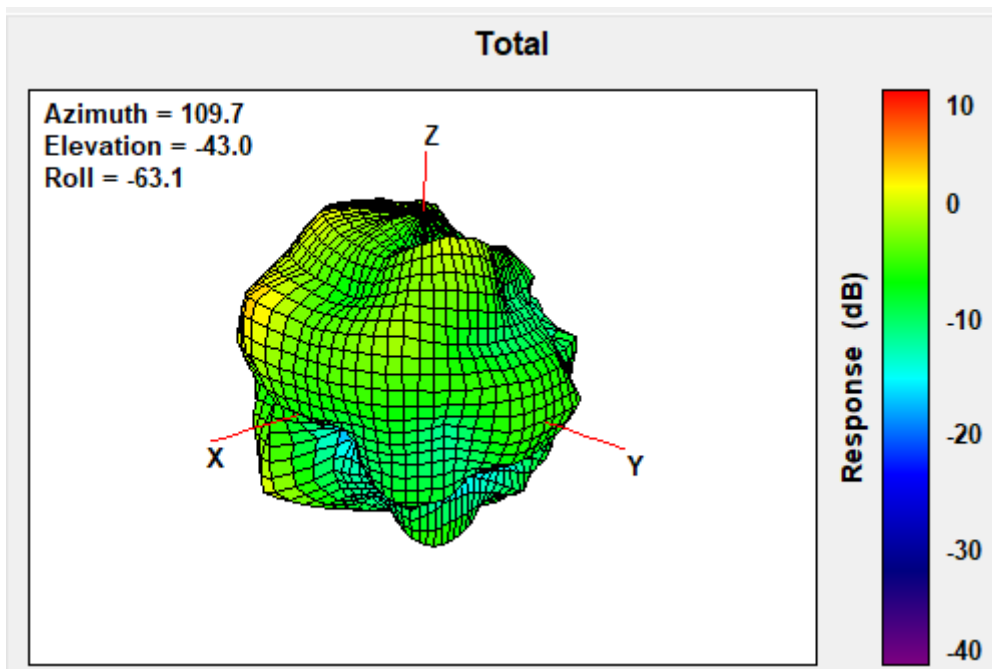


**2500MHz**



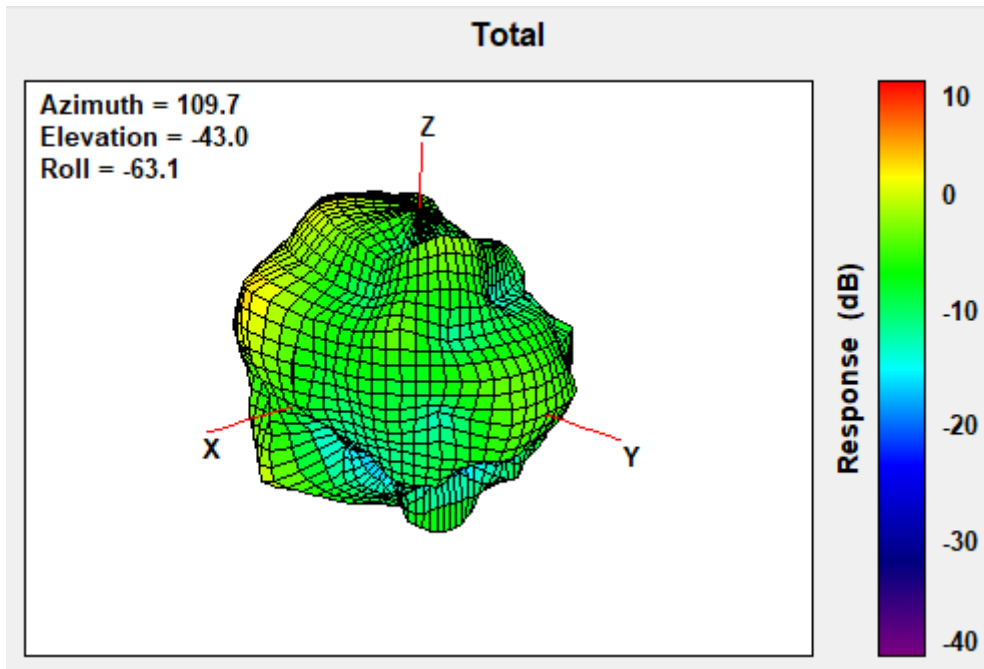
Center Frequency	<b>2500MHz</b>
Horizontal (dBi) peak	2.03
Vertical (dBi) peak	2.21

**2570MHz**



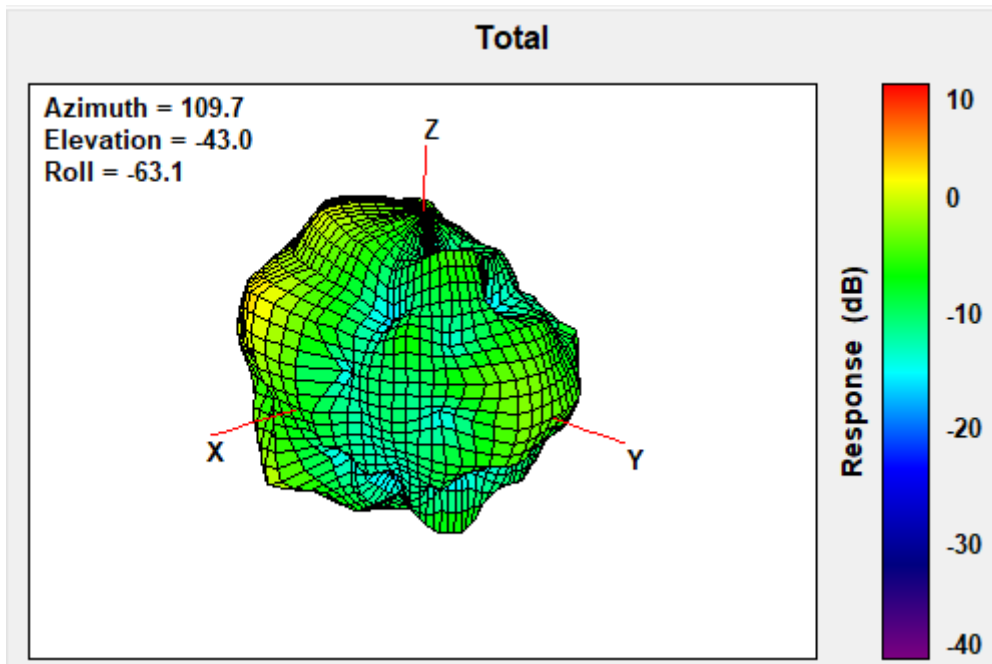
Center Frequency	<b>2570MHz</b>
Horizontal (dBi) peak	1.37
Vertical (dBi) peak	1.44

**2595MHz**



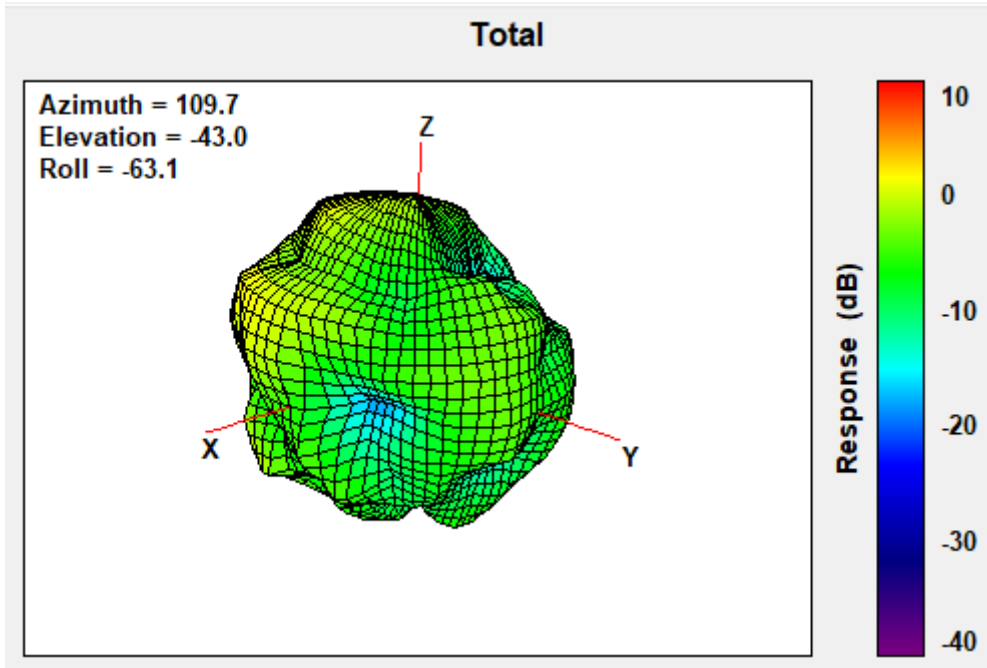
Center Frequency	<b>2595MHz</b>
Horizontal (dBi) peak	0.98
Vertical (dBi) peak	1.33

**2620MHz**



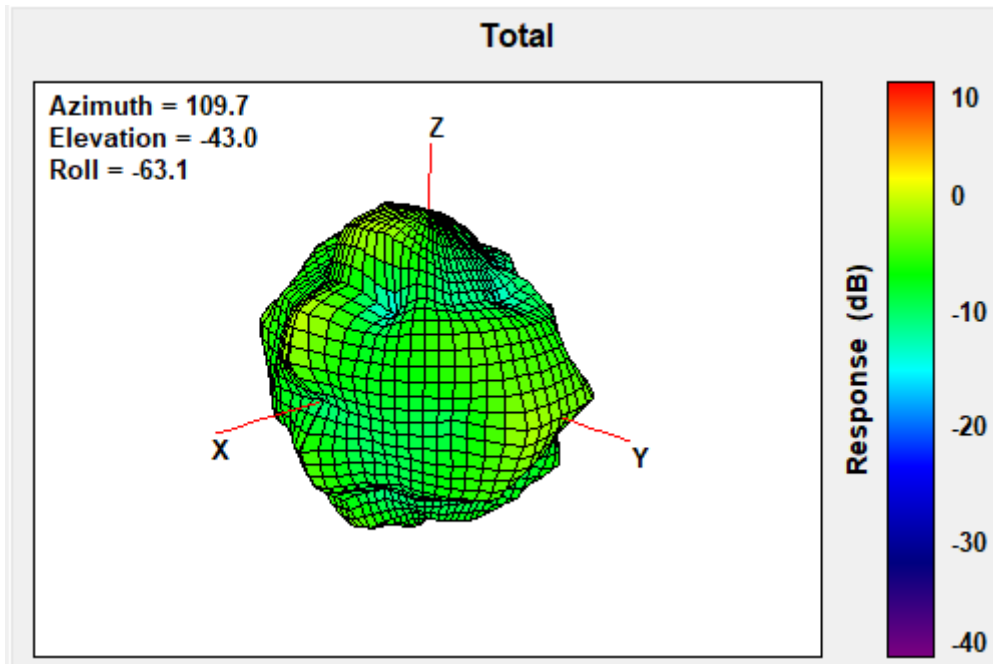
Center Frequency	<b>2620MHz</b>
Horizontal (dBi) peak	0.70
Vertical (dBi) peak	1.36

**2690MHz**



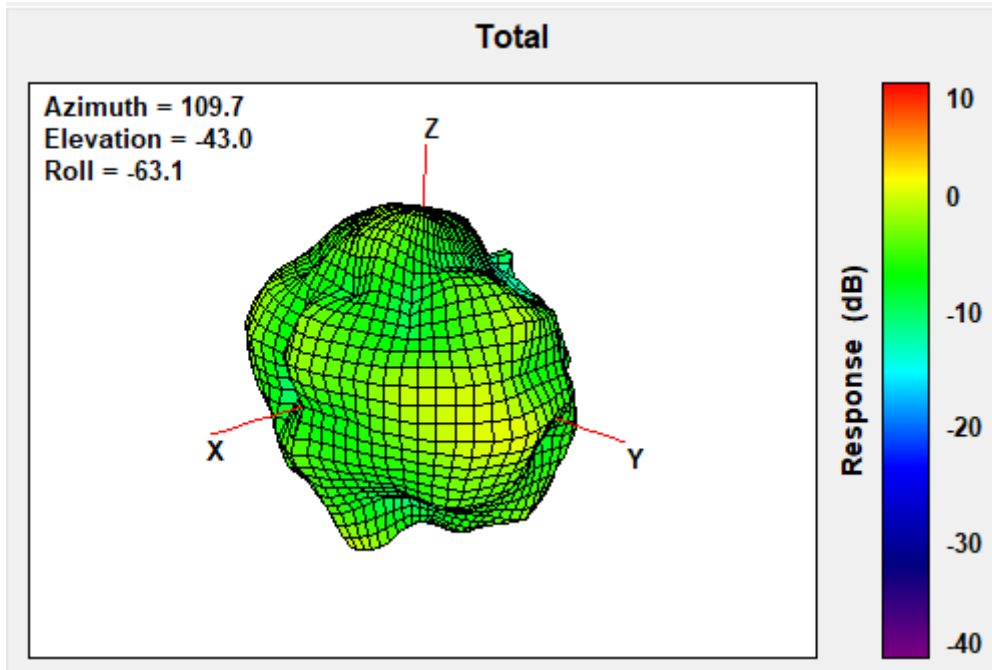
Center Frequency	<b>2690MHz</b>
Horizontal (dBi) peak	1.95
Vertical (dBi) peak	0.43

**3400MHz**



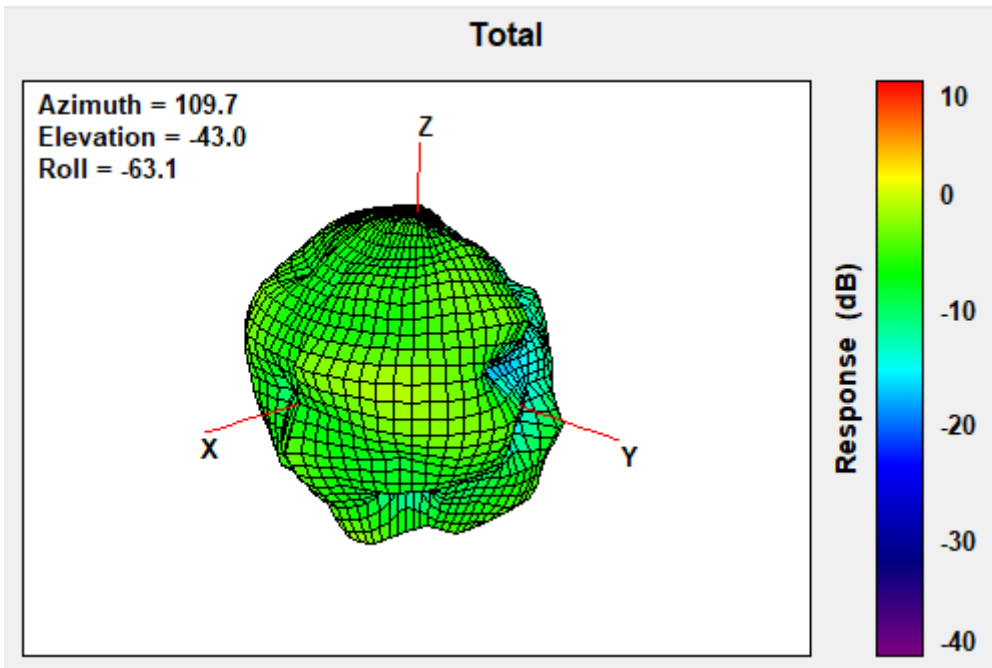
Center Frequency	<b>3400MHz</b>
Horizontal (dBi) peak	-1.70
Vertical (dBi) peak	-2.33

### 3500MHz



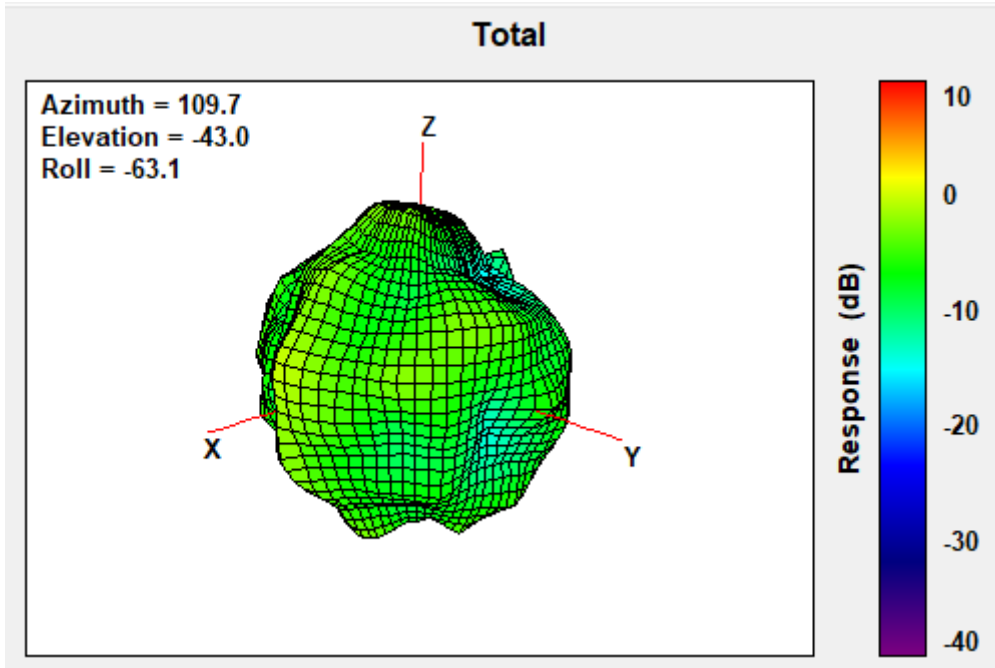
Center Frequency	<b>3500MHz</b>
Horizontal (dBi) peak	0.90
Vertical (dBi) peak	-0.75

### 3600MHz



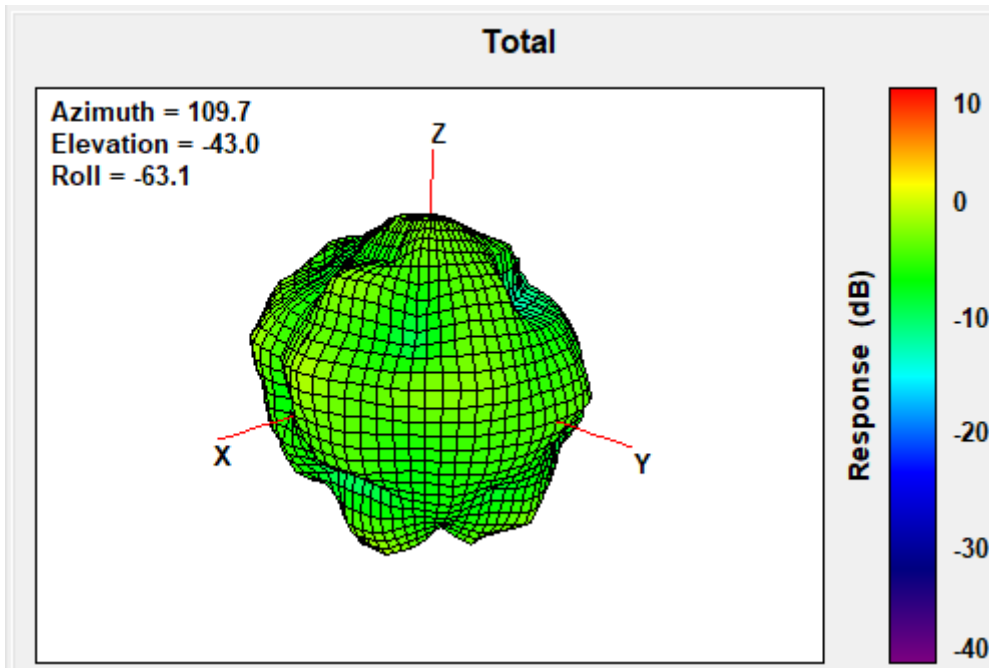
Center Frequency	<b>3600MHz</b>
Horizontal (dBi) peak	-0.24
Vertical (dBi) peak	-2.90

**3700MHz**



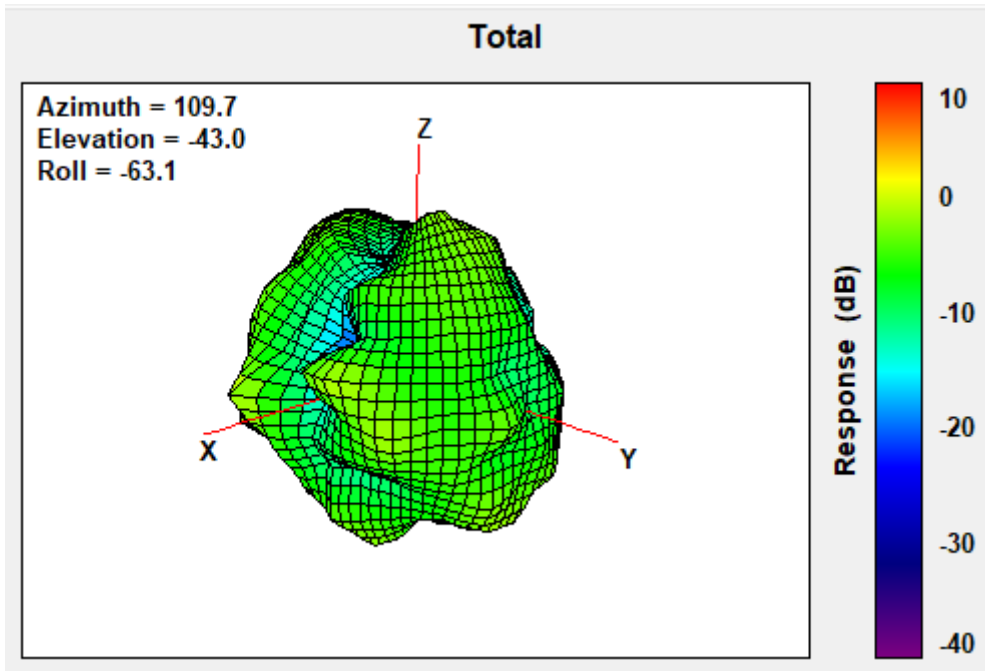
Center Frequency	<b>3700MHz</b>
Horizontal (dBi) peak	0.19
Vertical (dBi) peak	-3.03

**3800MHz**



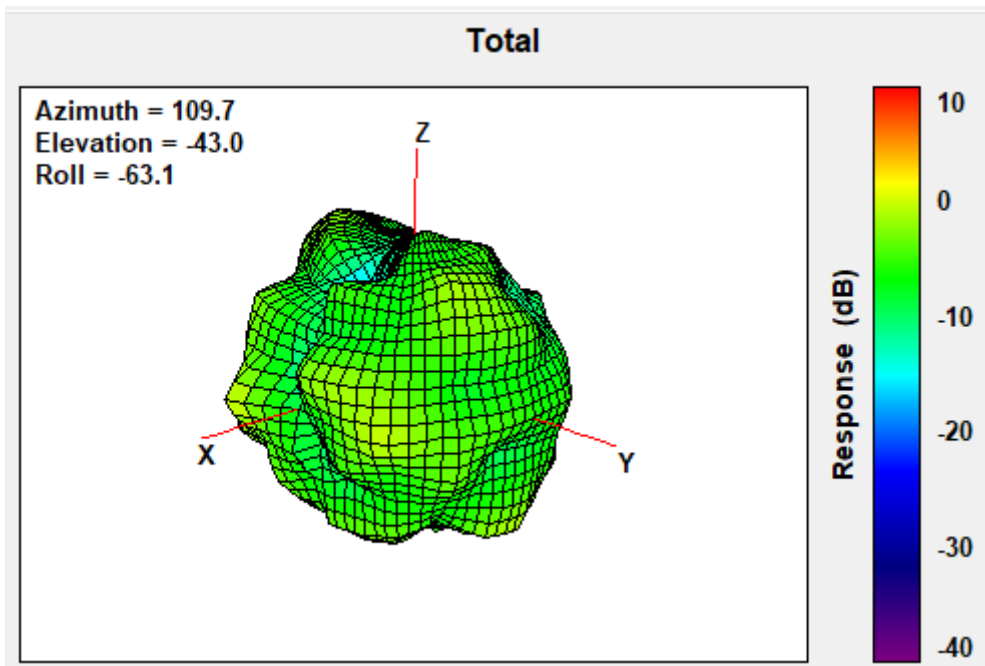
Center Frequency	<b>3800MHz</b>
Horizontal (dBi) peak	-0.19
Vertical (dBi) peak	-2.60

**4200MHz**



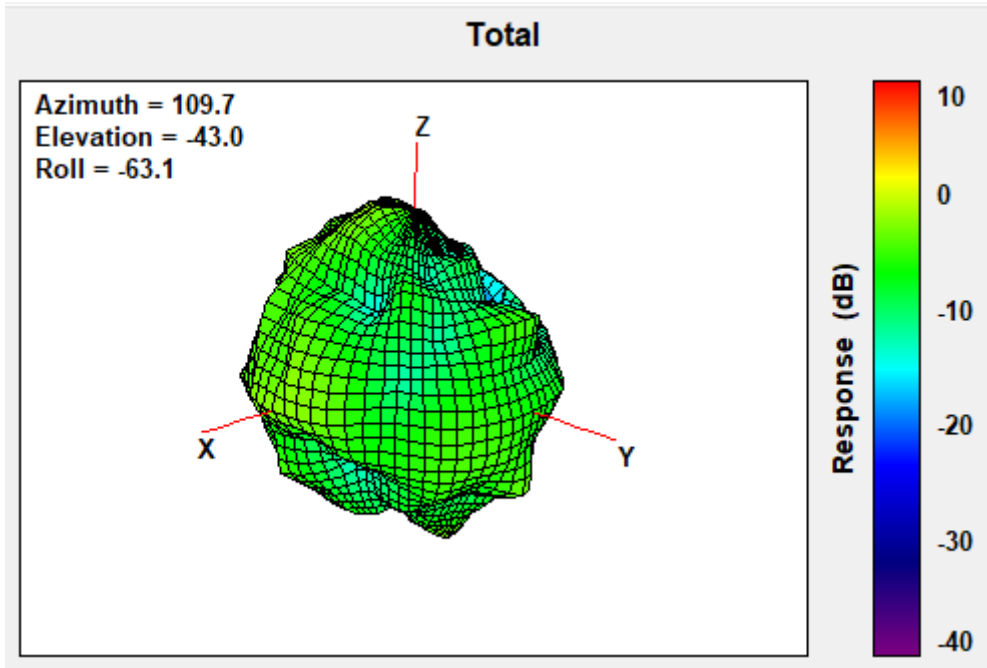
Center Frequency	<b>4200MHz</b>
Horizontal (dBi) peak	1.28
Vertical (dBi) peak	-1.85

**4400MHz**



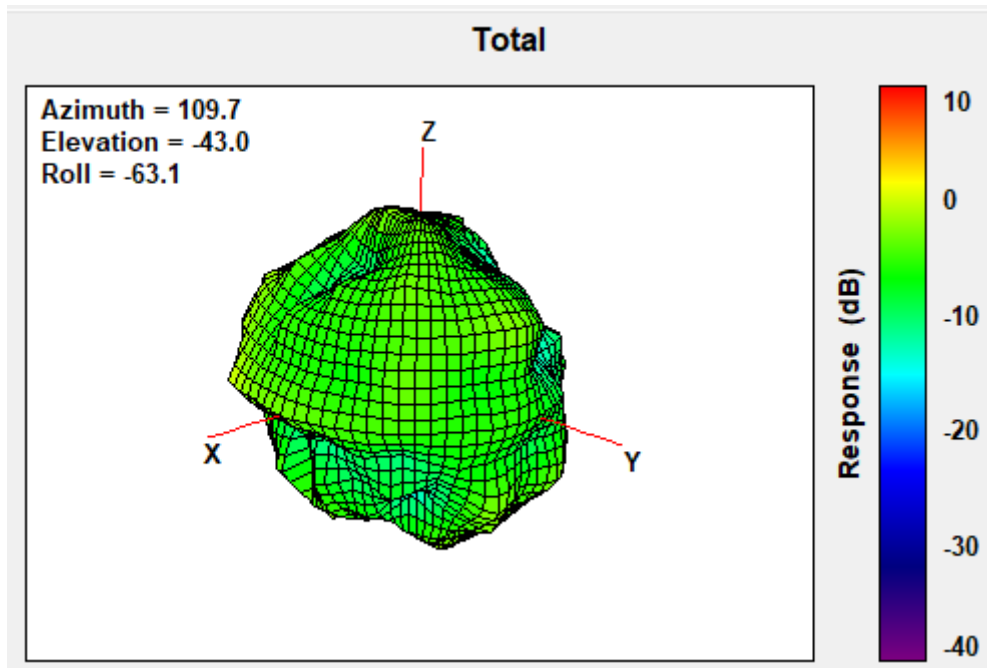
Center Frequency	<b>4400MHz</b>
Horizontal (dBi) peak	1.70
Vertical (dBi) peak	-0.50

### 4700MHz



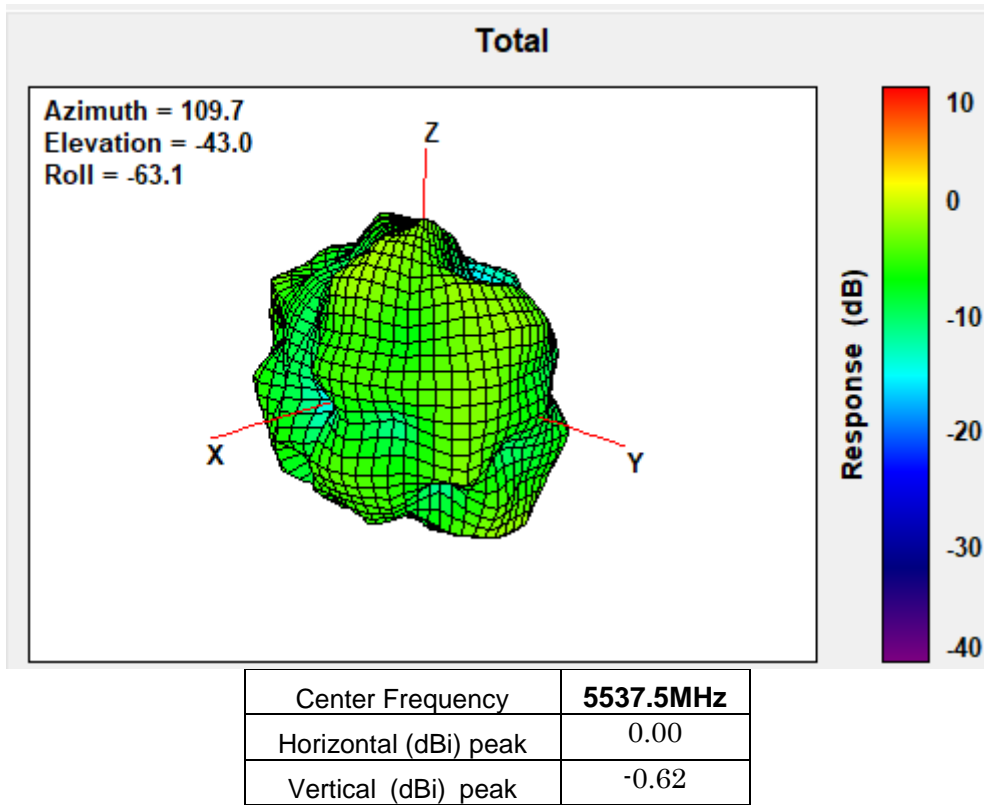
Center Frequency	<b>4700MHz</b>
Horizontal (dBi) peak	-1.81
Vertical (dBi) peak	-1.16

### 5150MHz

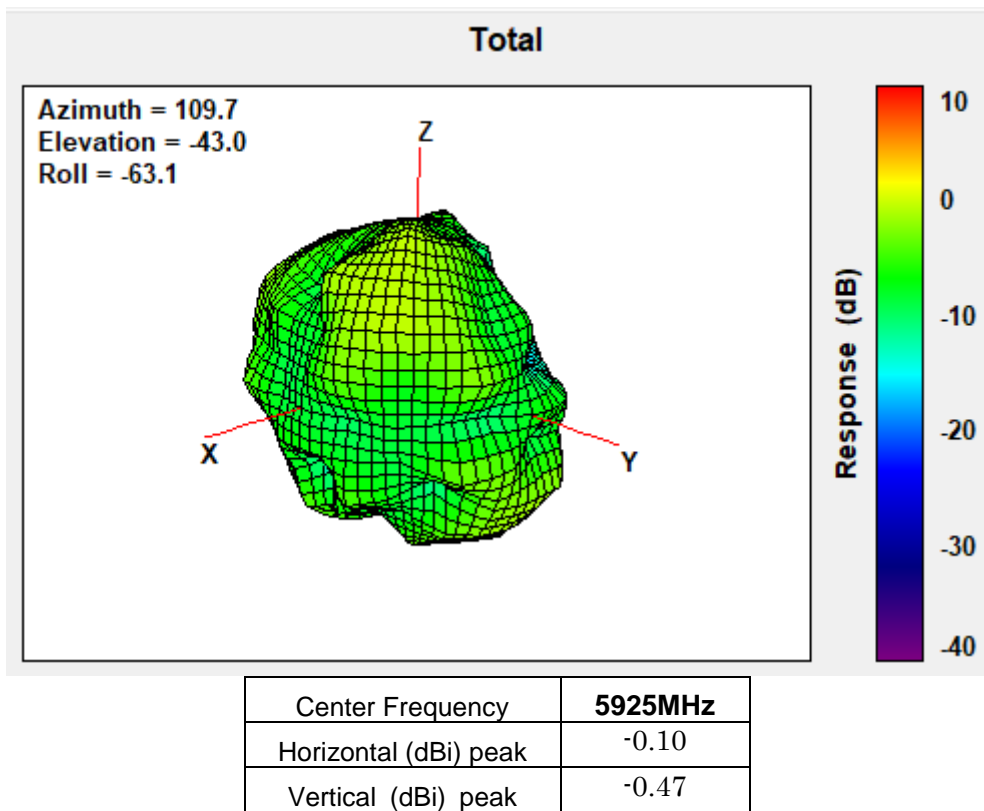


Center Frequency	<b>5150MHz</b>
Horizontal (dBi) peak	1.26
Vertical (dBi) peak	-0.92

**5537.5MHz**



**5925MHz**

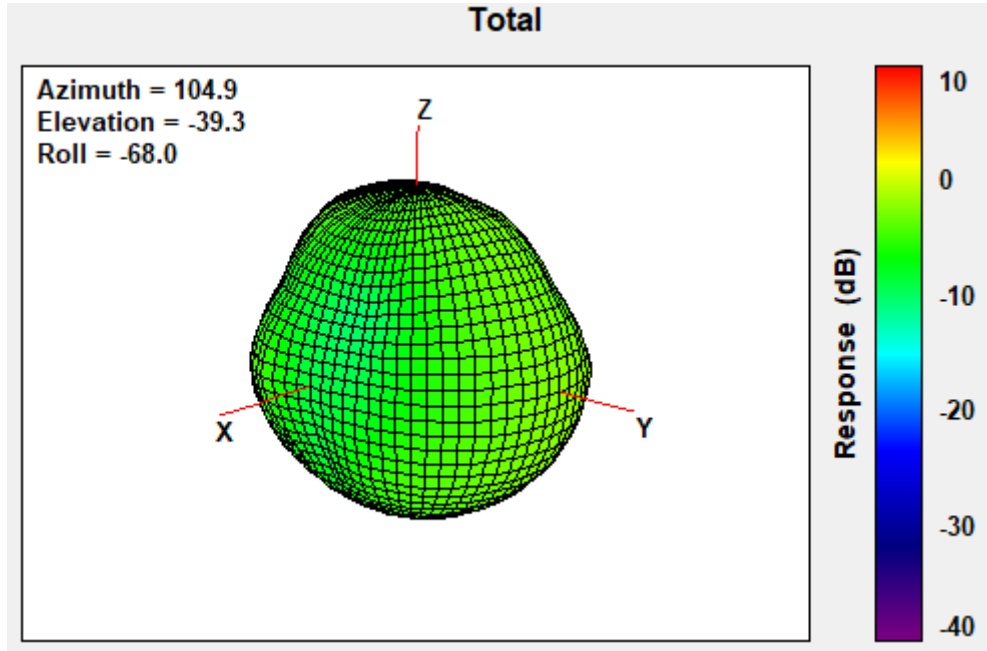




**NB mode**

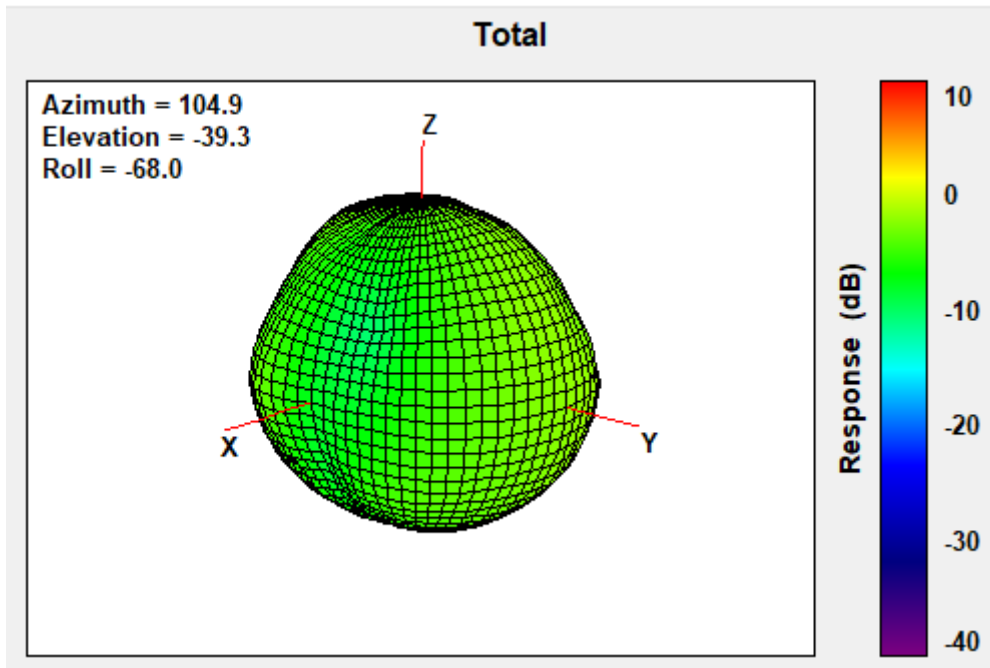
**WWAN Aux Antenna (Rx2)**

617MHz



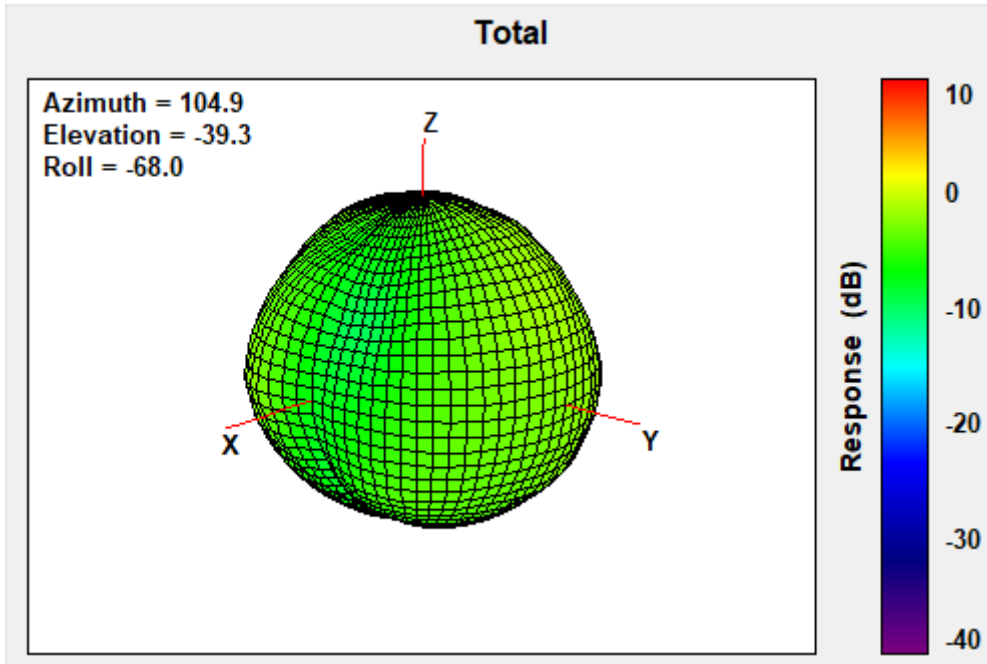
Center Frequency	<b>617 MHz</b>
Horizontal (dBi) peak	-1.62
Vertical (dBi) peak	-3.03

635MHz



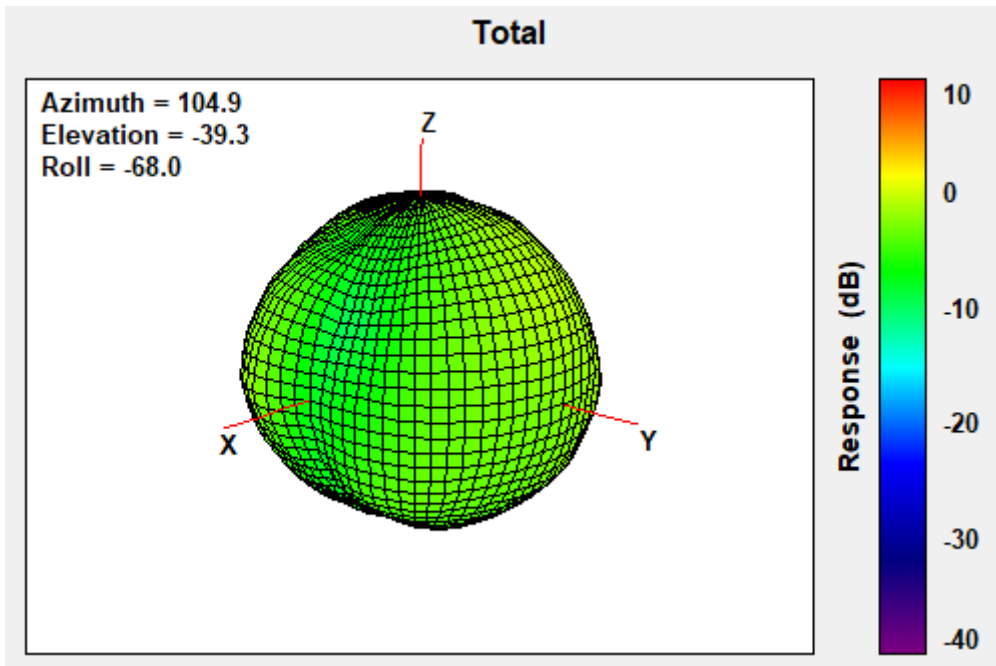
Center Frequency	<b>635 MHz</b>
Horizontal (dBi) peak	-1.33
Vertical (dBi) peak	-1.99

**652MHz**



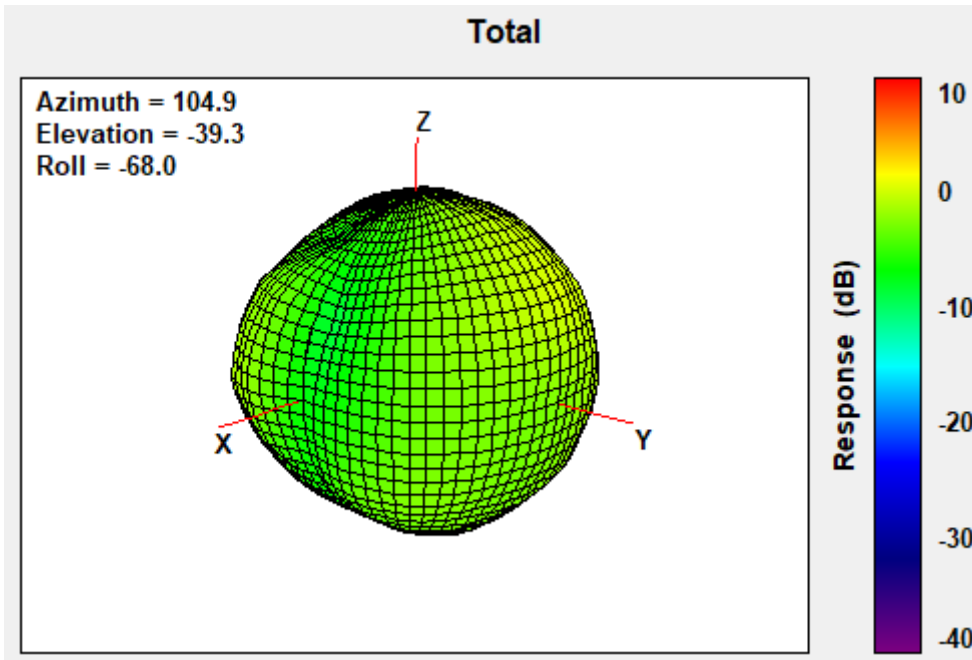
Center Frequency	<b>652MHz</b>
Horizontal (dBi) peak	-1.28
Vertical (dBi) peak	-1.11

**663MHz**



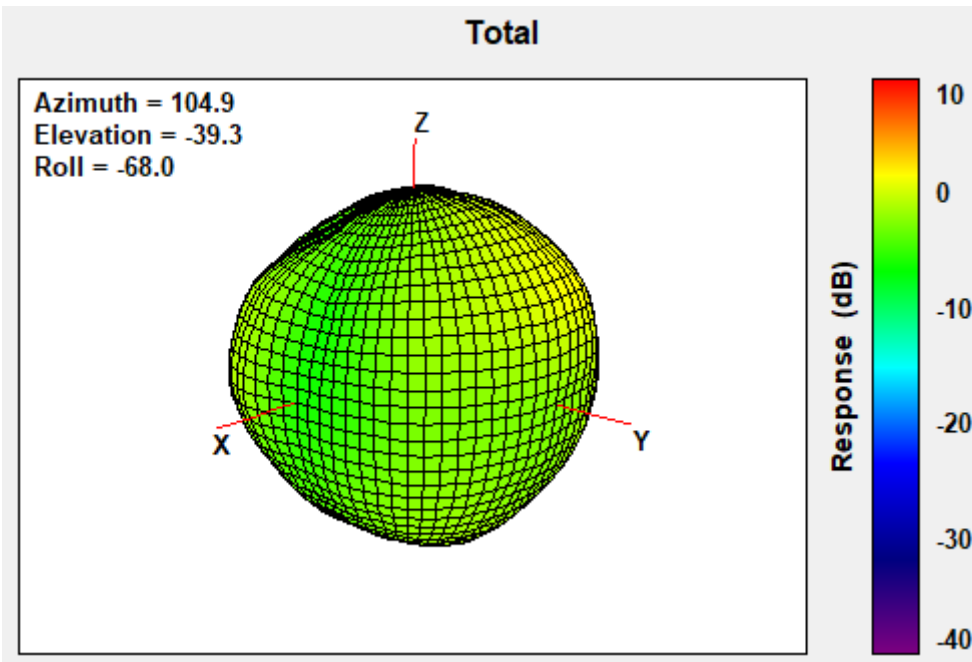
Center Frequency	<b>663 MHz</b>
Horizontal (dBi) peak	-1.29
Vertical (dBi) peak	-0.55

**681MHz**



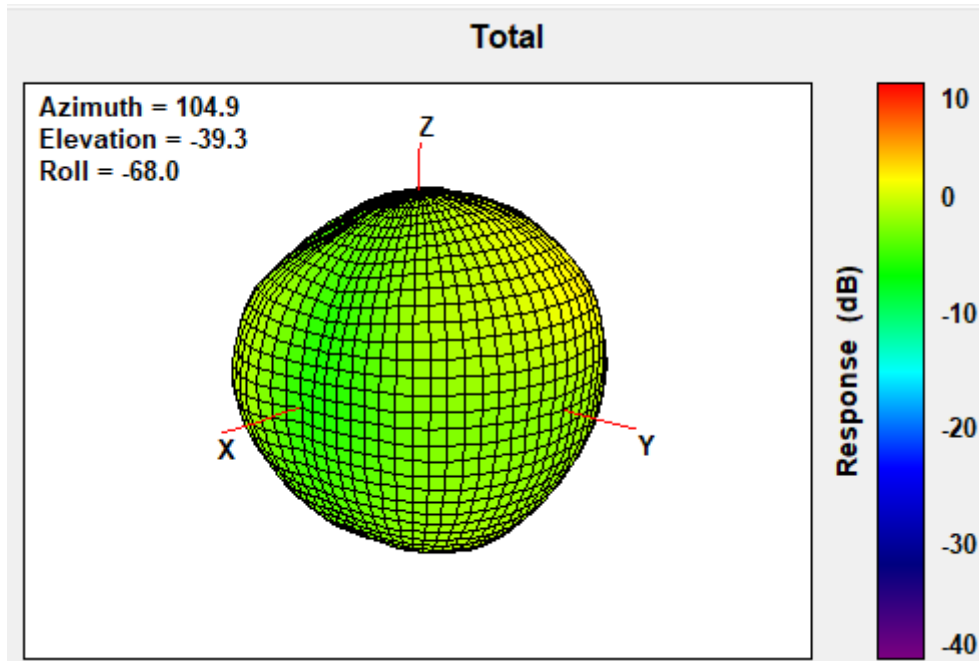
Center Frequency	<b>681MHz</b>
Horizontal (dBi) peak	-1.09
Vertical (dBi) peak	0.65

**698MHz**



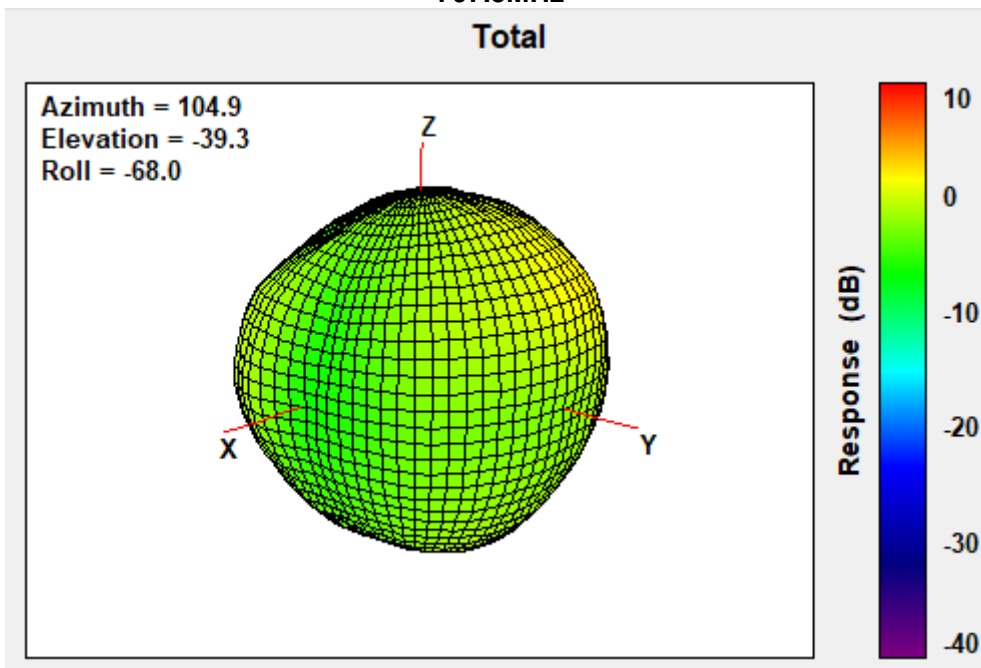
Center Frequency	<b>698MHz</b>
Horizontal (dBi) peak	-0.88
Vertical (dBi) peak	0.96

**703MHz**



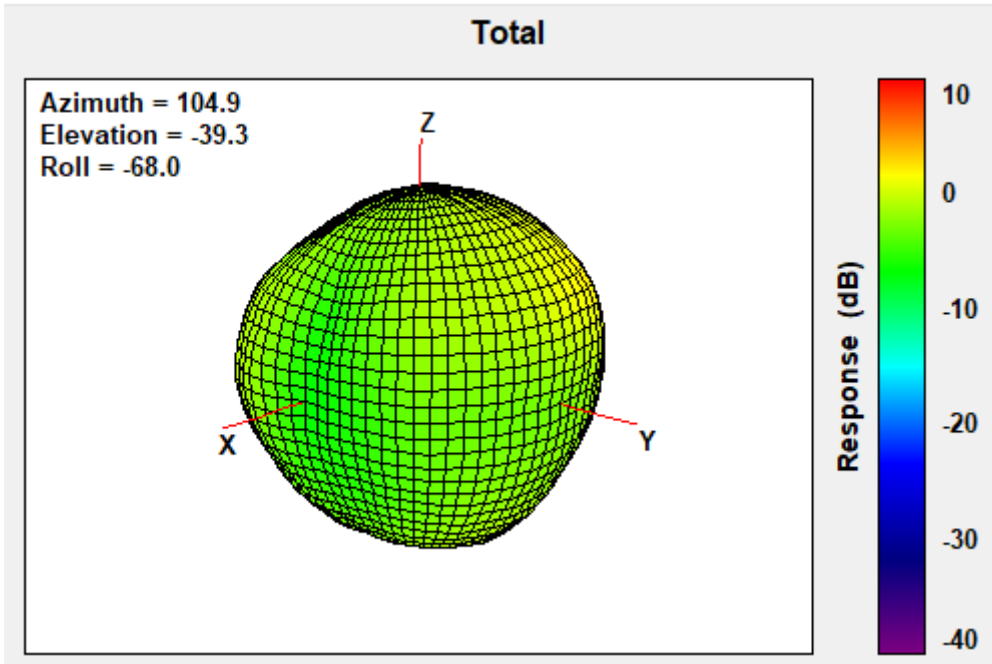
Center Frequency	<b>703 MHz</b>
Horizontal (dBi) peak	-0.45
Vertical (dBi) peak	1.38

**707.5MHz**



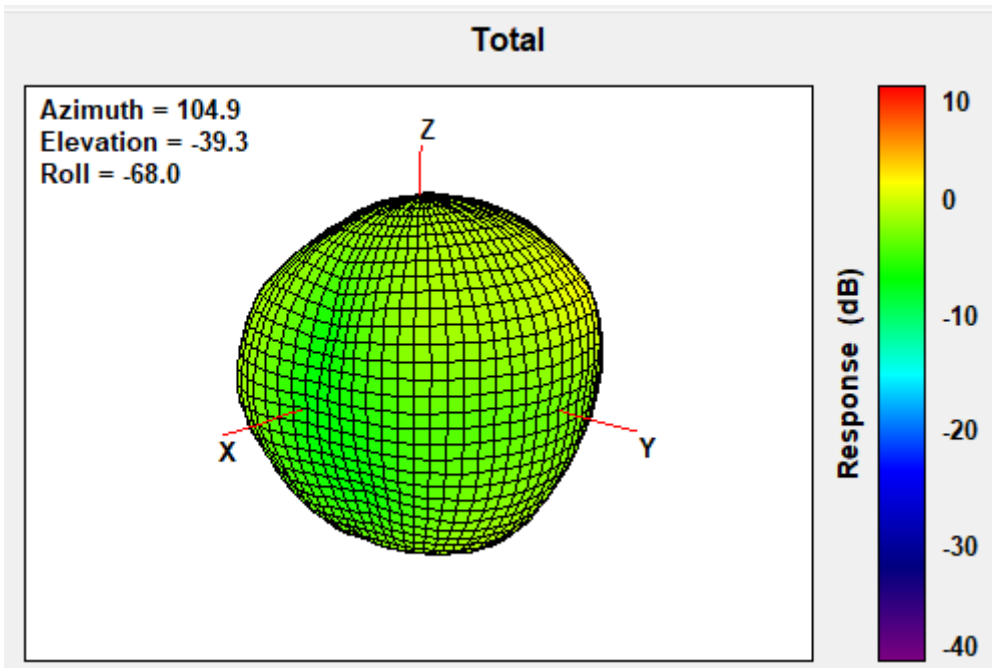
Center Frequency	<b>707.5MHz</b>
Horizontal (dBi) peak	-0.44
Vertical (dBi) peak	1.88

717MHz



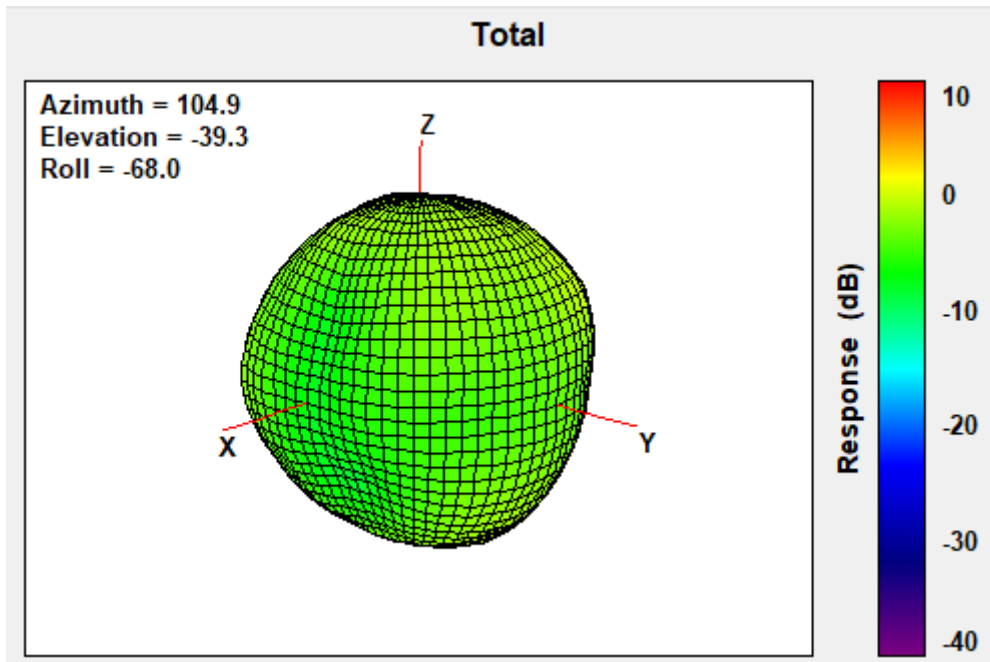
Center Frequency	<b>717MHz</b>
Horizontal (dBi) peak	-0.94
Vertical (dBi) peak	2.28

725.5MHz



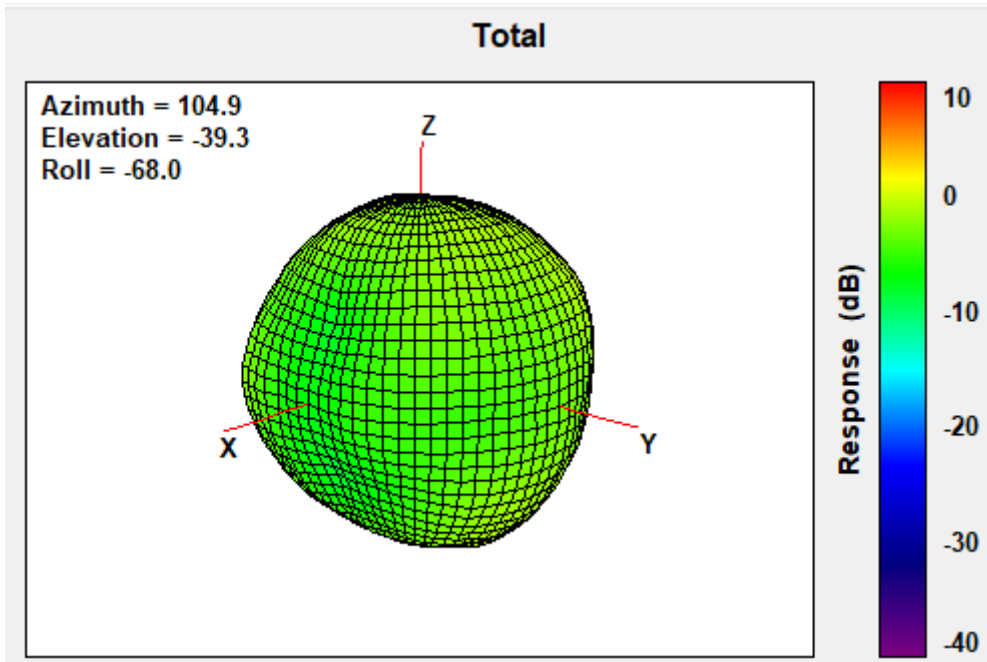
Center Frequency	<b>725.5MHz</b>
Horizontal (dBi) peak	-0.98
Vertical (dBi) peak	1.85

**748MHz**



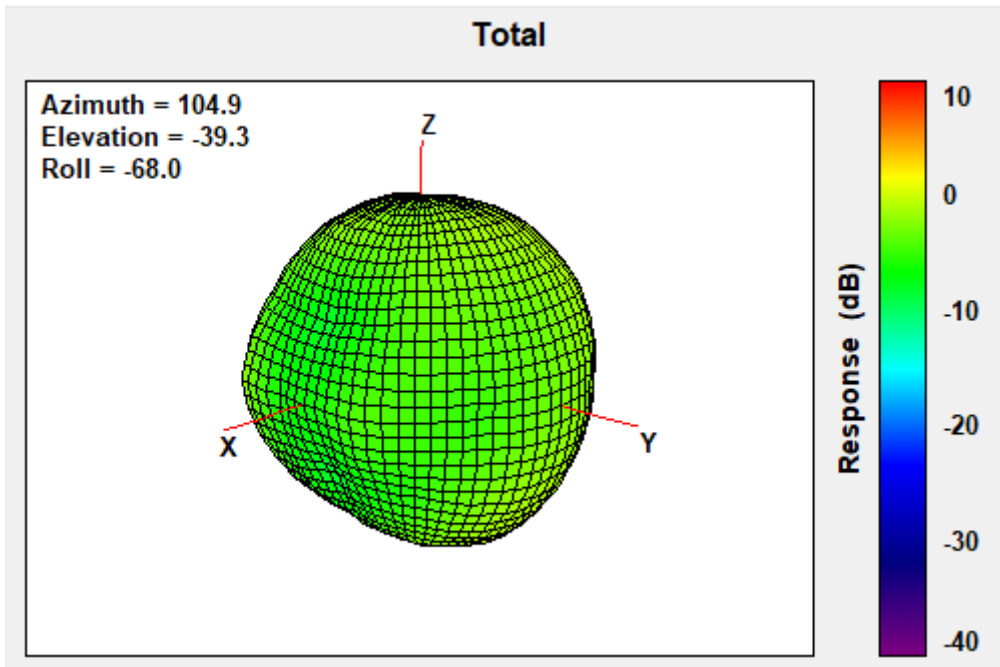
Center Frequency	<b>748MHz</b>
Horizontal (dBi) peak	-0.89
Vertical (dBi) peak	0.05

**756MHz**



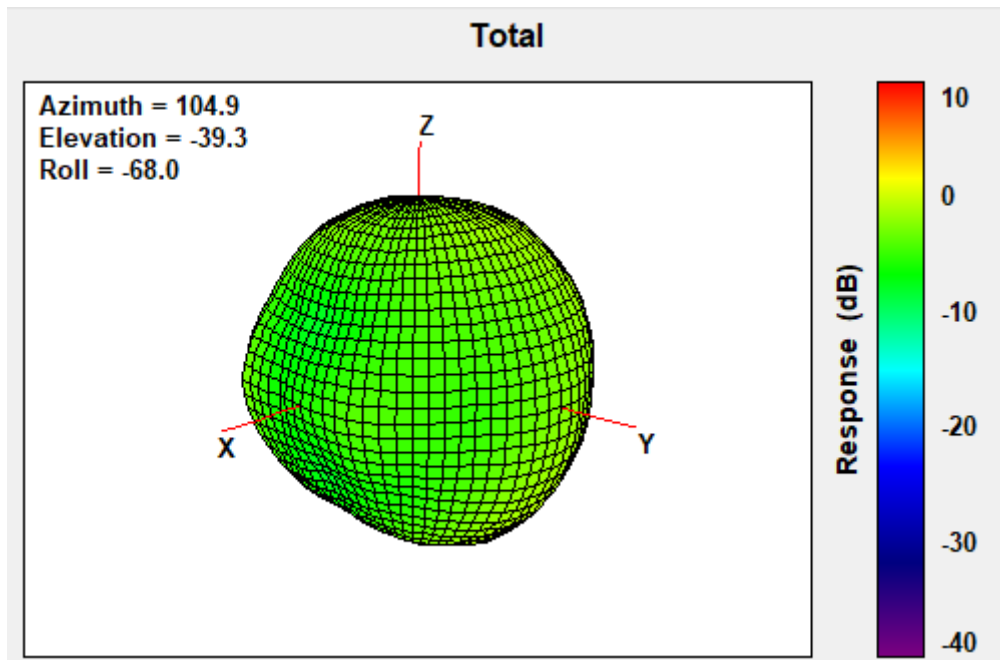
Center Frequency	<b>756MHz</b>
Horizontal (dBi) peak	-0.87
Vertical (dBi) peak	-0.49

**768MHz**



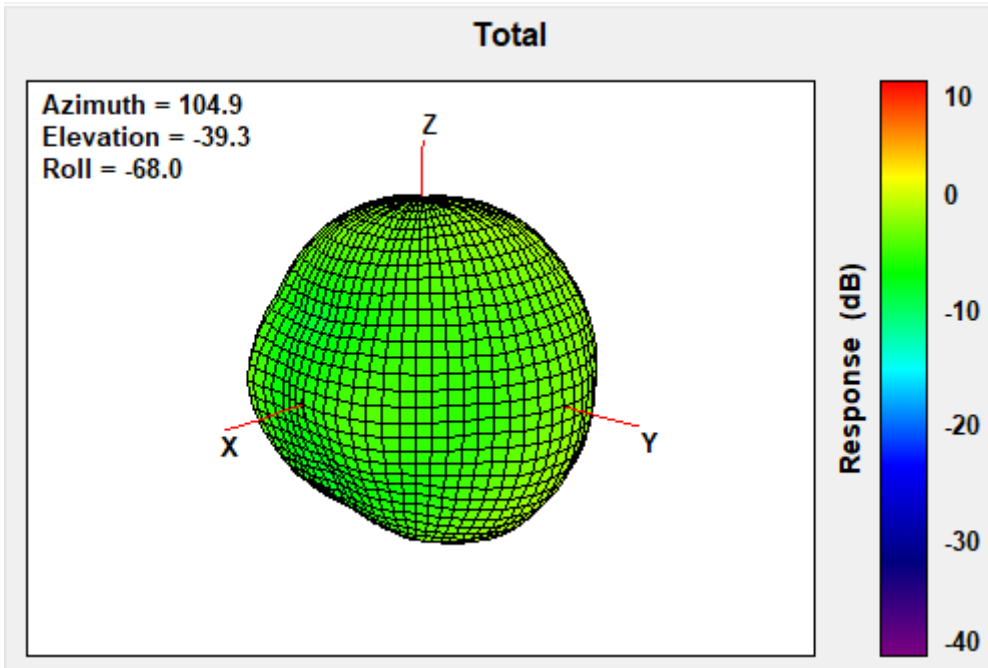
Center Frequency	<b>768MHz</b>
Horizontal (dBi) peak	-0.97
Vertical (dBi) peak	-0.41

**777MHz**

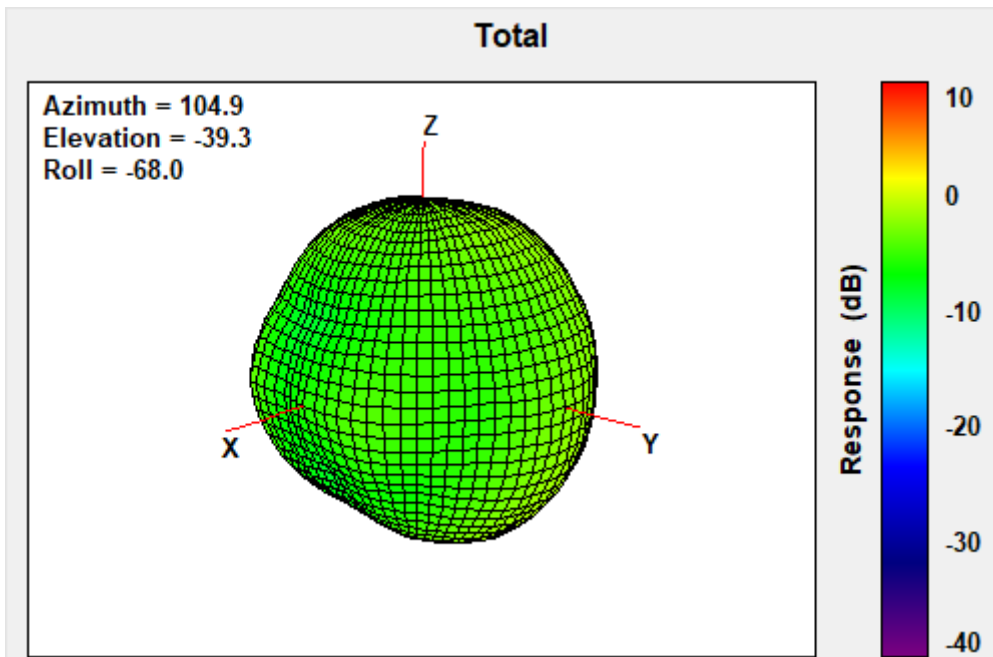


Center Frequency	<b>777MHz</b>
Horizontal (dBi) peak	-1.56
Vertical (dBi) peak	-0.44

**782MHz**

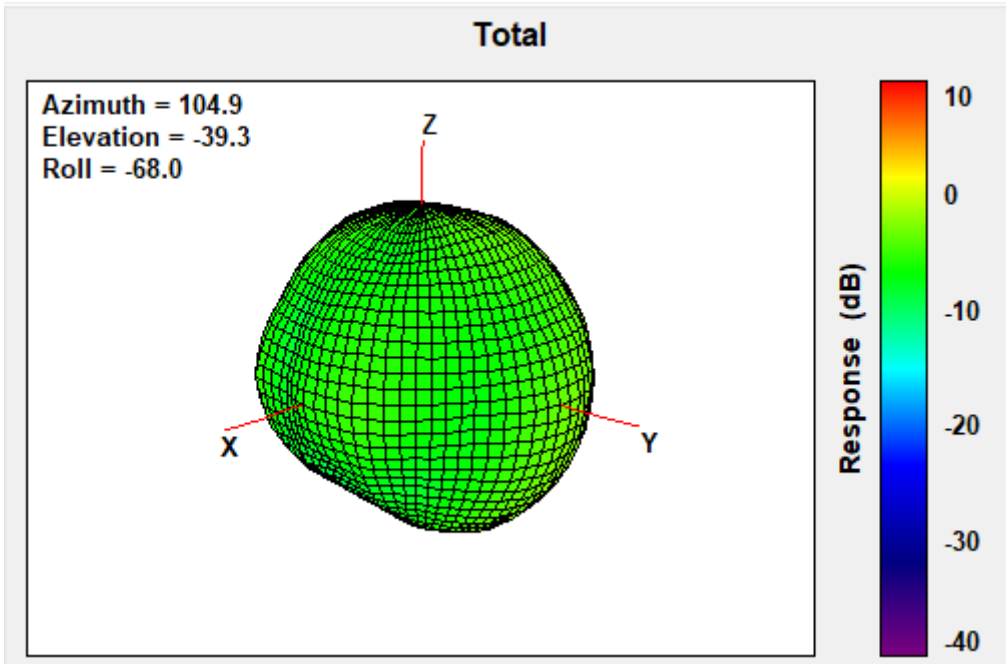


**787MHz**



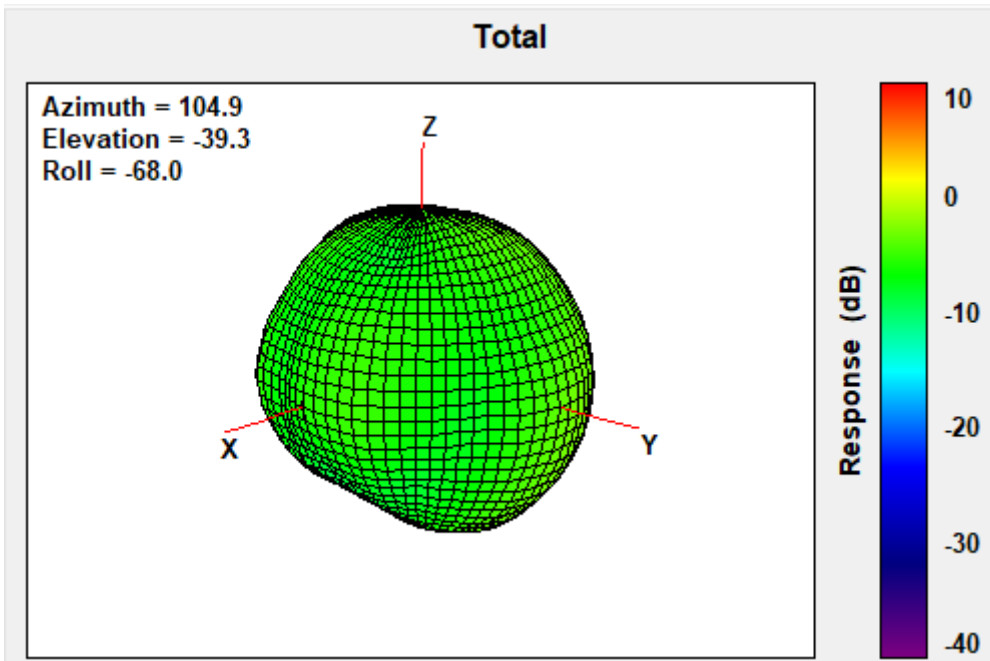


### 814MHz



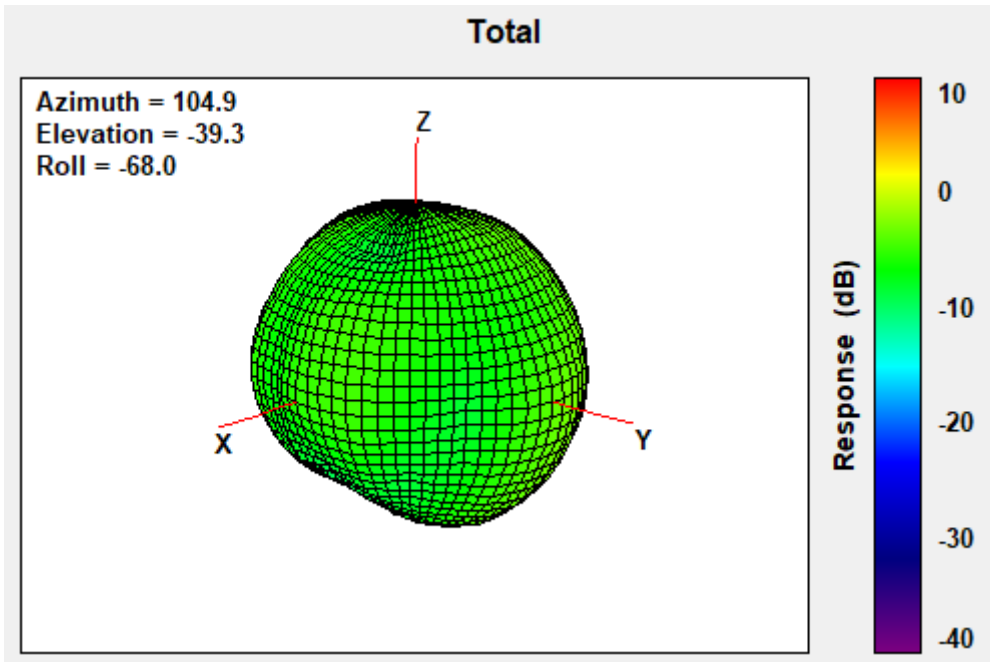
Center Frequency	<b>814MHz</b>
Horizontal (dBi) peak	-3.42
Vertical (dBi) peak	-2.25

### 824MHz



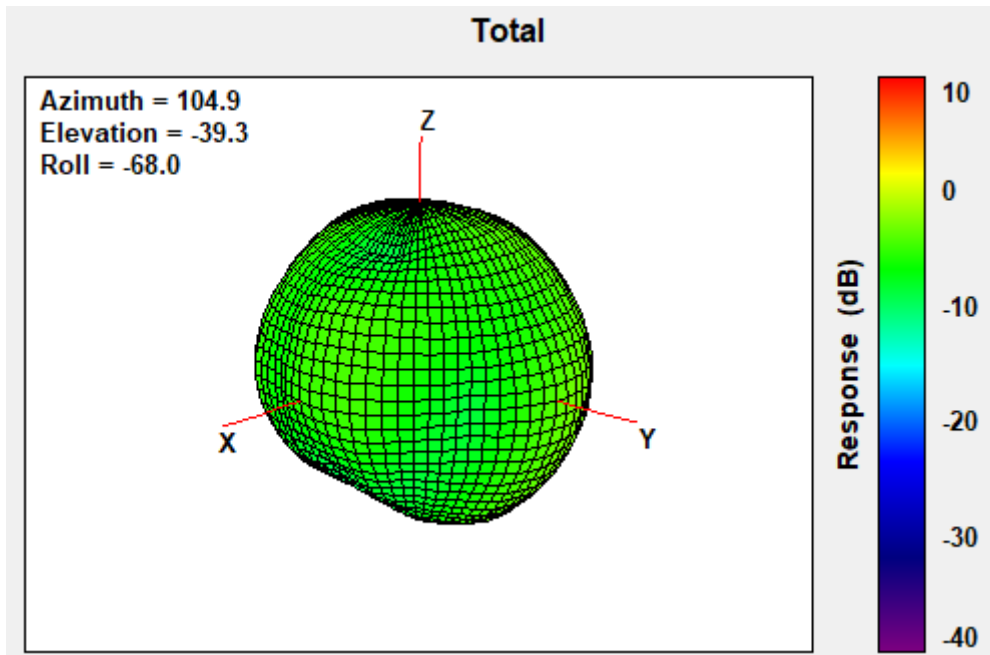
Center Frequency	<b>824MHz</b>
Horizontal (dBi) peak	-3.03
Vertical (dBi) peak	-2.05

**832MHz**



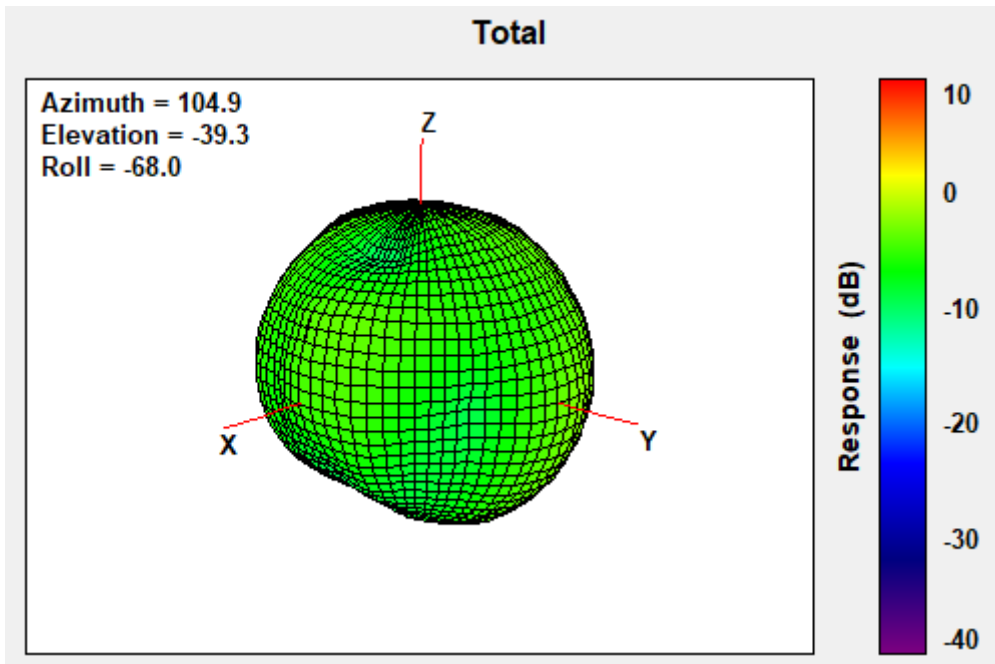
Center Frequency	<b>832MHz</b>
Horizontal (dBi) peak	-2.96
Vertical (dBi) peak	-2.27

**836.5MHz**



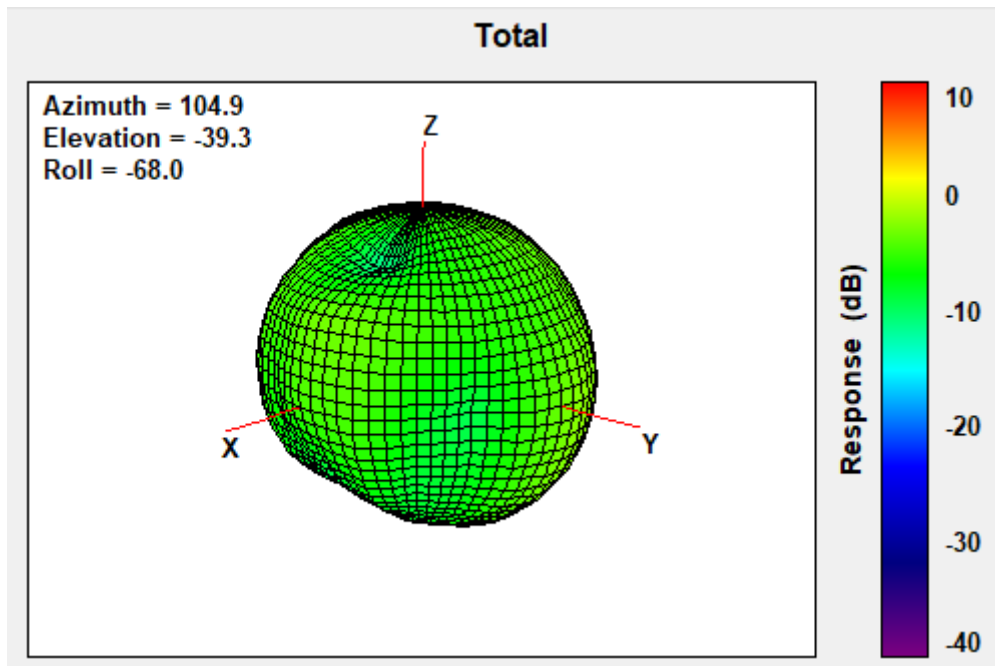
Center Frequency	<b>836.5MHz</b>
Horizontal (dBi) peak	-2.89
Vertical (dBi) peak	-2.37

**849MHz**



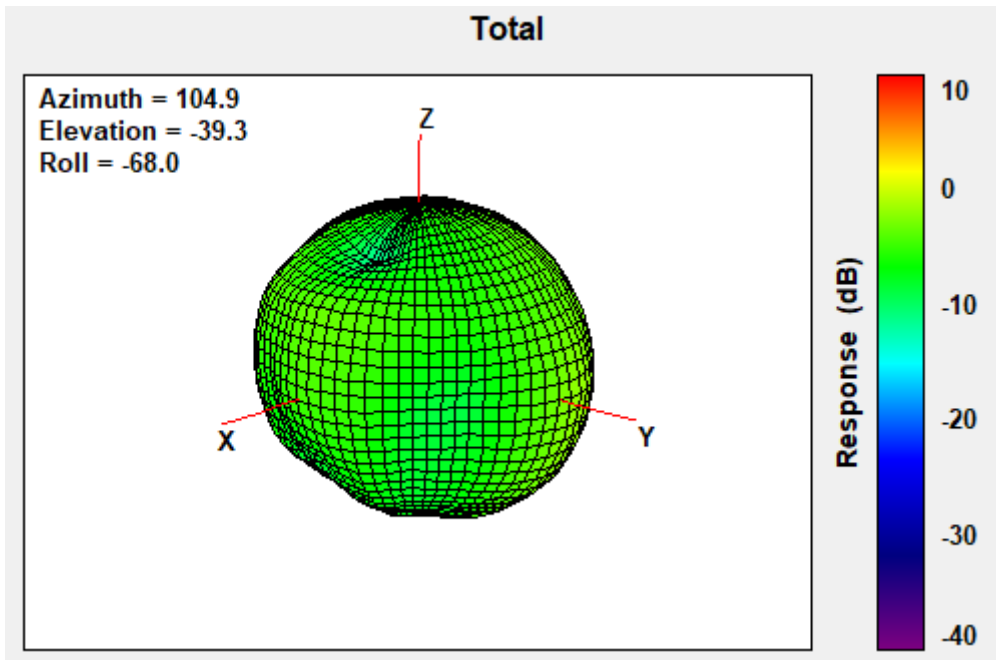
Center Frequency	<b>849MHz</b>
Horizontal (dBi) peak	-2.40
Vertical (dBi) peak	-2.07

**862MHz**



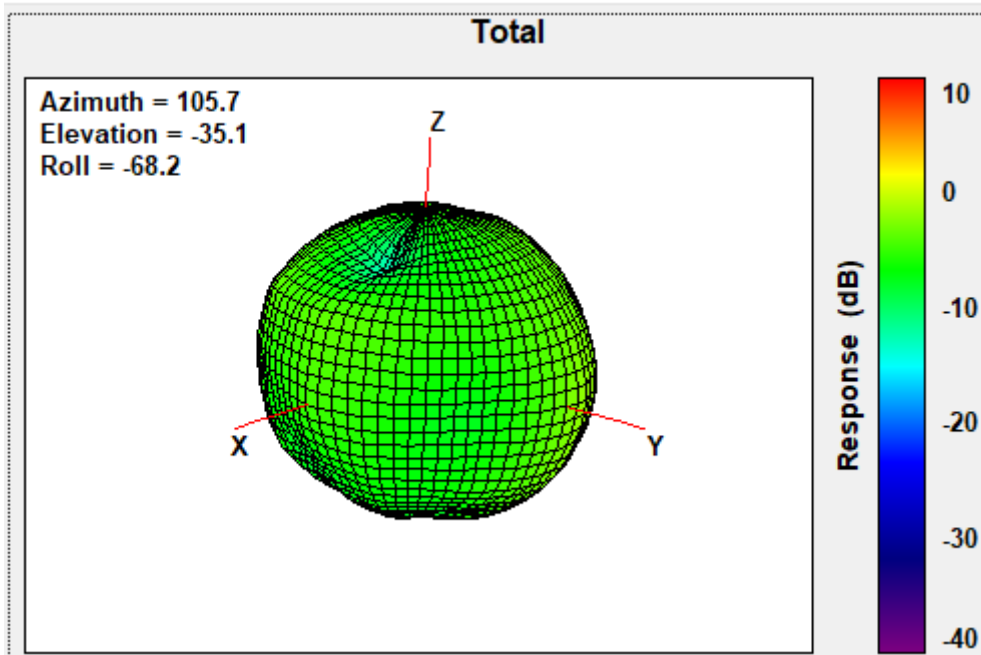
Center Frequency	<b>862MHz</b>
Horizontal (dBi) peak	-1.91
Vertical (dBi) peak	-1.57

### 880MHz



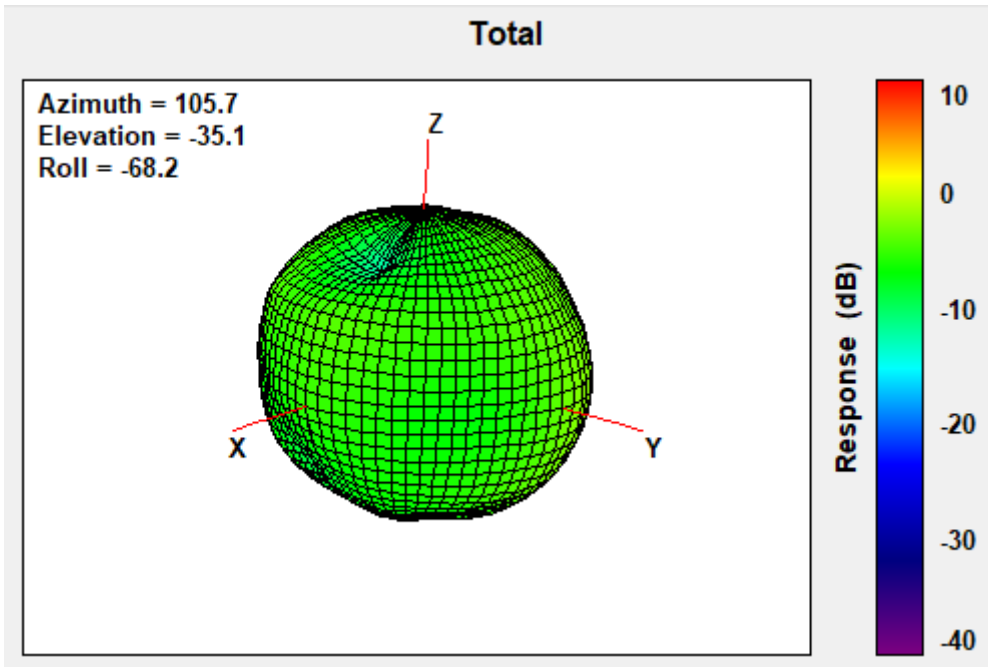
Center Frequency	<b>880MHz</b>
Horizontal (dBi) peak	-2.29
Vertical (dBi) peak	-0.91

### 897.5MHz



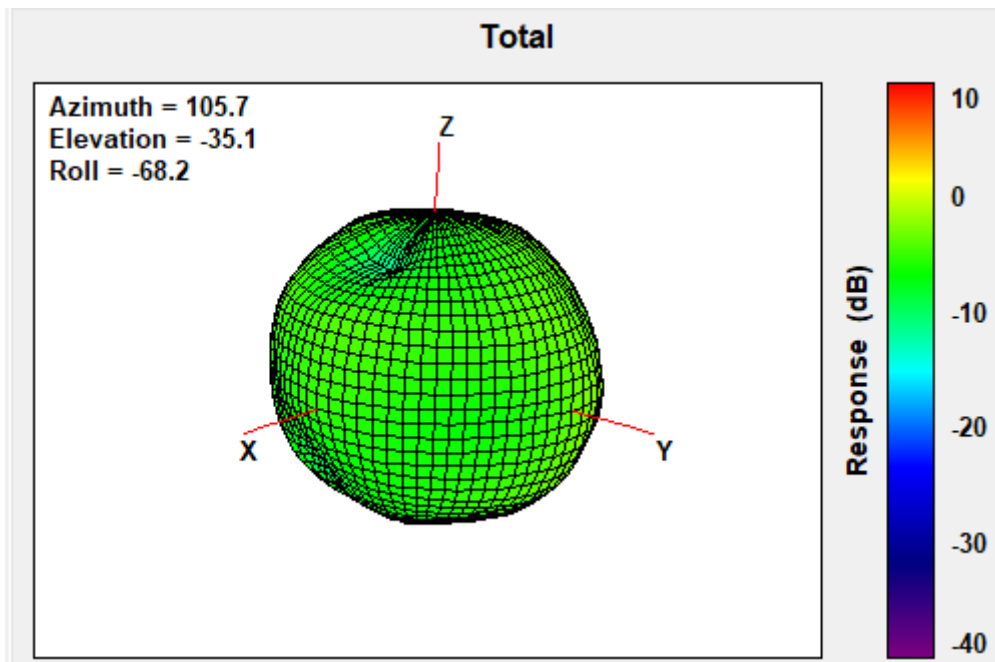
Center Frequency	<b>897.5MHz</b>
Horizontal (dBi) peak	-3.00
Vertical (dBi) peak	-1.64

**915MHz**



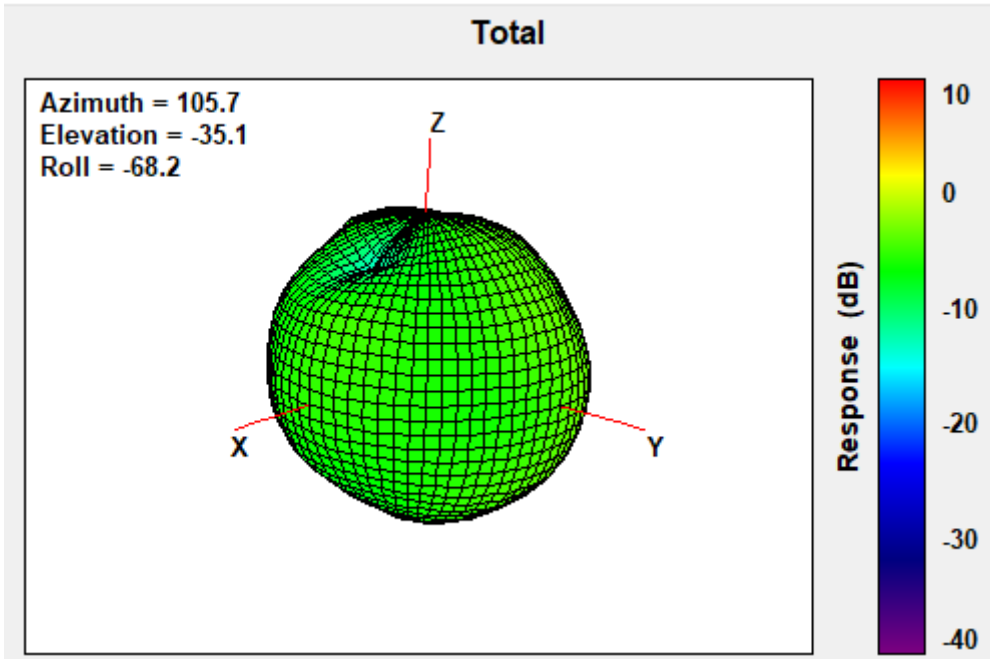
Center Frequency	<b>915MHz</b>
Horizontal (dBi) peak	-3.36
Vertical (dBi) peak	-2.06

**925MHz**



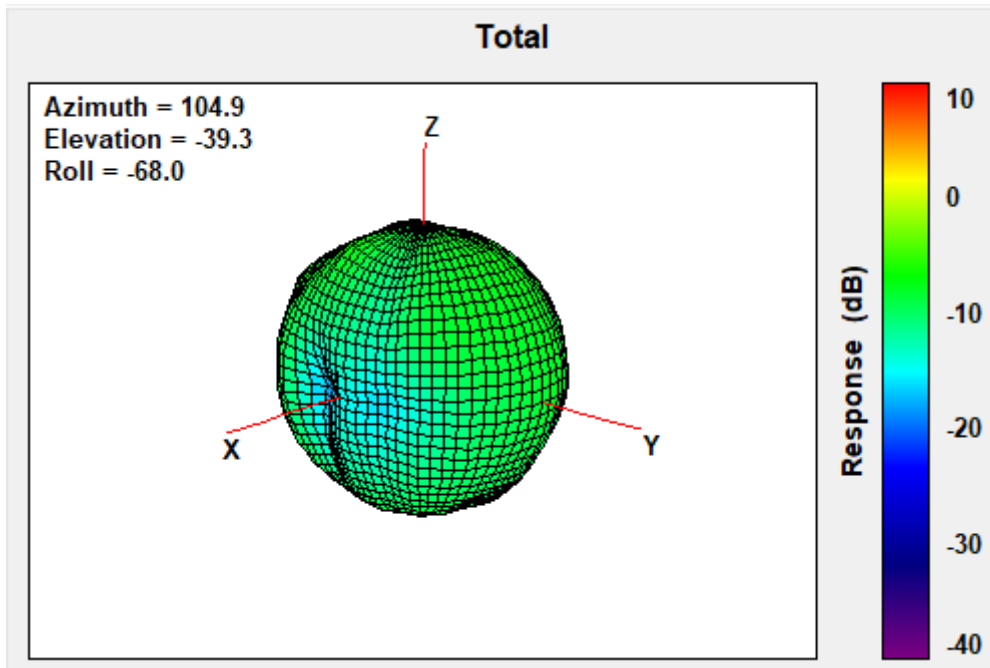
Center Frequency	<b>925MHz</b>
Horizontal (dBi) peak	-3.87
Vertical (dBi) peak	-2.30

**960MHz**



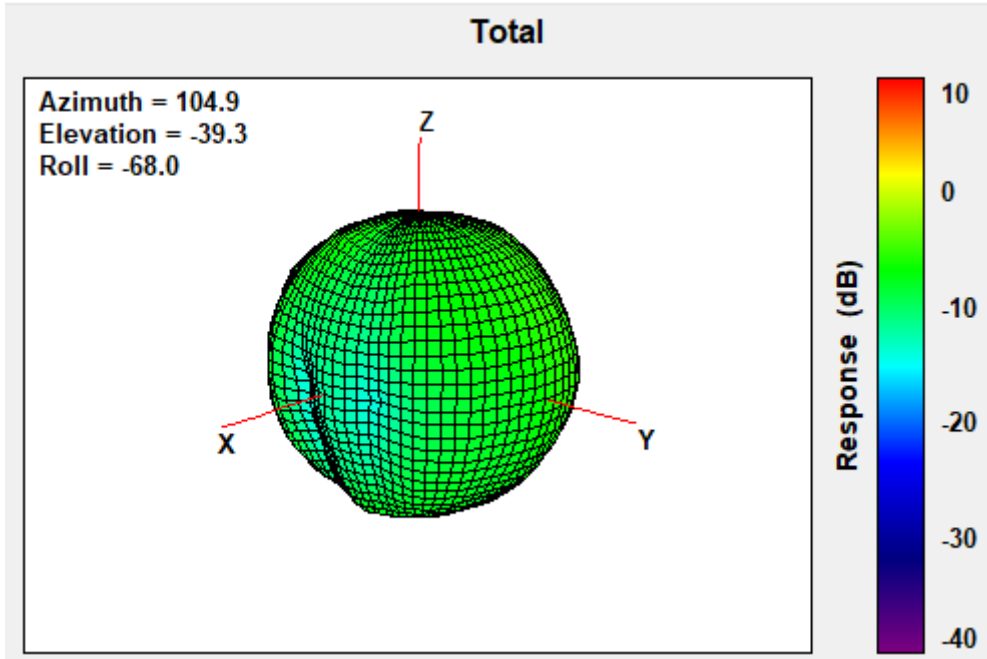
Center Frequency	<b>960MHz</b>
Horizontal (dBi) peak	-5.28
Vertical (dBi) peak	-3.00

**1427.9MHz**



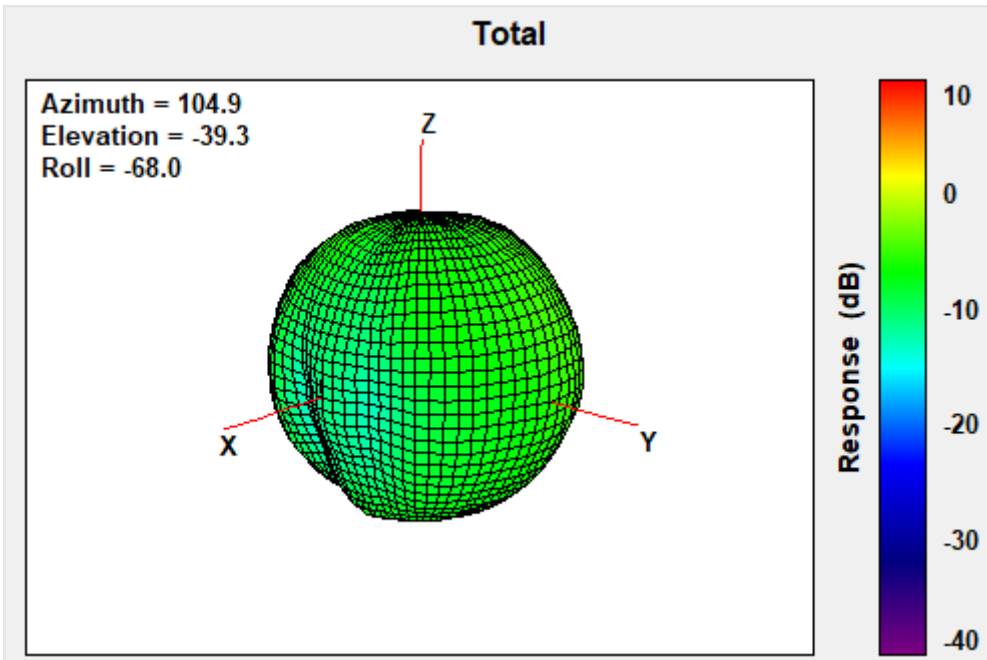
Center Frequency	<b>1427.9MHz</b>
Horizontal (dBi) peak	-4.05
Vertical (dBi) peak	-6.74

1447.9MHz



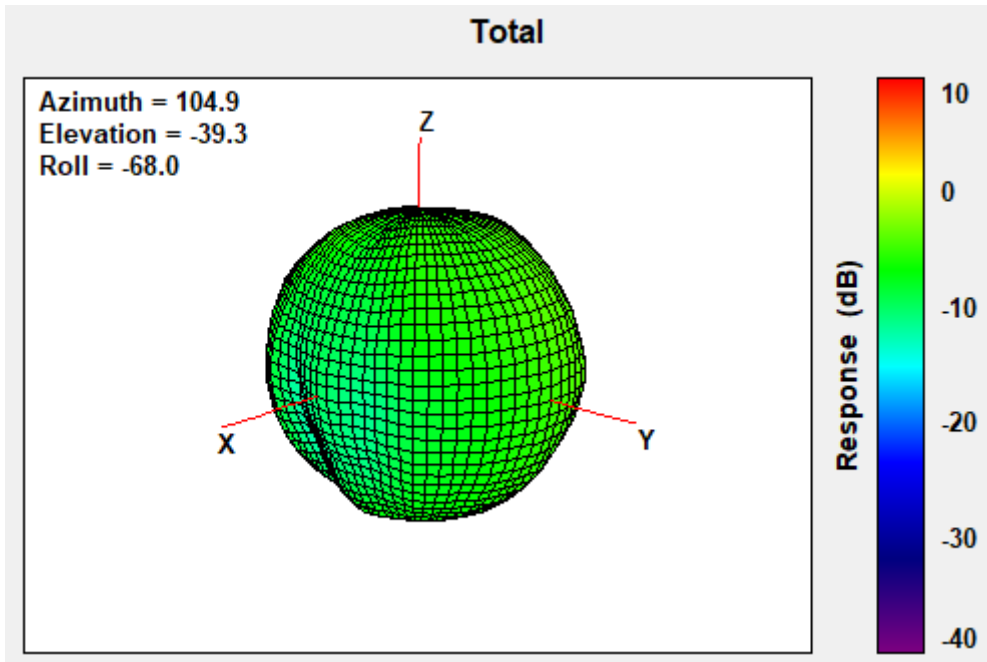
Center Frequency	<b>1447.9MHz</b>
Horizontal (dBi) peak	-3.27
Vertical (dBi) peak	-5.24

1455.4MHz



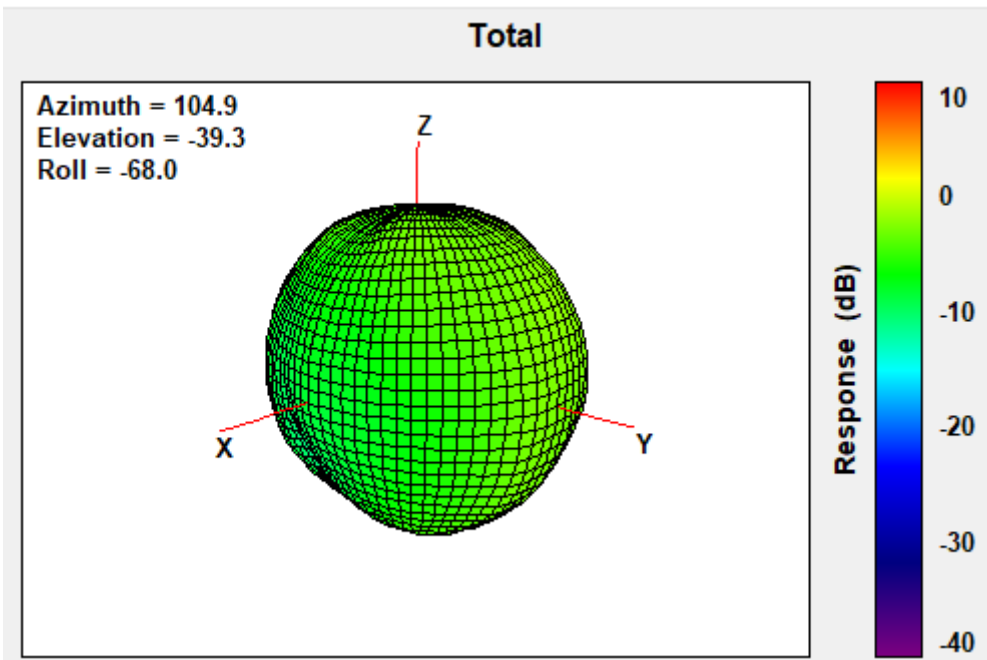
Center Frequency	<b>1455.4MHz</b>
Horizontal (dBi) peak	-3.11
Vertical (dBi) peak	-4.43

1462.9MHz



Center Frequency	<b>1462.9MHz</b>
Horizontal (dBi) peak	-2.84
Vertical (dBi) peak	-3.77

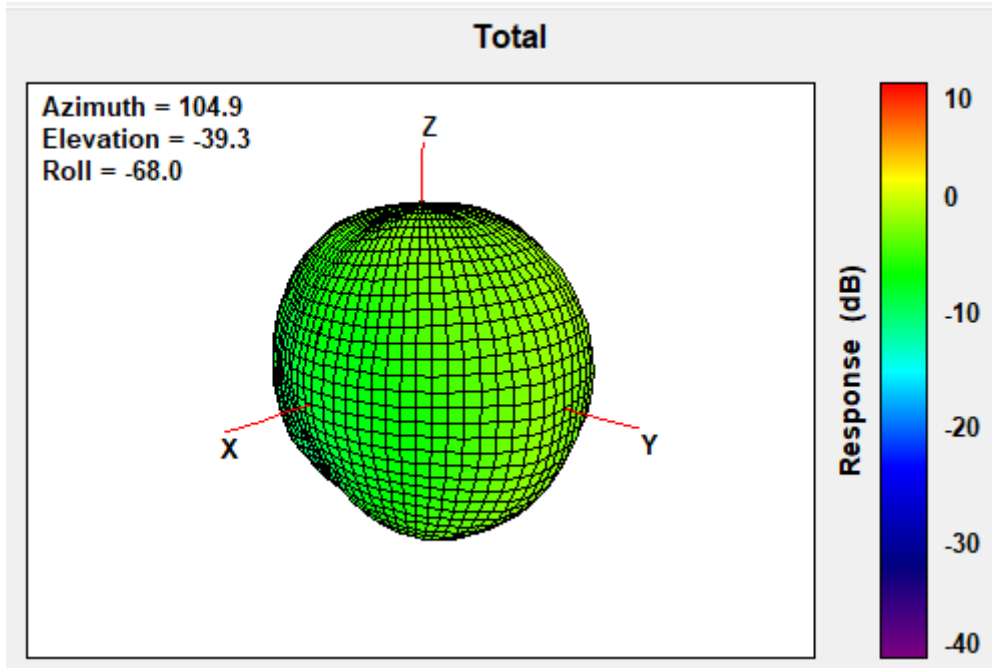
1496MHz



Center Frequency	<b>1496MHz</b>
Horizontal (dBi) peak	-1.34
Vertical (dBi) peak	-2.27

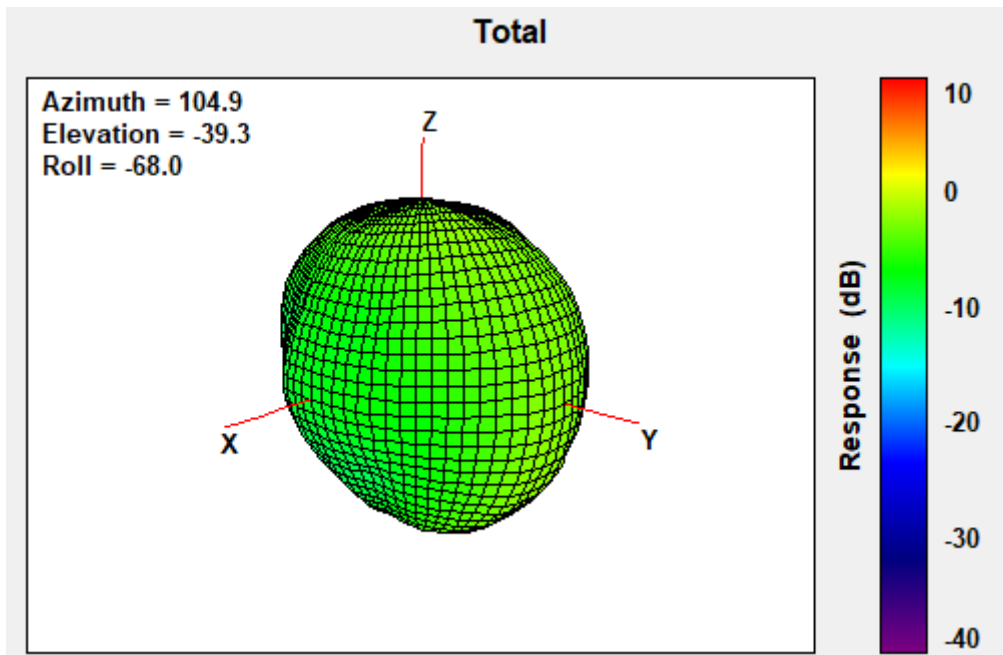


1510.9MHz



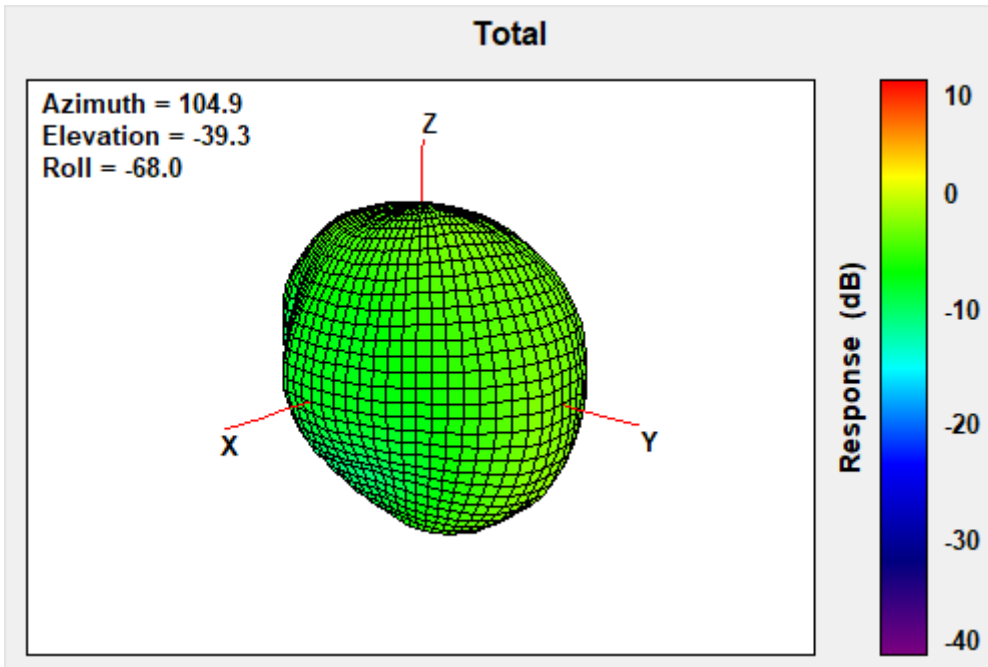
Center Frequency	<b>1510.9MHz</b>
Horizontal (dBi) peak	-1.14
Vertical (dBi) peak	-1.88

1557MHz



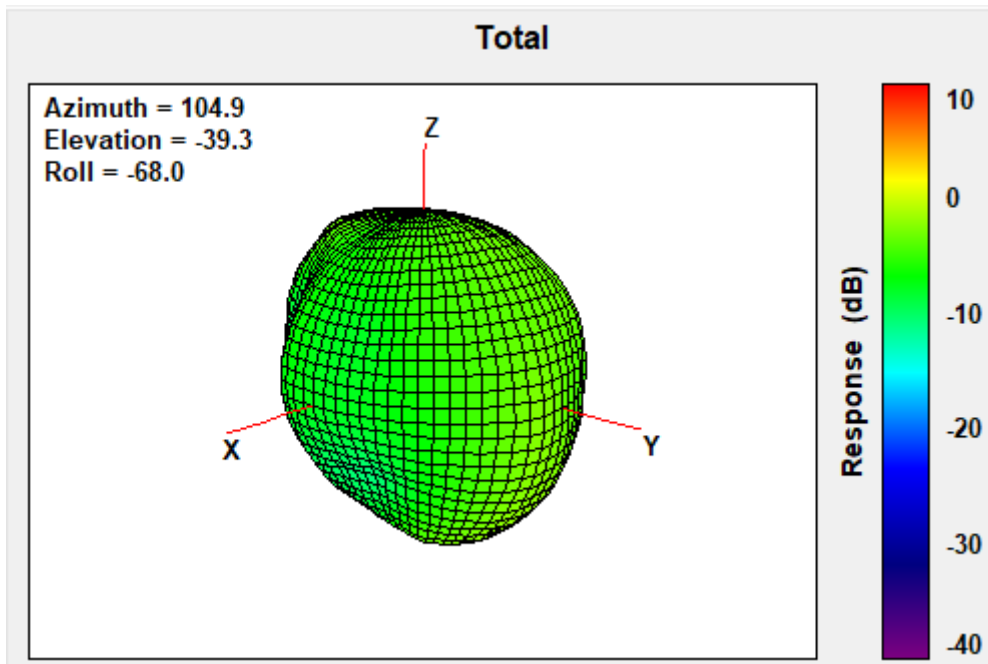
Center Frequency	<b>1557MHz</b>
Horizontal (dBi) peak	-1.25
Vertical (dBi) peak	-2.11

**1575MHz**



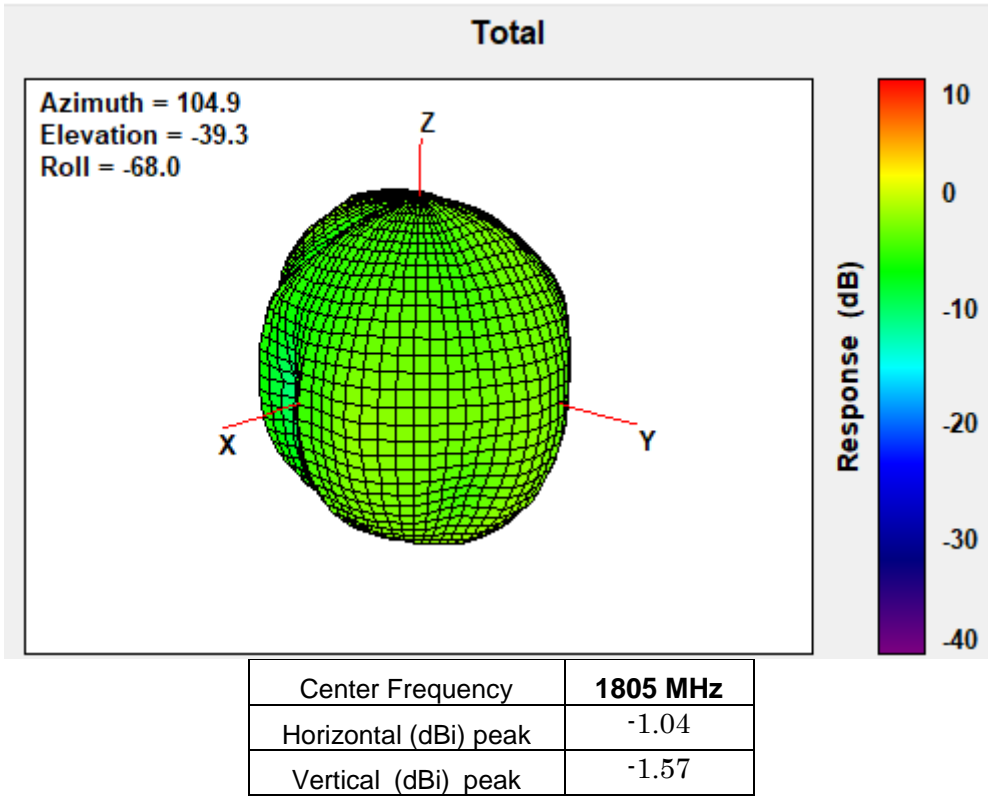
Center Frequency	<b>1575MHz</b>
Horizontal (dBi) peak	-1.84
Vertical (dBi) peak	-2.13

**1610MHz**

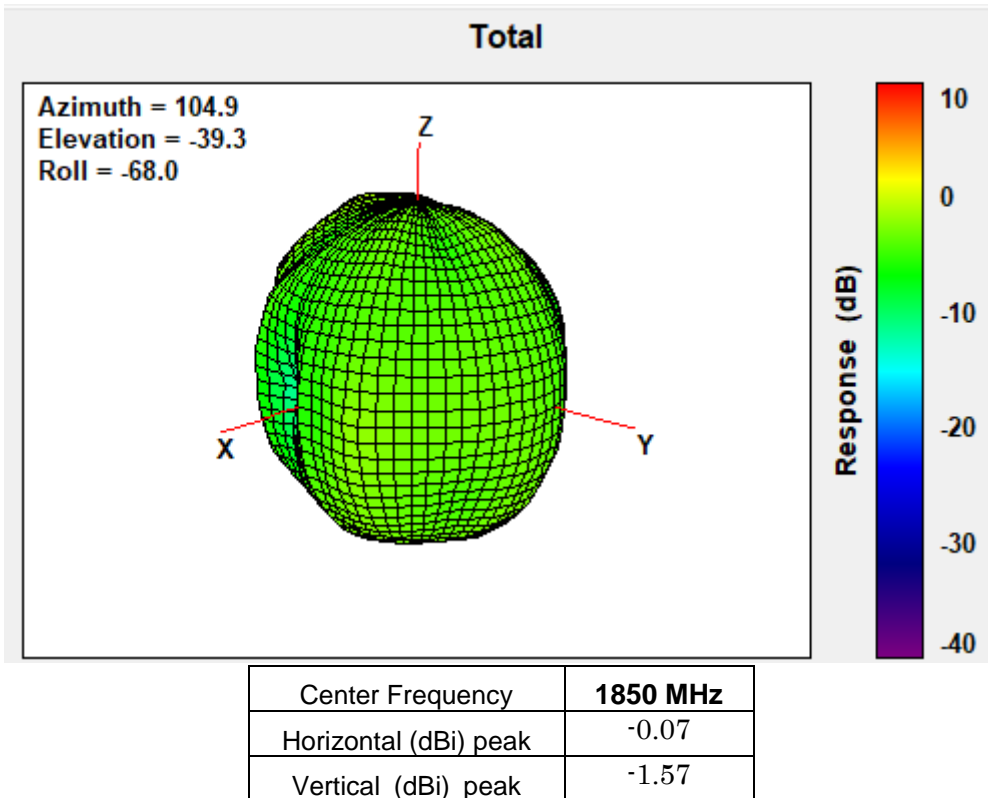


Center Frequency	<b>1610MHz</b>
Horizontal (dBi) peak	-1.06
Vertical (dBi) peak	-2.16

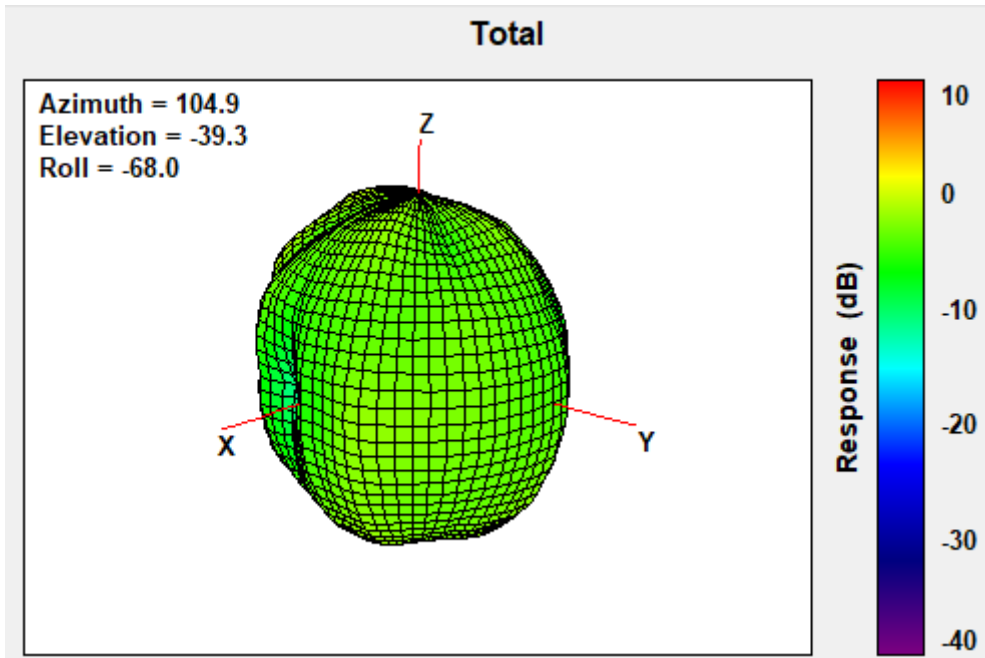
1805 MHz



1850 MHz

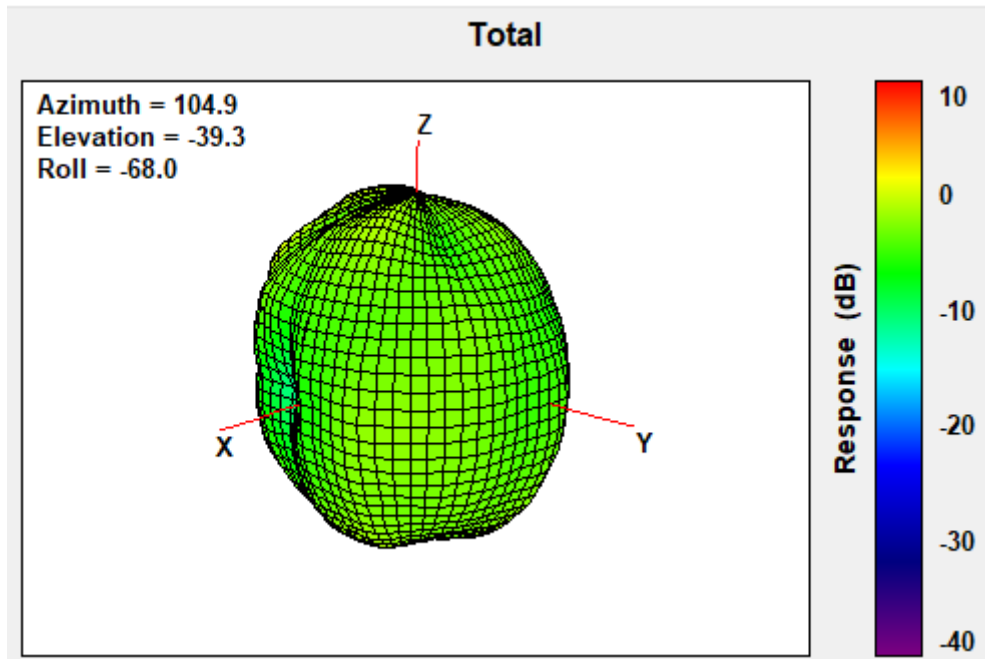


**1880 MHz**



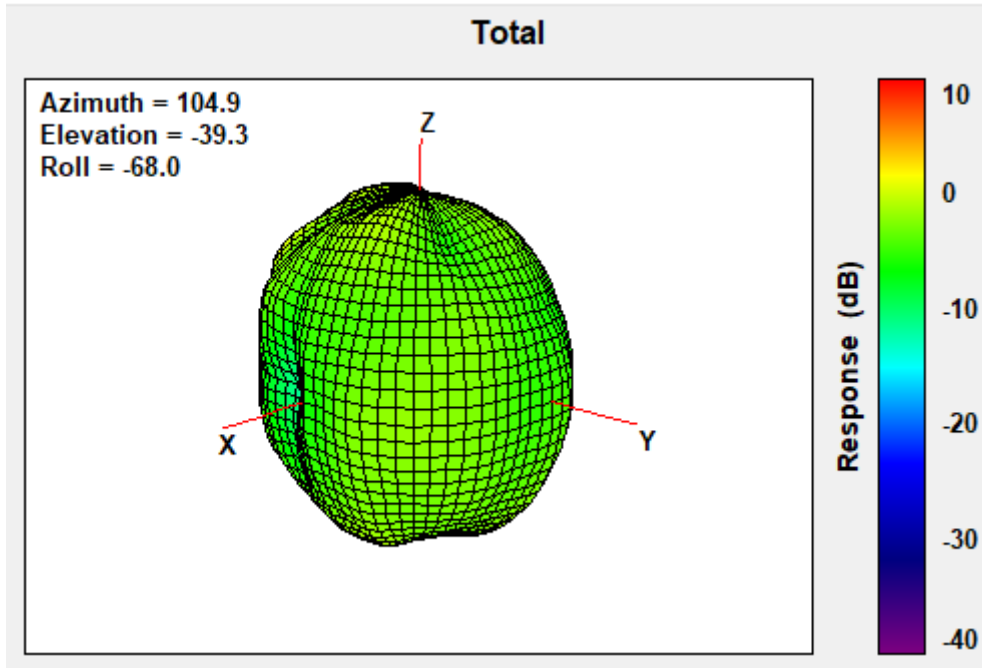
Center Frequency	<b>1880 MHz</b>
Horizontal (dBi) peak	1.12
Vertical (dBi) peak	-1.57

**1910MHz**



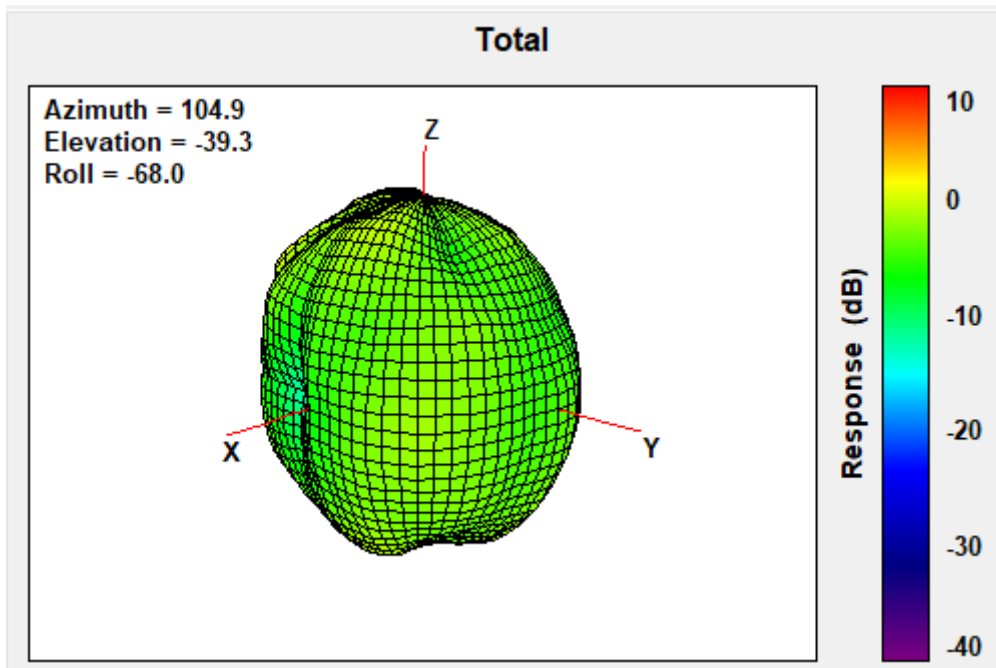
Center Frequency	<b>1910MHz</b>
Horizontal (dBi) peak	2.05
Vertical (dBi) peak	-1.73

**1920MHz**



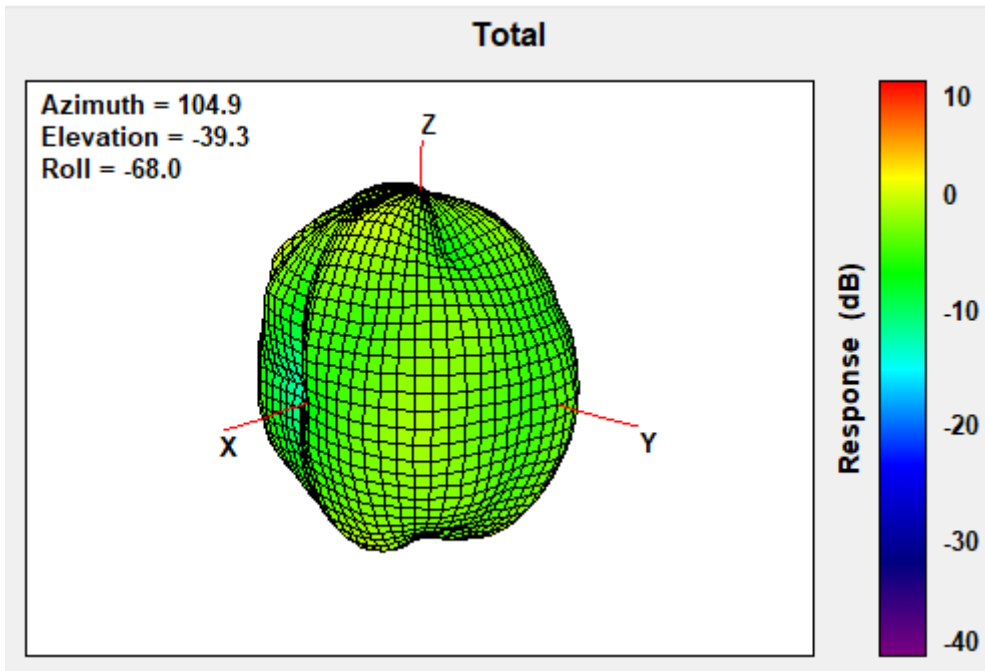
Center Frequency	<b>1920MHz</b>
Horizontal (dBi) peak	2.19
Vertical (dBi) peak	-1.55

**1950MHz**



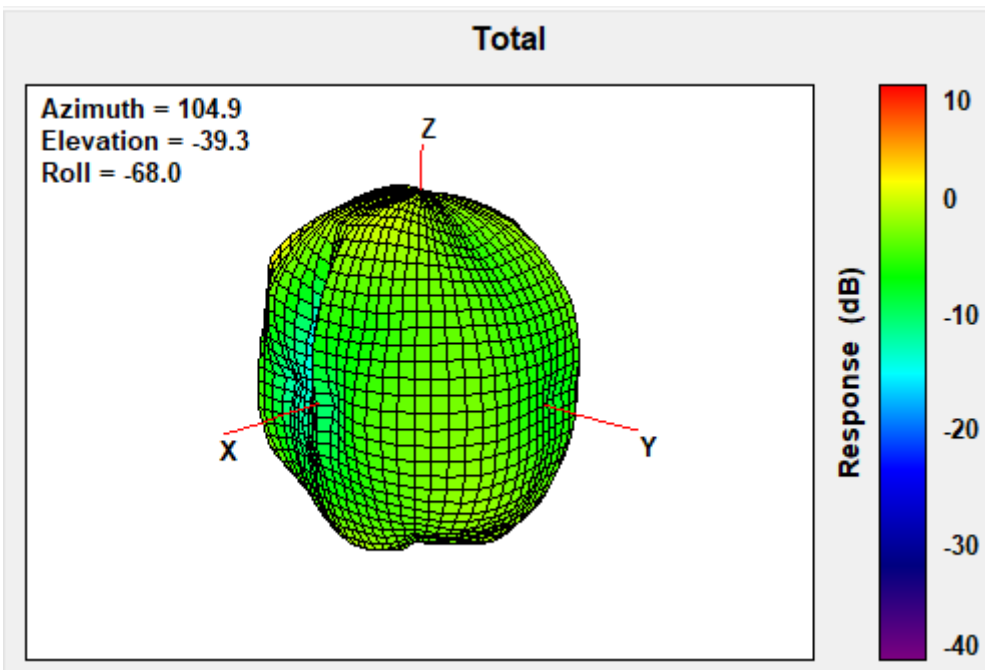
Center Frequency	<b>1950MHz</b>
Horizontal (dBi) peak	2.72
Vertical (dBi) peak	-1.02

**1980MHz**



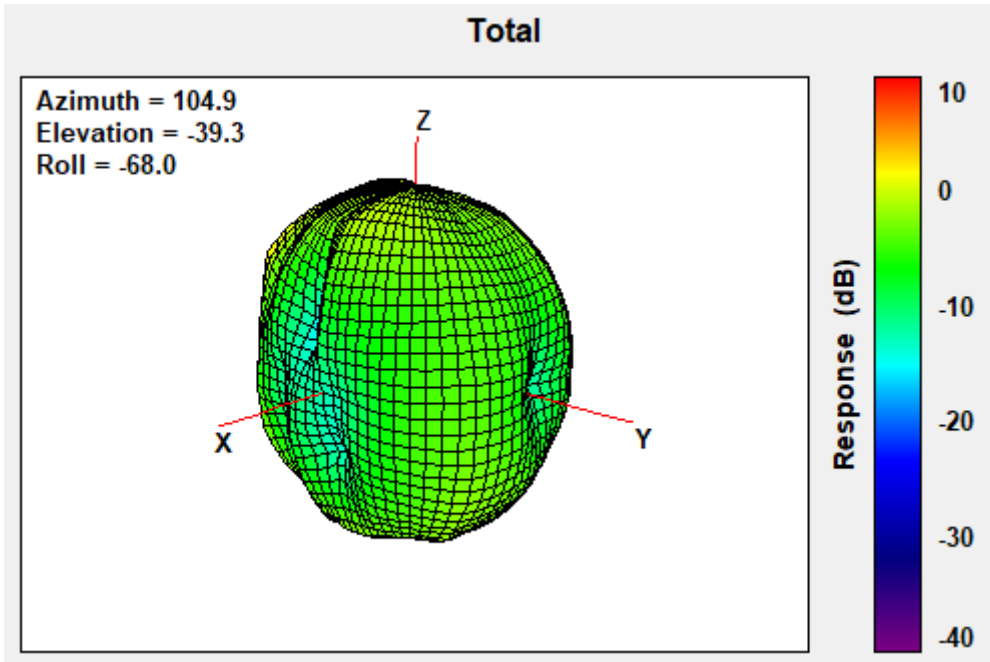
Center Frequency	<b>1980MHz</b>
Horizontal (dBi) peak	2.77
Vertical (dBi) peak	-0.79

**2110MHz**



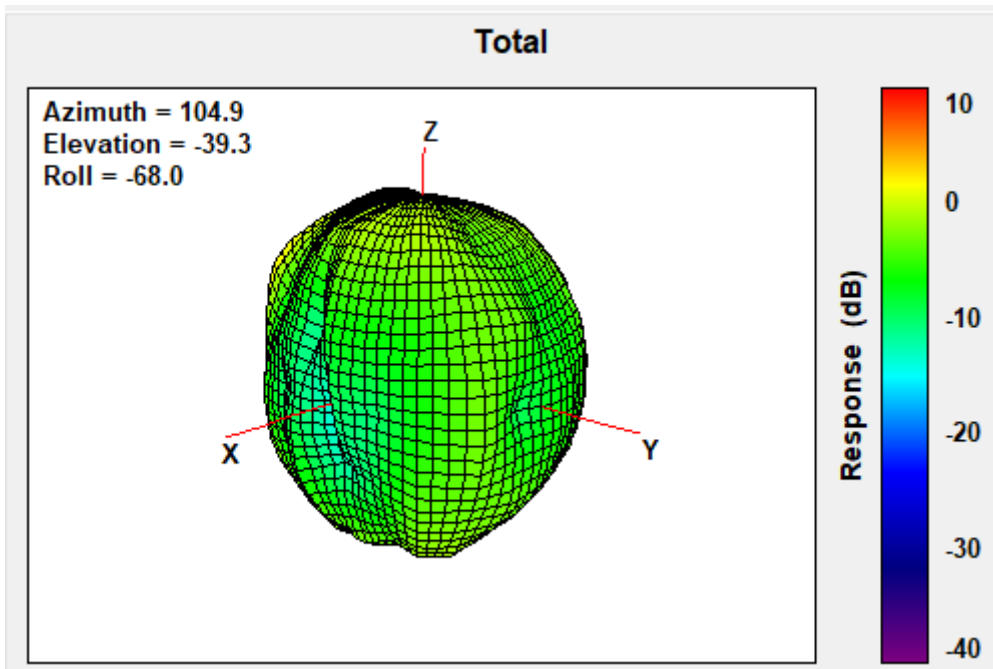
Center Frequency	<b>2110MHz</b>
Horizontal (dBi) peak	3.39
Vertical (dBi) peak	-1.68

**2200MHz**



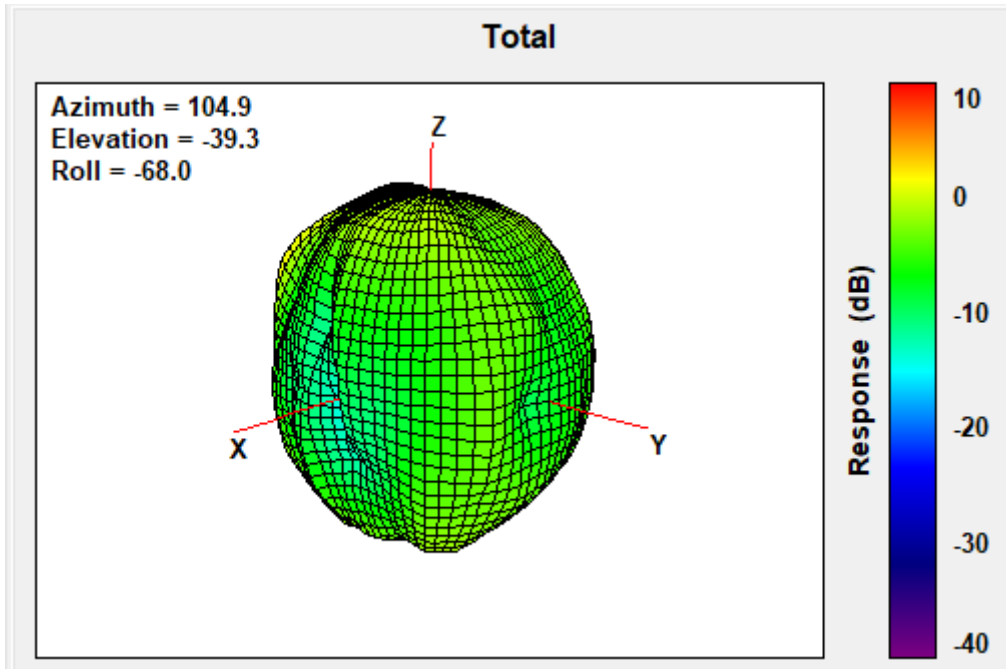
Center Frequency	<b>2200MHz</b>
Horizontal (dBi) peak	2.88
Vertical (dBi) peak	-1.92

**2300MHz**



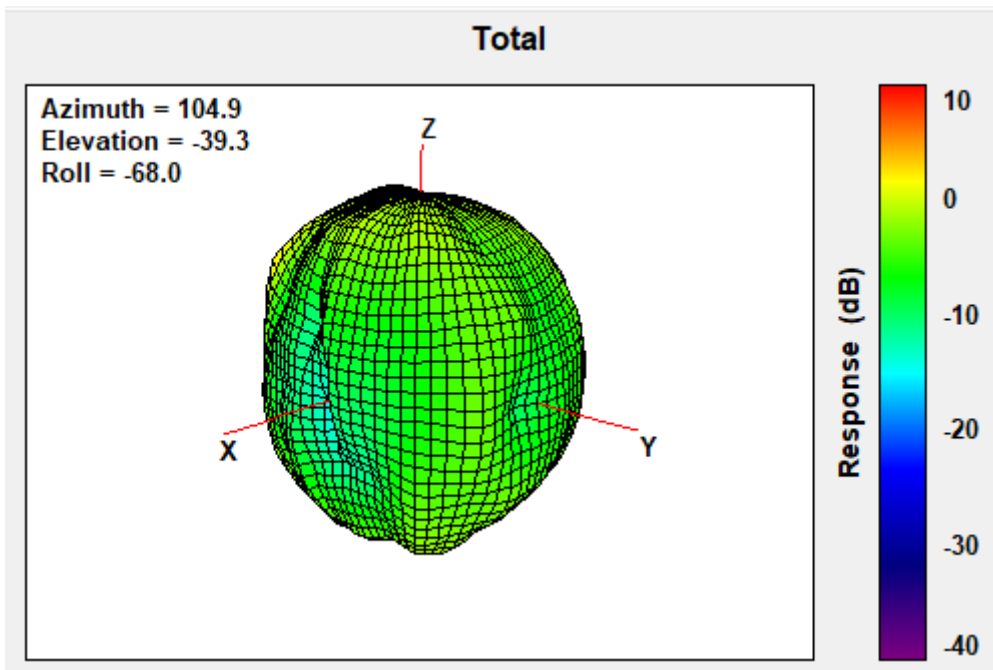
Center Frequency	<b>2300MHz</b>
Horizontal (dBi) peak	3.10
Vertical (dBi) peak	-1.43

**2305MHz**



Center Frequency	<b>2305MHz</b>
Horizontal (dBi) peak	3.06
Vertical (dBi) peak	-1.44

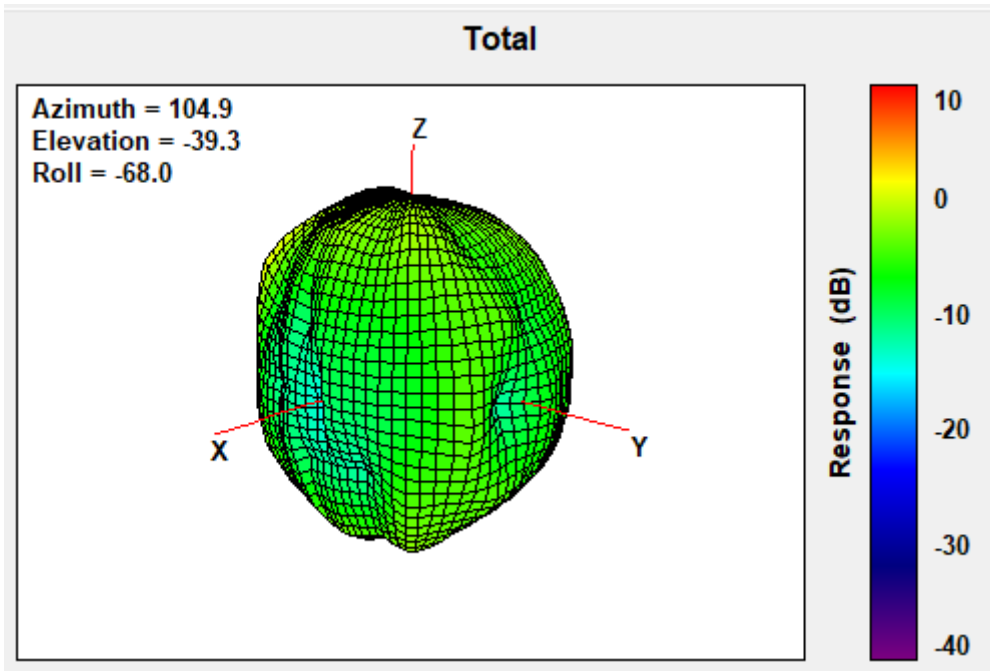
**2315MHz**



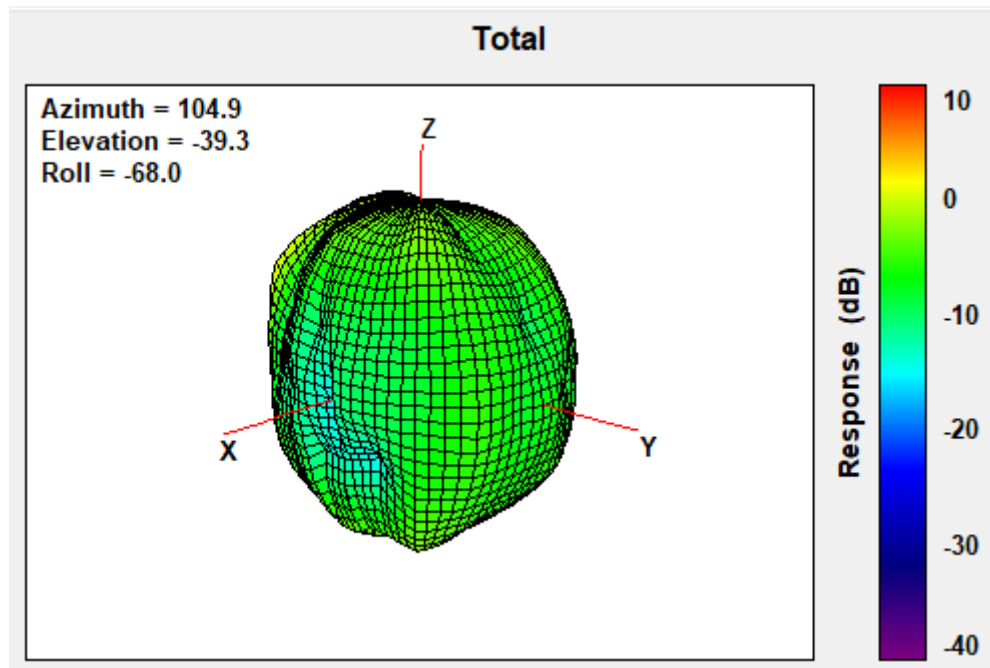
Center Frequency	<b>2315MHz</b>
Horizontal (dBi) peak	2.96
Vertical (dBi) peak	-1.41



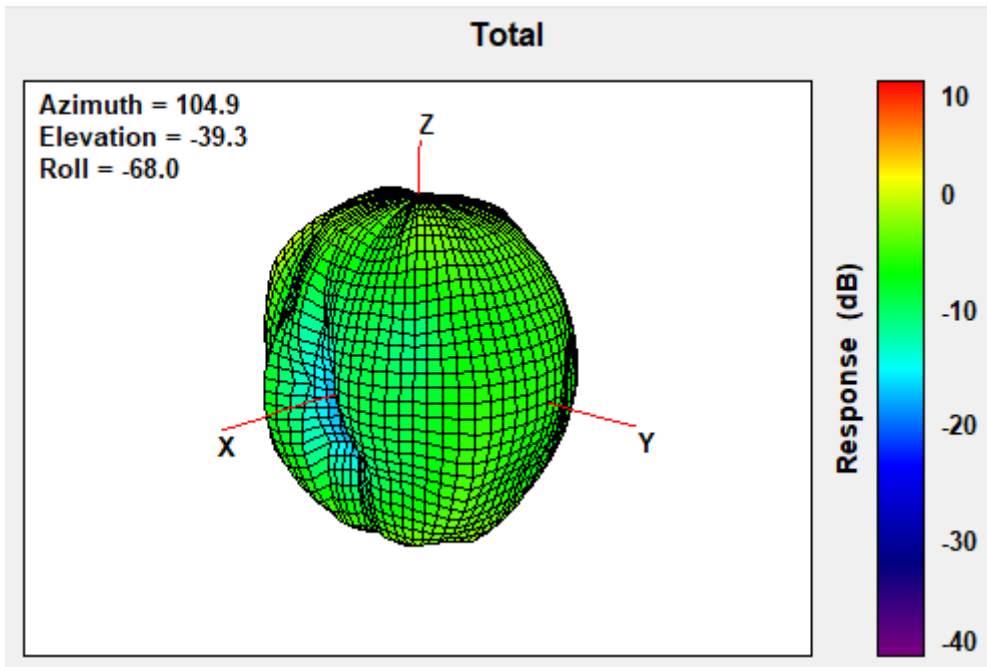
**2350MHz**



**2400MHz**

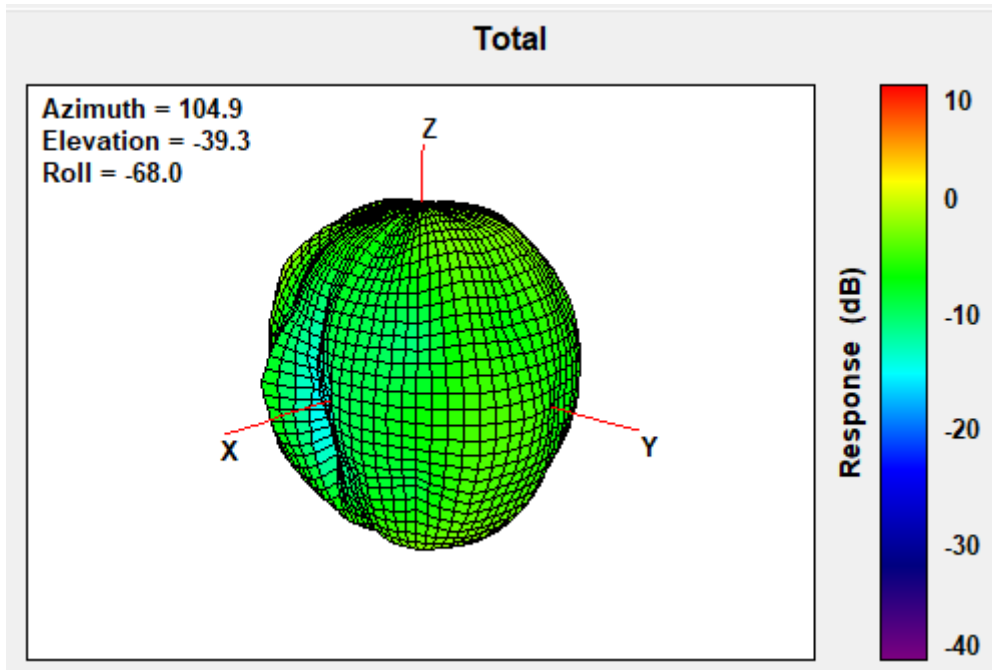


**2500MHz**



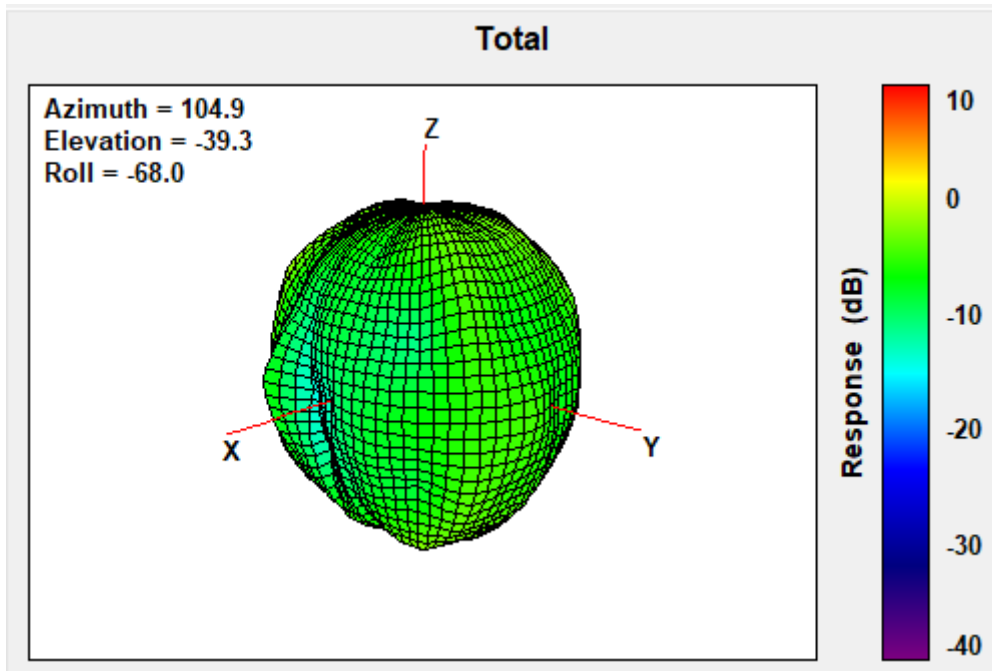
Center Frequency	<b>2500MHz</b>
Horizontal (dBi) peak	1.63
Vertical (dBi) peak	-1.51

**2570MHz**



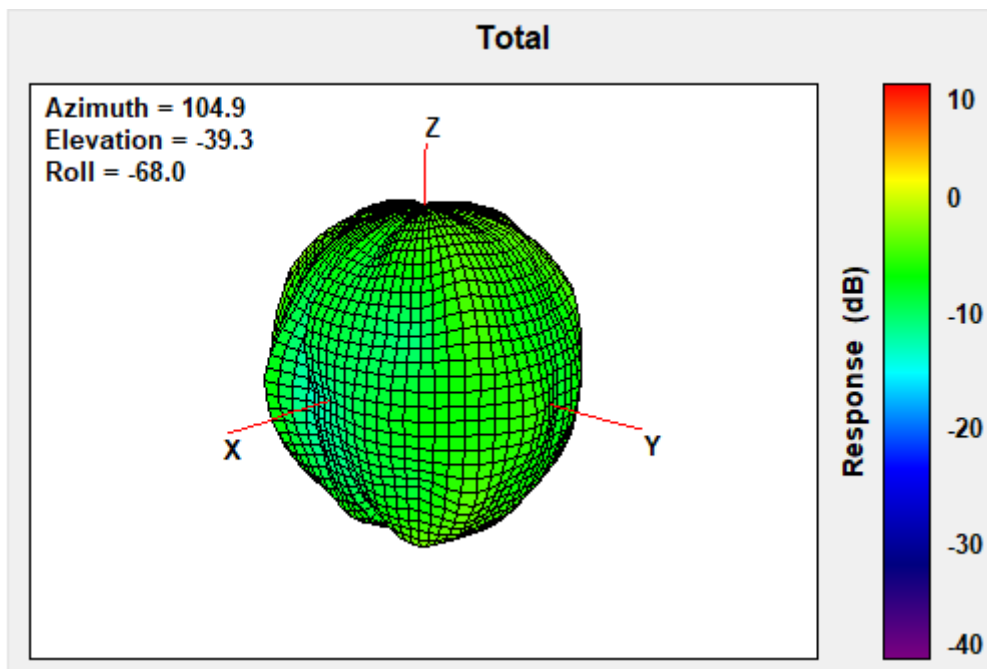
Center Frequency	<b>2570MHz</b>
Horizontal (dBi) peak	0.25
Vertical (dBi) peak	-0.51

**2595MHz**



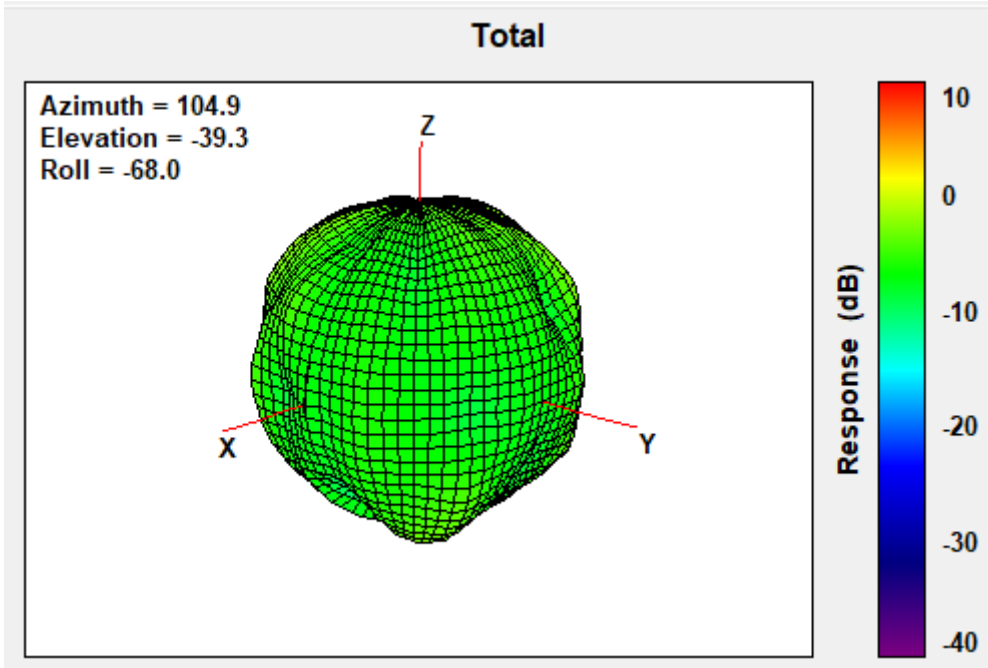
Center Frequency	<b>2595MHz</b>
Horizontal (dBi) peak	-0.56
Vertical (dBi) peak	-0.80

**2620MHz**



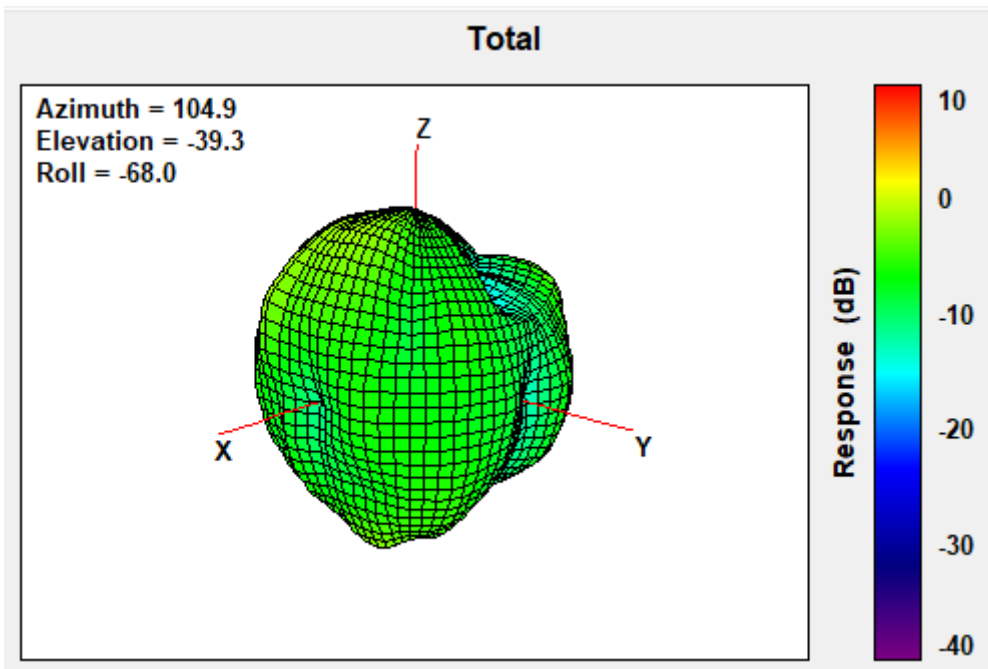
Center Frequency	<b>2620MHz</b>
Horizontal (dBi) peak	-1.15
Vertical (dBi) peak	-0.86

**2690MHz**



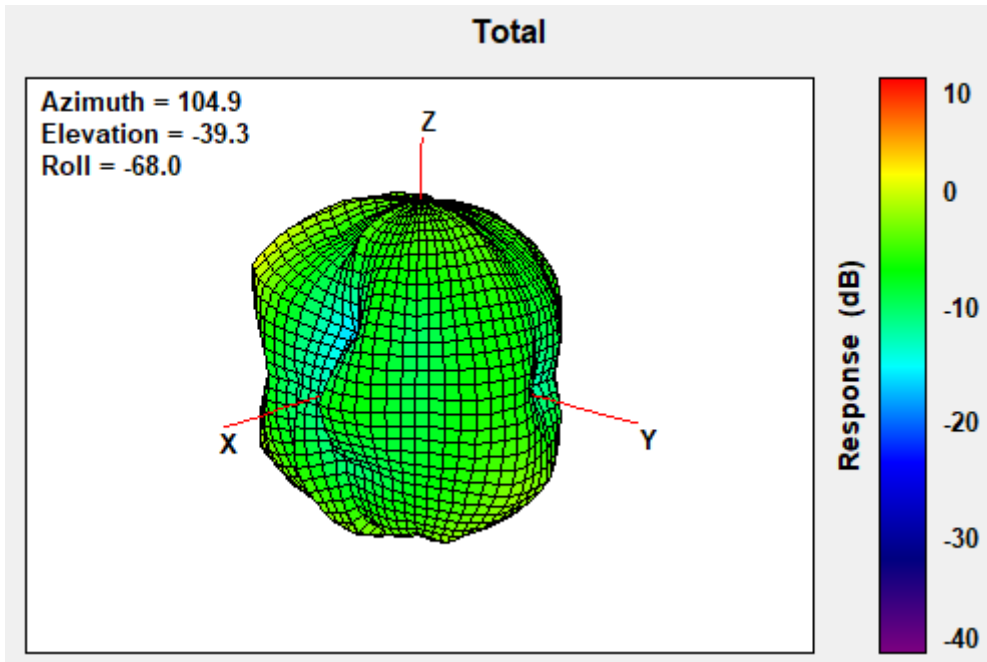
Center Frequency	<b>2690MHz</b>
Horizontal (dBi) peak	-1.58
Vertical (dBi) peak	-2.11

**3400MHz**



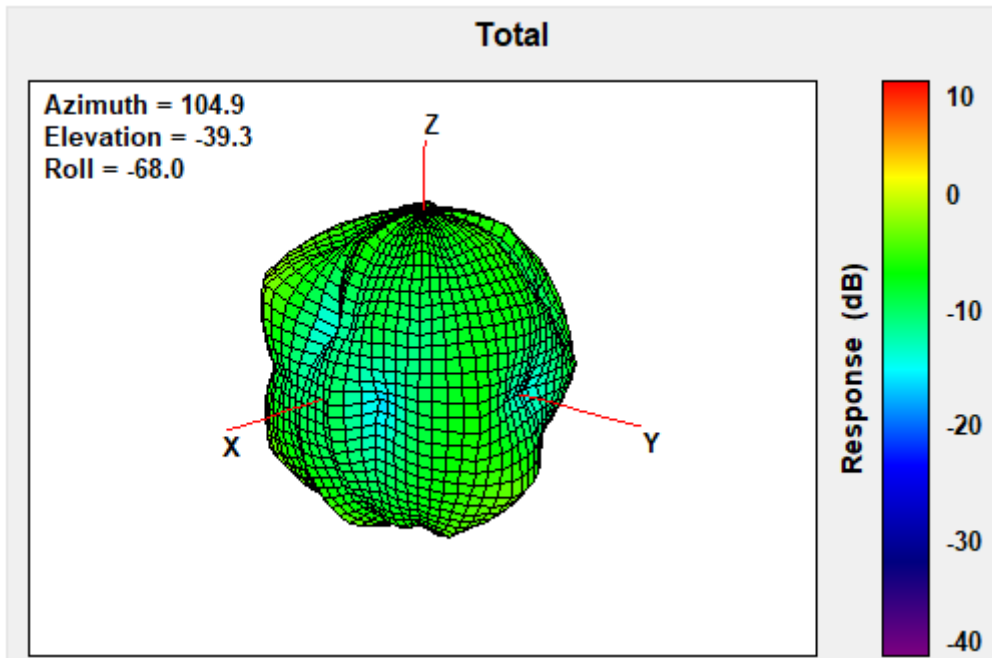
Center Frequency	<b>3400MHz</b>
Horizontal (dBi) peak	1.25
Vertical (dBi) peak	-0.78

### 3500MHz



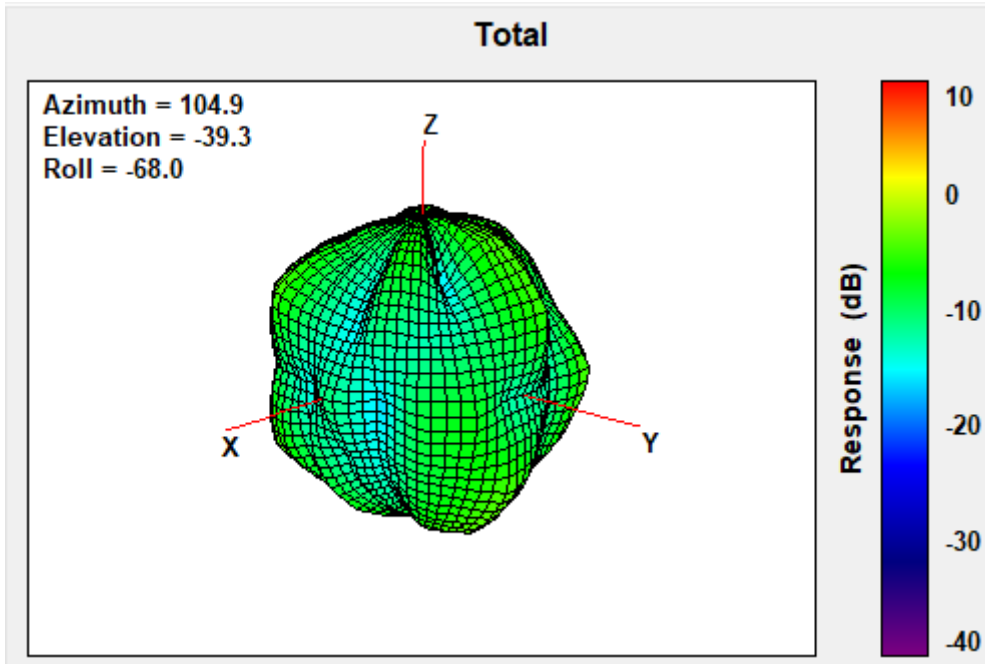
Center Frequency	<b>3500MHz</b>
Horizontal (dBi) peak	1.36
Vertical (dBi) peak	-3.15

### 3600MHz



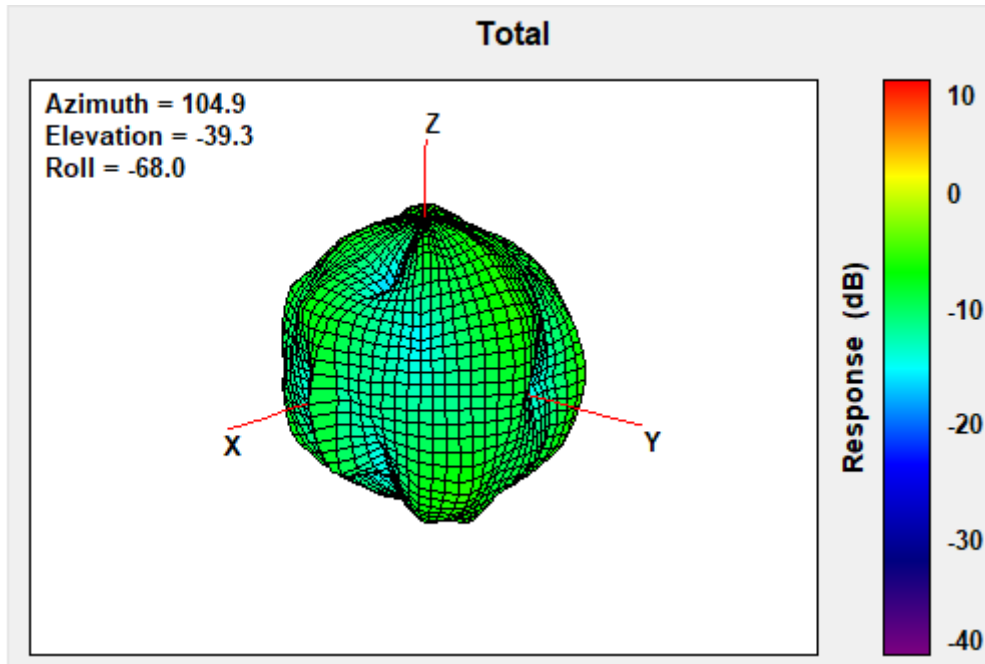
Center Frequency	<b>3600MHz</b>
Horizontal (dBi) peak	-0.43
Vertical (dBi) peak	-3.79

### 3700MHz



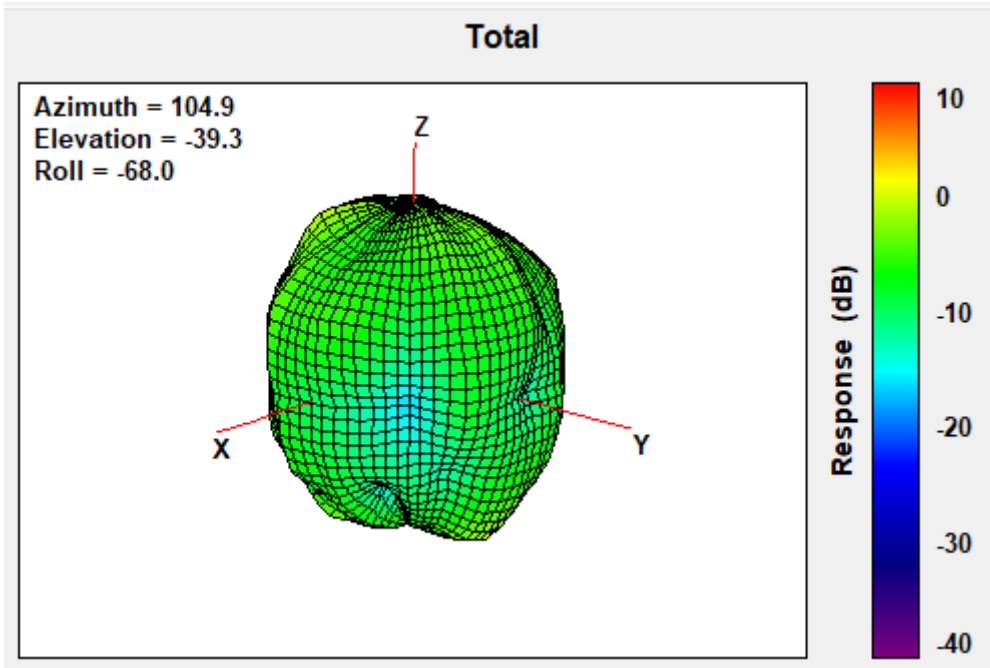
Center Frequency	<b>3700MHz</b>
Horizontal (dBi) peak	0.18
Vertical (dBi) peak	-2.54

### 3800MHz



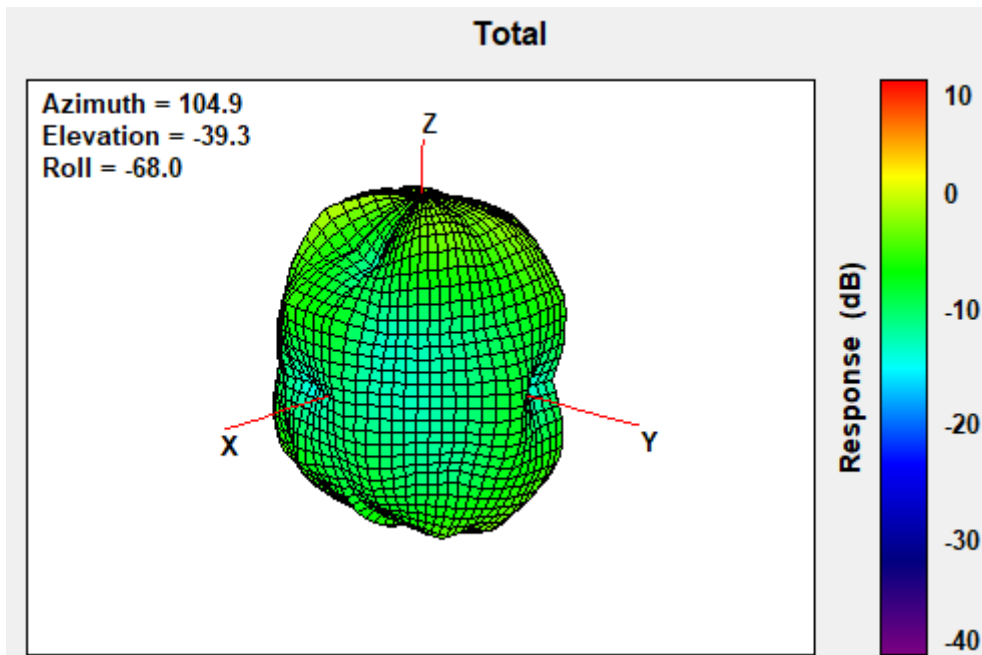
Center Frequency	<b>3800MHz</b>
Horizontal (dBi) peak	-2.30
Vertical (dBi) peak	-3.67

**4200MHz**



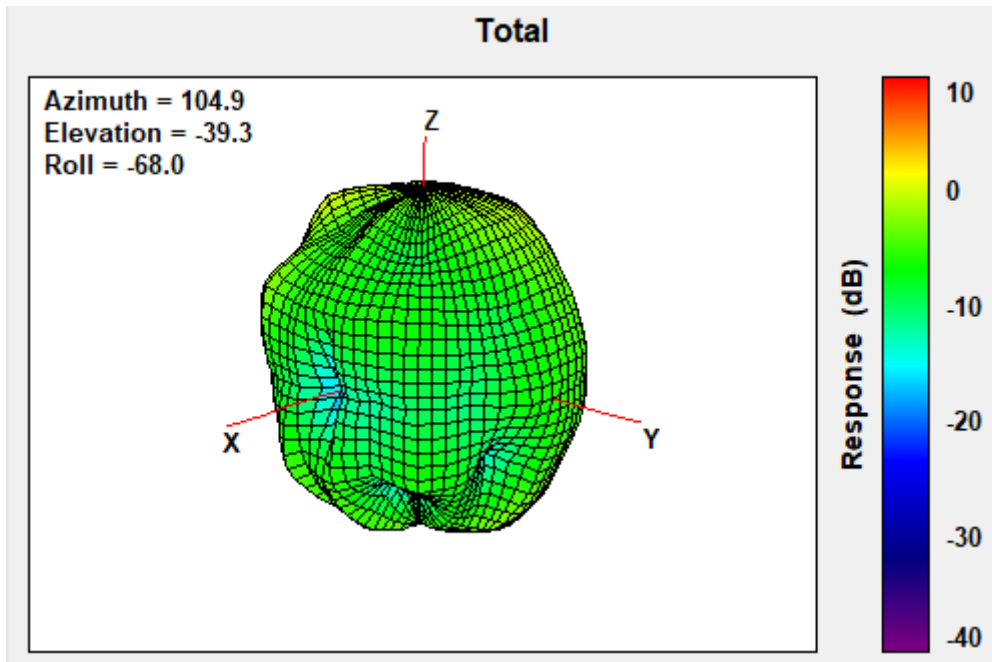
Center Frequency	<b>4200MHz</b>
Horizontal (dBi) peak	2.63
Vertical (dBi) peak	-1.33

**4400MHz**



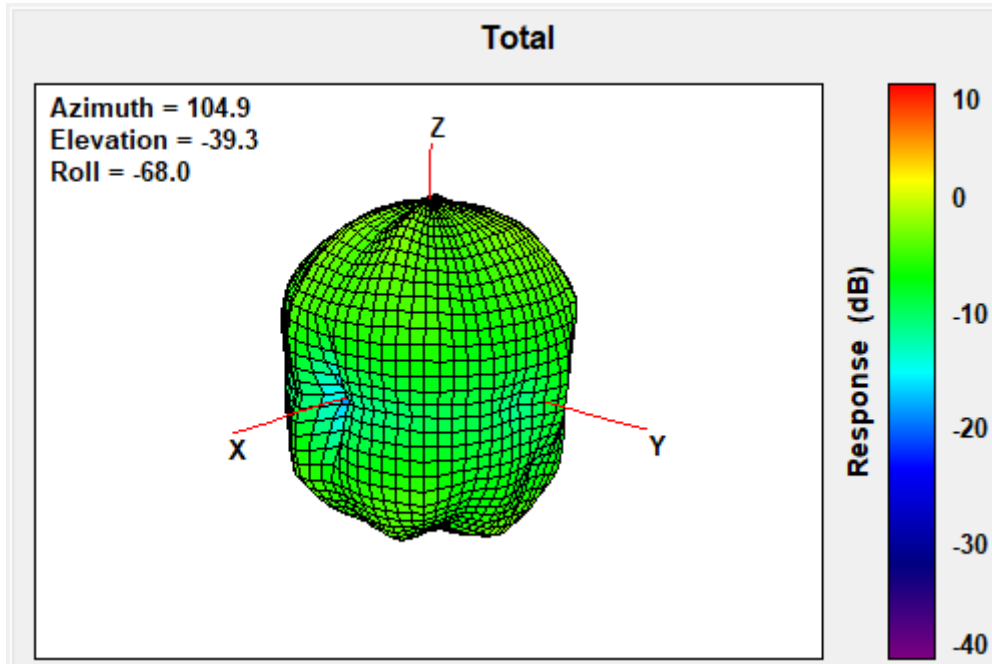
Center Frequency	<b>4400MHz</b>
Horizontal (dBi) peak	2.86
Vertical (dBi) peak	-1.12

**4700MHz**



Center Frequency	<b>4700MHz</b>
Horizontal (dBi) peak	3.33
Vertical (dBi) peak	-0.34

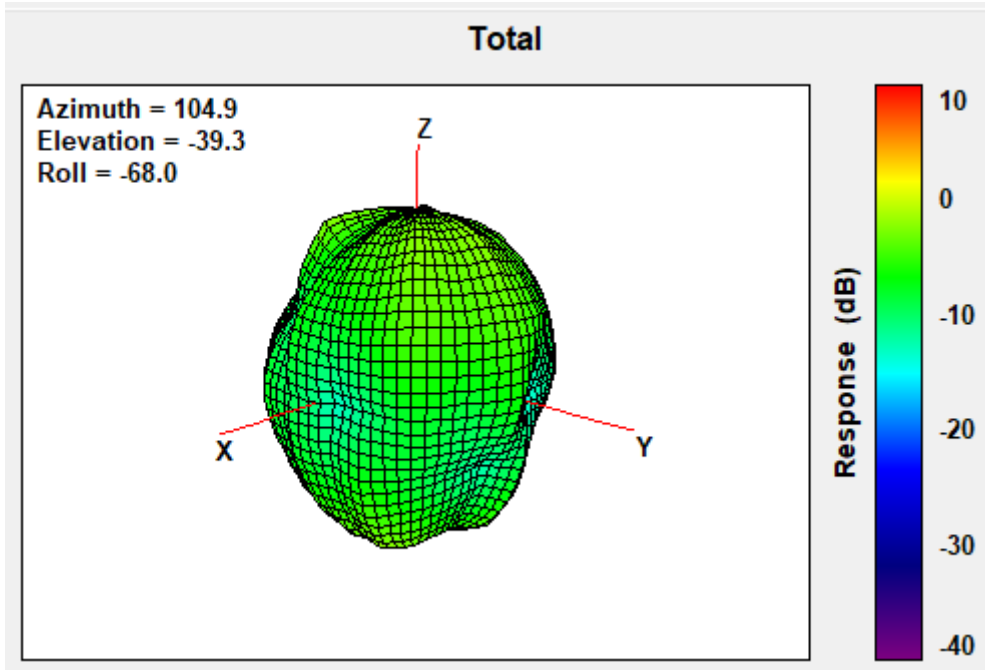
**5150MHz**



Center Frequency	<b>5150MHz</b>
Horizontal (dBi) peak	1.04
Vertical (dBi) peak	-1.70

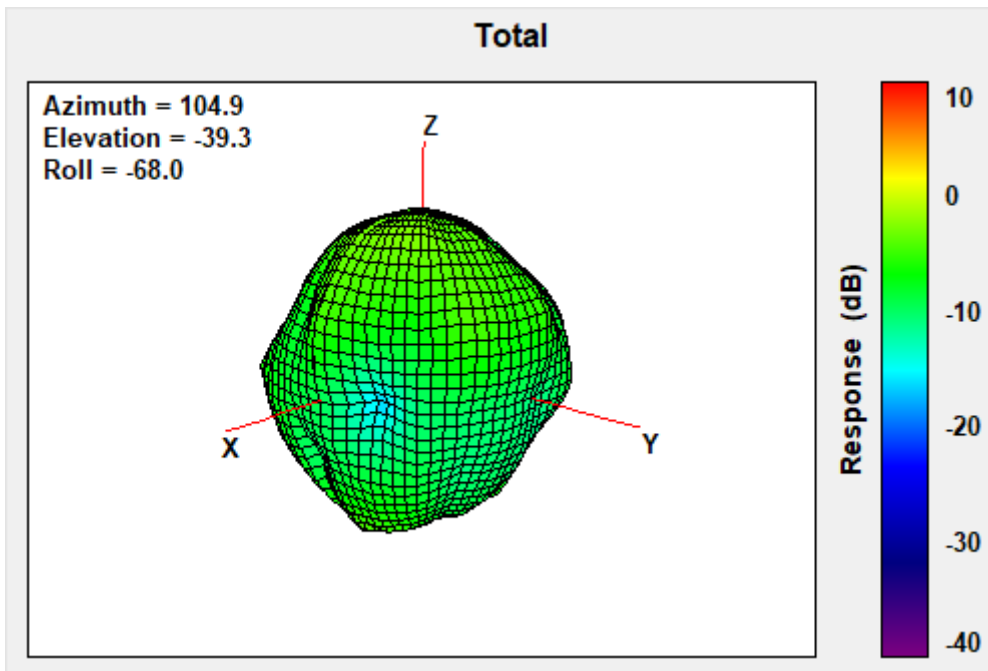


5537.5MHz



Center Frequency	<b>5537.5MHz</b>
Horizontal (dBi) peak	-0.97
Vertical (dBi) peak	-1.92

5925MHz

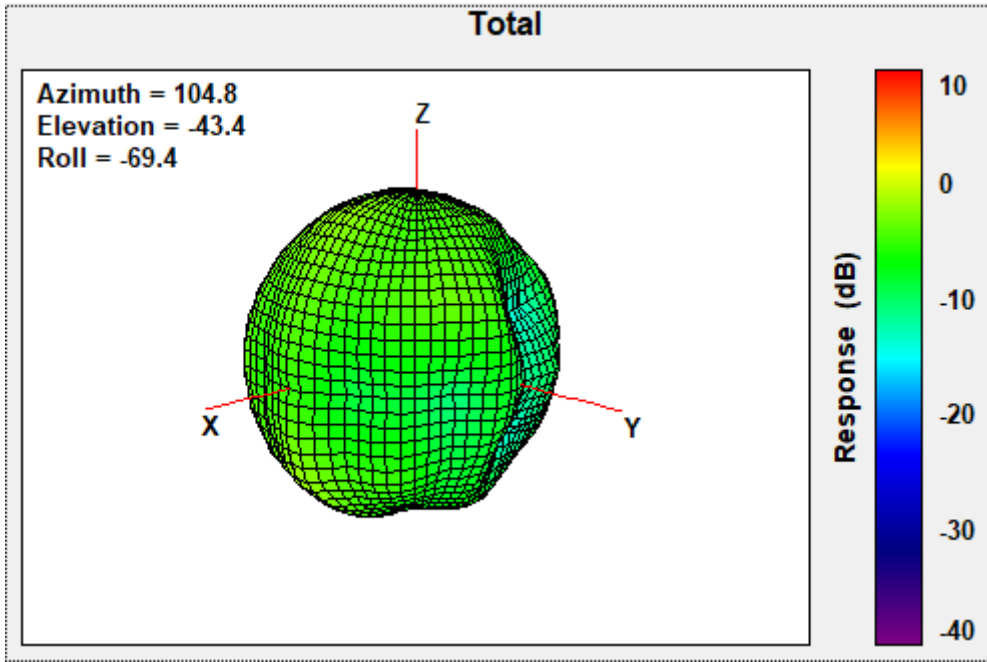


Center Frequency	<b>5925MHz</b>
Horizontal (dBi) peak	-1.82
Vertical (dBi) peak	-2.41

**NB mode**

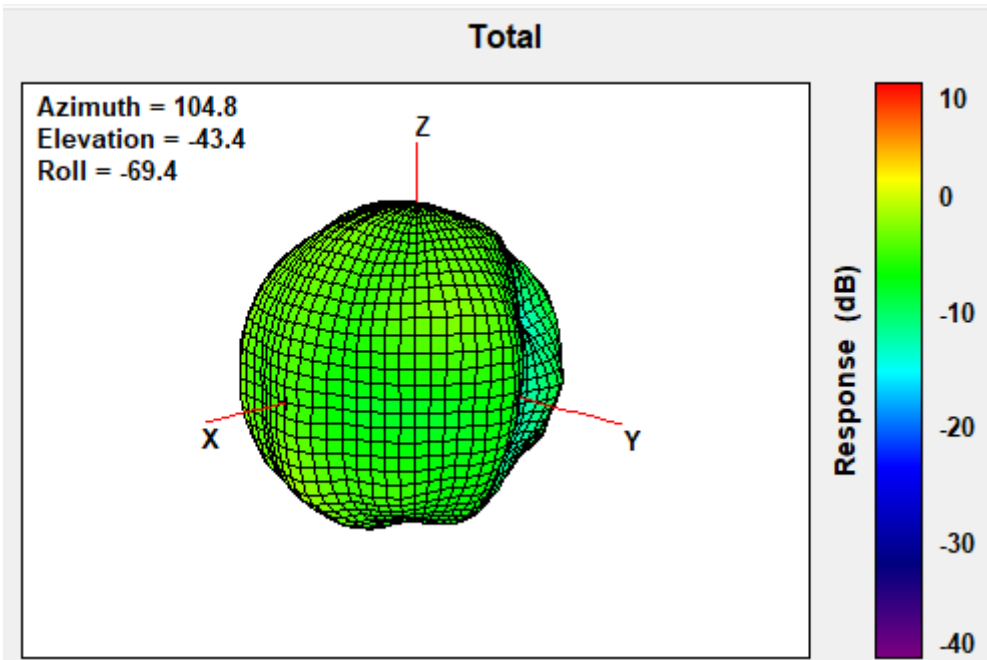
**MIMO2 Antenna (Tx2/Rx3)**

1452 MHz



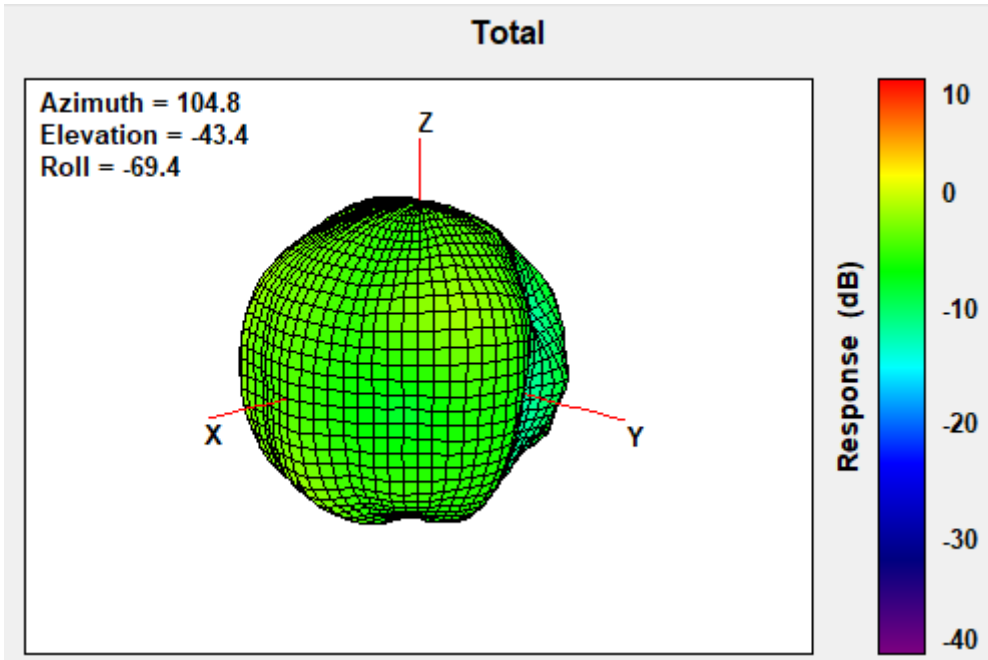
Center Frequency	<b>1452 MHz</b>
Horizontal (dBi) peak	0.16
Vertical (dBi) peak	-2.32

1474 MHz



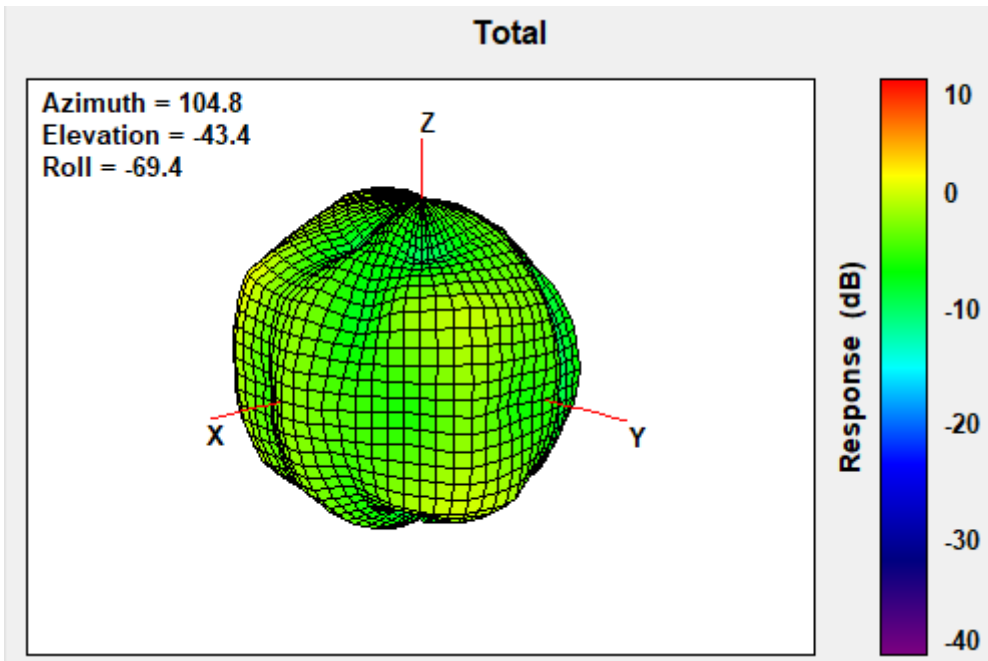
Center Frequency	<b>1474 MHz</b>
Horizontal (dBi) peak	-0.75
Vertical (dBi) peak	-1.22

1496 MHz



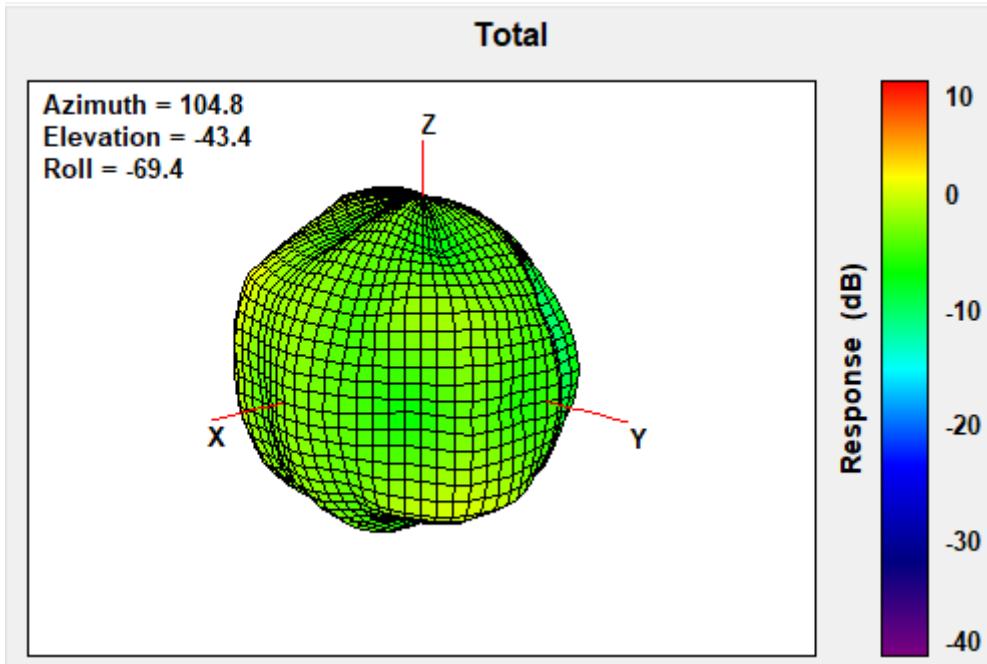
Center Frequency	<b>1496 MHz</b>
Horizontal (dBi) peak	-1.38
Vertical (dBi) peak	-0.48

1710 MHz

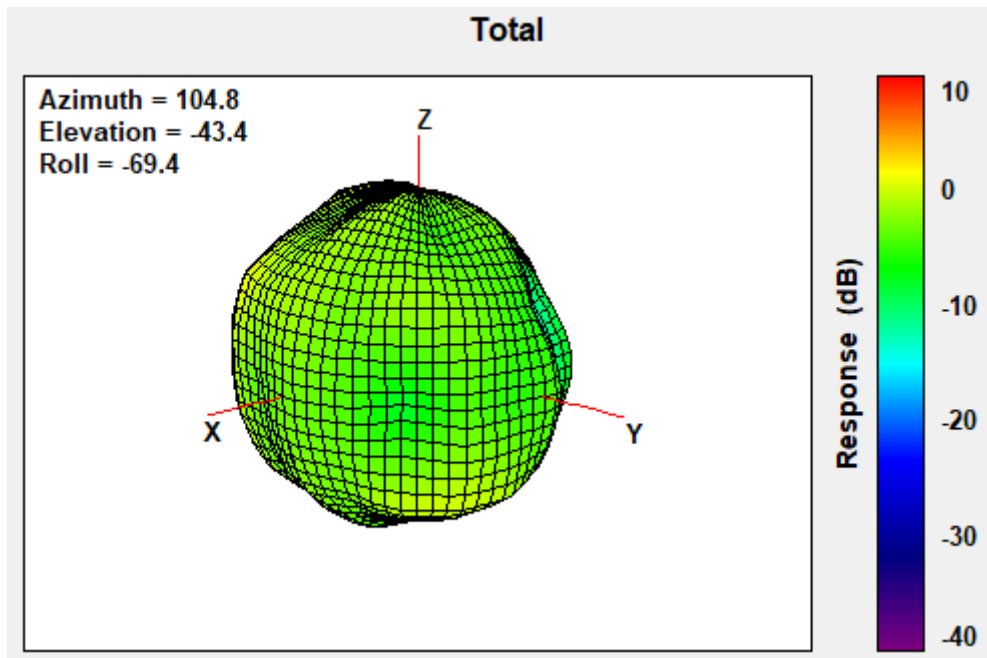


Center Frequency	<b>1710 MHz</b>
Horizontal (dBi) peak	0.55
Vertical (dBi) peak	0.64

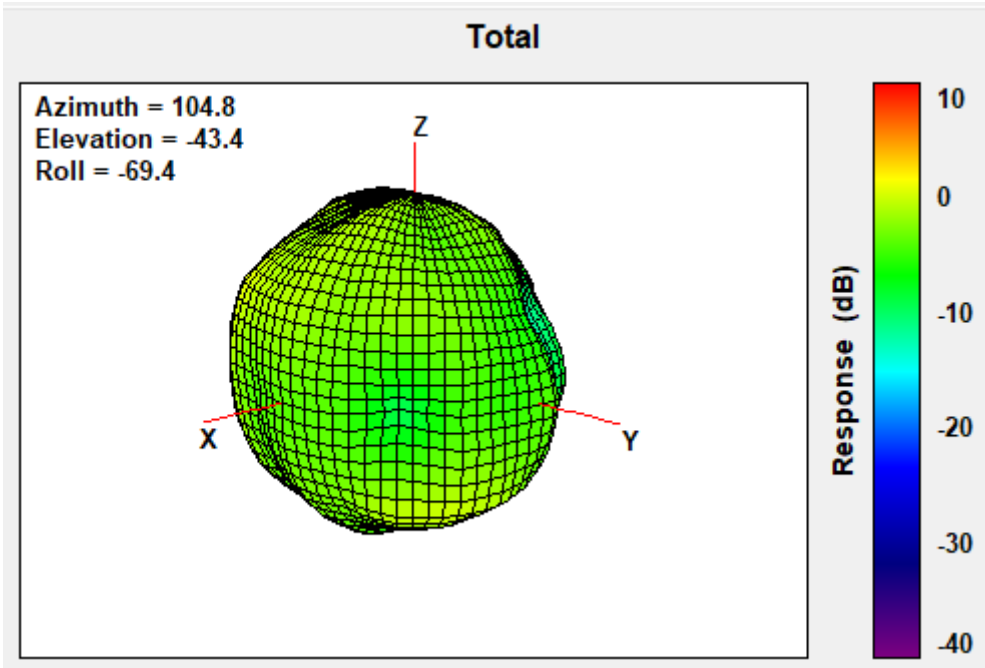
1732.5 MHz



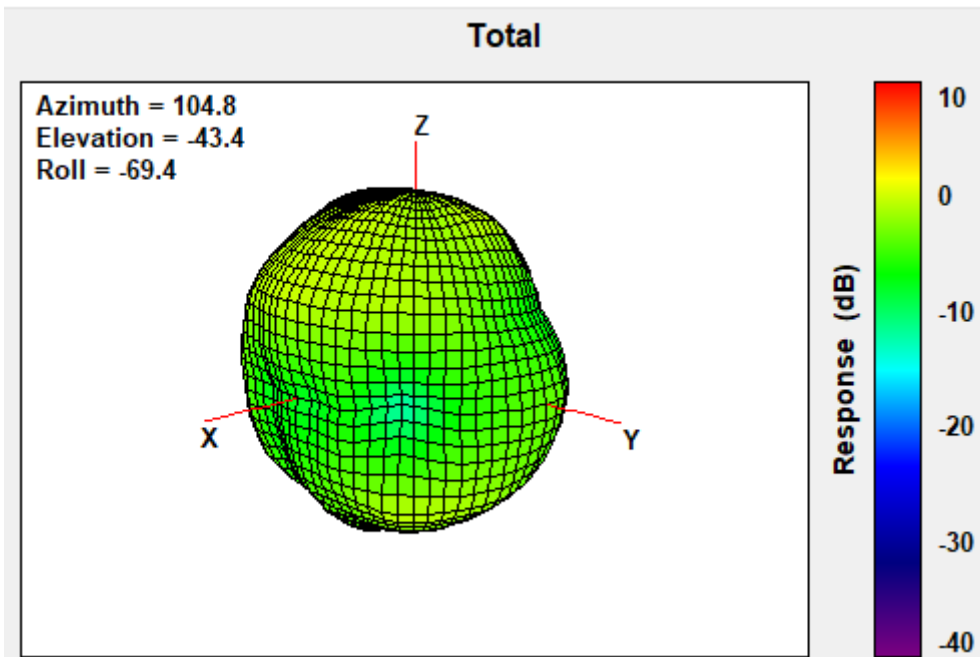
1747.5 MHz



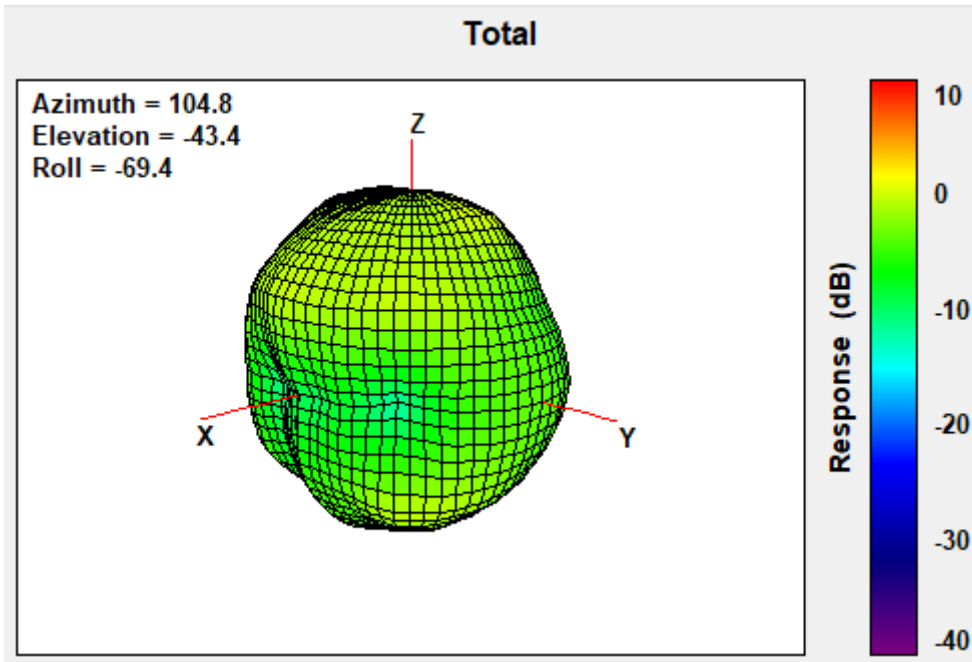
1755 MHz



1785 MHz

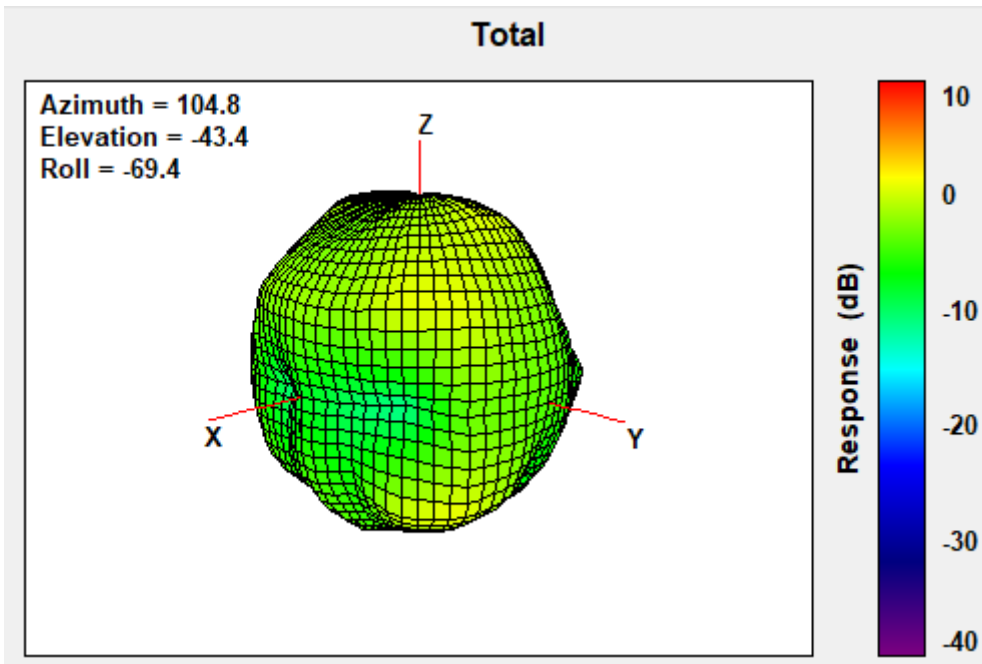


1805 MHz



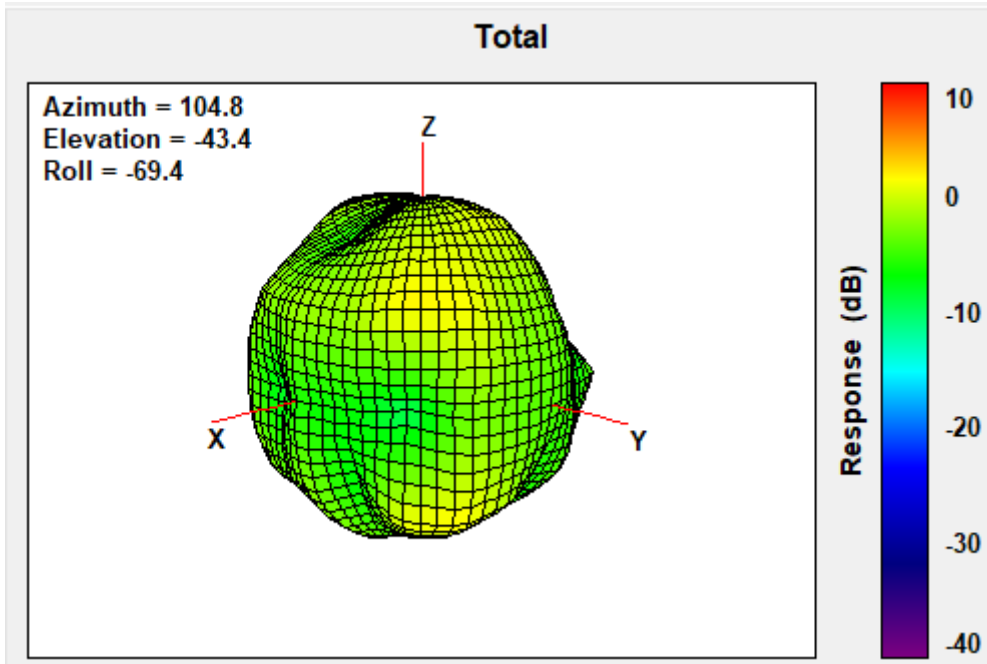
Center Frequency	<b>1805 MHz</b>
Horizontal (dBi) peak	-0.08
Vertical (dBi) peak	0.10

1850 MHz



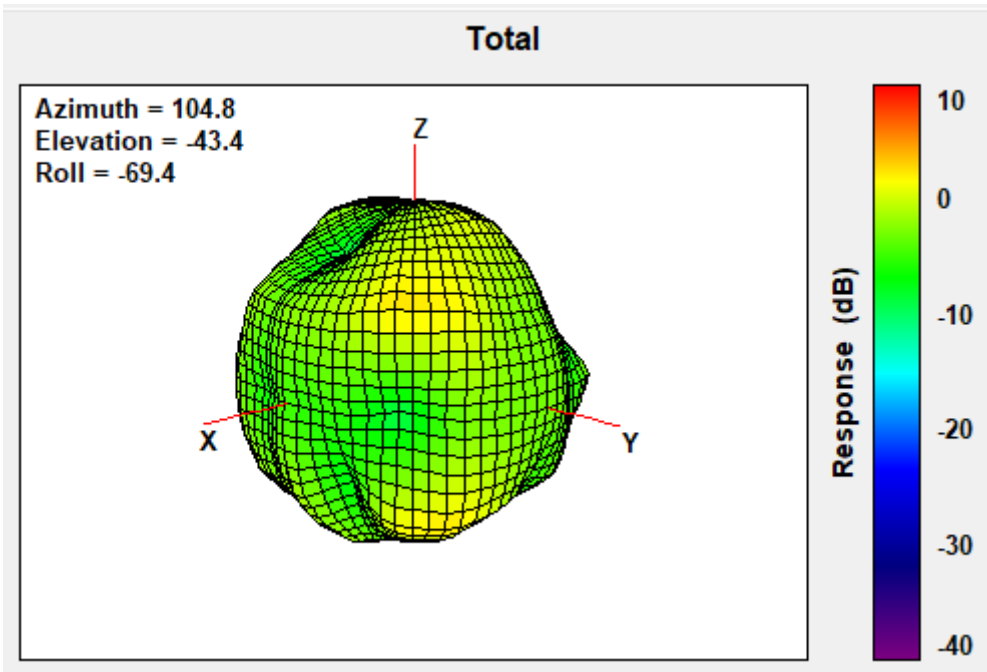
Center Frequency	<b>1850 MHz</b>
Horizontal (dBi) peak	1.49
Vertical (dBi) peak	0.65

**1880 MHz**



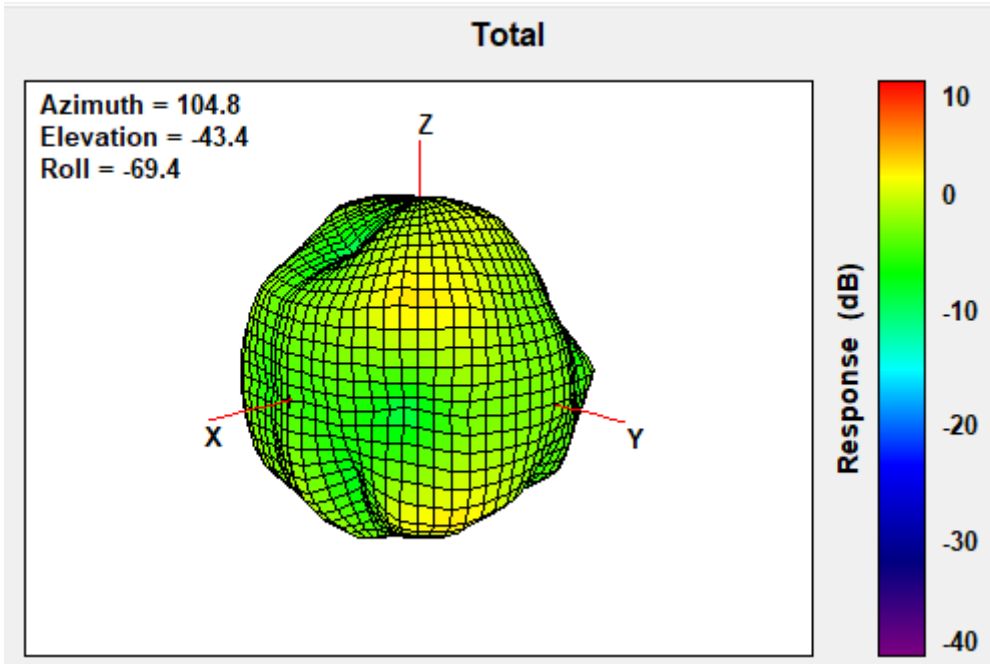
Center Frequency	<b>1880 MHz</b>
Horizontal (dBi) peak	2.14
Vertical (dBi) peak	0.96

**1910MHz**



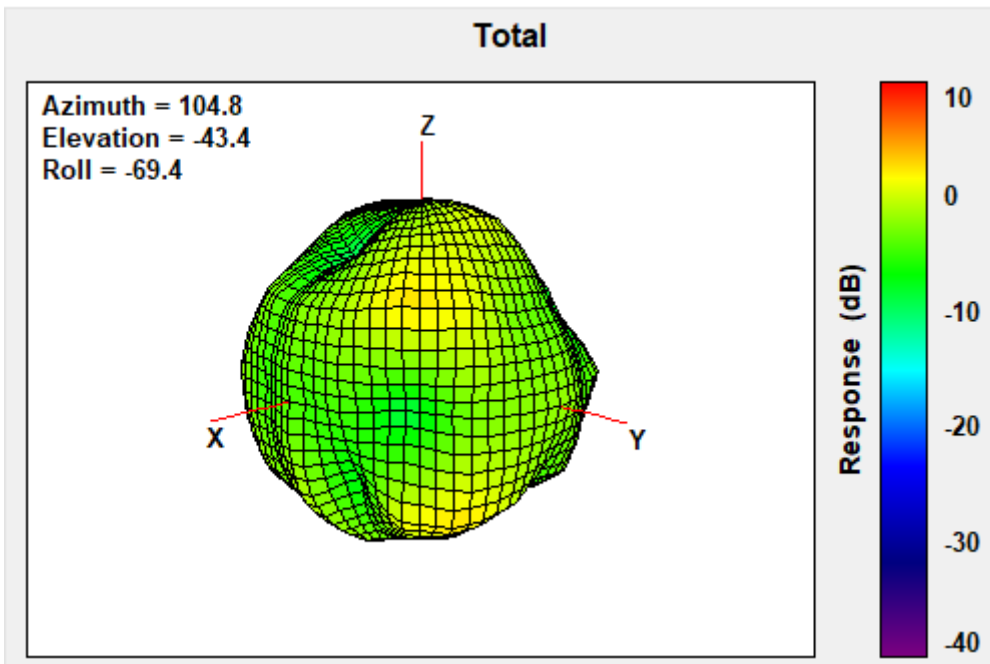
Center Frequency	<b>1910MHz</b>
Horizontal (dBi) peak	2.11
Vertical (dBi) peak	0.78

**1920MHz**



Center Frequency	<b>1920MHz</b>
Horizontal (dBi) peak	2.20
Vertical (dBi) peak	0.79

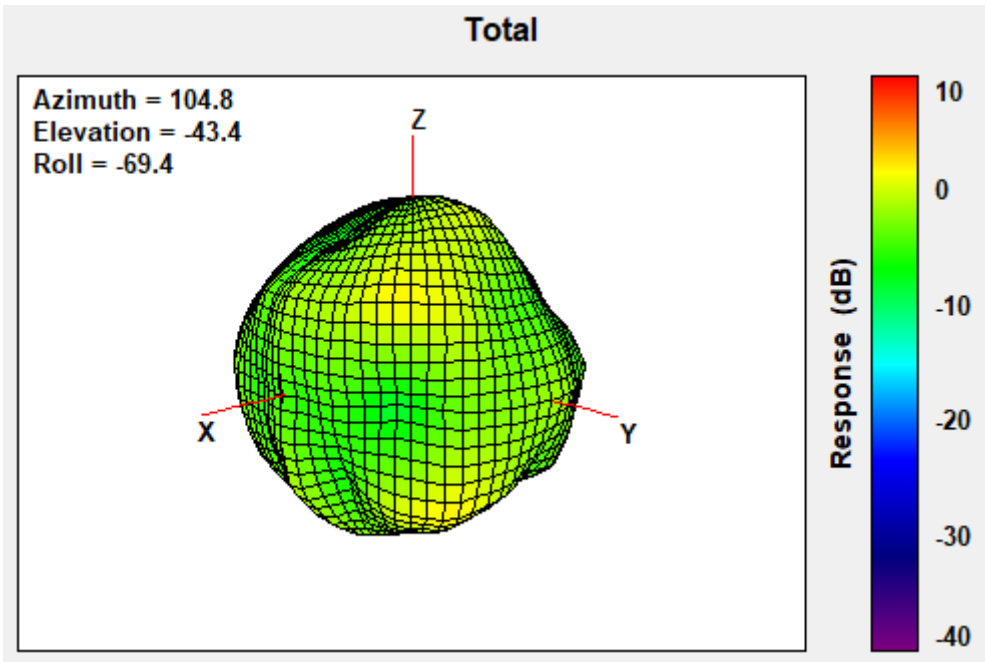
**1950MHz**



Center Frequency	<b>1950MHz</b>
Horizontal (dBi) peak	2.01
Vertical (dBi) peak	1.10

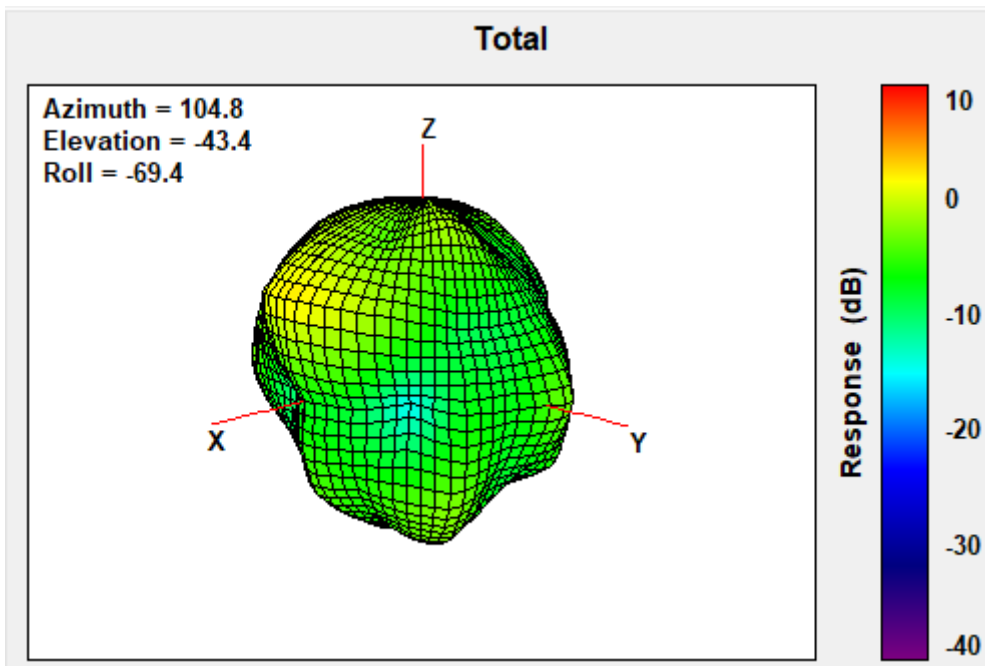


**1980MHz**



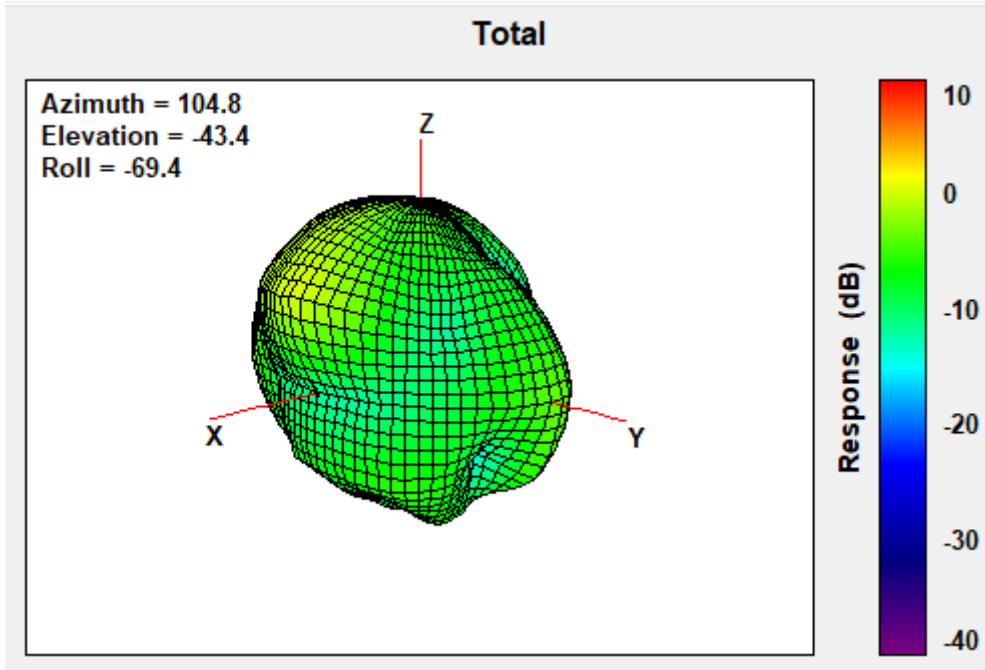
Center Frequency	<b>1980MHz</b>
Horizontal (dBi) peak	2.09
Vertical (dBi) peak	0.91

**2110MHz**



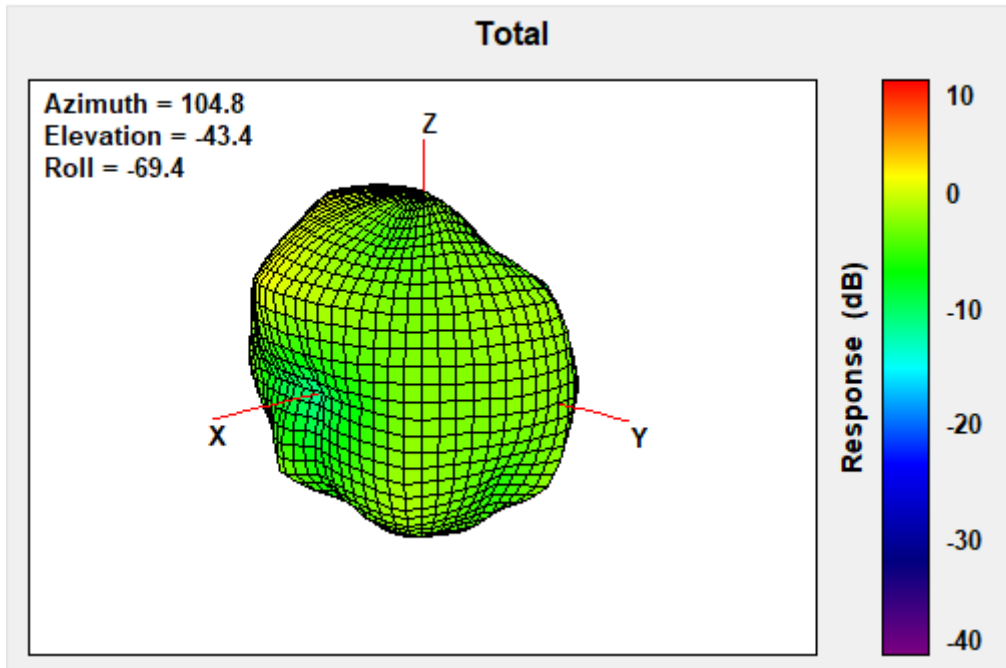
Center Frequency	<b>2110MHz</b>
Horizontal (dBi) peak	2.19
Vertical (dBi) peak	-1.18

**2200MHz**



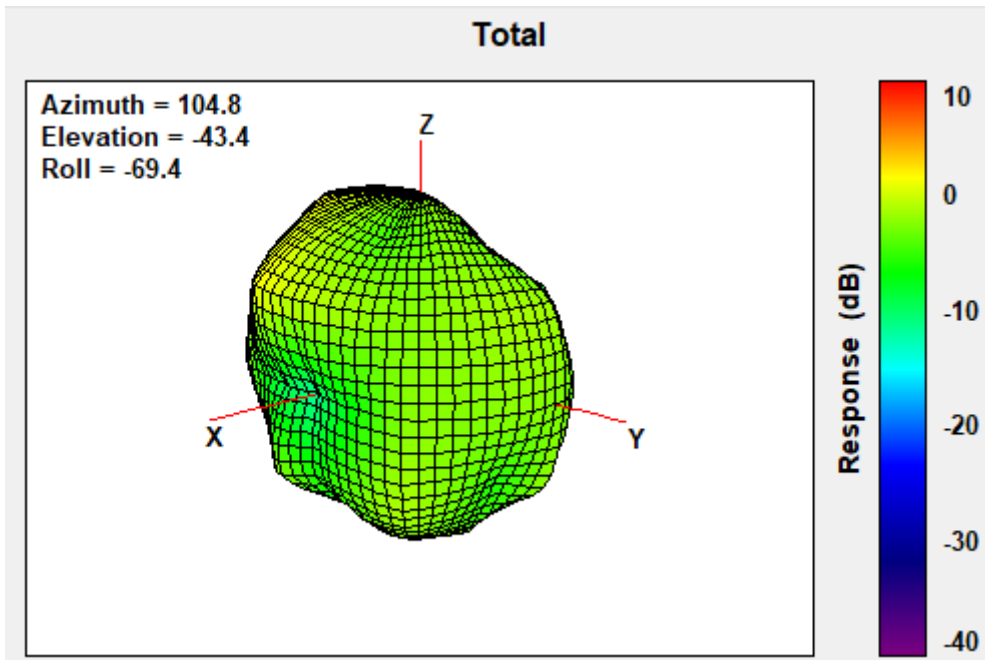
Center Frequency	<b>2200MHz</b>
Horizontal (dBi) peak	0.71
Vertical (dBi) peak	-0.95

**2300MHz**



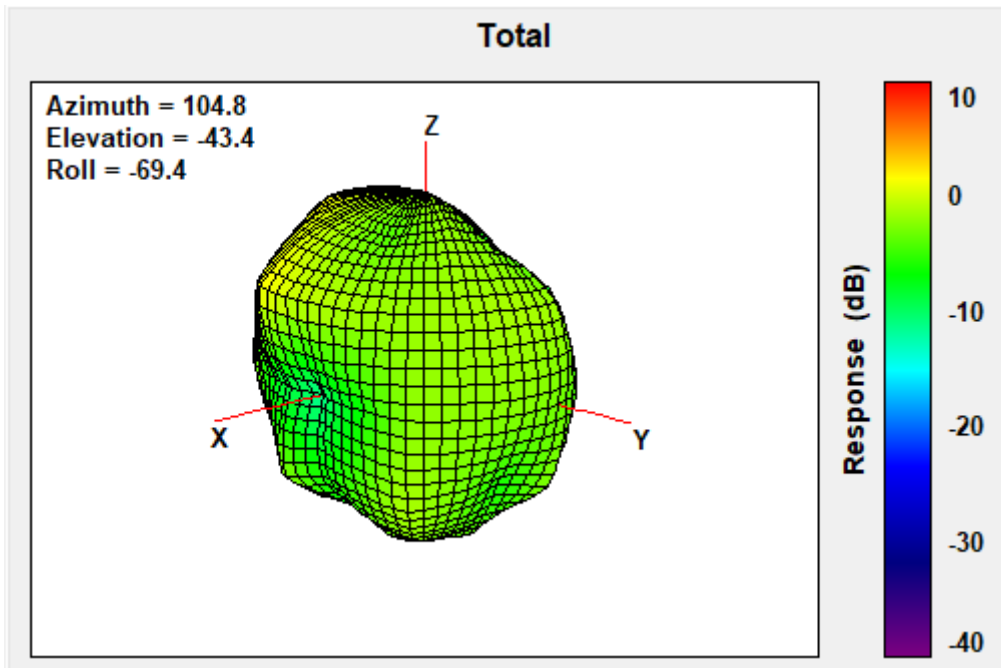
Center Frequency	<b>2300MHz</b>
Horizontal (dBi) peak	0.72
Vertical (dBi) peak	1.39

**2305MHz**



Center Frequency	<b>2305MHz</b>
Horizontal (dBi) peak	0.76
Vertical (dBi) peak	0.36

**2315MHz**

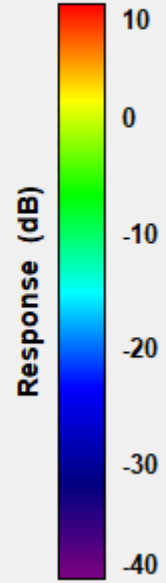
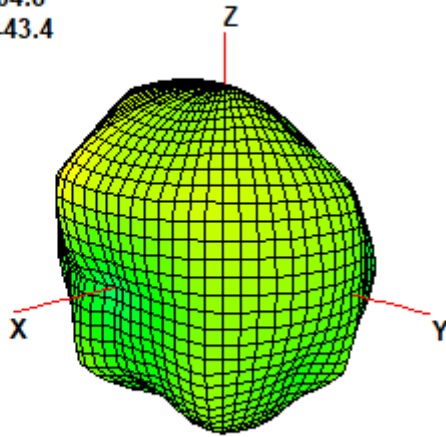


Center Frequency	<b>2315MHz</b>
Horizontal (dBi) peak	0.83
Vertical (dBi) peak	0.34

**2350MHz**

**Total**

Azimuth = 104.8  
 Elevation = -43.4  
 Roll = -69.4

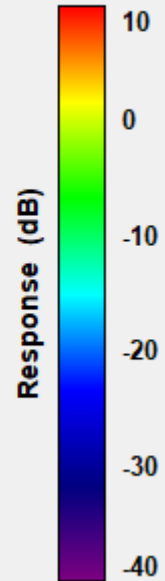
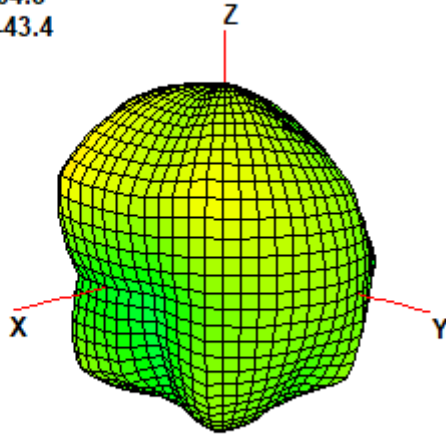


Center Frequency	<b>2350MHz</b>
Horizontal (dBi) peak	0.02
Vertical (dBi) peak	0.29

**2400MHz**

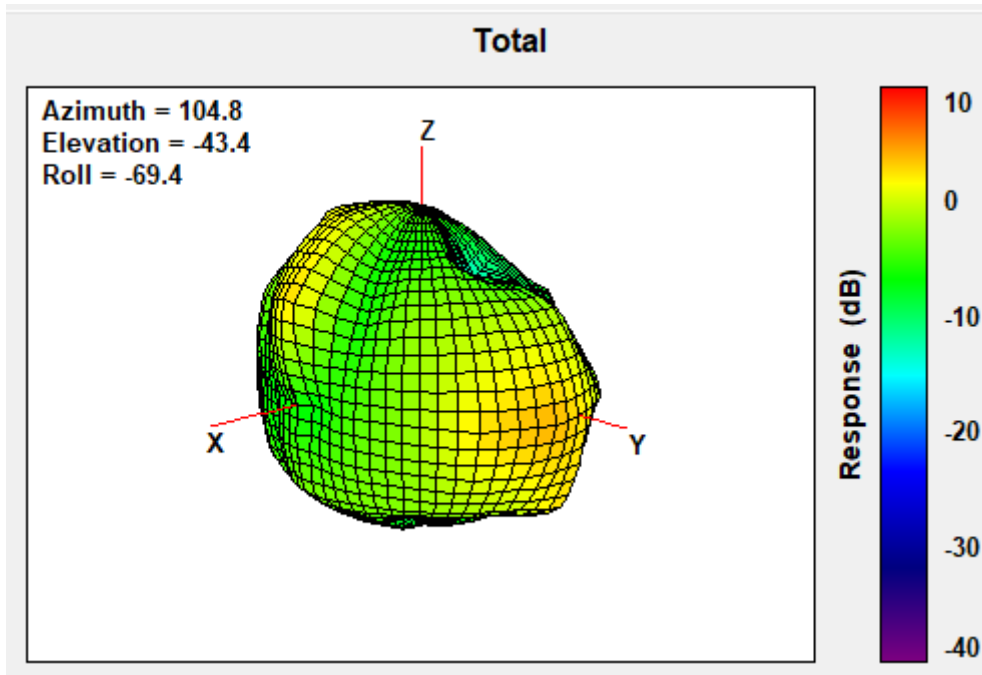
**Total**

Azimuth = 104.8  
 Elevation = -43.4  
 Roll = -69.4



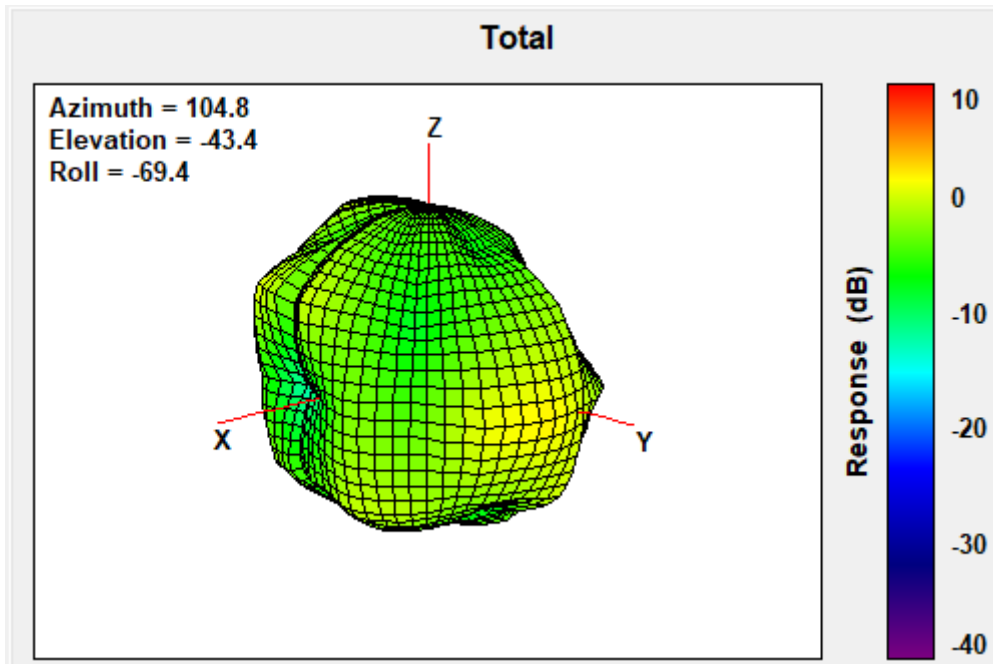
Center Frequency	<b>2400MHz</b>
Horizontal (dBi) peak	1.54
Vertical (dBi) peak	-1.84

### 2500MHz



Center Frequency	<b>2500MHz</b>
Horizontal (dBi) peak	1.70
Vertical (dBi) peak	0.21

### 2570MHz

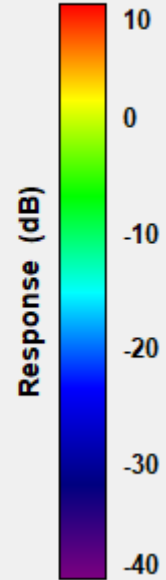
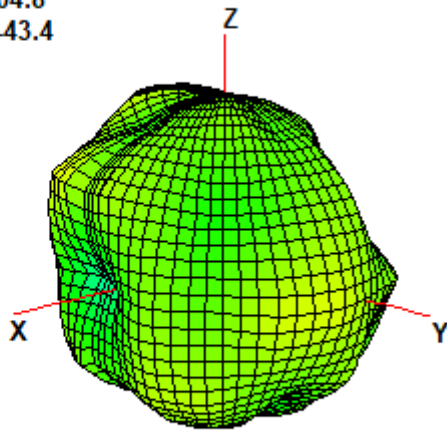


Center Frequency	<b>2570MHz</b>
Horizontal (dBi) peak	0.07
Vertical (dBi) peak	-0.44

**2595MHz**

**Total**

Azimuth = 104.8  
 Elevation = -43.4  
 Roll = -69.4

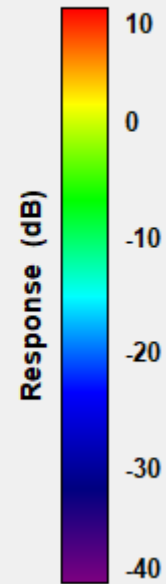
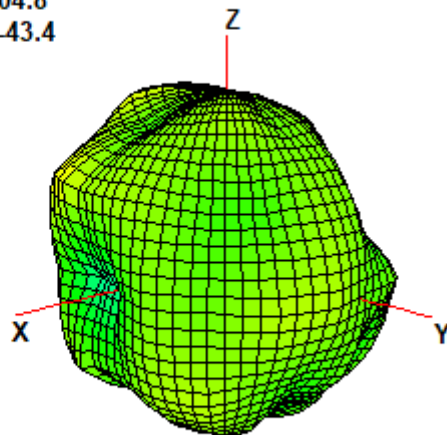


Center Frequency	<b>2595MHz</b>
Horizontal (dBi) peak	0.12
Vertical (dBi) peak	0.20

**2620MHz**

**Total**

Azimuth = 104.8  
 Elevation = -43.4  
 Roll = -69.4

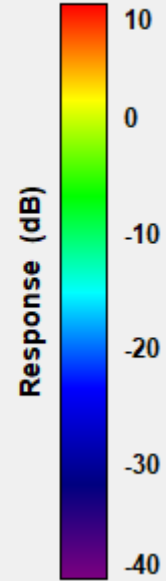
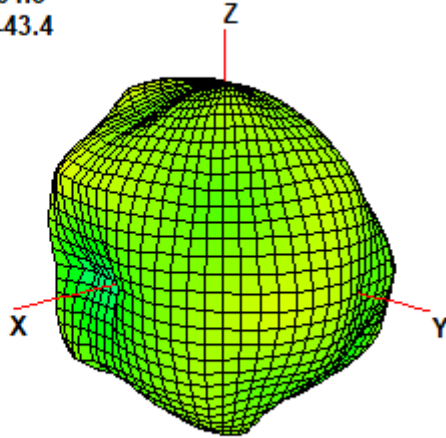


Center Frequency	<b>2620MHz</b>
Horizontal (dBi) peak	0.90
Vertical (dBi) peak	0.39

**2690MHz**

**Total**

Azimuth = 104.8  
 Elevation = -43.4  
 Roll = -69.4

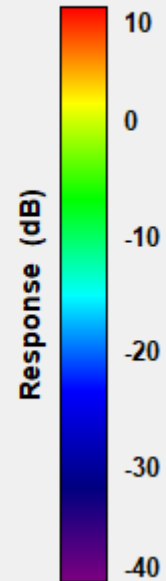
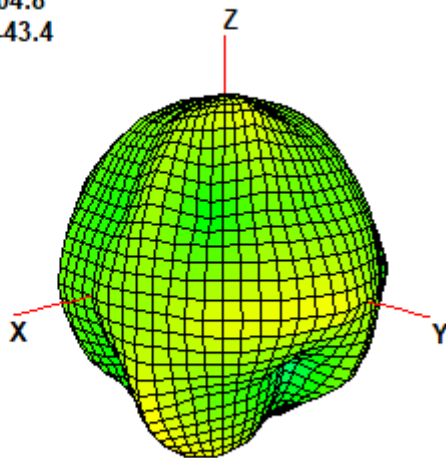


Center Frequency	<b>2690MHz</b>
Horizontal (dBi) peak	0.88
Vertical (dBi) peak	-0.58

**3400MHz**

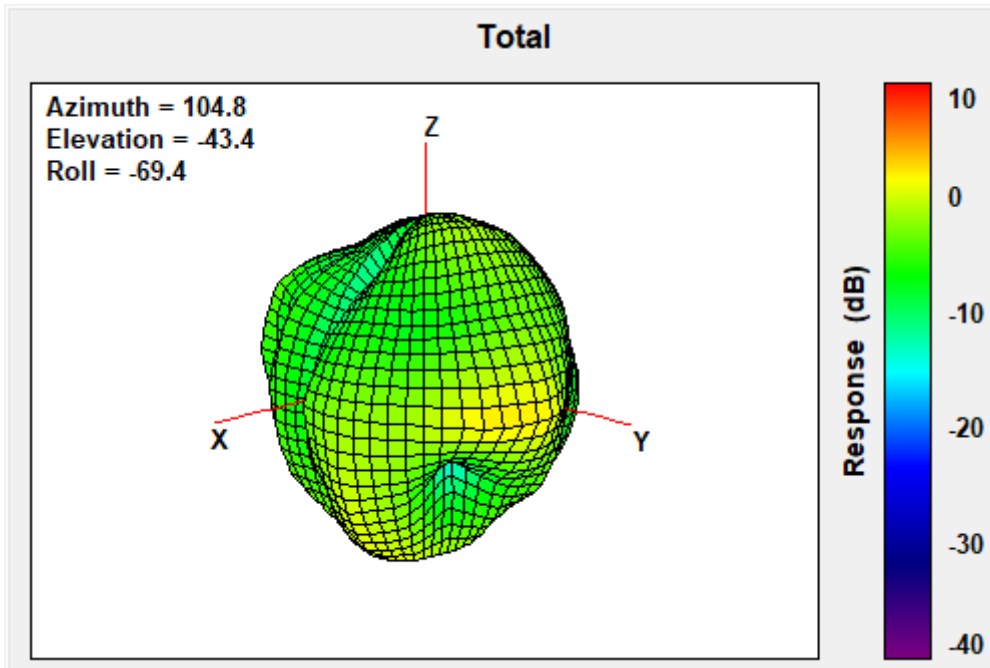
**Total**

Azimuth = 104.8  
 Elevation = -43.4  
 Roll = -69.4



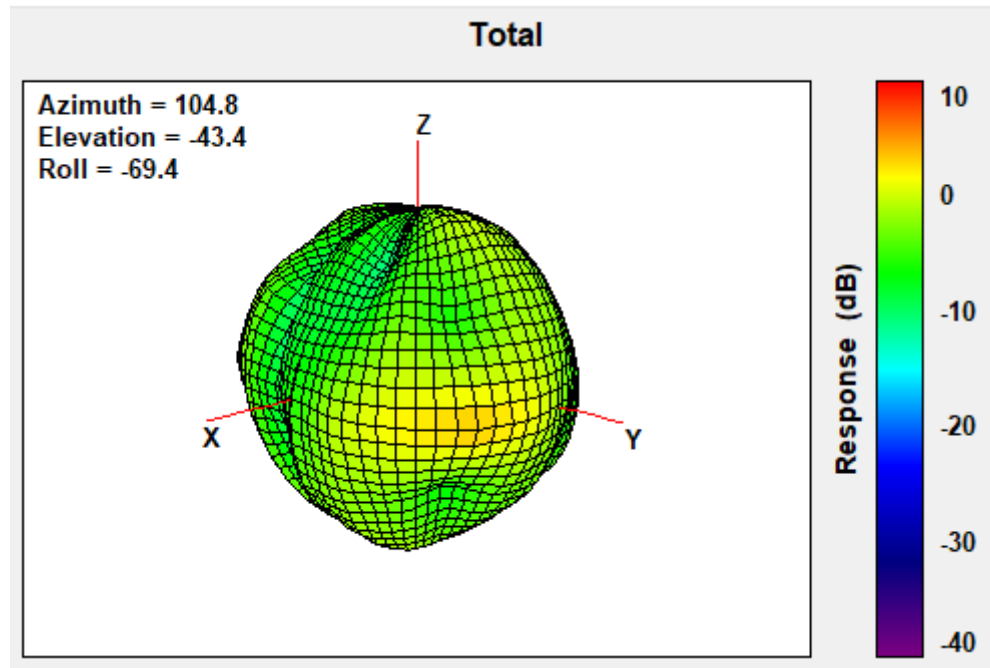
Center Frequency	<b>3400MHz</b>
Horizontal (dBi) peak	0.49
Vertical (dBi) peak	-2.29

### 3500MHz



Center Frequency	<b>3500MHz</b>
Horizontal (dBi) peak	0.18
Vertical (dBi) peak	-1.92

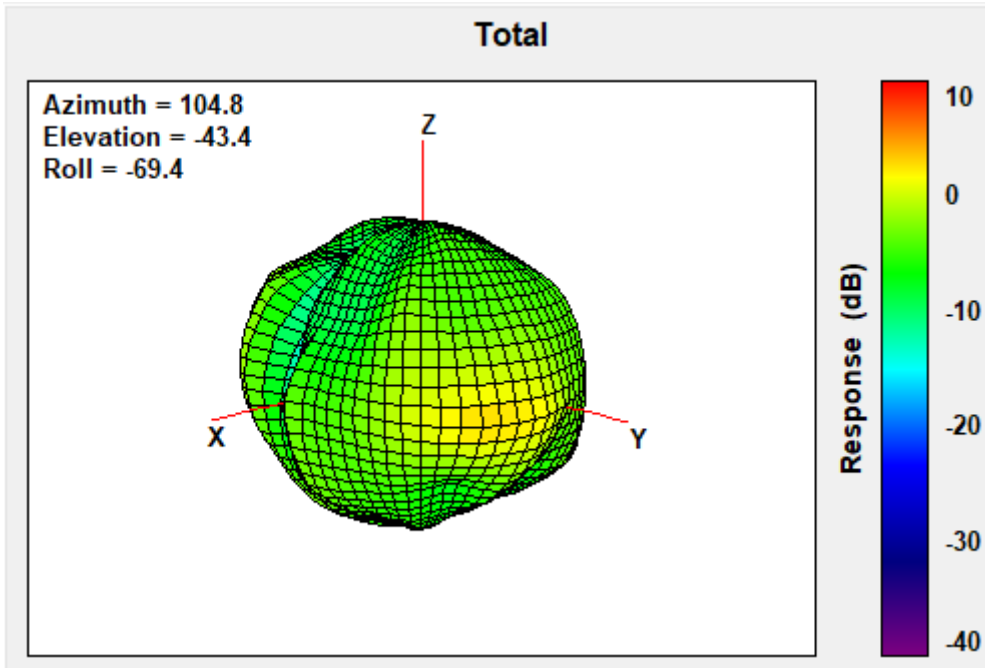
### 3600MHz



Center Frequency	<b>3600MHz</b>
Horizontal (dBi) peak	0.73
Vertical (dBi) peak	-0.63

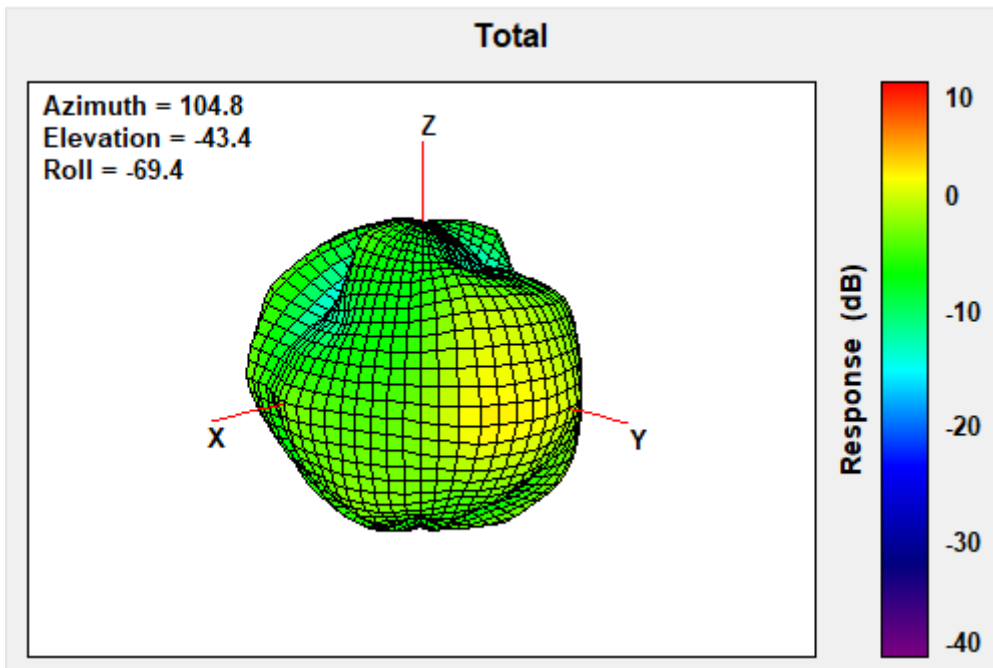


### 3700MHz



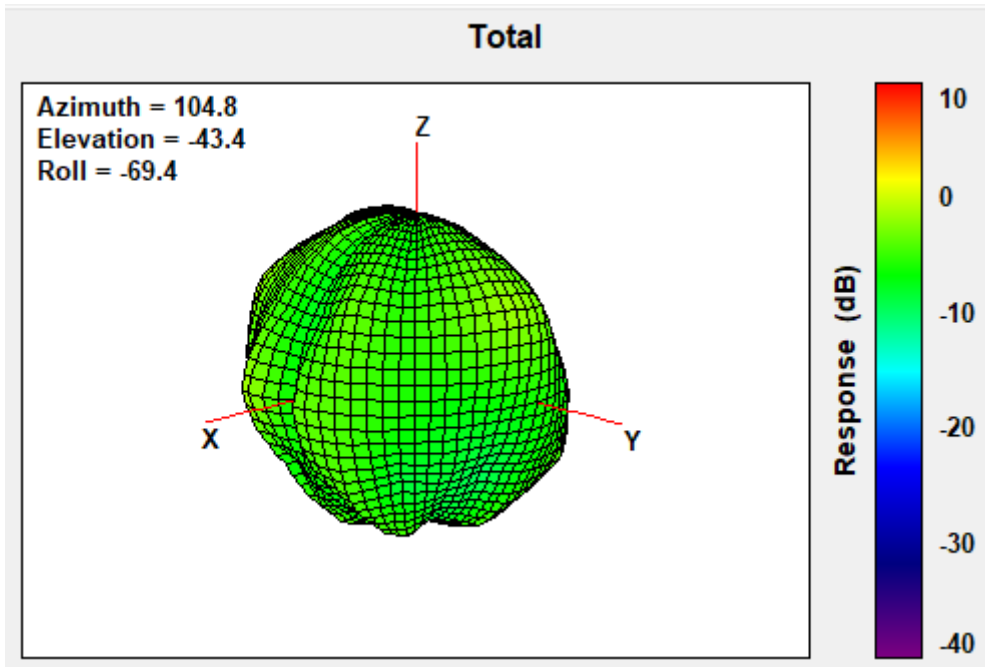
Center Frequency	<b>3700MHz</b>
Horizontal (dBi) peak	0.61
Vertical (dBi) peak	-2.47

### 3800MHz



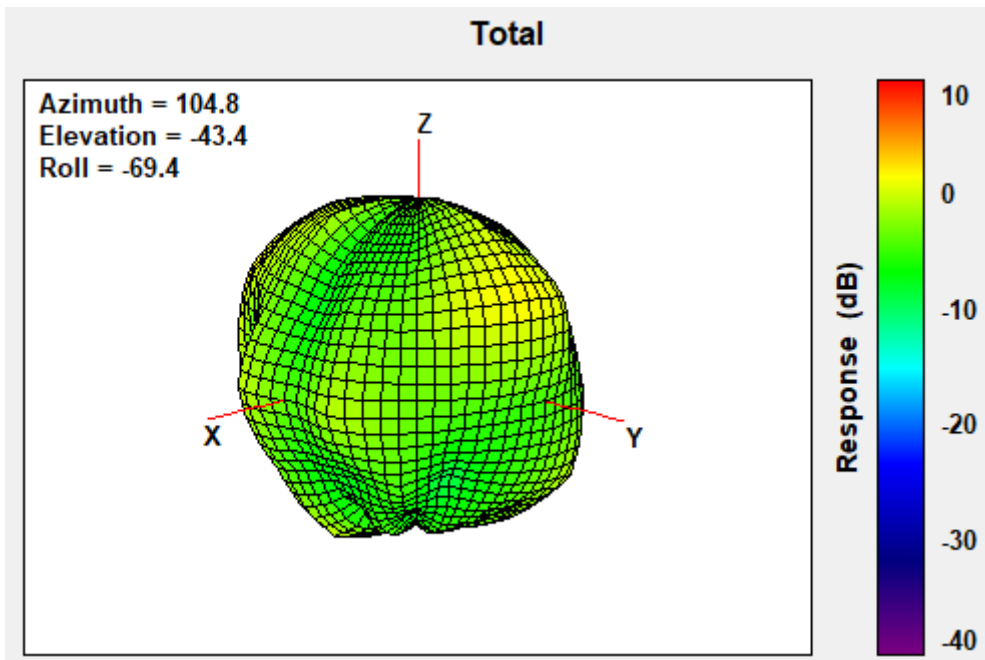
Center Frequency	<b>3800MHz</b>
Horizontal (dBi) peak	0.15
Vertical (dBi) peak	-1.74

**4200MHz**



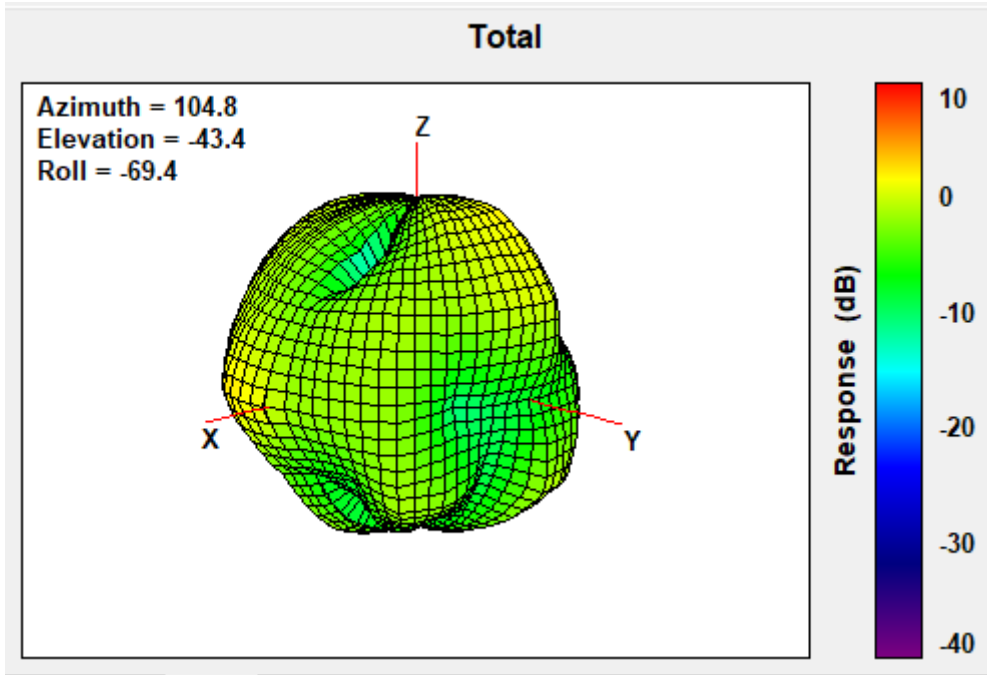
Center Frequency	<b>4200MHz</b>
Horizontal (dBi) peak	-1.28
Vertical (dBi) peak	-2.12

**4400MHz**



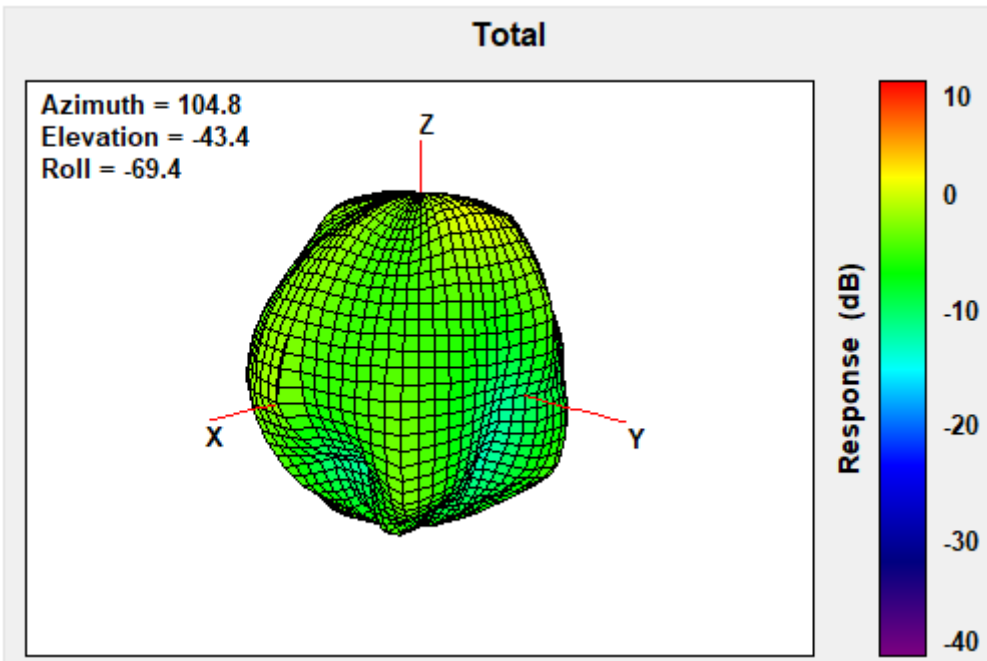
Center Frequency	<b>4400MHz</b>
Horizontal (dBi) peak	2.01
Vertical (dBi) peak	0.53

**4700MHz**



Center Frequency	<b>4700MHz</b>
Horizontal (dBi) peak	1.98
Vertical (dBi) peak	1.20

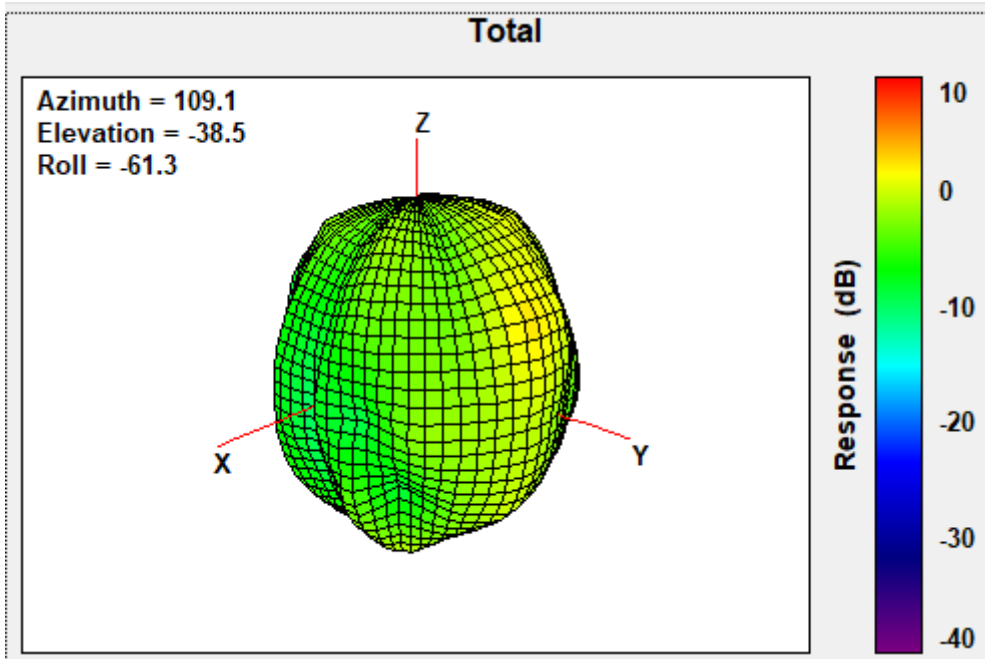
**5000MHz**



Center Frequency	<b>5000MHz</b>
Horizontal (dBi) peak	1.36
Vertical (dBi) peak	1.58

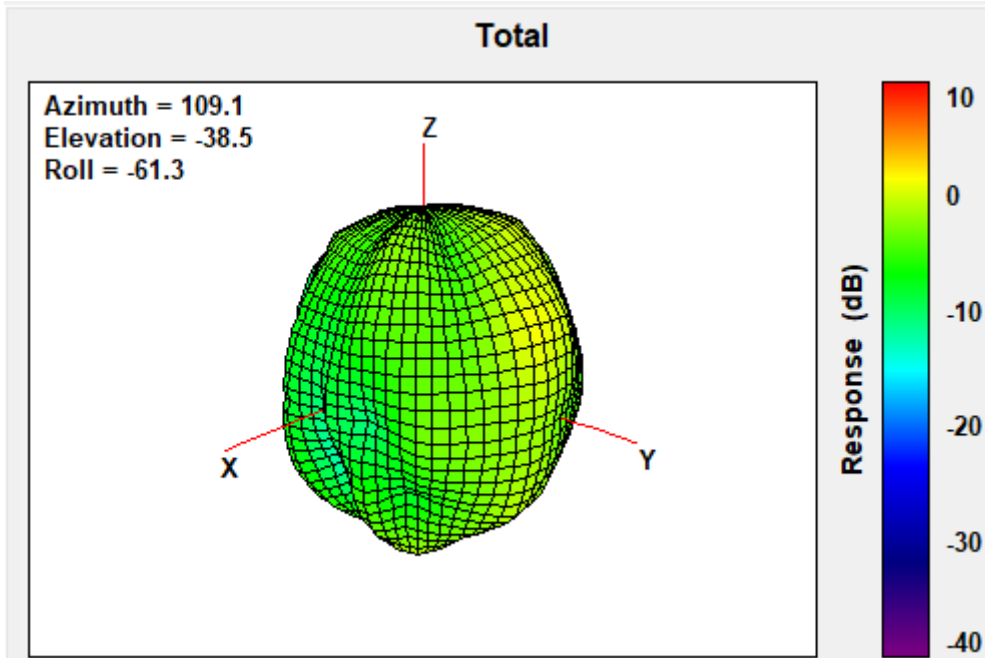
**NB mode**  
**MIMO3 Antenna (Rx4)**

**1805 MHz**



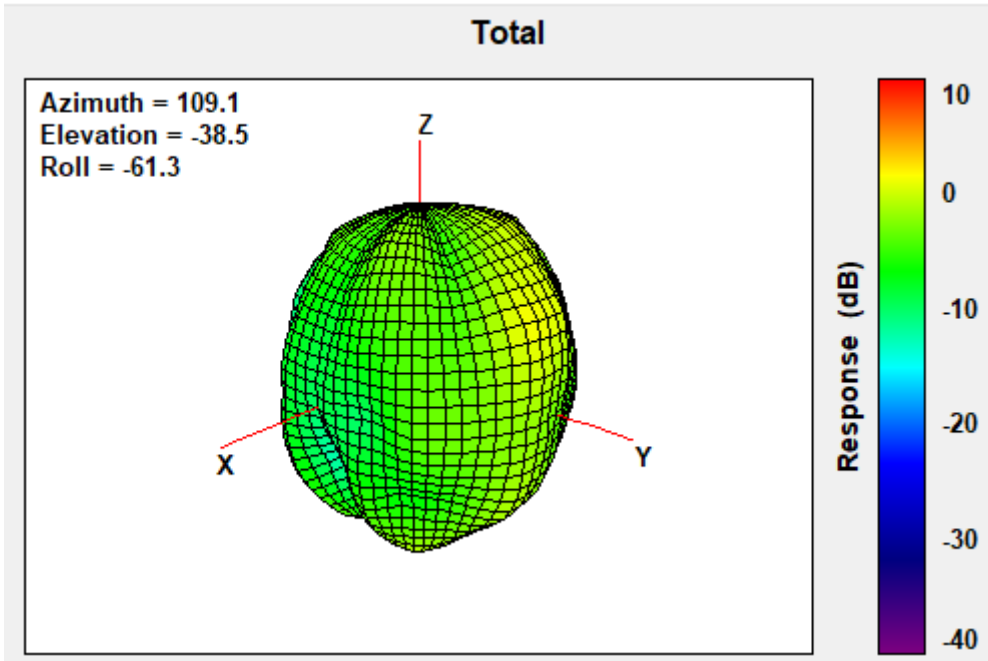
Center Frequency	<b>1805 MHz</b>
Horizontal (dBi) peak	1.22
Vertical (dBi) peak	-0.40

**1850 MHz**



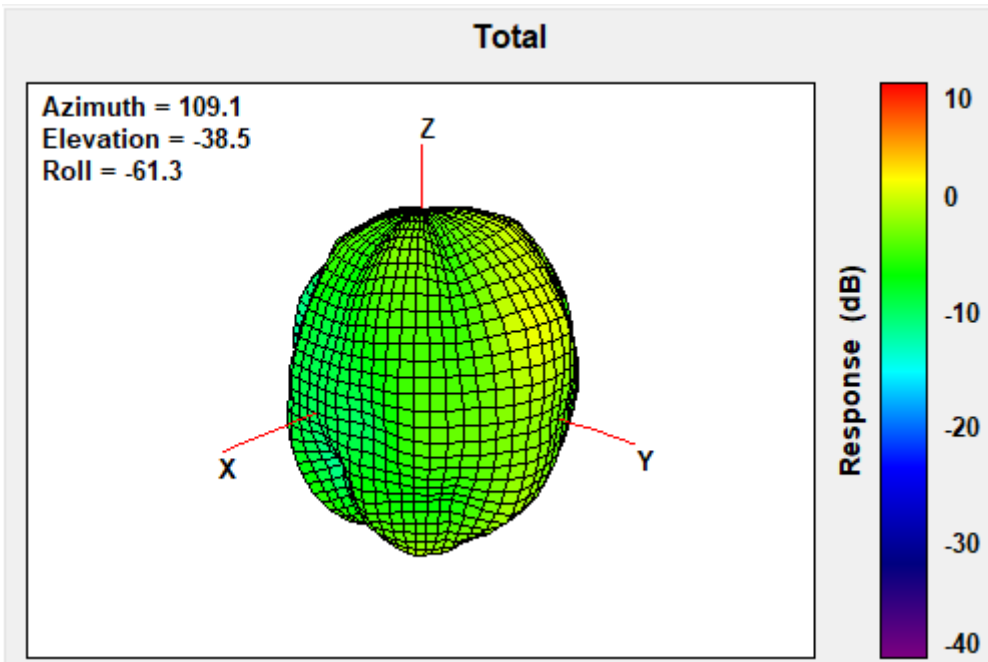
Center Frequency	<b>1850 MHz</b>
Horizontal (dBi) peak	1.01
Vertical (dBi) peak	-1.41

**1880 MHz**



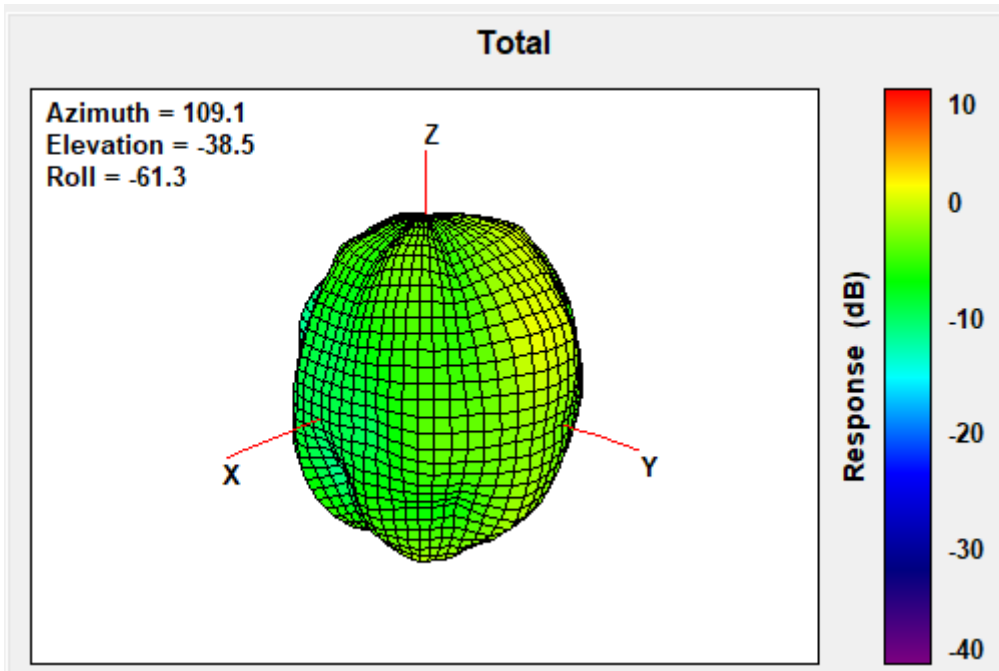
Center Frequency	<b>1880 MHz</b>
Horizontal (dBi) peak	0.89
Vertical (dBi) peak	-1.21

**1910MHz**



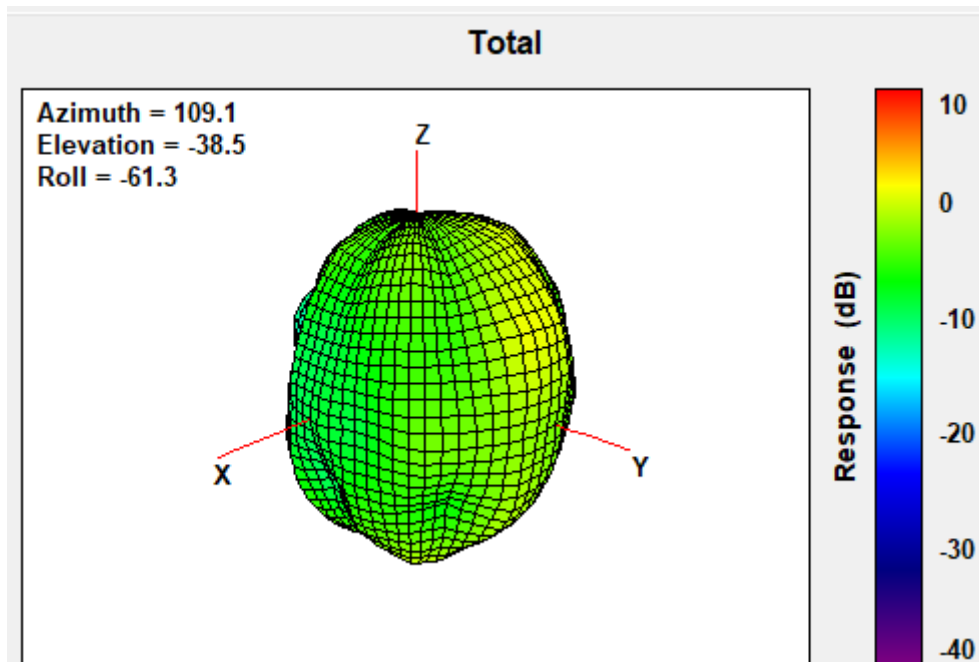
Center Frequency	<b>1910MHz</b>
Horizontal (dBi) peak	0.74
Vertical (dBi) peak	-1.14

### 1920MHz



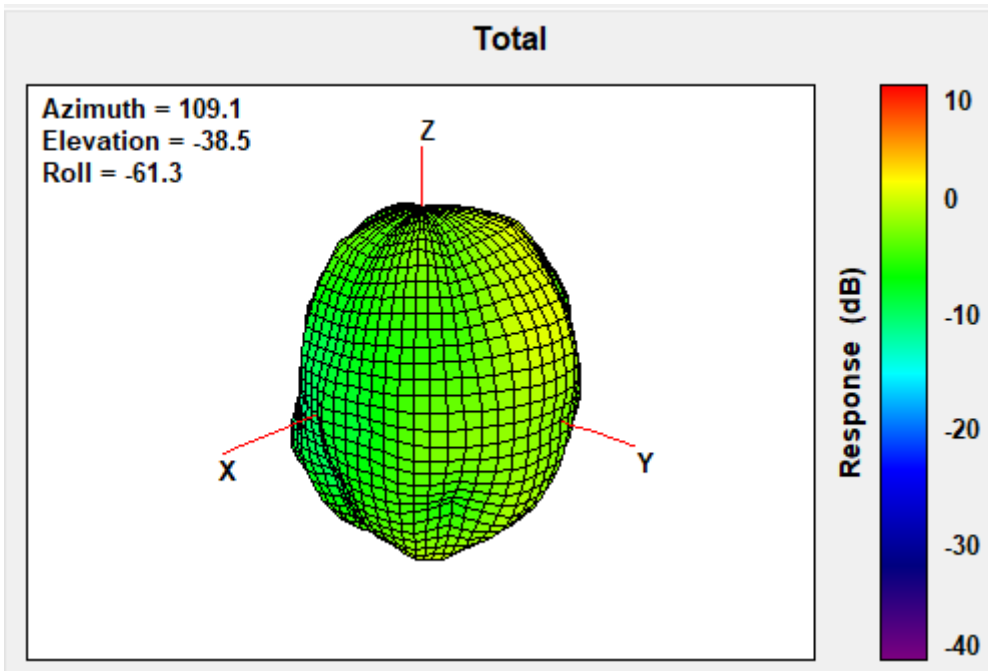
Center Frequency	<b>1920MHz</b>
Horizontal (dBi) peak	0.66
Vertical (dBi) peak	-1.18

### 1950MHz



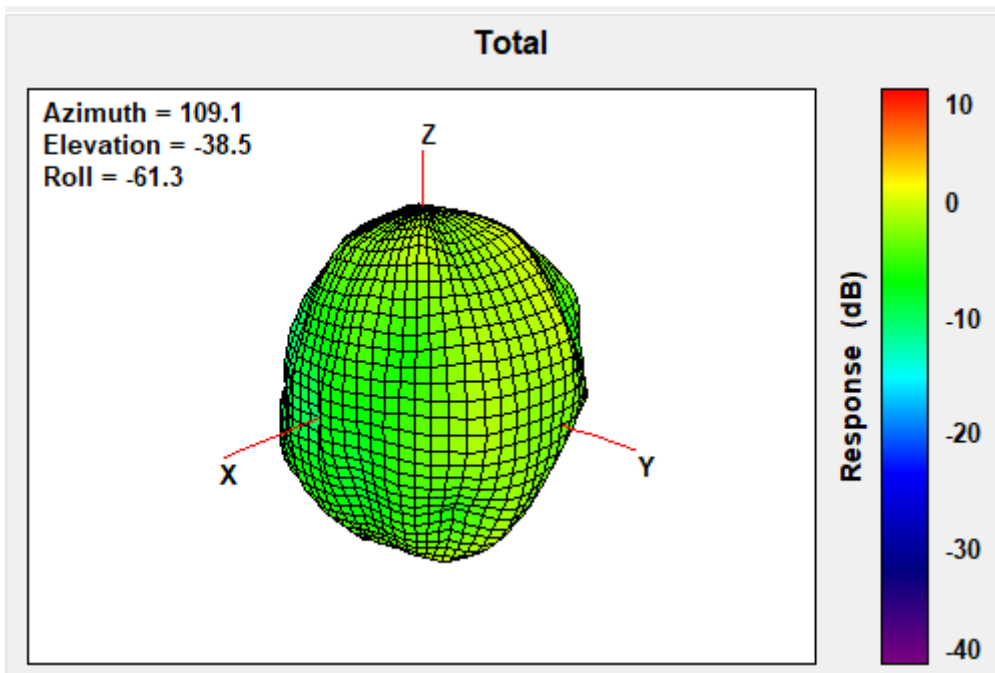
Center Frequency	<b>1950MHz</b>
Horizontal (dBi) peak	0.70
Vertical (dBi) peak	-0.98

**1980MHz**



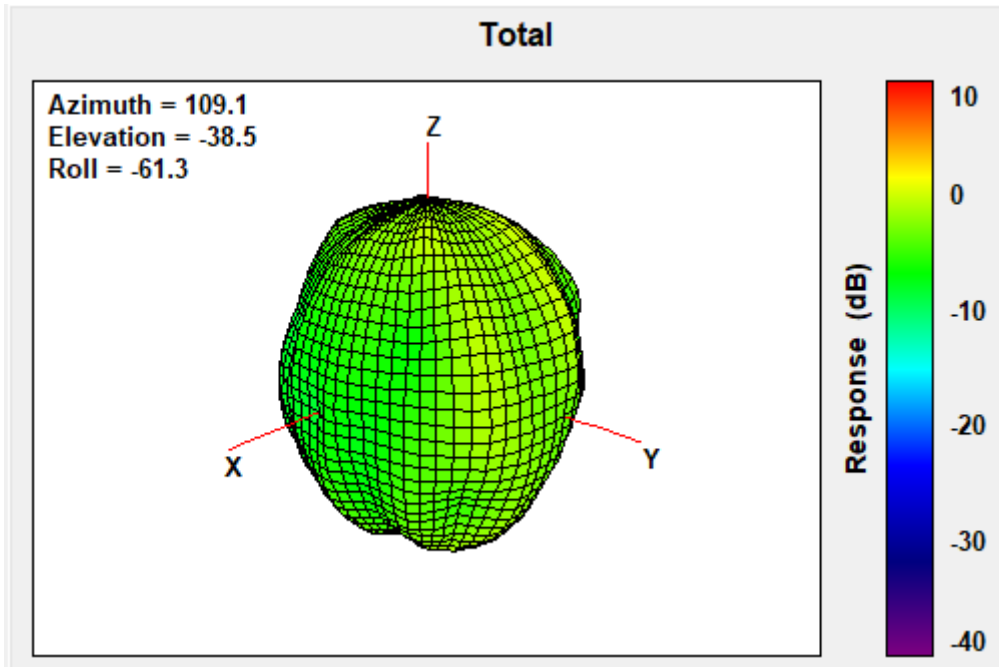
Center Frequency	<b>1980MHz</b>
Horizontal (dBi) peak	0.52
Vertical (dBi) peak	-1.57

**2110MHz**



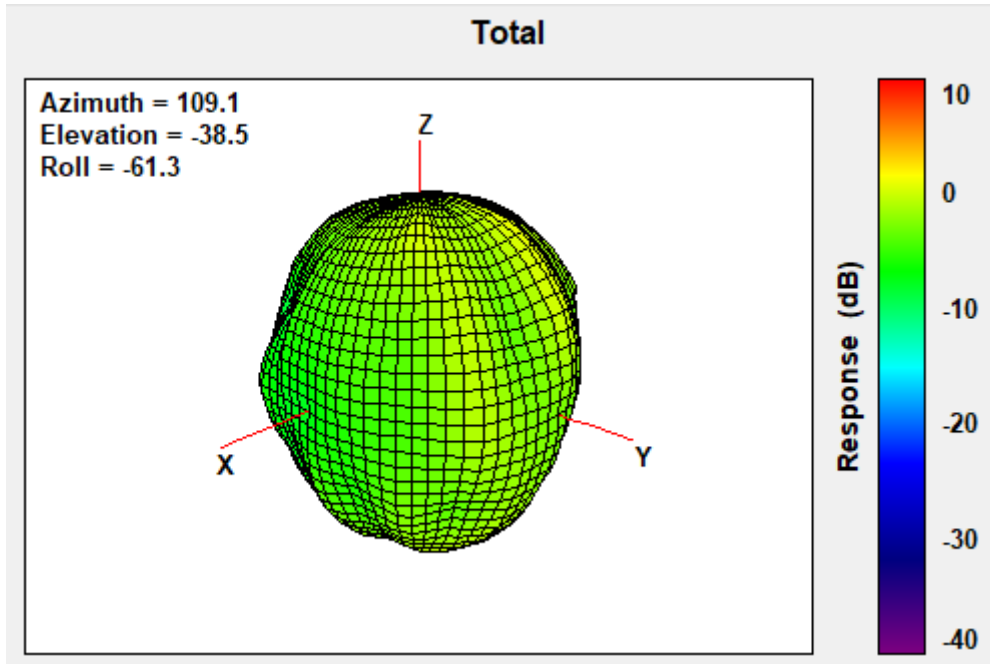
Center Frequency	<b>2110MHz</b>
Horizontal (dBi) peak	0.39
Vertical (dBi) peak	-1.00

**2200MHz**



Center Frequency	<b>2200MHz</b>
Horizontal (dBi) peak	-0.27
Vertical (dBi) peak	-0.82

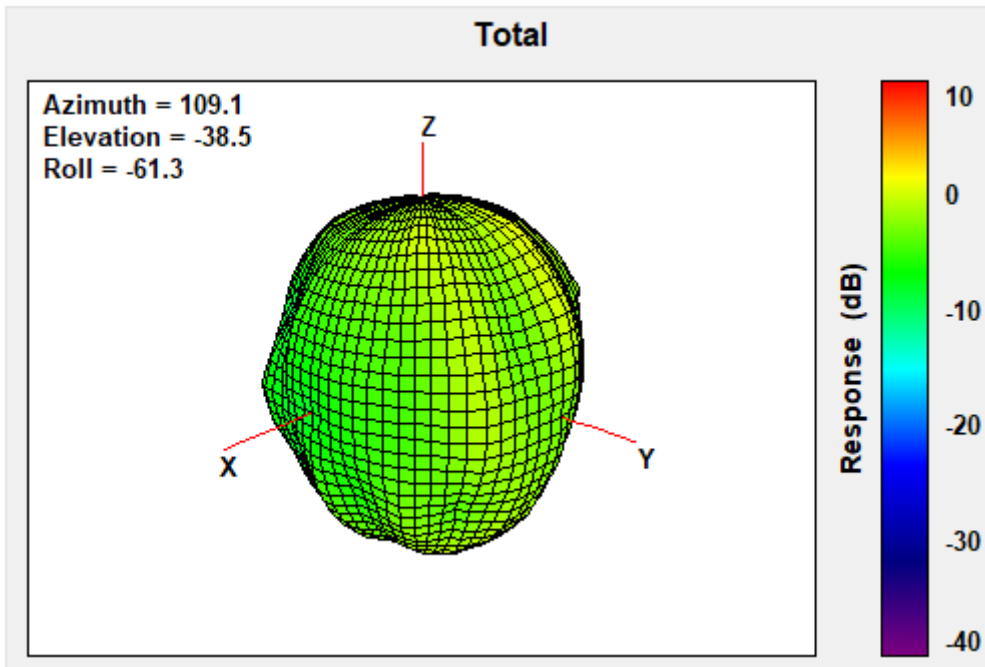
**2300MHz**



Center Frequency	<b>2300MHz</b>
Horizontal (dBi) peak	0.64
Vertical (dBi) peak	-0.51

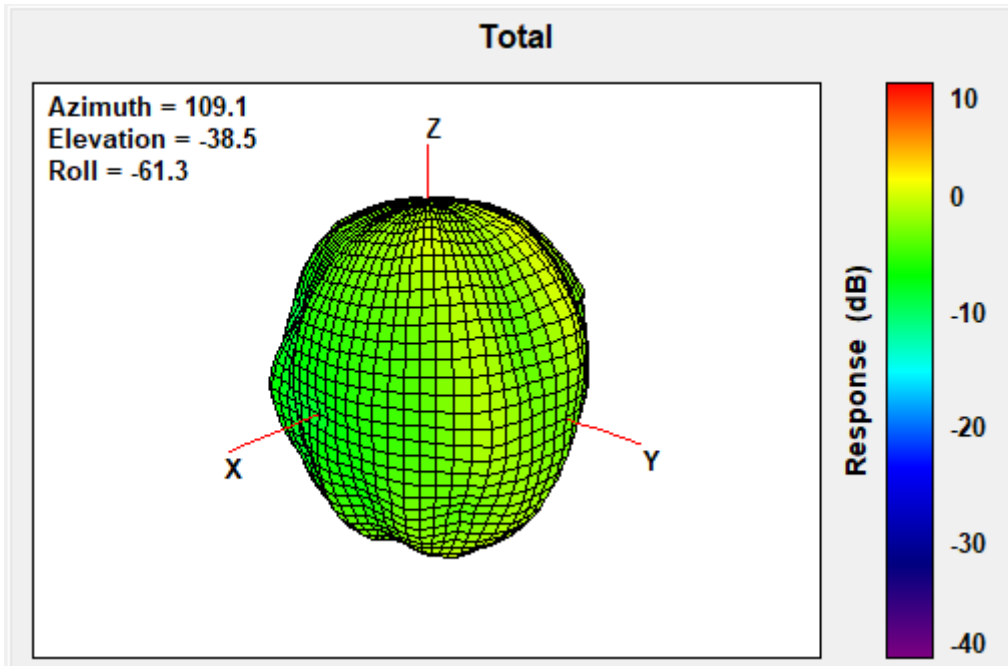


**2305MHz**



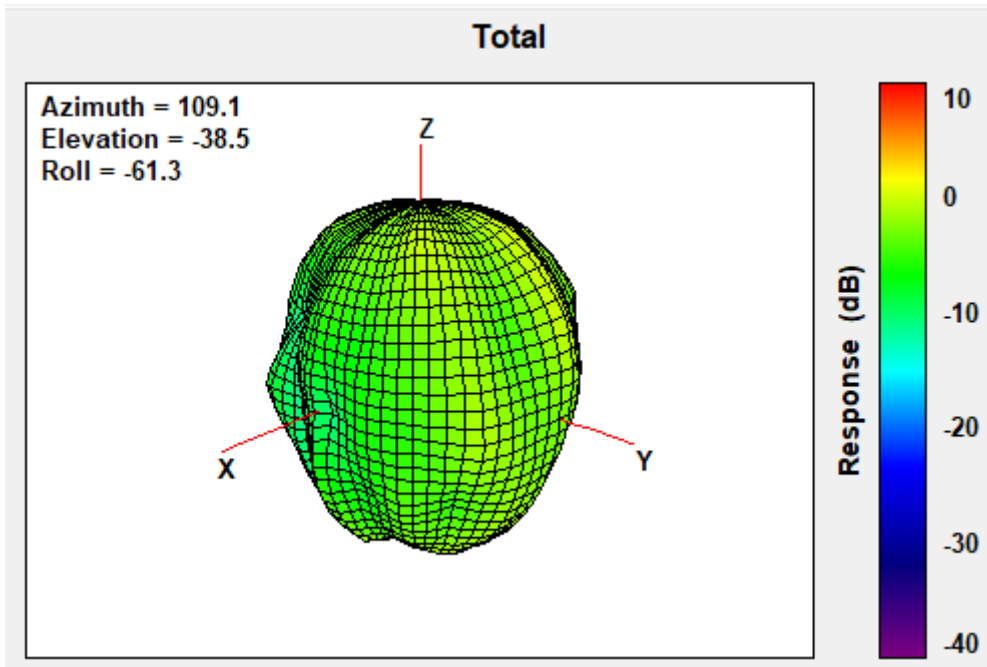
Center Frequency	<b>2305MHz</b>
Horizontal (dBi) peak	0.58
Vertical (dBi) peak	-0.54

**2315MHz**



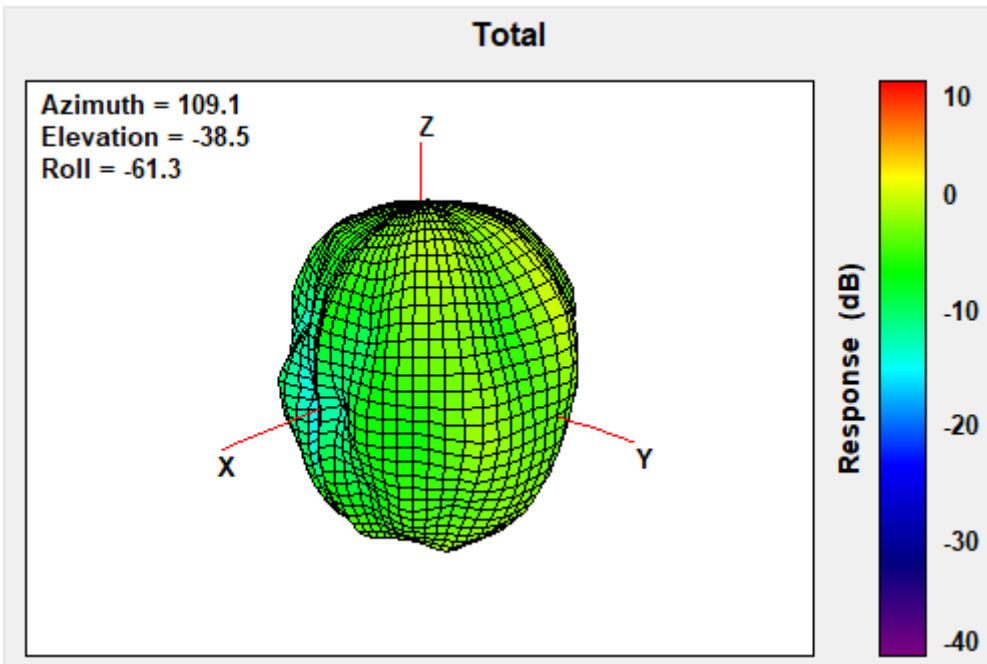
Center Frequency	<b>2315MHz</b>
Horizontal (dBi) peak	0.54
Vertical (dBi) peak	-0.42

**2350MHz**



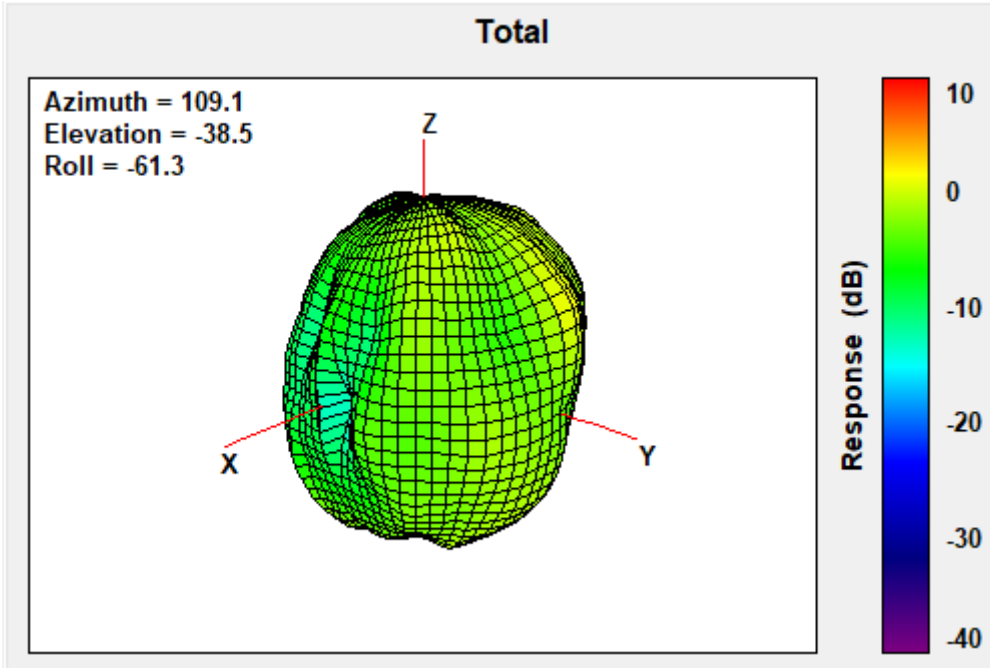
Center Frequency	<b>2350MHz</b>
Horizontal (dBi) peak	-0.15
Vertical (dBi) peak	-0.50

**2400MHz**



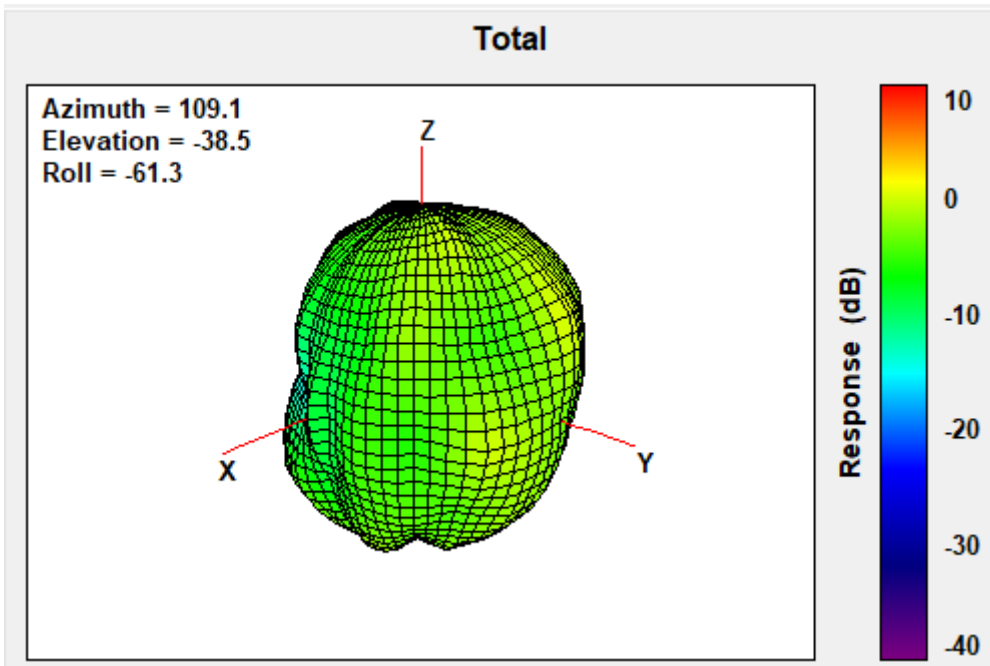
Center Frequency	<b>2400MHz</b>
Horizontal (dBi) peak	0.02
Vertical (dBi) peak	-0.83

**2500MHz**



Center Frequency	<b>2500MHz</b>
Horizontal (dBi) peak	1.09
Vertical (dBi) peak	-0.87

**2570MHz**

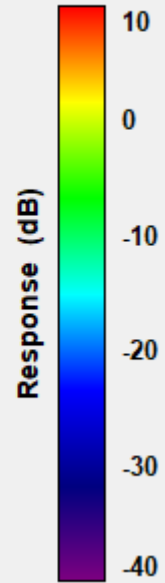
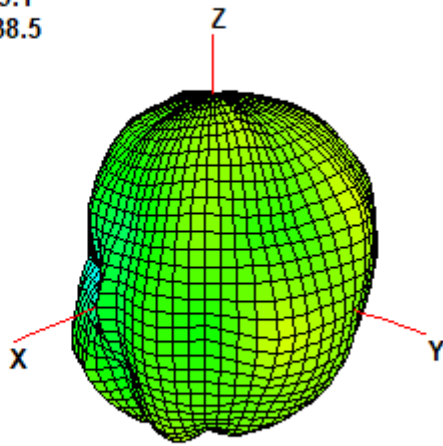


Center Frequency	<b>2570MHz</b>
Horizontal (dBi) peak	0.52
Vertical (dBi) peak	0.61

**2595MHz**

**Total**

Azimuth = 109.1  
 Elevation = -38.5  
 Roll = -61.3

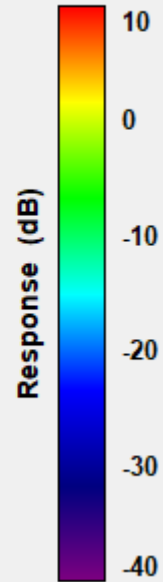
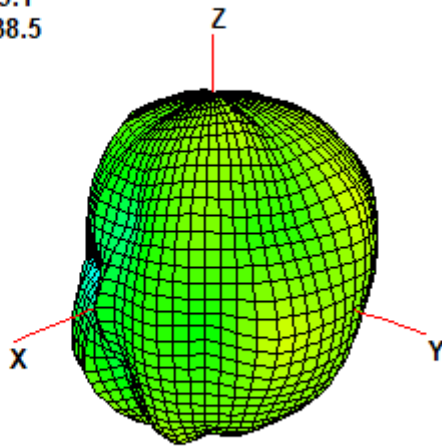


Center Frequency	<b>2595MHz</b>
Horizontal (dBi) peak	-0.16
Vertical (dBi) peak	0.71

**2620MHz**

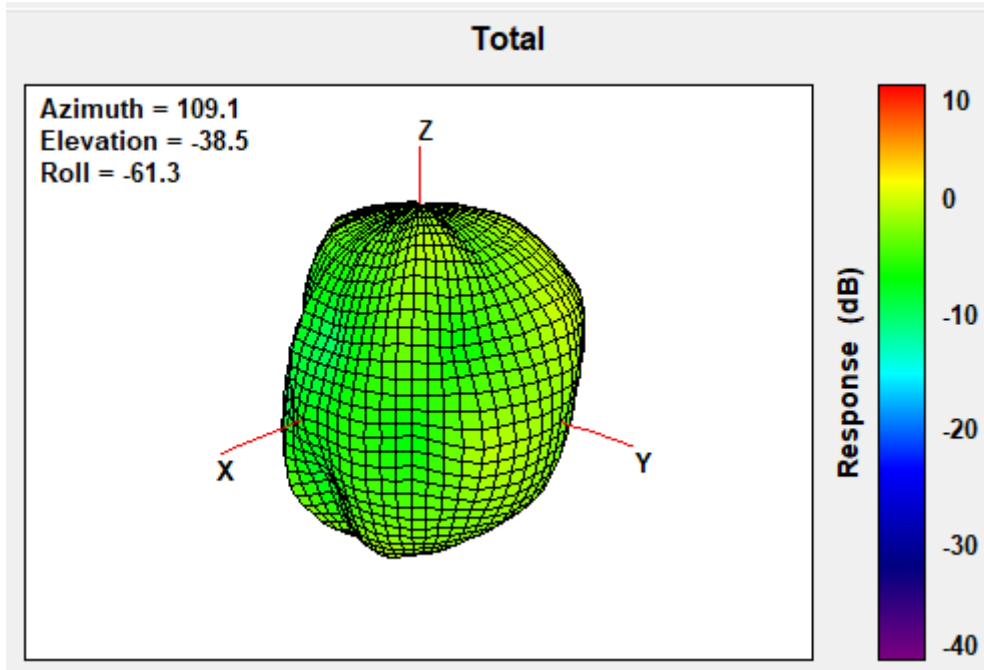
**Total**

Azimuth = 109.1  
 Elevation = -38.5  
 Roll = -61.3



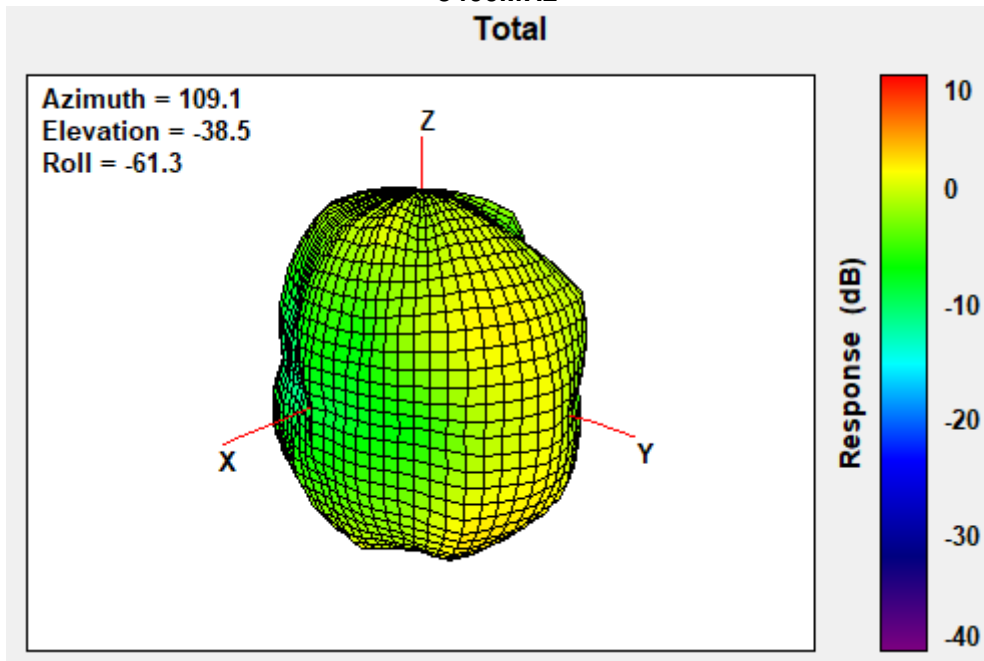
Center Frequency	<b>2620MHz</b>
Horizontal (dBi) peak	-0.33
Vertical (dBi) peak	0.64

**2690MHz**



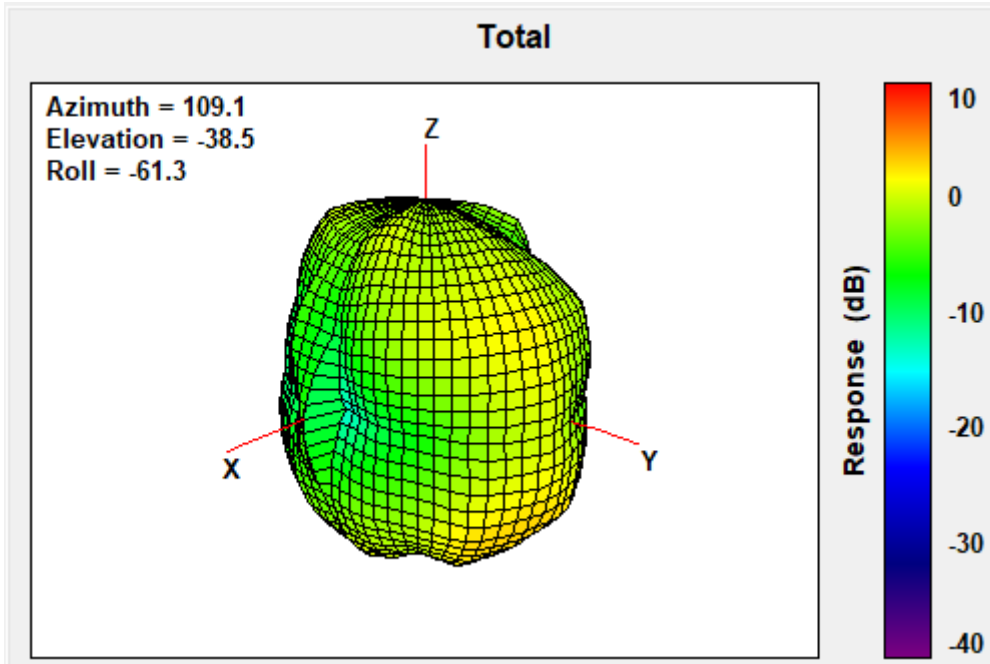
Center Frequency	<b>2690MHz</b>
Horizontal (dBi) peak	-0.50
Vertical (dBi) peak	-0.42

**3400MHz**

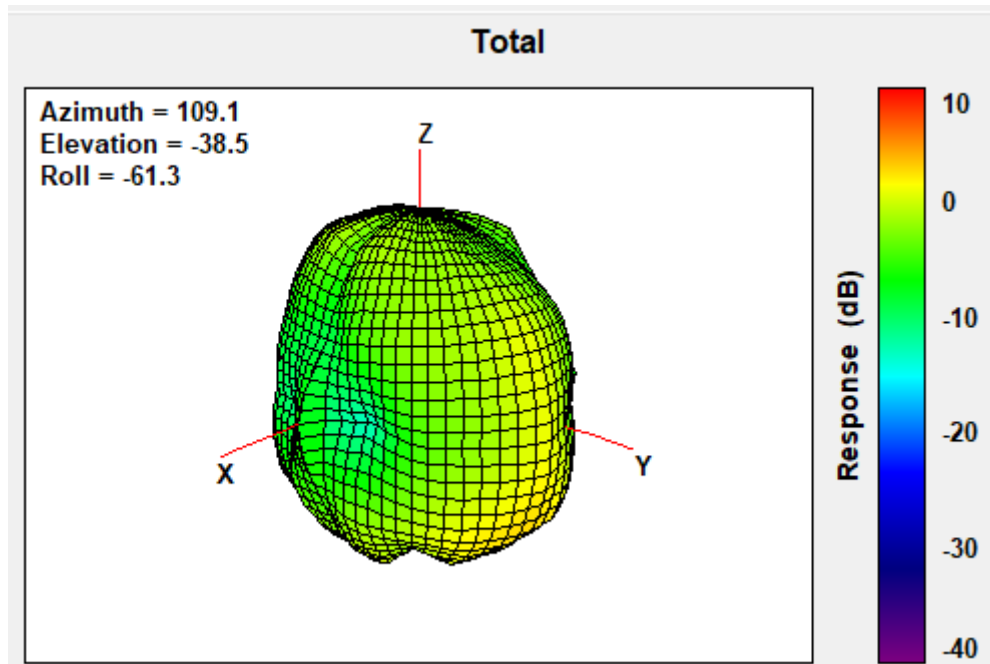


Center Frequency	<b>3400MHz</b>
Horizontal (dBi) peak	2.42
Vertical (dBi) peak	1.62

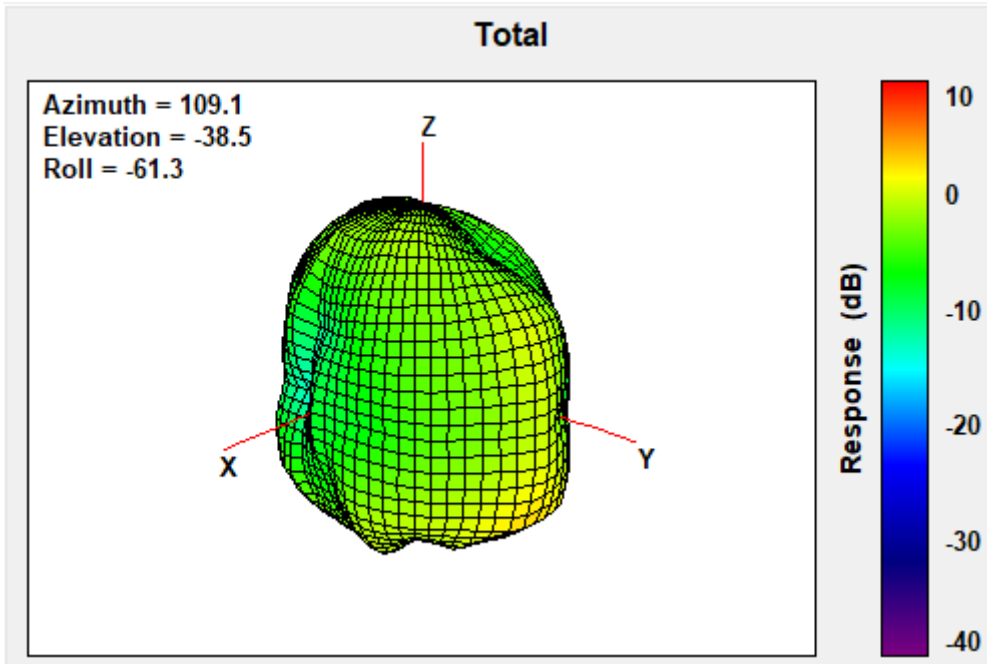
### 3500MHz



### 3600MHz

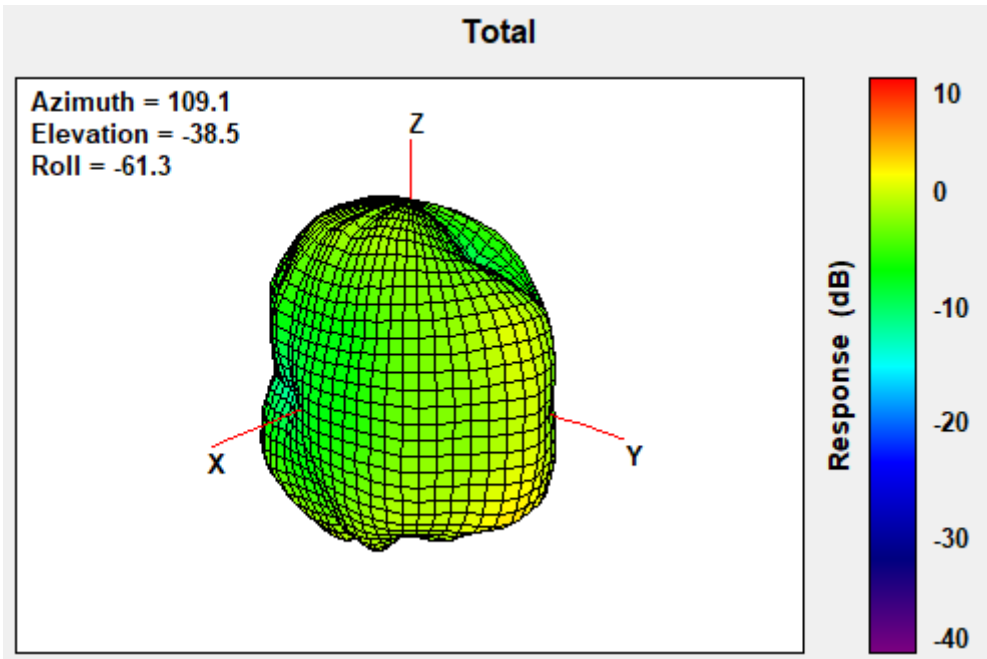


**3700MHz**



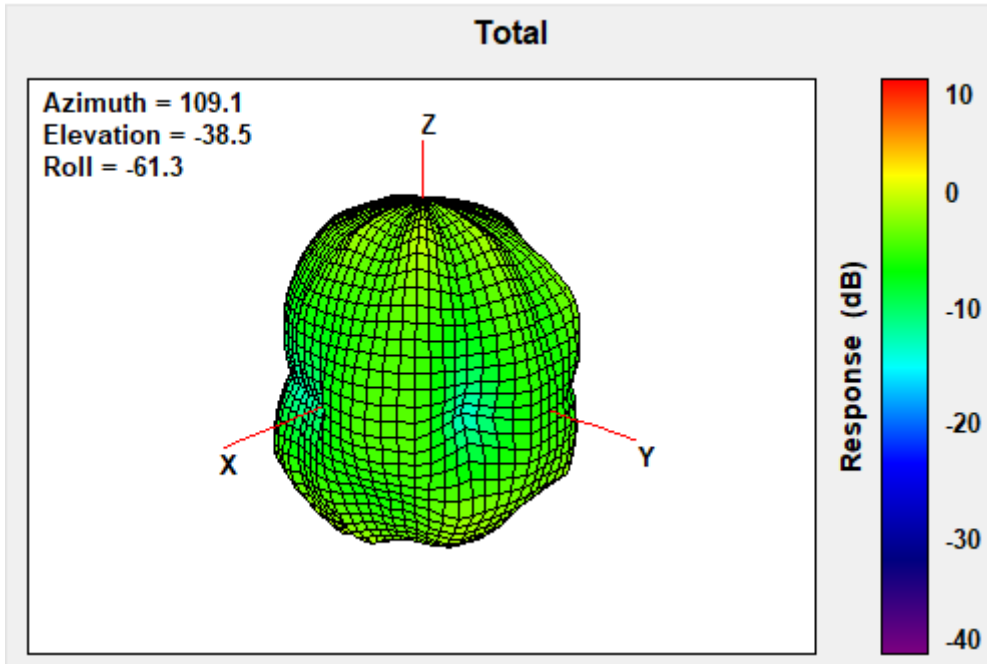
Center Frequency	<b>3700MHz</b>
Horizontal (dBi) peak	2.07
Vertical (dBi) peak	-0.70

**3800MHz**



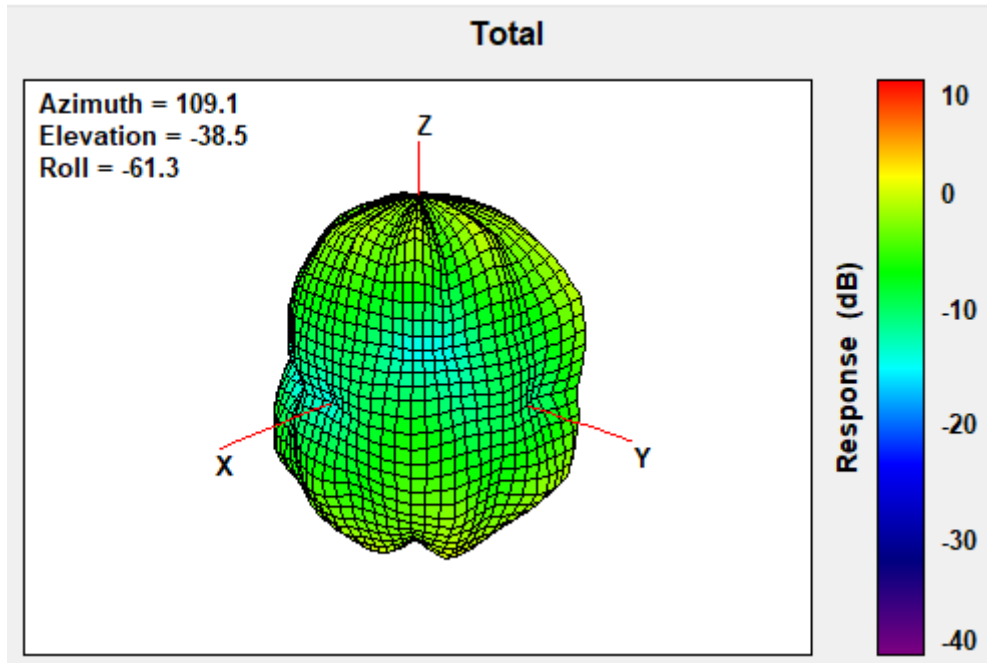
Center Frequency	<b>3800MHz</b>
Horizontal (dBi) peak	1.86
Vertical (dBi) peak	-0.10

4200MHz



Center Frequency	<b>4200MHz</b>
Horizontal (dBi) peak	-0.01
Vertical (dBi) peak	0.04

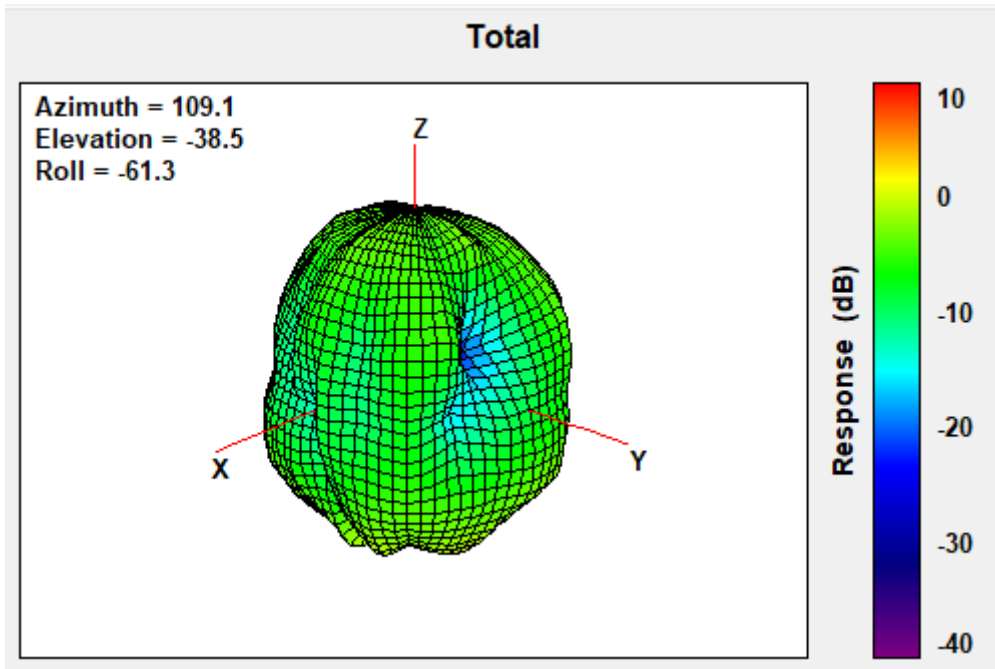
4400MHz



Center Frequency	<b>4400MHz</b>
Horizontal (dBi) peak	1.41
Vertical (dBi) peak	0.39

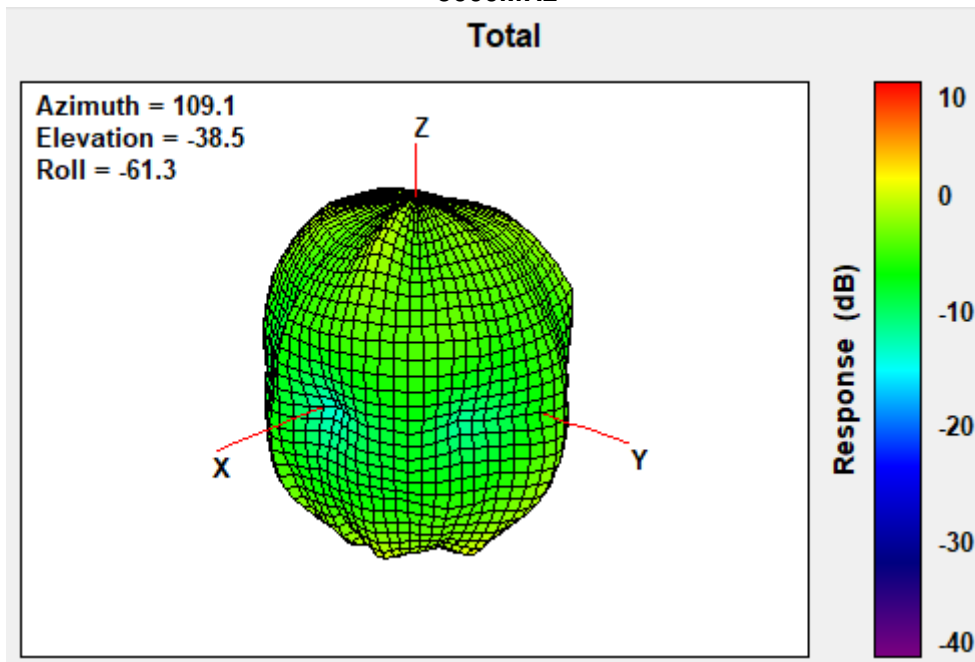


### 4700MHz



Center Frequency	<b>4700MHz</b>
Horizontal (dBi) peak	0.59
Vertical (dBi) peak	0.23

### 5000MHz



Center Frequency	<b>5000MHz</b>
Horizontal (dBi) peak	1.67
Vertical (dBi) peak	0.00