

Regulatory WLAN Antenna Information (Template)

(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)

Platform information															
Brand	ODM	****End product model name				Intel platform (ex: Yes, No or NA)	Platform type (ex: regular NB, convertible PC, AIO...etc)		*SAR minimum separation (mm)						
ASUS		M3502Q, D3502Q, Y3502CQ, M3502R, D3502R, Y3502CR					regular NB		N/A						
****Please fill in exact product model name and make sure the model name is visible on product cover or any parts for end users recognize for authority inspection.															
Antenna information															
Vendor		Type		Antenna Part number (Main)			Antenna Part number (Aux)								
PULSE		PIFA		TZ20874 (1415-092U000)			TZ20875 (1415-092V000)								
Peak gain w/ cable loss (dBi)*															
2.4GHz 2400-2500MHz		5.2/5.3GHz 5150-5350MHz		5.5GHz 5470-5725MHz		5.8GHz 5725-5850MHz		6.2GHz 5925-6425MHz		6.5GHz 6425-6525MHz		6.7GHz 6525-6875MHz		6.9GHz 6875-7125MHz	
1.96		2.7		3.2		3.52		3.17		1.98		1.9		1.56	
Intel Reference Gain/Type/ Separation distance															
Antenna Type	Antenna Peak gain (In dBi)									Distance to the end user (mm)					
	2.4GHz 2400-2500MHz	5.2GHz 5150-5250MHz	5.3GHz 5250-5350MHz	5.5GHz 5470-5725MHz	5.8GHz 5725-5850MHz	6.2GHz 5925-6425MHz	6.5GHz 6425-6525MHz	6.7GHz 6525-6875MHz	6.9GHz 6875-7125MHz	Generic sku: refer to modular FCC SAR report Mid-power sku: ≥8 Low power sku: ≥5					
PIFA	3	3.64	3.73	4.77	4.97	4.83	4.3	5	5						
Notes (marked with *)															
* SAR minimum separation (mm) - Regular NB: Minimum antenna-to-body (from antenna bottom to the bottom of the device) - Tablet / Convertible PC: Minimum antenna-to-edge (5 sides of the device) - Mini-tablet: Minimum antenna-to-edge (6 sides of the device) * 3D Peak Antenna gain should be equal or greater than -2 dBi - If a host integrator plans to use a lower gain antenna of the same type, additional CBP(FCC)/EDT(EU) testing need to be performed while the module is installed in the host.															

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	Required	N/A	N/A	N/A
1D	Part number of Antenna Assembly / cable impedance, length & diameter.	Required	Desired	Desired	Desired	Desired
1E	Main & Aux antenna (Peak Gain W/ cable loss) *	Required	Required	Required	Required	Required
	1E OR 1F, 1G, 1H					
1F	Main & Aux antenna (Peak Gain only) *	Required	Required	Required	Required	Required
1G	VSWR of cable including connector	Required	Required	Required	Required	Required
1H	Main & Aux antenna (Cable loss W/ connector) *	Required	Required	Required	Required	Required
2	Dimensioned Photographs <u>and</u> Drawings of Main & Aux antennas	Required	Required	Required	Required	Required
3	Radiation patterns of antennas loaded in the host platform.	Required	Desired	Required	Required	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
9	Antenna gain range should be equal or greater than -2 dBi. (2.4/5/6GHz: EU, 6GHz: FCC)	Required	Required	N/A	N/A	N/A

Antenna Information

Section 1. Antenna Assembly Specifications

1A	1B	1C	1D	Freq Range	1E	1F	1G	1H
Antenna Part Number	Manufacture	Antenna Type	Cable Assembly Part Number and Information	MHz	*Peak Gain W/ Cable loss (dBi)	Peak Gain w/o Cable Loss (dBi)	VSWR	Cable Loss (dB)
Pulse P/N: TZ20874 (1415-092U000) Tx1 Main Antenna	Pulse	PIFA	Connector: IPEX 20565-001R-13 or compatible. Cable: SY113L/50-001 or compatible. 50 ohm Coaxial. Length: 242 mm diameter: 1.13 LLS mm	2400-2500	1.96	2.69	3.00 max	0.73
				5150-5350	2.7	3.68	3.00 max	0.98
				5470-5725	3.2	4.22	3.00 max	1.02
				5725-5850	3.52	4.54	3.00 max	1.02
				5925-6425	3.17	4.25	3.00 max	1.08
				6425-6525	1.98	3.07	3.00 max	1.09
				6525-6875	1.9	3.02	3.00 max	1.12
				6875-7125	1.56	2.69	3.00 max	1.13
Pulse P/N: TZ20875 (1415-092V000) Tx2 Aux Antenna	Pulse	PIFA	Connector: IPEX 20565-001R-13 or compatible. Cable: SY113L/50-001 or compatible. 50 ohm Coaxial. Length: 430 mm diameter: 1.13 LLS mm	2400-2500	1.27	2.57	3.00 max	1.3
				5150-5350	0.45	2.19	3.00 max	1.74
				5470-5725	1.12	2.93	3.00 max	1.81
				5725-5850	0.59	2.41	3.00 max	1.82
				5925-6425	0.72	2.64	3.00 max	1.92
				6425-6525	-0.37	1.56	3.00 max	1.93
				6525-6875	-0.37	1.62	3.00 max	1.99
				6875-7125	-0.42	1.59	3.00 max	2.01

- 3D Antenna Peak Gain required being test in system basis.

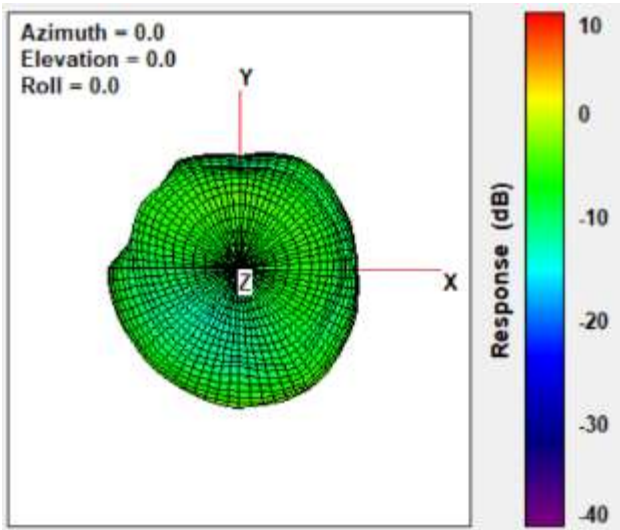
3D Antenna Peak Gain Table:

	Main antenna	Aux Antenna
Frequency (MHz)	(dBi)	(dBi)
2400	1.27	0.56
2450	1.82	1.27
2500	1.96	0.36
5150	2.59	-0.56
5250	1.76	0.45
5350	2.7	-1.02
5470	2.48	1.12
5600	3.2	-0.35
5725	2.13	0.44
5785	3.52	-0.21
5850	3.5	0.59
5925	3.17	0.31
6000	2.83	0.02
6125	2.29	-0.01
6225	1.88	0.72
6325	1.72	0.54
6425	1.98	-0.71
6525	0.33	-0.37
6625	1.47	-0.77
6725	1.9	-0.75
6875	0.11	-1.82
6925	0.64	-1.17
7000	1.56	-0.42
7125	0.51	-0.87

Section 3. Radiation characteristics of antennae Loaded in Host Platform

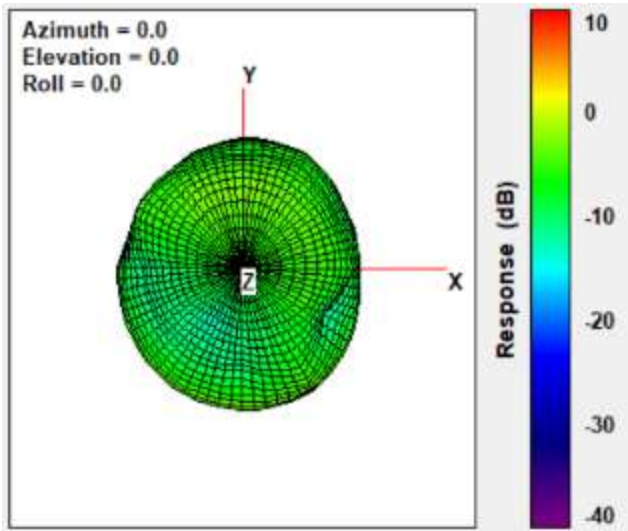
2400-2500MHz radiation characteristic

Main antenna: 2400 MHz



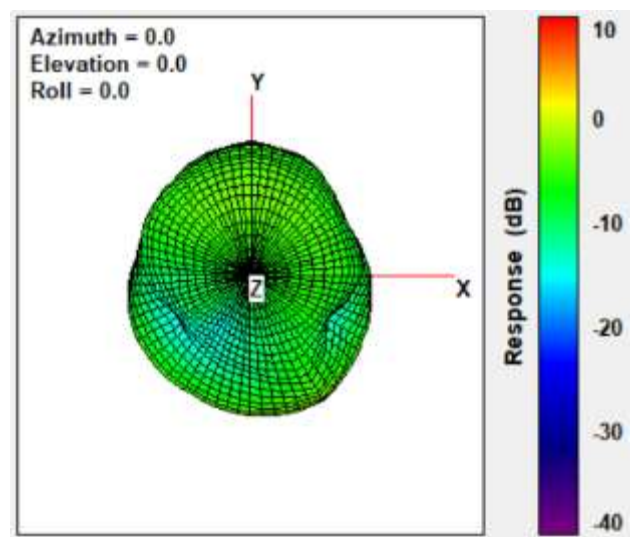
Center Frequency	2400 MHz
Three-dimensional (dBi) peak	1.27

Main antenna: 2450 MHz



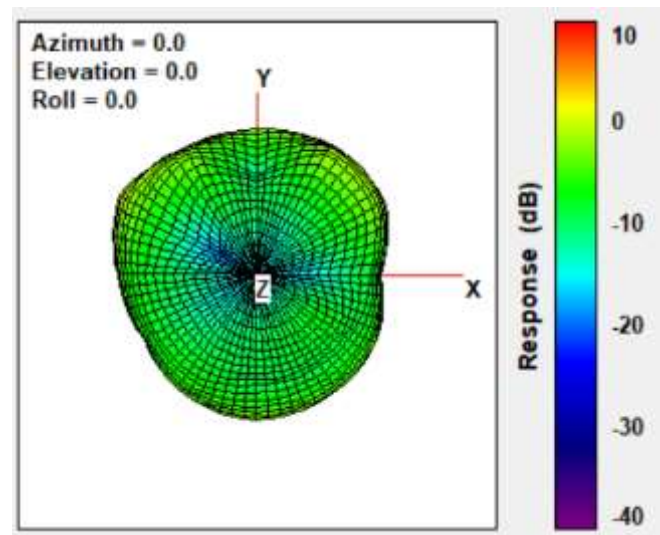
Center Frequency	2450 MHz
Three-dimensional (dBi) peak	1.82

Main antenna: 2500 MHz



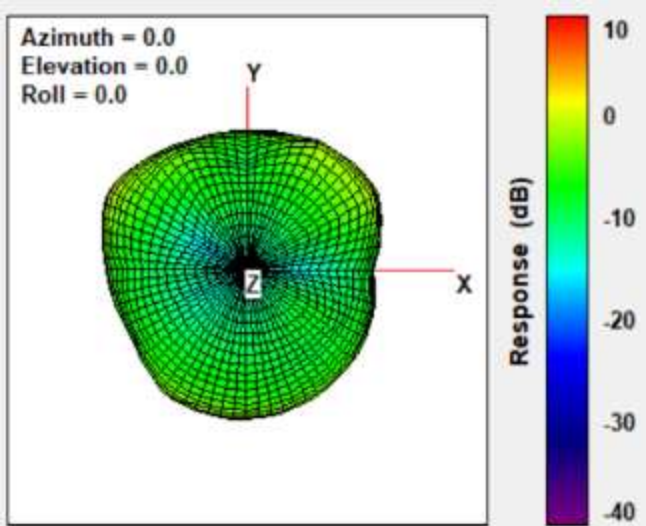
Center Frequency	2500 MHz
Three-dimensional (dBi) peak	1.96

Aux antenna: 2400 MHz



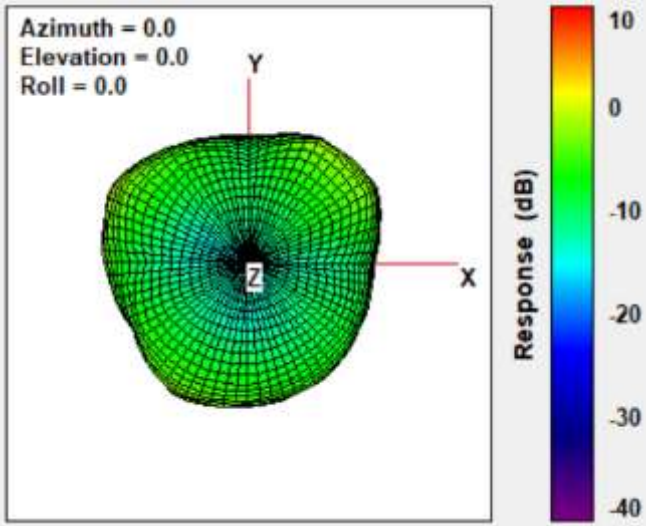
Center Frequency	2400 MHz
Three-dimensional (dBi) peak	0.56

Aux antenna: 2450 MHz



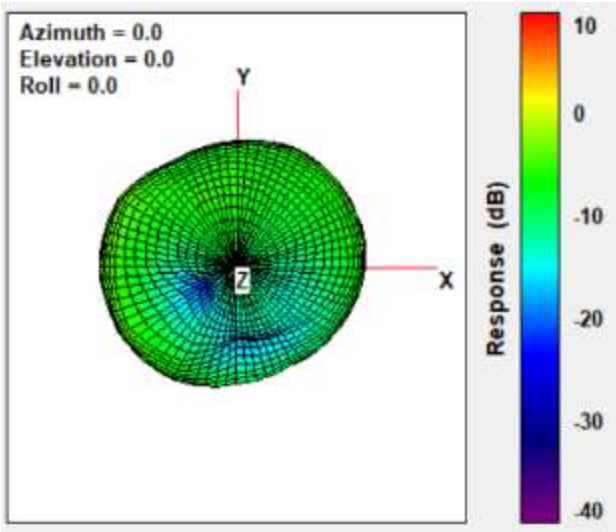
Center Frequency	2450 MHz
Three-dimensional (dBi) peak	1.27

Aux antenna: 2500 MHz



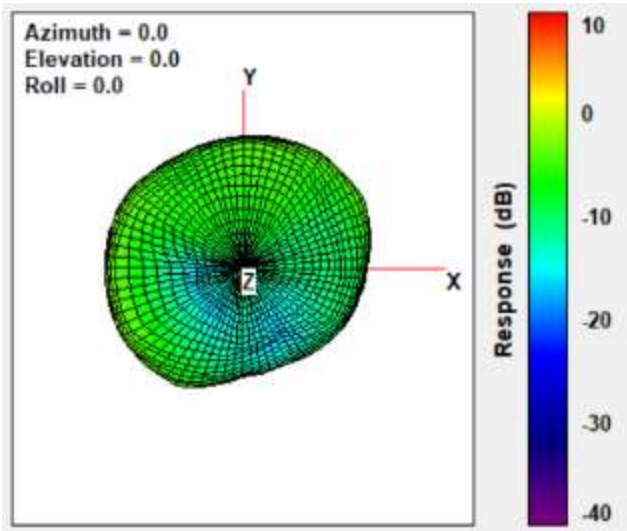
Center Frequency	2500 MHz
Three-dimensional (dBi) peak	0.36

Main antenna: 5150 MHz

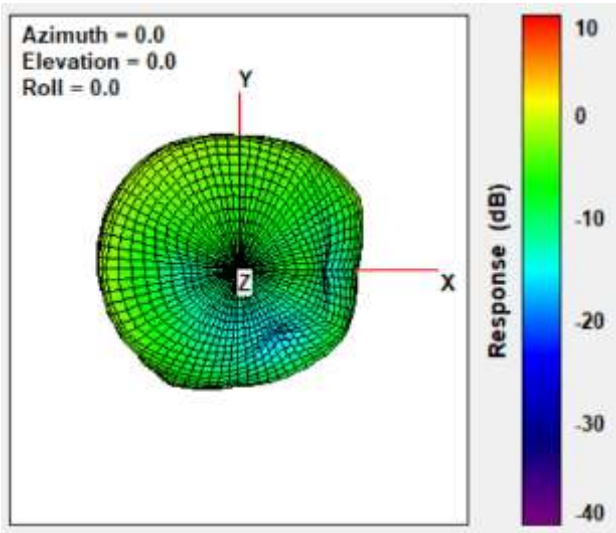


Center Frequency	5150 MHz
Three-dimensional (dBi) peak	2.59

Main antenna: 5250 MHz

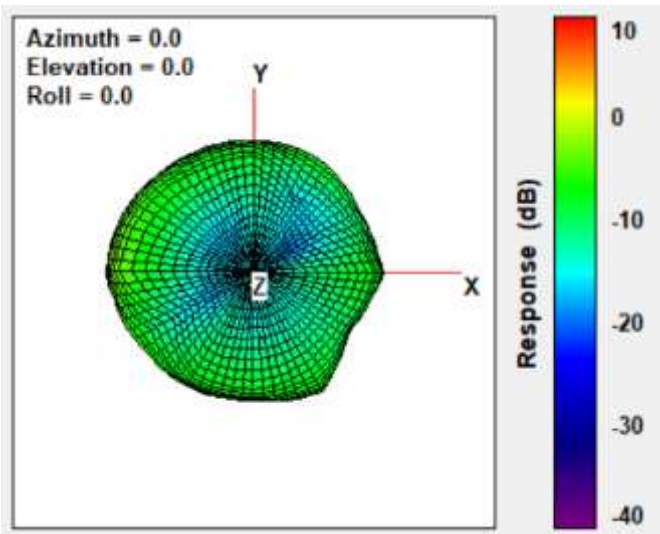


Center Frequency	5250 MHz
Three-dimensional (dBi) peak	1.76

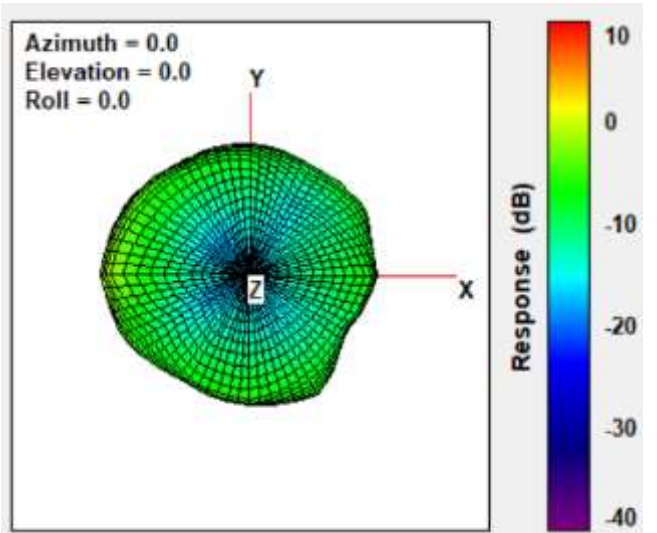


Center Frequency	5350 MHz
Three-dimensional (dBi) peak	2.70

Aux antenna: 5150 MHz

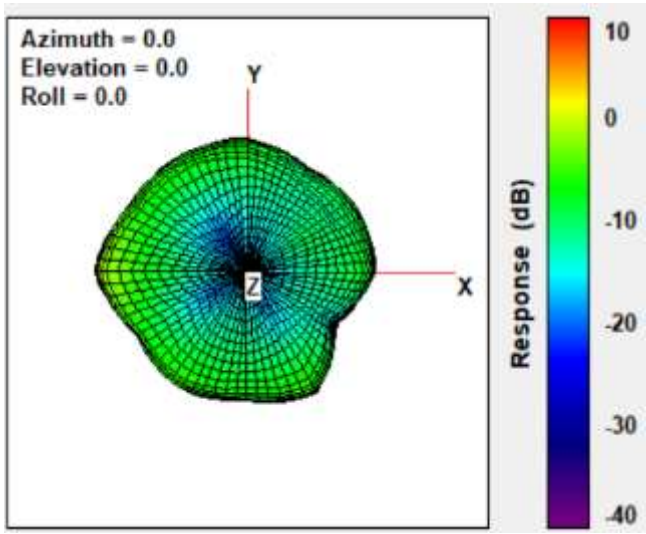


Center Frequency	5150 MHz
Three-dimensional (dBi) peak	-0.56



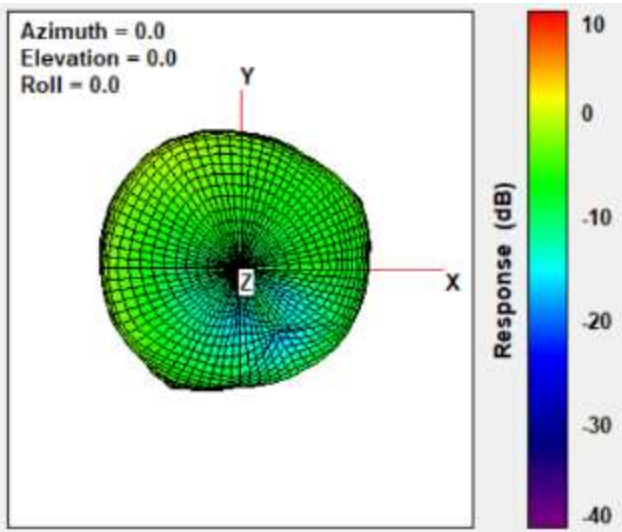
Center Frequency	5250 MHz
Three-dimensional (dBi) peak	0.45

Aux antenna: 5350 MHz



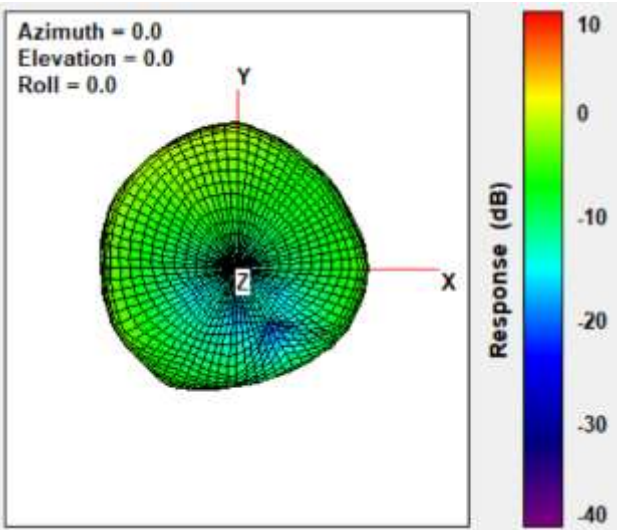
Center Frequency	5350 MHz
Three-dimensional (dBi) peak	-1.02

Main antenna: 5470 MHz

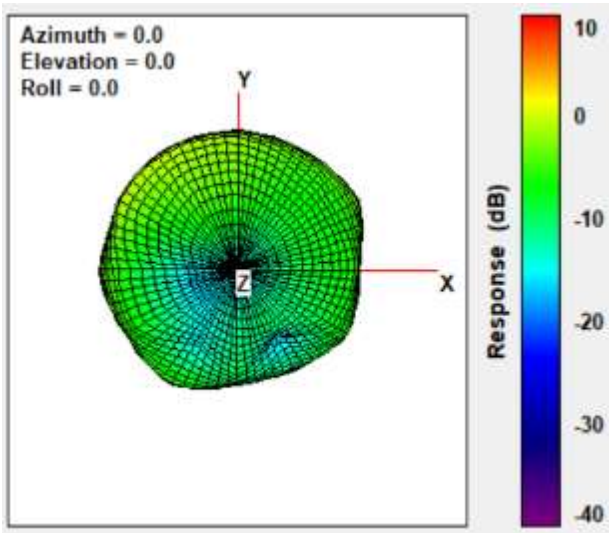


Center Frequency	5470 MHz
Three-dimensional (dBi) peak	2.48

Main antenna: 5600 MHz

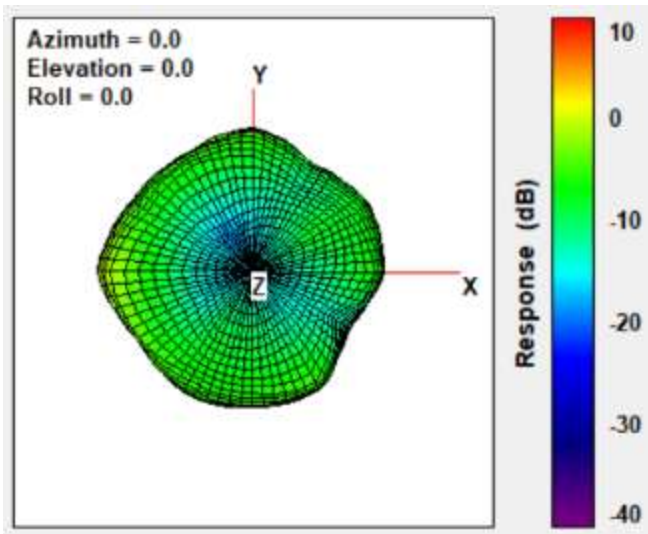


Center Frequency	5600 MHz
Three-dimensional (dBi) peak	3.20

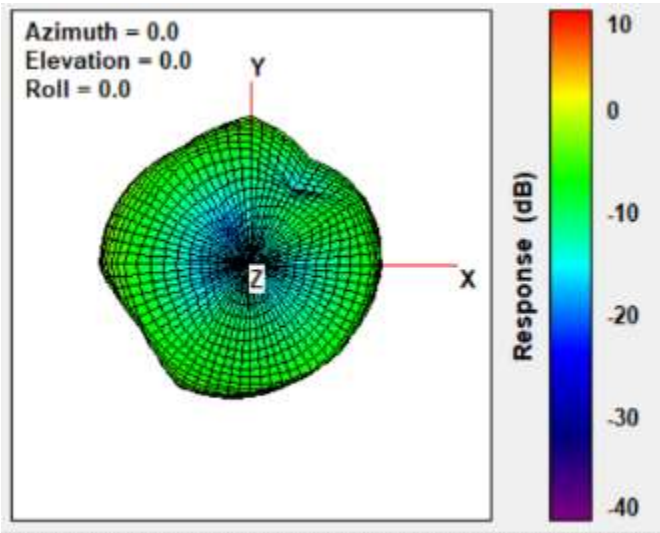


Center Frequency	5725 MHz
Three-dimensional (dBi) peak	2.13

Aux antenna: 5470 MHz

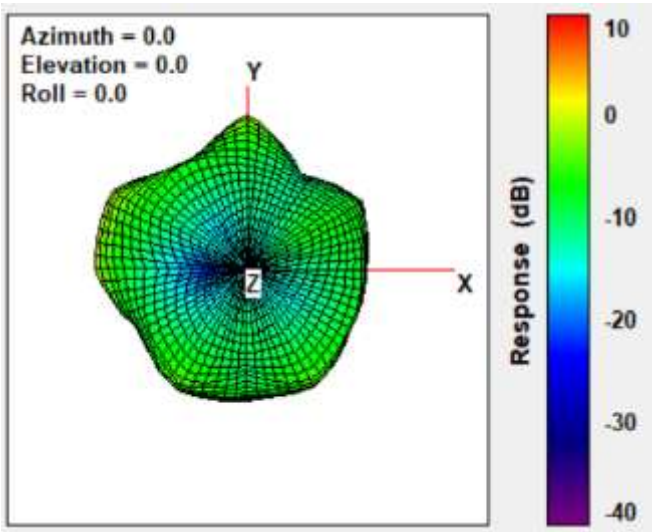


Center Frequency	5470 MHz
Three-dimensional (dBi) peak	1.12



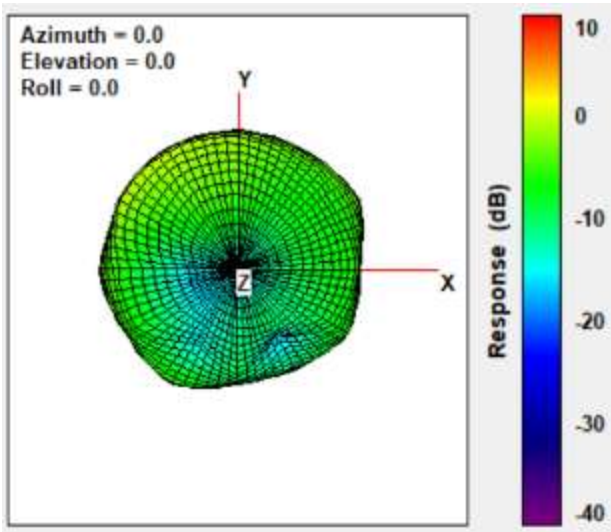
Center Frequency	5600 MHz
Three-dimensional (dBi) peak	-0.35

Aux antenna: 5725 MHz



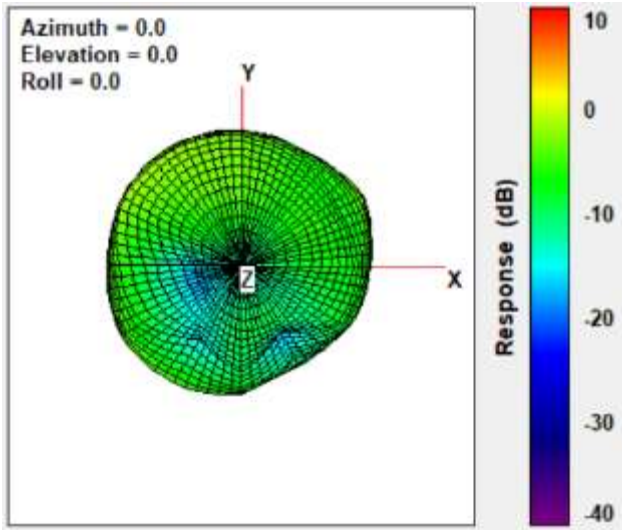
Center Frequency	5725 MHz
Three-dimensional (dBi) peak	0.44

Main antenna: 5725 MHz

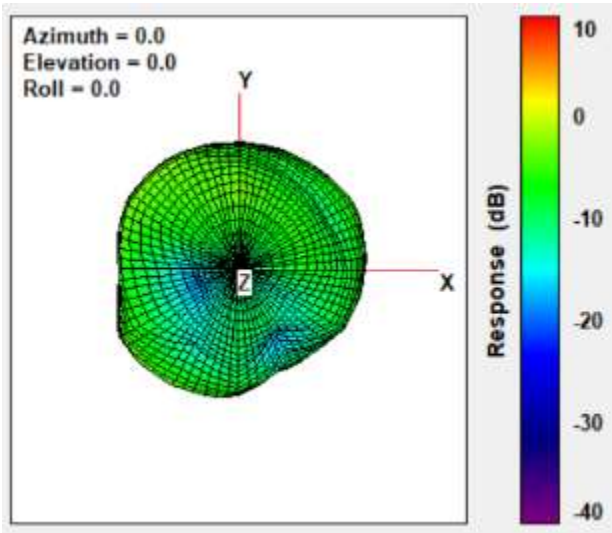


Center Frequency	5725 MHz
Three-dimensional (dBi) peak	2.13

Main antenna: 5785 MHz

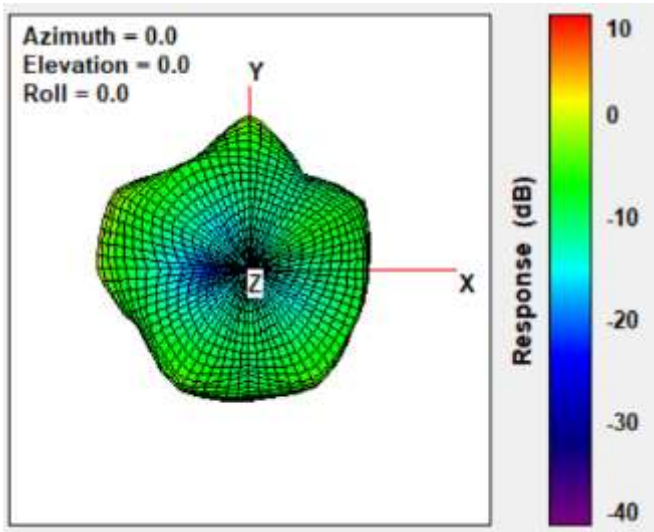


Center Frequency	5785 MHz
Three-dimensional (dBi) peak	3.52

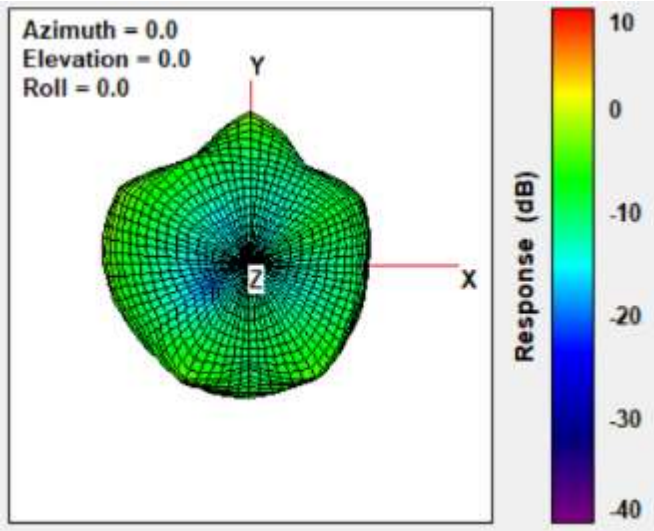


Center Frequency	5850 MHz
Three-dimensional (dBi) peak	3.50

Aux antenna: 5725 MHz

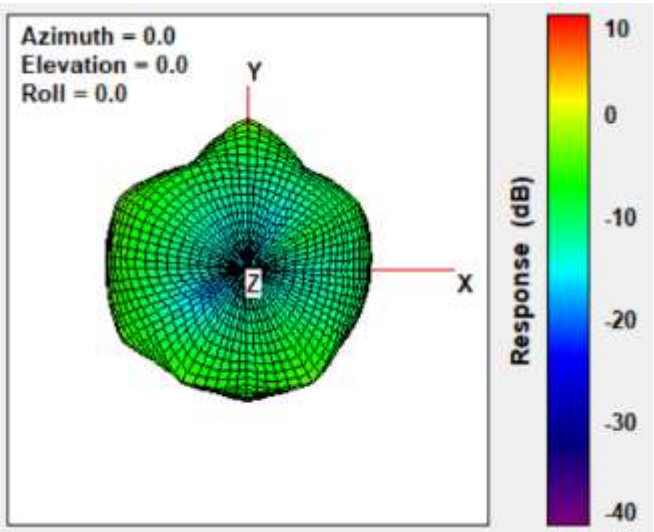


Center Frequency	5725 MHz
Three-dimensional (dBi) peak	0.44



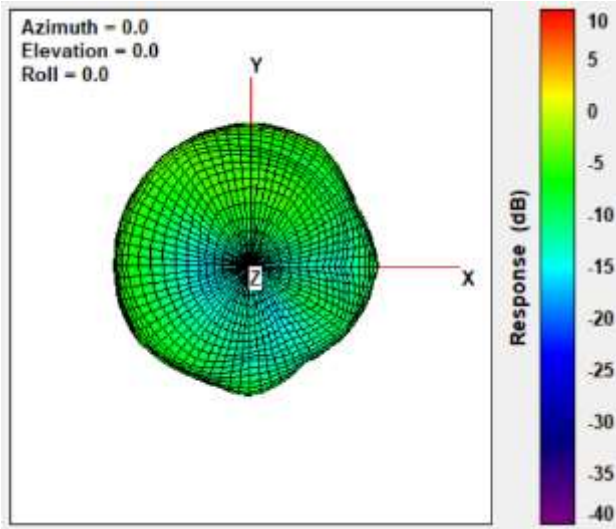
Center Frequency	5785 MHz
Three-dimensional (dBi) peak	-0.21

Aux antenna: 5850 MHz



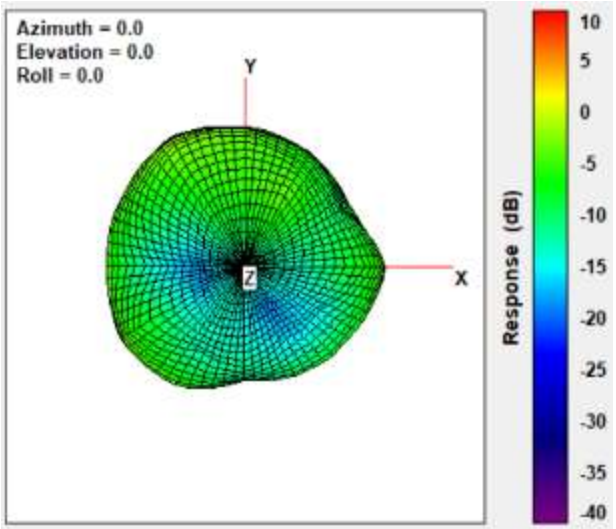
Center Frequency	5850 MHz
Three-dimensional (dBi) peak	0.59

Main antenna: 5925 MHz

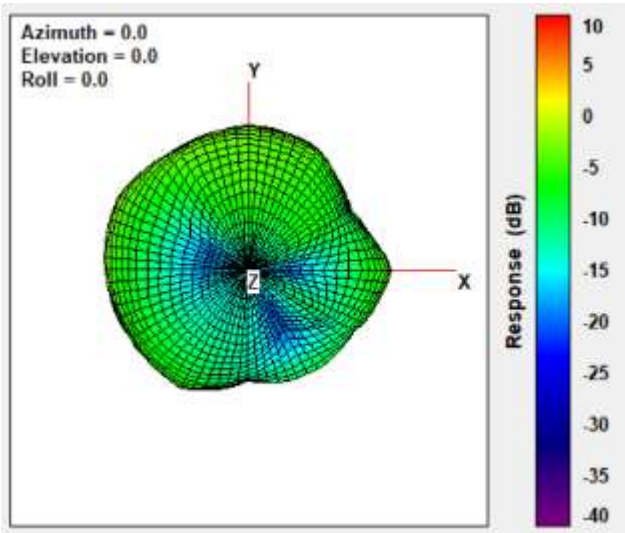


Center Frequency	5925 MHz
Three-dimensional (dBi) peak	3.17

Main antenna: 6000 MHz

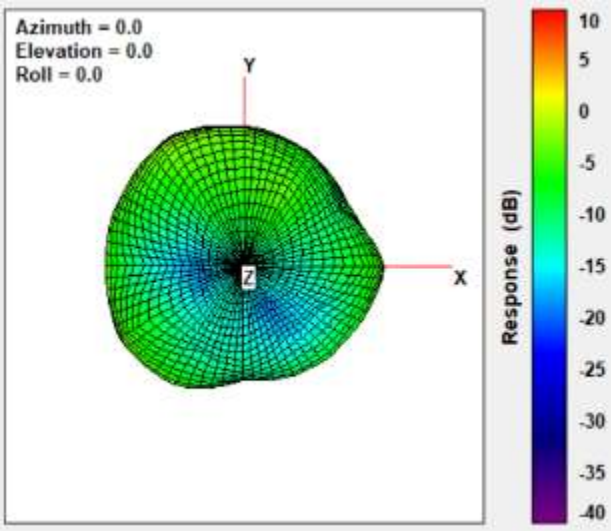


Center Frequency	6000 MHz
Three-dimensional (dBi) peak	2.83

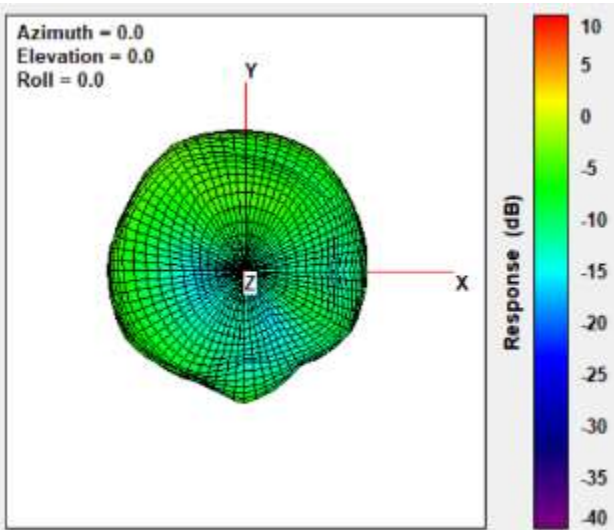


Center Frequency	6125 MHz
Three-dimensional (dBi) peak	2.29

Main antenna: 6225 MHz

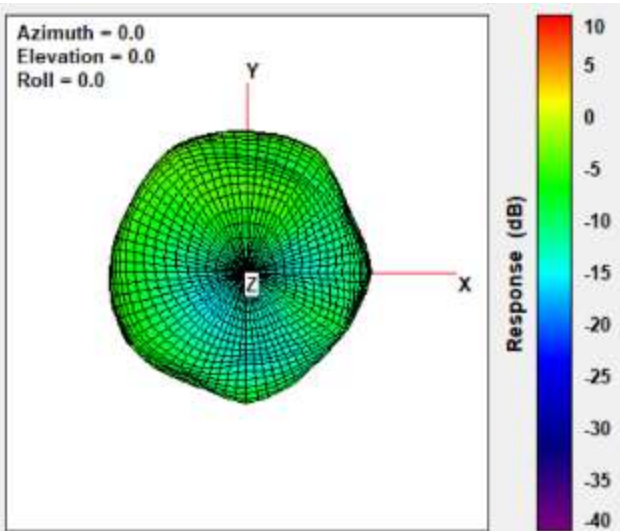


Center Frequency	6225 MHz
Three-dimensional (dBi) peak	1.88

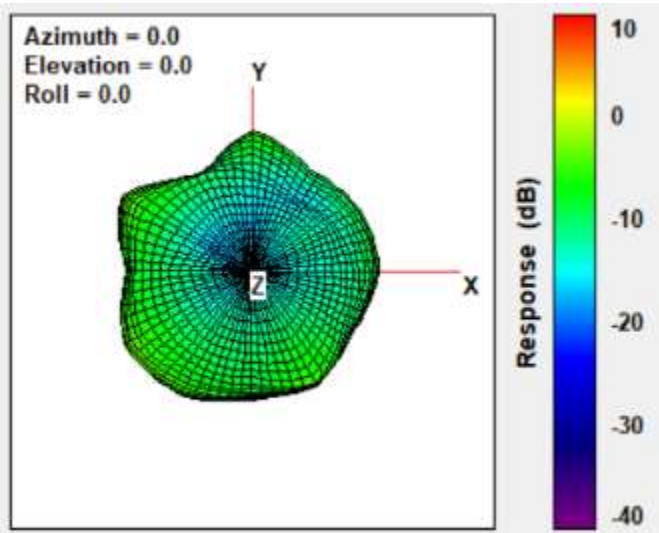


Center Frequency	6325 MHz
Three-dimensional (dBi) peak	1.72

Main antenna: 6425 MHz

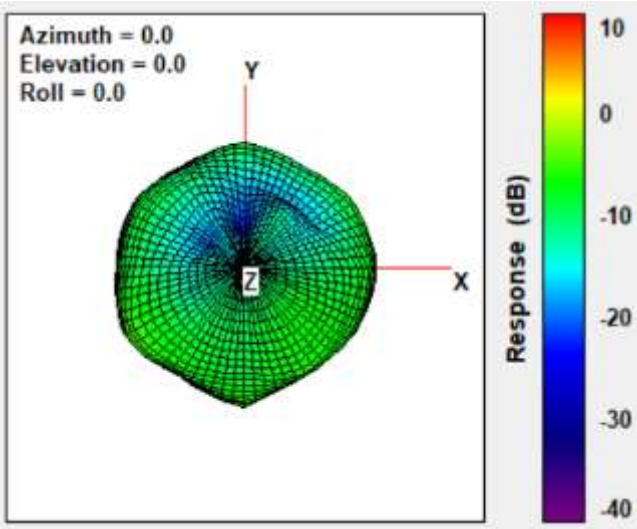


Center Frequency	6425 MHz
Three-dimensional (dBi) peak	1.98

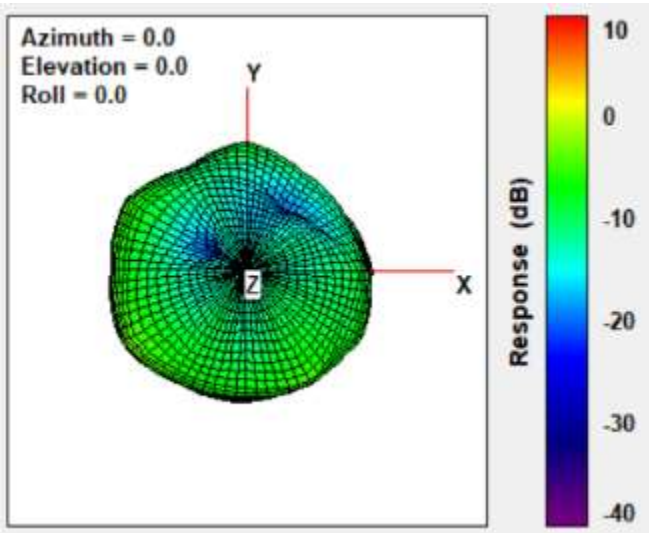


Center Frequency	5925 MHz
Three-dimensional (dBi) peak	0.31

Aux antenna: 6000 MHz

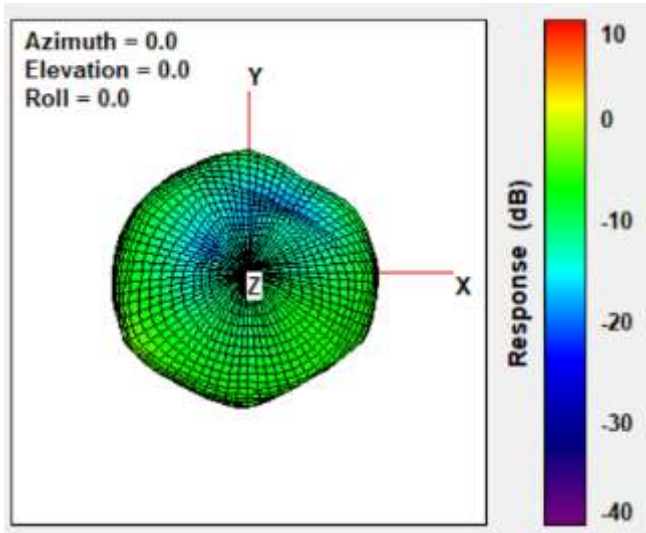


Center Frequency	6000 MHz
Three-dimensional (dBi) peak	0.02

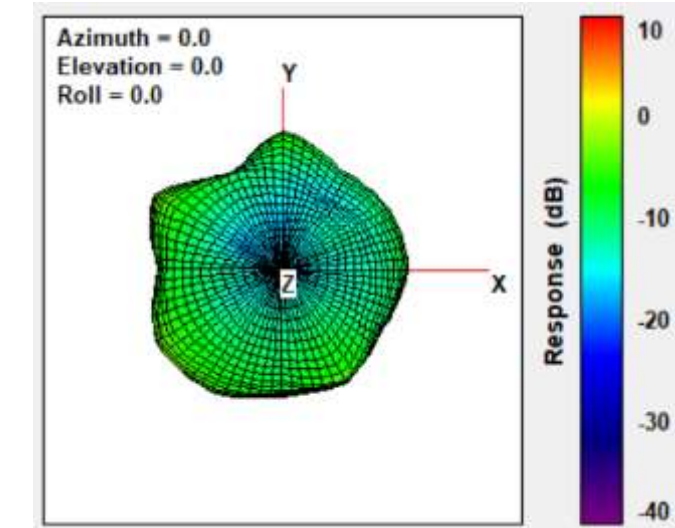


Center Frequency	6125 MHz
Three-dimensional (dBi) peak	-0.01

Aux antenna: 6225 MHz

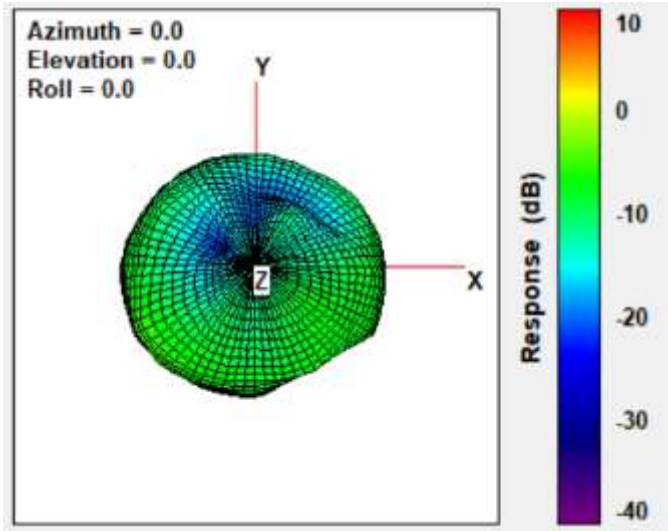


Center Frequency	6225 MHz
Three-dimensional (dBi) peak	0.72



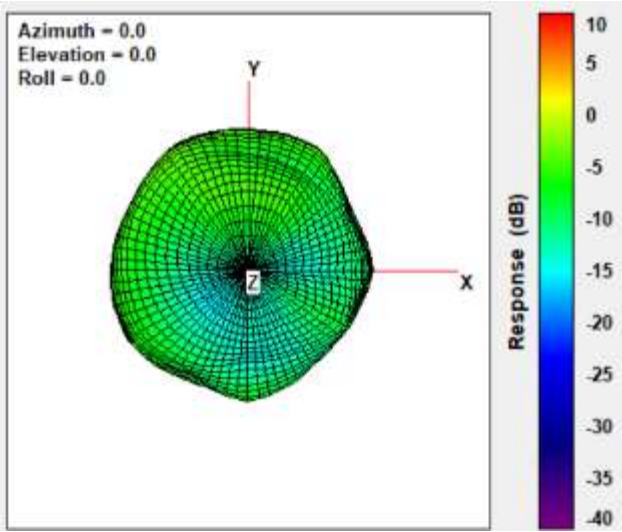
Center Frequency	6325 MHz
Three-dimensional (dBi) peak	0.54

Aux antenna: 6425 MHz



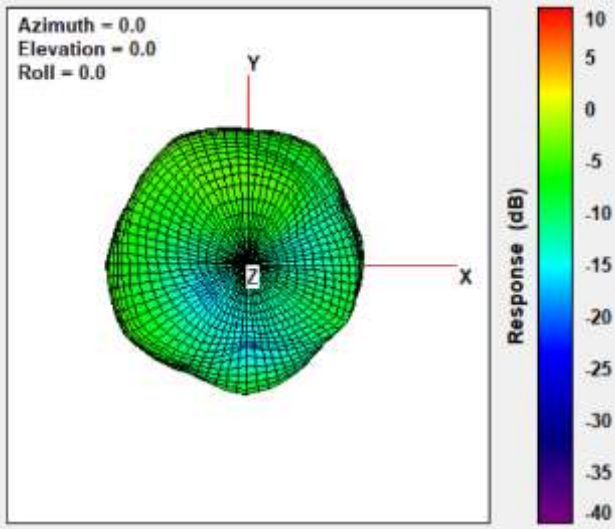
Center Frequency	6425 MHz
Three-dimensional (dBi) peak	-0.71

Main antenna: 6425 MHz

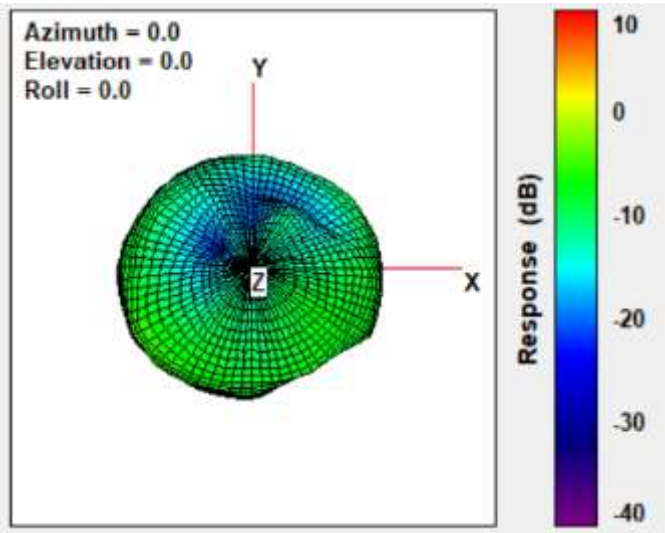


Center Frequency	6425 MHz
Three-dimensional (dBi) peak	1.98

Main antenna: 6525 MHz

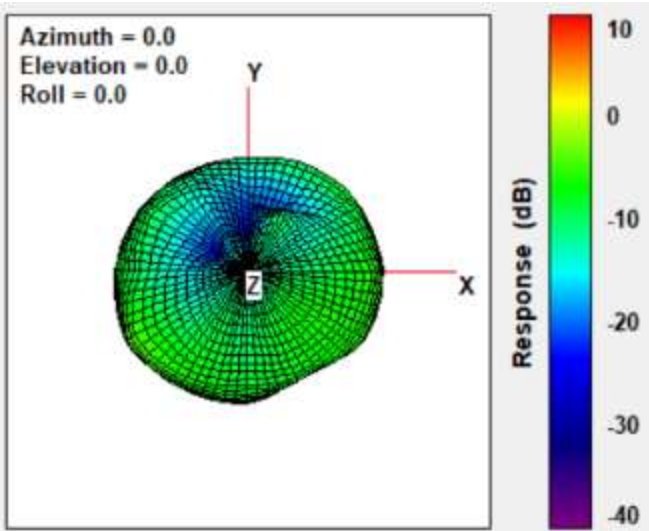


Center Frequency	6525 MHz
Three-dimensional (dBi) peak	0.33



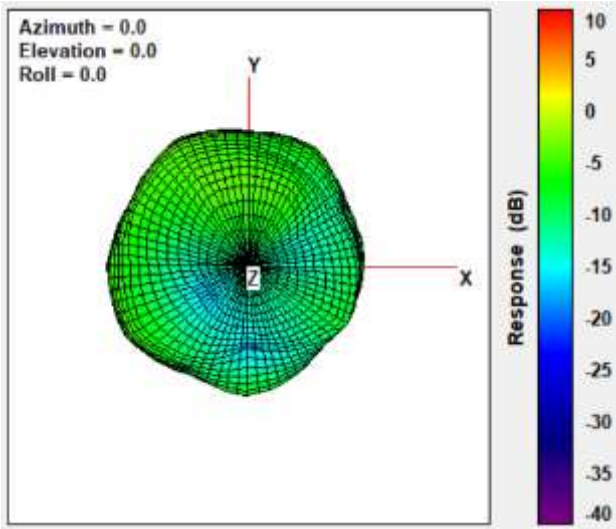
Center Frequency	6425 MHz
Three-dimensional (dBi) peak	-0.71

Aux antenna: 6525 MHz



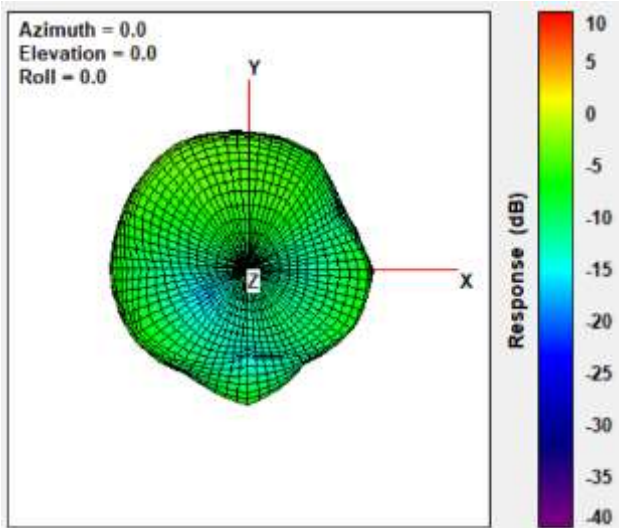
Center Frequency	6525 MHz
Three-dimensional (dBi) peak	-0.37

Main antenna: 6525 MHz

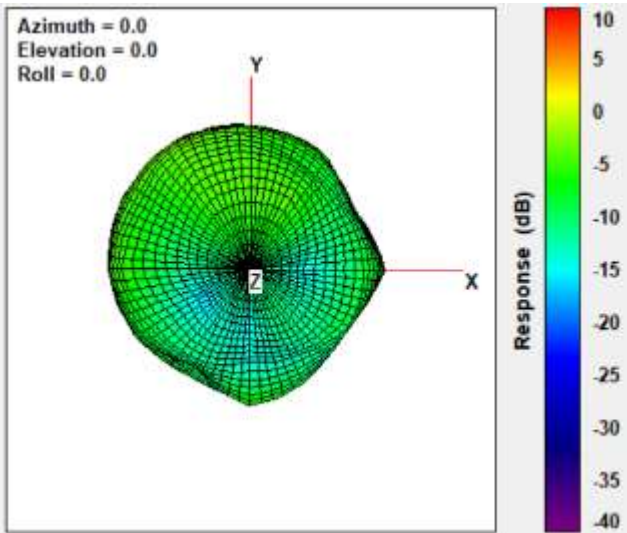


Center Frequency	6525 MHz
Three-dimensional (dBi) peak	0.33

Main antenna: 6625 MHz

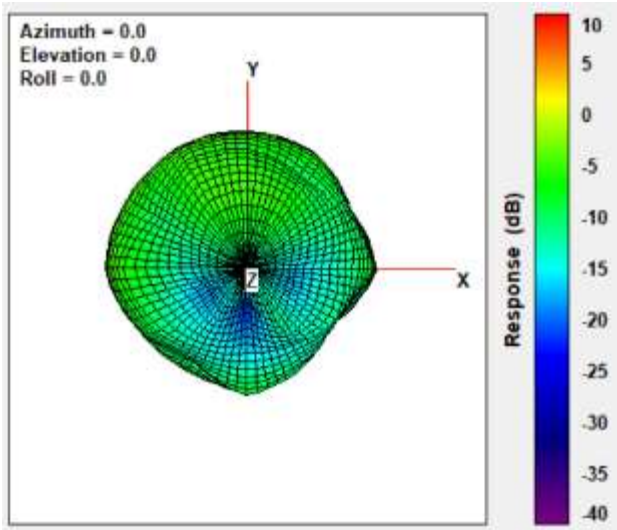


Center Frequency	6625 MHz
Three-dimensional (dBi) peak	1.47

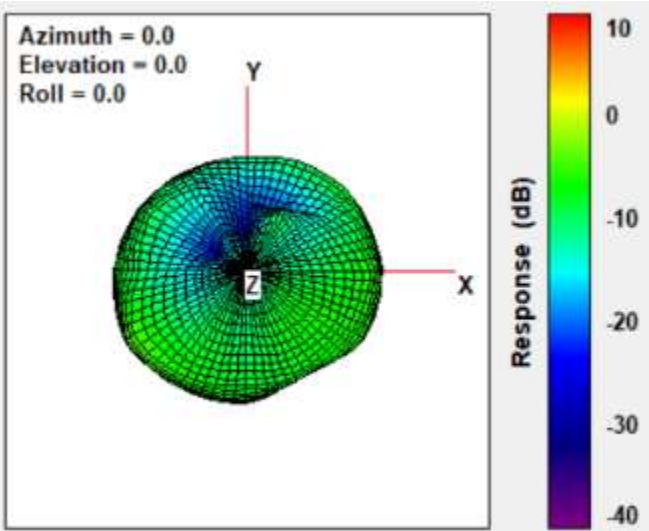


Center Frequency	6725 MHz
Three-dimensional (dBi) peak	1.90

Main antenna: 6875 MHz

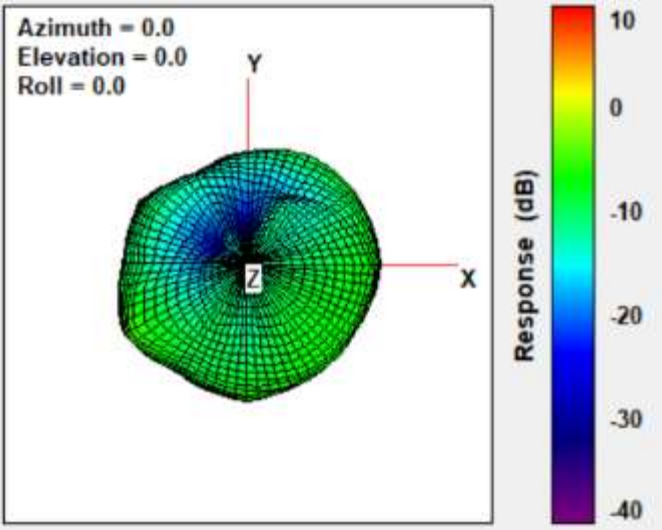


Center Frequency	6875 MHz
Three-dimensional (dBi) peak	0.11

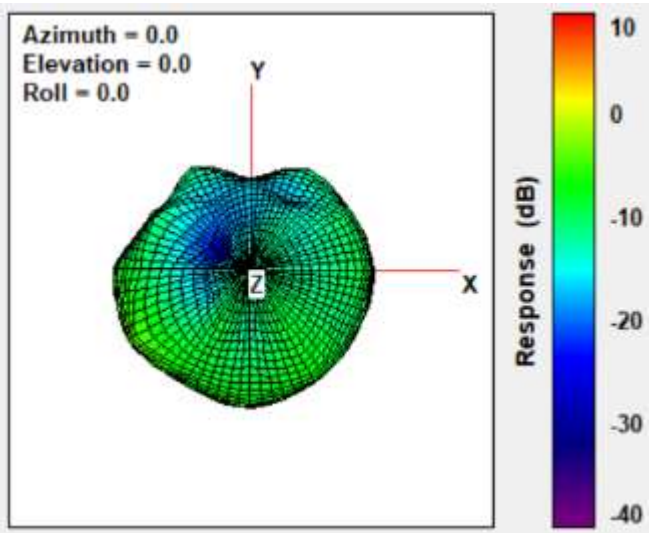


Center Frequency	6525 MHz
Three-dimensional (dBi) peak	-0.37

Aux antenna: 6625 MHz

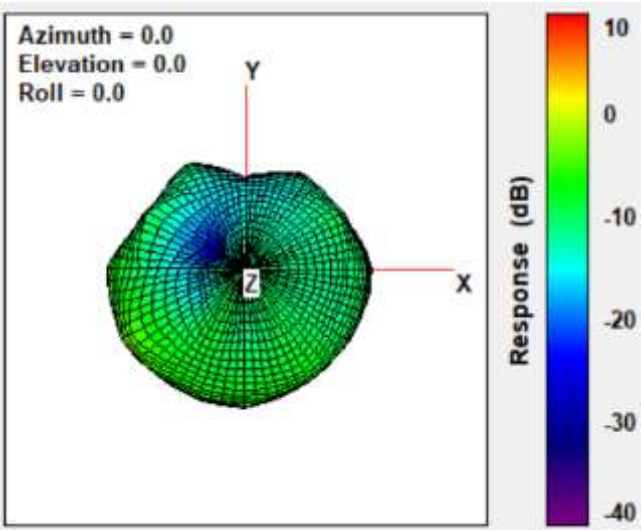


Center Frequency	6625 MHz
Three-dimensional (dBi) peak	-0.77



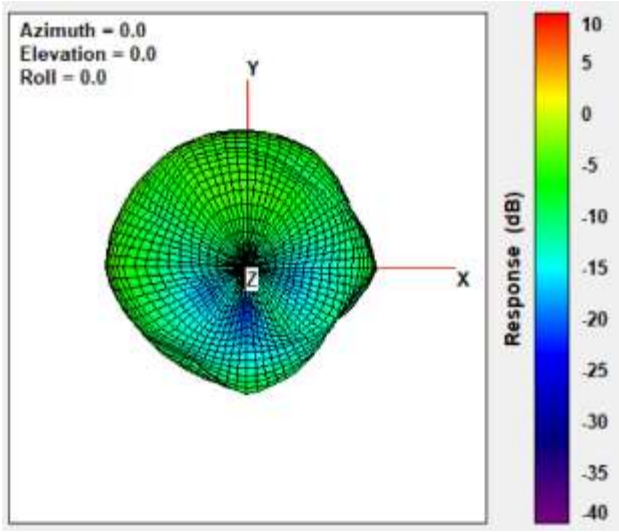
Center Frequency	6725 MHz
Three-dimensional (dBi) peak	-0.75

Aux antenna: 6875 MHz



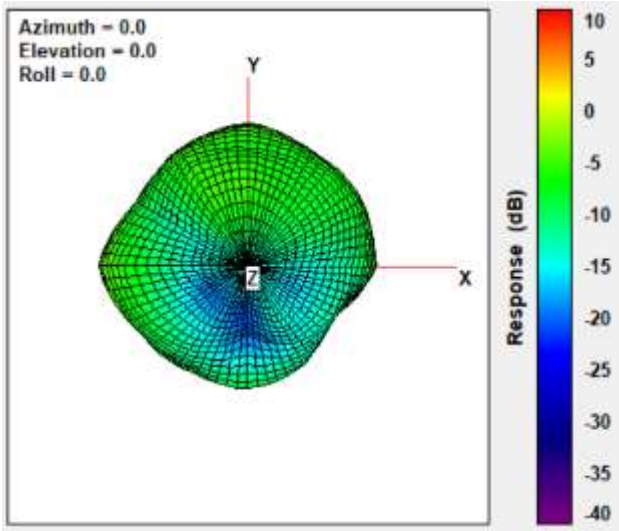
Center Frequency	6875 MHz
Three-dimensional (dBi) peak	-1.82

Main antenna: 6875 MHz

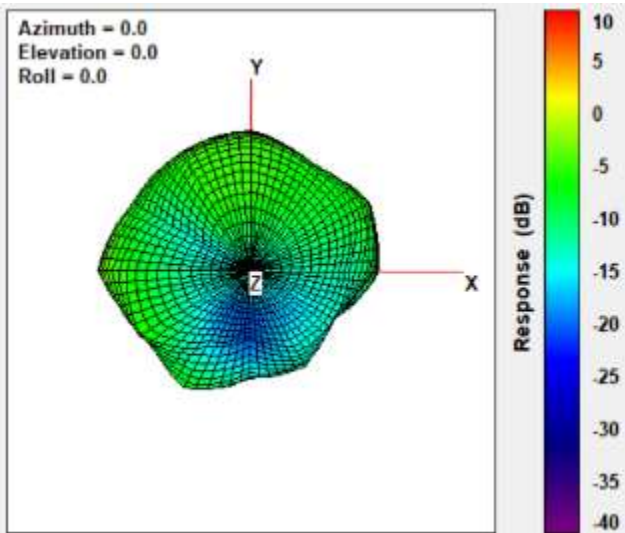


Center Frequency	6875 MHz
Three-dimensional (dBi) peak	0.11

Main antenna: 6925 MHz

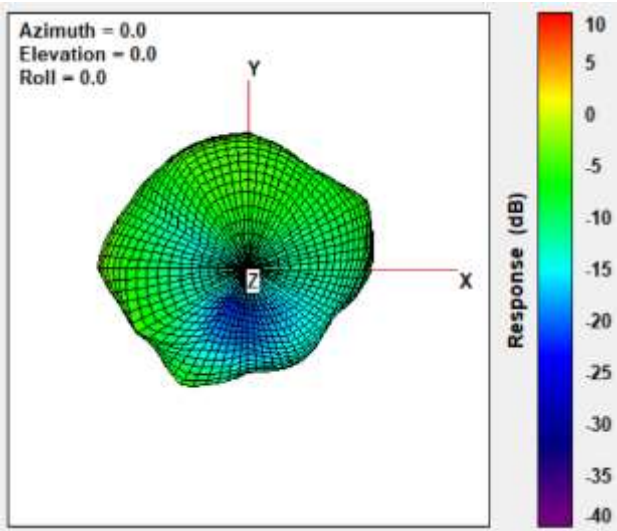


Center Frequency	6925 MHz
Three-dimensional (dBi) peak	0.64

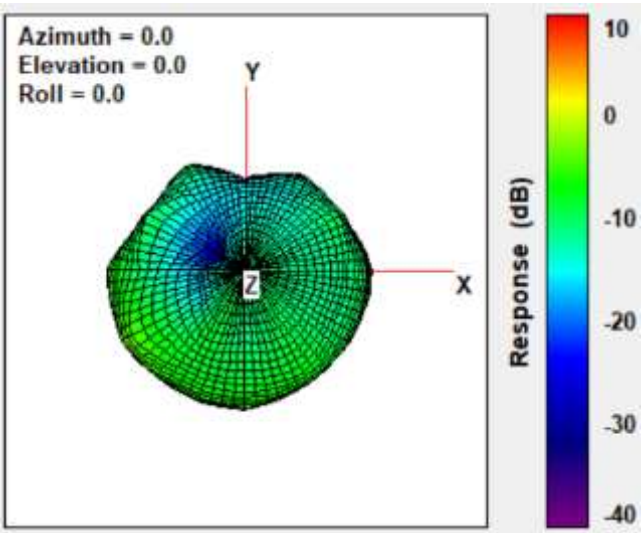


Center Frequency	7000 MHz
Three-dimensional (dBi) peak	1.56

Main antenna: 7125 MHz

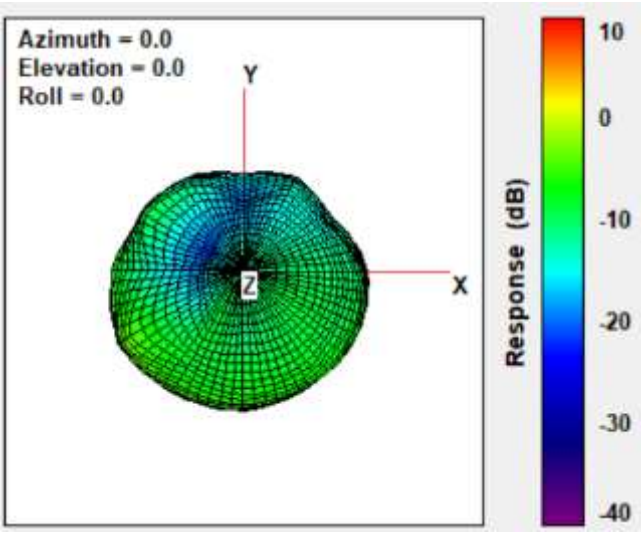


Center Frequency	7125 MHz
Three-dimensional (dBi) peak	0.51

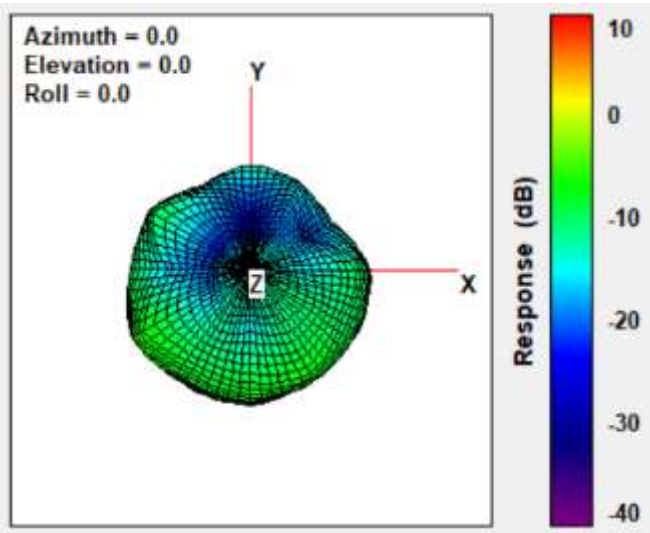


Center Frequency	6875 MHz
Three-dimensional (dBi) peak	-1.82

Aux antenna: 6925 MHz

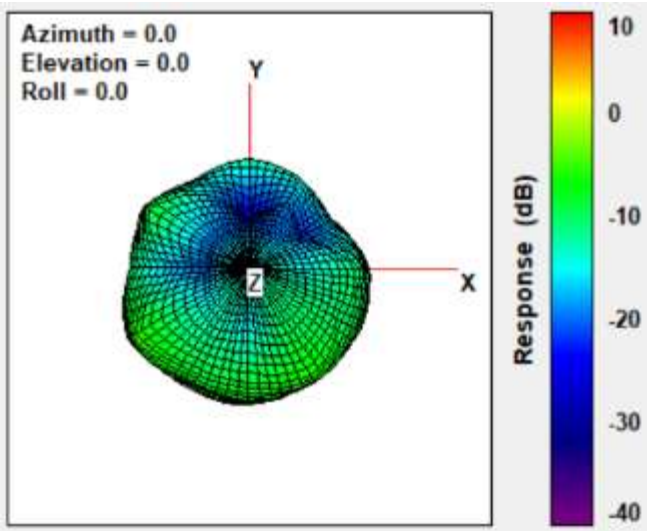


Center Frequency	6925 MHz
Three-dimensional (dBi) peak	-1.17



Center Frequency	7000 MHz
Three-dimensional (dBi) peak	-0.42

Aux antenna: 7125 MHz



Center Frequency	7125 MHz
Three-dimensional (dBi) peak	-0.87