ANTENNA INFORMATION

OEM		Dell Inc.
ODM		Wistron
Platform model name		P194G
Intel platform (ex: Yes, No or NA)		YES
Platform type (ex: regular NB, convertible PC, AIO…etc)		Regular NB
SAR minimum separation (mm)	FCC (1g)	4.42mm
	ISED (1g)	N/A
	ISED (10g)	N/A

Antenna manufacturer	Company name	Speed
	Address	25F, No.95, Xinpu 6th St., Taoyuan Dist., Taoyuan City 33044, Taiwan.
Test location	Company name	SPORTON INTERNATIONAL INC.
	Address	No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411 , Taiwan (R.O.C.)
Test Personnel	Name(Full name)	Kay Li
	E-mail	Kay_li@speed-hz.com
	Tel/Mobile	(03)325-3360 #243
Testing date		2024/09/04

Antenna Part number	Main	F-0G-FS-6184-001-00 (025.902GQ.0001)
	Aux	F-0G-FS-6184-002-00 (025.902GR.0001)
Antenna type (ex: PIFA, Dipole…etc)		PIFA

Antenna Peak gain w/ cable loss (dBi)*

	2.4GHz 2400-2483.5 MHz	**5.2GHz** 5150-5250MHz	**5.3GHz** 5250-5350MHz	**5.6GHz** 5470-5725MHz	**5.8GHz** 5725-5850MHz	**5.9GHz** 5850-5895MHz	**6.2GHz** 5925-6425MHz	**6.5GHz** 6425-6525MHz	**6.7GHz** 6525-6875MHz	**7.0 GHz** 6875-7125MHz
Main	1.45	2.98	2.81	4.18	4.18	4.06	3.63	3.82	4.48	4.08
Aux	0.84	2.39	1.75	4.22	4.13	1.69	4.55	4.29	4.44	4.04

Cable Assembly Part Number and Information

	Cable PN	**Cable length**(mm)	**Cable diameter**(mm)	**Impedance**(ohm)	**Connector type**
Main	SY113L/50-143(White)	188	1.13 S.L.L	50	I-PEX(MHF-4L)
Aux	SY113L/50-118(Black)	185	1.13 S.L.L	50	I-PEX(MHF-4L)

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

Table of Contents

1. Intel Reference Gain and Type

Antenna Peak gain w/ cable loss (dBi)											
Band/Frequency		**2.4GHz** 2400-2483.5 MHz	**5.2GHz** 5150-5250MHz	**5.3GHz** 5250-5350MHz	**5.6GHz** 5470-5725MHz	**5.8GHz** 5725-5850MHz	**5.9GHz** 5850-5895MHz	**6.2GHz** 5925-6425MHz	**6.5GHz** 6425-6525MHz	**6.7GHz** 6525-6875MHz	**7.0 GHz** 6875-7125MHz
Design	EU/UK	3.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
PIFA	For WiFi 6E and earlier	3.24	3.64	3.73	4.77	4.97	4.72	4.83	4.30	5.37	5.59
	From WiFi 7	2.95	5.11	4.55	5.15	5.13	4.45	5.02	5.02	4.96	4.96
Dipole	For WiFi 6E and earlier	2.89	2.92	3.19	4.41	4.22	4.22	4.83	4.30	4.49	5.34
	From WiFi 7	2.95	4.03	4.11	5.15	5.13	4.45	5.02	4.71	4.49	4.96
Monopole	From WiFi 7	2.83	4.57	4.44	4.95	4.95	4.43	4.87	4.91	4.91	4.79

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.

Revision #	Revision Details	Issued Date
Rev. 00	First Issue	

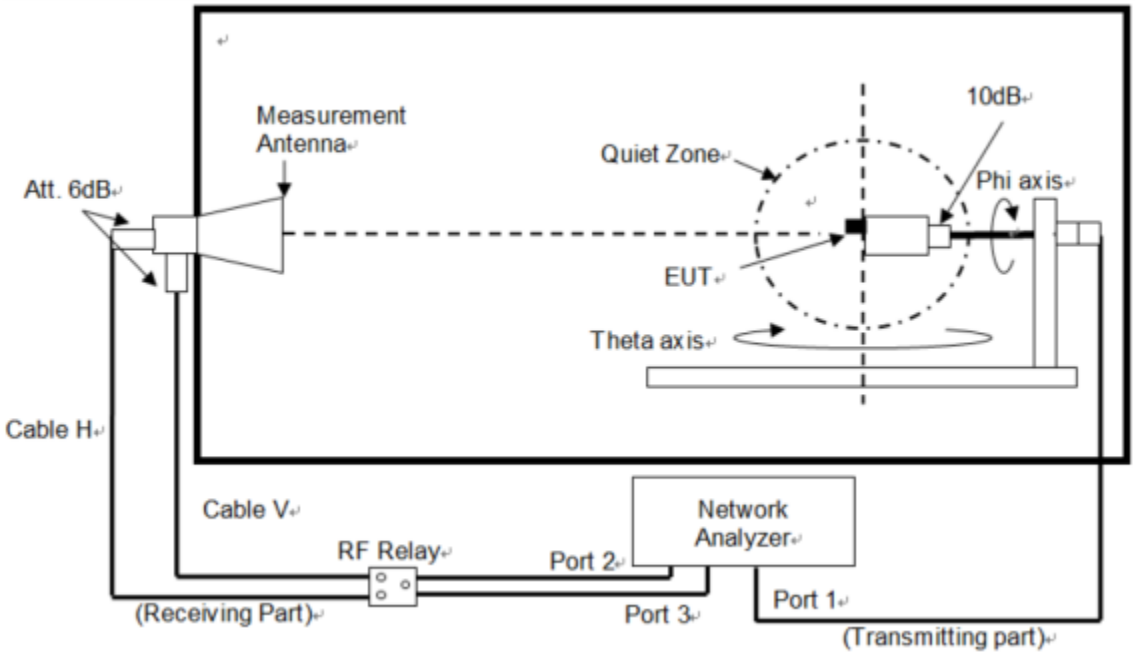
2. Document Revision History

3. Test & System Description

3.1 Measurement Method and System

The testing of antenna gain should be made at a CTIA qualified lab with an RF anechoic chamber with at least 3-meter separation from the receive antenna to the antenna under test. The antenna gain report from unqualified lab can't be referenced a passing. Besides, all test equipment including horn antennas, adapters, cables, network analyzers, and receivers shall be calibrated per manufacturer's minimum calibration requirements. .

3.2 Test setup



3.3 Equipment list

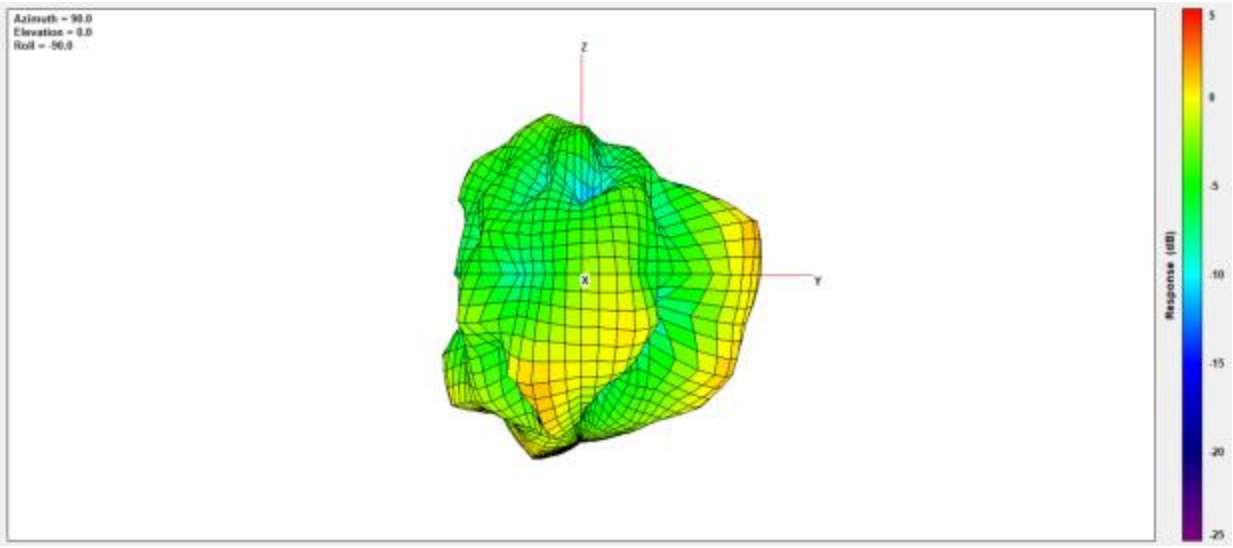
4 Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
Anechoic Chamber	AMS8500	-	ETS-Lindgren	31-May-22	10- May-24
Turn Table	MODEL-2090	T-543-6-11-102-02	ETS-Lindgren	31-May-22	10- May-24
Switch & Positioning systems	EMCenter	T-543-6-11-102-01	ETS-Lindgren	31-May-22	10- May-24
Measurement SW	EMQuest V1.15 build 27347	T-543-6-11-103-03	ETS-Lindgren	31-May-22	10- May-24
Horn antenna	3164-10	T1-1-1-R-02570	ETS-Lindgren	31-May-22	10- May-24
Vector Network Analyzer	E5071C	T1-1-1-R-01834	Keysight	31-May-22	31-May-23
Cable 7.5m 400MHz to 18GHz(H-pol)	SS402	T1-1-1-R-34511	WOKEN	31-May-22	31-May-24
Cable 7.5m 400MHz to 18GHz(V-pol)	SS402	T1-1-1-R-34512	WOKEN	31-May-22	31-May-24
Cable 14m 400MHz to 18GHz	SS402	T1-1-1-R-34513	WOKEN	31-May-22	31-May-24
Temp & Humidity Logger	830	T1-1-1-R-20911	PROVA	30-Jul-22	30-Jul-23

4. Radiation characteristics of antenna loaded in Host Platform

Main Antenna

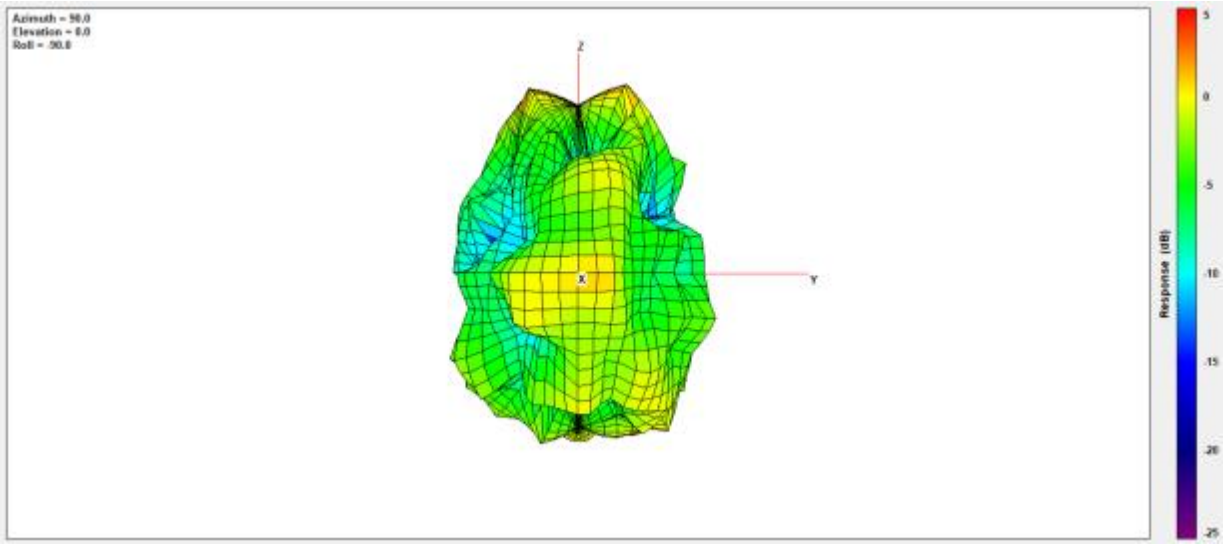
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	1.45



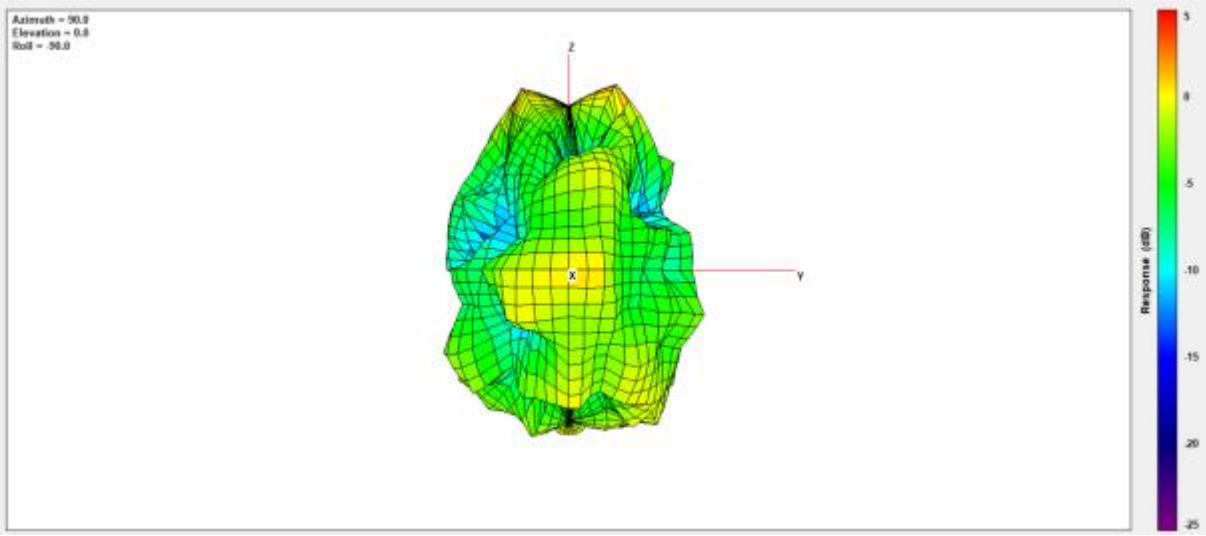
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	2.98



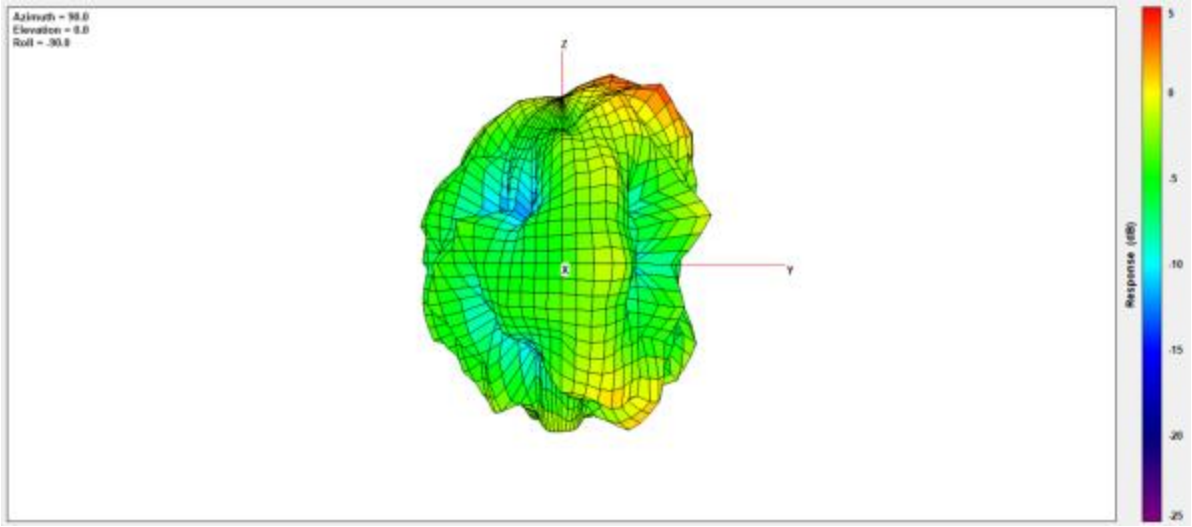
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	2.81



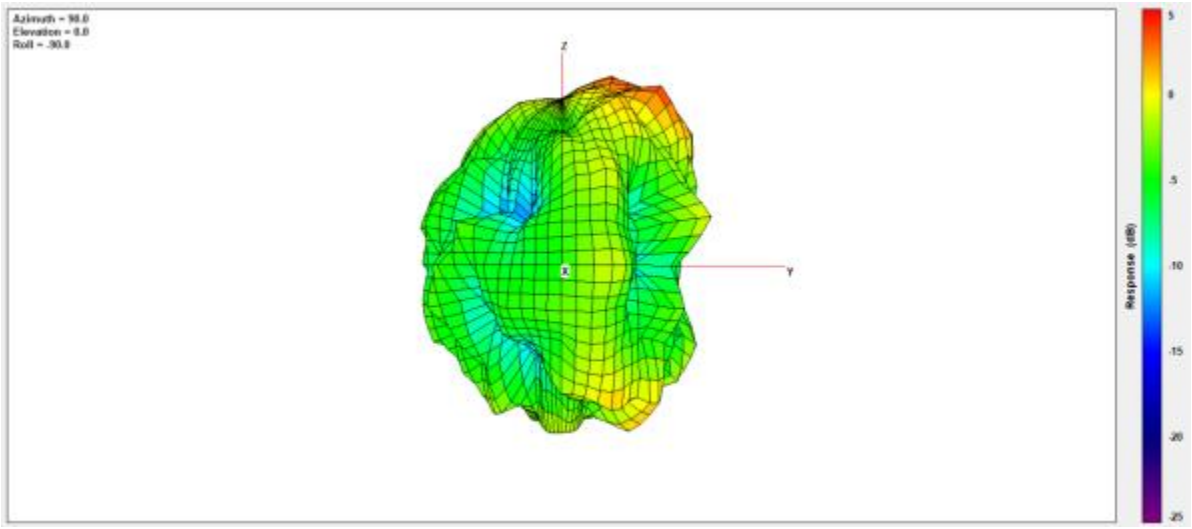
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	4.18



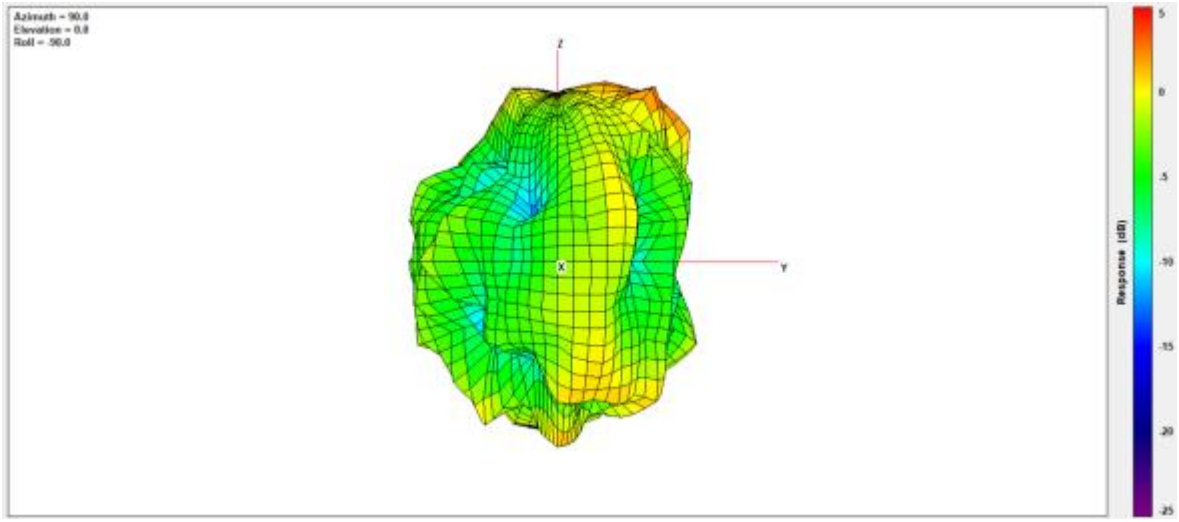
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	4.18



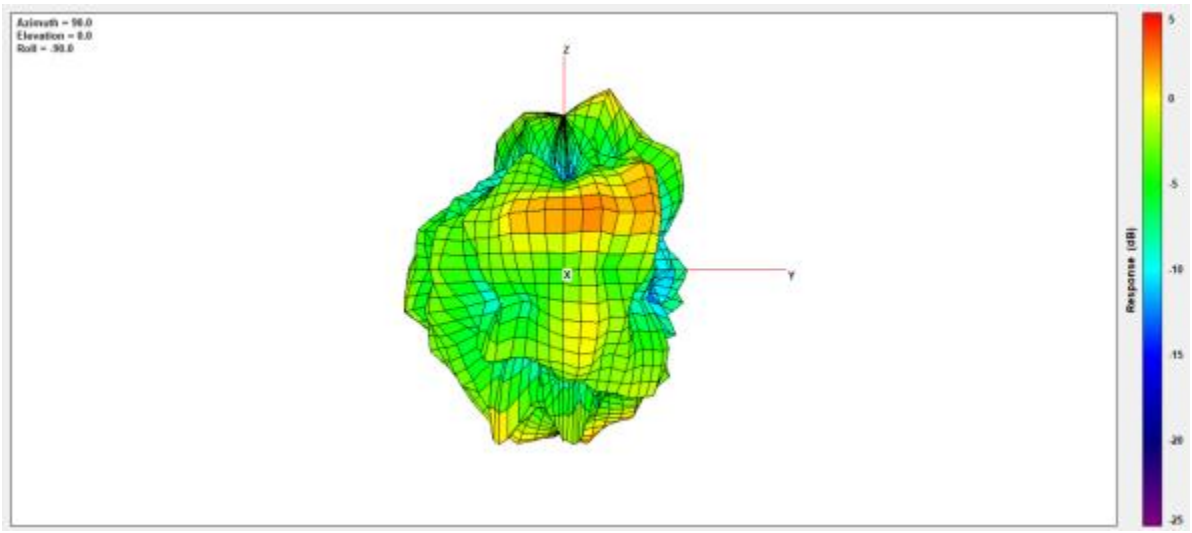
Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	4.06



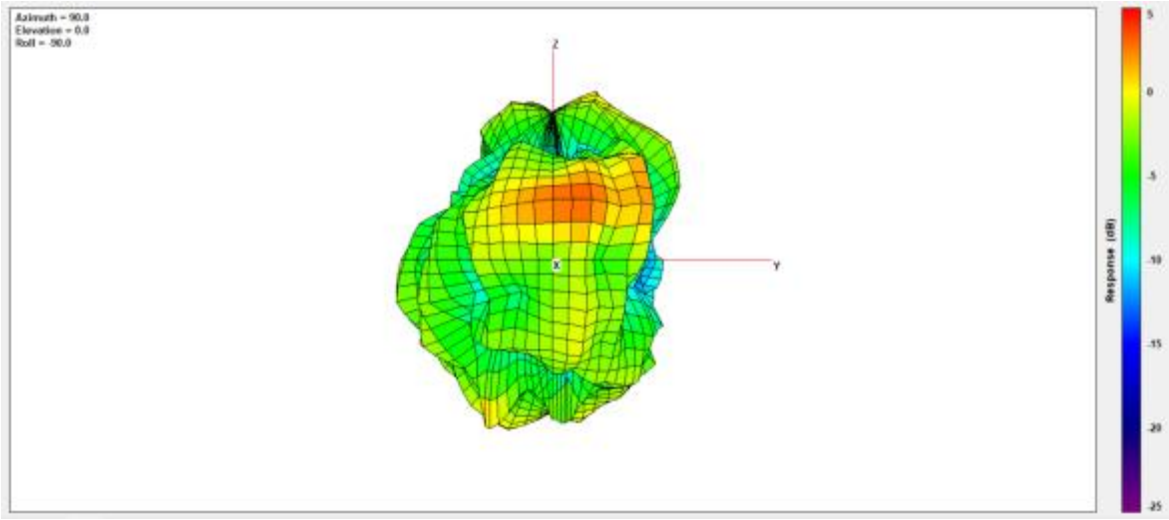
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	3.63



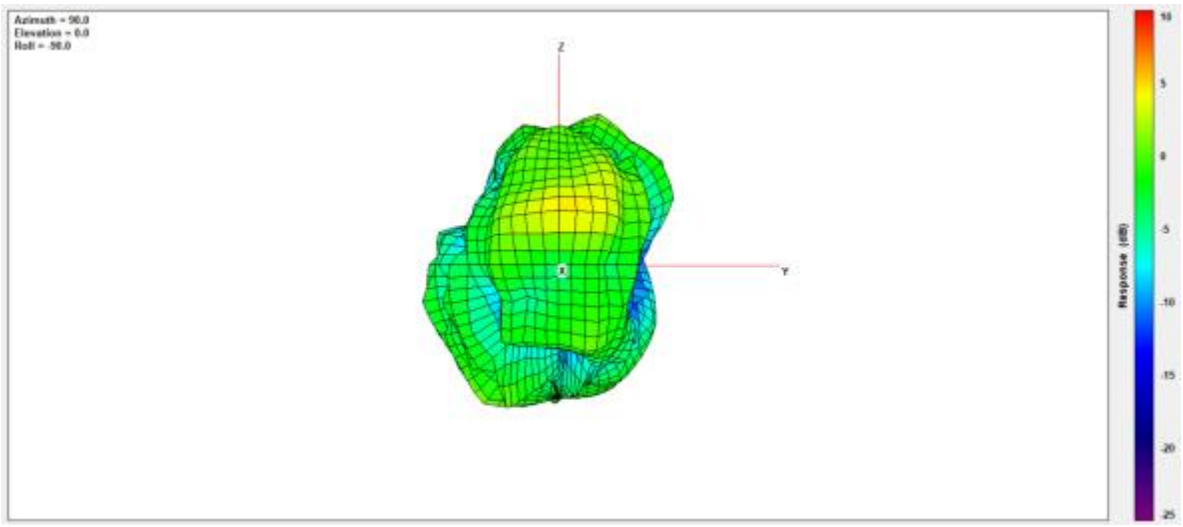
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	3.82



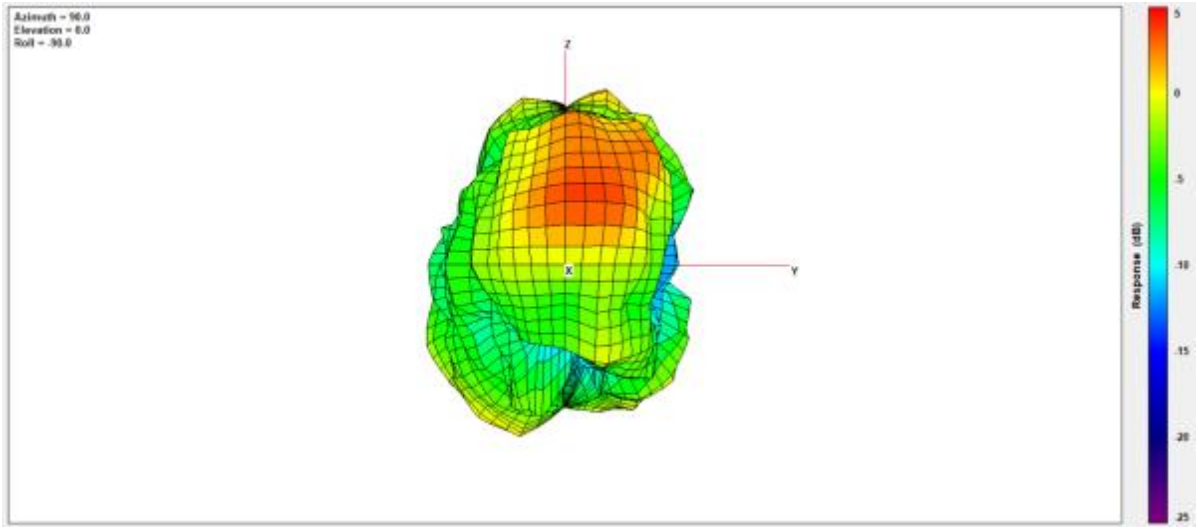
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	4.48



Max Antenna 3D Radiation Pattern 6875-7125 MHz

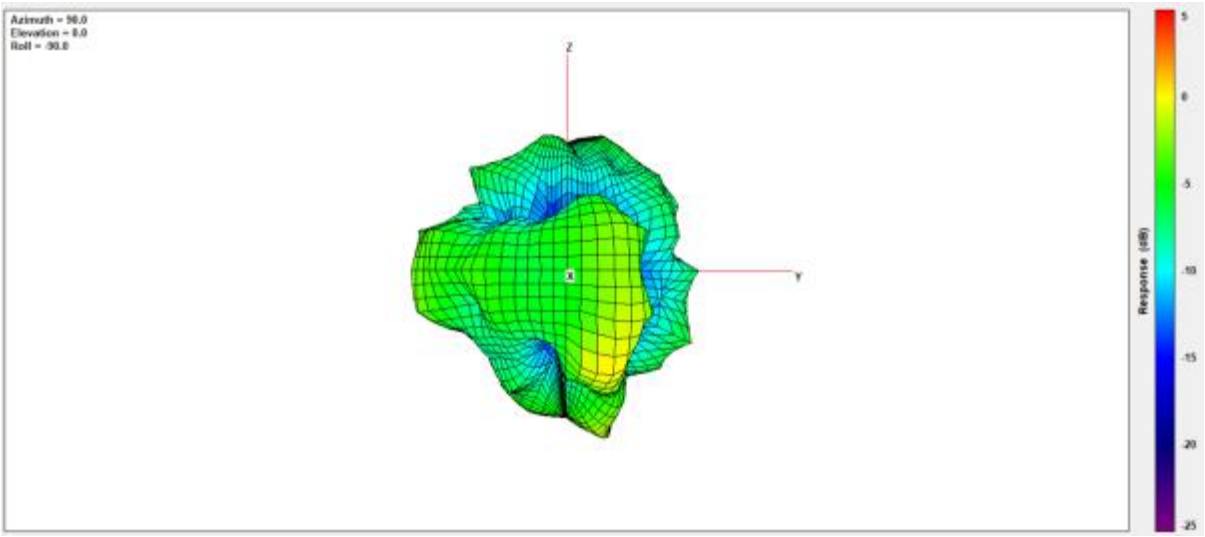
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	4.08



Auxiliary Antenna

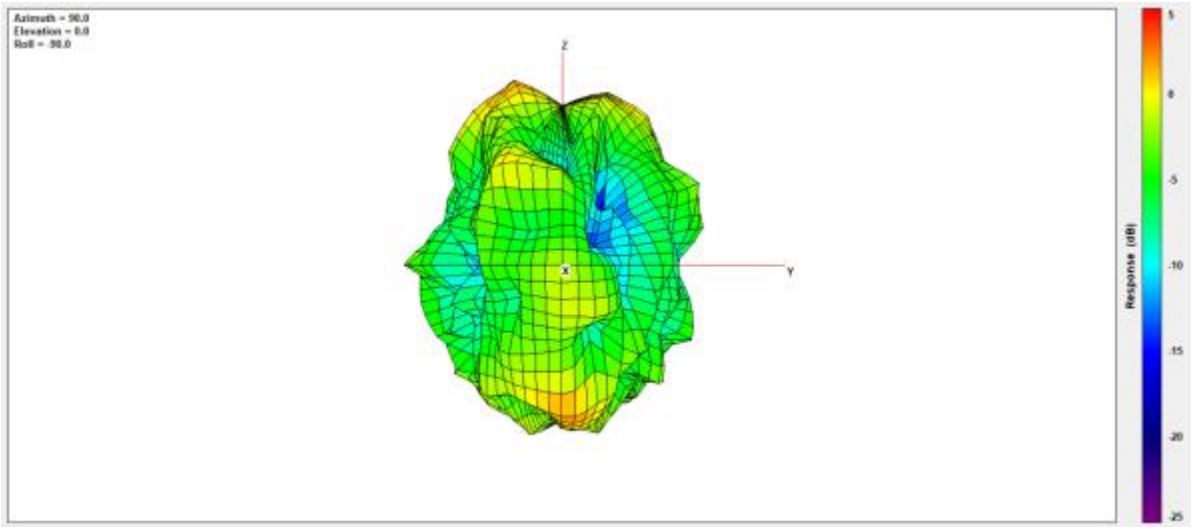
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	0.84



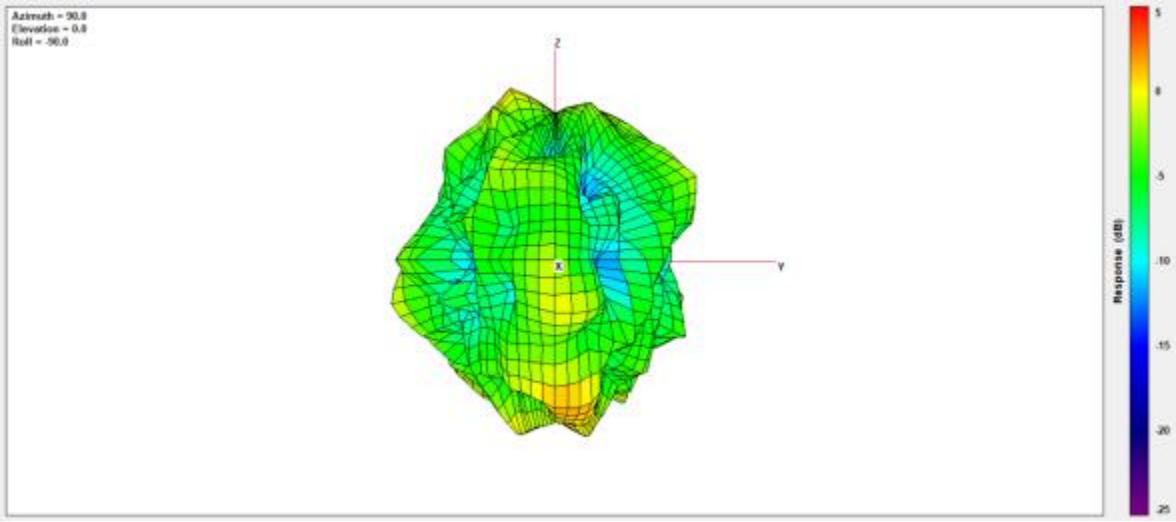
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	2.39



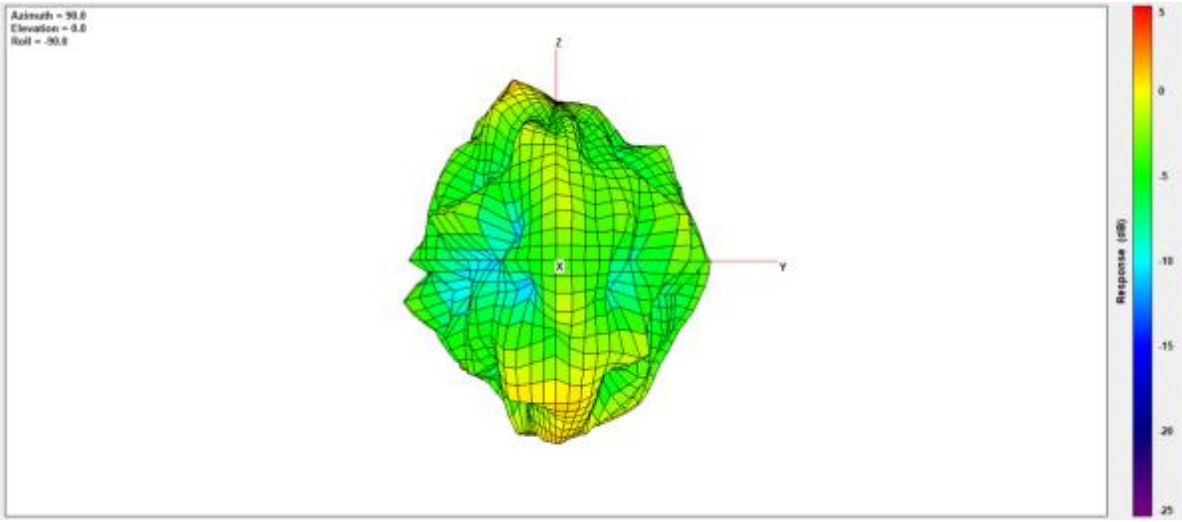
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	1.75



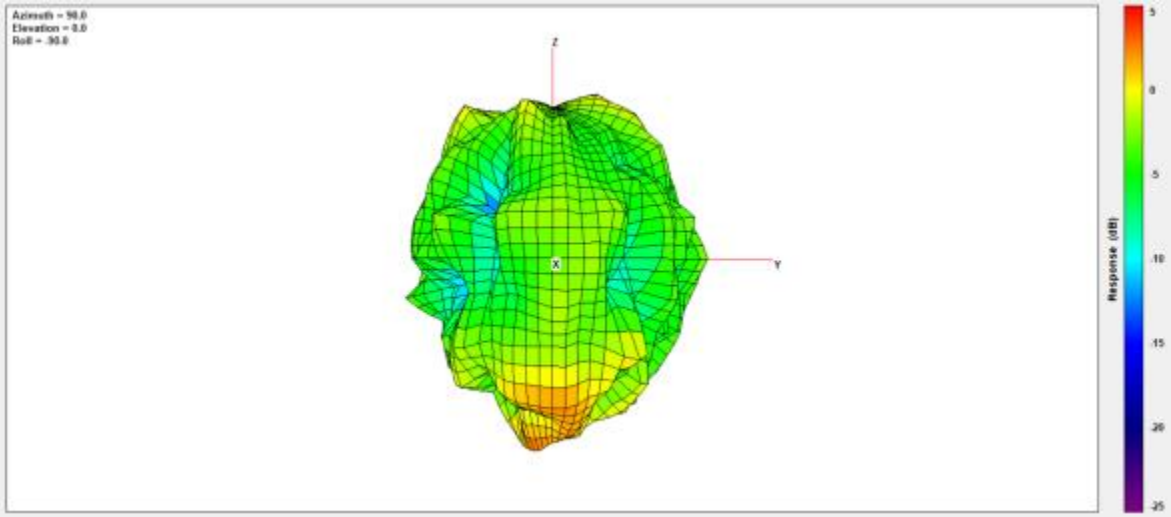
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	4.22



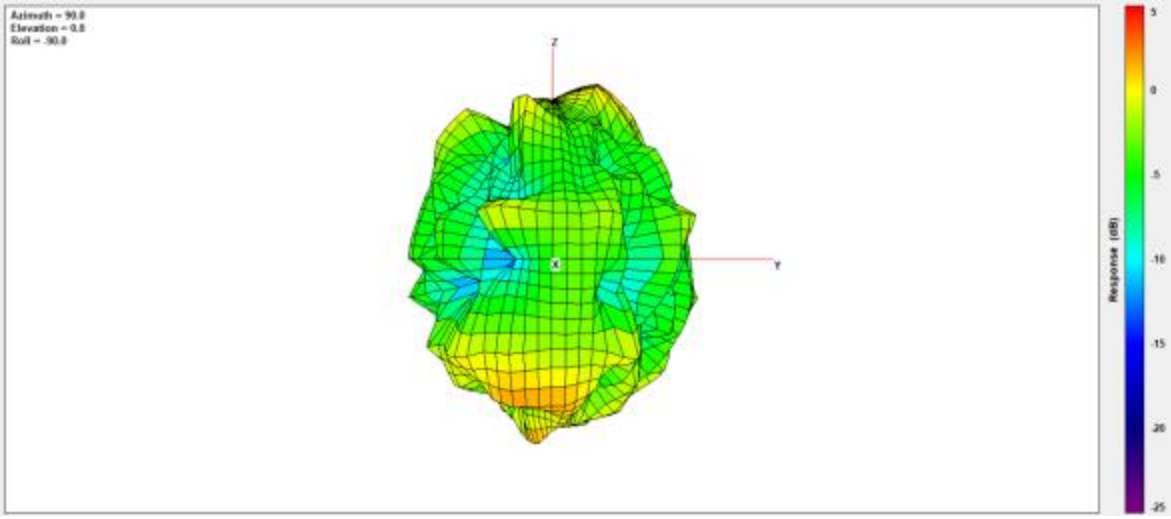
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	4.13



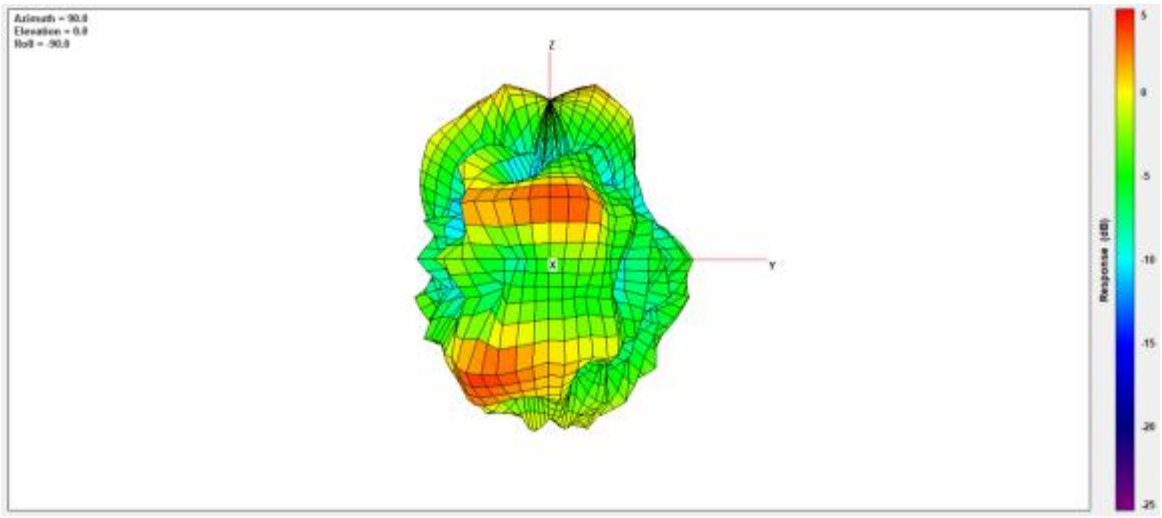
Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	1.69



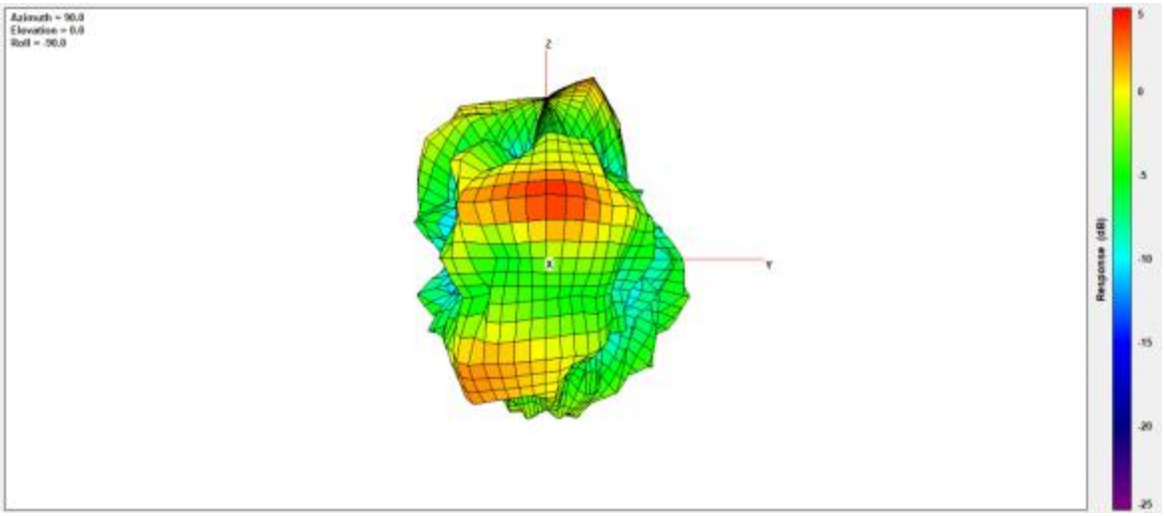
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	4.55



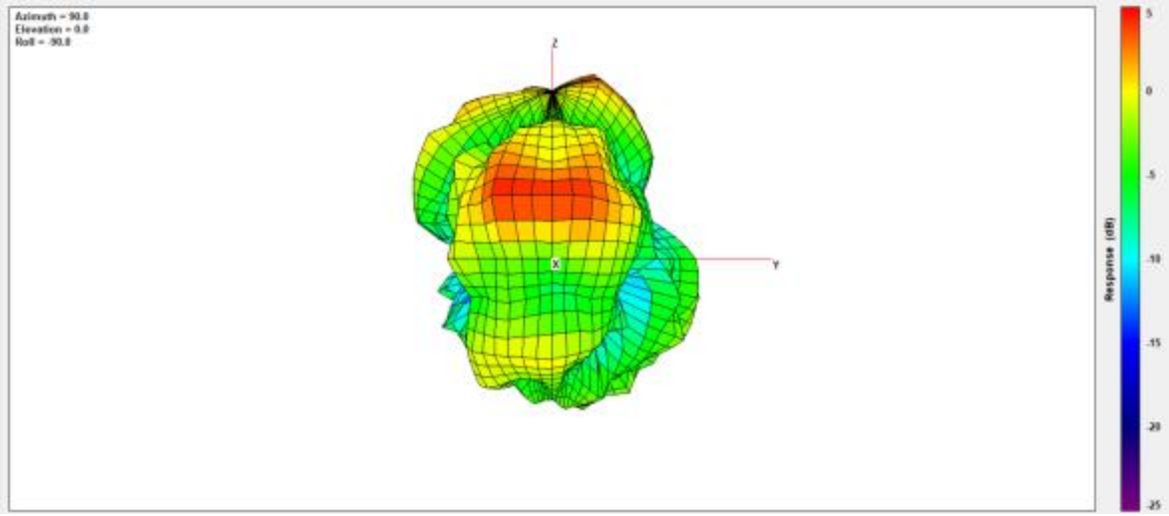
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	4.29



Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	4.44



Max Antenna 3D Radiation Pattern 6875-7125 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	4.04