

# ANTENNA INFORMATION

OEM	DELL
ODM	COMPAL
Platform model name	P175G
Intel platform (ex: Yes, No or NA)	Yes
Platform type (ex: regular NB, convertible PC, AIO...etc)	Convertible PC
SAR minimum separation (mm)	3.44 mm (w/o bumper: 2.2 mm)

Antenna manufacturer	SPEEDWIRE	
Address	25F, No.95, Xinpu 6th St., Taoyuan Dist., Taoyuan City 33044, Taiwan.	
Antenna Part number	Main: F-0G-FH-6165-001-00	DC33002RF0L(Compal)
	Aux: F-0G-FH-6165-001-00	DC33002RF0L(Compal)
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	1.32	2.43	3.40	3.85	3.85	2.68	3.66	3.70	4.16	3.48
Aux	-0.71	1.12	1.70	1.14	1.80	1.51	3.15	2.73	4.02	2.11

Cable Assembly Part Number and Information					
	Cable PN	Cable length(cm)	Cable diameter(mm)	Impedance(ohm)	Connector type
Main	SY113L/50-143	74	1.13	50	IPEX 4L
Aux	SY113L/50-118	179	1.13	50	IPEX 4L

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

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## 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

**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.

**2. Document Revision History**

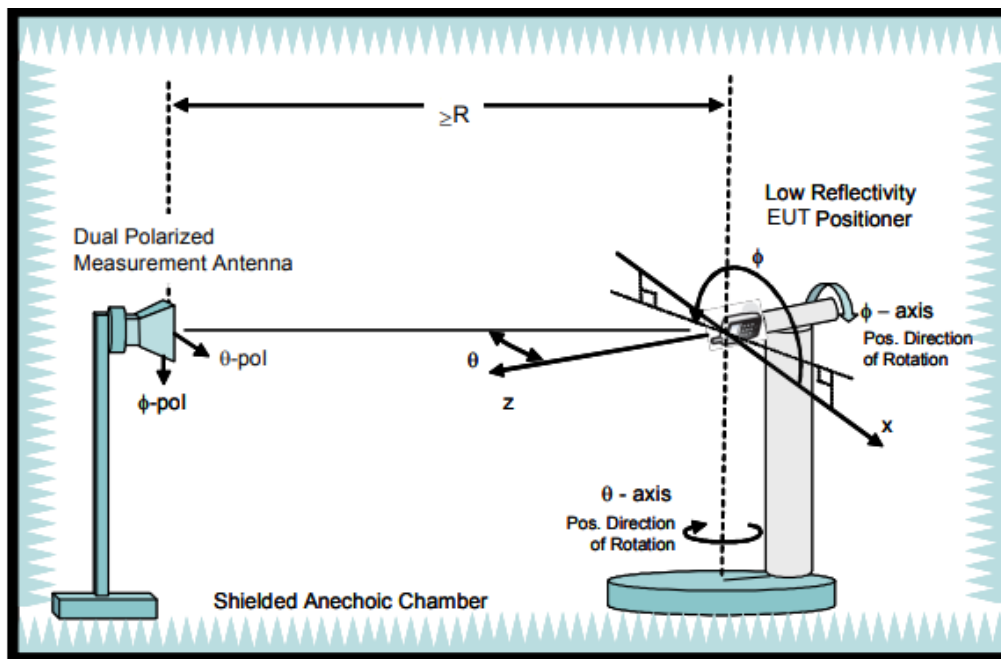
<b>Revision #</b>	<b>Revision Details</b>	<b>Issued Date</b>
Rev. 00	First Issue	2023.10.13

### 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

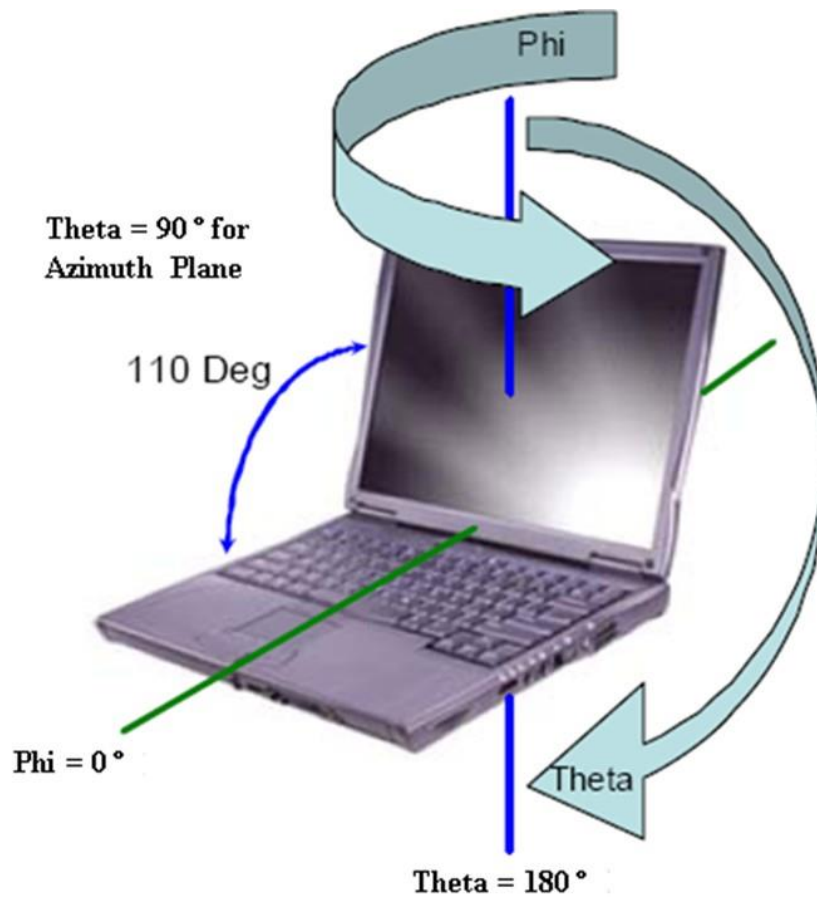


**Test Conditions**

NB under test placed on a non-conductive structure at sufficient height to be in the 'quiet zone' of the chamber

The NB under test must be fully populated with a power, motherboard, hard drive, disk drives, etc... The purpose is to characterize the antennas on a fully populated customer deliverable unit.

NB's Control panel should be parallel with XY-plane and face to X-axis, see diagram below.



### 3.3 Equipment list

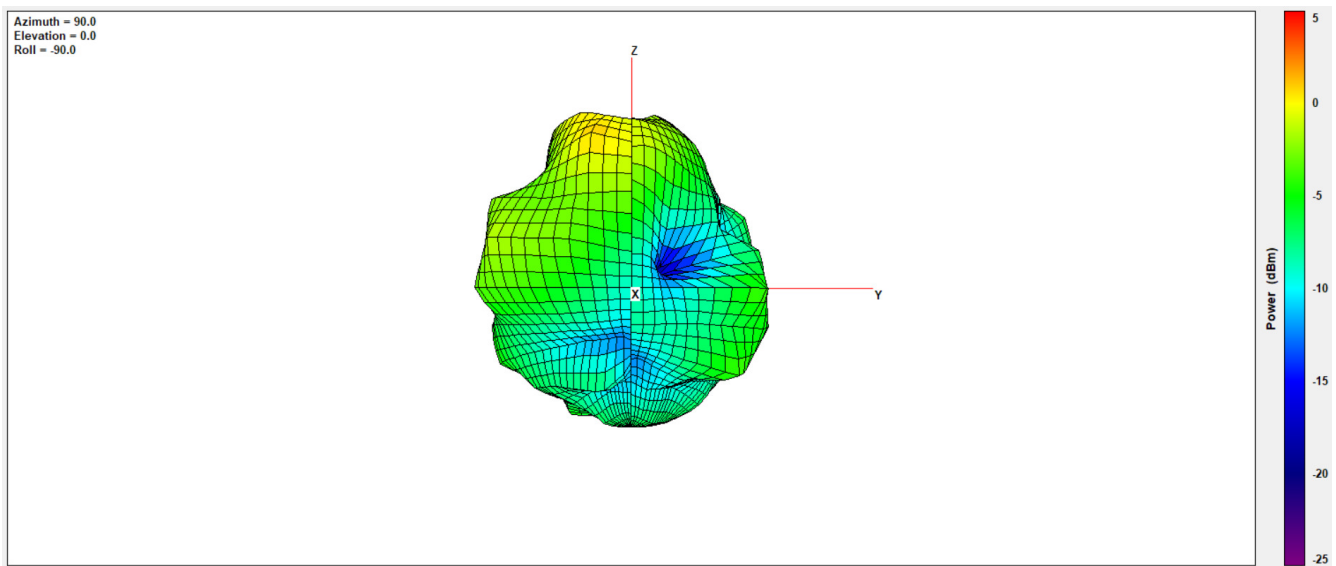
Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
Anechoic Chamber	AMS8500	-	ETS-Lindgren	22-Jun-22	10-Jul-24
Turn Table	2117-7200	SN00231447	ETS-Lindgren	22-Jun-22	10-Jul-24
Switch & Positioning systems	EMCenter	SN00242606	ETS-Lindgren	22-Jun-22	10-Jul-24
Measurement SW	EMQuest V1.15 build 27347	SN1802	ETS-Lindgren	22-Jun-22	10-Jul-24
Horn antenna	3164-10	SN00246202	ETS-Lindgren	22-Jun-22	10-Jul-24
Vector Network Analyzer	E5071C	PN5188-4462	Keysight	30-May-22	30-Nov-23
Cable 7.5m 400MHz to 18GHz(H-pol)	SS402	00100A1F5A1XXS	WOKEN	22-Jun-22	10-Nov-24
Cable 7.5m 400MHz to 18GHz(V-pol)	SS402	00100A1F5A1XXS	WOKEN	22-Jun-22	10-Nov-24
Cable 14m 400MHz to 18GHz	SS402	00100A1F5A1XXS	WOKEN	22-Jun-22	10-Nov-24
Temp & Humidity Logger	830	SN84972	PROVA	16-Jul-22	10-Jul-23

#### 4. Radiation characteristics of antenna loaded in Host Platform

### Main Antenna

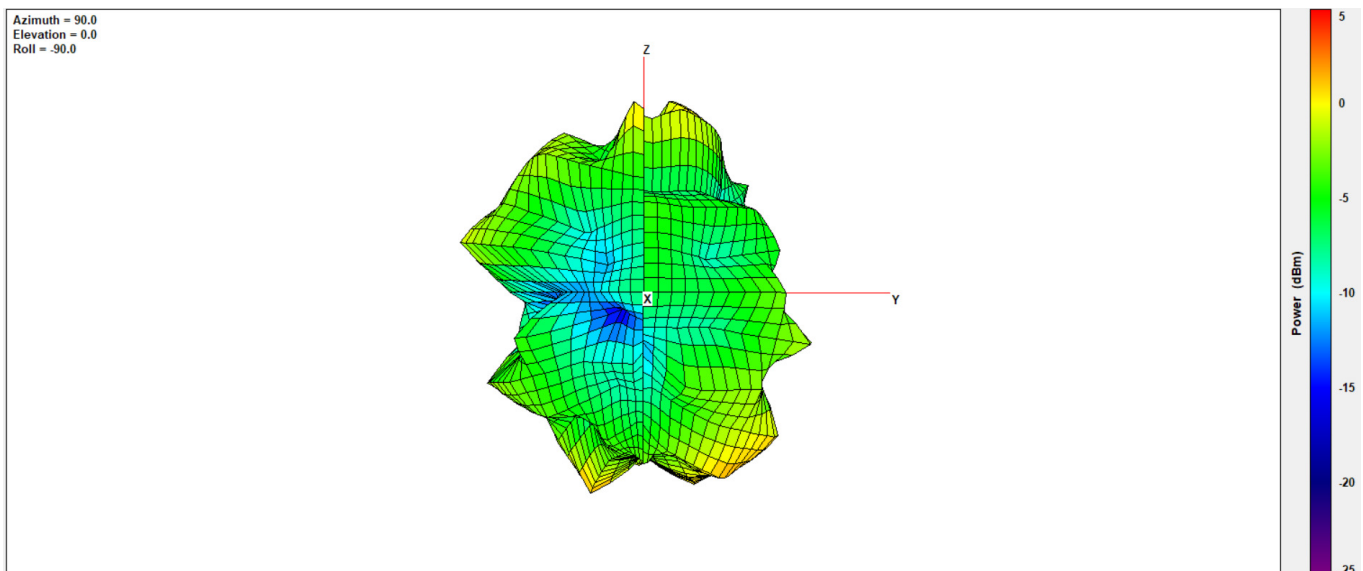
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	1.32



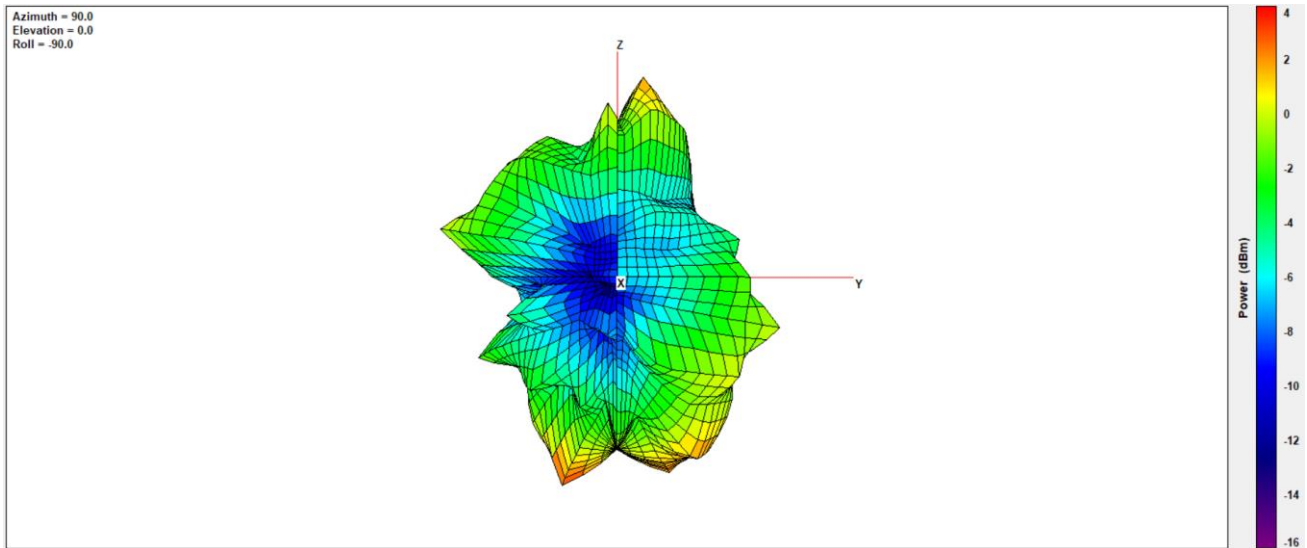
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	2.43



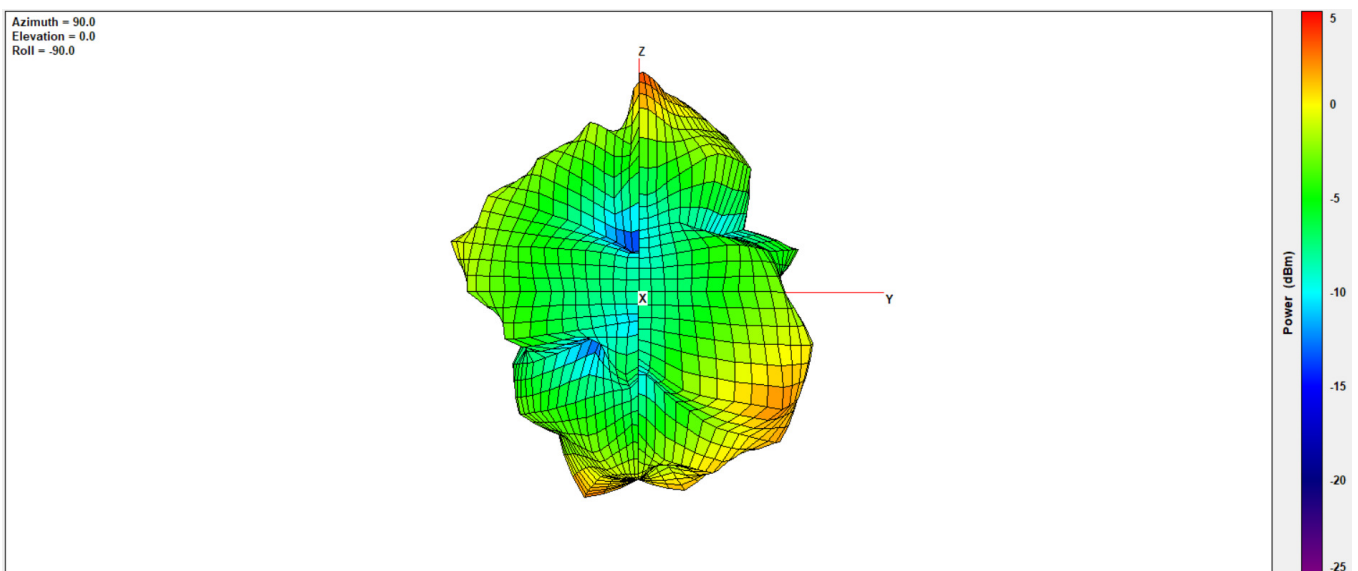
### Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	3.40



### Max Antenna 3D Radiation Pattern 5470-5725 MHz

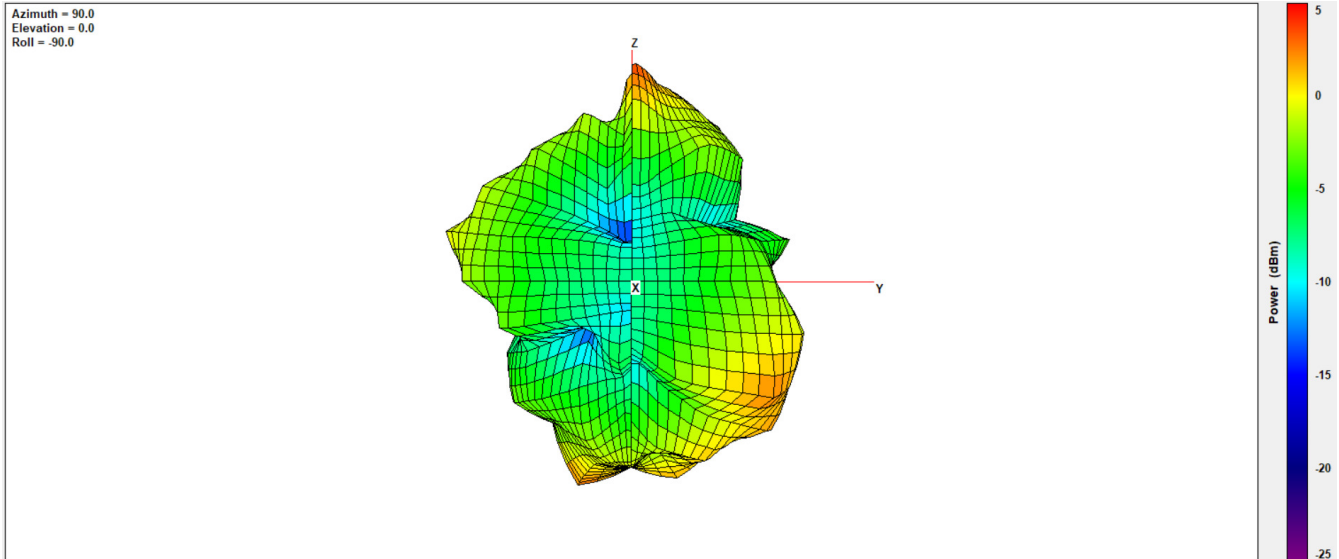
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	3.85





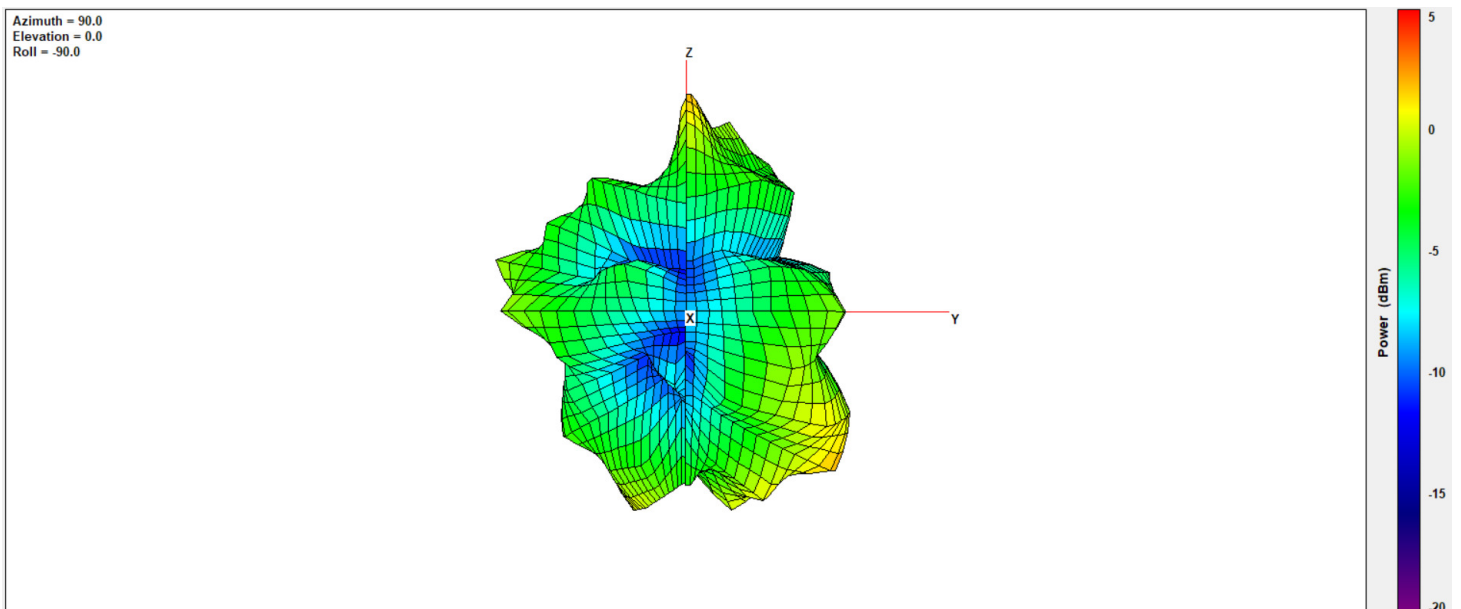
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	3.85



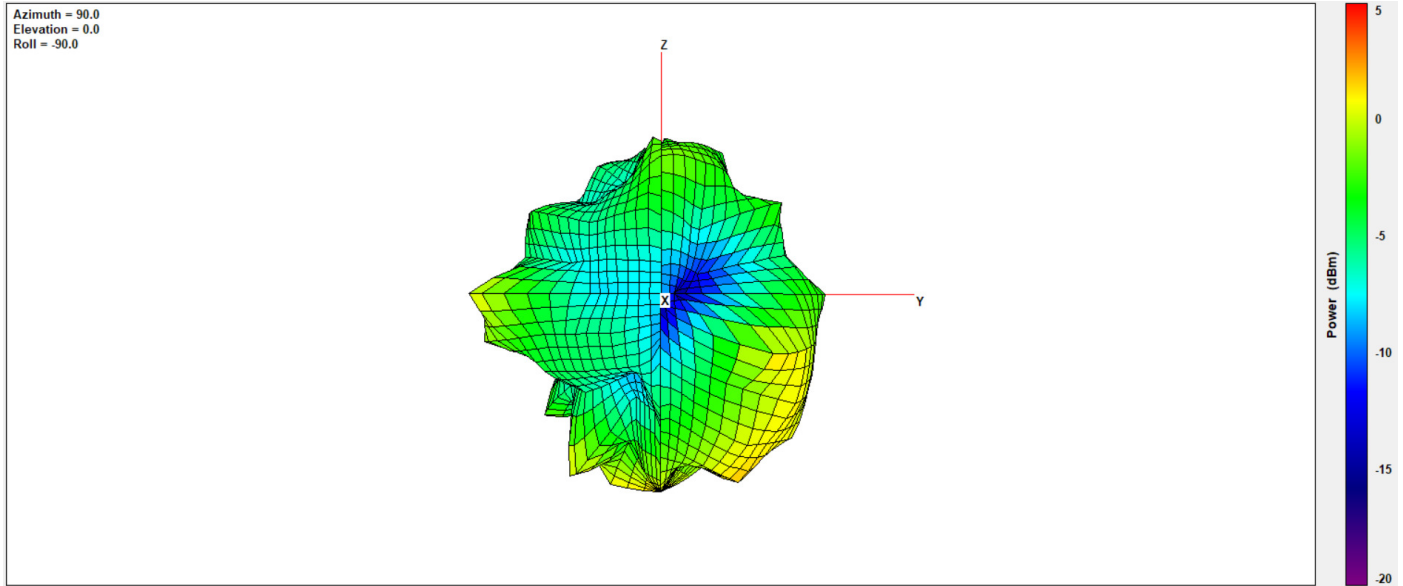
Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	2.68



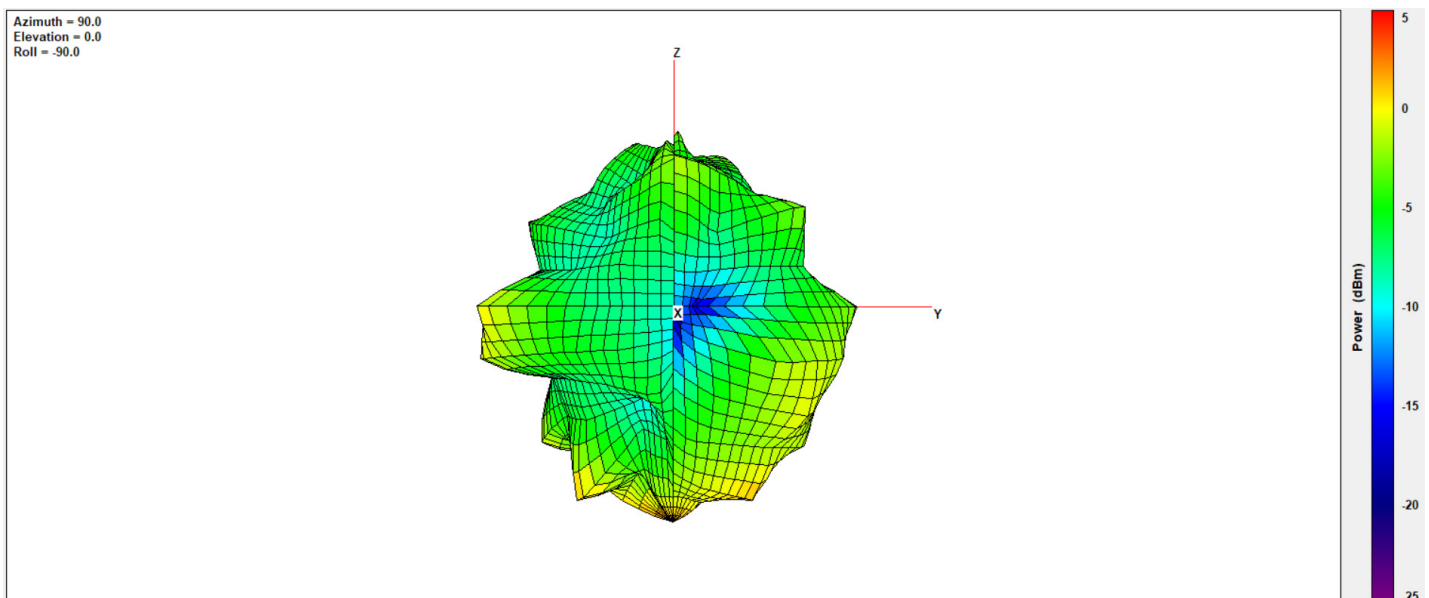
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	3.66



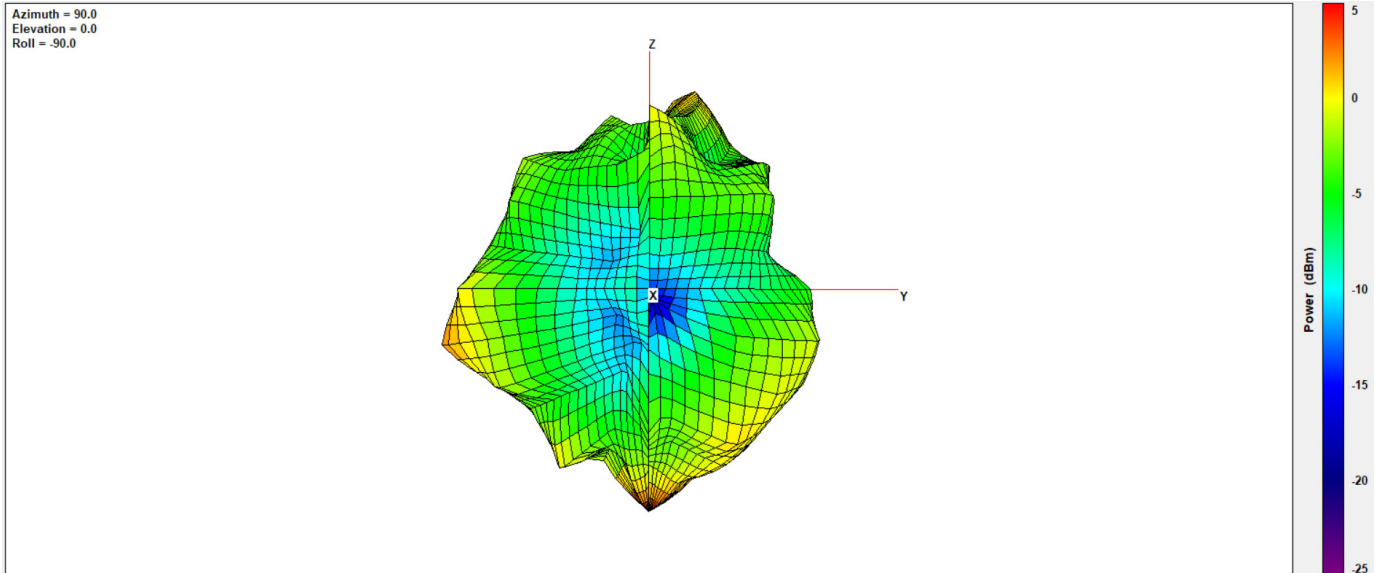
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	3.70



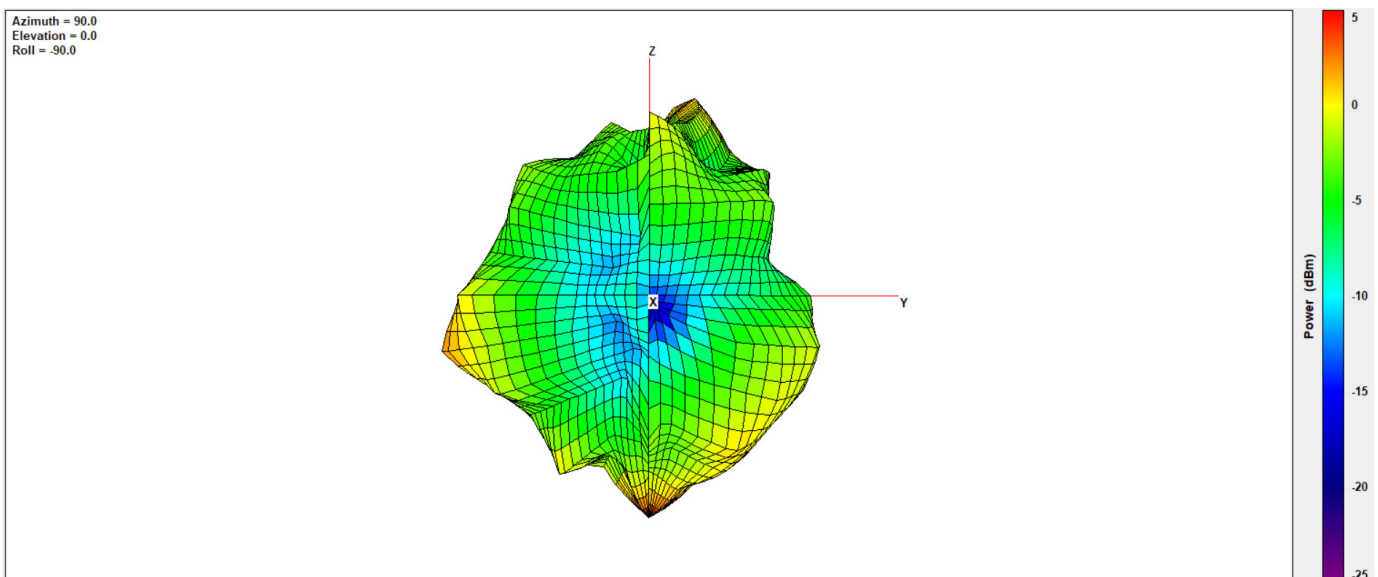
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	4.16



Max Antenna 3D Radiation Pattern 6875-7125 MHz

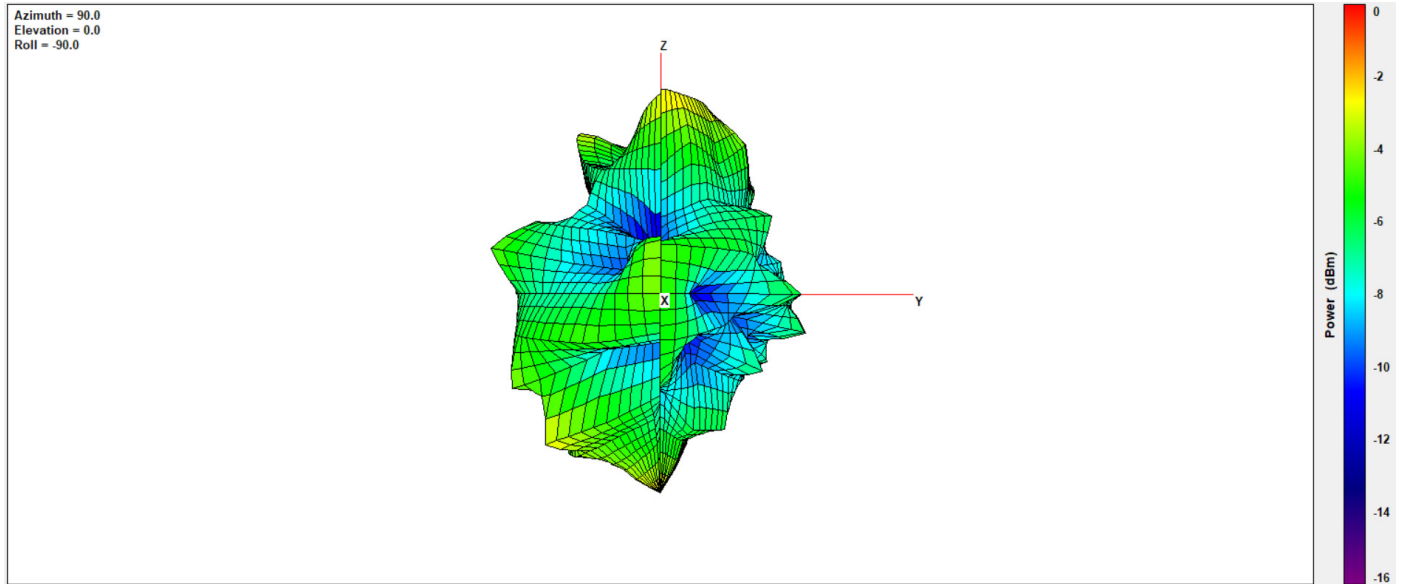
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	3.48



## Auxiliary Antenna

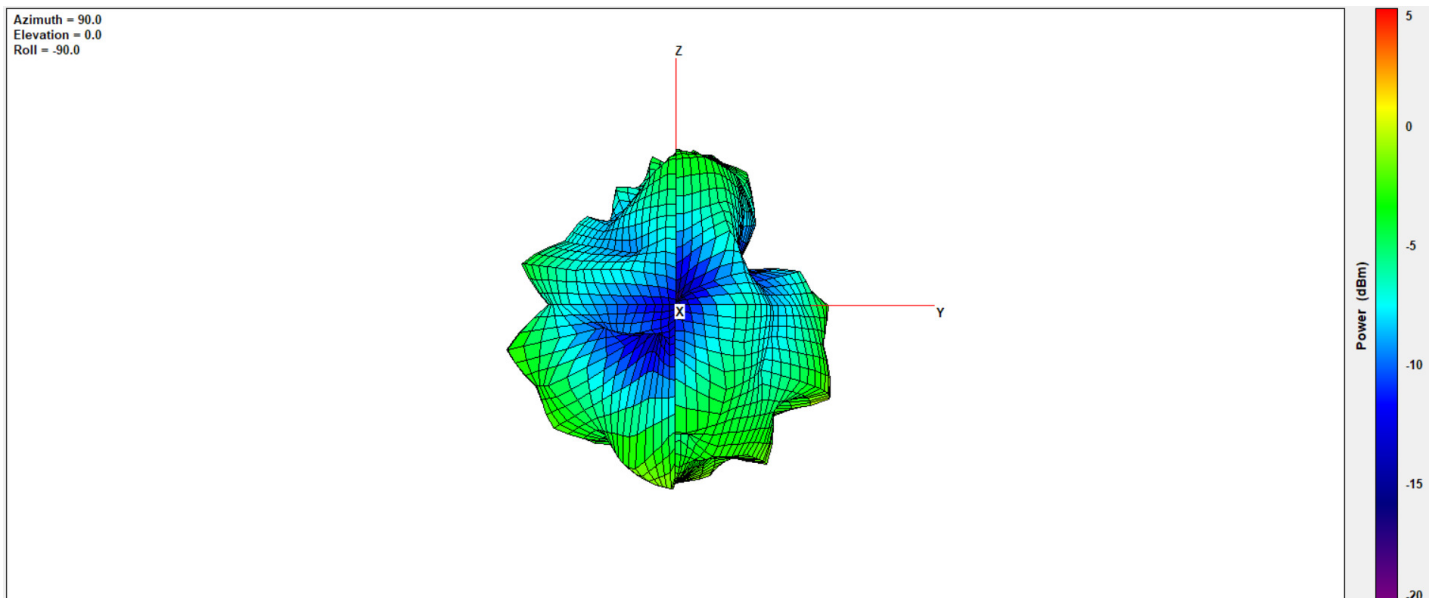
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	-0.71



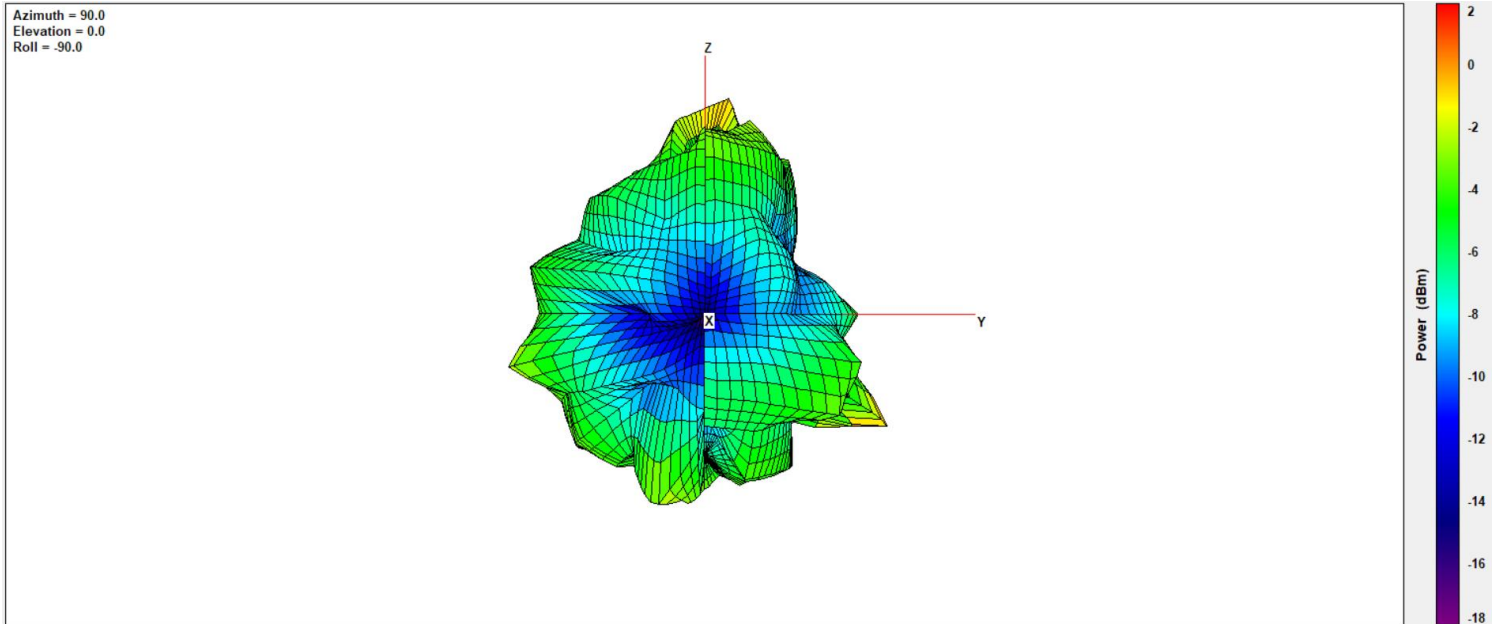
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	1.12



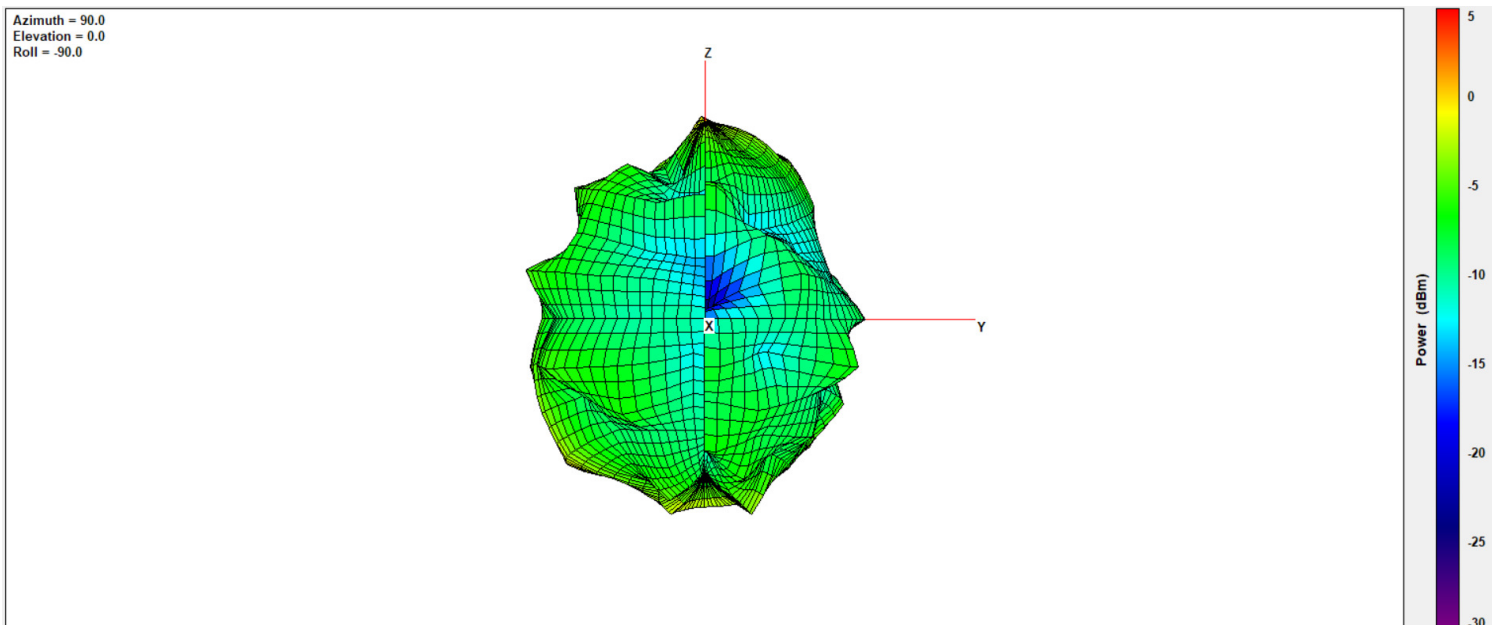
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	1.70



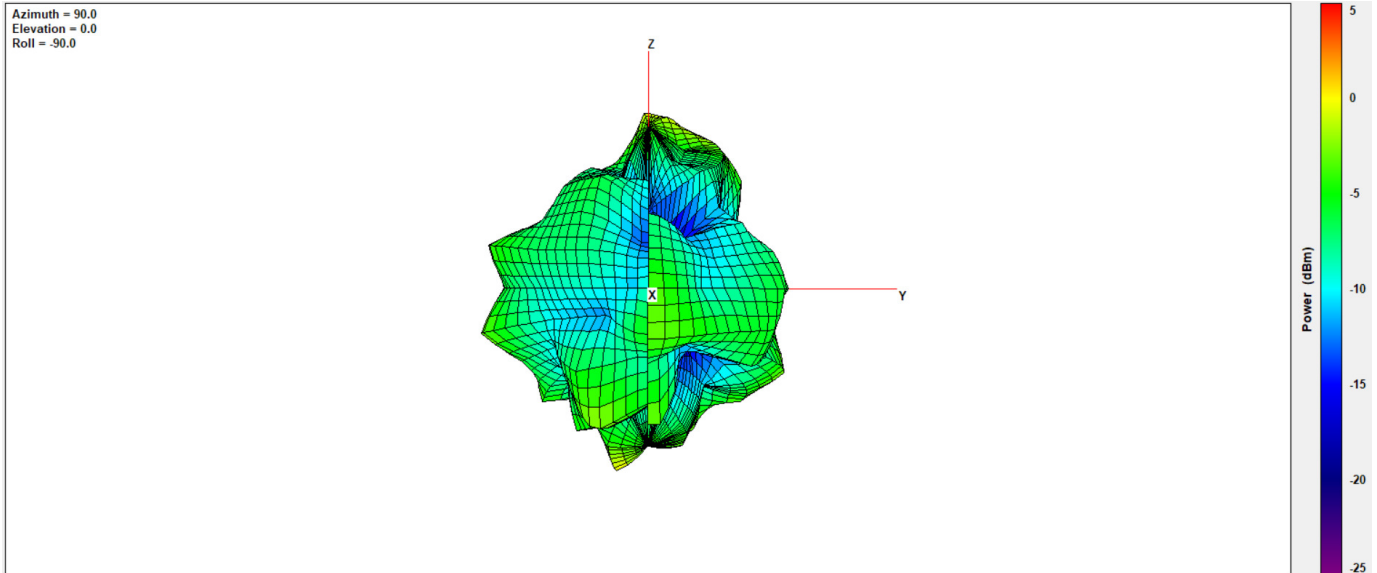
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	1.14



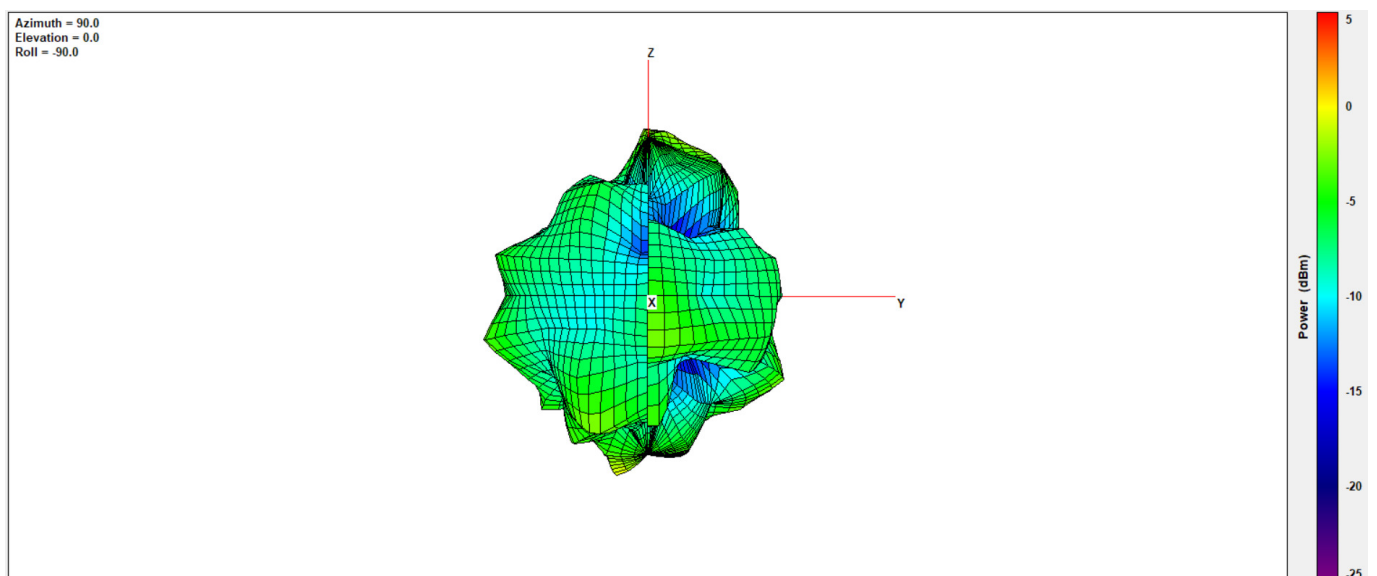
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	1.80



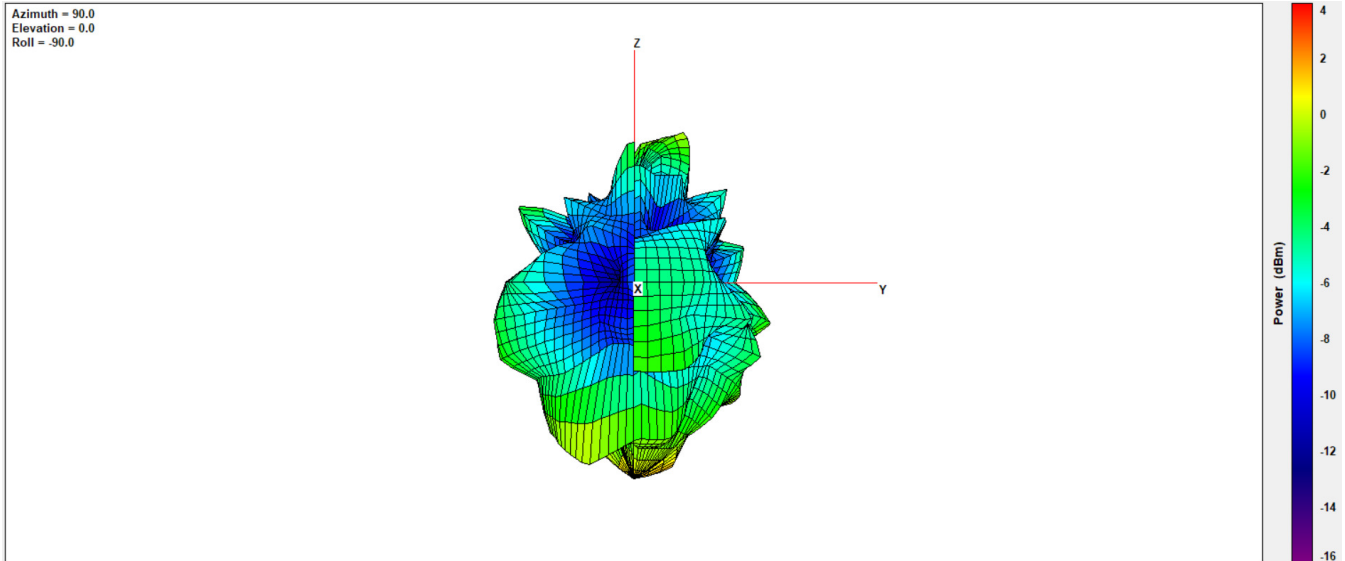
Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	1.51



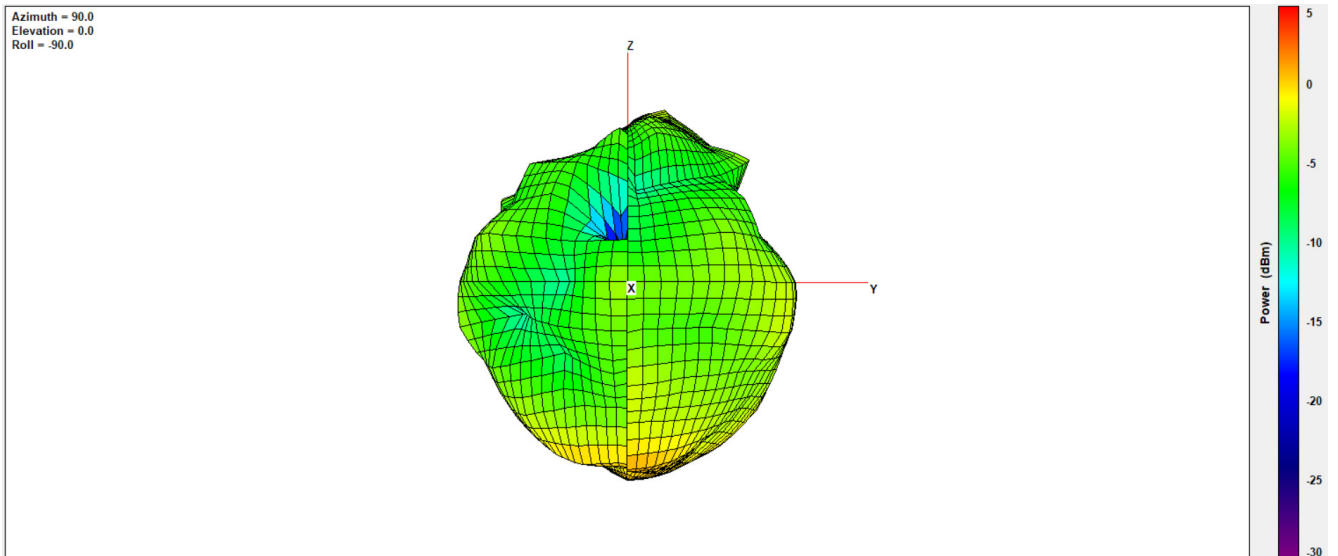
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	3.15



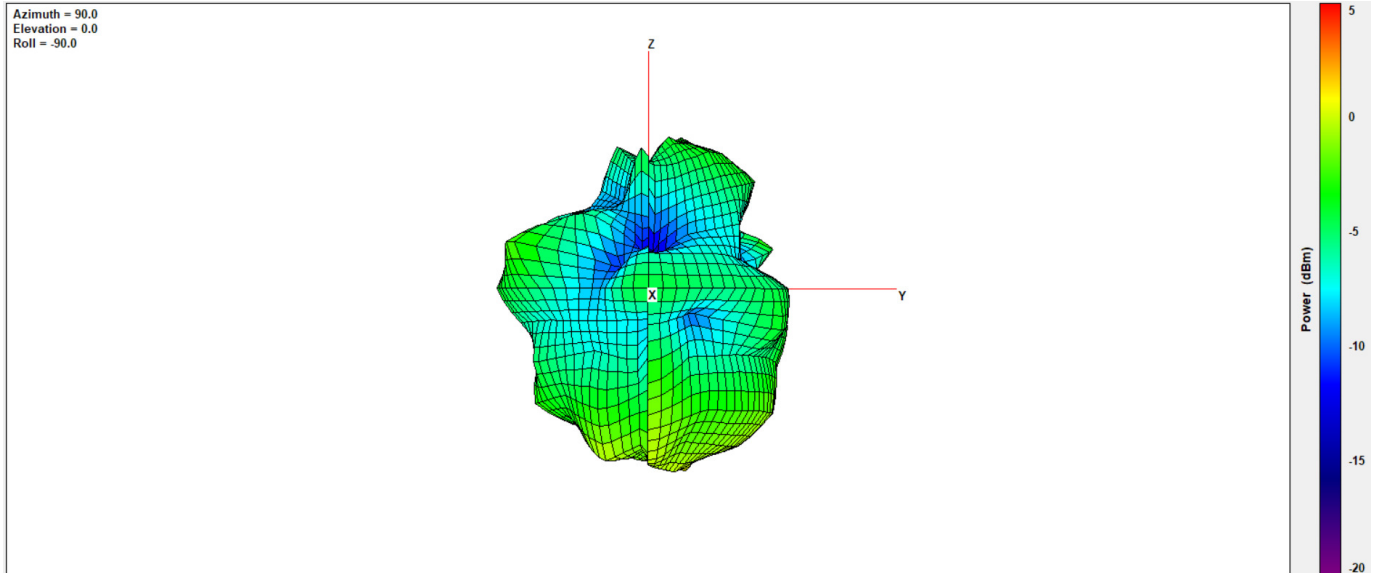
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	2.73



Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	4.02



Max Antenna 3D Radiation Pattern 6875-7125 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	2.11

