

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)						
Lenovo	Yoga Book 9 13IRU8	Hangzhou	Yes	Regular NB	NB: 4.2mm PAD:3.9mm						
*****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)				
AWAN		PIFA	AYF6Y-100226				AYF6Y-100227				
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	1.75	0.63	0.53	0.47	0.87	1.37	2.18	0.39	1.28	1.77	
Aux	0.12	2.43	1.24	1.04	1.05	1.14	2.33	2.11	2.75	1.49	
Intel Reference Gain/Type/ Separation distance											
Antenna Type	Antenna Peak gain (In dBi)*										Distance to the end user (mm)
	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	7.0GHz 6875-7125MHz	Generic: refer to modular FCC SAR report
Design	3.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	3.00	Mid-power: ≥ 8 mm Low power: ≥ 5 mm
PIFA	3.24	3.64	3.73	4.77	4.97	4.83	4.30	5.37	5.59	3.24	
Dipole	2.89	2.92	3.19	4.41	4.22	4.83	4.30	4.49	5.34	2.89	
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.											

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1. Applicable test methods

Antenna manufacturer company name: ADVANCED WIRELESS&ANTENNA(KUNSHAN) LTD

Antenna manufacturer address: Room 2 No.925,Hua-Yuan Road,Zhang-pu Town,Kun-Shan City, Jiang-Su Prov.,P.R.C.

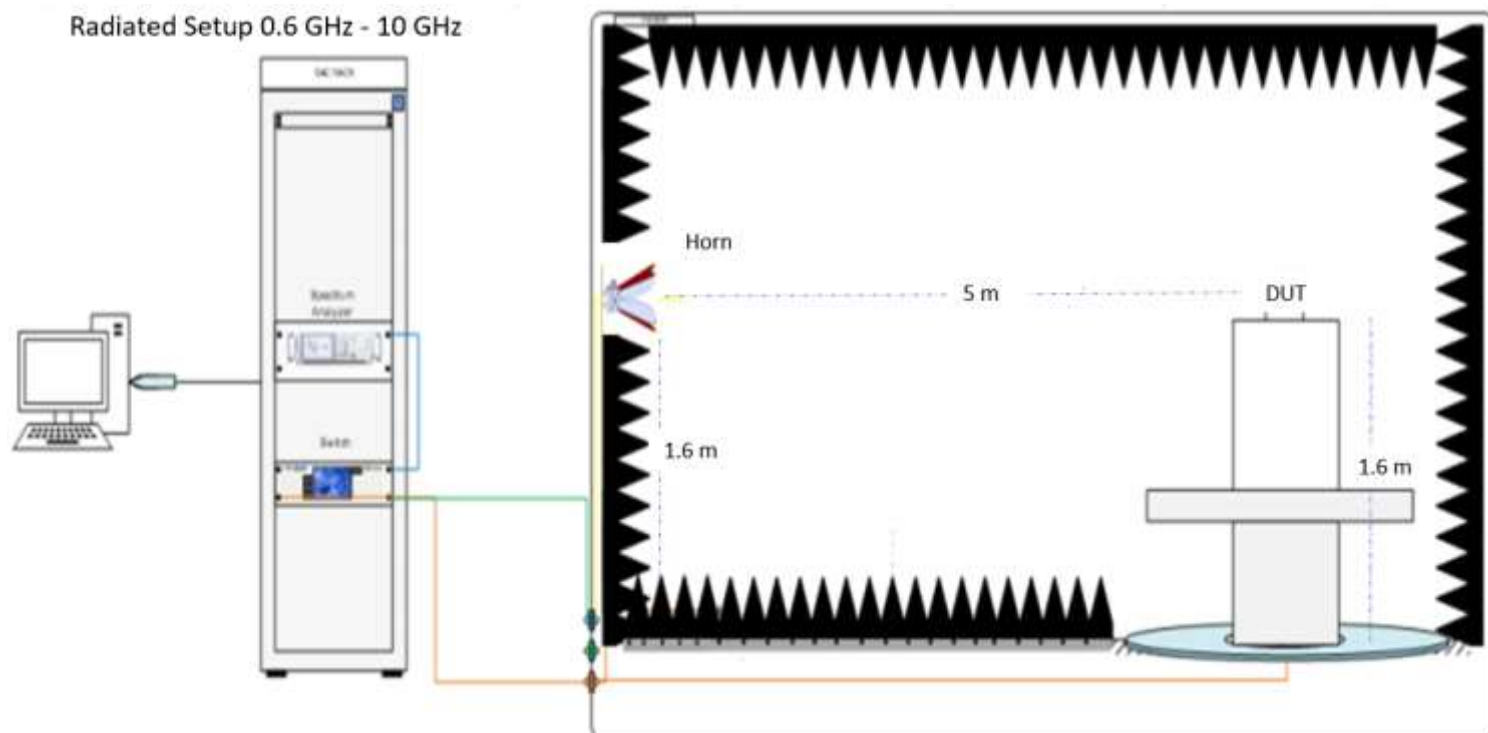
<insert test description here for test method>

1. Use a low-loss coaxial cable to connect the notebook fixture
2. Fix the notebook fixture on the turntable
3. Connect the jig to the network analyzer port, and use the antenna of the test probe to collect data.

2. Test & System Description

a. Test setup

<insert test diagram here for test site utilized>



b. Equipment list

<insert test diagram here for test site utilized>

Number	Device	Manufacturer	Cal. Date	Cal. Due. Date
1	Chamber	ETS-Lindgren	2022/3/13	2023/3/12
2	Hron Antenna	Bwant	2021/5/16	2023/5/15
3	Network Analyzer	Keysight	2022/3/17	2023/3/16
4	Turn table control box	ETS-Lindgren	N/A	N/A
5	Turn table control computer	ETS-Lindgren	N/A	N/A
6	Test system host	EMT	N/A	N/A
7	RF Line TX	Jmtt	2022/3/27	2023/3/26
8	RF Line RX	Jmtt	2022/3/27	2023/3/26
9	Cable 2m 1GHz-8.5GHz	Jmtt	2022/3/27	2023/3/26
10	Optical fiber line	Jmtt	N/A	N/A

Antenna Information

Section 1. Antenna Assembly Specifications

1A	1B	1C	1D		1E	1F	1G	1H
Antenna Part Number	Manufacturer	Antenna Type	Cable Assembly Part Number and Information	Freq Range MHz	* Peak Gain W/ Cable loss (dBi)	Peak Gain w/o Cable Loss (dBi)	Max VSWR	Cable Loss (dB)
(P/N: AYF6Y-100226) Main Antenna	AWAN	PIFA	1) AWAN 2) 50 ohm Coaxial 3)length:255mm diameter: 1.13mm 4)Connector p/n: I-pex:20565-001R-13	2400-2483.5	1.75	2.63	3.0	0.88
				5150-5250	0.63	1.95	3.0	1.32
				5250-5350	0.53	1.85	3.0	1.32
				5470-5725	0.47	1.84	3.0	1.37
				5725-5850	0.87	2.29	3.0	1.42
				5850-5895	1.37	2.79	3.0	1.42
				5925-6425	2.18	3.63	3.0	1.45
				6425-6525	0.39	1.97	3.0	1.58
				6525-6875	1.28	2.89	3.0	1.61
				6875-7125	1.77	3.4	3.0	1.63
(P/N: AYF6Y-100227) Aux Antenna	AWAN	PIFA	1) AWAN 2) 50 ohm Coaxial 3)length:252mm diameter: 1.13mm 4)Connector p/n: I-pex:20565-001R-13	2400-2483.5	0.12	0.98	3.0	0.86
				5150-5250	2.43	3.71	3.0	1.28
				5250-5350	1.24	2.52	3.0	1.28
				5470-5725	1.04	2.38	3.0	1.34
				5725-5850	1.05	2.46	3.0	1.41
				5850-5895	1.14	2.55	3.0	1.41
				5925-6425	2.33	3.88	3.0	1.55
				6425-6525	2.11	3.67	3.0	1.56
				6525-6875	2.75	4.32	3.0	1.57
				6875-7125	1.49	3.09	3.0	1.60

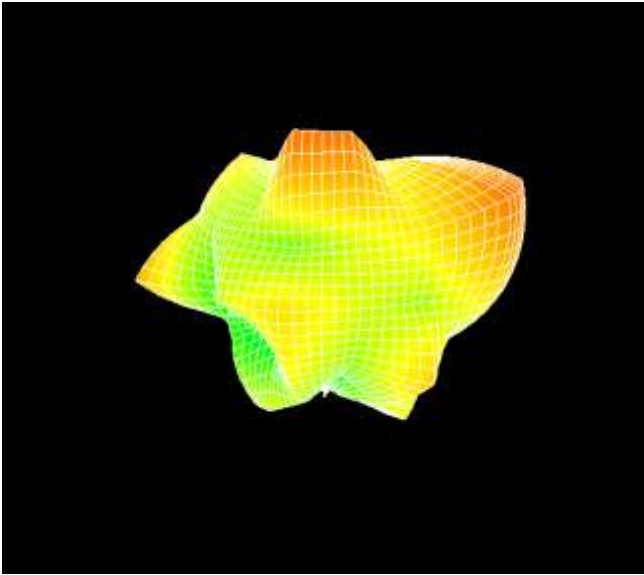
- 3D Antenna Peak Gain required being test in system basis.

Section 3. Radiation characteristics of antenna loaded in Host Platform

Main Antenna

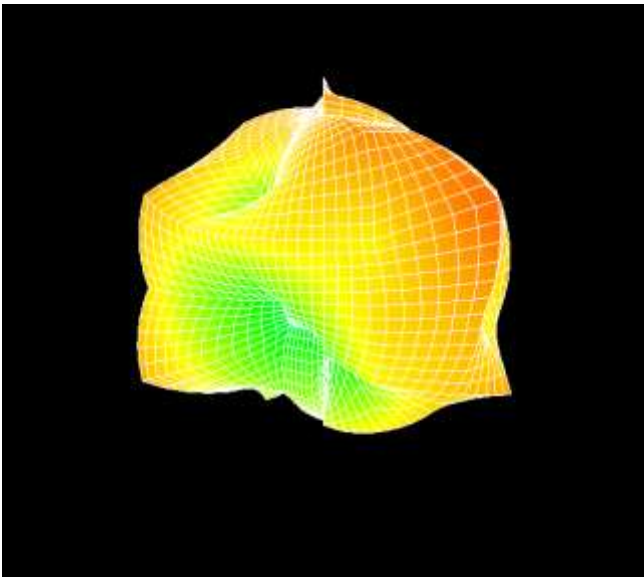
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	1.75



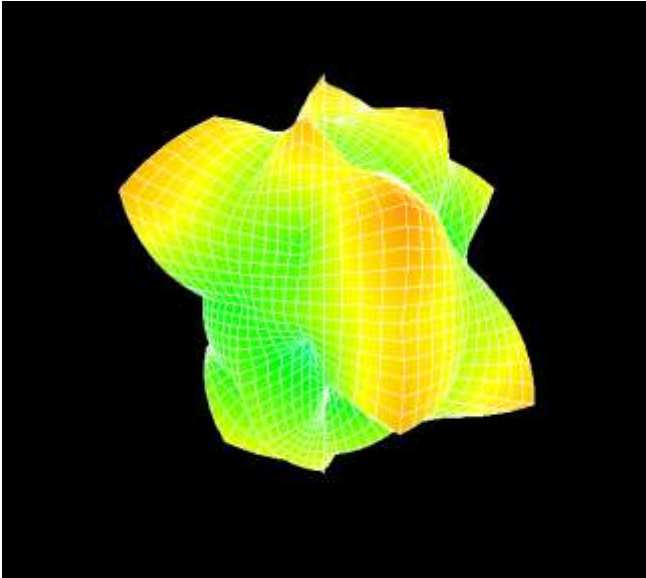
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	0.63



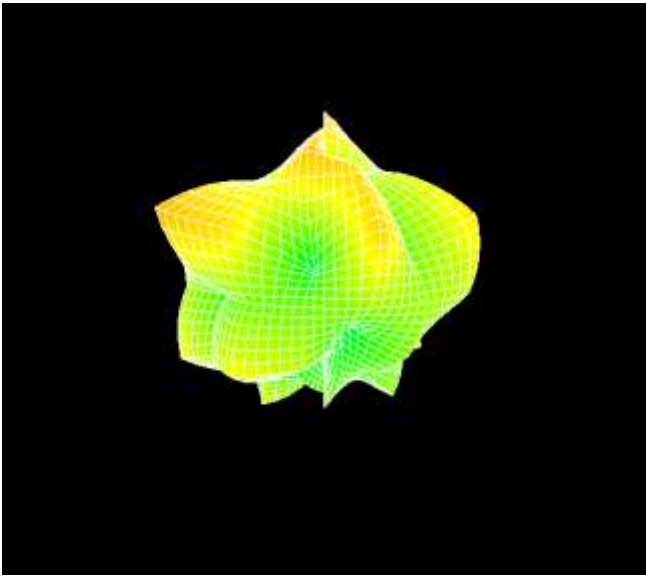
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	0.53



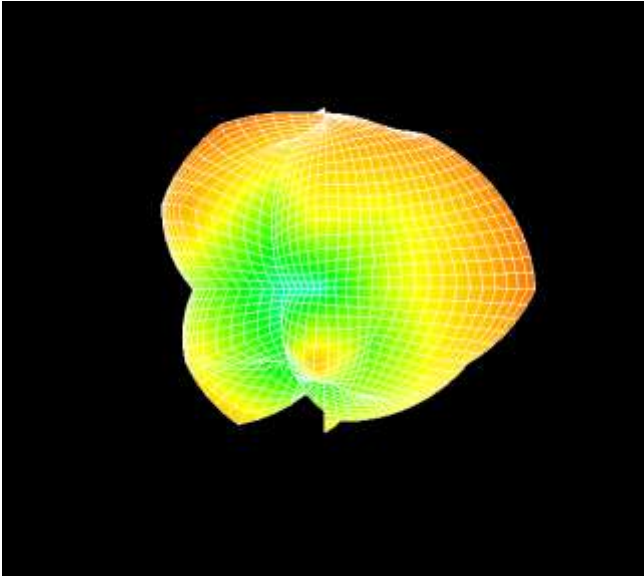
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	0.47



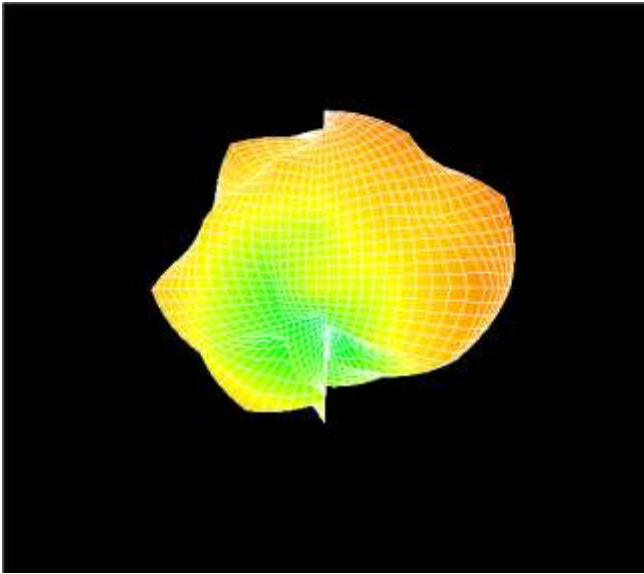
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	0.87



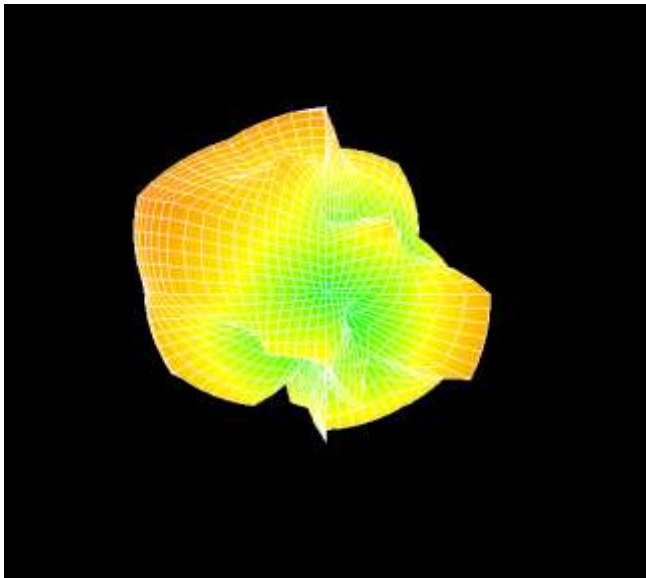
Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	1.37



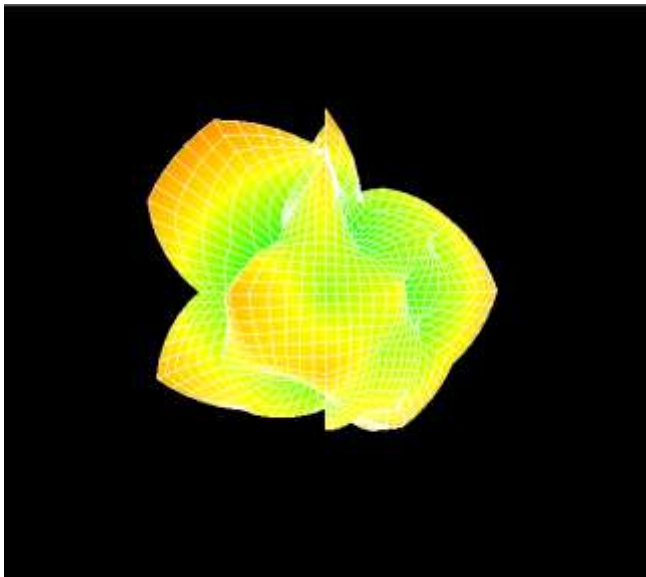
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	2.18



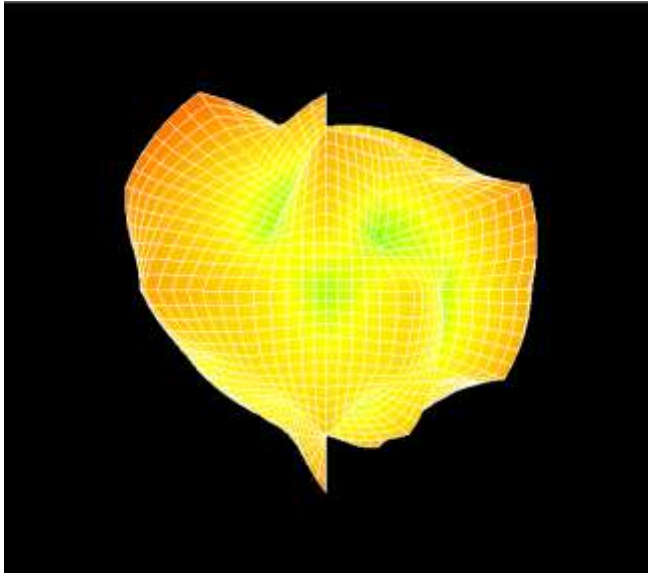
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	0.39



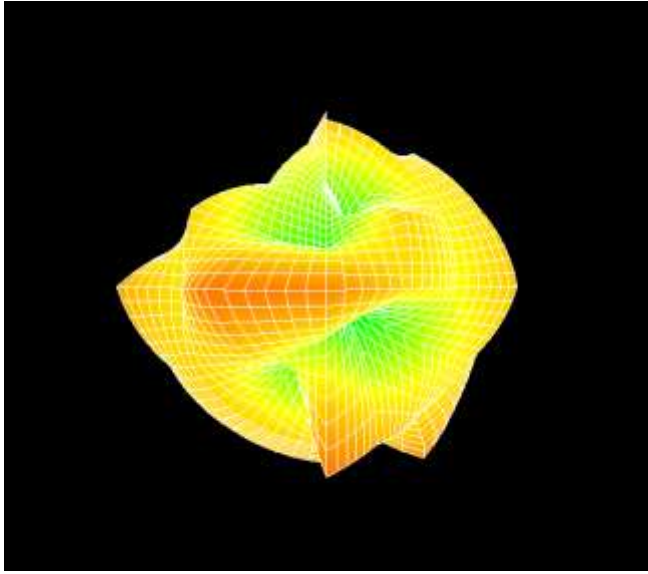
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	1.28



Max Antenna 3D Radiation Pattern 6875-7125 MHz

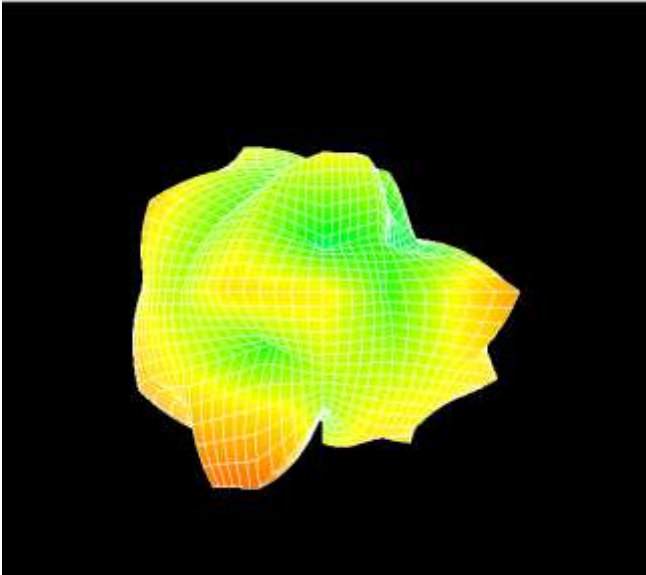
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	1.77



Auxiliary Antenna

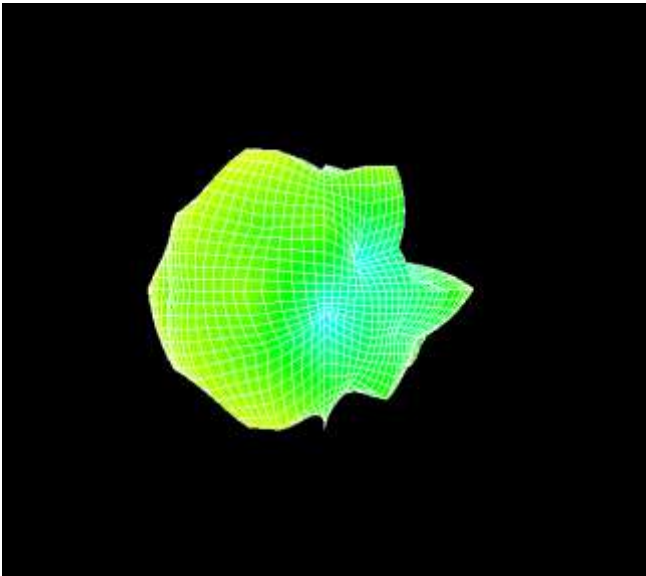
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	0.12



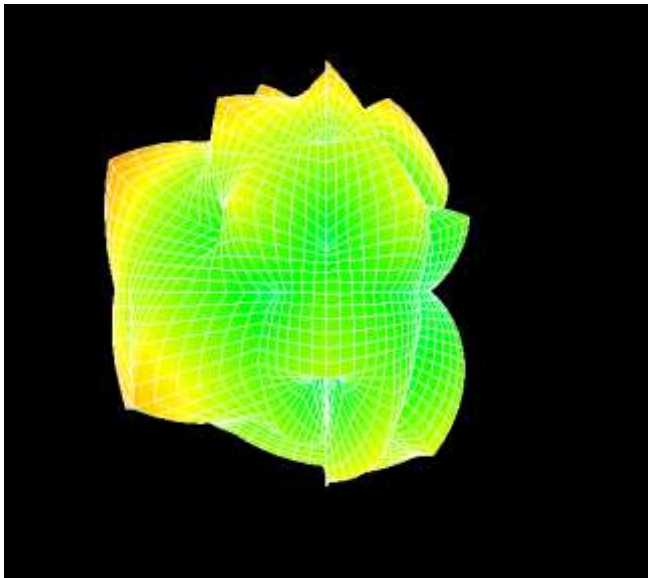
Max Antenna 3D Radiation Pattern 5150-5250 MHz

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



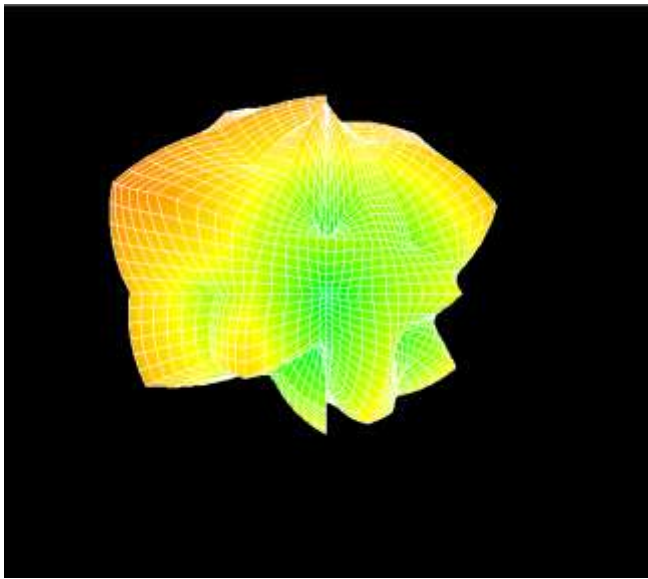
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	1.24



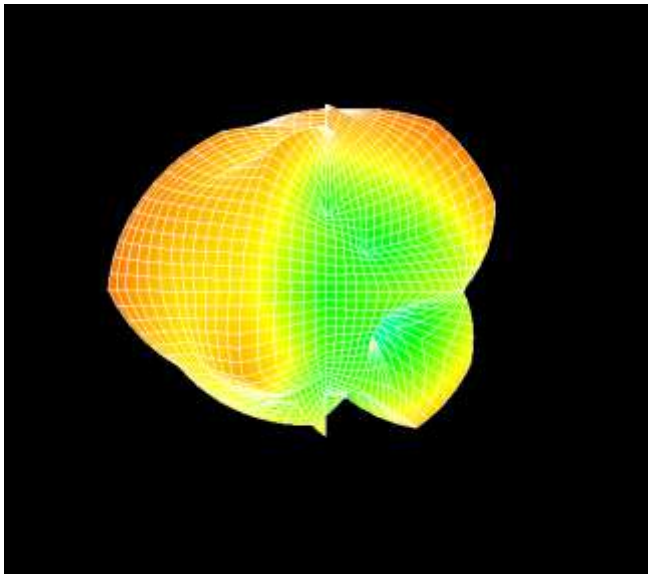
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	1.04



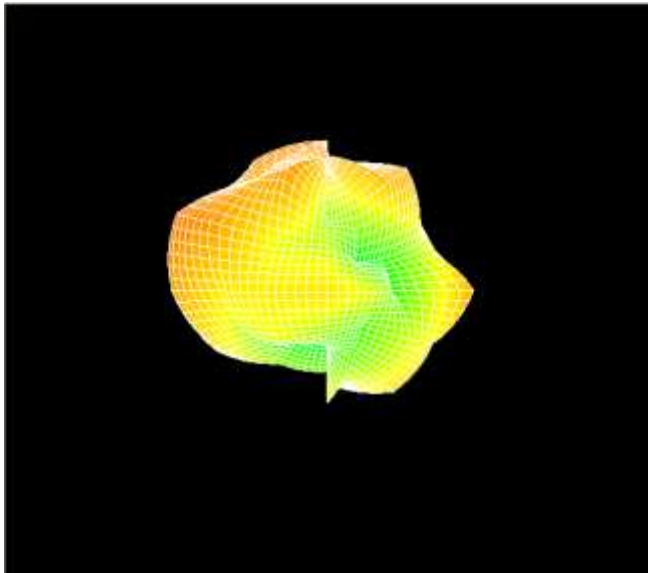
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	1.05



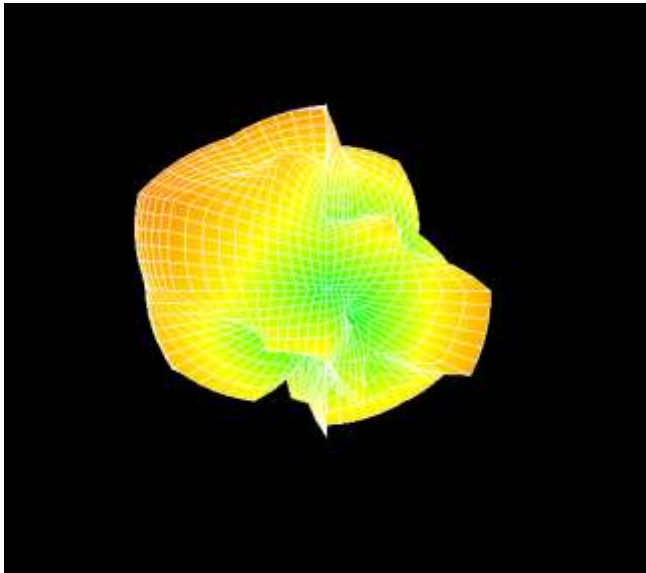
Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	1.14



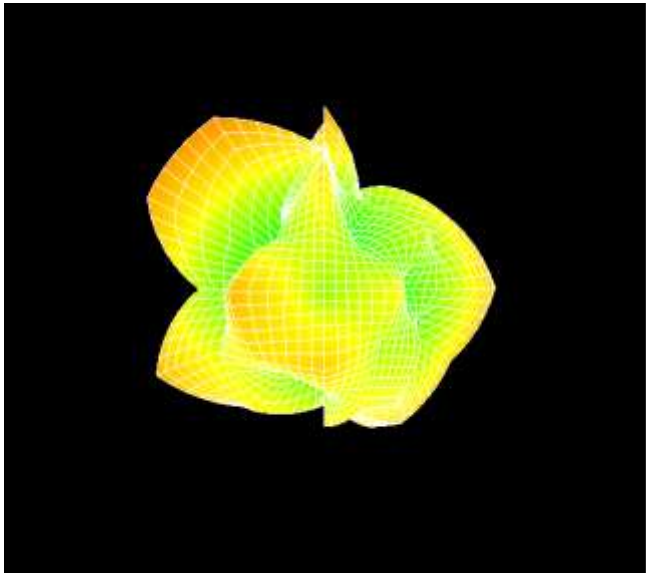
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	2.33



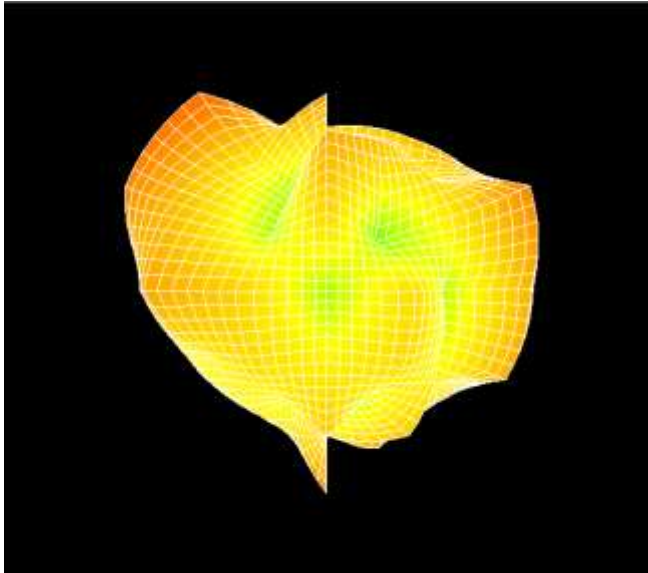
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	2.11



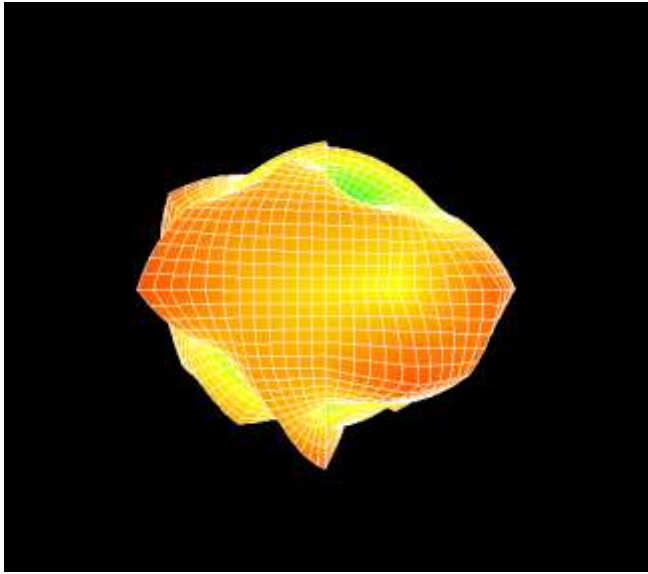
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	2.75



Max Antenna 3D Radiation Pattern 6875-7125 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	1.49



Revision History

Revision	Description	Date
10.3	<u>Page2-5</u> Add Applicable test method, Test & System Description and Setup photo	July 24, 2022
10.4	<u>Cover page</u> Add Intel 5.9GHz reference antenna gain <u>Cover page/Section1/Section3</u> Add 5.9GHz antenna gain information	September 15, 2022