

# 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	COMPAL	Legion Slim 5 16IRH8	Yes	NB	13.9						
*****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	DC33002TF00(TZ2481D)			DC33002TF10(TZ2481E)					
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	2.82	2.86	2.86	2.81	2.88	2.64	3.88	3.73	3.76	3.76	
Aux	2.70	2.89	2.85	2.95	2.94	2.86	3.66	3.63	3.70	2.89	
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	
Design	3.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	Generic: refer to modular FCC SAR report  Mid-power: ≥ 8 mm  Low power: ≥ 5 mm
PIFA	3.24	3.64	3.73	4.77	4.97	4.72	4.83	4.30	5.37	5.59	
Dipole	2.89	2.92	3.19	4.41	4.22	4.22	4.83	4.30	4.49	5.34	
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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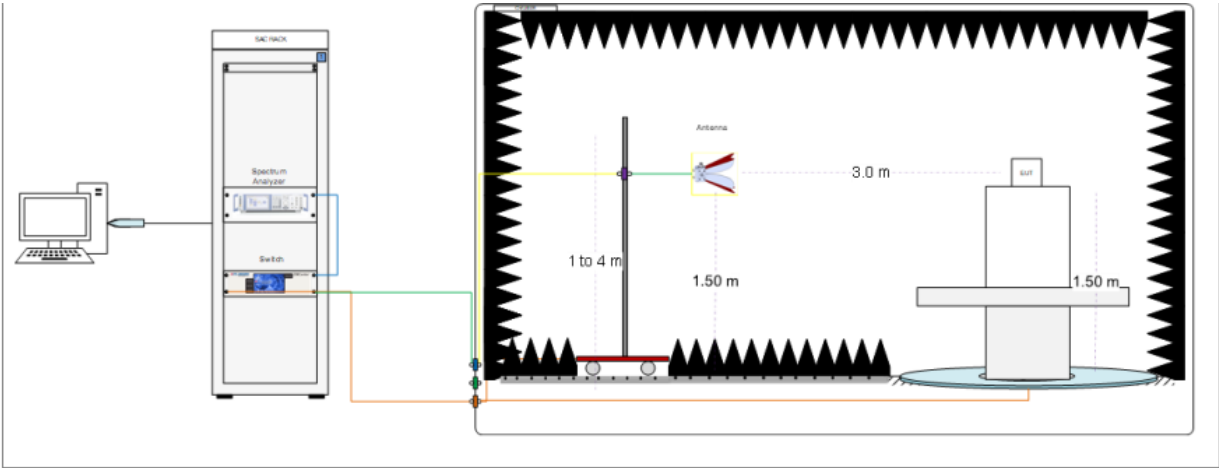
[Section 6. Diagram Example of Co-Location Antenna Separation](#)

1. Applicable test methods

This test report is prepared for host antenna testing under a Full Anechoic Chamber.

2. Test & System Description

- a. Test setup  
Radiated setup 1GHz -8GHz



- b. Equipment list

ID#	Device	Type/Model	Serial#	Manufactuter	Cal. Date	Cal. Due Date
1	Anechoic Chamber	AMS8500		ETS-Lindgren	2022-07-13	2023-07-13
2	Turn Table	ETS		ETS-Lindgren	2022-07-13	2023-07-13
3	Switch & Positioning system	2090		ETS-Lindgren	2022-07-13	2023-07-13
4	Horn Antenna	3164-08	99210	ETS-Lindgren	2022-07-13	2023-07-13
5	Network Analyzer	E5071C	MY46103999	Agilent	2022-07-13	2023-07-13
6	Open Boundary Quad-Ridged Horn	3164-10	240436	ETS-Lindgren	2022-07-13	2023-07-13
7	cable 80 IN(Table01) 600MHz-18GHz	RFC-SMS-100-SMS		ETS-Lindgren	2022-07-13	2023-07-13
8	cable 80 IN(Table02) 600MHz-18GHz	RFC-SMS-100-SMS		ETS-Lindgren	2022-07-13	2023-07-13
9	cable 150cm---600MHz-18GHz	SMAP-SMAP SF316D		ETS-Lindgren	2022-07-13	2023-07-13
10	cable 85cm---600MHz-18GHz	SMAP-SMAP SF316D		ETS-Lindgren	2022-07-13	2023-07-13
11	cable 80 IN 600MHz-18GHz	RFC-SMS-100-SMS		ETS-Lindgren	2022-07-13	2023-07-13
12	cable 80 IN 600MHz-18GHz	RFC-SMS-100-SMS		ETS-Lindgren	2022-07-13	2023-07-13
13	cable 80 IN 600MHz-18GHz	RFC-SMS-100-SMS		ETS-Lindgren	2022-07-13	2023-07-13
14	cable 400 IN(Panel-Table)	RFC-SMS-100-SMS		ETS-Lindgren	2022-07-13	2023-07-13
15	cable 400 IN(3102)	RFC-SMS-100-SMS		ETS-Lindgren	2022-07-13	2023-07-13
16	cable 400 IN(3164-10 -V)	RFC-SMS-100-SMS		ETS-Lindgren	2022-07-13	2023-07-13
17	cable 400 IN(3164-10 -H)	RFC-SMS-100-SMS		ETS-Lindgren	2022-07-13	2023-07-13

# Antenna Information

## Section 1. Antenna Assembly Specifications

1A Antenna Part Number	1B Manufacturer	1C Antenna Type	1D Cable Assembly Part Number and Information	Freq RangeMHz	1E *Total Peak Gain W/ Cable loss (dBi)	1F Total Peak Gain w/o Cable Loss (dBi)	1G Max VSWR	1H Cable Loss (dB)
Customer P/N: DC33002TF00  Pulse P/N: TZ2481D Tx1 Main Antenna	Pulse	PIFA	Connector: KANGSHUO MHF-B13L-N-01 or compatible. Cable: SY113L/50-001 or compatible. 50 ohm Coaxial. Length: 132.5 mm diameter: 1.13 LLS mm	2400-2483.5	2.82	3.22	3.00 max	0.40
				5150-5250	2.86	3.39	3.00 max	0.53
				5250-5350	2.86	3.40	3.00 max	0.54
				5470-5725	2.81	3.37	3.00 max	0.56
				5725-5850	2.88	3.44	3.00 max	0.56
				5850-5895	2.64	3.20	3.00 max	0.56
				5925-6425	3.88	4.47	3.00 max	0.59
				6425-6525	3.73	4.32	3.00 max	0.59
				6525-6875	3.76	4.37	3.00 max	0.61
Customer P/N: DC33002TF10  Pulse P/N: TZ2481E Tx2 Aux Antenna	Pulse	PIFA	Connector: KANGSHUO MHF-B13L-N-01 or compatible. Cable: SY113L/50-001 or compatible. 50 ohm Coaxial. Length: 363 mm diameter: 1.13 LLS mm	2400-2483.5	2.70	3.79	3.00 max	1.09
				5150-5250	2.89	4.34	3.00 max	1.45
				5250-5350	2.85	4.32	3.00 max	1.47
				5470-5725	2.95	4.48	3.00 max	1.53
				5725-5850	2.94	4.47	3.00 max	1.53
				5850-5895	2.86	4.40	3.00 max	1.54
				5925-6425	3.66	5.28	3.00 max	1.62
				6425-6525	3.63	5.26	3.00 max	1.63
				6525-6875	3.70	5.38	3.00 max	1.68
				6875-7125	2.89	4.59	3.00 max	1.70

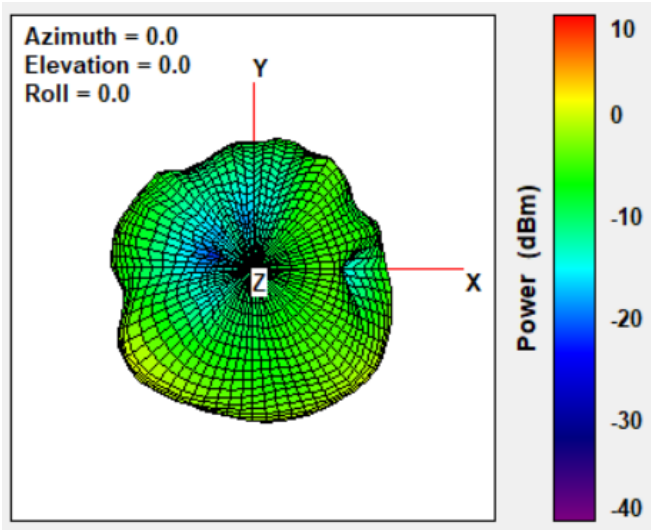
- 3D Antenna Peak Gain required being test in system basis.

Section 3. Radiation characteristics of antenna loaded in Host Platform

Main Antenna

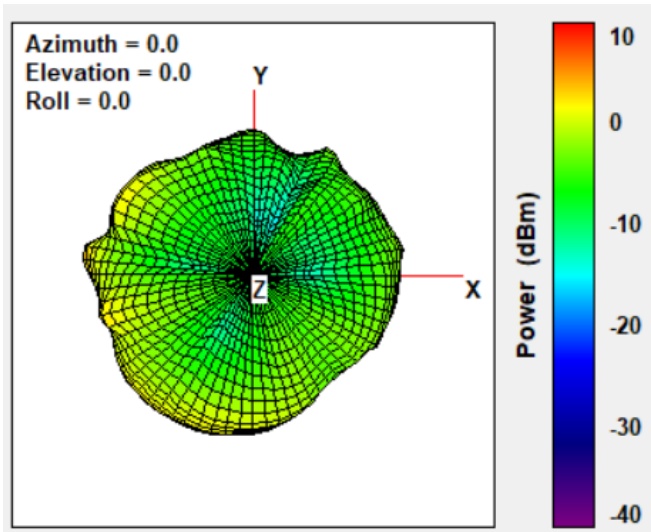
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	2.82



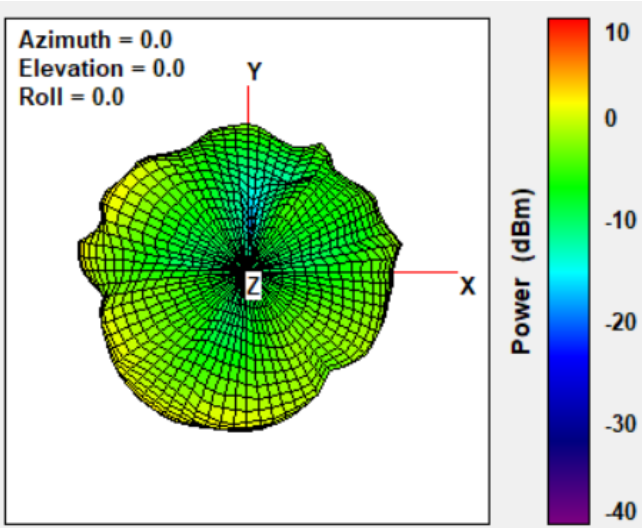
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	2.86



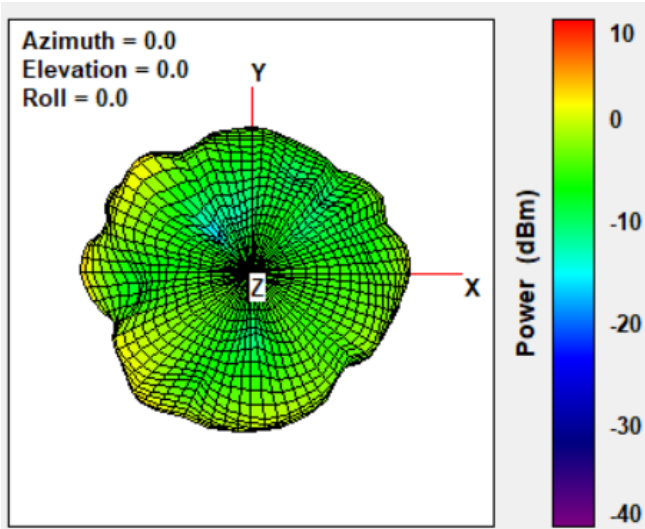
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	2.86



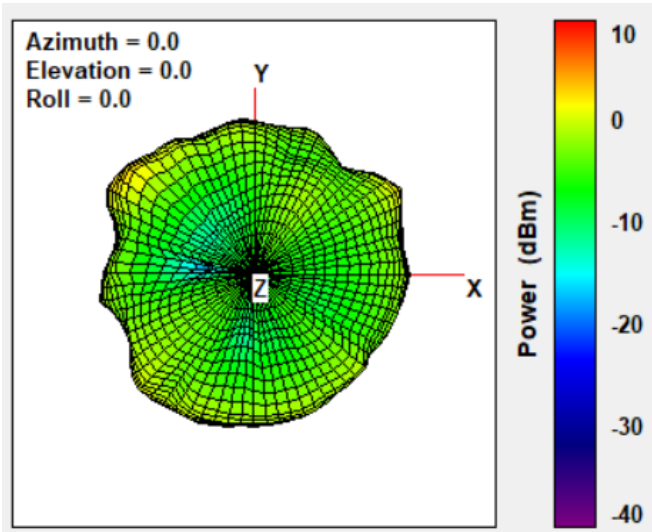
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	2.81



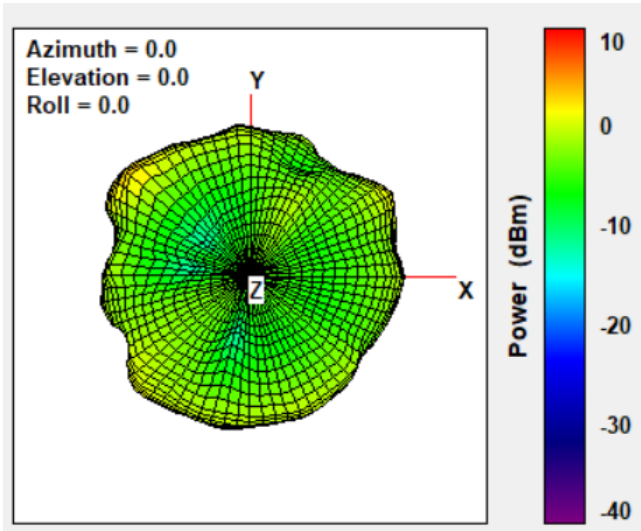
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	2.88



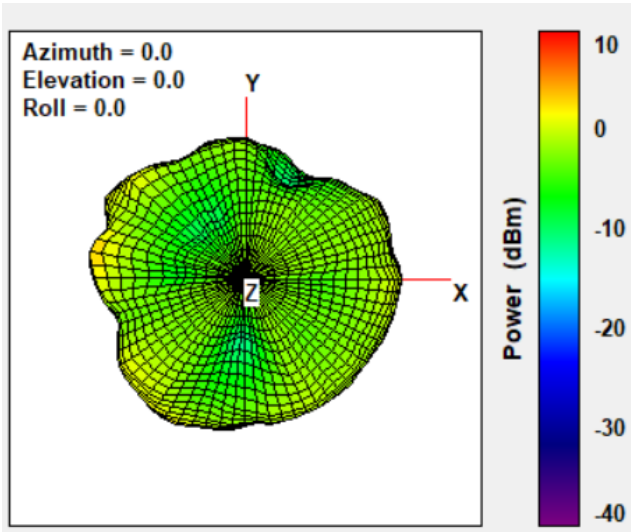
Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	2.64



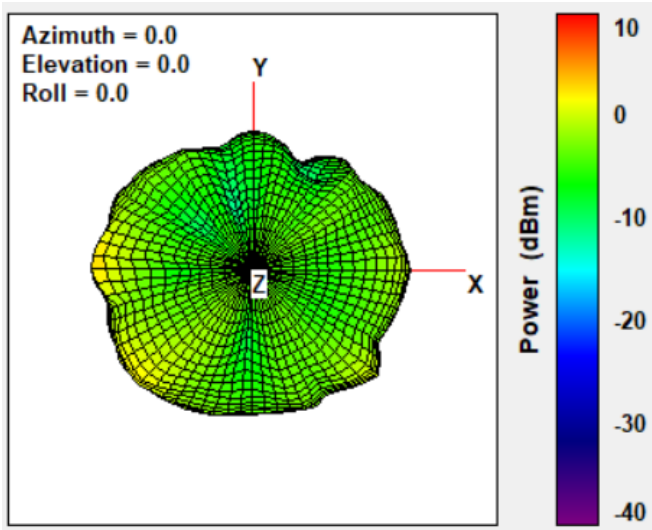
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	3.88



Max Antenna 3D Radiation Pattern 6425-6525 MHz

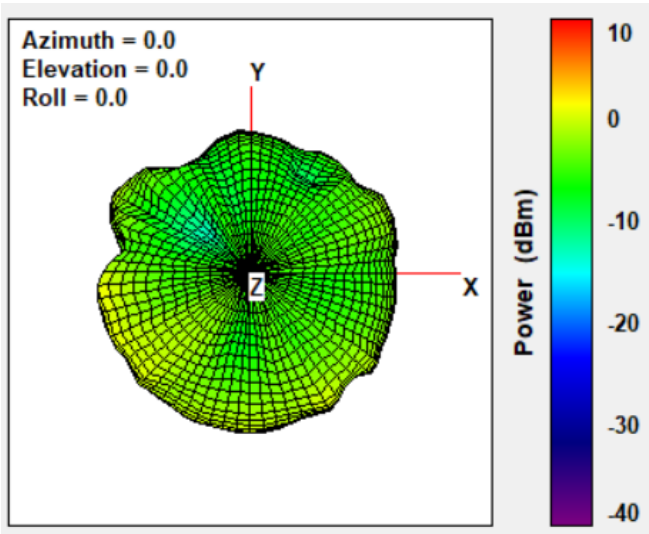
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	3.73





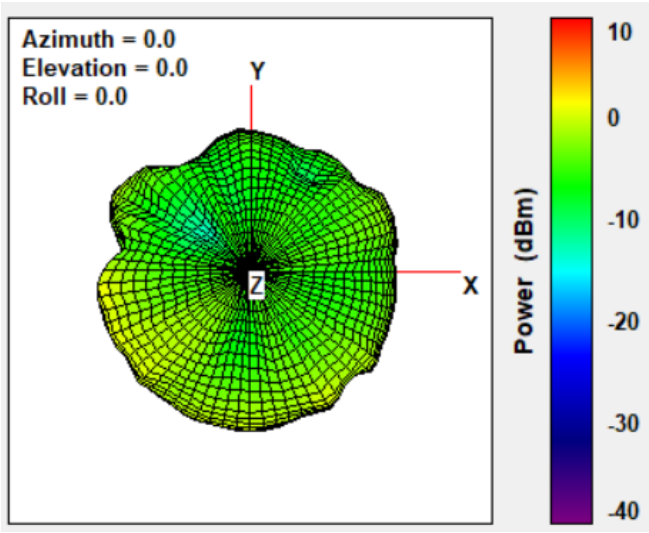
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	3.76



Max Antenna 3D Radiation Pattern 6875-7125 MHz

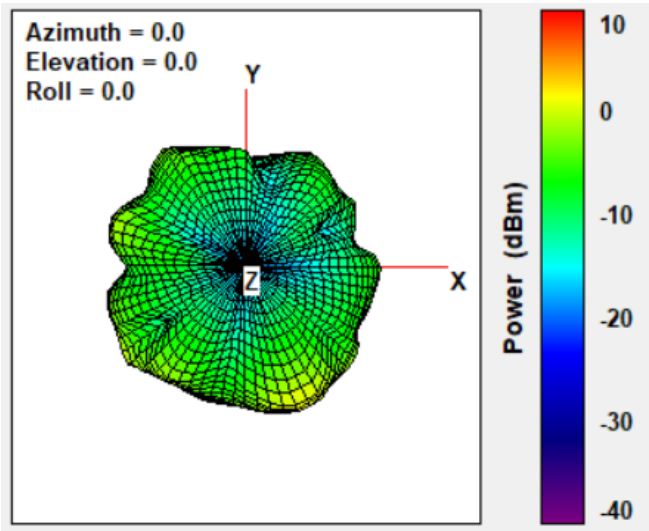
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	3.76



Auxiliary Antenna

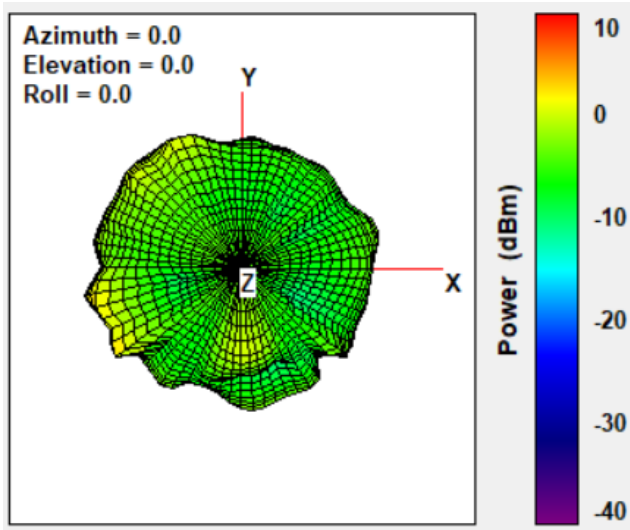
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	2.70



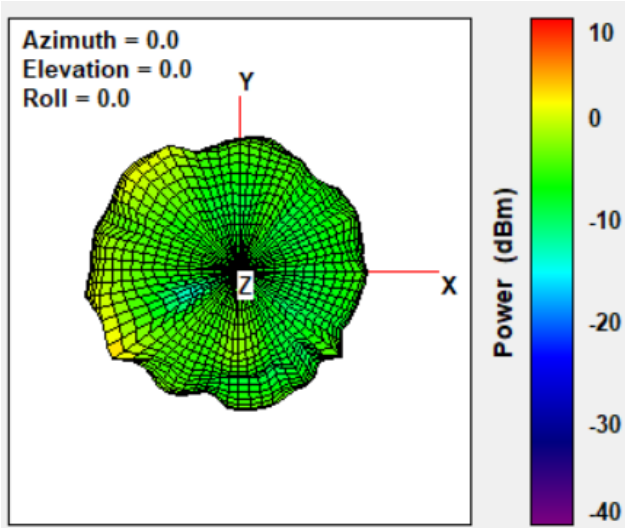
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	2.89



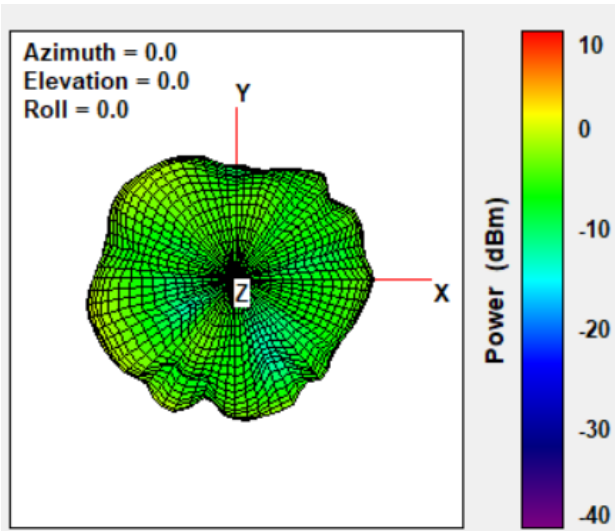
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	2.85



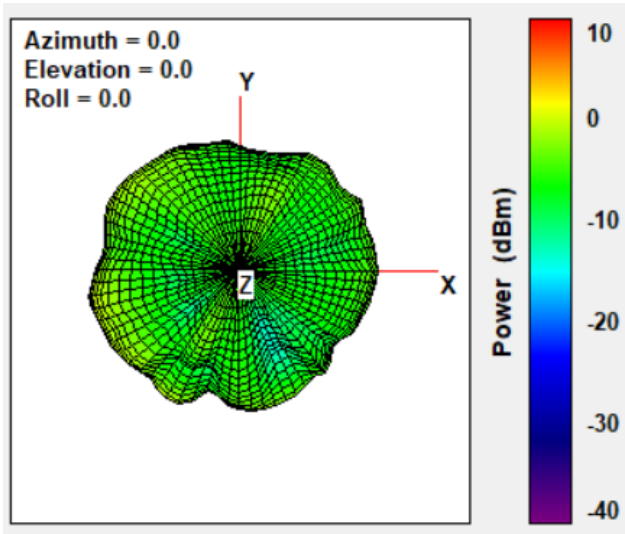
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	2.95



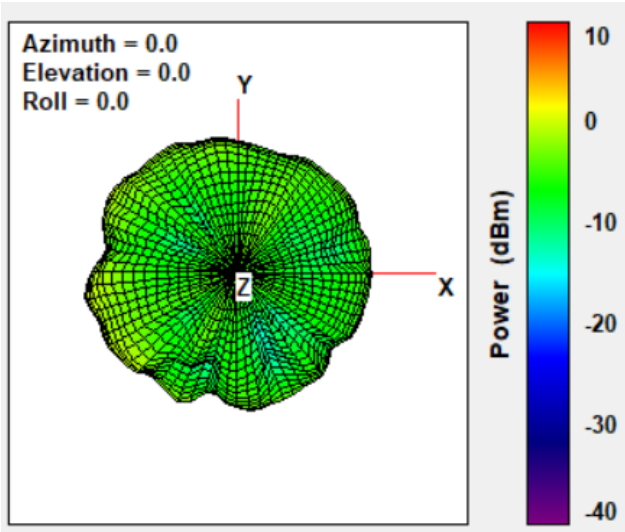
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	2.94



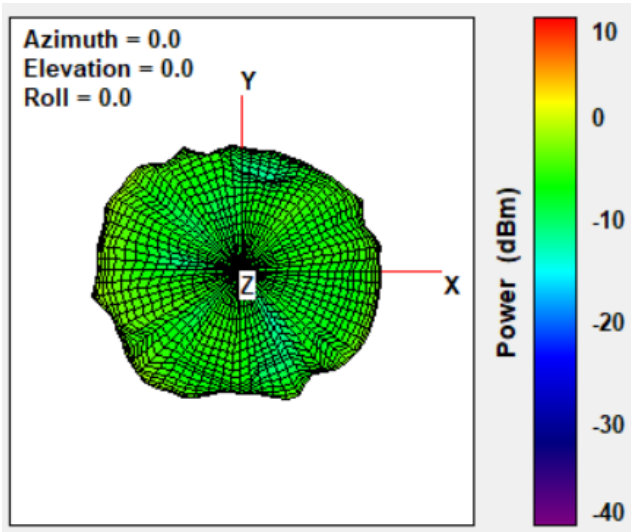
Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	2.86



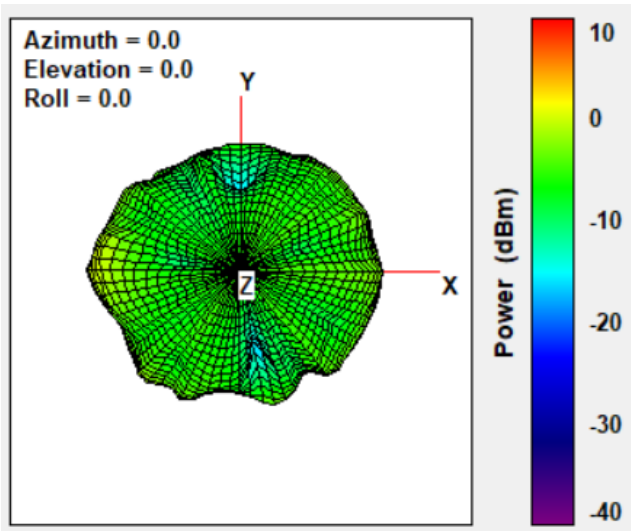
Max Antenna 3D Radiation Pattern 5925-6425 MHz

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



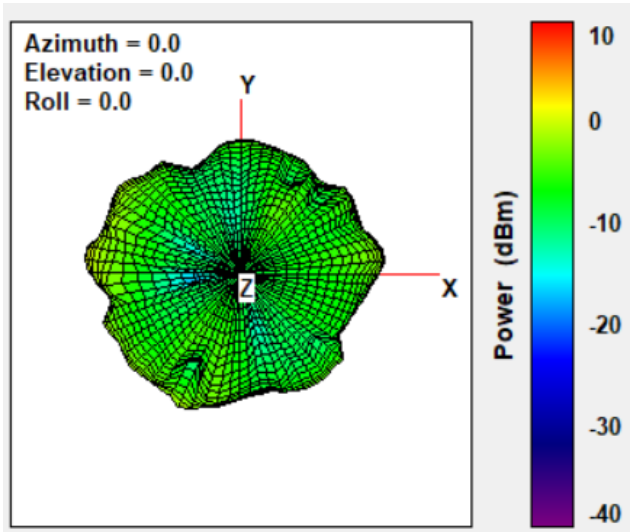
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	3.63



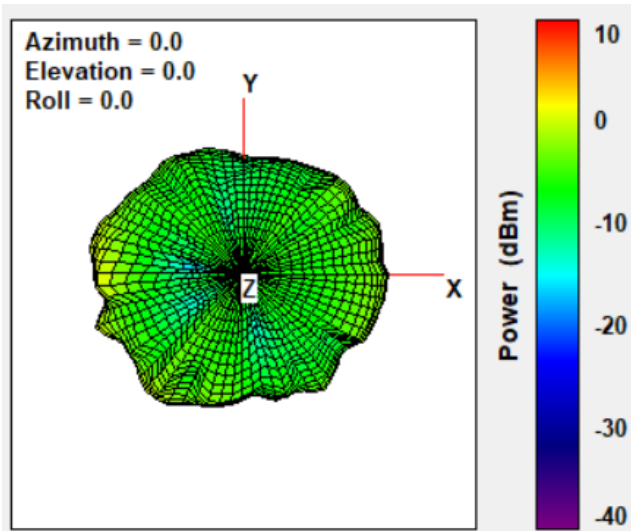
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	3.70



Max Antenna 3D Radiation Pattern 6875-7125 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	2.89



## 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