

# 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	Quanta	GA403U	No	NB	5.02					
*****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)			
INPAQ	PIFA		WA-P-LE-02-210				WA-P-LE-03-029			
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	2.91	2.42	2.63	2.86	3.31	2.62	2.52	1.37	1.41	0.92
Aux	2.21	2.93	2.25	3.26	2.59	2.23	4.05	3.28	4.38	3.36

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1. **Applicable test methods**

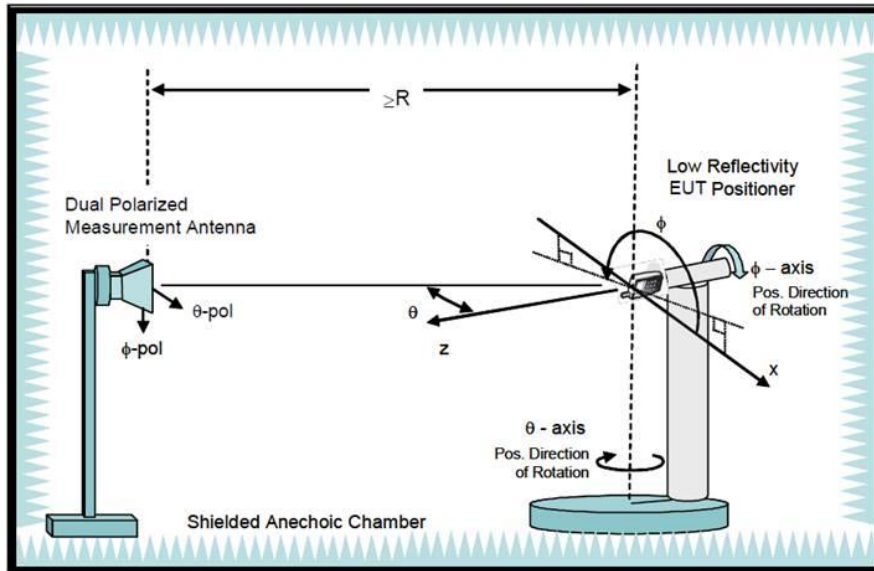
<insert test description here for test method>

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

2. **Test & System Description**

a. Test setup

<insert test diagram here for test site utilized>



## b. Equipment list

&lt;insert test diagram here for test site utilized&gt;

## Anechoic Chamber

Equipment Description	Manufacturer	Identification no.	Current calibration date	Next calibration date
Network analyzer	Agilent	E5071C	2023/01/06	2024/01/08
Measurement software	ETS-Lindgren	EMQuest	2023/03/03	2024/03/04
Multi axis positioning system(MAPSTM)	ETS-Lindgren	EMCO 2115	2023/03/03	2024/03/04
Multi axis positioning system(MAPSTM)	ETS-Lindgren	EMCO 2110	2023/03/03	2024/03/04
MAPSTM controller	ETS-Lindgren	EMCO 2090	2023/03/03	2024/03/04
Horn antenna	ETS-Lindgren	3164-10	2023/03/03	2024/03/04
Cable 40cm 18 GHz	Jmtt	201EH012010400	2023/04/07	2024/04/08
Cable 6m 18 GHz	Jmtt	201EH012016000	2023/04/07	2024/04/08
Cable 6m 18 GHz	Jmtt	201EH012016000	2023/04/07	2024/04/08
Cable 3.5m 18 GHz	Jmtt	201EH012013500	2023/04/07	2024/04/08
Cable 1.5m 18 GHz	Jmtt	201EH012011500	2023/04/07	2024/04/08

# Antenna Information

## Section 1. Antenna Assembly Specifications

1A Antenna Part Number	1B Manufacturer	1C Antenna Type	1D Cable Assembly Part Number and Information	Freq Range MHz	1E * Peak Gain W/ Cable loss (dBi)	1F Peak Gain w/o Cable Loss (dBi)	1G Max VSWR	1H Cable Loss (dB)
(P/N: WA-P-LE-02-210) Main Antenna	INPAQ	PIFA	(P/N: 400000707302) 50 ohm Coaxial length: 294 mm diameter: 1.13Normal  Connector type : I-PEX	2400-2483.5	2.91	3.97	3	1.06
				5150-5250	2.42	3.98	3	1.56
				5250-5350	2.63	4.20	3	1.57
				5470-5725	2.86	4.47	3	1.61
				5725-5850	3.31	4.95	3	1.64
				5850-5895	2.62	4.28	3	1.66
				5925-6425	2.52	4.25	3	1.73
				6425-6525	1.37	3.14	3	1.77
				6525-6875	1.41	3.23	3	1.82
6875-7125	0.92	2.80	3	1.88				
(P/N: WA-P-LE-03-029) Aux Antenna	INPAQ	PIFA	(P/N: 400000707302) 50 ohm Coaxial length:335 mm diameter: 1.13Normal  Connector type : I-PEX	2400-2483.5	2.21	3.26	3	1.05
				5150-5250	2.93	4.48	3	1.55
				5250-5350	2.25	3.81	3	1.56
				5470-5725	3.26	4.86	3	1.60
				5725-5850	2.59	4.22	3	1.63
				5850-5895	2.23	3.87	3	1.64
				5925-6425	4.05	5.77	3	1.72
				6425-6525	3.28	5.04	3	1.76
				6525-6875	4.38	6.19	3	1.81
6875-7125	3.36	5.23	3	1.87				

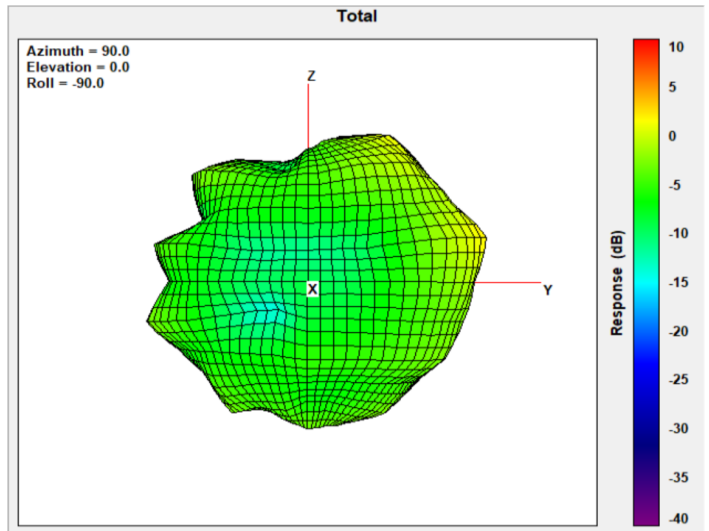
- 3D Antenna Peak Gain required being test in system basis.

## Section 3. Radiation characteristics of antenna loaded in Host Platform

### Main Antenna

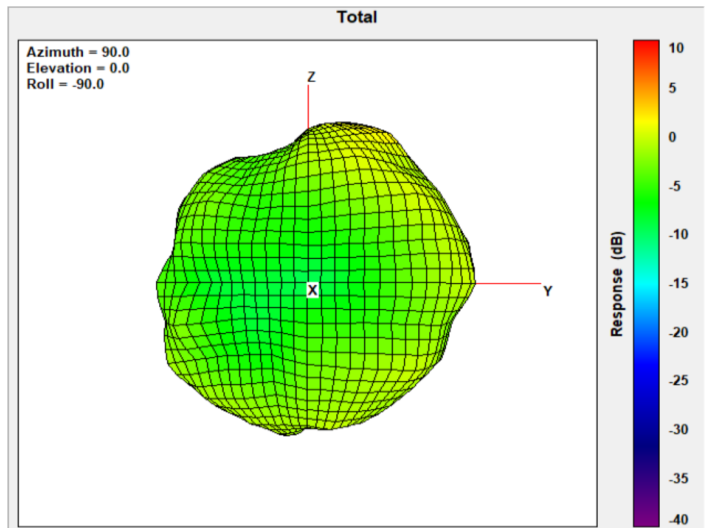
#### Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	2.91



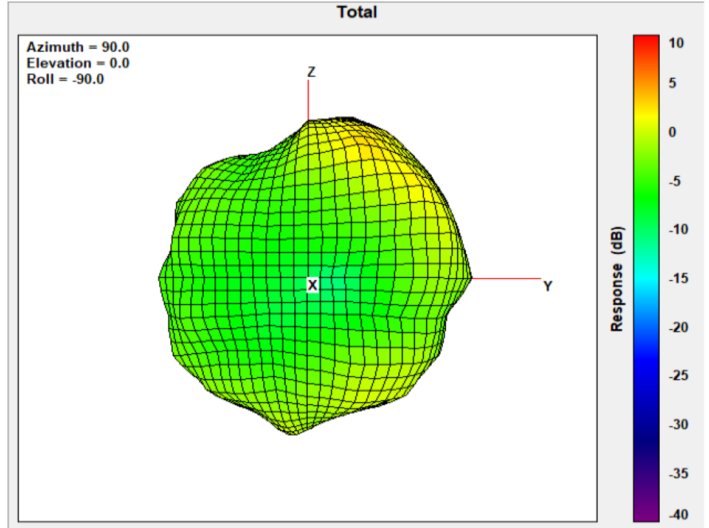
#### Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	2.42



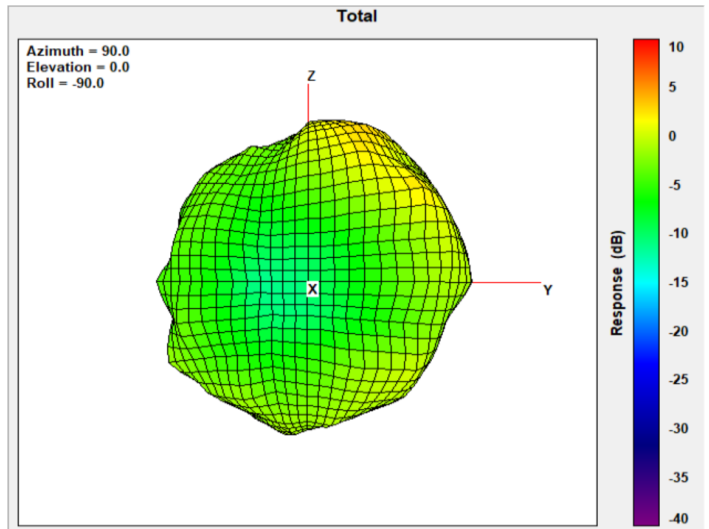
### Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	2.63



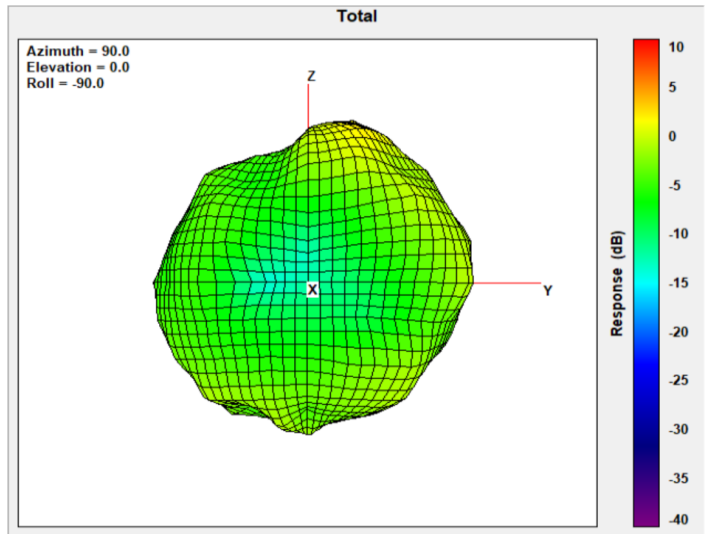
### Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	2.86



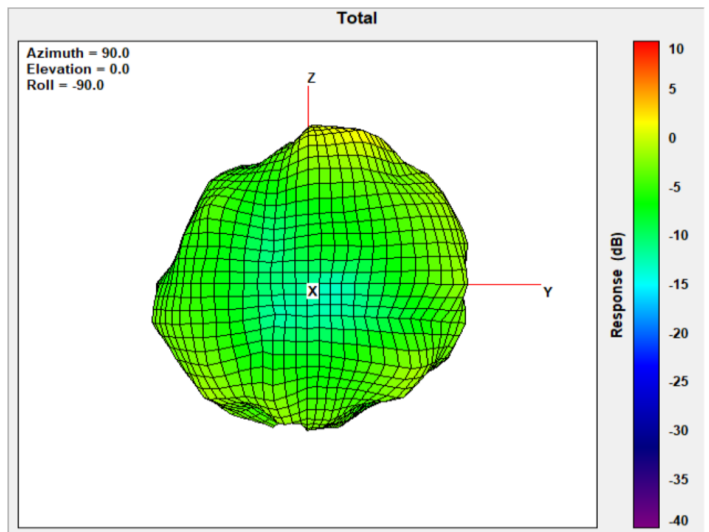
### Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	3.31



### Max Antenna 3D Radiation Pattern 5850-5895 MHz

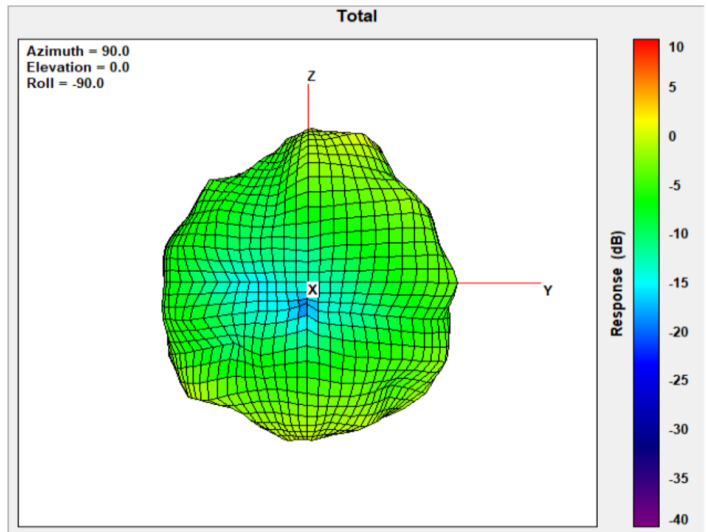
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	2.62





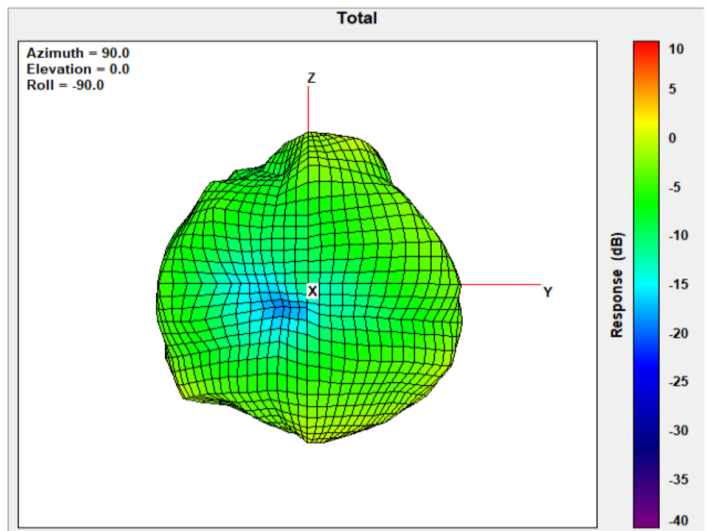
### Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	2.52



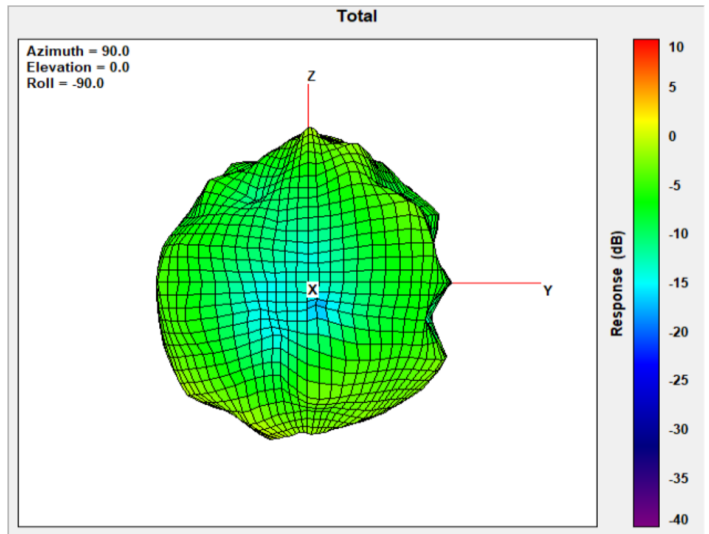
### Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	1.37



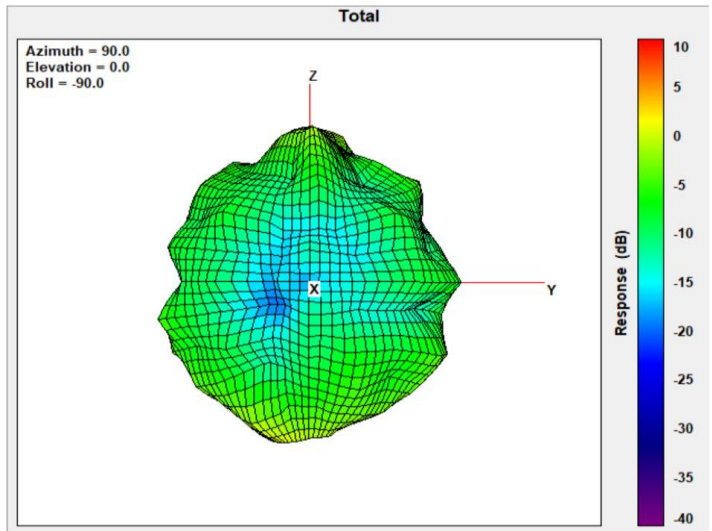
### Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	1.41



### Max Antenna 3D Radiation Pattern 6875-7125 MHz

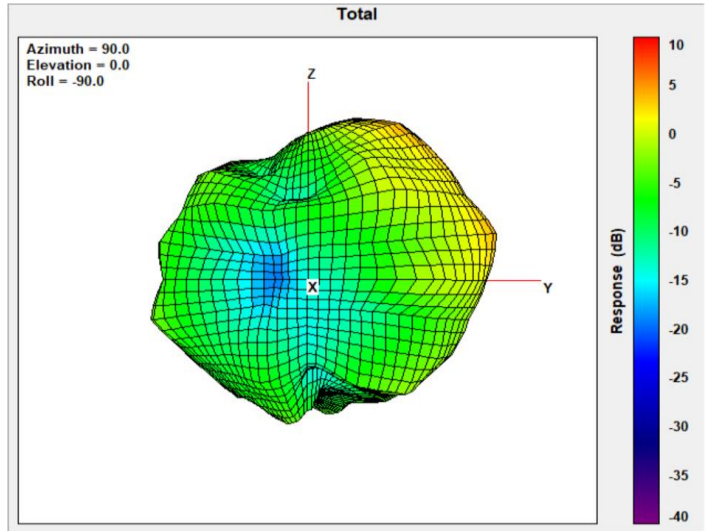
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	0.92



## Auxiliary Antenna

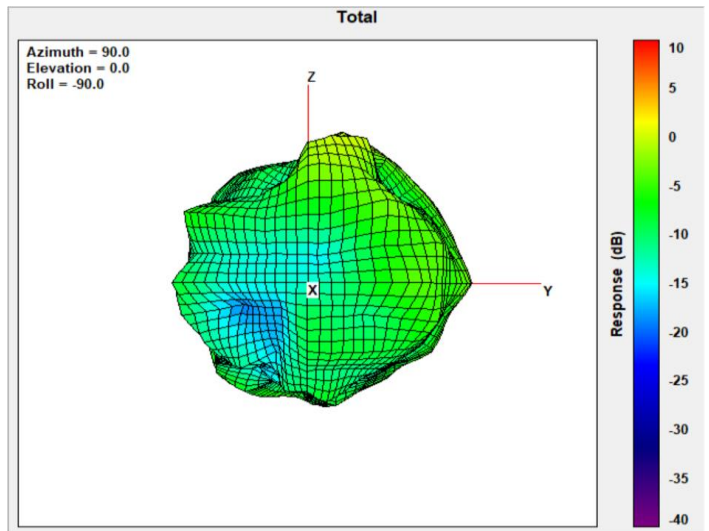
### Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	2.21



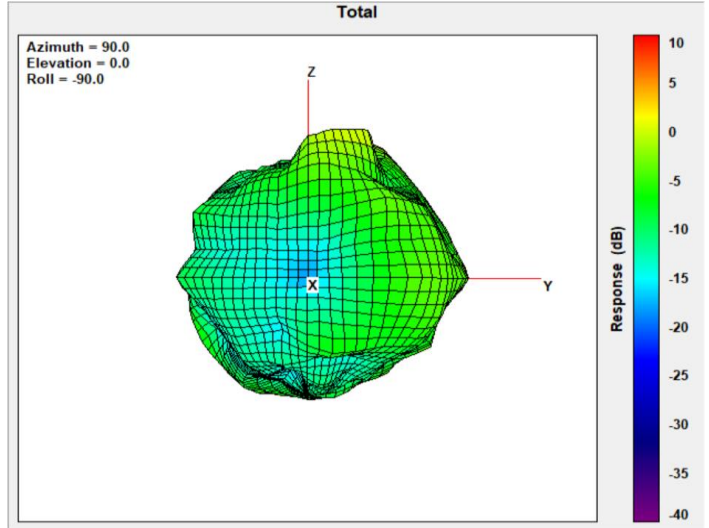
### Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	2.93



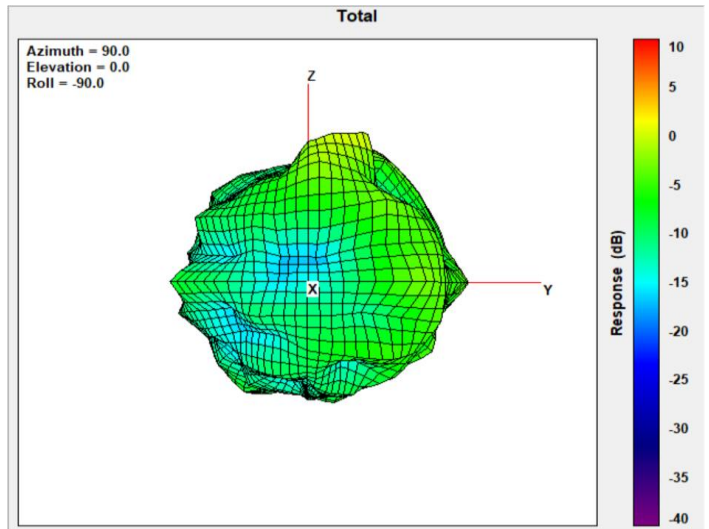
### Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	2.25



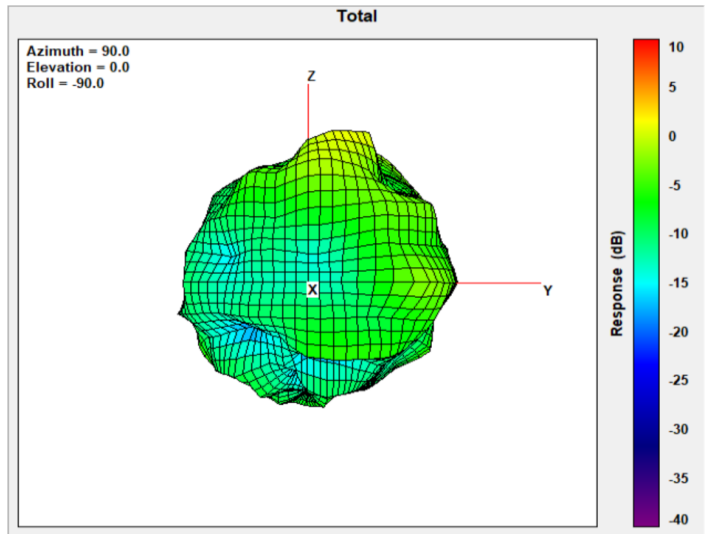
### Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	3.26



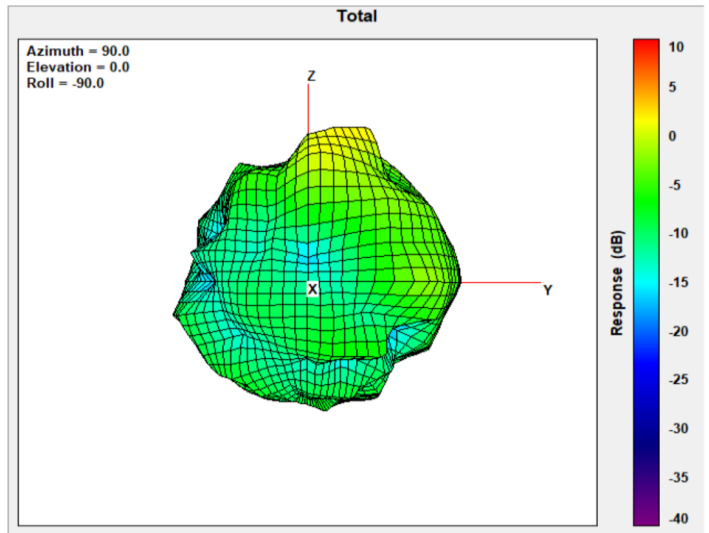
### Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	2.59



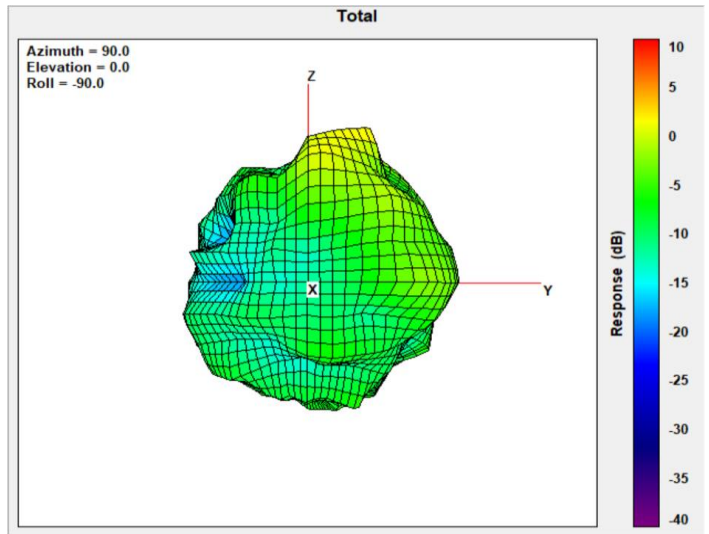
### Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	2.23



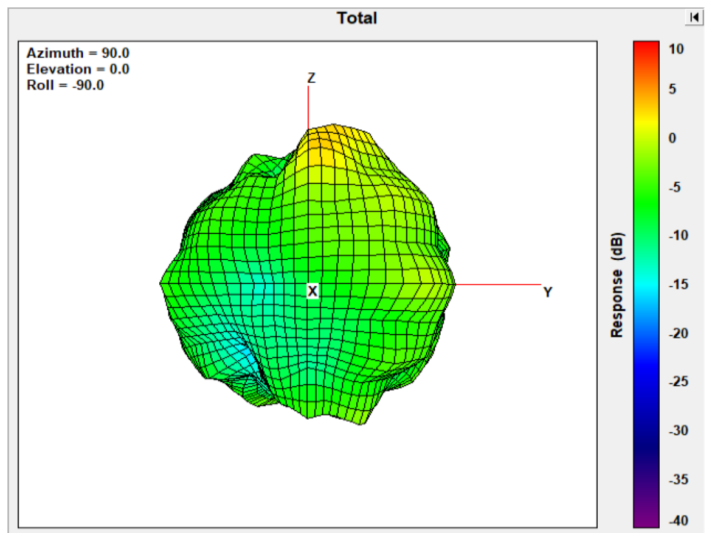
### Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	4.05



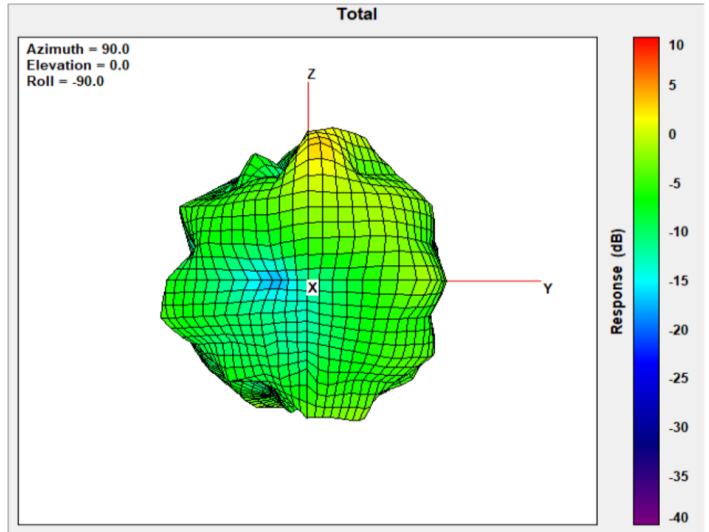
### Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	3.28



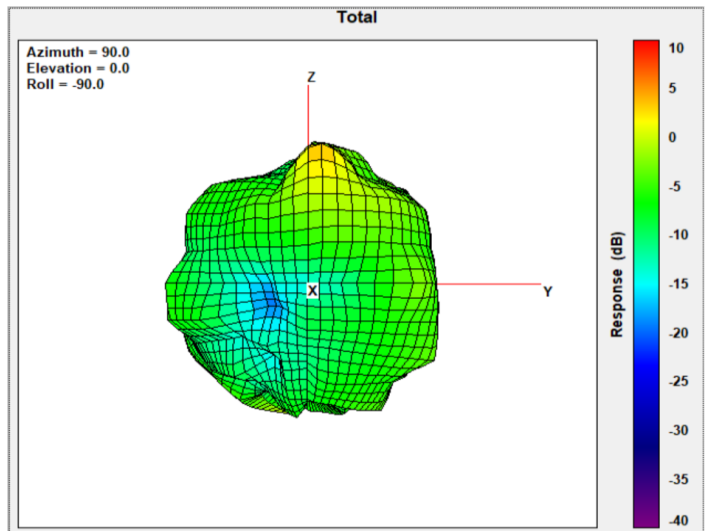
### Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	4.38



### Max Antenna 3D Radiation Pattern 6875-7125 MHz

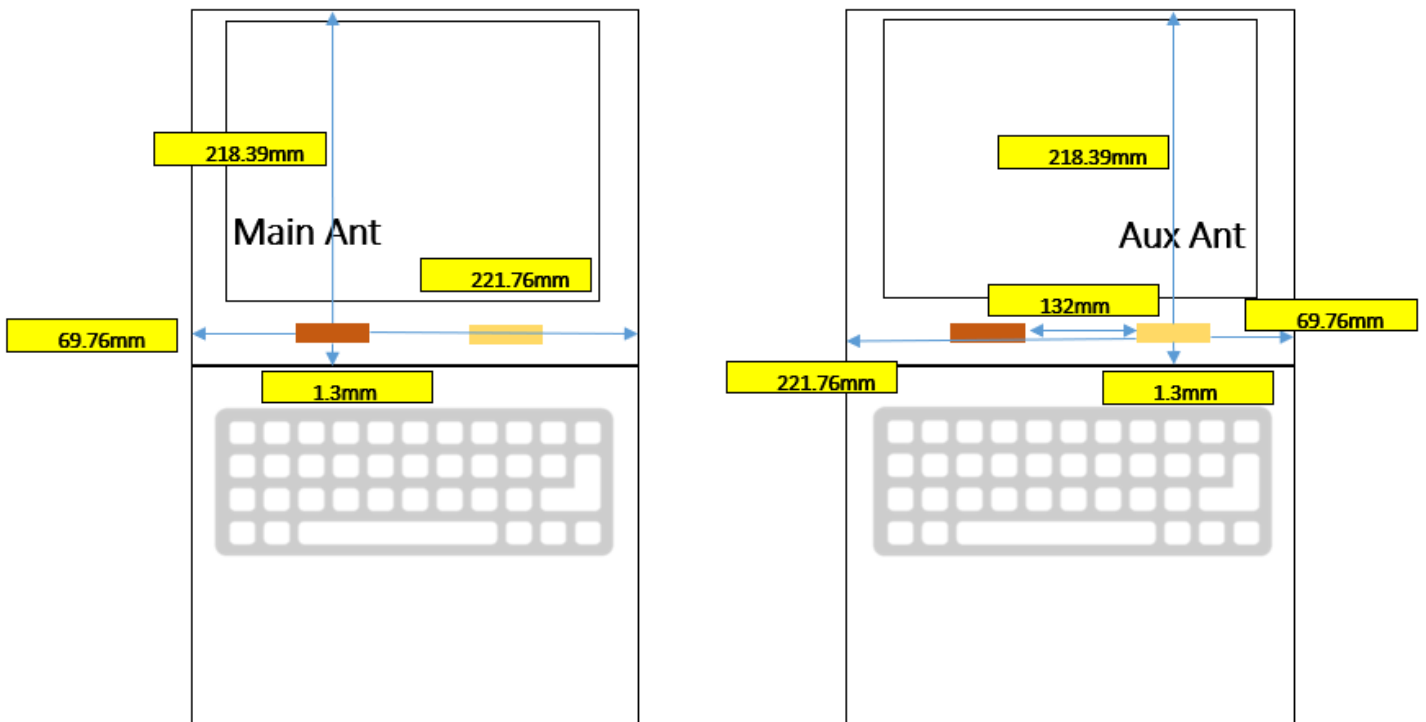
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	3.36



## Section 4. Antenna Host Platform Location Information

Include a **dimensioned photo(s) or dimensioned drawing(s)** of Main and Aux antenna placements (measurements are not required for receive-only antenna).

Any antenna that transmits must show dimensions to bottom of laptop. Provide a description of the materials that are used for supporting or surrounding transmit antennas; for example, non-conductive plastics vs. conductive coated plastic or metallic materials.



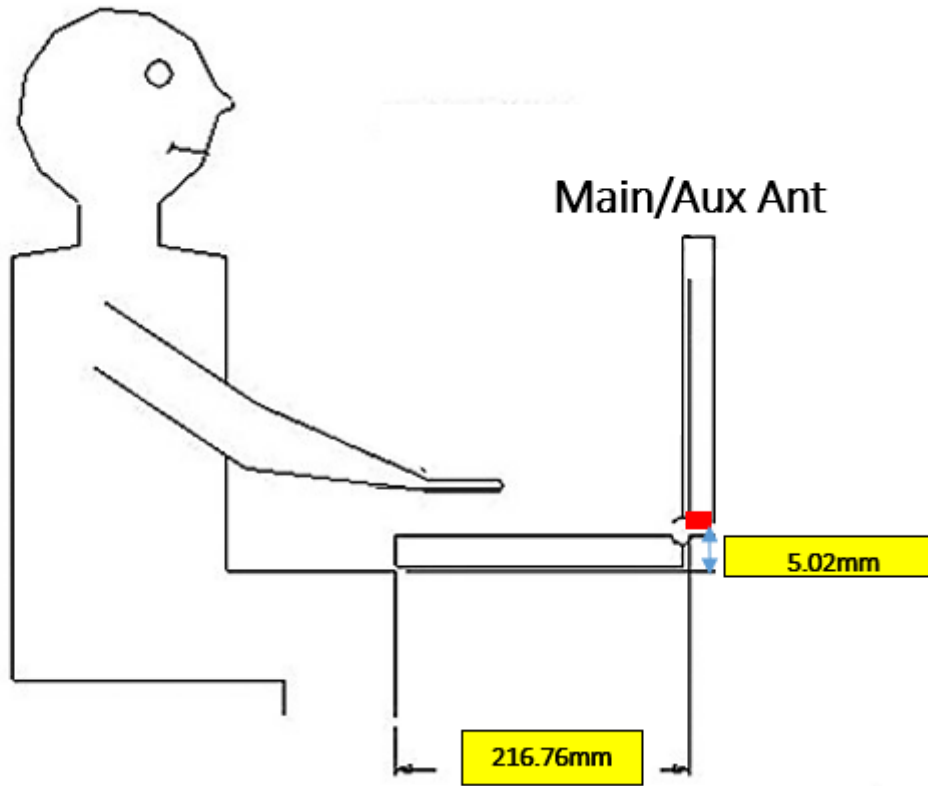
## Section 5. Antenna dimensional information for SAR evaluation

Include a **dimensioned photo(s) or dimensioned drawing(s)** showing the distance (mm) between the transmit antennas and the user. For notebook/laptop hosts show lapheld position (example below). For tablet hosts show all orientations including lapheld, primary & secondary portrait, primary & secondary



landscape positions. Include a description of any proximity sensors or power throttling implementations that limit or exclude use of any host orientation.

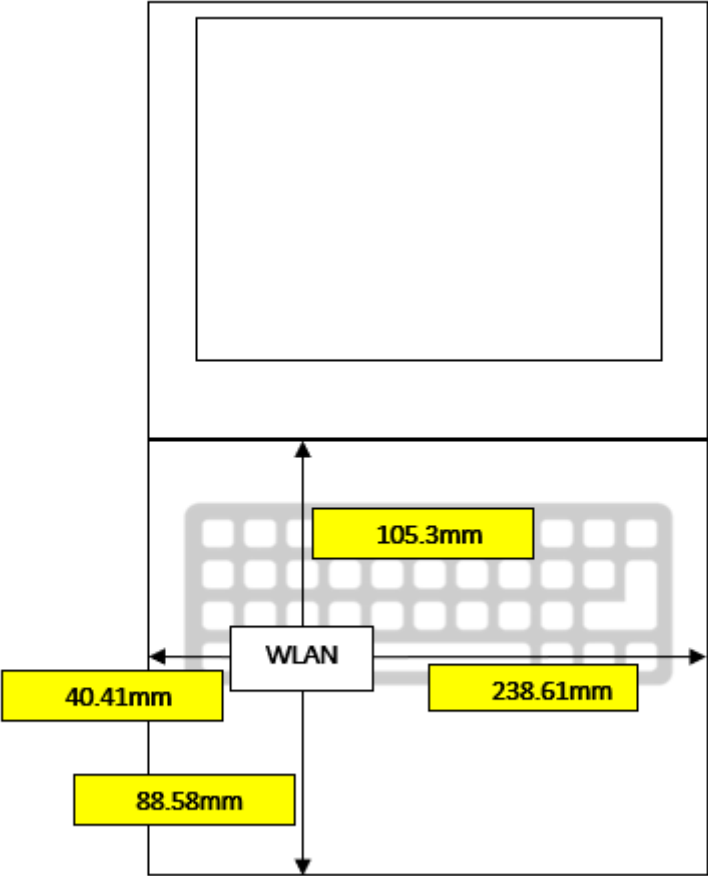
NB Mode



## Section 6. Diagram Example of Co-Location Antenna Separation

Include a **dimensioned photo or dimensioned drawing** showing the distance (mm) between all WLAN transmit antennas and other co-located radiator transmit antenna such as Bluetooth, WWAN,..

(Note: Due to the evolving rules regarding co-location, each platform will need to be reviewed on a case by case basis)



## Revision History

<b>Revision</b>	<b>Description</b>	<b>Date</b>
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