

ANTENNA INFORMATION

OEM	Quanta	
ODM	ASUS	
Platform model name	M5406NA / M5406UA / M5406WA / M5406KA M5406N / D5406N / Y5406CN M5406U / D5406U / Y5406CU M5406W / D5406W / Y5406CW M5406K / D5406K / Y5406CK	
Intel platform (ex: Yes, No or NA)	No	
Platform type (ex: regular NB, convertible PC, AIO...etc)	regular NB	
SAR minimum separation (mm)	FCC (1g)	3.3mm
	ISED (1g)	
	ISED (10g)	

Antenna manufacturer	Company name	Shenzhen Luxshare Acoustics Technology Ltd
	Address	Floor 2, Block A, Sanyo New Industrial Area, West Haoyi Community, Shajing street, Bao'an District, Shenzhen,China. 518104
Test location	Company name	Luxshare-ICT
	Address	7F, No. 568, Sec. 1, Minsheng N. Rd., Guishan Dist., Taoyuan City
Test Personnel	Name(Full name)	Joe Chou
	E-mail	Joe.Chou@luxshare-ict.com
	Tel/Mobile	+886 2 2657 0707#56665
Testing date	2024/09/10	

Antenna Part number	Main	LA9RF600-NB-H
	Aux	LA9RF601-NB-H
Antenna type (ex: PIFA, Dipole...etc)	PIFA	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	1.64	2.31	2.67	2.86	2.48	1.74	1.40	2.46	3.11	4.08
Aux	1.48	1.56	0.74	-0.23	0.93	1.07	1.81	1.43	2.11	2.57

Cable Assembly Part Number and Information					
	Cable PN	Cable length(mm)	Cable diameter(mm)	Impedance(ohm)	Connector type
Main	SY113L/50-001	240	1.13	50Ω	I-PEX (20565-001R-13)
Aux	SY113L/50-004	430	1.13	50Ω	I-PEX (20565-001R-13)

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

Table of Contents

Cover page.....	1
1. Intel Reference Gain and Type.....	3
2. Document Revision History.....	3
3. Test & System Description	
3.1 Measurement Method and System.....	4
3.2 Test setup.....	4
3.3 Equipment list.....	5
4. Radiation characteristics of antenna loaded in Host Platform.....	6
Annex A. Photographs	
A.1 Setup Photo.....	16
A.2 Test sample.....	17
Annex B. Antenna Location	
B.1 Antenna Host Platform Location Information.....	19
B.2 Antenna dimensional information for SAR evaluation.....	20

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.

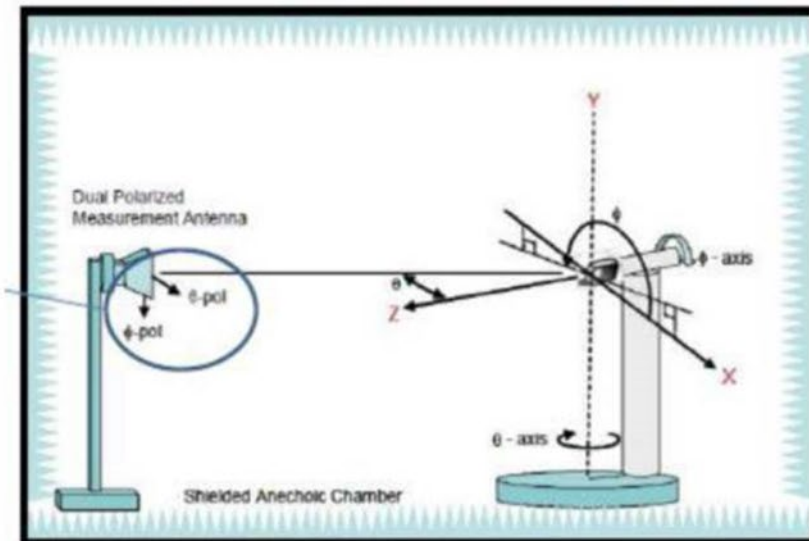
2. Document Revision History

Revision #	Revision Details	Issued Date
Rev. 00	First Issue	

3. Test & System Description

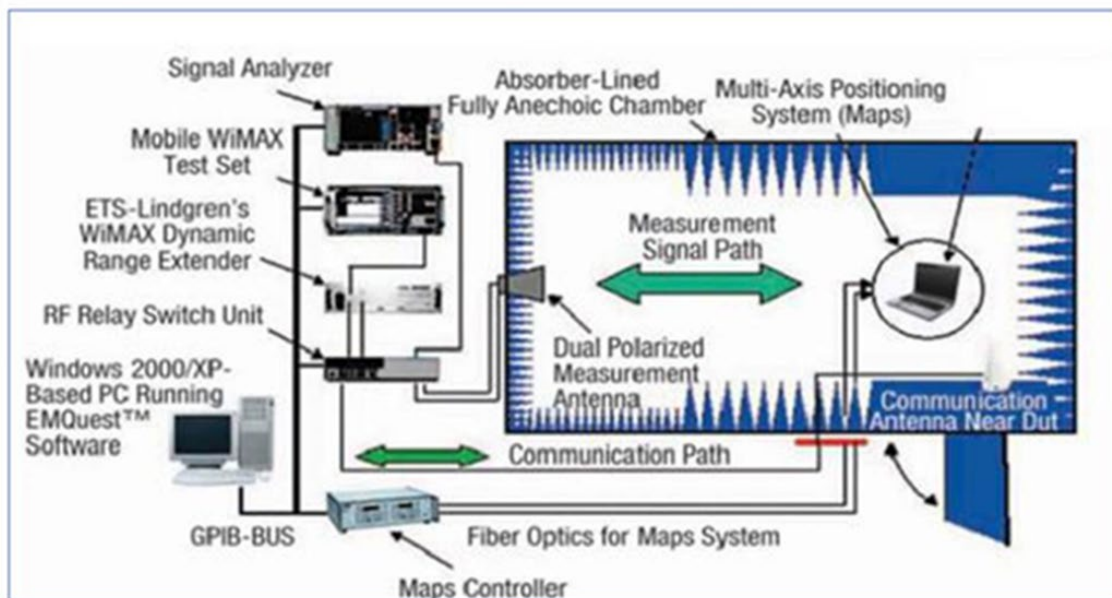
3.1 Measurement Method and System

<insert test description here for test method>



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

3.2 Test setup



3.3 Equipment list

Device	Type/Model	Serial#	Manufacturer	Cal. Date	Cal. Due Date
Anechoic Chamber	AMS-8500	1191	ETS-Lindgren	2024/3/9	2026/3/9
Turn Table	2090	-	ETS-Lindgren	N/A	N/A
Switch & Positioning systems	7001-002	116599	ETS-Lindgren	N/A	N/A
Measurement SW	EMQuest v1.0.8	1352	ETS-Lindgren	N/A	N/A
Boresight antenna mast	2090	-	ETS-Lindgren	N/A	N/A
Spectrum Analyzer	N9010A	X16-96096	Agilent Technologies	2024/7/25	2026/7/25
Horn antenna	3164-08	00143257	ETS-Lindgren	2024/4/3	2026/4/3
Horn antenna + Amplifier + HPF6.4	115195	00117614	ETS-Lindgren	2024/8/1	2026/8/1
Cable 2.5m - 30MHz to 18GHz	0500990992500KE	19.23.395	Radial	2024/1/10	2026/1/10
Cable 1.2m - 18 to 40GHz	UFA147A-0-0480-200200	MFR 64639223720-003	Micro-caox	2024/1/10	2026/1/10
Cable 1m - 1GHz to 18GHz	UFA147A	-	Uttiflex	2024/1/10	2026/1/10
Cable 2m - 26.5MHz to 40GHz	794-9191-200A	E00327	Atem	2024/1/10	2026/1/10
Cable 1m - 30MHz to 18GHz	UFB311A-0-0590-50U50U	MFR 64639223230-001	Micro-caox	2024/1/10	2026/1/10
Cable 7m - DC-18GHz	0501051057000GX	19.35.850	Radial	2024/1/10	2026/1/10
Cable 7m - 18GHz to 40GHz	R286304009	-	Radial	2024/1/10	2026/1/10
Cable 1.5m - DC-18GHz	CBL-1.5M-SMSM+	202879	Mini-Circuits	2024/1/10	2026/1/10
Temp & Humidity Logger	GM-108A	-		2024/5/2	2026/5/2

Antenna Information

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: LA9RF600-NB-H Main Antenna	Luxshare-ICT	PIFA	P/N:SY113L/50-001 50 ohm Coaxial length: 240mm diameter: 1.13mm	2400-2483.5	1.64	2.23	2	0.59
				5150-5250	2.31	3.19	2	0.88
				5250-5350	2.67	3.56	2	0.89
				5470-5725	2.86	3.76	2	0.90
				5725-5850	2.48	3.40	2	0.92
				5850-5895	1.74	2.66	2	0.92
				5925-6425	1.40	2.35	2	0.95
				6425-6525	2.46	3.41	2	0.95
				6525-6875	3.11	4.07	2	0.96
				6875-7125	4.08	5.04	2	0.96
P/N: LA9RF601-NB-H Aux Antenna	Luxshare-ICT	PIFA	P/N: SY113L/50-004 50 ohm Coaxial length: 430mm diameter: 1.13mm	2400-2483.5	1.48	2.52	2	1.04
				5150-5250	1.56	3.13	2	1.57
				5250-5350	0.74	2.32	2	1.58
				5470-5725	-0.23	1.38	2	1.61
				5725-5850	0.93	2.59	2	1.65
				5850-5895	1.07	2.72	2	1.66
				5925-6425	1.81	3.49	2	1.68
				6425-6525	1.43	3.13	2	1.70
				6525-6875	2.11	3.83	2	1.72
				6875-7125	2.57	4.30	2	1.73

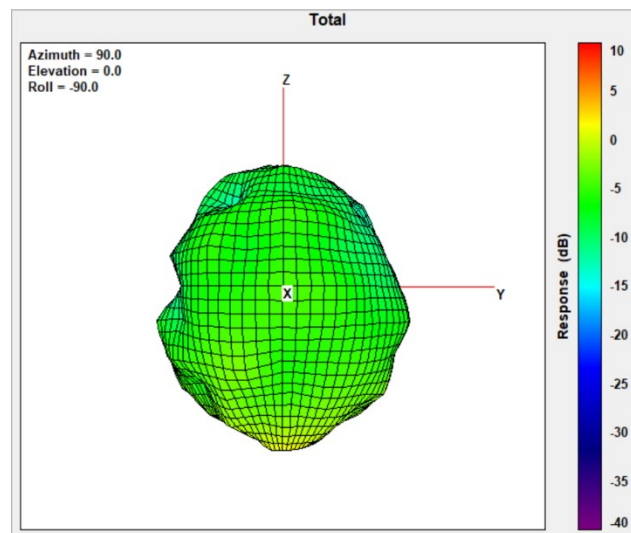
- 3D Antenna Peak Gain required being test in system basis.

4. Radiation characteristics of antenna loaded in Host Platform

Main Antenna

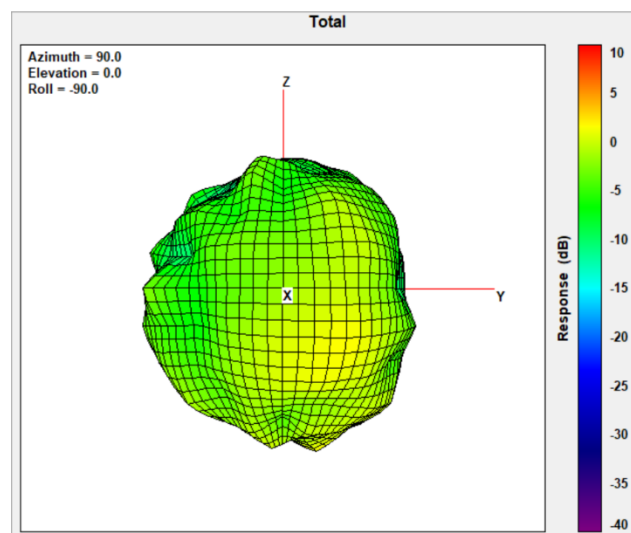
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	1.64



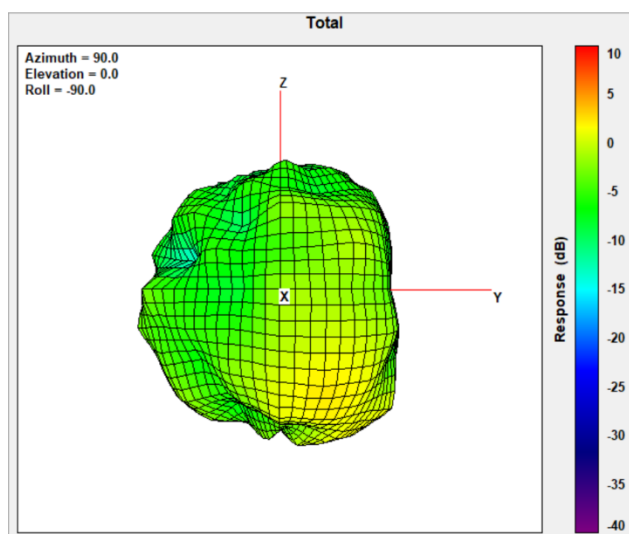
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	2.31



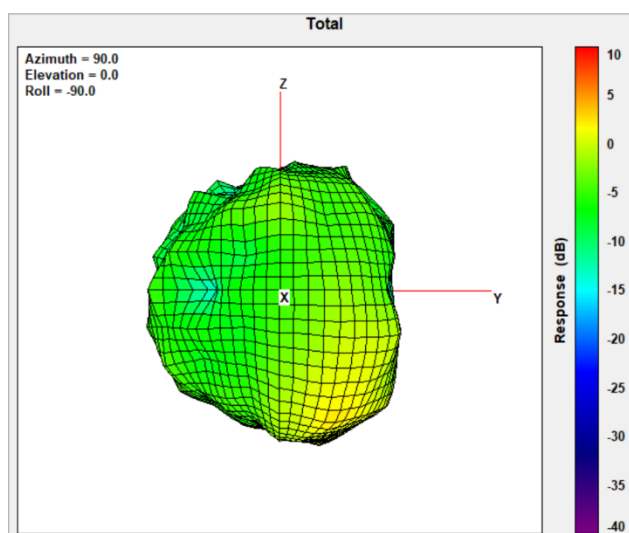
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	2.67



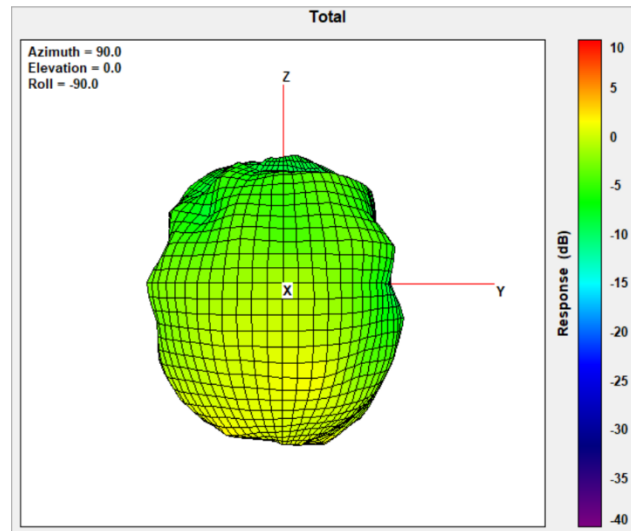
Max Antenna 3D Radiation Pattern 5470-5725 MHz

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



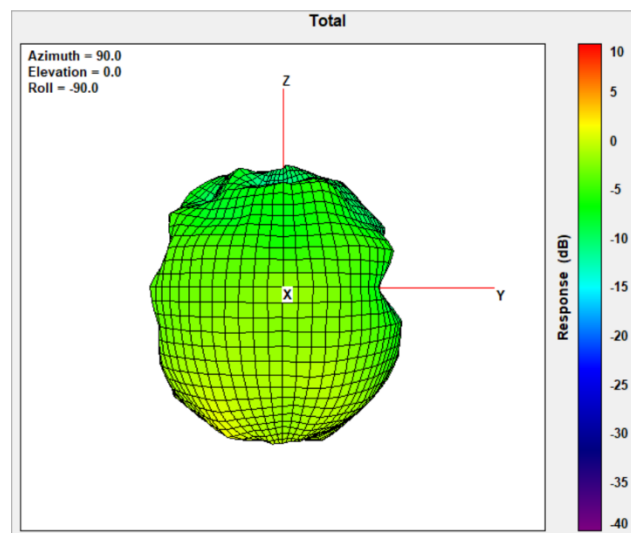
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	2.48



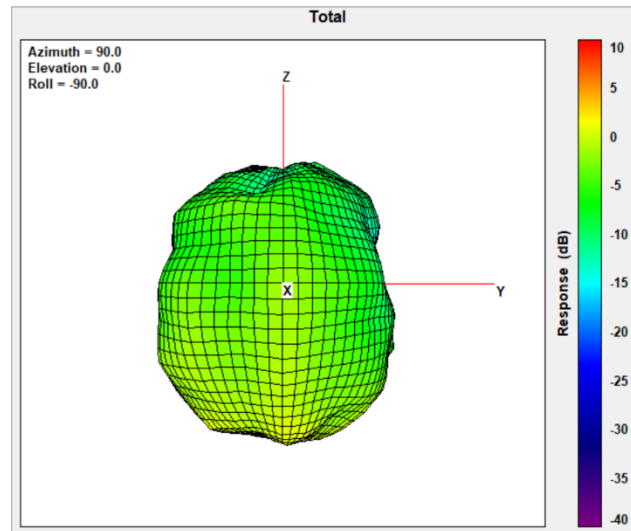
Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	1.74



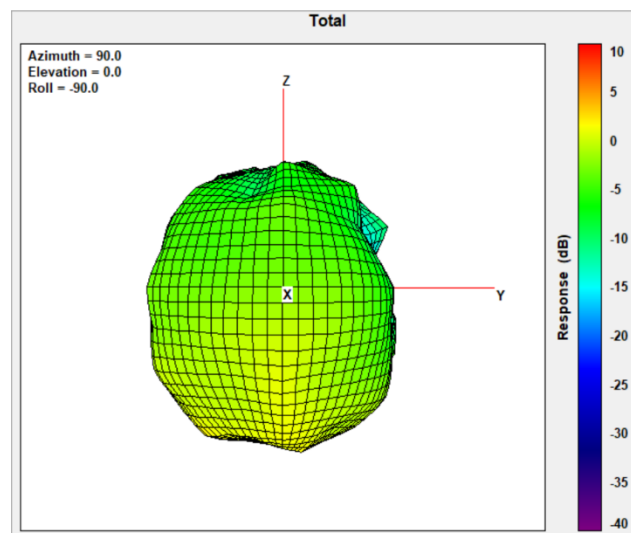
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	1.40



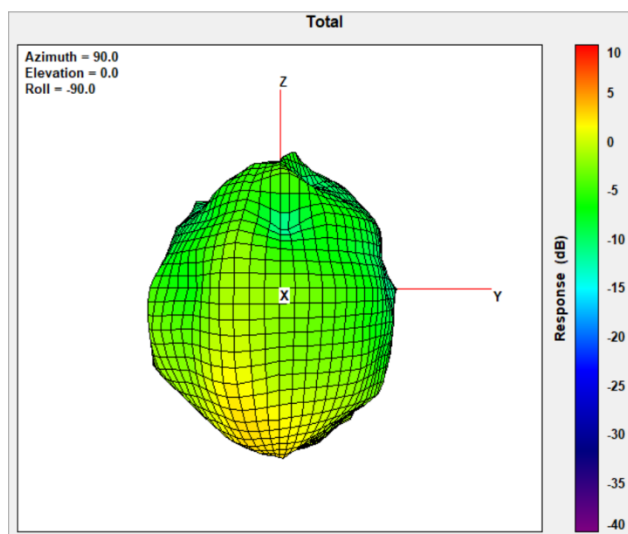
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	2.46



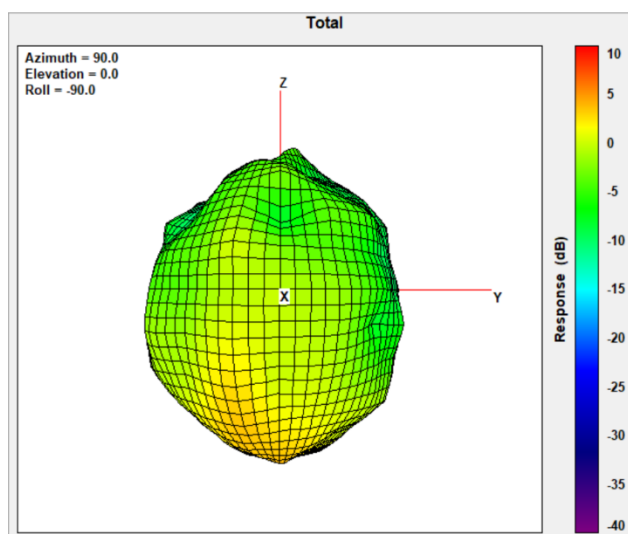
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	3.11



Max Antenna 3D Radiation Pattern 6875-7125 MHz

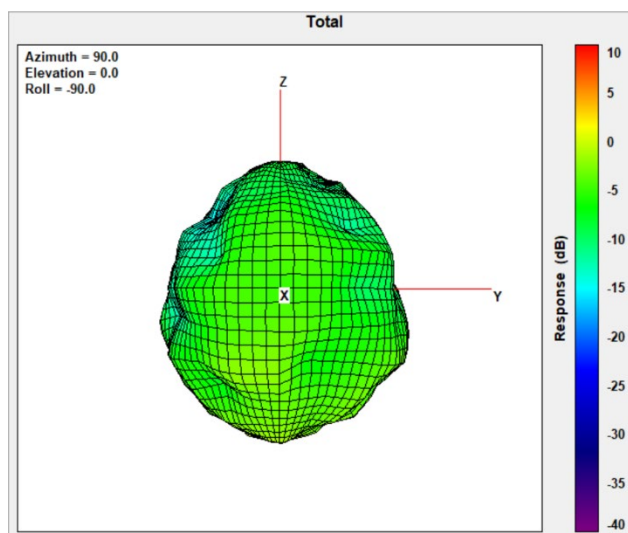
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	4.08



Auxiliary Antenna

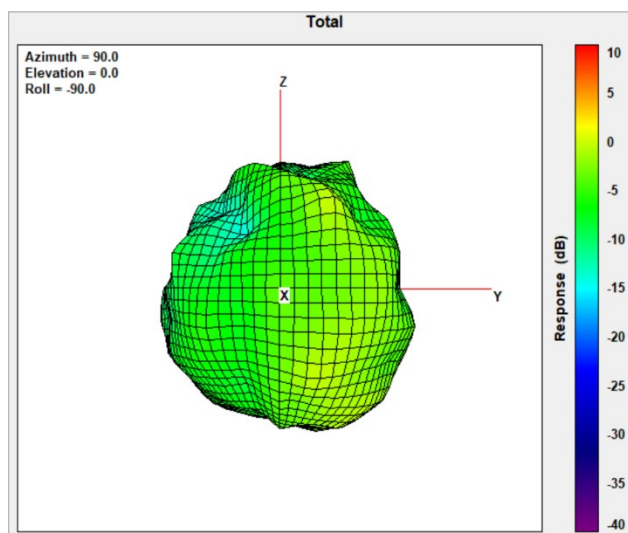
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	1.48



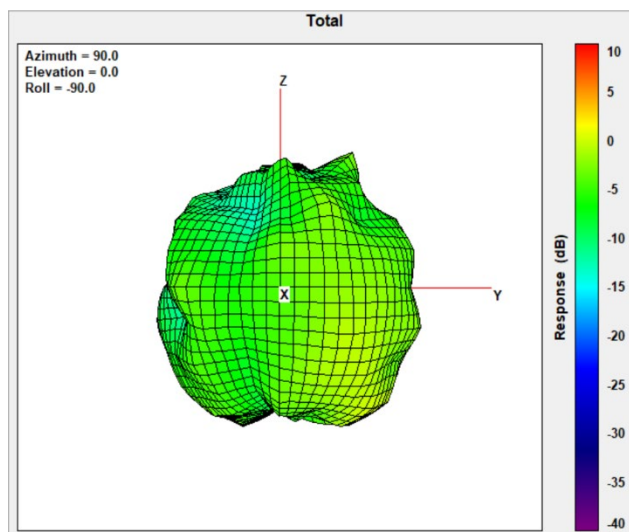
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	1.56



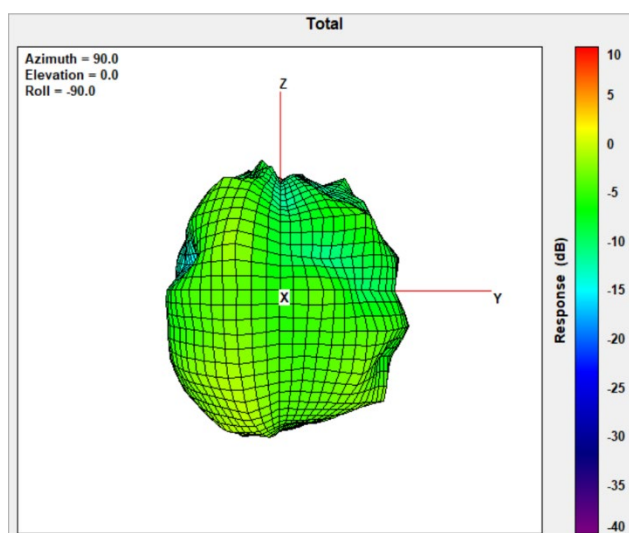
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	0.74



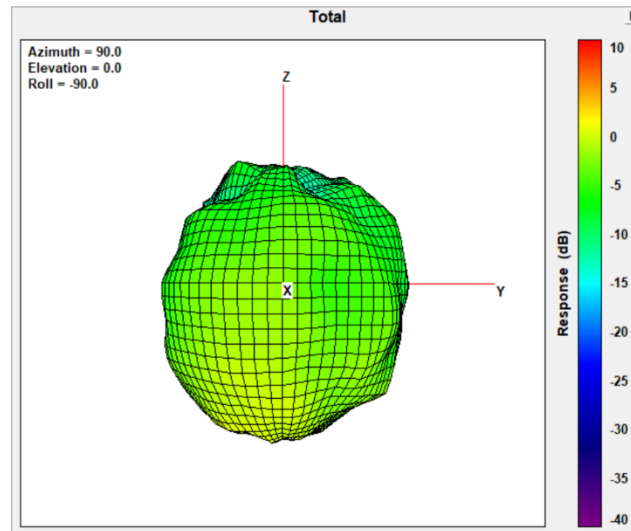
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	-0.23



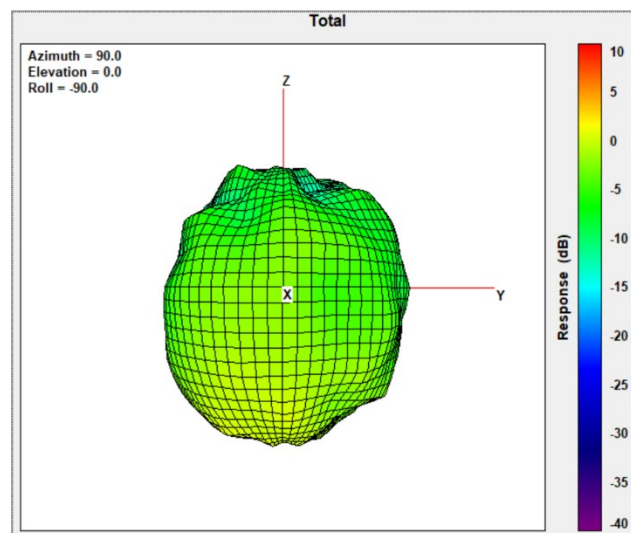
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	0.93



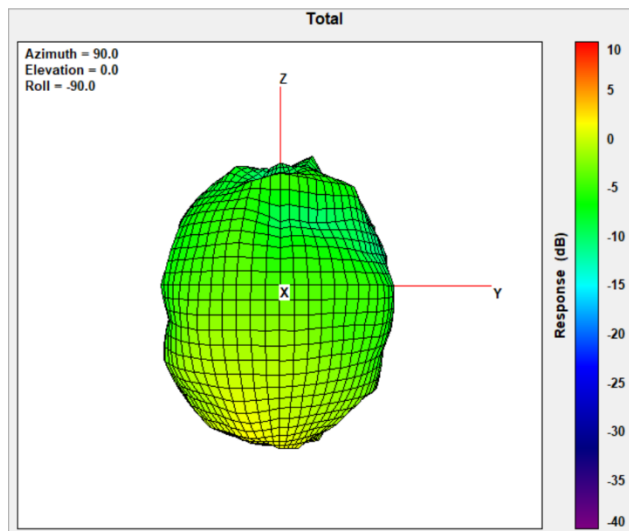
Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	1.07



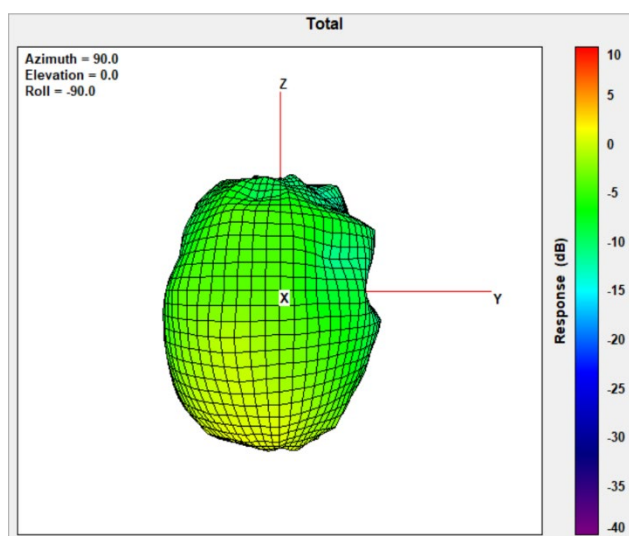
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	1.81



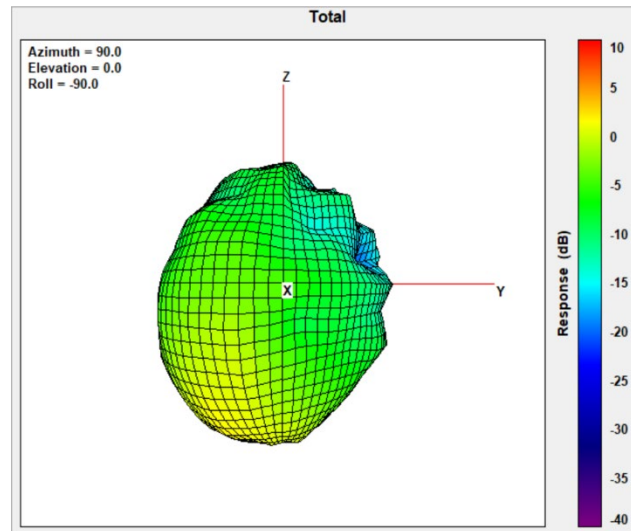
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	1.43



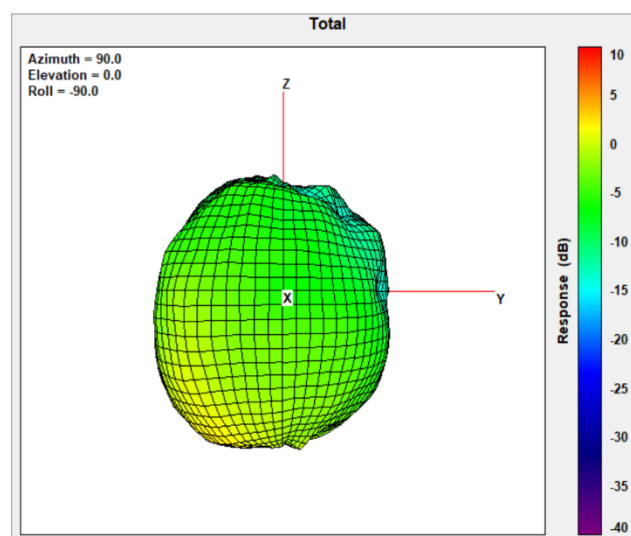
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	2.11



Max Antenna 3D Radiation Pattern 6875-7125 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	2.57

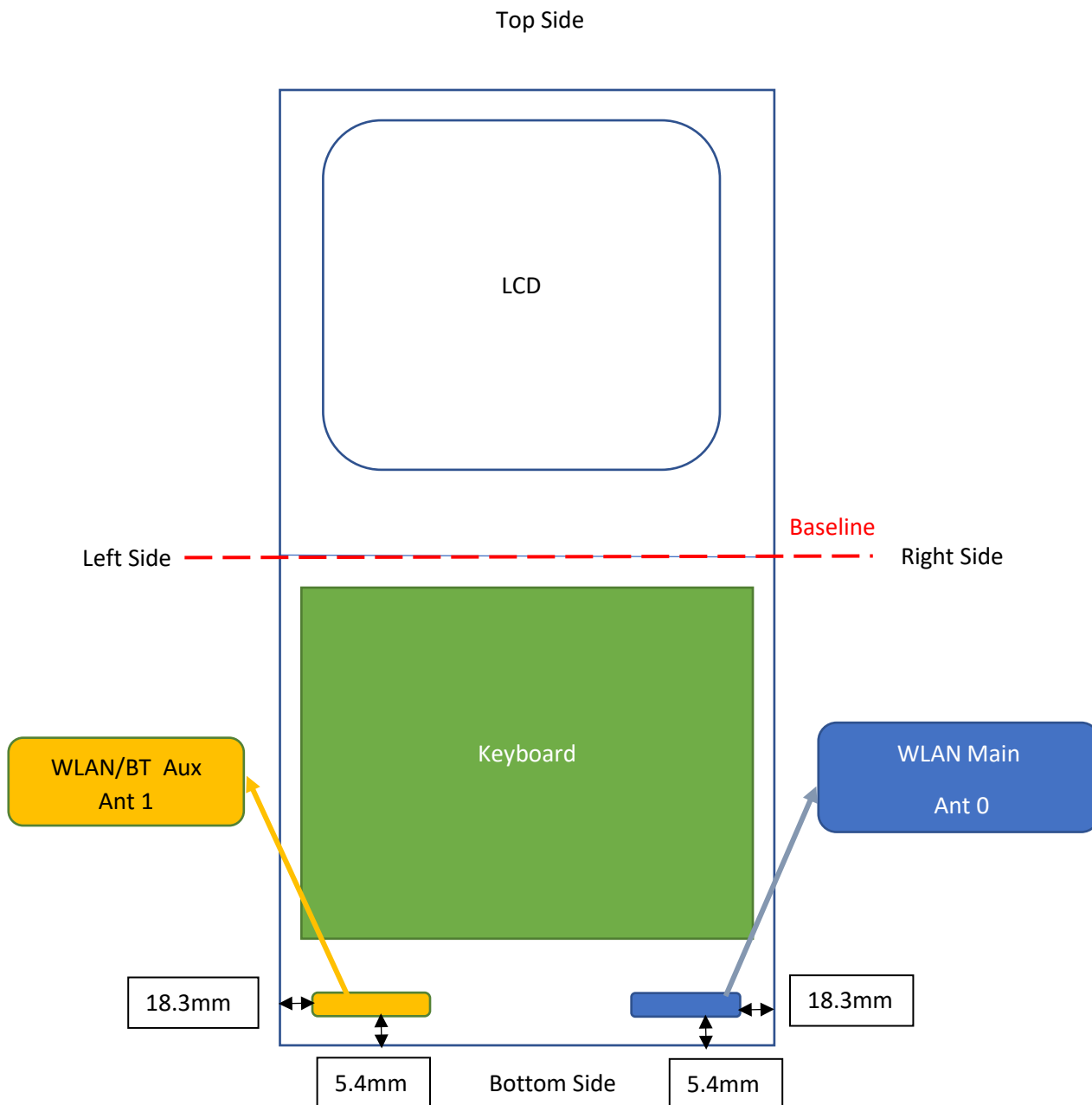


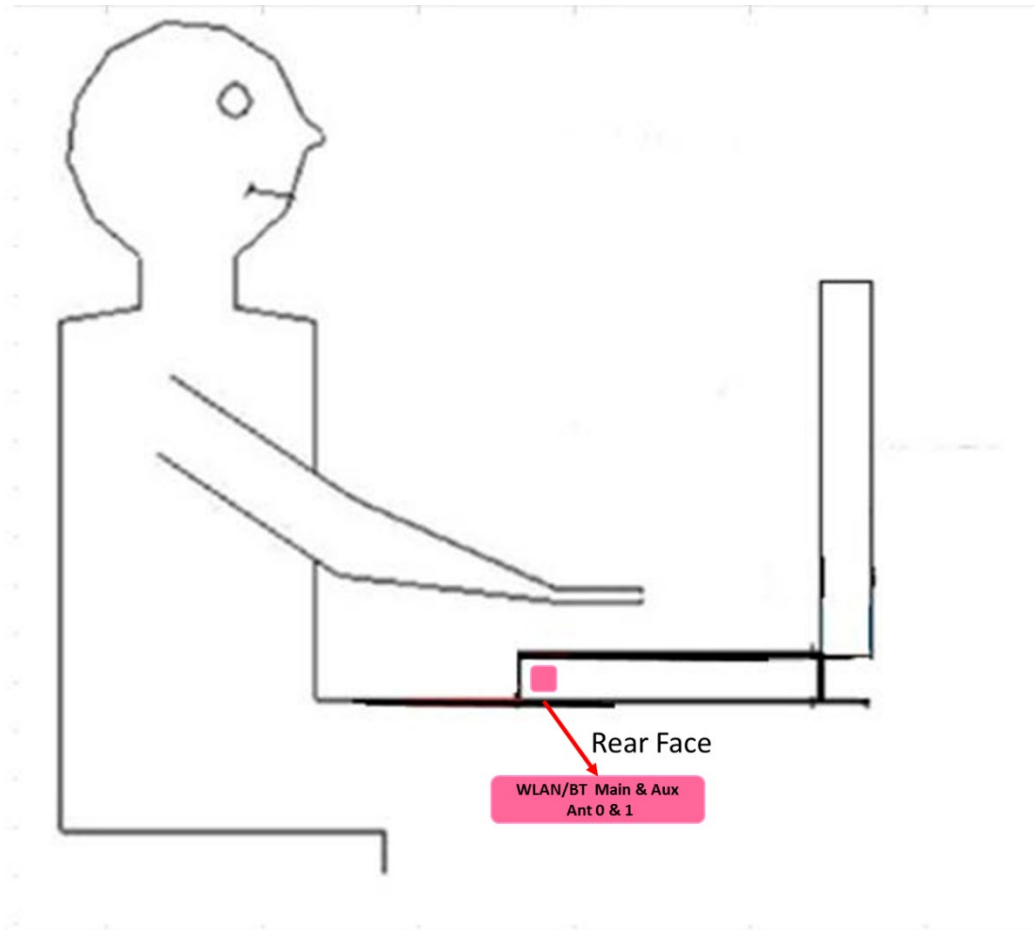
Annex B. Antenna Location

B.1 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.



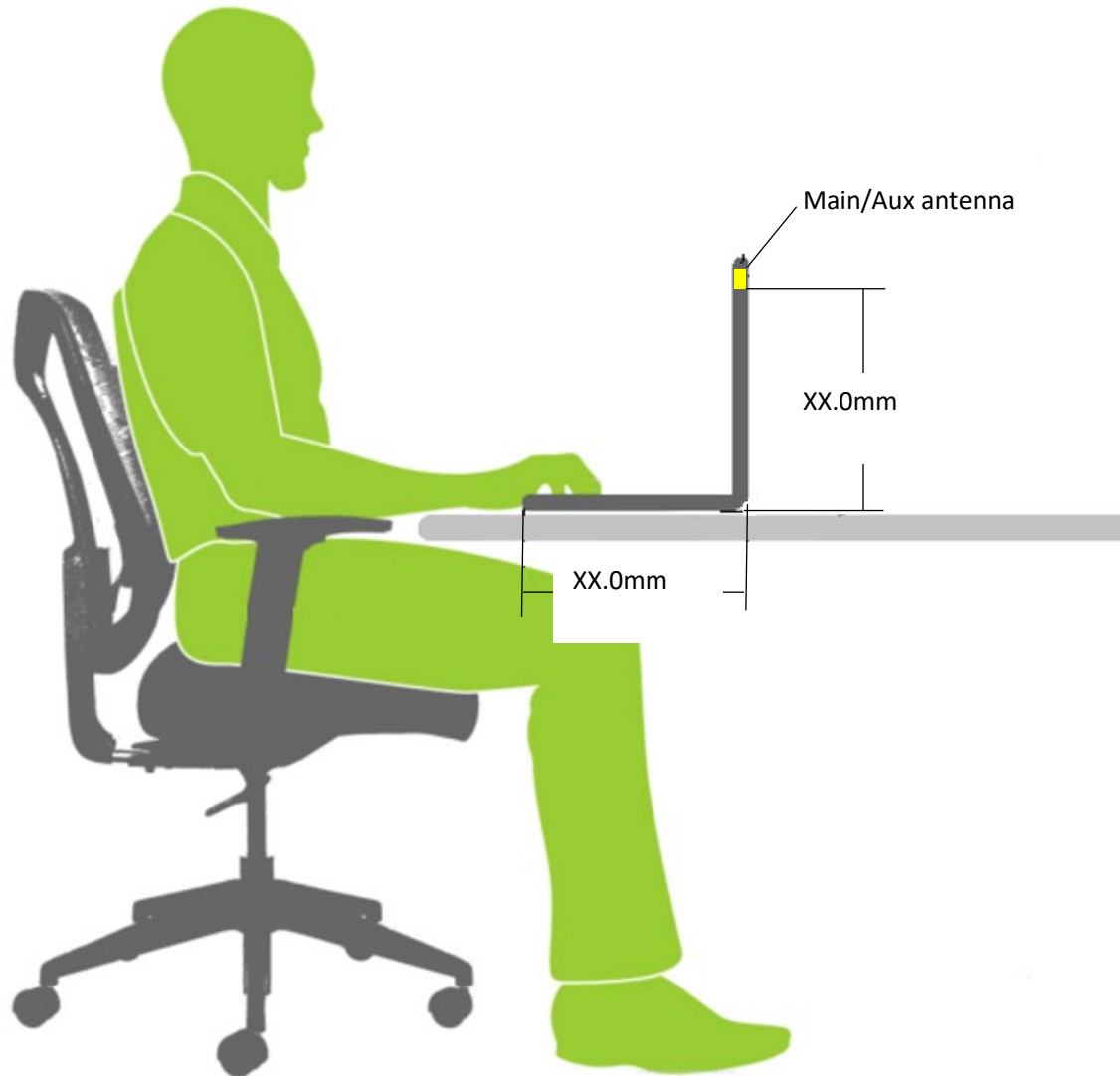


Antenna	Rear Face (mm)
WLAN Main Ant 0	2.7
WLAN/BT Aux Ant 1	2.7

B.2 Antenna dimensional information for SAR evaluation

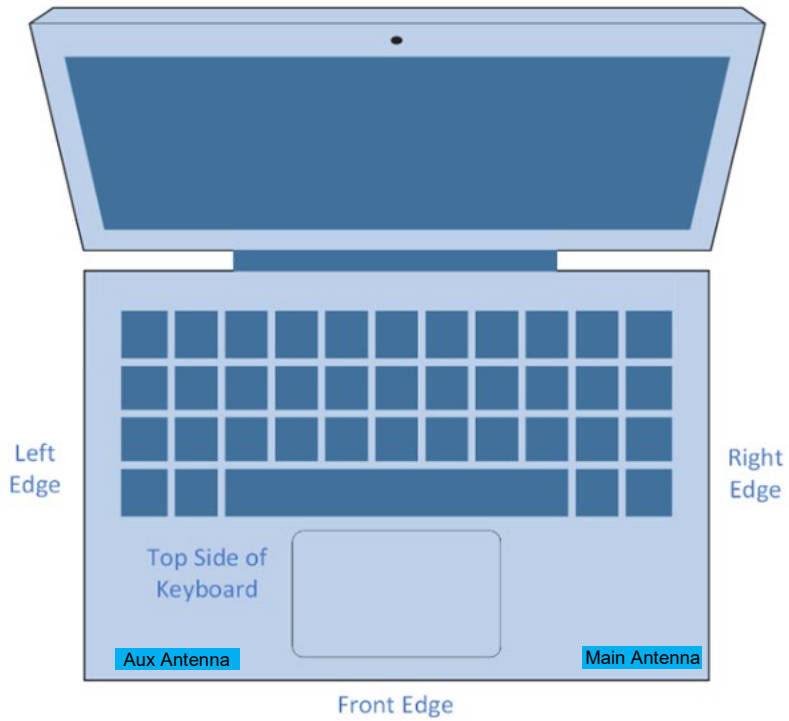
Include a dimensioned photo(s) or dimensioned drawing(s) showing the distance (mm) between the transmit antennas and the user. For notebook/laptop hosts show lapheld position (example below). For tablet hosts show all orientations including lapheld, primary & secondary portrait, primary & secondary landscape positions. Include a description of any proximity sensors or power throttling implementations that limit or exclude use of any host orientation.

Antennas on the panel section



Measuring Surface	Antenna	Separation Distance(antenna-to- Surface)(mm)	1g SAR
Bottom Side	Main		FCC/ISED
	Aux		FCC/ISED

Antennas on the keyboard section



Measuring Surface	Antenna	Separation Distance(antenna-to-Surface)(mm)	1g or 10g SAR
Bottom Side	Main	2.7mm	1g (FCC/ISED)
	Aux	2.7mm	1g (FCC/ISED)
Front Edge	Main	5.4mm	1g (ISED)
	Aux	5.4mm	1g (ISED)
Left Edge	Main	242.4mm	10g (ISED)
	Aux	18.3mm	10g (ISED)
Right Edge	Main	18.3mm	10g (ISED)
	Aux	242.4mm	10g (ISED)
Top side of Keyboard	Main	0.8mm	10g (ISED)
	Aux	0.8mm	10g (ISED)