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)
DELL	Compal	P33T	Yes	Convertible PC	197.18

*****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)
Hong-BO Wireless Communication Technology Co., LTD.	PIFA	260-24347 (DC33002HK0L)	260-24347 (DC33002HK0L)

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	6.2GHz 5925-6425MHz	6.5GHz 6425-6525MHz	6.7GHz 6525-6875MHz	7.0 GHz 6875-7125MHz
Main	1.53	2.19	2.73	3.07	2.52	N/A	N/A	N/A	N/A
Aux	2.90	2.50	2.84	3.38	3.38	N/A	N/A	N/A	N/A

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	6.2GHz 5925-6425MHz	6.5GHz 6425-6525MHz	6.7GHz 6525-6875MHz	7.0GHz 6875-7125MHz	Generic: refer to modular FCC SAR report Mid-power: ≥ 8 mm Low power: ≥ 5 mm
Design	**3.00**	**5.00**	**5.00**	**5.00**	**5.00**	**5.00**	**5.00**	**5.00**	**5.00**	
PIFA	**3.24**	**3.64**	**3.73**	**4.77**	**4.97**	**4.83**	**4.30**	**5.37**	**5.59**	
Dipole	**2.89**	**2.92**	**3.19**	**4.41**	**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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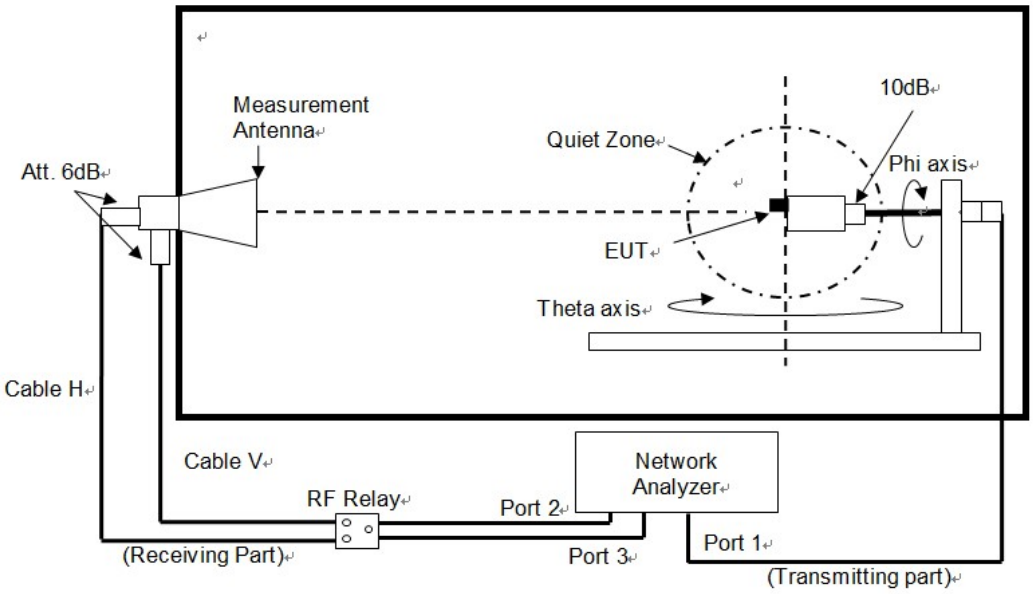
1. **Applicable test methods**

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

2. **Test & System Description**

   a. Test setup



   b. Equipment list

Name	Manufacturer	Type/Model	Serial Number
ENA Series Network Analyzer	Keysight	E5071C	MY46900218
RF Switch	N/A	N/A	N/A
Multi-Axis Positioner Controller	ETS-Lindgren	2090	N/A
Medium-Duty Positioner	ETS-Lindgren	2110	N/A
Measurement Horn Antenna	EMCO	Aug-64	N/A

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)
Main Antenna Compal P/N DC33002HK0L Hong-Bo P/N 260-24347	Hong-Bo Corporation	PIFA	Connector P/N: MHF-B13-N-01 50 ohm Coaxial length: 305 mm Diameter: 1.13mm	2400-2483.5	1.53	2.30	2.5	0.77
				5150-5250	2.19	3.35	2.5	1.16
				5250-5350	2.73	3.91	2.5	1.18
				5470-5725	3.07	4.28	2.5	1.21
				5725-5850	2.52	3.75	2.5	1.23
				5925-6425	N/A	N/A	N/A	N/A
				6425-6525	N/A	N/A	N/A	N/A
				6525-6875	N/A	N/A	N/A	N/A
				6875-7125	N/A	N/A	N/A	N/A
Aux Antenna Compal P/N DC33002HK0L Hong-Bo P/N 260-24347	Hong-Bo Corporation	PIFA	Connector P/N: MHF-B13-N-01 50 ohm Coaxial length: 539 mm Diameter: 1.13mm	2400-2483.5	2.90	4.25	2.5	1.35
				5150-5250	2.50	4.55	2.5	2.05
				5250-5350	2.84	4.92	2.5	2.08
				5470-5725	3.38	5.53	2.5	2.15
				5725-5850	3.38	5.56	2.5	2.18
				5925-6425	N/A	N/A	N/A	N/A
				6425-6525	N/A	N/A	N/A	N/A
				6525-6875	N/A	N/A	N/A	N/A
				6875-7125	N/A	N/A	N/A	N/A

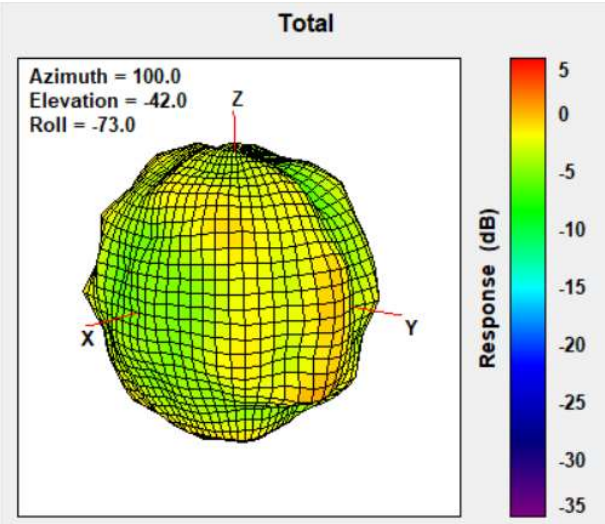
- **3D Antenna Peak Gain required being test in system basis.**

Section 3. Radiation characteristics of antenna loaded in Host Platform

Main Antenna

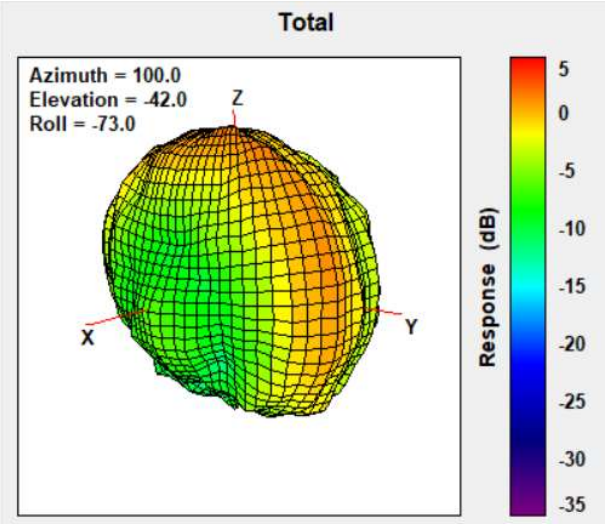
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	1.53



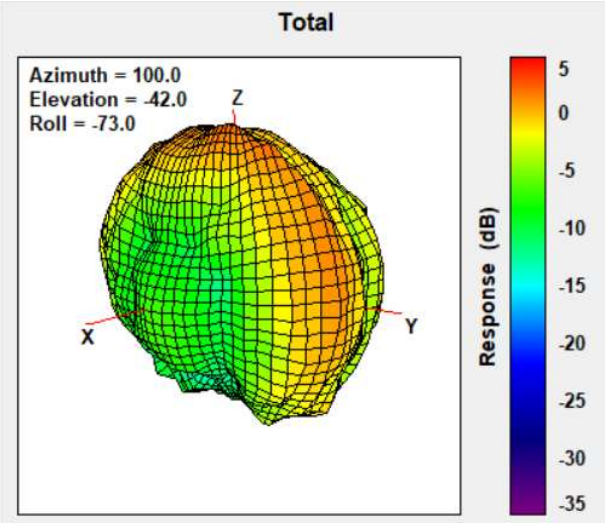
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	2.19



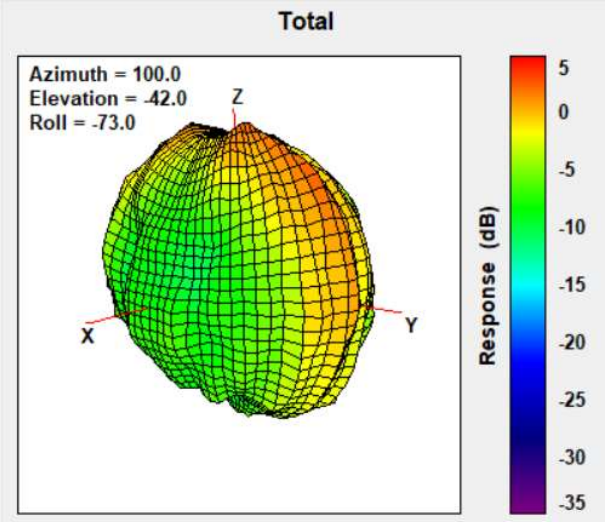
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	2.73



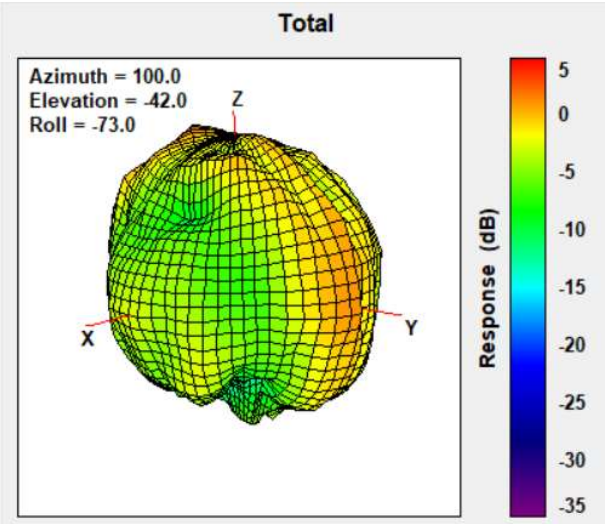
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	3.07



Max Antenna 3D Radiation Pattern 5725-5850 MHz

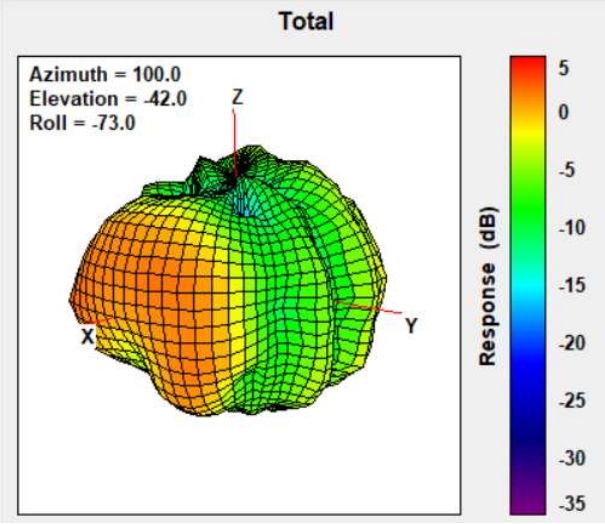
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	2.52



Auxiliary Antenna

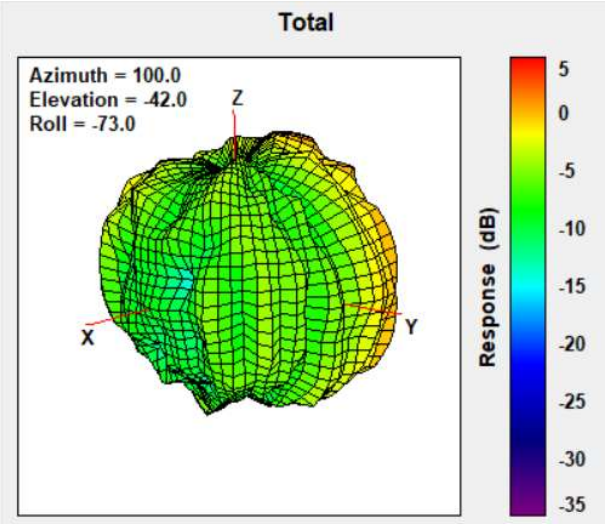
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	2.90



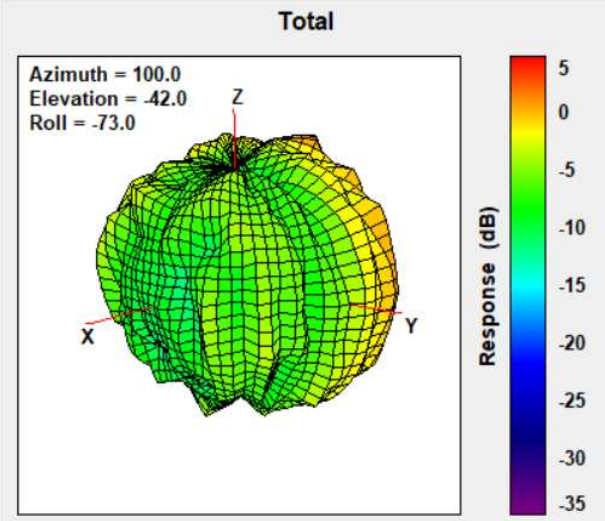
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	2.50



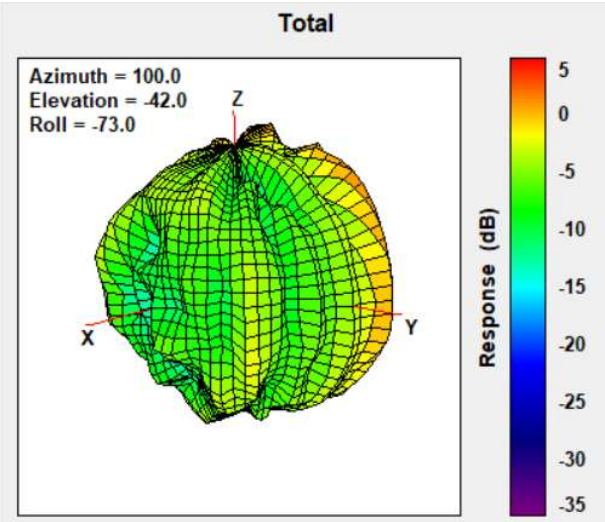
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	2.84



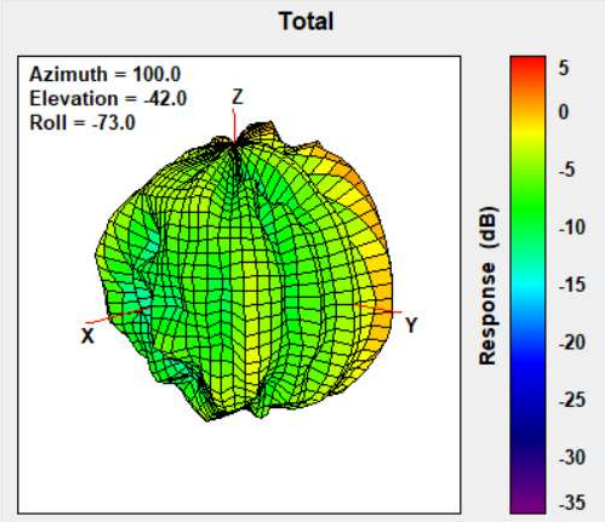
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	3.38



Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	3.38

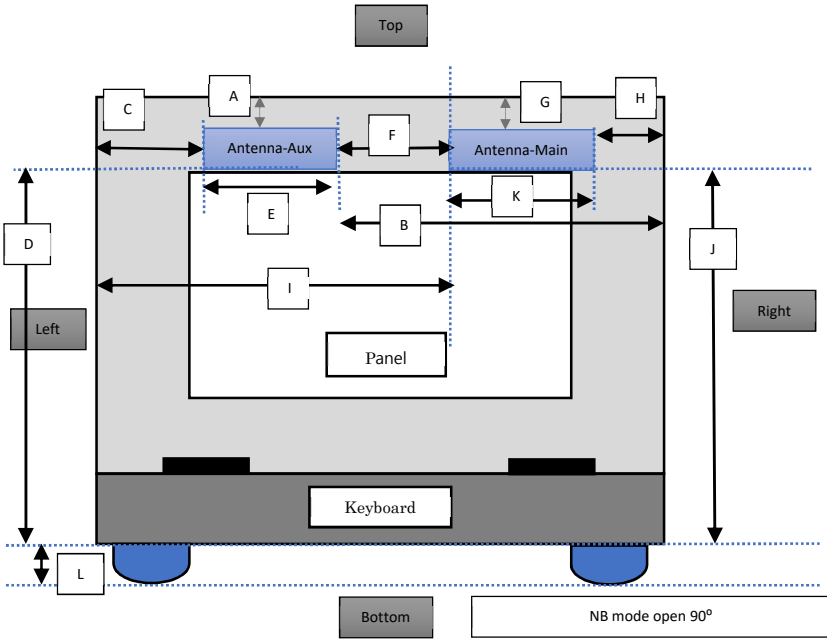


Section 4. Antenna Host Platform Location Information

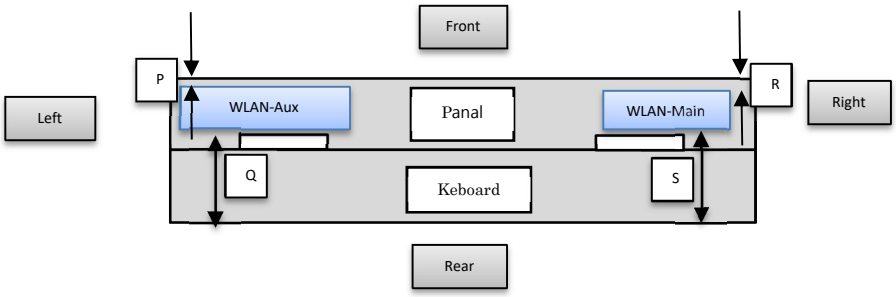
Include a **dimensioned photo(s) or dimensioned drawing(s)** of Main and Aux antenna placements (measurements are not required for receive-only antenna).

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.

Minimum Separation Distance			
Item	Antenna	Position	Distance (mm)
A	WLAN-Aux	to Top	3.47
B	WLAN-Aux	to Right	239.47
C	WLAN-Aux	to Left	29.47
D	WLAN-Aux	to Bottom	195.08
E	WLAN-Aux	Aux Antenna Length	30
F	Main-Aux	Main to Aux	180
G	WLAN-Main	to Top	3.47
H	WLAN-Main	to Right	29.47
I	WLAN-Main	to Left	239.47
J	WLAN-Main	to Bottom	195.08
K	WLAN-Main	Main Antenna Length	30
L	NB	Bumper thickness	2.1

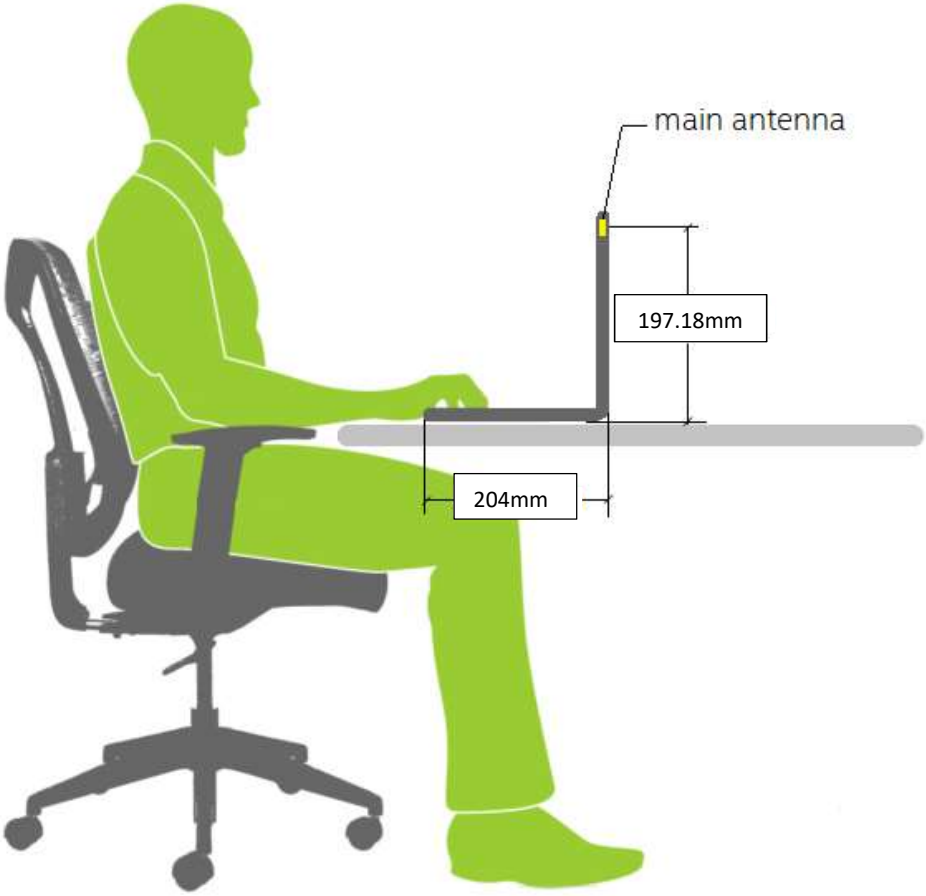


Minimum Separation Distance			
Item	Antenna	Position	Distance (mm)
P	WLAN-Aux	to Front	3.54
Q	WLAN-Aux	to Rear	18.15
R	WLAN-Main	to Front	3.54
S	WLAN-Main	to Rear	18.15



Section 5. Antenna dimensional information for SAR evaluation

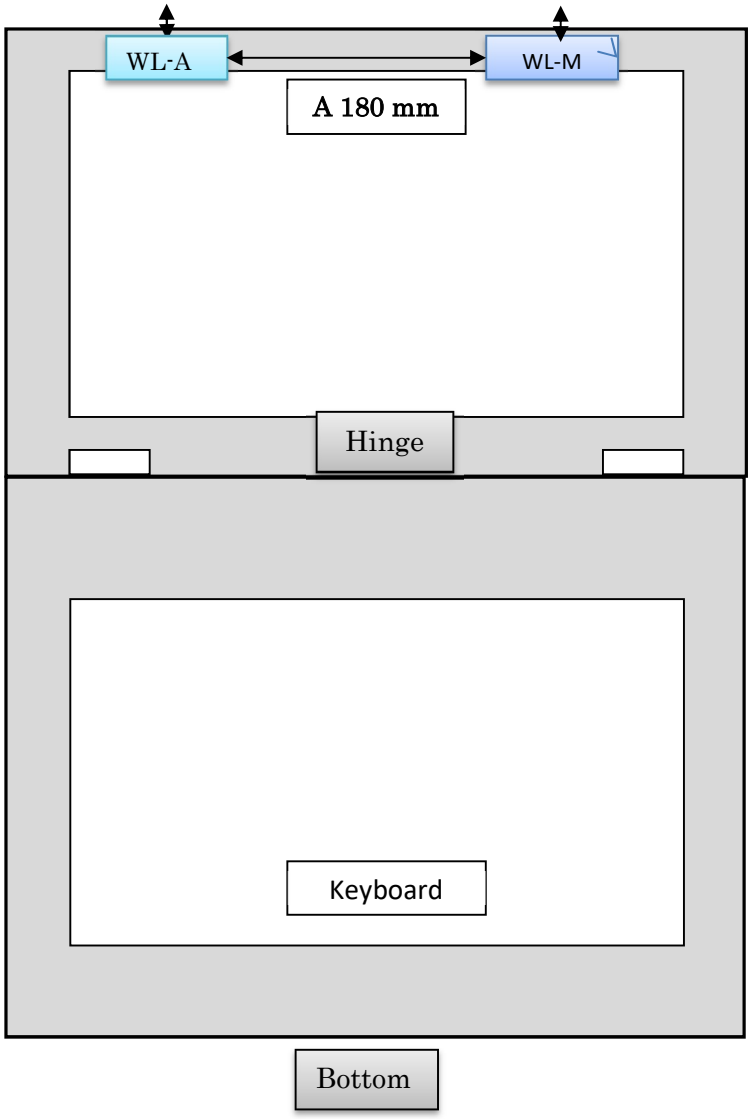
Include a **dimensioned photo(s) or dimensioned drawing(s)** showing the distance (mm) between the transmit antennas and the user. For notebook/laptop hosts show lapheld position (example below). For tablet hosts show all orientations including lapheld, primary & secondary portrait, primary & secondary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



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)



Minimum Separation Distance			
Item	Antenna	Position	Distance (mm)
A	WLAN-Main	To WLAN Aux	180