

Regulatory WLAN Antenna Information

Platform information							
Brand	ODM	Platform model name (RMN)	Platform type (ex: Notebook PC, convertible PC, AIO...etc)			*SAR minimum separation (mm)	
HP Inc.	Inventec	Magneta (HSN-I52C)	Notebook PC			12.8 mm	
Antenna information							
Vendor		Type	Antenna Part number (Main/TX2)			Antenna Part number (Aux/ TX1)	
HONG-BO		PIFA	6036B0321001 (00-2602752450)			6036B0321101 (00-2602752350)	
Peak gain w/ cable loss (dBi)							
2.4GHz 2400-2500MHz	5.2&5.3GHz 5150-5350MHz	5.5GHz 5470-5725MHz	5.8GHz 5725-5850MHz	6.2GHz 5925-6425MHz	6.5GHz 6425-6525MHz	6.7GHz 6525-6875MHz	6.9GHz 6875-7125MHz
2.41	2.14	2.43	0.47	2.9	2.35	1.44	0.51
Module information							
Model	Form factor and suffixes (NGW/ HMW AND AN/ NB/ BN....)						
AX211.D2WG	Intel Garfield Peak 2 AX211 Wi-Fi 6e +BT 5.2 M.2 1216 160MHz CNVi WW WLAN						
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.							

Antenna Sample / Antenna Data

Requirements for worldwide regulatory approval

Section	Description of Required OEM / ODM Antenna Information	US / IC	EU	Japan	Taiwan	S.Korea
1A	Part Number for Antenna only	Required	Required	Required	Required	Required
1B	Antenna Manufacturer Name	Required	Required	Required	Required	Required
1C	Description of Antenna Type	Required	N/A	N/A	N/A	N/A
1D	Part number of Antenna Assembly / cable impedance, length & diameter.	Required	Desired	Desired	Desired	Desired
1E	Tx1, Tx2 & Tx3 antenna (Peak Gain W/ cable loss) *	Required	Required	Required	Required	Required
	1E OR 1F, 1G, 1H					
1F	Tx1, Tx2 & Tx3 antenna (Peak Gain only) *	Required	Required	Required	Required	Required
1G	VSWR of cable including connector	Required	Required	Required	Required	Required
1H	Tx1, Tx2 & Tx3 antenna (Cable loss W/ connector) *	Required	Required	Required	Required	Required
2	Dimensioned Photographs <u>and</u> Drawings of Tx1, Tx2, and Tx3 (or Rx3) antennas	Required	Required	Required	Required	Required
3	Radiation patterns of antennas loaded in the host platform.	Required	Desired	Required	N/A	Required
4	Platform model name / number - correlated to antenna manufacturer and antenna part number	Required	Required	Desired	Required	Desired
5	Photograph(s) or Drawings showing location of antennas in platform. <u>(S. Korea requires photographs of antennas for approval submission). Taiwan requires pictures of each antenna type shown in the system.</u>	Required	Required	Desired	<u>Required (Photos)</u>	<u>Required (Photos)</u>
6	Mech. drawings / photos with dimensions of antenna locations and distance from end-user (For evaluation of SAR testing requirement).	Required	N/A	N/A	N/A	N/A
7	Photograph(s) or Drawings showing the location of all antennas (WLAN, other) and distance between those transmitting antennas. Information will be used to evaluate whether co-location testing is required.	Required	N/A	N/A	N/A	N/A
8	Local representative contact information for LMA/ PARS process.	Required	N/A	N/A	N/A	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)
P/N: 6036B0321001 (00-2602752450) Main Antenna (TX2)	HONG-BO	PIFA	50 ohm Coaxial length: 152mm diameter: 1.13mm Connector Type: I-PEX (P/N:20565-001R-13L)	2400-2500	2.41	2.8	3	0.39
				5150-5250	2.14	2.72	3	0.58
				5250-5350	2.14	2.72	3	0.58
				5470-5725	2.43	3.03	3	0.60
				5725-5850	0.47	1.08	3	0.61
				5925-6425	2.90	3.54	3	0.64
				6425-6525	2.35	2.99	3	0.64
				6525-6875	1.44	2.1	3	0.66
				6875-7125	0.51	1.18	3	0.67
P/N: 6036B0321101 (00-2602752350) Aux Antenna (TX1)	HONG-BO	PIFA	50 ohm Coaxial length: 440mm diameter: 1.13mm Connector Type: I-PEX (P/N:20565-001R-13L)	2400-2500	1.04	2.16	3	1.12
				5150-5250	0.50	2.17	3	1.67
				5250-5350	0.50	2.18	3	1.68
				5470-5725	0.42	2.17	3	1.75
				5725-5850	0.21	1.98	3	1.77
				5925-6425	-0.15	1.7	3	1.85
				6425-6525	-1.33	0.53	3	1.86
				6525-6875	-0.68	1.24	3	1.92
				6875-7125	-0.68	1.27	3	1.95

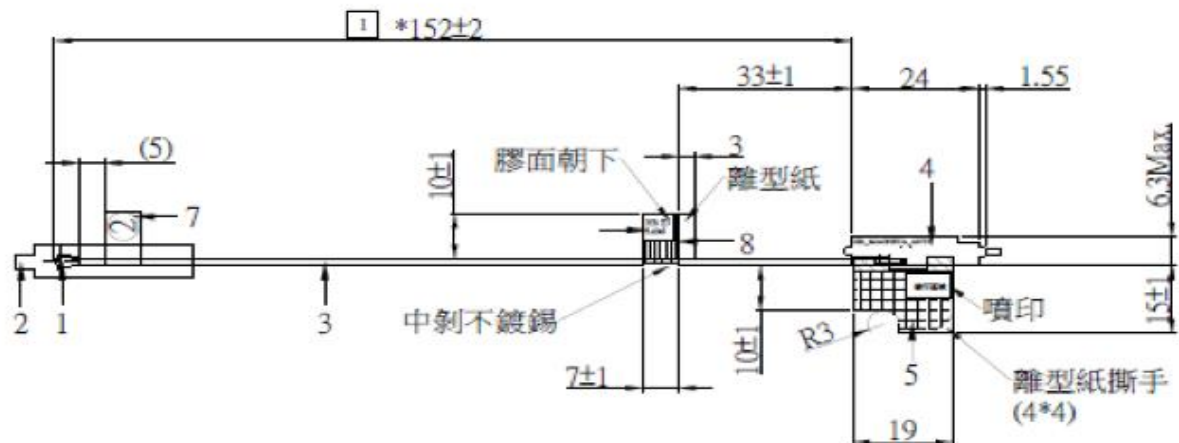
- Antenna Peak Gain required being test in system basis.
- 1E frame contend absolutely peak antenna gain include H/V

Tx1 Antenna Dimensioned Drawing:

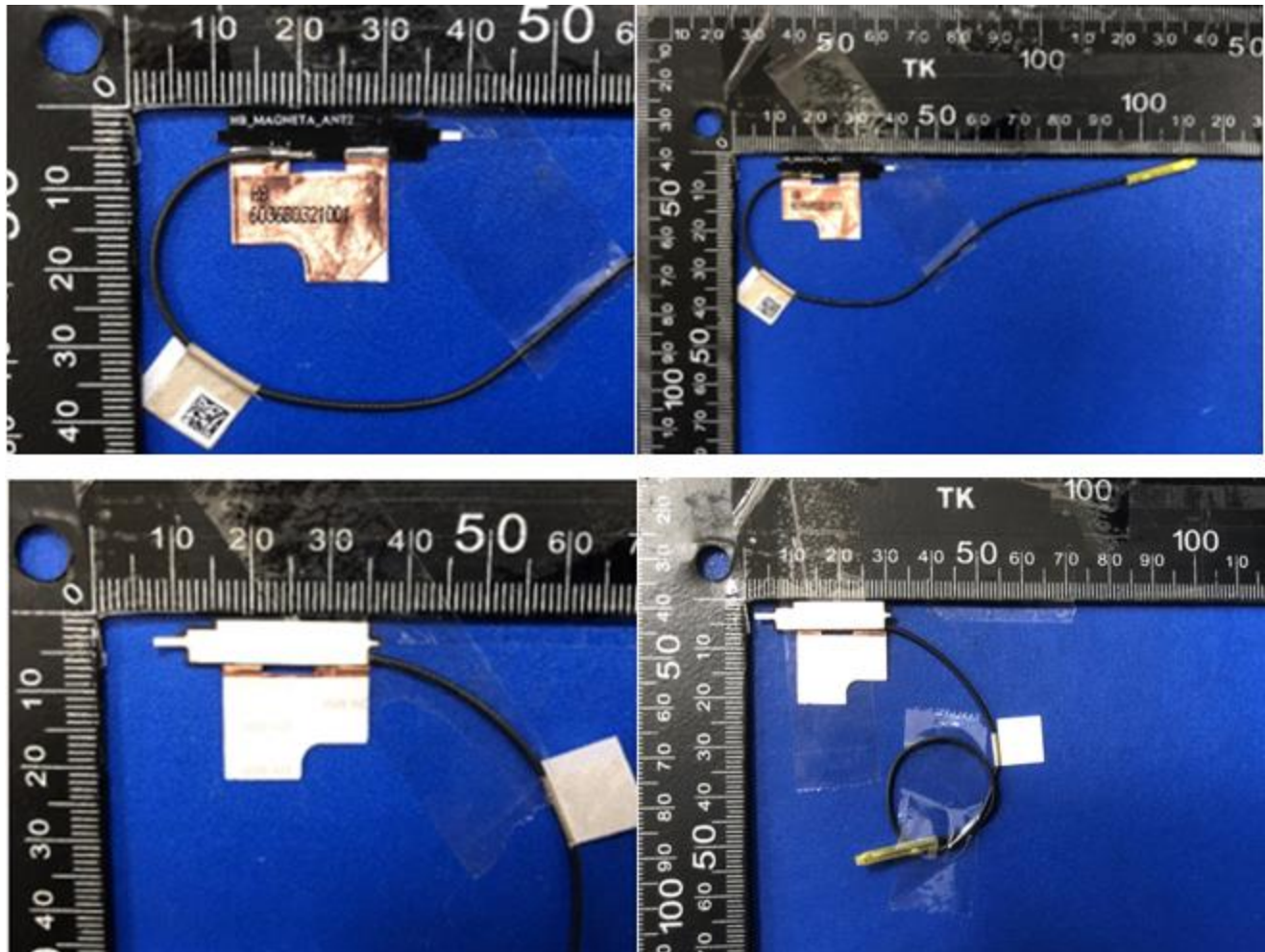


Include a dimensioned photo and dimensioned drawing of Tx2 (or Rx2) antenna here.

Tx2 (or Rx2) Antenna Dimensioned Drawing:



Tx2 (or Rx2) Antenna Photo:



Note: antenna photo should include L type ruler

Include front view photo of all 2 antennas here.

Antenna Manufacturer: HONG-BO

Antenna Part Number: 6036B0321001 (00-2602752450) (Tx2 **or** Rx2)(Main)
6036B0321101 (00-2602752350) (Tx1)(Aux)



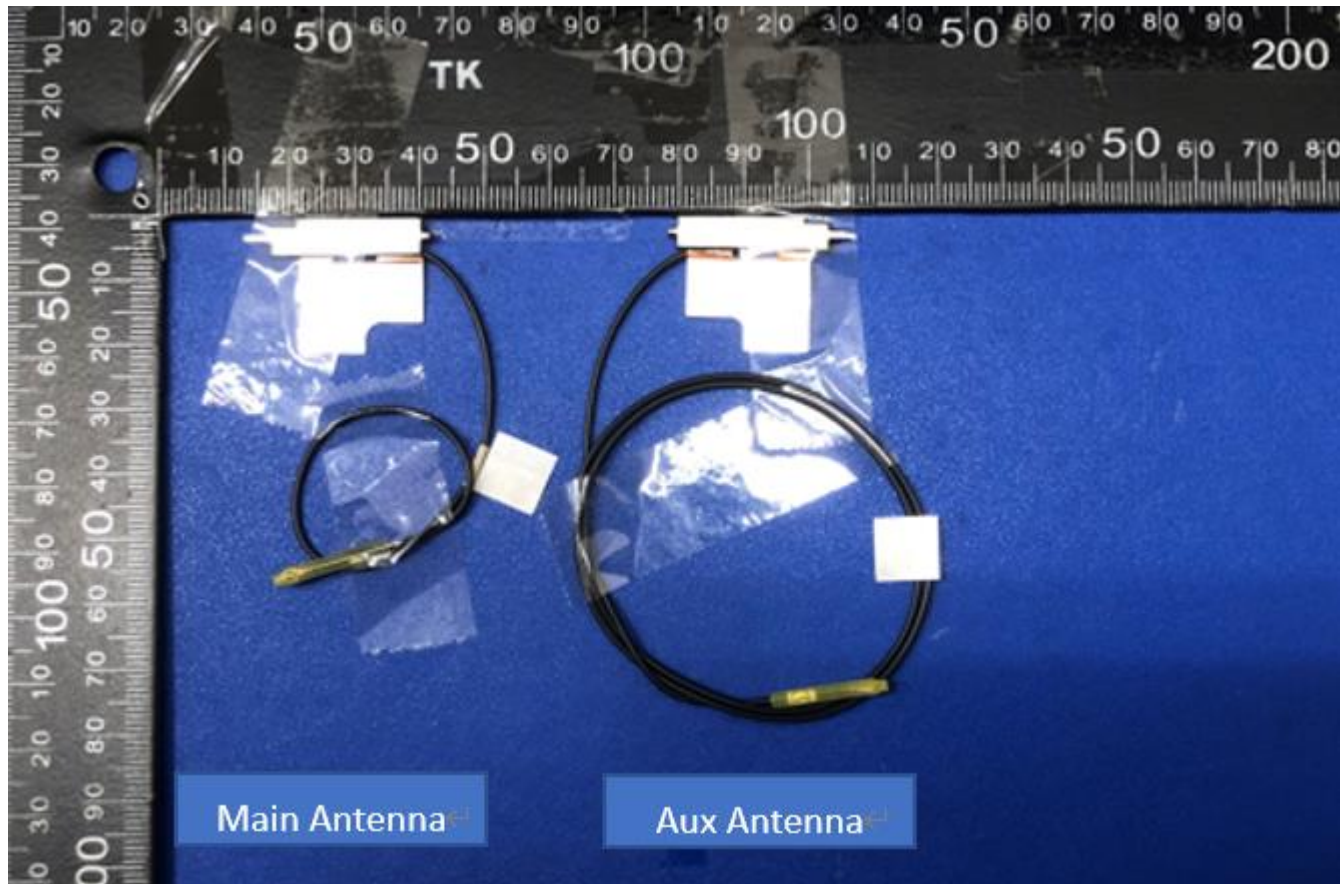
Note: antenna photo should include L type ruler

Include back view photo of all 2 antennas here.

Antenna Manufacturer: HONG-BO

Antenna Part Number: 6036B0321001 (00-2602752450) (Tx2 or Rx2)(Main)

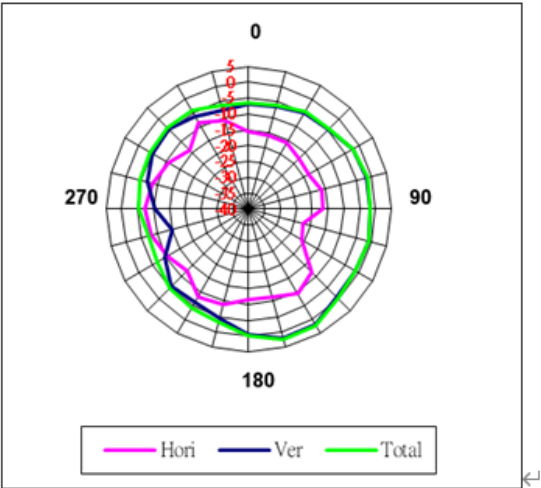
, 6036B0321101 (00-2602752350) (Tx1)(Aux)



Section 3. Radiation characteristics of antennae Loaded in Host Platform

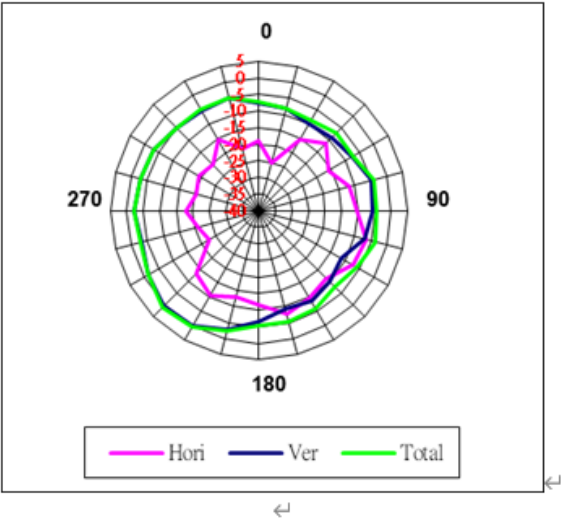
2400-2500MHz radiation characteristic (1E Peak Gain W/ Cable loss (dBi))

Main antenna:



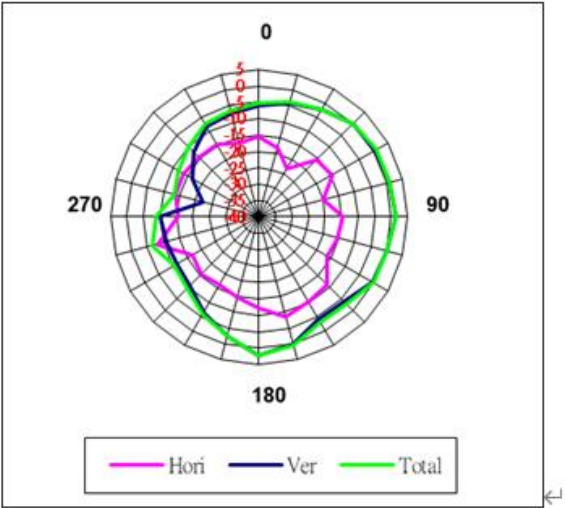
Center Frequency	2400-2500 MHz
Horizontal+ Vertical (dBi) peak	2.41

Aux antenna:



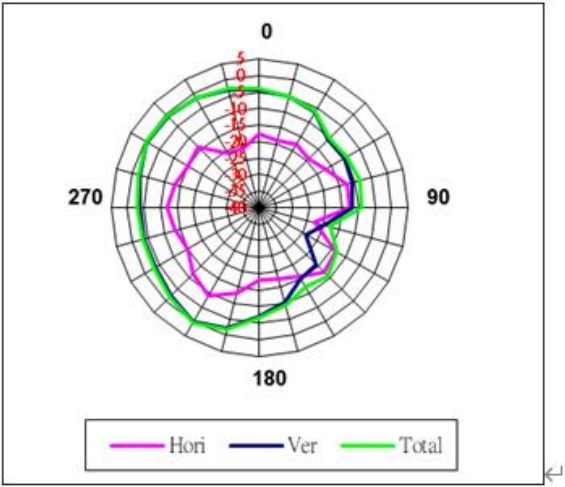
Center Frequency	2400-2500 MHz
Horizontal+ Vertical (dBi) peak	1.04

Main antenna:



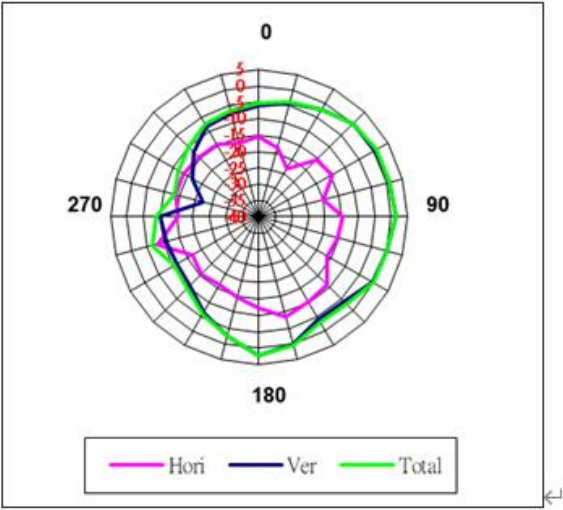
Horizontal+ Vertical (dBi) peak	2.14
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Aux antenna:



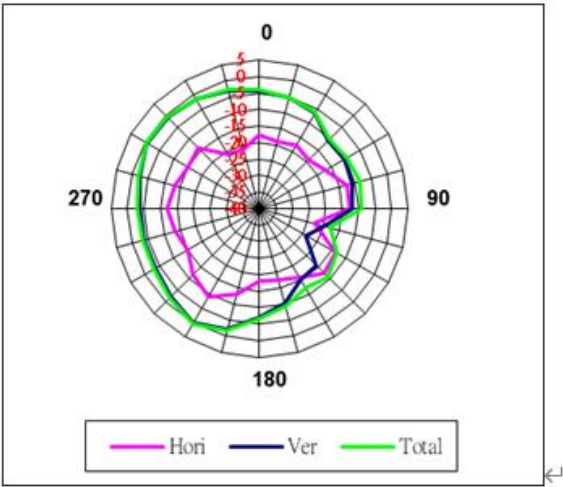
Horizontal+ Vertical (dBi) peak	0.50
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Main antenna:



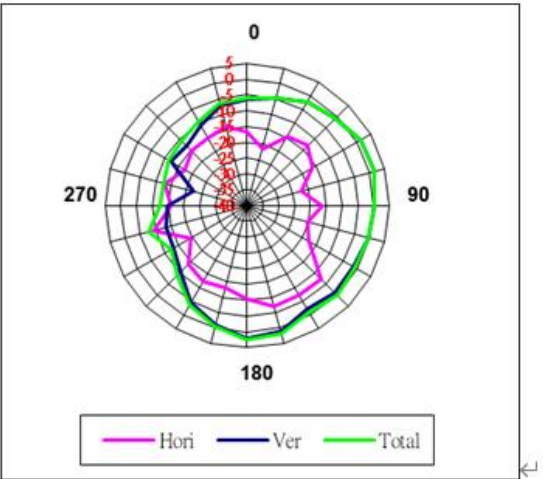
Horizontal+ Vertical (dBi) peak	2.14
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Aux antenna:



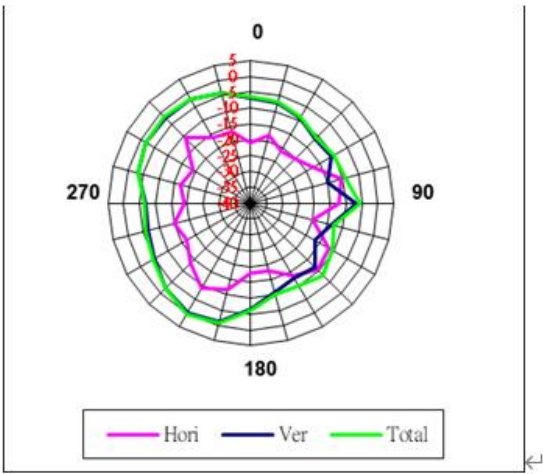
Horizontal+ Vertical (dBi) peak	0.50
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Main antenna:



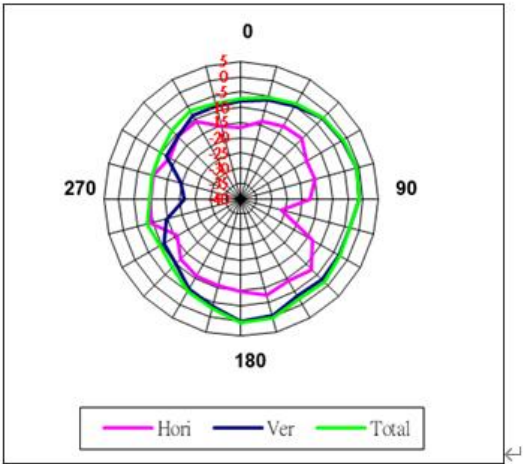
Horizontal+ Vertical (dBi) peak	2.43
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Aux antenna:



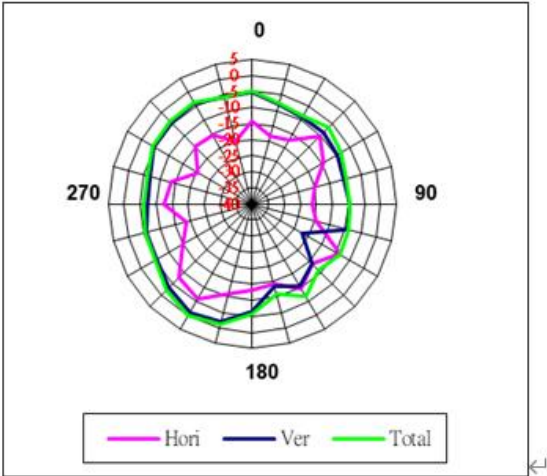
Horizontal+ Vertical (dBi) peak	0.42
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Main antenna:



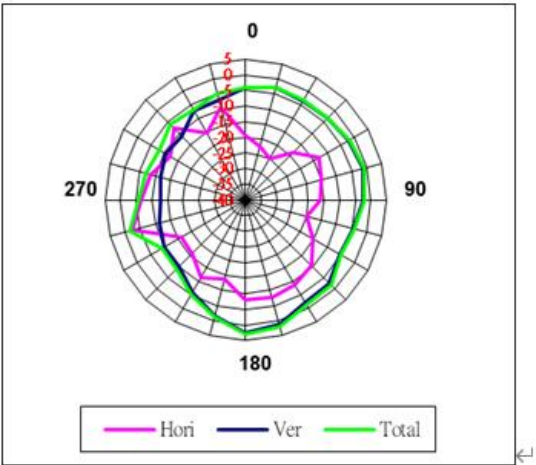
Horizontal+ Vertical (dBi) peak	0.47
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Aux antenna:



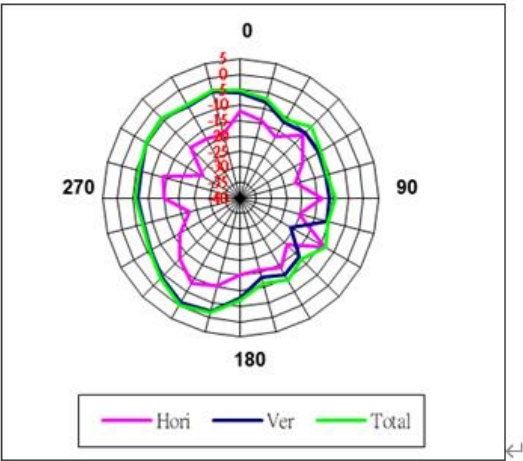
Horizontal+ Vertical (dBi) peak	0.21
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Main antenna:



Horizontal+ Vertical (dBi) peak	2.90
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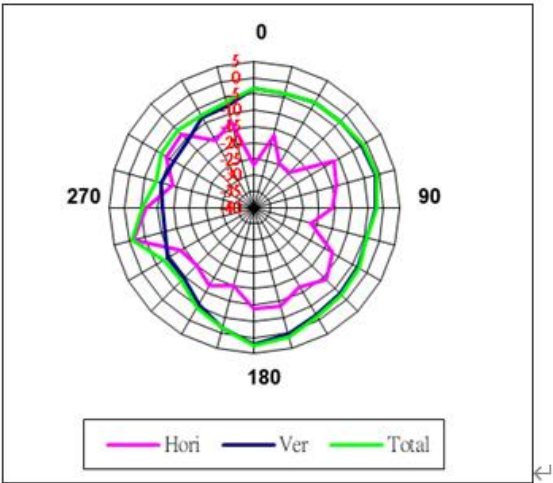
Aux antenna:



Horizontal+ Vertical (dBi) peak	-0.15
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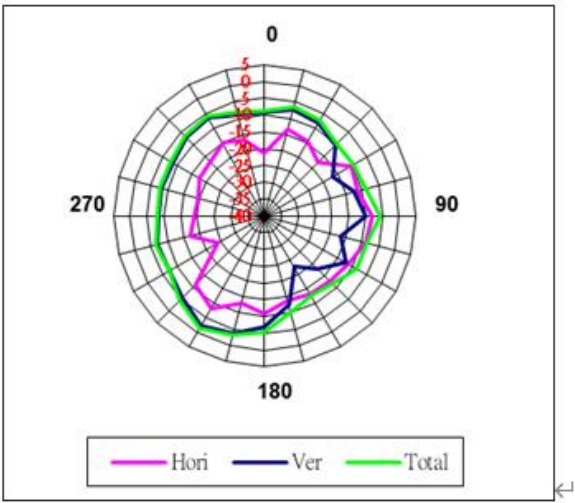
6425-6525MHz radiation characteristic (1E Peak Gain W/ Cable loss (dBi))

Main antenna:



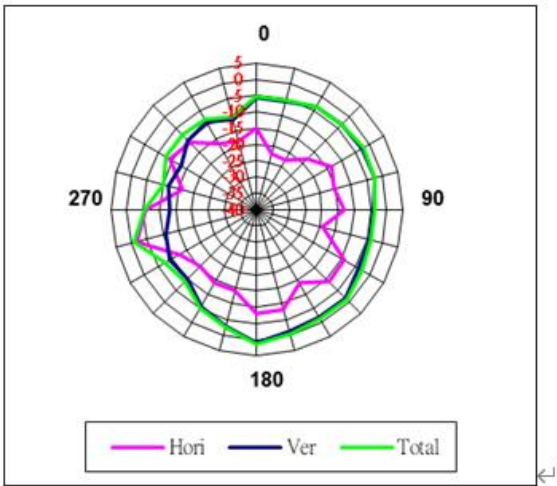
Horizontal+ Vertical (dBi) peak	2.35
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Aux antenna:



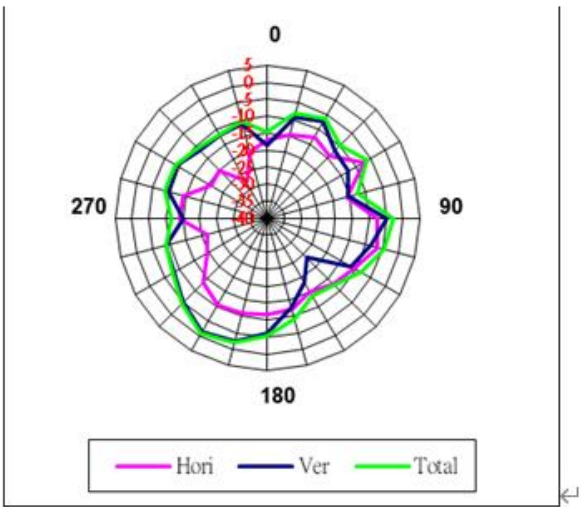
Horizontal+ Vertical (dBi) peak	-1.33
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Main antenna:



Horizontal+ Vertical (dBi) peak↵	1.44↵
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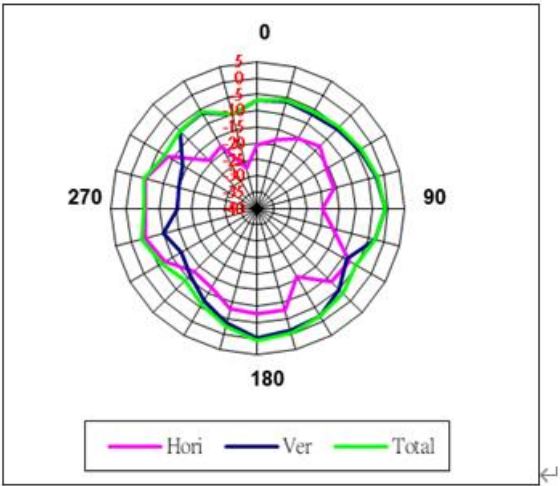
Aux antenna:



Horizontal+ Vertical (dBi) peak↵	-0.68↵
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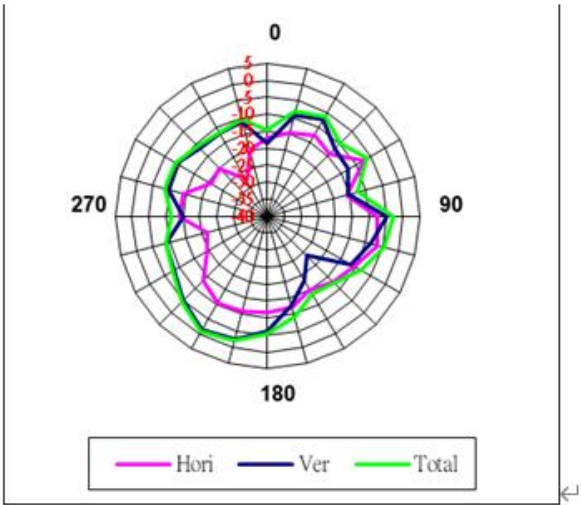
6875-7125MHz radiation characteristic(1E Peak Gain W/ Cable loss (dBi))

Main antenna:



Horizontal+ Vertical (dBi) peak↵	0.51↵
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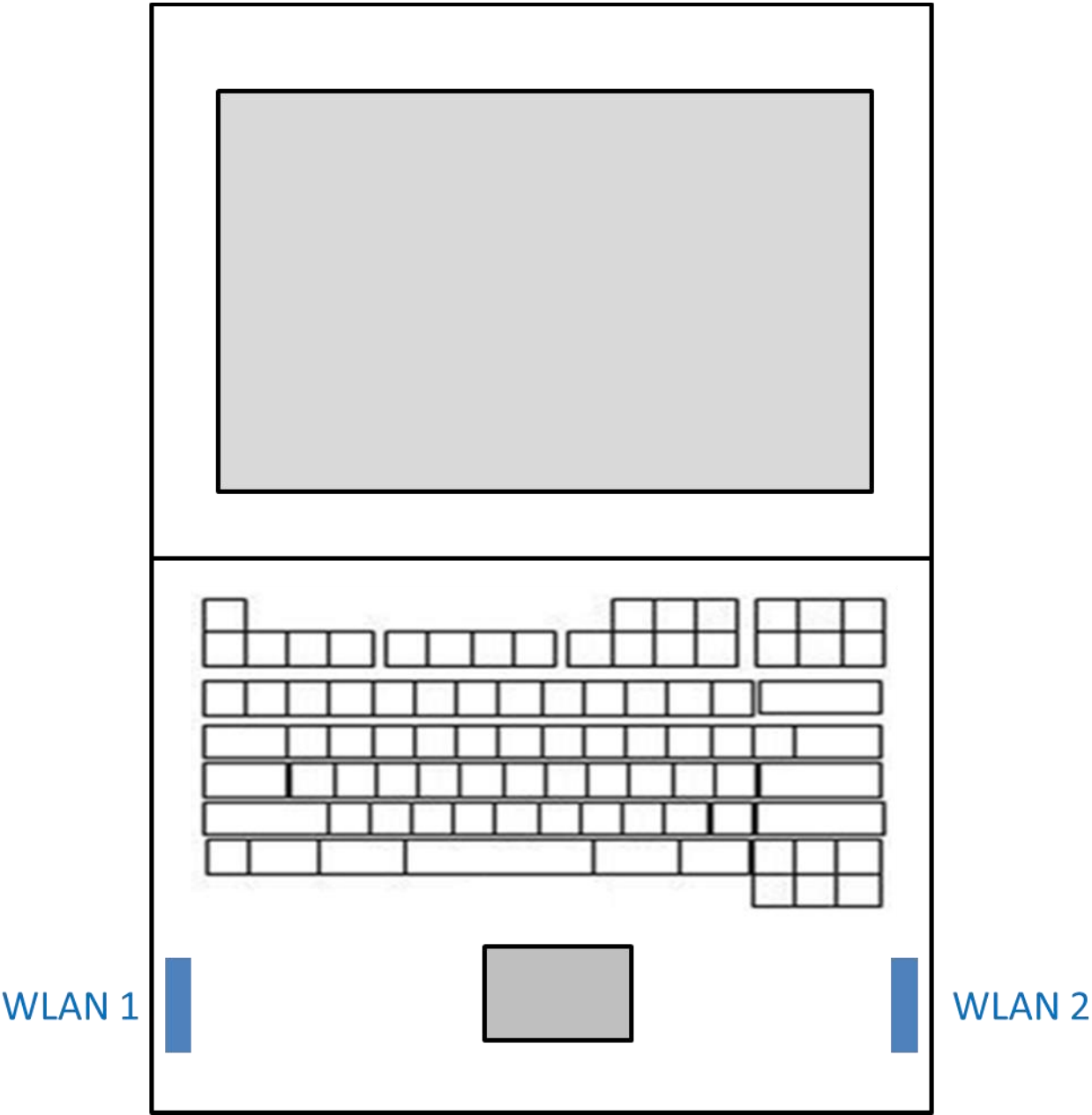
Aux antenna:

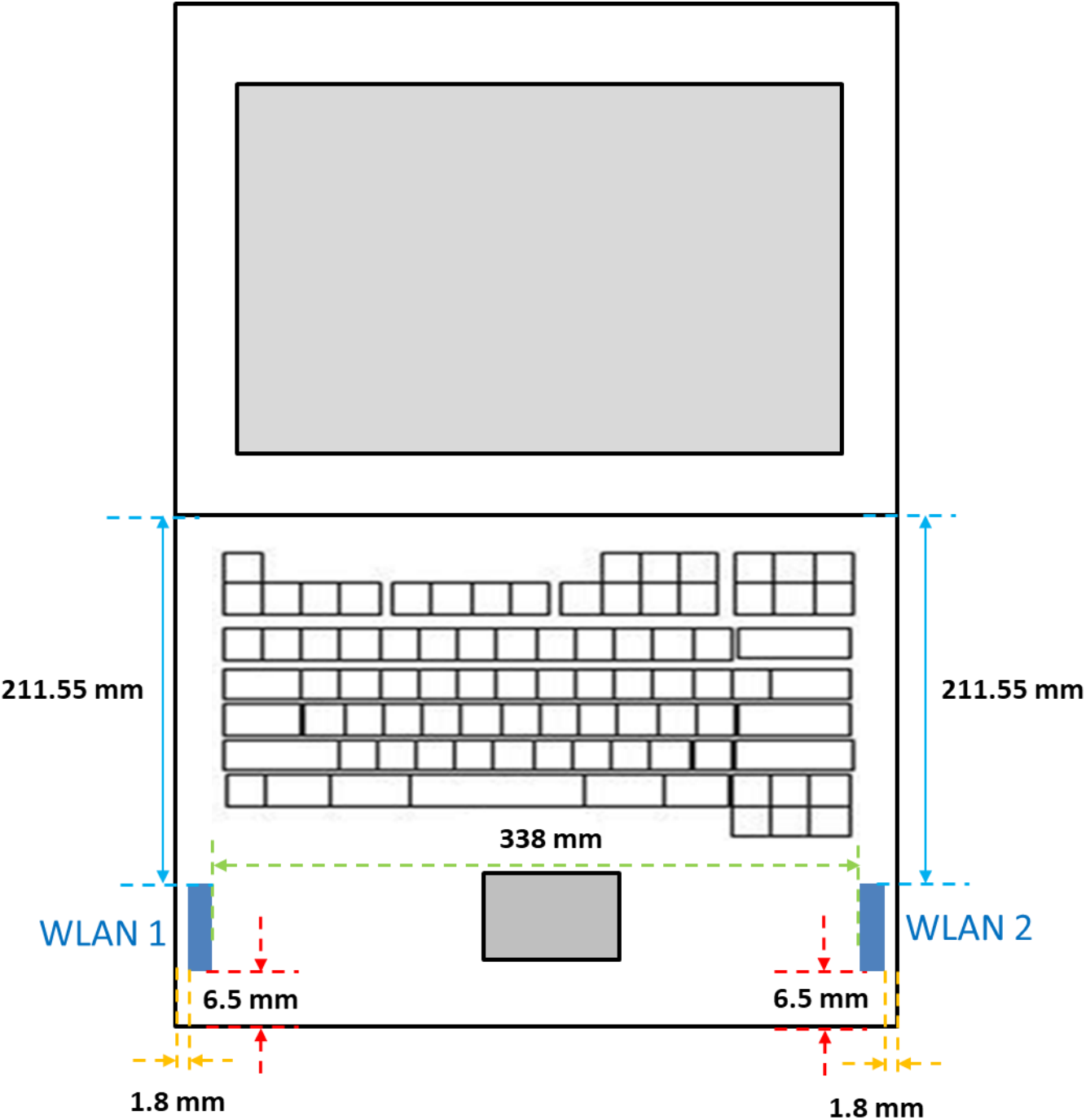


Horizontal+ Vertical (dBi) peak↵	-0.68↵
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Section 4. Antenna Host Platform Location Information

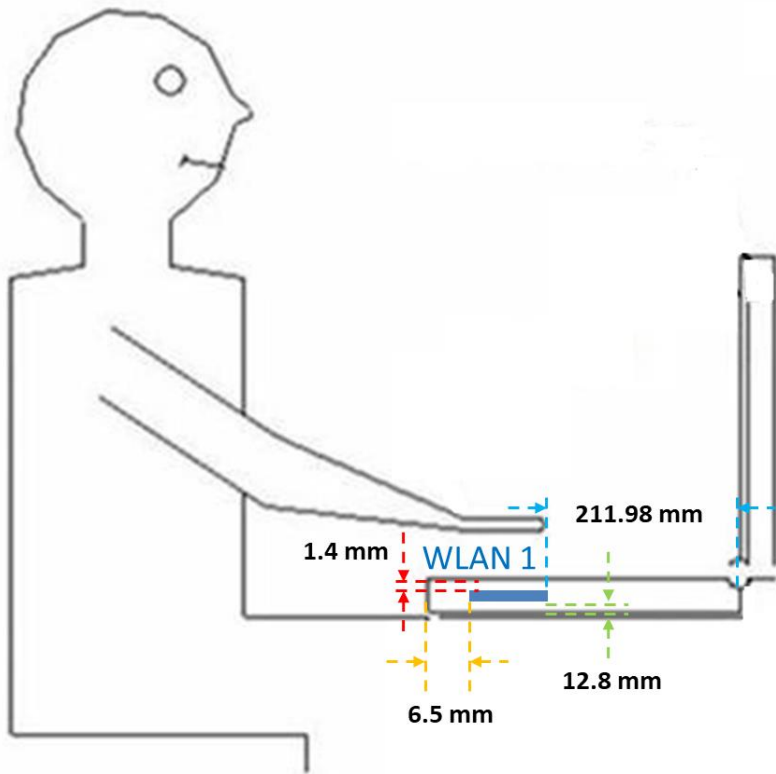
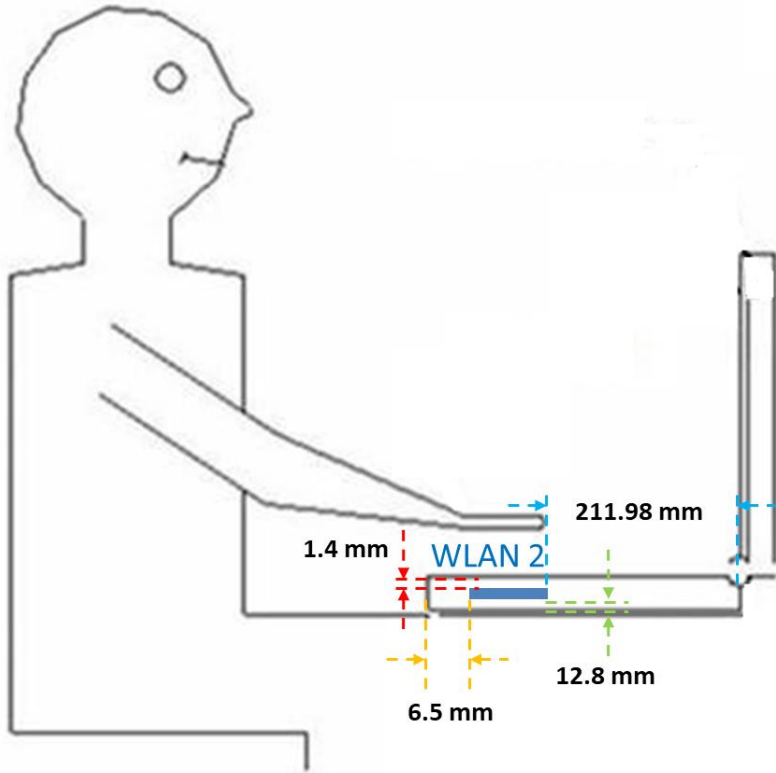
Include a **dimensioned photo(s) or dimensioned drawing(s)** of Main and Aux antenna placements (measurements are not required for receive-only antenna). Any antenna that transmits must show dimensions to bottom of laptop. Provide a description of the materials that are used for supporting or surrounding 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.



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)

