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	Huaqin	NB3500A	No	regular NB	

*****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)
ZTX	PIFA	2.00005365 HQ20604915000	2.00005366 HQ20604924000

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
2.18	2.60	2.34	3.95	4.81	3.91	4.87	4.89

Intel Reference Gain/Type/ Separation distance

Antenna Type	Antenna Peak gain (In dBi)									Distance to the end user (mm)
	2.4GHz 2400-2500MHz	5.2GHz 5150-5250MHz	5.3GHz 5250-5350MHz	5.5GHz 5470-5725MHz	5.8GHz 5725-5850MHz	6.2GHz 5925-6425MHz	6.5GHz 6425-6525MHz	6.7GHz 6525-6875MHz	6.9GHz 6875-7125MHz	
PIFA	3	3.64	3.73	4.77	4.97	4.83	4.3	5	5	Generic sku: refer to modular FCC SAR report Mid-power sku: ≥8 Low power sku: ≥5

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	Required	N/A	N/A	N/A
1D	Part number of Antenna Assembly / cable impedance, length & diameter.	Required	Desired	Desired	Desired	Desired
1E	Main & Aux antenna (Peak Gain W/ cable loss) *	Required	Required	Required	Required	Required
	1E OR 1F, 1G, 1H					
1F	Main & Aux antenna (Peak Gain only) *	Required	Required	Required	Required	Required
1G	VSWR of cable including connector	Required	Required	Required	Required	Required
1H	Main & Aux antenna (Cable loss W/ connector) *	Required	Required	Required	Required	Required
2	Dimensioned Photographs and Drawings of Main & Aux antennas	Required	Required	Required	Required	Required
3	Radiation patterns of antennas loaded in the host platform.	Required	Desired	Required	Required	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. (S. Korea requires photographs of antennas for approval submission). Taiwan requires pictures of each antenna type shown in the system.	Required	Required	Desired	Required (Photos)	Required (Photos)
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
9	Antenna gain range should be equal or greater than -2 dBi. (2.4/5/6GHz: EU, 6GHz: FCC)	Required	Required	N/A	N/A	N/A

Antenna Information

Section 1. Antenna Assembly Specifications

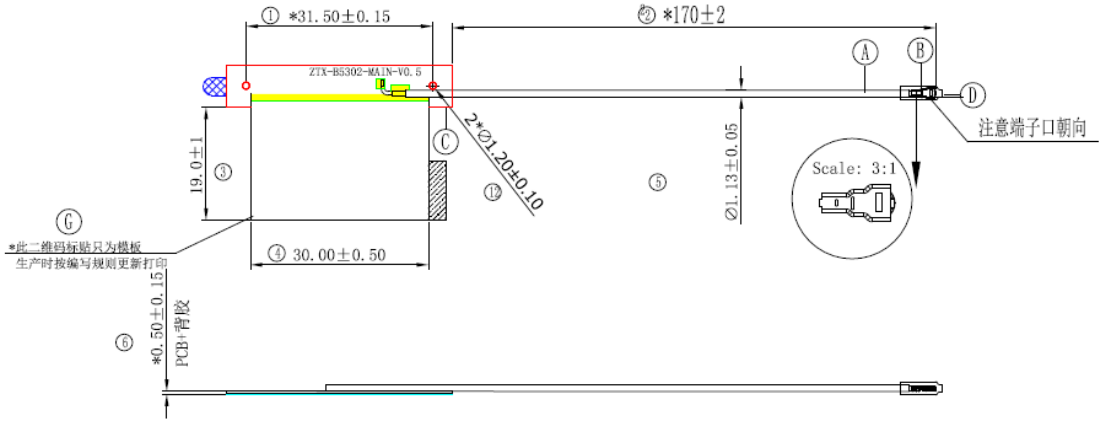
1A Antenna Part Number	1B Manu-facturer	1C Antenna Type	1D Cable Assembly Part Number and Information	Freq Range MHz	1E *Peak Gain W/ Cable loss (dBi)	1F Peak Gain w/o Cable Loss (dBi)	1G Max VSWR	1H Cable Loss (dB)
P/N: HQ20604915000 (2.00005365) Main Antenna	ZTX	PIFA	50 ohm Coaxial. length:170mm diameterr:1.13mm Connector: KS	2400-2500	2.18	2.65	3.0	0.47
				5150-5250	2.60	3.30	3.0	0.70
				5250-5350	1.38	2.08	3.0	0.70
				5470-5725	2.34	3.06	3.0	0.72
				5725-5850	3.95	4.69	3.0	0.74
				5925-6425	4.81	5.57	3.0	0.76
				6425-6525	3.91	4.70	3.0	0.79
				6525-6875	4.87	5.68	3.0	0.81
				6875-7125	4.89	5.72	3.0	0.83
P/N: HQ20604924000 (2.00005366) Aux Antenna	ZTX	PIFA	50 ohm Coaxial. length:313mm diameterr:1.13mm Connector: KS	2400-2500	2.81	3.68	3.0	0.87
				5150-5250	2.52	3.82	3.0	1.30
				5250-5350	0.47	1.77	3.0	1.30
				5470-5725	2.75	4.08	3.0	1.33
				5725-5850	3.89	5.24	3.0	1.35
				5925-6425	3.88	5.28	3.0	1.40
				6425-6525	2.96	4.41	3.0	1.45
				6525-6875	3.70	5.18	3.0	1.48
				6875-7125	3.76	5.29	3.0	1.53

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

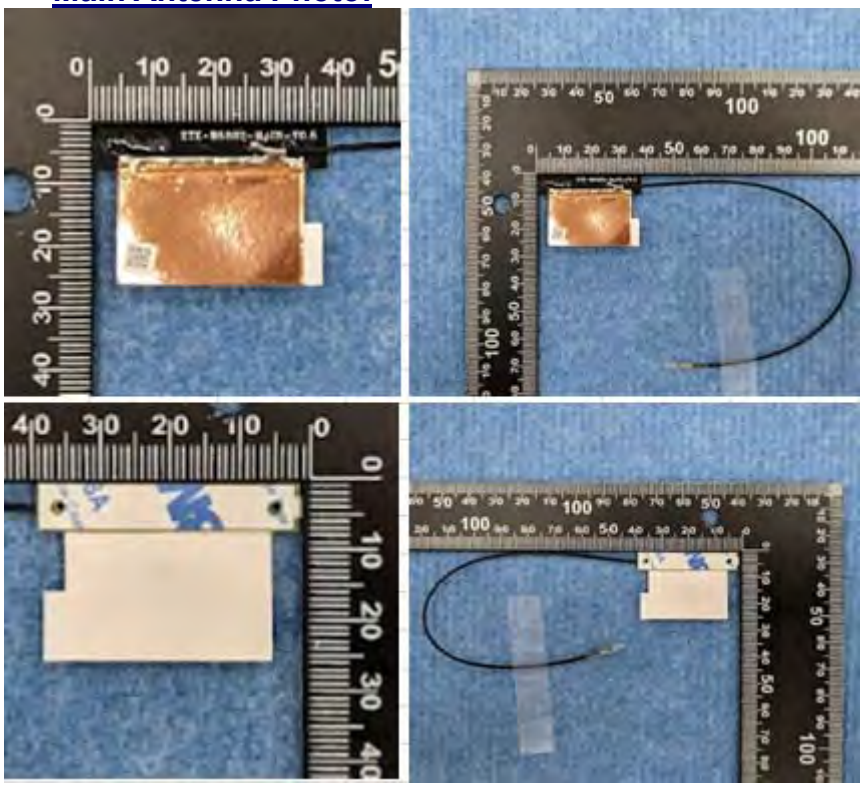
Section 2. Dimensioned Photos or Drawings of Antennas

Include a dimensioned photo and dimensioned drawing of Main antenna here.

Main Antenna Dimensioned Drawing:

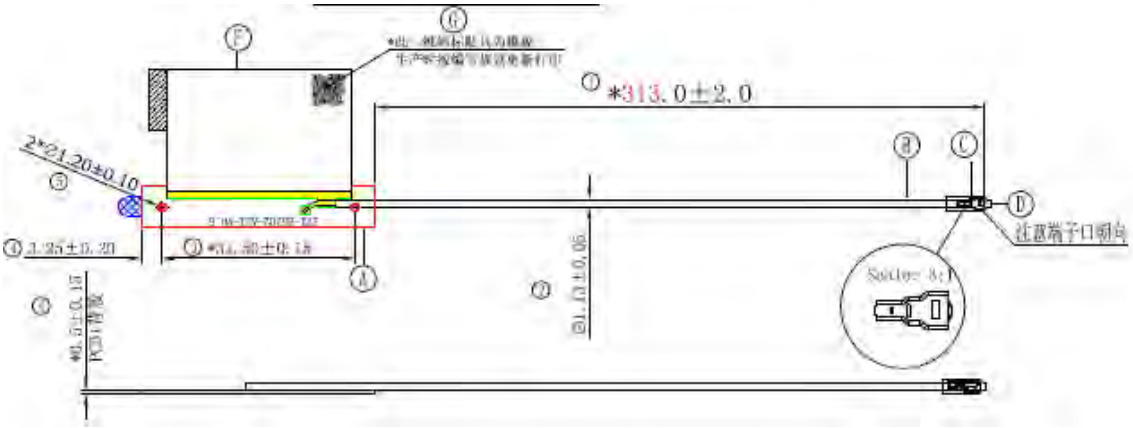


Main Antenna Photo:

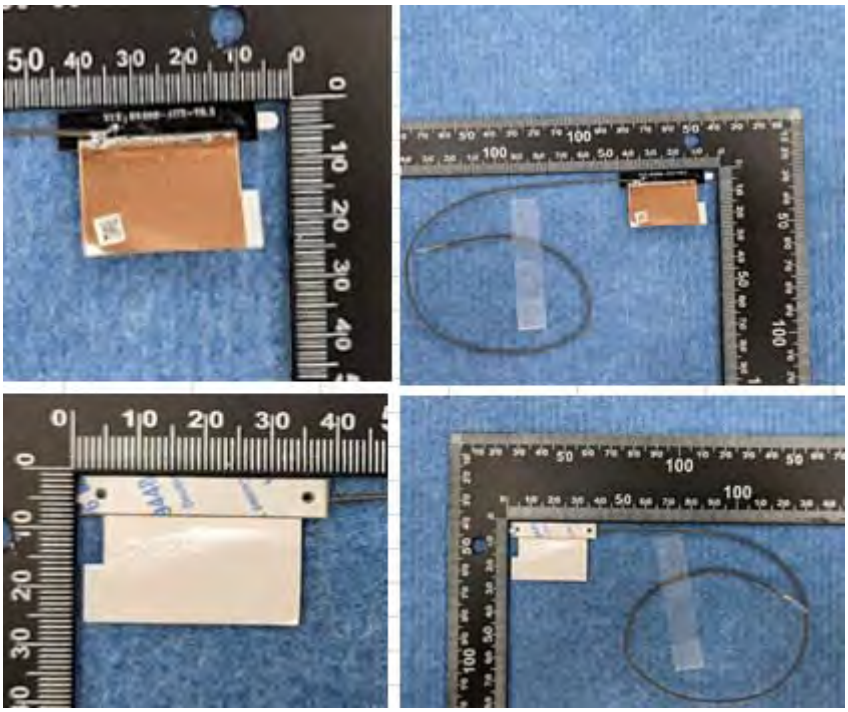


Include a dimensioned photo and dimensioned drawing of Aux antenna here.

Aux Antenna Dimensioned Drawing:

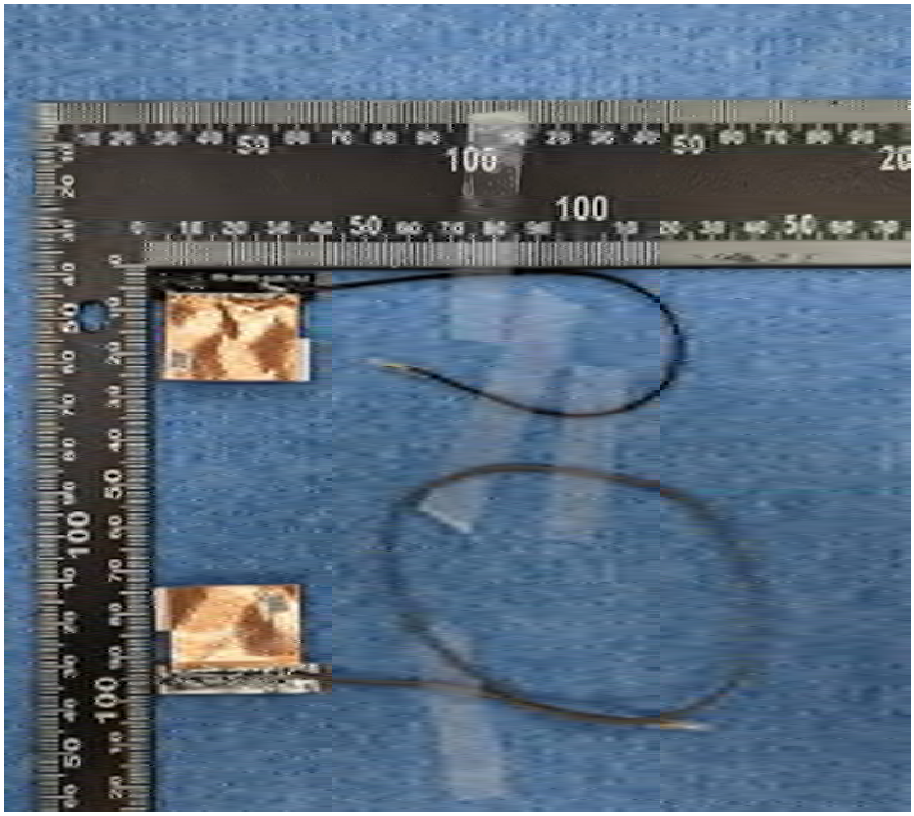


Aux Antenna Photo:



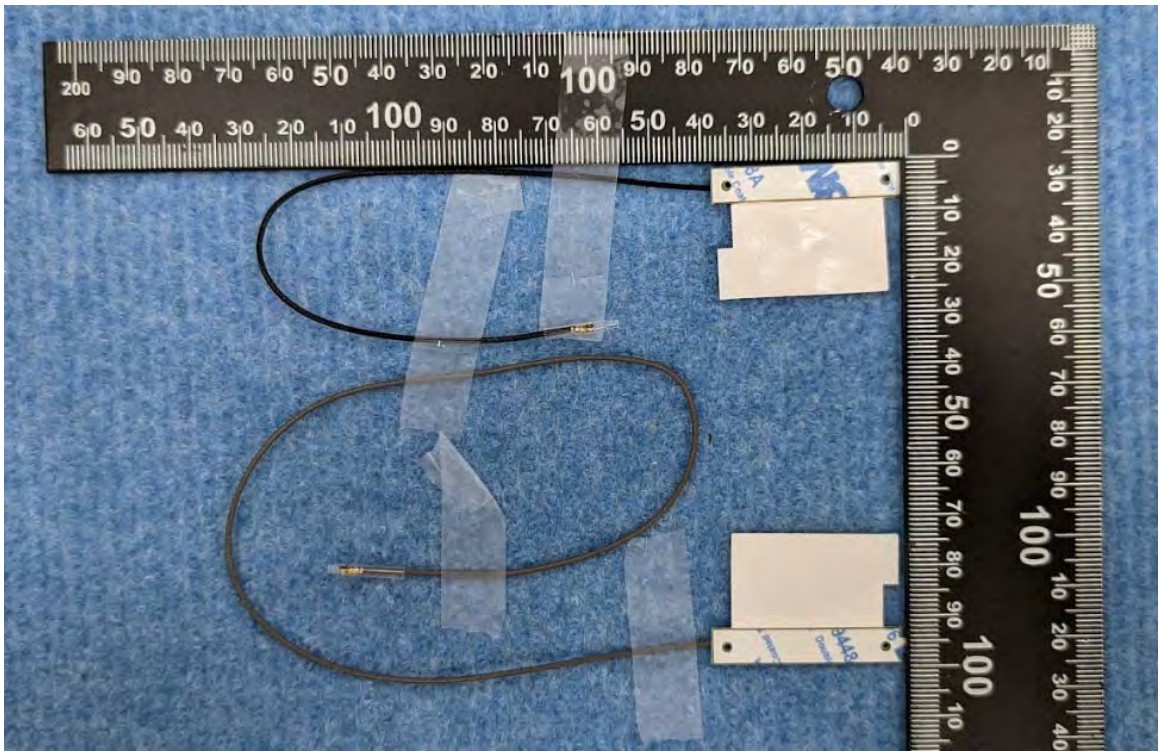
Include front view photo of all 2 antennas here.

Antenna Manufacturer: ZTX
Antenna Part Number: 2.00005365 (Main), 2.00005366 (Aux)



Include back view photo of all 2 antennas here.

Antenna Manufacturer: ZTX
Antenna Part Number: 2.00005365 (Main), 2.00005366 (Aux)

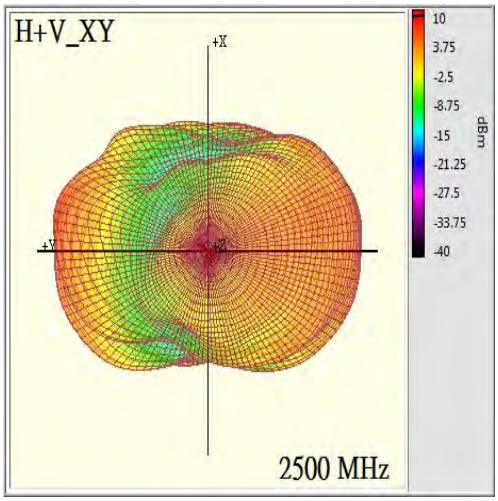


Note: antenna photo should include L type ruler

Section 3. Radiation characteristics of antennae Loaded in Host Platform

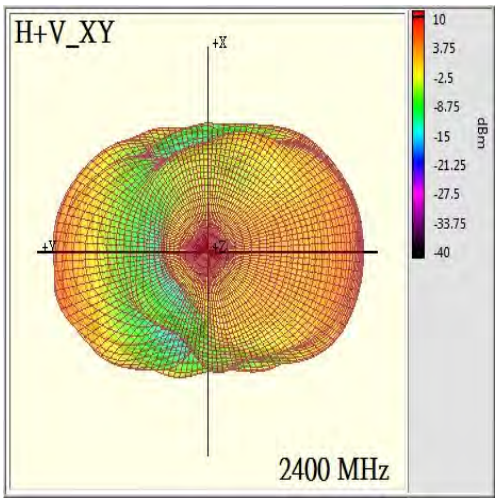
2400-2500MHz radiation characteristic (1E Peak Gain W/ Cable loss (dBi))

Main antenna:



Max Three-dimensional (dBi) peak	2.18

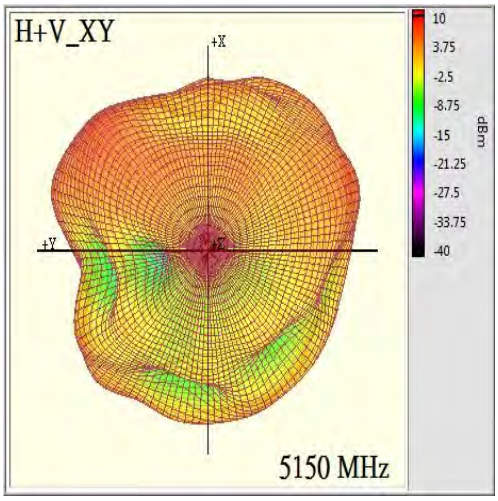
Aux antenna: 2400-2500 MHz



Max Three-dimensional (dBi) peak	2.81

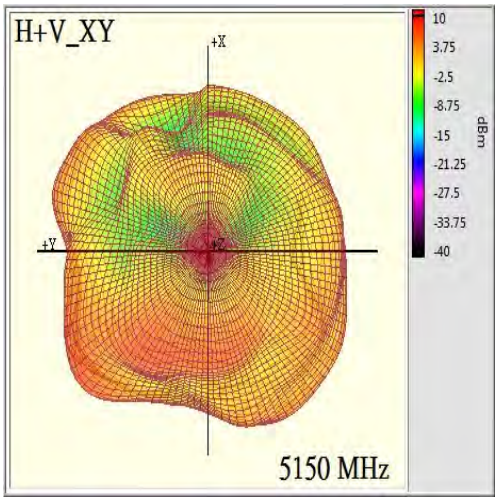
51500-52500MHz radiation characteristic(1E Peak Gain W/ Cable loss (dBi))

Main antenna:



Max Three-dimensional (dBi) peak	2.60

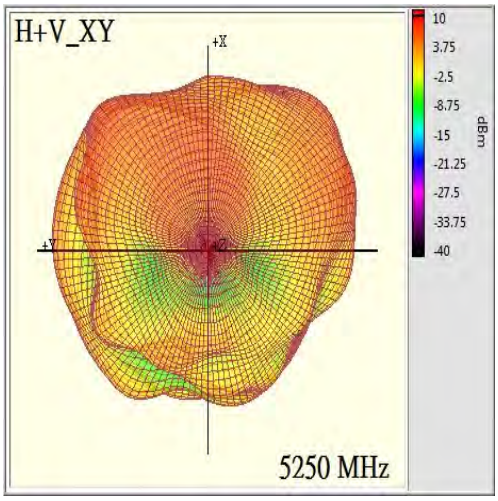
Aux antenna:



Max Three-dimensional (dBi) peak	2.52

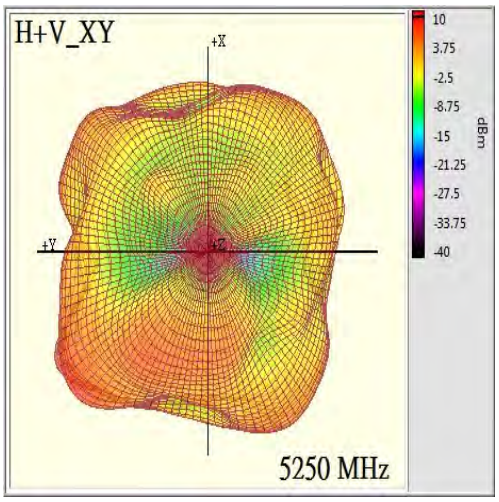
52500-53500MHz radiation characteristic(1E Peak Gain W/ Cable loss (dBi))

Main antenna:



Max Three-dimensional (dBi) peak	1.38

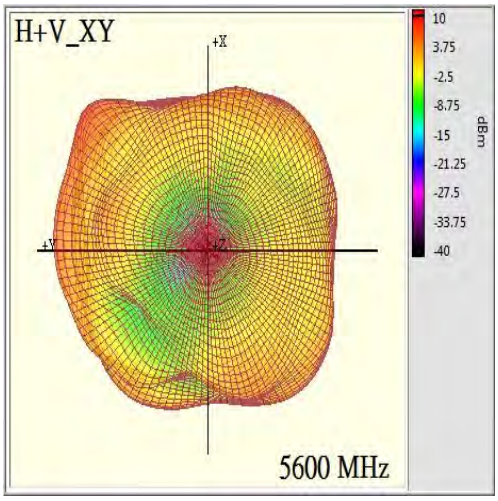
Aux antenna:



Max Three-dimensional (dBi) peak	0.47

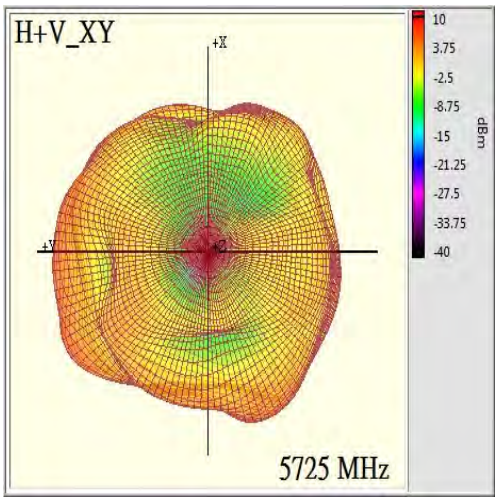
5470-5725MHz radiation characteristic(1E Peak Gain W/ Cable loss (dBi))

Main antenna:



Max Three-dimensional (dBi) peak	2.34

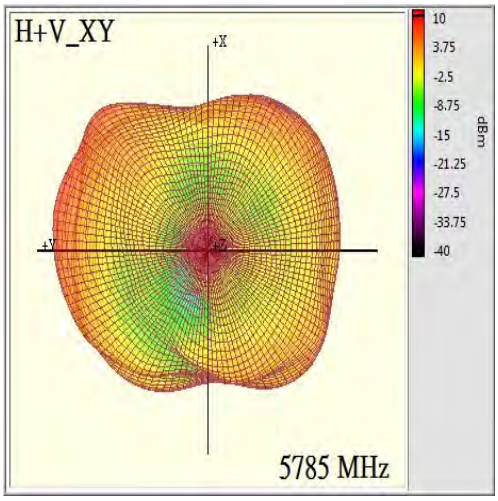
Aux antenna:



Max Three-dimensional (dBi) peak	2.75

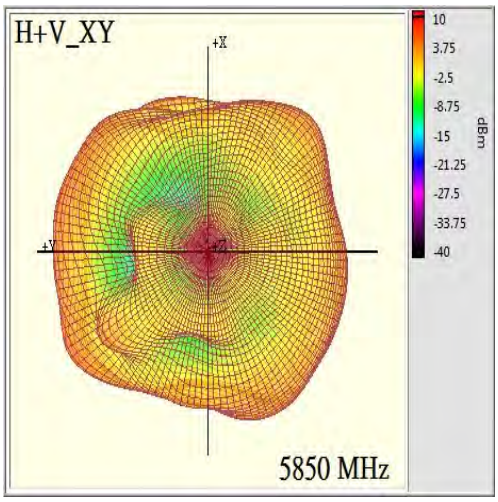
5725-5850MHz radiation characteristic(1E Peak Gain W/ Cable loss (dBi))

Main antenna:



Max Three-dimensional (dBi) peak	3.95

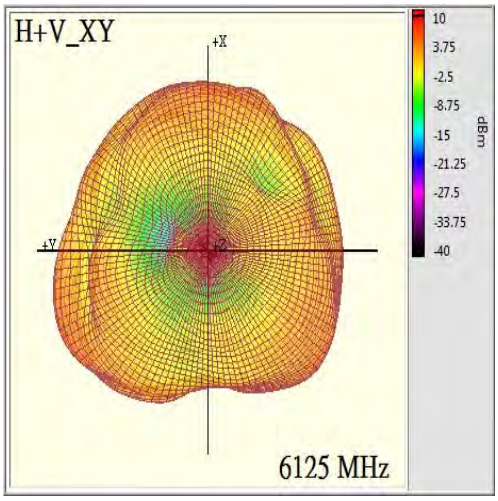
Aux antenna:



Max Three-dimensional (dBi) peak	3.89

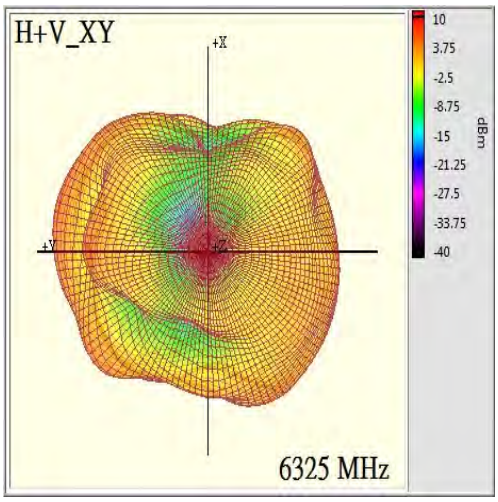
5925-6425MHz radiation characteristic(1E Peak Gain W/ Cable loss (dBi))

Main antenna:



Max Three-dimensional (dBi) peak	4.81

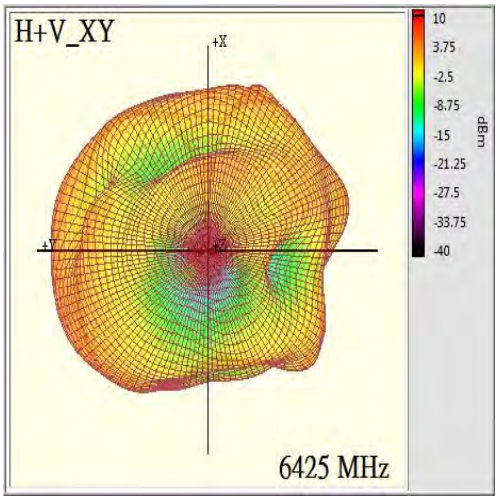
Aux antenna:



Max Three-dimensional (dBi) peak	3.88

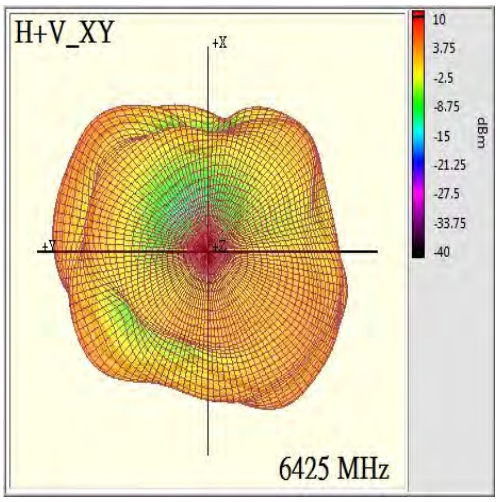
6425-6525MHz radiation characteristic(1E Peak Gain W/ Cable loss (dBi))

Main antenna:



Max Three-dimensional (dBi) peak	3.91

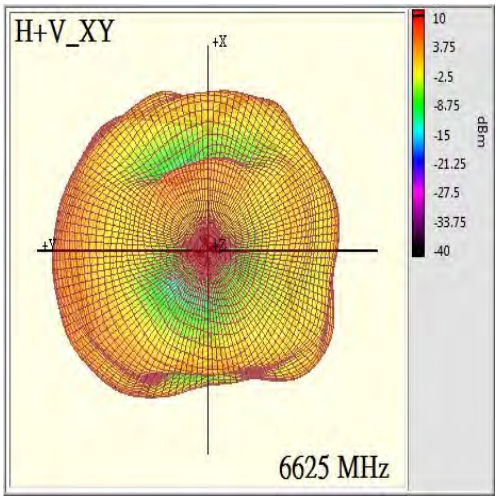
Aux antenna:



Max Three-dimensional (dBi) peak	2.96

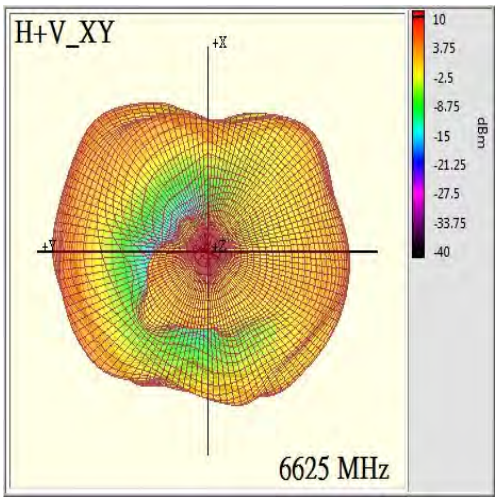
6525-6875MHz radiation characteristic(1E Peak Gain W/ Cable loss (dBi))

Main antenna:



Max Three-dimensional (dBi) peak	4.87

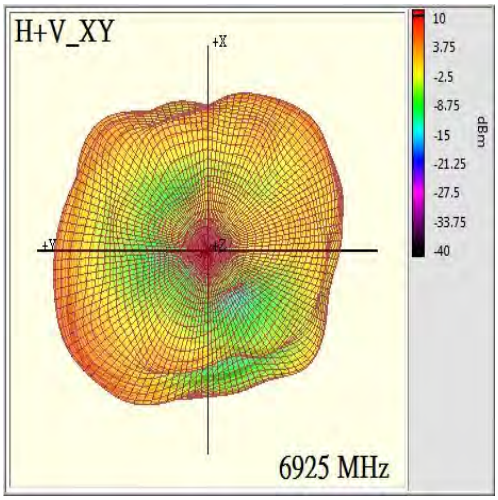
Aux antenna:



Max Three-dimensional (dBi) peak	3.70

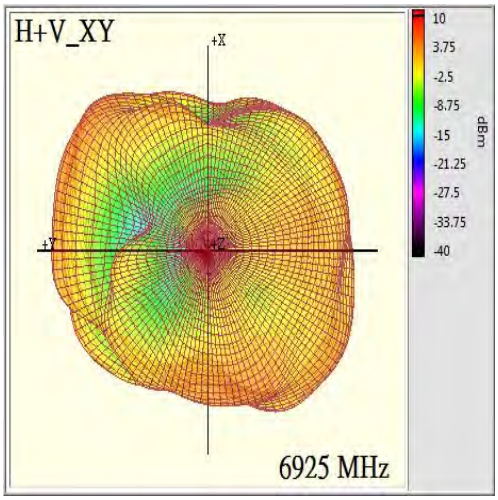
6875-7125MHz radiation characteristic(1E Peak Gain W/ Cable loss (dBi))

Main antenna:



Max Three-dimensional (dBi) peak	4.89

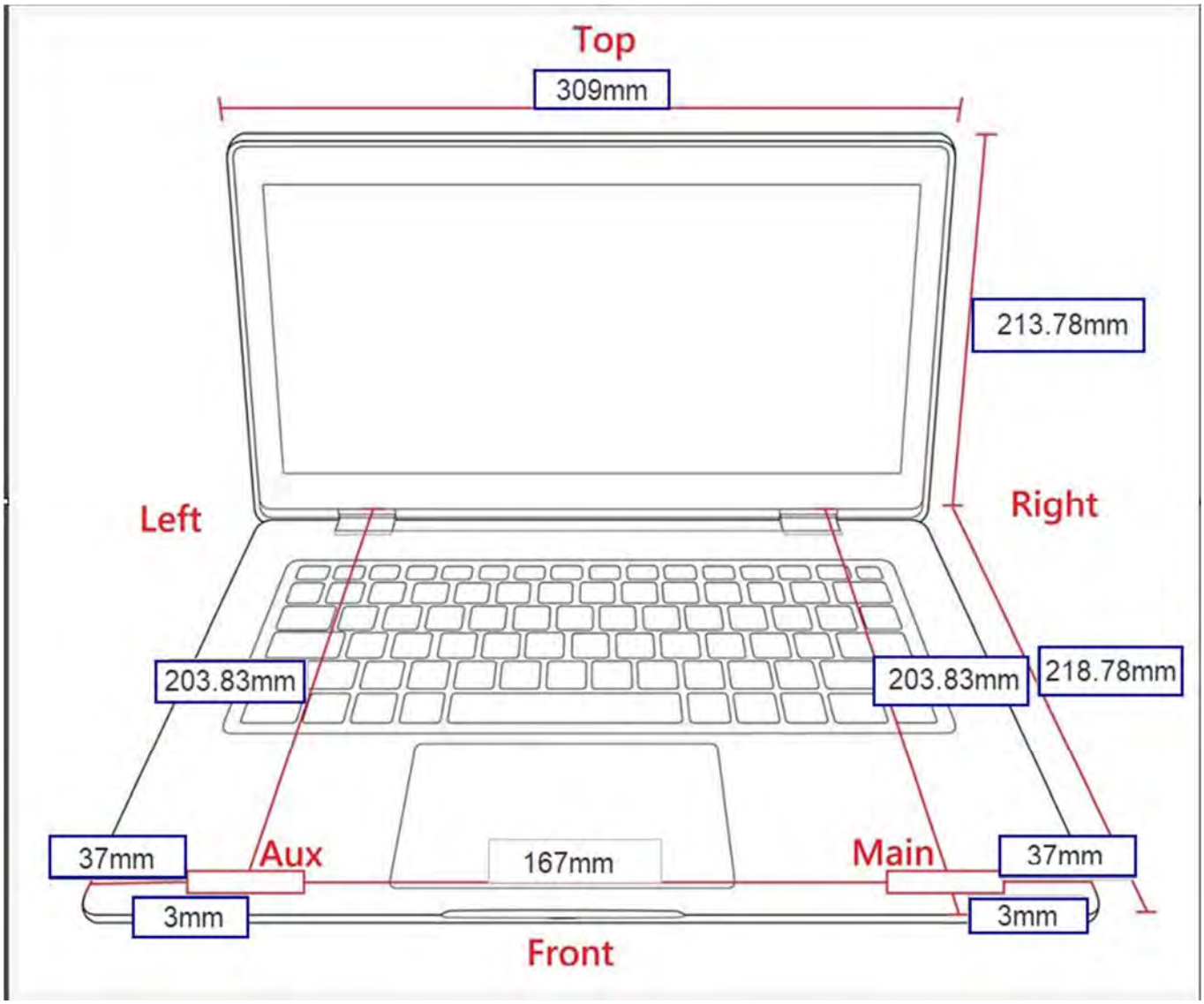
Aux antenna:



Max Three-dimensional (dBi) peak	3.76

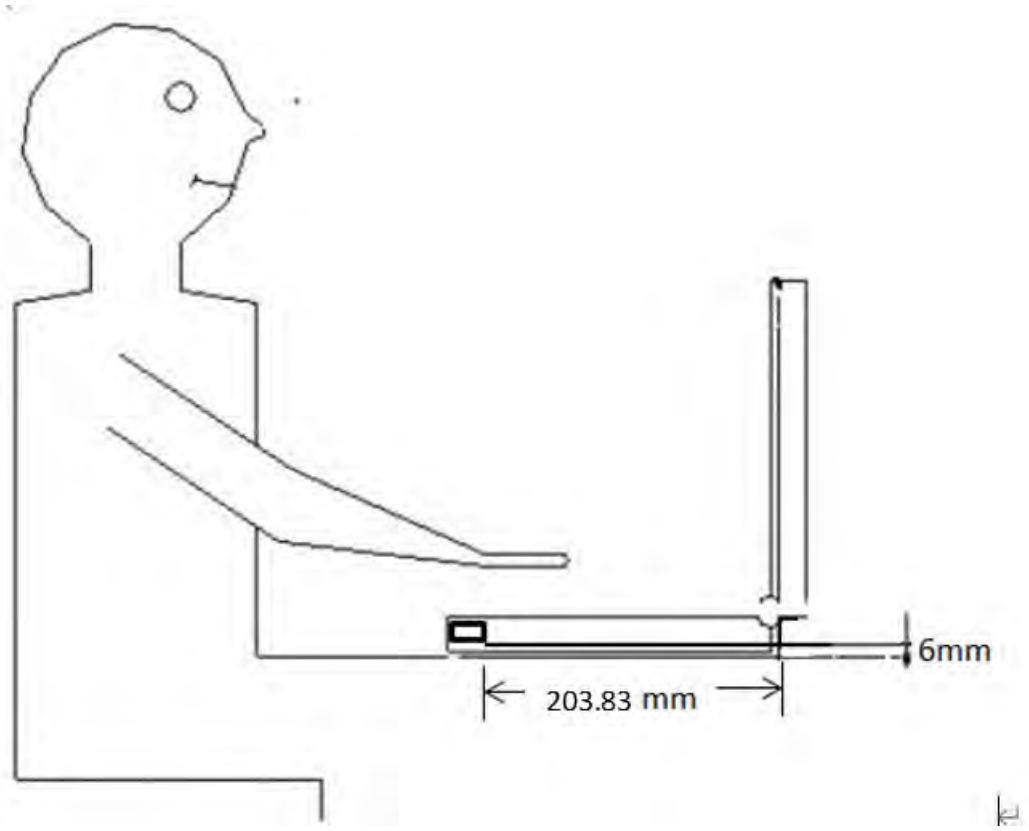
Section 4. Antenna Host Platform Location Information

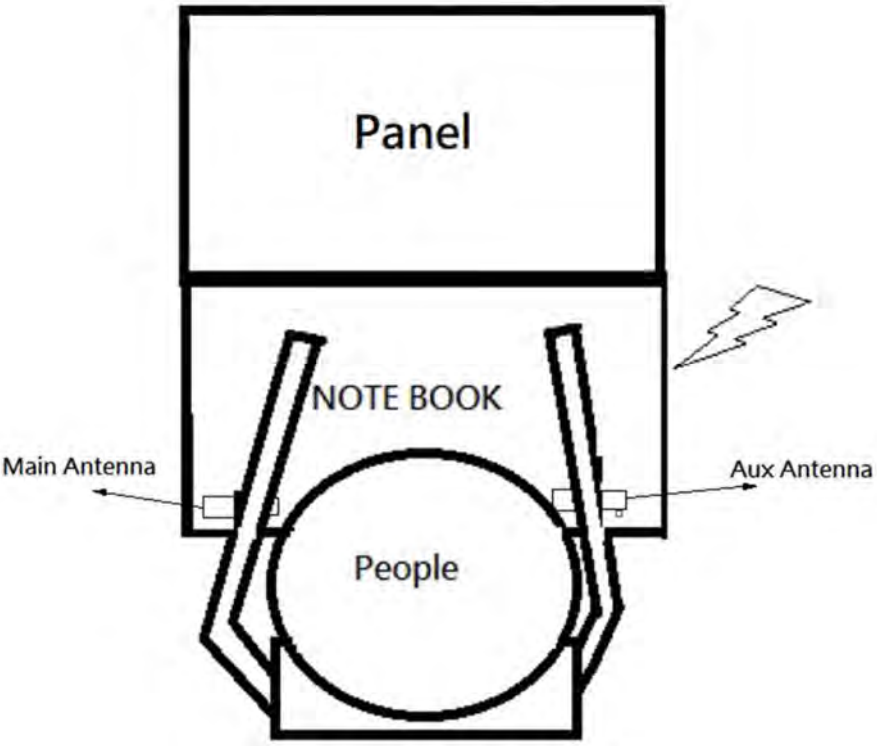
Include a **dimensioned photo(s) or dimensioned drawing(s)** of Main and Aux antenna placements (measurements are not required for receive-only antenna).
Any antenna that transmits must show dimensions to bottom of laptop. Provide a description of the materials that are used for supporting or surrounding transmit antennas; for example, non-conductive plastics vs. conductive coated plastic or metallic materials.



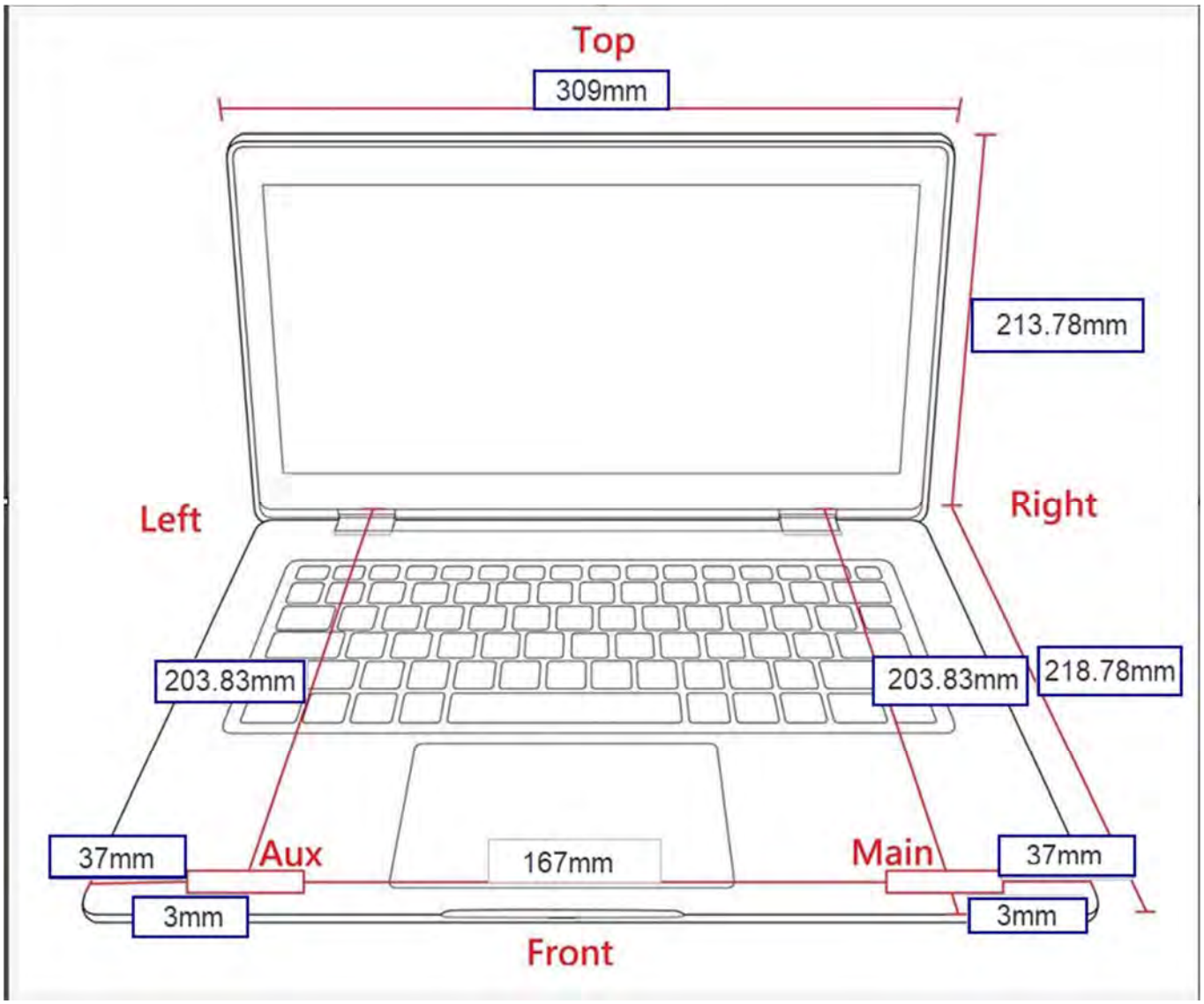
Section 5. Antenna dimensional information for SAR evaluation

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)