

Regulatory WLAN Antenna Information (Template)

(English Language Required for Module Vendor 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	Platform model name (RMN)	Platform type (ex: Notebook PC, convertible PC, AIO...etc)			SAR minimum separation (mm)	
HP Inc.	Wistron	Tiberius	Notebook PC			5.2mm	
Antenna information							
Vendor		Type	Antenna Part number (Aux/TX1)		Antenna Part number (Main/TX2)		
High-Tek Electronics Co., Ltd		PIFA	025.901S2.0011 (0ACAR020017N)		025.901S2.0001 (0ACAR020016N)		
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
-0.24	0.73	-0.83	-0.56	0.90	2.55	2.92	2.92
Module information							
Model	Form factor and suffixes (NGW/ HMW AND AN/ NB/ BN....)						
AX211NGW (Garfield Peak 2)	Intel Wi-Fi 6E AX211 + BT5.2 (802.11ax 2x2, MU-MIMO, supporting gigabit data rate)						

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 and 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. (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

Antenna Information

Section 1. Antenna Assembly Specifications

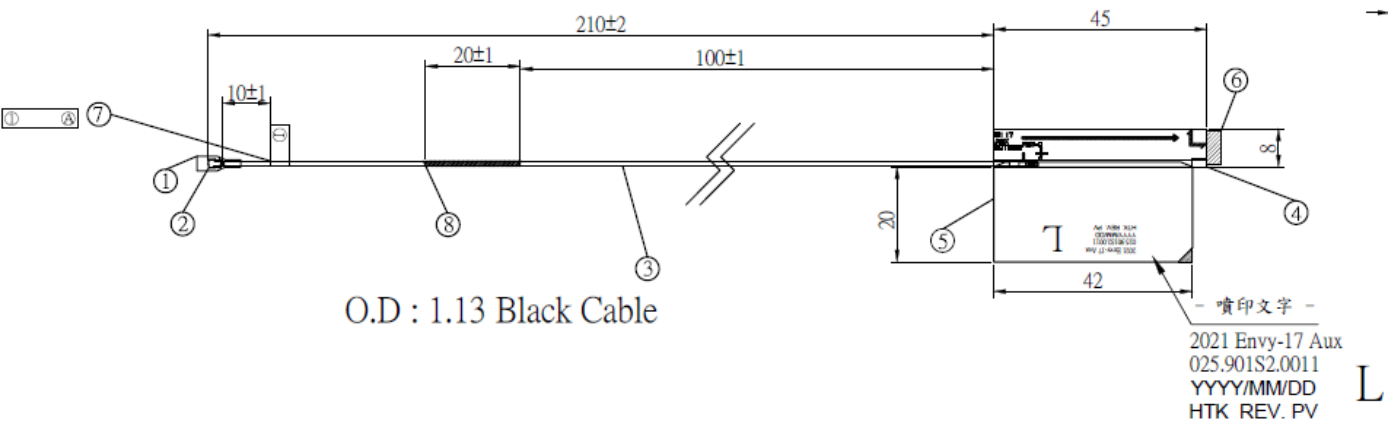
Antenna Part Number	1B Manu-facturer	1C Antenna Type	Cable Assembly Part Number and Information	*Peak Gain W/ Cable loss (dBi)	Peak Gain w/o Cable Loss (dBi)	Max VSWR	Cable Loss (dB)	Freq Range MHz
(P/N:025.901S2.0011 (0ACAR020017N)) Tx1/ Rx1 Antenna	High-Tek Electronics Co., Ltd	PIFA	Example: (P/N: U.FL-2LP-XXX) 50 ohm Coaxial length: 210cm diameter: 1.13mm	-1.64	-0.96	3	0.68	2400-2500
				-1.31	-0.20	3	1.11	5150-5350
				-1.18	-0.04	3	1.14	5470-5725
				-1.18	-0.01	3	1.17	5725-5850
				-0.09	1.22	3	1.31	5925-6425
				2.38	3.71	3	1.33	6425-6525
				2.92	4.29	3	1.37	6525-6875
				2.92	4.35	3	1.43	6875-7125
(P/N:025.901S2.0001 (0ACAR020016N)) Tx2/ Rx2 Antenna	High-Tek Electronics Co., Ltd	PIFA	50 ohm Coaxial length: 145cm diameter: 1.13mm	-0.24	0.23	3	0.47	2400-2500
				0.73	1.49	3	0.76	5150-5350
				-0.83	-0.04	3	0.79	5470-5725
				-0.56	0.25	3	0.81	5725-5850
				0.90	1.81	3	0.91	5925-6425
				2.55	3.47	3	0.92	6425-6525
				2.89	3.83	3	0.94	6525-6875
				2.85	3.84	3	0.99	6875-7125

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

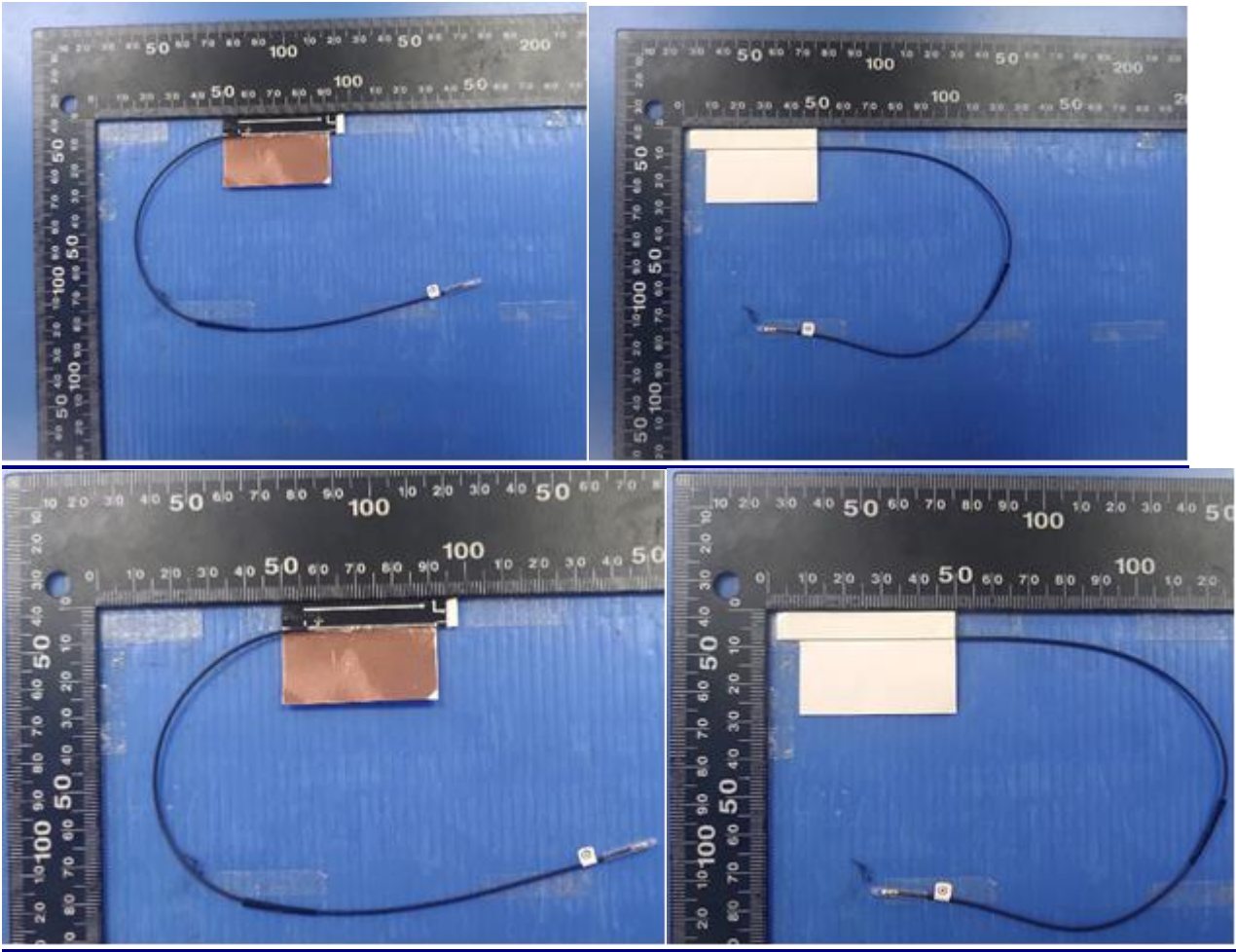
Section 2. Dimensioned Photos or Drawings of Antennas

Include a dimensioned photo and dimensioned drawing of Tx1 antenna here.

Tx1 Antenna Dimensioned Drawing:



Tx1 Antenna Photo:

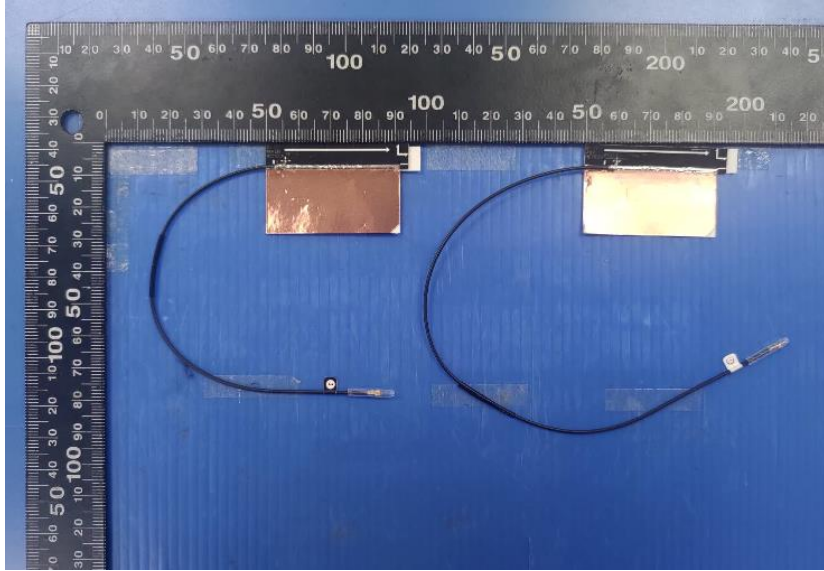


Technical drawing of the 2021 Envy-17 Main chassis showing dimensions and callouts:

- Dimensions: 145±2, 20±1, 40±1, 45, 10±1, 20, 42.
- Callouts: ①, ②, ③, ④, ⑤, ⑥, ⑦, ⑧.
- Text: O.D : 1.13 Black Cable, 噴印文字 - (Spray printed text -), 2021 Envy-17 Main, 025.901S2.0001, YYYY/MM/DD, HTK REV. PV, R.

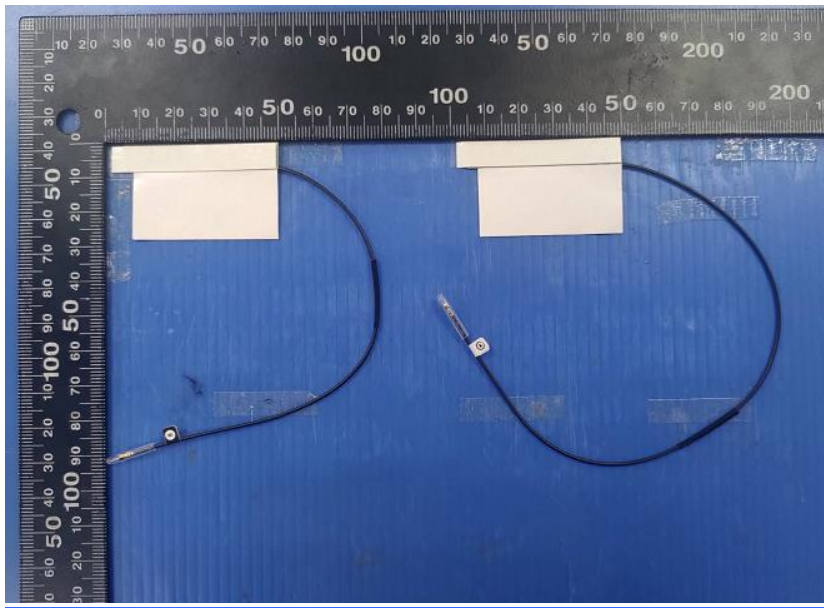
Include front view photo of all 2 antennas here.

Antenna Manufacturer: High-Tek Electronics Co., Ltd
Antenna Part Number: 025.901S2.0011(0ACAR020017N) (Tx1),
025.901S2.0001(0ACAR020016N) (Tx2 or Rx2)



Include back view photo of all 2 antennas here.

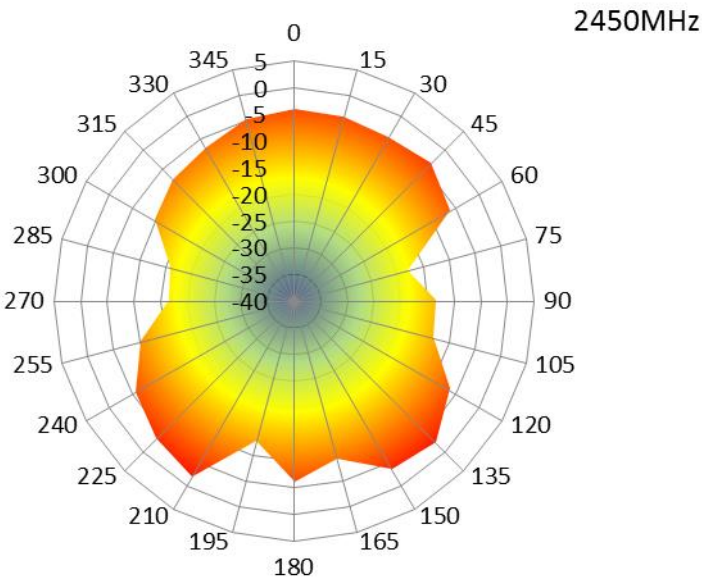
Antenna Manufacturer: High-Tek Electronics Co., Ltd
Antenna Part Number: 025.901S2.0011(0ACAR020017N) (Aux),
025.901S2.0001(0ACAR020016N) (Main)



Section 3. Radiation characteristics of antennae Loaded in Host Platform

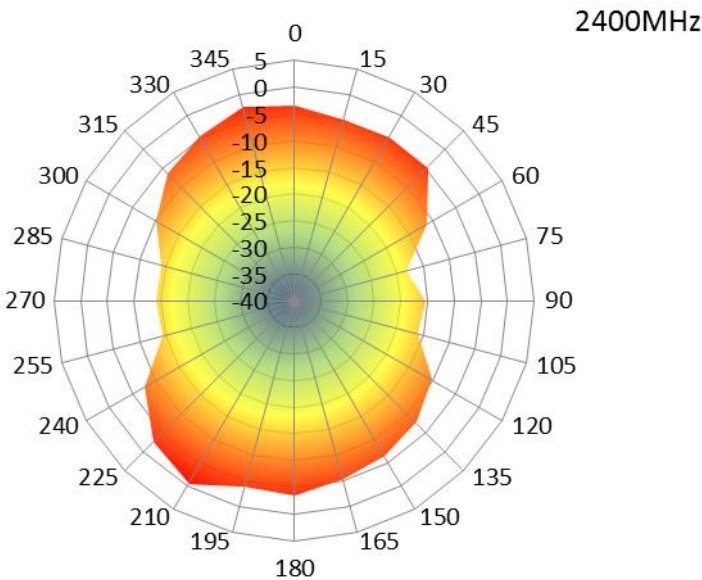
2400-2500MHz radiation characteristic

Tx1 antenna: 2450 MHz



Center Frequency	2450 MHz
Horizontal+ Vertical (dBi) peak	-1.64

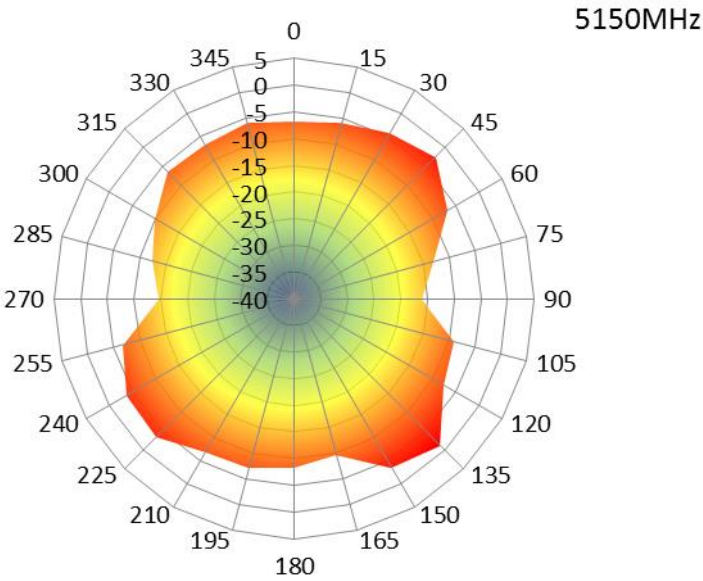
Tx2 antenna: 2400 MHz



Center Frequency	2400 MHz
Horizontal+ Vertical (dBi) peak	-0.24

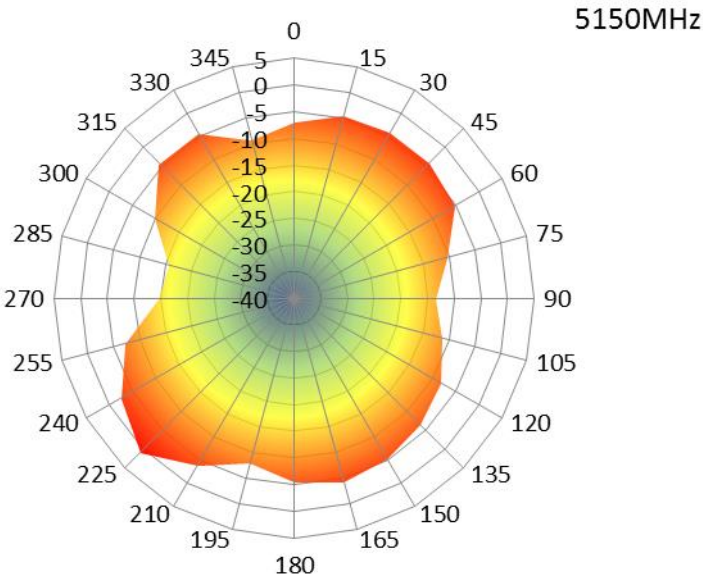
5150-5350MHz radiation characteristic

Tx1 antenna: 5150 MHz



Center Frequency	5150 MHz
Horizontal+ Vertical (dBi) peak	-1.31

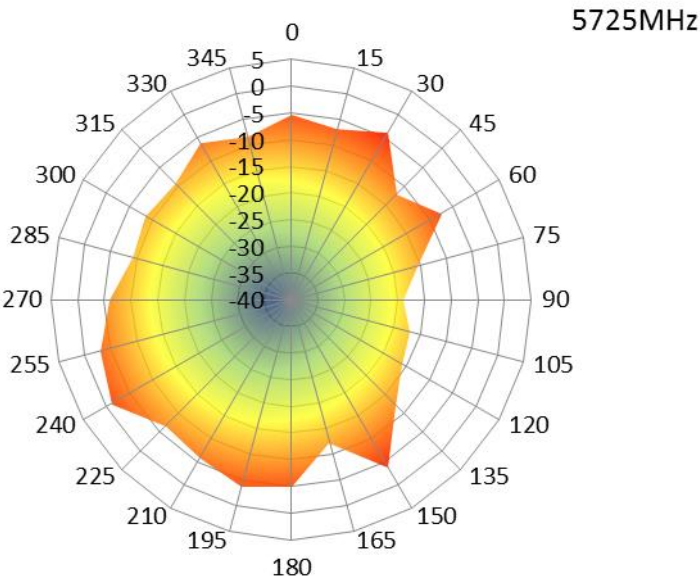
Tx2 antenna: 5150 MHz



Center Frequency	5150 MHz
Horizontal+ Vertical (dBi) peak	0.73

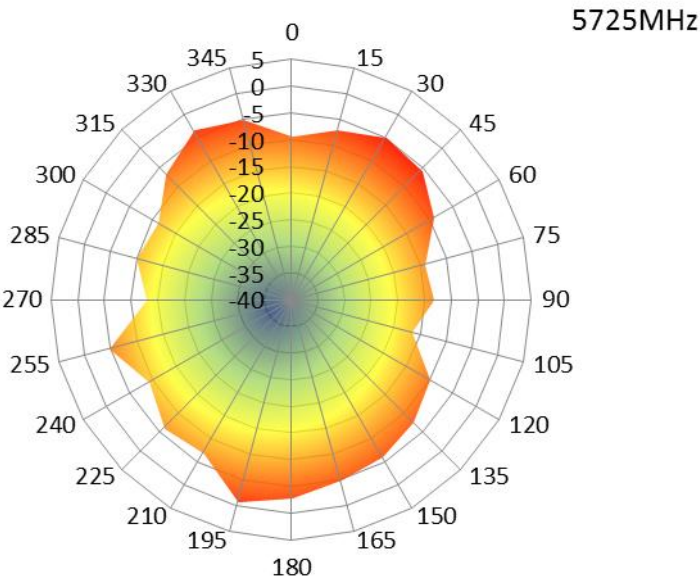
5470-5725MHz radiation characteristic

Tx1 antenna: 5725 MHz



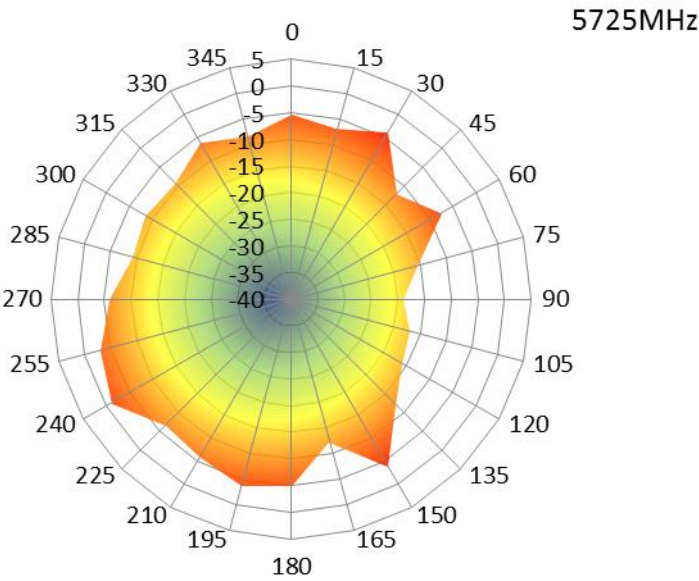
Center Frequency	5725 MHz
Horizontal+ Vertical (dBi) peak	-1.18

Tx2 antenna: 5725 MHz



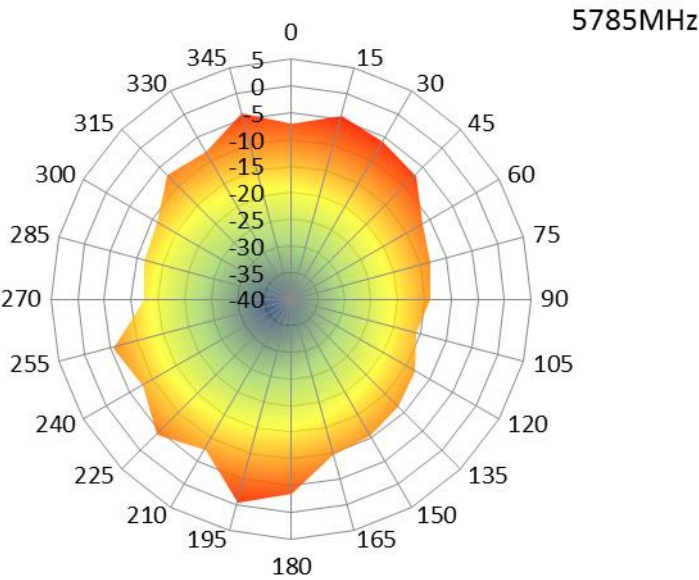
Center Frequency	5725 MHz
Horizontal+ Vertical (dBi) peak	-0.83

Tx1 antenna: 5725 MHz

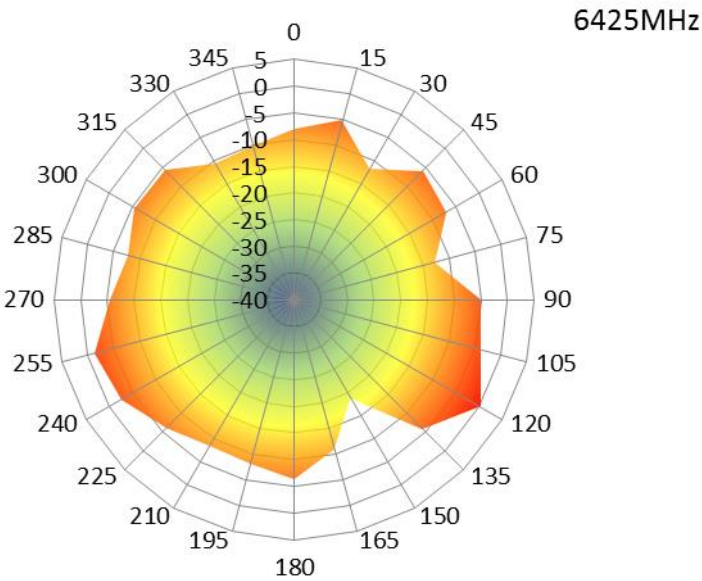


Center Frequency	5725 MHz
Horizontal+ Vertical (dBi) peak	-1.18

Tx2 antenna: 5785 MHz

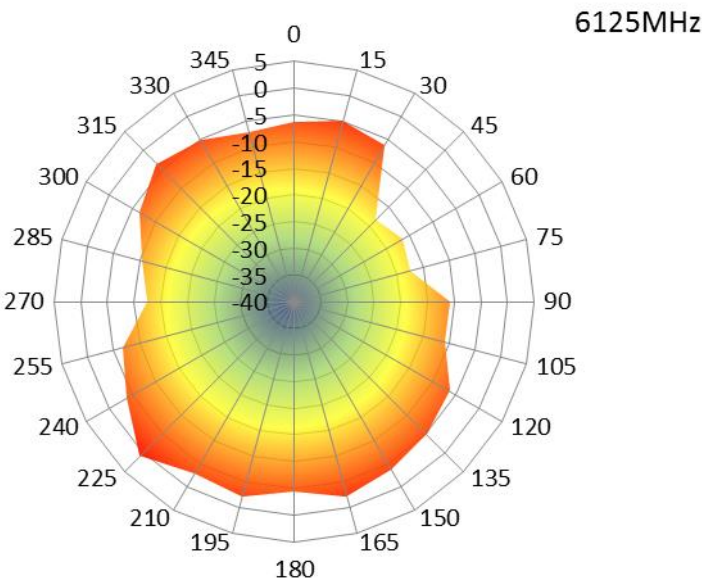


Center Frequency	5785 MHz
Horizontal+ Vertical (dBi) peak	-0.56



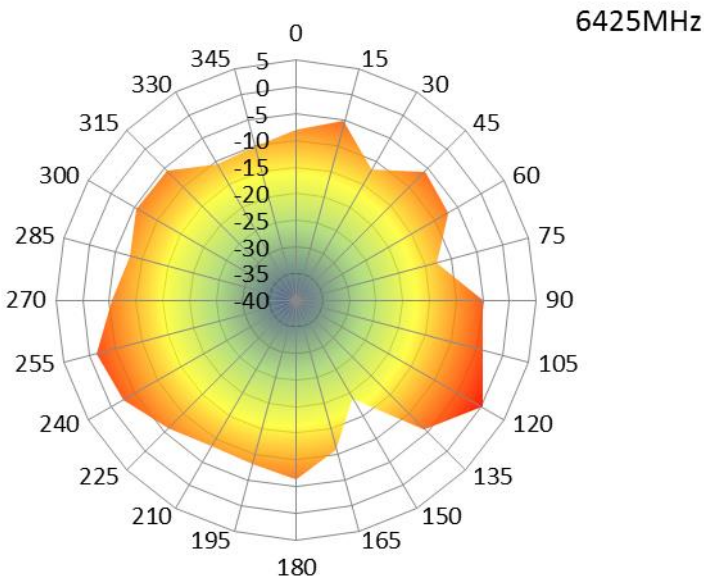
Center Frequency	6425 MHz
Horizontal+ Vertical (dBi) peak	-0.09

Tx2 antenna: 6125 MHz



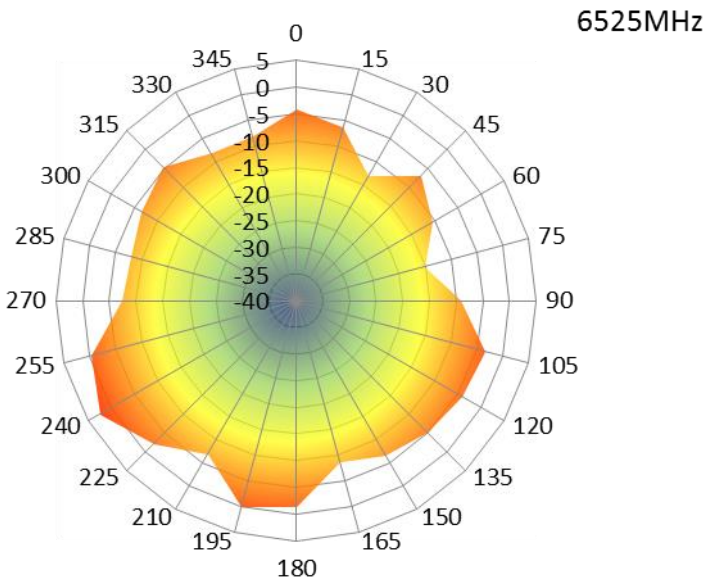
Center Frequency	6125 MHz
Horizontal+ Vertical (dBi) peak	0.90

Tx1 antenna: 6425 MHz

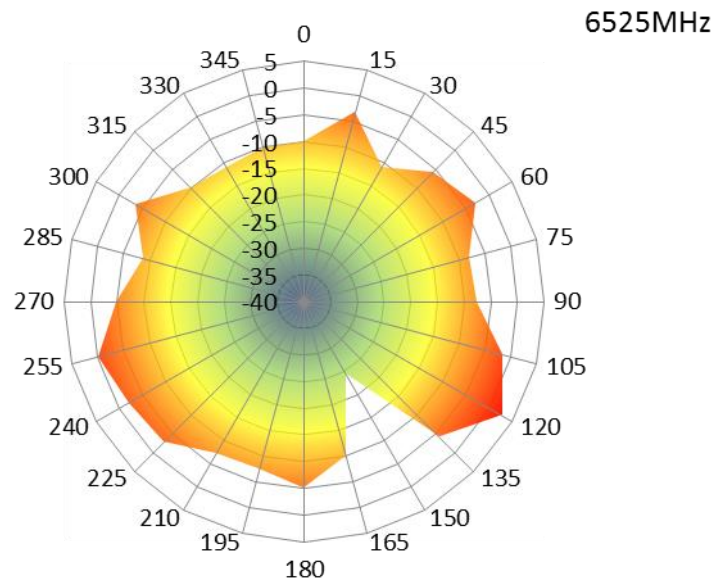


Center Frequency	6425 MHz
Horizontal+ Vertical (dBi) peak	-0.09

Tx2 antenna: 6525 MHz

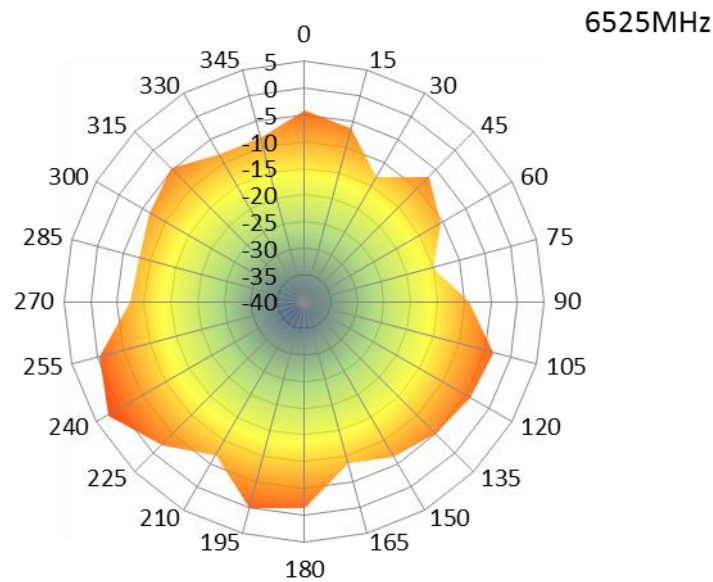


Center Frequency	6525 MHz
Horizontal+ Vertical (dBi) peak	2.55



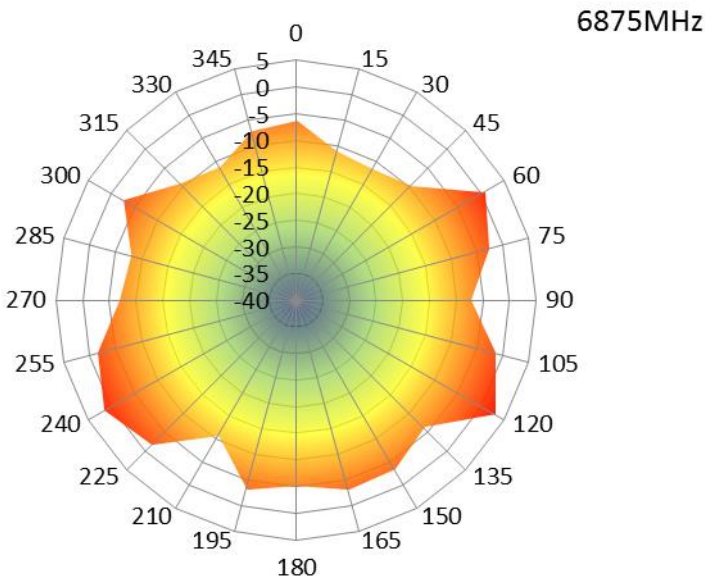
Center Frequency	6525 MHz
Horizontal+ Vertical (dBi) peak	2.38

Tx2 antenna: 6525 MHz



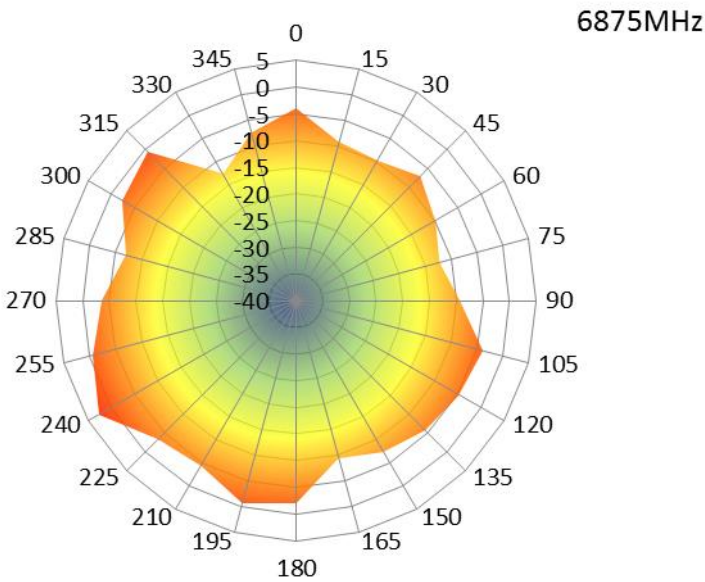
Center Frequency	6525 MHz
Horizontal+ Vertical (dBi) peak	2.55

Tx1 antenna: 6875 MHz



Center Frequency	6875 MHz
Horizontal+ Vertical (dBi) peak	2.92

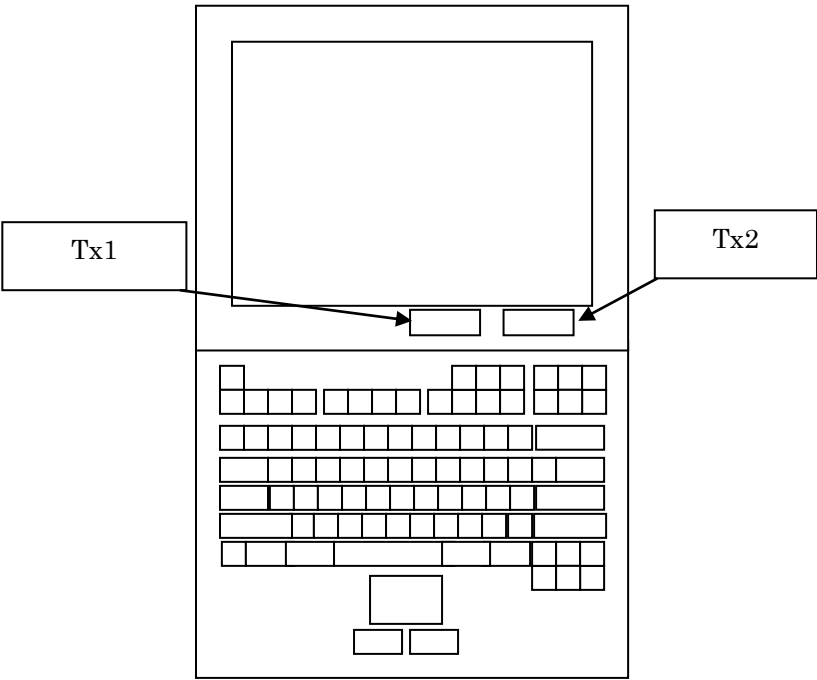
Tx2 antenna: 6875 MHz



Center Frequency	6875 MHz
Horizontal+ Vertical (dBi) peak	2.85

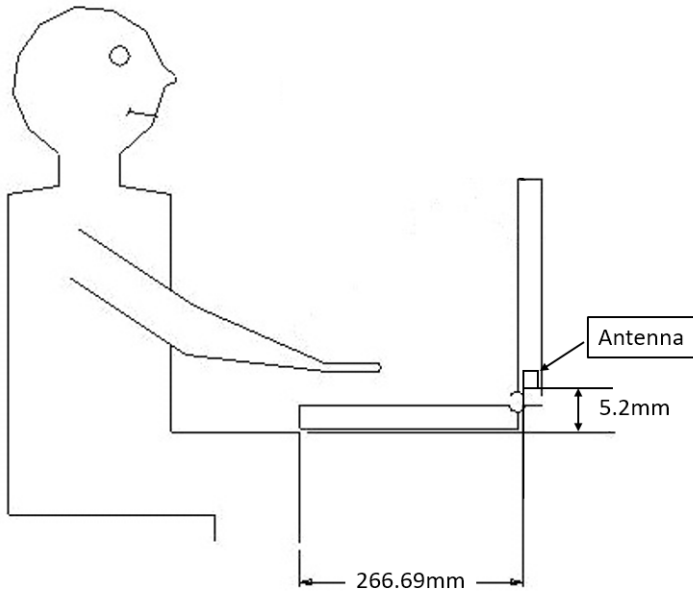
Section 4. Antenna Host Platform Location Information

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

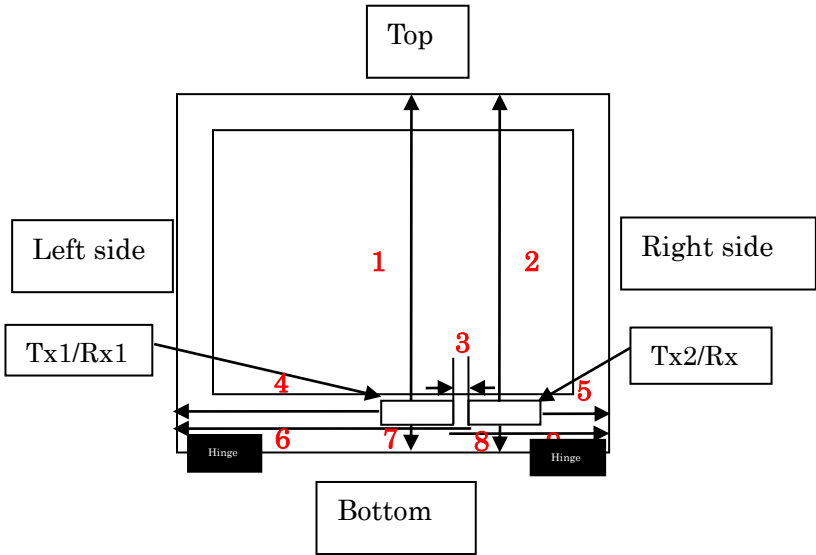
Include a **dimensioned photo(s) or dimensioned drawing(s)** showing the distance (mm) between the transmit antennas and the user. For notebook/laptop hosts show lapheld position (example below). For tablet hosts show all orientations including lapheld, primary & secondary portrait, primary & secondary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



Dimension:	1	2	3	4	5	6	7	8	9
(mm)	249	249	20	200.25	86.46	265.25	2.3	2.3	151.46

TX1 to Right side:(3)+TX2 width+(5) =(9)= 151.46mm

TX2 to Left side:(3)+TX1 width +(4)=(6)= 265.25mm