

Regulatory WLAN Antenna Information

(English Language Required for Intel Regulatory Review / Approval)

Platform information							
Brand	ODM	*****Platform model name	Platform type (ex: regular NB, convertible PC, AIO...etc)	SAR minimum separation (mm)			
SAMSUNG	SAMSUNG	XE350XBA	Regular NB	2.65mm			
*****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				Peak gain w/ cable loss (dBi)			
Vendor	Type	Antenna Part number (Main)	Antenna Part number (Aux)	2.4GHz	5.2GHz	5.5GHz	5.8GHz
WNC	PIFA	81.ELA15.G11	81.ELA15.G12				

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. <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 Manufacture	1C Antenna Type	1D Cable Assembly Part Number and Information	1E *Peak Gain W/ Cable loss (dBi)	1F Peak Gain w/o Cable Loss (dBi)	1G VSWR	1H Cable Loss (dBi)
(P/N:BA42-00653A) Tx1/ Rx1 Antenna (Main)	Wistron Neweb Corporation	PIFA	(P/N:81.ELA15.G11) MHF4L 50 ohm Coaxial length: 76 mm diameter: 1.13mm	2400-2500MHz <u>3.06</u> dBi (peak)	2400-2500MHz <u>3.28</u> dBi	2400-2500MHz <u>2</u> max	2400-2500MHz <u>0.22</u> dBi
				5150-5350MHz <u>3.03</u> dBi (peak)	5150-5350MHz <u>3.38</u> dBi	5150-5350MHz <u>2</u> max	5150-5350MHz <u>0.35</u> dBi
				5470-5725MHz <u>3.0</u> dBi (peak)	5470-5725MHz <u>3.36</u> dBi	5470-5725MHz <u>2.5</u> max	5470-5725MHz <u>0.36</u> dBi
				5725-5850MHz <u>2.4</u> dBi (peak)	5725-5850MHz <u>2.77</u> dBi	5725-5850MHz <u>2.5</u> max	5725-5850MHz <u>0.37</u> dBi
(P/N:BA42-00653B) Tx1/ Rx1 Antenna (Aux)	Wistron Neweb Corporation	PIFA	(P/N:81.ELA15.G12) MHF4L 50 ohm Coaxial length: 132.5mm diameter: 1.13mm	2400-2500MHz <u>3.54</u> dBi (peak)	2400-2500MHz <u>3.93</u> dBi	2400-2500MHz <u>2</u> max	2400-2500MHz <u>0.39</u> dBi
				5150-5350MHz <u>3.37</u> dBi (peak)	5150-5350MHz <u>3.97</u> dBi	5150-5350MHz <u>2</u> max	5150-5350MHz 0.6 dBi
				5470-5725MHz <u>3.53</u> dBi (peak)	5470-5725MHz <u>4.16</u> dBi	5470-5725MHz <u>2.5</u> max	5470-5725MHz 0.63 dBi
				5725-5850MHz <u>4.12</u> dBi (peak)	5725-5850MHz <u>4.76</u> dBi	5725-5850MHz <u>2.5</u> max	5725-5850MHz 0.64 dBi

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

Antenna Peak Gain Table

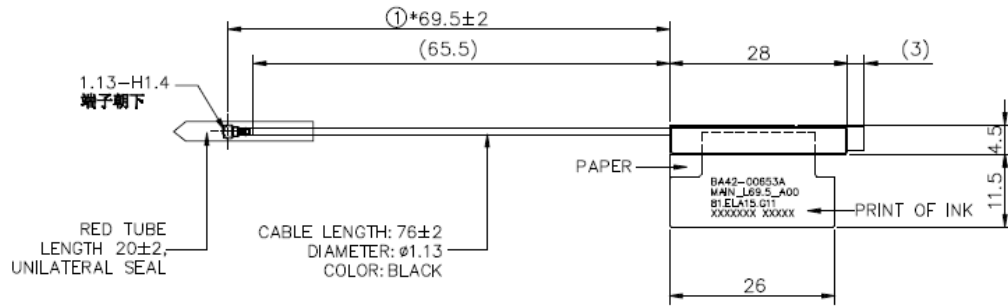
Frequency (MHz)	Main antenna		Aux Antenna	
	Horizontal	Vertical	Horizontal	Vertical
	(dBi)	(dBi)	(dBi)	(dBi)
2400	1.37	1.15	3.14	0.71
2450	0.38	0.85	2.17	0.6
2500	0.3	0.69	1.76	1.71
5150	1.46	1.96	2.21	2
5250	2.23	1.83	2.26	3.4
5350	2.34	2.62	1.3	2.86
5470	0.46	1.33	0.9	2.38
5600	1.5	1.66	1.79	2.56
5725	1.1	1.46	1.92	2.6
5785	1.64	1.52	1.47	2.79
5850	2.61	1.32	1.93	2.96

Section 2. Dimensioned Photos or Drawings of Antennas

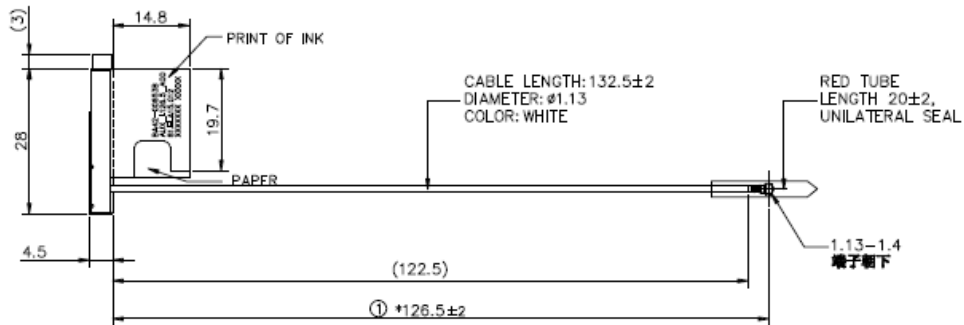
Include a dimensioned photo and dimensioned drawing of Tx1 antenna here.

Tx1 & Tx2 Antenna Dimensioned Drawing:

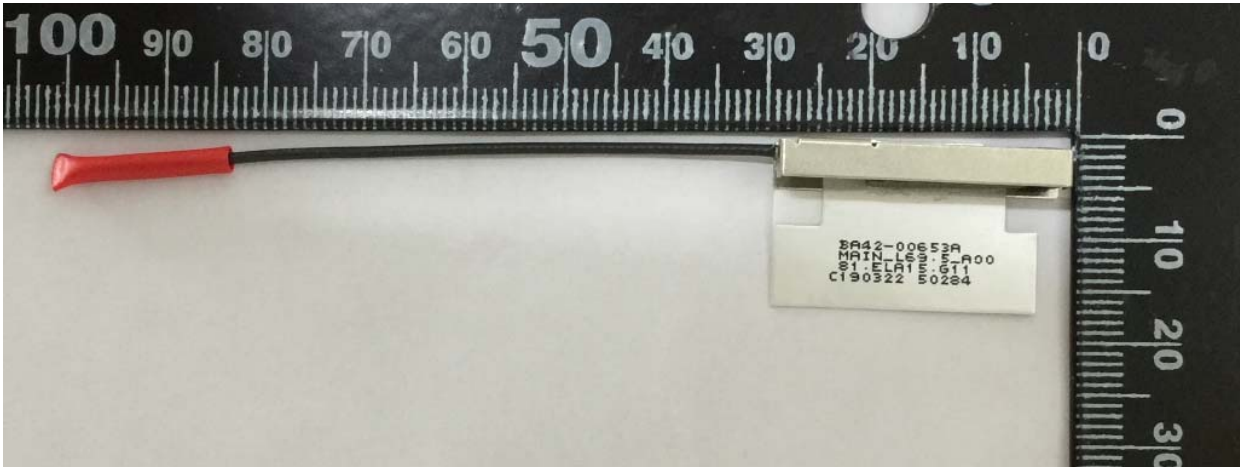
TX1 Drawing(Main)



TX2 Drawing(AUX)



Tx1 Antenna Photo:



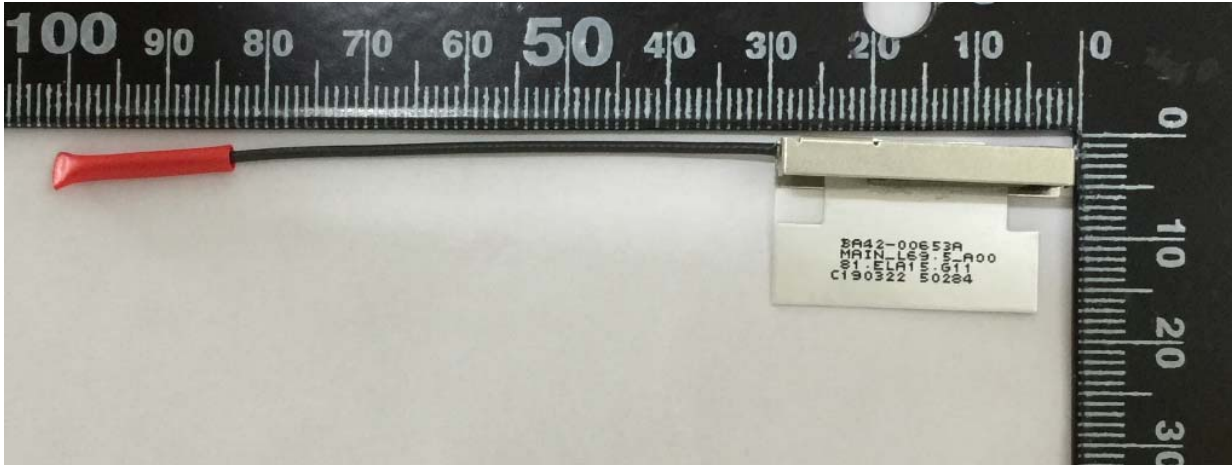
Tx2 Antenna Photo:



Include front view photo of all 2 antennas here.

Antenna Manufacturer: Wistron Neweb Corporation

Antenna Part Number: 81.ELA15.G11



Include back view photo of the antenna here.

Antenna Manufacturer: Wistron Neweb Corportation

Antenna Part Number: 81.ELA15.G11



Include back view photo of all 2 antennas here.

Antenna Manufacturer: Wistron Neweb Corportation

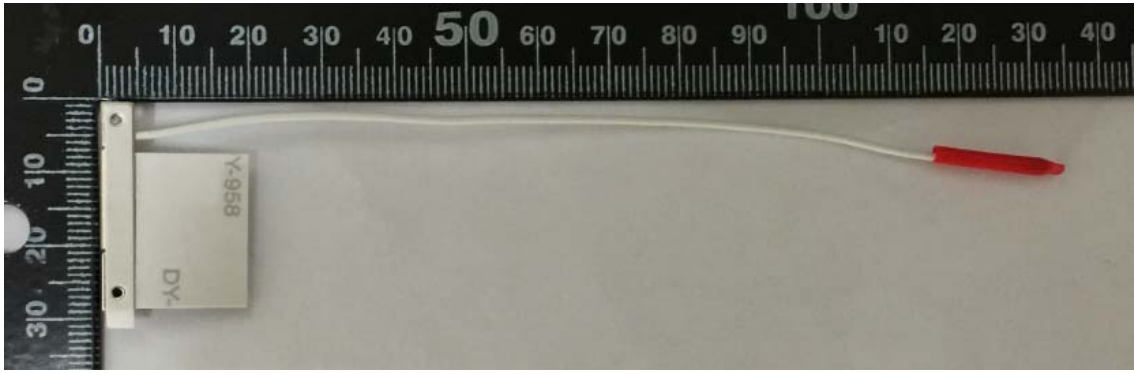
Antenna Part Number: 81.ELA15.G12



Include back view photo of the antenna here.

Antenna Manufacturer: Wistron Neweb Corportation

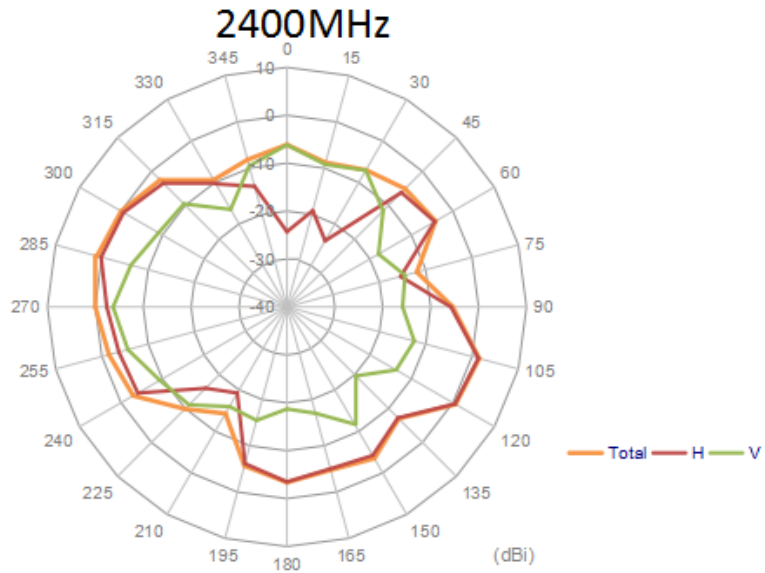
Antenna Part Number: 81.ELA15.G12



Section 3. Radiation characteristics of antennae Loaded in Host Platform

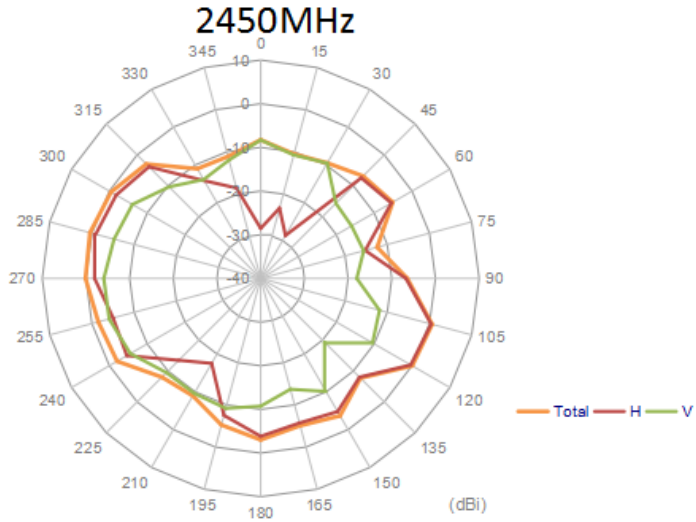
2400-2500MHz radiation characteristic

Tx1 (main) antenna: 2400 ~ 2500MHz



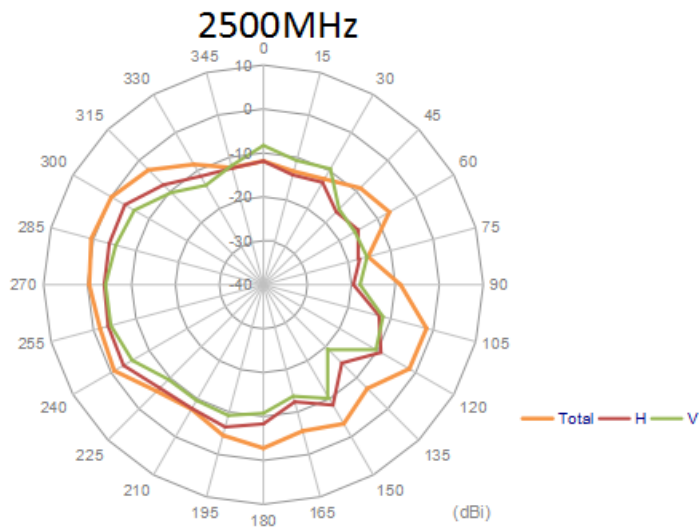
Center Frequency	2400 MHz
Horizontal (dBi) peak	1.37
Vertical (dBi) peak	1.55

Tx1 antenna: 2450 MHz



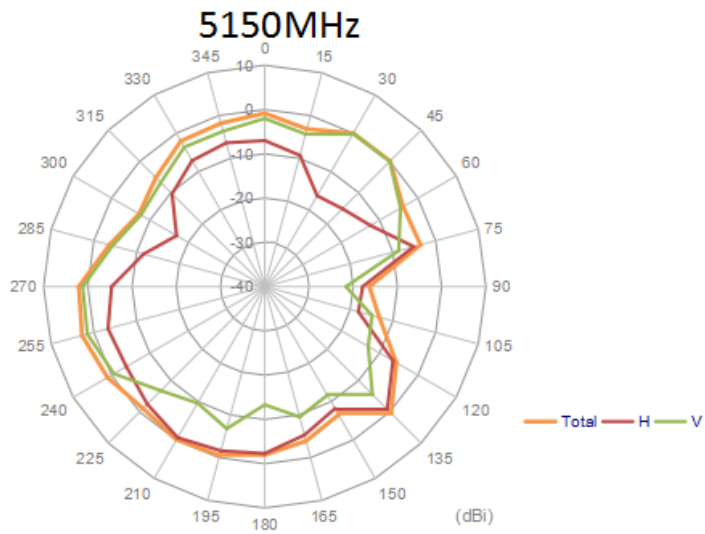
Center Frequency	2450 MHz
Horizontal (dBi) peak	0.37
Vertical (dBi) peak	0.85

Tx1 antenna: 2500MHz

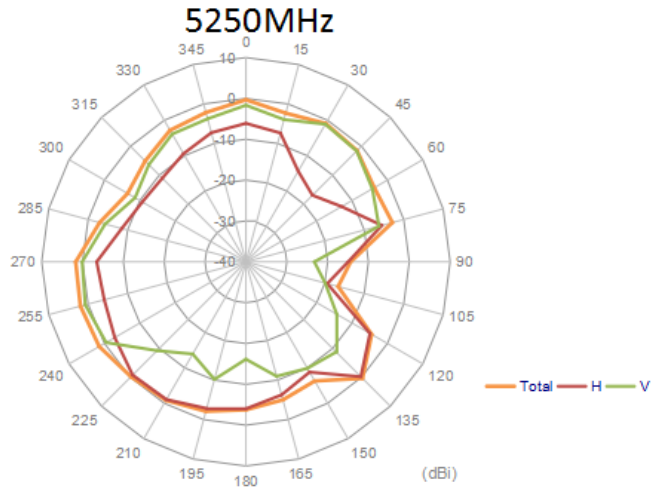


Center Frequency	2500 MHz
Horizontal (dBi) peak	0.3
Vertical (dBi) peak	0.69

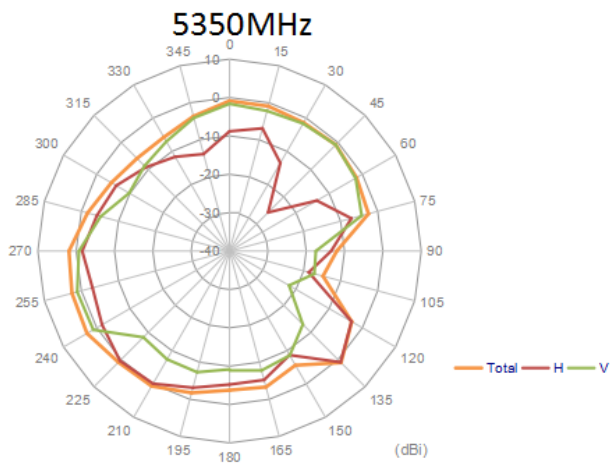
Tx1 5150-5350 MHz radiation characteristic



Center Frequency	5150 MHz
Horizontal (dBi) peak	1.46
Vertical (dBi) peak	1.96

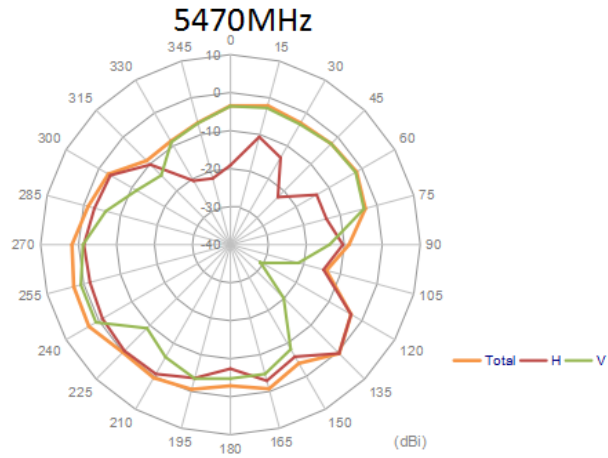


Center Frequency	5250 MHz
Horizontal (dBi) peak	2.23
Vertical (dBi) peak	1.83

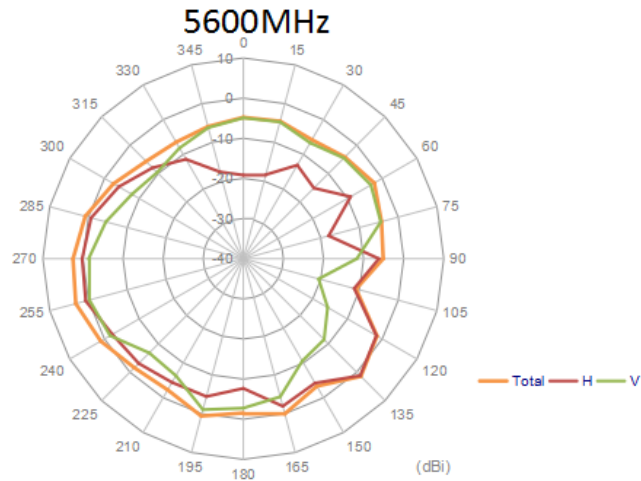


Center Frequency	5350 MHz
Horizontal (dBi) peak	2.34
Vertical (dBi) peak	2.62

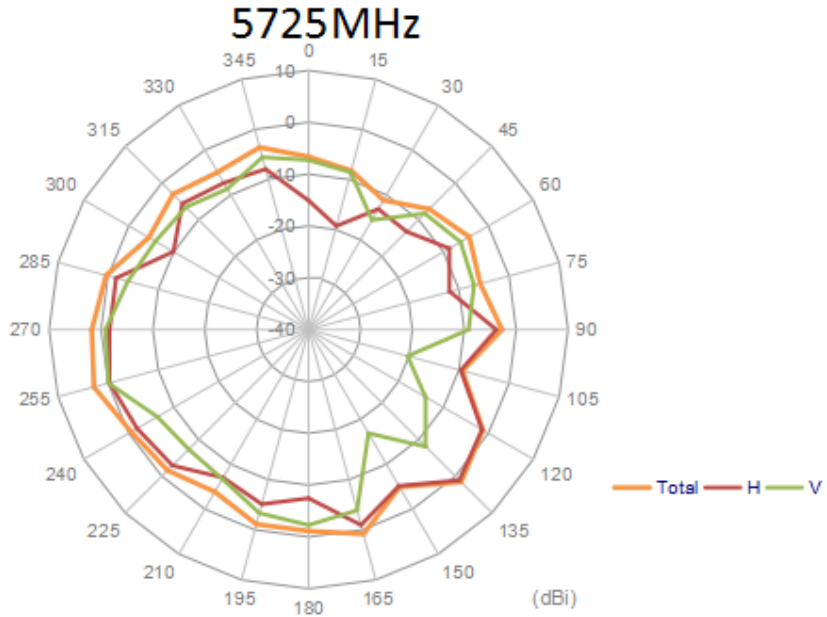
Tx1 5470-5725MHz radiation characteristic



Center Frequency	5470 MHz
Horizontal (dBi) peak	0.46
Vertical (dBi) peak	1.33

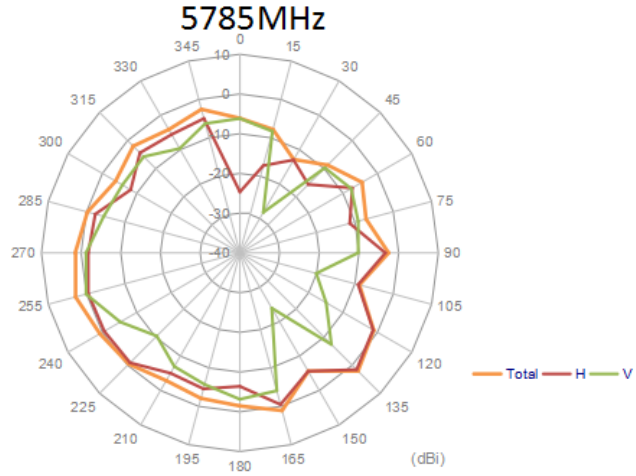


Center Frequency	5600 MHz
Horizontal (dBi) peak	1.5
Vertical (dBi) peak	1.66

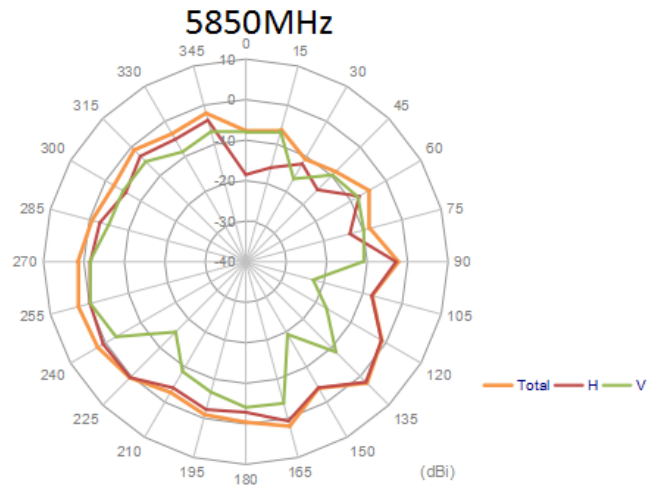


Center Frequency	5725 MHz
Horizontal (dBi) peak	1.1
Vertical (dBi) peak	1.46

Tx1 5785-5850 MHz radiation characteristic

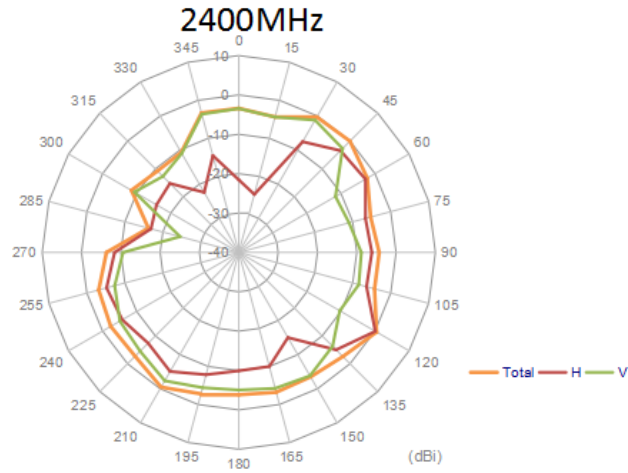


Center Frequency	5785 MHz
Horizontal (dBi) peak	1.64
Vertical (dBi) peak	1.52



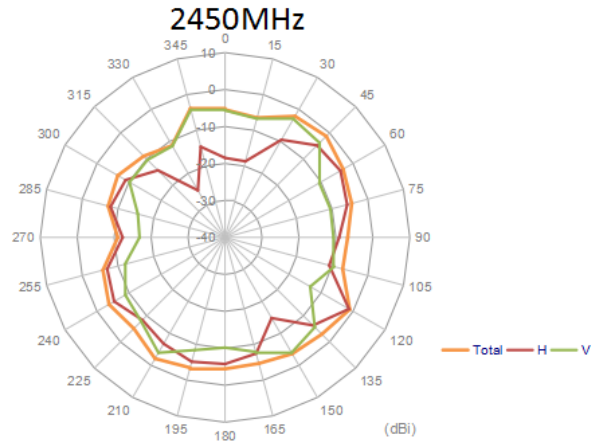
Center Frequency	5850 MHz
Horizontal (dBi) peak	2.61
Vertical (dBi) peak	1.32

TX2 AUX 2400-2485MHz radiation characteristic



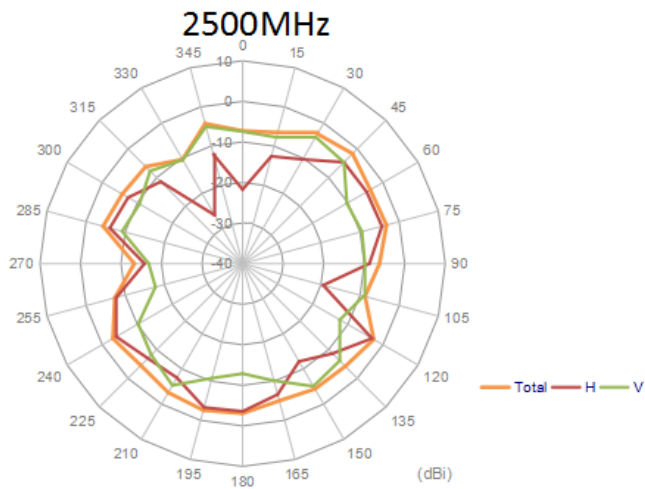
Center Frequency	2400 MHz
Horizontal (dBi) peak	3.14
Vertical (dBi) peak	0.71

Tx2 antenna: 2450 MHz



Center Frequency	2450 MHz
Horizontal (dBi) peak	2.17
Vertical (dBi) peak	0.6

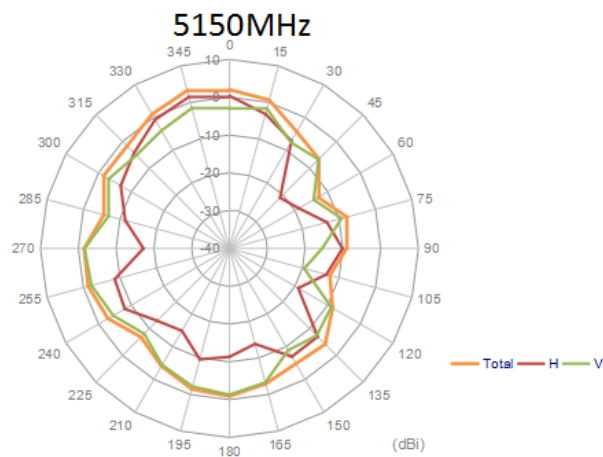
Tx2 antenna: 2500MHz



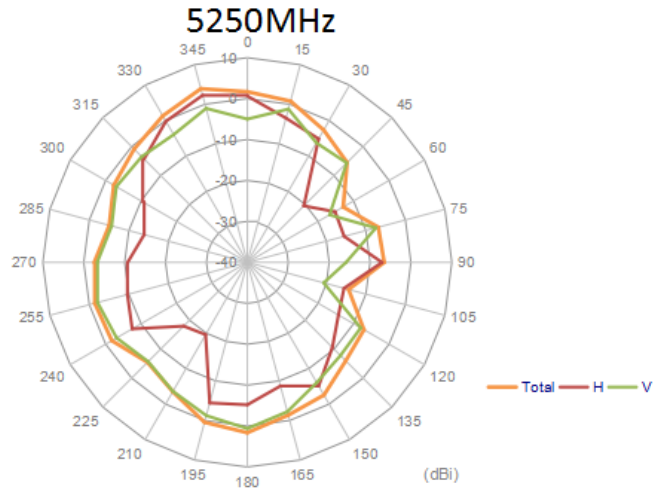
Center Frequency	2500 MHz
Horizontal (dBi) peak	1.76

Vertical (dBi) peak	1.71
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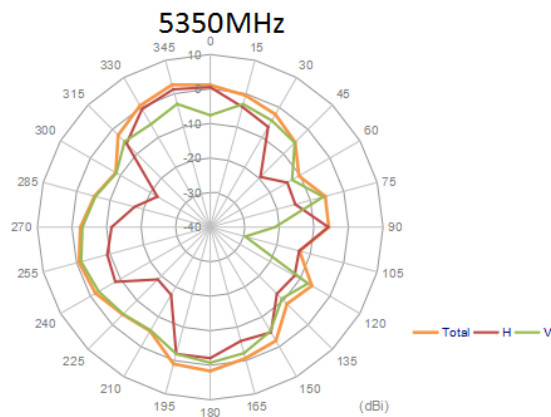
Tx2 5150-5350 MHz radiation characteristic



Center Frequency	5150 MHz
Horizontal (dBi) peak	2.21
Vertical (dBi) peak	2

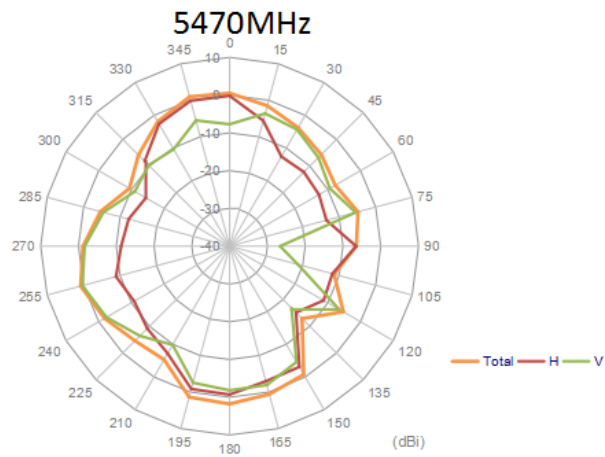


Center Frequency	5250 MHz
Horizontal (dBi) peak	2.26
Vertical (dBi) peak	3.4

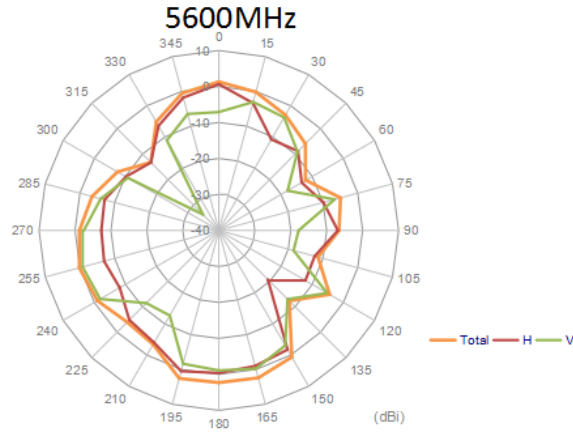


Center Frequency	5350 MHz
Horizontal (dBi) peak	1.3
Vertical (dBi) peak	2.86

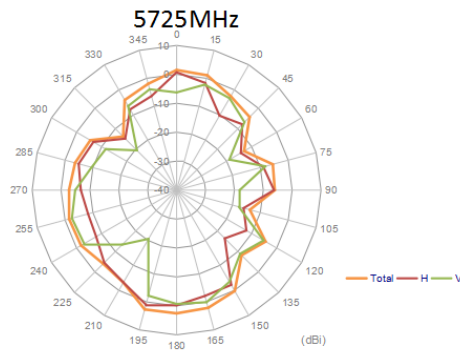
Tx2 5470-5725MHz radiation characteristic



Center Frequency	5470 MHz
Horizontal (dBi) peak	0.9
Vertical (dBi) peak	2.38

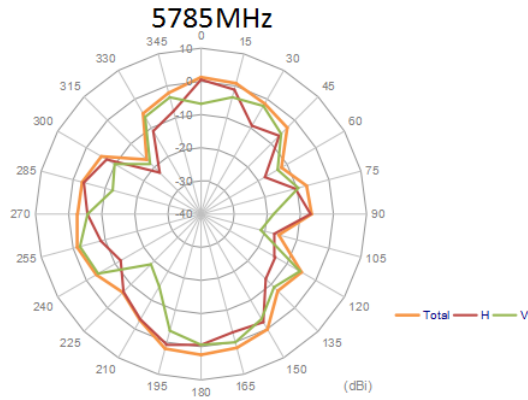


Center Frequency	5600 MHz
Horizontal (dBi) peak	1.79
Vertical (dBi) peak	2.56

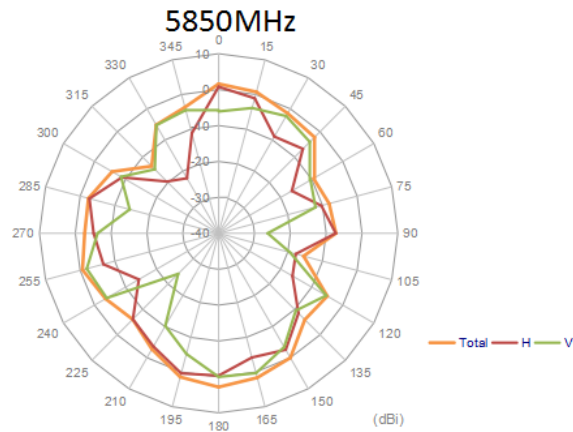


Center Frequency	5725 MHz
Horizontal (dBi) peak	1.92
Vertical (dBi) peak	2.6

Tx2 5785-5850 MHz radiation characteristic



Center Frequency	5785 MHz
Horizontal (dBi) peak	1.47
Vertical (dBi) peak	2.79

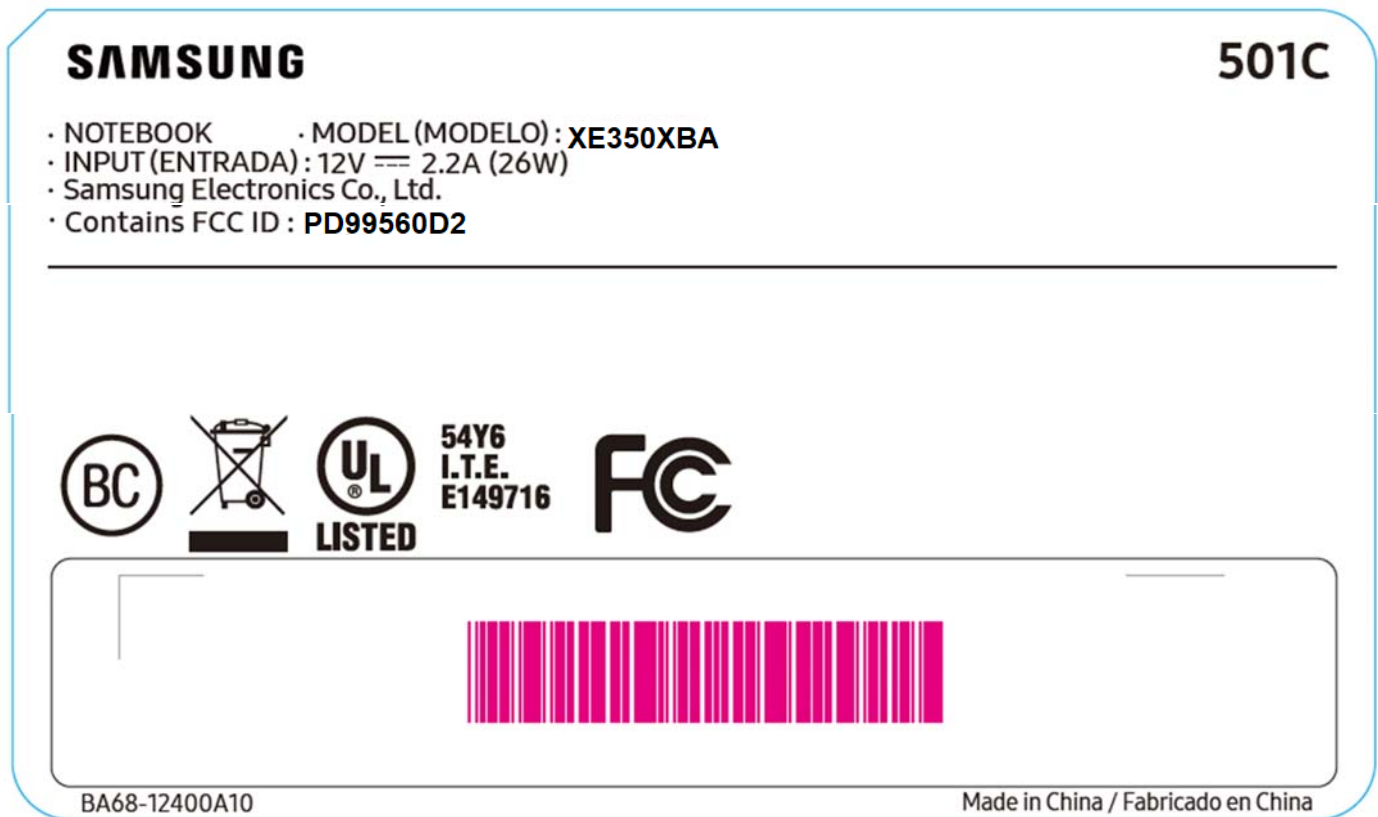


Center Frequency	5850 MHz
Horizontal (dBi) peak	1.93
Vertical (dBi) peak	2.96

Section 4. Host Platform Information

OEM / ODM Host platform: (XXXXXXX) platform correlated to antenna data

Rating Label Photo:



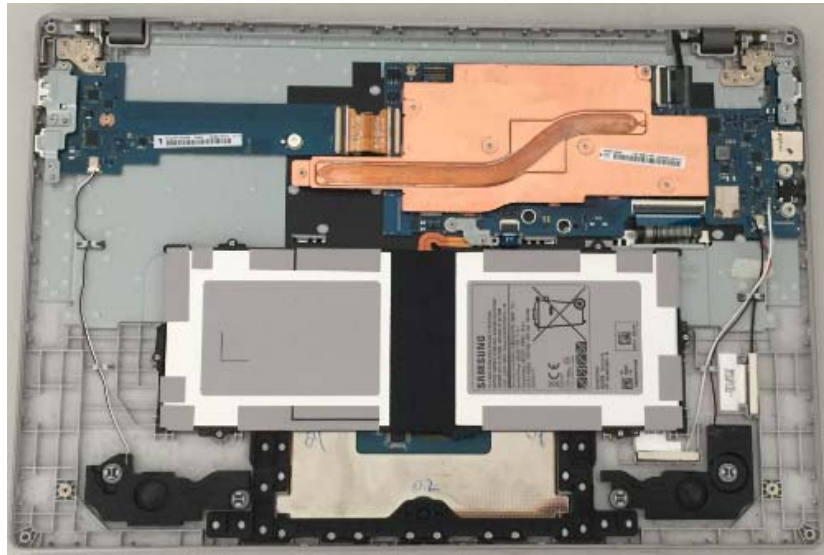


Section 5. Antenna Host Platform Location Information

Include a **dimensioned photo(s) or dimensioned drawing(s)** of Tx1, Tx2 and Tx3 antenna placements (measurements are not required for receive-only antenna).

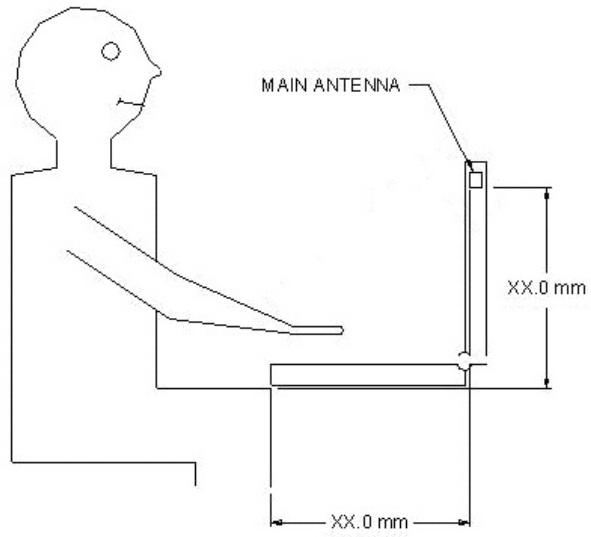
Any antenna that transmits must show dimensions to bottom of laptop. Provide a description of the materials that are used for supporting or surrounding transmit antennas; for example, non-conductive plastics vs. conductive coated plastic or metallic materials.





Section 6. 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 (excluding hands, wrist, feet, and ankle). 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 7. 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)

