

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	Wistron	P92F				Yes	regular NB			6.48			
****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)					
HB		Monopole		Antenna P/N: 330-29002 Wistron P/N: 025.901WT.0011				Antenna P/N: 330-29003 Wistron P/N: 025.901WU.0011					
Peak gain w/ cable loss (dBi)													
2.4GHz 2400-2500MHz		5.2&5.3GHz 5150-5350MHz				5.5GHz 5470-5725MHz			5.8GHz 5725-5850MHz				
3.07		3.28				3.93			4.13				
Module information													
(Please check with "x" when applies, or to fill-in proper model in empty column and specify (manual key-in) if you use non-regular sku, ie. Low power sku or mid power sku.)													
Model	Form factor and suffixes												
9560 (JfP 2)		NGW		D2W		D2WL	AX201 (HrP2)		NGW		D2W		D2WL
9260 (ThP 2)		NGW		D2WL			AX200 (CcP2)		NGW		D2WL		
9461 (JfP 1)		NGW		D2W			AX210 (TyP2)		NGW		D2W		
9462 (JfP 1)		NGW		D2W			Other Intel model		AX211D2W				
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	Generic sku: refer to modular FCC SAR report Mid-power sku: ≥8 Low power sku: ≥5			
Monopole	3.22	3.35	3.42	4.77	4.72	4.75	4.29	4.81	4.74				
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)													

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	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 <u>and</u> 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. <u>(S. Korea requires photographs of antennas for approval submission).</u> <u>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 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)
Main Antenna P/N: 330-29002 Wistron P/N: 025.901WT.0011	Hong-BO Co., Ltd.	Monopole	50 ohm Coaxial. length: 155 mm diameter: 1.37mm Connector: IPEX NGFF	2400-2500MHz	2400-2500MHz 3.07 dBi (peak)	2400-2500MHz 3.66 dBi (peak)	2400-2500MHz 3.50 max	2400-2500MHz 0.59 dBi (peak)
				5150-5350 MHz	5150-5350 MHz 3.28 dBi (peak)	5150-5350 MHz 4.06 dBi (peak)	5150-5350 MHz 3.50 max	5150-5350 MHz 0.78 dBi (peak)
				5470-5725 MHz	5470-5725 MHz 3.92 dBi (peak)	5470-5725 MHz 4.74 dBi (peak)	5470-5725 MHz 3.50 max	5470-5725 MHz 0.82 dBi (peak)
				5725-5850 MHz	5725-5850 MHz 3.92 dBi (peak)	5725-5850 MHz 4.75 dBi (peak)	5725-5850 MHz 3.50 max	5725-5850 MHz 0.83 dBi (peak)
Aux Antenna P/N: 330-29003 Wistron P/N: 025.901WU.0011	Hong-BO Co., Ltd.	Monopole	50 ohm Coaxial. length: 278 mm diameter: 1.37mm Connector: IPEX NGFF	2400-2500MHz	2400-2500MHz 2.99 dBi (peak)	2400-2500MHz 3.90 dBi (peak)	2400-2500MHz 3.50 max	2400-2500MHz 0.91 dBi (peak)
				5150-5350 MHz	5150-5350 MHz 3.25 dBi (peak)	5150-5350 MHz 4.46 dBi (peak)	5150-5350 MHz 3.50 max	5150-5350 MHz 1.21 dBi (peak)
				5470-5725 MHz	5470-5725 MHz 3.93 dBi (peak)	5470-5725 MHz 5.21 dBi (peak)	5470-5725 MHz 3.50 max	5470-5725 MHz 1.28 dBi (peak)
				5725-5850 MHz	5725-5850 MHz 4.13 dBi (peak)	5725-5850 MHz 5.43 dBi (peak)	5725-5850 MHz 3.50 max	5725-5850 MHz 1.30 dBi (peak)

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

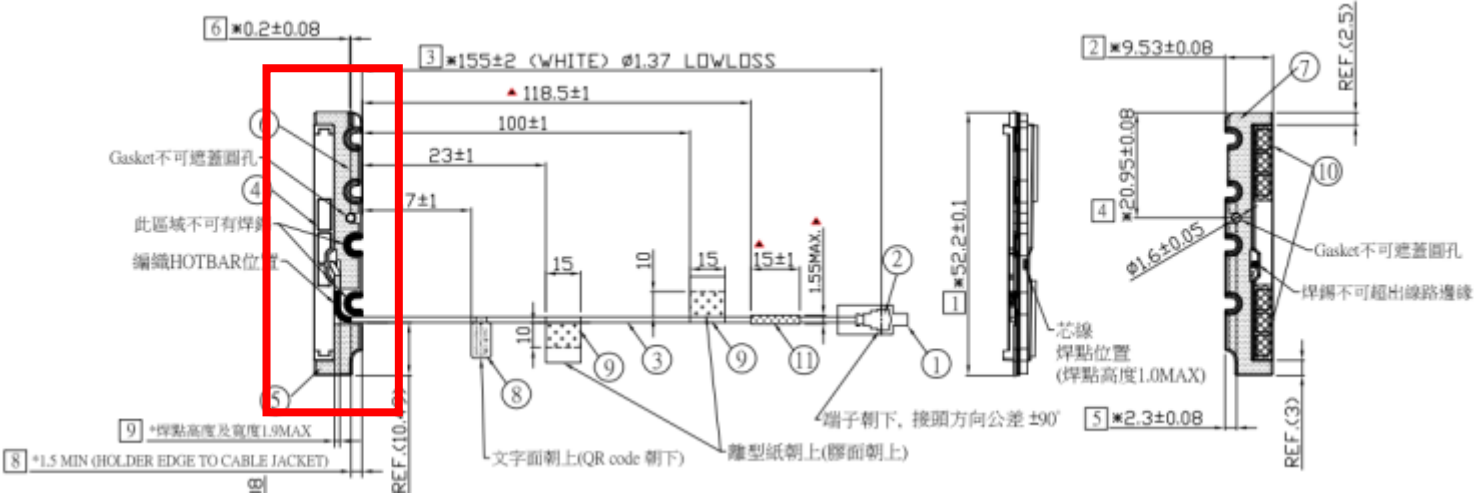
3D Antenna Peak Gain Table:

	Main antenna	Aux Antenna
Frequency (MHz)	(dBi)	(dBi)
2412	3.02	2.99
2442	3.07	2.86
2484	2.92	2.89
5150	3.06	3.24
5250	3.24	3.10
5350	3.28	3.25
5470	3.88	3.93
5725	3.92	3.67
5785	3.68	3.39
5875	3.83	4.13

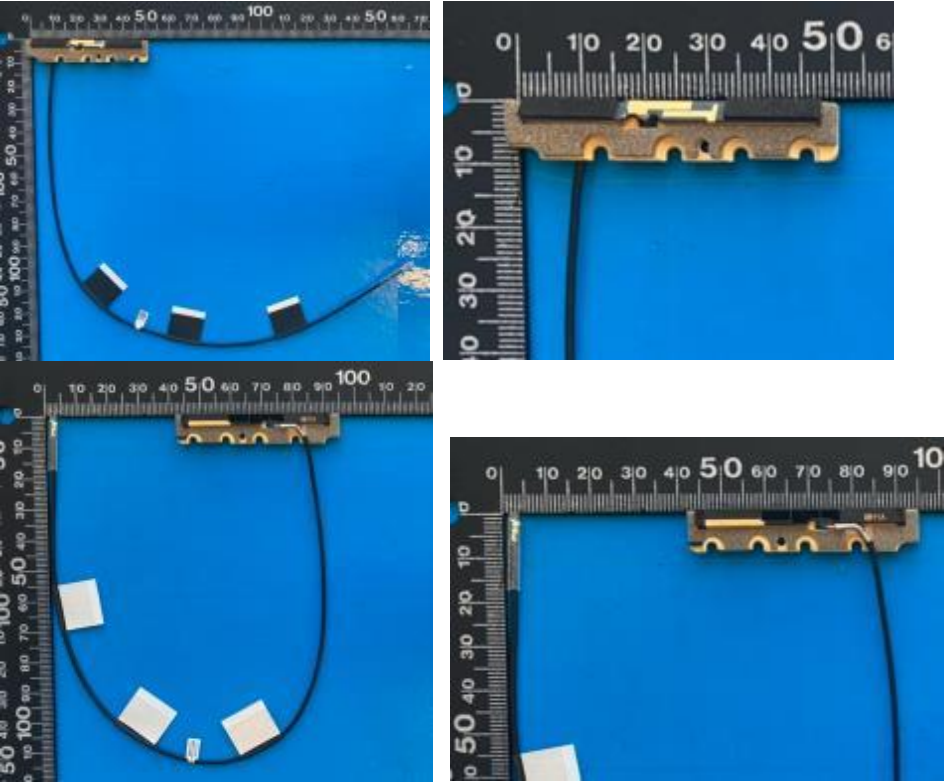
Section 2. Dimensioned Photos or Drawings of Antennas

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

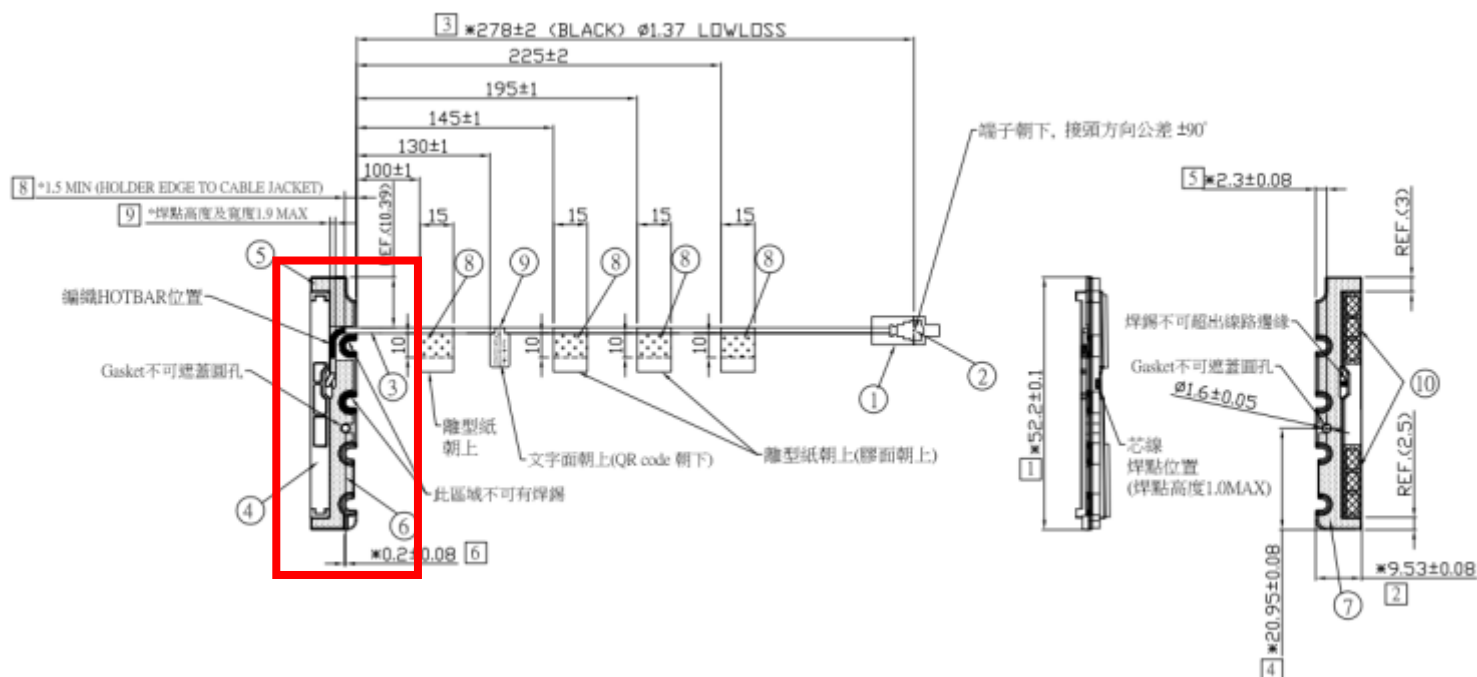
Main Antenna Dimensioned Drawing:



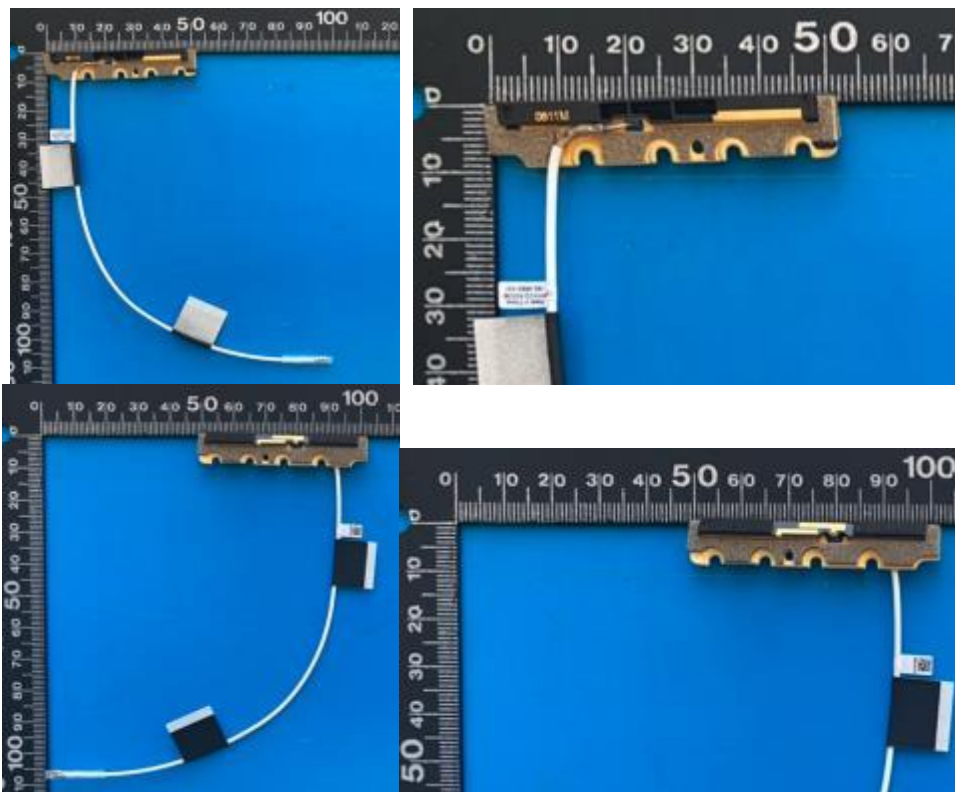
Main Antenna Photo:



Aux Antenna Dimensioned Drawing:



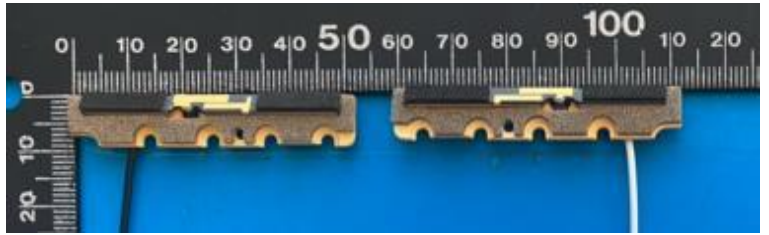
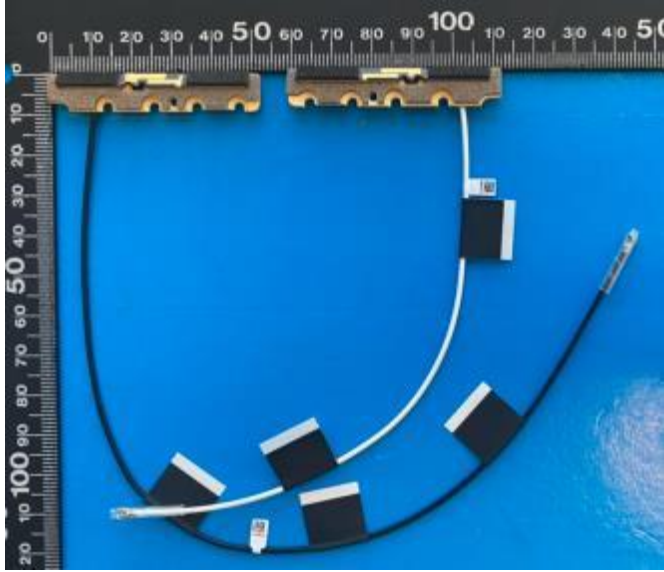
Aux Antenna Photo:



Include front view photo of all 2 antennas here.

Antenna Manufacturer: HB

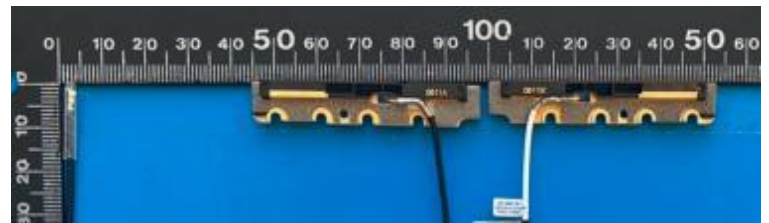
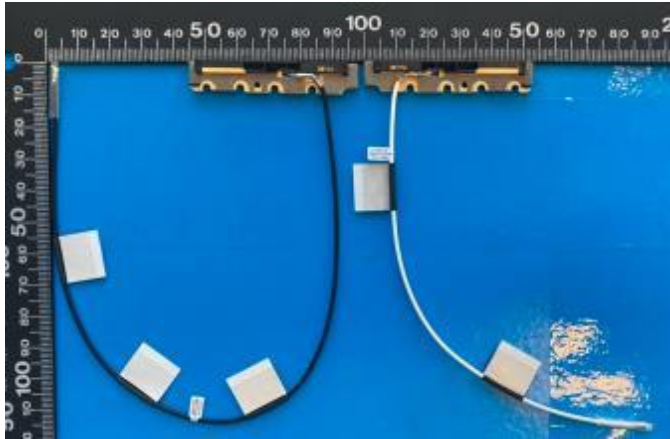
Antenna Part Number: 025.901WT.0011 (330-29002) (Main), 025.901WU.0011 (330-29003) (Aux)



Include back view photo of all 2 antennas here.

Antenna Manufacturer: HB

Antenna Part Number: 025.901WT.0011 (330-29002) (Main), 025.901WU.0011 (330-29003) (Aux)

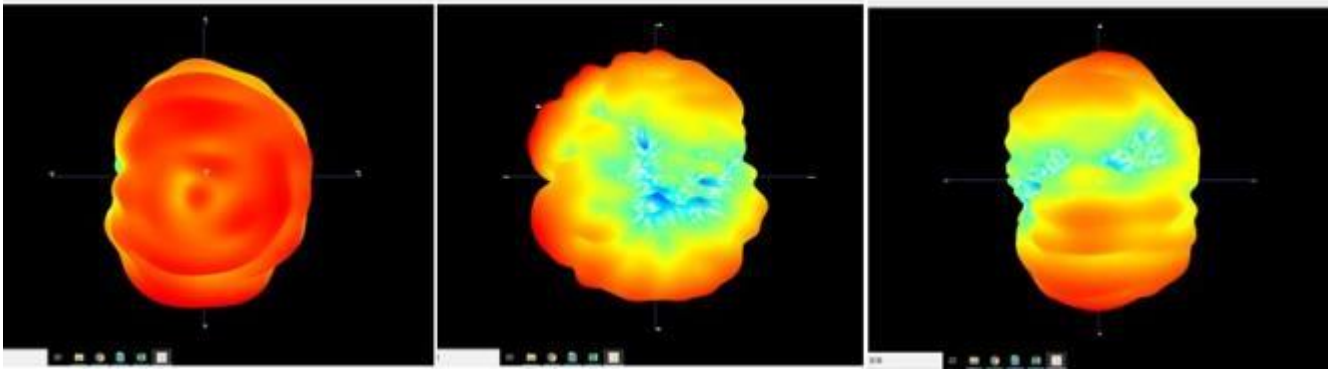


Note: antenna photo should include L type ruler

Section 3. Radiation characteristics of antennae Loaded in Host Platform

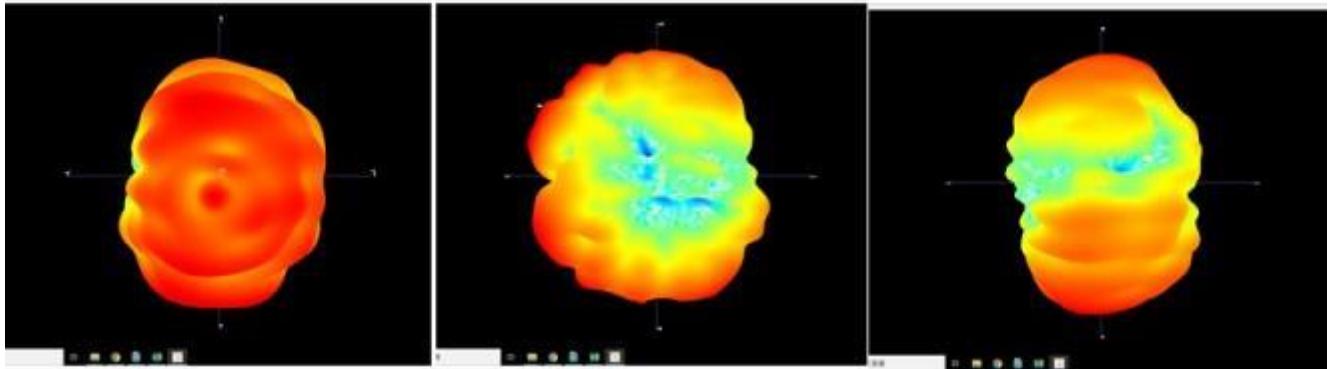
2400-2500MHz radiation characteristic

Main antenna: 2412 MHz



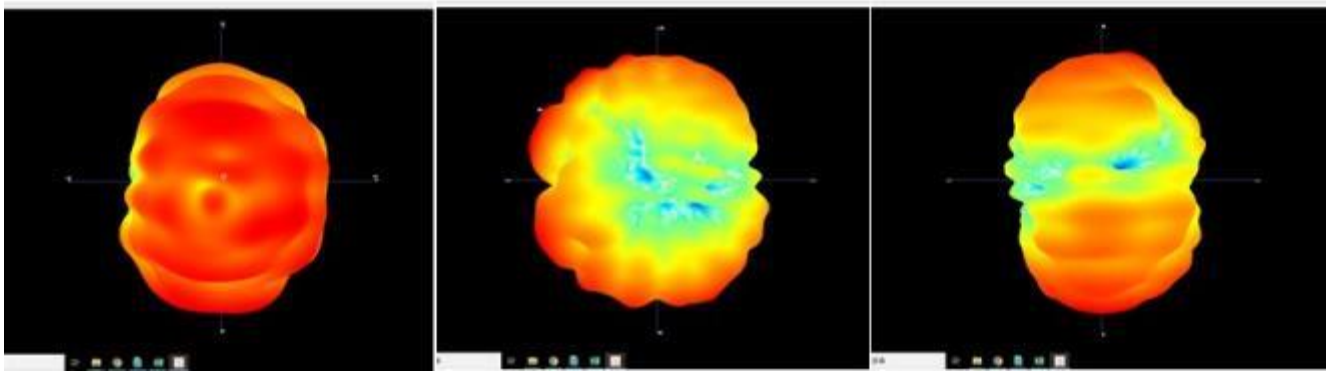
Center Frequency	2412 MHz
Three-dimensional (dBi) peak	3.02

Main antenna: 2442 MHz



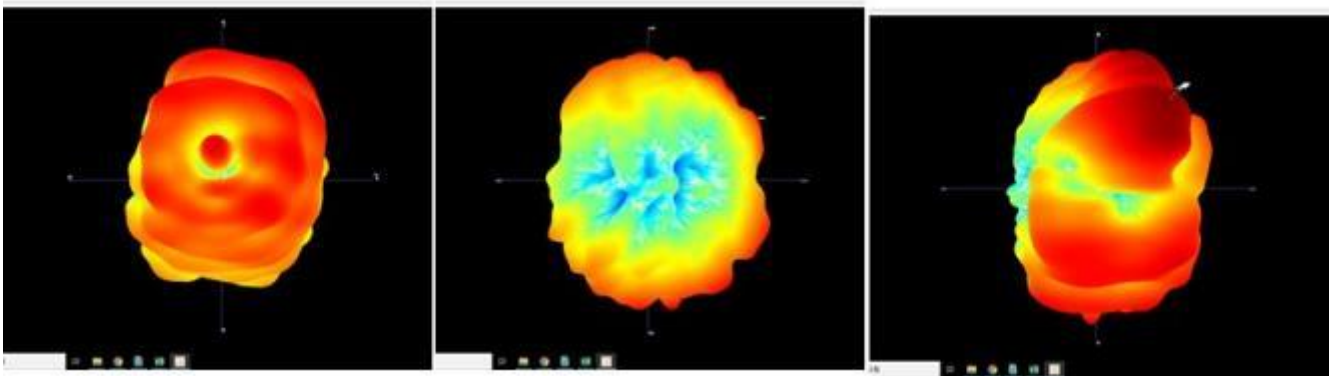
Center Frequency	2442 MHz
Three-dimensional (dBi) peak	3.07

Main antenna: 2484 MHz



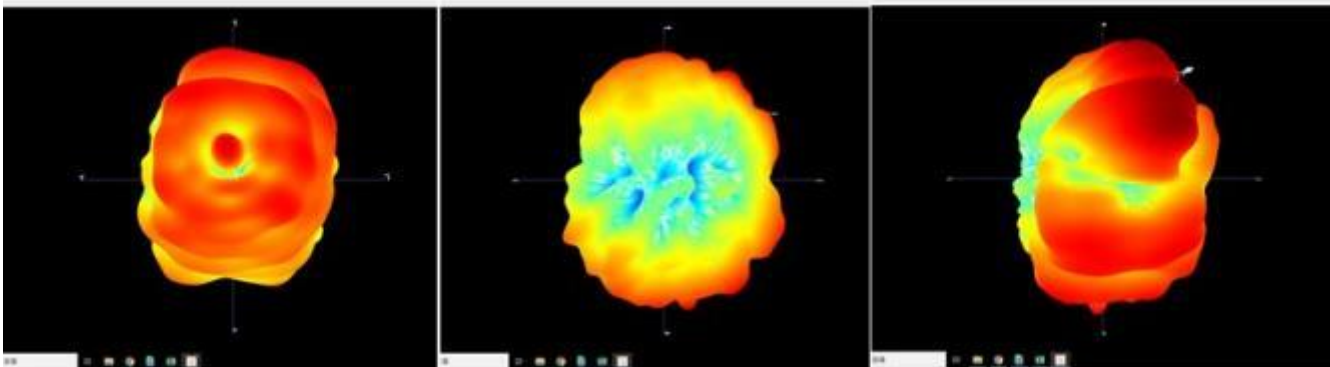
Center Frequency	2484 MHz
Three-dimensional (dBi) peak	2.92

Aux antenna: 2412 MHz



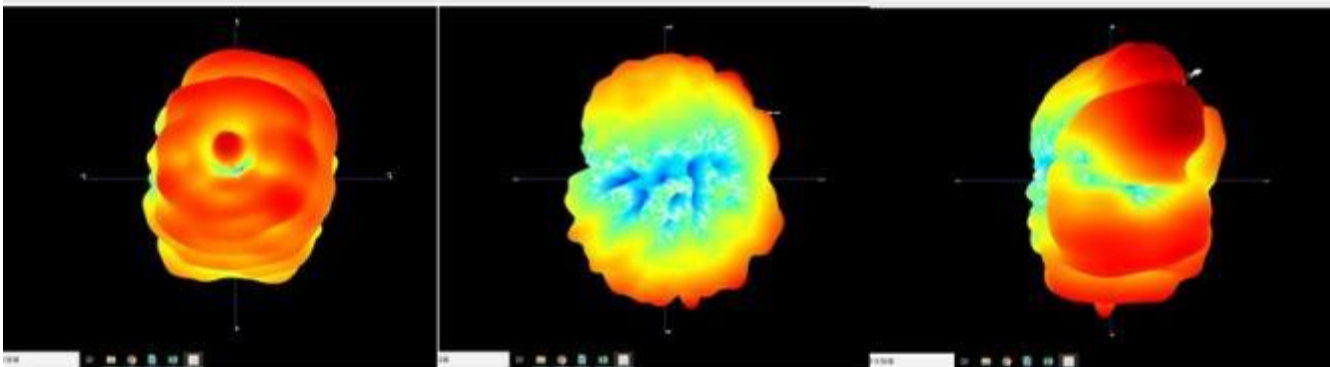
Center Frequency	2412 MHz
Three-dimensional (dBi) peak	2.99

Aux antenna: 2442 MHz



Center Frequency	2442 MHz
Three-dimensional (dBi) peak	2.86

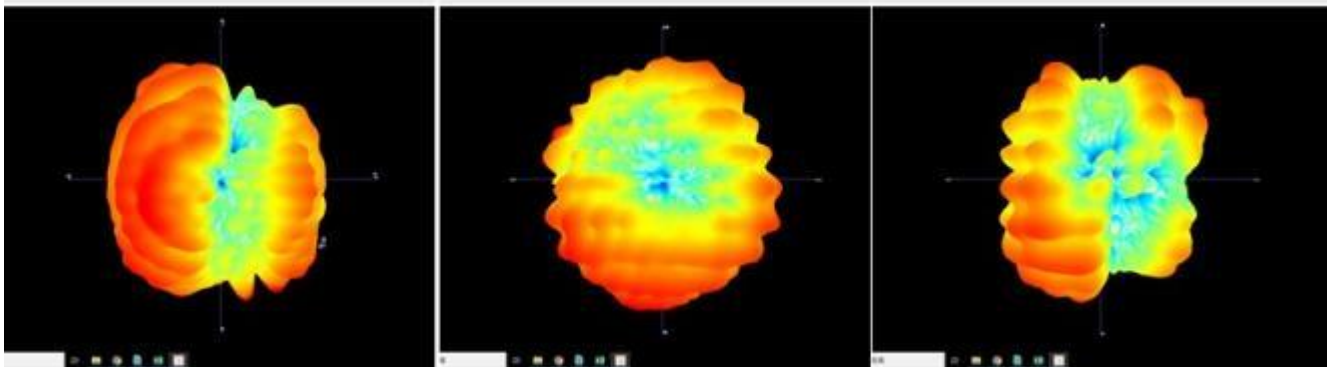
Aux antenna: 2484 MHz



Center Frequency	2484 MHz
Three-dimensional (dBi) peak	2.89

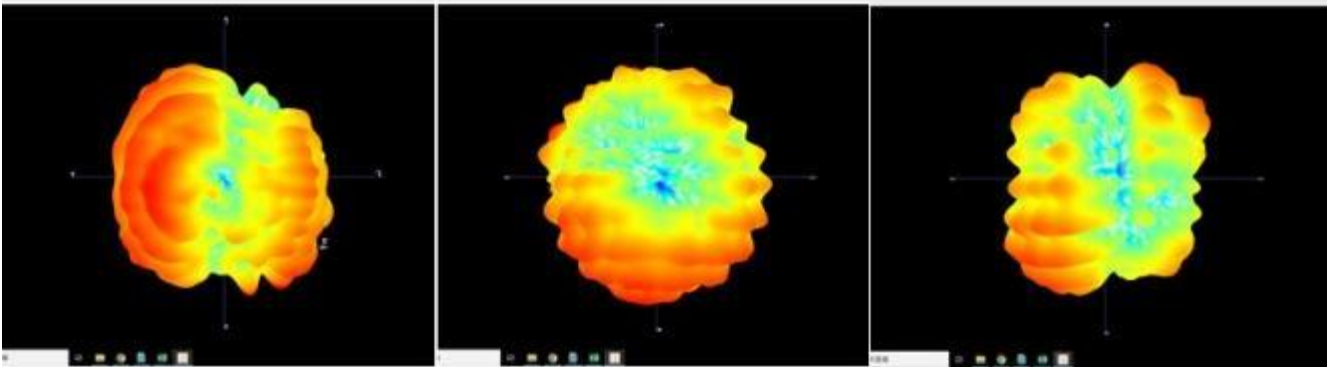
5150-5350MHz radiation characteristic

Main antenna: 5150 MHz

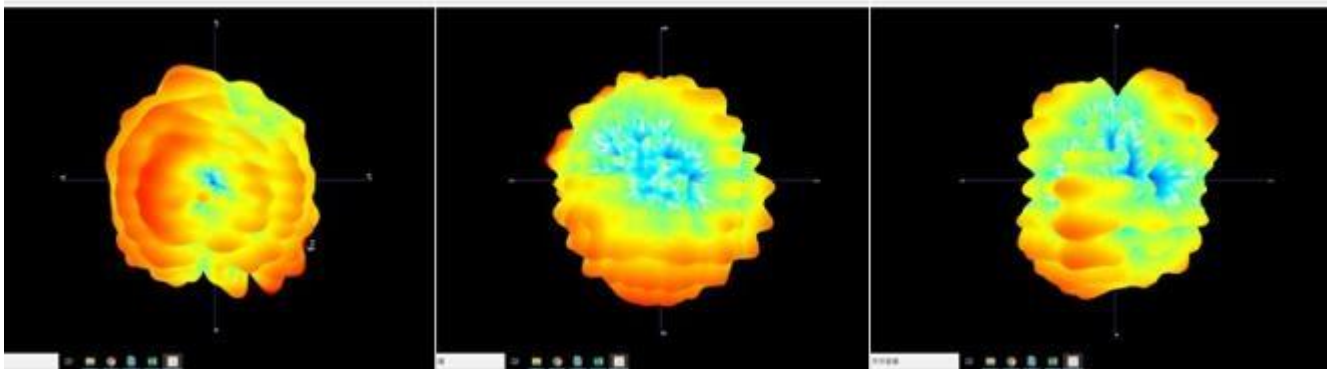


Center Frequency	5150 MHz
Three-dimensional (dBi) peak	3.06

Main antenna: 5250 MHz

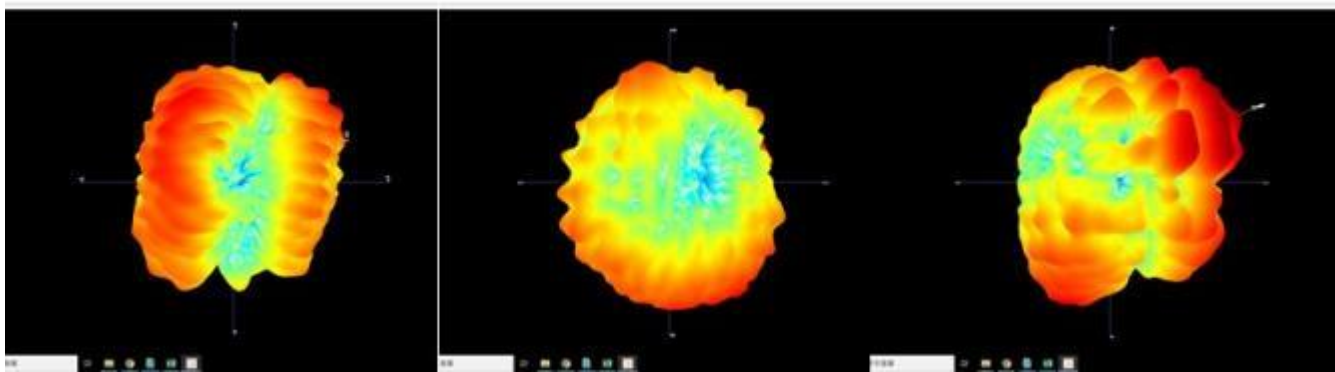


Center Frequency	5250 MHz
Three-dimensional (dBi) peak	3.24



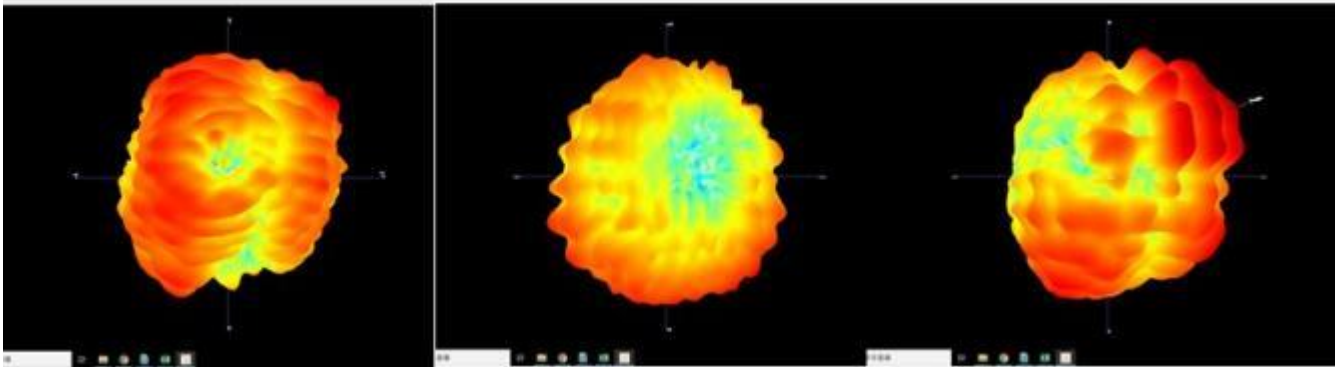
Center Frequency	5350 MHz
Three-dimensional (dBi) peak	3.28

Aux antenna: 5150 MHz



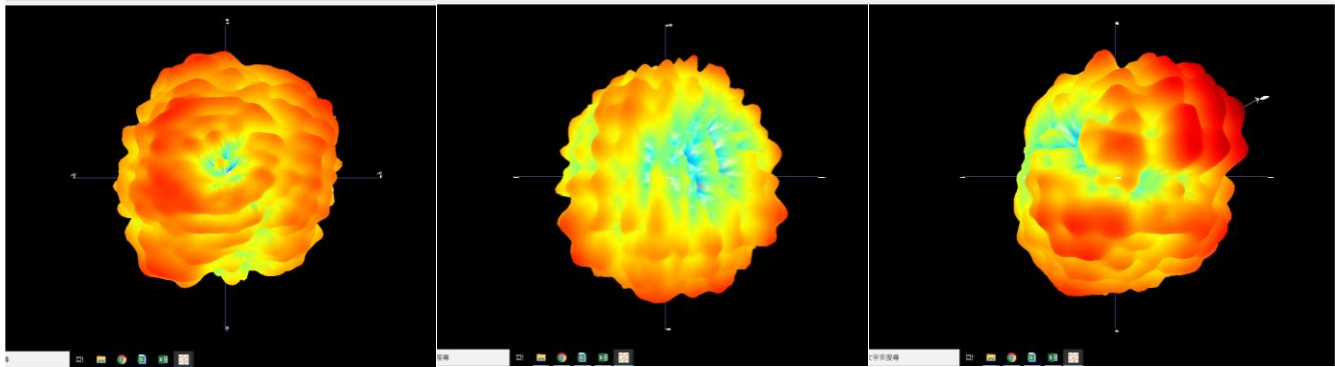
Center Frequency	5150 MHz
Three-dimensional (dBi) peak	3.24

Aux antenna: 5250 MHz



Center Frequency	5250 MHz
Three-dimensional (dBi) peak	3.10

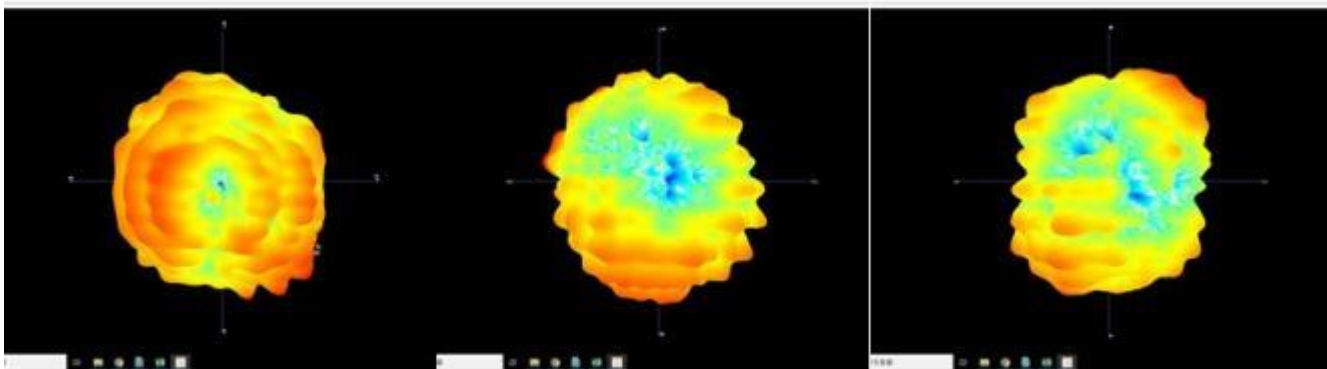
Aux antenna: 5350 MHz



Center Frequency	5350 MHz
Three-dimensional (dBi) peak	3.25

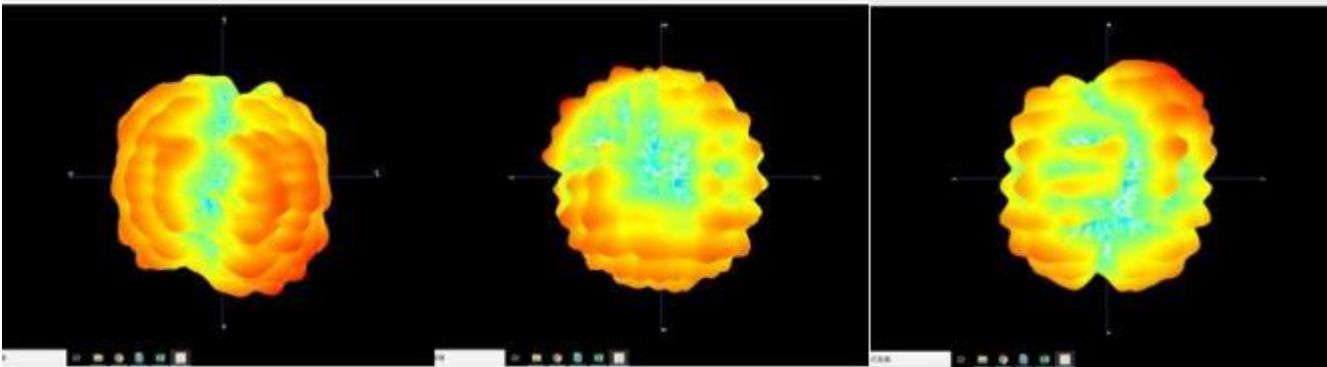
5470-5725MHz radiation characteristic

Main antenna: 5470 MHz



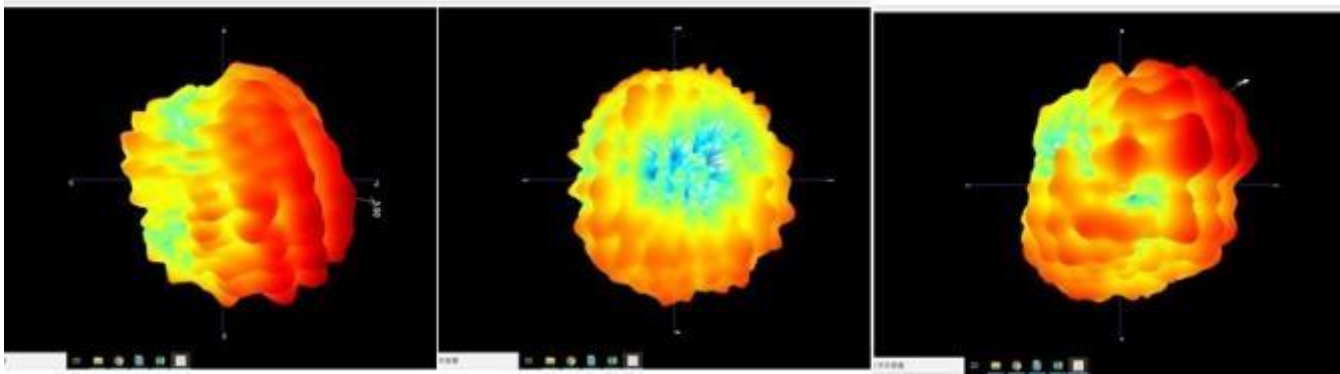
Center Frequency	5470 MHz
Three-dimensional (dBi) peak	3.88

Main antenna: 5725 MHz



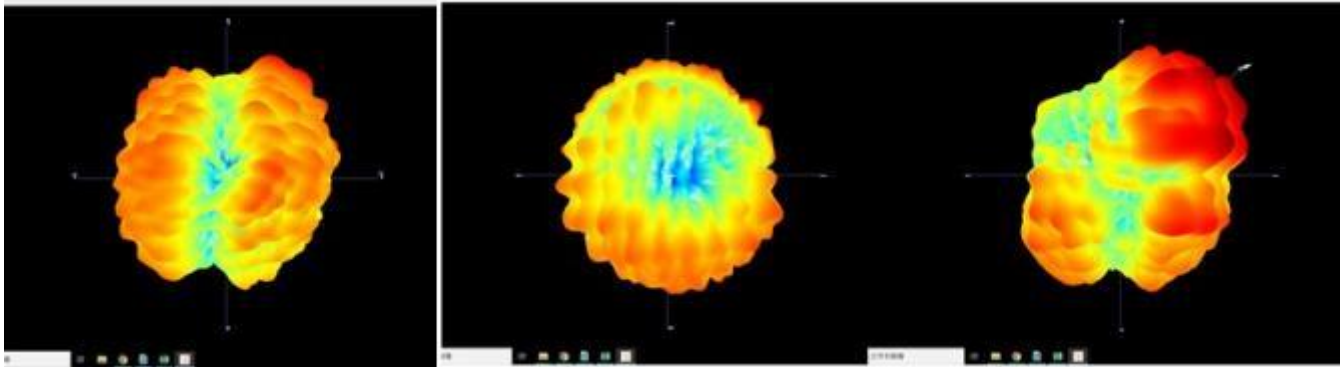
Center Frequency	5725 MHz
Three-dimensional (dBi) peak	3.92

Aux antenna: 5470 MHz



Center Frequency	5470 MHz
Three-dimensional (dBi) peak	3.93

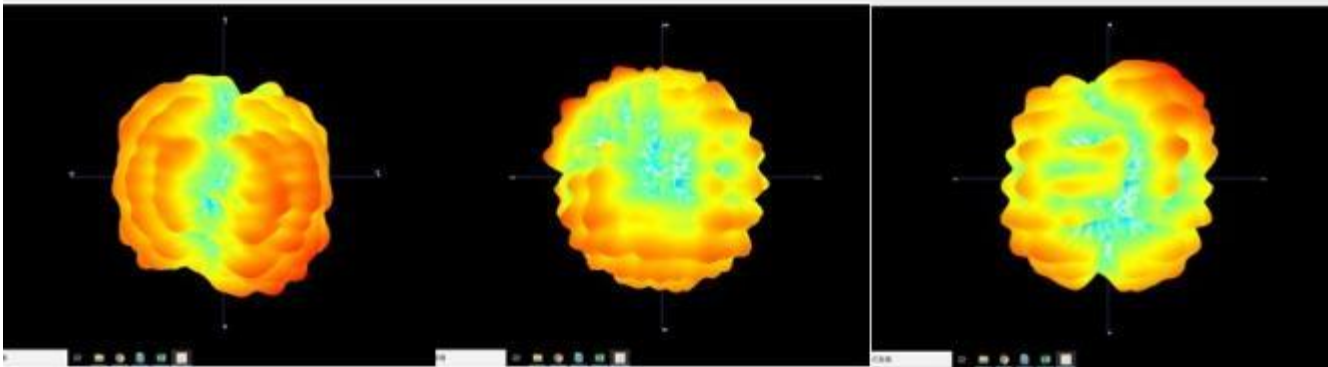
Aux antenna: 5725 MHz



Center Frequency	5725 MHz
Three-dimensional (dBi) peak	3.67

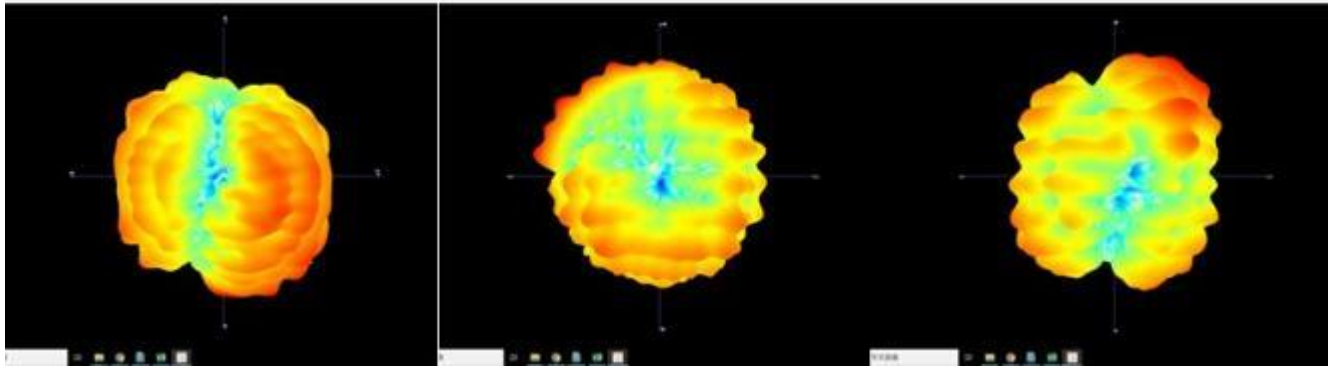
5725-5850MHz radiation characteristic

Main antenna: 5725 MHz



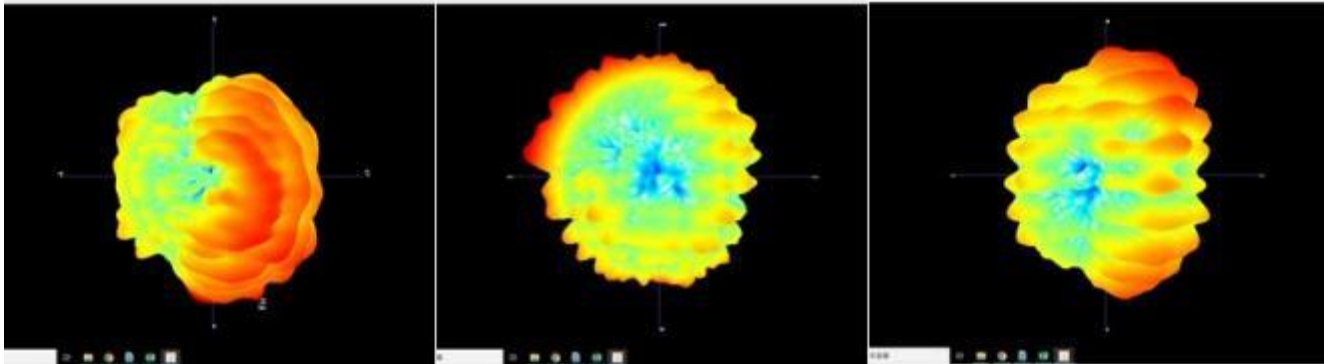
Center Frequency	5725 MHz
Three-dimensional (dBi) peak	3.92

Main antenna: 5785 MHz



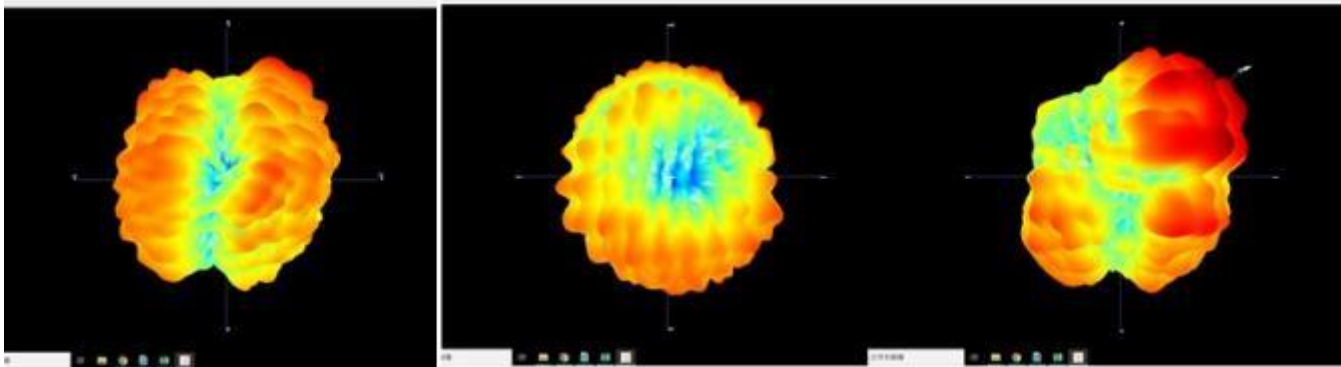
Center Frequency	5785 MHz
Three-dimensional (dBi) peak	3.68

Main antenna: 5875 MHz



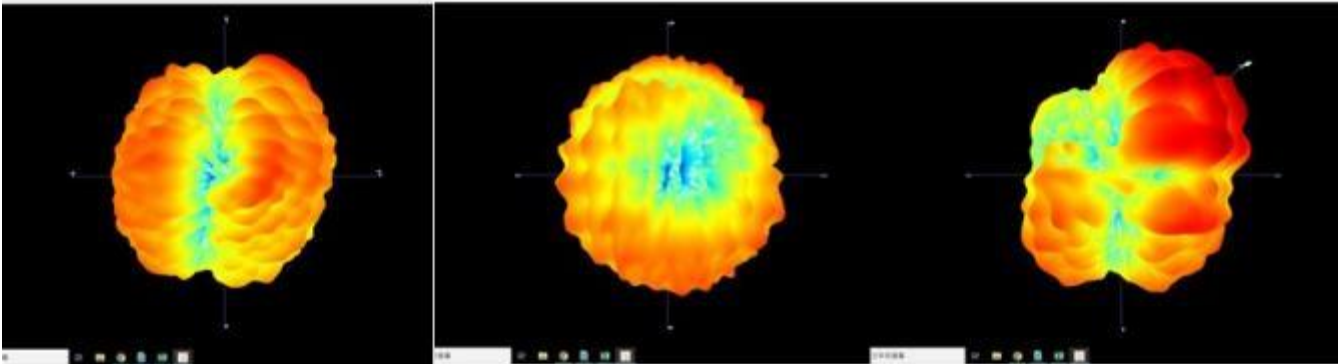
Center Frequency	5875 MHz
Three-dimensional (dBi) peak	3.83

Aux antenna: 5725 MHz



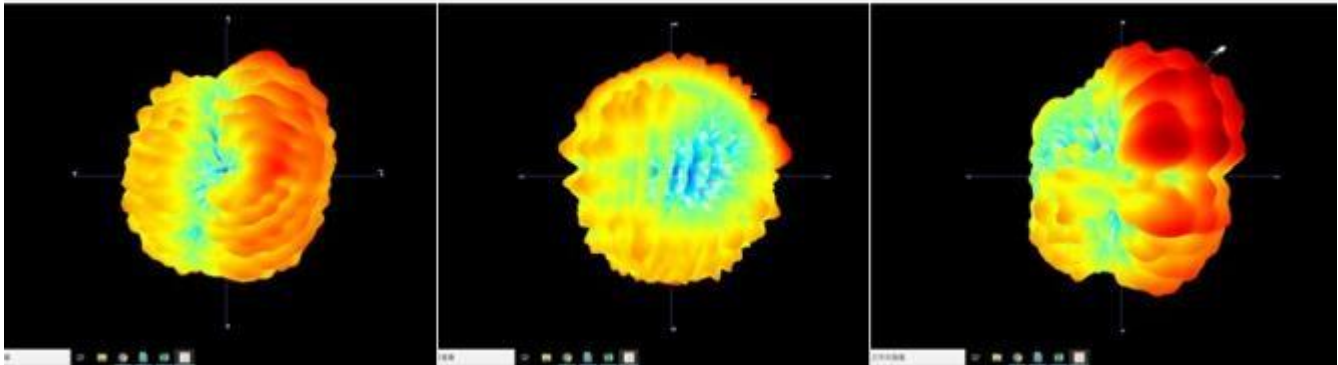
Center Frequency	5725 MHz
Three-dimensional (dBi) peak	3.67

Aux antenna: 5785 MHz



Center Frequency	5785 MHz
Three-dimensional (dBi) peak	3.39

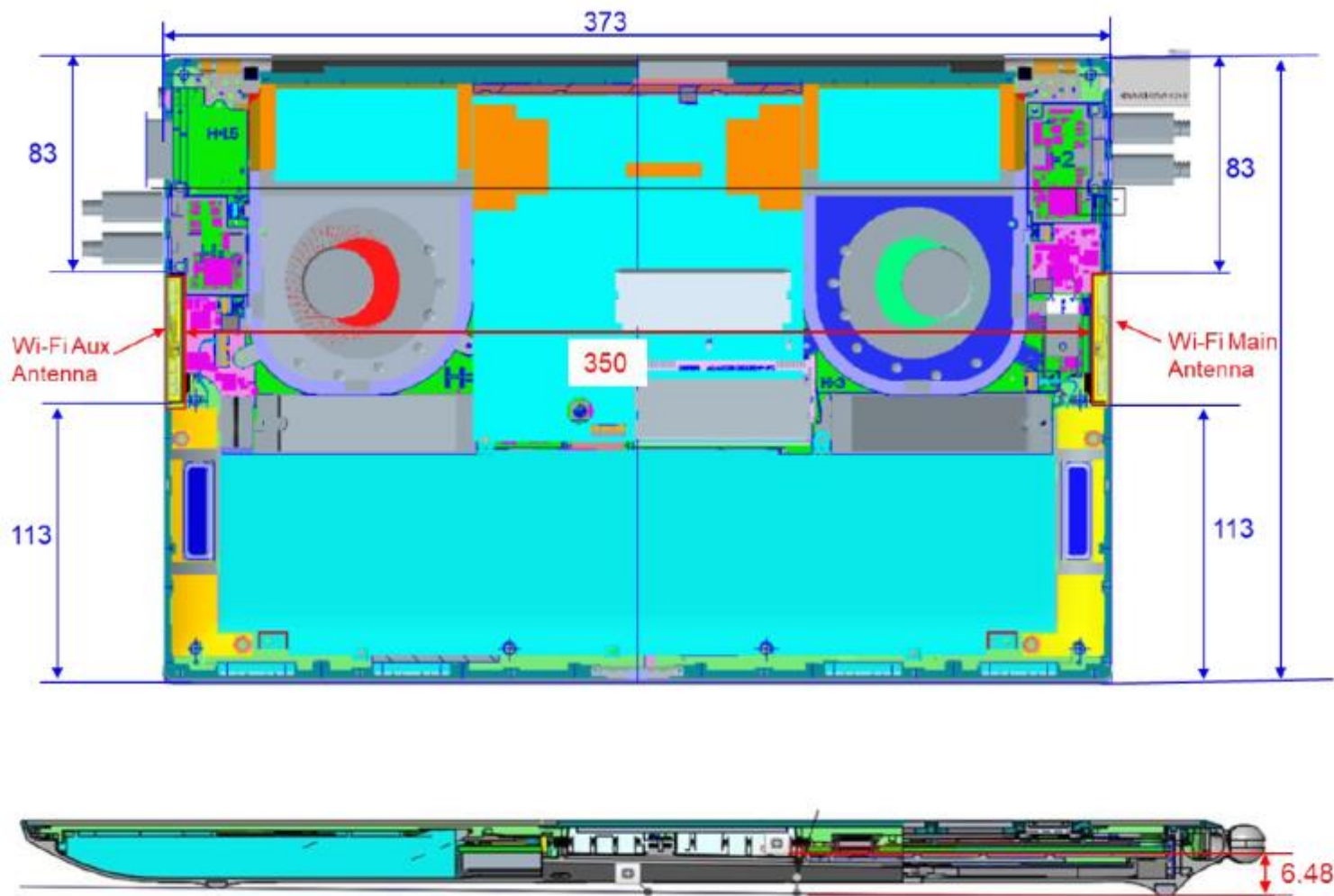
Aux antenna: 5875 MHz



Center Frequency	5875 MHz
Three-dimensional (dBi) peak	4.13

Section 4. Antenna Host Platform Location Information

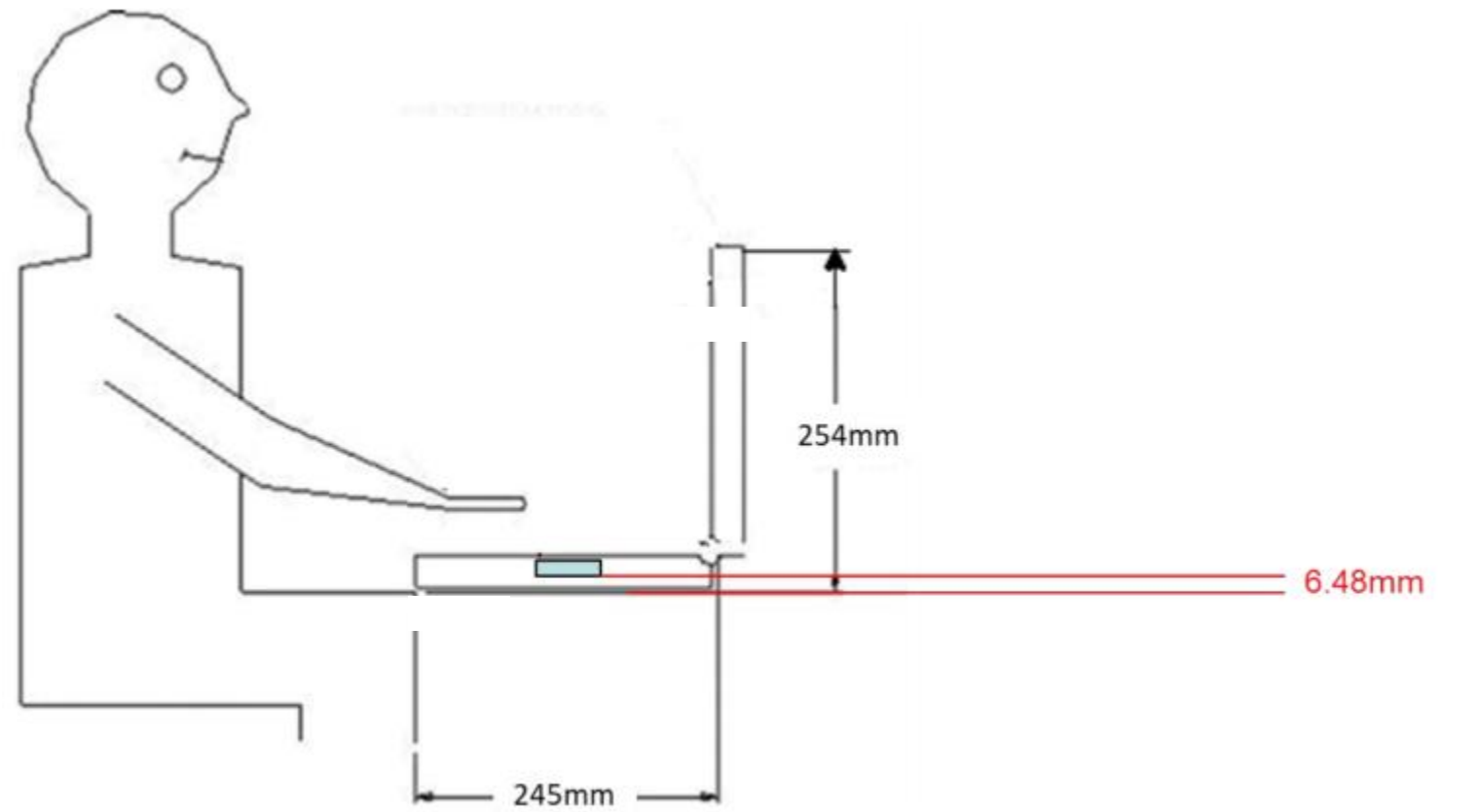
Include a **dimensioned photo(s) or dimensioned drawing(s)** of Main and Aux antenna placements (measurements are not required for receive-only antenna). Any antenna that transmits must show dimensions to bottom of laptop. Provide a description of the materials that are used for supporting or surrounding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

Normal Mode



(Note: Due to the evolving rules regarding co-location, each platform will need to be reviewed on a case by case basis)

