

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)					
Lenovo	Huaqin	Yoga 7 14ARP8	YES	NB	4.09					
*****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)				
Luxshae-ICT		PIFA	L01RF354-NB-H			L01RF355-NB-H				
Peak gain w/ cable loss (dBi)*										
	2.4GHz 2400-2483.5 MHz	5.2GHz 5150-5250MHz	5.3GHz 5250-5350MHz	5.6GHz 5470-5725MHz	5.8GHz 5725-5850MHz	6.2GHz 5925-6425MHz	6.5GHz 6425-6525MHz	6.7GHz 6525-6875MHz	7.0 GHz 6875-7125MHz	
Main	-0.98	-4.57	-3.71	-1.32	-0.97	-0.09	-0.14	-0.14	-0.81	
Aux	0.35	-0.42	-0.42	-0.35	1.98	3.64	2.28	2.28	0.77	
Intel Reference Gain/Type/ Separation distance										
Antenna Type	Antenna Peak gain (In dBi)*									Distance to the end user (mm)
	2.4GHz 2400-2483.5 MHz	5.2GHz 5150-5250MHz	5.3GHz 5250-5350MHz	5.6GHz 5470-5725MHz	5.8GHz 5725-5850MHz	6.2GHz 5925-6425MHz	6.5GHz 6425-6525MHz	6.7GHz 6525-6875MHz	7.0GHz 6875-7125MHz	
Design	3.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	Generic: refer to modular FCC SAR report Mid-power: ≥ 8 mm Low power: ≥ 5 mm
PIFA	3.24	3.64	3.73	4.77	4.97	4.83	4.30	5.37	5.59	
Dipole	2.89	2.92	3.19	4.41	4.22	4.83	4.30	4.49	5.34	
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.										

Table of contents

1. Applicable test method
2. Test & System Description
 - a. Test setup
 - b. Equipment list
3. Setup photo

[Section 1. Antenna Assembly Specifications](#)

[Section 2. Dimensioned Photos or Drawings of Antennas](#)

[Section 3. Radiation characteristics of antenna loaded in Host Platform](#)

[Section 4. Antenna Host Platform Location Information](#)

[Section 5. Antenna dimensional information for SAR evaluation](#)

[Section 6. Diagram Example of Co-Location Antenna Separation](#)

1. **Applicable test methods**

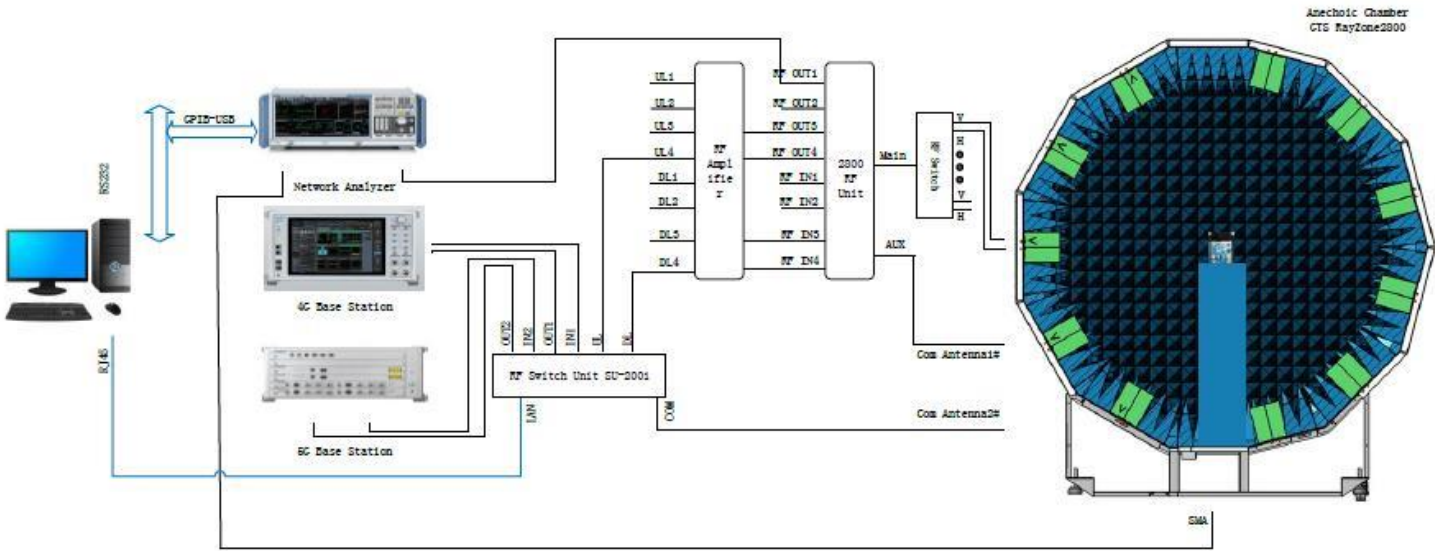
<insert test description here for test method>

- 1. Use a low-loss coaxial cable to connect the notebook fixture
- 2. Fix the notebook fixture on the turntable
- 3. Connect the jig to the network analyzer port, and use the antenna of the test probe to collect data.

2. **Test & System Description**

- a. Test setup

<insert test diagram here for test site utilized>

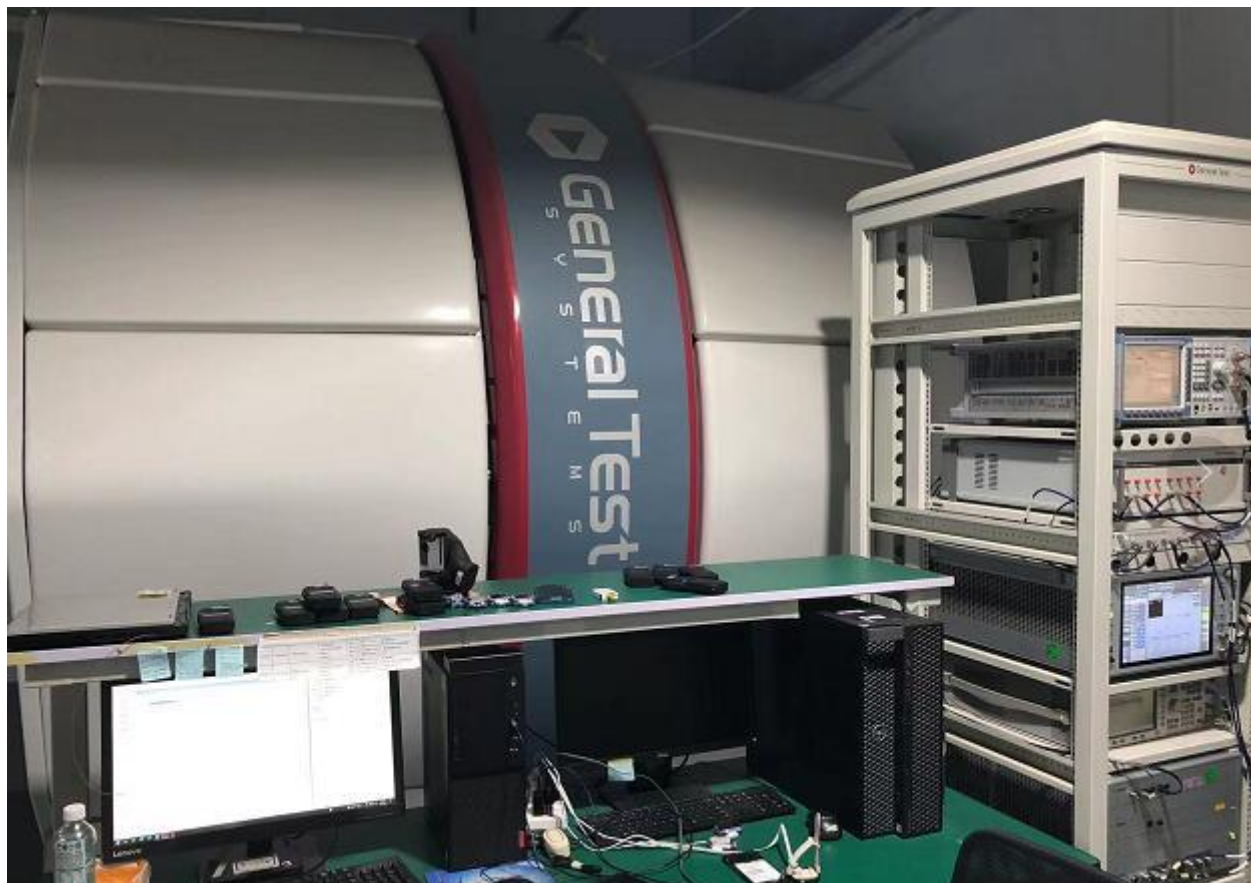


b. Equipment list

<insert test diagram here for test site utilized>

Number	Device	Manufacturer	Cal.Date	Cal.Due.Date
1	Anechoic Chamber	GTS	2022/6/15	2023/6/14
2	measurement antenna	GTS	2022/6/15	2023/6/14
3	Network Analyzer	Keysight	2022/6/15	2023/6/14
4	turn table control box	GTS	N/A	N/A
5	turn table control computer	GTS	N/A	N/A
6	test system host	GTS	N/A	N/A
7	RF line TX	Times	N/A	N/A
8	RF line RX	Times	N/A	N/A
9	cable 2m 1GHz-8.5GHz	Times	N/A	N/A
10	optical fiber line	Times	N/A	N/A

3. Setup photo



Antenna Information

Section 1. Antenna Assembly Specifications

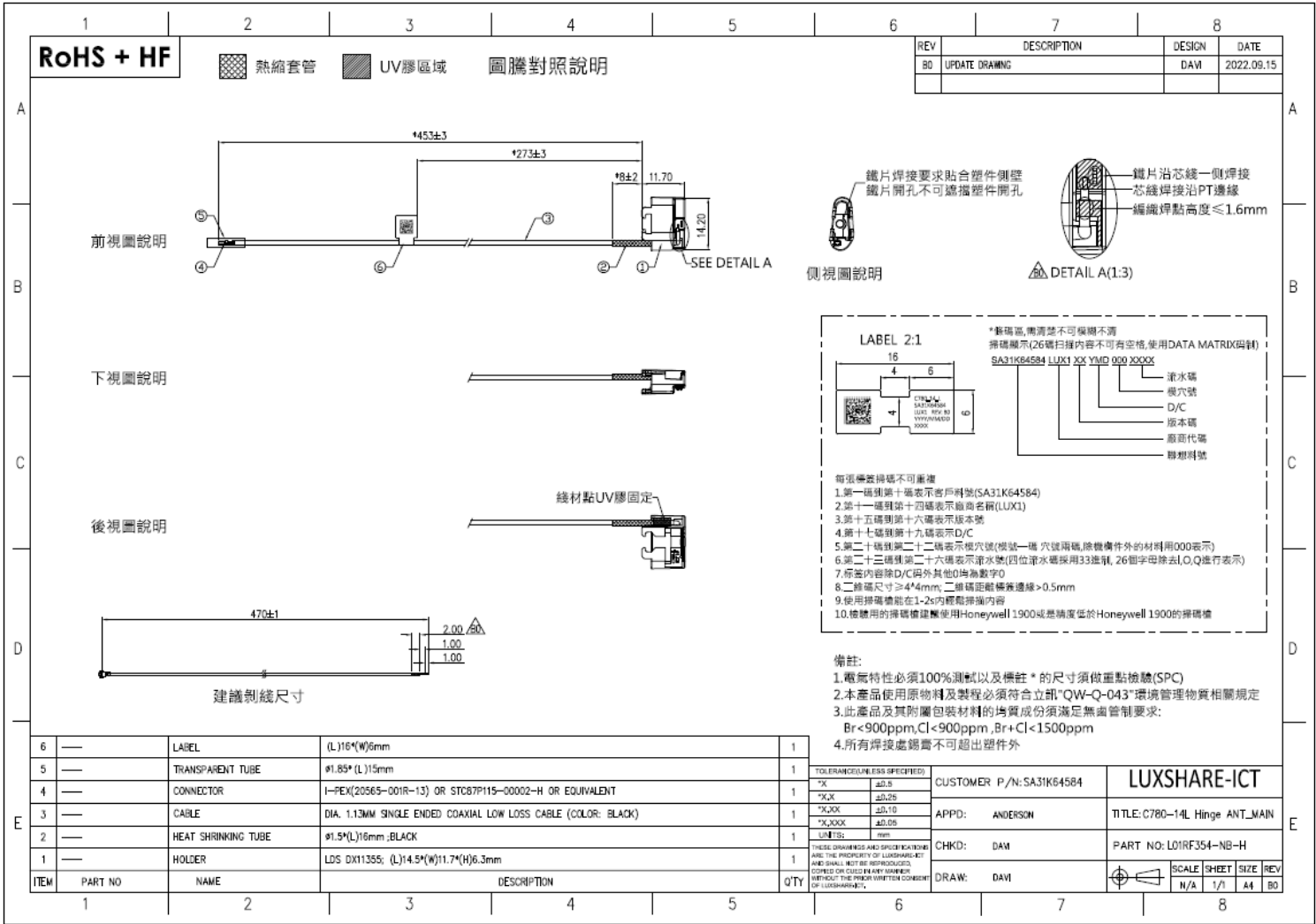
1A	1B	1C	1D		1E	1F	1G	1H
Antenna Part Number	Manufacturer	Antenna Type	Cable Assembly Part Number and Information	Freq Range MHz	* Peak Gain W/ Cable loss (dBi)	Peak Gain w/o Cable Loss (dBi)	Max VSWR	Cable Loss (dB)
(P/N: L01RF354-NB-H) Main Antenna	Luxshare-ICT	PIFA	P/N: I-PEX(20565-001R-13) 50 ohm Coaxial length:470mm diameter: 1.13mm Connector type: IPEX4	2400-2483.5	-0.98	0.17	3.0	1.15
				5150-5250	-4.57	-2.84	3.0	1.73
				5250-5350	-3.71	-1.97	3.0	1.74
				5470-5725	-1.32	0.47	3.0	1.79
				5725-5850	-0.97	0.84	3.0	1.81
				5925-6425	-0.09	1.77	3.0	1.86
				6425-6525	-0.14	1.73	3.0	1.87
				6525-6875	-0.14	1.74	3.0	1.88
				6875-7125	-0.81	1.08	3.0	1.89
(P/N: L01RF355-NB-H) AUX Antenna	Luxshare-ICT	PIFA	P/N: I-PEX(20565-001R-13) 50 ohm Coaxial length: 290mm diameter: 1.13mm Connector type: IPEX4	2400-2483.5	0.35	0.71	3.0	0.71
				5150-5250	-0.42	0.66	3.0	1.07
				5250-5350	-0.42	0.66	3.0	1.08
				5470-5725	-0.35	0.76	3.0	1.11
				5725-5850	1.98	3.1	3.0	1.12
				5925-6425	3.64	4.79	3.0	1.15
				6425-6525	2.28	3.43	3.0	1.15
				6525-6875	2.28	3.44	3.0	1.16
				6875-7125	0.77	1.93	3.0	1.16

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

Section 2. Dimensioned Photos and Drawings of Antennas

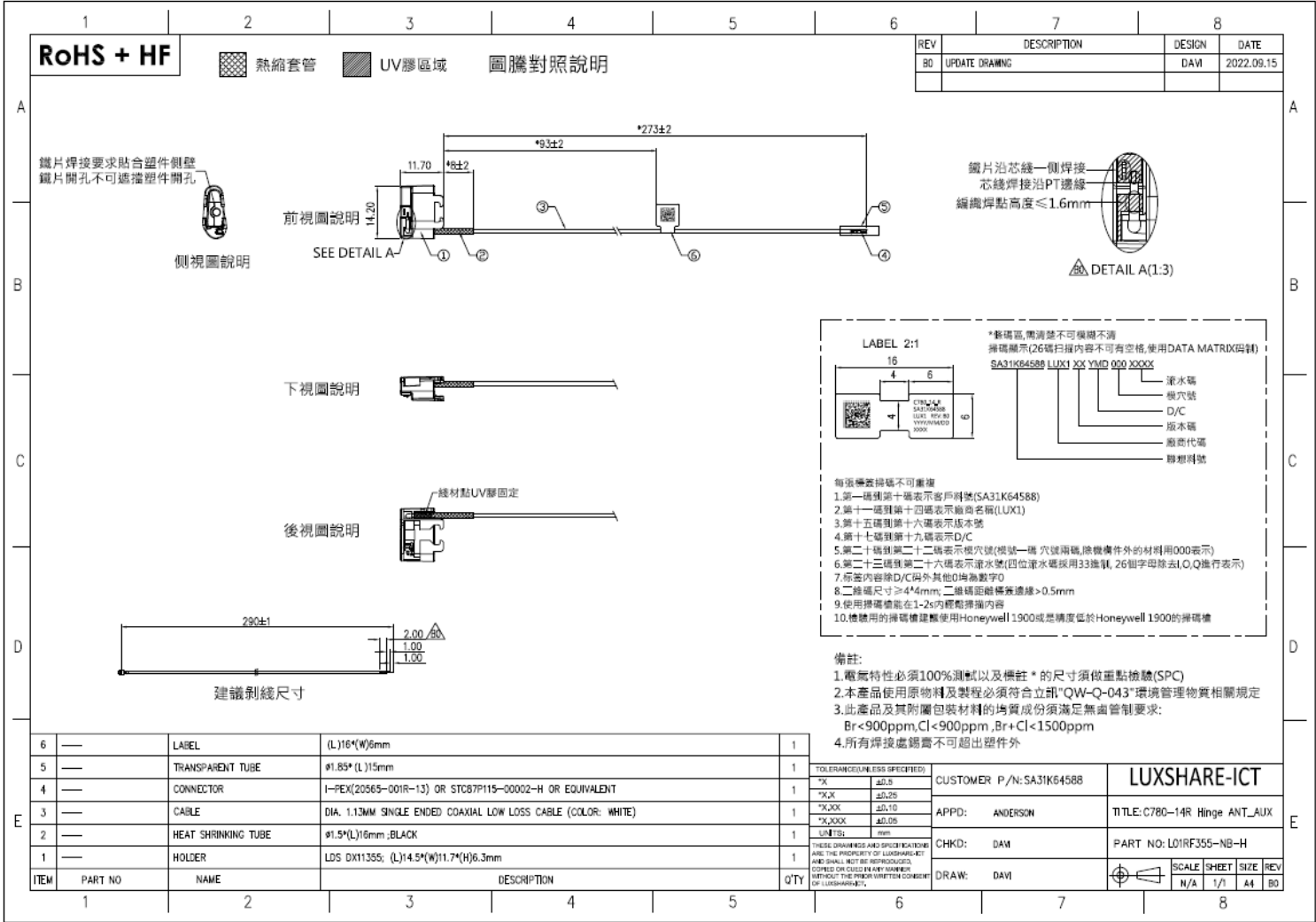
Include the dimensioned photo and drawing of Main antenna here.

Main Antenna Drawing:



Include the dimensioned photo and drawing of Main antenna here.

AUX Antenna Drawing:

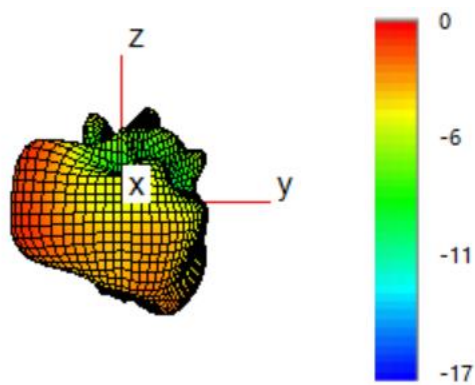


Section 3. Radiation characteristics of antenna loaded in Host Platform

Main Antenna

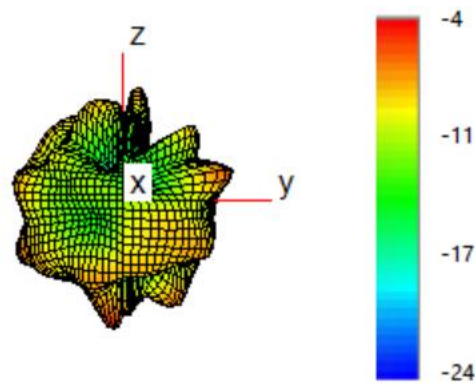
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	-0.98



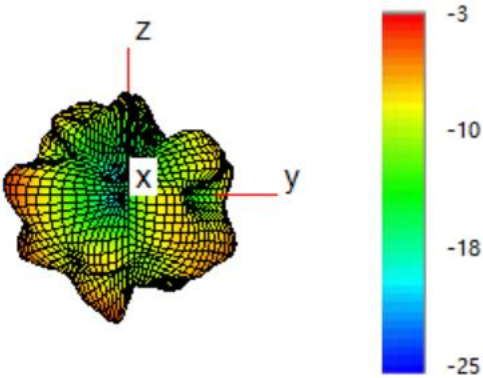
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	-4.57



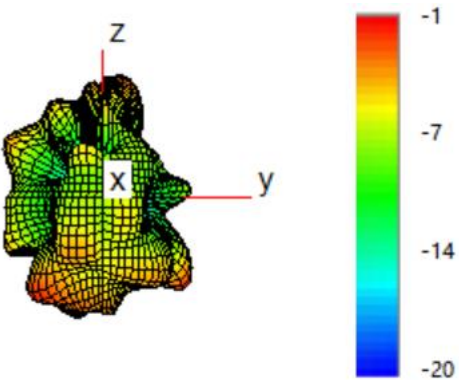
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	-3.71



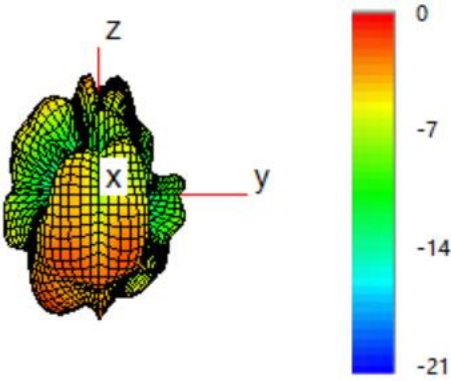
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	-1.32



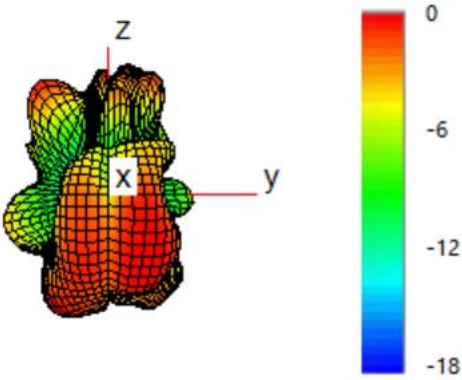
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	-0.97



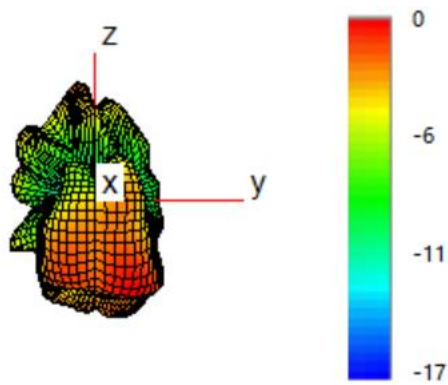
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	-0.09



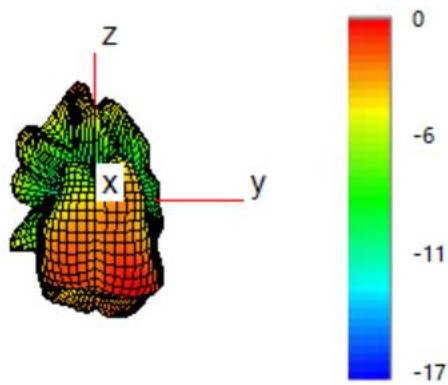
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	-0.14



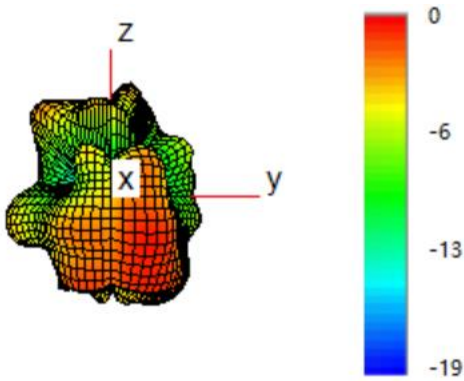
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	-0.14



Max Antenna 3D Radiation Pattern 6875-7125 MHz

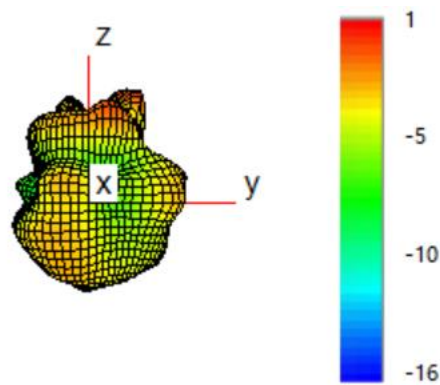
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	-0.81



Auxiliary Antenna

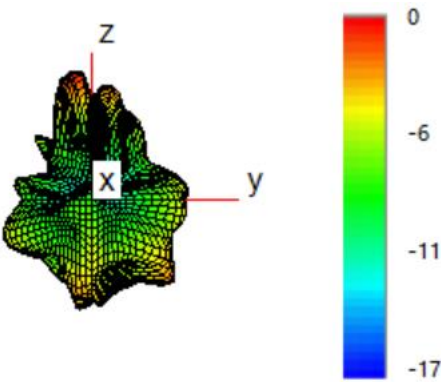
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	0.35



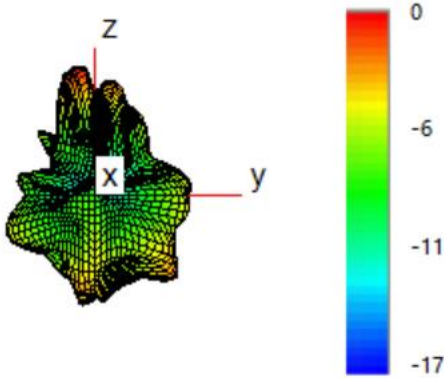
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	-0.42



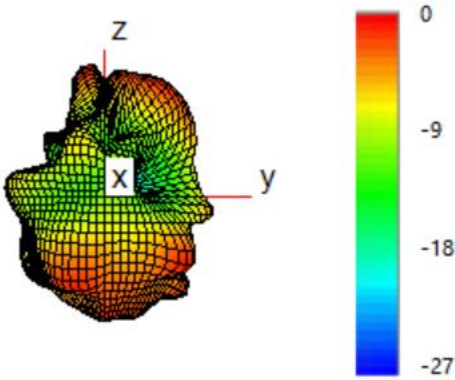
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	-0.42



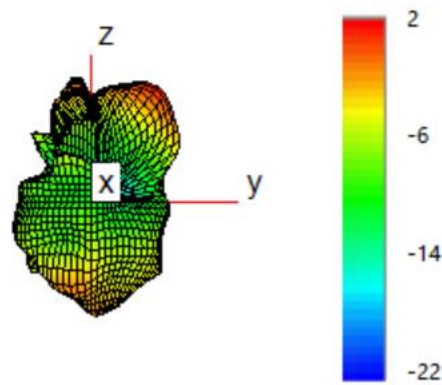
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	-0.35



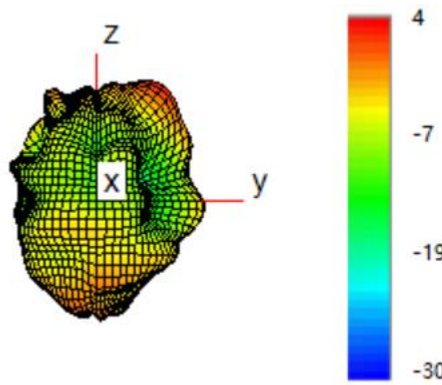
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	1.98



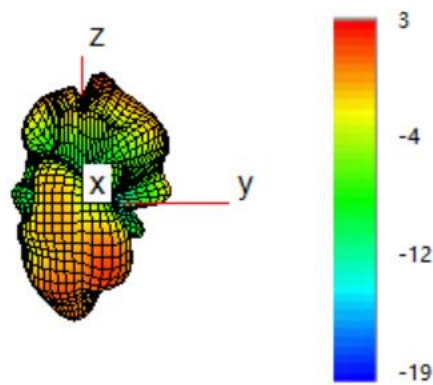
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	3.64



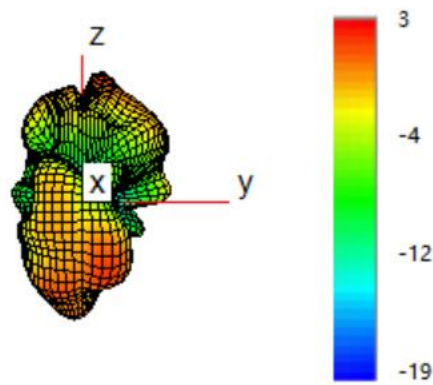
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	2.28



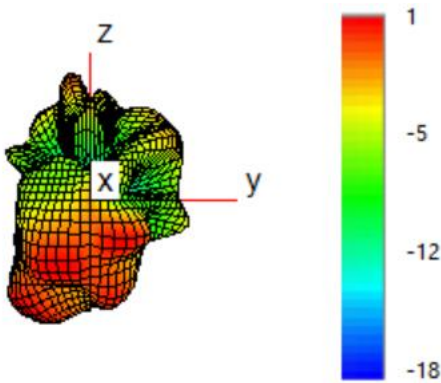
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	2.28



Max Antenna 3D Radiation Pattern 6875-7125 MHz

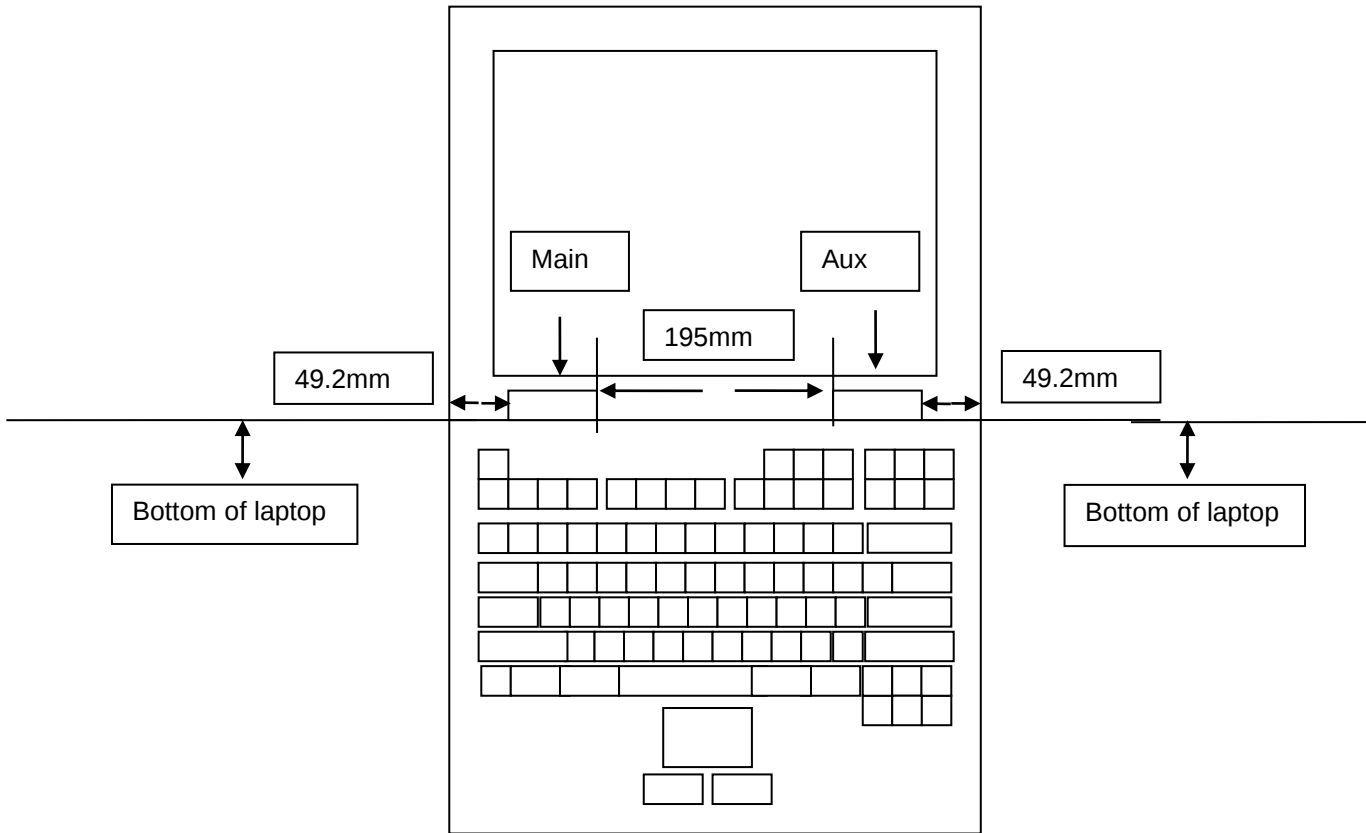
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	0.77



Section 4. Antenna Host Platform Location Information

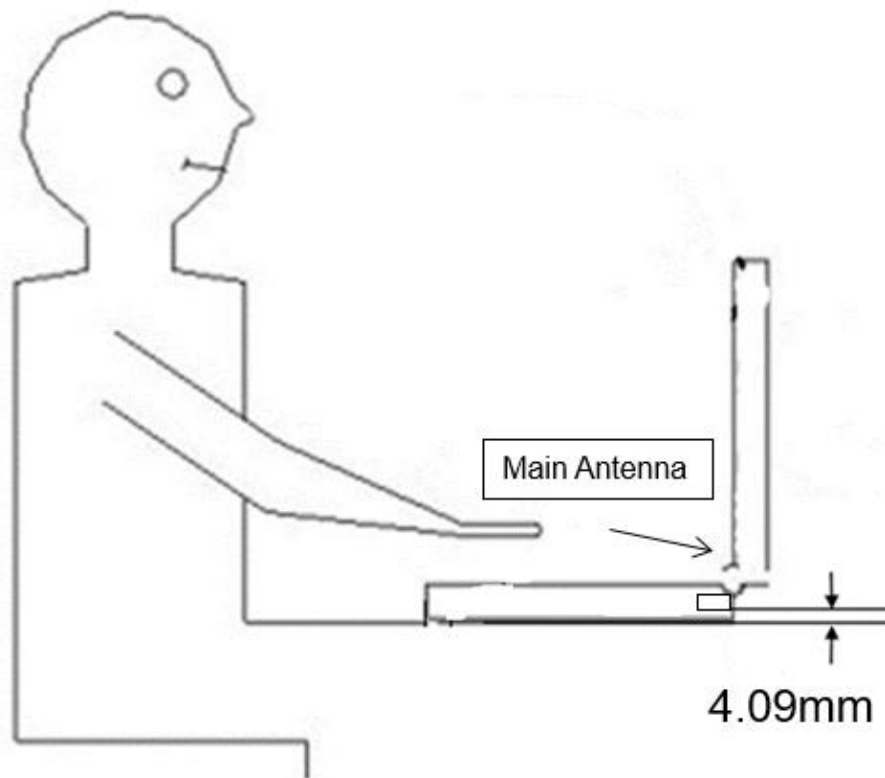
Include a **dimensioned photo(s) or dimensioned drawing(s)** of Main and Aux antenna placements (measurements are not required for receive-only antenna).

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)

