

ANTENNA INFORMATION

OEM	Lenovo		
ODM	Huaqin		
Platform model name	Yoga 7 2-in-1 16ILL10		
Intel platform (ex: Yes, No or NA)	Yes		
Platform type (ex: regular NB, convertible PC, AIO...etc)	Convertible PC		
SAR minimum separation (mm)	FCC (1g)	2.96	
	ISED (1g)	2.96	
	ISED (10g)	N/A	

Antenna manufacturer	Company name	Luxshare-ICT
	Address	Block A,SANYO New Industrial Zone, West HaoYi,Shajing, Bao'an,Shenzhen, 518104, China.
Test location	Company name	Luxshare-ICT
	Address	Block A,SANYO New Industrial Zone, West HaoYi,Shajing, Bao'an,Shenzhen, 518104, China.
Test Personnel	Name(Full name)	Huaiyang Zou
	E-mail	Huaiyang.Zou@luxshare-ict.com
	Tel/Mobile	16620809787
Testing date		2024/9/23

Antenna Part number	Main	L01RF456-NB-H
	Aux	L01RF455-NB-H
Antenna type	PIFA	

Antenna 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	5.9GHz 5850-5895MHz	6.2GHz 5925-6425MHz	6.5GHz 6425-6525MHz	6.7GHz 6525-6875MHz	7.0 GHz 6875-7125MHz
Main	-0.32	1.44	1.44	2.38	3.04	2.99	2.49	2.07	2.78	2.43
Aux	-0.58	-0.27	0.46	2.79	3.17	3.17	3.33	2.73	2.65	1.54

Cable Assembly Part Number and Information					
	Cable PN	Cable length(mm)	Cable diameter(mm)	Impedance(ohm)	Connector type
Main	I-PEX(20565-001R-13)	314	1.13	50	IPEX4
Aux	I-PEX(20565-001R-13)	90	1.13	50	IPEX4

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

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1. Intel Reference Gain and Type

Antenna Peak gain w/ cable loss (dBi)											
Band/Frequency		2.4GHz 2400-2483.5 MHz	5.2GHz 5150-5250MHz	5.3GHz 5250-5350MHz	5.6GHz 5470-5725MHz	5.8GHz 5725-5850MHz	5.9GHz 5850-5895MHz	6.2GHz 5925-6425MHz	6.5GHz 6425-6525MHz	6.7GHz 6525-6875MHz	7.0 GHz 6875-7125MHz
Design	EU/UK	3.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
PIFA	For WiFi 6E and earlier	3.24	3.64	3.73	4.77	4.97	4.72	4.83	4.30	5.37	5.59
	From WiFi 7	2.95	5.11	4.55	5.15	5.13	4.45	5.02	5.02	4.96	4.96
Dipole	For WiFi 6E and earlier	2.89	2.92	3.19	4.41	4.22	4.22	4.83	4.30	4.49	5.34
	From WiFi 7	2.95	4.03	4.11	5.15	5.13	4.45	5.02	4.71	4.49	4.96
Monopole	From WiFi 7	2.83	4.57	4.44	4.95	4.95	4.43	4.87	4.91	4.91	4.79

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.

2. Document Revision History

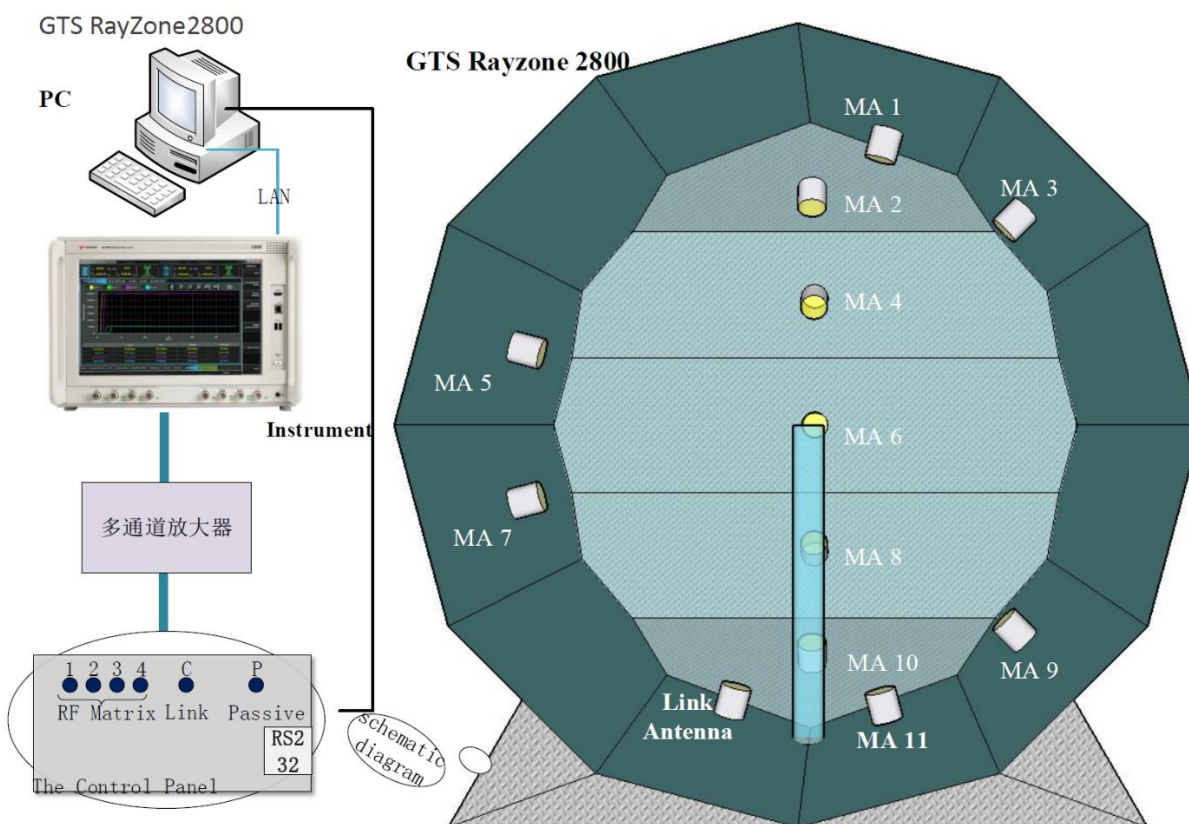
Revision #	Revision Details	Issued Date
Rev. 00	First Issue	2024/09/23

3. Test & System Description

3.1 Measurement Method and System

This test report is prepared for host antenna testing under a Full Anechoic Chamber.

3.2 Test setup



3.3 Equipment list

Number	Device	Type/Model	Serial#	Manufacturer	Cal. Date	Cal. Due Date
1	GTS Chamber	RayZone-2800	1603000026	GTS	2023/10/09	2024/12/21
2	RF Amplifier Unit	RayZone-2800	1612000032	GTS	2023/10/09	2024/12/21
3	Test software	GTS MaxSign 100	1603000054	GTS	2023/10/09	2024/12/21
4	Test system host	Lenovo	1603000056	GTS	2023/10/09	2024/12/21
5	23 Probe Antenna	TEM23	1603000057	GTS	2023/10/09	2024/12/21
6	Wi-Fi Dynamic Amplifier	WDAP	1604000002	GTS	2023/10/09	2024/12/21
7	RF line TX	FL18-SM	1612000078	GTS	2023/10/09	2024/12/21
8	RF line RX	FL18-SM	1612000559	GTS	2023/10/09	2024/12/21
9	Cable 0.6m – 50MHz -18GHz	UFB	1604000339	GTS	2023/10/09	2024/12/21
10	Cable 0.8m – 50MHz -18GHz	UFB	1608000001	GTS	2023/10/09	2024/12/21
11	General-purpose Tester	CMW500	1608000036	RS	2023/10/09	2024/12/21
12	EXA Signal Analyzer	N9020A	1612000560	KeySight	2023/10/09	2024/12/21
13	Network analyzer	E5071C	1608000022	KeySight	2023/10/09	2024/12/21

N/A: Not Applicable

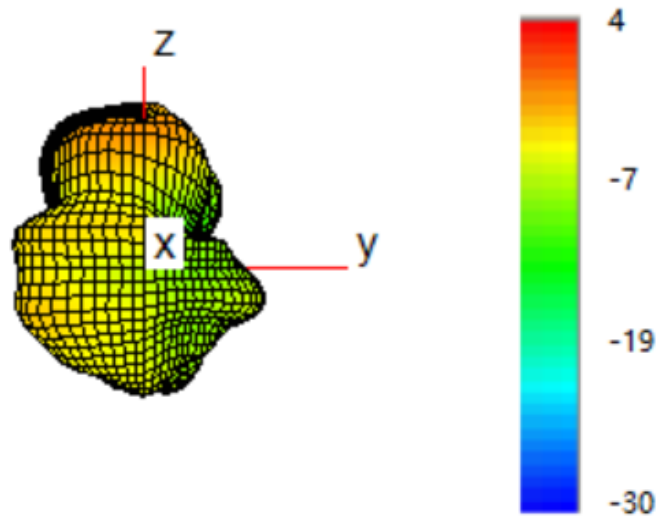
Note: Chamber calibration included full set of implement

4. Radiation characteristics of antenna loaded in Host Platform

Main Antenna

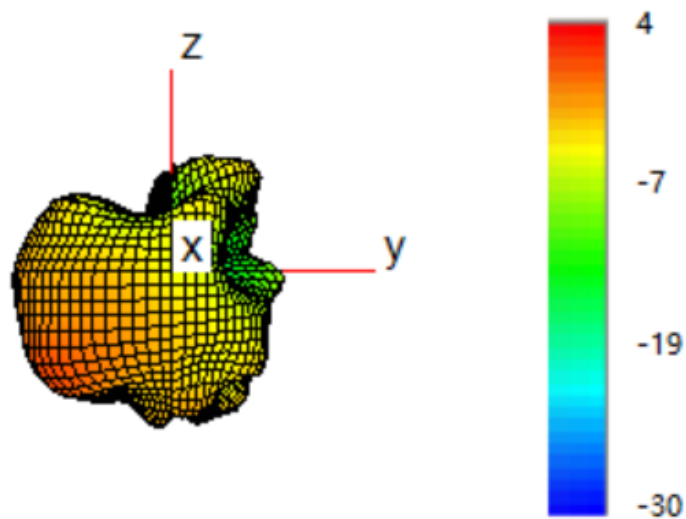
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	-0.32



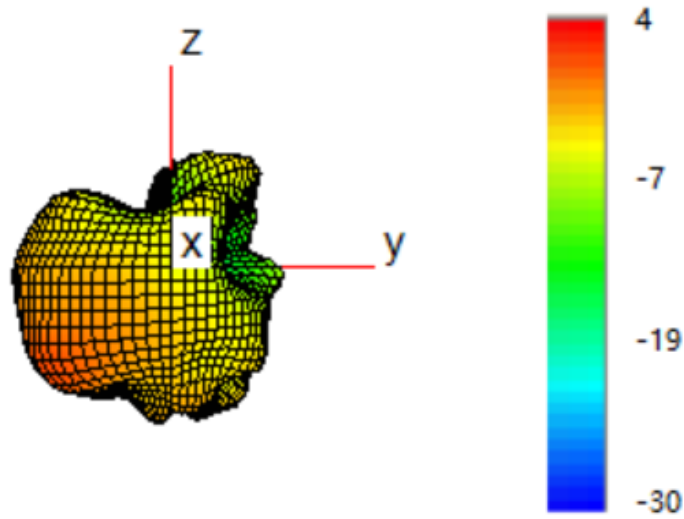
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	1.44



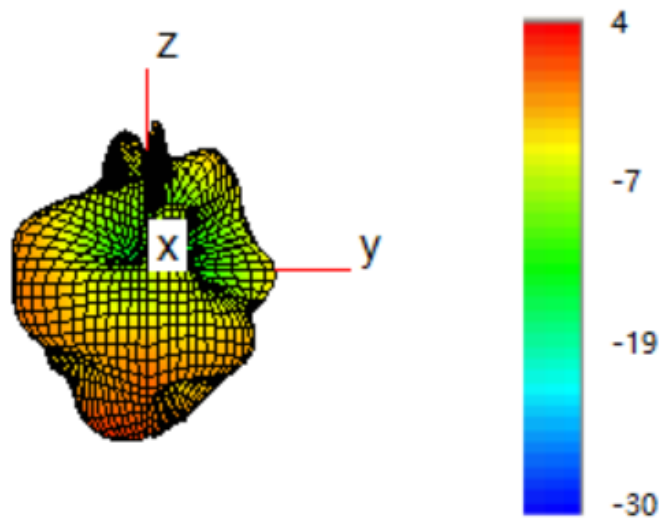
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	1.44



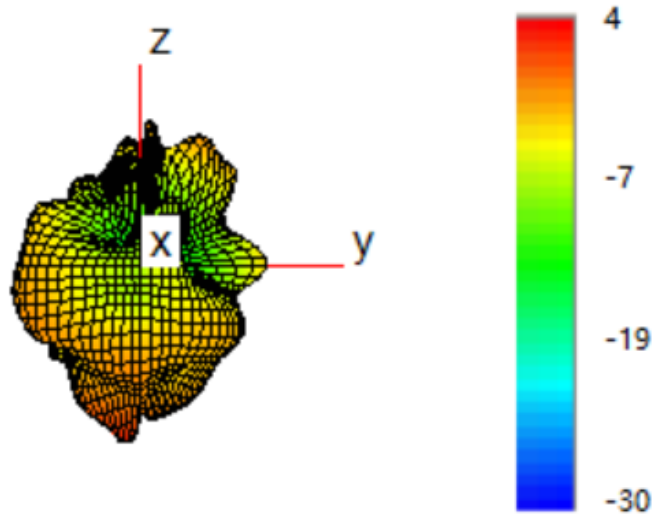
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	2.38



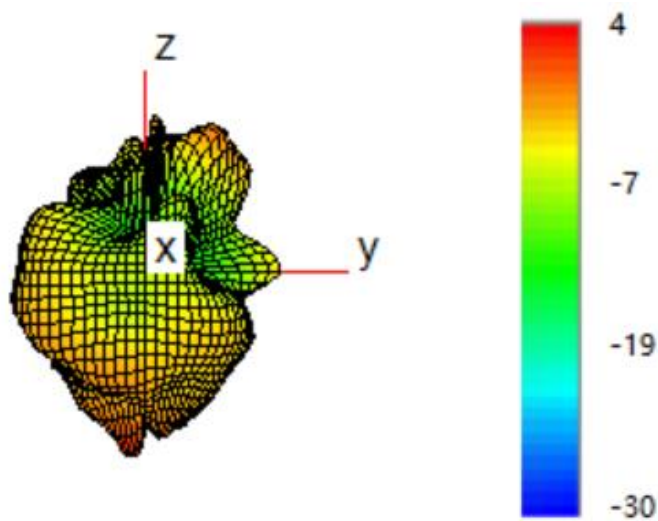
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	3.04



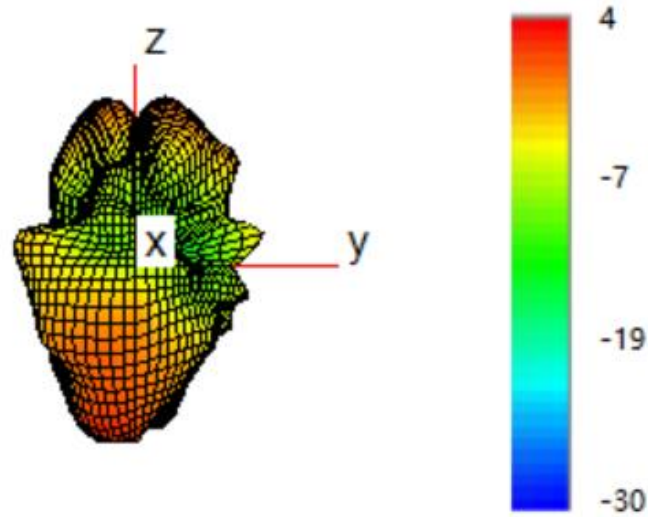
Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	2.99



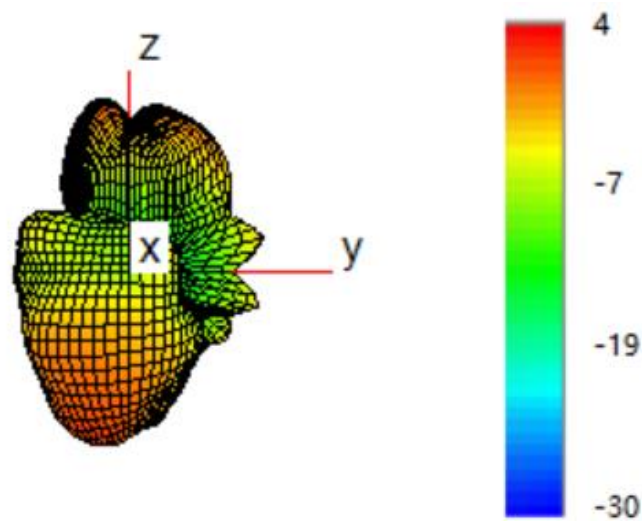
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	2.49



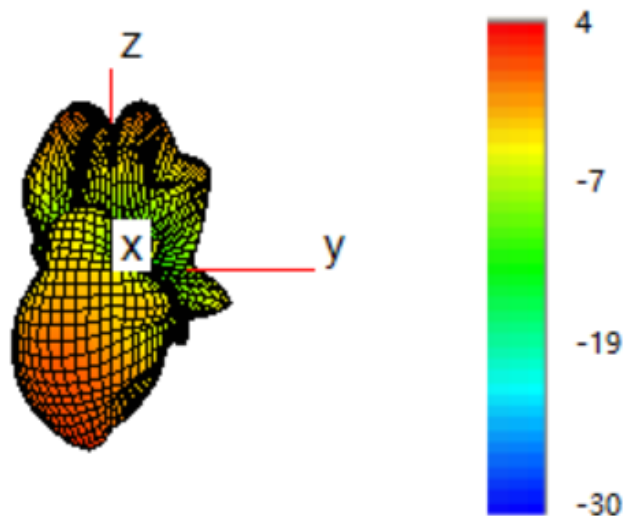
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	2.07



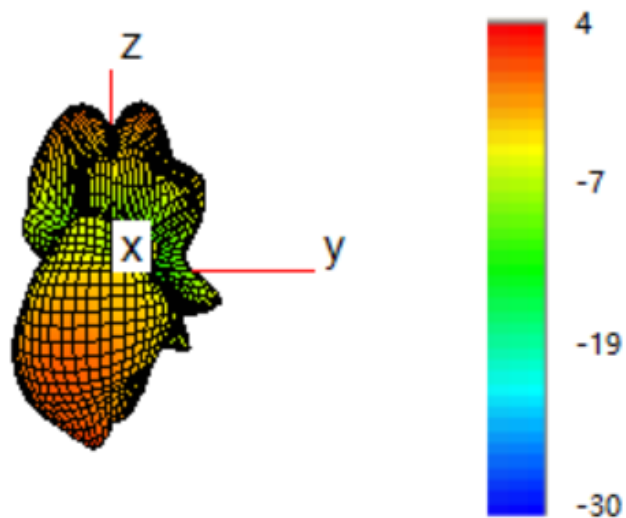
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	2.78



Max Antenna 3D Radiation Pattern 6875-7125 MHz

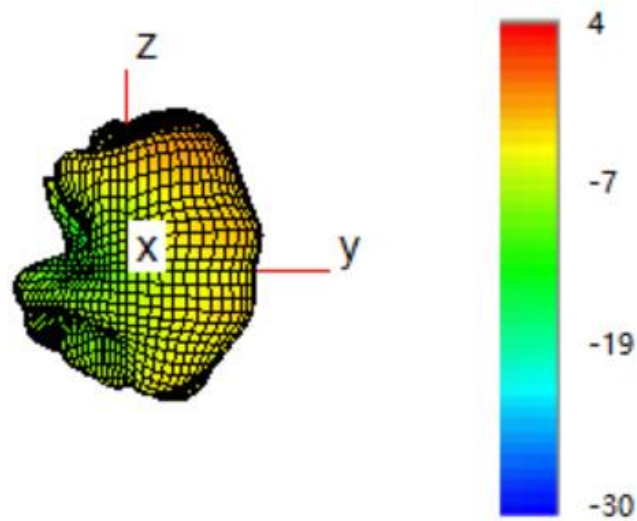
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	2.43



Auxiliary Antenna

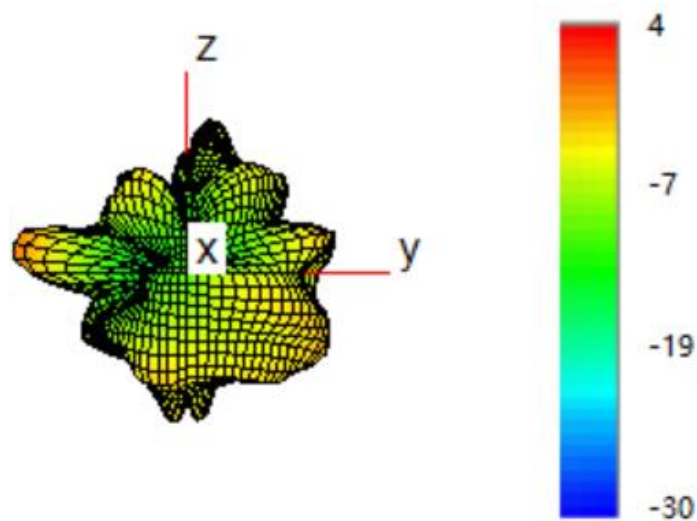
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	-0.58



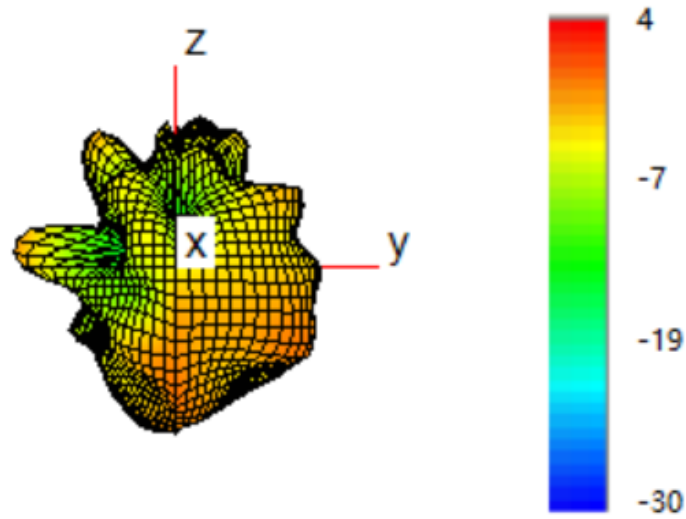
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	-0.27



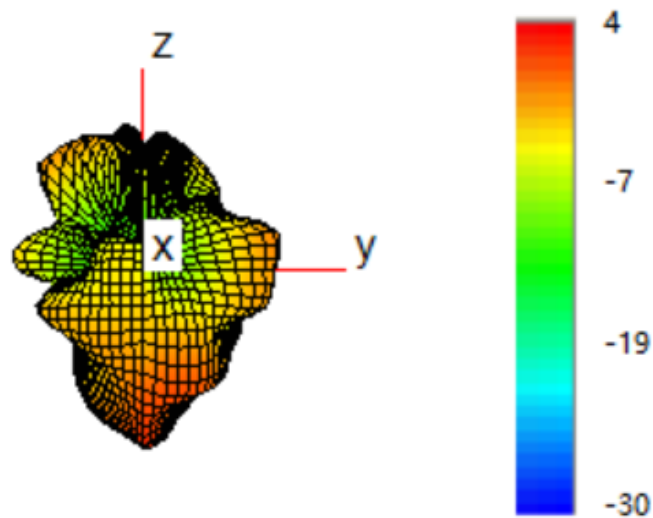
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	0.46



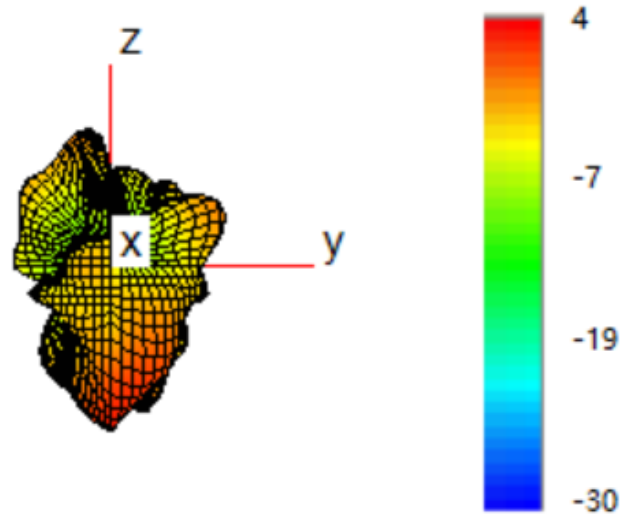
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	2.79



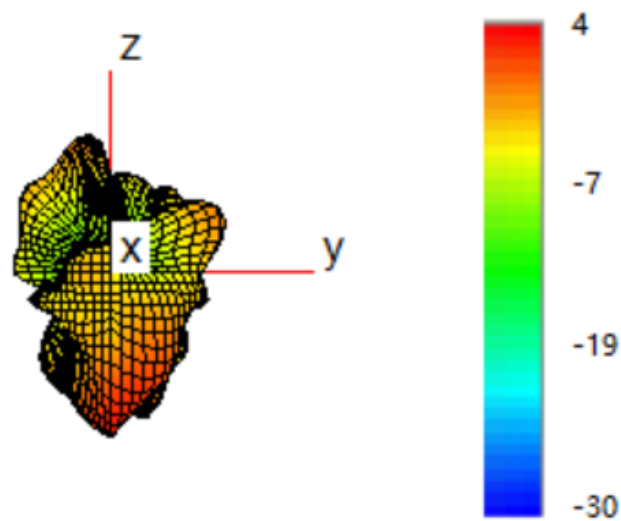
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	3.17



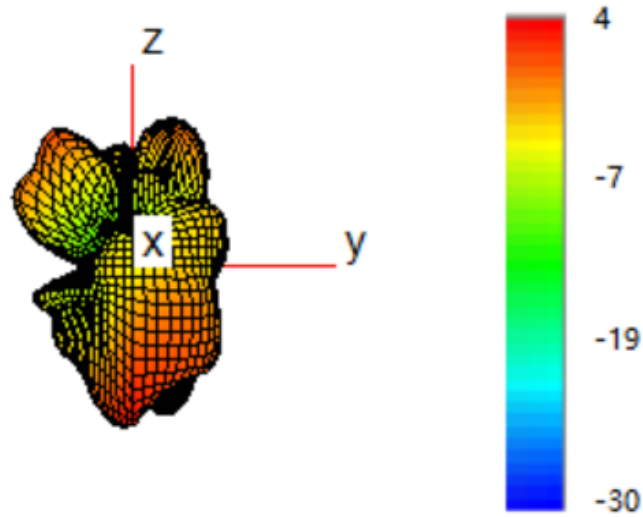
Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	3.17



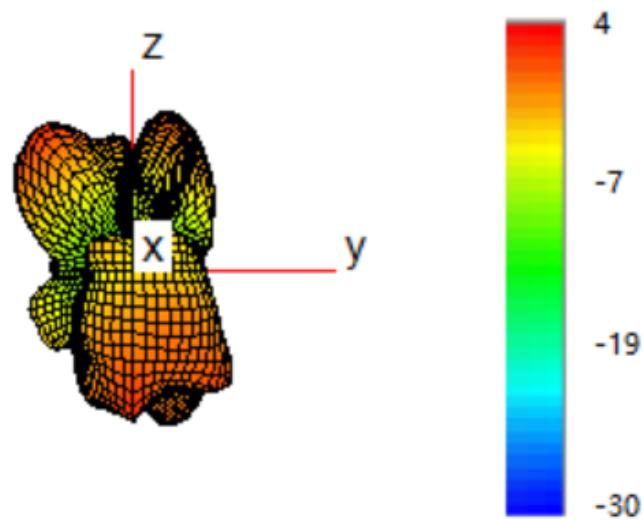
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	3.33



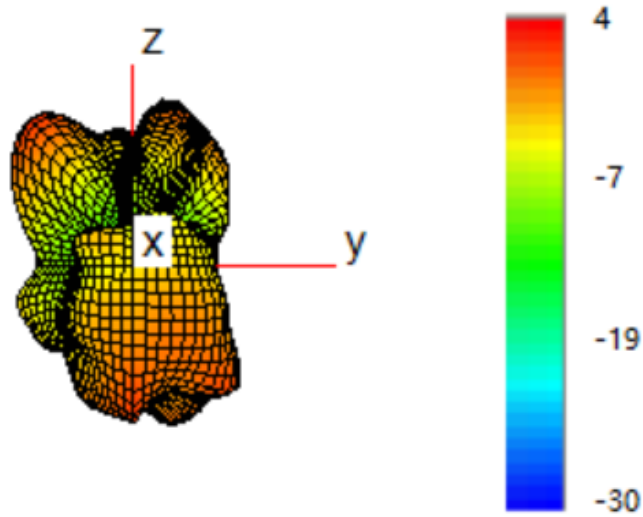
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	2.73



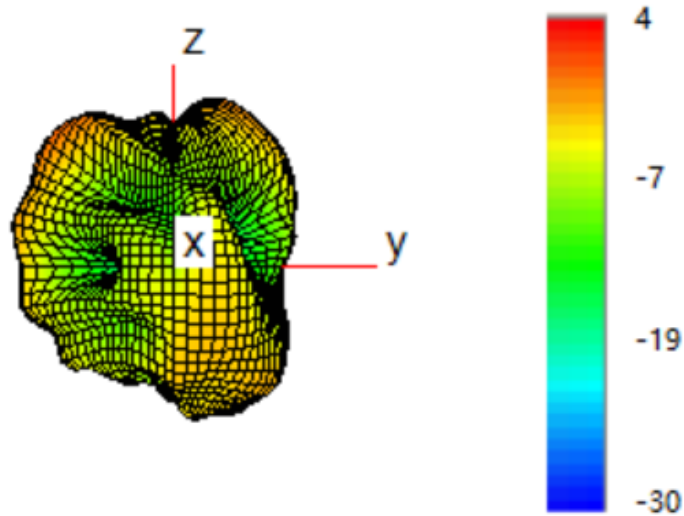
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	2.65



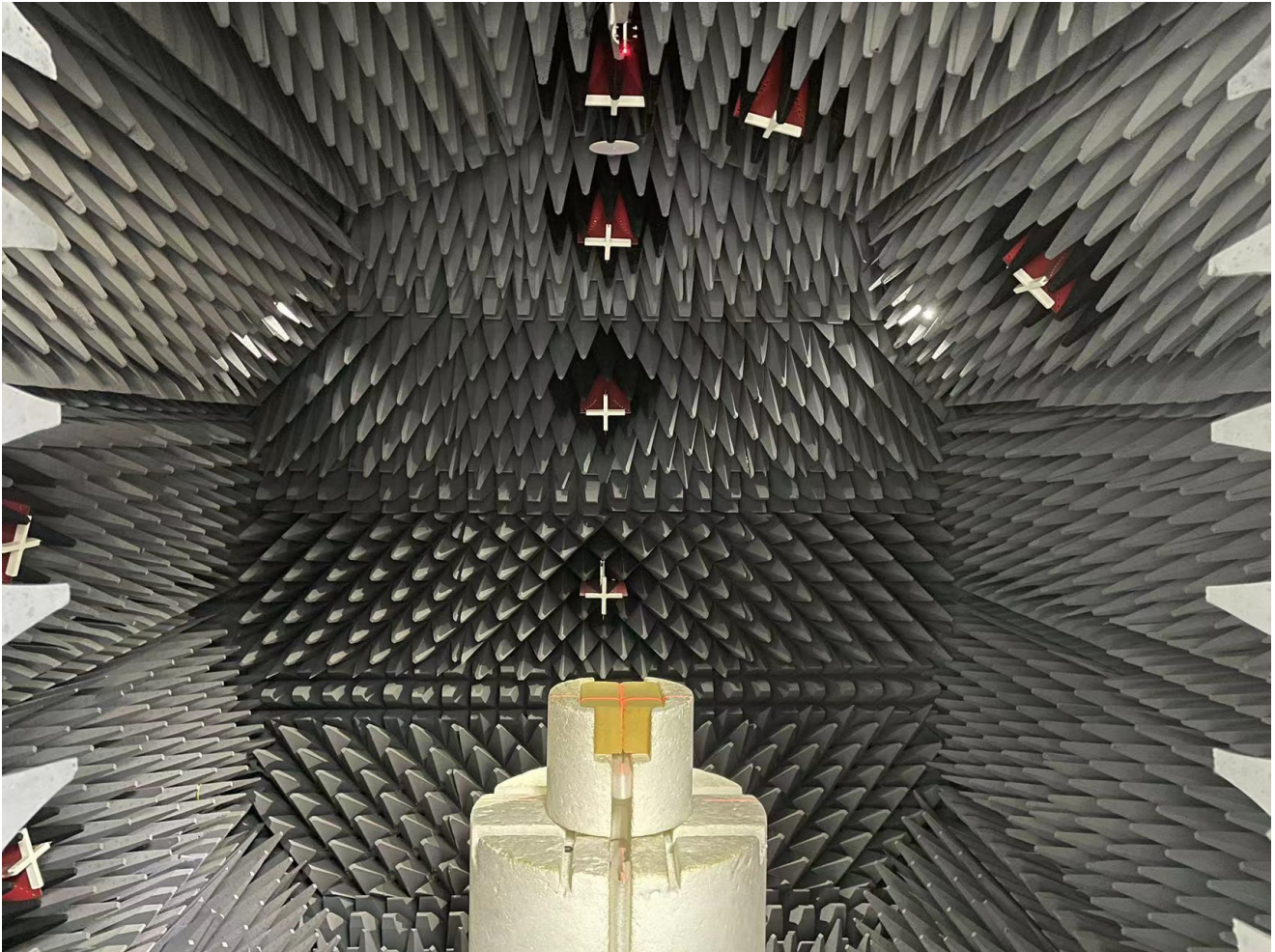
Max Antenna 3D Radiation Pattern 6875-7125 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	1.54



Annex A. Photographs

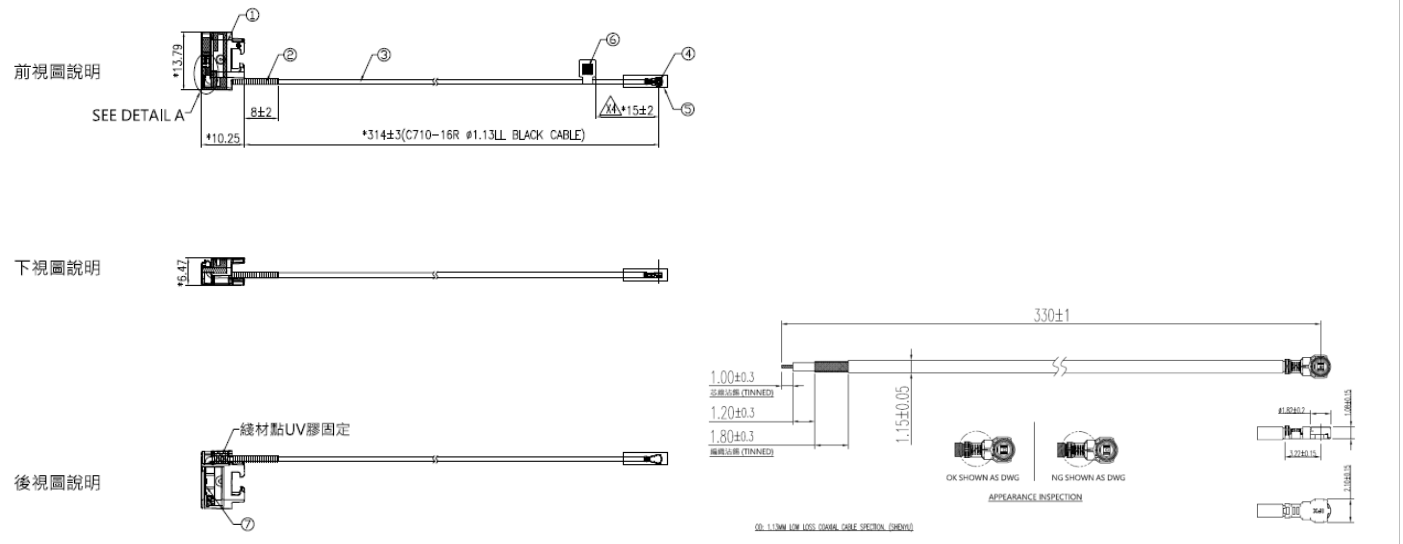
A.1 Setup Photo



A.2 Test sample

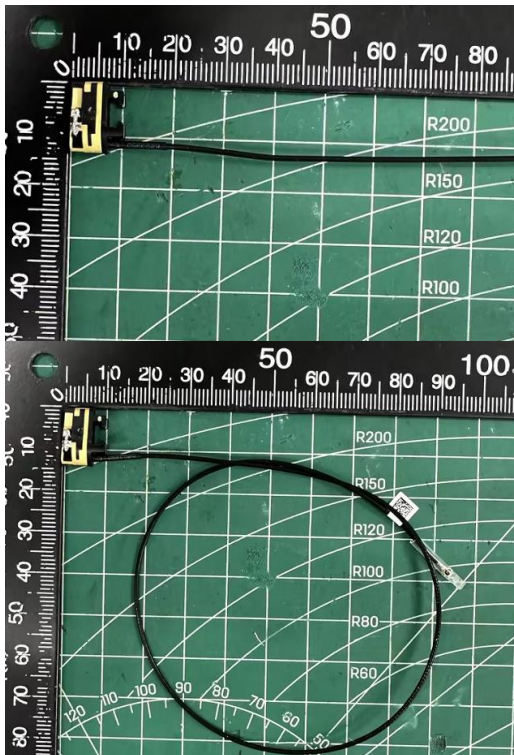
Main Antenna

Antenna Drawing

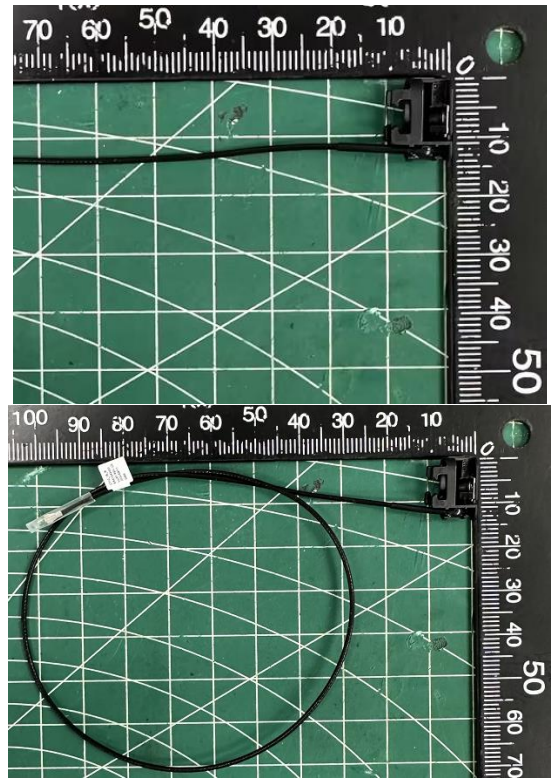


Antenna Photo

Front



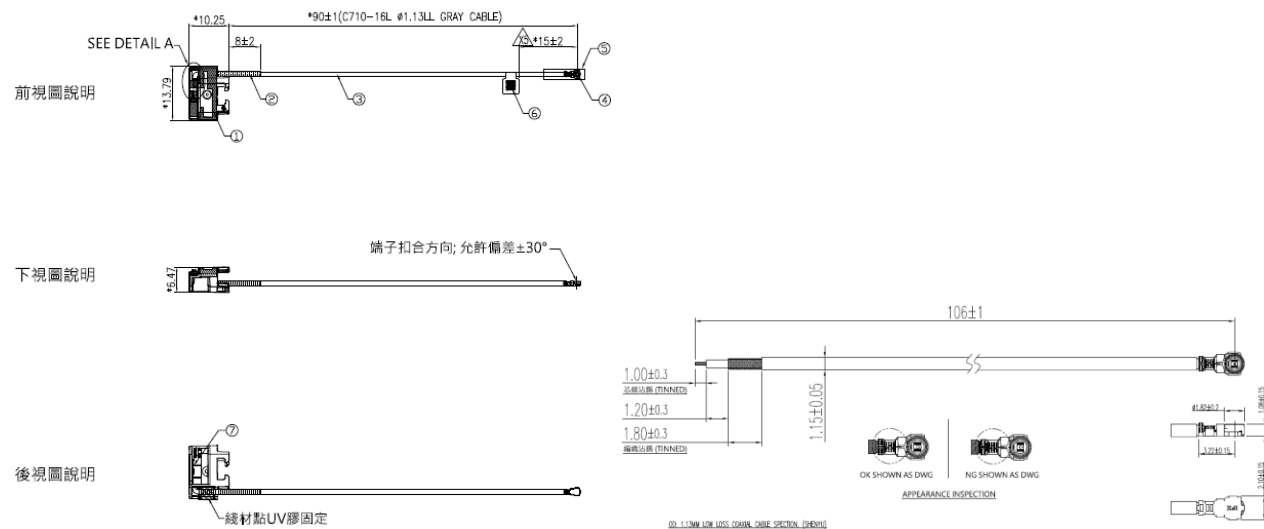
Back



Note: antenna photo should include L type ruler

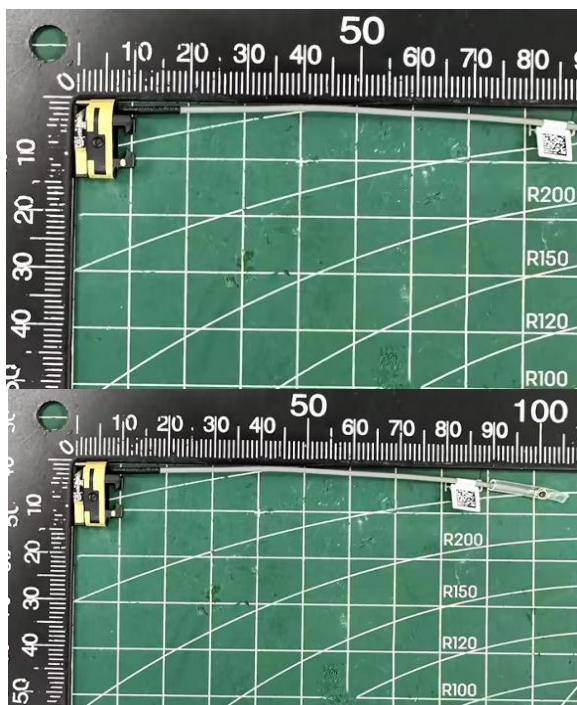
Aux Antenna

Antenna Drawing

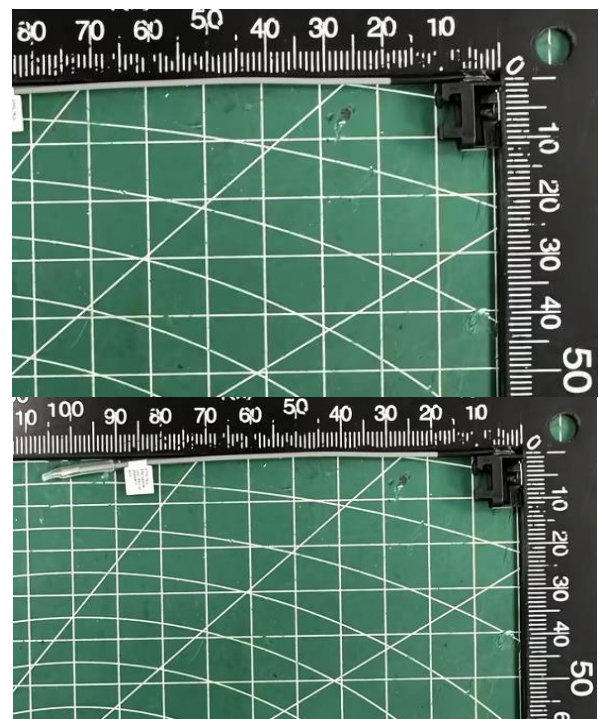


Antenna Photo

Front



Back



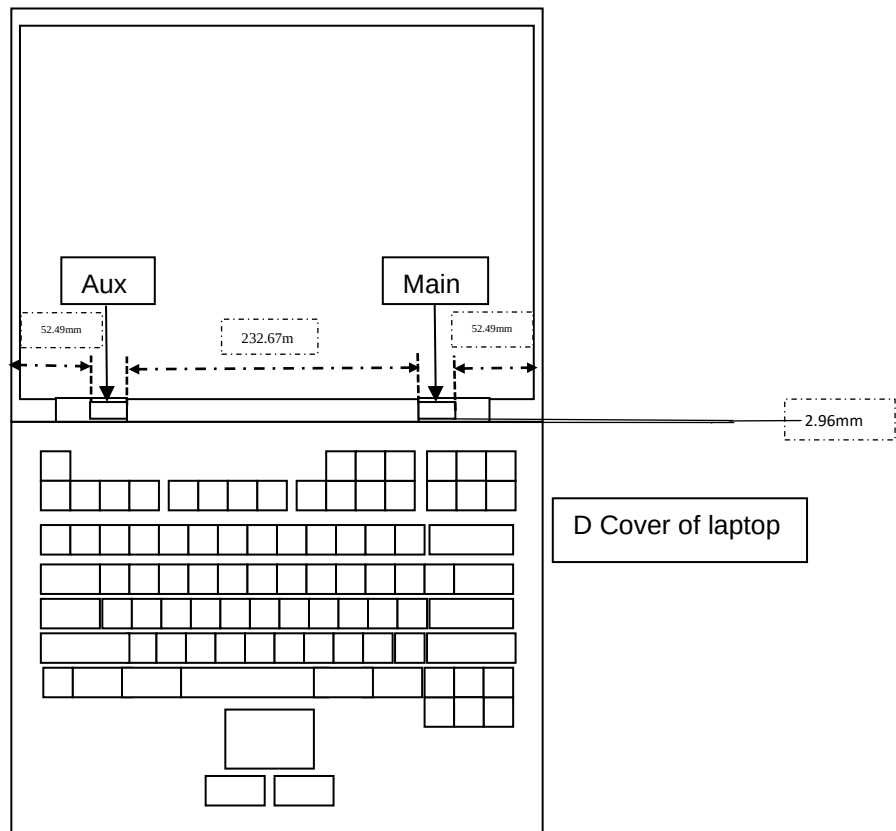
Note: antenna photo should include L type ruler

Annex B. Antenna Location

B.1 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).

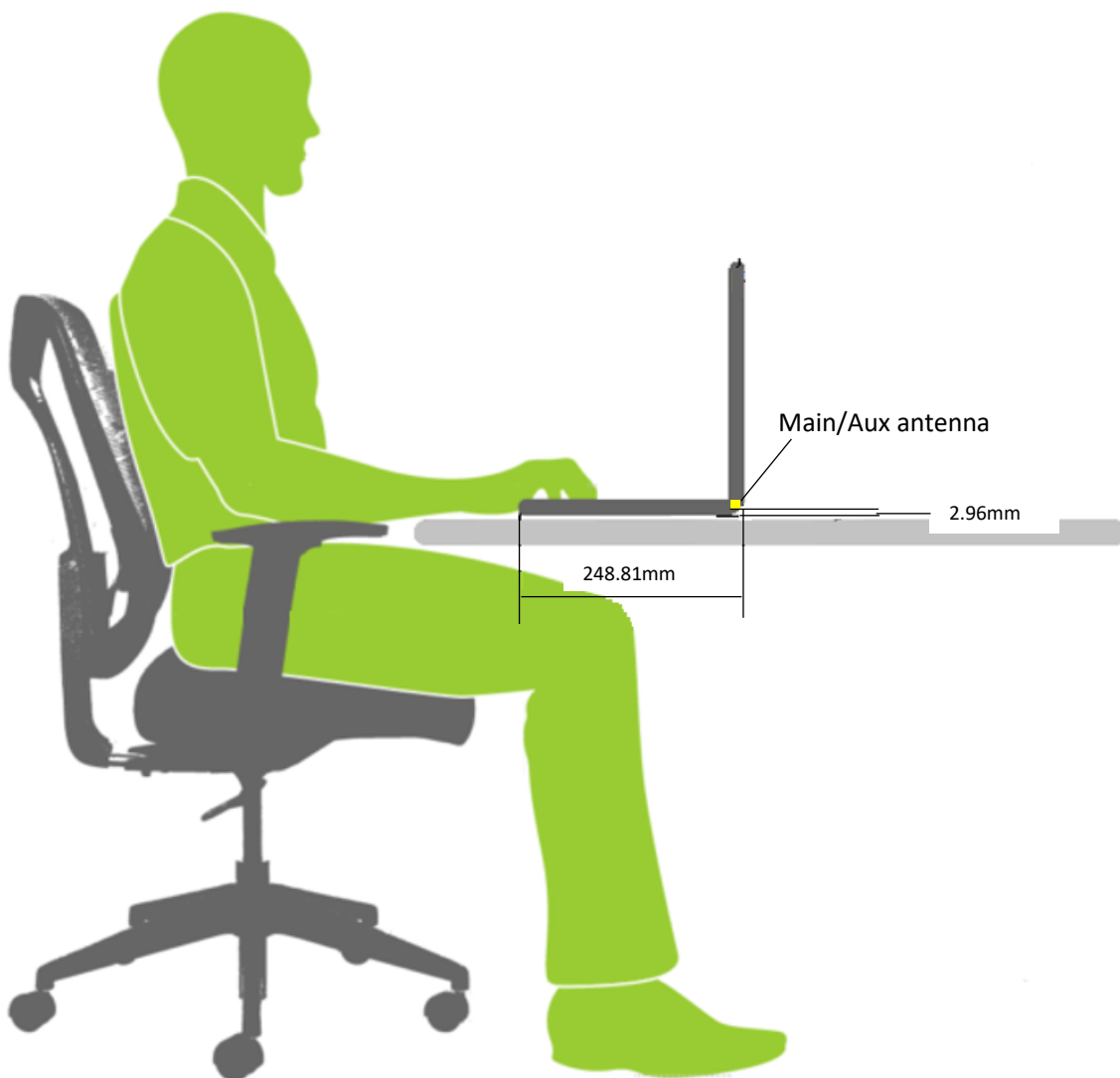
Any antenna that transmits must show dimensions to bottom of laptop. Provide a description of the materials that are used for supporting or surrounding transmit antennas; for example, non-conductive plastics vs. conductive coated plastic or metallic materials.



B.2 Antenna dimensional information for SAR evaluation

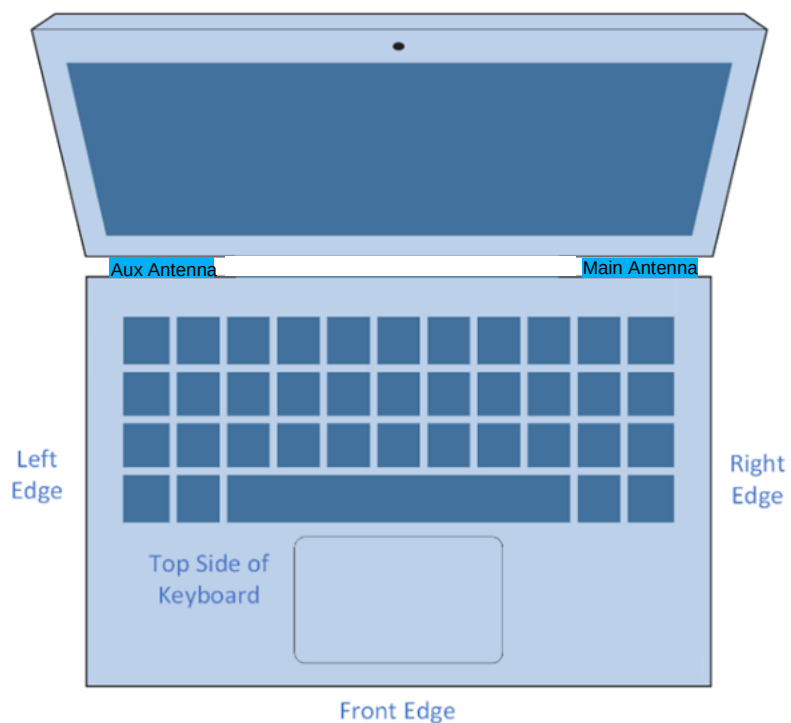
Include a dimensioned photo(s) or dimensioned drawing(s) showing the distance (mm) between the transmit antennas and the user. For notebook/laptop hosts show lapheld position (example below). For tablet hosts show all orientations including lapheld, primary & secondary portrait, primary & secondary landscape positions. Include a description of any proximity sensors or power throttling implementations that limit or exclude use of any host orientation.

Antennas on the panel section



Measuring Surface	Antenna	Separation Distance(antenna-to- Surface)(mm)	1g SAR
Bottom Side	Main	2.96	FCC/ISED
	Aux	2.96	FCC/ISED

Antennas on the keyboard section



Measuring Surface	Antenna	Separation Distance(antenna-to-Surface)(mm)	1g or 10g SAR
Bottom Side	Main	2.96	1g (FCC/ISED)
	Aux	2.96	1g (FCC/ISED)
Front Edge	Main	N/A	1g (ISED)
	Aux	N/A	1g (ISED)
Left Edge	Main	N/A	10g (ISED)
	Aux	N/A	10g (ISED)
Right Edge	Main	N/A	10g (ISED)
	Aux	N/A	10g (ISED)
Top side of Keyboard	Main	N/A	10g (ISED)
	Aux	N/A	10g (ISED)