

ANTENNA INFORMATION

OEM	Lenovo
ODM	LCFC
Platform model name	LOQ 15IAX9E
Intel platform (ex: Yes, No or NA)	Yes
Platform type (ex: regular NB, convertible PC, AIO...etc)	regular NB
SAR minimum separation (mm)	FCC (1g) 13.8
	ISED (1g) 5.48
	ISED (10g) 1.8

Antenna manufacturer	Company name	Luxshare-ict
	Address	No. 277, Baisheng Road, Jinxi Town, Kunshan City, Suzhou
Test location	Company name	Luxshare-ict
	Address	No. 277, Baisheng Road, Jinxi Town, Kunshan City, Suzhou
Test Personnel	Name(Full name)	Cai JinQi
	E-mail	Jinqi.Cai@luxshare-ict.com
	Tel/Mobile	15951130763
Testing date		2024/07/01

Antenna Part number	Main	DC330025J00
	Aux	DC330025J10
Antenna type (ex: PIFA, Dipole...etc)		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	2.51	3.56	3.17	4.52	4.53	4.24	4.51	4.03	4.49	3.82
Aux	2.61	2.57	3.43	2.82	3.19	3.17	4.21	3.81	3.10	3.23

Cable Assembly Part Number and Information					
	Cable PN	Cable length(mm)	Cable diameter(mm)	Impedance(ohm)	Connector type
Main	SY113L/50-001	180	1.13	50	IPEX
Aux	SY113L/50-003	350	1.13	50	IPEX

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

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: DC330025J00) Main Antenna	LUXSHARE-ICT	PIFA	Connector type: IPEX Connector: KANGSHUO (P/N: MHF-B13L-N-01) 50 ohm Coaxial length: 180mm diameter: 1.13mm	2400-2483.5	2.51	2.95	3	0.44
				5150-5250	3.56	4.23	3	0.67
				5250-5350	3.17	3.85	3	0.68
				5470-5725	4.52	5.22	3	0.7
				5725-5850	4.53	5.24	3	0.71
				5850-5895	4.24	4.96	3	0.72
				5925-6425	4.51	5.24	3	0.73
				6425-6525	4.03	4.77	3	0.74
				6525-6875	4.49	5.25	3	0.76
				6875-7125	3.82	4.6	3	0.78
(P/N: DC330025J10) Aux Antenna	LUXSHARE-ICT	PIFA	Connector type: IPEX Connector: KANGSHUO (P/N: MHF-B13L-N-01) 50 ohm Coaxial length: 350mm diameter: 1.13mm	2400-2483.5	2.61	3.35	3	0.74
				5150-5250	2.57	3.68	3	1.11
				5250-5350	3.43	4.55	3	1.12
				5470-5725	2.82	3.96	3	1.14
				5725-5850	3.19	4.35	3	1.16
				5850-5895	3.17	4.34	3	1.17
				5925-6425	4.21	5.4	3	1.19
				6425-6525	3.81	5.01	3	1.20
				6525-6875	3.10	4.33	3	1.23
				6875-7125	3.23	4.48	3	1.25

Table of Contents

Cover page.....	1
2. Document Revision History.....	3
3. Test & System Description	
3.1 Measurement Method and System.....	4
3.2 Test setup.....	4
3.3 Equipment list.....	5
4. Radiation characteristics of antenna loaded in Host Platform.....	6
Annex A. Photographs	
A.1 Setup Photo.....	16
A.2 Test sample.....	17
Annex B. Antenna Location	
B.1 Antenna Host Platform Location Information.....	19
B.2 Antenna dimensional information for SAR evaluation.....	20

1. Document Revision History

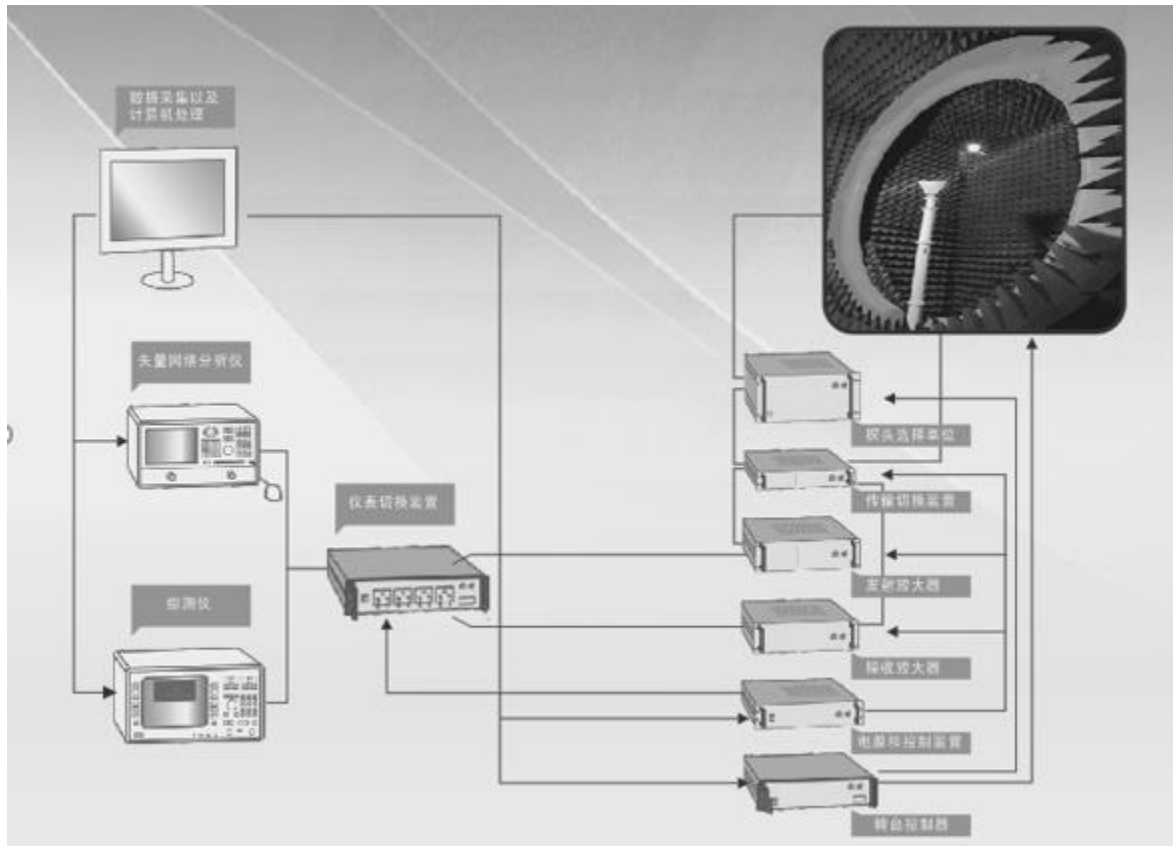
Revision #	Revision Details	Issued Date
Rev. 00	First Issue	2024.07.01

2. Test & System Description

3.1 Measurement Method and System

This test report is prepared by testing in a dark room that is completely silenced and shielded from external signals .

3.2 Test setup



3.3 Equipment list

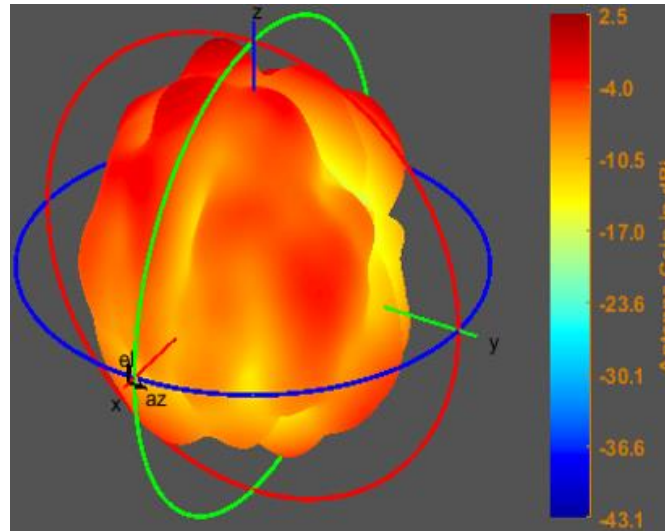
Number	Device	Type/Model	Serial	Manufacturer	Cal. Date	Cal. Due Date
1	EMT24 Chamber	EM-testing	1603000653	EMT	2023/11/15	2024/12/31
2	Turntable control box	EM-testing	1603000653	EMT	2023/11/15	2024/12/31
3	Turntable control computer	EM-testing	1603000653	EMT	2023/11/15	2024/12/31
4	Tx/rx RF power and its control unit	EM-testing	1603000653	EMT	N/A	N/A
5	Probe switch array	EM-testing	1603000653	EMT	N/A	N/A
6	Test system host	EM-testing	1603000653	EMT	N/A	N/A
7	Network analyzer	E5071C	1603000653	EMT	2023/12/29	2024/12/31
8	RF line TX	EM-testing	1603000653	EMT	N/A	N/A
9	RF line RX	EM-testing	1603000653	EMT	N/A	N/A
10	UPS uninterruptible power supply	Castle	1603000653	EMT	N/A	N/A
11	24 Probe Antenna	EM-testing	1603000653	EMT	2023/11/15	2024/12/31
12	Cable 3m 400MHz~8.5GHz	EM-testing	1603000653	EMT	2023/9/30	2024/12/31

3. Radiation characteristics of antenna loaded in Host Platform

Main Antenna

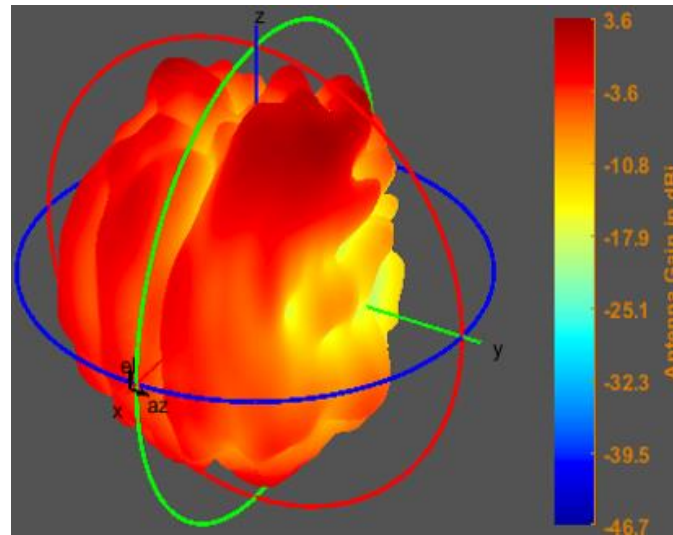
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	2.51



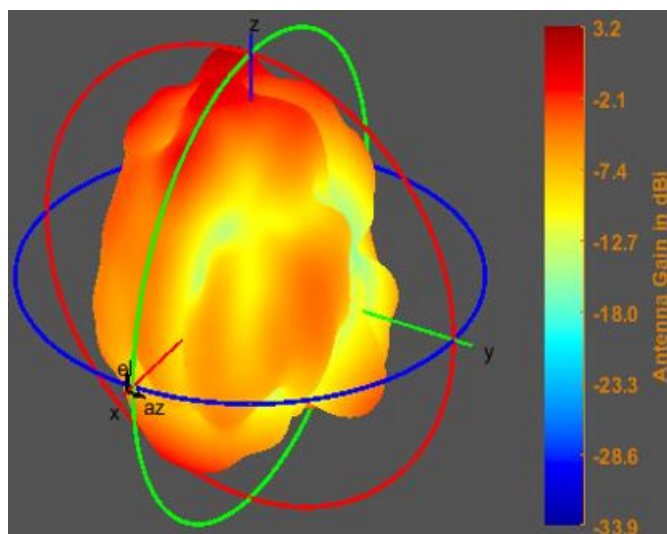
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	3.56



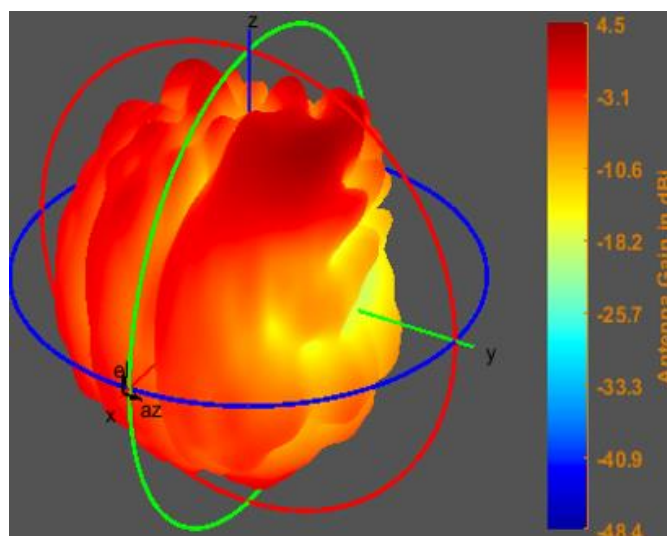
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	3.17



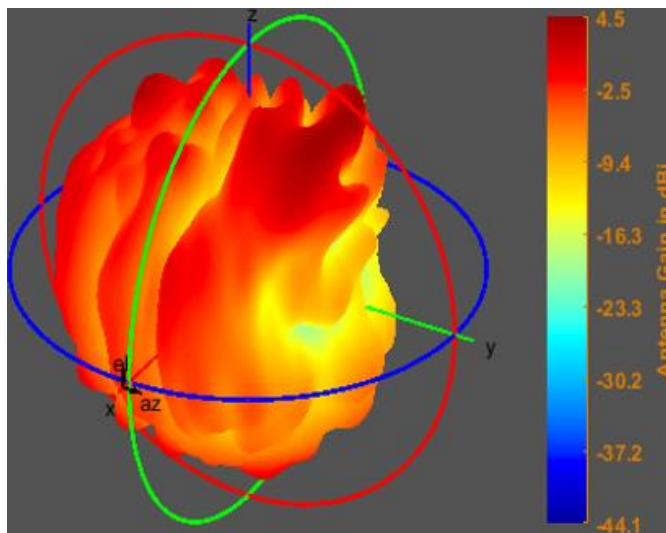
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	4.52



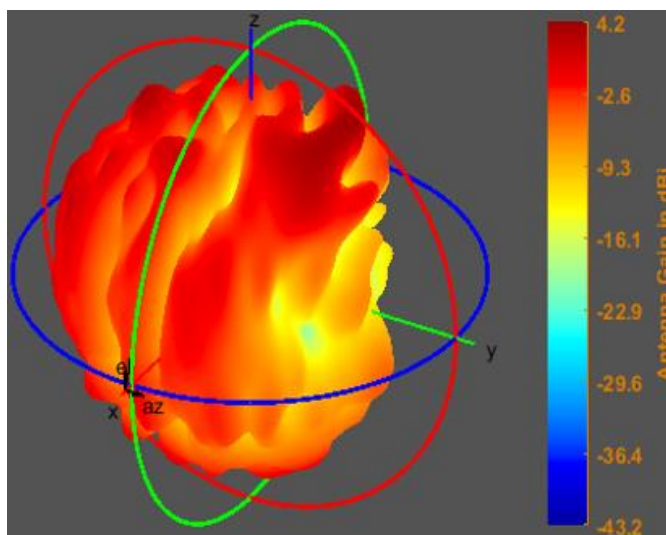
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	4.53



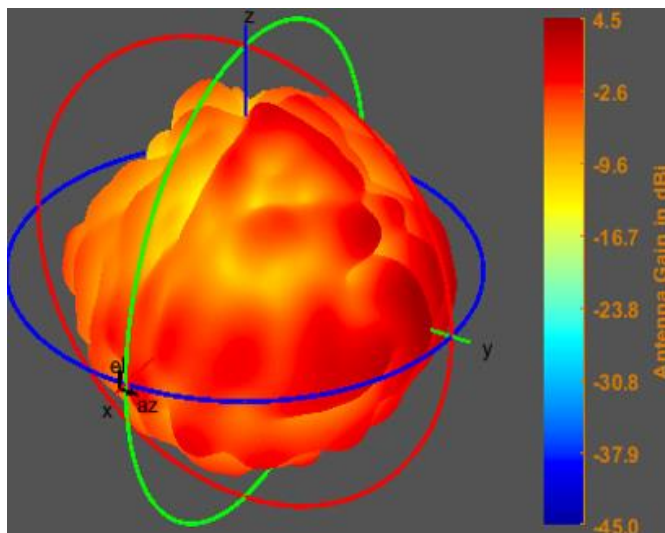
Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	4.24



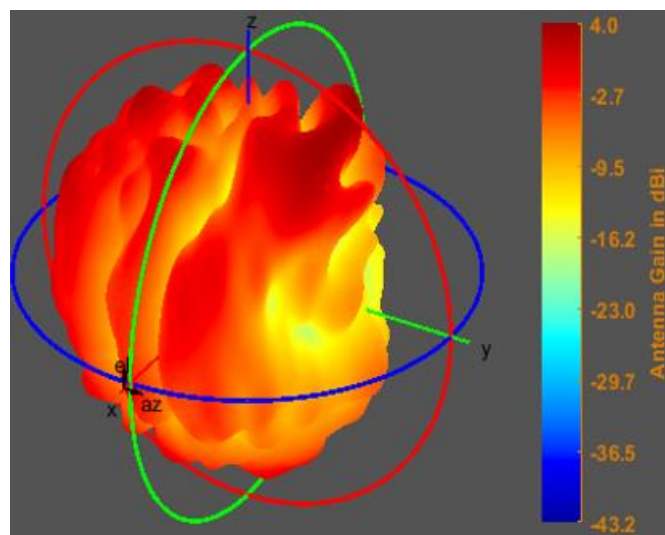
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	4.51



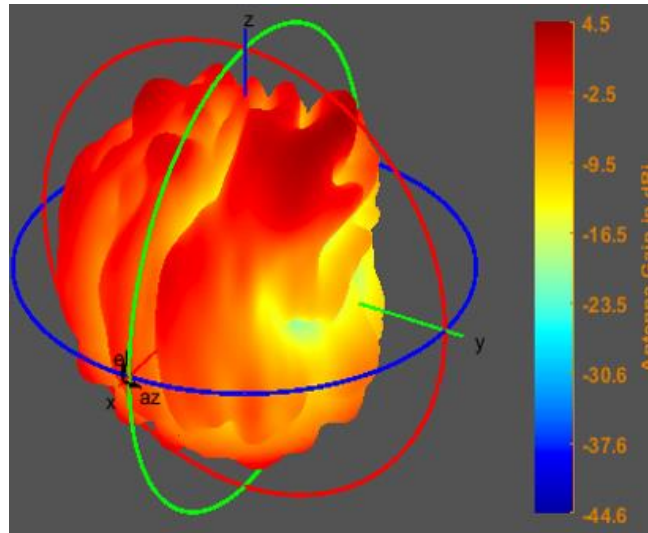
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	4.03



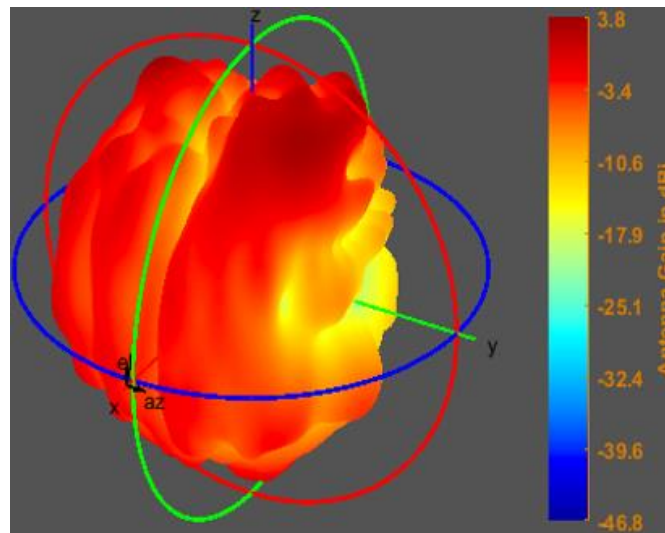
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	4.49



Max Antenna 3D Radiation Pattern 6875-7125 MHz

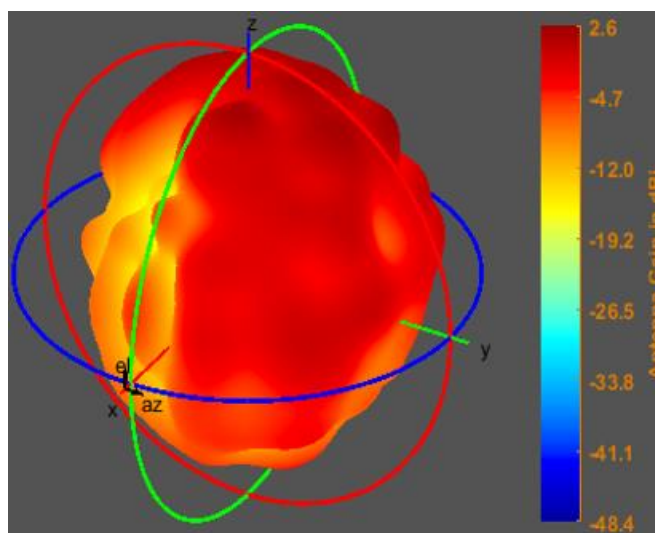
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	3.82



Auxiliary Antenna

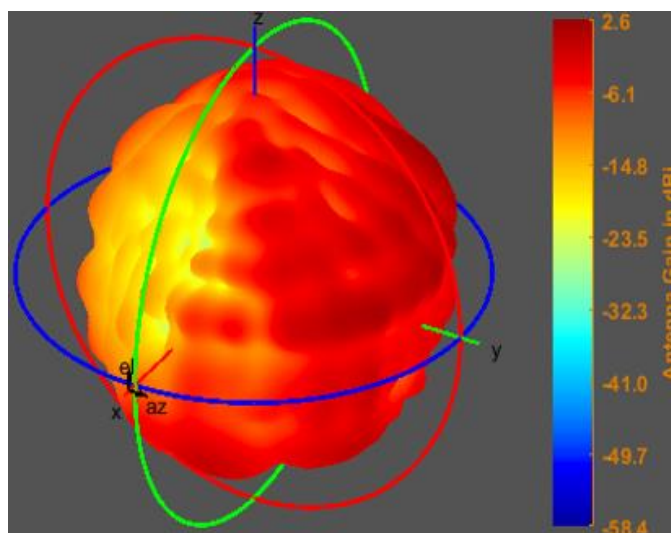
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	2.61



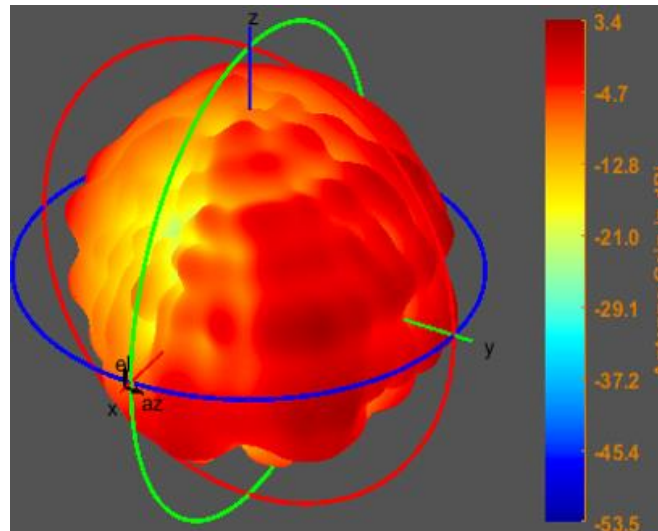
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	2.57



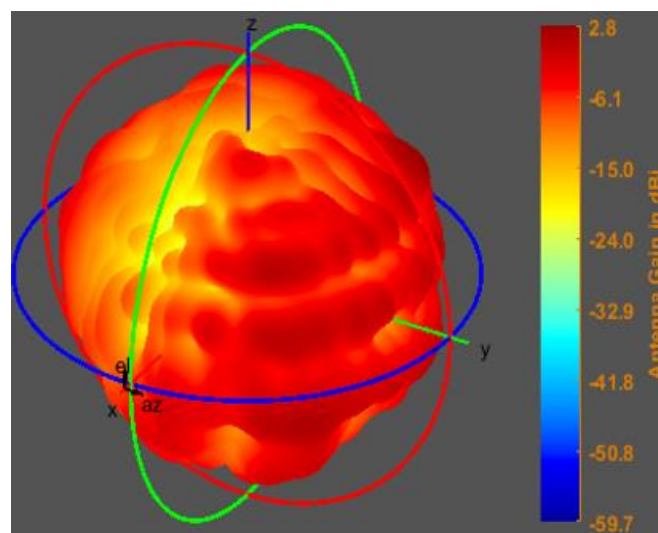
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	3.43



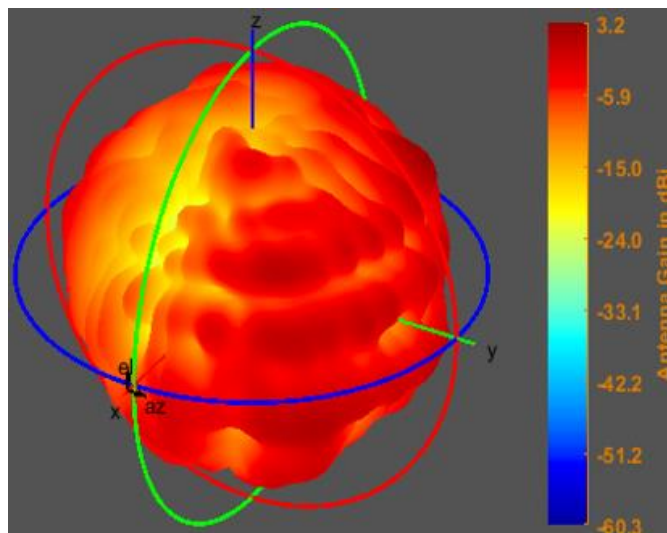
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	2.82



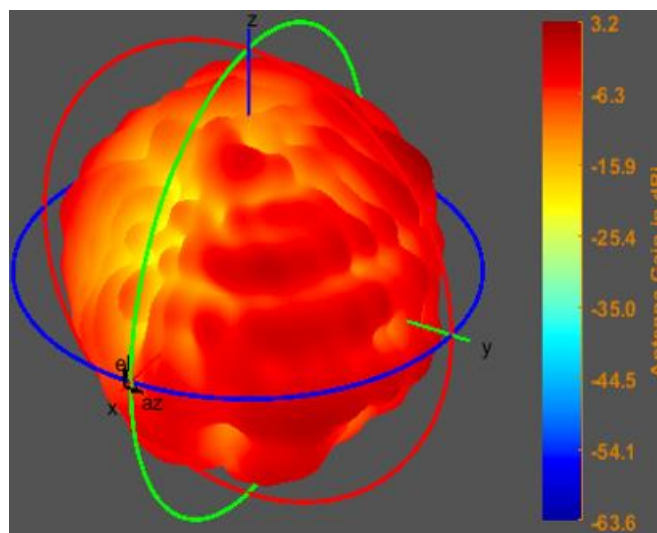
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	3.19



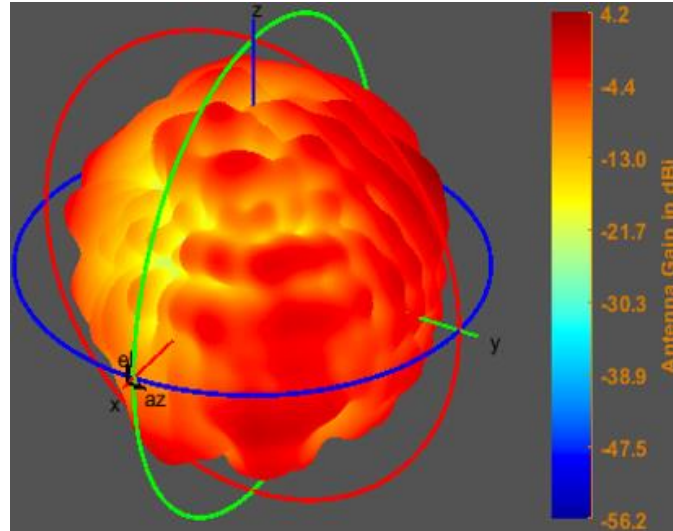
Max Antenna 3D Radiation Pattern 5850-5895 MHz

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



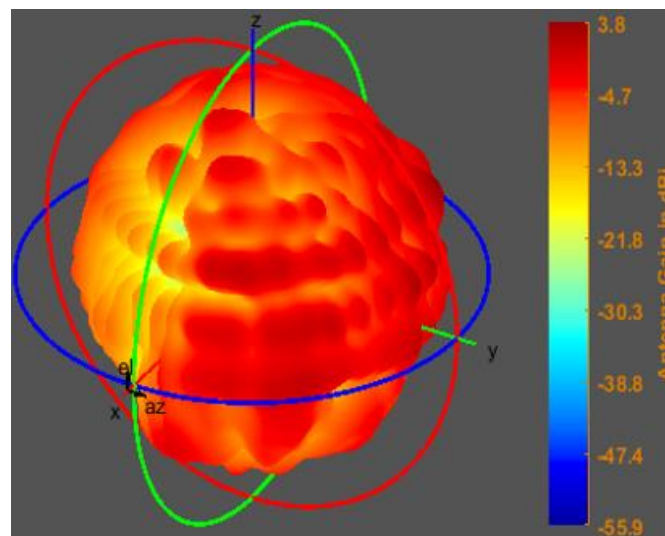
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	4.21



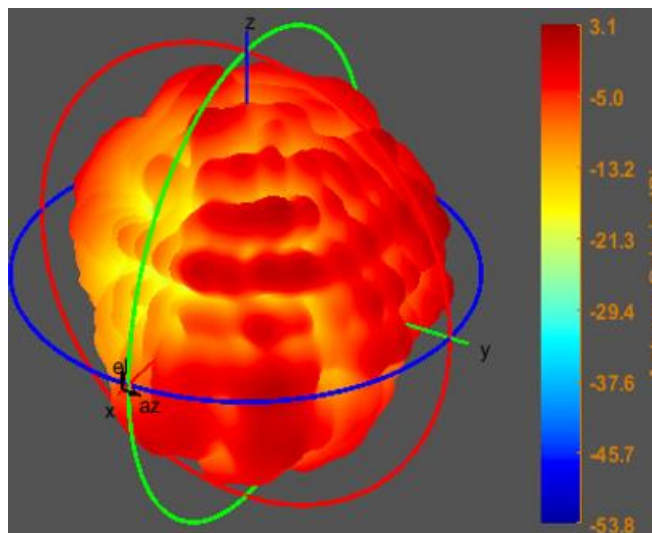
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	3.81



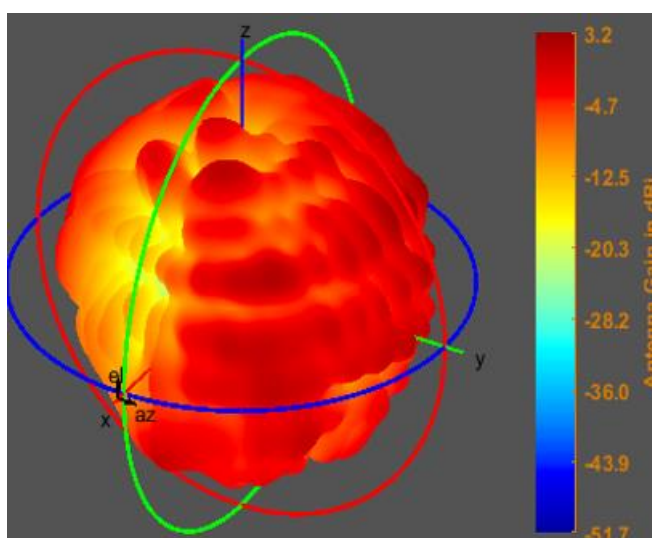
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	3.10



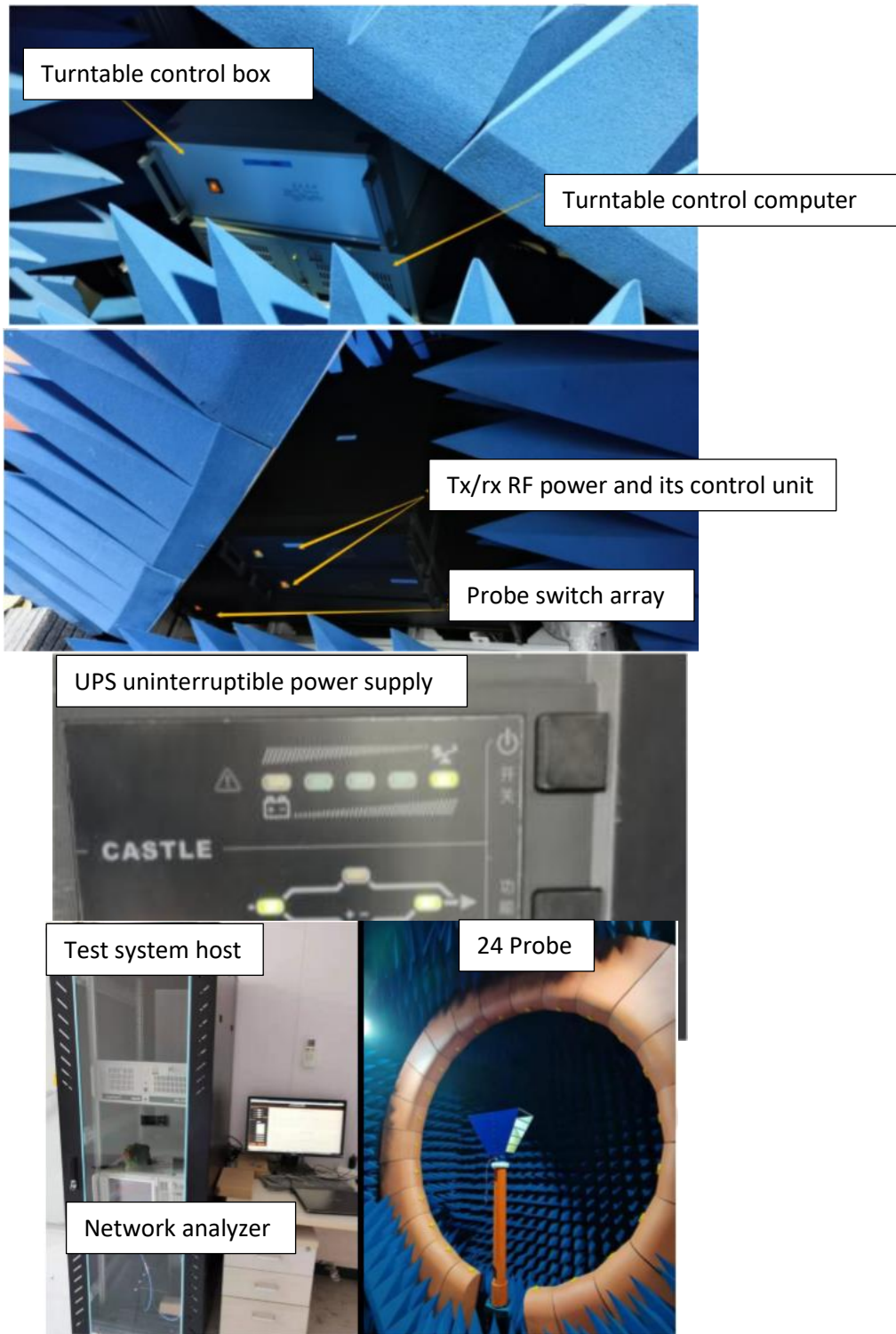
Max Antenna 3D Radiation Pattern 6875-7125 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	3.23



Annex A. Photographs

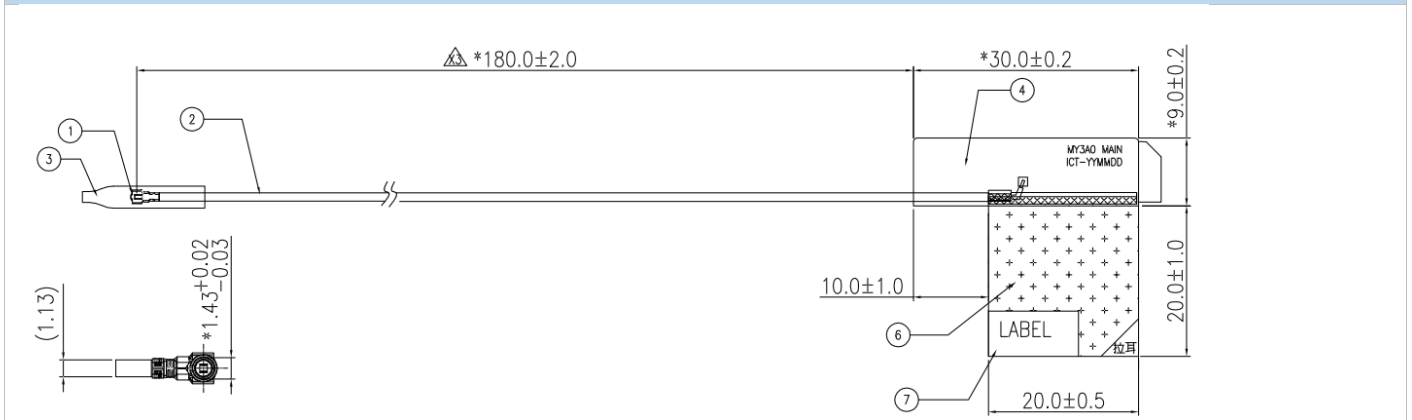
A.1 Setup Photo



A.2 Test sample

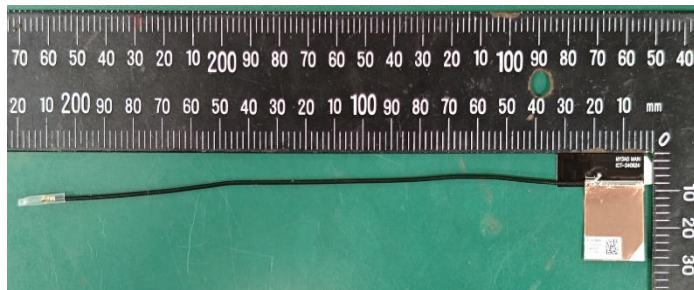
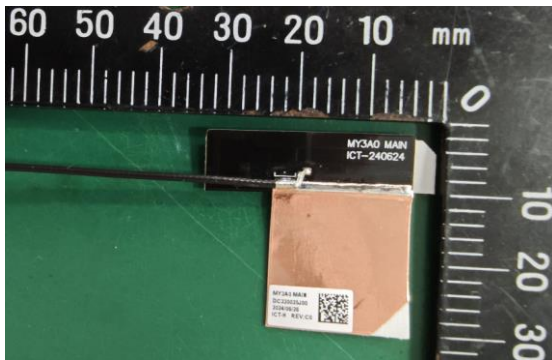
Main Antenna

Antenna Drawing

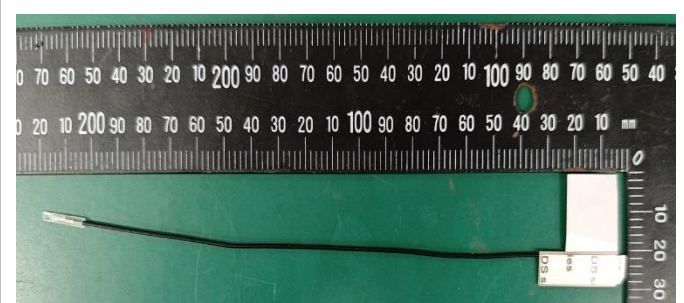
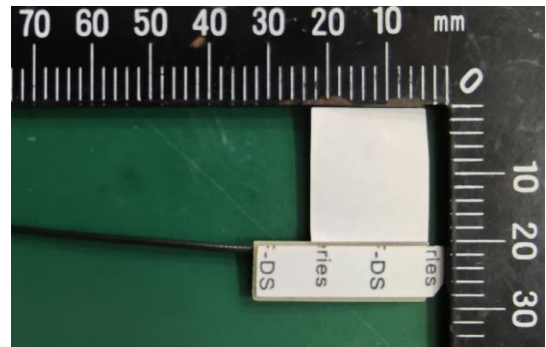


Antenna Photo

Front



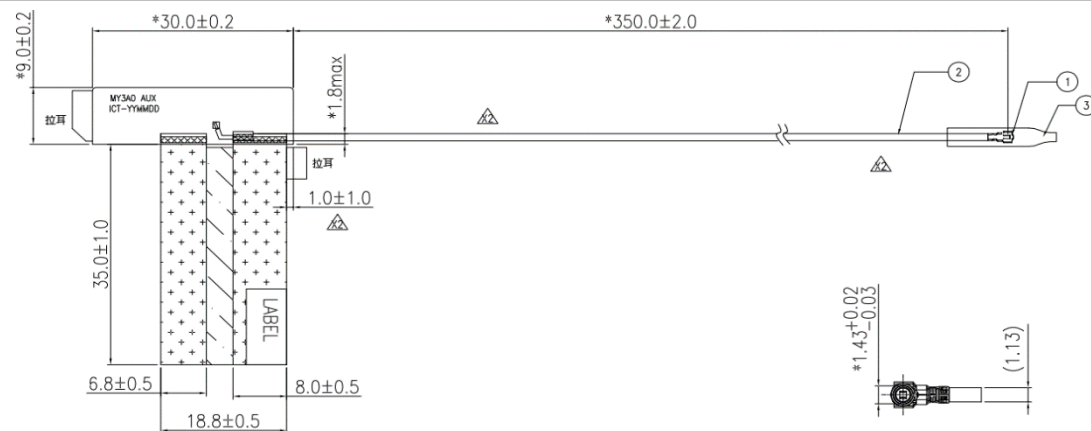
Back



Note: antenna photo should include L type ruler

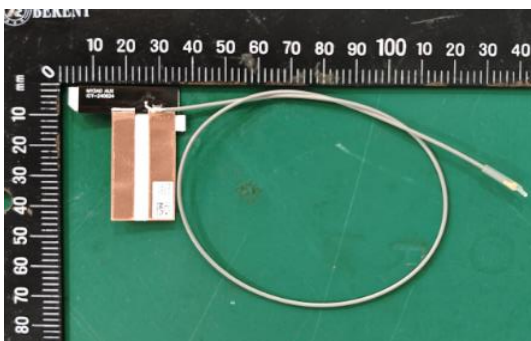
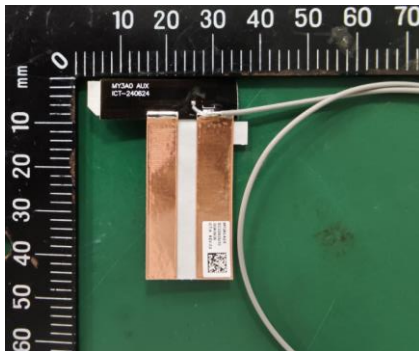
Aux Antenna

Antenna Drawing

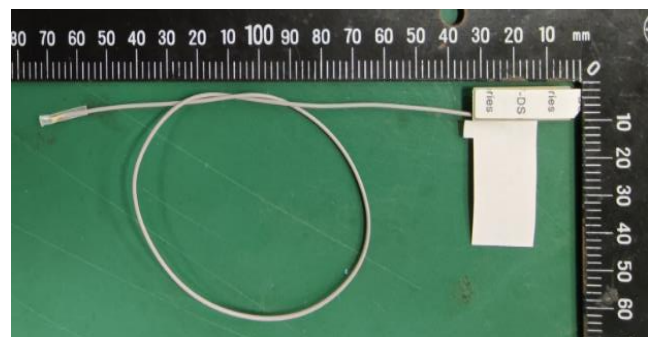
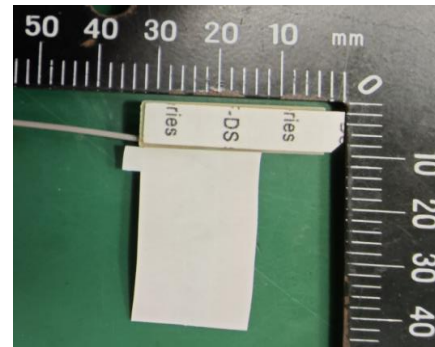


Antenna Photo

Front



[Back](#)



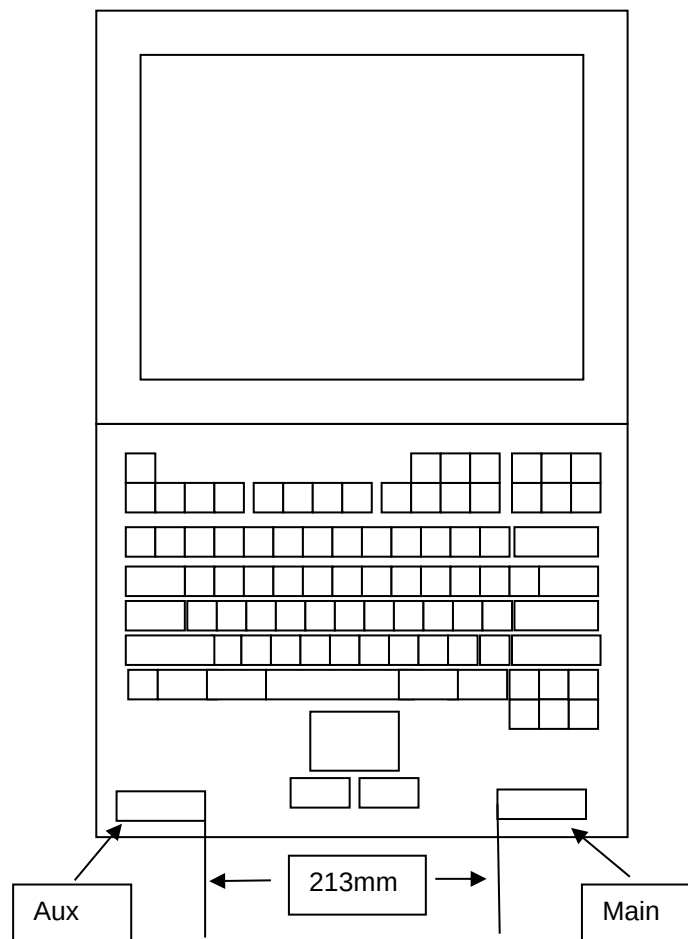
Note: antenna photo should include L type ruler

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).

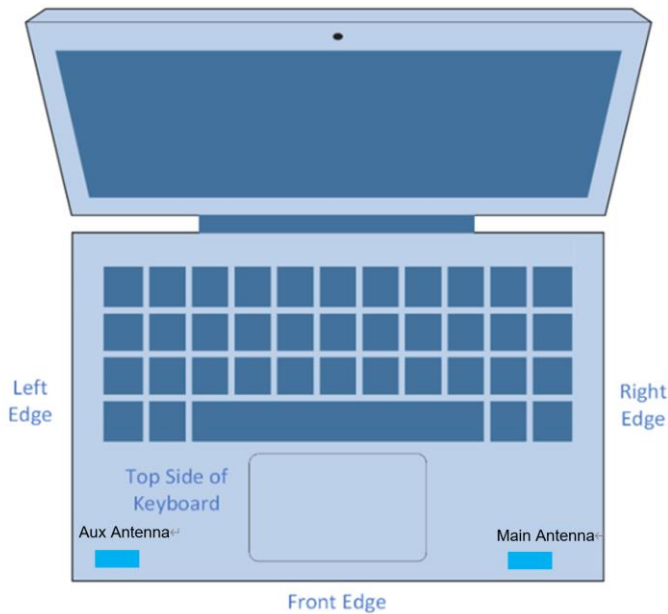
Any antenna that transmits must show dimensions to bottom of laptop. Provide a description of the materials that are used for supporting or surrounding transmit antennas; for example, non-conductive plastics vs. conductive coated plastic or metallic materials.



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 i

Antennas on the keyboard section



Measuring Surface	Antenna	Separation Distance(antenna-to-Surface)(mm)	1g or 10g SAR
Bottom Side	Main	13.8	1g (FCC/ISED)
	Aux	13.8	1g (FCC/ISED)
Front Edge	Main	5.48	1g (ISED)
	Aux	5.48	1g (ISED)
Left Edge	Main	267.4	10g (ISED)
	Aux	24.4	10g (ISED)
Right Edge	Main	61.8	10g (ISED)
	Aux	304.8	10g (ISED)
Top side of Keyboard	Main	1.8	10g (ISED)
	Aux	1.8	10g (ISED)