

ANTENNA INFORMATION

OEM	Lenovo	
ODM	LCFC	
Platform model name	IdeaPad Slim 3 15Q8X10 小新 15c Q8X10	
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)	6.94
	ISED (1g)	5.4
	ISED (10g)	5

Antenna manufacturer	Company name	Shenzhen ZTX Communication Technology Co., Ltd
	Address	No.34, Shilong Avenue, Shiyan Town, Baoan District, Shenzhen, (Tengda Industrial Park)
Test location	Company name	Shenzhen ZTX Communication Technology Co., Ltd
	Address	No.34, Shilong Avenue, Shiyan Town, Baoan District, Shenzhen, (Tengda Industrial Park)
Test Personnel	Name(Full name)	LiuGang
	E-mail	liugang@chinaztx.com
	Tel/Mobile	15811806849
Testing date	2024/12/16	

Antenna Part number	Main	DC330028P00
	Aux	DC330028P10
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	1.91	2.82	3.02	3.52	3.14	3.41	3.22	3.12	3.47	3.03
Aux	2.31	3.01	3.01	3.18	3.28	2.94	3.59	3.59	3.3	2.87

Cable Assembly Part Number and Information					
	Cable PN	Cable length(mm)	Cable diameter(mm)	Impedance(ohm)	Connector type
Main	IPEX:20565-001R-13 KANGSHUO: MHF-B13L-N-01	238	1.13	50	IPEX
Aux	IPEX:20565-001R-13 KANGSHUO: MHF-B13L-N-01	285	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)
DC330028P00 Main Antenna	Shenzhen ZTX Communication Technology Co., Ltd	PIFA	Connector type: IPEX Connector: IPEX (P/N:20565-001R-13) KANGSHO (P/N: MHF-B13L-N-01) 50 ohm Coaxial length: 350mm diameter: 1.13mm	2400-2483.5	1.91	2.71	1.59	0.8
				5150-5250	2.82	3.67	1.64	0.85
				5250-5350	3.02	4.02	1.43	1
				5470-5725	3.52	4.63	1.51	1.1
				5725-5850	3.14	4.34	1.32	1.2
				5850-5895	3.41	4.66	1.56	1.25
				5925-6425	3.22	4.52	1.32	1.3
				6425-6525	3.12	4.47	1.53	1.35
				6525-6875	3.47	4.87	1.56	1.4
				6875-7125	3.03	4.48	1.97	1.45
DC330028P10 Aux Antenna	Shenzhen ZTX Communication Technology Co., Ltd	PIFA	Connector type: IPEX Connector: IPEX (P/N:20565-001R-13) KANGSHUO (P/N: MHF-B13L-N-01) 50 ohm Coaxial length: 399mm diameter: 1.13mm	2400-2483.5	2.31	3.21	1.32	0.9
				5150-5250	3.01	4.01	1.42	1
				5250-5350	3.01	4.11	1.33	1.1
				5470-5725	3.18	4.43	1.54	1.25
				5725-5850	3.28	4.58	1.79	1.3
				5850-5895	2.94	4.34	1.77	1.4
				5925-6425	3.59	5.09	1.99	1.5
				6425-6525	3.59	5.14	1.69	1.55
				6525-6875	3.3	4.9	1.83	1.6
				6875-7125	2.87	4.67	1.30	1.8

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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

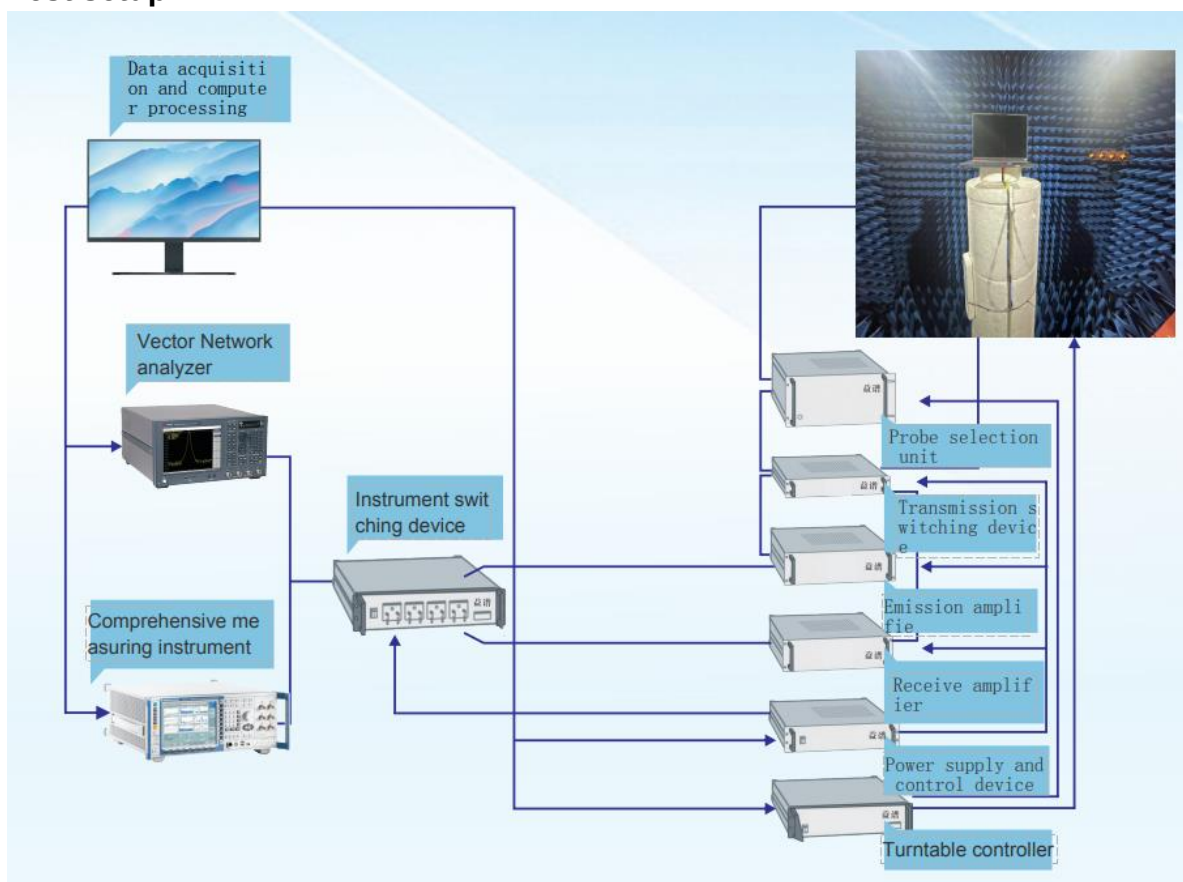
Revision #	Revision Details	Issued Date
Rev. 00	First Issue	

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



3.3Equipment list

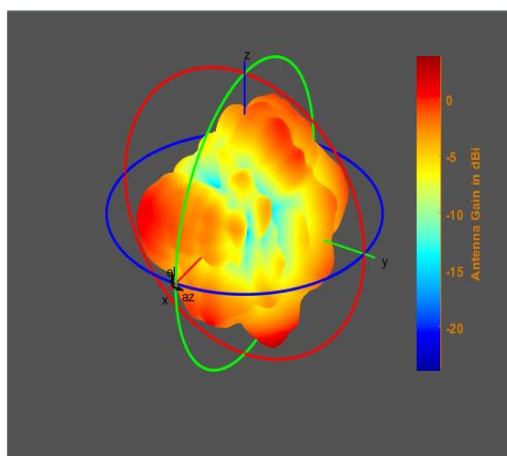
Number	Device	Type/Model	Serial	Manufacture	Cal. Date	Cal. Due Date
1	EMT64 Chamer	EM-testing	ZCLB652	EMT	2024/4/16	2025/4/15
2	Turntable control box	EM-testing		EMT	2024/4/16	2025/4/15
3	Turntable control computer	EM-testing		EMT	2024/4/16	2025/4/15
4	Tx/rx RF power and its control unit	EM-testing	626293238	EMT	N/A	N/A
5	Probe switch array	EM-testing		EMT	N/A	N/A
6	Test system host	EM-testing	ZCLB03197	EMT	N/A	N/A
7	Network analyzer	E5071C	ZCLB03298	Rohde&Schwarz	2024/4/16	2025/4/15
8	RF line TX	EM-testing		EMT	N/A	N/A
9	RF line RX	EM-testing		EMT	N/A	N/A
10	UPS uninerruptible power supply	Castle		EMT	N/A	N/A
11	64 Probe Antenna	EM-testing		EMT	2024/4/16	2025/4/15
12	Cable 3m 400MHz-8.5GHZ	EM-testing		EMT	2024/4/16	2025/4/15

4. Radiation characteristics of antenna loaded in Host Platform

Main Antenna

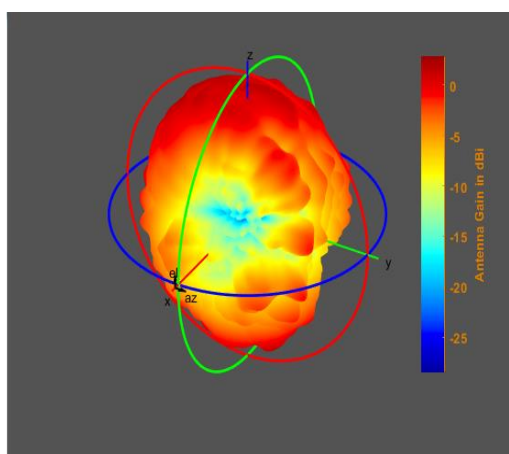
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	1.91



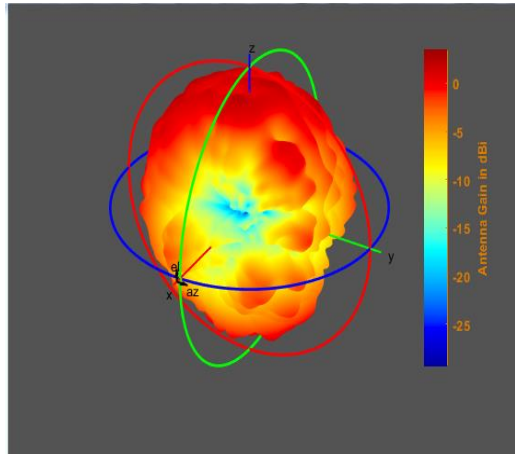
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	2.82



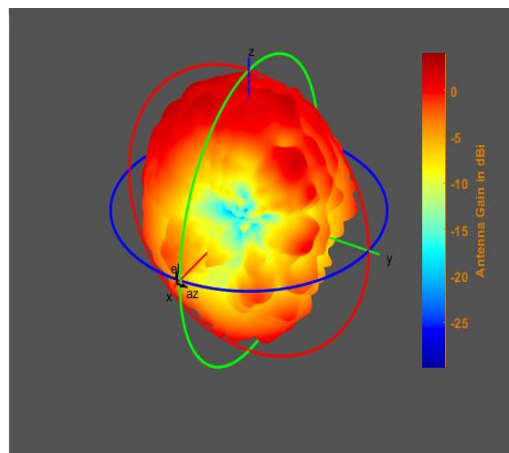
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	3.02



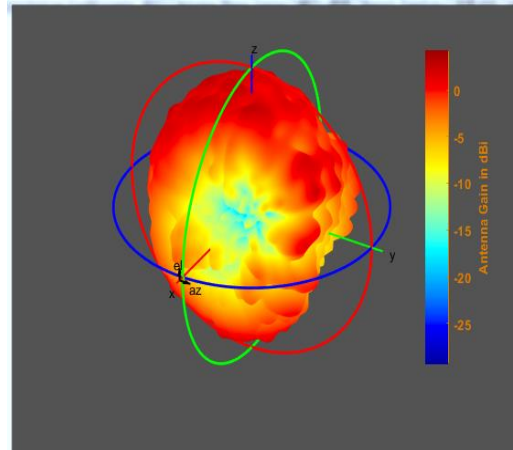
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	3.52



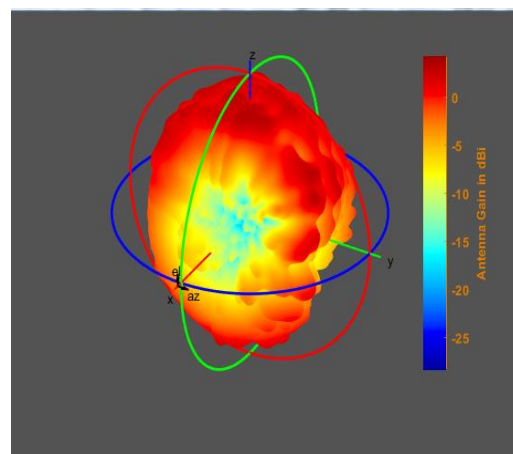
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	3.14



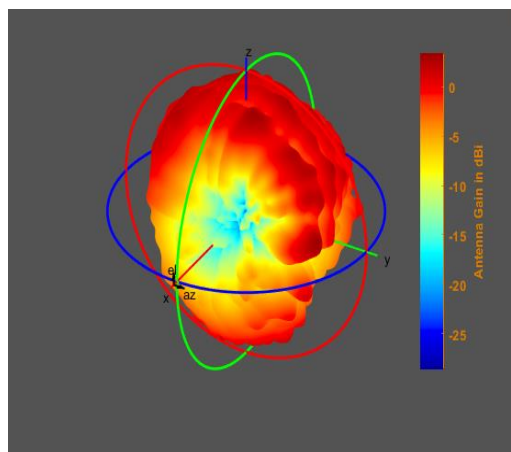
Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	3.41



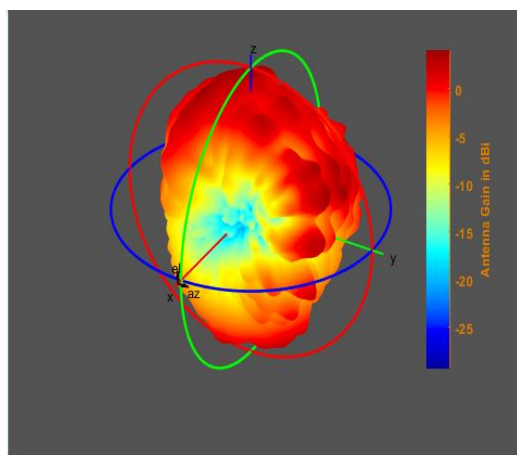
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	3.22



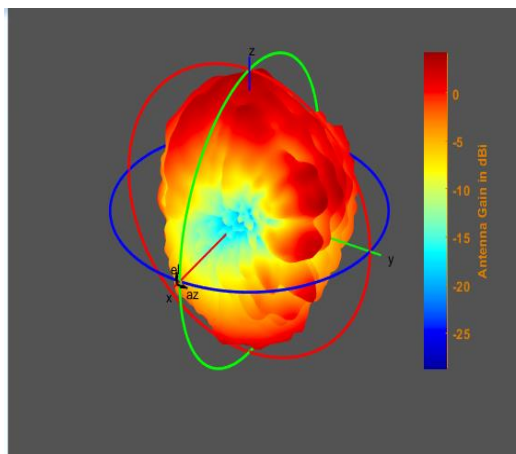
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	3.12



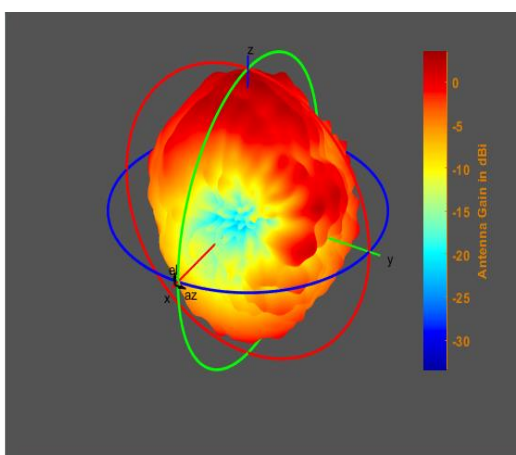
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	3.47



Max Antenna 3D Radiation Pattern 6875-7125 MHz

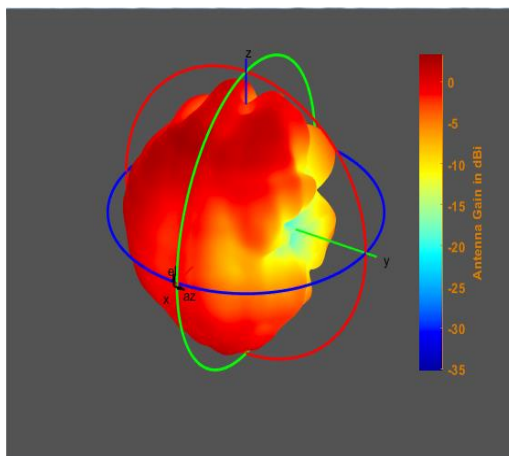
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	3.03



Auxiliary Antenna

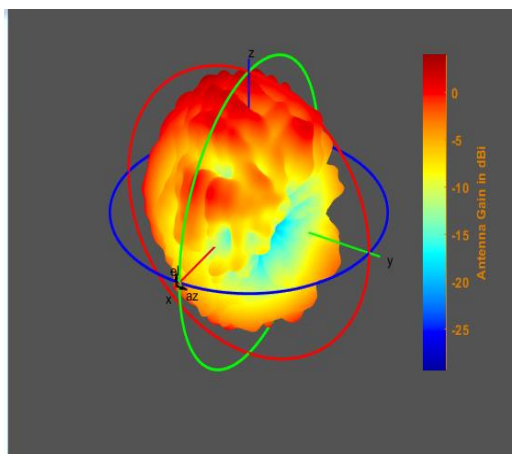
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	2.31



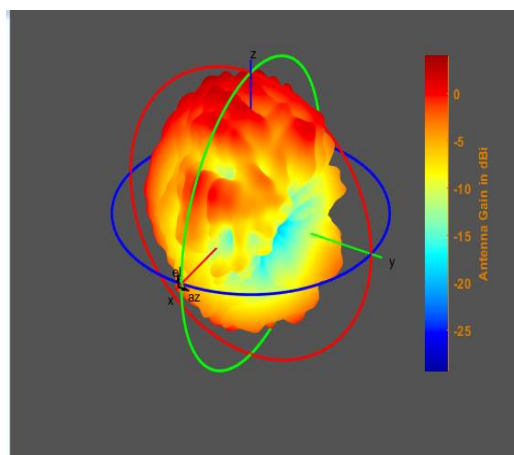
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	3.01



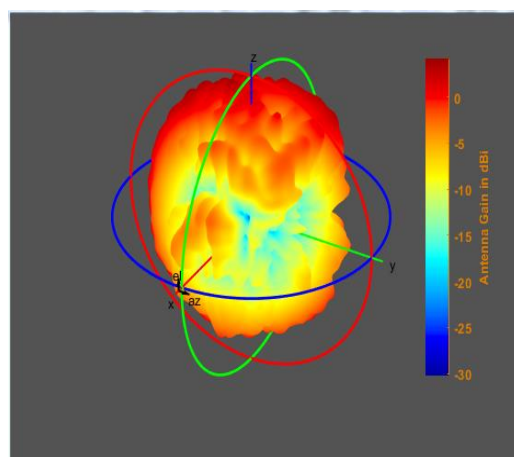
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	3.01



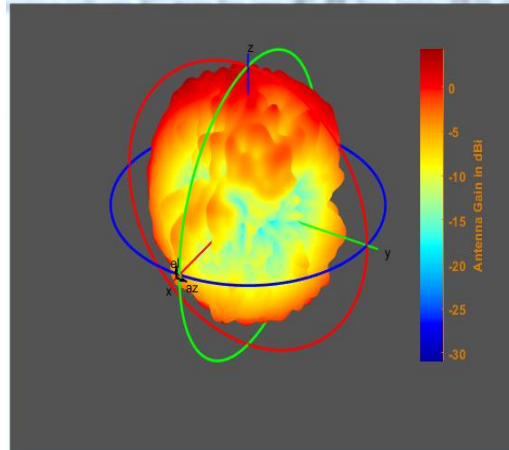
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	3.18



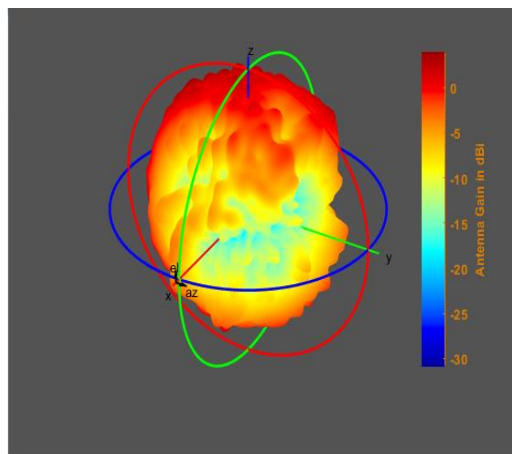
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	3.28



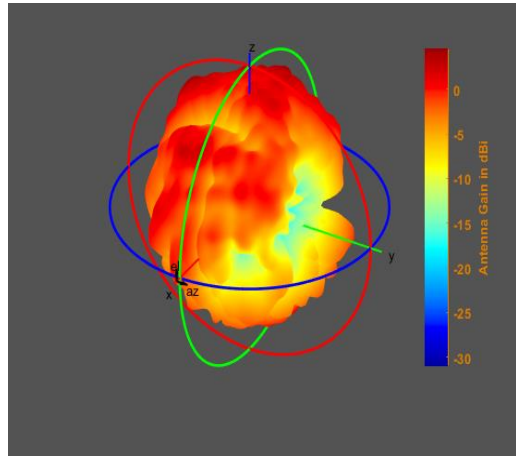
Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	2.94



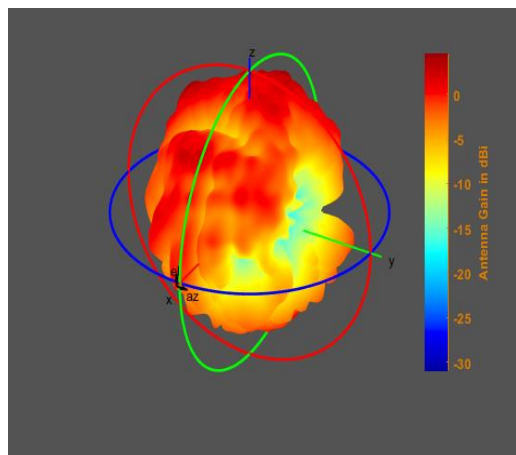
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	3.59



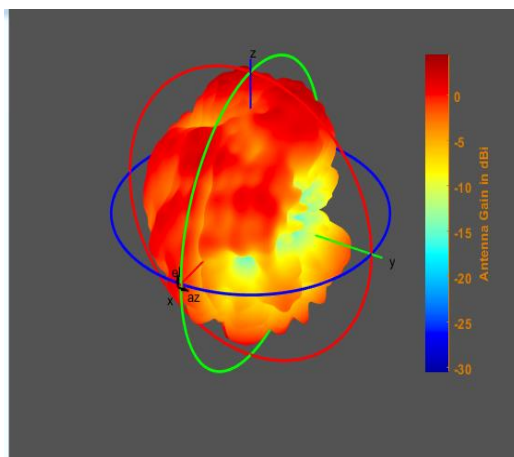
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	3.59



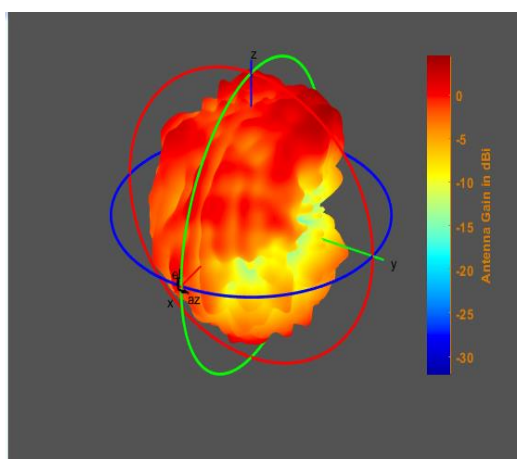
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	3.3



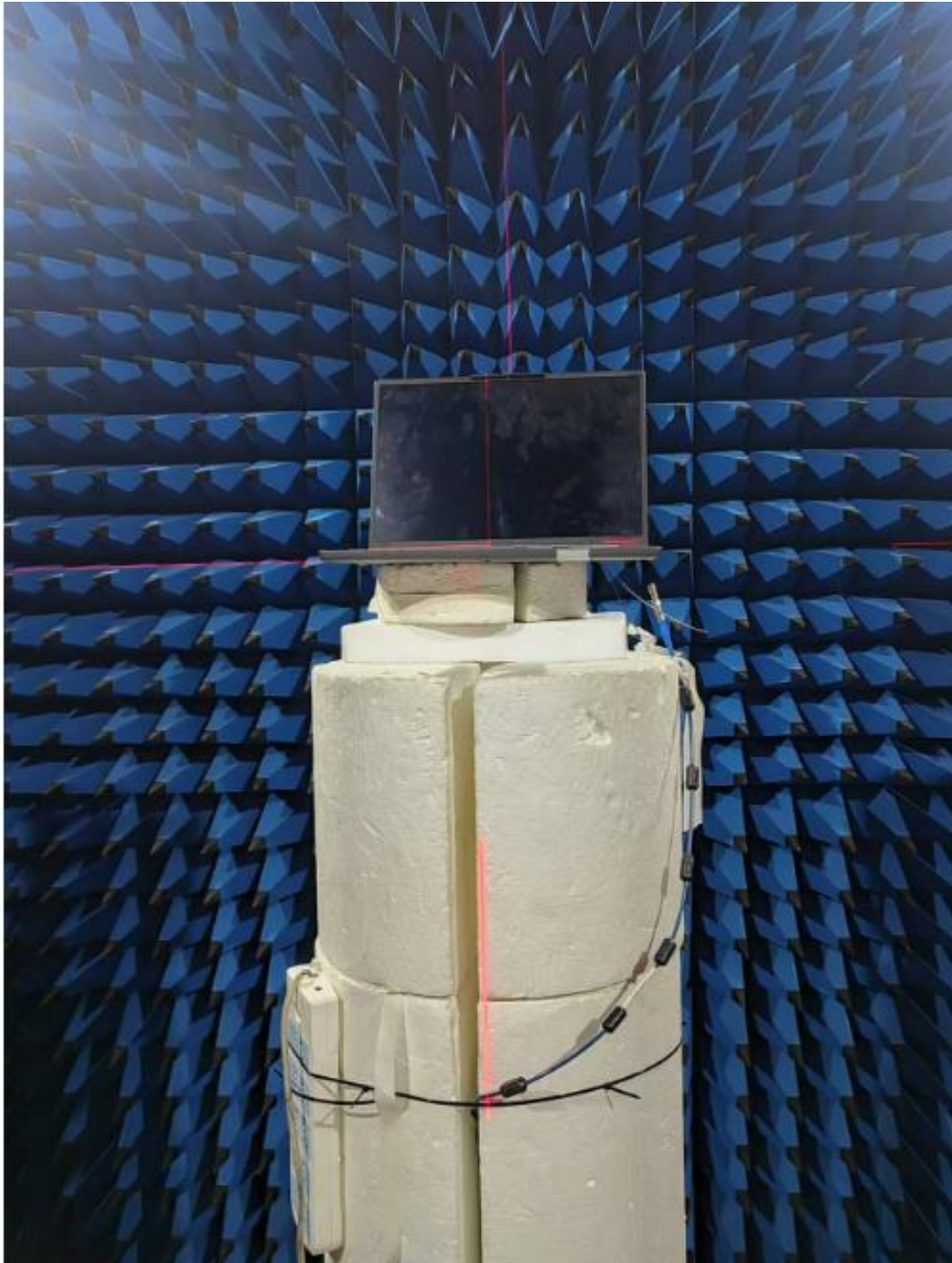
Max Antenna 3D Radiation Pattern 6875-7125 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	2.87



Annex A. Photographs

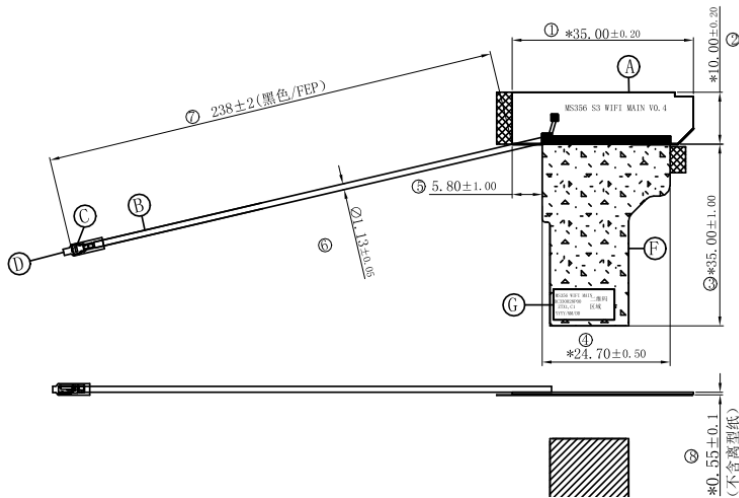
A.1 Setup Photo



A.2 Test sample

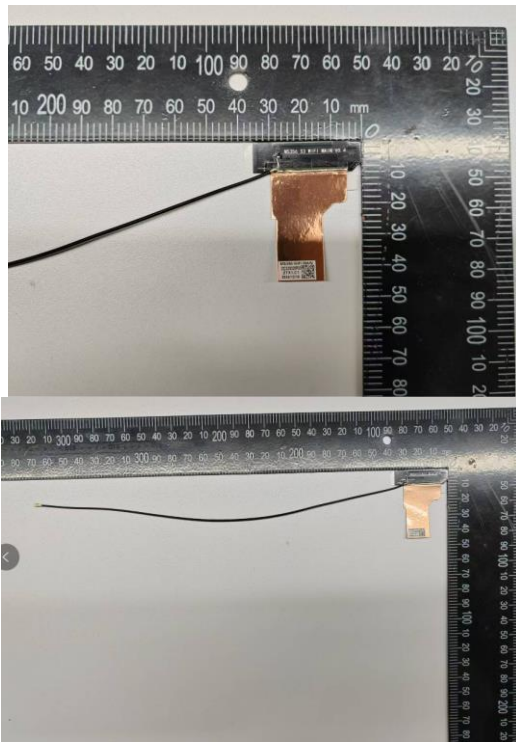
Main Antenna

Antenna Drawing

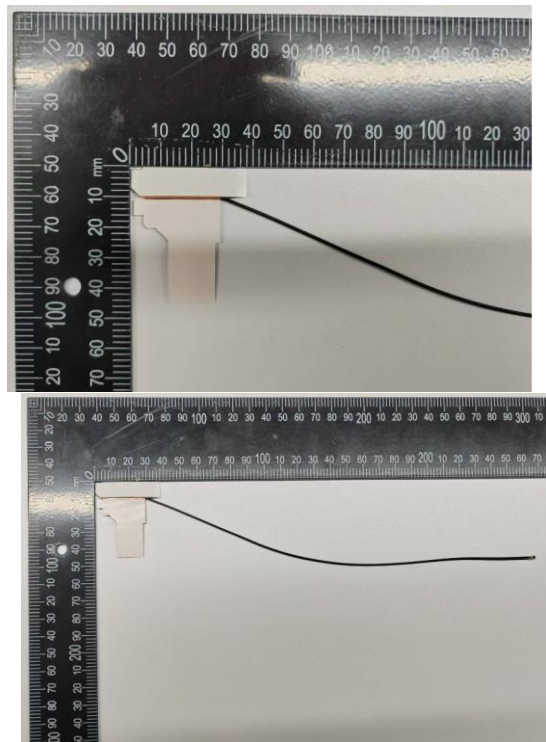


Antenna Photo

Front



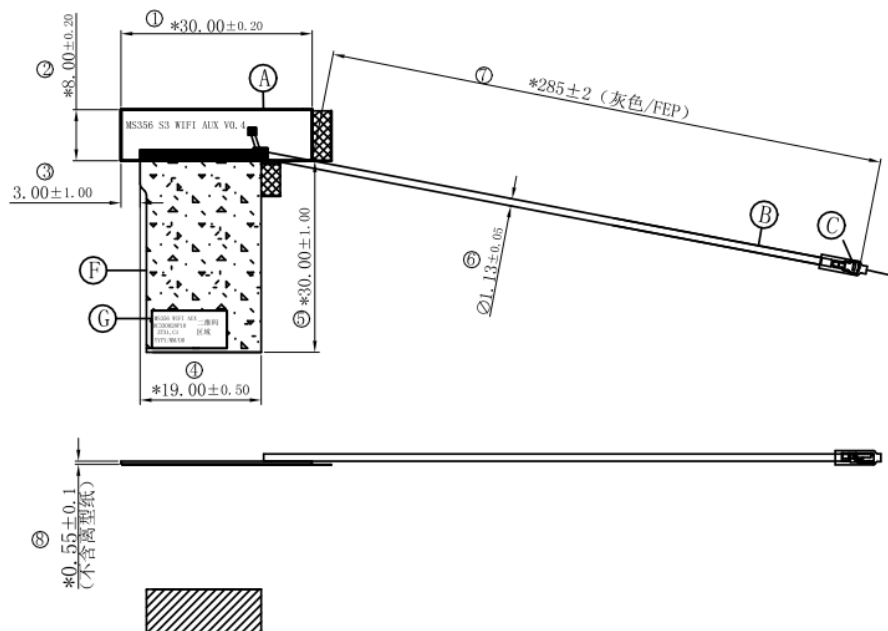
Back



Note: antenna photo should include L type ruler

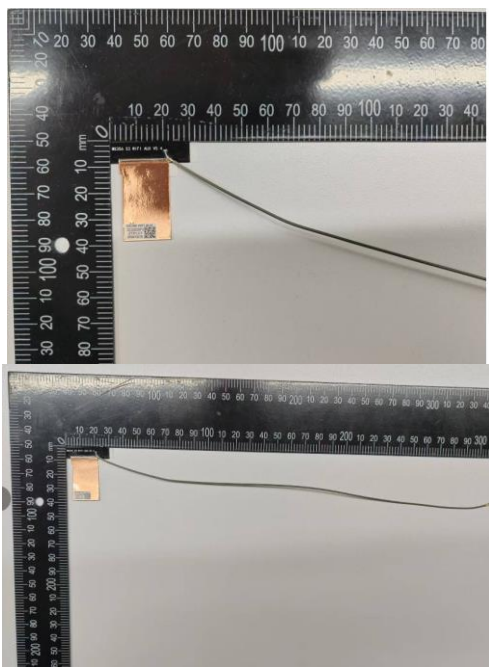
Aux Antenna

Antenna Drawing

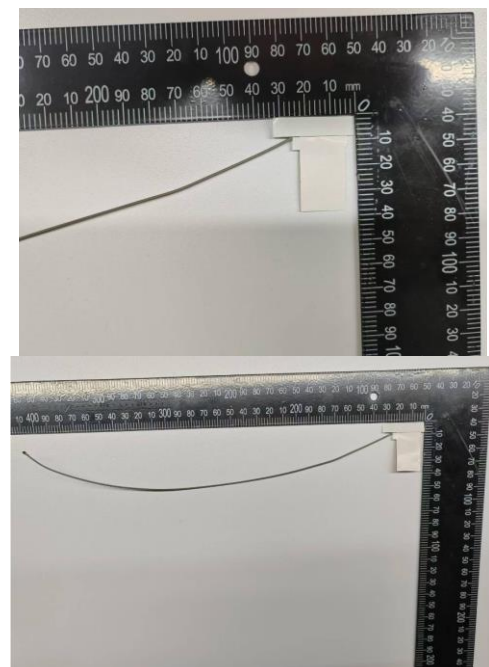


Antenna Photo

Front



[Back](#)



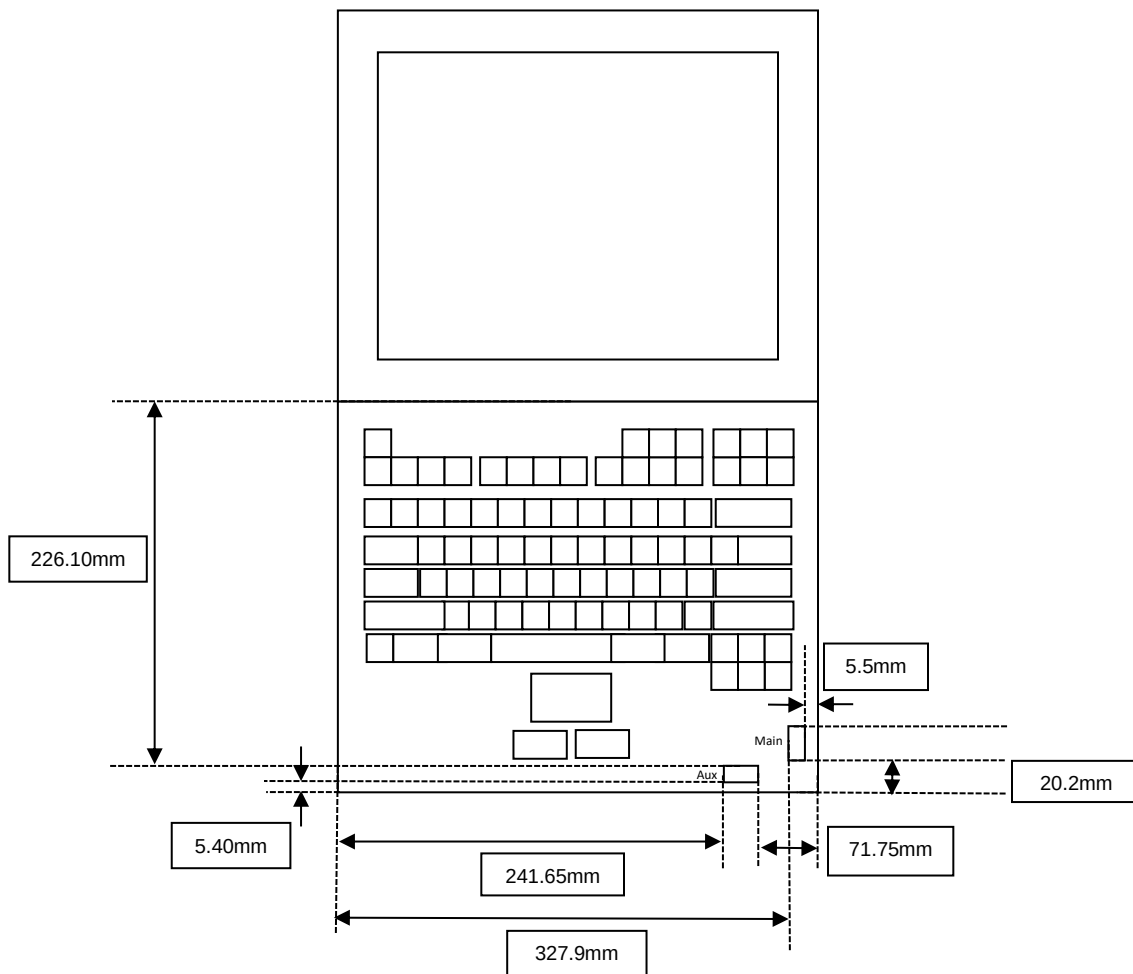
Note: antenna photo should include L type ruler

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).

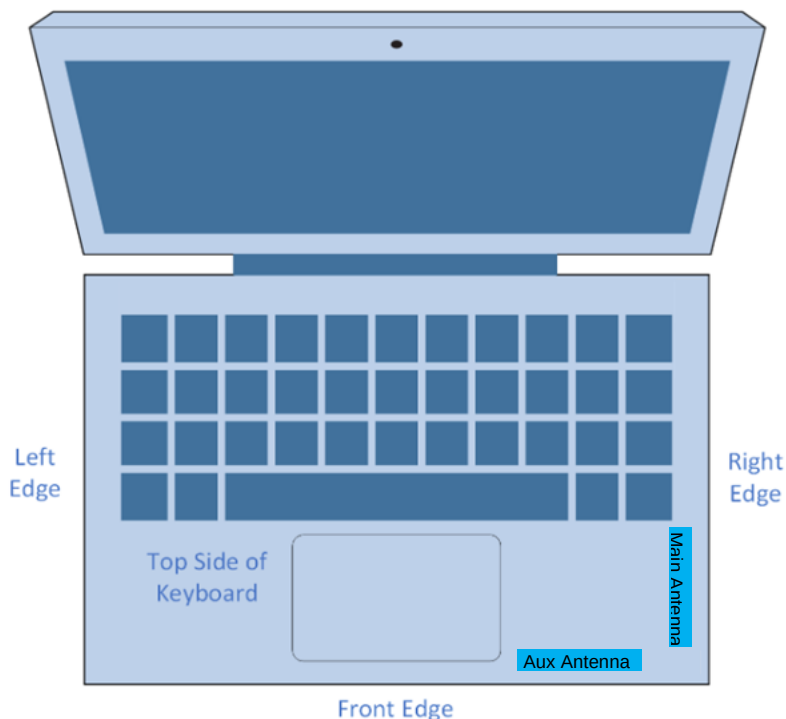
Any antenna that transmits must show dimensions to bottom of laptop. Provide a description of the materials that are used for supporting or surrounding transmit antennas; for example, non-conductive plastics vs. conductive coated plastic or metallic materials.



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 keyboard section



Measuring Surface	Antenna	Separation Distance(antenna-to-Surface)(mm)	1g or 10g SAR
Bottom Side	Main	6.94mm	1g (FCC/ISED)
	Aux	6.94mm	1g (FCC/ISED)
Front Edge	Main	20.2mm	1g (ISED)
	Aux	5.4mm	1g (ISED)
Left Edge	Main	327.9mm	10g (ISED)
	Aux	241.65mm	10g (ISED)
Right Edge	Main	5.5mm	10g (ISED)
	Aux	71.75mm	10g (ISED)
Top side of Keyboard	Main	5mm	10g (ISED)
	Aux	5mm	10g (ISED)