ANTENNA INFORMATION

OEM		Lenovo
ODM		LCFC
Platform model name		Legion 5 15IRX10 Legion 5 15IAX10 Legion 5 15AHP10 Legion 5 15AKP10
Intel platform (ex: Yes, No or NA)		IRX/IAX: Yes AHP/AKP: No
Platform type (ex: regular NB, convertible PC, AIO…etc)		Regular NB
SAR minimum separation (mm)	FCC (1g)	9.4
	ISED (1g)	5.0
	ISED (10g)	3.35

Antenna manufacturer	Company name	Speed Wireless Technical Co., LTD
	Address	No.138 Huize Road, Hi-Tech Industrial Park of East River, Zhongkai Hi-tech District, Huizhou City, Guangdong Province
Test location	Company name	Speed Wireless Technical Co., LTD.
	Address	Lenovo Science and Technology Port, 5899 Xi You Road, Jingkai District, Hefei, Anhui province
Test Personnel	Name(Full name)	Deng Shun
	E-mail	dengshun@speed-hz.com
	Tel/Mobile	18326631256
Testing date		2025.02.28

Antenna Part number	Main	DC330027G00
	Aux	DC330027G00
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	1.68	2.06	2.06	2.74	2.10	1.63	2.92	2.92	2.61	1.86
Aux	0.58	1.22	1.49	1.95	1.24	1.34	1.24	1.26	1.73	1.32

Cable Assembly Part Number and Information

	Cable PN	**Cable length**(mm)	**Cable diameter**(mm)	**Impedance**(ohm)	**Connector type**
Main	SY113L/50-048(Black)	148	1.13	50	IPEX
Aux	SY113L/50-050(Gray)	397	1.13	50	IPEX

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

1A Antenna Part Number	1B Manufacturer	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)
(P/N: DC330027G00) Main Antenna	Speed Wireless Technical Co., LTD.	PIFA	Connector Type: IPEX (Connector P/N: MHF-B13L-N-01) 50ohm Coaxial length: 148mm diameter: 1.13mm	2400-2483.5	1.68	2.03	1.92	0.35
				5150-5250	2.06	2.6	1.95	0.54
				5250-5350	2.06	2.61	2.21	0.55
				5470-5725	2.74	3.29	2.06	0.55
				5725-5850	2.1	2.67	1.83	0.57
				5850-5895	1.63	2.2	1.26	0.57
				5925-6425	2.92	3.5	1.64	0.58
				6425-6525	2.92	3.5	1.64	0.58
				6525-6875	2.61	3.2	1.94	0.59
				6875-7125	1.86	2.45	2.25	0.59
(P/N: DC330027G00) Aux Antenna	Speed Wireless Technical Co., LTD.	PIFA	Connector Type: IPEX (Connector P/N: MHF-B13L-N-01) 50ohm Coaxial length: 397mm diameter: 1.13mm	2400-2483.5	0.58	1.53	1.56	0.95
				5150-5250	1.22	2.68	2.41	1.46
				5250-5350	1.49	2.96	1.86	1.47
				5470-5725	1.95	3.44	1.35	1.49
				5725-5850	1.24	2.76	1.23	1.52
				5850-5895	1.34	2.87	1.17	1.53
				5925-6425	1.24	2.79	1.36	1.55
				6425-6525	1.26	2.84	1.06	1.58
				6525-6875	1.73	3.31	1.32	1.58
				6875-7125	1.32	2.91	2.11	1.59

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

Table of Contents

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

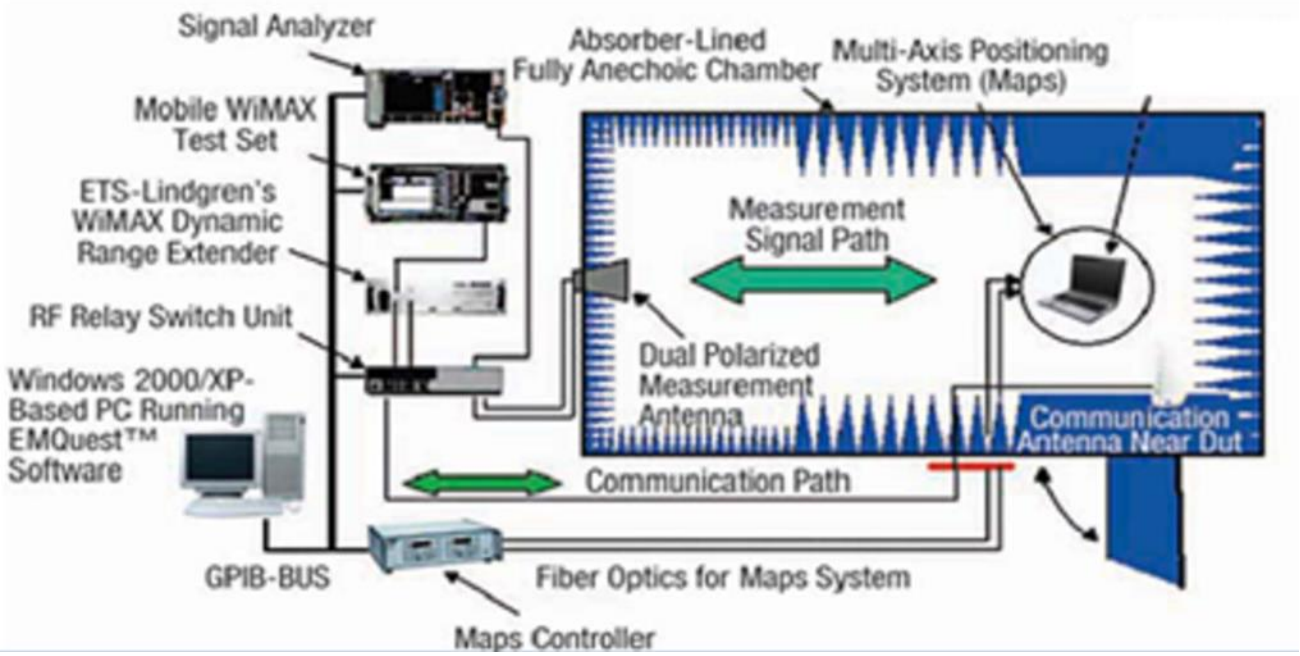
Revision #	Revision Details	Issued Date
Rev. 00	First Issue	2025/2/28

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

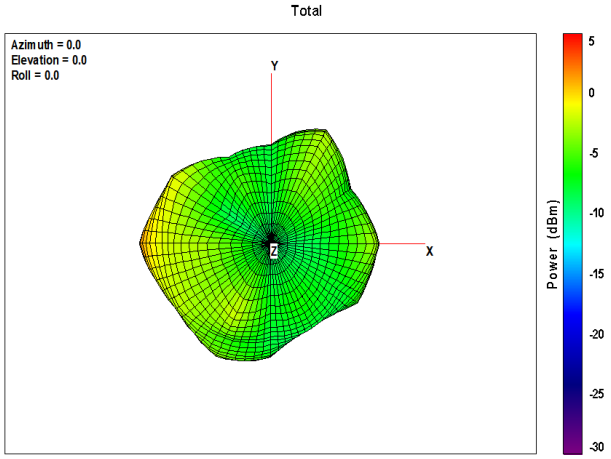
Number	Device	Manufacter	Cal. Date	Cal. Due. Date
1	Turn table control box	EMT	2024/11/15	2025/11/15
2	Turn table control computer	EMT	2024/11/15	2025/11/15
3	TX/RX RF power and its control unit	EMT	N/A	N/A
4	Probe switch array	EMT	N/A	N/A
5	Test system host	EMT	N/A	N/A
6	Notwork analyzer	EMT	2024/5/19	2025/5/19
7	RF line TX	EMT	N/A	N/A
8	RF line RX	EMT	N/A	N/A
9	UPS uninterruptible power supply	EMT	N/A	N/A
10	Cable 2m 1GHz 8.5GHz	Atem	2024/11/15	2025/11/15
11	Chamber	EMT	2024/11/15	2025/11/15
12	Horn antenna	EMT	N/A	N/A

4. Radiation characteristics of antenna loaded in Host Platform

Main Antenna

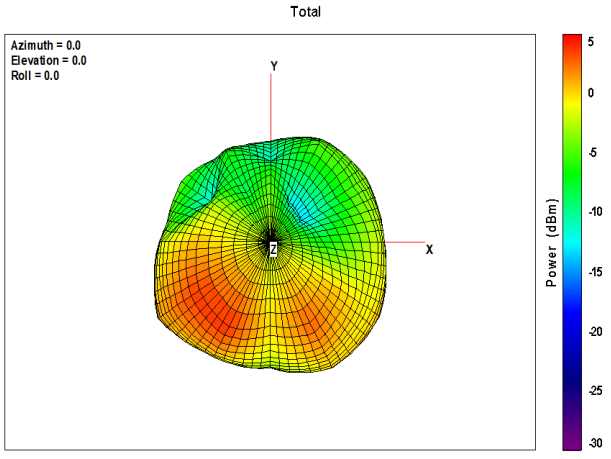
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	1.68



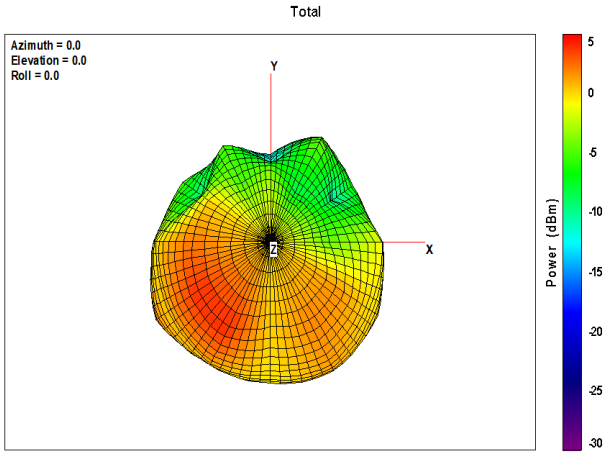
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	2.06



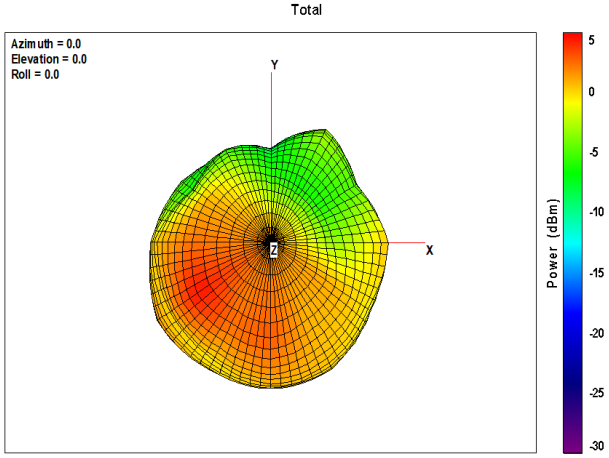
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	2.06



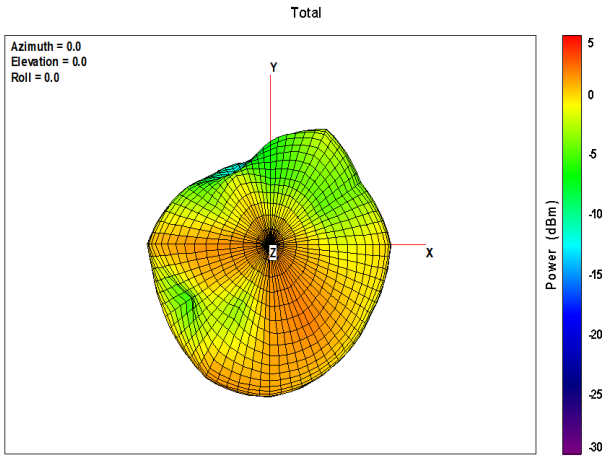
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	2.74



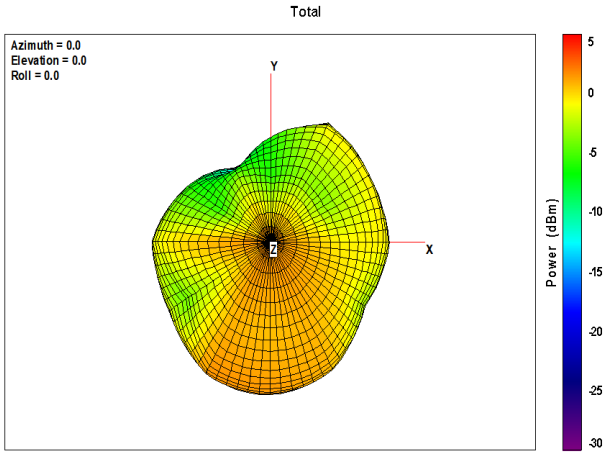
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	2.10



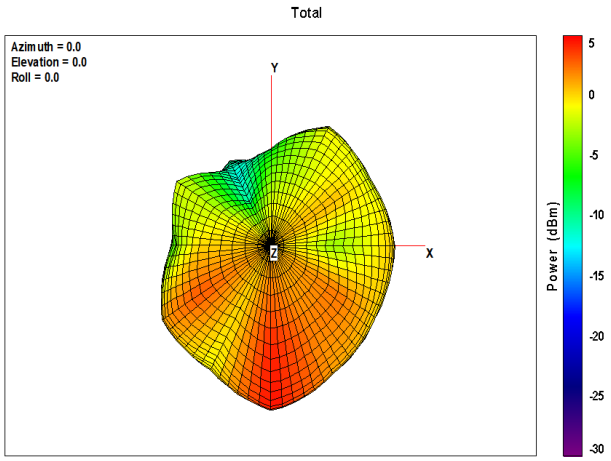
Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	1.63



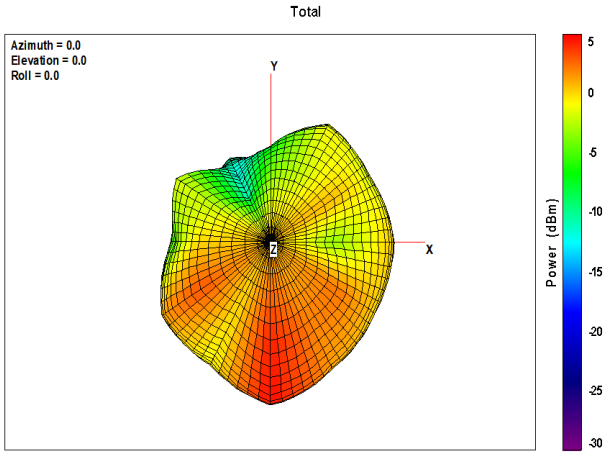
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	2.92



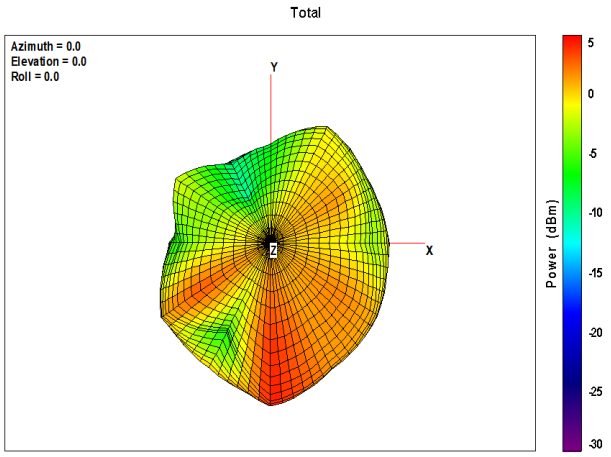
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	2.92



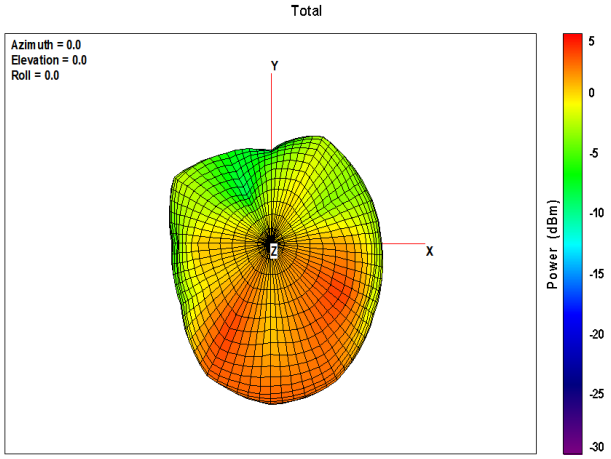
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	2.61



Max Antenna 3D Radiation Pattern 6875-7125 MHz

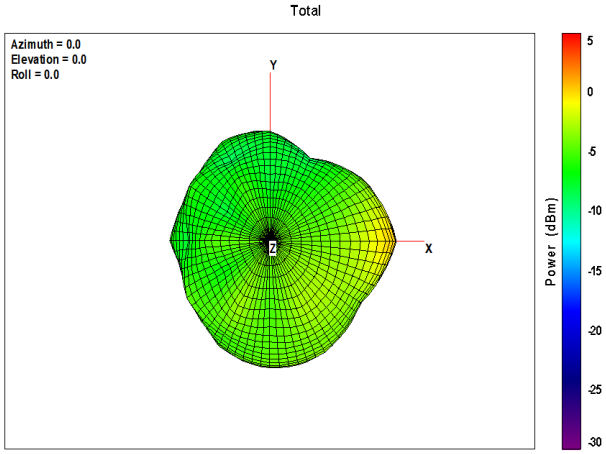
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	1.86



Auxiliary Antenna

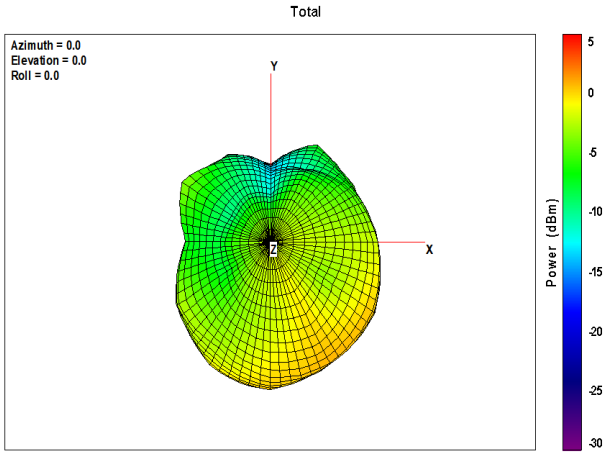
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

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



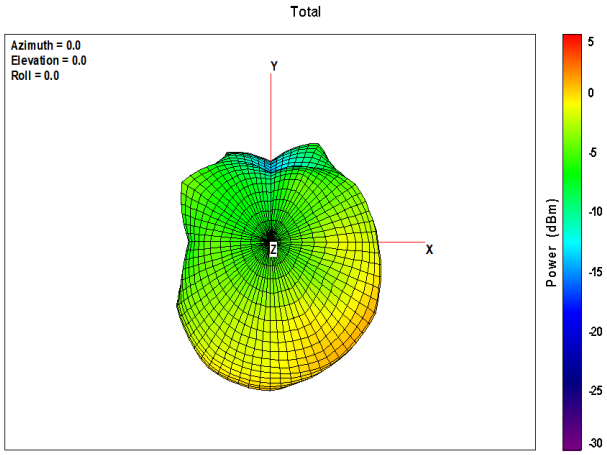
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	1.22



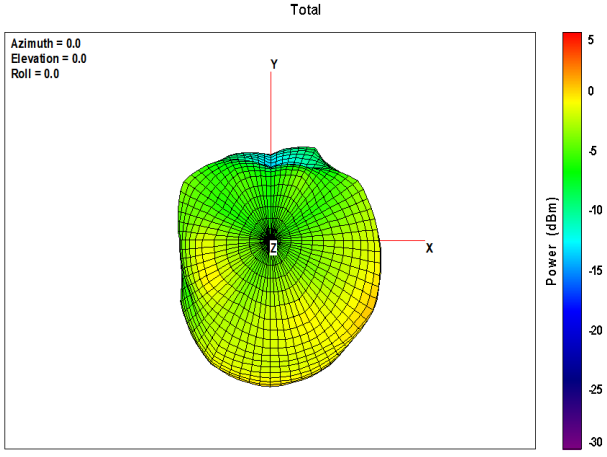
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	1.49



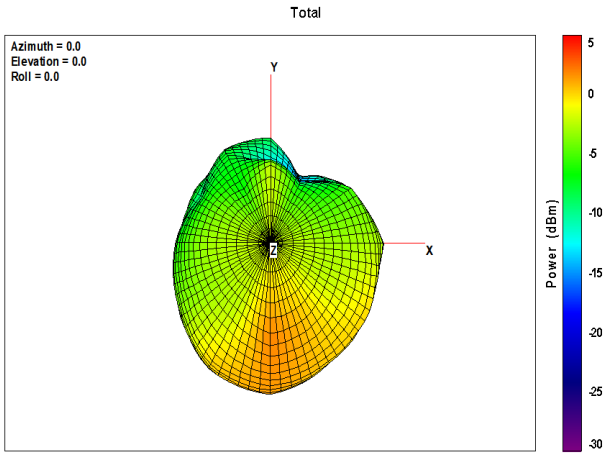
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	1.95



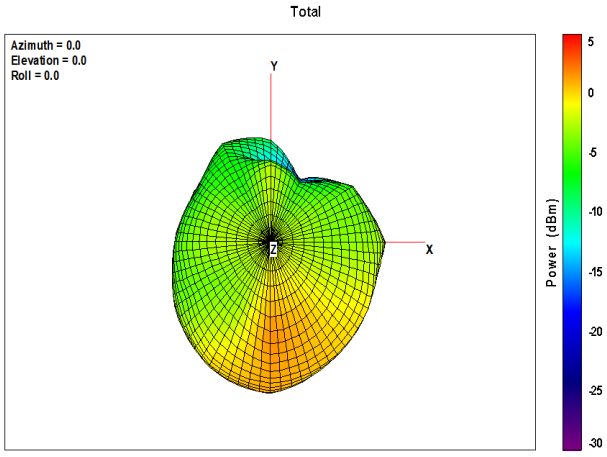
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	1.24



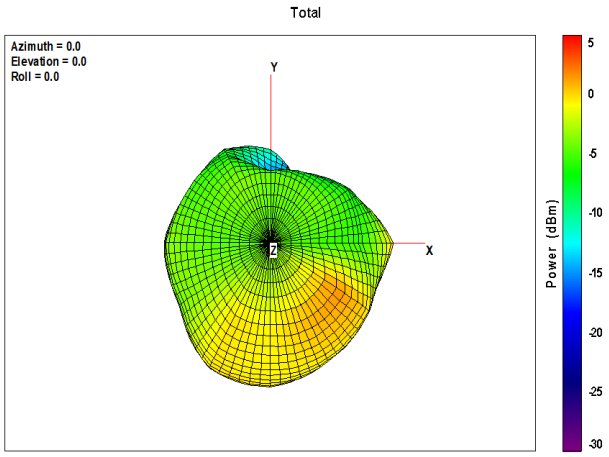
Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	1.34



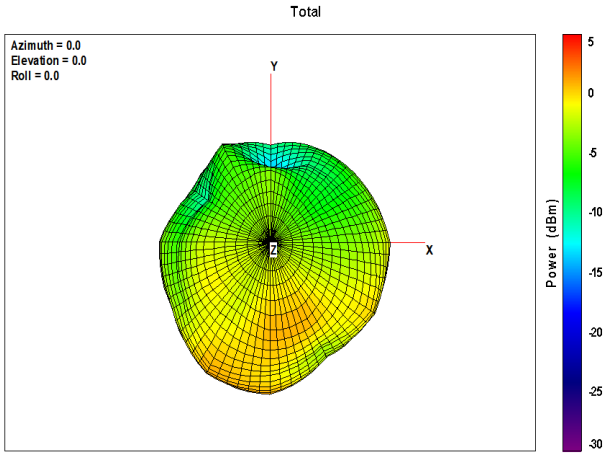
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	1.24



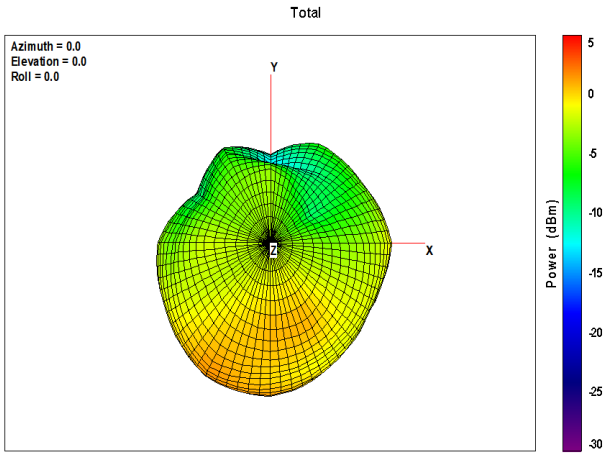
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	1.26



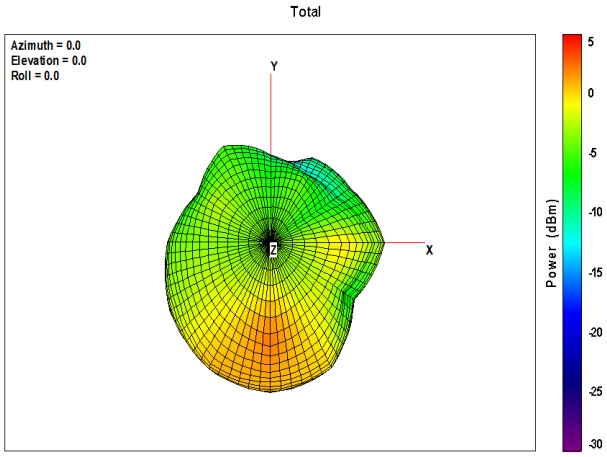
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	1.73



Max Antenna 3D Radiation Pattern 6875-7125 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	1.32



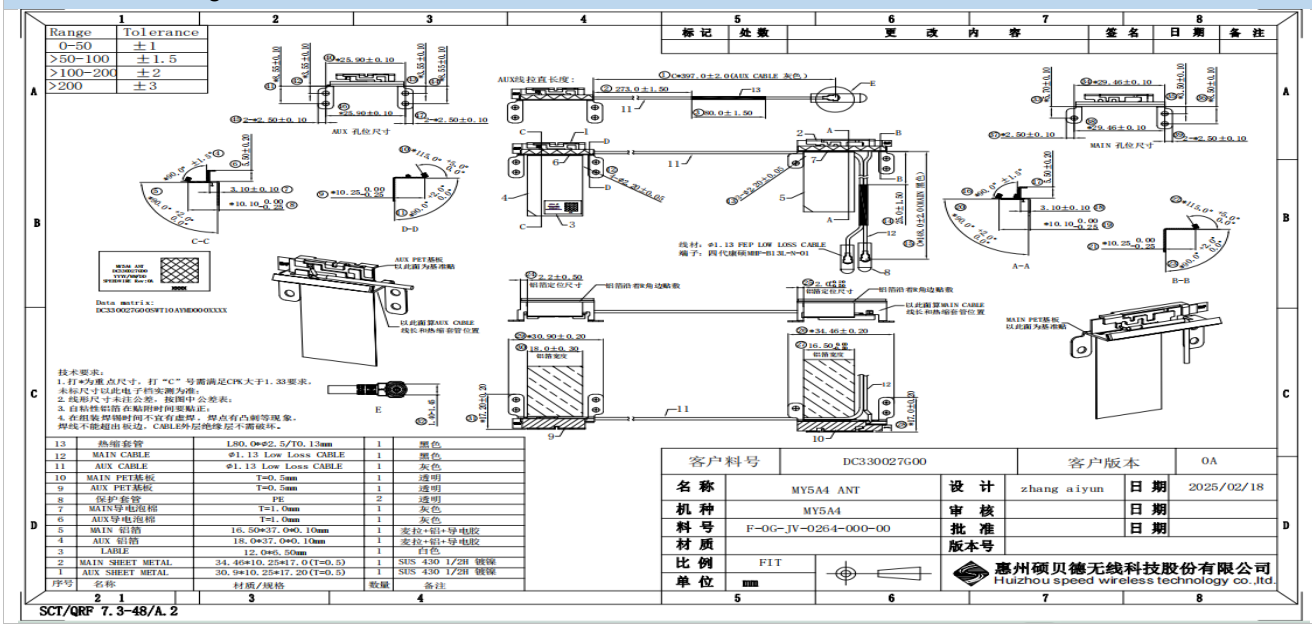
Annex A. Photographs

A.1 Setup Photo

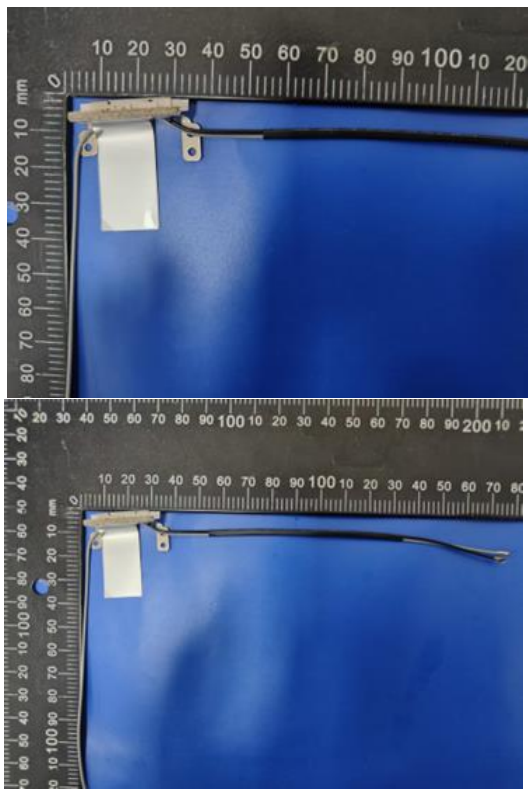
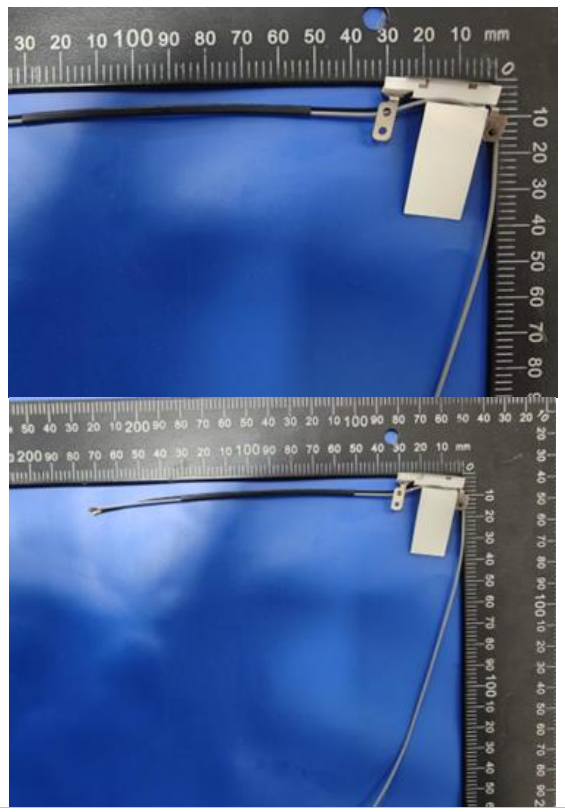
A.2 Test sample

Main Antenna

Antenna Drawing

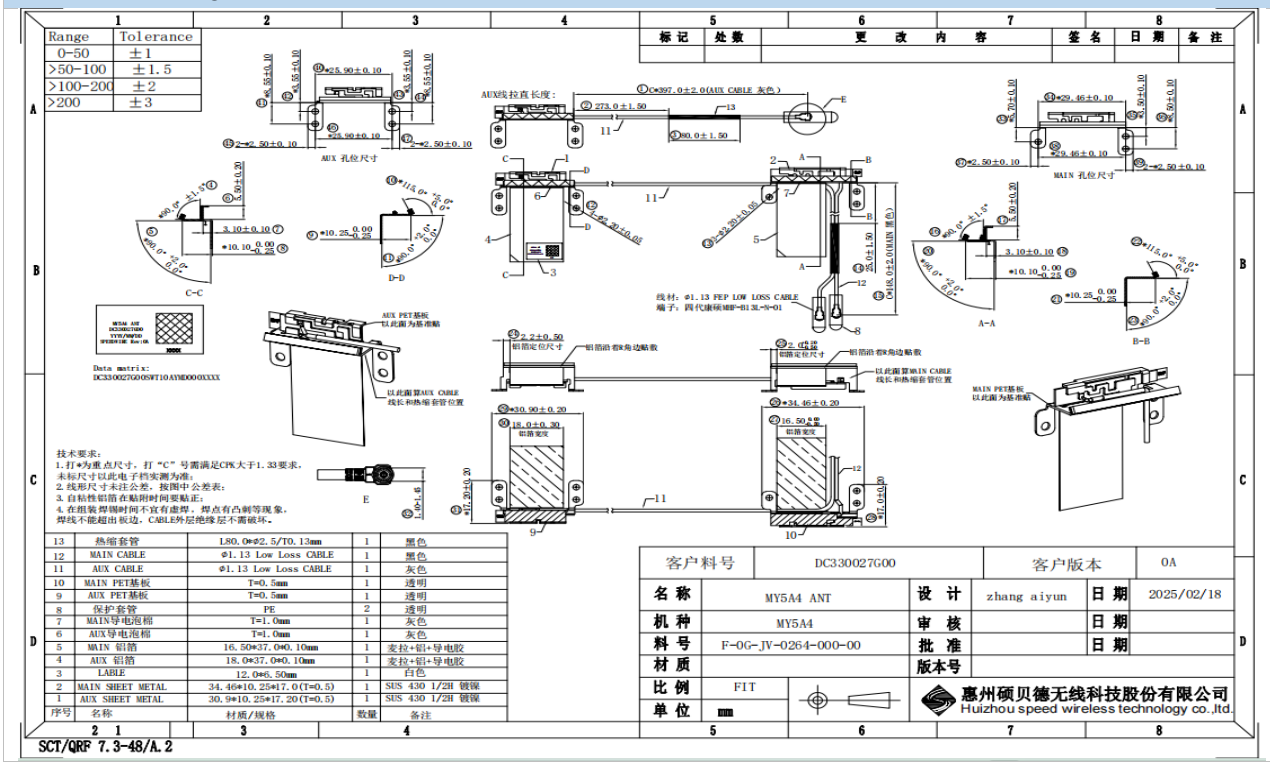


Antenna Photo

Front	Back
	

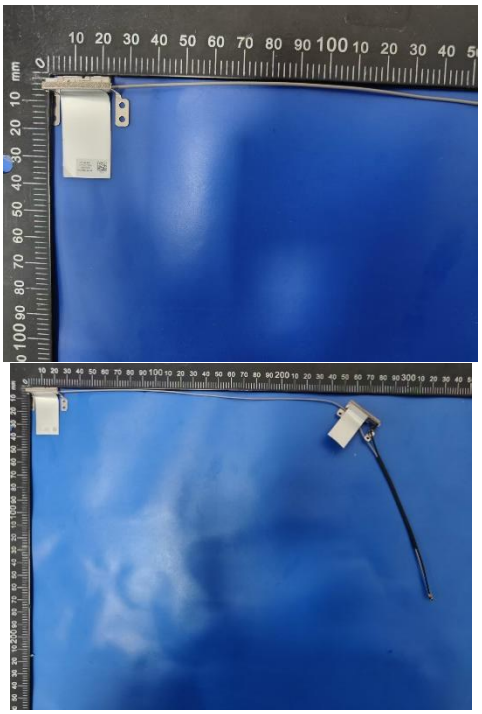
Aux Antenna

Antenna Drawing

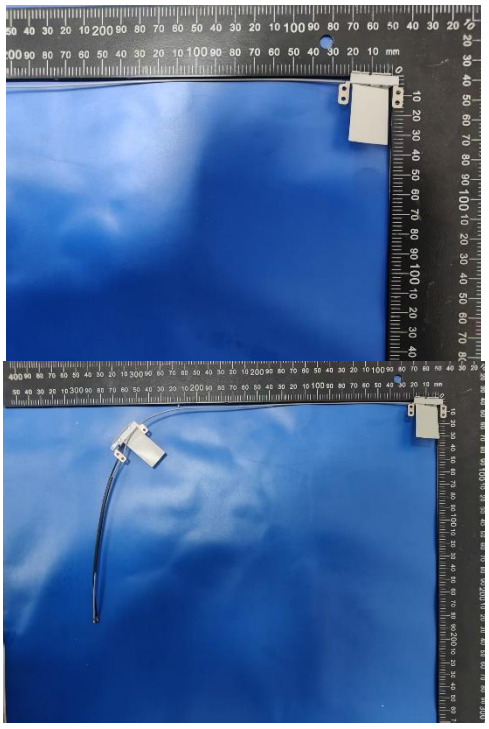


Antenna Photo

Front



Back

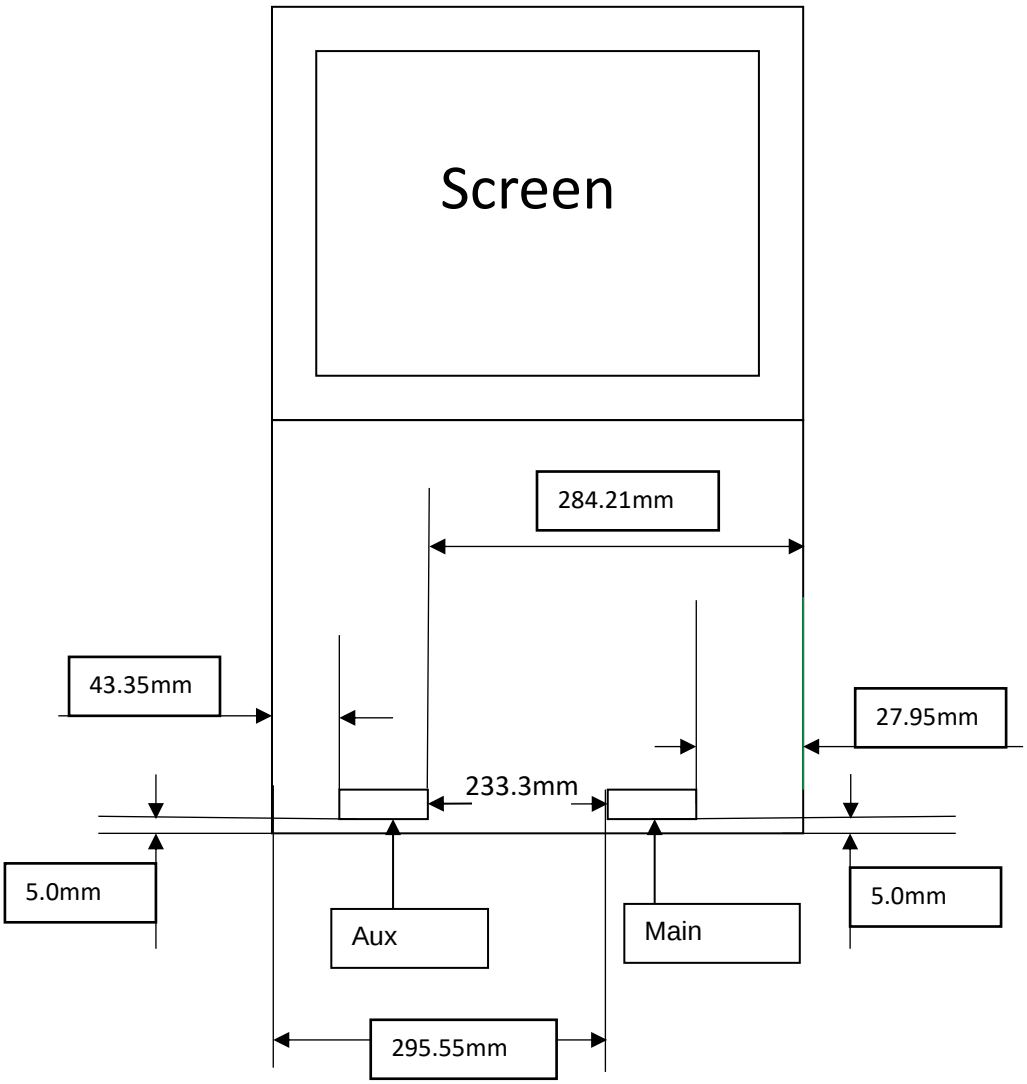


Annex B. Antenna Location

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).

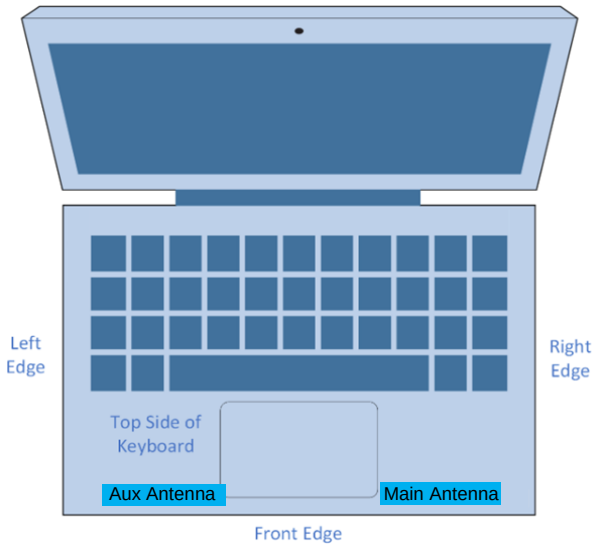
Any antenna that transmits must show dimensions to bottom of laptop. Provide a description of the materials that are used for supporting or surrounding transmit antennas; for example, non-conductive plastics vs. conductive coated plastic or metallic materials.

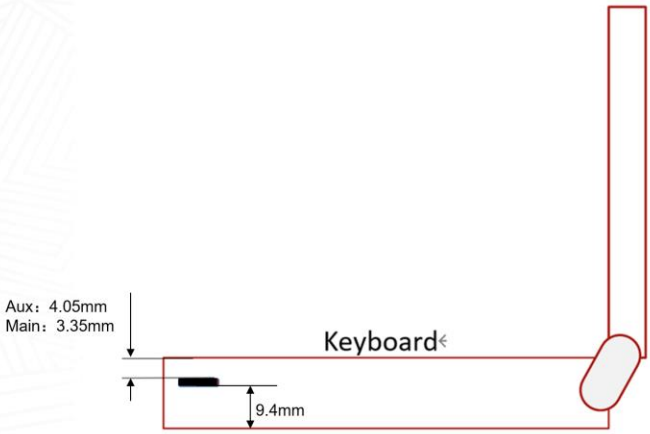


B.2 Antenna dimensional information for SAR evaluation

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	**9.4**	1g (FCC/ISED)
	Aux	**9.4**	1g (FCC/ISED)
Front Edge	Main	**5.0**	1g (ISED)
	Aux	**5.0**	1g (ISED)
Left Edge	Main	**295.55**	10g (ISED)
	Aux	**43.35**	10g (ISED)
Right Edge	Main	**27.95**	10g (ISED)
	Aux	**284.21**	10g (ISED)
Top side of Keyboard	Main	**3.35**	10g (ISED)
	Aux	**4.05**	10g (ISED)