

Regulatory WLAN Antenna Information

English Language Required for Intel Regulatory Review / Approval

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	LCFC	ThinkBook Plus G4 IRU			Yes	convertible PC			3.15mm		
*****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)			
Speed Wireless Technical Co., LTD.		PIFA			DC330020K00			DC330020K10			
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	0.36	2.57	2.57	2.23	3.06	3.16	3.32	2.15	2.9	2.56	
Aux	1.63	1.56	2.43	2.64	2.64	1.42	1.53	0.34	1.75	0.51	
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	5.9GHz 5850-5895MHz	6.2GHz 5925-6425MHz	6.5GHz 6425-6525MHz	6.7GHz 6525-6875MHz	7.0GHz 6875-7125MHz	Generic: refer to modular FCC SAR report
Design	3.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	Mid-power: ≥ 8 mm Low power: ≥ 5 mm
PIFA	3.24	3.64	3.73	4.77	4.97	4.72	4.83	4.30	5.37	5.59	
Dipole	2.89	2.92	3.19	4.41	4.22	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.											

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1. Applicable test methods

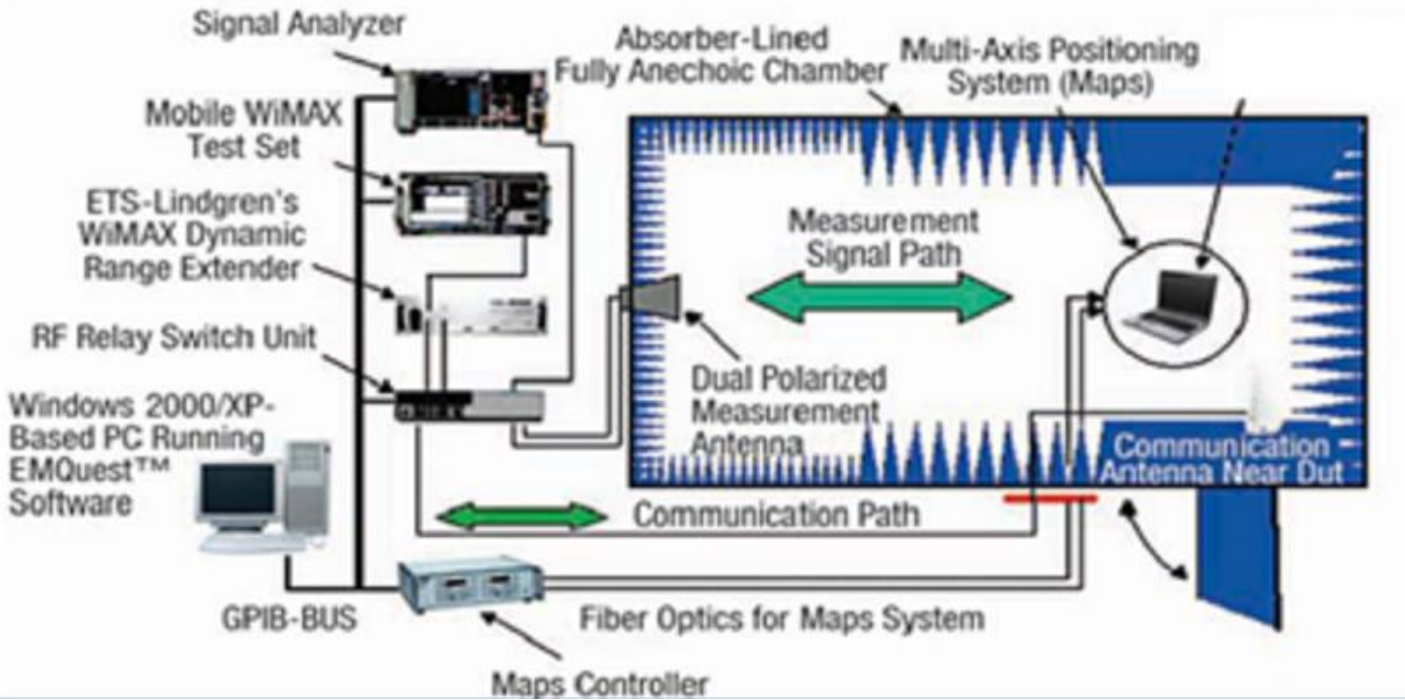
<insert test description here for test method>

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

2. Test & System Description

a. Test setup

<insert test diagram here for test site utilized>

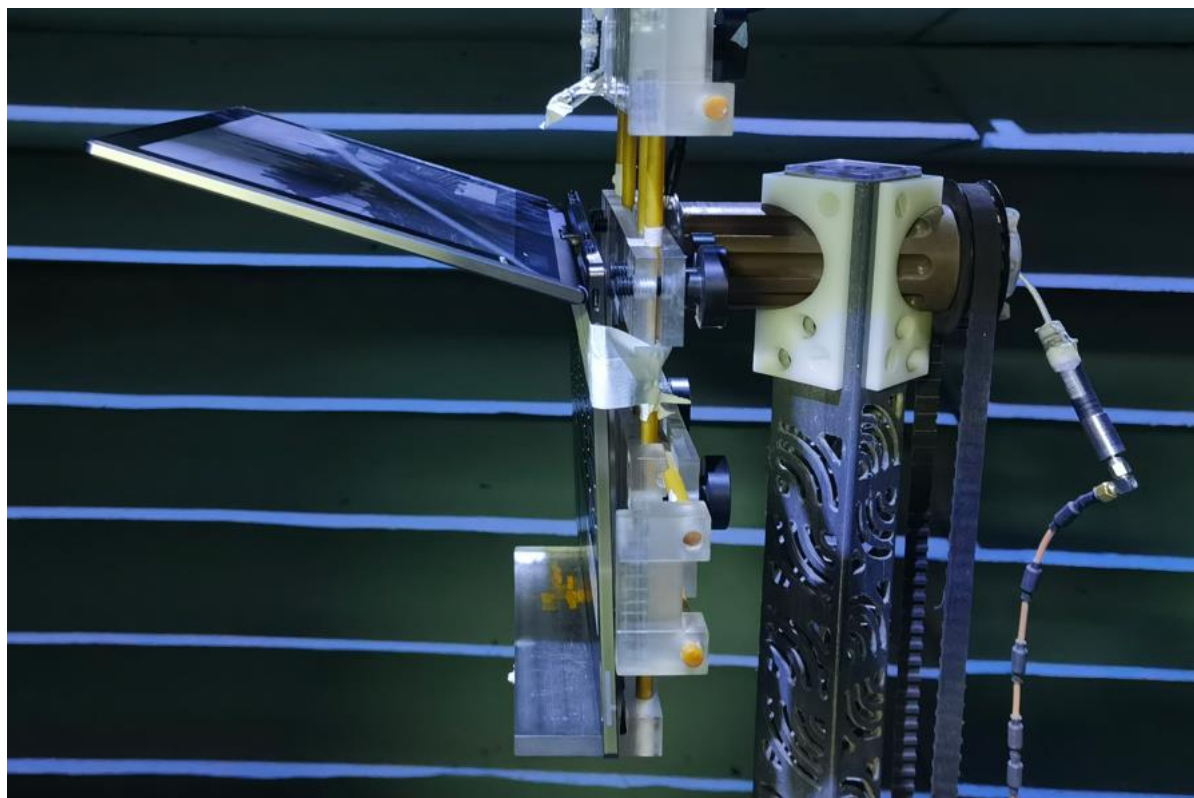


b. Equipment list

<insert test diagram here for test site utilized>

Number	Device	Manufacturer	Cal. Date	Cal. Due. Date
1	Turn table control box	EMT	2022/11/20	2023/11/20
2	Turn table control computer	EMT	2022/11/20	2023/11/20
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	Network analyzer	EMT	2022/11/20	2023/11/20
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	2022/11/20	2023/11/20
11	Chamber	EMT	2022/11/20	2023/11/20
12	Horn antenna	EMT	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: DC330020K00) Main Antenna Black	Speed Wireless Technical Co., LTD.	PIFA	(Connector: I-PEX Kangshuo(P/N:MHF-B13L-N-01)) 50 ohm Coaxial length: 114mm diameter: 1.13mm	2400-2483.5	0.36	0.71	1.42	0.35
				5150-5250	2.57	3.10	1.48	0.53
				5250-5350	2.57	3.10	1.53	0.53
				5470-5725	2.23	2.78	1.69	0.55
				5725-5850	3.06	3.64	1.58	0.58
				5850-5895	3.16	3.78	1.72	0.62
				5925-6425	3.32	4.03	1.78	0.71
				6425-6525	2.15	2.98	1.83	0.83
				6525-6875	2.90	3.84	1.85	0.94
				6875-7125	2.56	3.58	1.91	1.02
(P/N: DC330020K10) Aux Antenna Gray	Speed Wireless Technical Co., LTD.	PIFA	(Connector: I-PEX Kangshuo(P/N:MHF-B13L-N-01)) 50 ohm Coaxial length:314mm diameter: 1.13mm	2400-2483.5	1.63	2.46	1.46	0.83
				5150-5250	1.56	2.81	1.53	1.25
				5250-5350	2.43	3.69	1.56	1.26
				5470-5725	2.64	3.94	1.62	1.30
				5725-5850	2.64	3.94	1.63	1.30
				5850-5895	1.42	2.75	1.78	1.33
				5925-6425	1.53	2.88	1.68	1.35
				6425-6525	0.34	1.70	1.82	1.36
				6525-6875	1.75	3.12	1.84	1.37
				6875-7125	0.51	1.91	1.88	1.40

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