

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)				
HB		PIFA			DC330020L00			DC330020L10				
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	-0.14	-0.16	0.71	1.87	2.89	3.43	3.89	3.89	3.66	1.49		
Aux	1.15	1.35	1.97	1.84	2.45	2.45	2.21	0.81	1.16	1.88		
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 Mid-power: ≥ 8 mm Low power: ≥ 5 mm	
	Design	3.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00		
	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

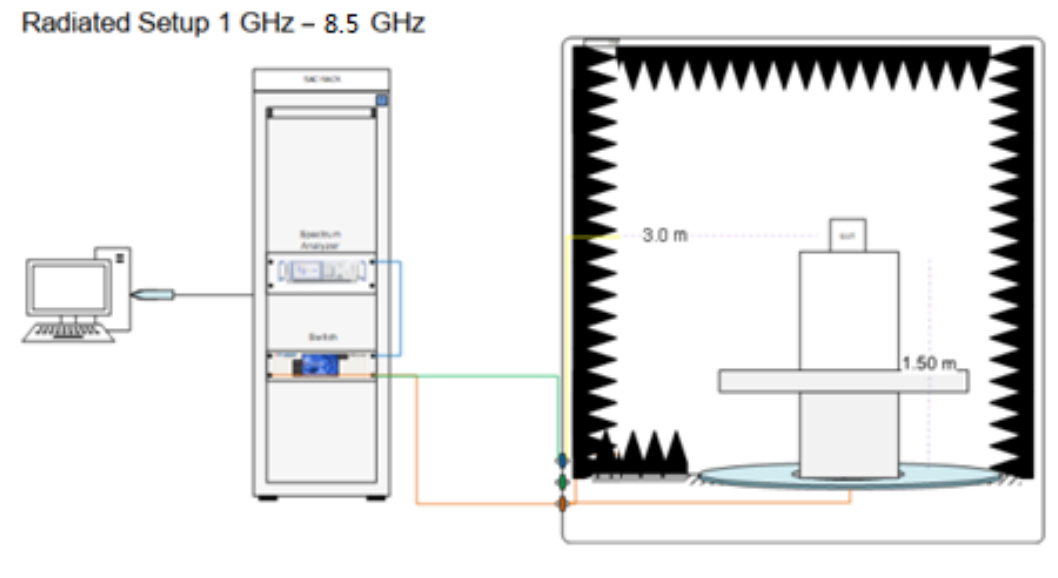
<insert test description here for test method>

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>

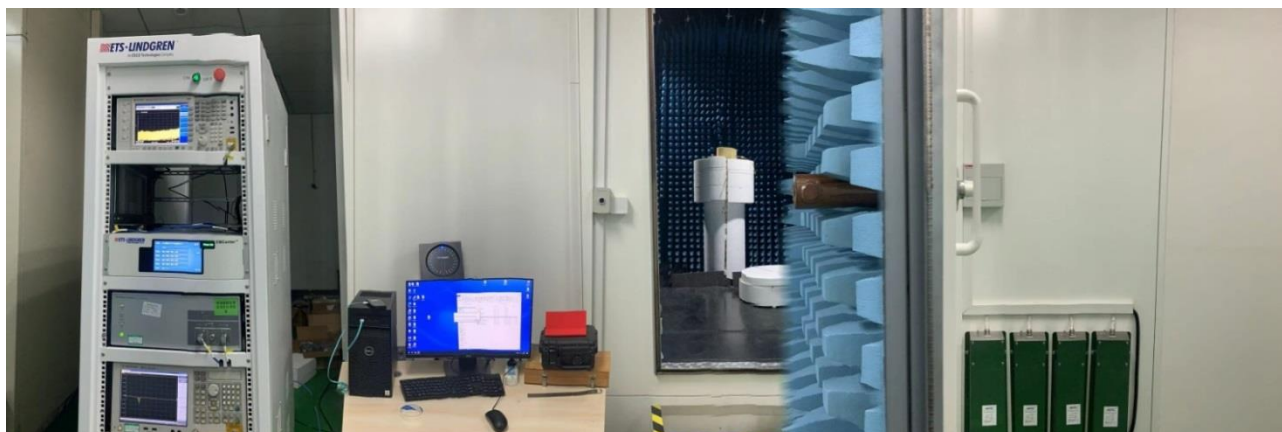


b. Equipment list

<insert test diagram here for test site utilized>

ID#	Device	Type/Model	Seril#	Manufacturer	Cal.Date	Cal.Due.Date
1	Anechoic Chamber	ETS	8923	ETS-Lindgren	2022/4/16	2023/4/16
2	Network Analyzer	Agilent	E50713	Agilent Technologier	2022/5/25	2023/5/25
3	Messurement SW	EMQuest V1.14 build 31654	/	ETS-Lindgren	N/A	N/A
4	Switch Positioning System	EMC Center	/	ETS-Lindgren	N/A	N/A
5	Spectrum Analyzer	Keysight	N9020A	Keysight	2022/5/23	2023/5/25
6	Horn Antenna	3117	157734	ETS-Lindgren	2022/4/16	2023/4/16
7	Cable 2.5m-30MHZ to 18GHZ	0500990992500KE	19.23.395	Radiall	2022/4/16	2023/4/16
8	Cable 1.2m-30MHZ to 18GHZ	UFA147A-0-0480-200200	MFR 64639223720-003	Micro-coax	2022/4/16	2023/4/16
9	Cable 1m-30MHZ to 18GHZ	UFB311A-0-0590-50U50U	E00327	Micro-coax	2022/4/16	2023/4/16
N/A: Not Applicable						

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)
Customer PN : DC330020L00 Main Antenna Black	ChangShu HongBo Telecommunicat ion Technology Co., Ltd	PIFA	(Connector: I-PEX Speedtech 1.13 C87P115-0000X-H or equivalent) 50 ohm Coaxial length:114mm diameter:1.13mm	2400-2483.5	-0.14	0.20	2.38	0.34
				5150-5250	-0.16	0.35	1.51	0.51
				5250-5350	0.71	1.22	2.02	0.51
				5470-5725	1.87	2.38	1.97	0.51
				5725-5850	2.89	3.40	1.44	0.51
				5850-5895	3.43	3.94	1.73	0.51
				5925-6425	3.89	4.46	1.89	0.57
				6425-6525	3.89	4.46	1.89	0.57
				6525-6875	3.66	4.28	2.40	0.62
				6875-7125	1.49	2.11	1.65	0.62
Customer PN : DC330020L10 AUX Antenna Gray	ChangShu HongBo Telecommunicat ion Technology Co., Ltd	PIFA	(Connector: I-PEX Speedtech 1.13 C87P115-0000X-H or equivalent) 50 ohm Coaxial length:314mm diameter:1.13mm	2400-2483.5	1.15	2.09	2.60	0.94
				5150-5250	1.35	2.76	1.97	1.41
				5250-5350	1.97	3.38	1.97	1.41
				5470-5725	1.84	3.25	1.61	1.41
				5725-5850	2.45	3.86	1.46	1.41
				5850-5895	2.45	3.86	1.33	1.41
				5925-6425	2.21	3.78	2.08	1.57
				6425-6525	0.81	2.38	2.08	1.57
				6525-6875	1.16	2.88	2.21	1.72
				6875-7125	1.88	3.60	2.55	1.72

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