Radiation Characteristics of antenna located into a Host Platform

Antenna Peak Gain and VSWR w/ cable loss (dBi)[1]

Antenna Cycle	OEM	ODM	Host Platform Compliance ID	Host Platform product name	Host Platform Type	Antenna-Manufacturer	Antenna-Type	Antenna-PN	Antenna Main/Aux	SAR min separation (mm)	Antenna Metrics[2]	2400 – 2483.5 MH 2.4 GHz	5150-5250 MHz 5.2 GHz	5250-5350 MHz 5.3 GHz	5470-5725 MHz 5.6 GHz	5725-5850 MHz 5.8 GHz	5850-5895 MHz 5.9 GHz	5925-6425 MHz 6.2 GHz	6425-6525 MHz 6.5 GHz	6525-6875 MHz 6.7 GHz	6875-7125 MHz 7.0 GHz	Applicant e-mail	Application Date
202503	Lenovo Japan	Wistron	TP00168B;	ThinkPad L13 Gen 6 AMD; ThinkPad L13 2-in-1 Gen 6 AMD;	Convertible PC	AWAN	PIFA	025.902J0.0001	Main/Ant.2	2.00	Gain	2.29	2.77	2.82	2.54	1.89	1.89	2.41	1.97	1.85	1.85	benson_yc_chang@wistron.com	2025-03-17
202503	Lenovo Japan	Wistron	TP00168B;	ThinkPad L13 Gen 6 AMD; ThinkPad L13 2-in-1 Gen 6 AMD;	Convertible PC	AWAN	PIFA	025.902J1.0001	Aux/Ant.1	2.00	Gain	1.56	1.76	1.76	2.12	2.12	2.08	2.47	2.21	1.79	1.64	benson_yc_chang@wistron.com	2025-03-17
202503	Lenovo Japan	Wistron	TP00168B;	ThinkPad L13 Gen 6 AMD; ThinkPad L13 2-in-1 Gen 6 AMD;	Convertible PC	AWAN	PIFA	025.902J0.0001	Main/Ant.2	2.00	VSWR	1.97	1.28	1.12	1.26	1.80	1.80	1.65	1.71	1.81	1.13	benson_yc_chang@wistron.com	2025-03-17
202503	Lenovo Japan	Wistron	TP00168B;	ThinkPad L13 Gen 6 AMD; ThinkPad L13 2-in-1 Gen 6 AMD;	Convertible PC	AWAN	PIFA	025.902J1.0001	Aux/Ant.1	2.00	VSWR	1.88	1.30	1.42	1.24	1.80	1.89	1.43	1.24	1.33	1.45	benson_yc_chang@wistron.com	2025-03-17

1: 3D Antenna Peak Gain required being test in system basis

2: Maximum VSWR level required by the Wi-Fi module vendor to ensure proper antenna matching is 2 (S11 < -10 dB) for dual band LB/HB modules and 2.32 (S11 < -8 dB) for triple band LB/HB/UHB modules

MTK Reference Antenna Gain and Type

Antenna Type	Application Module	2.4 GHz	5.2 GHz	5.3 GHz	5.6 GHz	5.8 GHz	5.9 GHz	6.2 GHz	6.5GHz	6.7 GHz	7.0 GHz
PIFA	MT7925B14L	3.18	4.92	4.92	4.92	4.92	4.92	4.76	4.29	4.61	4.09
Dipole	MT7925B14L	2.42	3.87	3.87	3.87	3.87	3.87	3.93	3.61	3.61	3.14

		2.4 GHz	5.2 GHz	5.3 GHz	5.6 GHz	5.8 GHz	5.9 GHz	6.2 GHz	6.5GHz	6.7 GHz	7.0 GHz
Main/Ant. 2	PIFA	3.18	4.92	4.92	4.92	4.92	4.92	4.76	4.29	4.61	4.09
AUX/Ant. 1	PIFA	3.18	4.92	4.92	4.92	4.92	4.92	4.76	4.29	4.61	4.09

Max Antenna 3D Radiation Pattern - Main Antenna / Ant.2

Frequency (MHz) - Gain (dBi)										
2400 – 2483.5	5150-5250	5250-5350	5470-5725	5725-5850	5850-5895	5925-6425	6425-6525	6525-6875	6875-7125
2.29	2.77	2.82	2.54	1.89	1.89	2.41	1.97	1.85	1.85

Max Antenna 3D Radiation Pattern - Aux Antenna / Ant.1

Frequency (MHz) - Gain (dBi)										
2400 – 2483.5	5150-5250	5250-5350	5470-5725	5725-5850	5850-5895	5925-6425	6425-6525	6525-6875	6875-7125
1.56	1.76	1.76	2.12	2.12	2.08	2.47	2.21	1.79	1.64

Antenna VSWR data plot inside and outside a host Platform (standalone)

Main/Ant.2 Standalone	Aux/Ant.1 Standalone	Main/Ant.2 Inside host platform	Aux/Ant.1 inside host platform
1	2	1	2

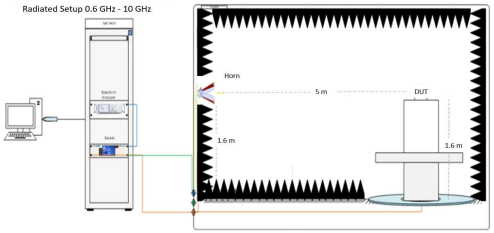
Maximum VSWR level required by the Wi-Fi module vendor to ensure proper antenna matching is 2 (S11 < -10dB)

Main/Aux	Model	Peak gain with cable loss	Cable Loss (dB)
Main	025.902J0.0001	2.29 dBi @ 2.4GHz 2.82 dBi @ 5GHz 2.41 dBi @ 5.925~6.425GHz 1.97 dBi @6.425~6.525GHz 1.85 dBi @6.525~6.875GHz 1.85 dBi @6.875~7.125GHz	0.15 dB @2.4GHz 0.3 dB @5GHz 0.35 dB @ 5.925~6.425GHz 0.4 dB @6.425~6.525GHz 0.5 dB @6.525~6.875GHz 0.5 dB @6.875~7.125GHz
Aux	025.902J1.0001	1.56 dBi @ 2.4GHz 2.12 dBi @ 5GHz 2.47 dBi @ 5.925~6.425GHz 2.21 dBi @6.425~6.525GHz 1.79 dBi @6.525~6.875GHz 1.64 dBi @6.875~7.125GHz	0.56 dB @2.4GHz 0.9 dB @5GHz 0.95 dB @ 5.925~6.425GHz 1 dB @6.425~6.525GHz 1.1 dB @6.525~6.875GHz 1.1 dB @6.875~7.125GHz

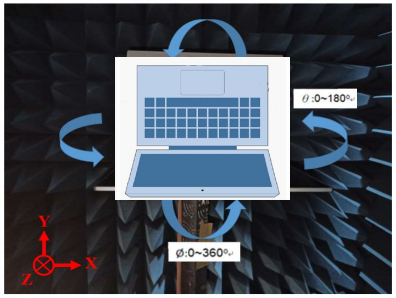
Antenna Report

Measurement Method and Test System Description

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.



Photographs



Test location

Company name	AWAN
Addreaa	5F, No. 225, Sec. 3, Bei-Hsin Rd., Xindian Dist., New Taipei City, 231, Taiwan

Test Personnel

Name(Full nam	Kanni.ke
E-mail	Kanni.ke@awan-ant.com
Tel/Mobile	+886-2-8913-1939
Testing date	2025/02/08

Test Equipment List

ID	Model Name	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
	AMS-8500	ETS-Lindgren	1047.00	2024.2.21	2025.8.21
	ETS	ETS-Lindgren	-	N/A	N/A
	2090	ETS-Lindgren	SN 00035073	N/A	N/A
	HAD-0710	Bwant	111025-02	2025.1.16	2027.1.16
	E5071C	Keysight	MY46733781	2025.1.21	2028.1.21
	201EH012010400	Jmtt	)1EH012010400	2025.1.23	2026.1.23
	201EH012016000	Jmtt	)1EH012016000	2025.1.22	2026.1.22
	201EH012016000	Jmtt	)1EH012016000	2025.1.22	2026.1.22
	201EH012013500	Jmtt	)1EH012013500	2025.1.22	2026.1.22
	201EH012011500	Jmtt	)1EH012011500	2025.1.22	2026.1.22