PEGATRON 和碩聯合科技

AOS ESR-M WiFi Antenna Report for FCC

Antenna Vendor Info

- Antenna Vendor : INPAQ
- Test Date:2025/07/31
- Test Engineer : INPAQ HongXianXiu

Antenna Photo

Wi-Fi 2.4G

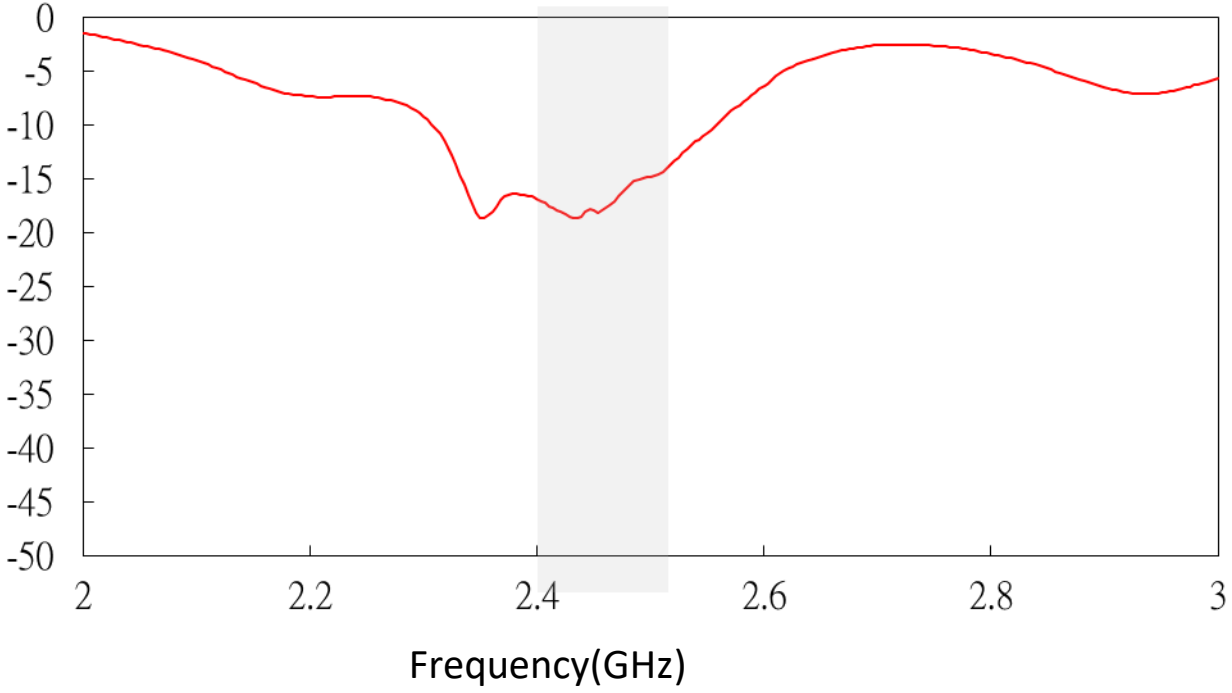
Antenna in Single Socket

- Antenna placement and Antenna type

Antenna	Type	Material
WIFI 2.4G	PIFA	FPCB

Measurement Data

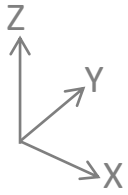
❖ Return Loss(S11): Wi-Fi 2.4G

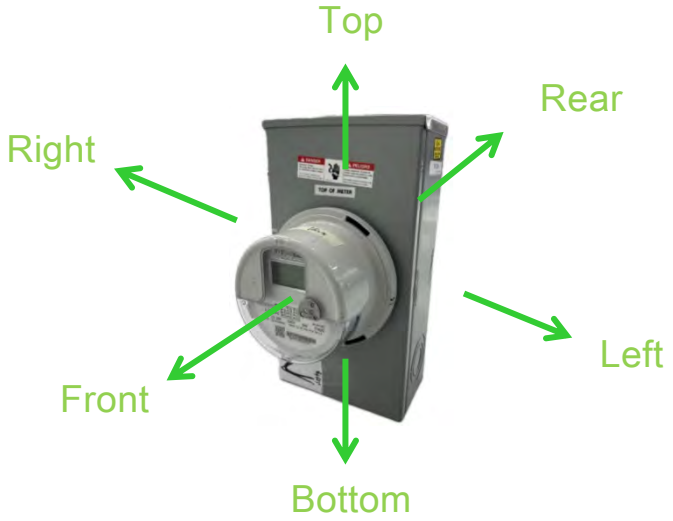


Return loss(dB)	
Frequency (MHz)	2.4G
2400	-16.83
2450	-17.98
2500	-14.83

Measurement data

- Measurement Method

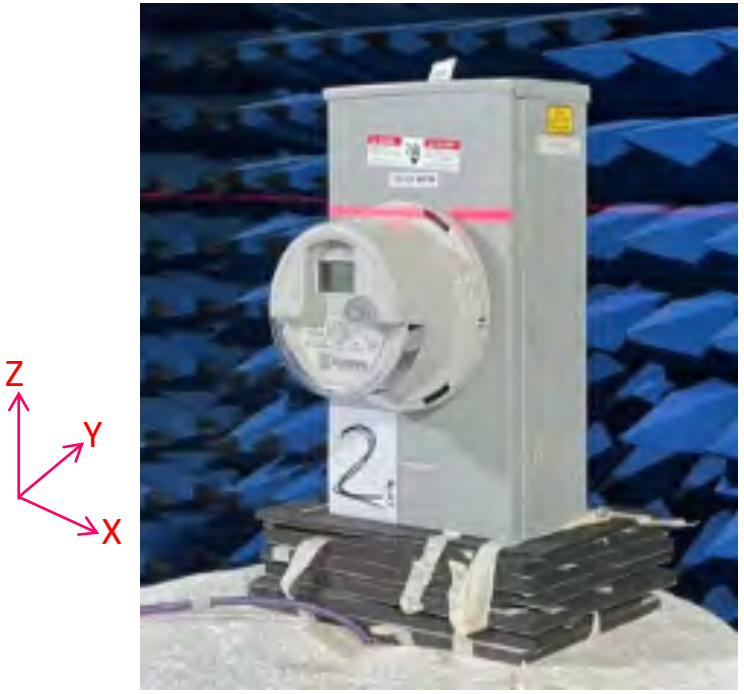




	XY	YZ	XZ
0°	Left	Top	Top
90°	Rear	Rear	Left
180°	Right	Bottom	Bottom
270°	Front	Front	Right

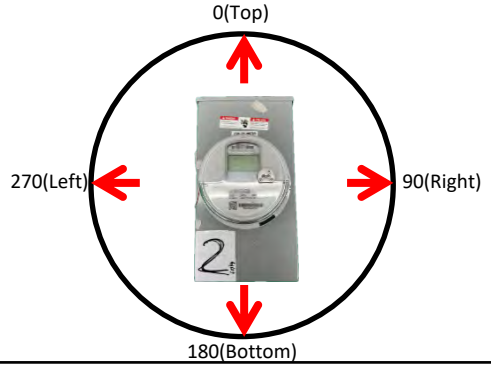
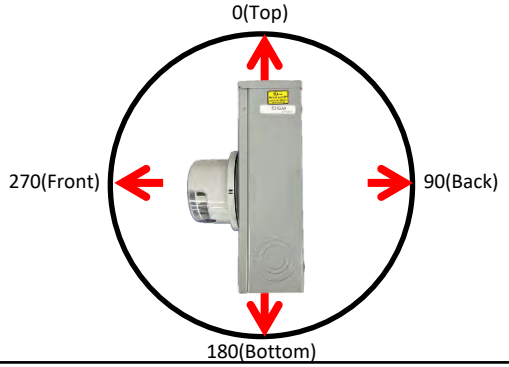
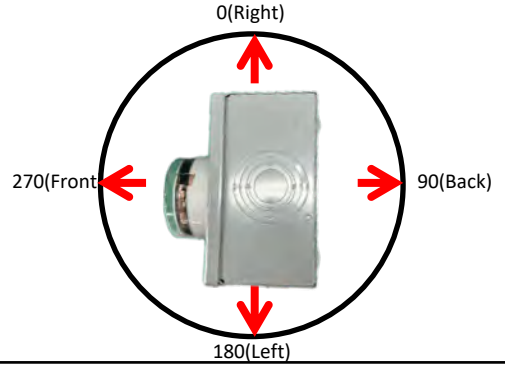
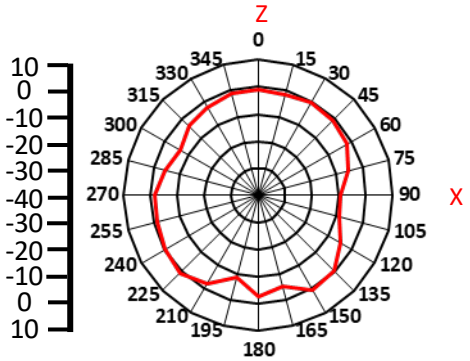
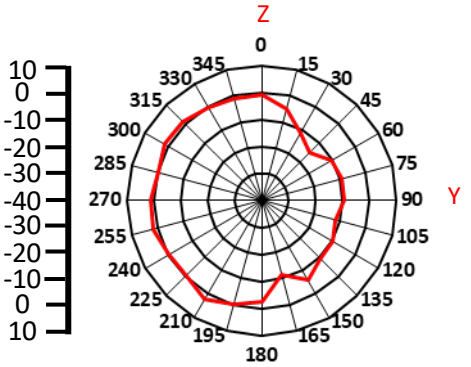
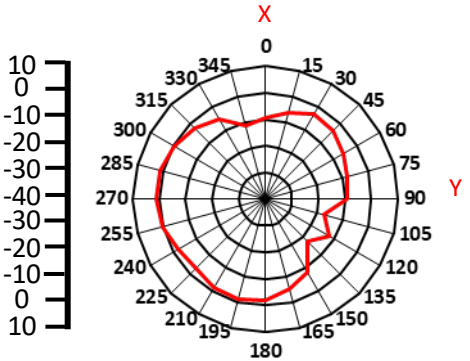
Measurement data

- Measurement Method



Measurement Data

❖ Radiation Pattern(Wi-Fi 2.4G)

X-Z plane	Y-Z plane	X-Y plane
		
		

Measurement data

❖ Gain table: WiFi 2.4G

Frequency (MHz)	XZ plane			YZ plane			XY plane			3D		
	Peak Gain (dBi)	Min. Gain (dBi)	Average Gain (dBi)	Peak Gain (dBi)	Min. Gain (dBi)	Average Gain (dBi)	Peak Gain (dBi)	Min. Gain (dBi)	Average Gain (dBi)	E-total (dBi)	3D Min. Gain (dBi)	Efficiency (%)
2400	0.46	-10.02	-3.23	1.17	-19.83	-6.68	-0.10	-18.92	-5.31	3.62	-17.63	54.22
2450	0.18	-9.90	-3.36	1.59	-16.96	-4.83	1.01	-20.35	-6.01	3.85	-17.82	55.53
2500	0.35	-9.14	-3.52	1.76	-14.64	-5.34	0.60	-17.49	-6.07	3.75	-16.35	54.69

Applicable test methods

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ETS-Lindgren AMS-8600 system is 3D fully anechoic chamber, it is applied to the "Conical Cut test method", the detail description is described as below.

The Conical Cut method requires the ability of the Measurement Antenna to be physically rotated in the theta plane (overhead) of the EUT for implementations using a single Measurement Antenna, Eleven conical cuts are required to capture data at every 15 degrees from the EUT, with the top (0 degrees) and bottom (180 degrees) cuts not being measured. Typically, the EUT will remain affixed to a turntable during the entire measurement process. The Measurement Antenna will be positioned at a starting theta angle. The EUT will then be rotated around the full 360 degrees of phi rotation. The Measurement Antenna will then be positioned at the next theta angle, and the process repeated.

		θ -Axis	Φ-Axis
Passive	Step size	15°~165° step: 15°	0°~345° step: 15°
	N / M (Points)	12	24

Test & System Description

- Typical Setup for ETS-Lindgren AMS-8600:

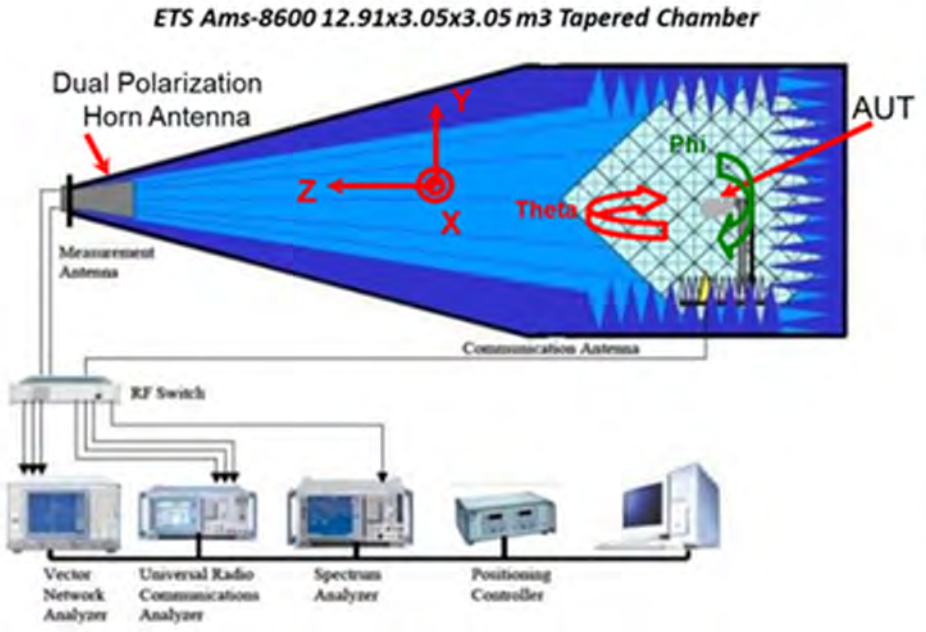

Figure 1: System diagram for test system including compact-size tapered anechoic chamber and optional test instrumentation

Equipment list

ID#	Device	Type/Model	Serial#	Manufacturer	Cal Date	Cal. Due Date
0135	Anechoic Chamber	FACT3	5720	ETS-Lindgren	2025-02-14	2026-02-15
0136	Turn Table	ETS		ETS-Lindgren	N/A	N/A
0147	Switch & Positioning systems	EMC Center	00159757	ETS-Lindgren	N/A	N/A
0530	Measurement SW	EMC32,v10.40.10	100623	Rohde & Schwarz	N/A	N/A
1033	Boresight antenna mast	BAM 4.0-P	P/278/2890.01	Maturo	N/A	N/A
1076	Spectrum Analyzer	FSW43	101847	Rohde & Schwarz	2025-02-24	2026-02-23
0993	Biconical antenna 30MHz-1GHz	UBAA9115 + BBVU9135 + DGA9552N	0286 + CH 9044	Schwarzbeck	2025-05-03	2026-05-03
0325	Horn antenna	3117	00157734	ETS-Lindgren	2025-01-07	2026-01-08
0141	Horn antenna + Amplifier + HPF6.4	3117	00157736	ETS-Lindgren	2025-02-14	2026-02-20
0334	Double-Ridged Waveguide Horn with Pre-Amplifier 18 GHz to 40 GHz	3116C+PA	00169308bis + 00196308	ETS-Lindgren	2025-05-27	2026-05-30
0859	Cable 2.5m – 30MHz to 18 GHz	0500990992500KE	19.23.395	Radial	2024-02-13	2026-03-30
0206	Cable 1.2m – 18 to 40 GHz	UFA147A-0-0480-200200	MFR60637-59609-072	Micro-coax	2024-07-26	2026-04-14
0263	Cable 1m – 1GHz to 18GHz	UFA147A		Utilflex	2024-07-25	2026-03-30
0369	Cable 2m – 26.5GHz to 40GHz	794-9191-2000A	E00327	Atem	2024-07-26	2026-03-30
0371	Cable 1m 30 MHz – 18GHz	UFB311A-0-0590-50U50U	MFR 64637-59609-060	Micro-coax	2024-07-25	2026-03-30
1099	Cable7m DC-18 GHz	0501051057000GX	19.35.850	Radial	2024-07-26	2026-09-03
0809	Cable7m – 18GHz to 40GHz	R286304009		Radial	2024-07-25	2026-04-14
1098	Cable 1.5m – DC-18GHz	CBL-1.5M-SMSM+	202879	Mini-Circuits	2024-07-26	2026-07-17
0797	Temp & Humidity Logger	RA12E-TH-RAS	RA12-D0EB1A	Avtech	2023-09-28	2025-05-26