



Percsson Communication Equipment Co., Ltd

Antenna OTA Test Report

For

ESP-ANT-A

Manufacturer	Shenzhen four bo smart link technology Co., LTD	Demo	ESPS3-32
Band	2.4G	Color	黑色
PRS PN		Version	V1.0
Issued by	Jason	Checked by	Mem
Confirmed by	Zhang	Date	2025.2.14

一. TEST INSTRUMENTATION

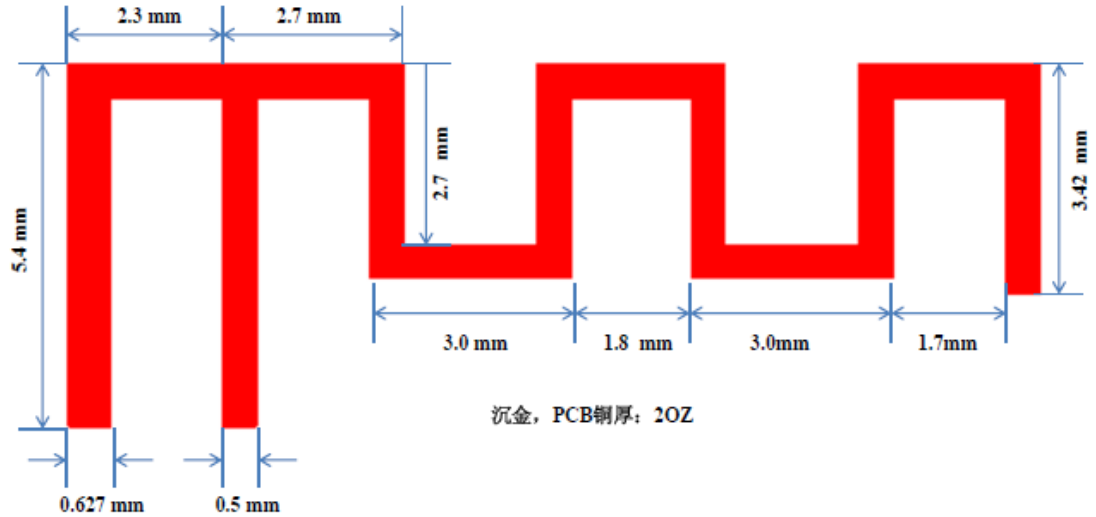
CHAMBER	SATIMO Chamber
Wireless Networking Test Set	Agilent E5071C
NETWORK ANALYZER	Agilent 8753D
TEMPERATURE	20±3℃
HUMIDITY	50±20%rh
GROUND RESISTANCE	<0.5R

Manufacturer:Shenzhen four bo smart link technology Co., LTD
Address:Building 8, Building A, Shenzhen International Innovation Valley, Xili Community, Xili Street, Nanshan District, Shenzhen City, Building 903904

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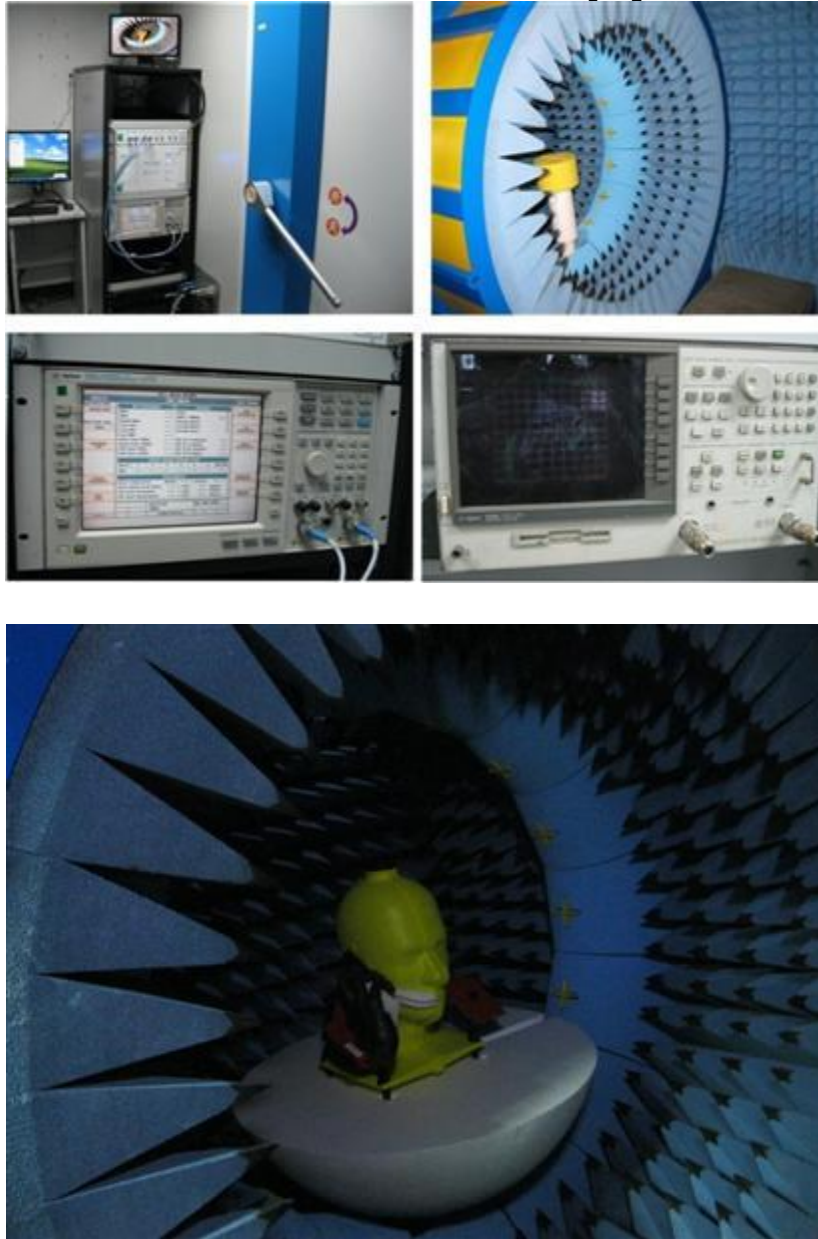
ESP33-WROOM-32 WiFi Module



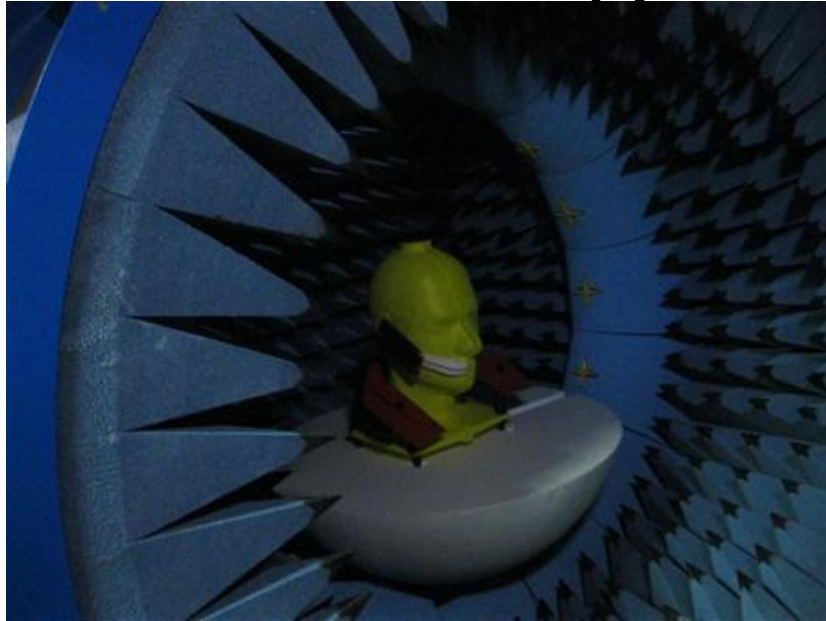
Antenna Dimension for ESP33-WROOM-32



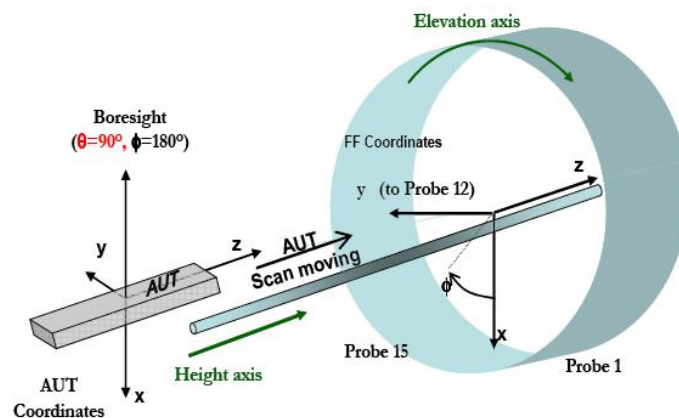
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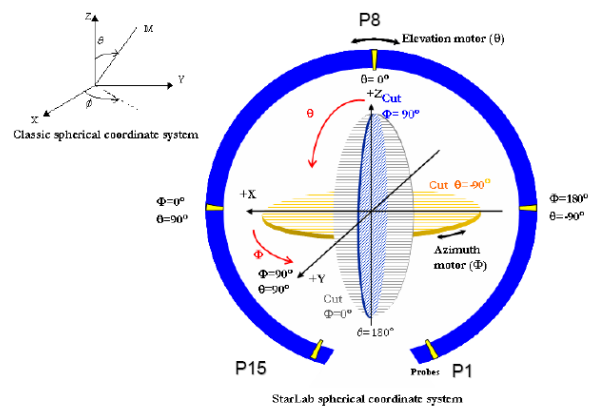
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Coordinate system – Cylindrical geometry



Coordinate system – Spherical geometry



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二. Test Results

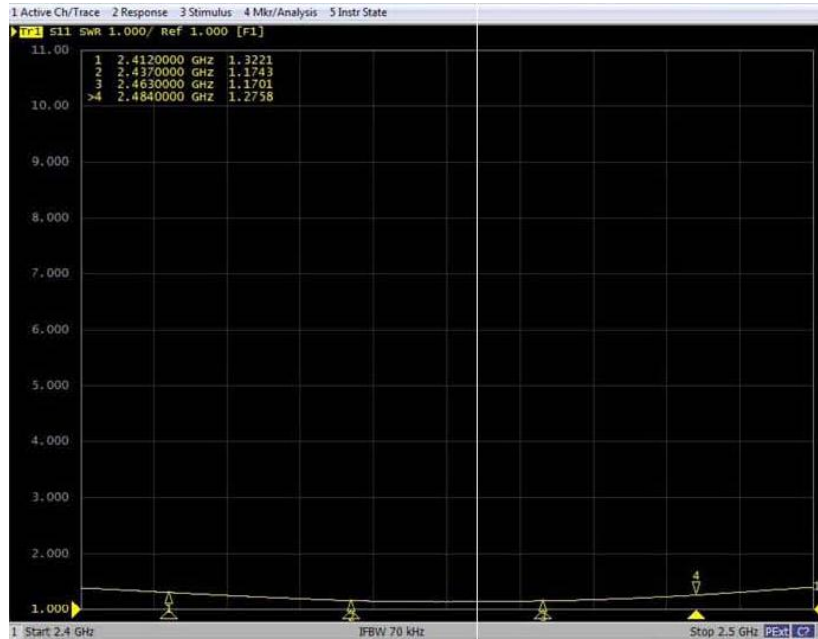
2.1 Gain and Efficiency

Test Item	Freq (MHz)	Efficiency (%)	Gain (dBi)	Note
Gain	2400	71.32	2.72	Vertical 30°
	2412	70.68	3.21	
	2417	76.51	2.88	
	2422	77.78	2.67	
	2427	80.76	2.89	
	2432	80.11	2.80	
	2437	75.32	2.64	
	2442	75.23	2.93	
	2447	72.99	2.78	
	2452	70.01	3.12	
	2457	72.34	3.13	
	2462	71.32	3.28	
	2467	72.33	3.24	
	2472	75.67	3.33	
	2477	72.12	3.42	
	2482	80.23	3.57	
	2500	79.65	3.22	

2.2 VSWR (Voltage Standing Wave Ration)

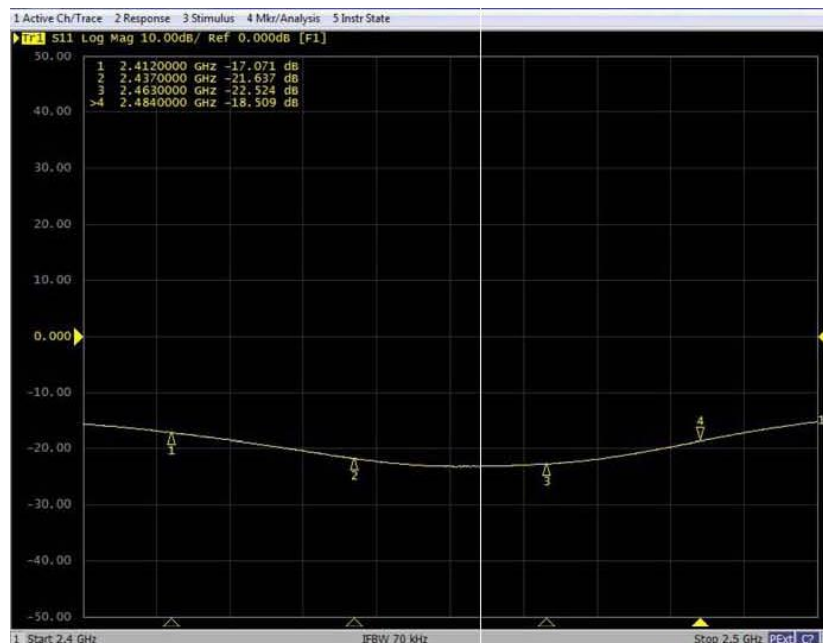


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Frequency(MHz)	2412	2437	2463	2484
VSWR	1.31	1.17	1.16	1.29

2.3 Antenna S11



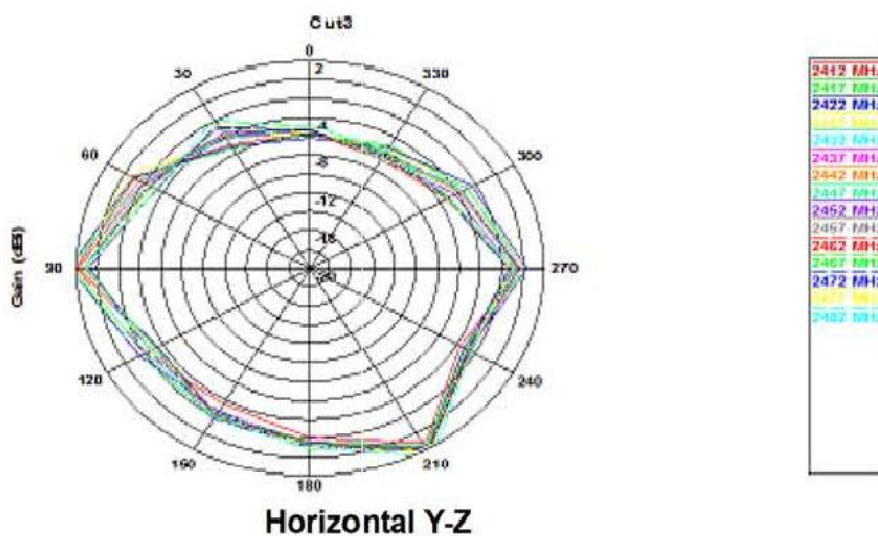
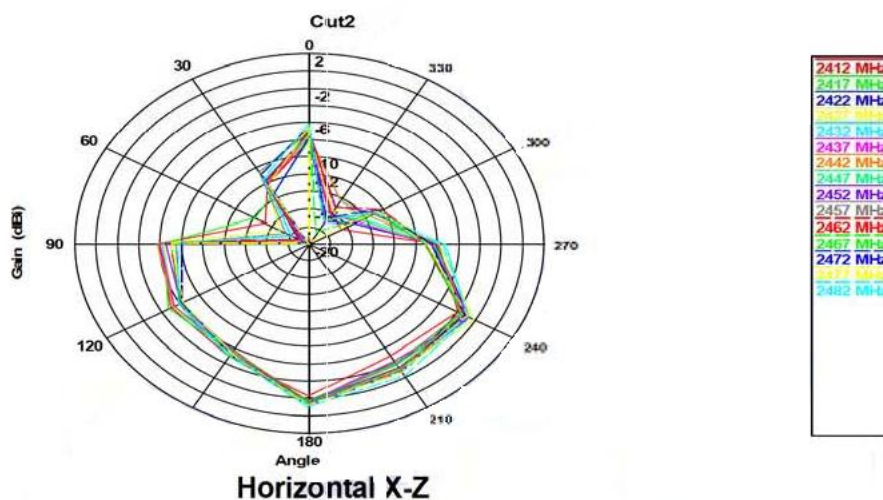
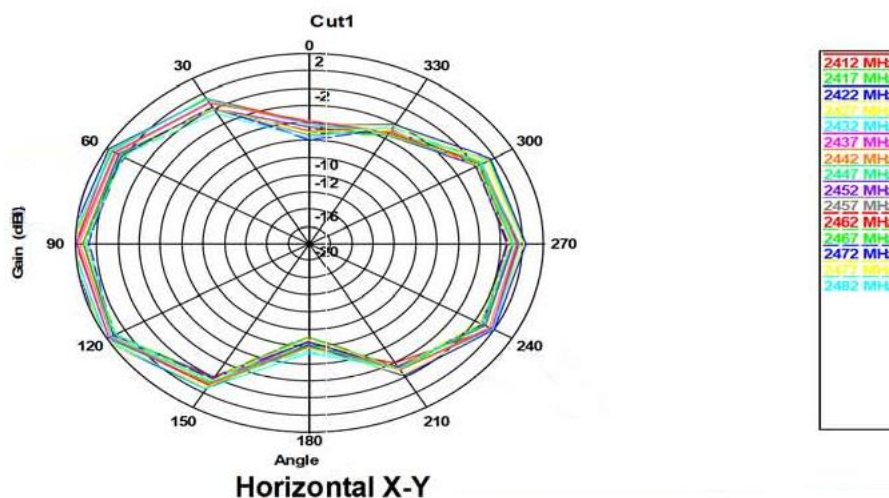
Frequency(MHz)	2412	2437	2463	2484
S11 (dB)	-17.01	-21.65	-22.52	-18.51

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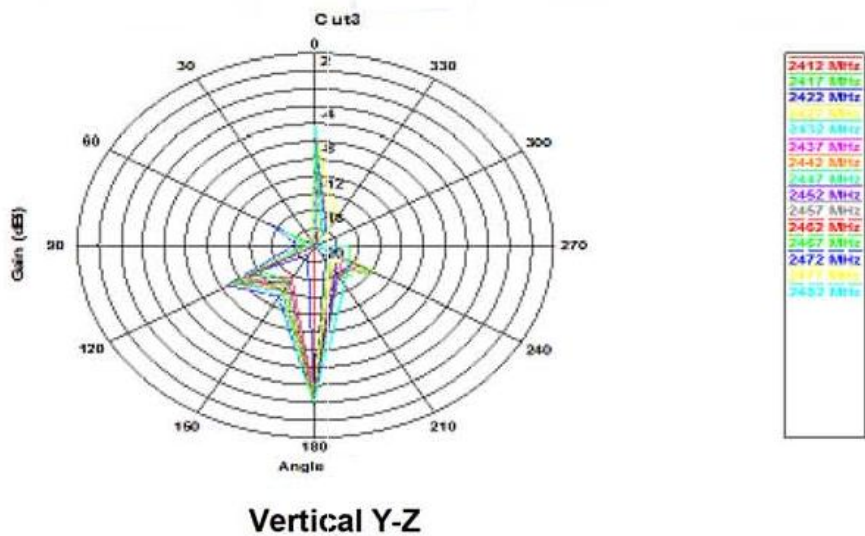
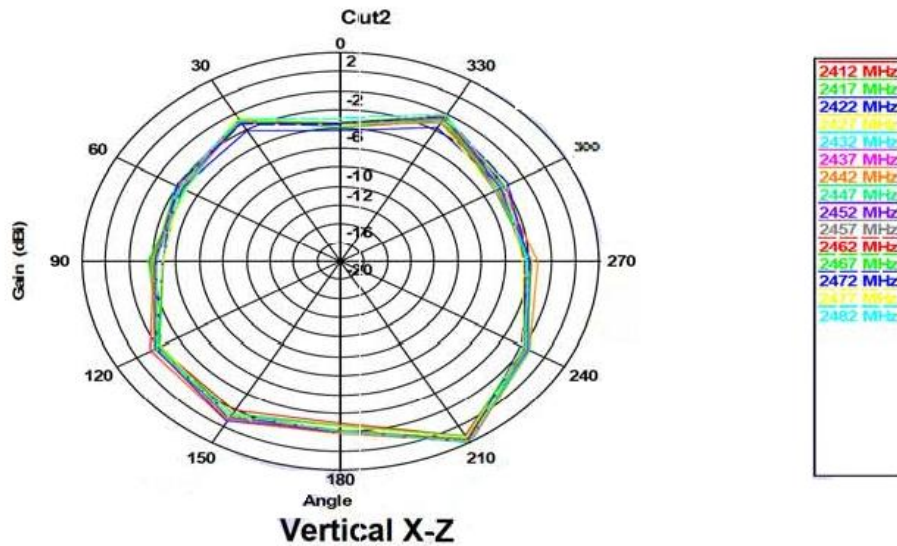
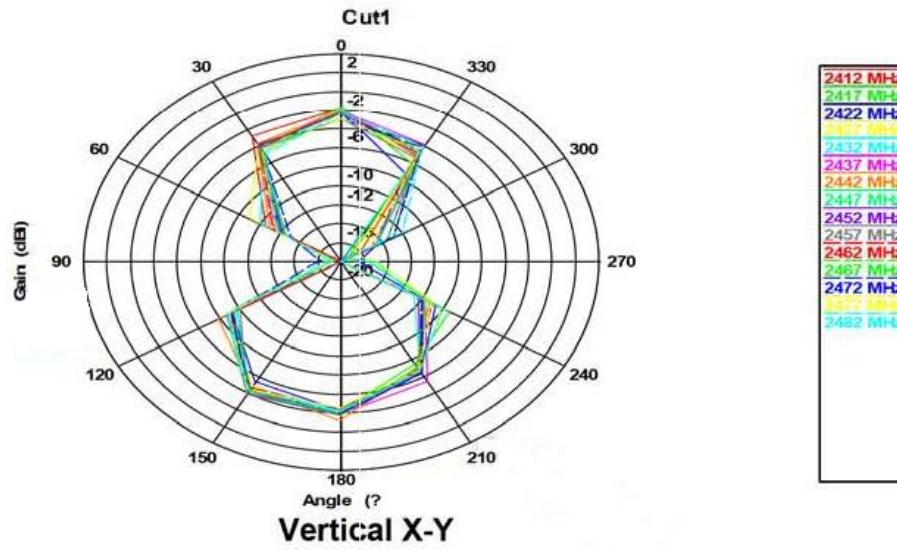
三. 2-D pattern Plots



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