JOINSOON ELECTRONICS MFG .CO,LTO

WIFI DIPOLE antenna test report

2022/11/24

APPROVAL SHEET

客戶名稱(Costumer):冠捷TPV
品名規格 (DESCRIPTION) : WIFI DIPOLE
檔案號碼 (FILE NO.) : IAHA202206004
版次 (REV) : 01
料號 (PART NO.) : 1510-0326-0085
工程師 (ENGINEER) : Roy
品保確認 (QC. CHK.) : Jane
工程確認 (ENG. CHK.) : Jess
測試時間 (TEST DATE):2022/11/24
發行日期 (RELEASED DATE) : 2022/11/24
Factory ： SuZhou JianHe Precision Electronics Co.,Ltd.
Address : NO. 118 TONGCHENG Rd., Wei Tang Town,Xiang Cheng District,SuZhou City,Jiang Su Province,China.

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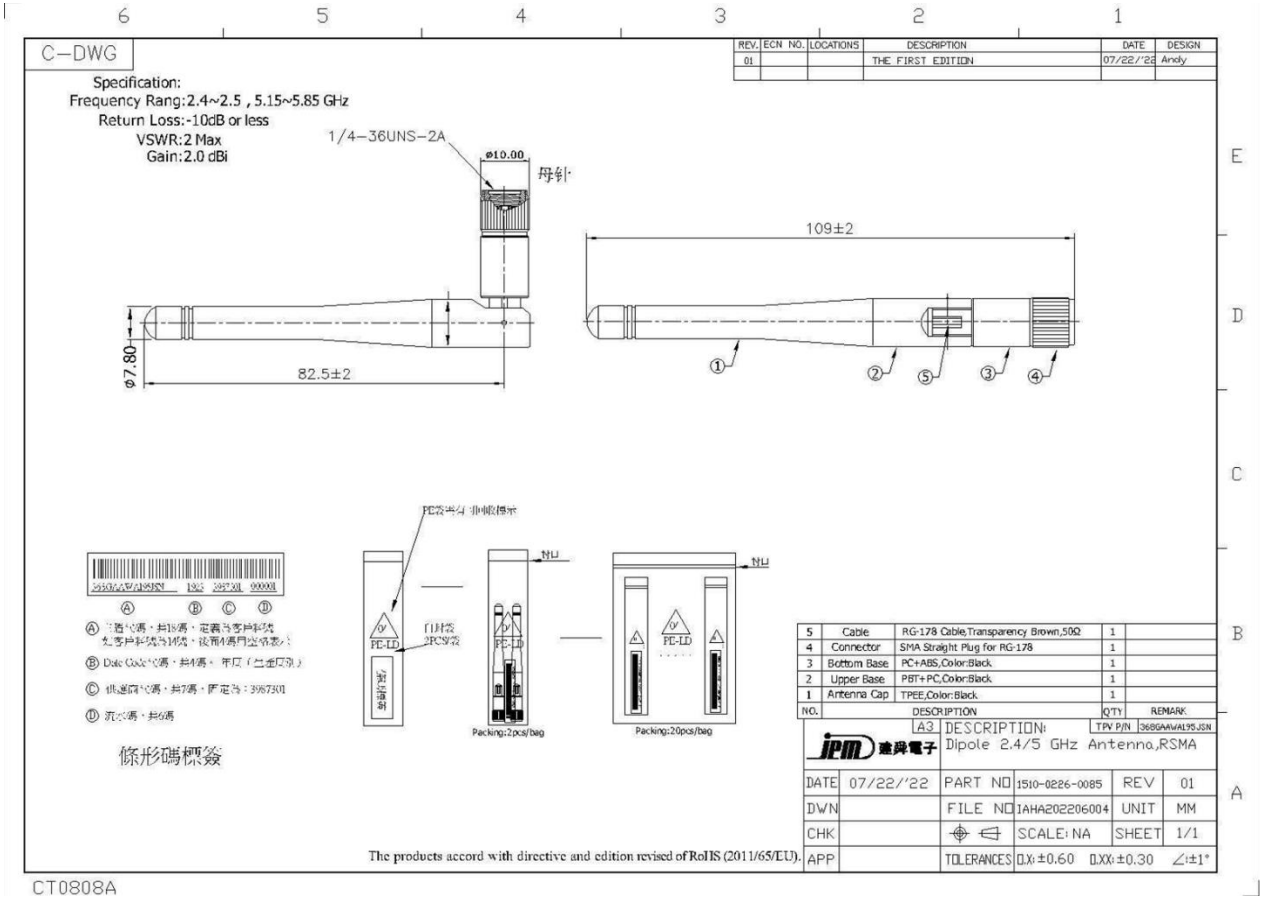
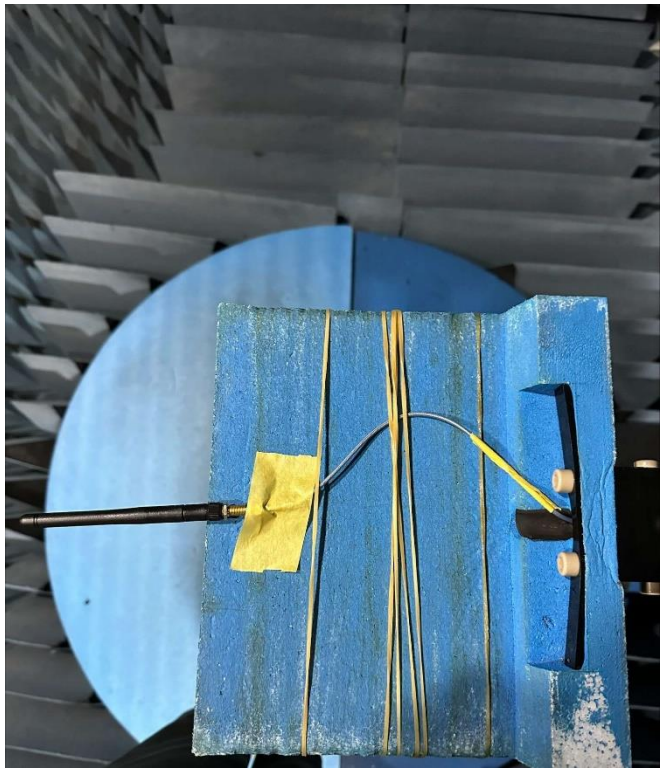
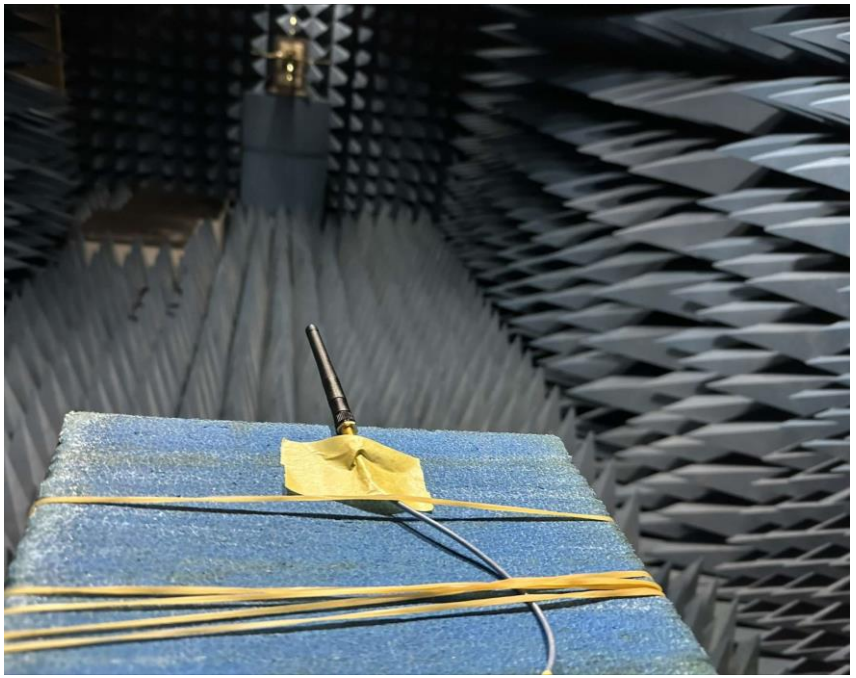
2.Antenna Drawing



3. Antenna Photo





4.Antenna Related Data

4.1 Frequency Range : 2.4~ 2.5GHz

5.15~5.85GHz

4.2 Impedance : 50Ω

4.3 V.S.W.R : ≦ 2.5

4.4 Polarization : Linear

4.5 Cable : RG-178 Cable

4.6 Connector : RSMA Plug

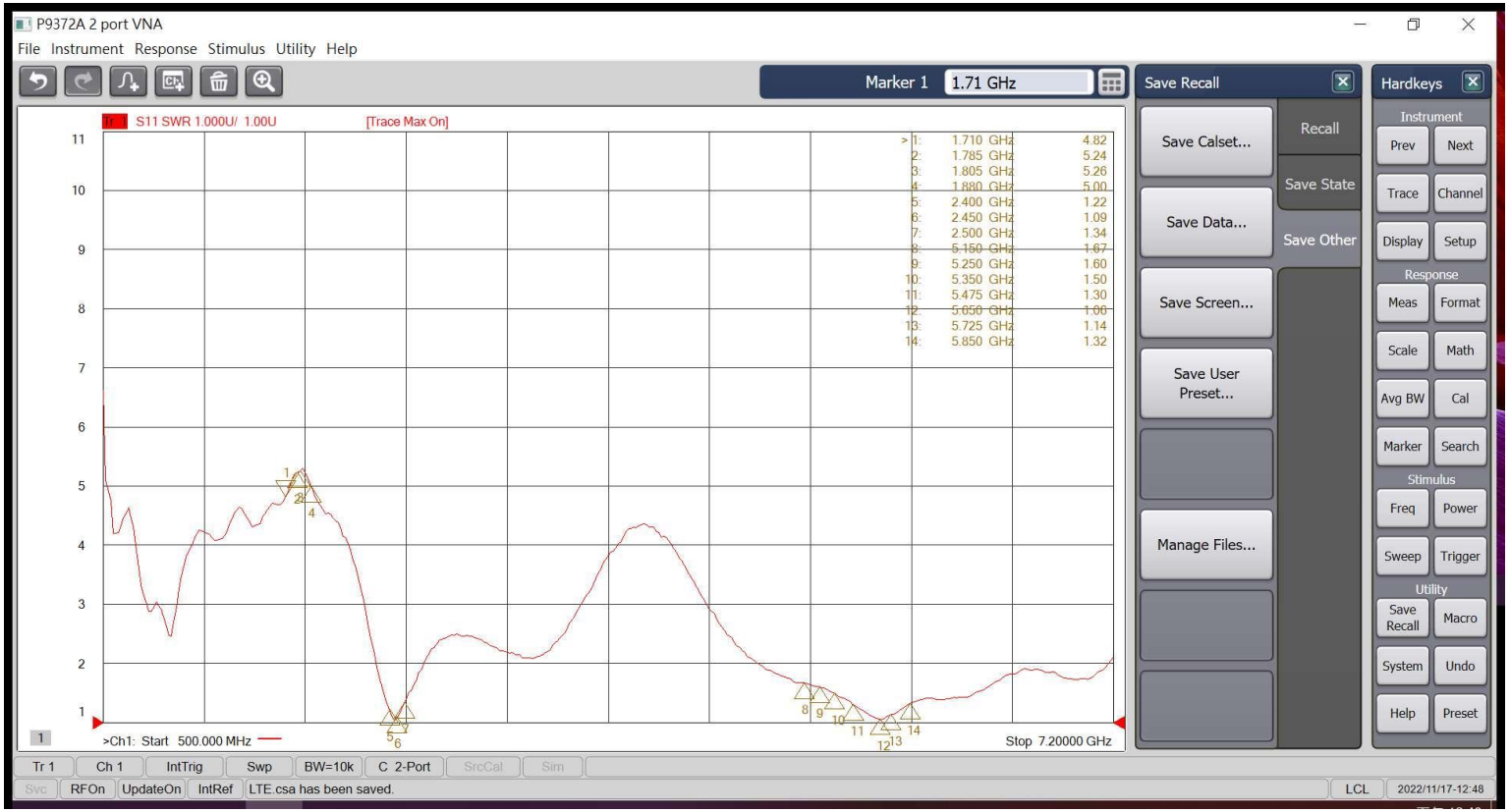
4.7 Antenna pattern : PIFA

5.Test Procedure

1.Connect EUT antenna connector to the signal generator.
2.Fasten the EUT to the locator in the center of the turntable, leavi only free space.
3.Transmit a 0 dBm power level from the signal generator to the EUT antenna connector.
4.Make sure the transmit signal is stable at the maximum RF pow level.
5.Read the power level on the spectrum analyzer and record it in t following locations.
6.The EUT is placed on a turntable that rotates 360 degree in 1 degr steps. Measure the E and H plane patterns.
7.The turntables should be stepped from 0 degree to 360 degree with maximum angular resolution of 1 degree. The 360 degree measurement should be compared to the 0 degree value to complete the pattern.

6. Test Result

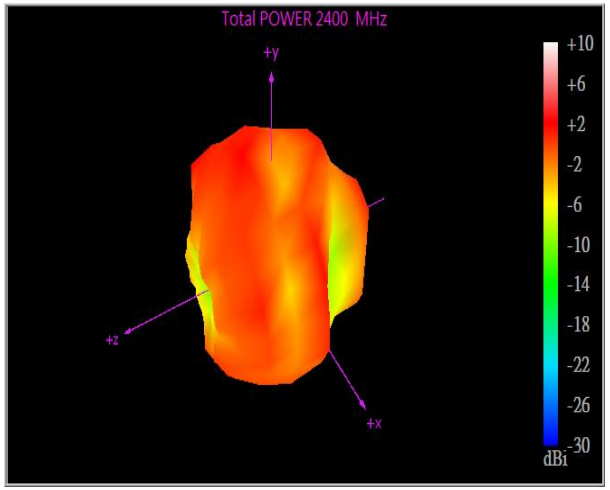
6.1 S11 VSWR

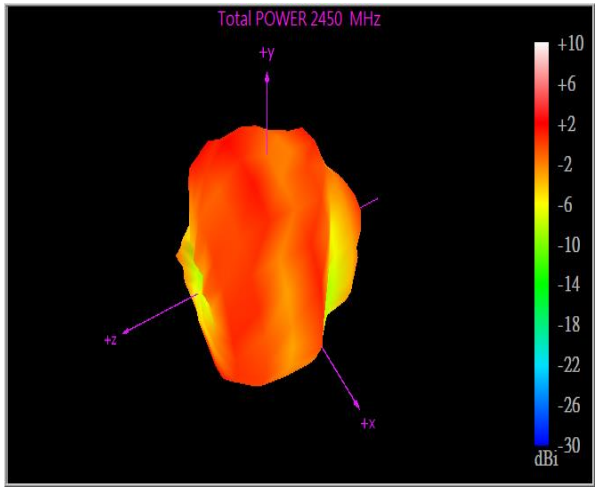


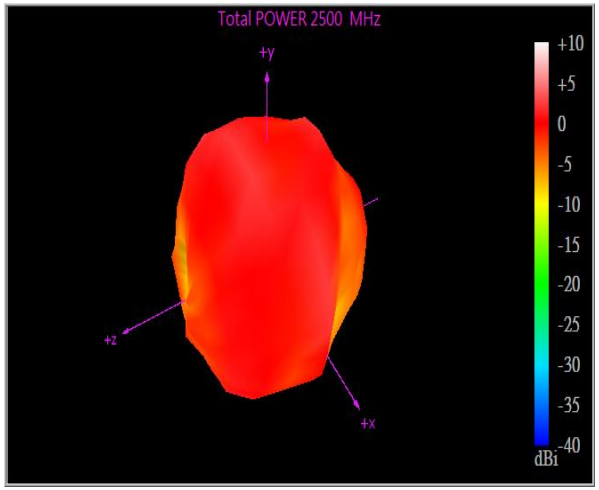
6.2 3D Specifications

Frequency (MHz)	2400 MHz	2450 MHz	2500 MHz	5150 MHz	5250 MHz	5350 MHz	5470 MHz	5500 MHz	5600 MHz	5700 MHz	5725 MHz	5785 MHz	5850 MHz
Efficiency (dB)	-1.69	-1.59	-0.95	-1.2	-1.39	-1.76	-1.38	-1.82	-1.7	-0.62	-1.32	-1.27	-1.17
Peak Gain (dBi)	3.78	3.8	3.69	4.6	3.88	3.69	4.35	3.88	4.02	5.67	4.54	5.98	4.99
Efficiency (%)	67.71	69.4	80.38	75.8	72.59	66.71	72.78	65.82	67.67	86.67	73.85	74.71	76.4

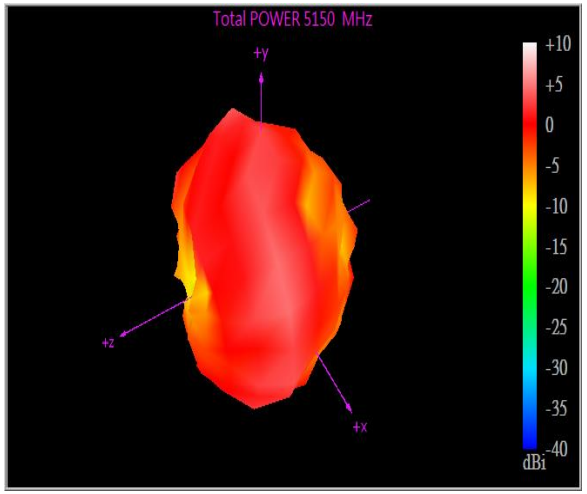
3D Pattern-2400~2500MHz

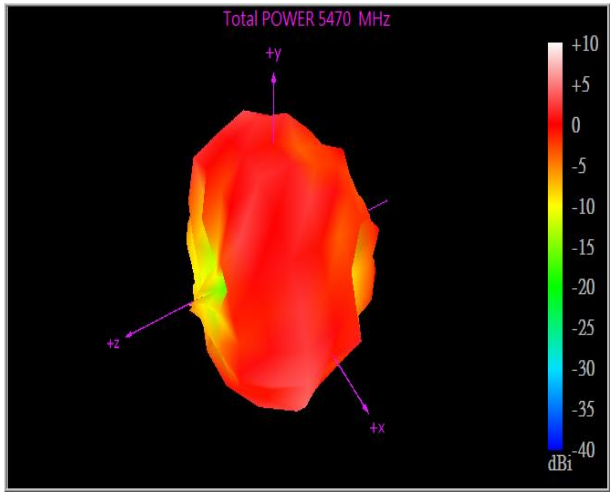


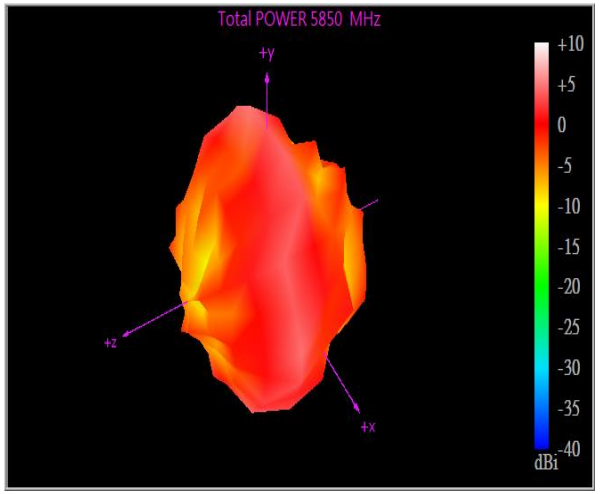




3D Pattern-5150~5850MHz



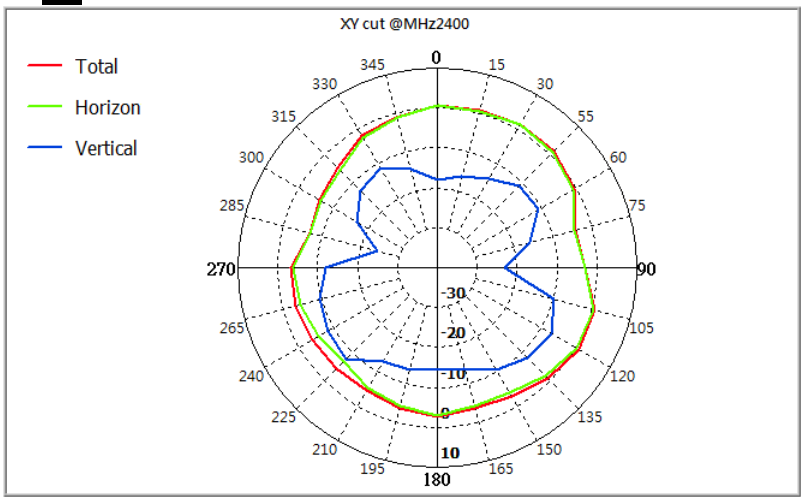


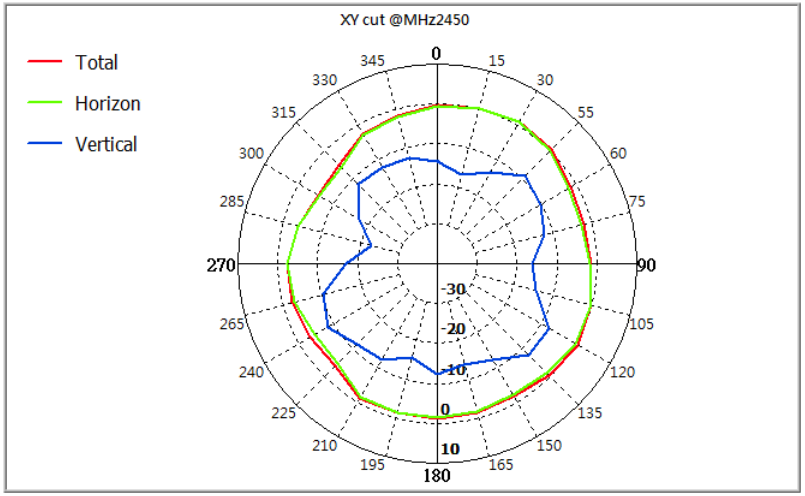


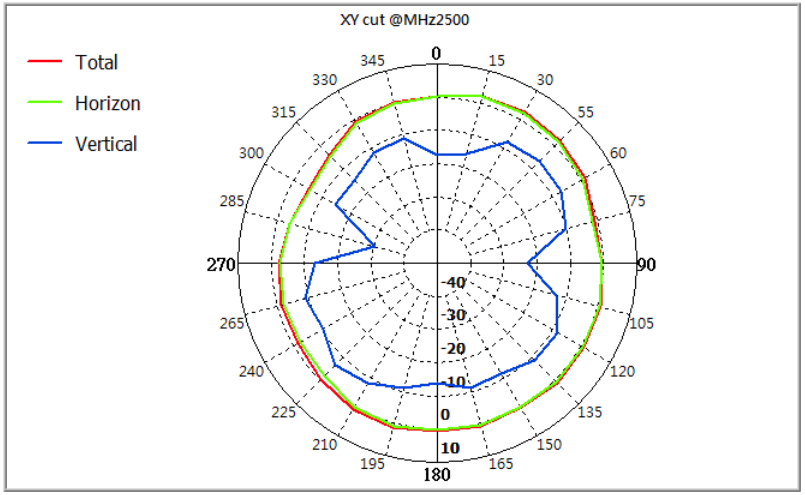
6.3 2D - θ Specifications

XY Plane	2400 MHz	2412 MHz	2425 MHz	2450 MHz	2485 MHz	2500 MHz	5150 MHz	5250 MHz	5350 MHz	5470 MHz	5597.5 MHz	5725 MHz	5785 MHz	5850 MHz
H-Pol. (Max.)	1.53	1.1	1.68	2.08	1.22	2.55	1.68	2.1	2.69	2.35	2.18	2.42	2.34	2.51
V-Pol. (Max.)	2.54	1.98	2.07	2.78	2.36	2.53	2.57	2.57	2.69	2.29	2.89	2.49	2.1	2.55

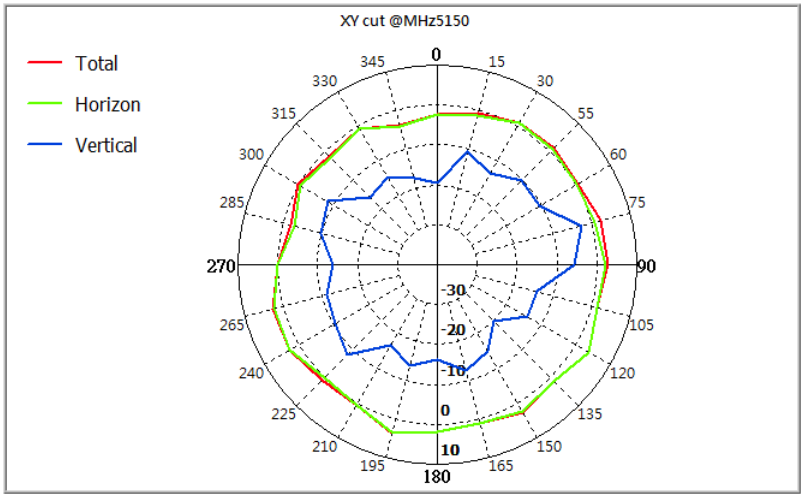
2D - θ Pattern-2400~2500MHz

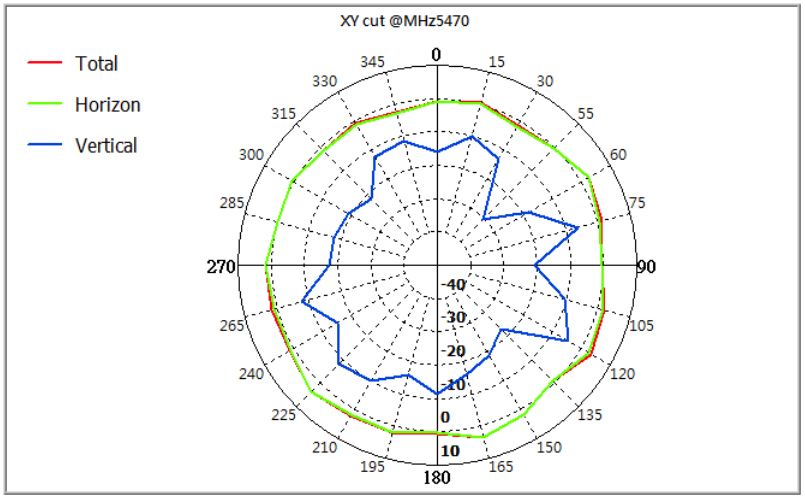


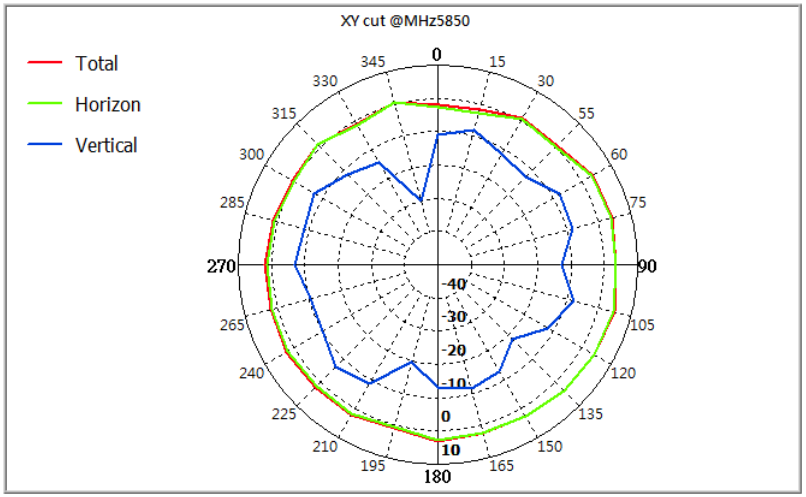




2D - θ Pattern-5150~5850MHz



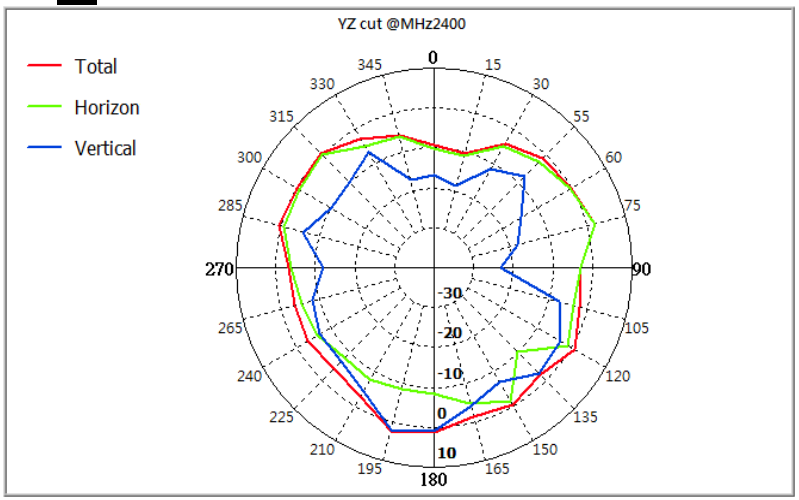


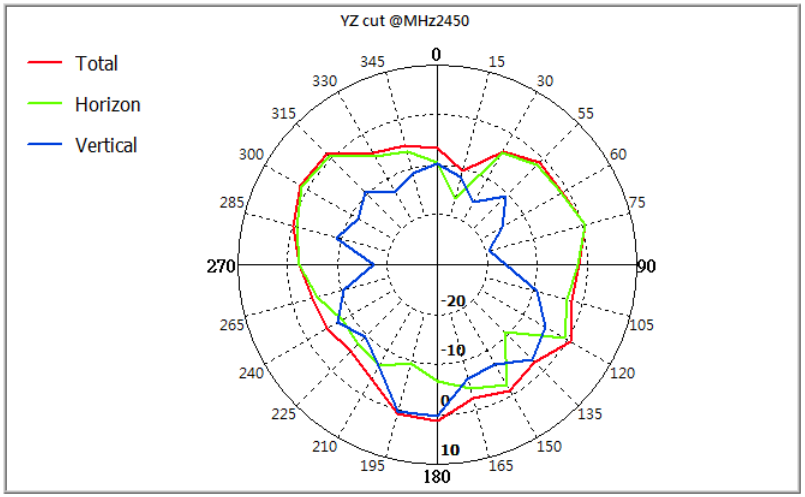


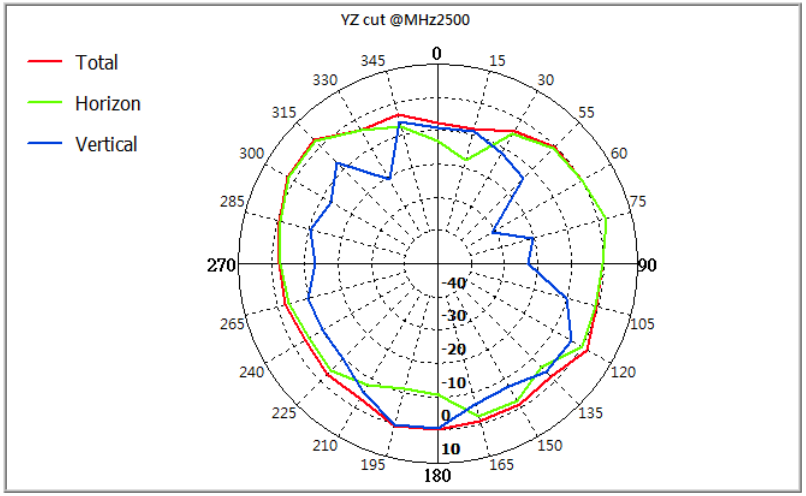
6.4 2D - Φ Specifications

YZ Plane	2400 MHz	2412 MHz	2425 MHz	2450 MHz	2485 MHz	2500 MHz	5150 MHz	5250 MHz	5350 MHz	5470 MHz	5597.5 MHz	5725 MHz	5785 MHz	5850 MHz
H+V. (Max.)	2.03	1.80	1.68	2.61	2.56	2.54	2.87	2.89	2.51	2.29	2.03	2.35	2.31	2.42
H-Pol. (Max.)	1.53	0.84	1.19	2.08	2.51	2.55	1.68	2.77	2.69	2.24	1.64	2.41	2.36	2.51
V-Pol. (Max.)	2.54	1.39	1.10	2.78	0.02	2.53	2.57	2.43	2.69	2.32	1.25	2.51	2.41	2.55

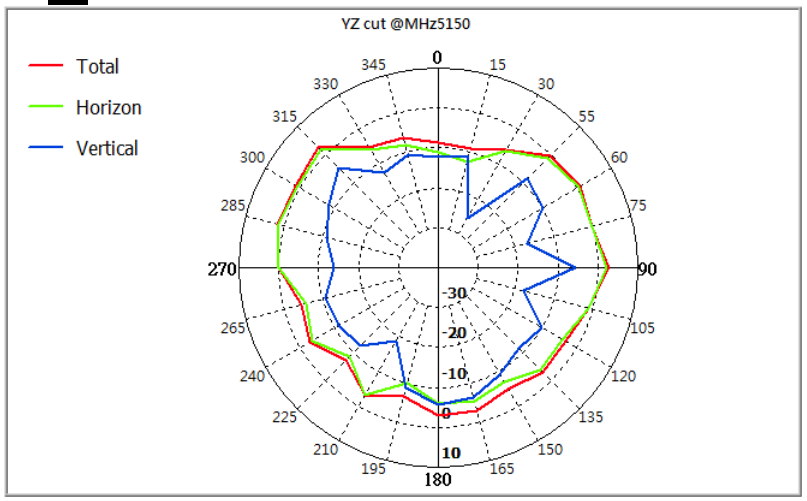
2D - Φ Pattern-2400~2500MHz

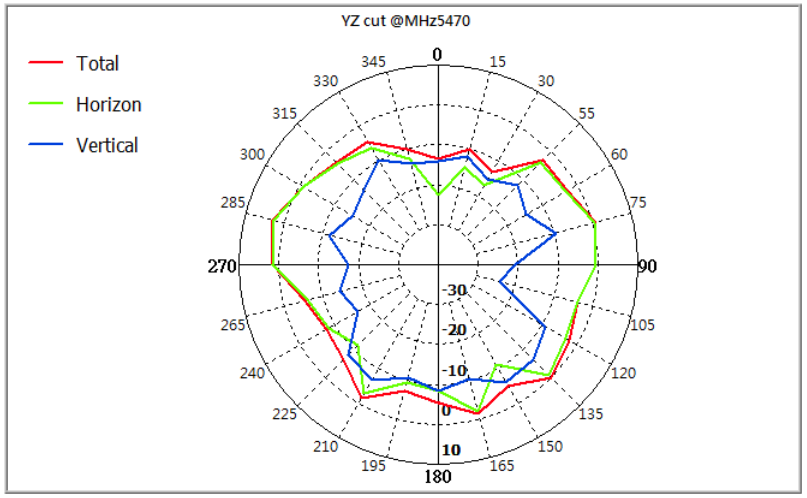


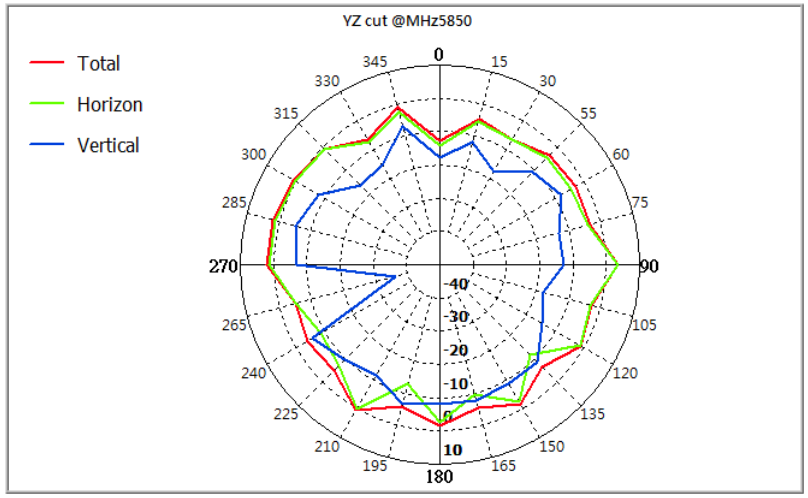




2D - Φ Pattern-5150~5850MHz

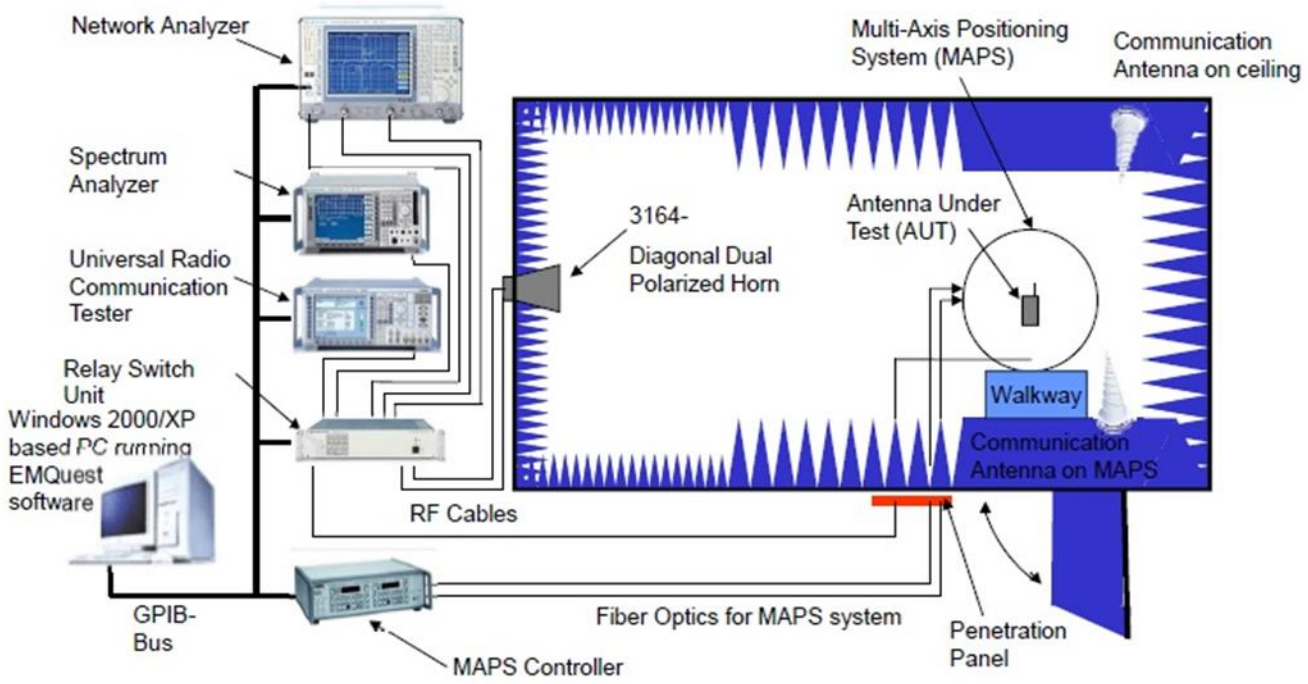






7.Test & System Description

7.1 Test setup



7.2 Equipment list

Device	Type/Model	Manufacturer	Cal. Date	Cal. Du Date
Anechoic Chamber	AMS-8500	ETS-Lindgren	2022/3/3	2023/9/3
Horn antenna(400M~10GHz)	Oct-64	ETS-Lindgren	2022/3/3	2023/9/3
Switch	3499B	Agilent	N/A	N/A
Spectrum Analyzer	N9010A	Agilent	2021/5/7	2023/5/7
ENA	E5071C	Agilent	2021/5/7	2023/5/7
MAPS Controller	2090	ETS-Lindgren	2022/3/3	2023/9/3
Cable 7.5mm 400MHz to 18GHz(H-pol)	SS402	Woken	2021/11/15	2023/11/15
Cable 7.5mm 400MHz to 18GHz(V-pol)	SS402	Woken	2021/11/15	2023/11/15
Cable 14mm 400MHz to 18GHz	SS402	Woken	2021/11/15	2023/11/15