



JOINSOON ELECTRONICS MFG .CO,LTO

BT Antenna Simulation report

2022/08/11

APPROVAL SHEET

客戶名稱(Costumer):冠捷TPV

品名規格 (DESCRIPTION) : BT Antenna

檔案號碼 (FILE NO.) : IAHA202206001

版次 (REV) : 01

料號 (PART NO.) :

工程師 (ENGINEER) : Jess

品保確認 (QC. CHK.) : Jane

工程確認 (ENG. CHK.) : Jess

測試時間 (TEST DATE):2022/08/11

發行日期 (RELEASED DATE) : 2022/08/11

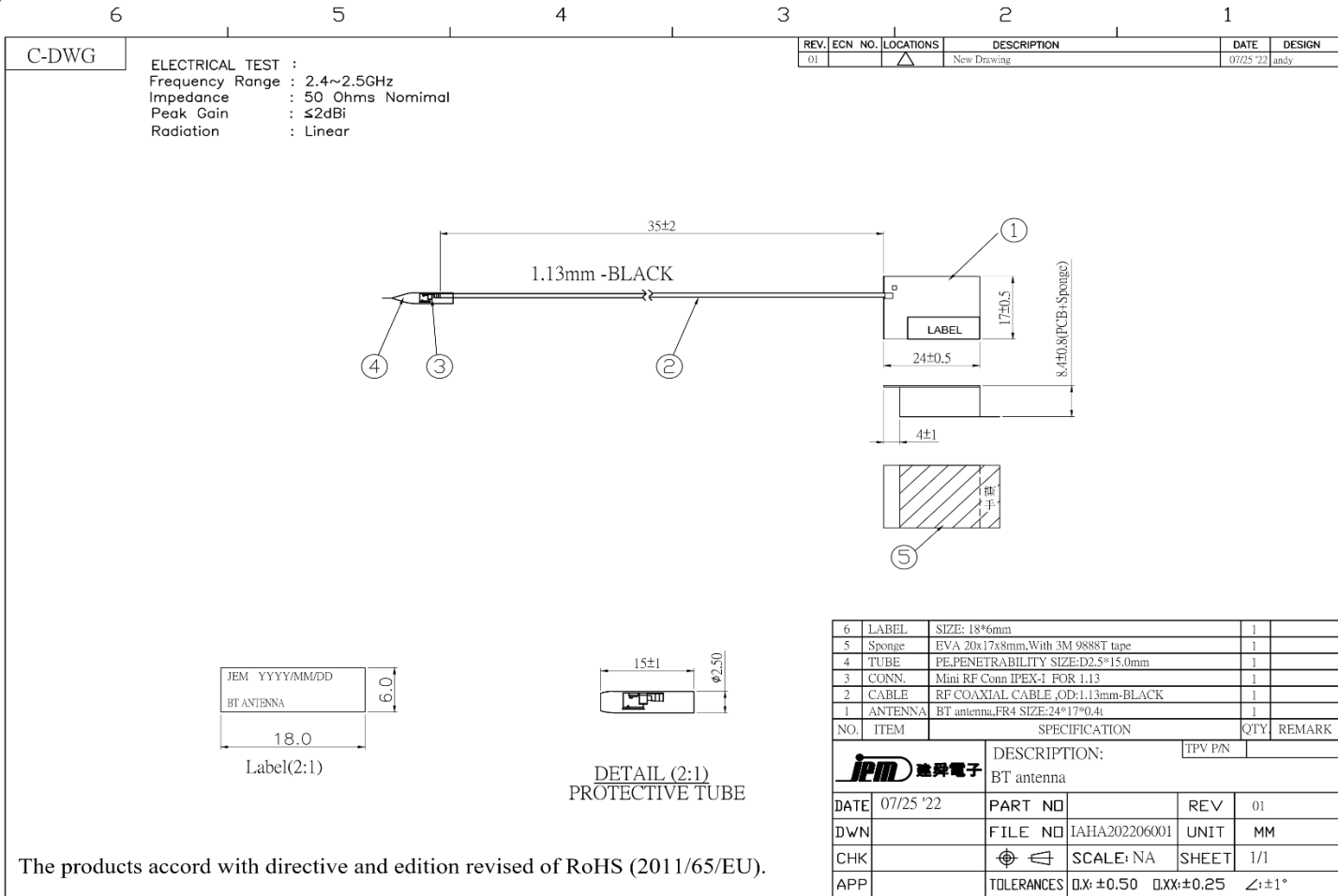
Factory : SuZhou JianHe Precision Electronics Co.,Ltd.

Address : NO. 118 TONGCHENG Rd., Wei Tang Town,Xiang Cheng
District,SuZhou City,Jiang Su Province,China.

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2. Antenna Drawing



CT0808A

4. Antenna Related Data

4.1 Frequency Range : 2.4~2.5 GHz

4.2 Impedance : 50Ω

4.3 V.S.W.R : ≤ 2.5

4.4 Polarization : Linear

4.5 Cable : MI-113 (Black)

4.6 Connector : Black)20278-112R-13 for 1.13

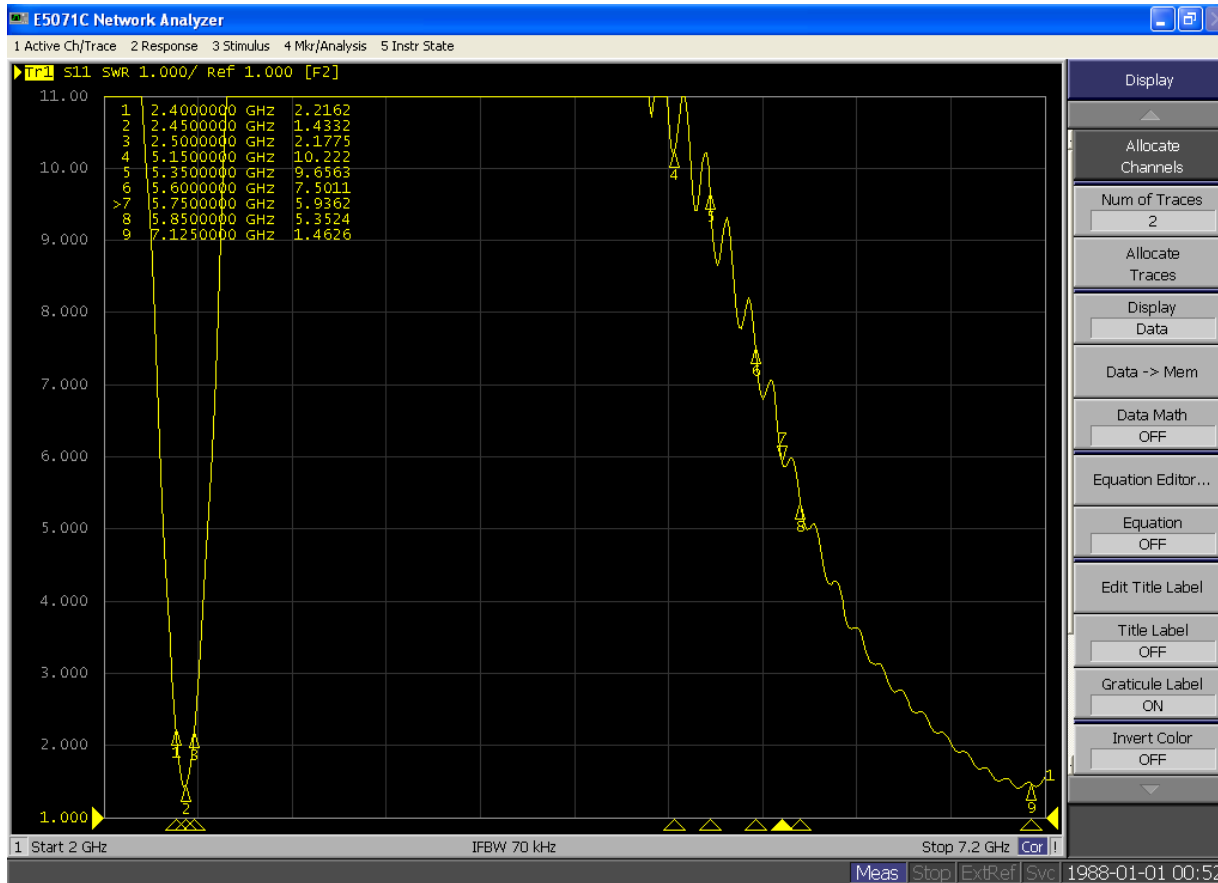
4.7 Antenna pattern : PIFA

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, leaving 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 power level.**
- 5. Read the power level on the spectrum analyzer and record it in the following locations.**
- 6. The EUT is placed on a turntable that rotates 360 degree in 1 degree steps. Measure the E and H plane patterns.**
- 7. The turntables should be stepped from 0 degree to 360 degree with a 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

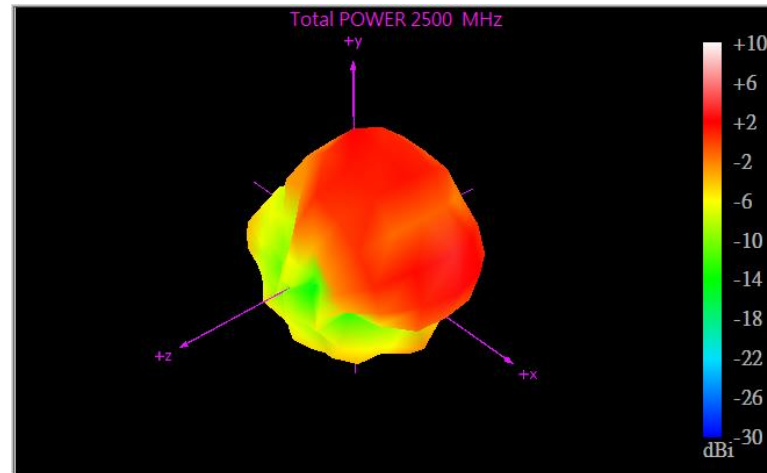
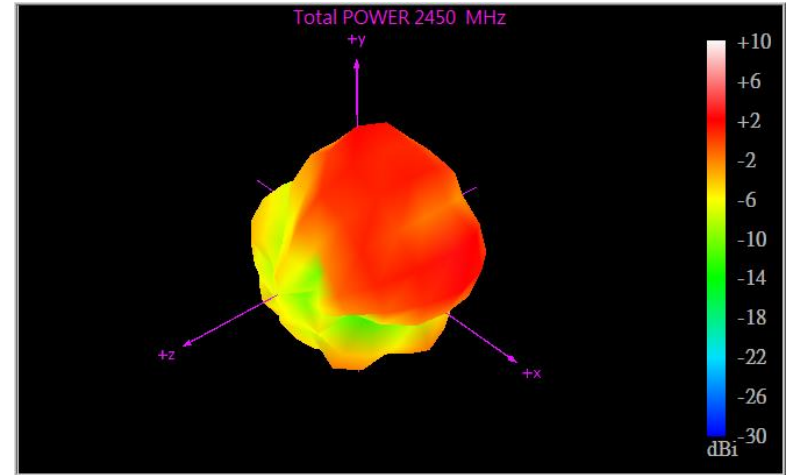
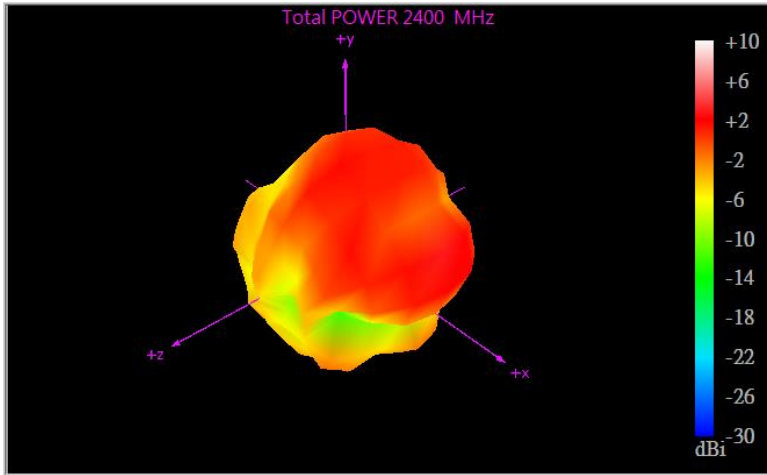
6.1 S11 VSWR



6.2 3D Specifications

Frequency (MHz)	2400	2410	2420	2440	2450	2460	2470	2480	2490	2500
Arg. Gain(dB)	-3.06	-2.78	-3.18	-3.24	-3.38	-3.34	-3.47	-3.63	-3.83	-3.56
Peak Gain (dBm)	2.88	2.85	2.6	2.9	2.61	2.73	2.63	3	2.62	3.39
Efficiency (%)	49.42	52.77	48.05	47.39	45.95	46.38	44.96	43.38	41.42	44.02

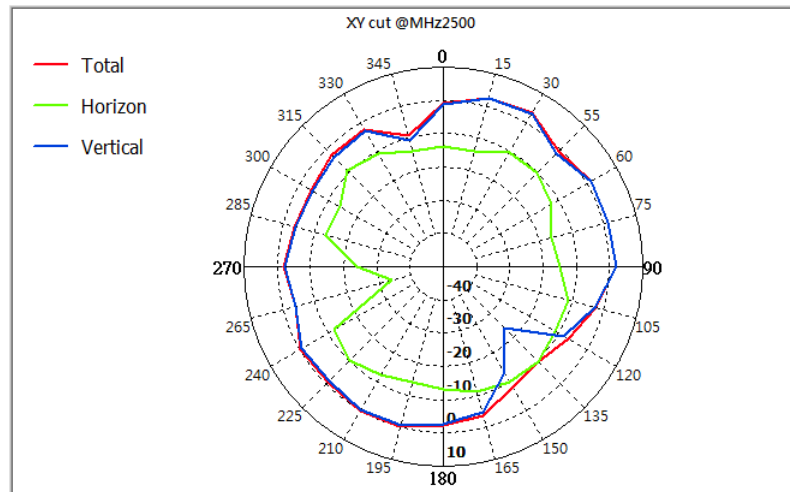
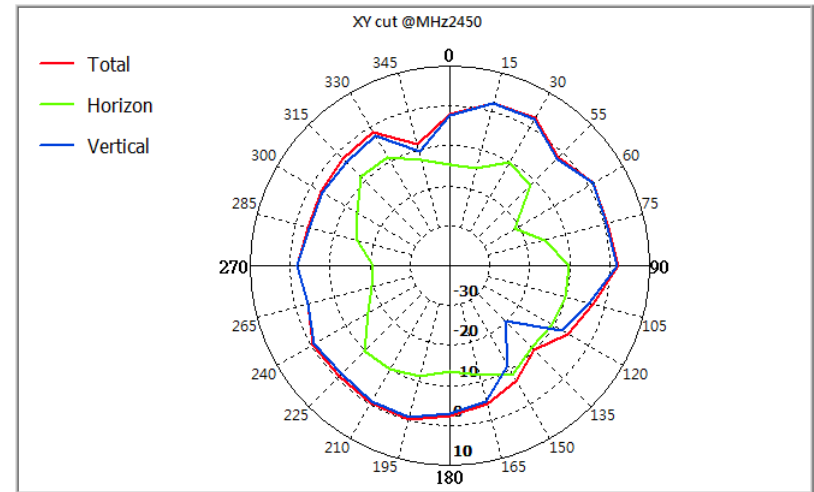
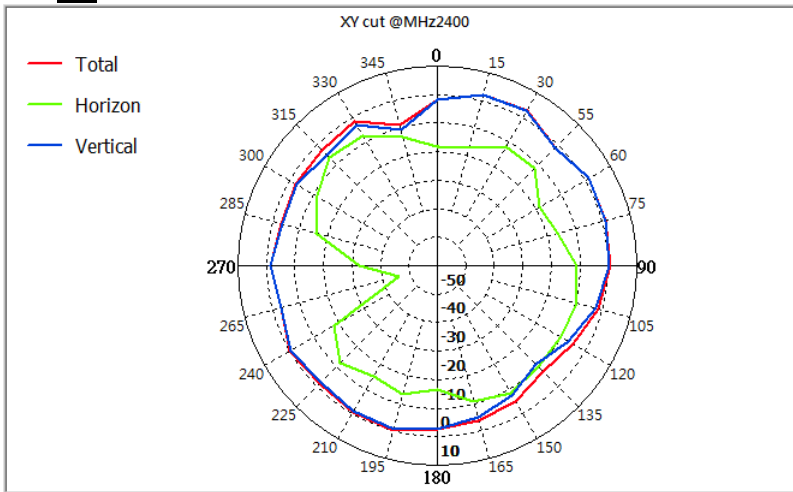
3D Pattern



6.3 2D - θ Specifications

Frequency (MHz)	2400	2410	2420	2440	2450	2460	2470	2480	2490	2500
H+V. (Max.) Peak Gain	2.88	2.85	2.60	2.90	2.61	2.73	2.63	3.00	2.62	3.39
H-Pol. (Max.)	-6.05	-5.94	-7.26	-7.81	-8.42	-8.80	-8.18	-8.42	-9.17	-9.34
V-Pol. (Max.)	2.73	2.67	2.44	2.70	2.38	2.62	2.55	2.85	2.52	3.21

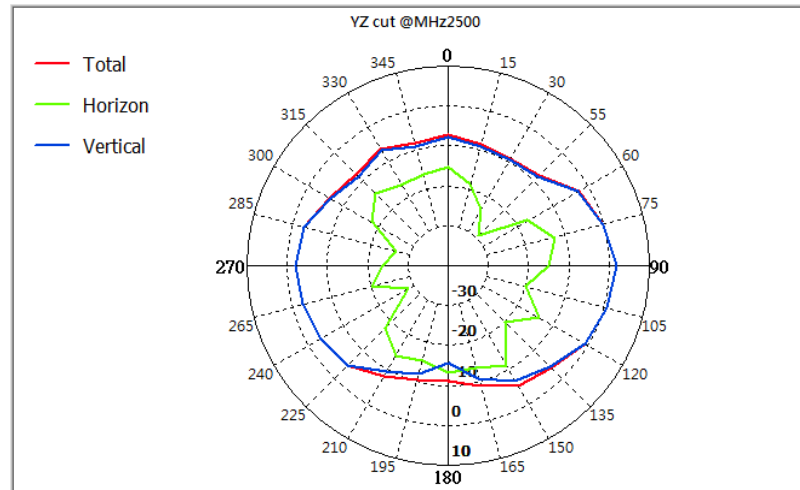
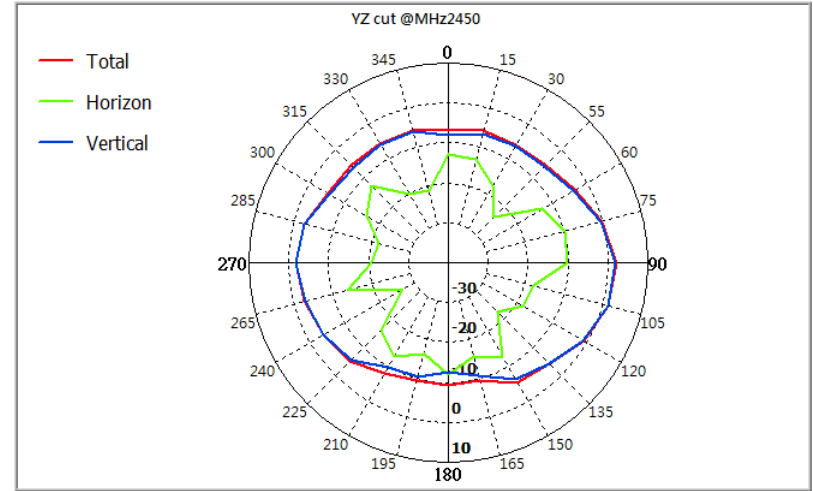
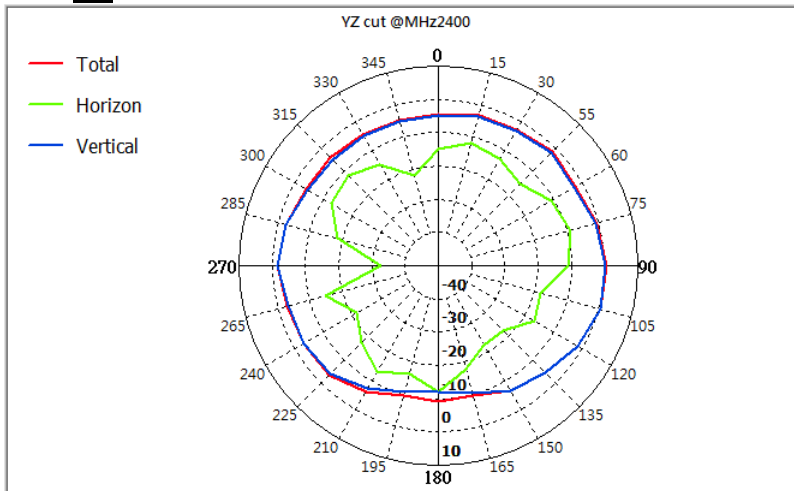
2D - θ Pattern



6.4 2D - Φ Specifications

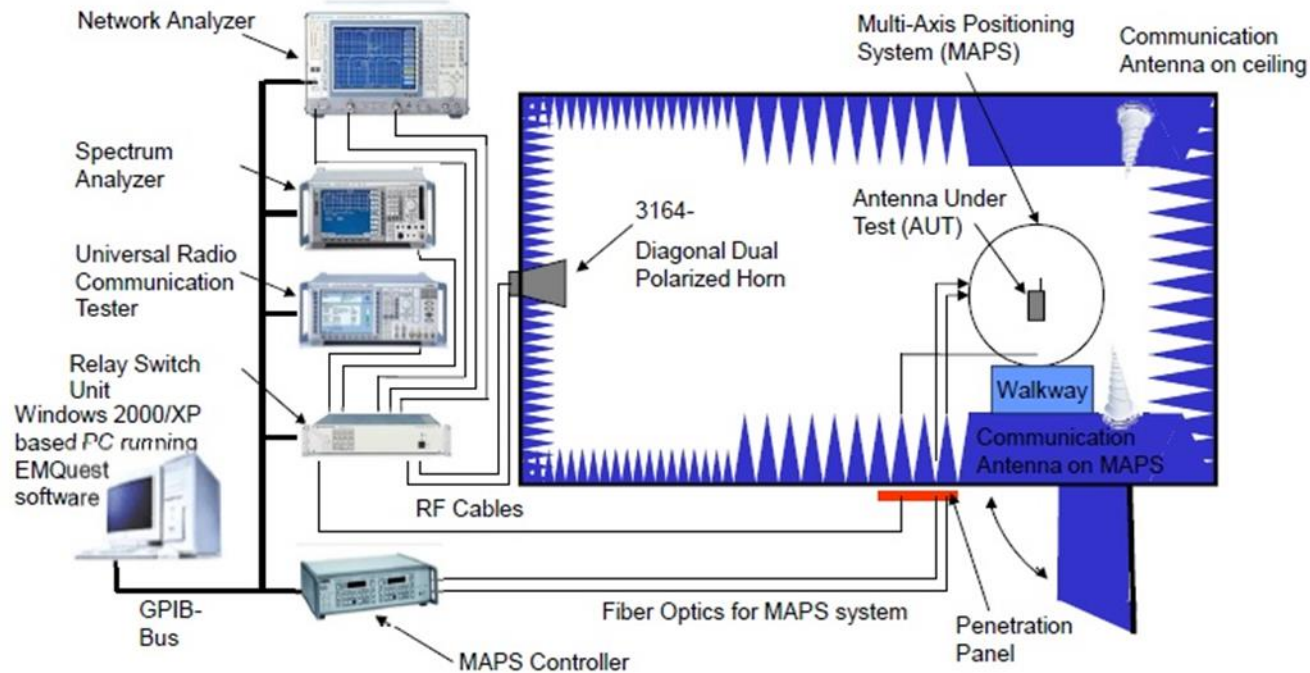
Frequency (MHz)	2400	2410	2420	2440	2450	2460	2470	2480	2490	2500
H+V. (Max.)	0.53	1.22	1.25	1.89	2.10	2.01	1.85	1.98	1.37	1.98
H-Pol. (Max.)	-8.92	-6.85	-10.04	-9.02	-9.85	-10.53	-11.48	-11.47	-11.00	-11.29
V-Pol. (Max.)	0.37	0.97	0.93	1.66	1.83	1.84	1.68	1.78	1.23	1.89

2D - Φ Pattern



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