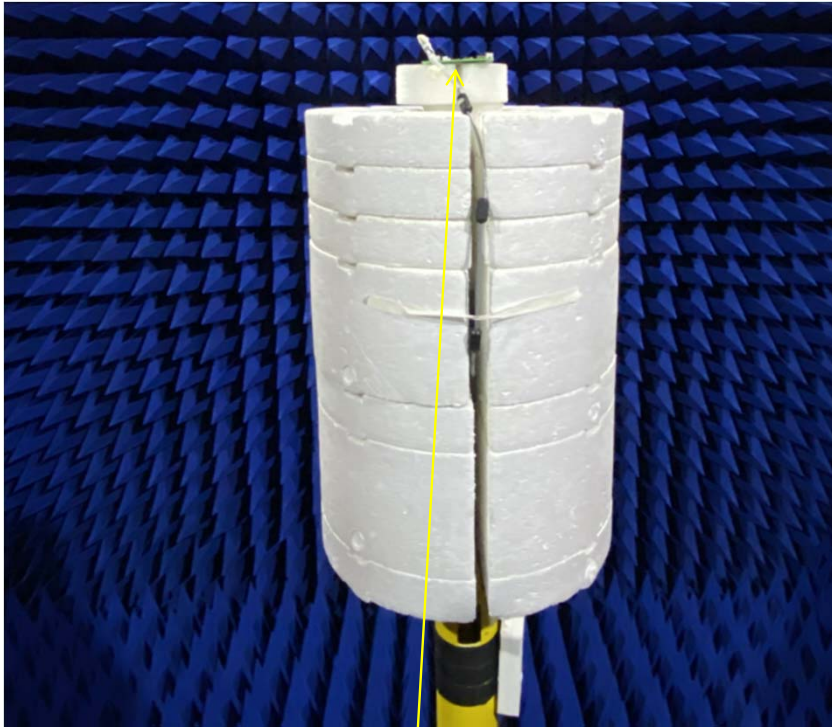


Antenna Study

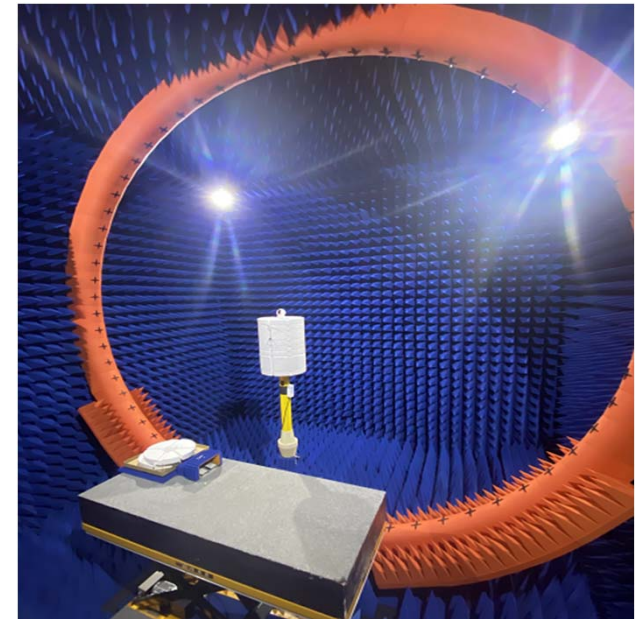
- **Client Name:**Fuzhou Conssin Lighting Co.,Ltd
- **Project Name:**ZBP 2000 Main control panel
- **Debugging frequency band:** 2400-2500MHz
- **Valuation date:** 2023.03.15

Internal Antenna

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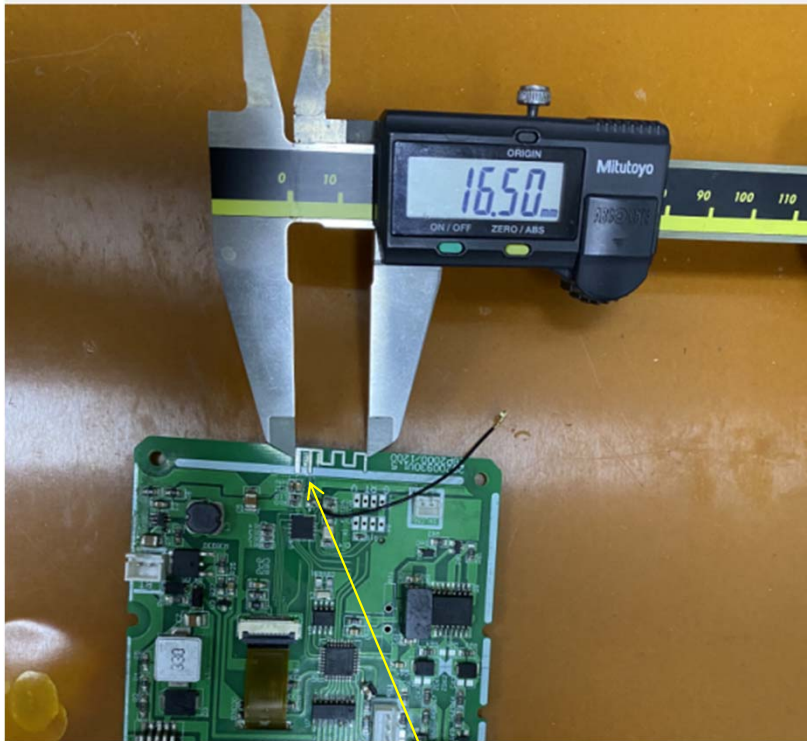
Testing environment



Testing 3D microwave darkroom(6m*6m*6m)

External Antenna

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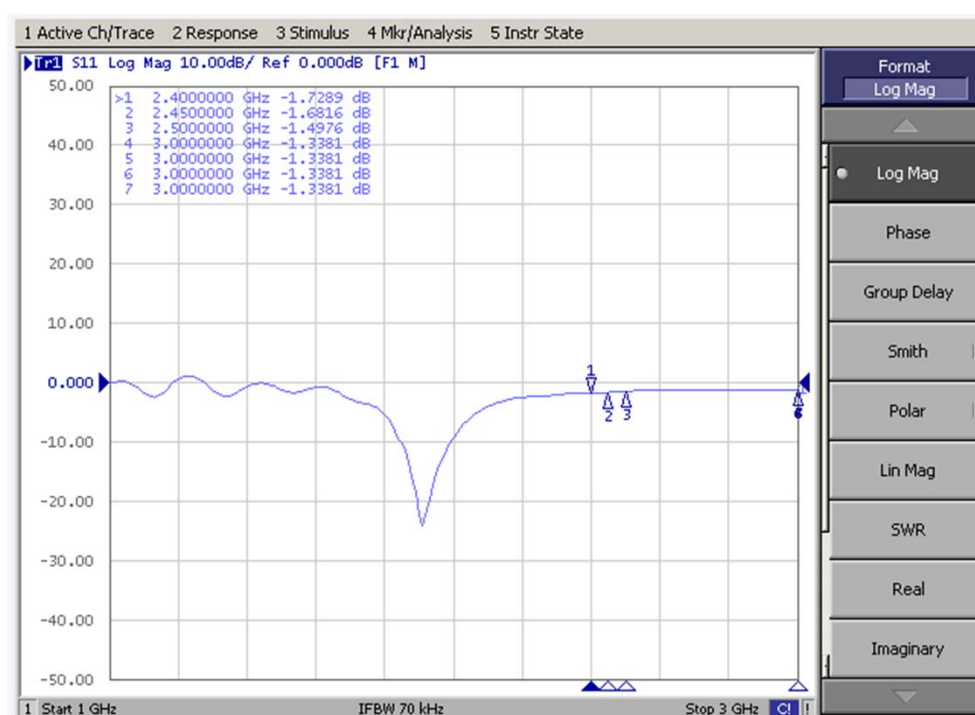
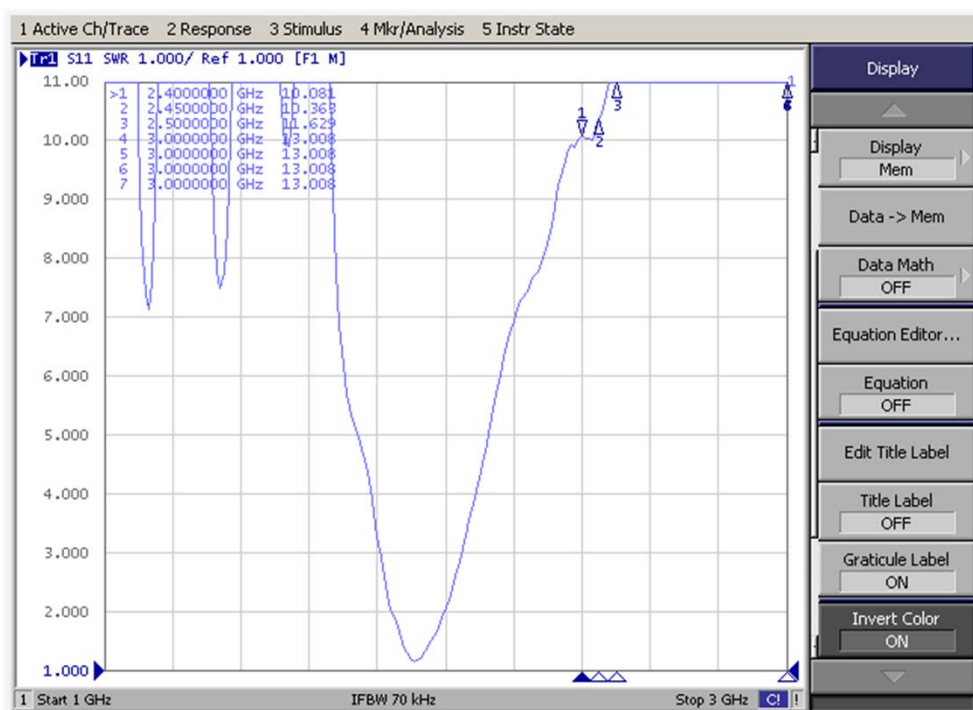


Antenna

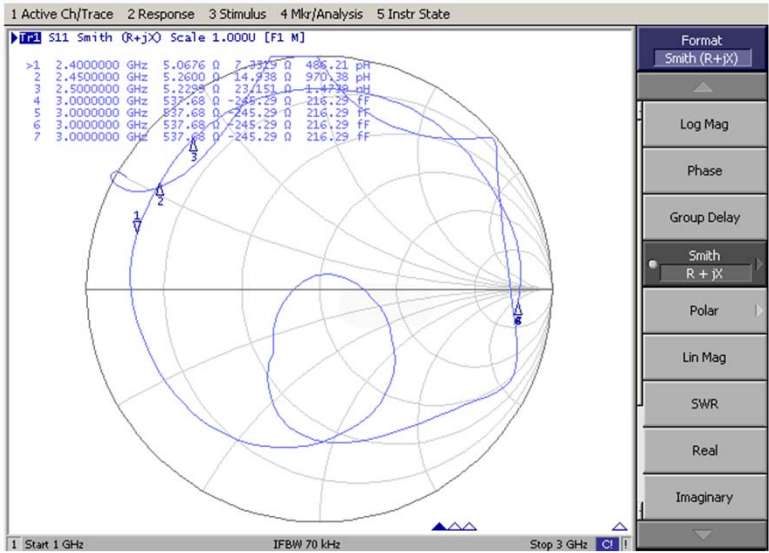
- Antenna name: 2.4G
- Antenna Type: PIFA
- Covers : 2400-2500MHz

S Parameter_Return Loss&VSWR

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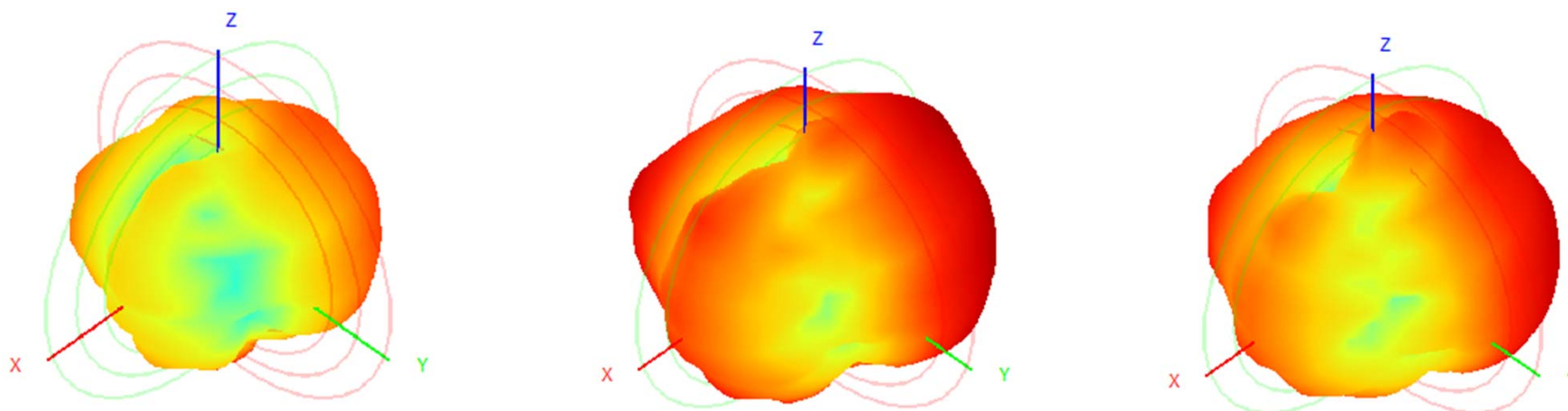
Efficiency and Gain-Smith

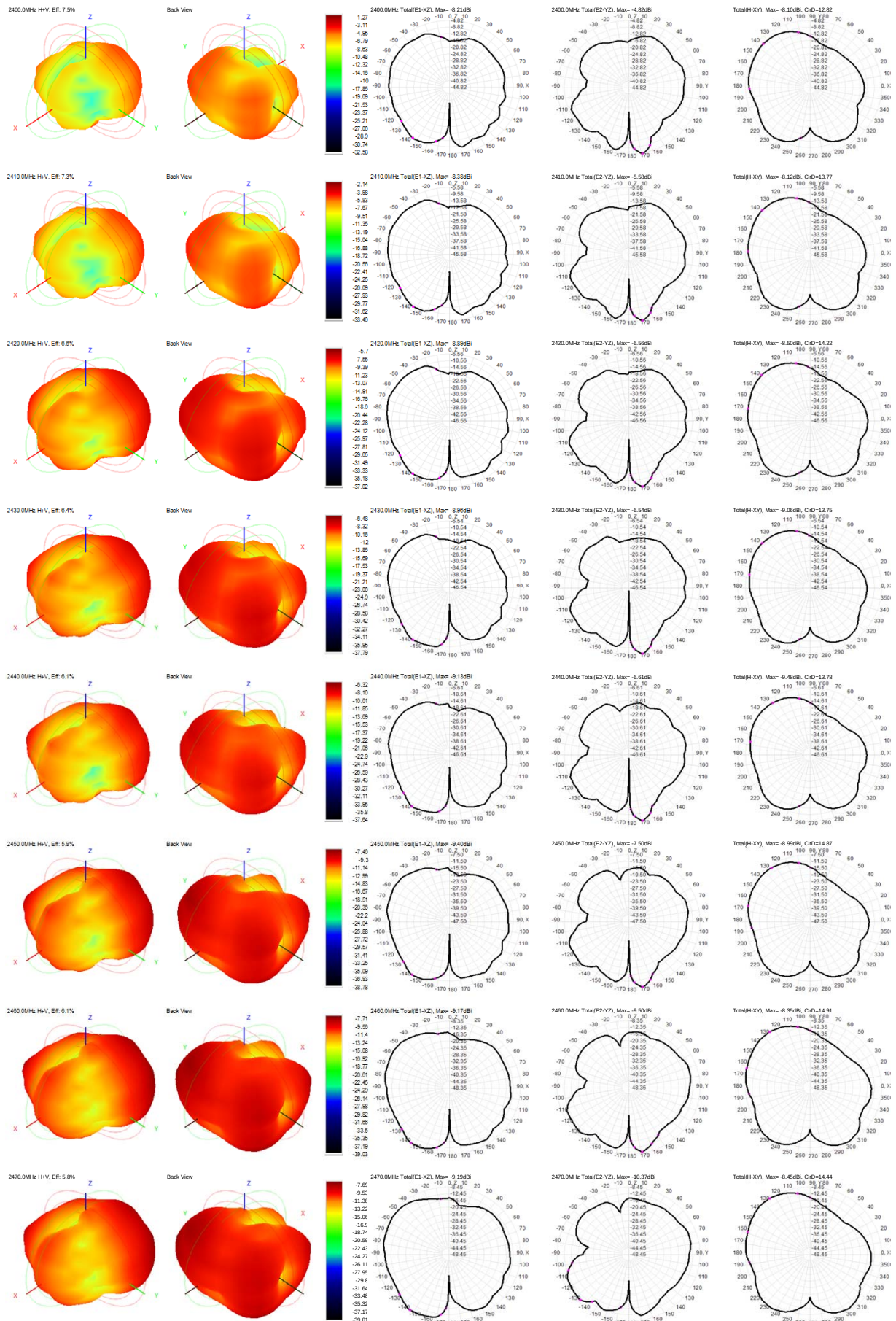


Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Gain (dBi)	-1.27	-2.14	-5.70	-6.48	-6.32	-7.46	-7.71	-7.69	-8.11	-6.53	-7.25
Efficiency (%)	7.49	7.25	6.57	6.38	6.12	5.90	6.06	5.80	5.21	5.25	4.94

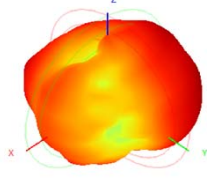
Freespace Environment Performance – WIFI

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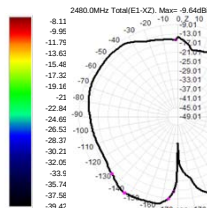
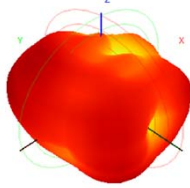




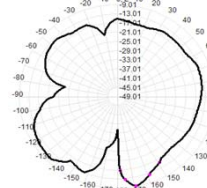
2480.0MHz H+V, Eff: 5.2%



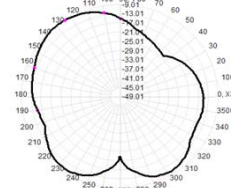
Back View



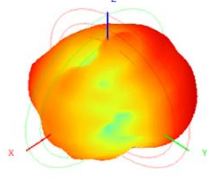
2480.0MHz Total(E2-YZ), Max=-9.52dBi



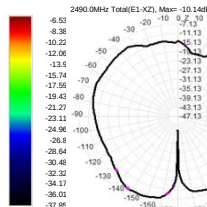
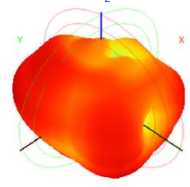
Total(H+V), Max=-9.01dBi, C/D=15.15



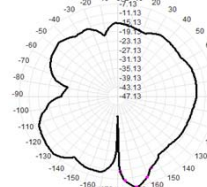
2490.0MHz H+V, Eff: 5.2%



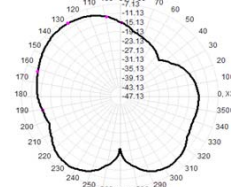
Back View



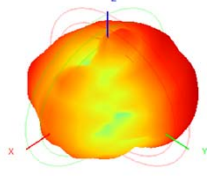
2490.0MHz Total(E2-YZ), Max=-7.13dBi



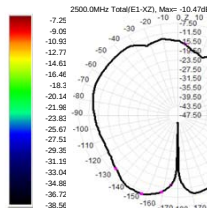
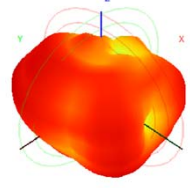
Total(H+V), Max=-9.16dBi, C/D=16.02



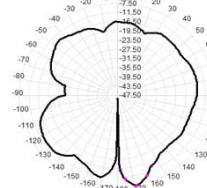
2500.0MHz H+V, Eff: 4.9%



Back View



2500.0MHz Total(E2-YZ), Max=-7.50dBi



Total(H+V), Max=-9.46dBi, C/D=16.82

