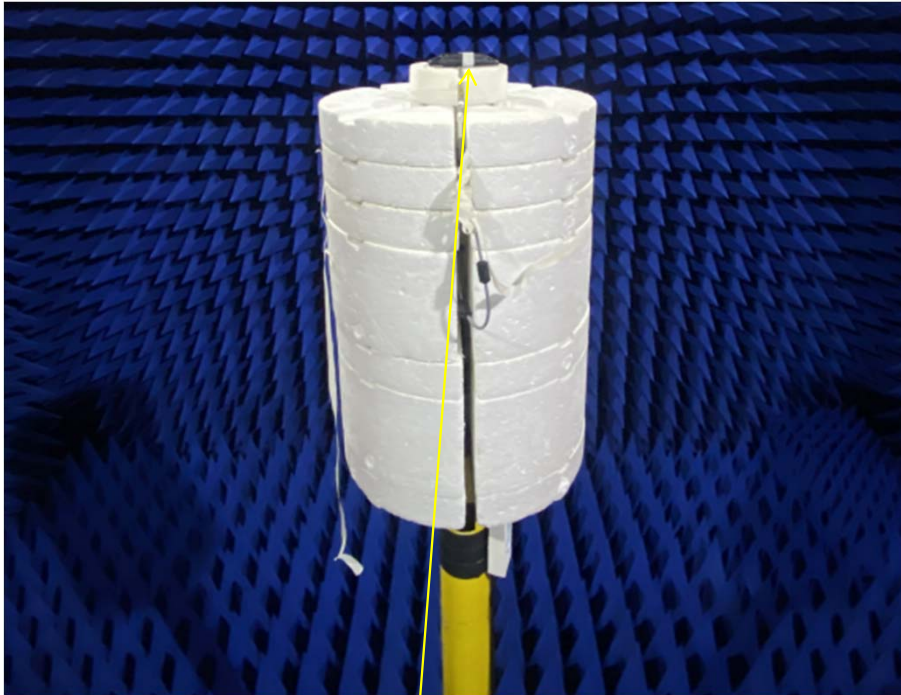


## Antenna Study

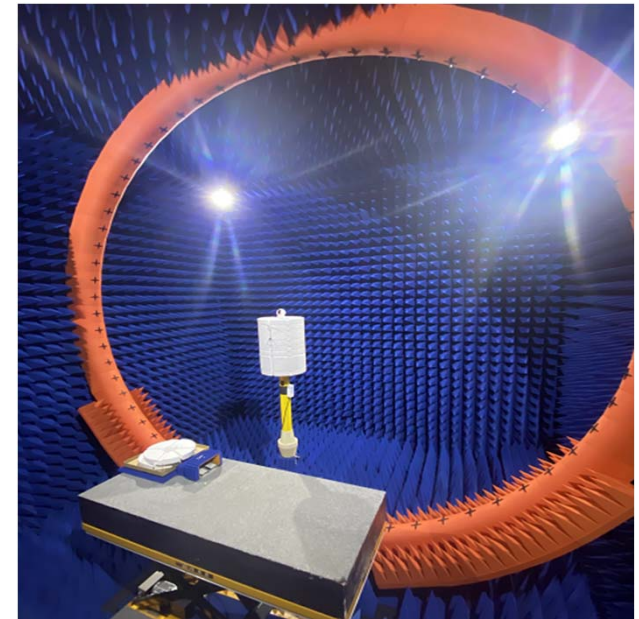
- **Client Name:SCALA Digital Technology(Ningbo) Co., LTD**
- **Project Name:Asset Tag**
- **Debugging frequency band: 2400-2500MHz**
- **Valuation date: 2023.04.24**

# PCB Antenna

Dongguan UB Electronics Co., Ltd



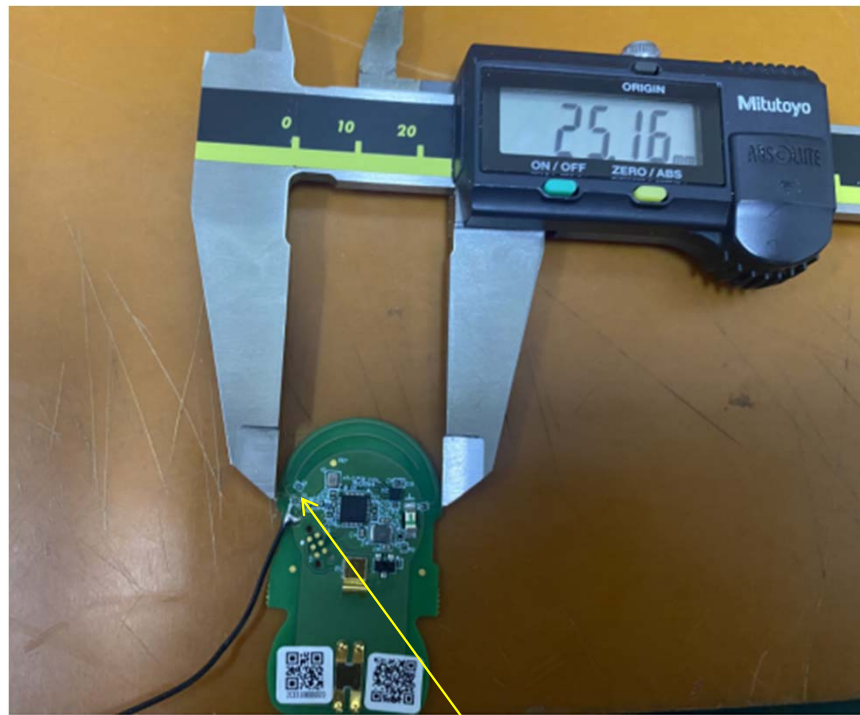
Testing environment



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

# PCB Antenna

Dongguan UB Electronics Co., Ltd

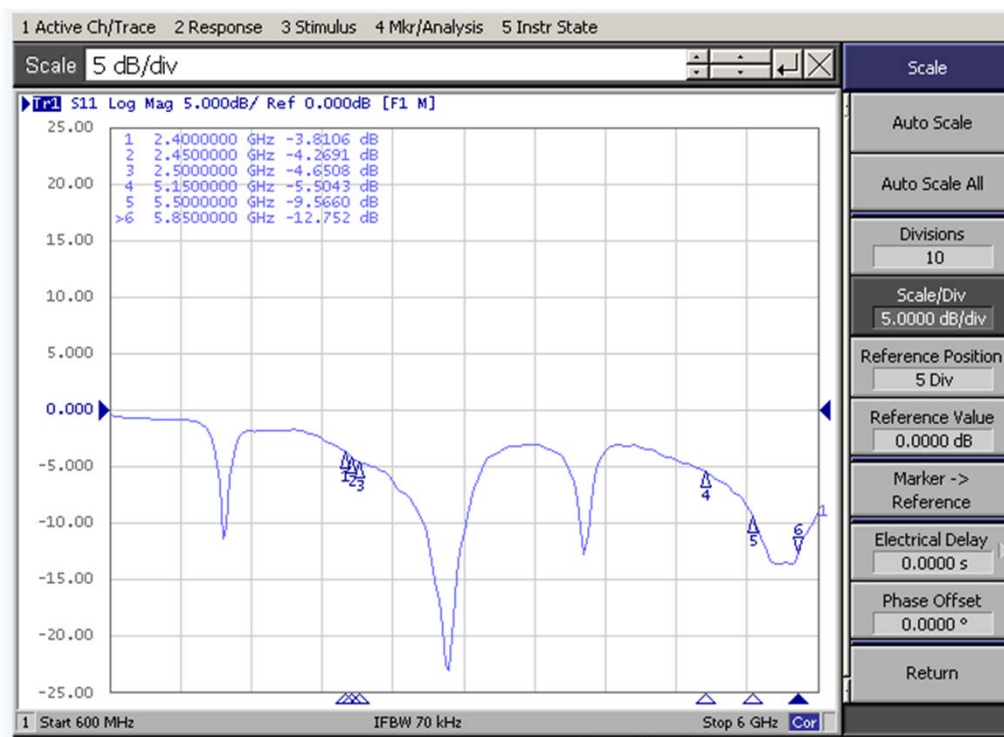
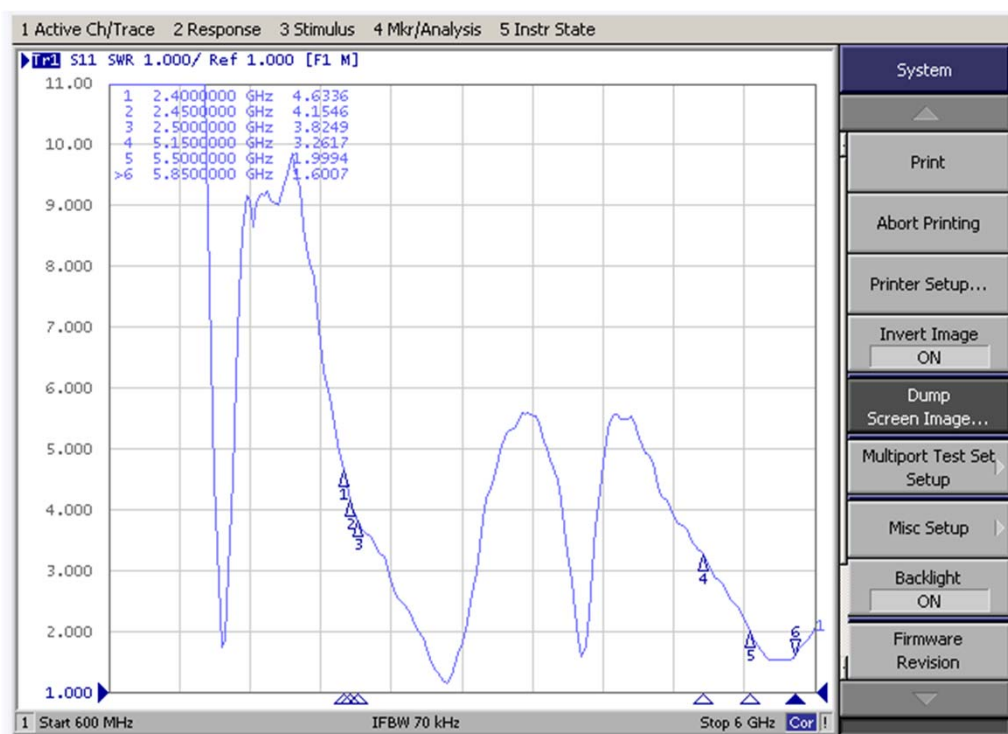


Antenna

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

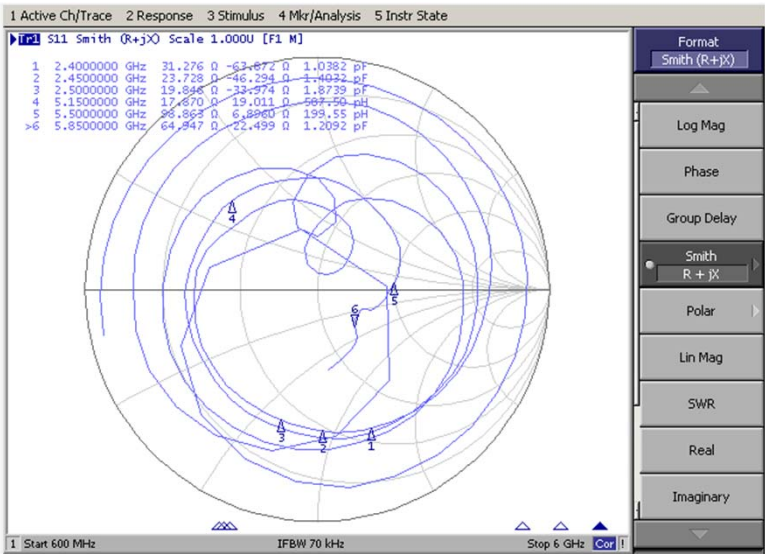
# S Parameter\_Return Loss&VSWR

Dongguan UB Electronics Co., Ltd

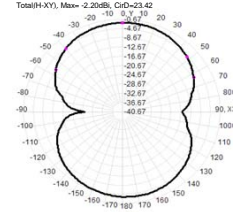
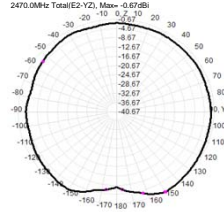
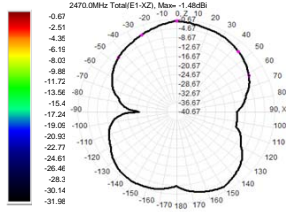
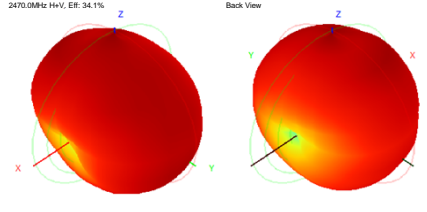
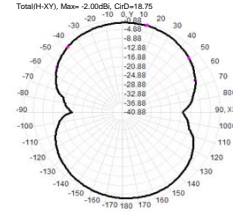
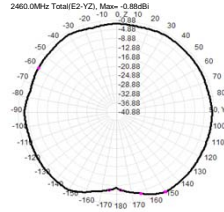
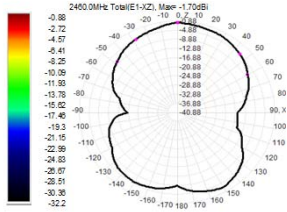
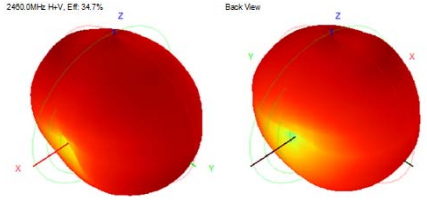
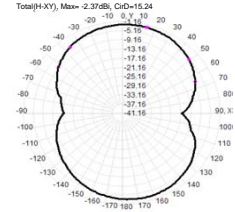
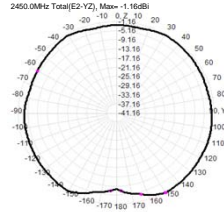
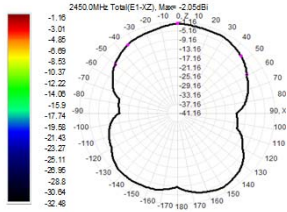
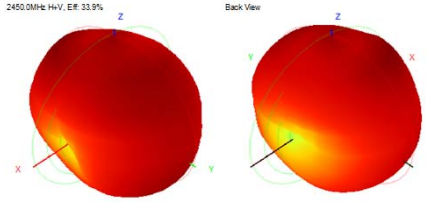
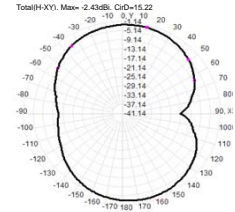
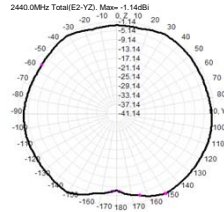
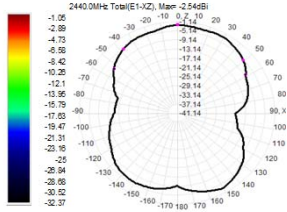
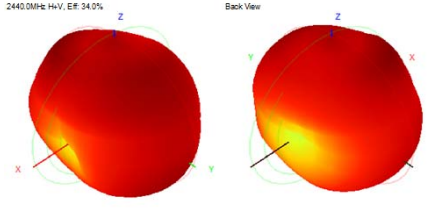
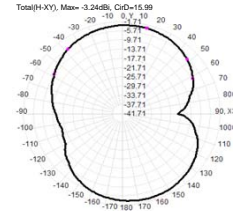
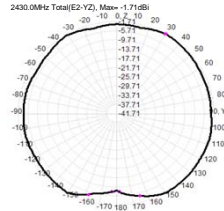
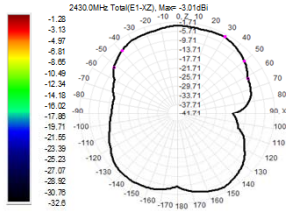
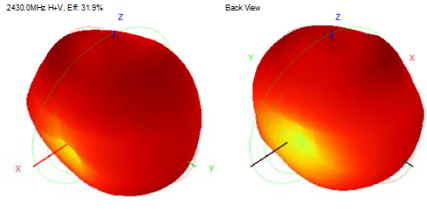
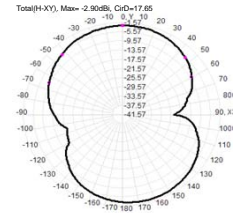
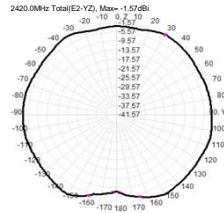
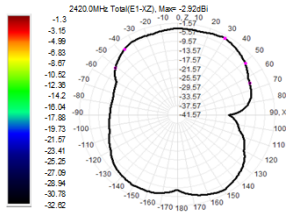
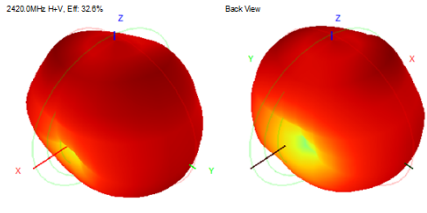
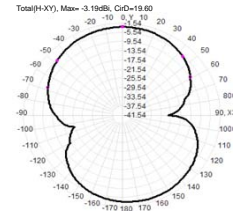
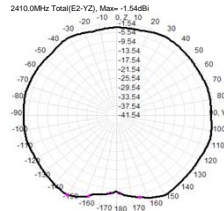
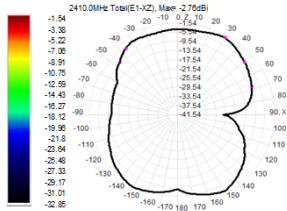
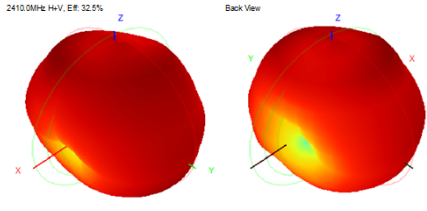
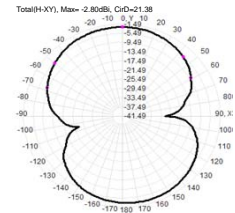
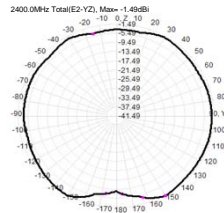
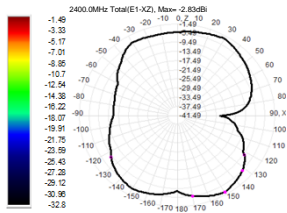
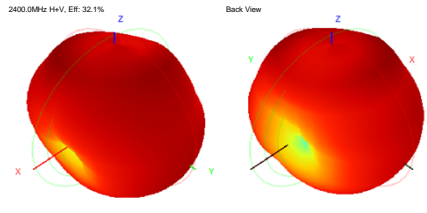


# Efficiency and Gain-Smith

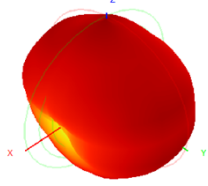
Dongguan UB Electronics Co., Ltd



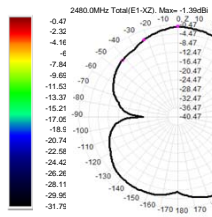
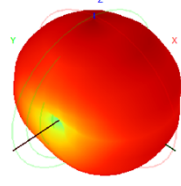
Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Gain (dBi)	-1.49	-1.54	-1.30	-1.28	-1.05	-1.16	-0.88	-0.67	-0.47	-0.66	-0.26
Efficiency (%)	32.12	32.51	32.57	31.88	34.04	33.91	34.72	34.12	36.53	34.03	36.08



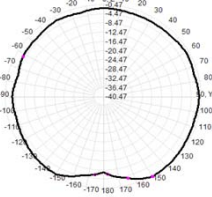
2480.0MHz H+V, Ef: 36.5%



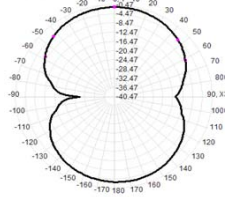
Back View



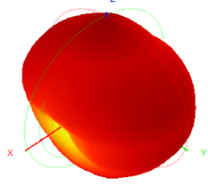
2480.0MHz Total(E2-YZ), Max=-0.47dB



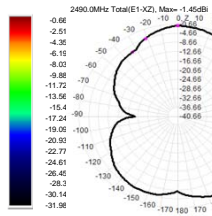
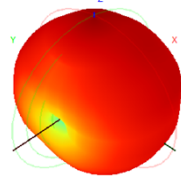
Total(H+V), Max=-1.58dB, CrD=25.18



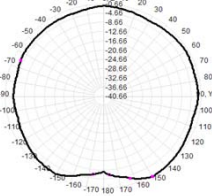
2490.0MHz H+V, Ef: 34.0%



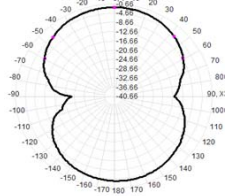
Back View



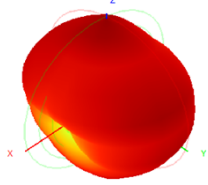
2490.0MHz Total(E2-YZ), Max=-0.66dB



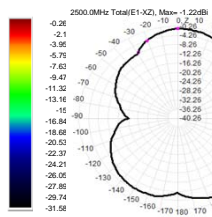
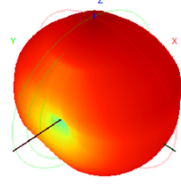
Total(H+V), Max=-2.13dB, CrD=21.50



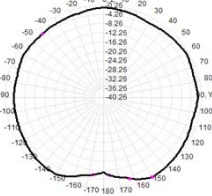
2500.0MHz H+V, Ef: 36.1%



Back View



2500.0MHz Total(E2-YZ), Max=-0.26dB



Total(H+V), Max=-1.90dB, CrD=19.40

