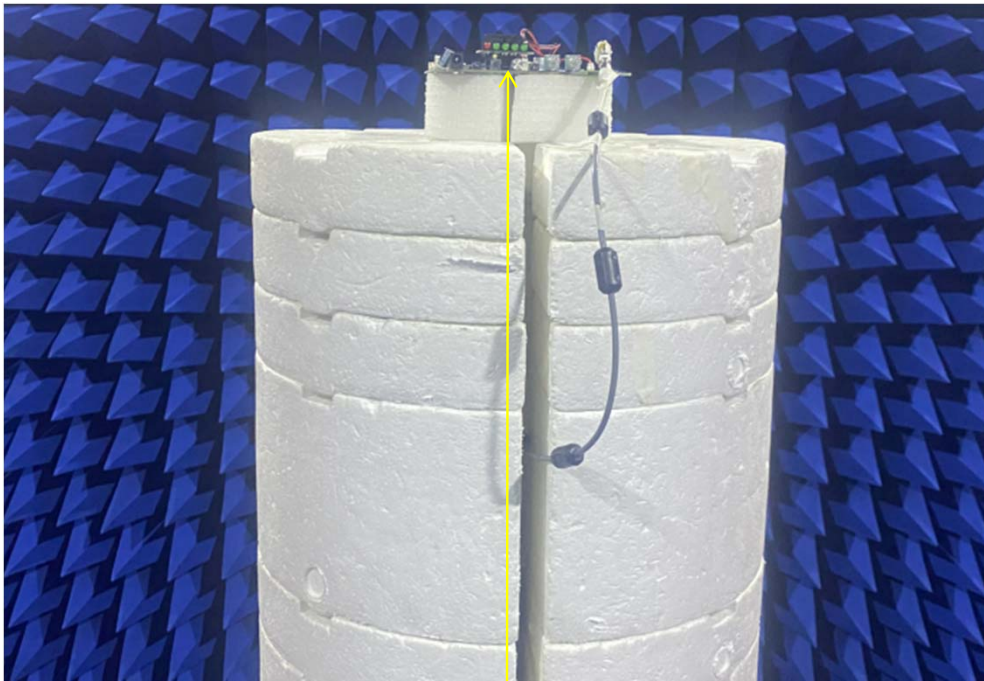


SEP Antenna Study

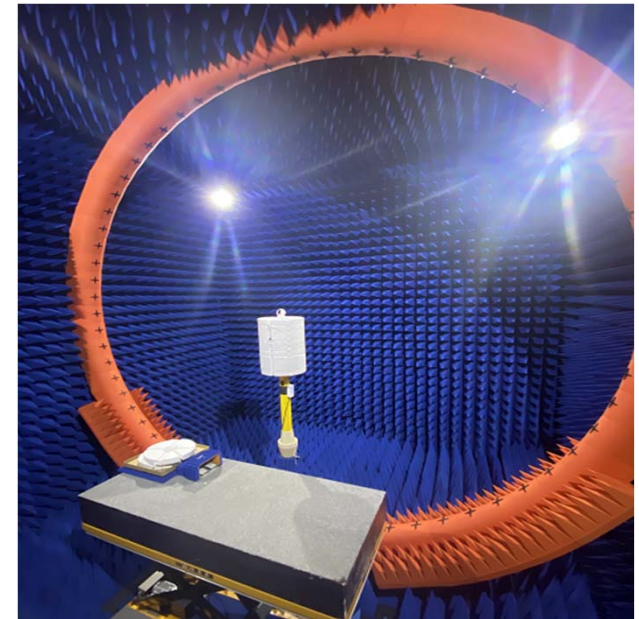
- **Client Name:COLINSE INC.**
- **Project Name:SEP**
- **Debugging frequency band: 2400-2500MHz**
- **Valuation date: 2022.12.30**

Internal Antenna

Dongguan UB Electronics Co., Ltd



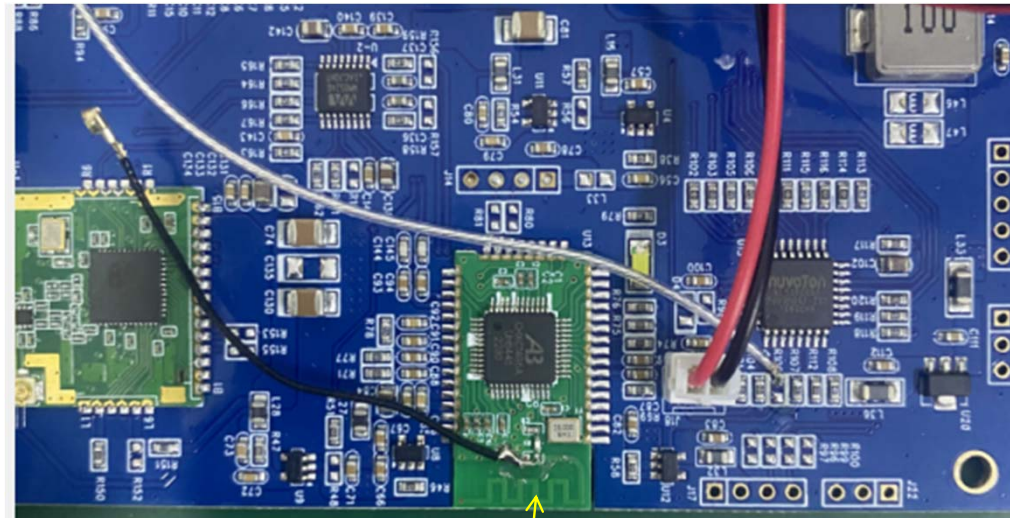
Testing environment



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

External Antenna

Dongguan UB Electronics Co., Ltd

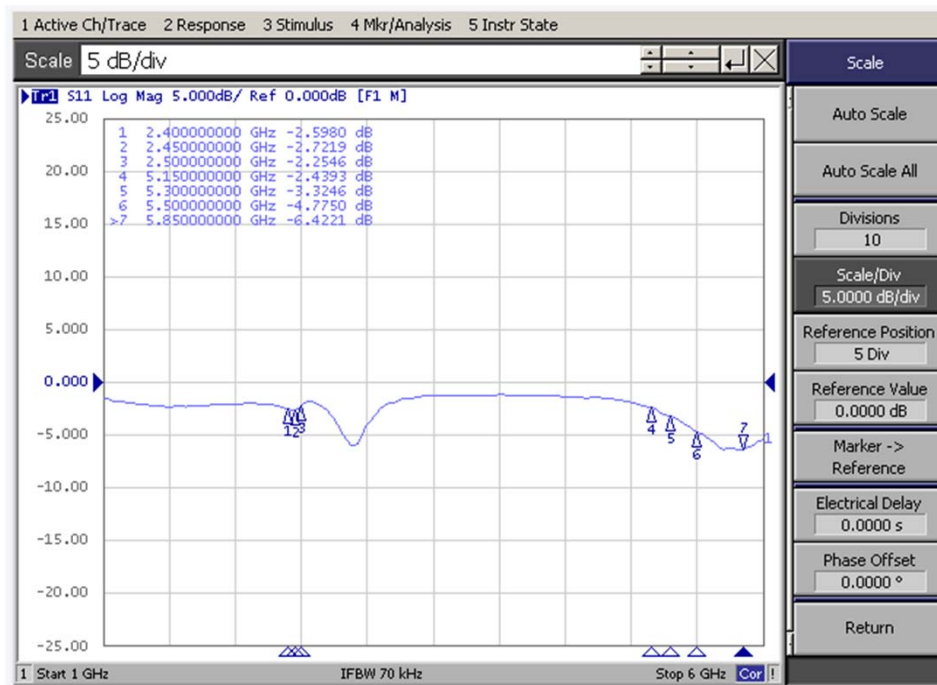
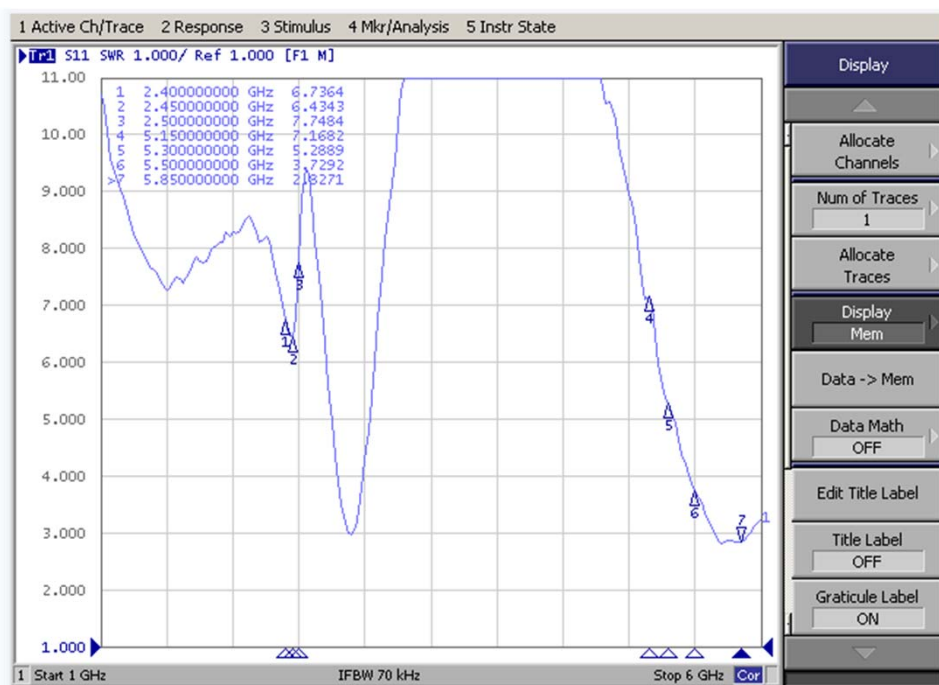


Antenna

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

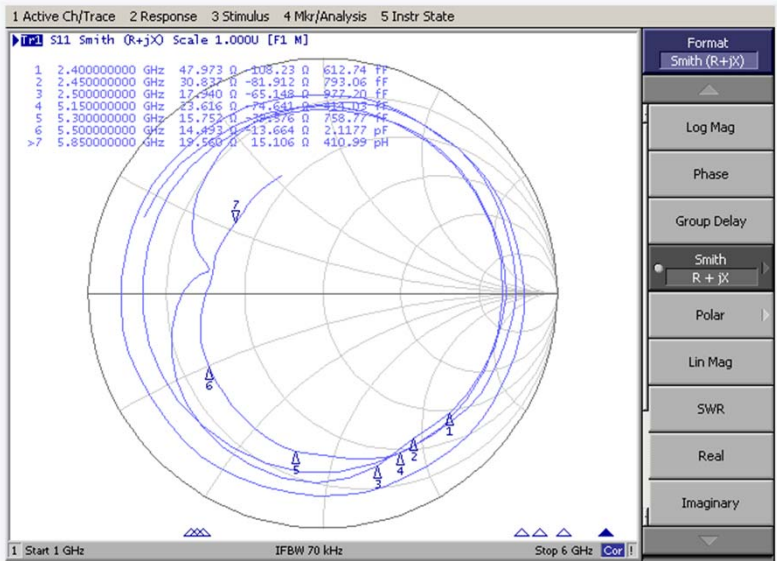
S Parameter_Return Loss&VSWR

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)	-6.81	-5.35	-7.11	-9.12	-8.68	-8.07	-6.99	-5.54	-4.81	-5.30	-5.20
Efficiency (%)	2.82	3.26	3.61	4.04	4.59	5.60	6.65	7.89	9.13	9.45	10.44

