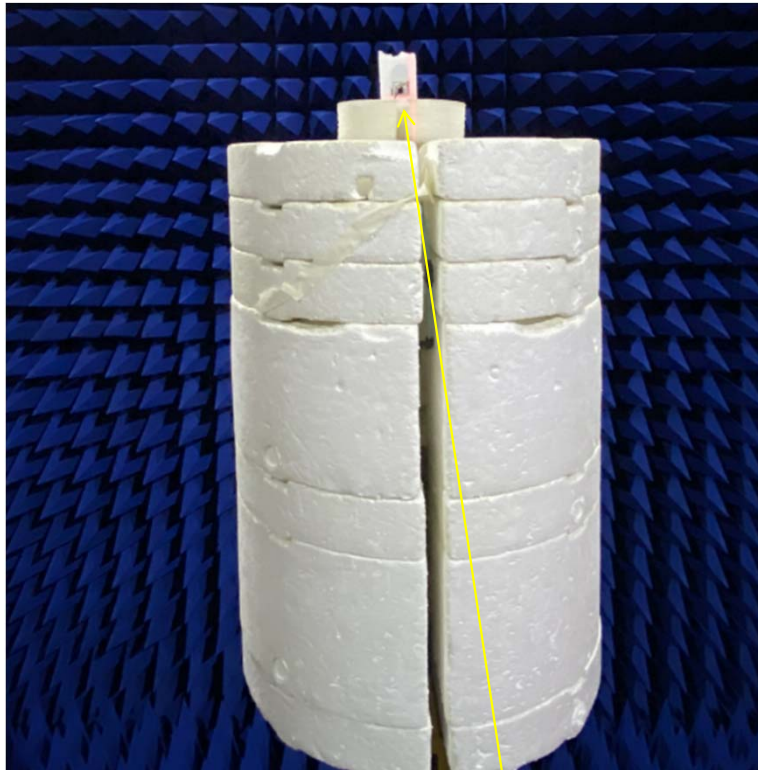


Antenna Study

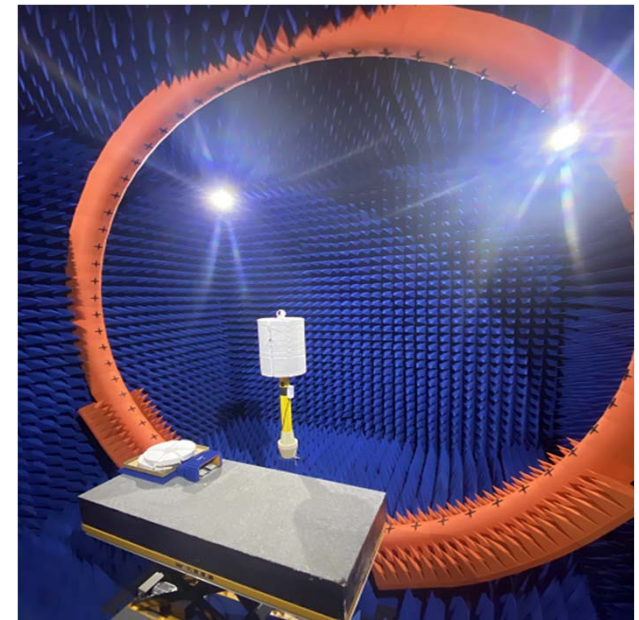
- **Client Name: MClimate Jsc**
- **Project Name : MClimate Vicki LoRaWAN**
- **Debugging frequency band: 900-920HMz**
- **Valuation date: 2024.06.25**
- **Linkman contacts: gao shang 18925546490**

PCB Antenna

Dongguan UB Electronics Co., Ltd



Testing environment



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

PCB Antenna

Dongguan UB Electronics Co., Ltd

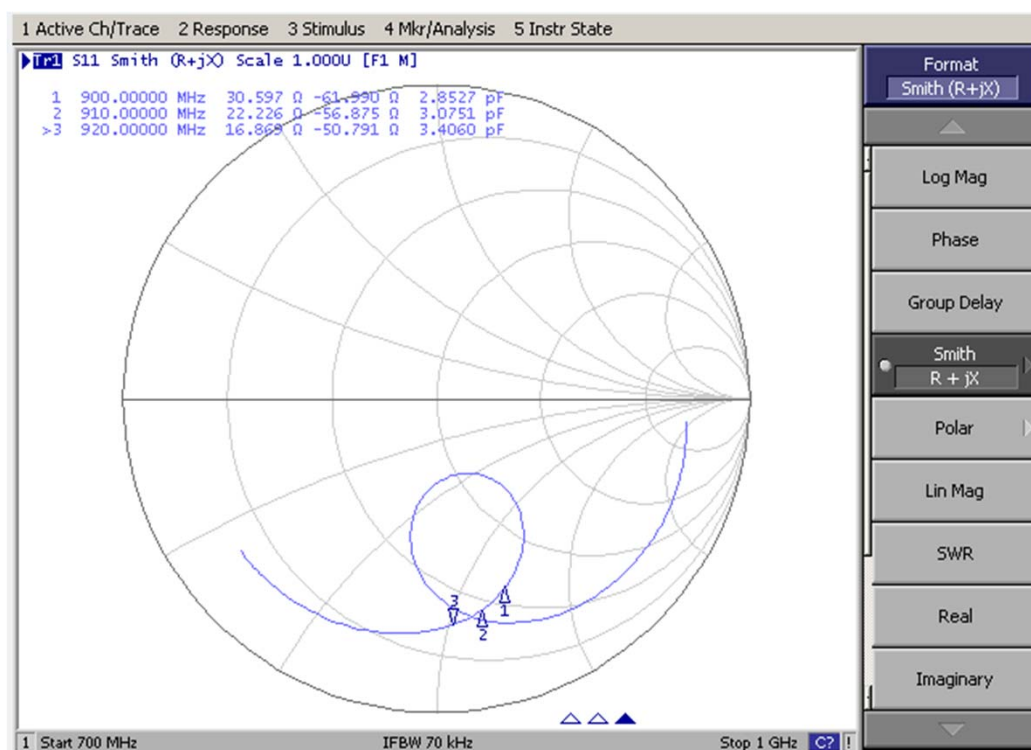
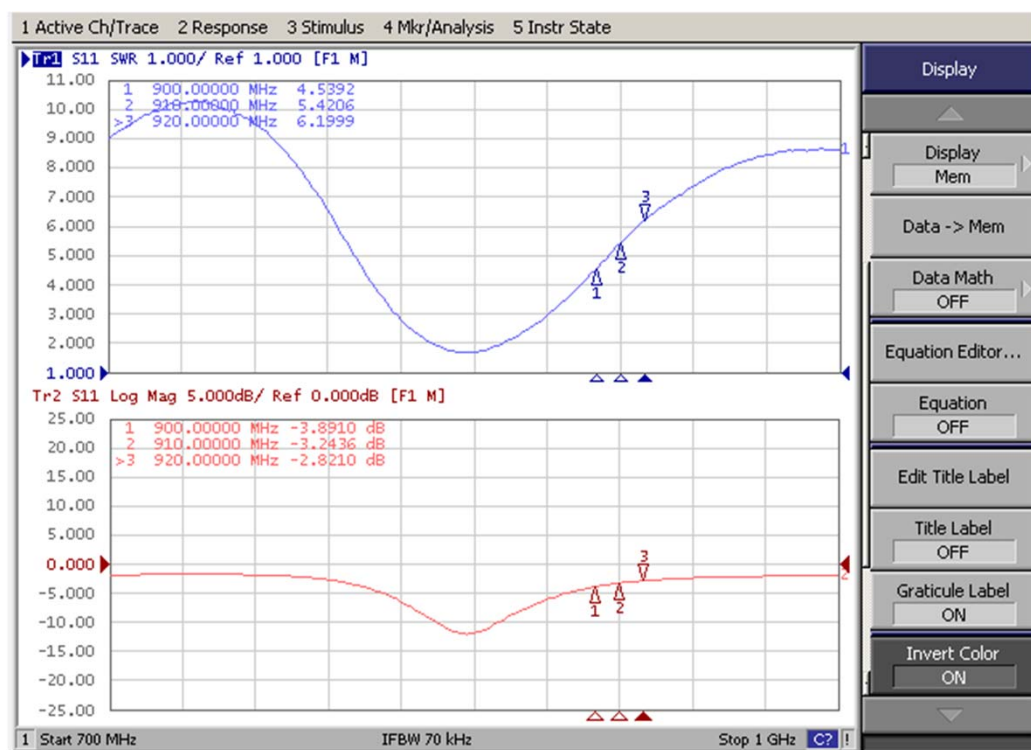


Antenna

- Antenna name: LoRa
- Antenna Type: PCB
- Covers : 900/920MHz

S Parameter_Return Loss&VSWR-Smith

Dongguan UB Electronics Co., Ltd



Efficiency and Gain

Frequency ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Frequency (MHz)	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920
Gain (dBi)	-5.74	-5.75	-5.76	-5.78	-5.79	-5.80	-5.81	-5.84	-5.85	-5.88	-5.91	-5.90	-5.90	-5.91	-5.92	-5.92	-5.94	-5.96	-5.97	-5.96	-5.94
Efficiency (%)	4.62	4.61	4.60	4.59	4.57	4.55	4.53	4.50	4.47	4.43	4.40	4.38	4.36	4.33	4.30	4.28	4.25	4.22	4.20	4.19	4.18

