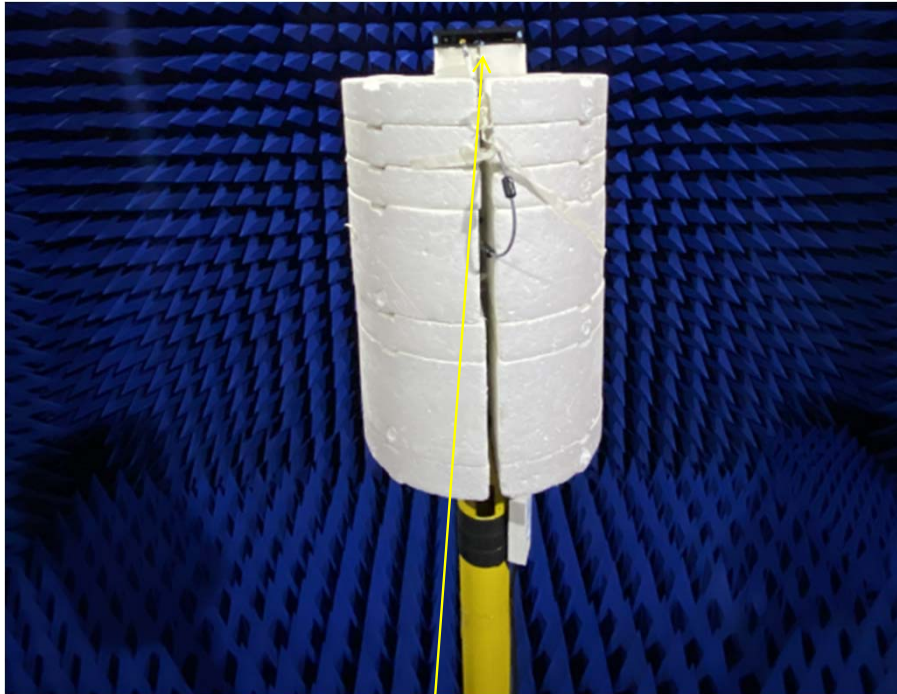


Antenna Study

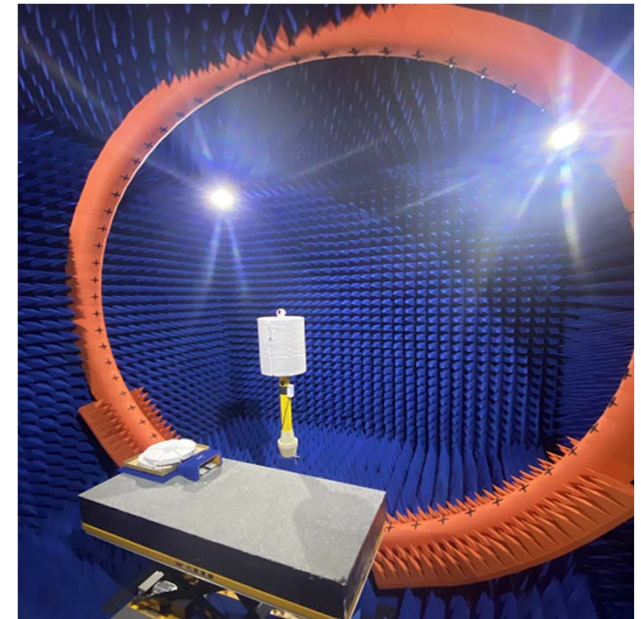
- **Client Name:COLINSE INC.**
- **Project Name:4DS Tactile System**
- **Debugging frequency band: 5150-5850MHz**
- **Valuation date: 2023.04.24**

PCB Antenna

Dongguan UB Electronics Co., Ltd



Testing environment



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

PCB Antenna

Dongguan UB Electronics Co., Ltd

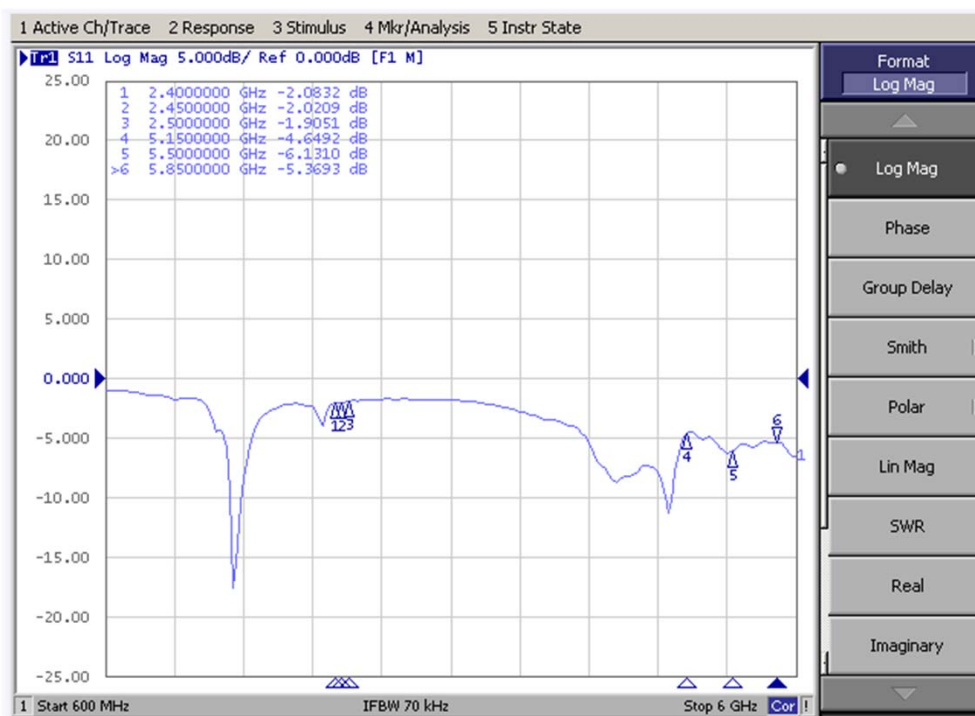
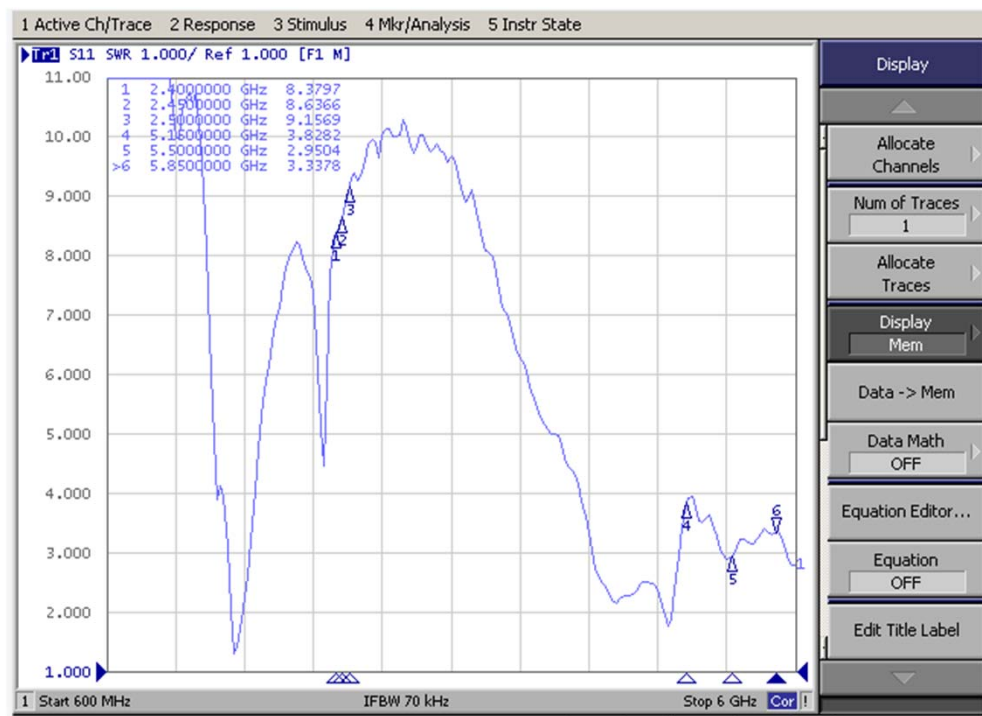


Antenna

- Antenna name: PCB Antenna
- Antenna Type: PCB
- Covers : 5150-5850MHz

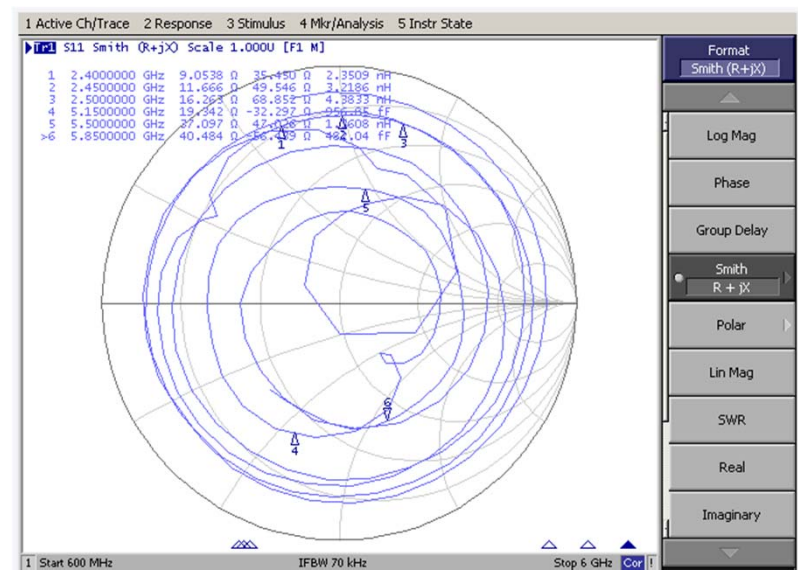
S Parameter_Return Loss&VSWR

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Efficiency and Gain-Smith

Dongguan UB Electronics Co., Ltd



Frequency ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Frequency (MHz)	5150.0	5200.0	5250.0	5300.0	5350.0	5400.0	5450.0	5500.0	5550.0	5600.0	5650.0	5700.0	5750.0	5800.0	5850.0
Gain (dBi)	-3.77	-3.75	-4.77	-5.63	-6.32	-6.21	-4.64	-2.37	-1.83	-2.21	-2.90	-3.50	-3.95	-4.74	-5.87
Efficiency (%)	6.15	6.27	5.36	4.97	5.02	5.44	7.80	11.16	11.88	10.61	9.03	7.96	7.40	6.65	5.91

