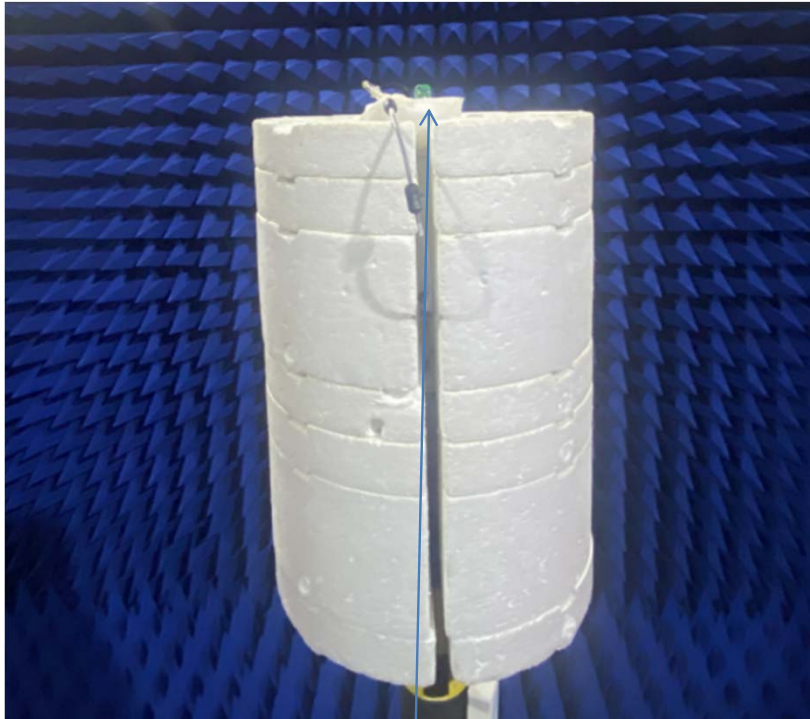


Antenna Study

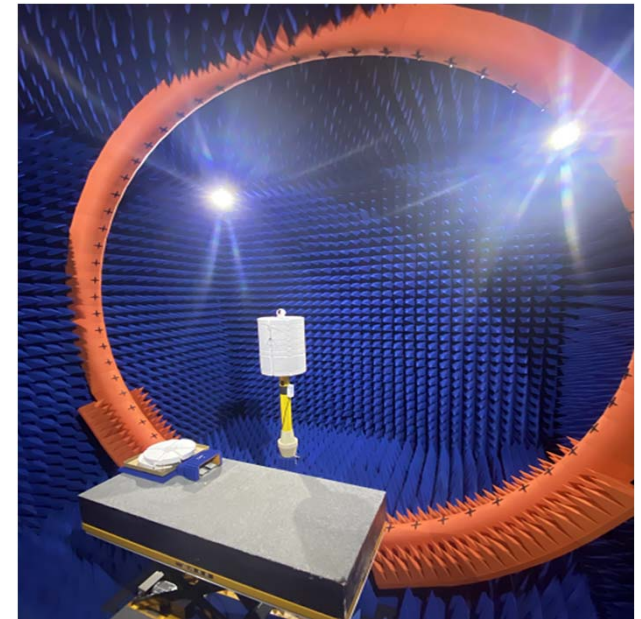
- **Client Name: Shanghai Representative Office of wheel group**
- **Project Name : sensor**
- **Debugging frequency band: 433MHz**
- **Valuation date: 2023.12.19**

Internal Antenna

Dongguan UB Electronics Co., Ltd



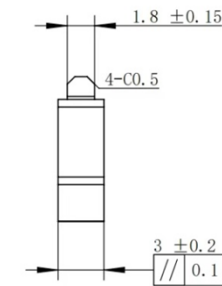
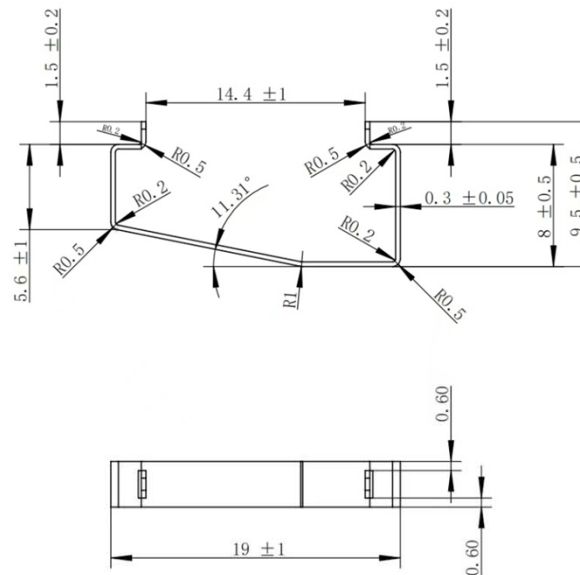
Testing environment



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

Internal Antenna

Donnauan UB Electronics Co., Ltd

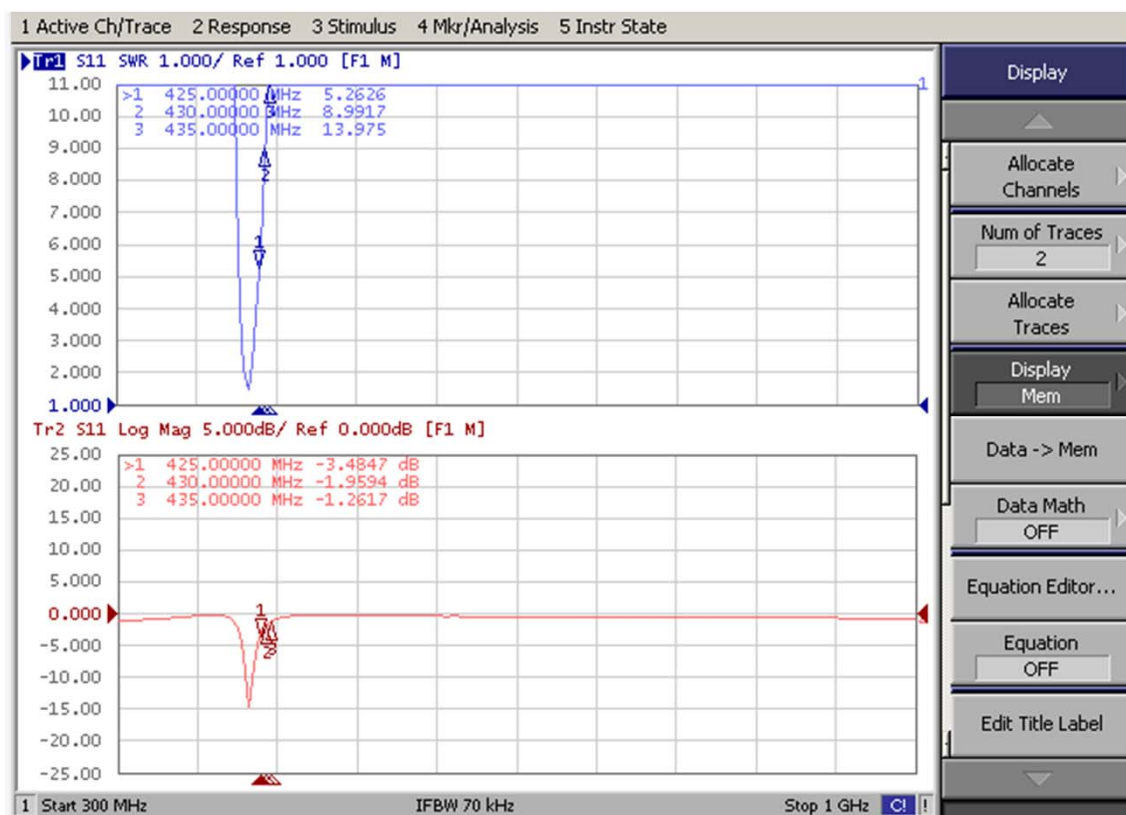


- Antenna name: 433MHz
- Antenna Type: Internal

Antenna

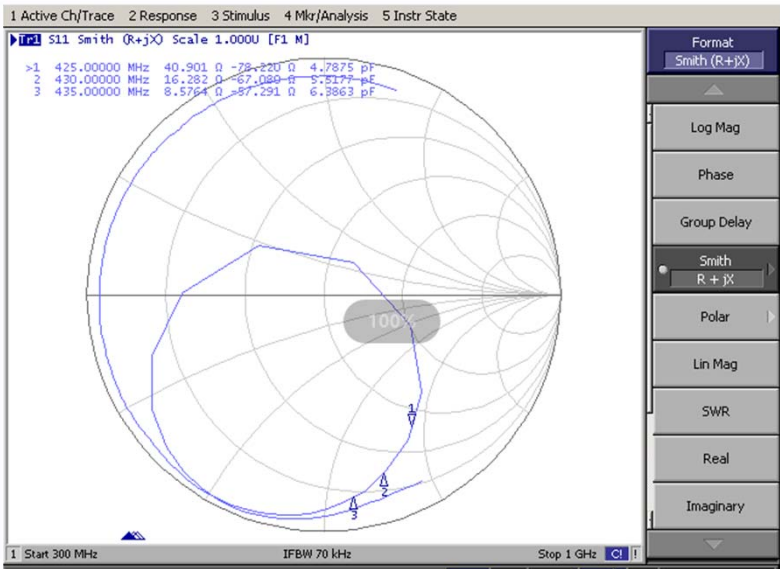
S Parameter_Return Loss&VSWR

Dongguan UB Electronics Co., Ltd

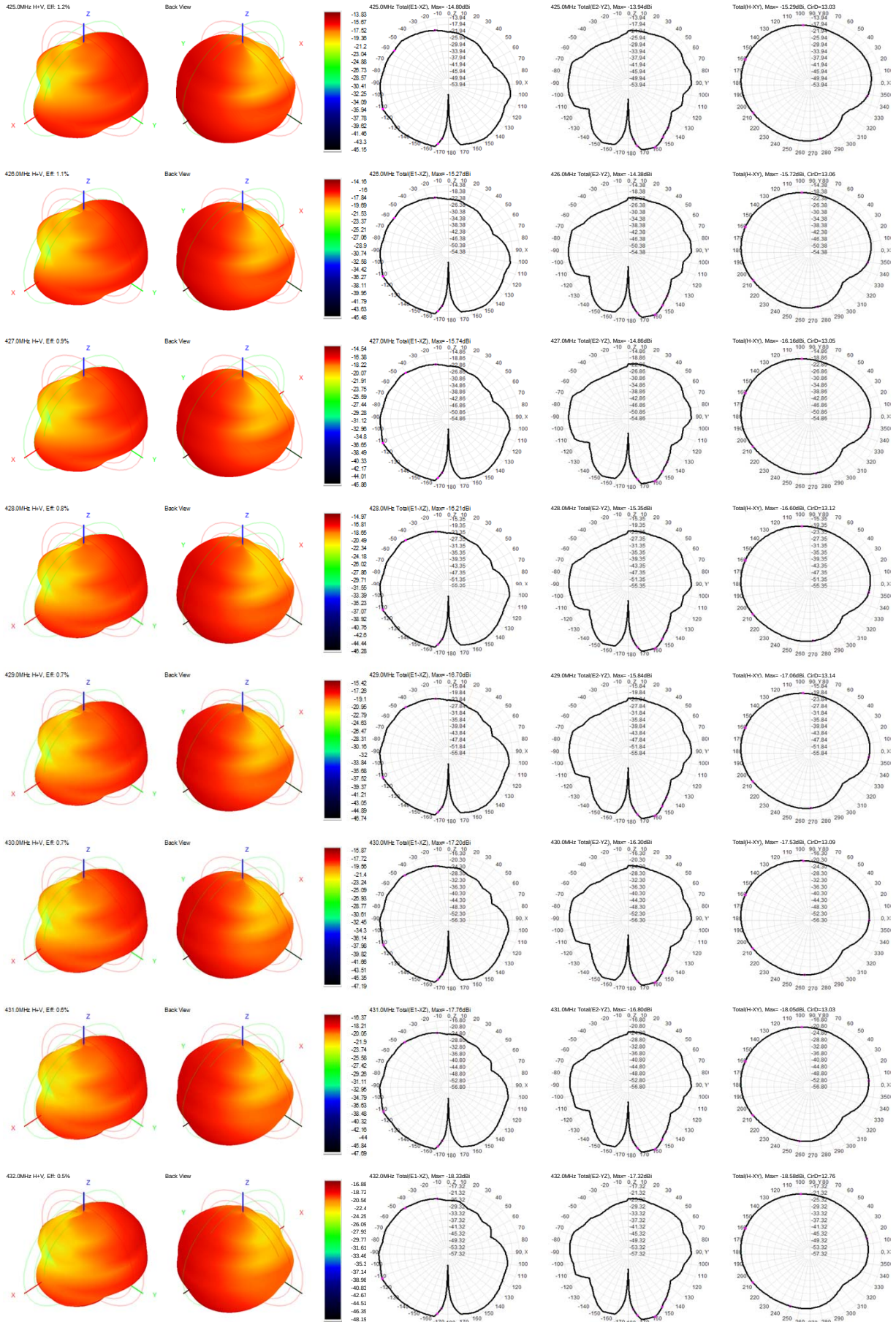


Efficiency and Gain-Smith

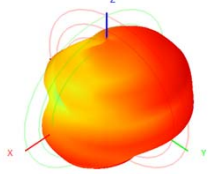
Dongguan UB Electronics Co., Ltd



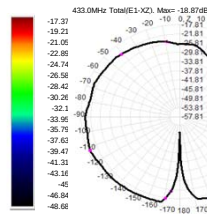
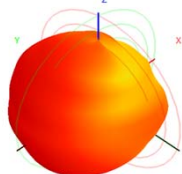
Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	425	426	427	428	429	430	431	432	433	434	435
Gain (dBi)	-13.83	-14.16	-14.54	-14.97	-15.42	-15.87	-16.37	-16.88	-17.37	-17.82	-18.31
Efficiency (%)	1.20	1.06	0.95	0.84	0.74	0.66	0.58	0.51	0.46	0.41	0.37



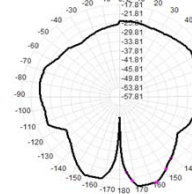
433.0MHz H+V, Eff: 0.5%



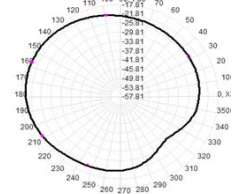
Back View



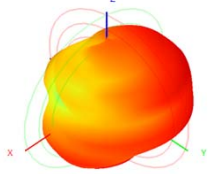
433.0MHz Total(E2-YZ), Max=-17.81dB



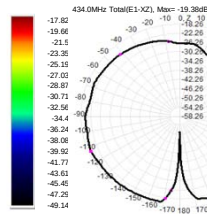
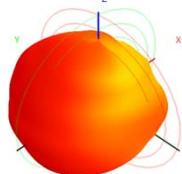
Total(H+V), Max=-19.07dB, CrD=12.56



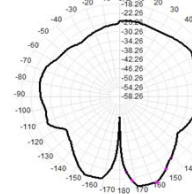
434.0MHz H+V, Eff: 0.4%



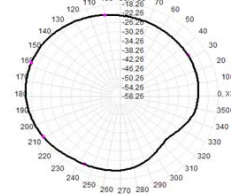
Back View



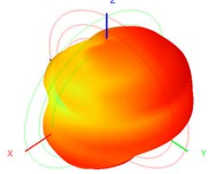
434.0MHz Total(E2-YZ), Max=-18.26dB



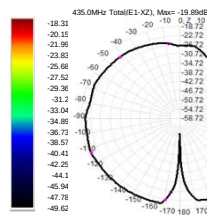
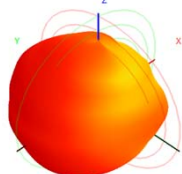
Total(H+V), Max=-19.56dB, CrD=12.46



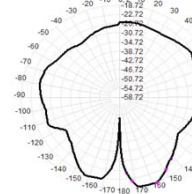
435.0MHz H+V, Eff: 0.4%



Back View



435.0MHz Total(E2-YZ), Max=-18.72dB



Total(H+V), Max=-20.06dB, CrD=12.26

