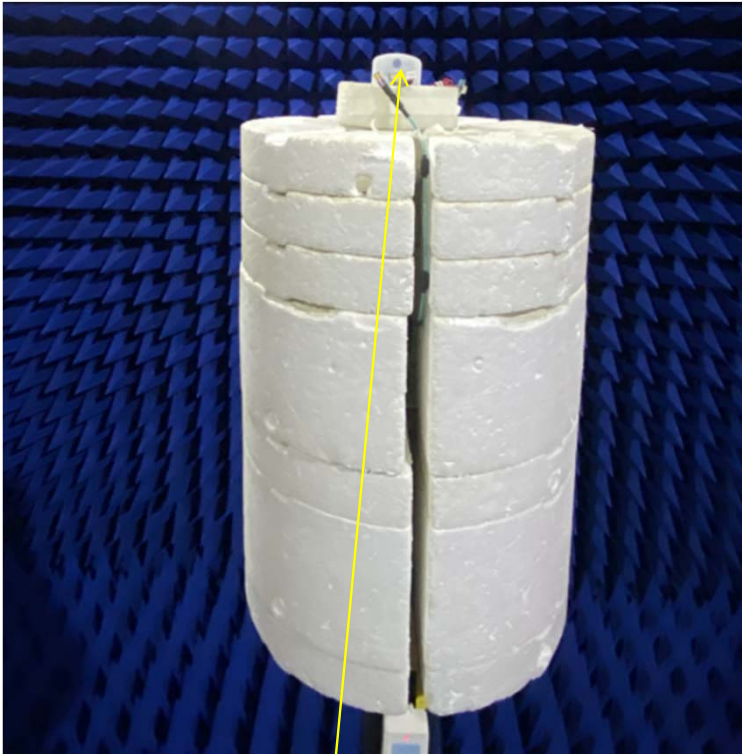


Antenna Study

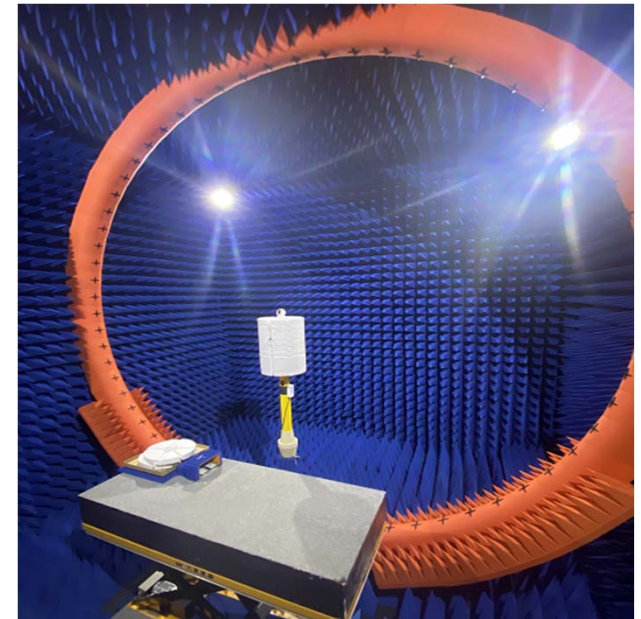
- **Client Name:TOWNSTEEL INC.**
- **Project Name : NET DOOR LOCK**
- **Debugging frequency band: 900/930/2400/2500HMz**
- **Valuation date: 2024.05.15**
- **Linkman contacts: gao shang 18925546490**

Internal Antenna

Dongguan UB Electronics Co., Ltd



Testing environment



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

Internal Antenna

Dongguan UB Electronics Co., Ltd

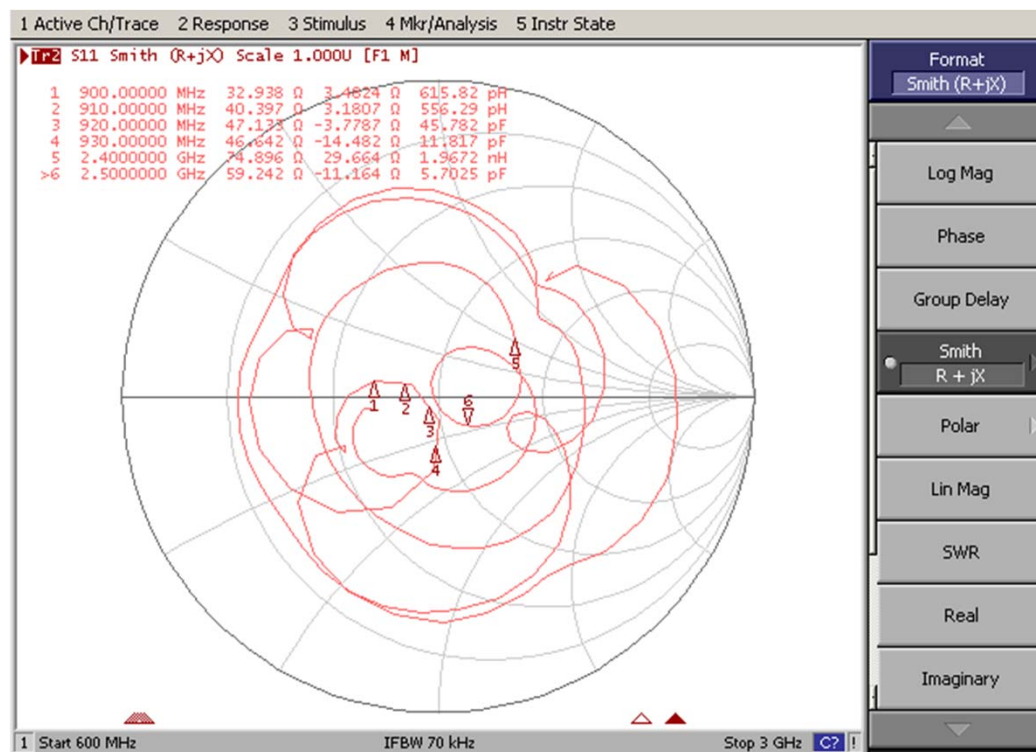
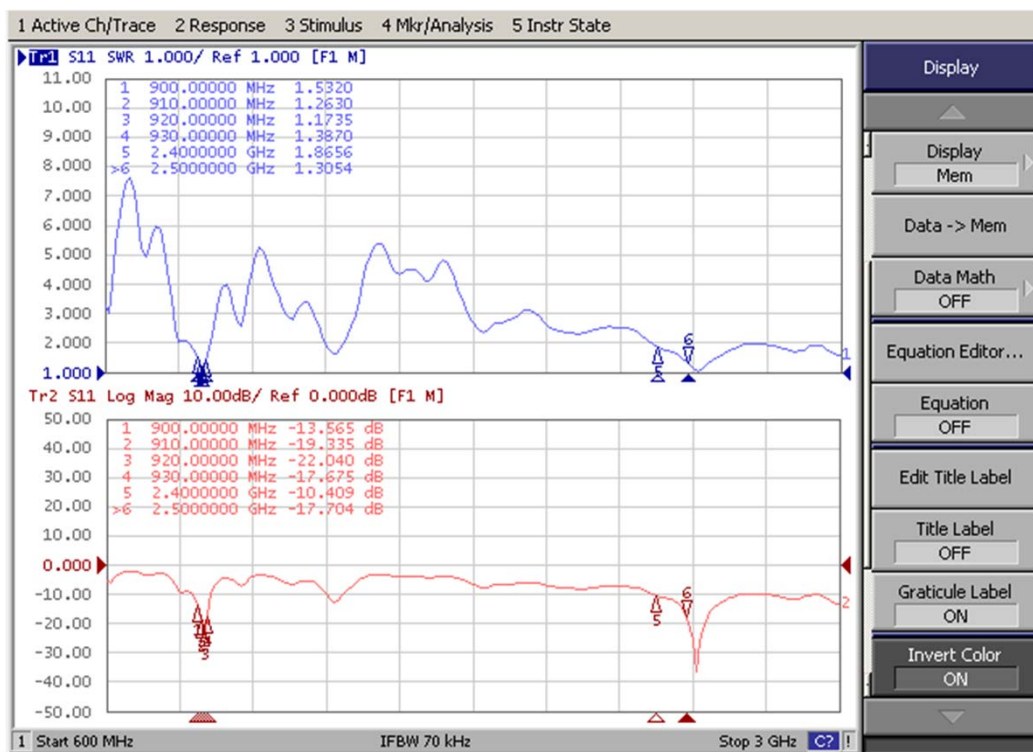


- Antenna name: NDL-ANT
- Antenna Type: Internal Antenna
- Covers : 900/930/2400/2500MHz

Antenna

S Parameter_Return Loss&VSWR-Smith

Dongguan UB Electronics Co., Ltd

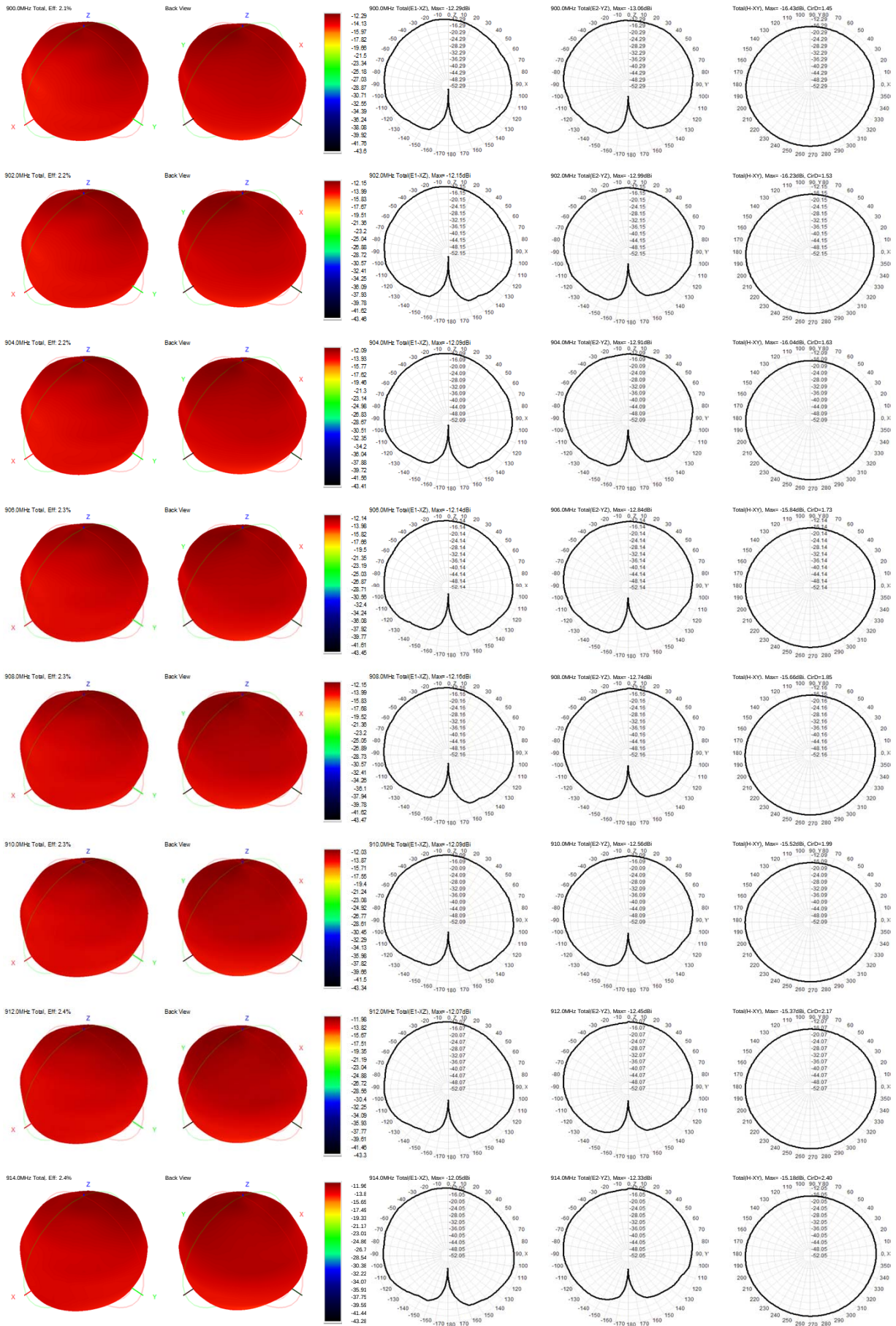


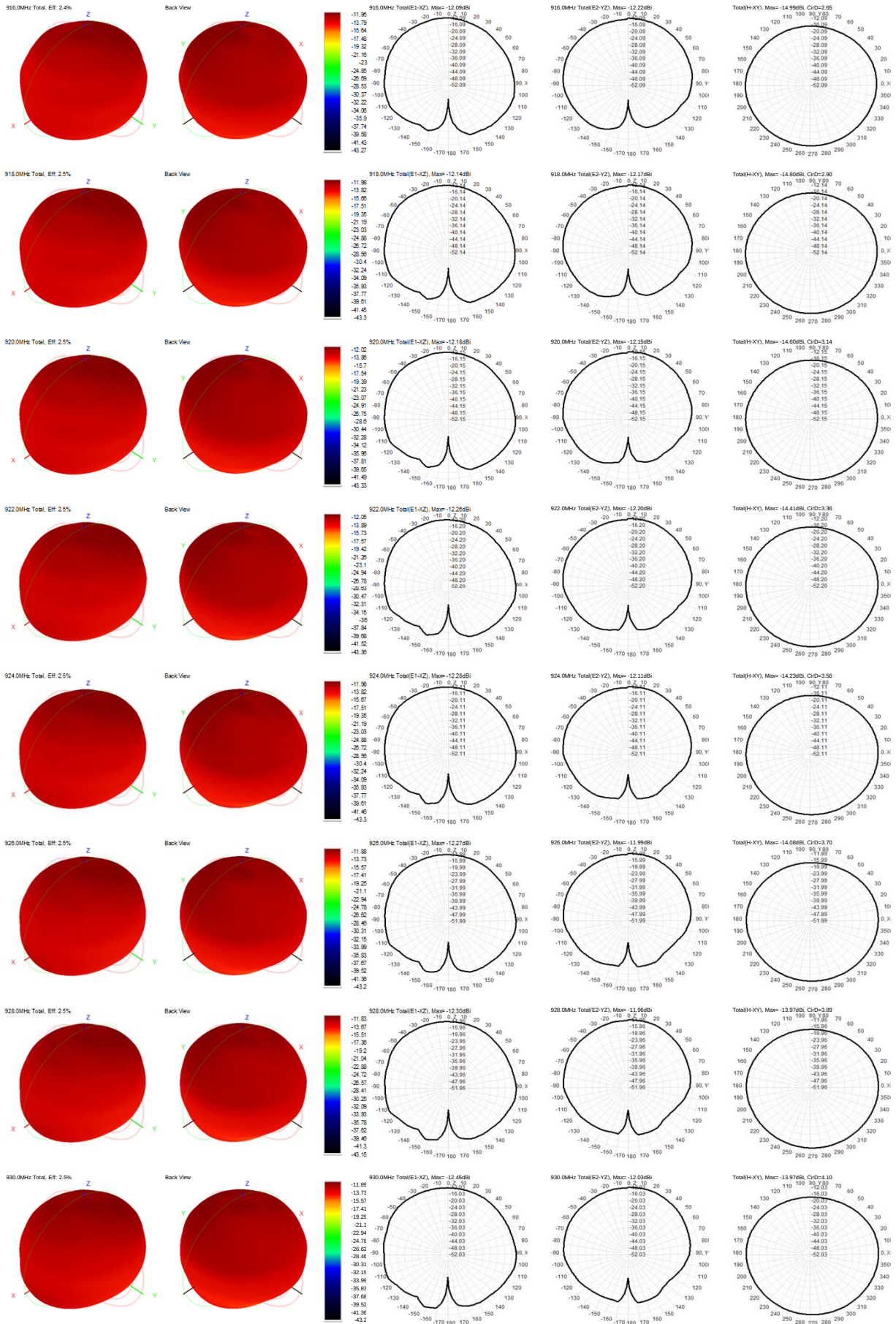
Efficiency and Gain

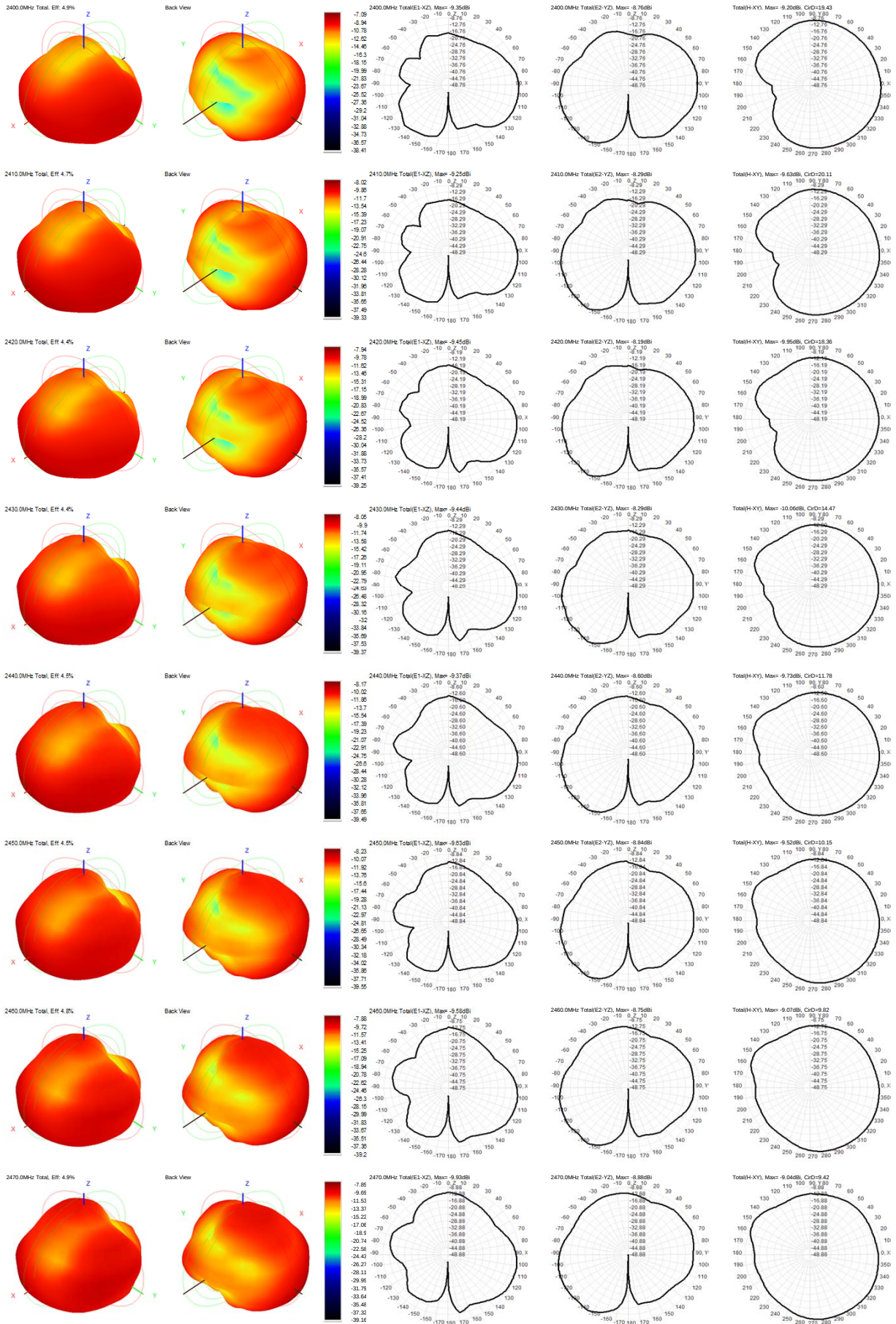
Dongguan UB Electronics Co., Ltd

Frequency ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Frequency (MHz)	900.0	902.0	904.0	906.0	908.0	910.0	912.0	914.0	916.0	918.0	920.0	922.0	924.0	926.0	928.0	930.0
Gain (dBi)	-12.29	-12.15	-12.09	-12.14	-12.15	-12.03	-11.98	-11.96	-11.95	-11.98	-12.02	-12.05	-11.98	-11.88	-11.83	-11.89
Efficiency (%)	2.11	2.17	2.21	2.25	2.29	2.34	2.37	2.40	2.44	2.46	2.45	2.45	2.47	2.49	2.50	2.50

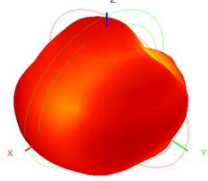
17	18	19	20	21	22	23	24	25	26	27
2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
-7.09	-8.02	-7.94	-8.05	-8.17	-8.23	-7.88	-7.85	-8.31	-8.01	-8.03
4.87	4.72	4.43	4.45	4.54	4.53	4.82	4.93	4.70	4.67	4.71



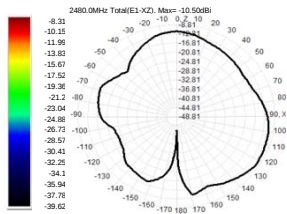
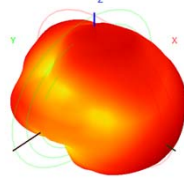




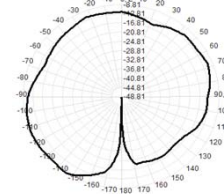
2480.0MHz Total, Eff: 4.7%



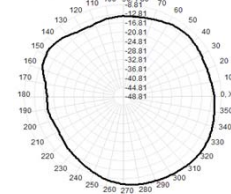
Back View



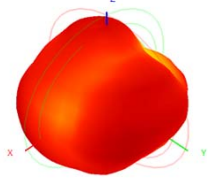
2480.0MHz Total(E2-YZ), Max: -8.81dBi



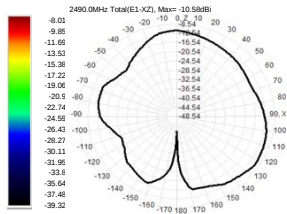
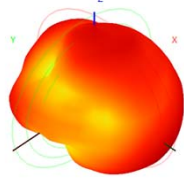
Total(H-XY), Max: -9.16dBi, Crd=9.60



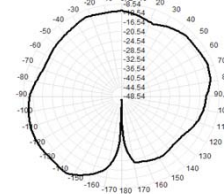
2490.0MHz Total, Eff: 4.7%



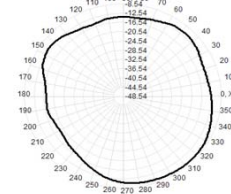
Back View



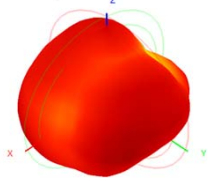
2490.0MHz Total(E2-YZ), Max: -8.54dBi



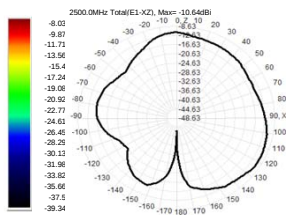
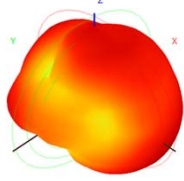
Total(H-XY), Max: -9.50dBi, Crd=9.57



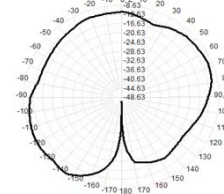
2500.0MHz Total, Eff: 4.7%



Back View



2500.0MHz Total(E2-YZ), Max: -8.63dBi



Total(H-XY), Max: -9.95dBi, Crd=9.90

