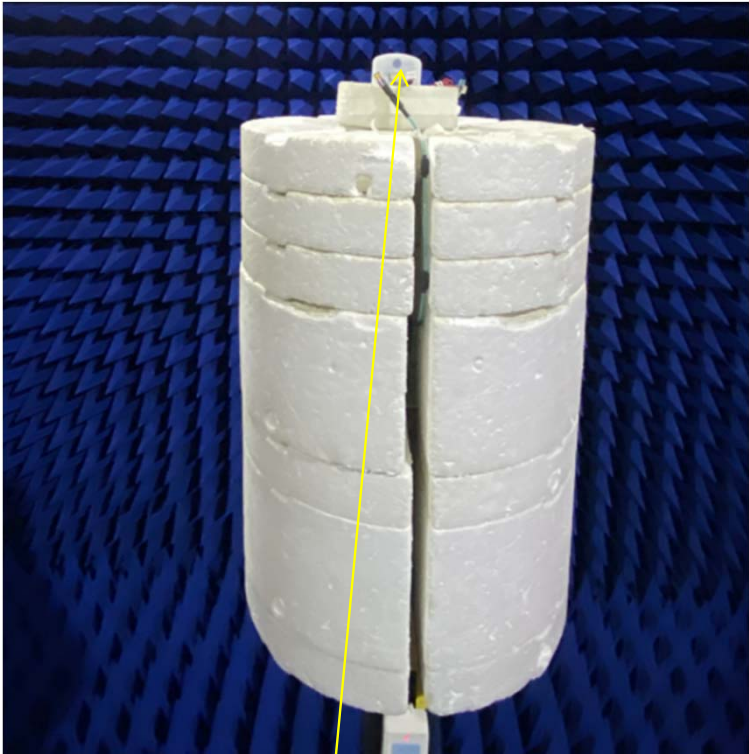
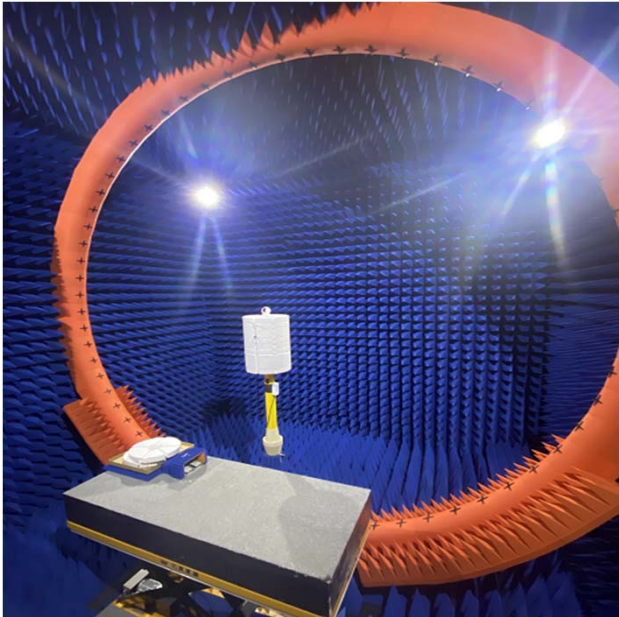


Antenna Study

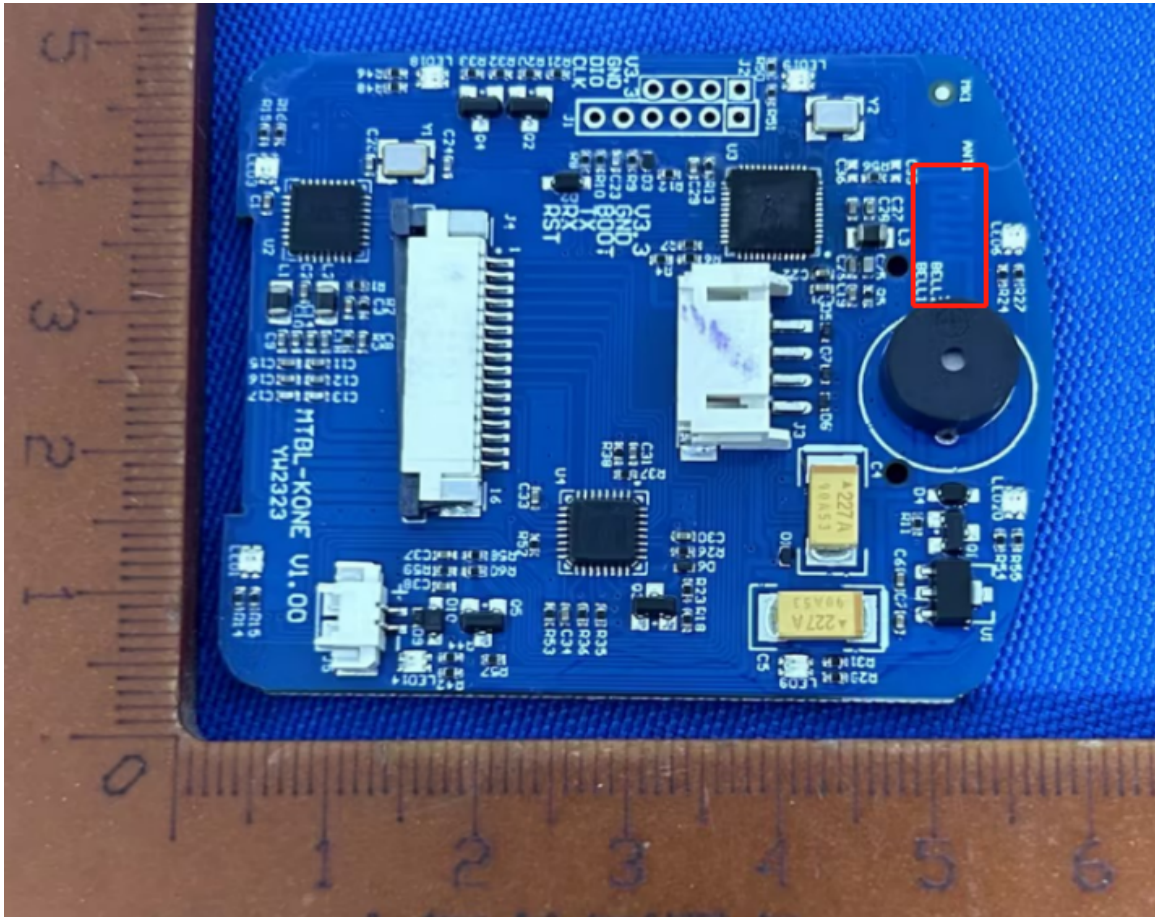
- **Client Name:TOWNSTEEL INC.**
- **Project Name : NET DOOR LOCK**
- **Debugging frequency band: 900/930/2400/2500HMz**
- **Valuation date: 2024.05.15**
- **Linkman contacts: gao shang 18925546490**



Testing environment



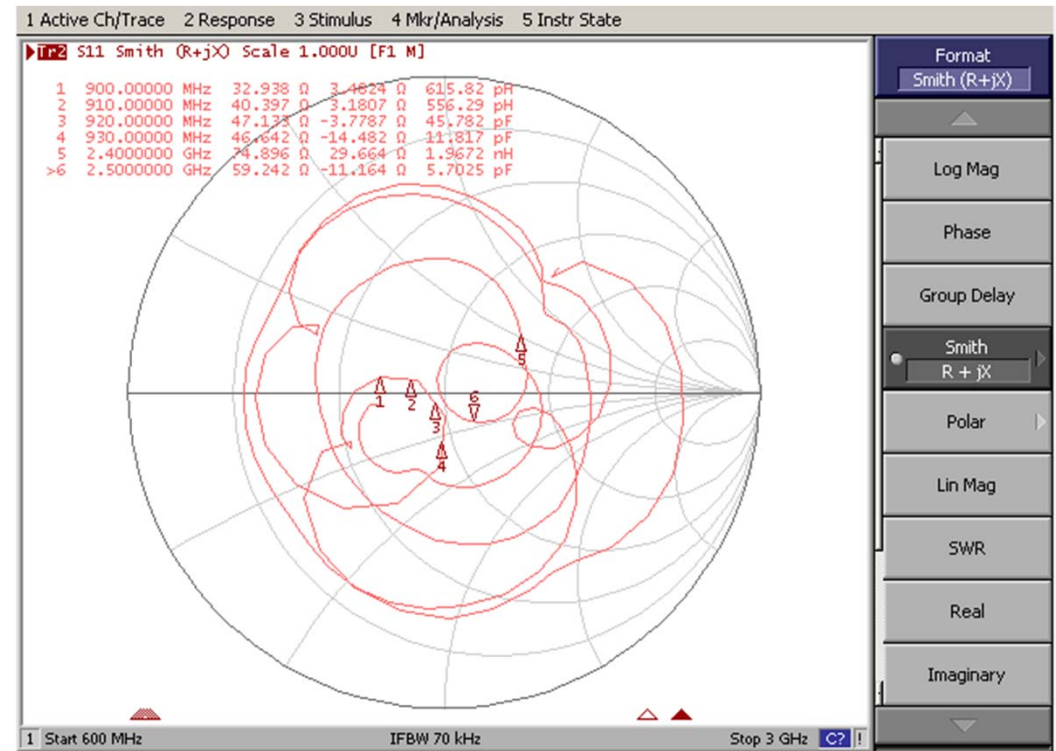
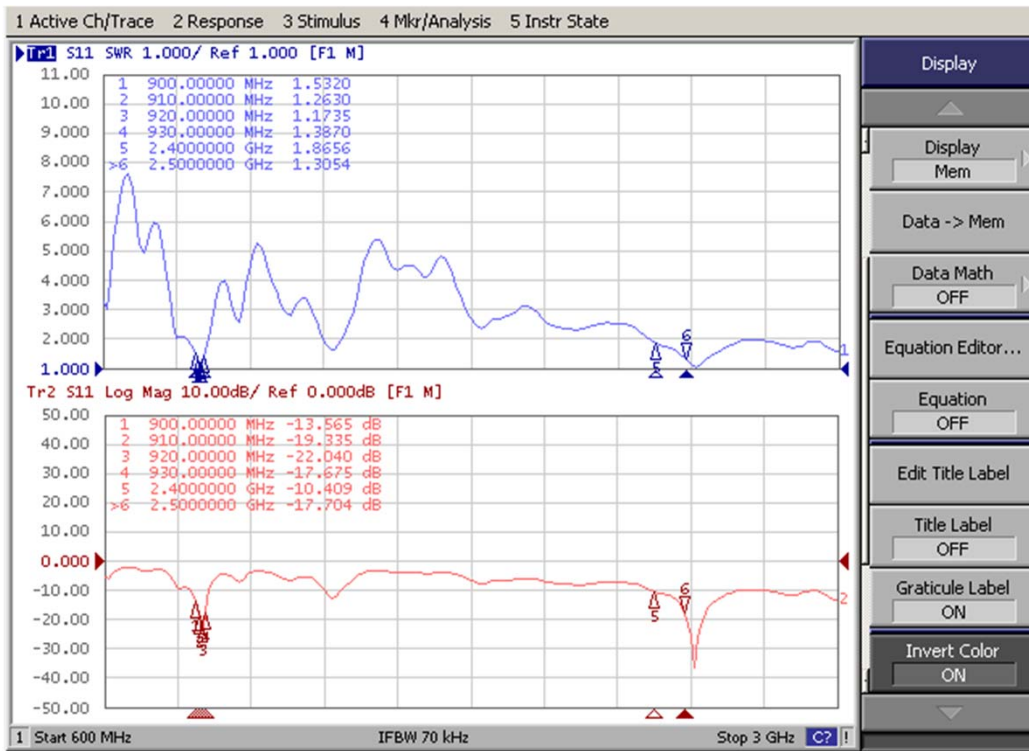
Testing 3D microwave darkroom(6m*6m*6m)



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



S Parameter_Return Loss&VSWR-Smith

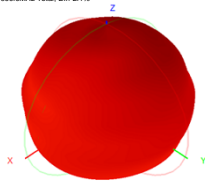


Efficiency and Gain

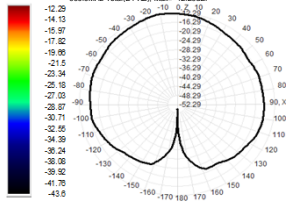
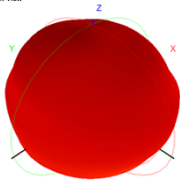
Frequency ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Frequency (MHz)	900.0	902.0	904.0	906.0	908.0	910.0	912.0	914.0	916.0	918.0	920.0	922.0	924.0	926.0	928.0	930.0
Gain (dBi)	1.91	2.01	2.02	2.05	2.09	2.14	2.17	2.10	2.14	2.16	2.15	2.15	2.17	2.19	2.23	2.23

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
2.07	2.02	2.03	2.05	2.04	2.03	2.02	2.23	2.10	2.17	2.11

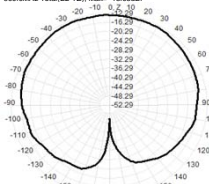
900.0MHz Total, Eff: 2.1%



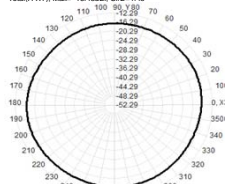
Back View



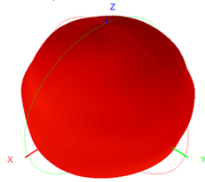
900.0MHz Total (E2-YZ), Max=-13.06dBi



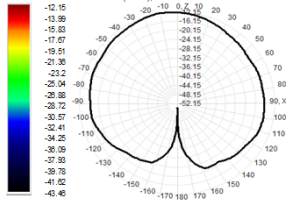
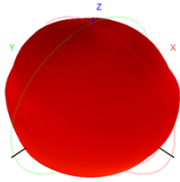
Total (H-XY), Max=-16.43dBi, CrD=1.45



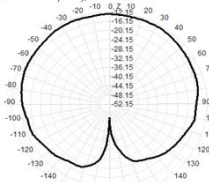
902.0MHz Total, Eff: 2.2%



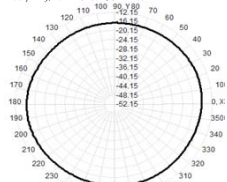
Back View



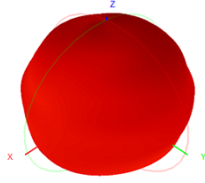
902.0MHz Total (E2-YZ), Max=-12.99dBi



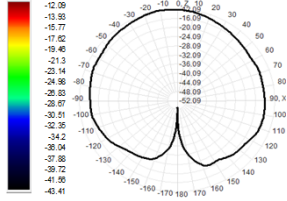
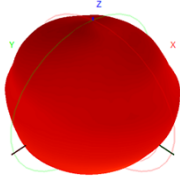
Total (H-XY), Max=-16.23dBi, CrD=1.53



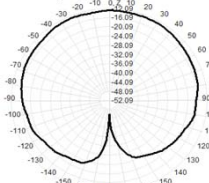
904.0MHz Total, Eff: 2.2%



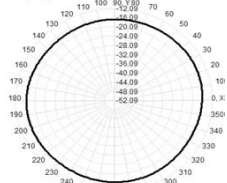
Back View



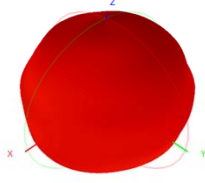
904.0MHz Total (E2-YZ), Max=-12.91dBi



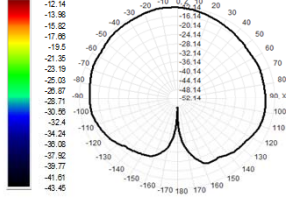
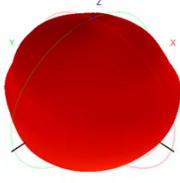
Total (H-XY), Max=-16.04dBi, CrD=1.53



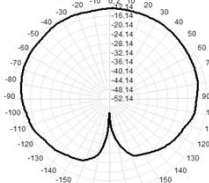
906.0MHz Total, Eff: 2.3%



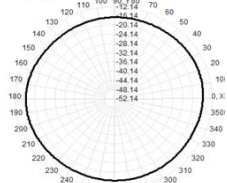
Back View



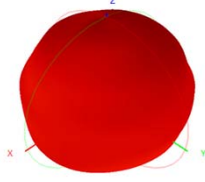
906.0MHz Total (E2-YZ), Max=-12.84dBi



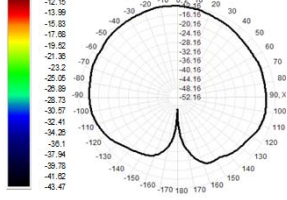
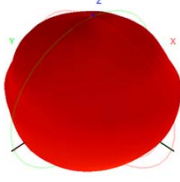
Total (H-XY), Max=-15.84dBi, CrD=1.73



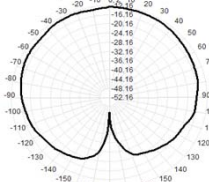
908.0MHz Total, Eff: 2.3%



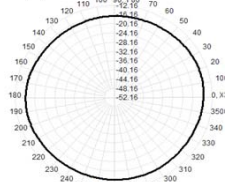
Back View



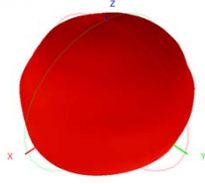
908.0MHz Total (E2-YZ), Max=-12.74dBi



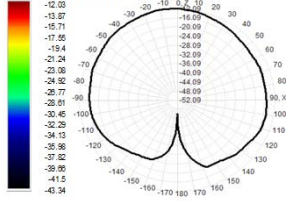
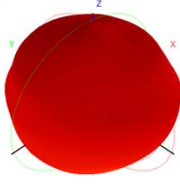
Total (H-XY), Max=-15.66dBi, CrD=1.85



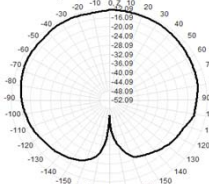
910.0MHz Total, Eff: 2.3%



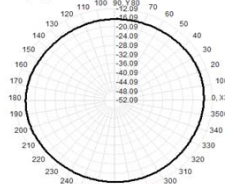
Back View



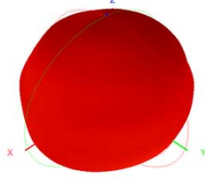
910.0MHz Total (E2-YZ), Max=-12.56dBi



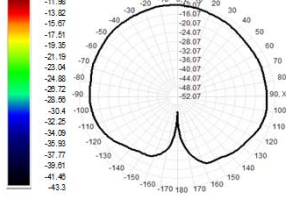
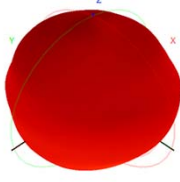
Total (H-XY), Max=-15.52dBi, CrD=1.99



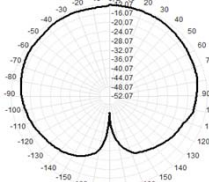
912.0MHz Total, Eff: 2.4%



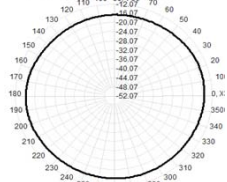
Back View



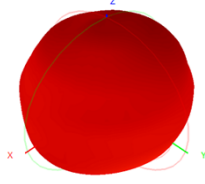
912.0MHz Total (E2-YZ), Max=-12.45dBi



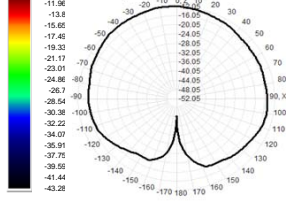
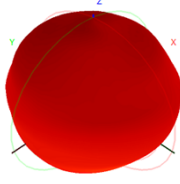
Total (H-XY), Max=-15.37dBi, CrD=2.17



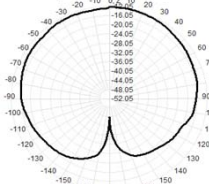
914.0MHz Total, Eff: 2.4%



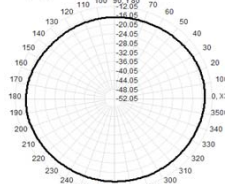
Back View

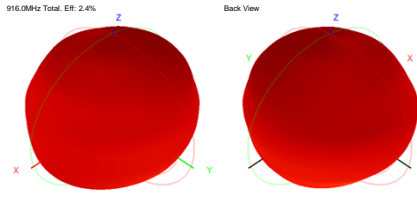


914.0MHz Total (E2-YZ), Max=-12.33dBi

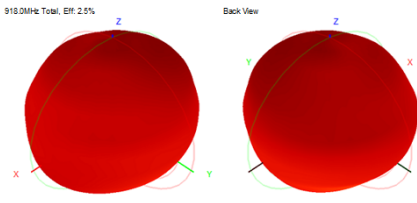
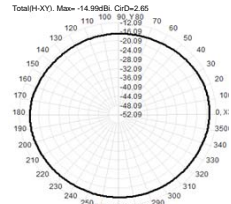
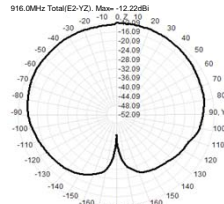
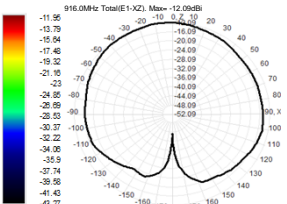


Total (H-XY), Max=-15.18dBi, CrD=2.40

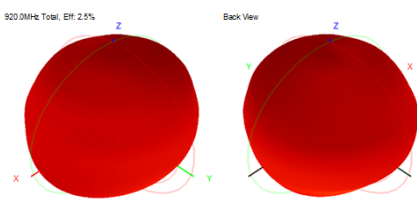
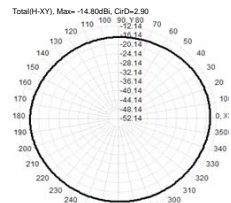
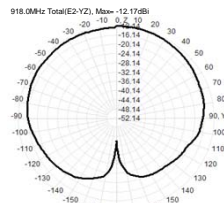
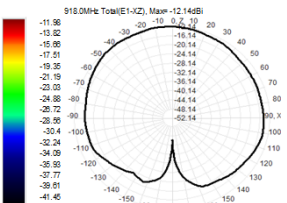




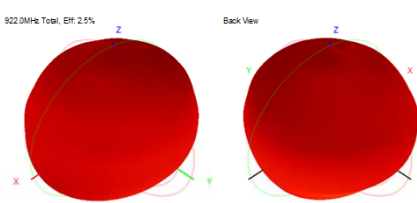
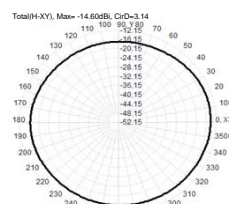
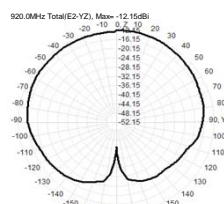
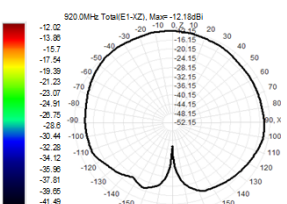
Back View



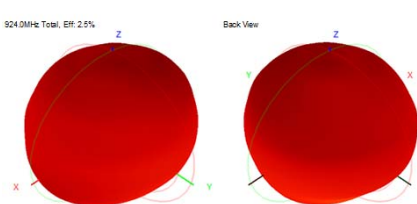
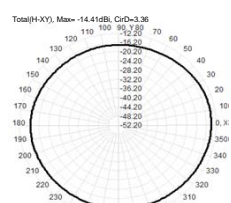
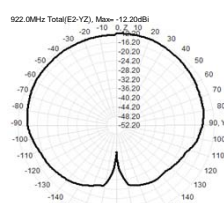
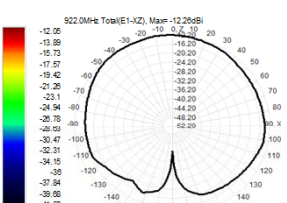
Back View



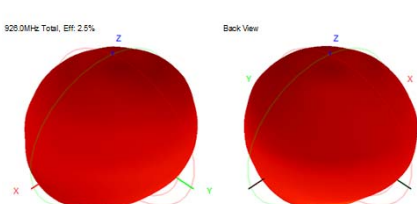
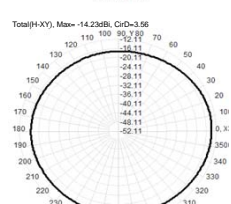
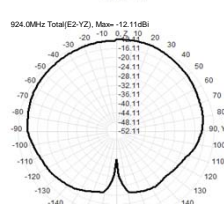
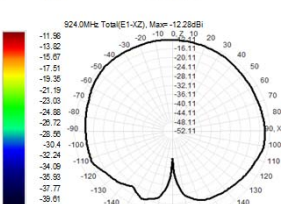
Back View



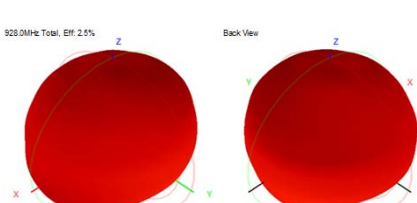
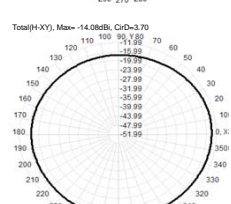
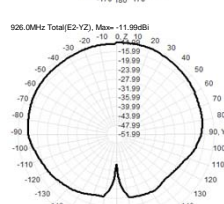
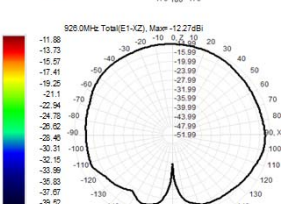
Back View



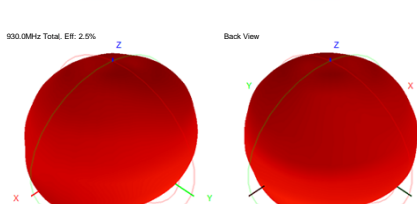
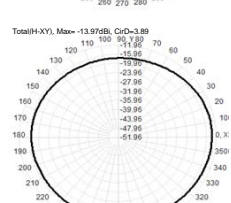
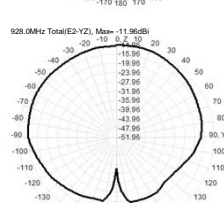
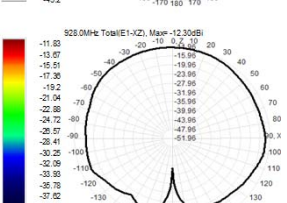
Back View



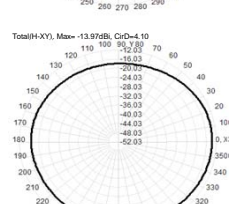
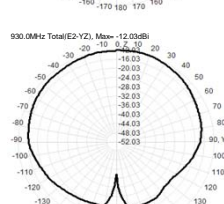
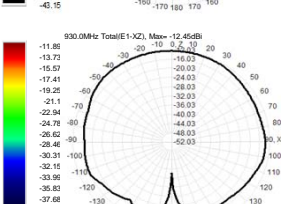
Back View

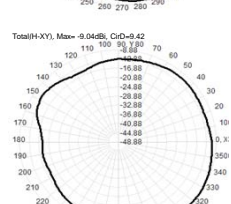
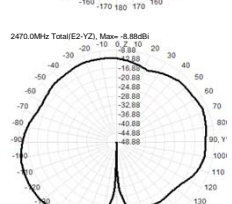
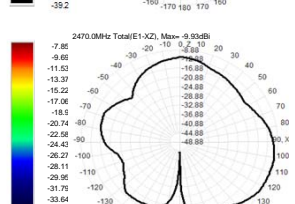
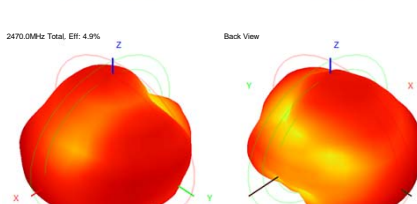
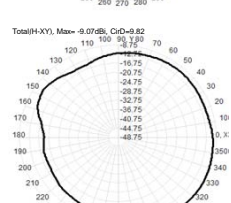
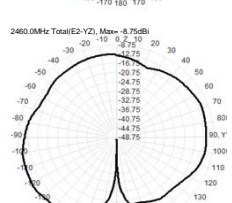
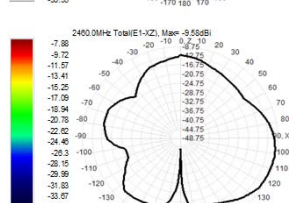
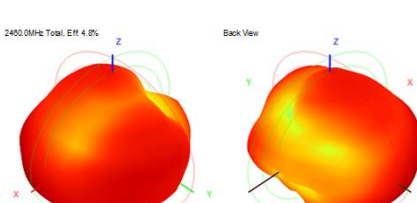
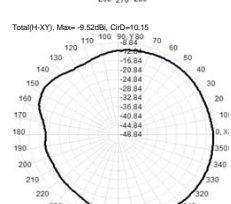
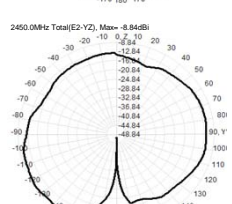
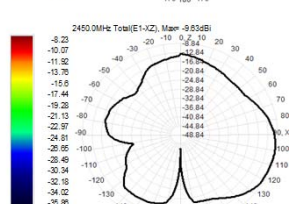
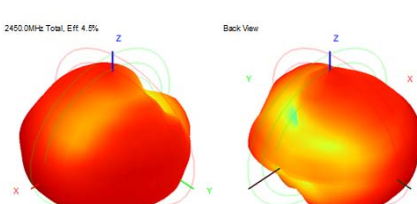
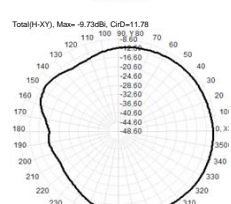
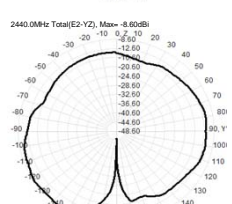
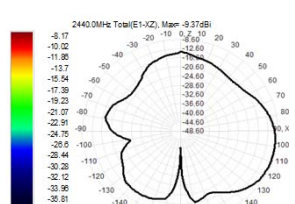
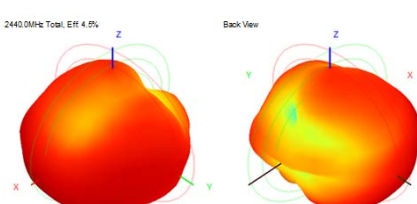
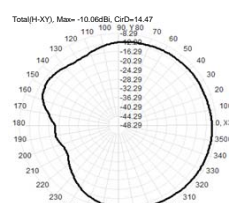
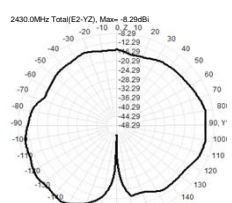
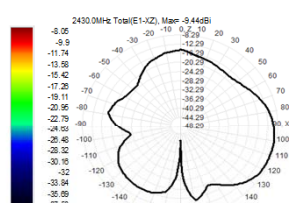
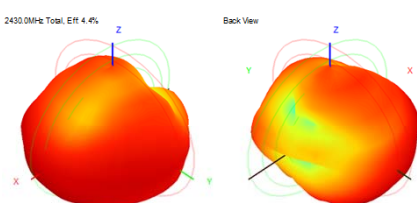
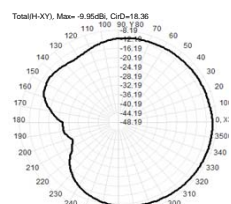
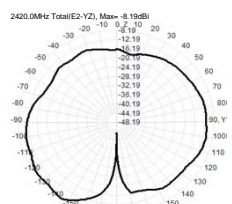
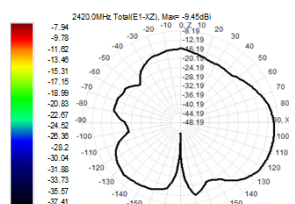
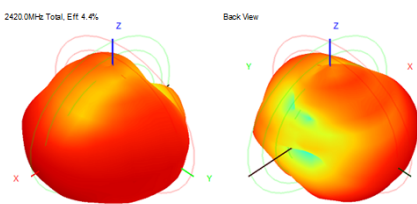
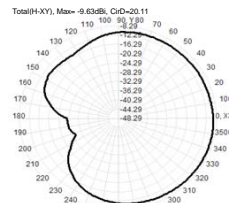
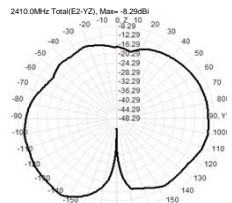
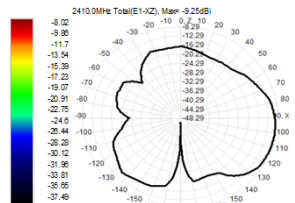
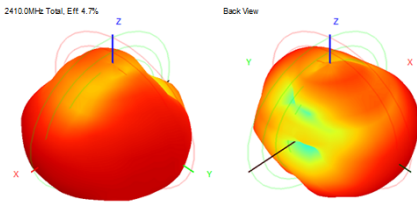
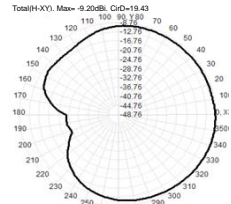
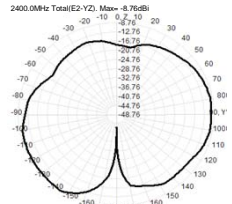
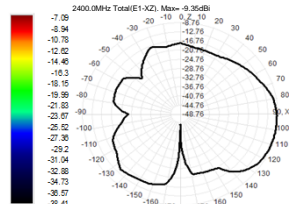
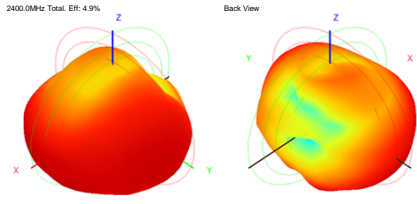


Back View

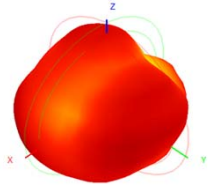


Back View

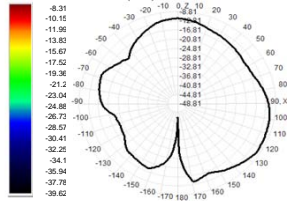
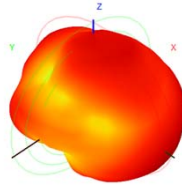




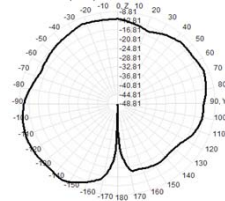
2480.0MHz Total Eff: 4.7%



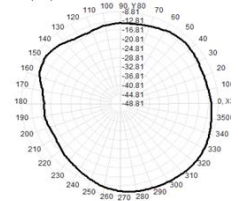
Back View



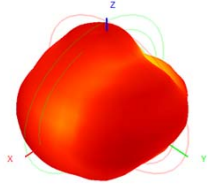
2480.0MHz Total(E2-YZ), Max=-8.81dBi



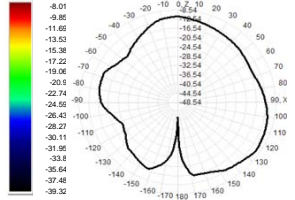
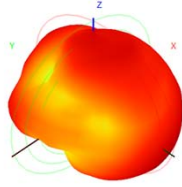
Total(H-XY), Max=-9.16dBi, C/D=0.60



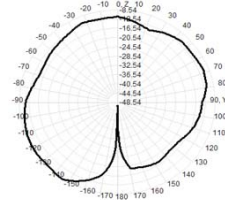
2490.0MHz Total Eff: 4.7%



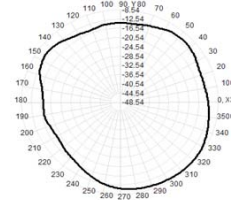
Back View



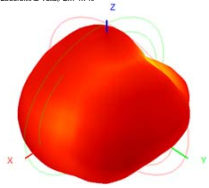
2490.0MHz Total(E2-YZ), Max=-8.54dBi



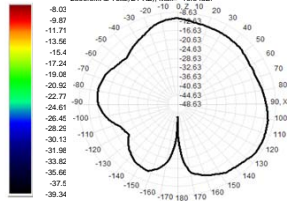
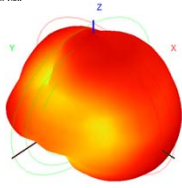
Total(H-XY), Max=-9.50dBi, C/D=0.57



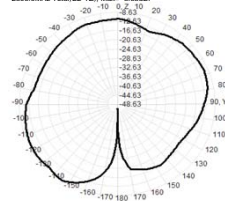
2500.0MHz Total Eff: 4.7%



Back View



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



Total(H-XY), Max=-9.95dBi, C/D=0.90

