

Antenna Study

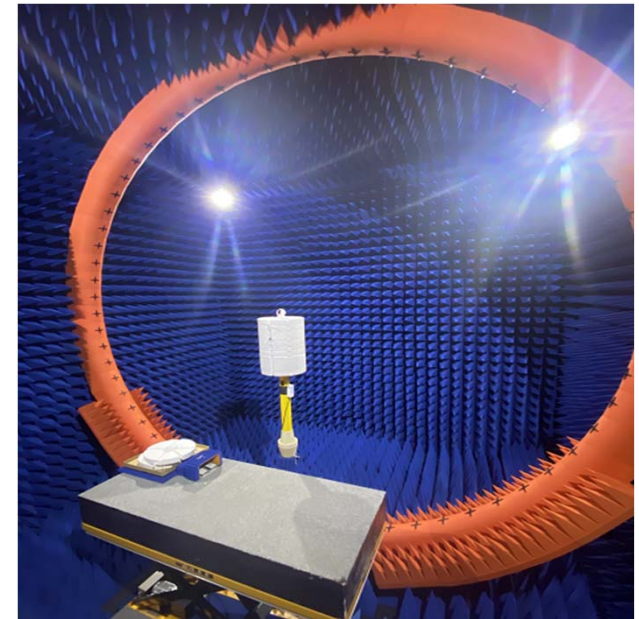
- **Client Name: 34ED LLC, DBA Centegix**
- **Project Name: Gateway**
- **Debugging frequency band: 2.4G**
- **Valuation date: 2023.07.25**

Internal Antenna

Dongguan UB Electronics Co., Ltd



Testing environment



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

Internal Antenna

Dongguan UB Electronics Co., Ltd

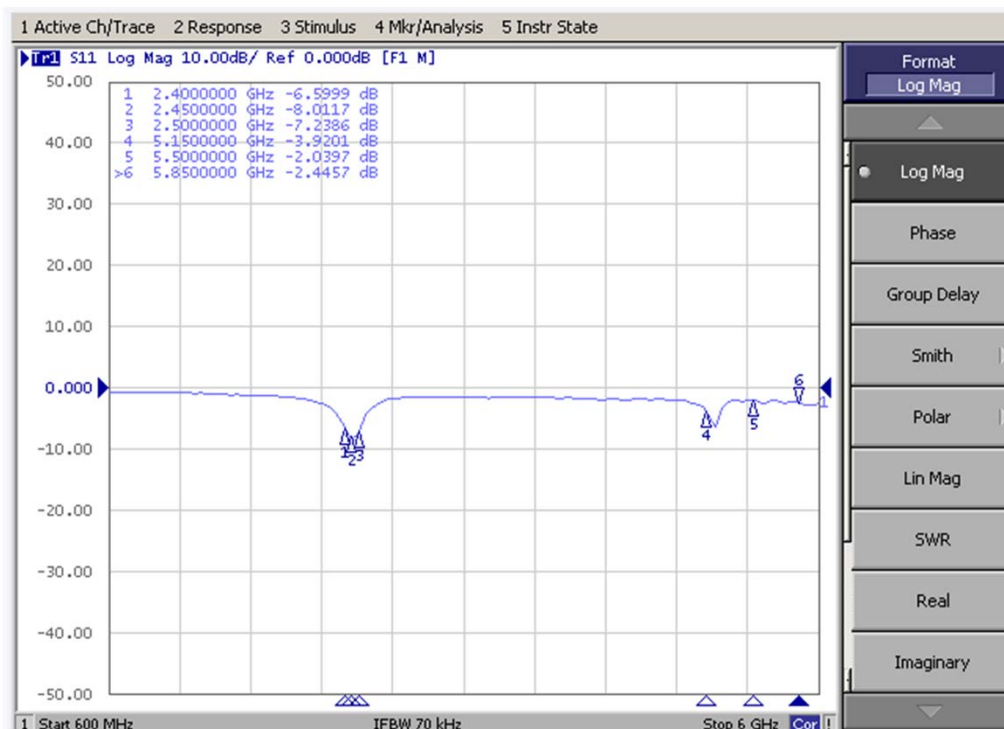
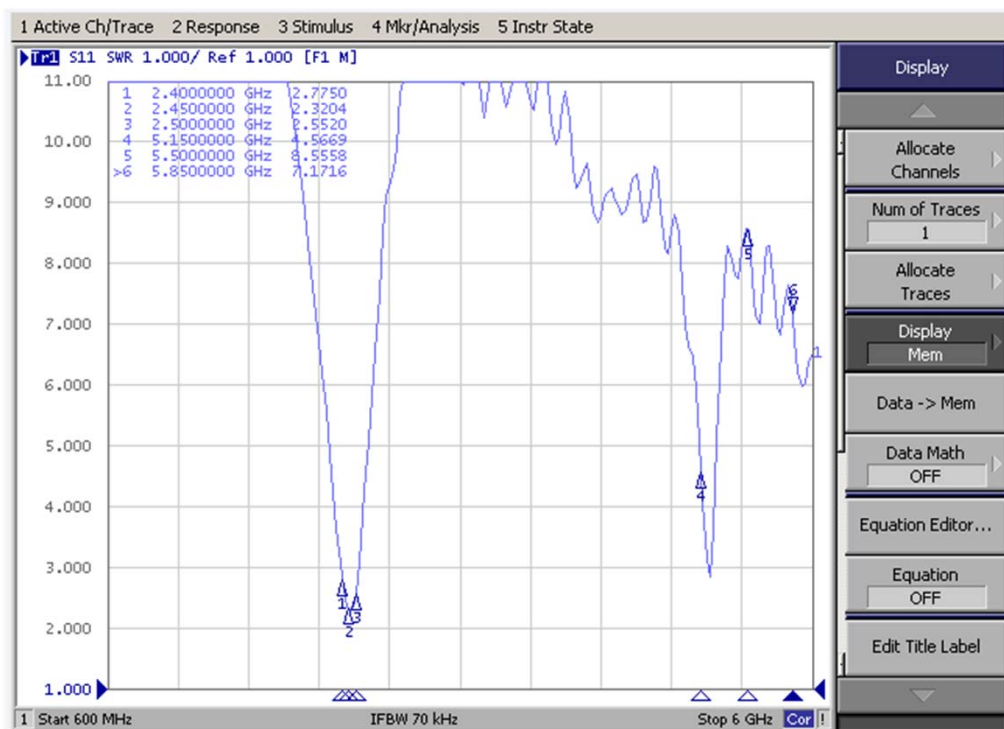


Antenna

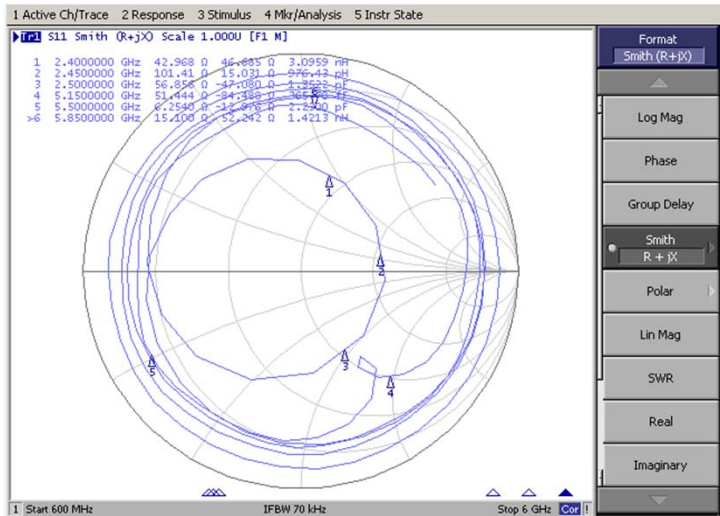
- Antenna name: 2.4G
- Antenna Type: Internal
- Covers : 2.4G

S Parameter_Return Loss&VSWR

Dongguan UB Electronics Co., Ltd

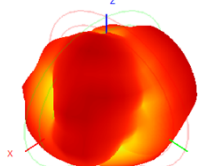


Efficiency and Gain-Smith

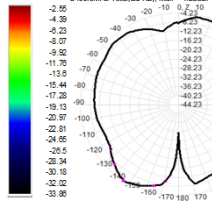
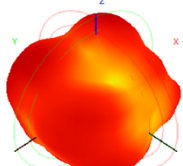


Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Gain (dBi)	-2.55	-2.61	-2.72	-2.86	-3.08	-2.82	-2.50	-2.63	-2.80	-3.09	-3.15
Efficiency (%)	16.40	16.77	16.92	16.99	16.91	17.03	17.44	17.14	16.63	16.17	15.78

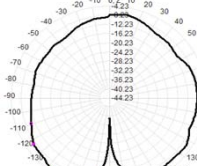
2400.0MHz H+V, E# 16.4%



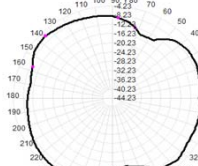
Back View



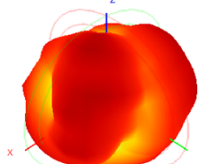
2400.0MHz Total(E2-YZ), Max= -4.57dBi



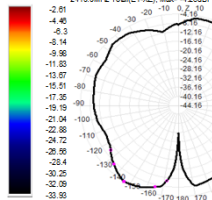
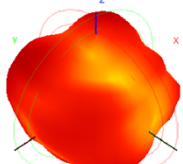
Total(H+V), Max= -6.16dBi, C/D=8.37



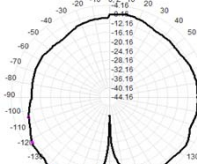
2410.0MHz H+V, E# 16.8%



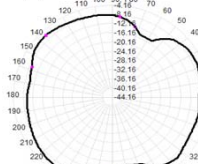
Back View



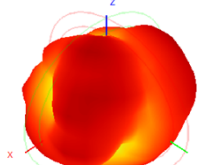
2410.0MHz Total(E2-YZ), Max= -4.16dBi



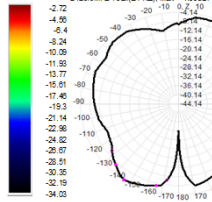
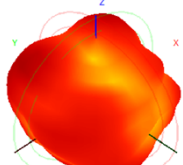
Total(H+V), Max= -6.15dBi, C/D=8.79



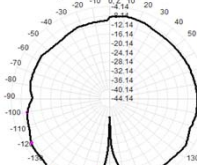
2420.0MHz H+V, E# 16.9%



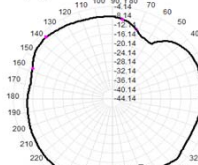
Back View



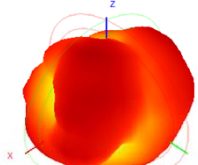
2420.0MHz Total(E2-YZ), Max= -4.14dBi



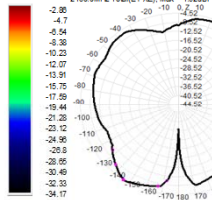
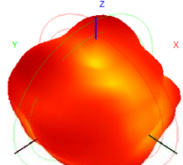
Total(H+V), Max= -6.43dBi, C/D=9.16



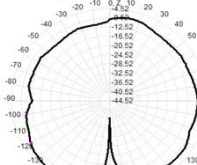
2430.0MHz H+V, E# 17.0%



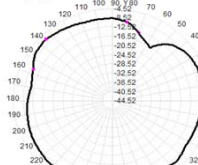
Back View



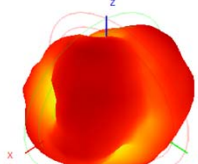
2430.0MHz Total(E2-YZ), Max= -4.50dBi



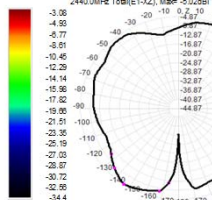
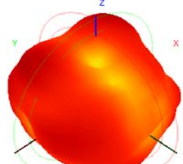
Total(H+V), Max= -6.62dBi, C/D=9.66



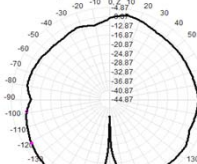
2440.0MHz H+V, E# 16.9%



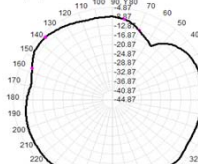
Back View



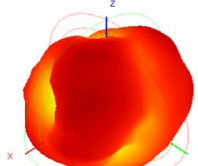
2440.0MHz Total(E2-YZ), Max= -4.87dBi



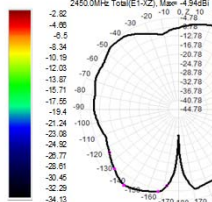
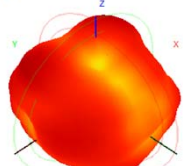
Total(H+V), Max= -6.64dBi, C/D=10.14



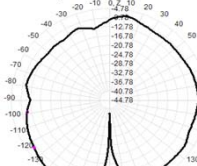
2450.0MHz H+V, E# 17.0%



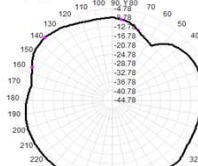
Back View



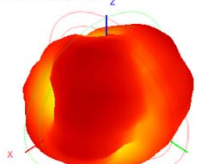
2450.0MHz Total(E2-YZ), Max= -4.78dBi



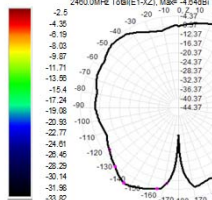
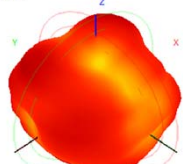
Total(H+V), Max= -6.24dBi, C/D=9.91



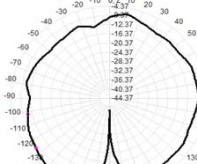
2460.0MHz H+V, E# 17.4%



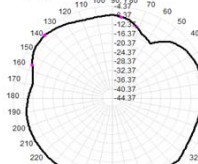
Back View



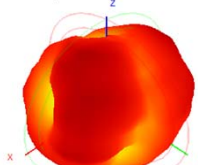
2460.0MHz Total(E2-YZ), Max= -4.37dBi



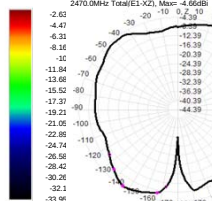
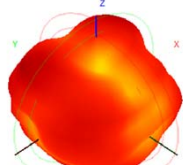
Total(H+V), Max= -6.82dBi, C/D=10.12



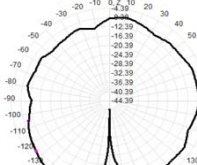
2470.0MHz H+V, E# 17.1%



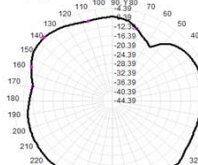
Back View



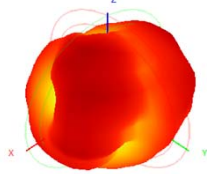
2470.0MHz Total(E2-YZ), Max= -4.39dBi



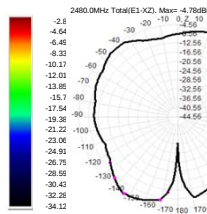
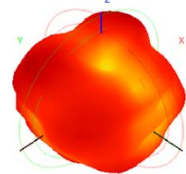
Total(H+V), Max= -6.63dBi, C/D=10.09



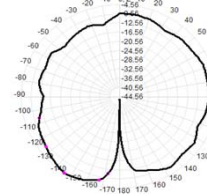
2480.0MHz H+V, EF: 16.6%



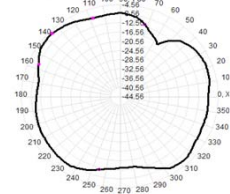
Back View



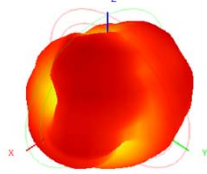
2480.0MHz Total(E2-YZ), Max=-4.56dBi



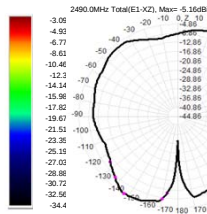
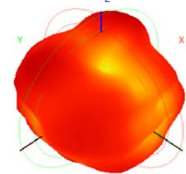
Total(H+V), Max=-5.70dBi, Crd=11.47



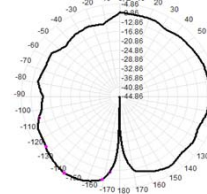
2490.0MHz H+V, EF: 16.2%



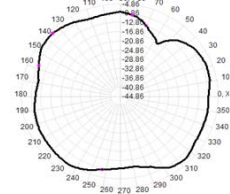
Back View



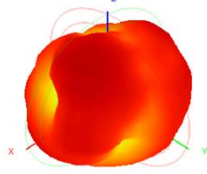
2490.0MHz Total(E2-YZ), Max=-4.86dBi



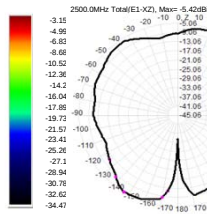
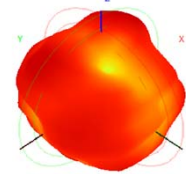
Total(H+V), Max=-6.34dBi, Crd=11.28



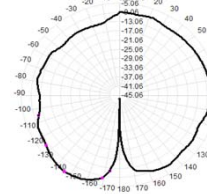
2500.0MHz H+V, EF: 15.8%



Back View



2500.0MHz Total(E2-YZ), Max=-5.06dBi



Total(H+V), Max=-6.83dBi, Crd=10.75

