



Shenzhen double xin communication equipment Co., LTD

a 3,silver Unicom Industrial Park,Zhangbei village,Ailian Town,Longgang

District,Shenzhen,Guangdong Province,China

SPECIFICATION OF APPROVA

CUSTOMER: ZKTECO CO., LTD.

DESCRIPTION: 2.4G Built-in FPC Antenna (L=60MM)

PART NO: SX-2.4G-FPC-8*22-060A

SIGNATURE

| Approval | Engineer |
|--|-----------------------|
| Shenzhen double xin communication equipment Co., LTD | Technology Department |
| MONTH,2020 | |

CUSTOMER APPROVAL

| Confirm Result | Engineer |
|---|----------|
| <input type="checkbox"/> Qualified <input type="checkbox"/> Unqualified | |
| MONTH,2020 | |



Product Feature

3.10dBi Peak Gain

Flexible, Ultra Low Profile

IPEX MHF I Connector (U.FL compatible)

60mm 1.13 Mini-Coaxial Cable

22*8*0.1 mm

RoHS & Reach Compliant

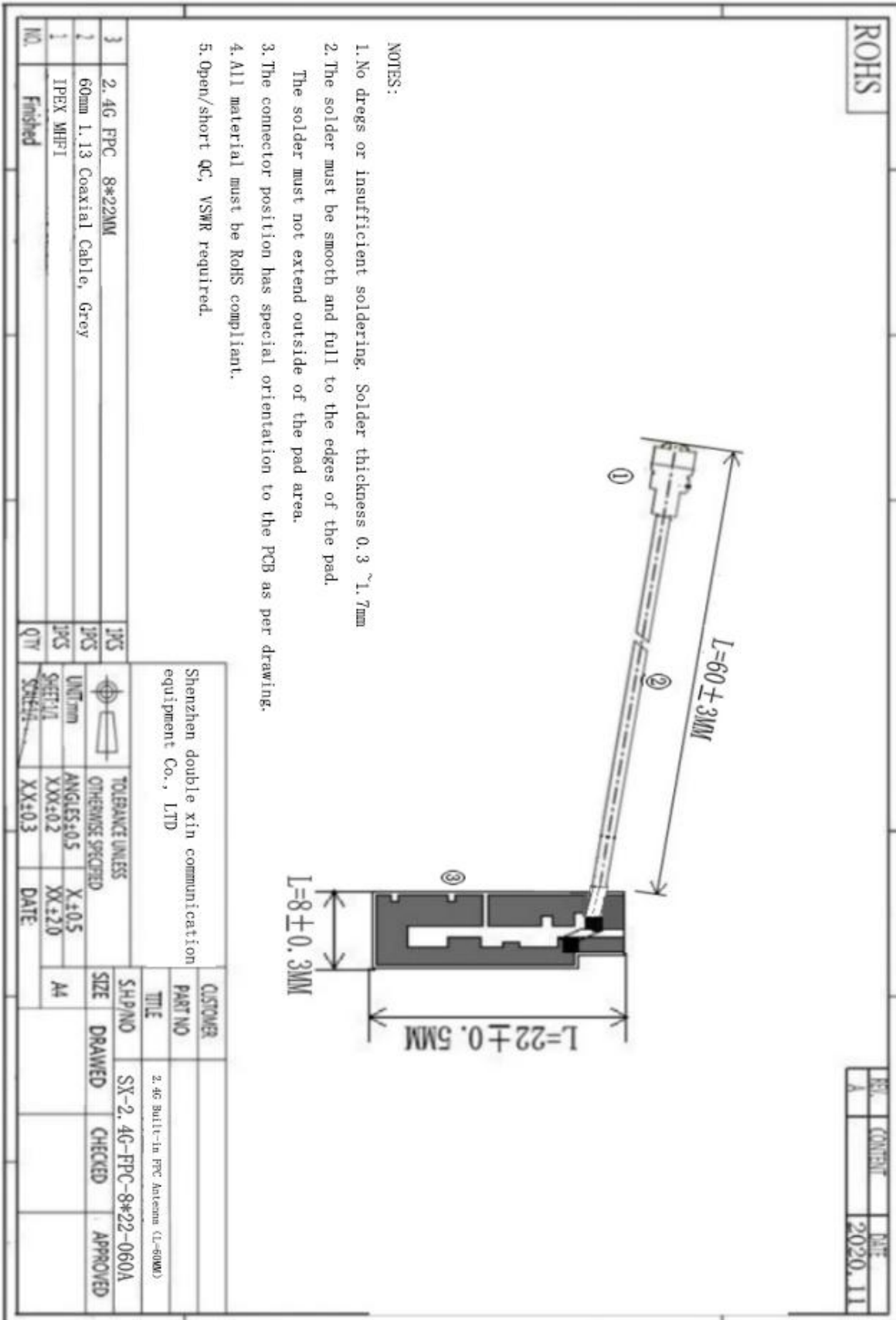
Shenzhen double xin communication equipment Co., LTD



SPECIFICATION

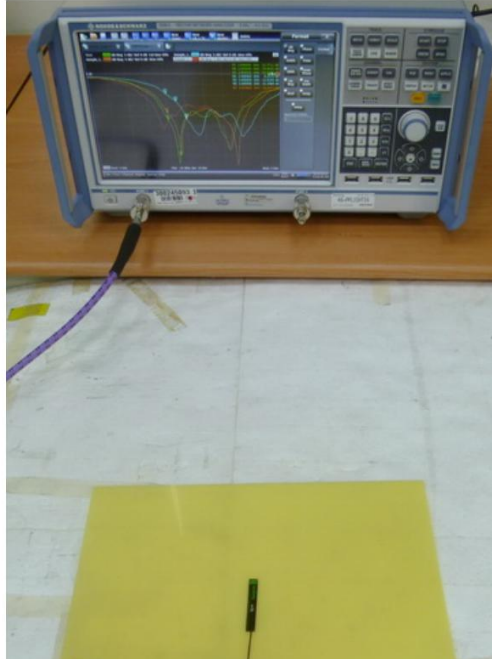
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|------------------------|------------------------|
| Model | SX-2.4G-FPC-8*22-060A |
| SPECIFICATIONS | |
| Frequency Range | 2400~2500MHz |
| Efficiency | 50% |
| Gain | 3.10dBi |
| VSWR | ≤2:1 |
| Input Impedance | 50Ω |
| Polarization | Linear |
| Max input power | 5W |
| MECHANICAL | |
| Dimensions | 22*8*0.1 mm |
| Weight | 1.2g |
| Connector | MHFI (U.FL Compatible) |
| Cable Standard | Mini-Coax 1.13 mm |
| Cable Length and color | 60mm, Grey |
| Adhesive tape | 3M |
| ENVIRONMENTAL | |
| Operation Temperature | -40 °C ~ +85 °C |
| Storage Temperature | -40 °C ~ +85 °C |
| RoHS Compliant | Yes |

Antenna Drawing



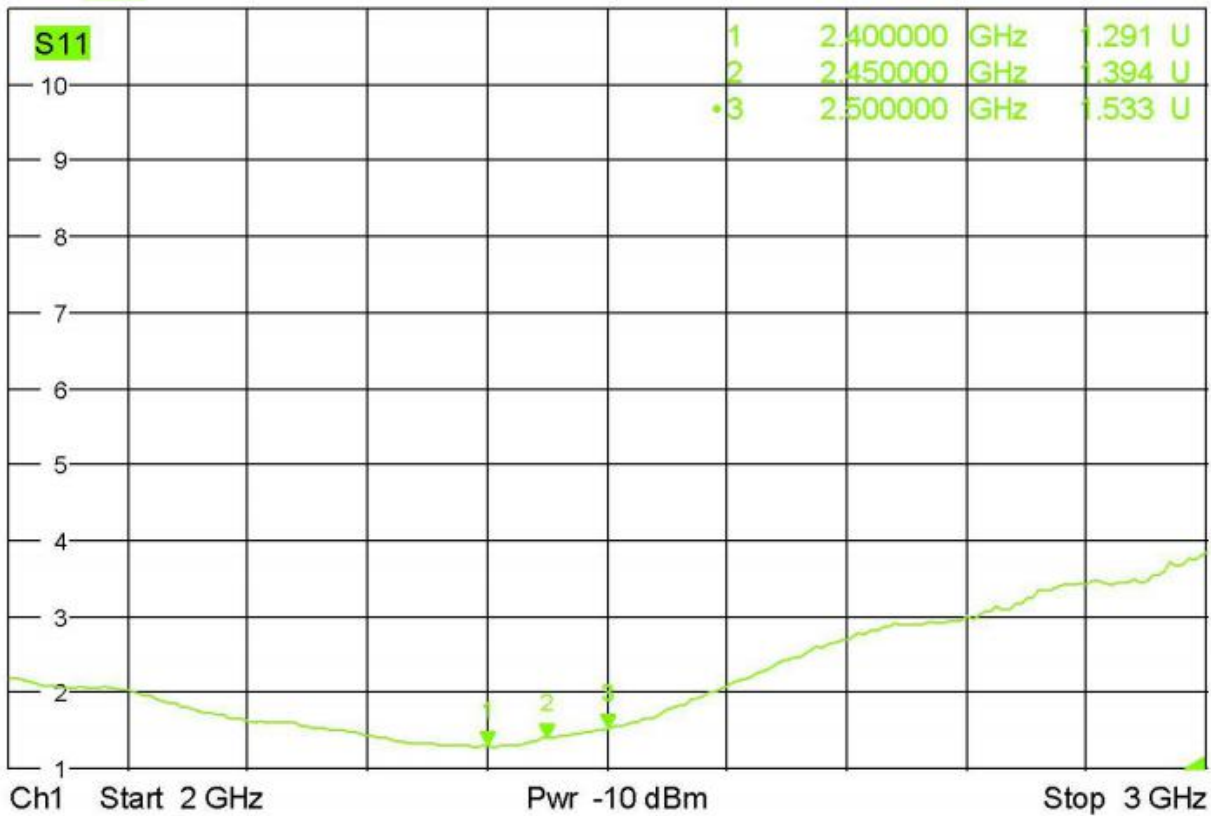
Antenna Characteristics

Rohde & Schwarz Network Analyzer

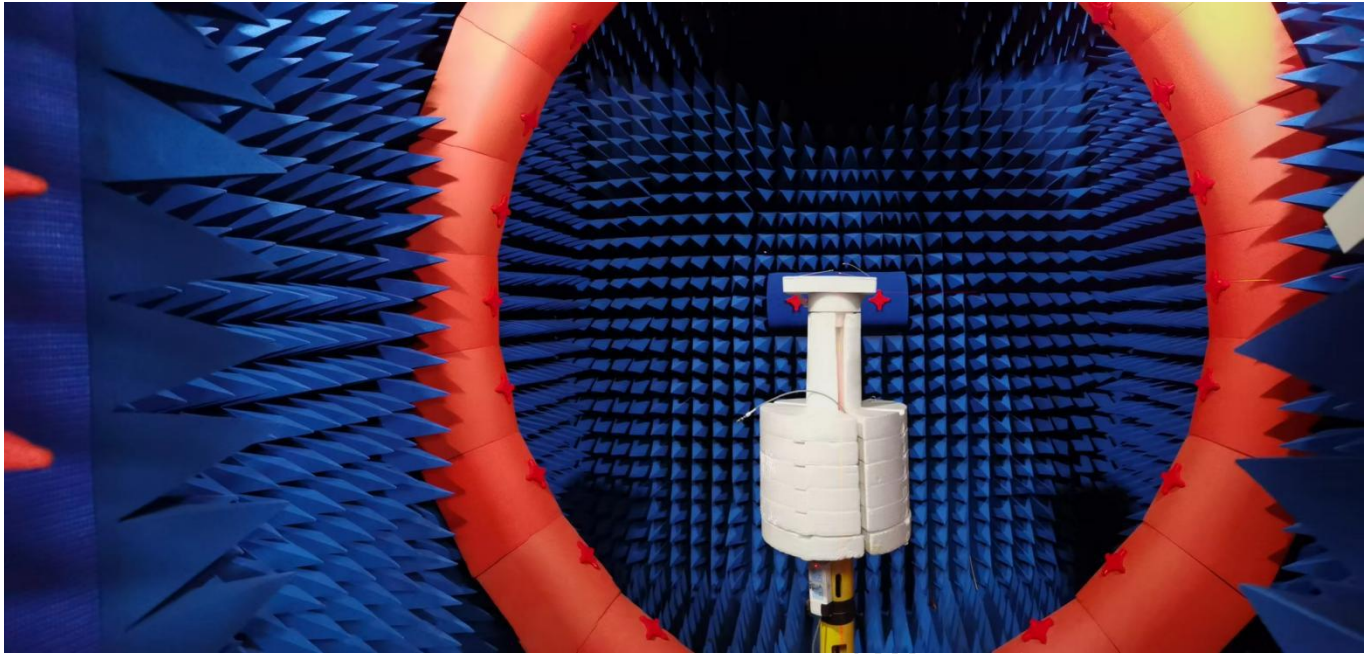


Trc1 S11 SWR 1 U/ Ref1 U

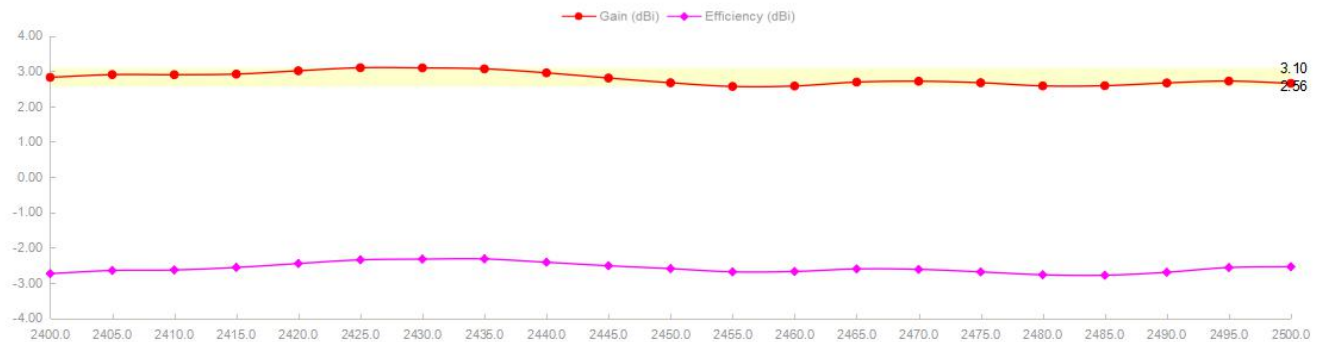
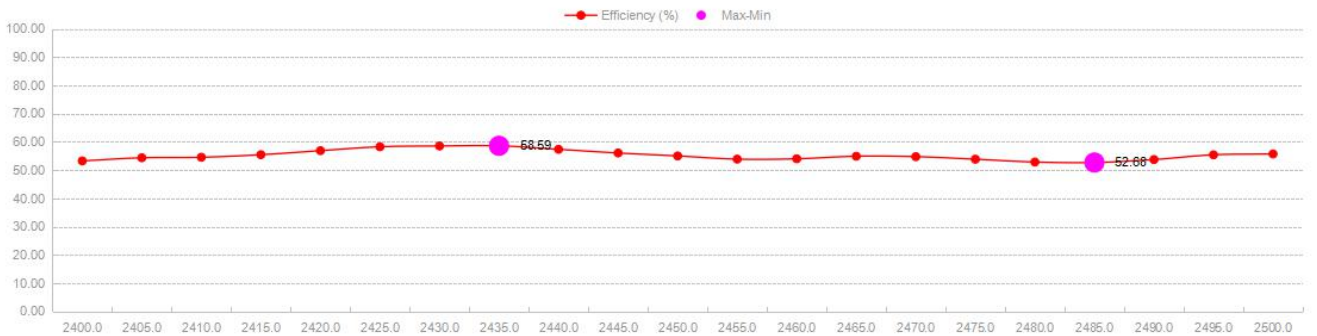
1



ETS 3D Radiation Scan System with Anechoic Chamber

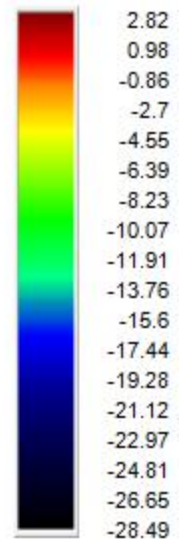
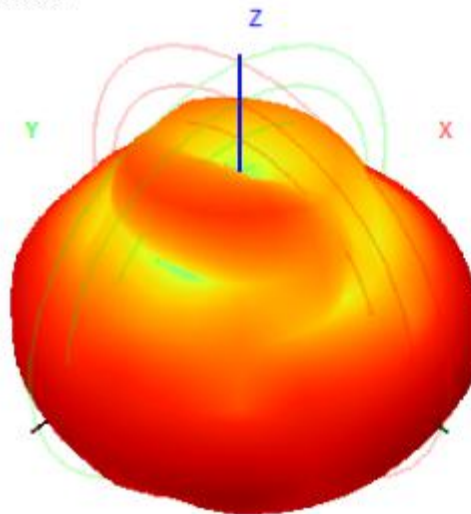
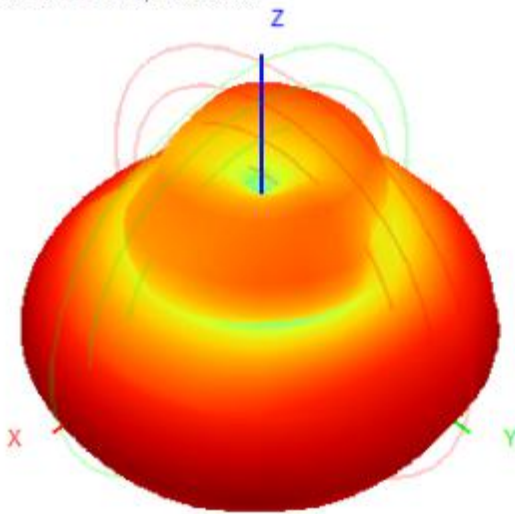


| Frequency ID | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Frequency (MHz) | 2400.0 | 2405.0 | 2410.0 | 2415.0 | 2420.0 | 2425.0 | 2430.0 | 2435.0 | 2440.0 | 2445.0 | 2450.0 | 2455.0 | 2460.0 | 2465.0 | 2470.0 | 2475.0 | 2480.0 | 2485.0 | 2490.0 | 2495.0 | 2500.0 |
| Efficiency (dBi) | -2.74 | -2.65 | -2.63 | -2.56 | -2.45 | -2.35 | -2.33 | -2.32 | -2.41 | -2.51 | -2.60 | -2.69 | -2.68 | -2.60 | -2.62 | -2.69 | -2.77 | -2.78 | -2.70 | -2.56 | -2.54 |
| Gain (dBi) | 2.82 | 2.90 | 2.90 | 2.91 | 3.01 | 3.10 | 3.09 | 3.06 | 2.95 | 2.80 | 2.67 | 2.56 | 2.58 | 2.69 | 2.71 | 2.67 | 2.58 | 2.59 | 2.66 | 2.72 | 2.65 |
| Efficiency (%) | 53.25 | 54.36 | 54.53 | 55.44 | 56.87 | 58.25 | 58.53 | 58.59 | 57.35 | 56.05 | 55.01 | 53.87 | 54.00 | 54.90 | 54.75 | 53.85 | 52.85 | 52.68 | 53.73 | 55.41 | 55.70 |
| Directivity (dB) | 5.56 | 5.55 | 5.53 | 5.48 | 5.46 | 5.44 | 5.42 | 5.38 | 5.36 | 5.32 | 5.26 | 5.25 | 5.29 | 5.33 | 5.36 | 5.35 | 5.37 | 5.36 | 5.28 | 5.19 | |
| Peak Gain Position (Theta) | 90.00 | 90.00 | 90.00 | 90.00 | 90.00 | 90.00 | 90.00 | 90.00 | 90.00 | 90.00 | 90.00 | 90.00 | 90.00 | 90.00 | 90.00 | 90.00 | 90.00 | 90.00 | 90.00 | 90.00 | 90.00 |
| Peak Gain Position (Phi) | 285.00 | 285.00 | 285.00 | 285.00 | 45.00 | 45.00 | 45.00 | 315.00 | 315.00 | 315.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 |
| Efficiency ThetaPol (%) | 51.11 | 52.36 | 52.61 | 53.49 | 54.82 | 56.20 | 56.55 | 56.65 | 55.36 | 54.01 | 52.99 | 51.96 | 52.14 | 52.96 | 52.65 | 51.59 | 50.59 | 50.40 | 51.29 | 52.61 | 52.60 |
| Efficiency PhiPol (%) | 2.14 | 2.00 | 1.92 | 1.95 | 2.05 | 2.05 | 1.98 | 1.94 | 1.99 | 2.04 | 2.02 | 1.91 | 1.86 | 1.94 | 2.10 | 2.26 | 2.26 | 2.29 | 2.44 | 2.79 | 3.10 |
| Upper Hem. Efficiency (%) | 21.91 | 22.36 | 22.39 | 22.70 | 23.21 | 23.68 | 23.72 | 23.64 | 23.05 | 22.45 | 21.96 | 21.41 | 21.34 | 21.56 | 21.34 | 20.78 | 20.18 | 19.89 | 20.03 | 20.36 | 20.17 |
| Lower Hem. Efficiency (%) | 31.34 | 32.00 | 32.15 | 32.74 | 33.66 | 34.57 | 34.81 | 34.95 | 34.30 | 33.59 | 33.05 | 32.47 | 32.65 | 33.34 | 33.42 | 33.07 | 32.67 | 32.79 | 33.70 | 35.05 | 35.53 |



2400.0MHz H+V, Eff: 53.2%

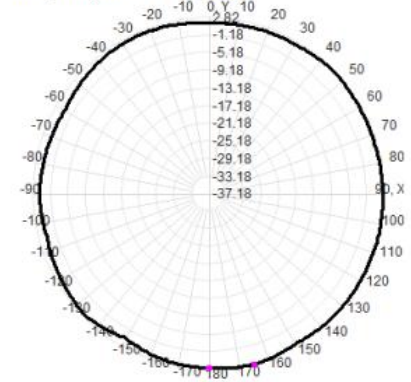
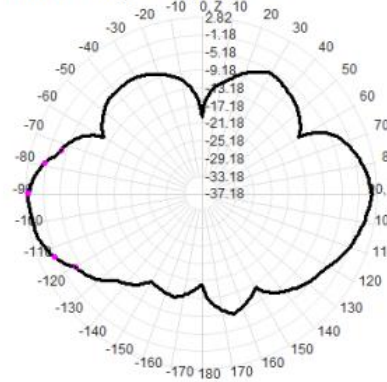
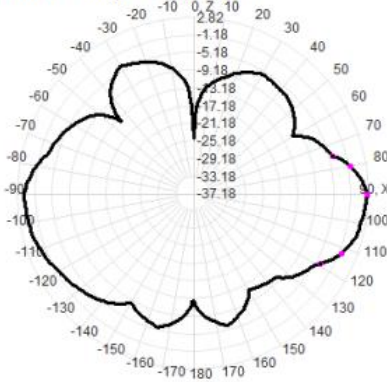
Back View



2400.0MHz Total(E1-XZ), Max=2.24dBi

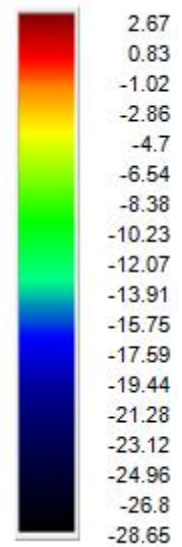
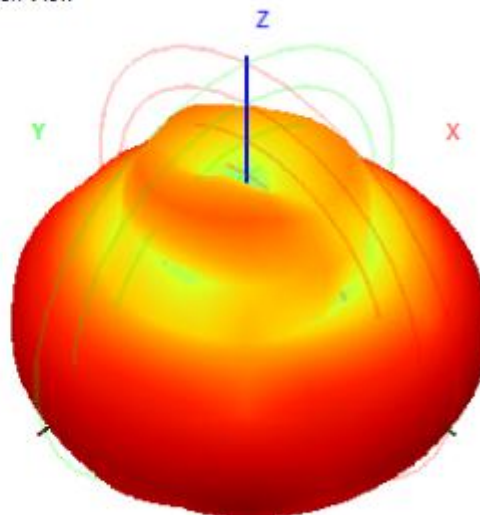
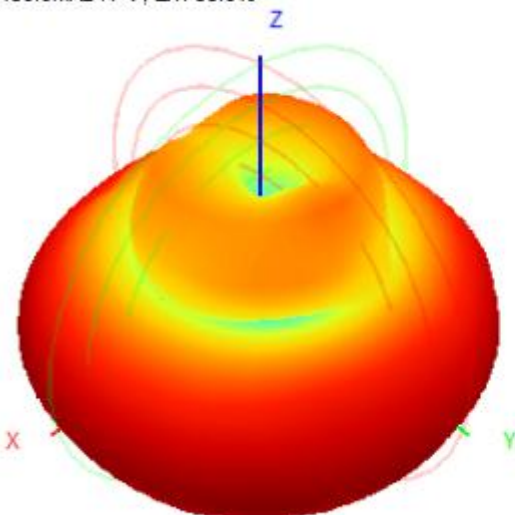
2400.0MHz Total(E2-YZ), Max=2.32dBi

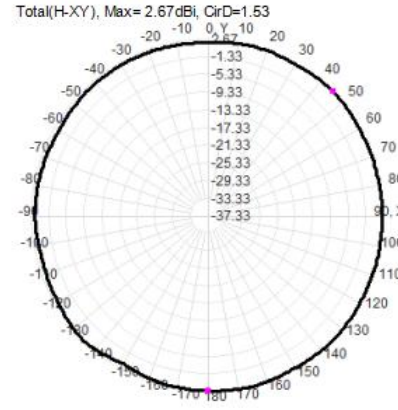
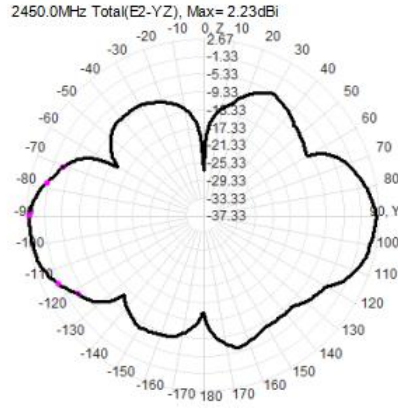
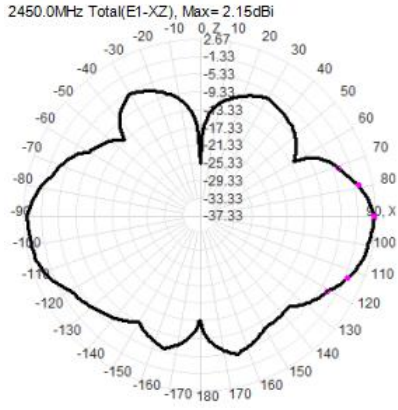
Total(H-XY), Max=2.62dBi, CirD=2.28



2450.0MHz H+V, Eff: 55.0%

Back View





2480.0MHz H+V, Eff: 52.9%

Back View

