# 产品规格书

# PRODUCTSPECIFICATION

**Product description:** **2.4G patch Antenna**

**Uni Link's part number:** **MS-2.4G-TP1**

**Issue Date:** **2022-12-30**

**Note:** **2400-2500MHz,5100-5800MHz**

**male**

## Application and Features

### Applications:

1： 2.4G/5.8G ISM band applications

2： ISM, RFID applications

3： Remote antenna location better reception

### Features :

1： Compact size

2： Mounting foam tape on back

3： Indoor or outdoor use

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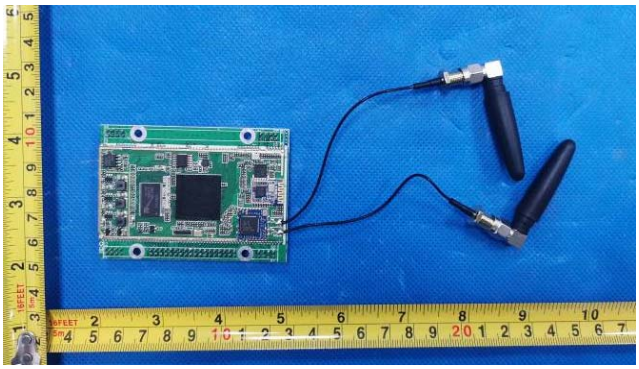
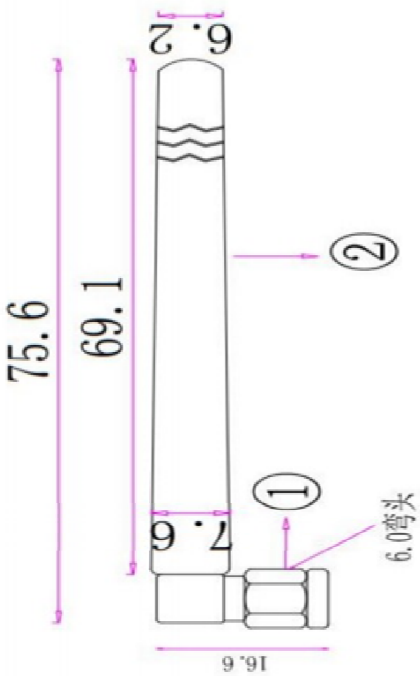
| 电性能指标 Electrical Specifications | |
|---|---|
| 频率范围 Frequency Range (MHz) | 2400-2500 |
| 频带宽度 Bandwidth (MHz) | 100 |
| 输入阻抗 Input Impedance (Ω) | 50 |
| 电压驻波比 V.S.W.R | ≤ 1.5 |
| 增益 Gain (dBi) | **2.4G:2dBi**<br>**5.8G:1.73dBi** |
| 最大输入功率 Max Input Power (w) | 50 |
| 机械指标 Mechanical Specifications | |
| 天线长度 Antenna Length (mm) | **50*8** |
| 连接器型号 Connect Type | SMA male(用户指定) |
| 外壳颜色 Radome Color | 黑色 Black |

2、产品图片（PICTURE）



3、产品规格图(DRAWING)

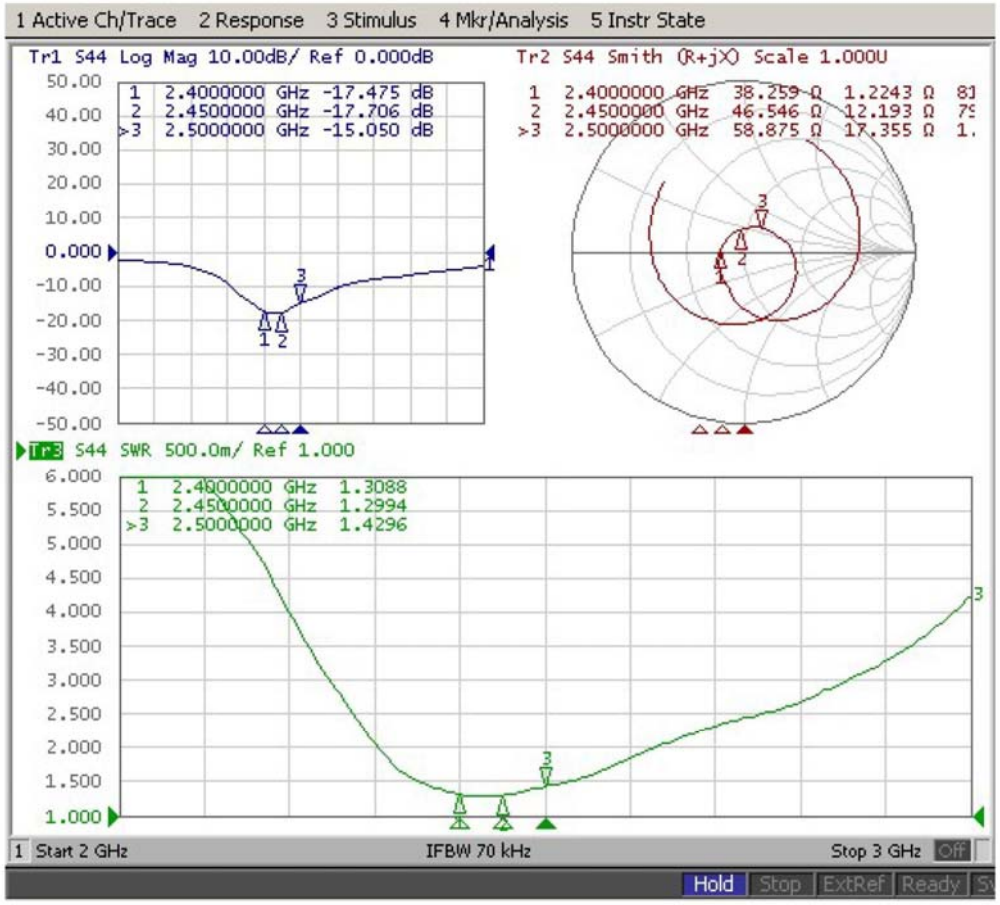
单位：mm　比例：1:1



## 4、机械性能（MECHANICAL CHARACTERISTICS）

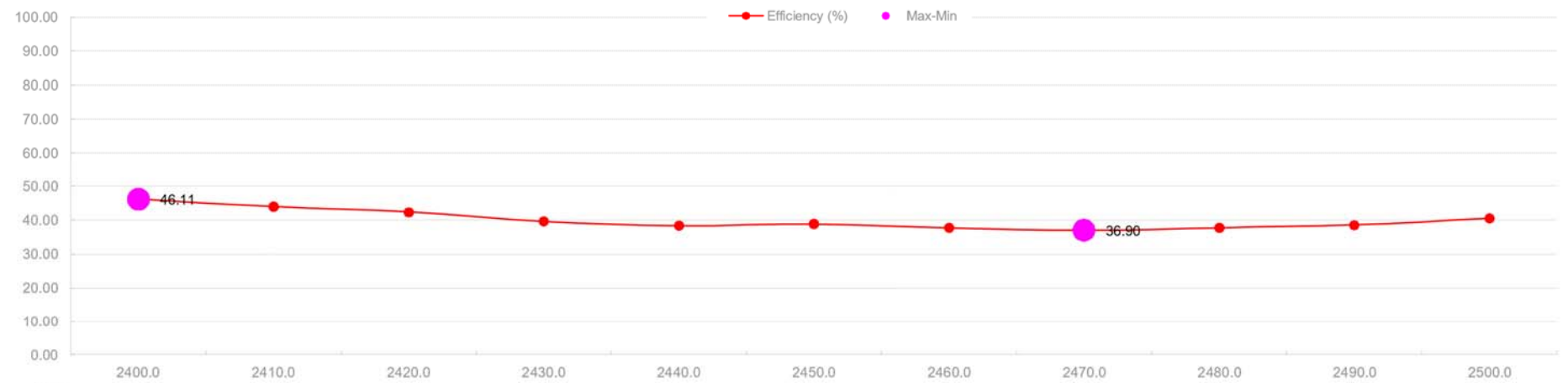
| | | | |
|---|---|---|---|
| 1 | 摇摆测试<br>BENDING TEST | 放离接头 30CM 的线端上荷重 120g，固定接头后进行遥摆测试，遥摆角度左右各 60 度，遥摆 1000 次后测试特性.<br><br>Put load 120g to 30cm cable from the end of the connector, fixed joints, swaying test at an angle of 60 degrees , test features after 1000 times | 特性无任何现象显示电器性能之损坏.<br>after 1000 times test no visible damage |

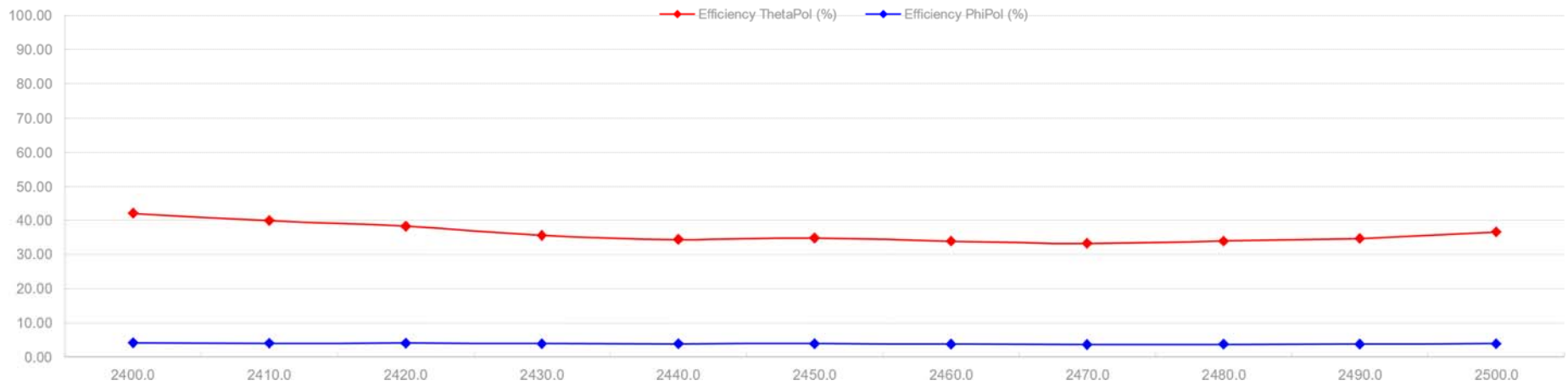
# 7、驻波图（VSWR）

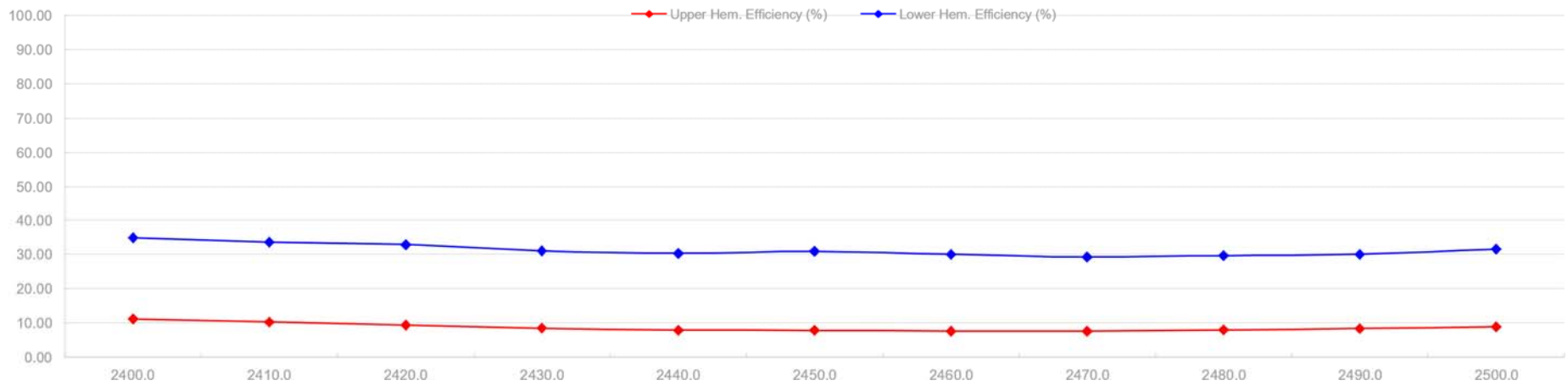

1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Tr1 S44 Log Mag 10.00dB/ Ref 0.000dB
1 2.4000000 GHz -17.475 dB
2 2.4500000 GHz -17.706 dB
>3 2.5000000 GHz -15.050 dB
Tr2 S44 Smith (R+jX) Scale 1.000U
1 2.4000000 GHz 38.259 Ω 1.2243 Ω
2 2.4500000 GHz 46.546 Ω 12.193 Ω
>3 2.5000000 GHz 58.875 Ω 17.355 Ω
Tr3 S44 SWR 500.0m/ Ref 1.000
1 2.4000000 GHz 1.3088
2 2.4500000 GHz 1.2994
>3 2.5000000 GHz 1.4296
1 Start 2 GHz
IFBW 70 kHz
Stop 3 GHz
Hold
Stop
ExtRef
Ready

# 科信无线

| 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 |
| Efficiency (dBi) | -3.36 | -3.57 | -3.74 | -4.03 | -4.17 | -4.11 | -4.24 | -4.33 | -4.24 | -4.15 | -3.93 |
| Gain (dBi) | 1.98 | 1.97 | 1.90 | 1.89 | 1.91 | 2.0 | 1.97 | 1.94 | 1.93 | 1.92 | 1.95 |
| Efficiency (%) | 46.11 | 43.91 | 42.30 | 39.55 | 38.26 | 38.78 | 37.65 | 36.90 | 37.67 | 38.49 | 40.48 |
| Directivity (dB) | 6.68 | 6.72 | 6.86 | 7.00 | 7.17 | 7.32 | 7.39 | 7.37 | 7.31 | 7.22 | 7.14 |
| Peak Gain Position (Theta) | 144.00 | 144.00 | 144.00 | 144.00 | 144.00 | 144.00 | 145.00 | 145.00 | 146.00 | 146.00 | 146.00 |
| Peak Gain Position (Phi) | 24.00 | 26.00 | 27.00 | 28.00 | 30.00 | 30.00 | 29.00 | 29.00 | 28.00 | 28.00 | 28.00 |
| Efficiency ThetaPol (%) | 41.95 | 39.80 | 38.17 | 35.54 | 34.32 | 34.80 | 33.83 | 33.16 | 33.88 | 34.65 | 36.47 |
| Efficiency PhiPol (%) | 4.16 | 4.11 | 4.13 | 4.01 | 3.94 | 3.98 | 3.82 | 3.74 | 3.78 | 3.84 | 4.01 |
| Upper Hem. Efficiency (%) | 11.21 | 10.30 | 9.41 | 8.51 | 7.96 | 7.88 | 7.67 | 7.66 | 8.02 | 8.39 | 8.91 |
| Lower Hem. Efficiency (%) | 34.90 | 33.61 | 32.90 | 31.05 | 30.30 | 30.90 | 29.98 | 29.24 | 29.65 | 30.09 | 31.57 |
| T90(H)圆度 | 4.66 | 4.84 | 5.14 | 5.55 | 6.26 | 7.19 | 8.21 | 9.00 | 9.21 | 8.64 | 7.90 |
| Gain 15deg (dBi) | | | | | | | | | | | |
| E1(XZ)波瓣宽度 | 25.00 | 26.00 | 26.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 24.00 | 24.00 | 24.00 |
| E1(XZ)前后比 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| E2(YZ)波瓣宽度 | 21.00 | 20.00 | 20.00 | 43.00 | 43.00 | 43.00 | 43.00 | 43.00 | 42.00 | 42.00 | 41.00 |
| E2(YZ)前后比 | 1.63 | 1.61 | 1.38 | 0.98 | 0.80 | 0.62 | 0.50 | 0.35 | 0.20 | 0.04 | 0.03 |
| 最大增益处轴比(P) | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 |
| 仰角 10 度最差(大)轴比(P) | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 |
| Hc(XY)波瓣宽度 | 317.00 | 315.00 | 274.00 | 270.00 | 268.00 | 268.00 | 267.00 | 267.00 | 267.00 | 270.00 | 271.00 |
| Hc(XY)前后比 | 0.07 | 0.15 | 0.28 | 0.37 | 0.39 | 0.45 | 0.65 | 0.72 | 0.56 | 0.28 | 0.06 |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| Empty | | | | | | | | | | | |

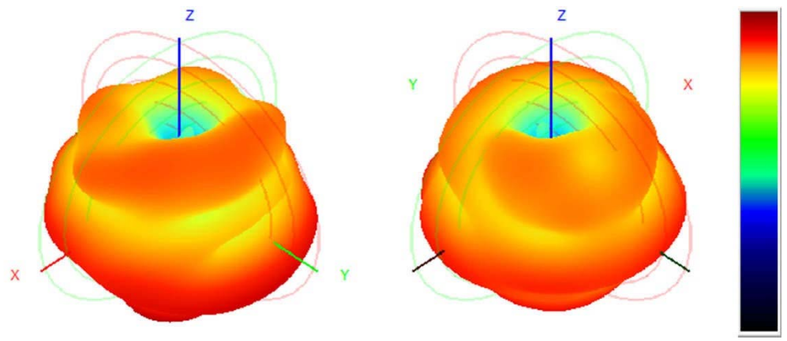


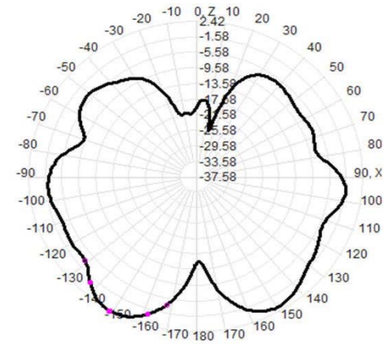

Efficiency ThetaPol (%)
Efficiency PhiPol (%)
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
2400.0
2410.0
2420.0
2430.0
2440.0
2450.0
2460.0
2470.0
2480.0
2490.0
2500.0


Upper Hem. Efficiency (%)
Lower Hem. Efficiency (%)
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
2400.0
2410.0
2420.0
2430.0
2440.0
2450.0
2460.0
2470.0
2480.0
2490.0
2500.0

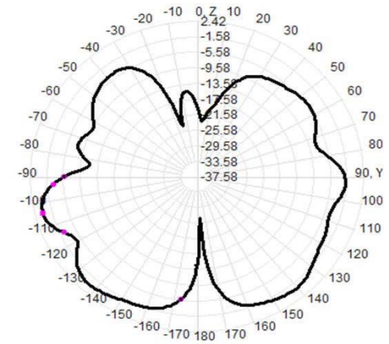
2400.0MHz H+V, Eff: 46.1%
View

Back
2400.0MHz Total(E1-XZ), Max=

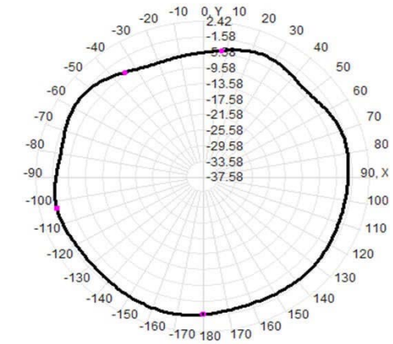



2.42dBi2400.0MHz Total(E2-YZ), Max= 0.43dBi
3.31

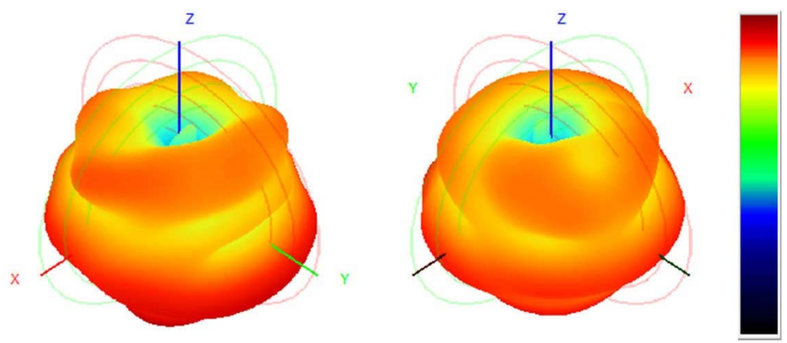



Total(H-XY), Max= -1.79dBi, CirD=4.66

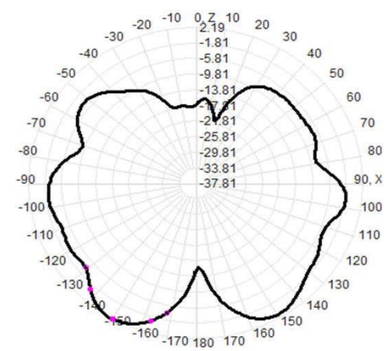



2410.0MHz H+V, Eff: 43.9%

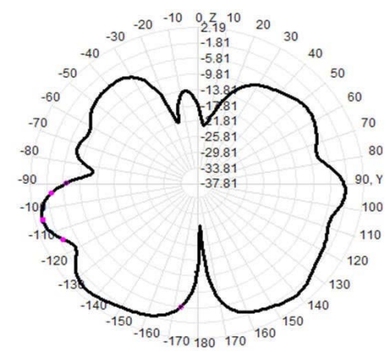
Back View



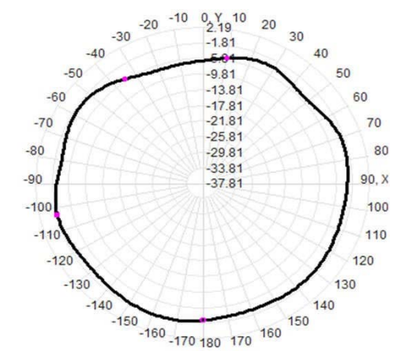

2410.0MHz Total(E1-XZ), Max= 2.19dBi



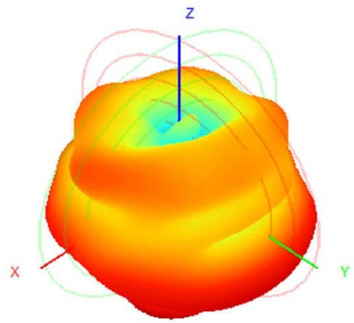

2410.0MHz Total(E2-YZ), Max= 0.30dBi



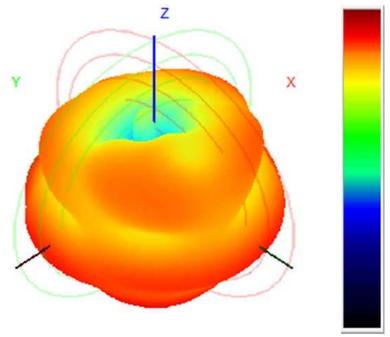

Total(H-XY), Max= -2.13dBi,
CirD=4.84



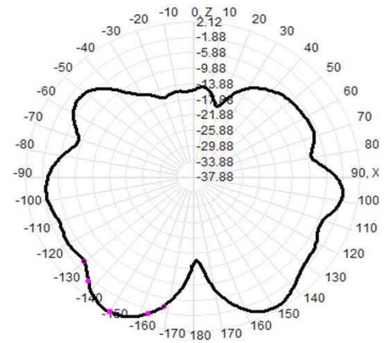
2420.0MHz H+V, Eff: 42.3%



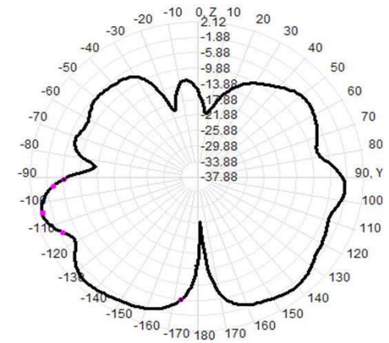

Back View



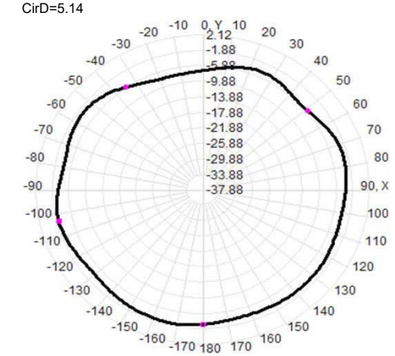

2420.0MHz Total(E1-XZ), Max= 2.12dBi



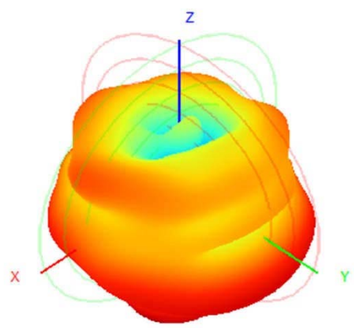

2420.0MHz Total(E2-YZ), Max= 0.25dBi



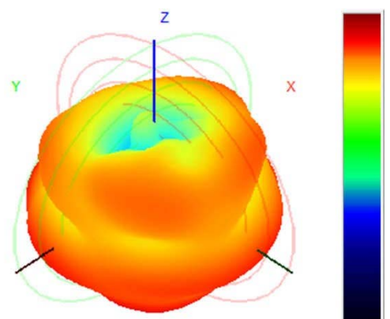

Total(H-XY), Max= -2.51dBi, CirD=5.14



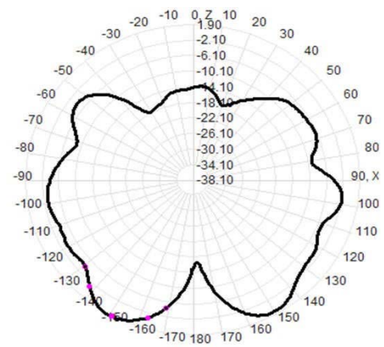

2430.0MHz H+V, Eff: 39.6%



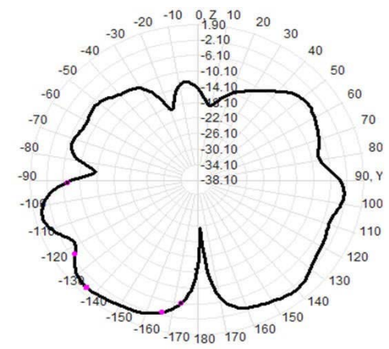

Back View

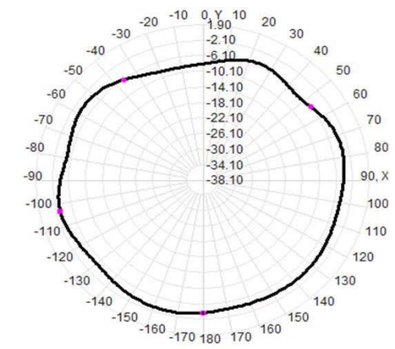



2430.0MHz Total(E1-XZ), Max= 1.90dBi




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

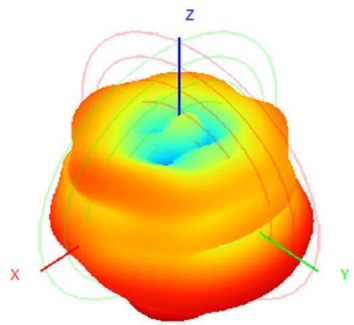


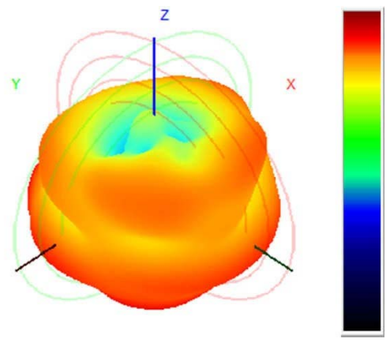

0.00dBi

Total(H-XY), Max= -3.11dBi, CirD=5.55

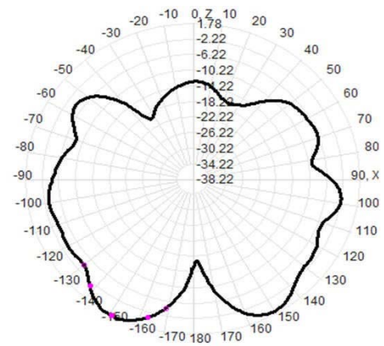
2440.0MHz H+V, Eff: 38.3%



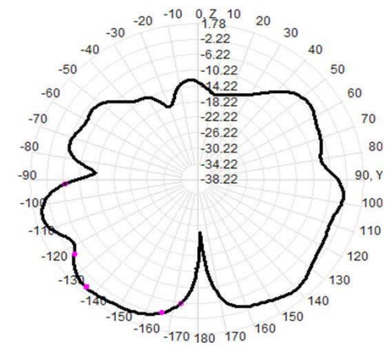

Back View



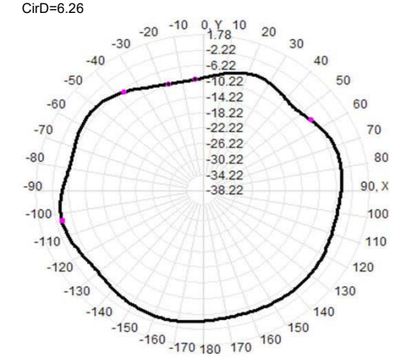

2440.0MHz Total(E1-XZ), Max= 1.78dBi



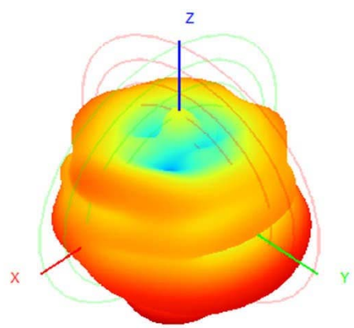

2440.0MHz Total(E2-YZ), Max= 0.11dBi



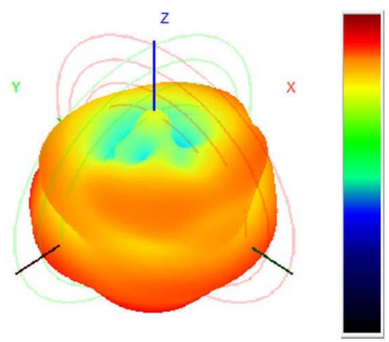

Total(H-XY), Max= -3.68dBi, CirD=6.26



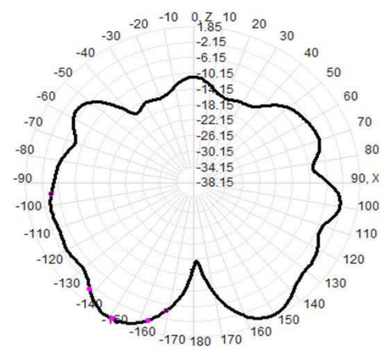

2450.0MHz H+V, Eff: 38.8%



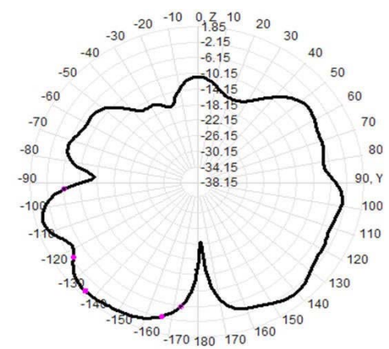

Back View



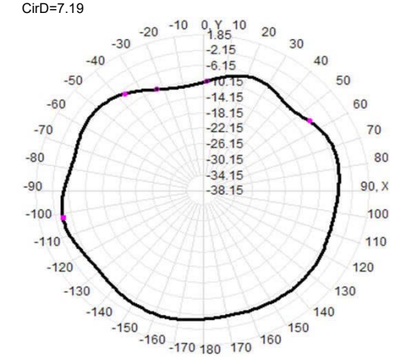

2450.0MHz Total(E1-XZ), Max= 1.85dBi




2450.0MHz Total(E2-YZ), Max= 0.38dBi

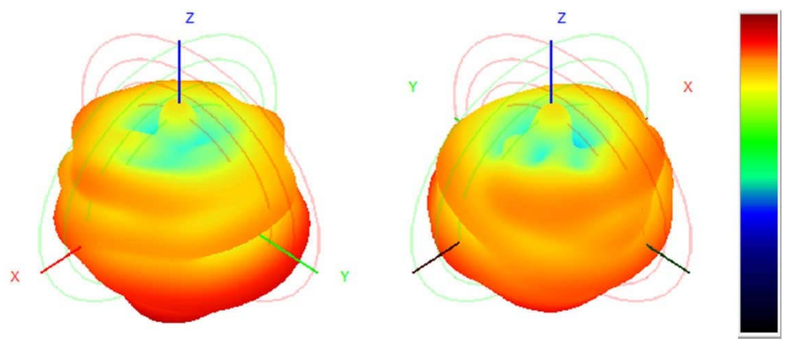


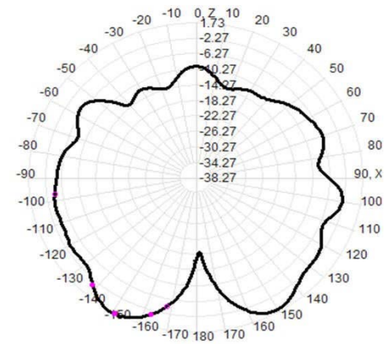

Total(H-XY), Max= -4.01dBi, CirD=7.19



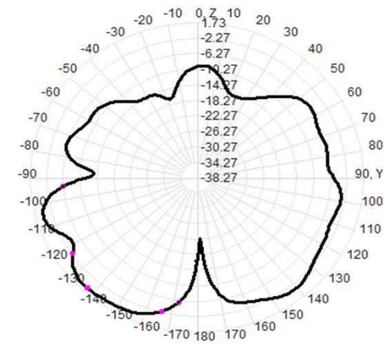
2460.0MHz H+V, Eff: 37.7%
View

Back
2460.0MHz Total(E1-XZ), Max=

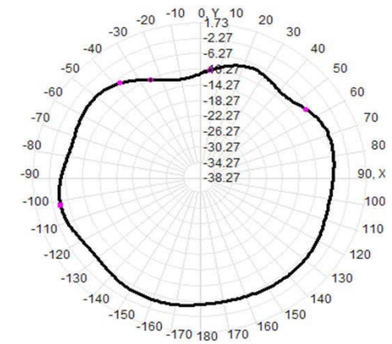


1.73dBi2460.0MHz Total(E2-YZ), Max= 0.38dBi
3.14

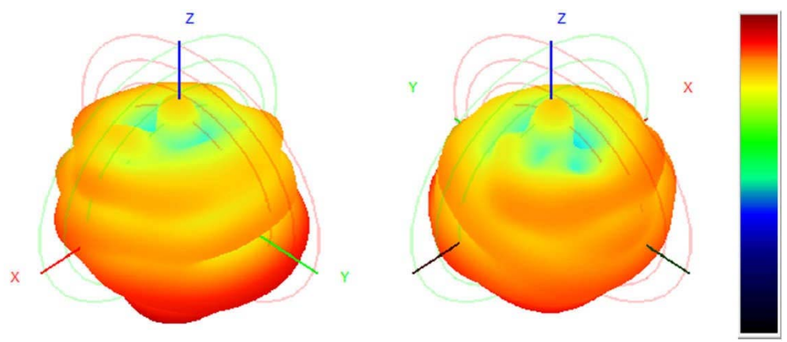


Total(H-XY), Max= -4.29dBi, CirD=8.21

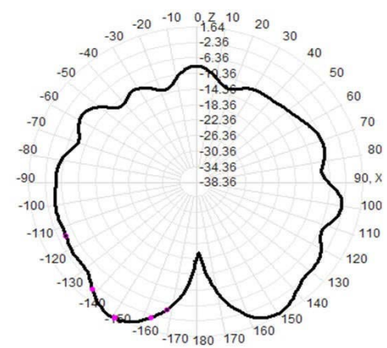


2470.0MHz H+V, Eff: 36.9%

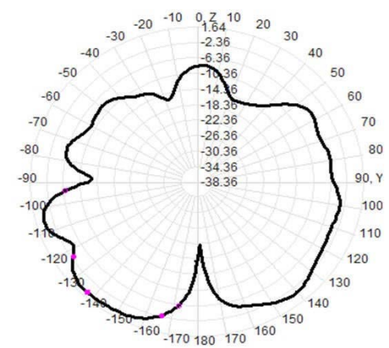
Back View



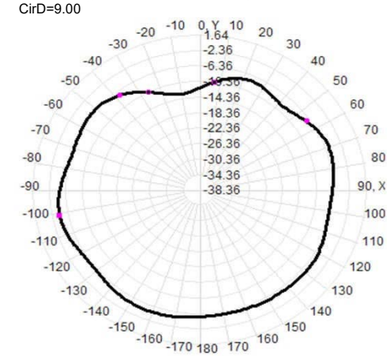

2470.0MHz Total(E1-XZ), Max= 1.64dBi



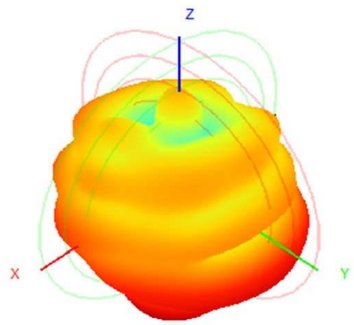
2470.0MHz Total(E2-YZ), Max= 0.29dBi



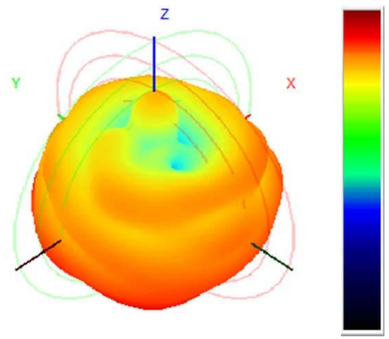
Total(H-XY), Max= -4.26dBi,
CirD=9.00



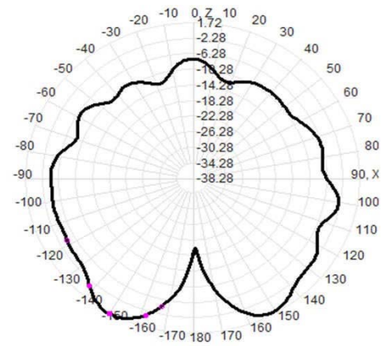
2480.0MHz H+V, Eff: 37.7%



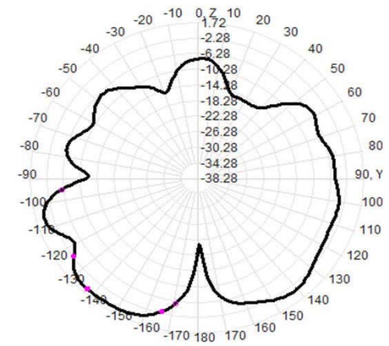

Back View



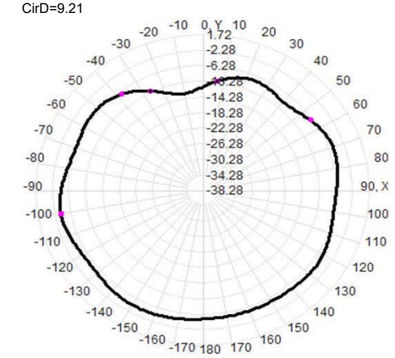

2480.0MHz Total(E1-XZ), Max= 1.72dBi



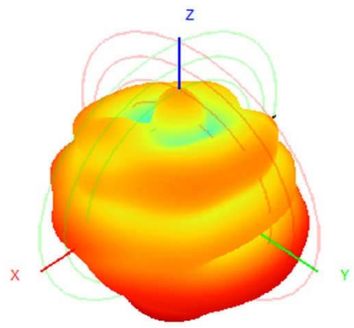

2480.0MHz Total(E2-YZ), Max= 0.32dBi



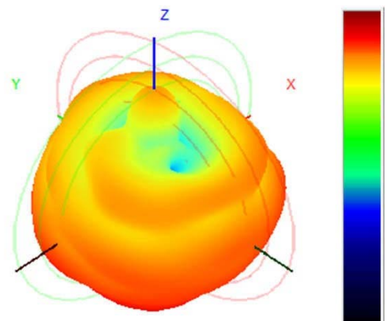

Total(H-XY), Max= -3.85dBi, CirD=9.21



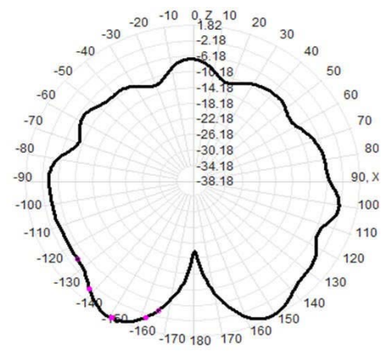

2490.0MHz H+V, Eff: 38.5%



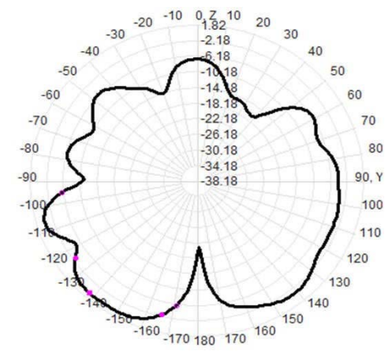

Back View



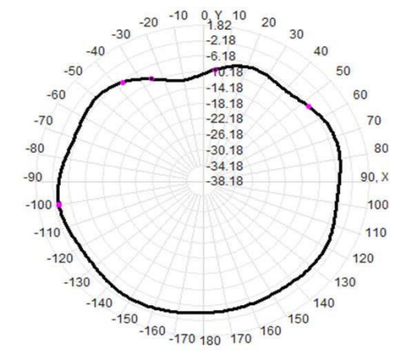

2490.0MHz Total(E1-XZ), Max= 1.82dBi



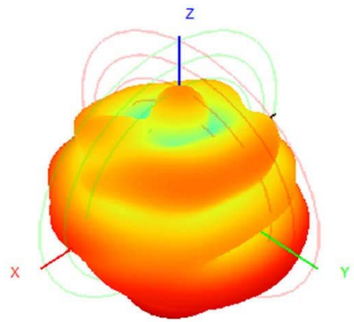

2490.0MHz Total(E2-YZ), Max= 0.26dBi



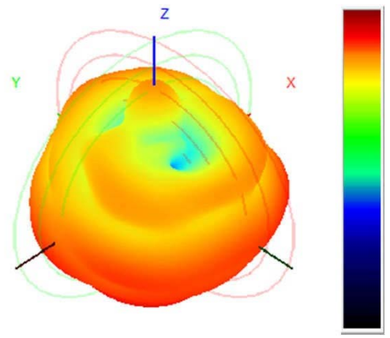

Total(H-XY), Max= -3.30dBi, CirD=8.64



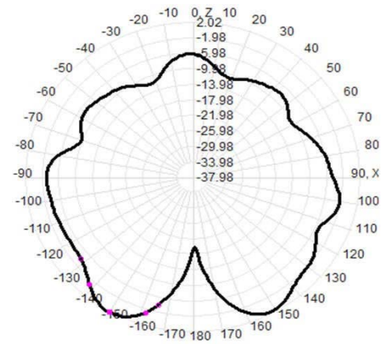
2500.0MHz H+V, Eff: 40.5%



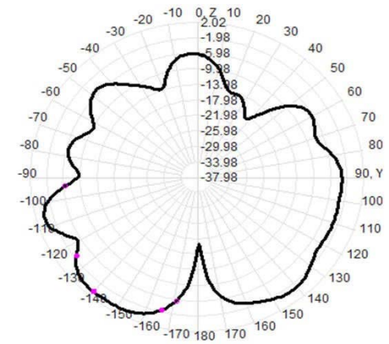

Back View



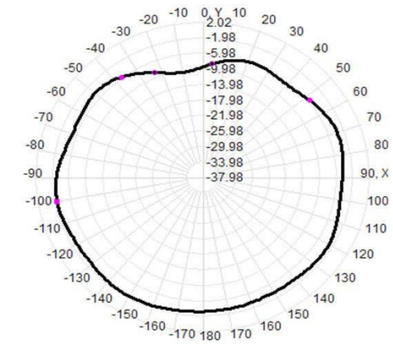

2500.0MHz Total(E1-XZ), Max= 2.02dBi

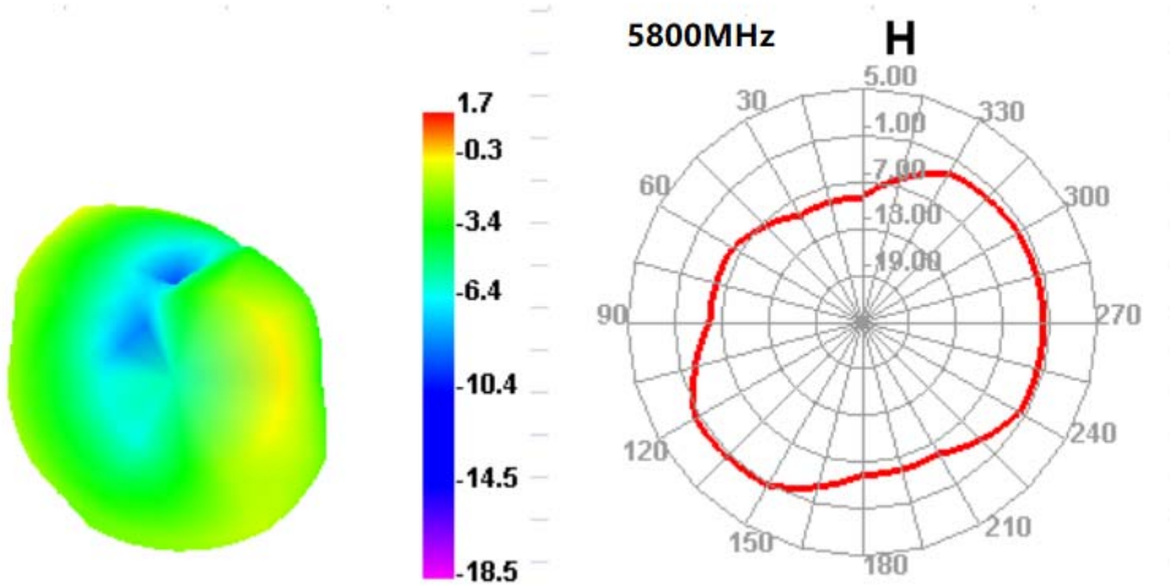



2500.0MHz Total(E2-YZ), Max= 0.37dBi




Total(H-XY), Max= -2.62dBi, CirD=7.90




5800MHz
H
1.7
-0.3
-3.4
-6.4
-10.4
-14.5
-18.5
5.00
-1.00
-7.00
-13.00
-19.00
30
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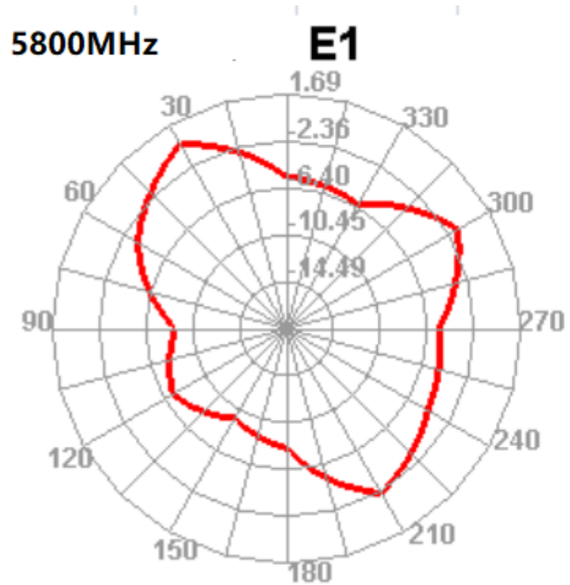
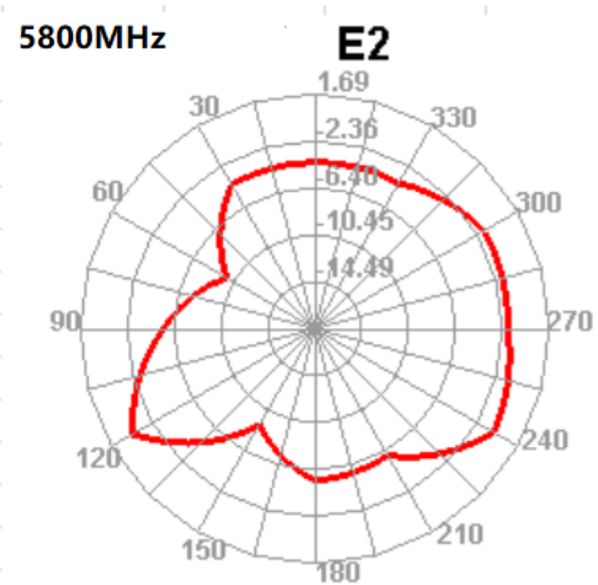
240
150
210
180




5800MHz

| Effi (%%) | Effi (dB) | Gain (dBi) | Gain (dBd) | Max (dB) | Min (dB) | Attenut Hor | Attenut Ver |
|---|---|---|---|---|---|---|---|
| 50.67 | -2.95 | 1.73 | -0.42 | 1.73 | -18.33 | 51.53 | 51.61 |