# Recognition

**（Product Name）：DD-X20**

**（interior M/ N）：20505010005**

**（Product specifications）：FPC**

**（Date of issue）：2023-7-19**

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# 1 产品说明 Product Description

The antenna is designed for superior performance，and can be widely used for wireless applications.
We provide comprehensive antenna design support such as simulation, testing and manufacturing for custom antenna solutions to meet your specific application needs.
该天线设计性能优越，可广泛用于无线应用。
我们为定制天线解决方案提供仿真，测试和制造等全面的天线设计支持，以满足您的具体应用需求。

# 2 整机示意图 diagrammatic sketch of the whole machine

# 3 产品规格 Product Specifications

| 无源电性能指标 Passive Electrical Specifications | |
|---|---|
| 频率范围 Frequency Range (MHz) | 2400-2500MHz |
| 输入阻抗 Input Impendence (Ω) | 50 Ω |
| 电压驻波比 VSWR | ≤ 3.0 |
| 增益 Gain (dBi) | ≤ -0.3 |
| 极化形式 Polarization Type | 线性 Linear |
| **机械指标 Mechanical Specifications** | |

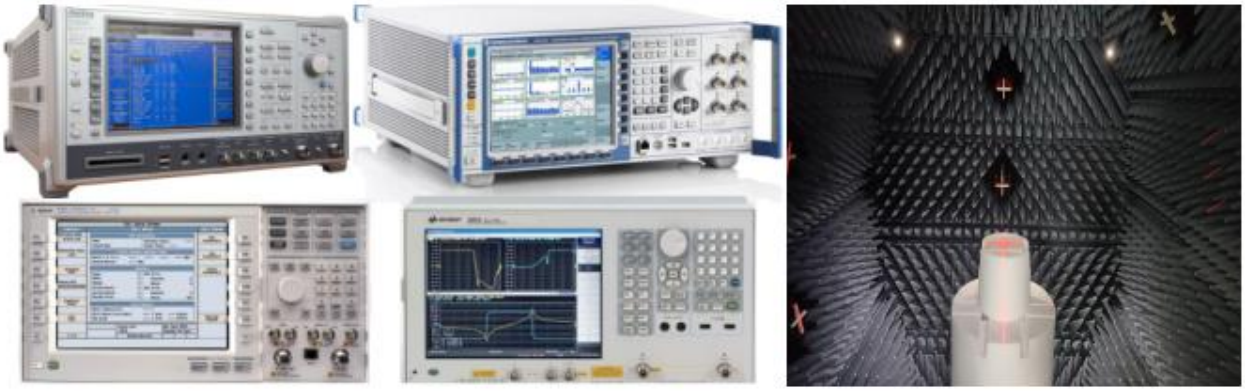
| | |
|---|---|
| 天线尺寸 Antenna Size (mm) | 22.4*12.4mm |
| 馈线长度 Cable Length (mm) | 0.81　　60mm |
| 连接器型号 Connect Type | - |
| 工作温度 Working Temperature (°C) | -20 ~ +85 |
| 颜色 Radome Color | 黑色 Black |

## 4 测试环境 Test environment

网络分析仪：安捷伦 5071B
Network Analyzer: Agilent 5071 B

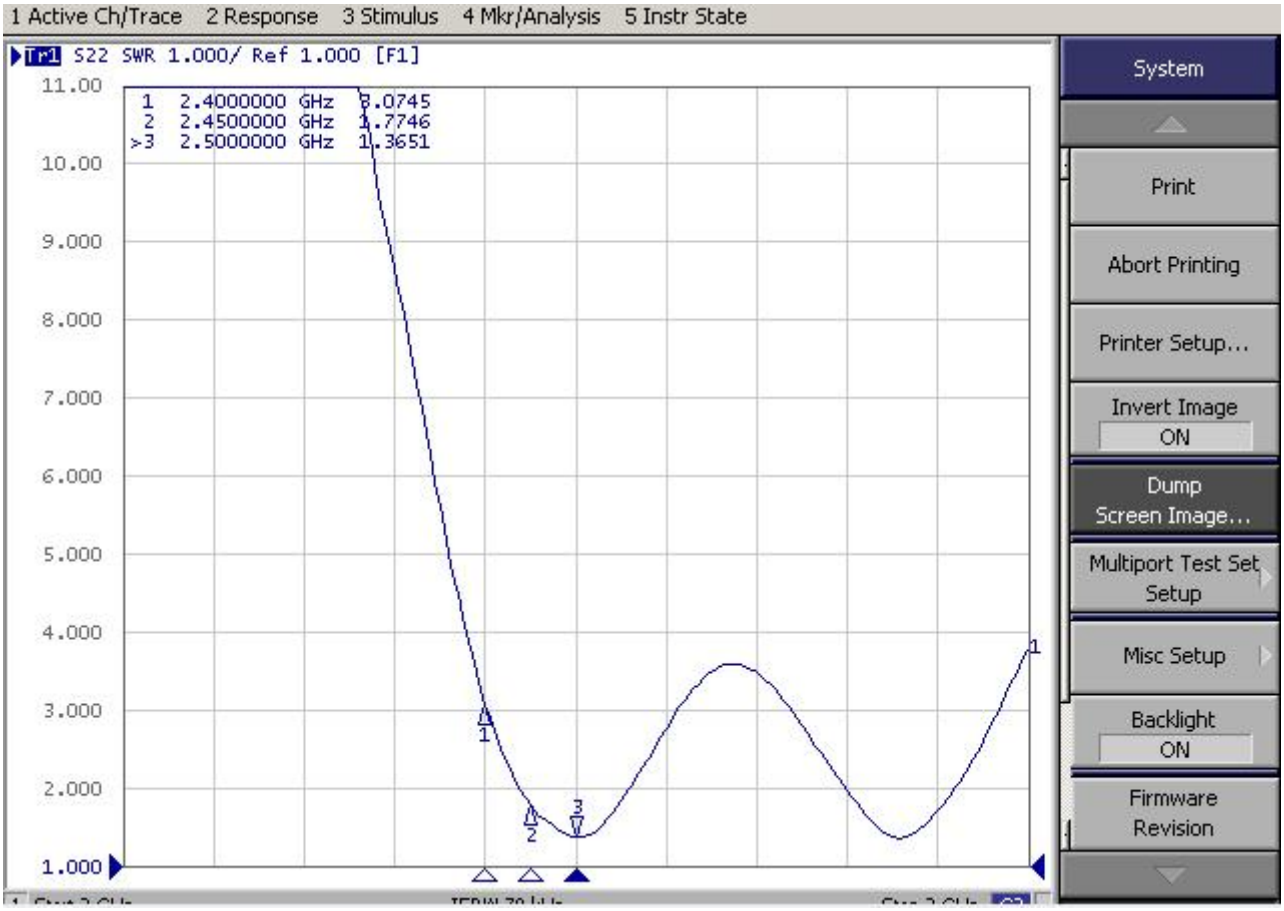
综合测试仪：R&SCMW500(2/3/4G/NB-IoT/W/BT)；AnritsuMT8820C
Comprehensive tester: R&S CMW500(2/3/4G/NB-IoT/WIFI/BT); Anritsu MT8820C

微波暗室：5G SISO/MIMO, 400 MHz – 8.0 GHz
RayZone® 2800 Chamber 5G (FR1) SISO/MIMO, 400 MHz – 8.0 GHz



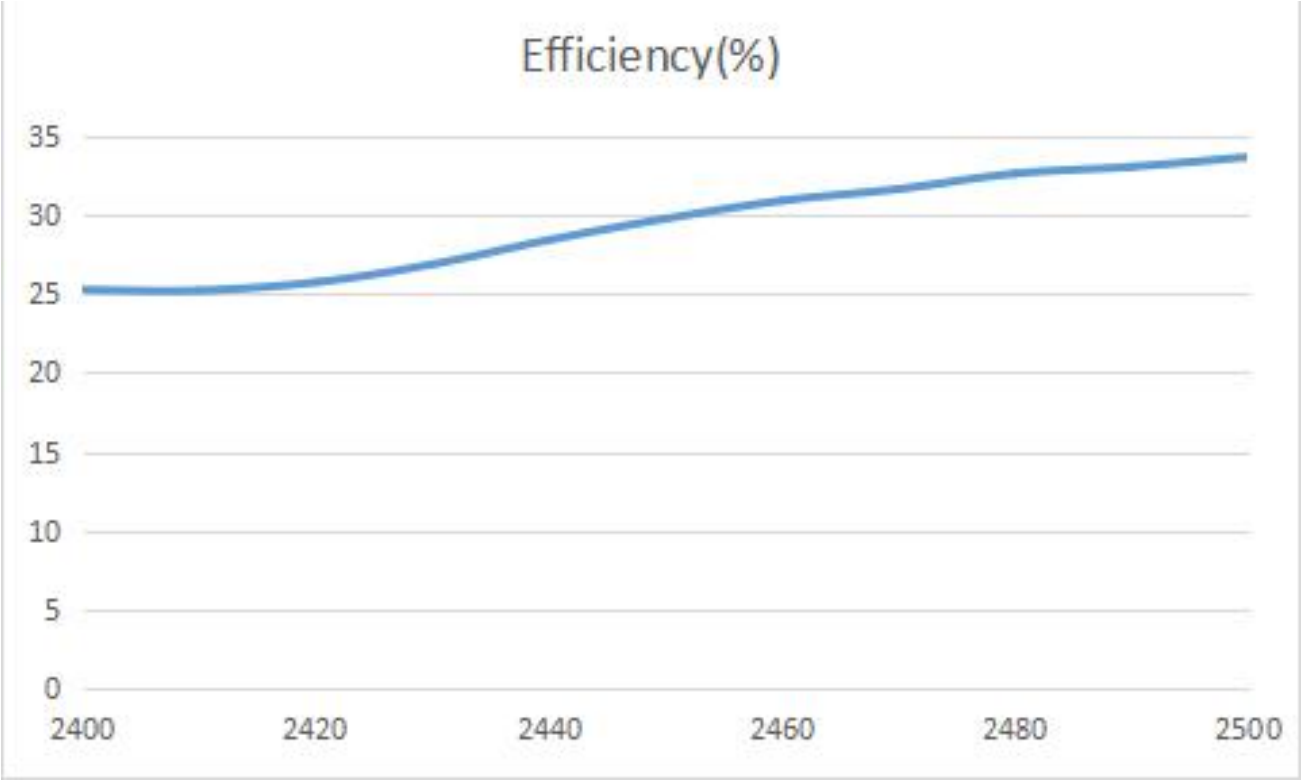
# 5 测试数据 Test data

- 驻波比图 VSWR



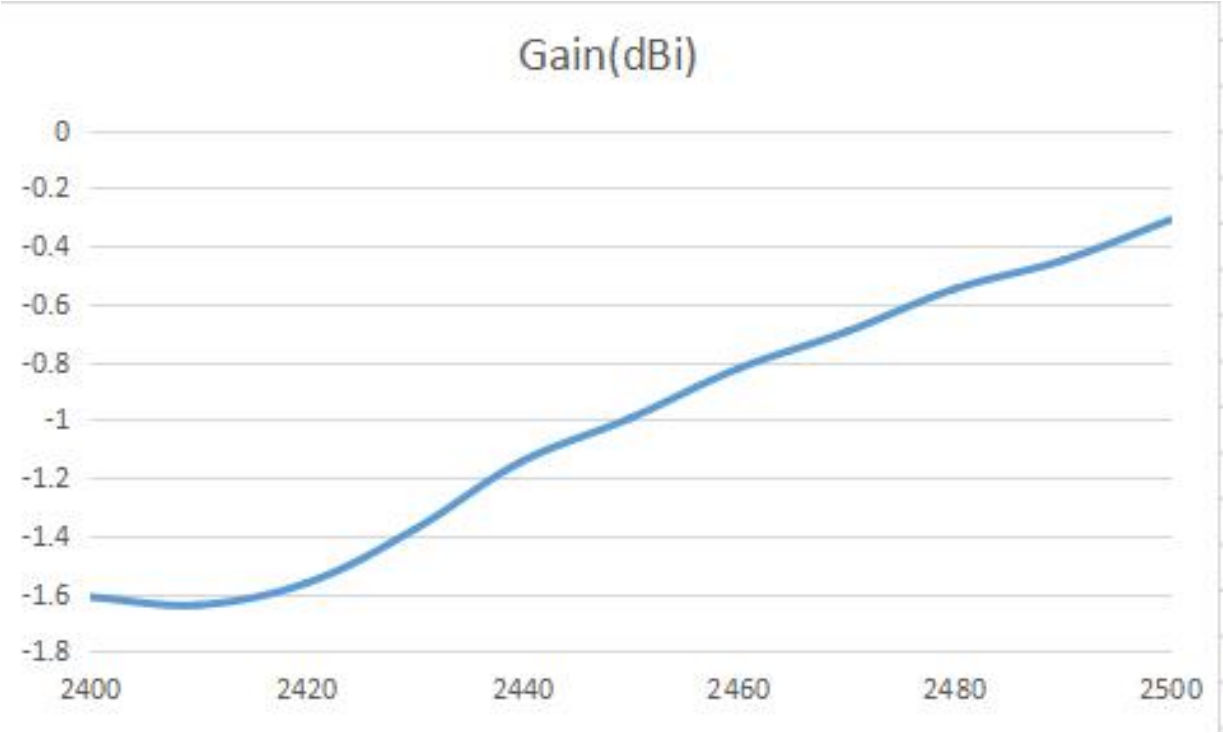

| Frequency(MHz) | 2400 | 2450 | 2500 |
|---|---|---|---|
| VSWR | 3.07 | 1.77 | 1.36 |

- 效益 Efficiency



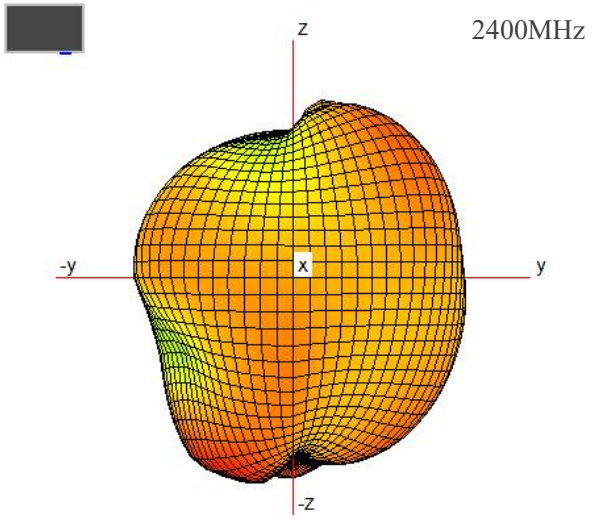

| Frequency(MHz) | 2400 | 2450 | 2500 |
|---|---|---|---|
| Efficiency(%) | 25.23 | 29.73 | 33.63 |

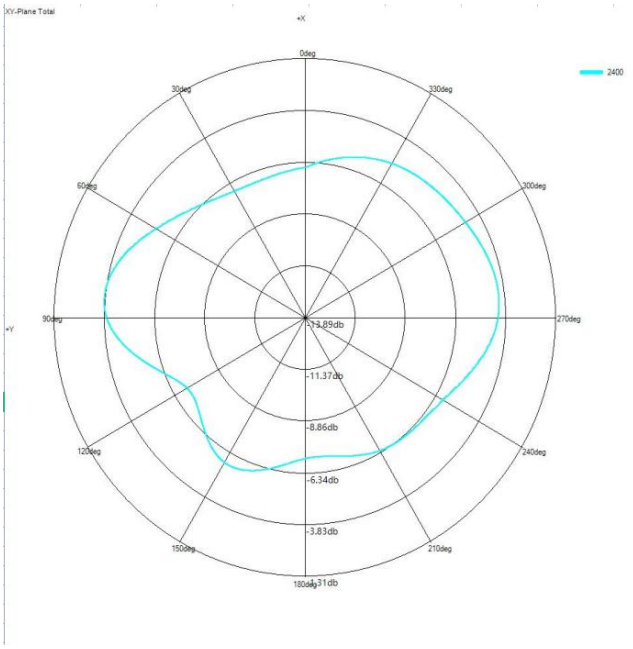
- 增益 Gain

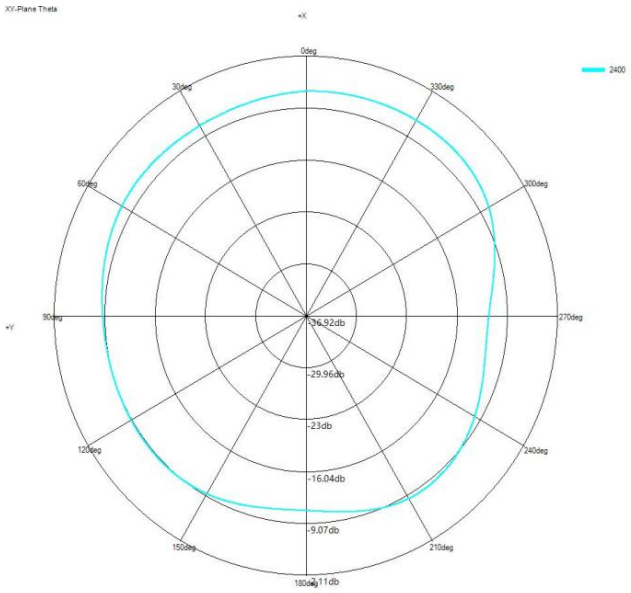


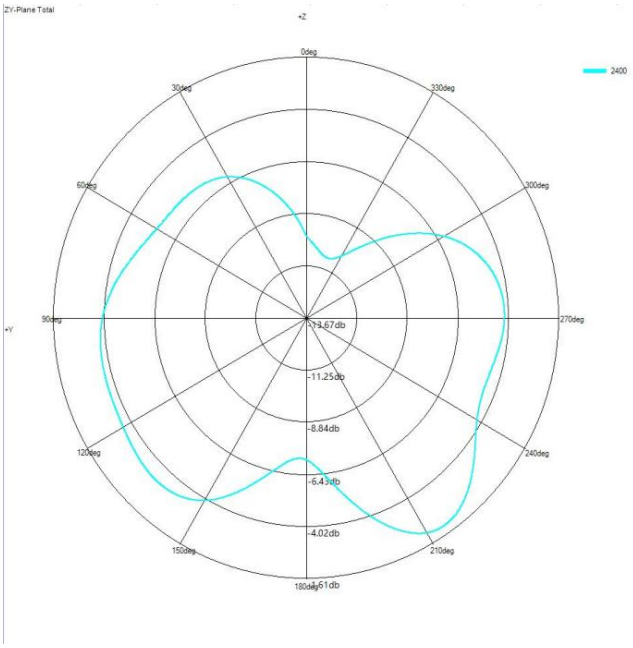

| Frequency(MHz) | 2400 | 2450 | 2500 |
|---|---|---|---|
| Gain | -1.61 | -5.26 | -4.73 |

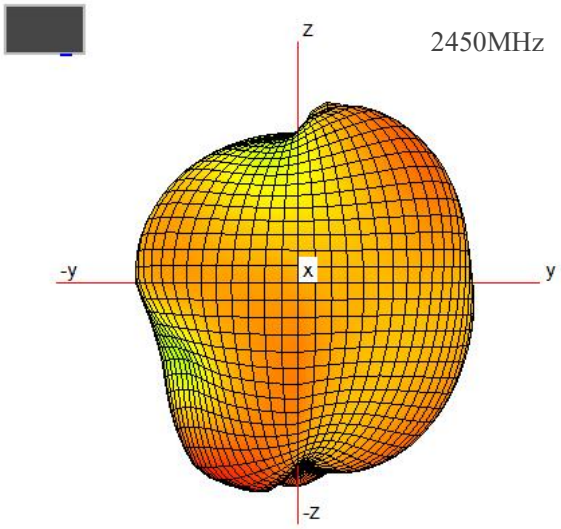
- 方向辐射图 Radiation Patterns

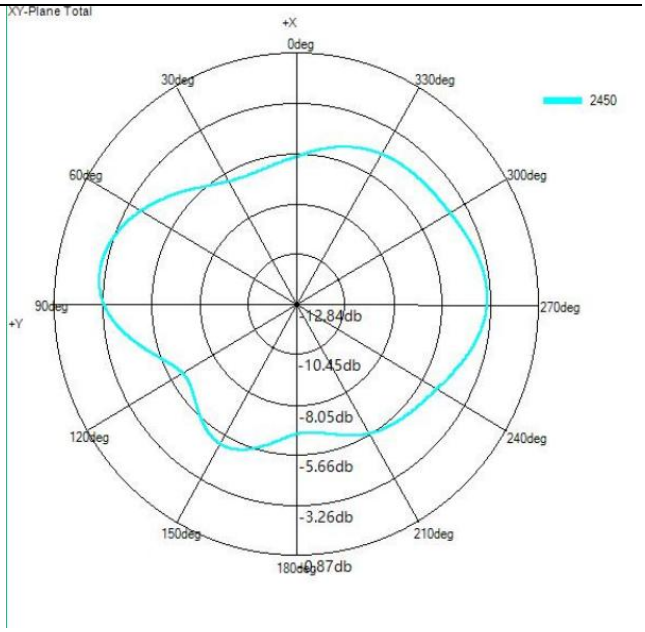


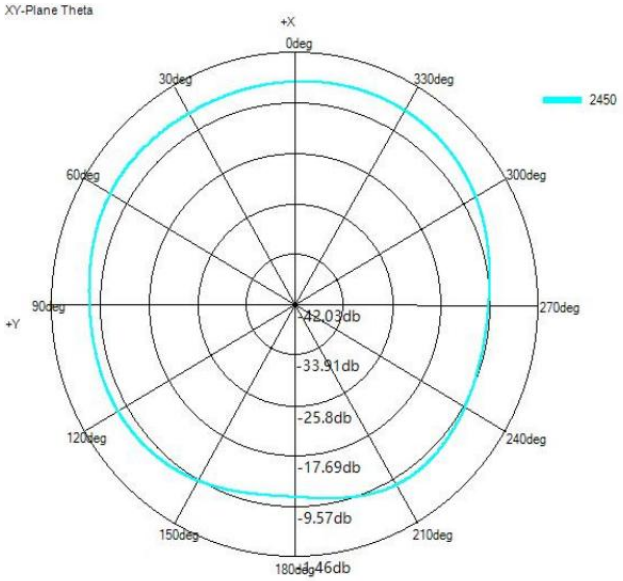



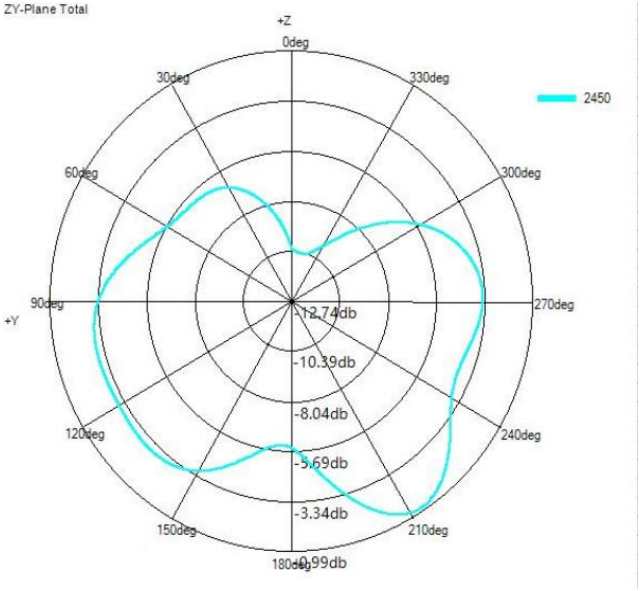



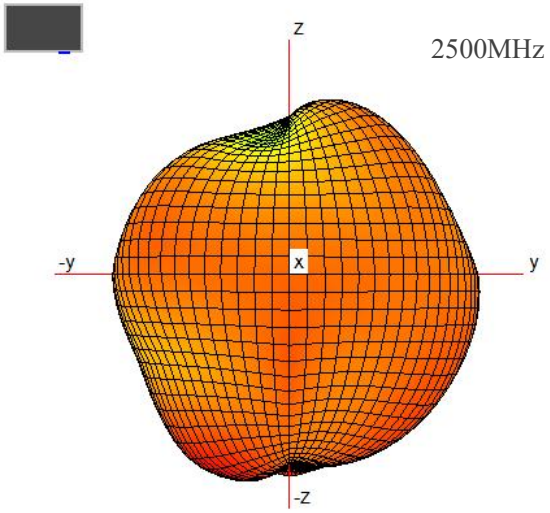



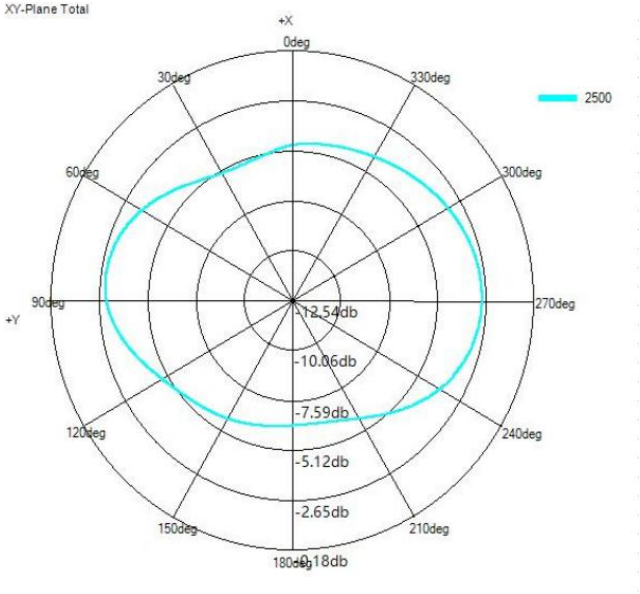

2450MHz
z
-y
x
y
-z

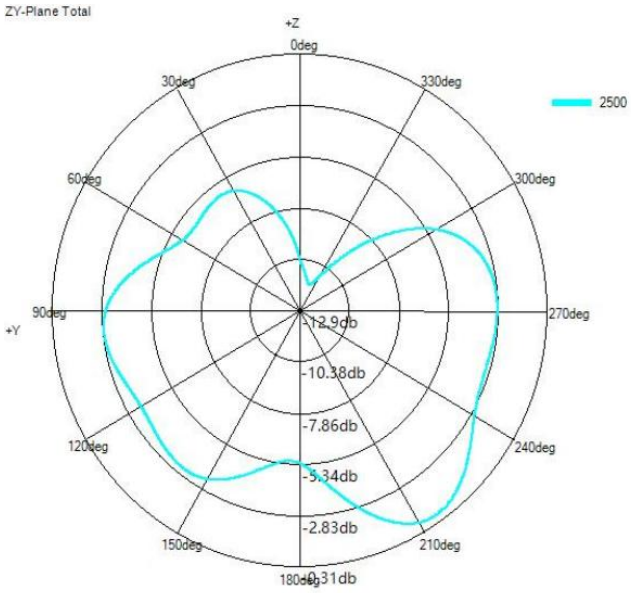

XY-Plane Total
+X
0deg
30deg
330deg
60deg
300deg
90deg
+Y
270deg
120deg
240deg
150deg
210deg
180deg
2450
-12.84db
-10.45db
-8.05db
-5.66db
-3.26db
-0.87db

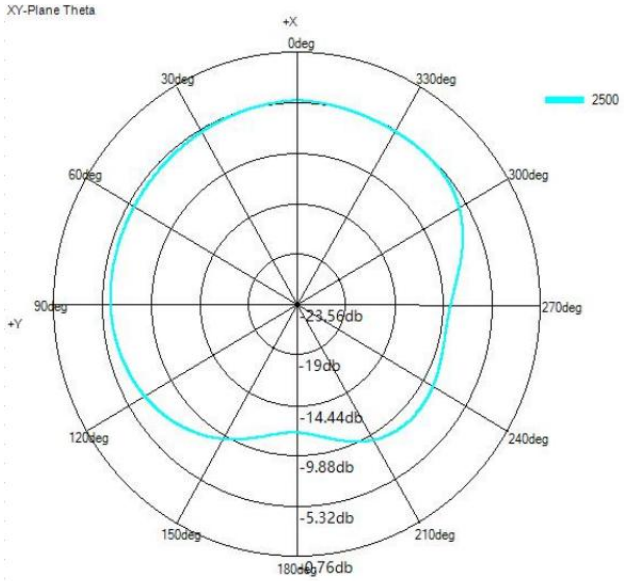
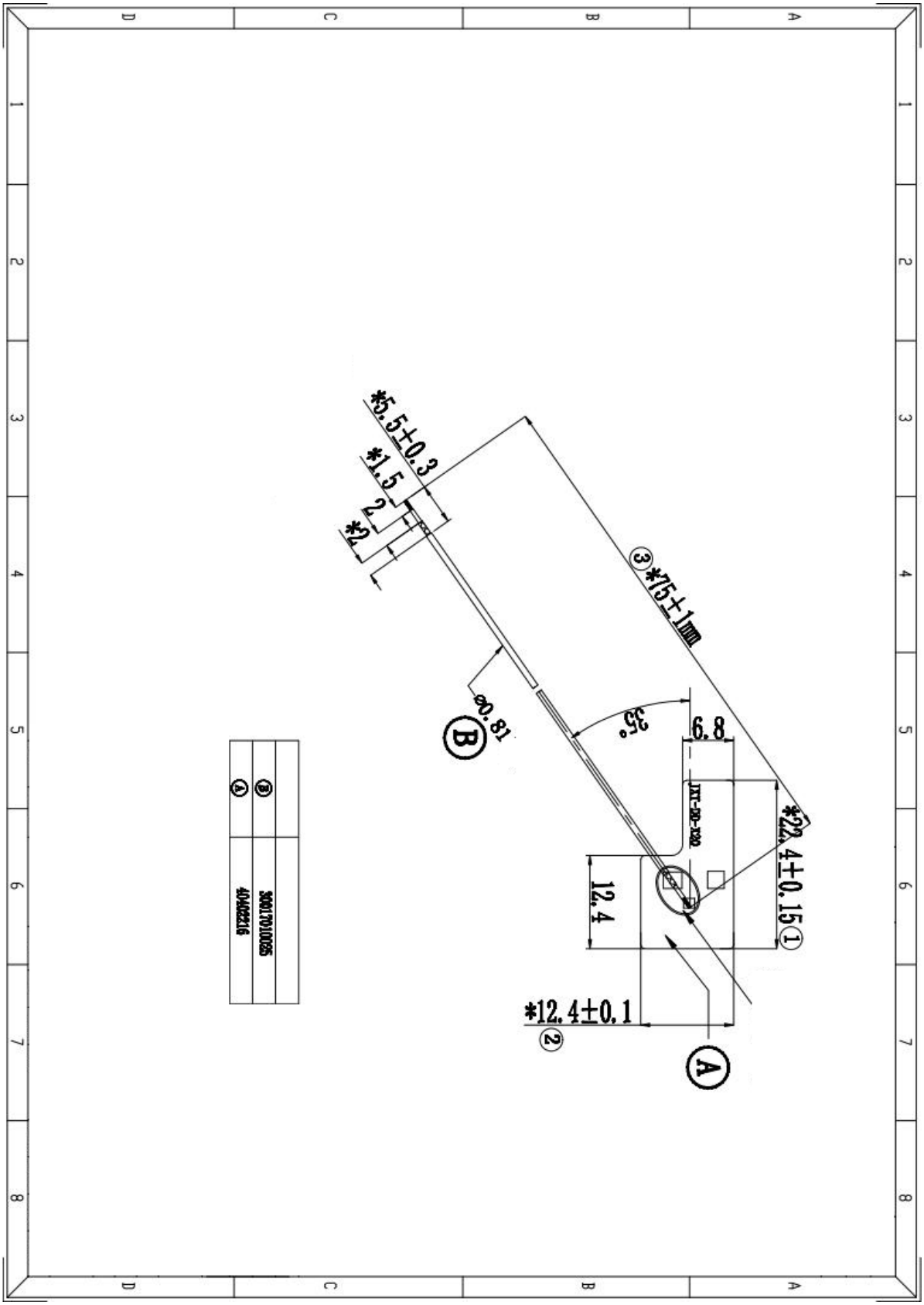

XY-Plane Theta
+X
0deg
30deg
330deg
60deg
300deg
90deg
+Y
270deg
120deg
240deg
150deg
210deg
180deg
2450
-42.03db
-33.91db
-25.8db
-17.69db
-9.57db
-1.46db


ZY-Plane Total
+Z
0deg
30deg
330deg
60deg
300deg
90deg
+Y
270deg
120deg
240deg
150deg
210deg
180deg
2450
-12.74db
-10.39db
-8.04db
-5.69db
-3.34db
-0.99db


2500MHz
z
-y
x
y
-z


XY-Plane Total
+X
0deg
30deg
330deg
60deg
300deg
90deg
+Y
270deg
120deg
240deg
150deg
210deg
180deg
2500
-12.54db
-10.06db
-7.59db
-5.12db
-2.65db
-0.18db


ZY-Plane Total
+Z
0deg
30deg
330deg
60deg
300deg
90deg
+Y
270deg
120deg
240deg
150deg
210deg
180deg
2500
-12.9db
-10.38db
-7.86db
-5.34db
-2.83db
-0.31db


XY-Plane Theta
+X
0deg
30deg
330deg
60deg
300deg
90deg
+Y
270deg
120deg
240deg
150deg
210deg
180deg
2500
-23.56db
-19db
-14.44db
-9.88db
-5.32db
-0.76db

# 6 工程图 Engineering drawings