



Shenzhen xingtong wireless technology co.,  
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Address: 3/F, Building A1, Qiangrongdong Industrial Zone,  
Jiuwei, Xixiang, Baoan District, Shenzhen

# Product specification

Product number: F3

Product name: 2.4GHZ/BT-ANT

Product item number:

Producer	Audit	Date
Huangjiajun	Wu Yanlong	2023-04-25

Customer confirmation:

Customer name:
Approval :
Date :
Notes :

Please accept your signature and seal and return one copy to our company for filing. Thank you for your cooperation!



Shenzhen Xingtong Wieress Technology Co., Ltd

Date

2023-4-25

Version

A0

File number

XT-YF-004

Product model

F3-BT-ANT

Product number

F3-BT-2.4GHZ

### 1.Product Constrution

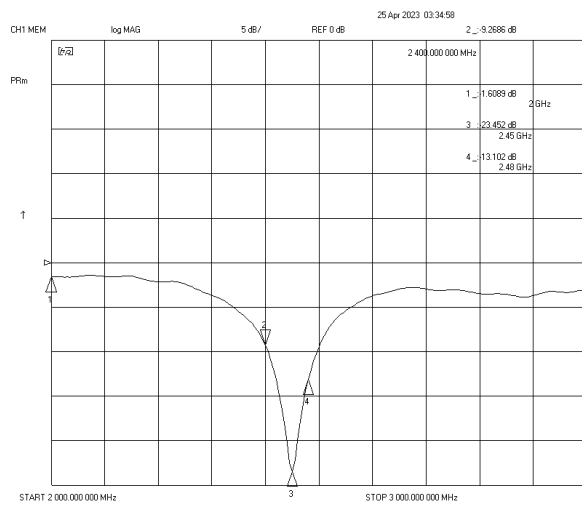
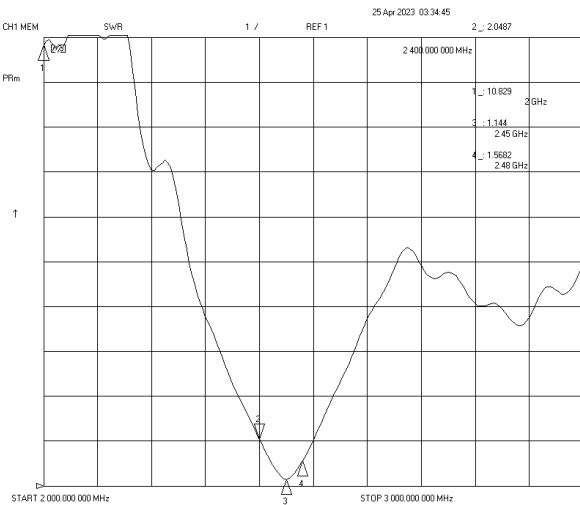
- 1. Antenna material: Chalcopyrite
- 2. Adhesive type: Not have
- 3. Antenna size: 16.7 \* 13 \* 0.3mm (tolerance ± 0.1)
- 4. Appearance treatment: surface oxidation resistance treatment

### 2.parameters

- Scope of use: customer-supplied machines
- Antenna frequency: 2.4-2.48Ghz
- Antenna free space gain: 2.4≥0.4dbi
- Installation mode: terminal wire is welded to motherboard OUT
- Packing method: use PE bag+packing box

### 3.S11 value of antenna

- 3.1: Antenna standing wave ratio/Antenna return loss value



- 3.2: Antenna parameters

Frequency point	2400mhz	2450mhz	2480mhz
SWR(dbm)	2.0	1.1	1.5
LOG (dbm)	-9.26	-23.4	-13.1



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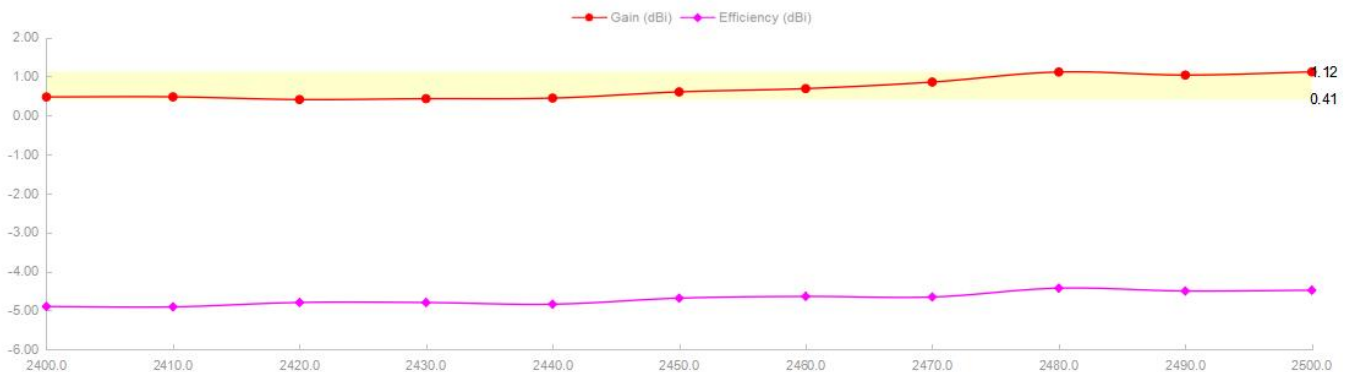
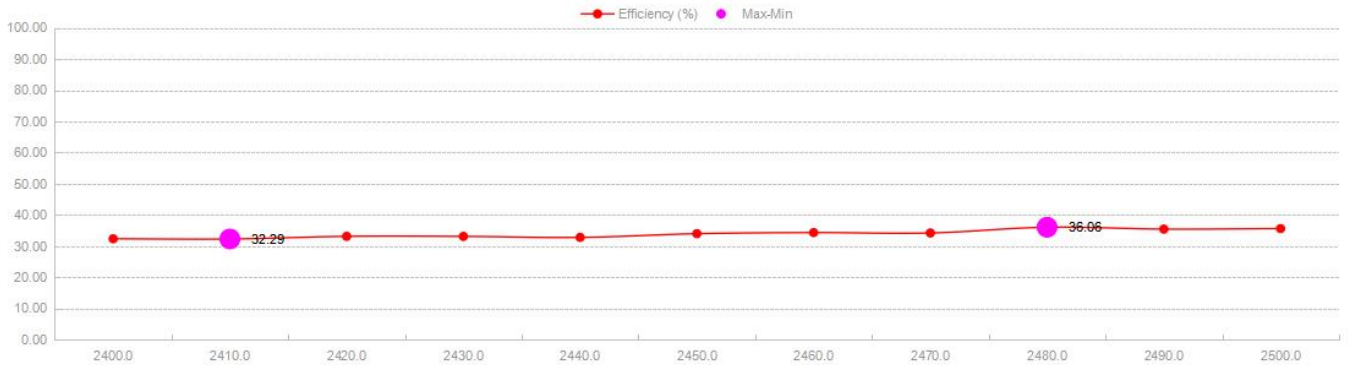
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### 4. Antenna performance (OTA)

- 4.1: Antenna matching recommendations  
Vector impedance modulation can be performed.
- 4.2: Antenna OTA/ efficiency/gain (test instruments: network analyzer, oscilloscope, customer engineering prototype, various standard cards, etc.)

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)	-4.90	-4.91	-4.80	-4.80	-4.84	-4.69	-4.64	-4.66	-4.43	-4.50	-4.48
Gain (dBi)	0.47	0.48	0.41	0.43	0.45	0.60	0.69	0.86	1.11	1.04	1.12
Efficiency (%)	32.35	32.29	33.13	33.12	32.80	33.99	34.34	34.23	36.06	35.46	35.62
Directivity (dB)	4.43	4.73	5.01	5.13	5.29	5.29	5.33	5.51	5.55	5.54	5.60
Peak Gain Position (Theta)	165.00	165.00	165.00	165.00	165.00	165.00	165.00	165.00	165.00	165.00	165.00
Peak Gain Position (Phi)	180.00	180.00	180.00	180.00	180.00	180.00	180.00	180.00	180.00	180.00	180.00
Efficiency ThetaPol (%)	14.50	14.50	15.15	15.37	15.42	15.94	16.20	16.50	17.37	17.18	17.36
Efficiency PhiPol (%)	17.86	17.79	17.98	17.75	17.38	18.05	18.14	17.73	18.68	18.28	18.26
Upper Hem. Efficiency (%)	17.51	17.43	17.83	17.77	17.52	18.05	18.25	18.25	19.35	19.14	19.30
Lower Hem. Efficiency (%)	14.84	14.86	15.30	15.35	15.28	15.94	16.09	15.97	16.71	16.32	16.33





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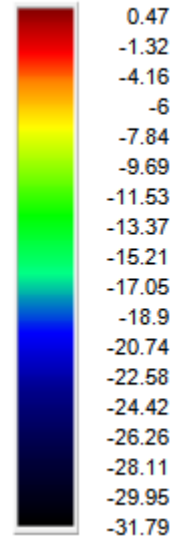
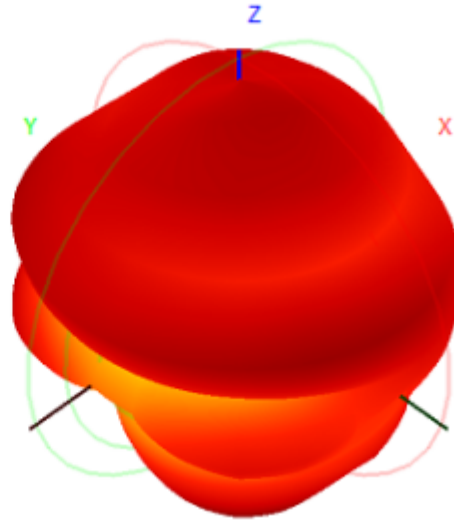
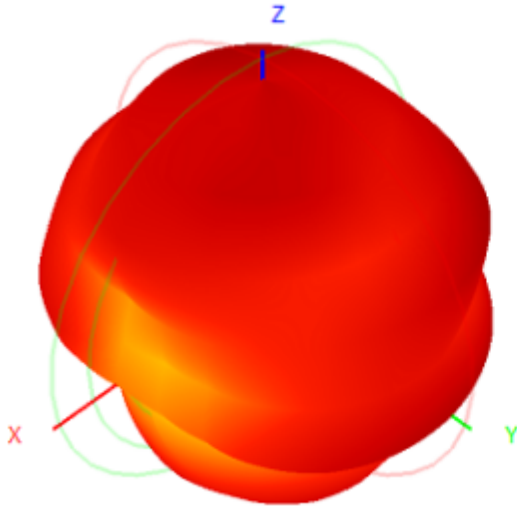
F3-BT-2.4GHZ

### 4.3: Antenna OTA-2.4G-3D

2.4GHz: Maximum gain 0.47dBi

2400.0MHz H+V, Eff: 32.4%

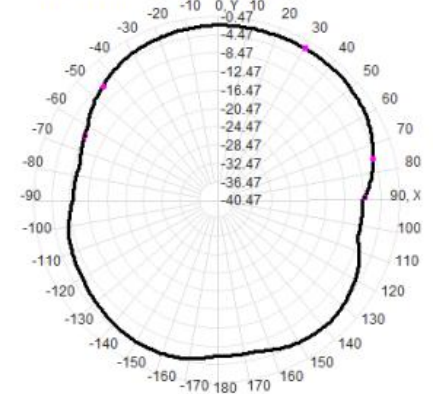
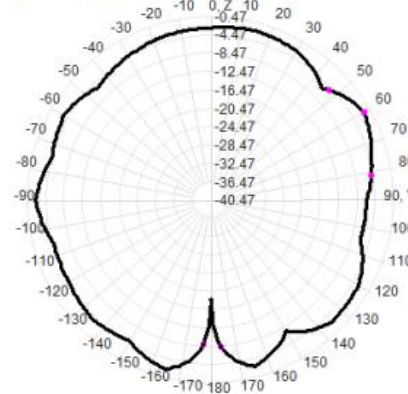
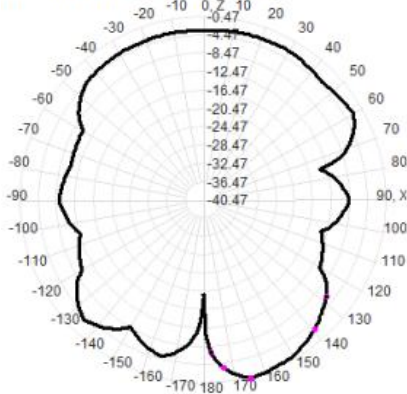
Back View



2400.0MHz Total(E1-XZ), Max= 0.47dBi

2400.0MHz Total(E2-YZ), Max=-2.02dBi

Total(H-XY), Max=-2.30dBi, CirD=7.30





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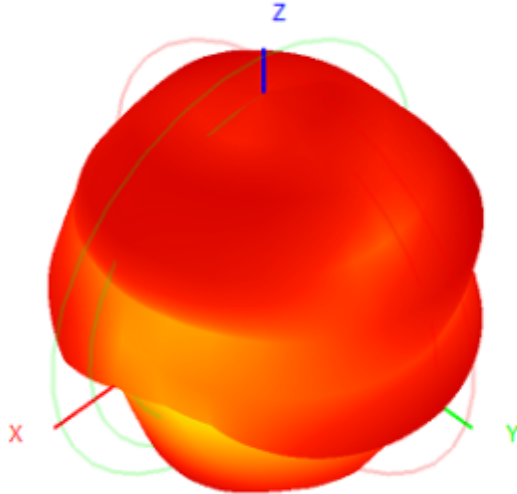
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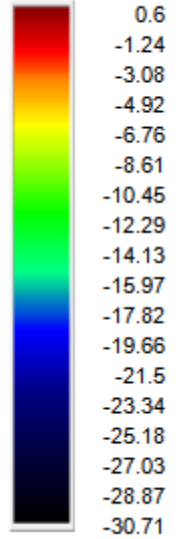
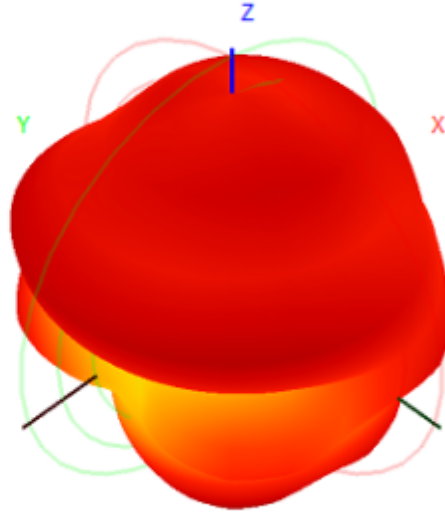
F3-BT-2.4GHZ

2.45GHz: Maximum gain 0.6dBi

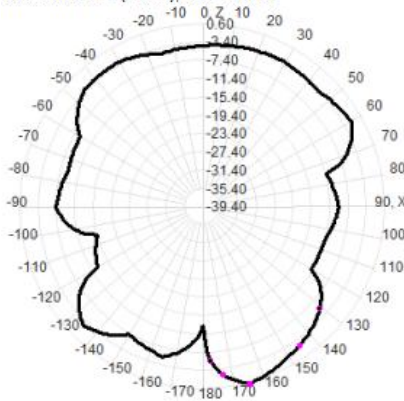
2450.0MHz H+V, Eff: 34.0%



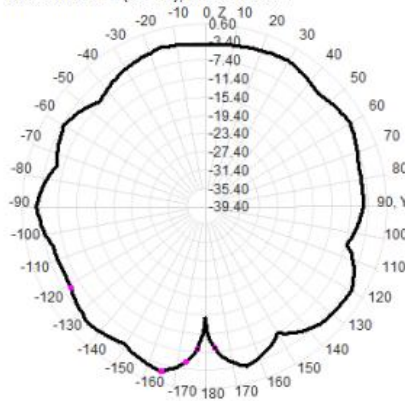
Back View



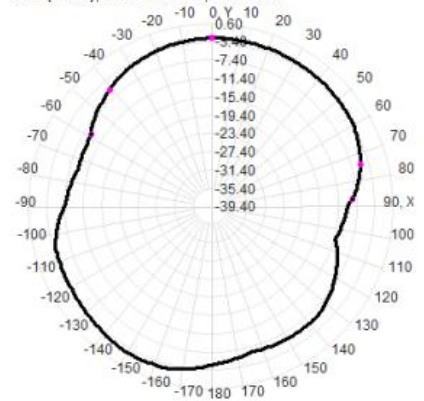
2450.0MHz Total(E1-XZ), Max= 0.60dBi



2450.0MHz Total(E2-YZ), Max= -2.19dBi



Total(H-XY), Max= -2.55dBi, CirD=8.86





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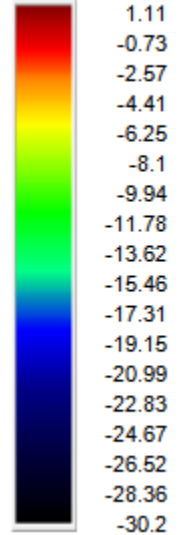
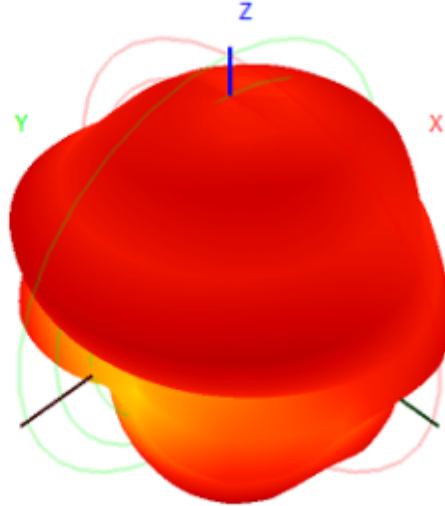
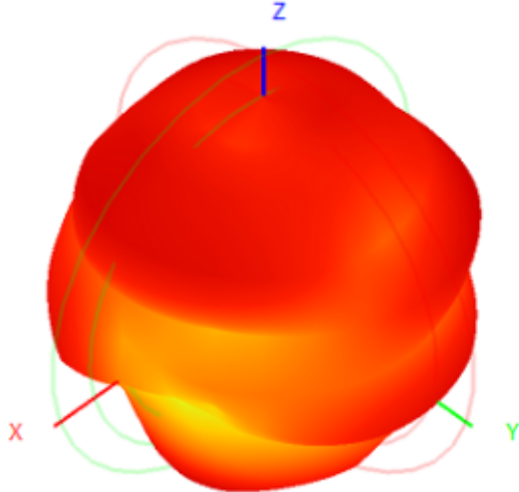
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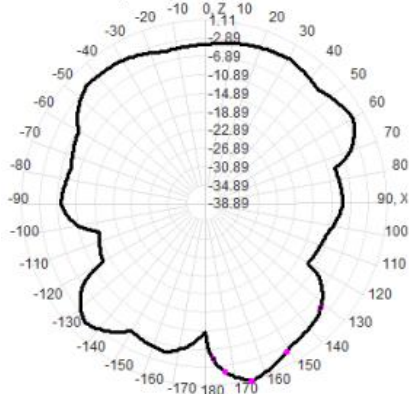
### 2.48GHz: Maximum gain 1.11dBi

2480.0MHz H+V, Eff: 36.1%

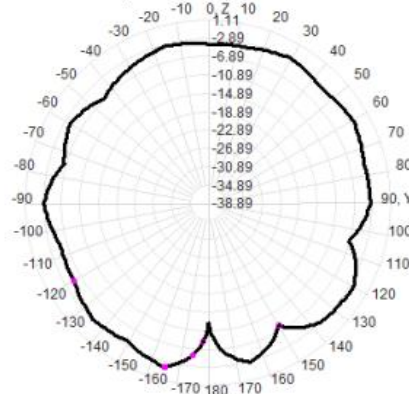
Back View



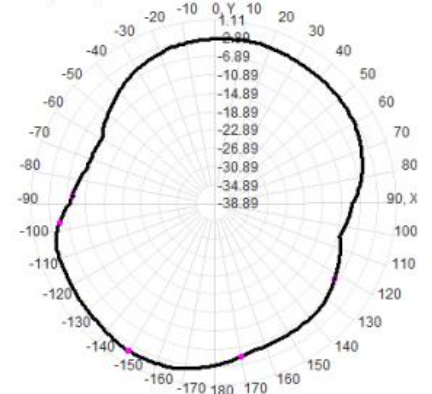
2480.0MHz Total(E1-XZ), Max= 1.11dBi



2480.0MHz Total(E2-YZ), Max= -2.06dBi



Total(H-XY), Max= -1.80dBi, CirD=8.95





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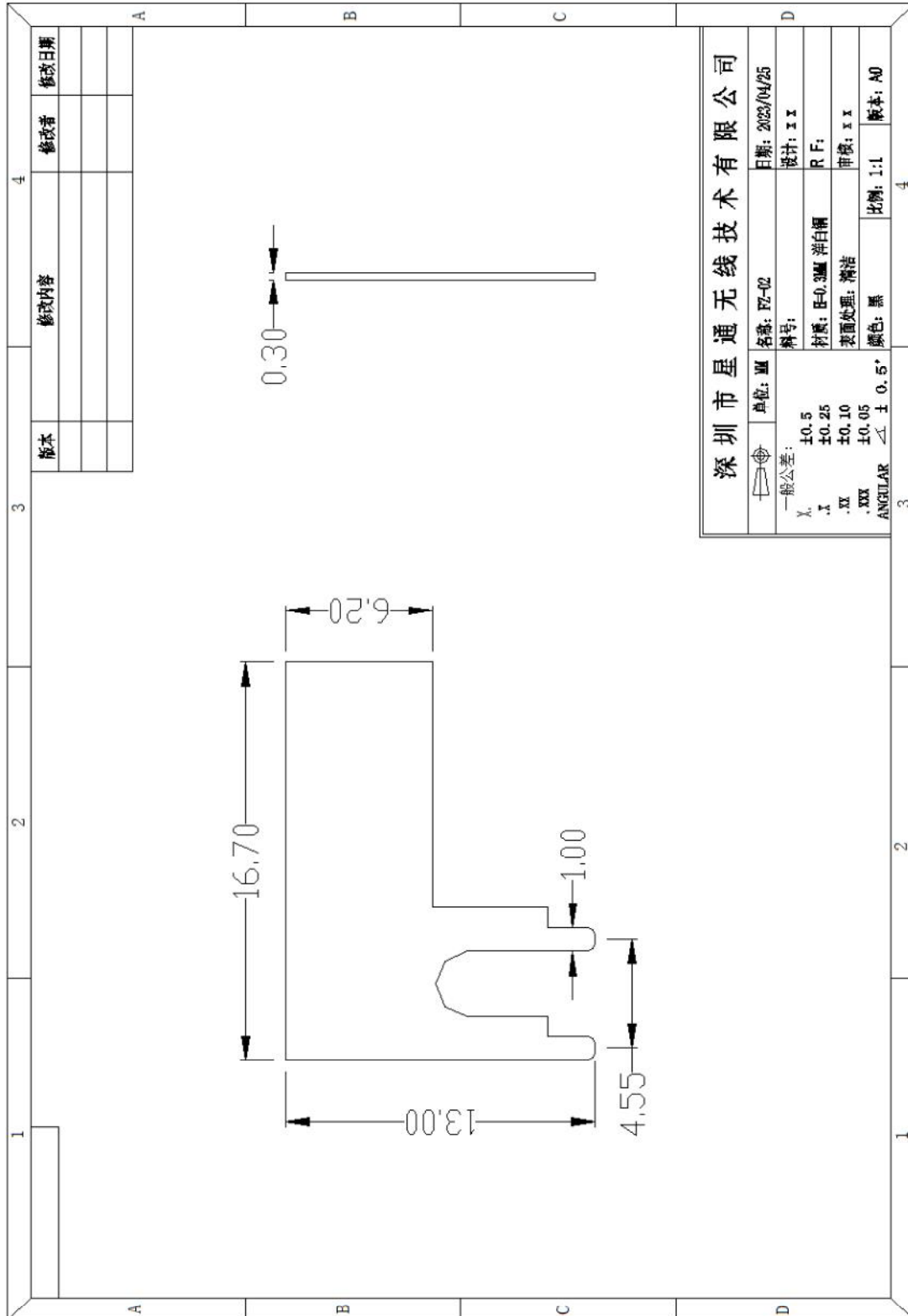
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### 5. Figure:

#### ■ 5.1: Finished antenna drawing





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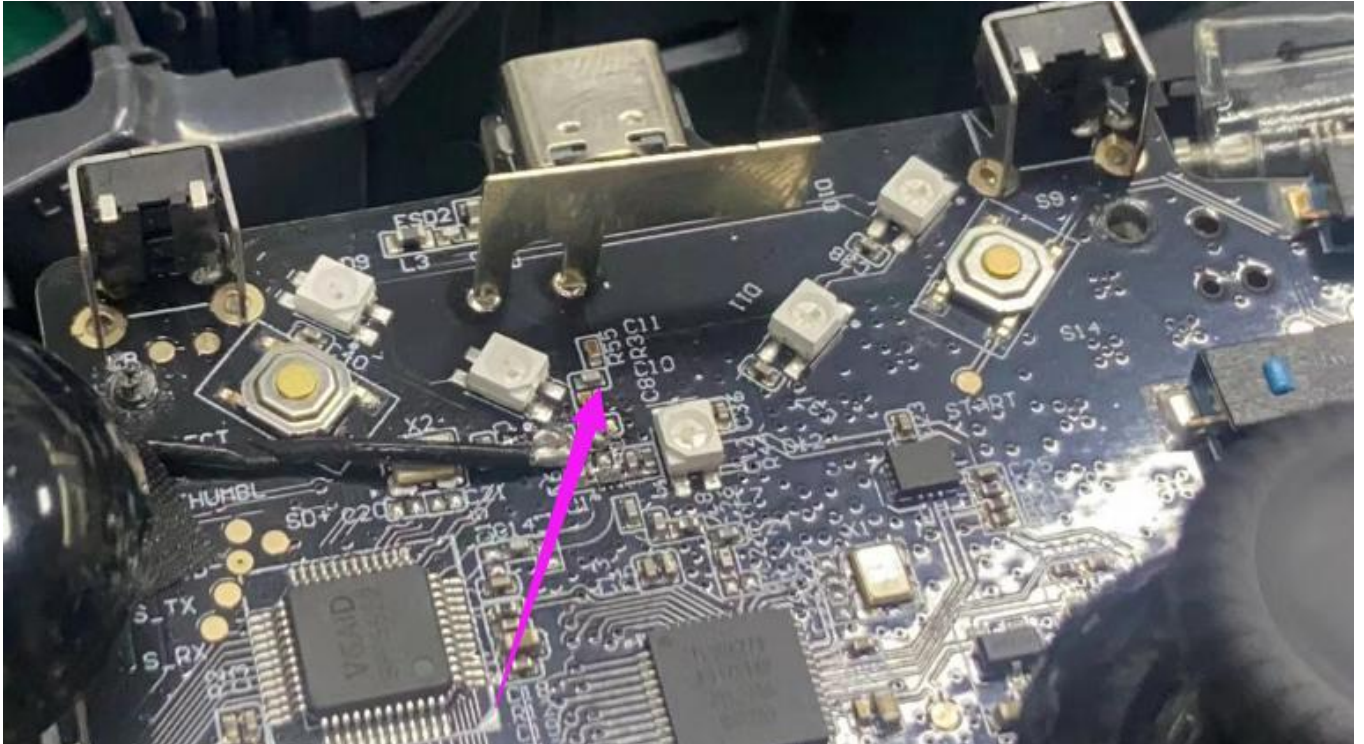
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## 6 Matters needing attention



After opening, please carefully check whether the goods are complete. If there is any damage, please contact us immediately.