承　认　书

APPROVAL　SHEET

客 户 名 称

CUSTOMER NAME:　　熵基科技股份有限公司

产 品 名 称　　2.4G FPC 内置天线 L=200mm+端子

PRODUCT　NAME:　　4G FPC 内置天线 L=211mm+端子

客 户 料 号

CUSTOMER　P/N:

优比电子料号

Youbi　P/N:　　UB01C85F2D2868A　　REV: A

	MANUFACTURER SIGNATURE	CUSTOMER SIGNATURE
CHECKED BY:	Yongxin.Lu	
APPROVED BY:	东莞市优比电子有限公司 工程专用章 Changxing.Liu	
DATE:	2022/10/22	

Modification History

Version	Content Revision	Issued by	Date
A	Original version	Yongxin.Lu	2022-4-17

Content

ltem ***Description***

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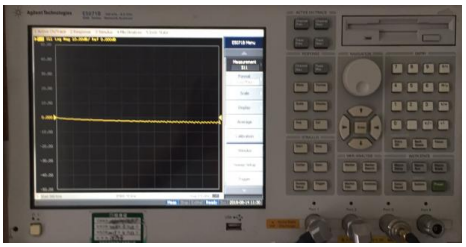
1. Electrical Specification:

Characteristics	Specifications	Unit
Outline Dimensions	101.3x19,L200 / 211	mm
Frequency	2400-2500 824-960 / 1710-2170;2300-2700	MHz
Impedance	50	Ω
Return Loss_2.4G	-10 Max	dB
VSWR_4G	< 7 / 3	
Polarization	Linear Polarization	
Gain	1 REF@2.4G 0 REF@4G	dBi
Efficiency	> 30@2.4G > 5 / 20@4G	%
Connector Type	1.13 MHF-1-Plug	
Operating temperature	-20℃~+85℃	
Storage Temp	-20℃~+50℃	

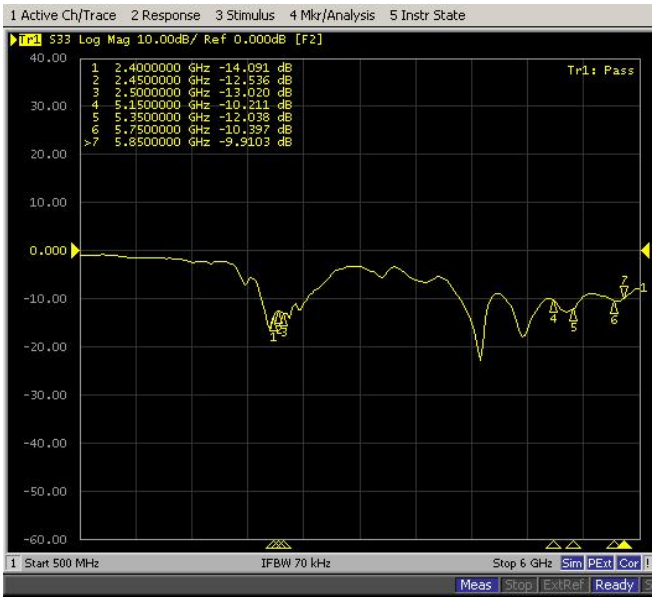
2.Test Items and Equipment

	Test items	Test equipment
S Parameter	1.Return Loss 2.VSWR	Network analyzer (Agilent E5071B)
The whole machine of Passive parameters	1.Frequency 2.Gain 3.Radiation Pattern	1.3D microwave darkroom (5m*5m*5m) 2.Network analyzer (Agilent E5071B)
The whole machine of Active parameters	1.TRP 2.TIS	1.3D microwave darkroom (5m*5m*5m) 2.Comprehensive test instrument (CMW500)


3. S Parameter_2.4G

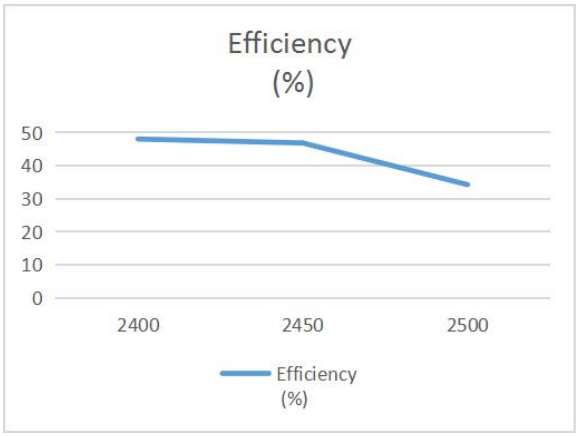
Frequency (MHz)	Return Loss (dB)
2400	-14.09
2450	-12.53
2500	-13.02

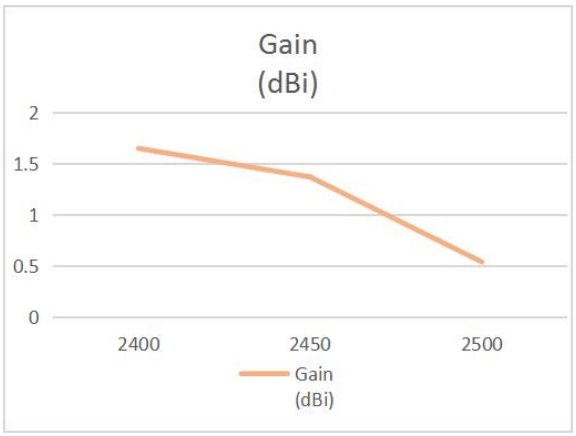


*Voltage Standing Wave Ratio(VSWR)
Return Loss(RL)
RL=20*log10[(VSWR+1)/(VSWR-1)

4. Efficiency and Gain_2.4G

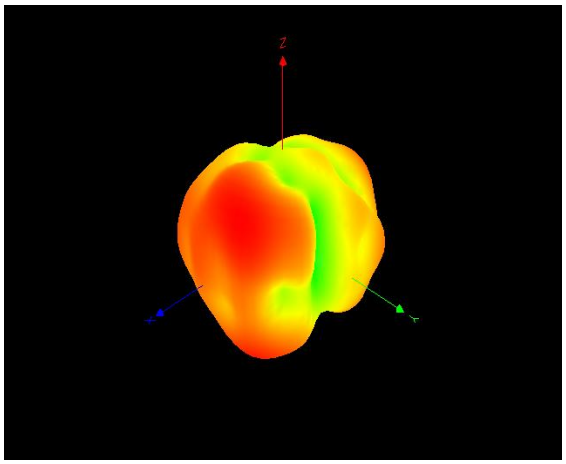
Frequency (MHz)	2400	2450	2500
Efficiency (%)	48.08	46.88	34.28
Gain (dBi)	1.65	1.37	0.54



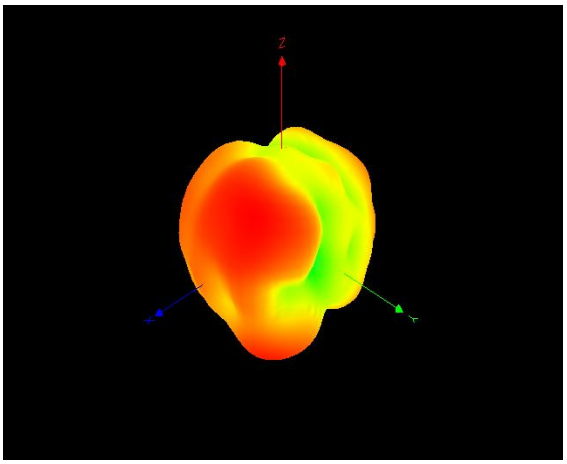


5. Radiation Pattern_2.4G

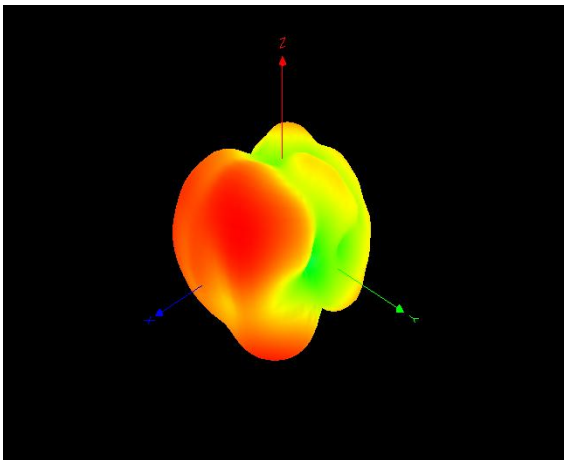
5-1 Antenna 3D Radiation Pattern



2400MHz

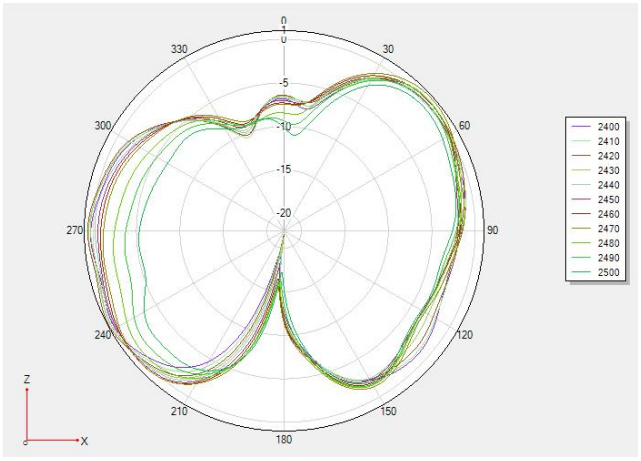


2450MHZ

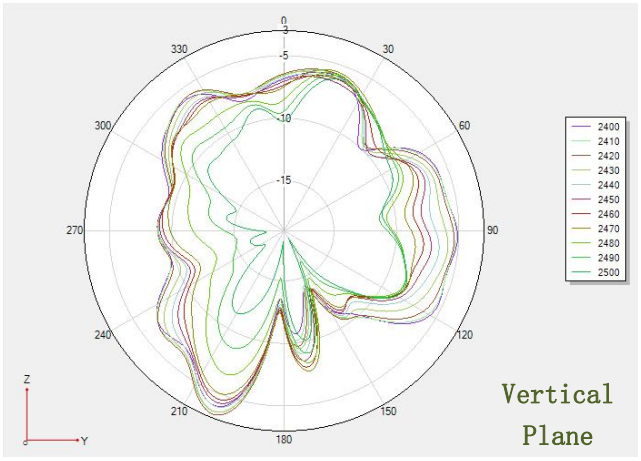


2500MHZ

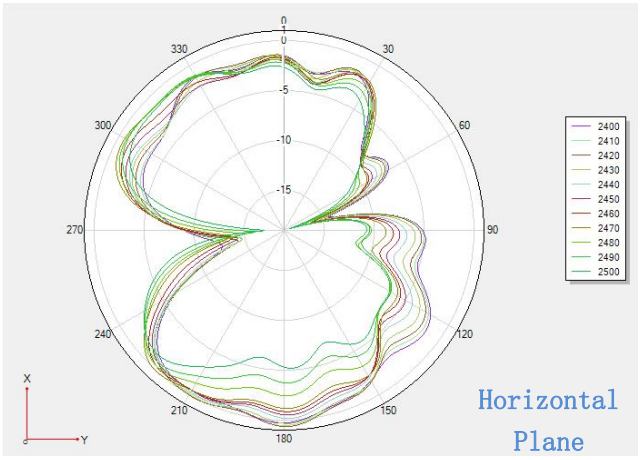
5-2 Antenna 2D Radiation Pattern



Phi 0 2D



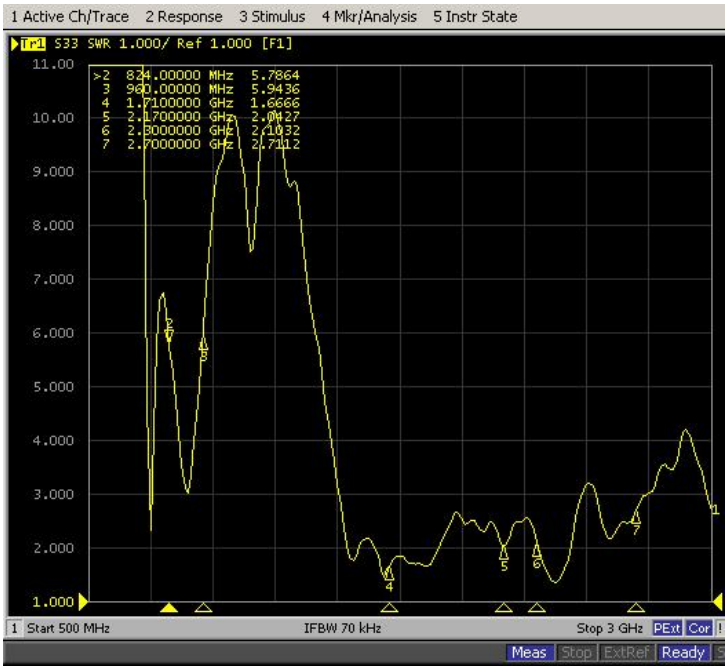
Phi 90 2D



Theta 90 2D

3. S Parameter_4G

Frequency(MHz)	VSWR
824	5.78
960	5.94
1710	1.66
2170	2.04
2300	2.10
2700	2.71



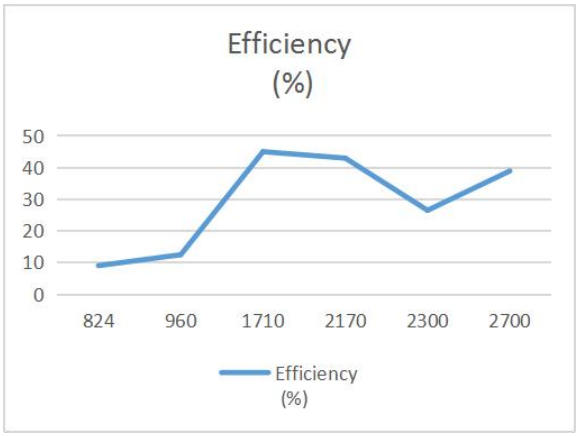
*Voltage Standing Wave Ratio(VSWR)

Return Loss(RL)

RL=20*log10[(VSWR+1)/(VSWR-1)

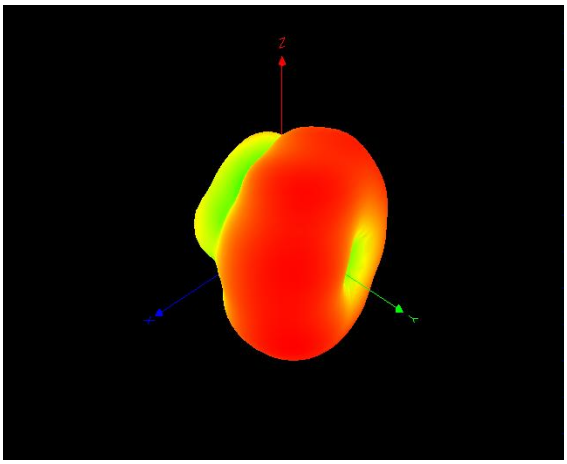
4. Efficiency and Gain_4G

Frequency (MHz)	824	960	1710	2170	2300	2700
Efficiency (%)	9.06	12.5	44.98	42.95	26.49	38.9
Gain (dBi)	-4.64	-5.39	1.89	-0.25	-1.22	1.99

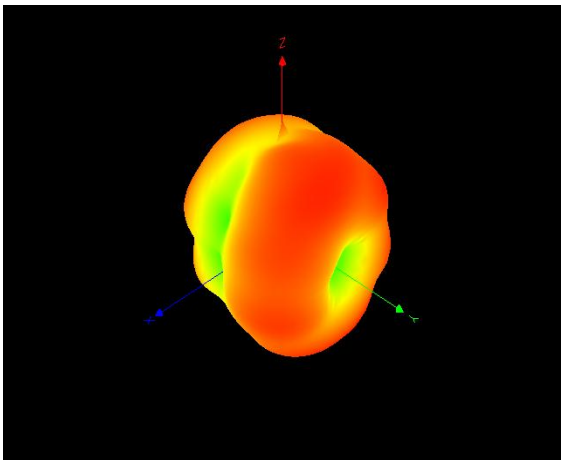


5. Radiation Pattern_4G

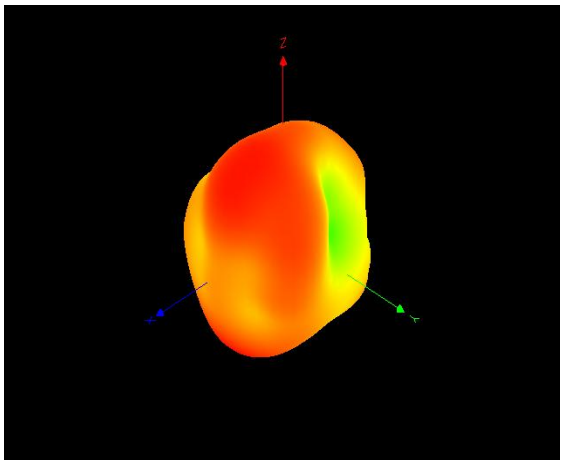
5-1 Antenna 3D Radiation Pattern



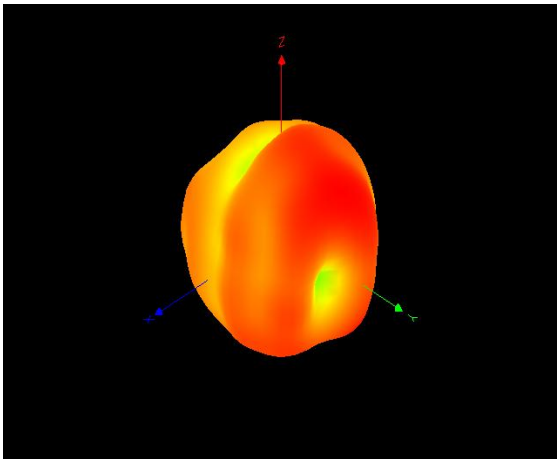
824MHz



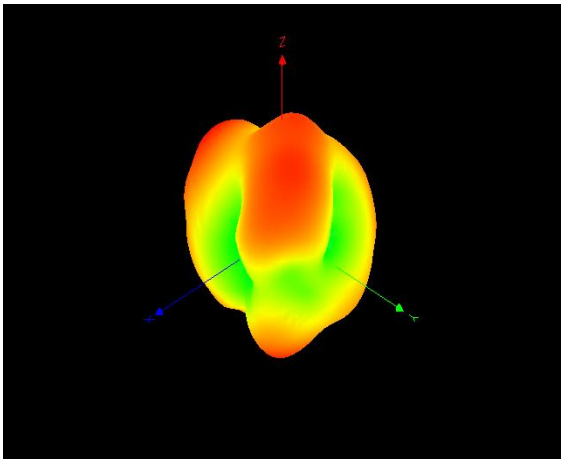
960MHZ



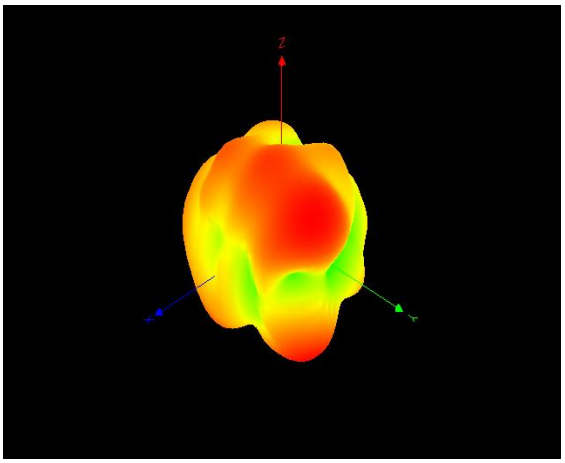
1710MHZ



2170MHz

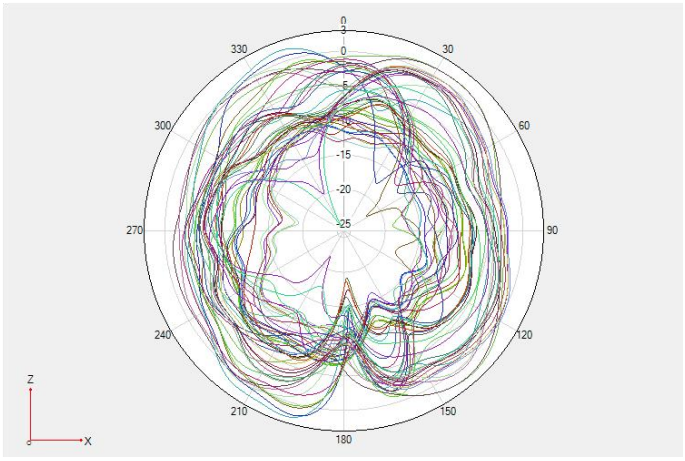


2300MHZ

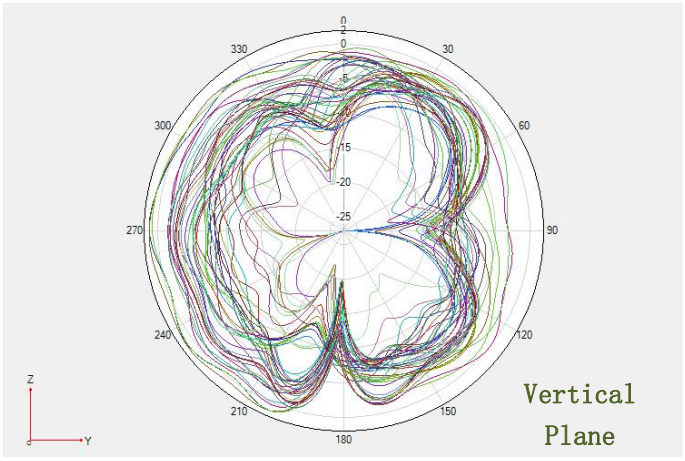


2700MHZ

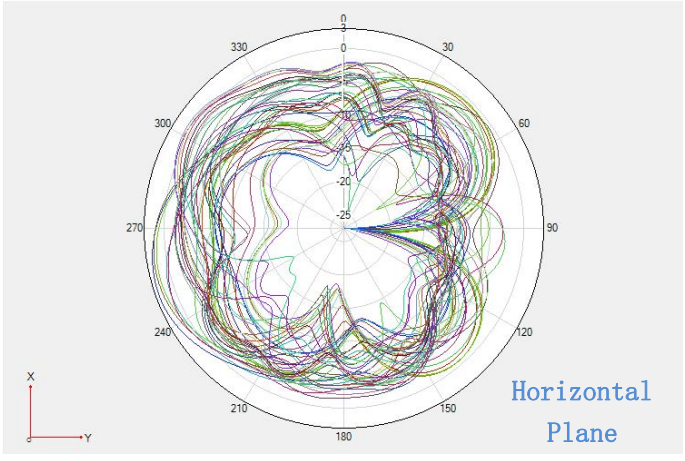
5-2 Antenna 2D Radiation Pattern



Phi 0 2D

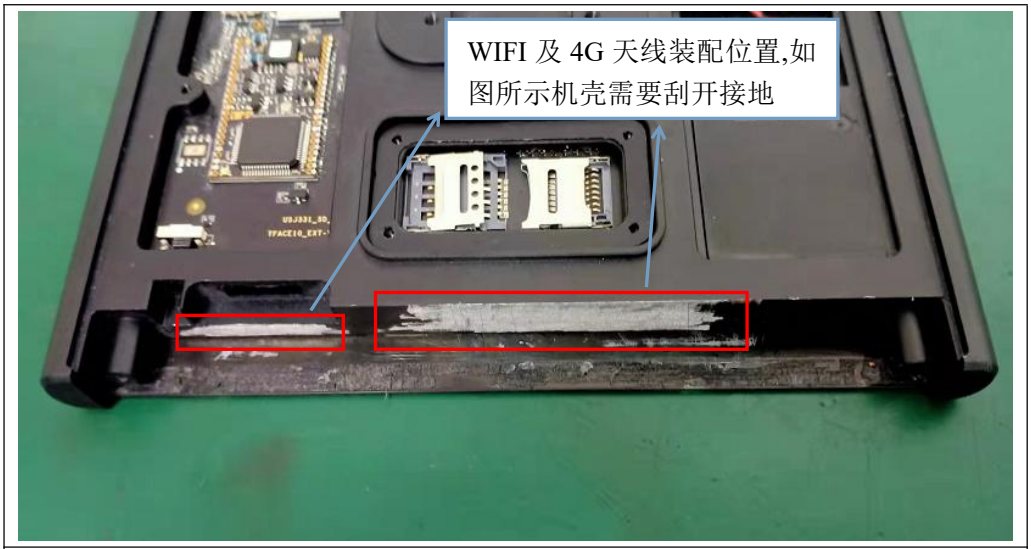


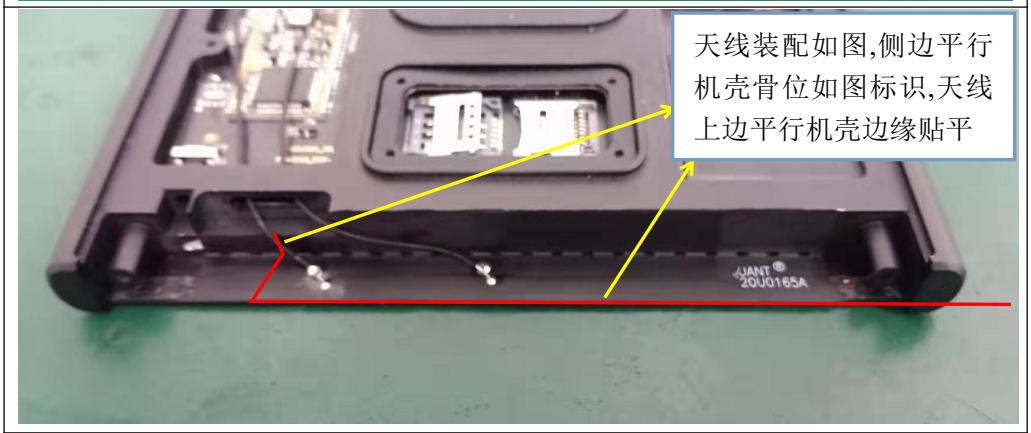
Phi 90 2D



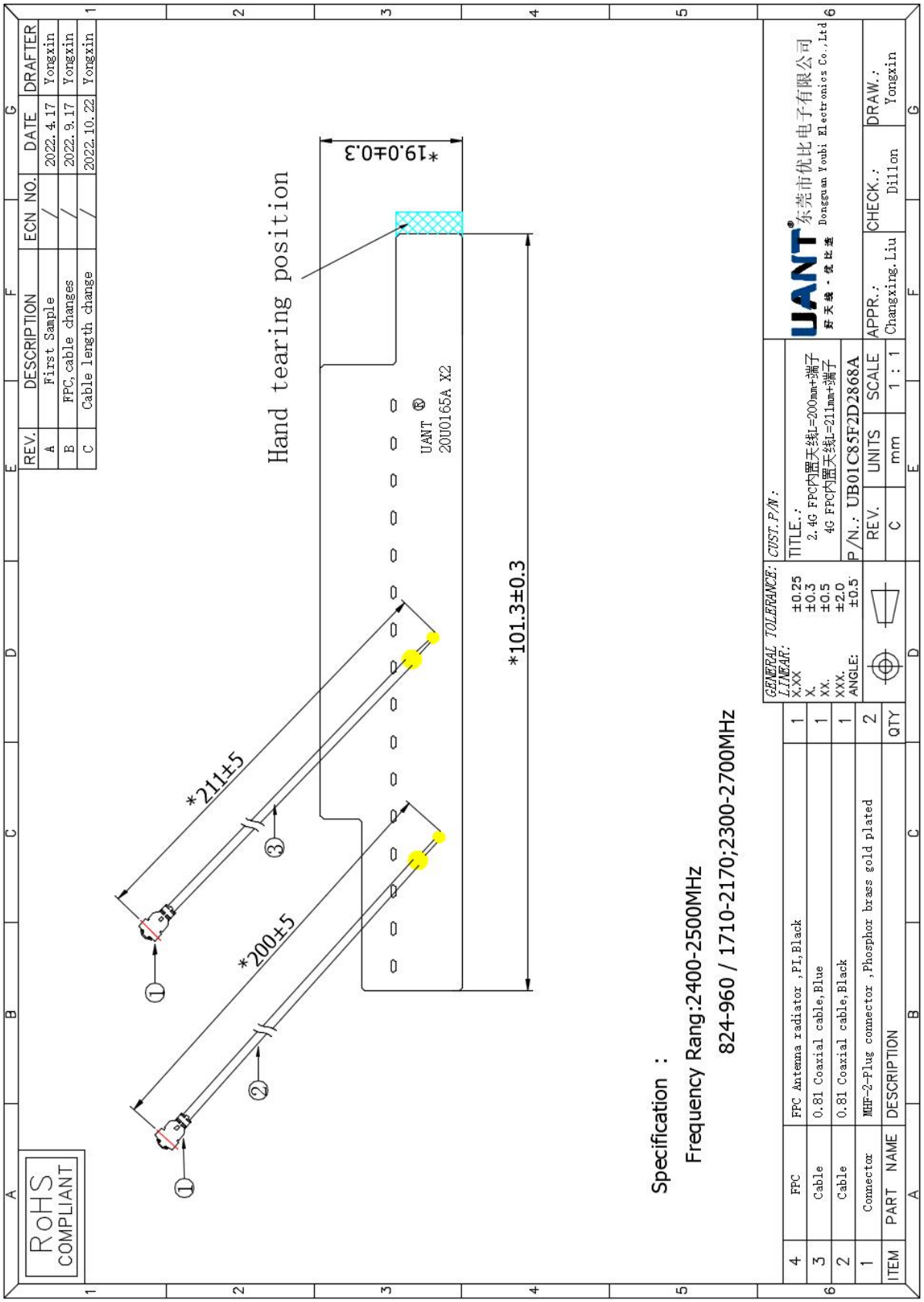
Theta 90 2D

6. Antenna installation diagram:

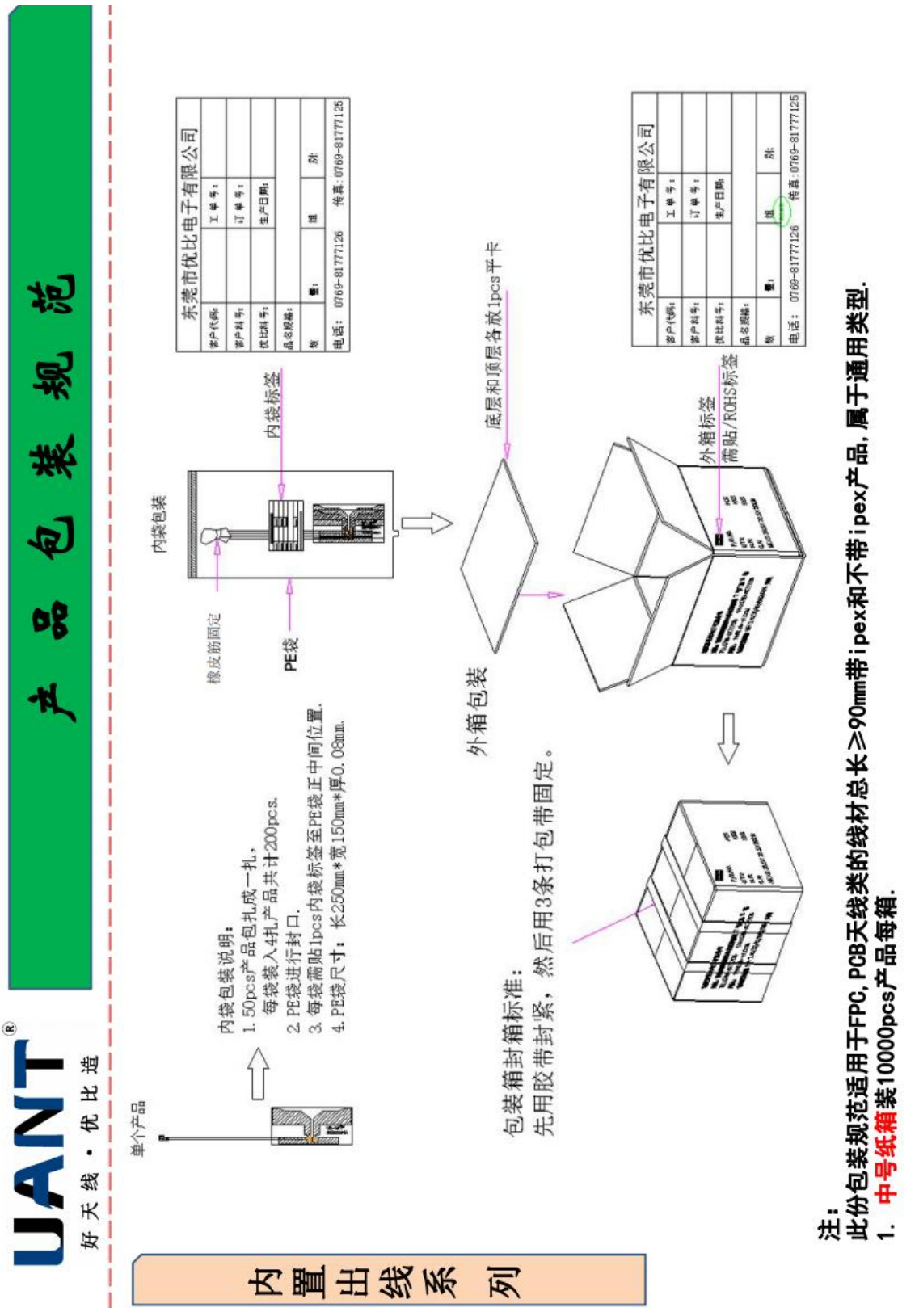




7.Mechanical Specification:



8. Packaging


产品包装规范
UANT®
好 天 线 · 优 比 造
内置出线系列
单个产品
内袋包装说明：
1. 50pcs产品包扎成一扎，
每袋装入4扎产品共计200pcs.
2. PE袋进行封口.
3. 每袋需贴1pcs内袋标签至PE袋正中间位置.
4. PE袋尺寸：长250mm*宽150mm*厚0.08mm.
橡皮筋固定
内袋包装
内袋标签
PE袋
东莞市优比电子有限公司
电话：0769-81777126 传真：0769-81777125
底层和顶层各放1pcs平卡
外箱包装
包装箱封箱标准：
先用胶带封紧，然后用3条打包带固定。
外箱标签
需贴/ROHS标签
注：
此份包装规范适用于FPC, PCB天线类的线材总长≥90mm带ipex和不带ipex产品, 属于通用类型.
1. 中号纸箱装10000pcs产品每箱.

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铅(Pb)	1000PPM
镉(Cd)	100PPM
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六价铬(Cr6+)	1000PPM
多溴联苯(PBBs)	1000PPM
多溴联苯醚(PBDEs)	1000PPM
邻苯二甲酸二（2-乙基己基）酯（DEHP）	1000PPM
邻苯二甲酸甲苯基丁酯（BBP）	1000PPM
邻苯二甲酸二丁基酯（DBP）	1000PPM
邻苯二甲酸二异丁酯（DIBP）	1000PPM

公司总经理签字及公司盖章：

日　　期：