产品规格承认书

Product Specification Acknowledgment

移动通信终端天线产品设计与制造

Design & Manufacturing of Mobile Terminal Antennas

产品名称: 瑞昱 300 万 3881 云台机
PRODUCT NAME 3MP PTZ Camera(Realtek 3881 wifi antenna)

客户名称: 看护家
CUSTOMER NAME Shenzhen Ehome Technology Co., LTD

客户料号:
MATERIAL CODE

中科料号:

客户	深圳市中科无线有限公司			
客户确认	品　质	研 发 部	结 构	核 准
日期:　　年　月　日	日期:　　2024 年 05 月 25 日			

深 圳 市 中 科 无 线 有 限 公 司
Shenzhen ZHONGKE Mireless Co., LTD
深圳地址:深圳市龙华新区大浪金瑞中核科技园 A 栋 1 楼
东莞地址:东莞常平镇塘角蓝市路 1 号 4 楼
电话: 29588096

1.目的 Purpose

对于深圳市中科无线有限公司出品的移动通信终端天线产品规格、测试方法进行规范避免因测试条件，方法的不同引起误差。

To standardize the product specifications and testing methods for the mobile communication terminal antennas produced by Shenzhen Zhongke Wireless Co., Ltd., and to avoid errors caused by differences in testing conditions and methods.

2.产品类别和产品型号概述 Overview of Product Categories and Product Models

2.1产品型号概述 Overview of Product Models

这份报告主要概述的是瑞昱300万3881云台机 项目所设计的天线的电气结果。此天线设计频段为:2.4G/ WIFI 段。

This report primarily summarizes the electrical results of the antenna designed for the Realtek 3-megapixel 3881 (Realtek antenna model) PTZ camera project. The designed frequency band for this antenna is: 2.4G/WIFI band.

3.基本参数和实验设备说明 Basic Parameters and Experimental Equipment Description

3.1基本参数 Basic parameters

产品电气性能指标 Electrical Specification	
工作频率范围 Operating frequency range	2400-2480MHz
驻波比VSWR	2400-2480 MHz: < 1.5
天线增益 Antenna gain	2400-2480 MHz: > 2.5dBi ± 0.5dBi
辐射效率 Radiation efficiency	2400-2480 MHz: > 50%
阻抗 Impedance	50 ohm
产品材料说明 Product Material	
PCB	同轴线coaxial cable
ABS	
产品环境说明 Product Working Environment	
工作温度 Working temperature	- 30˚C ~ + 85 ˚C
储藏温度 Storage temperature	- 30˚C ~ + 85 ˚C

3.2实验设备说明 Experimental Equipment

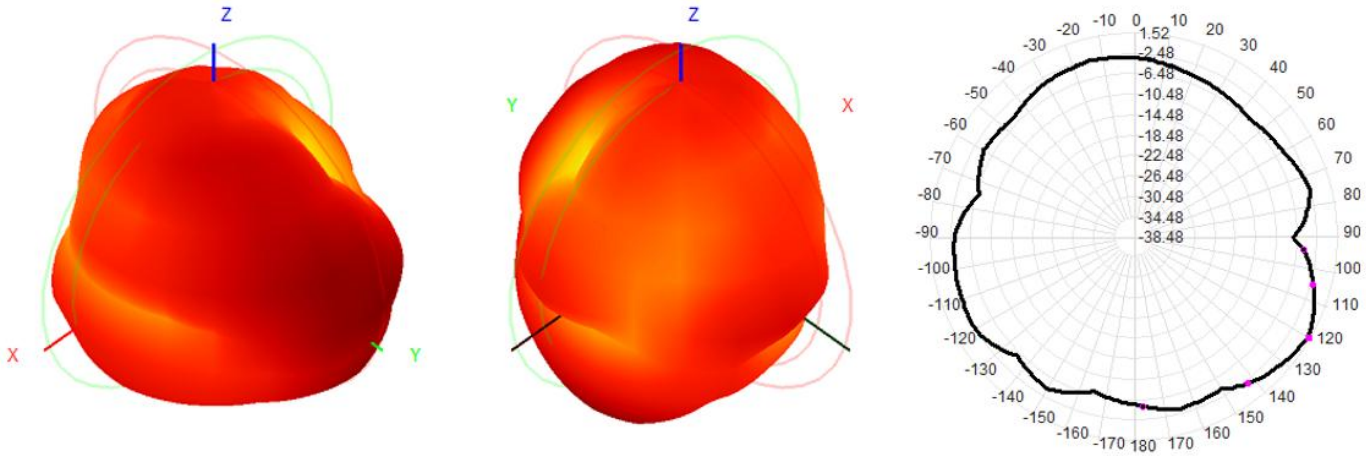
List	Testing project	Equipment
1. S Parameters	1.Return loss 2. VSWR at	Network analyzer: Agilent 8753ES
2. Coupling power test	1. Transmission power 2. Receiving sensitivity	Comprehensive tester: Agilent 8960 E5515C
3. Radiation pattern and gain	1. Radiation pattern 2. Antenna gain	1. Darkroom： 7x4x3 m (3D) 2. Network analyzer ： Agilent 8753ES

4.天线测试数据 Antenna Testing Data

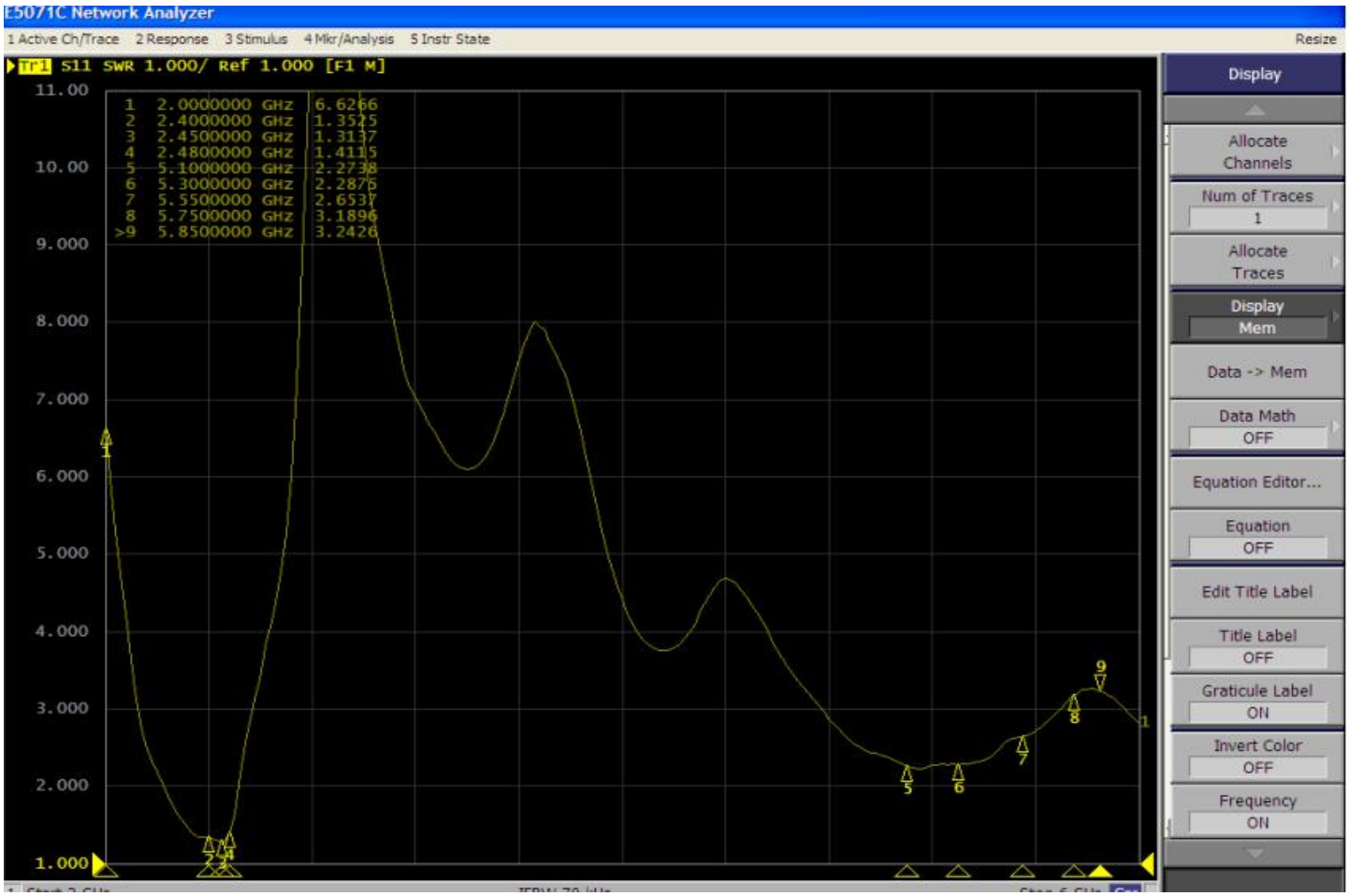
4.1 Wifi: 2.4G效率/增益 Frequency/Gain

WIFI 测试数据 Testing Data：		
WIFI 2.4G		
Freq(MHz)	Efficiency (%)	Gain (dBi)
2400	62.14	2.34
2410	61.37	2.4
2420	56.07	2.62
2430	53.68	2.71
2440	64.98	2.91
2450	64.34	2.6
2460	65.08	2.32
2470	61.53	2.44
2480	57.61	2.13

5. 天线2.4G 苹果图 Antenna 2.4G Apple Diagram



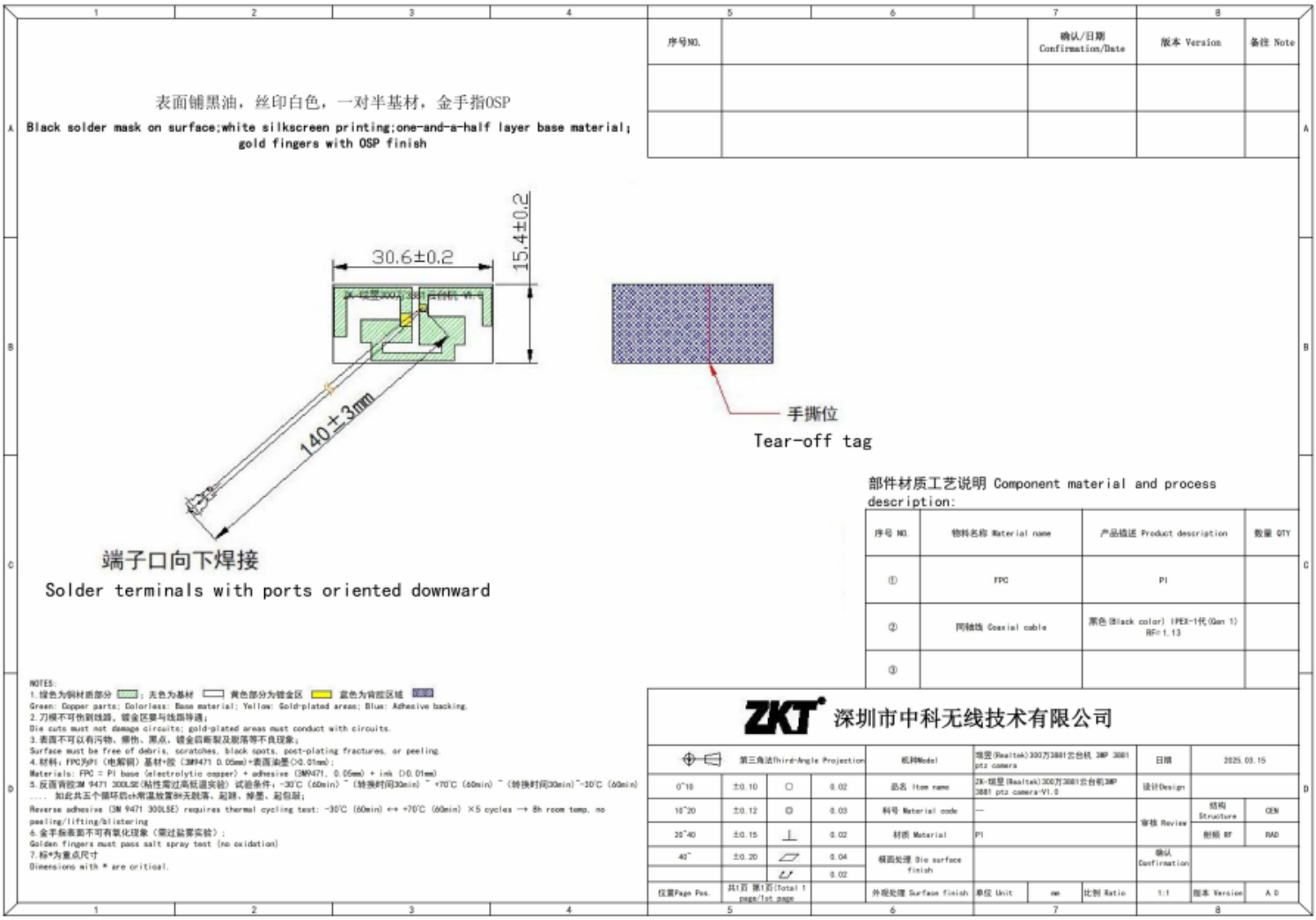
6. 驻波比 VSWR



7. 有源数据 Active Data

Item	Measurement	Band	Channel	Total
1	TRP	WIFI_B (11M)	1	24.41
2	TRP	WIFI_B (11M)	6	23.1
3	TRP	WIFI_B (11M)	11	21.9
4	TIS(EIRP)	WIFI_B (11M)	11	-82.65
5	TRP	WIFI_G (54M)	1	24.75
6	TRP	WIFI_G (54M)	6	23.36
7	TRP	WIFI_G (54M)	11	22.39
8	TIS(EIRP)	WIFI_G (54M)	11	-71.43
9	TRP	WIFI_N_ISM (6	1	24.51
10	TRP	WIFI_N_ISM (6	6	23.29
11	TRP	WIFI_N_ISM (6	11	22.33
12	TIS(EIRP)	WIFI_N_ISM (6	11	-68.06

8. 产品 2D 结构图和备注说明 2D Product Layout Drawing & Technical Notes



9. Environmental Characteristic

Test Item	Test description

1. Low Temperature	Temp.: -20 ℃ Time: 24 hours
2. High Temperature	Temp.: 80℃ Time: 24 hours
3. Salt Fog	5±0.1% Nad salt fog PH Value: 6.5-7.2 Temp: 35±1℃ Time:24 hours

10. 可靠性测试报告 Characteristics and Reliability Test

Test Items 測試項目		Test Condition and Procedure 測試方法	Requirements 要求	Result 結果
C1	V.S.W.R. 電壓駐波比	Set DUT on Network Analyzer; make individual calibration to test 設置網路分析儀參數進行測試	Directive DUT specification 符合待測物規範	PASS
C3	Antenna Gain 天線增益	Set DUT on Antenna Chamber; make individual calibration to test 設置天線暗室參數進行測試	Directive DUT specification 符合待測物規範	PASS
M1	Vibration 震動	GB / T2423.48-2008 Amplitude: 0.03 inch (1.5mm); Freq: 20 to 80 to 20 Hz 3 directions; 2 hours for each direction 振幅 1.5mm；頻率 20~80~20Hz；3 個方向各 2H	1. No Visual Damage 2. Frequency Tol. ≤5%無明顯外觀不良 ;頻率偏移≤ 5%	PASS
M4	Pull Test 拉力	Holding with individual specification; force applied to axis of Connector .單獨定義產品端子拉力	1. Directive DUT specification 2. Frequency Tol. ≤5%符合待測物規範 ;頻率偏移≤ 5%	PASS
M5	Magnetic force 磁力	The separate definition of retention product magnetic surface magnets and adsorption on the iron 單獨定義產品磁鐵表面磁力及吸附鐵板上保持力	1. Directive DUT specification 2. Frequency Tol. ≤ 5%符合待測物規範 ;頻率偏移 ≤5%	PASS
M6	Sway test 搖擺測試	Holding with individual specification; the swing joint and wire, wire and plastic body test.單獨定義接頭與線材、線材與塑膠本體的搖擺測試 .	1. Directive DUT specification 2. Frequency Tol. ≤ 5%符合待測物規範 ;頻率偏移 ≤5%	PASS
M7	Dimensio n 尺寸	Inspection of dimension, color, material, package, surface process.檢查尺寸 ,顏色,材料,包裝,表面處理	Directive DUT specification 符合待測物規範	PASS
E2	Salt Spray 鹽霧	GB / T 2423.17-2008 Temp: 35°C; RH: ≥ 95%; NaCl solution: ≥ 5%;Time: 24H 溫度 35°C；濕度≥95%;鹽水濃度≥5% ；測試 24H	1. No Visual Damage 2. Frequency Tol. ≤5%無明顯外觀不良 ;頻率偏移≤ 5%	PASS
E3	Temperature and Humidity Chamber 恒溫恒濕	GB / T 2423.3-2006 Temp: 80°C / 12 H; -40°C / 12H RH: ≥ 90%; Time: 24H 溫度 80°C測試 12H 轉-40°C測試 12H；濕度 ≥ 90% ；時間 24H	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol. ≤5%恢復 2H 后,無明顯外觀不良 ; 頻率偏移≤5%	PASS
E4	Thermal Shock 冷熱衝擊	GB / T 2423.22 - 2008 - 40°C (30 minutes) to + 80° C (30 minutes)；Cycles: 24	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol. ≤5%	PASS

产品包装规范 Code for product packaging

产品名称/规格 Product Name/Specification

一、标签要求 Label requirement

客户名称 Customer	****		
供应商名称 Supplier	***	采购订单号 PO No.	***
物料编号 Material code	***	物料名称 Material	***
物料规格 Material Specification	***	数量 Quantity	***
生产日期 Production date	***	检验员 Inspector	***

物料标签 Material label			
供应商 Supplier	***		
项目名 Project	***		
物料编码 Material code	***		
物料规格 Material specification	***		
送货日期 Delivery date	***	送货数量 Delivery QTY	***

二、装箱要求 Packaging requirement

作业说明 Packaging instructions:

1. 内包装 Inner pack:

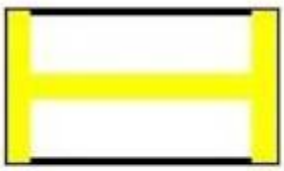
产品 200 PCS 一小袋 product:200pcs/small bag

PE bag

2. 外包装 Outer pack:

根据实际数量定数量/箱

Set quantity/box based on actual quantity



纸箱 Carton

注意事项:

1. 是否要增设隔板、珍珠棉

Whether to add dividers and EPE foam;

2. 标签的贴附, 如 ROHS 等

Label attachment ,such as ROHS labels;