

AXT1800 Project, antenna material requirements specification

Customer name: Shenzhen Guanglian Zhitong Technology Co., LTD

Customer product name: AXT1800

Product name: R-PCB ultra-sound antenna assembly on the right

Product specification: ultrasonic supply material, PCB + coaxial welding wire-right R

Material code: 205-2039

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The Supplier acknowledges the signature of the following documents:

Responsible person / date		IQC/ date	Review / Date	Approval / Date
MD	Feng Jiwu	Analysis hair	Zeng Xiang good	
RF	He lei			

The Demander acknowledges the signature (please send it back after the confirmation):

The demander's judgment result: ☐ qualified ☐ unqualified			
Development & Design Engineer / Date	SQE Engineer / Date	Purchasing Leader / Date	Development Manager approval / date

Catalogue

1. OVERVIEW	4
1.1 SCOPE OF APPLICATION	4
1.2 PROJECT BASIC INFORMATION	4
2. TECHNICAL INDEX REQUIREMENTS	4
2.1 INTRODUCTION OF TEST ITEMS AND EQUIPMENT	4
2.2.1 TEST INSTRUCTIONS	4
2.2.2 ANTENNA PASSIVE DATA (EFFICIENCY)	4
2.2.3 ANTENNA PASSIVE (FIGURE FILE LOGMAG + VSWR + SMITH)	4
2.2.4 ANTENNA PASSIVE PARAMETERS-2.4G APPLE DIAGRAM	5
2.2.5 ANTENNA PASSIVE PARAMETERS-5.8G APPLE DIAGRAM	5
2.2.6 ANTENNA PASSIVE PARAMETERS-2.4G DIRECTION DIAGRAM	6
2.2.7 ANTENNA PASSIVE PARAMETERS-5G DIRECTION DIAGRAM	6
2.2.8 ACTIVE PARAMETERS OF THE MAIN ANTENNA	6
3. ENGINEERING DRAWINGS	7
4. LIST OF MATERIALS	8
5. PACKAGE SCHEMATIC DIAGRAM	9

1. Overview

1.1 Scope of application

This requirement specifies the antenna technical requirements and material requirements specifications for AXT1800 products.

This requirement is applicable to the antenna selection, testing and acceptance of AXT1800 products.

1.2 Project basic information

Antenna name:	AXT1800
Antenna band:	WIFI-2.4G/5.8G
Antenna material:	PCB + coaxial welding line-R
Antenna version:	V0.1

2. Technical index requirements

2.1 Introduction of test items and equipment

inventory	test item	equipment
S11 parameter	Standing wave ratio, echo loss	network analyzer
Active test	TRP,TIS	Integrated tester, microwave darkroom
Passive test	Gain, efficiency	network analyzer

2.2.1 Test instructions

Test tools: Agilent8960 instrument, R & S CMW500, full wave far field ETS dark room, high precision positioning system and its controller and computer with automatic test program

Test environment: temperature $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$, humidity $50\% \pm 15\%$

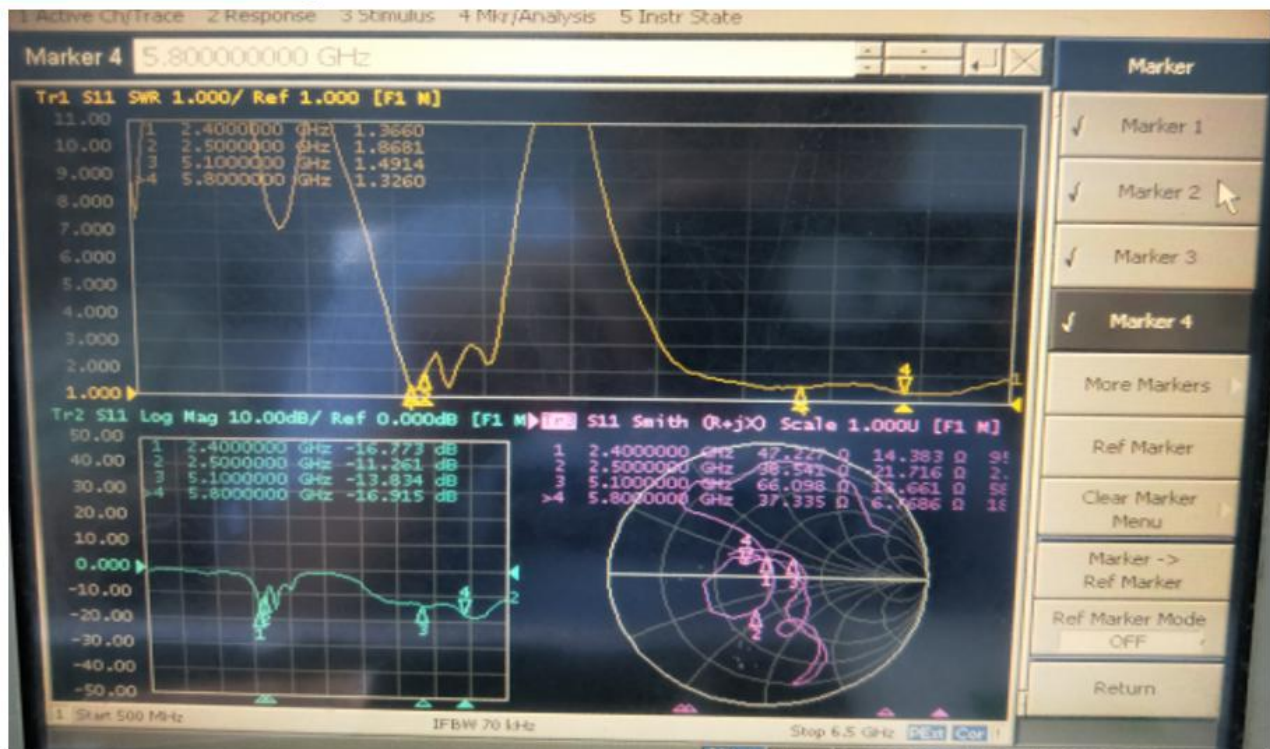
Test method: DUT is fixed in the center of the turntable with H plane, on the same horizontal line as the center of the horn antenna. The positioning system enables the DUT to rotate in the whole sphere to satisfy the high-precision 3 D positioning. Each RF instrument and turntable controller communicate with the PC with automatic test software through the GPIB interface

2.2.2 Antenna passive data (efficiency)

Test Point ID	1	2	3	4	5	6	7	8	9	10	11
Freq. (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Gain (dBi)	3.18	3.26	3.45	3.57	3.61	3.79	3.62	3.55	3.33	3.19	3.07
Efficiency (%)	59.8%	60.5%	61.3%	61.7%	62.5%	64.9%	63.7%	63.2%	62.5%	61.8%	61.2%

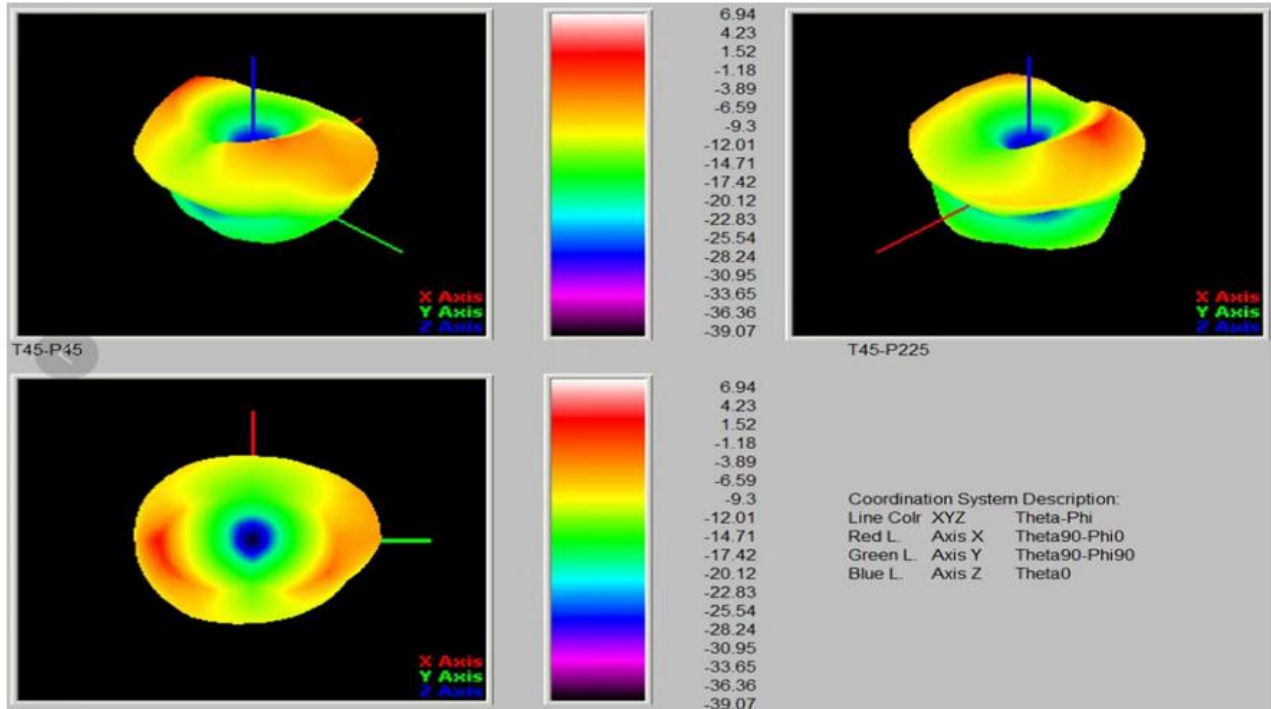
Test Point ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Freq. (MHz)	5100.0	5150.0	5200.0	5250.0	5300.0	5350.0	5400.0	5450.0	5500.0	5550.0	5600.0	5650.0	5700.0	5750.0	5800.0
Gain (dBi)	3.82	3.94	4.12	4.18	4.39	3.81	3.87	3.78	3.53	3.42	3.69	3.87	4.12	4.08	4.25
Efficiency (%)	58.6%	59.3%	60.9%	60.6%	61.8%	61.7%	60.8%	60.5%	58.2%	57.1%	58.5%	61.6%	62.7%	63.8%	63.2%

2.2.3 Antenna passive (Figure file LOGMAG + VSWR + SMITH)



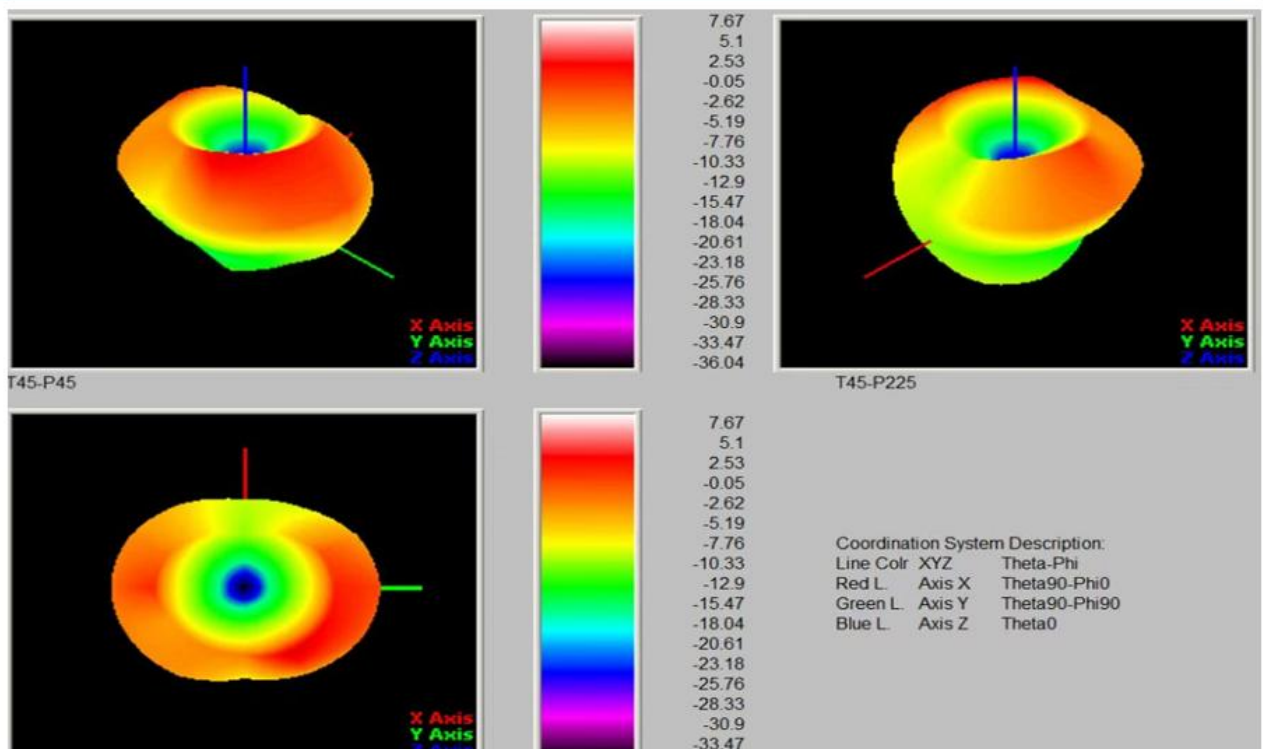
2.2.4 Antenna passive parameters-2.4G Apple diagram

Radiation Pattern For WIFI Antenna (2450MHz) , Peak Gain: 3.79dbi

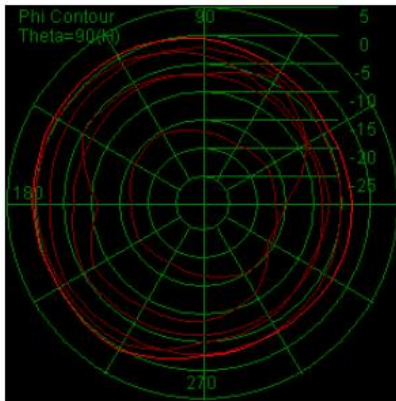


2.2.5 Antenna passive parameters-5.8G Apple diagram

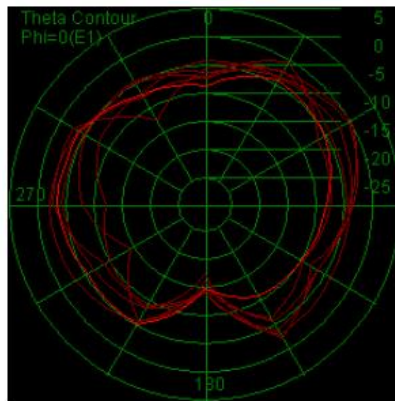
Radiation Pattern For WIFI Antenna (5300MHz) , Peak Gain: 4.39dbi



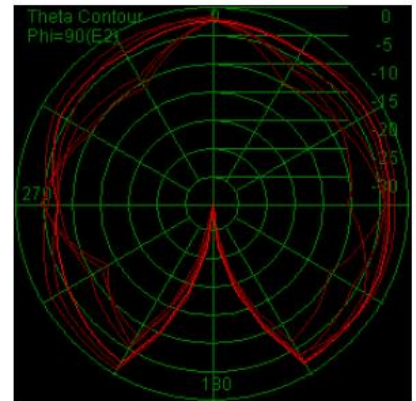
2.2.6 Antenna passive parameters-2.4G direction diagram

The θ =90 (Phi=270° Straight ahead)


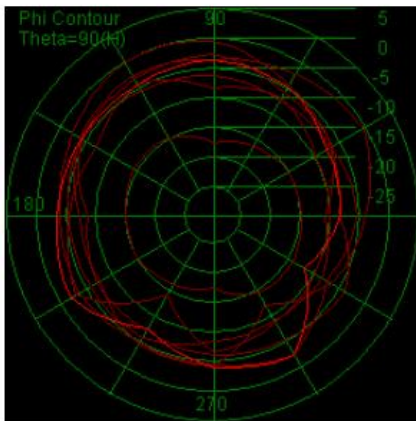
Phi=90°



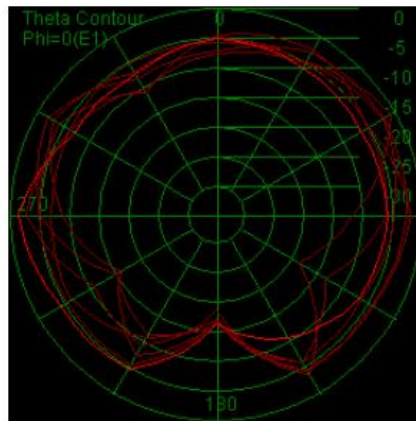
Phi=180°



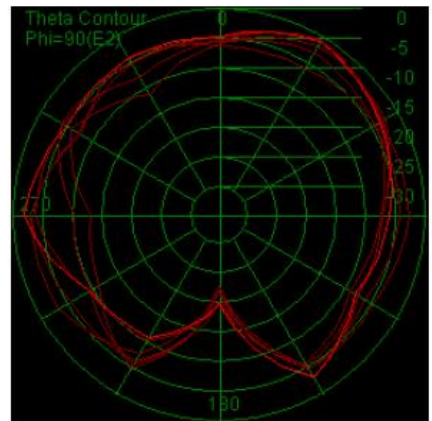
2.2.7 Antenna passive parameters-5G direction diagram

The θ =90 (Phi=270° Straight ahead)


Phi=90°



Phi=180°



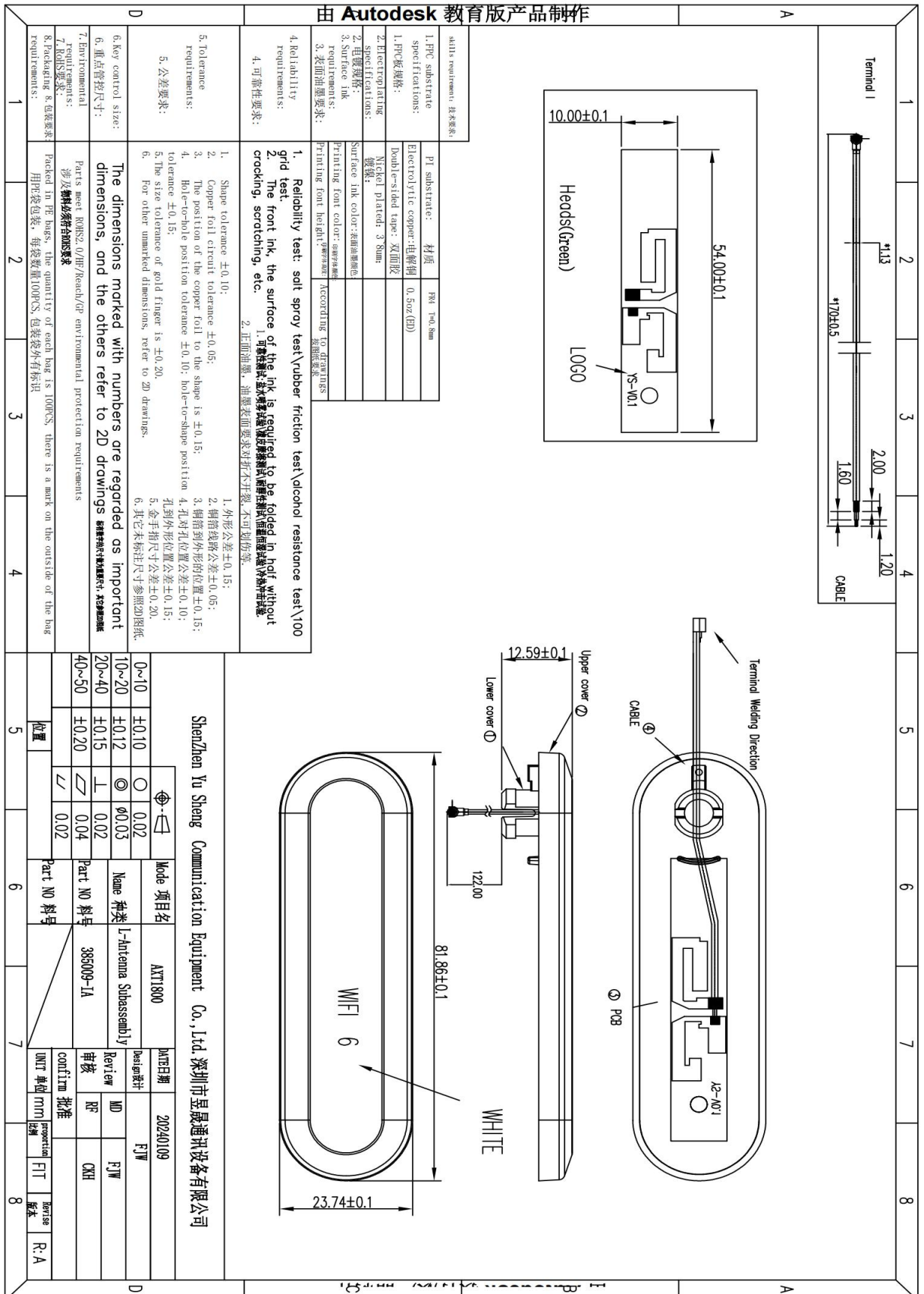
2.2.8 Active parameters of the main antenna

Test	2.4WIFI B			2.4WIFI G		
Result	1	6	11	1	6	11
TRP (dBm)	21.47	22.39	22.11	21.24	21.51	21.37
TIS (dBm)	-87.38	-87.46	-87.25	-73.13	-73.83	-73.42

Test	2.4WIFI N		
Result	1	6	11
TRP (dBm)	20.63	20.52	20.16
TIS (dBm)	-73.11	-72.27	-72.89

3. engineering drawing

R-antenna assembly on the right



4 Material list

YUSHENG COMMUNICATION TECHNOLOGY CO.,LTD.深圳市昱晟通讯设备有限公司

385009 (AXT1800) –BOM

File No

Edition/版本: R:A

client/机种:385

Model/项目: 385009

date/日期: 20240109

Item	Part No项次	Name名称	Types of类型	version版本	specification规格	Material quality材质	colour颜色	Surface treatment 表面处理	Unit单位	Quantity数量
1	385009-IA	R-Antenna Subassembly	Z	R:A	81.86*23.74*12.59MM				PCS	1
1.1	385009-IA-01	PCB	Z	R:A	54.00*10.00*0.8MM	PCB板 T0.8MM	Green	Tinning	PCS	1
1.1.1	385009-IA-02	CABLE	Z	R:A	1.13*170MM	1.13CABLE Terminal I	black	Gold plated	PCS	1
1.2	385009-IA-03	Upper cover	Z	R:A	81.86*23.74*12.59MM	PC	White	Fine Lines	PCS	1
1.3	385009-IA-04	Lower cover	Z	R:A	79.35*21.24*10MM	PC	White	Fine Lines	PCS	1
2	385009-IB	L-Antenna Subassembly	Z	R:B	81.86*23.74*12.59MM				PCS	1
2.1	385009-IA-01	PCB	Z	R:A	54.00*10.00*0.8MM	PCB板 T0.8MM	Green	Tinning	PCS	1
2.1.1	385009-IB-02	CABLE	Z	R:B	1.13*100MM	1.13CABLE Terminal I	black	Gold plated	PCS	1
2.2	385009-IA-03	Upper cover	Z	R:A	81.86*23.74*12.59MM	PC	White	Fine Lines	PCS	1
2.3	385009-IA-04	Lower cover	Z	R:A	79.35*21.24*10MM	PC	White	Fine Lines	PCS	1

The above parts meet the environmental requirements of ROHS2.0 HF Reach GP

Type: W. Outsourcing B. Semi-finished products Z. Finished products C. Customer supply

Confirmation:

Review:

Production: FJW

5. Package schematic diagram

Shenzhen Yusheng Communication Equipment Co., LTD

Product factory packaging requirements

client	Guang Lian Zhi Tong	project name	XAT1800	Project material number	
date	2022-3-24	part name	Antenna components	Part material number	
Storage conditions:		Temperature 20 degrees and humidity 75%			
materials used					
order number	name	specifications			
1	Seal bag 2	250*170mm			
2	carton	300*200*180mm			
The antenna is packaged in PE bags, 100 PCS, and then in sealed bags, one box for every 10 bags					

Schematic diagram of packaging



(This figure is the packaging diagram of this project, subject to the mass production object)