QT35 project antenna material requirements specification

Customer name: QCY

Customer name: **QT35**

Product name: FPC antenna

Size of product: See the BOM table for more details

Material code: 10.157.000141

Change Content CV:

order number	edition	state	Start and end date	person liable	page number	remarks
1	editio princeps	editio princeps	2024-8-19	Li Jieyi	11	
2						

The Supplier acknowledges the signature of the following documents:

Responsible person / date		IQC/ date	Review / Date	Approval / Date
MD	Close industry	Su Guanfeng	Chen Kehong	
RF	He poetry Yin			

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

1.1 Scope of application

This requirement, provided QT35 Antenna technical requirements and material requirements specifications.

This requirement applies to QT 35 Antenna selection, testing and acceptance of the product.

1.2 Project basic information

Antenna name:	QT35
Antenna band:	2400MHz-2500MHz
Antenna material:	FPC

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

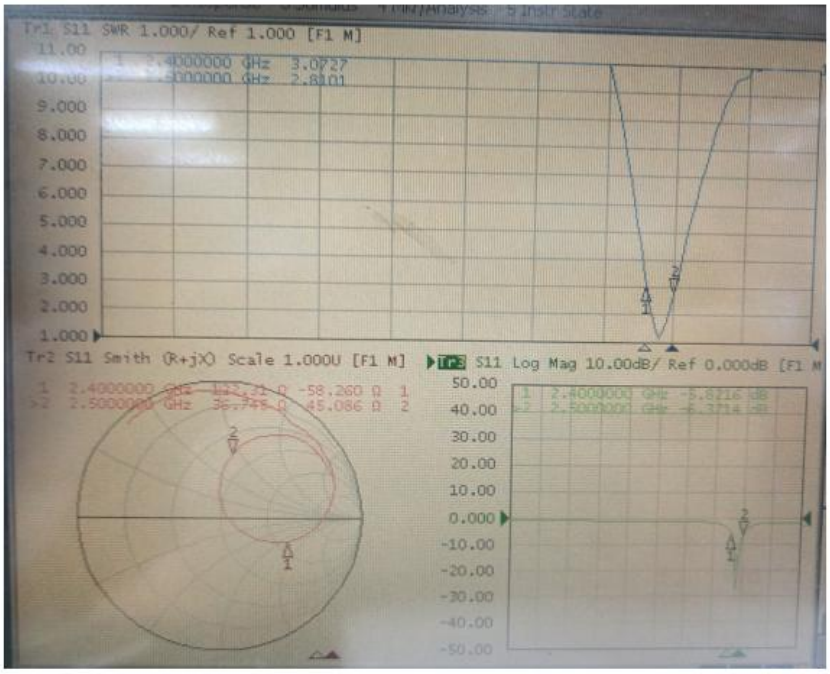
Test tools: Agilent8960 instrument, R & S CMW500, full wave far field ETS dark room, high precision positioning system and its controller and computer with automatic test program

Test environment: temperature 22℃± 3℃, humidity 50% ± 15%

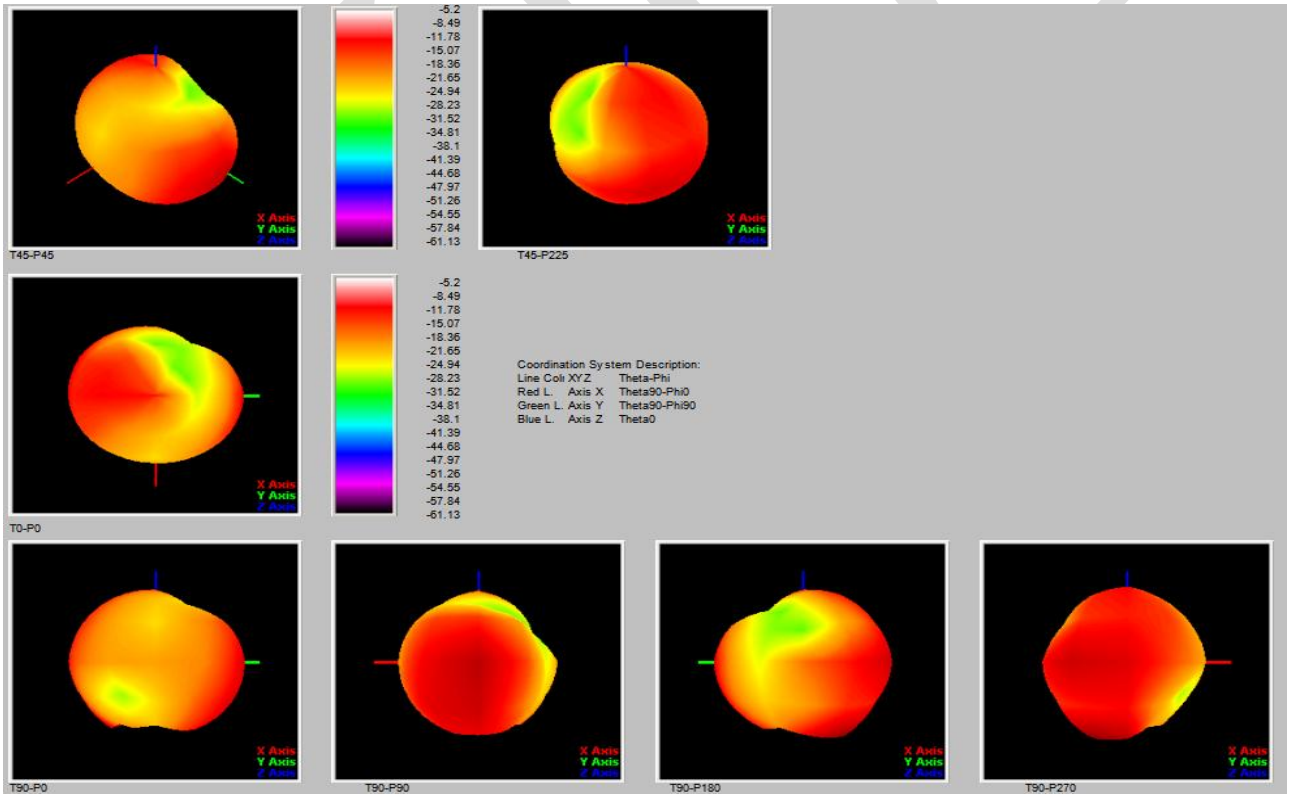
Test method: DUT is fixed in the center of the turntable on the same horizontal line as th e center of the horn antenna. The positioning system enables the DUT to rotate in the whol e sphere to satisfy the high-precision 3 D positioning. Each RF instrument and turntable c ontroller communicate with the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

2.2.2 Active and passive data of the right ear antenna

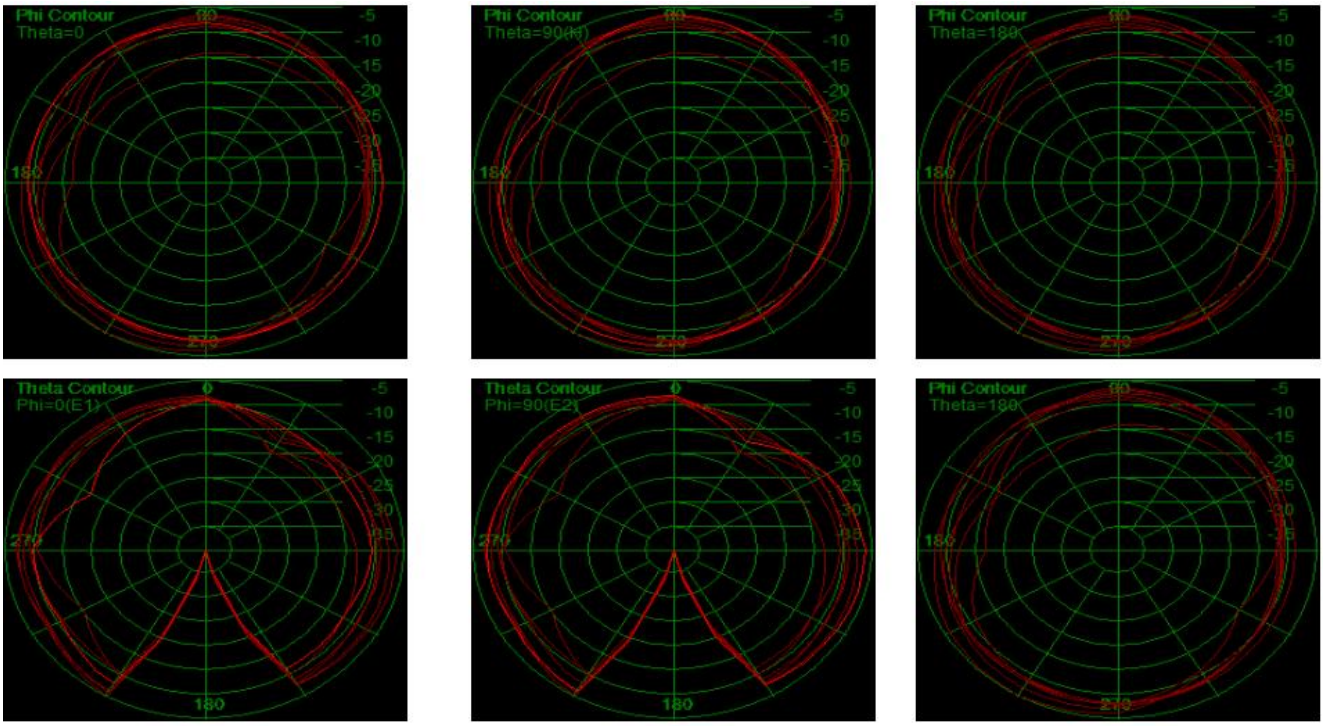
Freq	Gain (dBi)	Effi (%)
2400.0	-2.68	19.24%
2410.0	-2.80	20.61%
2420.0	-1.74	21.24%
2430.0	-1.59	22.36%
2440.0	-1.34	23.58%
2450.0	-1.48	22.75%
2460.0	-1.35	21.41%
2470.0	-1.77	20.33%
2480.0	-2.69	19.56%
2490.0	-2.55	18.21%
2500.0	-2.84	17.44%



2.2.3 Right ear antenna passive parameter-direction graph



2.2.4 Active parameters of right ear antenna-plan plan



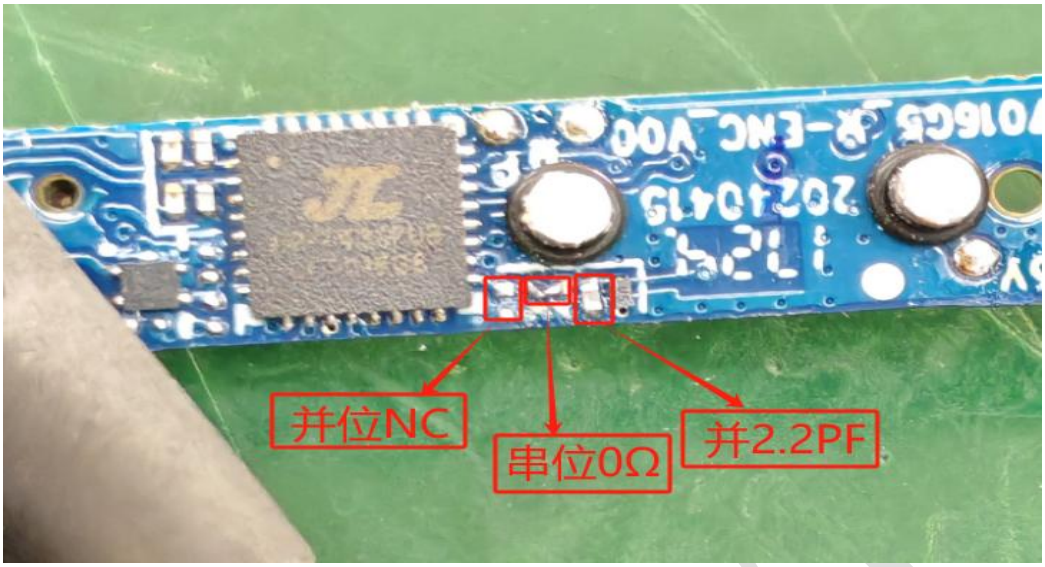
2.2.5 Antenna active parameters / head ear 1

Channel No.	Head and ear test data/R	
	TRP (dBm)	TIS (dBm)
0	-2.82	-81.76
39	-2.55	-82.73
78	-1.37	-82.53

2.2.6 Antenna active parameters / head ear 2

Channel No.	Head and ear test data/R	
	TRP (dBm)	TIS (dBm)
0	-2.87	-81.49
39	-2.67	-81.59
78	-2.59	-82.75

2.2.7 Antenna matching



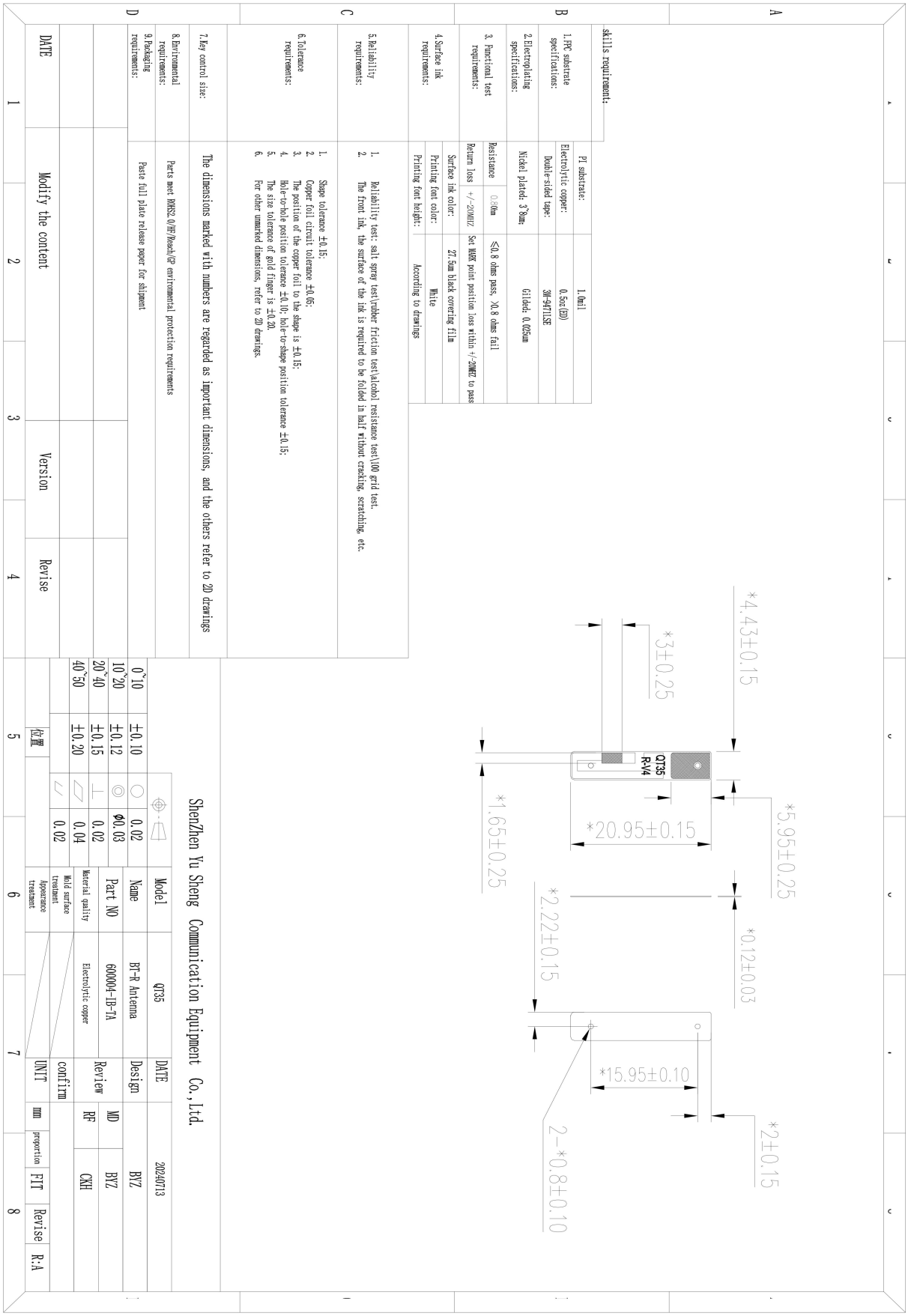
Note: Antenna π -shaped matching changes, and position 2.2 PF / string O Ohm-left and right ear matching synchronization- - (as shown in the figure)

2.2.8 antenna field measurement data

test method:	1. Distance test: Connect the Bluetooth headset with the mobile phone, and place the mobile phone on the 60cm high non-metal bracket. The tester wears the headset to walk to the distance, and the tester rotates 360 degrees. Measure the limit distance between the call sound and music sound in the headset, measure the distance.	
	2. Close body test: the tester carries the mobile phone (preferably the back pocket of the pants opposite the main ear of the Bluetooth headset) for the human rotation test whether there is no card.	
	3. Cover the hands test: testers wear headphones and connect with the mobile phone to play music, test two states: 1) fingertip up test, test whether the music is broken; 2) fingertip back test, test whether the music is broken.	
Test location:	In the outdoor open space of our building (see the test environment)	
testing facility:	Apple 6	
test result:	listen to music	1. The left and right ears are the main ear test 12M.
		2. The close proximity has not been tested yet.
		3, cover your ears with both hands and test for 5M. (Apple 5S)

3. Engineering drawings

Right antenna



4. Reliability test report

Hot and cold shock test report

<table>
<tr><td>client</td><td colspan="2">QCY</td><td>date</td><td colspan="2">2024-7-12</td><td>Factory number</td><td colspan="2">600004</td></tr>
<tr><td>P / N</td><td colspan="2">QT35</td><td>quantity</td><td colspan="2">Each 5PCS</td><td>testing time</td><td colspan="2">48H</td></tr>
<tr><td>material specification</td><td colspan="2">Single side half to half, electrolytic copper gold plating</td><td>supplier</td><td colspan="2">Renesola</td><td>reference standard</td><td colspan="2">MIL-SDT-202Method017IEC 60749-25
JEDEC JESD22-A104-B
IEC68-2-1MIL-STD-2168-85</td></tr>
<tr><td colspan="9">Test purpose: To test the reliability of products and coating binding force, coating and oxidation resistance and corrosion resistance.</td></tr>
<tr><td colspan="9">Equipment name: high and low temperature test box</td></tr>
<tr><td colspan="9">laboratory environment</td></tr>
<tr><td>temperature</td><td colspan="2">22-26℃</td><td>relative humidity</td><td>65-75%</td><td colspan="2">atmos</td><td colspan="2">1MPA</td></tr>
<tr><td colspan="9">test parameter</td></tr>
<tr><td>temperature</td><td colspan="2">high temperature</td><td>80℃</td><td>low temperature</td><td colspan="2">minus forty ℃</td><td>Temperature tolerance</td><td>2℃</td></tr>
<tr><td rowspan="2">time</td><td rowspan="2">constant temperature</td><td>high temperature</td><td>0.30H</td><td>High temperature heating</td><td colspan="2">10min</td><td rowspan="2">remarks</td><td rowspan="2">1. High temperature heating up rises from room temperature to set high temperature
2. Low temperature cooling refers to the set high temperature to the set low temperature</td></tr>
<tr><td>low temperature</td><td>0.30H</td><td>Low temperature cooling</td><td colspan="2">10min</td></tr>
<tr><td>cycle index</td><td colspan="2">32 Times</td><td>else</td><td>relative humidity</td><td colspan="2">95%</td><td></td><td></td></tr>
<tr><td>visual inspection</td><td>lamination</td><td>ACC</td><td>oxidize</td><td>ACC</td><td>blister</td><td>ACC</td><td>The ink fell off</td><td>ACC</td></tr>
<tr><td>test</td><td>antistripping</td><td>⩾ 0.8kgf/cm2</td><td>spot welding</td><td>ACC</td><td>Bige test</td><td>ACC</td><td>Wear-resistant experiment</td><td>ACC</td></tr>
<tr><td colspan="9">test record:</td></tr>
<tr><td colspan="2">identification of product</td><td colspan="5">Product test results</td><td colspan="2">judge</td></tr>
<tr><td colspan="2"></td><td colspan="5">After the experiment, the product has no warping and no glue overflow.</td><td colspan="2">ACC</td></tr>
</table>

Shenzhen Yusheng Communication Equipment Co., LTD		
Salt mist test report		
client:	QCY	Model number: QT 35
Sample condition	Number of samples: 5 PCS	
	Material: single-sided half-to-half electrolytic copper	Plating layer: gold-plated
Start time of the experiment: 09, July 20,2024 to 09,25, July 12,2024		
Type of experiment	■ NSS □ASS □CASS	
experiment condition	Salt solution: 5%	PH:7.0
	Box temperature: 35 · C	Relative humidity: 85% ℃
	Spray method: ■ Continuous □ interval	Compressed air pressure: 1kg / m 2
	precipitation rate of salt spray:	Fog liquid collection: PH7.0anc
	Experimental period: 1- -cycle	Spray time: 48H
		Hold time: 2H
The results were observed every 16 hours	The test temperature is: 36℃	Pressure barrel temperature: 47.5℃
experimental result	Appearance after the experiment: the appearance is intact and intact, no obvious change	
	Plating: no peeling, no corrosion	
	Surface spraying, screen printing: no falling off, no bubbles	

5. List of materials

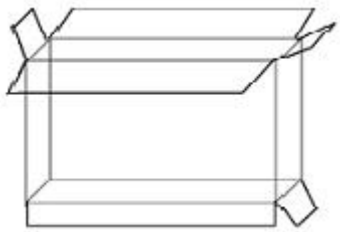
Shenzhen Yusheng Communication Equipment Co., LTD

600004 (QT35) BOM

edition: T:A client: 600 Type of aircraft: 600004 et a date: 2024/08/2

Item numb	* Material code	* Material	Material class	*Machine type	Specification and model	colour	*unit.	dosage	remark
2	600004-IB-TA	BT-R-FPC		QT35	BT-R-FPC Electrolytic copper 20.95*4.43*0.12 mm	BLACK	PCS	1	
2.1	600004-IB-01-TA	BT-R-FPC		QT35	BT-R-FPC Electrolytic copper 20.95*4.43*0.12 mm	BLACK	PCS	1	
verify:				examine:				manufacture: BYZ	

6. Packaging diagram

<table>
<tr><td colspan="3">Packaging method diagram</td></tr>
<tr><td>product name</td><td colspan="2">Antenna components</td></tr>
<tr><td>P / N</td><td colspan="2">600004</td></tr>
<tr><td>Project model</td><td colspan="2">QT35</td></tr>
<tr><td rowspan="3">File details</td><td>Carton Size 1:
270*260*200MM
Carton Size 2:
260*200*200MM
Carton Size 3:
Depending on the order quantity / volume</td><td>  </td></tr>
<tr><td>Boating method</td><td>The minimum package of 100 bags, in turn with waterproof bags, a waterproof bag with up to 1000 materials</td></tr>
<tr><td>Total number of binning</td><td>Packaging by order quantity</td></tr>
<tr><td>labeling requirement</td><td>Tag Size 1:
Universal use 100 * 100mm
Tag Size 2:
According to customer requirements</td><td></td></tr>
<tr><td colspan="3">matters need attention</td></tr>
<tr><td colspan="3">1. Due to the limitation of order quantity, the packing method of each material is the size of the box according to the total quantity of the order or the physical volume</td></tr>
<tr><td colspan="3">2. Storage temperature: room temperature</td></tr>
<tr><td colspan="3">3. Preservation conditions: store them in a cool and dry place</td></tr>
</table>