



Shenzhen Yusheng Communication Equipment Co., LTD

XE3000 project antenna material requirements specification

customer name: Shenzhen Guanglian Zhitong Technology Co., LTD

Customer product name: GL-XE3000NR

Product name: Antenna assembly

Product specification: FPC + common-axis welding

Material code: FPC assembly 205-1019

Change Content CV:

order number	edition	state	Start and end date	person liable	page number	remarks
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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	Analysys hair	Zeng Xiang good	
RF	He lei			

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

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

catalogue

1. OVERVIEW	3
1.1 SCOPE OF APPLICATION	3
1.2 PROJECT BASIC INFORMATION	3
2. TECHNICAL INDEX REQUIREMENTS	3
2.1 INTRODUCTION OF TEST ITEMS AND EQUIPMENT	3
2.2 TEST INSTRUCTIONS	3
3. TEST REPORT	4
3.1: ANTENNA PASSIVE PARAMETERS-FPC 5.8 G	4
3.2: ANTENNA PASSIVE PARAMETERS-5 GWIFI (FPC)	4
3.3 : RADIATION PATTERN FOR WIFI FPC ANTENNA (5600MHZ) , PEAK GAIN : 3.48DBI	5
3.4: ANTENNA PASSIVE PARAMETERS- (FPC) 5G DIRECTION DIAGRAM	5
3.5 LOCATION OF THE ANTENNA	6
3.6 PICTURE OF THE WHOLE MACHINE	6
4. STRUCTURAL SIZE DIAGRAM	7
5. BOM TABLE (BILL OF MATERIALS)	8
6. PACKAGING DIAGRAM	9

1. Overview

1.1 Scope of application

This requirement specifies the antenna technical requirements and material requirements specifications for XE3000 products.

This requirement is applicable to the antenna selection, testing and acceptance of XE3000 products.

1.2 Project basic information

Antenna name:	XE3000
Antenna band:	WIFI: 5.8G
Antenna material:	FPC+ coaxial cable
Antenna version:	V0.6

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 Test instructions

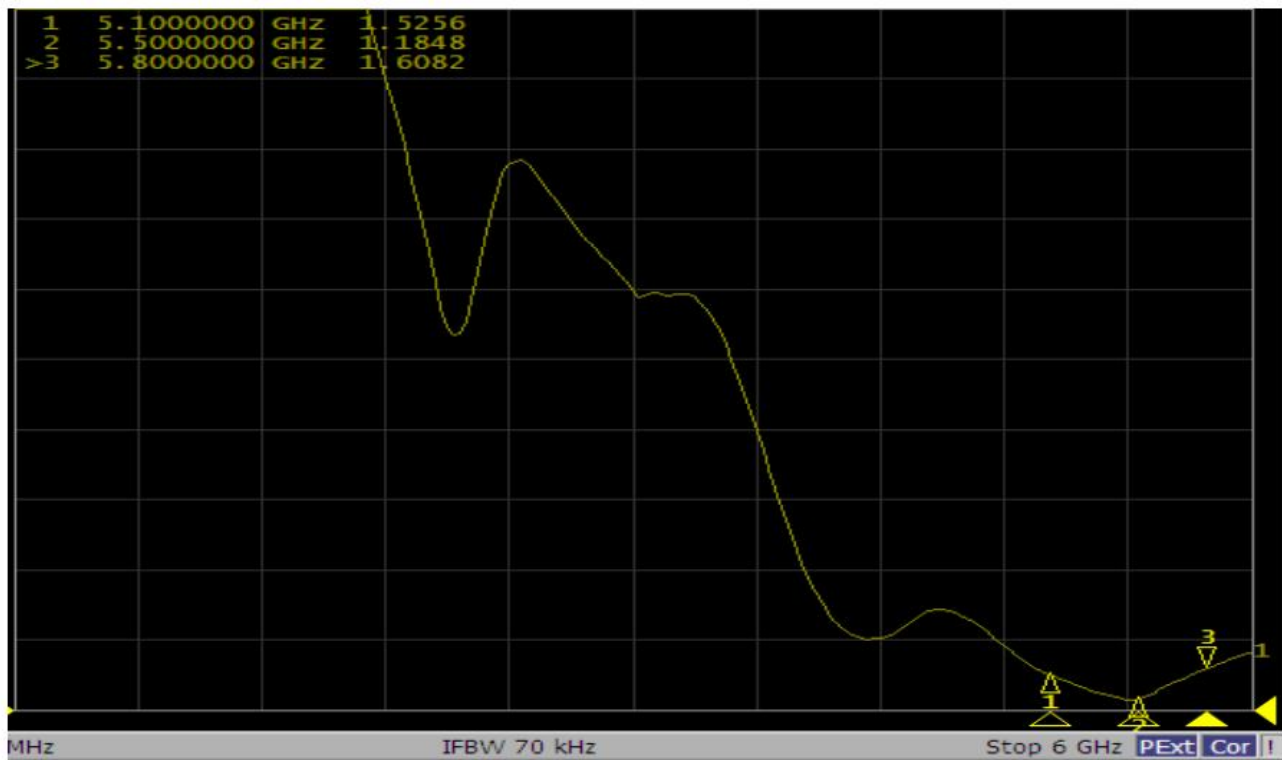
Test tools: Agilent8960 instrument, R & S CMW500, full wave far field ETS dark room, high precision positioning system and its controller and computer with automatic test program

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 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

3. Test report

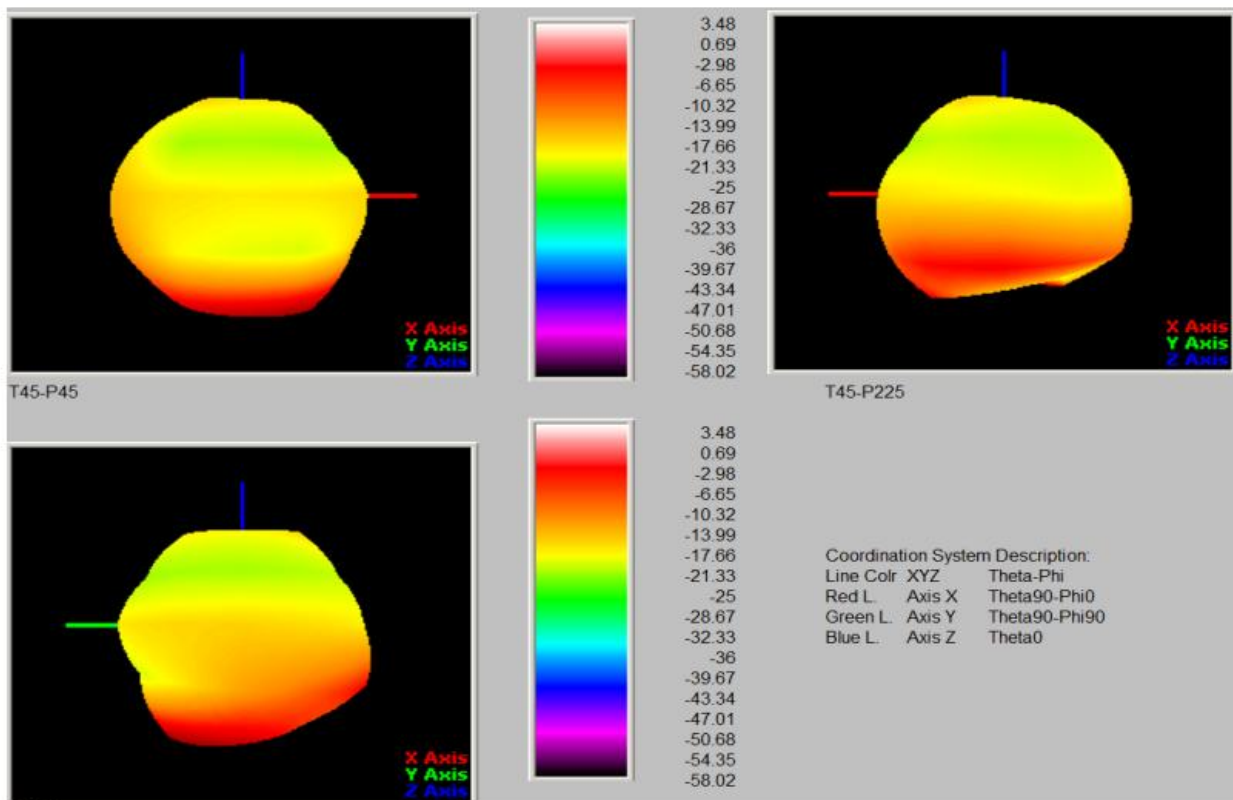
3.1: Antenna passive parameters-FPC 5.8 G



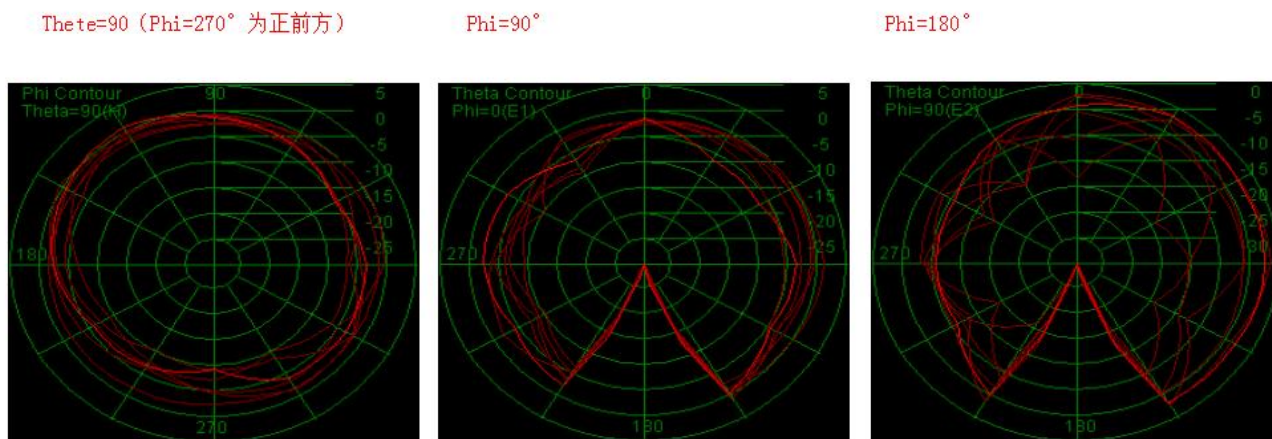
3.2: Antenna passive parameters-5 GWIFI (FPC)

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)	2.35	2.42	2.68	2.93	3.11	3.04	3.14	3.28	3.53	3.65	3.46	3.27	3.13	2.98	2.81
Efficiency (%)	54.2%	55.1%	55.9%	56.5%	57.7%	58.6%	59.3%	61.7%	62.5%	61.9%	61.2%	59.8%	58.6%	57.9%	57.1%

3.3 : Radiation Pattern For WIFI FPC Antenna (5600MHz) , Peak Gain : 3.48dbi



3.4: Antenna passive parameters- (FPC) 5G direction diagram



3.5 Location of the antenna



3.6 Picture of the whole machine



4. Structural size diagram

由 Autodesk 教育版产品制作				Skills requirements: <table border="1"> <tr> <td>1. IPC substrate specifications:</td><td>PI substrate:</td><td>Electrolytic copper (1 to 3mil)</td></tr> <tr> <td>2. Electroplating specifications:</td><td>Electrolytic copper:</td><td>0.5oz (ED)</td></tr> <tr> <td>3. Surface ink requirements:</td><td>Double-sided tape:</td><td>3M-9471JSE</td></tr> <tr> <td></td><td>Nickel plated:</td><td>3µm</td></tr> <tr> <td></td><td>Surface ink color:</td><td>Glided: 0.0125um</td></tr> <tr> <td></td><td>Printing ink color:</td><td>Matt black</td></tr> <tr> <td></td><td>Printing font height:</td><td>Bright black</td></tr> <tr> <td></td><td></td><td>According to drawings</td></tr> </table>				1. IPC substrate specifications:	PI substrate:	Electrolytic copper (1 to 3mil)	2. Electroplating specifications:	Electrolytic copper:	0.5oz (ED)	3. Surface ink requirements:	Double-sided tape:	3M-9471JSE		Nickel plated:	3µm		Surface ink color:	Glided: 0.0125um		Printing ink color:	Matt black		Printing font height:	Bright black			According to drawings																
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4. Reliability requirements: 1. Reliability test: salt spray test\rubber friction test\alcohol resistance test\100 grid test. 2. The front ink, the surface of the ink is required to be folded in half without cracking, scratching, etc.				Opening to the left																																											
5. Tolerance requirements: 1. Shape tolerance ±0.10; 2. Copper foil circuit tolerance ±0.05; 3. The position of the copper foil to the shape is ±0.15; 4. Hole-to-hole position tolerance ±0.10; hole-to-shape position tolerance ±0.15; 5. The size tolerance of gold finger is ±0.20. 6. For other unmarked dimensions, refer to 2D drawings.				Centrifugal paper separation line																																											
6. Key control size: The dimensions marked with numbers are regarded as important dimensions, and the others refer to 2D drawings				ShenZhen Yu Sheng Communication Equipment Co., Ltd.																																											
7. Environmental requirements: Parts meet ROHS2.0/REACH/GR environmental protection requirements				<table border="1"> <tr> <td>Model</td><td>Y3000</td><td>DATE</td><td>20230330</td></tr> <tr> <td>Name</td><td>WiFi antenna</td><td>Design</td><td>JFB</td></tr> <tr> <td>Part NO</td><td>385014-1A</td><td>Review</td><td>JFB</td></tr> <tr> <td>Material quality</td><td>Electrolytic copper (1 to 3mil)</td><td>RF</td><td>CKH</td></tr> <tr> <td>Weld surface treatment</td><td></td><td>confirm</td><td></td></tr> <tr> <td>Appearance treatment</td><td></td><td>UNIT</td><td></td></tr> <tr> <td></td><td></td><td>mm</td><td></td></tr> <tr> <td></td><td></td><td>proportion</td><td>1:1</td></tr> <tr> <td></td><td></td><td>FTT</td><td></td></tr> <tr> <td></td><td></td><td>Revise</td><td>R.A</td></tr> </table>				Model	Y3000	DATE	20230330	Name	WiFi antenna	Design	JFB	Part NO	385014-1A	Review	JFB	Material quality	Electrolytic copper (1 to 3mil)	RF	CKH	Weld surface treatment		confirm		Appearance treatment		UNIT				mm				proportion	1:1			FTT				Revise	R.A
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8. Packaging requirements: Packed in PE bags, the quantity of each bag is 100PCS, there is a mark on the outside of the bag				<table border="1"> <tr> <td>10~20</td><td>±0.10</td><td>○</td><td>0.02</td></tr> <tr> <td>20~40</td><td>±0.12</td><td>◎</td><td>0.03</td></tr> <tr> <td>40~50</td><td>±0.15</td><td>⊥</td><td>0.02</td></tr> <tr> <td></td><td>±0.20</td><td>∇</td><td>0.04</td></tr> <tr> <td></td><td></td><td>∇</td><td>0.02</td></tr> </table>				10~20	±0.10	○	0.02	20~40	±0.12	◎	0.03	40~50	±0.15	⊥	0.02		±0.20	∇	0.04			∇	0.02																				
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