Shanghai Sunnyway Communication Technology Limited Company

Skyline Acknowledgement Book

Customer: Shanghai Yike Communication Technology Co.,Ltd.	The project: PT201B
Operating frequency band: **LTE Band 2/4/12/14/66**	
Motherboard version: **A506_V1_200310**	

Shangyuan material specifications

Specifications and models	Shangyuan material number	Customer part number
MAIN	SH23172IB75-2	

The record of project changes			
Date of preparation/change	Changes	Change of person	version

Sunnyway counter-signature bar				
Research and development	ME:	Auditor:	QE:	Approver:
	RF:	Auditor:		

Client Counter-signature bar			
EE	PM	RF	QE

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1. Project information

Machine information

Antenna information

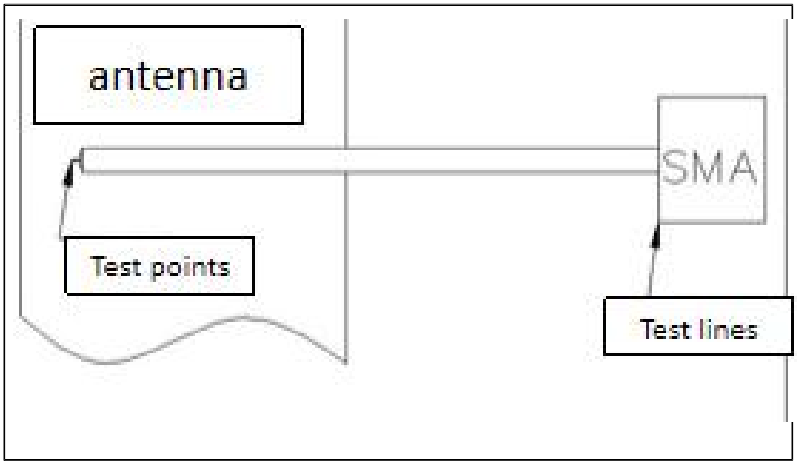
	version
MAIN	SY-PT201B-4G-V0.2
Mainboard	A506_V1_200310

Note: The customer finally verified that the antenna performance prototype was retained in our company for at least one year, which is convenient for analysis and solution to abnormal situations in antenna mass production.
Ensure antenna shipment quality.

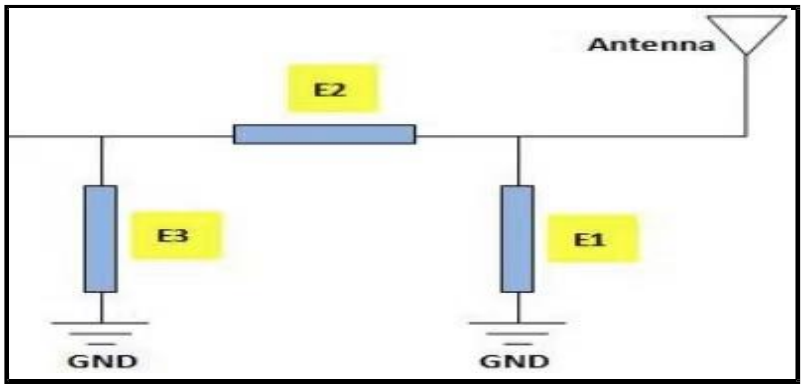
2. Test fixtures

Purpose: To test the passive parameters of the antenna as accurately as possible.

How to make: The prototyping mechanism is made of a 50 ohm coaxial cable, one end is connected to the test point at the back of the matching circuit of the prototype motherboard (the front of the RF test hole), and the other end is connected to the SMA connector. The schematic diagram is as follows:



3. Matching circuits



Element	Value	Specification
E1	N/A	
E2	0Ω	
E3	N/A	

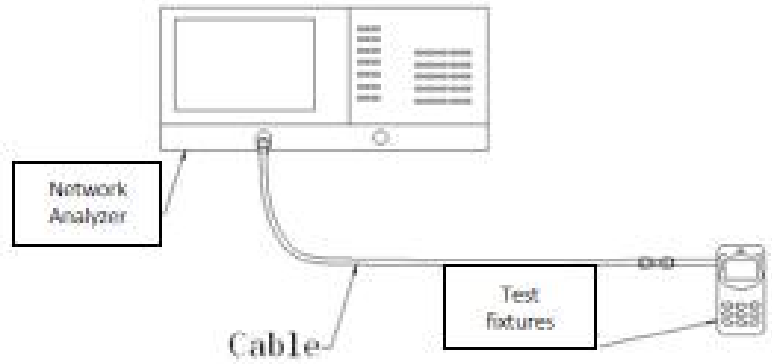
4. S11 test

4. 1S11 Test Method Description

Test Equipment: Network Analyzer (E5071C)

Test method: A 50 ohm CABLE cable is derived from the instrument test port, and the SMA connector of the prototype is connected after calibration using the calibrator to record the return loss and standing wave ratio corresponding to the relevant frequency point.

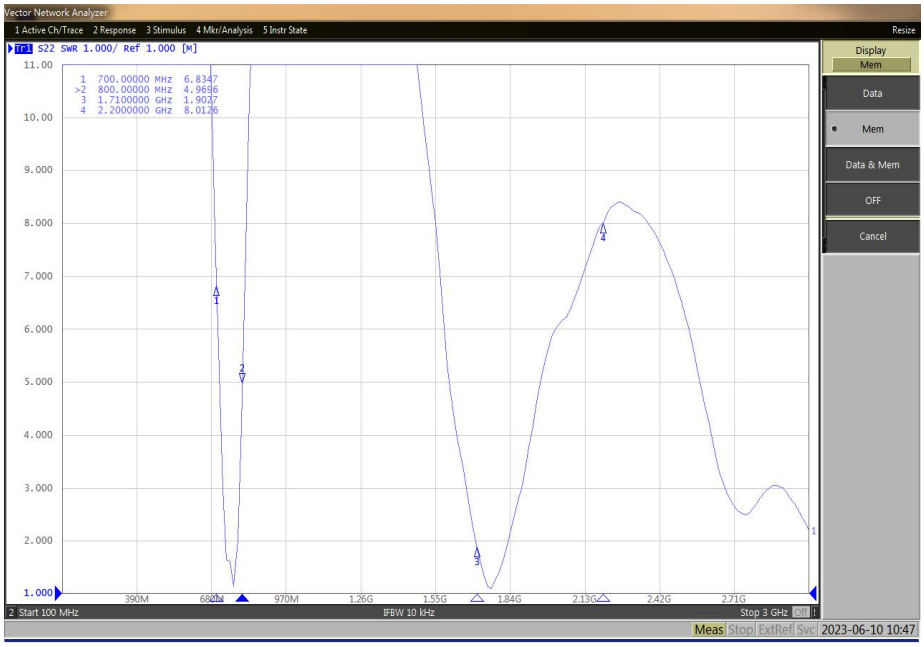
The test diagram is as follows:



Test the schematic

4.2 S11 parameter

MAIN



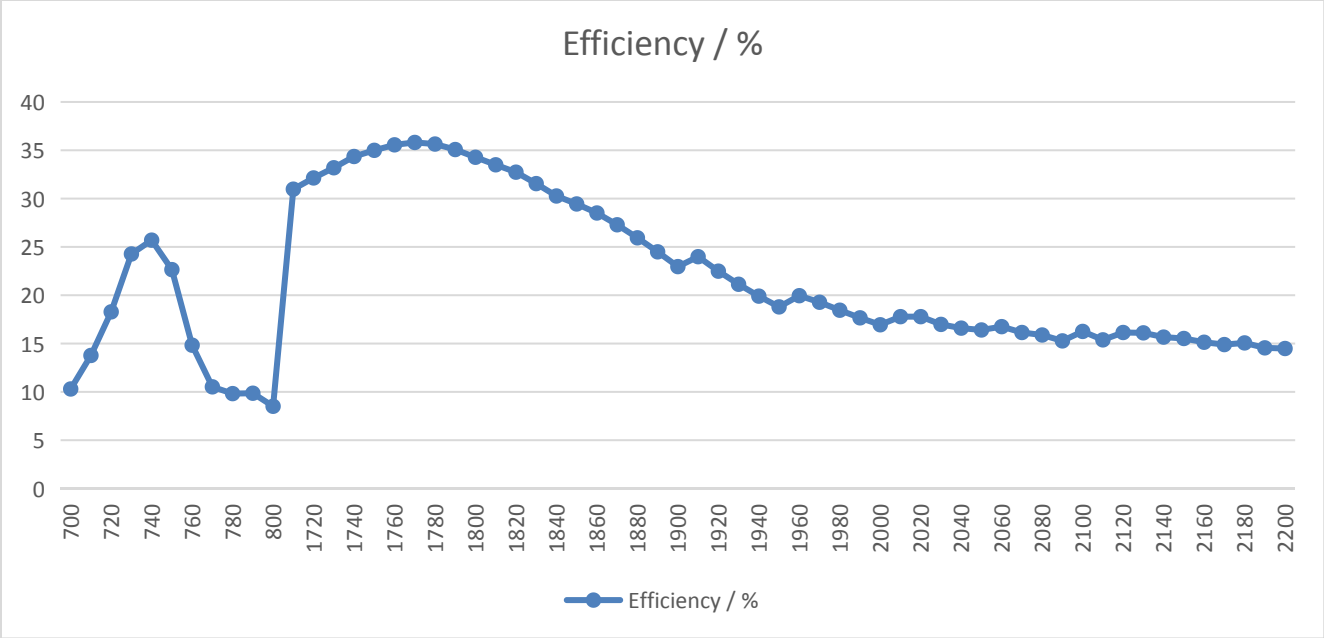
	MAIN
frequency (MHz)	SWR
700	6.83
800	4.97
1710	1.90
2200	8.01

5 Darkroom test data

Test system: Shielded darkroom
Test environment: temperature 22℃±3℃, humidity 50%±15%
Test equipment: When testing passive data, use the Network Analyzer Agilent E5062C
When testing active data, the Comprehensive Tester Agilent 8960 /CMW500/E4438C is used

5.1 Passive test data

Main antenna RF1 passive efficiency



Freq.(MHz)	700-800			1710-2200		
	MIN	MAX	AVE	MIN	MAX	AVE
Effi(%)	8.51	25.70	15.32	14.49	35.81	22.92
Effi(dB)	-10.70	-5.9	-8.47	-8.39	-4.46	-6.63
Gain(dBi)	-4.84	0.81	-1.62	-3.93	1.48	-0.62

5.2 Active test data

Main antenna active test data (free space)

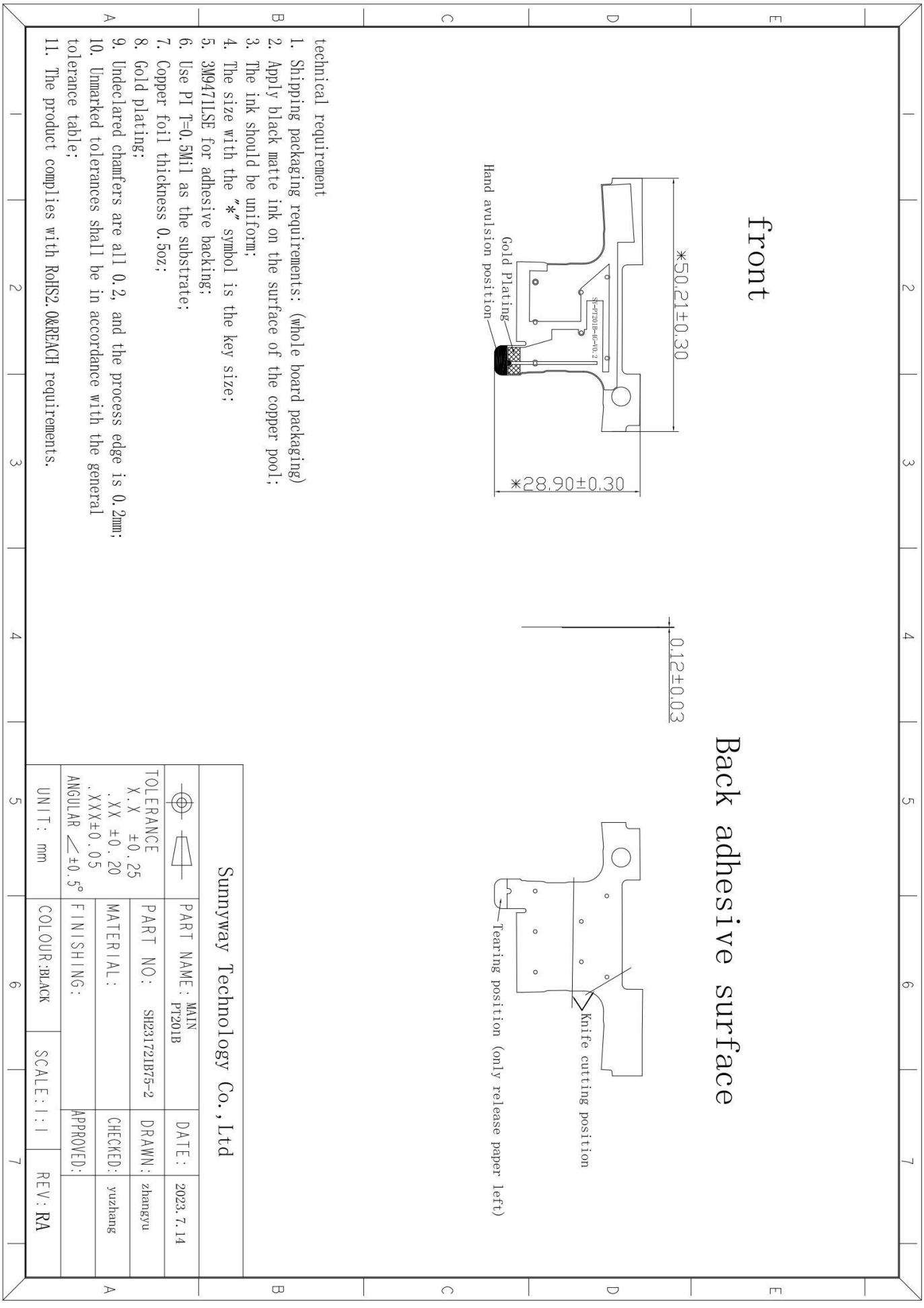
Band	OTA	
	TRP(dB)	TIS(dB)
LTE_B2	18.98	
	18.70	
	18.02	-95.87
LTE_B4	18.07	
	18.27	
	18.84	-91.52
LTE_B12	15.57	
	16.86	
	18.09	-91.53
LTE_B14	16.82	
	16.74	
	16.54	-92.52
LTE_B66	18.03	
	18.19	
	18.23	-91.39

6. Mass production antenna indicators

When the antenna is mass-produced, the standing wave ratio is used as the mass production test standard. According to the differences in the project itself, the following criteria are given:

frequency (MHz)	Mass production standards
Main antenna 700--800; 1710--2200	VSWR (Mass production performance) <VSWR(Acknowledge performance)+1

7. Drawings


front
*50.21±0.30
*28.90±0.30
Gold Plating
Hand avulsion position
SH1-PT201B-4G-V0.2
Back adhesive surface
0.12±0.03
Knife cutting position
Tearing position (only release paper left)
technical requirement
1. Shipping packaging requirements: (whole board packaging)
2. Apply black matte ink on the surface of the copper pool;
3. The ink should be uniform;
4. The size with the "*" symbol is the key size;
5. 3M9471LSE for adhesive backing;
6. Use PI T=0.5Mil as the substrate;
7. Copper foil thickness 0.5oz;
8. Gold plating;
9. Undeclared chamfers are all 0.2, and the process edge is 0.2mm;
10. Unmarked tolerances shall be in accordance with the general tolerance table;
11. The product complies with RoHS2.0&REACH requirements.
Sunnyway Technology Co.,Ltd
PART NAME: MAIN PT201B
DATE: 2023.7.14
PART NO: SH23172IB75-2
DRAWN: zhangyu
MATERIAL:
CHECKED: yuzhang
FINISHING:
APPROVED:
TOLERANCE
X.X ±0.25
.XX ±0.20
.XXX±0.05
ANGULAR ∠ ±0.5°
UNIT: mm
COLOUR:BLACK
SCALE:1:1
REV:RA