Shenzhen Maya Communication Equipment Co., LTD

SPECIFICATION FOR APPROVAL

(Product acceptance letter)

product name: spring

Product model (original factory model): ER02201

The Customer's Item Name is:

The Customer's "Specification and Model":

Customer's Material Code for all items:

Change Content CV:

order numbe	Content before the change	Change of the content	Change date	editi on	page number	person liable
1	editio princeps		2024.1.6	A 1		Feng Guojun

Name of the supplier: Shenzhen Maya Communication Equipment Co., LTD		
Supplier address: 202,2nd Floor, Building 1, Guanghui Science Park, No.13, Minqing Road, Longhua District, Shenzhen		
Contact number: 0755-36517075	**Fax: 0755-82916227**	**Email: 446080430@qq.com**
(Signature of the Supplier)		
Responsible person / Date	**Review / Date**	**Approval / Date**

This admission includes the following: (indispensable)

One, the cover
2. Parameters and specifications
3. Structural size diagram
4. BOM outside
V. Production process flow table
Vi. Certification and test status

Customer Name (Company name): Shenzhen Oni Electronics Co., Ltd

Shenzhen Maya Communication Equipment Co., LTD

The buyer (customer) determines the result: ☐ qualified ☐ unqualified			
Demander (customer) recognition (please return the entire recognition bookmark after confirmation)			
Development & Design Engineer / Date	**SQE, Engineer / Date**	**Head of the Purchasing Department / Date**	**Development Manager approval / date**

Shenzhen Maya Communication Equipment Co., LTD

special clause

1. For the performance and structure confirmation section

★ Please effectively confirm the appearance and performance of the product before signing the confirmation letter.

★ Please be sure to provide the final trial production machine to us or take it back for verification before mass production.

★ Since the product of this admission is highly sensitive, please keep the test machine for subsequent traceability.

★ Because this product is customized items, the use of pertinence is strong, the customer in the material replacement or used for non-specified project, please be sure to change the material or the machine back to verify the RF performance, otherwise, may lead to the use of the design status, the storage debugging prototype function confirmation, to ensure that our debugging sample function completely normal, to prevent the abnormal antenna performance of antenna performance error.

2. About product storage issues

★ Because the product surface printing ink, back glue, electroplating objects, please be sure to confirm in the storage or transportation process in the temperature between 23℃ -27℃, relative humidity below 60%, no strong acid, no sulfur, no oxygen environment storage or transportation.

★ Due to the harsh environmental requirements of the product back glue, please assemble the product within the optimal service period after receiving the product to ensure the reliability of the product.

3. Agreement on product use

★ Due to the special structure of the product, please use the product, and the paste objects must not be residual chemical agent (release agent, etc.) or try not to use raw materials with release agent, in order to ensure the product use state, please use the paste object surface before the product, to ensure that the paste object surface without any chemical residue.

4. Statement the quality of this product

★ Due to the influence of the above factors, it is suggested that the optimal use period of this product is 12 months, overdue will affect the use effect of the product. Our company will provide lifelong consultation and paid replacement service for this product.

★ This product is a special customized device. Please inspect the appearance, quantity and performance of the product according to the standards stipulated in the Product Performance and Specifications Recognition within 7 days after receiving the product. overdue, the quality of the product shall be deemed to meet the standards agreed by both parties.

★ Verification method: seal proof of acceptance.

catalogue

1. Frequband for customer antenna debugging and design

frequency	frequency range
433MHz	433MHz

drawing of complete machine

Antenna diagram

3. Electric performance

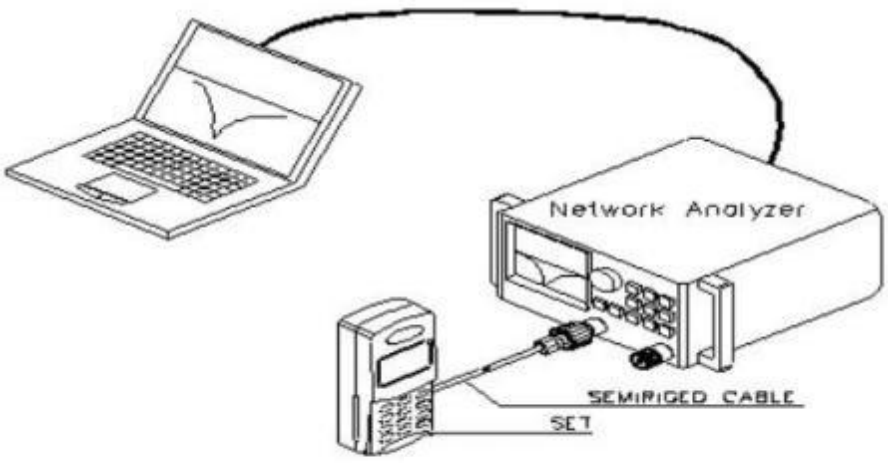
3.1 Description of the test method and the data

implementor name	use
Vector Network Analyzer	S 11/Impedance / Passive Test
Agilent 8960 SP 6010 R &S CMU 200	Mobile phone mobile communication equipment test including GSM, GPRS, EDGE, CDMA2000,1 xEV-DO, TD-SCDMA, WCDMA, and HSDPA
R &S CMW 500 MT 8820C	Containing TD-SCDMA, WCDMA, and HSDPA, LTE, WIFI, GPS mobile phone mobile communication equipment test
Agilent E 4438C	Test for the active GPS
MVG Chamber	Passive Test / OTA active Test / Efficiency /Gain

3.2 Passive Test Report (Passive Test Report)

Test equipment: network analyzer

Test method: use a 50 ohm CABLE cable to export the data from the instrument test port, use the SMA connector of the hand mechanism after the calibration part, and record the data such as echo loss or standing wave ratio corresponding to the relevant frequency point.


Network Analyzer
SEMIRIGED CABLE
SET

3.3 Active Test Report (Active Test Report)

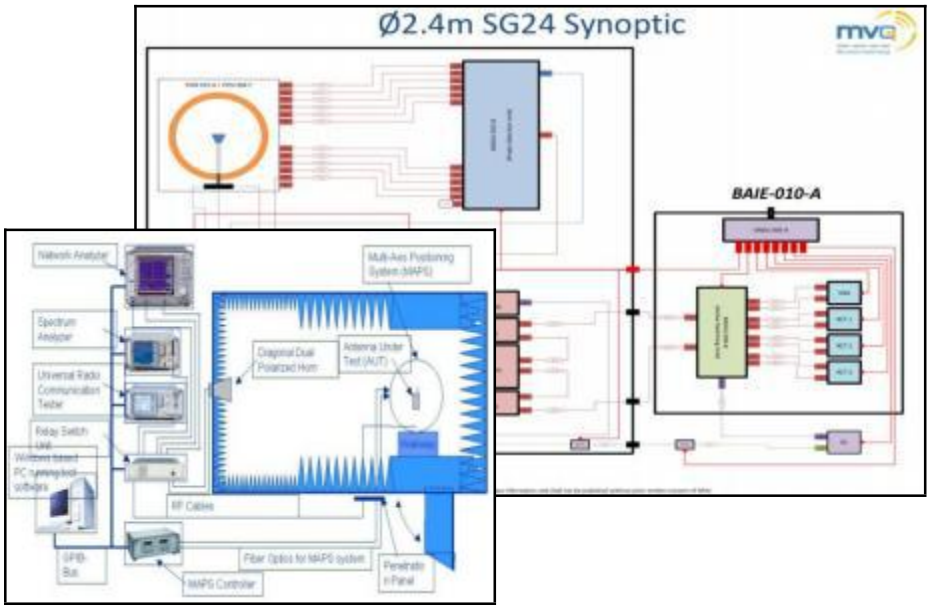
TRP /TIS

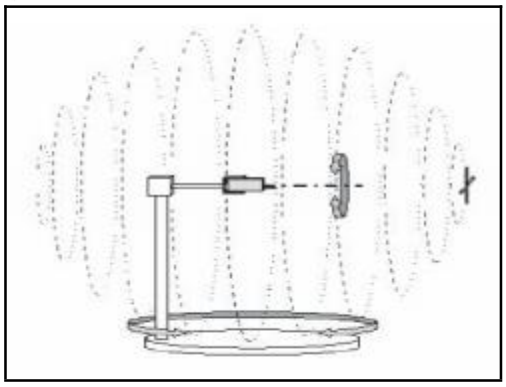
Test tools: comprehensive tester, network analyzer, full radio far field ETS, The French MVG SG24LT (Satmio) near-field 3D microwave dark chamber, High-precision positioning system and its controller and computer test environment with automatic test program: temperature 22℃ ± 3℃, Humidity 60% ± 15% test method: test method and calculation of TRP of system software during the TRP test, The DUT (Device Under Test) is in the maximum transmitting power state, Select high school, low three channels for testing, Controlling the position of the DUT through the positioning system, With 15 degrees as the step length, Measure the effective radiation power (EIRP) at each point in the three-dimensional space, By integrating the average over the sphere, The calculation formula is as follows:

$$TRP \cong \frac{\pi}{2NM}\sum_{i=1}^{N-1}\sum_{j=0}^{M-1}\left[EiRP_{\theta}(\theta_i,\phi_j)+EiRP(\theta_i,\phi_j)\right]\sin(\theta_i)$$

In the TIS test, DUT is in the maximum transmitting power state, and three channels, high and low, are selected for the test. By controlling the position of DUT, measuring the receiving sensitivity of each point in the 3-dimensional space, and calculate the average value on the sphere by integrating. The calculation formula is as follows:

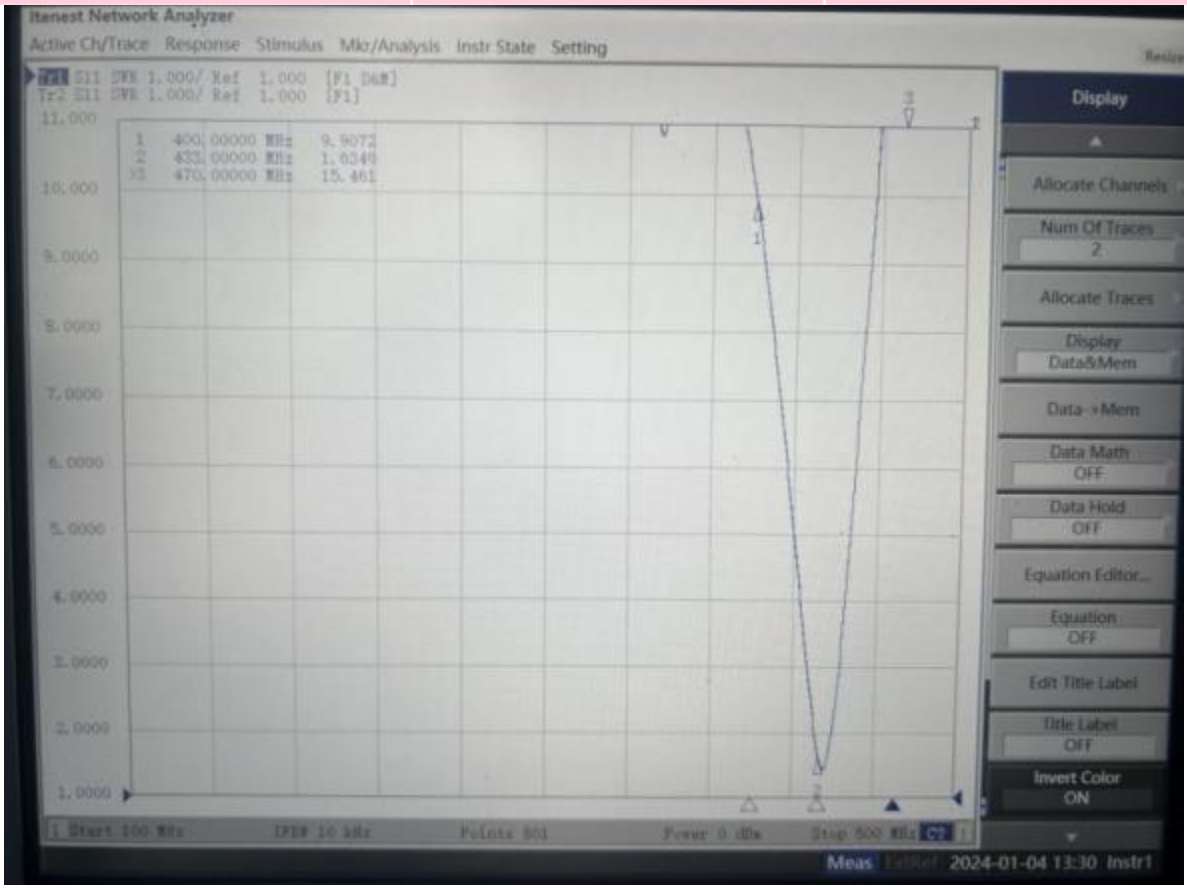
$$TIS \cong \frac{2NM}{\pi\sum_{i=1}^{N-1}\sum_{j=0}^{M-1}\left[\frac{1}{EIS_{\theta}(\theta_i,\phi_j)}+\frac{1}{EIS_{\phi}(\theta_i,\phi_j)}\right]\sin(\theta_i)}$$





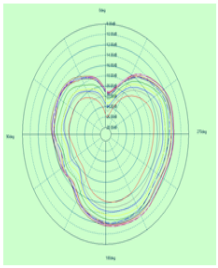
3.4 No Source of data

Frequency	Efficiency	Gain . dB
420000000	0.22%	-22.70
422000000	0.21%	-22.08
424000000	0.63%	-21.47
426000000	1.13%	-20.70
428000000	2.79%	-19.64
430000000	3.04%	-18.81
432000000	1.37%	-19.84
434000000	0.92%	-20.02
436000000	0.57%	-20.31
438000000	031%	-20.51
440000000	0.19%	-21.12

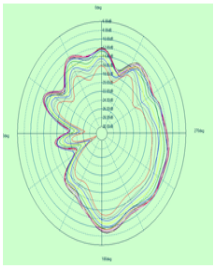


3.5. The passive direction map

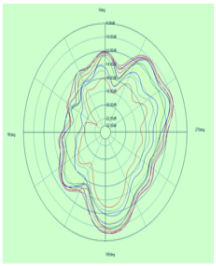
Azimuth 0°



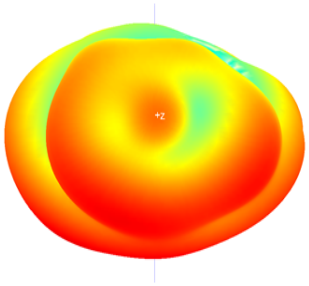
Azimuth 90°



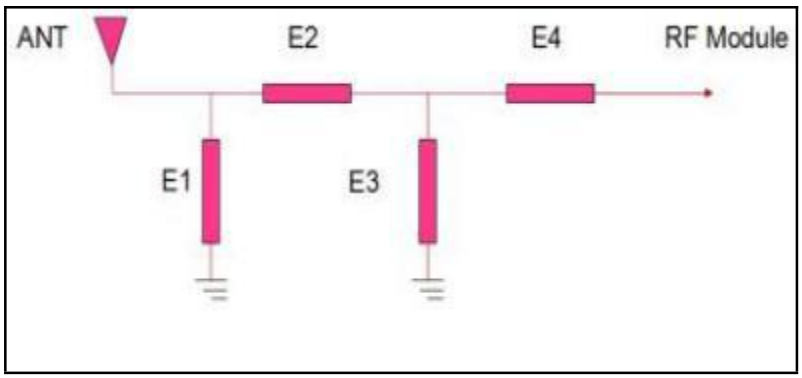
H-Plane (Elevation 90°)

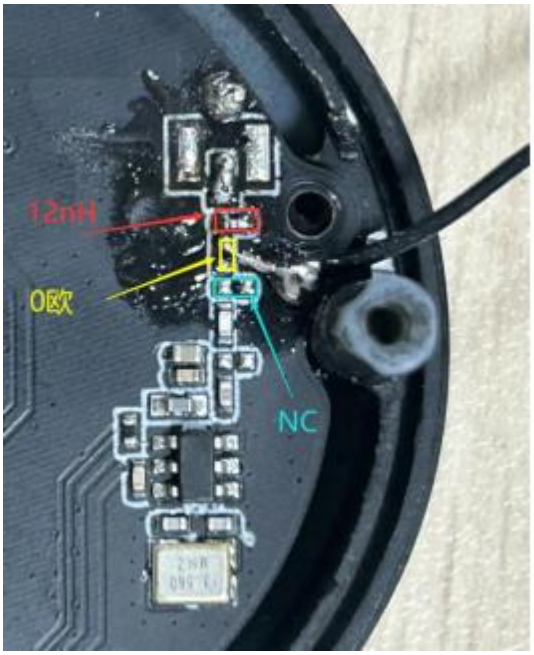


3D view Frequency
433MHz



4. Matching circuit description



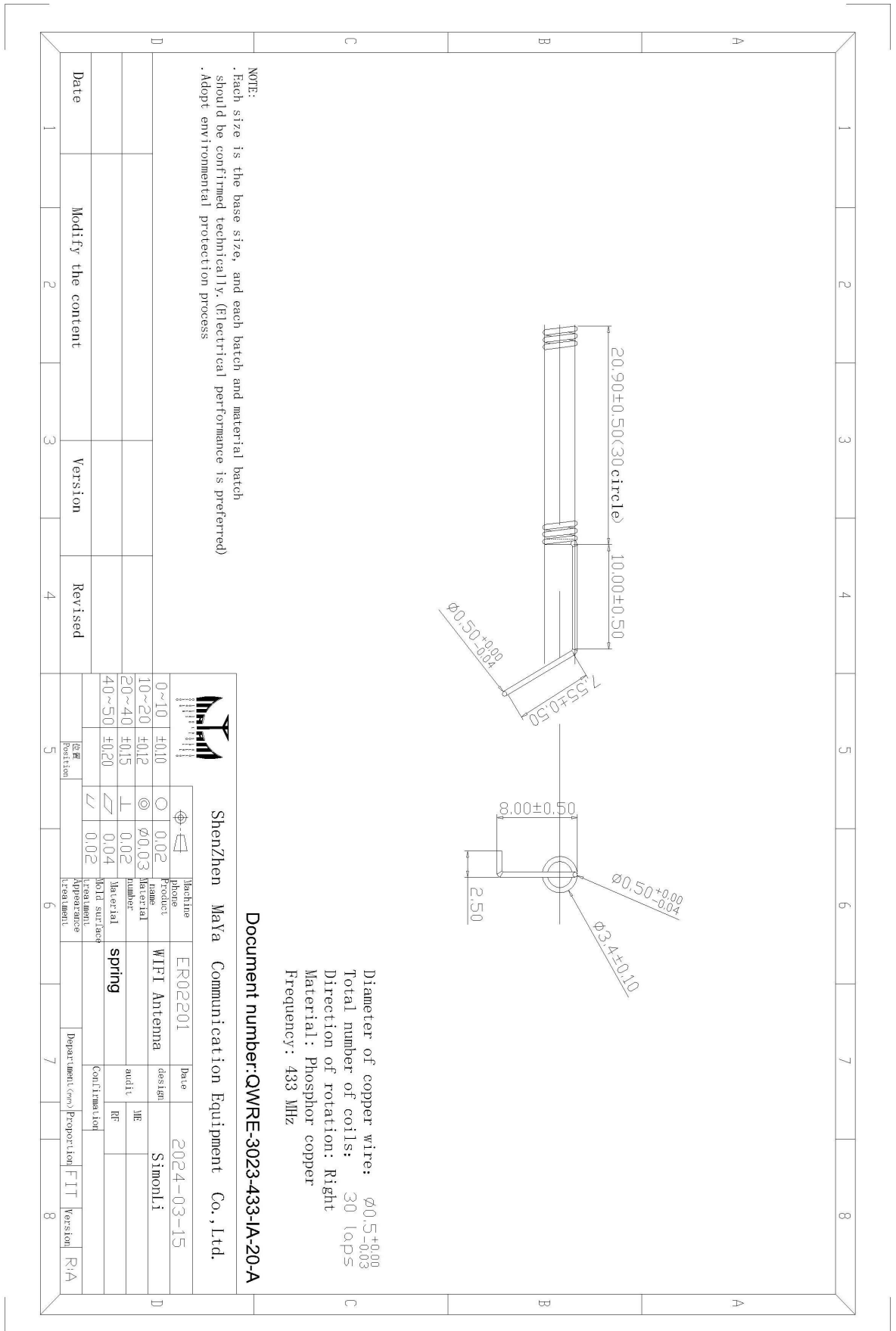


Note: Our company has adjusted the matching circuit of the antenna.

5. Environmental treatment

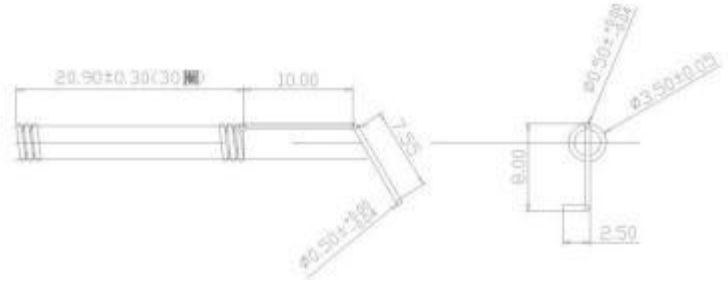
433 antenna assembly diagram

6. Structural drawings



7. Sample size test report

material quality	spring antenna		graphic:
project name	ER 02201		
The number of samples	5 PCS		
The sample date	2024.1.6		
I. Appearance inspection:			
Visually inspect the items	casual inspection	result	
1. Dirty surface impurities	5PCS	0 K	
2. Gel		0 K	
3. Waste		0 K	
4. Rip		0 K	
5. Gold surface oxidation		0 K	
6. Ink (black)		0 K	
Ii. Reliability test (5 PCS):			



test item	standard	1	2	3	4	5	result
1. The adhesion test	The ink must not fall off	not have	not have	not have	not have	not have	0 K
2. Salt spray test status	There is no corrosion in gold surface	not have	not have	not have	not have	not have	0 K
3. Wear-resistant test	Do not leak the substrate						0 K
4. Screen print content							0 K

3. Dimension measurement (randomly selected 5 PCS):

	Site reference value (mm)	tolerance +	Tolerance - (mm)	1	2	3	4	5	detection result
1	20.9	0.3	0.3	20.99	20.98	20.82	20.94	20.96	0 K
2	0.5	0.00	0.04	0.47	0.48	0.49	0.47	0.49	0 K
3	3.5	0.05	0.05	3.48	3.49	3.51	3.52	3.53	0 K

8. Certification test status (fill in the instructions: if there are relevant test certification, please mark in brackets and indicate the corresponding identification Certificate or report number)

() UL certification or report number:_____

() VDE Certification or Report number:_____

() CE Certification or Report number:_____

() FCC Certification or Report number:_____

(√) R O HS Certification or Report Number:__No .NGBML 2105022606___

(√) REACH Certification or report number: No.NGBML 2105023708_____

() EMC Certification or Report Number:_____

() CCC Certification or Report Number:_____

() SRRC Certification or Report number:_____

() Other certification or report number:_____

() No product certification