shenzhenTian wei xun wireless technology co.,ltd.

Product performance and specification

Tian wei xun antenna the research and development department

CUSTOMER NAME: Shenzhen AZW Technology Co., Ltd

PRODUCT NAME: Key N

BOARD MODEL: V1

TIAN WEI XUN P/N: TWX-069-086

PCB MODEL:

CUSTOMER P/N:

Client	Admit manufacturing party		
Customers confirmation	**Quality department**	**R&D**	**Approval**
		ME:	
		RF:	
Date:	**(Date): Wednesday, July 3rd, 2024**		

Telephone: 86-755-29361726 Fax: 86-755-85268343

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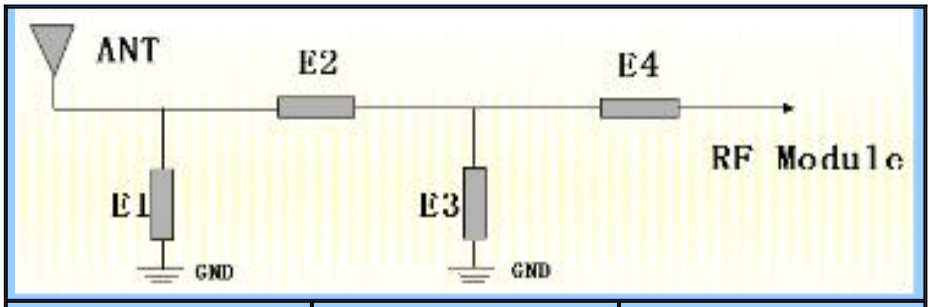
1.1 Project Diagram

MAX N

1.1.1 Antenna matching diagram



Element	capacitance	inductance
E1(0402)		
E2(0402)		
E3(0402)		
E4(0402)		

Matching instructions: Match according to the original motherboard without any changes.

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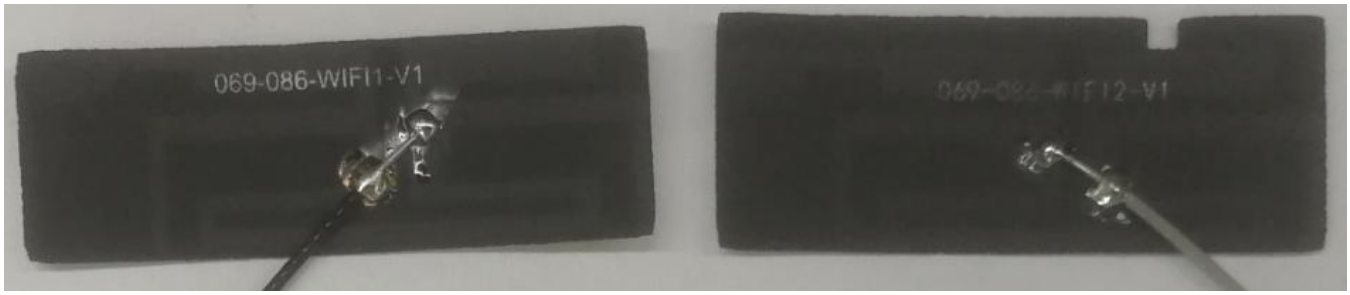
2.1 objective

Standardize the specifications and testing methods of mobile communication terminal antenna products produced by Tianweixun to avoid errors caused by different testing conditions and methods.

3.1 antenna

3.1.1 Main antenna electrical specifications and materials

This report mainly provides the testing status of the structural performance parameters of mobile phone antenna MAXN.



Physical image of antenna designed by TianWei Xun

3.1.2 Antenna form

Implementation type: PIFA antenna

3.1.3 Antenna design operating frequency band

The working frequency band of the antenna is

2412MHz~ 2472MHz ;\5100MHz~5820MHz

3.1.4 Measurement data of the main antenna in the ETS-SG24SYSTEM 3D testing system

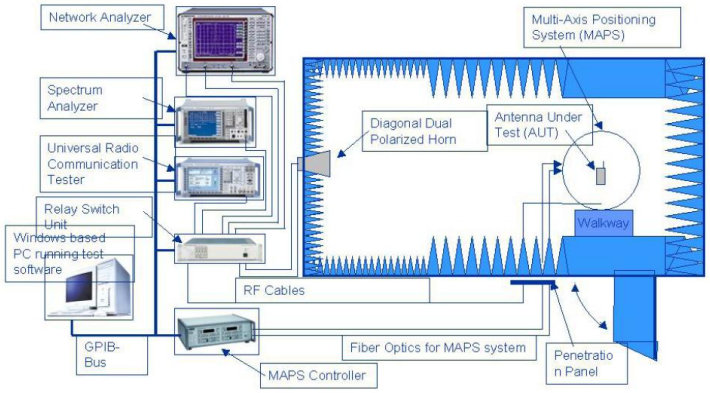


Figure (2) ETS Testing System

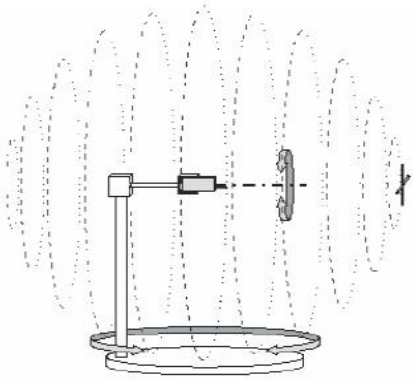


Figure (3) Three dimensional positioning device for mobile phone in darkroom

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The following table shows the passive performance indicators of Tianweixun's designed and mass-produced antennas:

Freq. (MHz)	Gain (dBi)	Efficiency (%)	Freq. (MHz)	Gain (dBi)	Efficiency (%)	Freq. (MHz)	Gain (dBi)	Efficiency (%)
2400	1.73	40.1	5100	2.89	44.8	5485	3.42	48.2
2410	1.75	40.0	5135	2.82	44.8	5520	2.85	42.6
2420	1.95	40.1	5170	2.23	48.2	5555	2.75	41.4
2430	1.85	40.7	5205	2.46	44.3	5590	2.79	44.5
2440	1.87	41.2	5240	2.11	40.2	5625	2.06	41.9
2450	1.93	42.4	5275	2.40	42.7	5660	2.36	41.6
2460	1.99	41.9	5310	2.07	40.4	5695	2.39	44.5
2470	1.81	41.7	5345	2.14	41.2	5730	2.20	39.0
2480	1.74	42.7	5380	2.89	46.6	5765	2.48	39.0
2490	1.66	41.5	5415	2.88	46.0	5800	2.27	39.0
2500	1.76	41.8	5450	3.07	46.3			

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Freq. (MHz)	Gain (dBi)	Efficiency (%)	Freq. (MHz)	Gain (dBi)	Efficiency (%)	Freq. (MHz)	Gain (dBi)	Efficiency (%)
2400	-0.30	36.1	5100	3.48	35.8	5485	3.67	44.3
2410	-0.22	36.1	5135	3.75	37.2	5520	3.20	38.3
2420	-0.16	36.8	5170	4.53	42.3	5555	3.48	39.0
2430	-0.22	35.7	5205	4.19	40.9	5590	3.77	43.5
2440	-0.31	35.8	5240	3.56	37.0	5625	3.66	40.5
2450	-0.31	39.0	5275	3.71	42.6	5660	3.47	41.6
2460	-0.24	38.1	5310	3.42	39.4	5695	4.39	46.8
2470	-0.15	37.7	5345	3.52	39.7	5730	3.55	39.2
2480	-0.08	37.5	5380	3.94	43.7	5765	4.34	42.1
2490	0.22	37.0	5415	3.71	42.6	5800	3.98	38.8
2500	0.68	36.3	5450	3.85	42.9			

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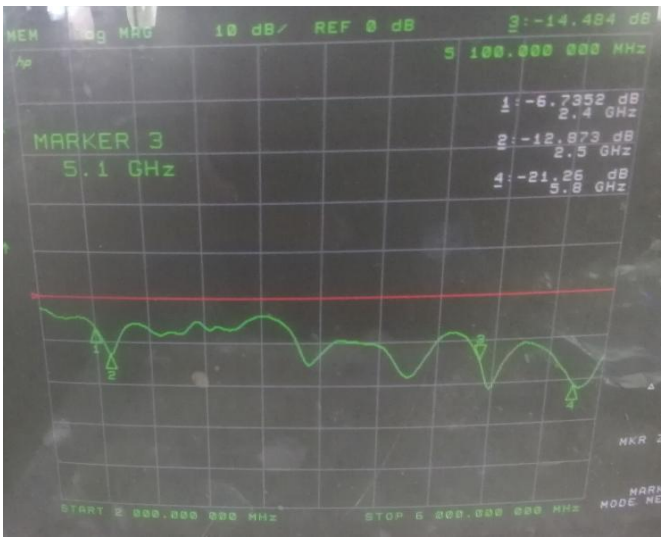
3.1.5 Passive standing wave and return loss of antenna

Voltage standing wave ratio (SWR)



Return loss (Return loss)

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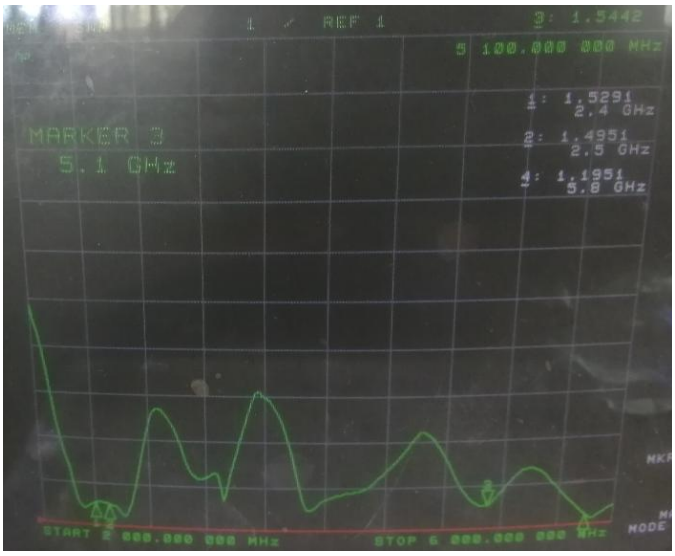

Voltage standing wave ratio (SWR)

Return loss (Return loss)

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3.1.6 WiFi Antenna active test data

		Channel No.	TRP (dBm)	TIS (dBm)
WiFi	2.4G	1	12.99	-80.62
		6	13.04	-79.34
		13	13.13	-79.18
	5G	36	13.72	-71.29
		64	13.17	-70.37
		149	12.82	-71.25
		157	13.16	-70.93
		165	12.36	-70.82

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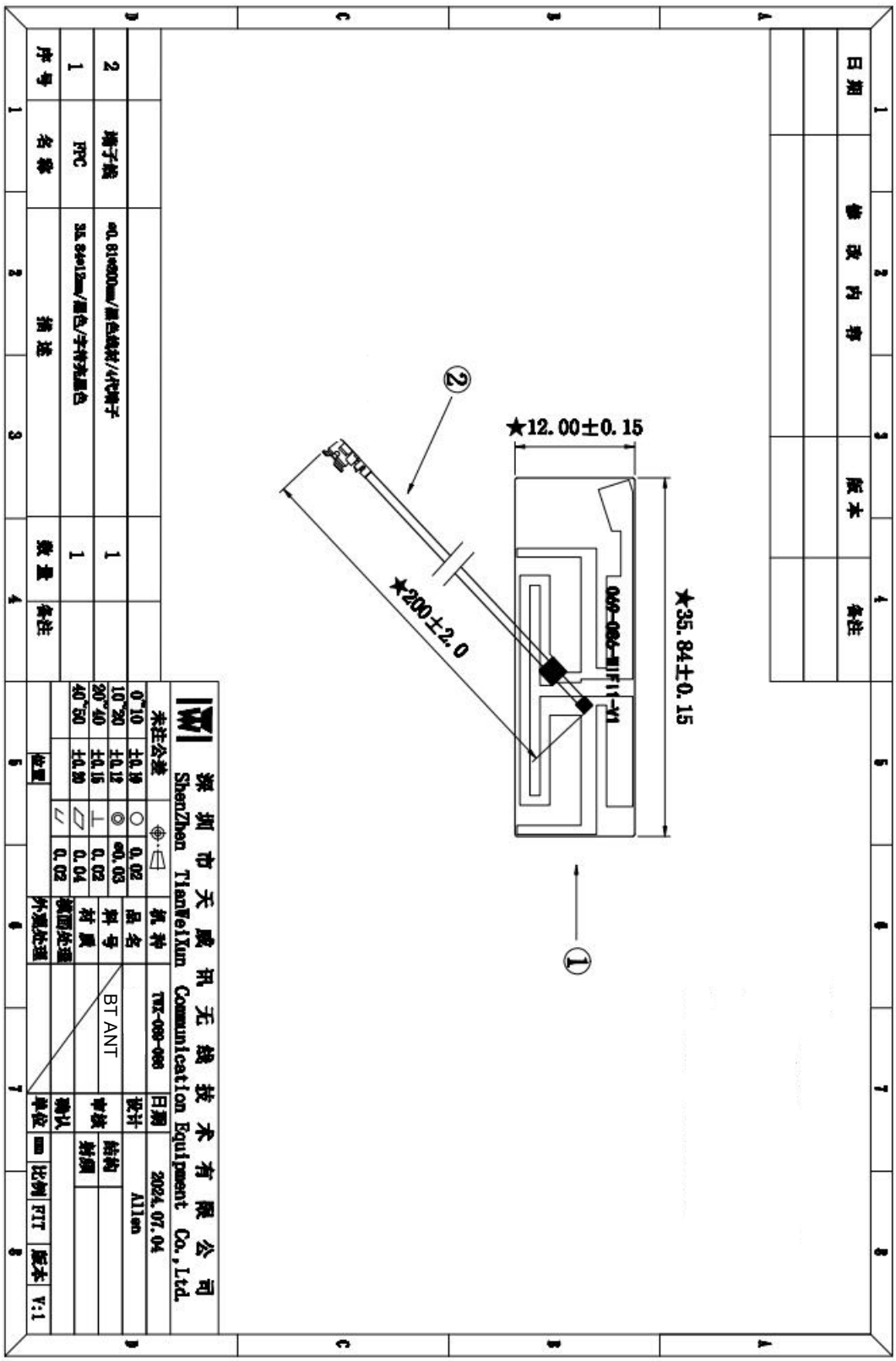

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