



深圳市天达通信有限公司

BAB10 Antenna debugging report

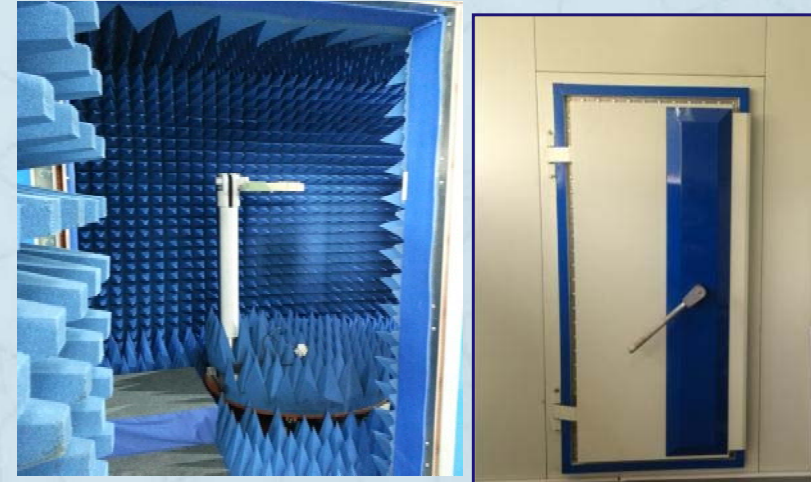
Person in charge: Wang Xinchuang
Phone: 15914002533
Date: 2024.04.11

Test equipment

SATIMO -24



广屏 -ETS



Amway MT8820C



Agilent 8960



Agilent E5071C

Test system	Test environment	Active testing	source-free testing
Guangping ETS	Temperature: $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$ Humidity: $50\% \pm 15\%$	support 2G/3G/4G	600MHZ——6G

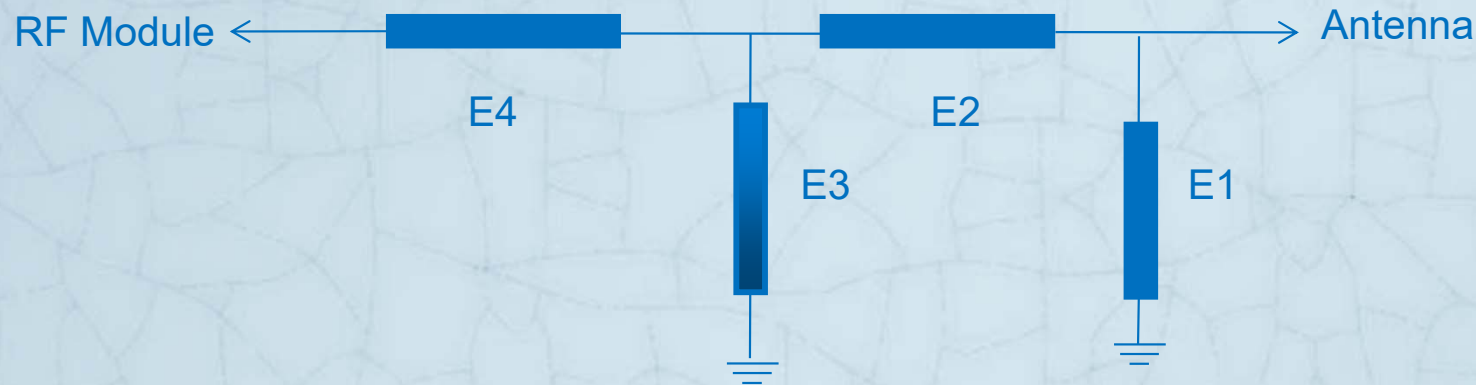
Project Overview

Customer Name		Item Name	Model	Antenna implementation method	Model dimensions
WUUK		BAB10		FPC+Cable line	/
Frequency band					
Main antenna	2G	/	Secondary antenna	GPS	/
	3G	/		WIFI/BT	2400--2500MHz 5150--5850MHz
	4G	FDD: /		diversity antenna	/
		TDD: /		433MHz	/
Shell material		Plastic			

Test version record

[illegible]

Matching circuit



WIFI/BT	
Element	Value
E1(0201)	
E2(0201)	
E3(0201)	
E4(0201)	

The antenna matching circuit being debugged is the original matching circuit of the mainboard, with no changes made.

Passive test data



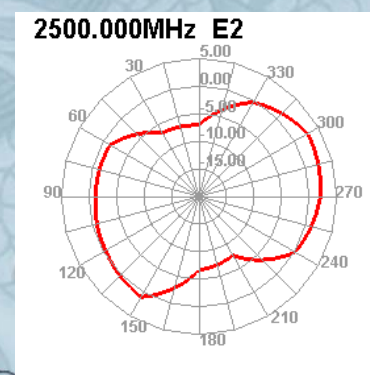
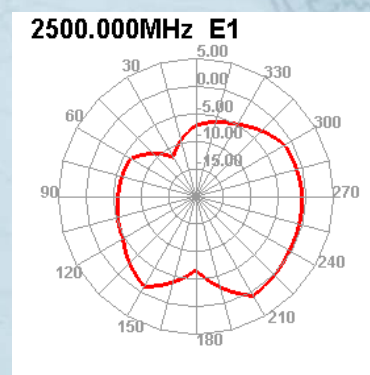
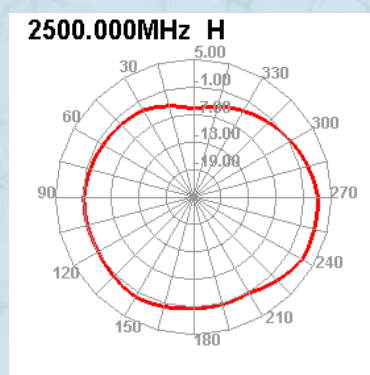
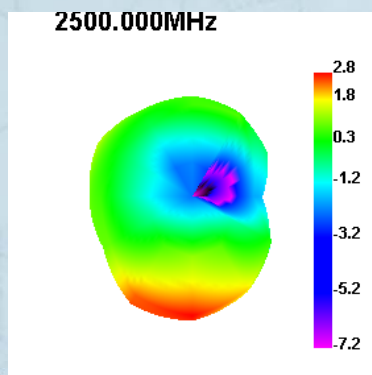
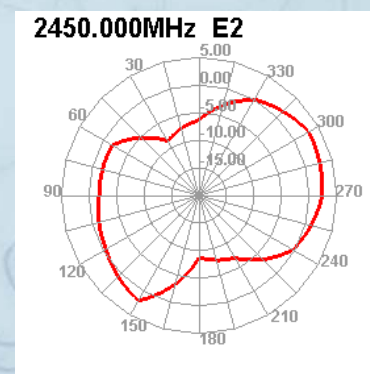
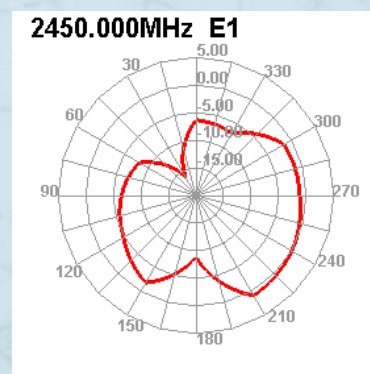
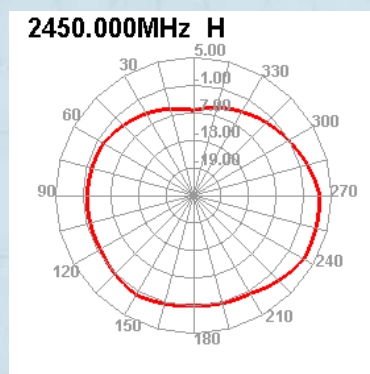
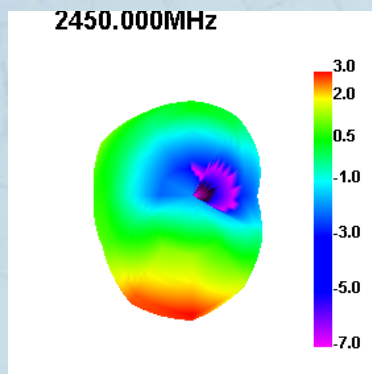
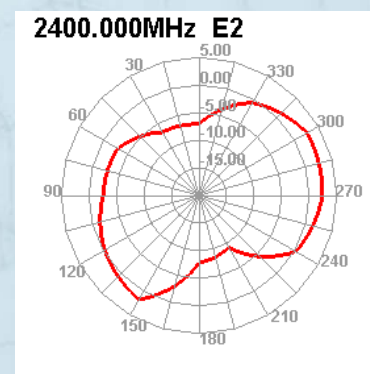
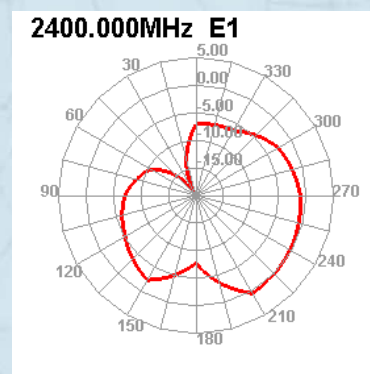
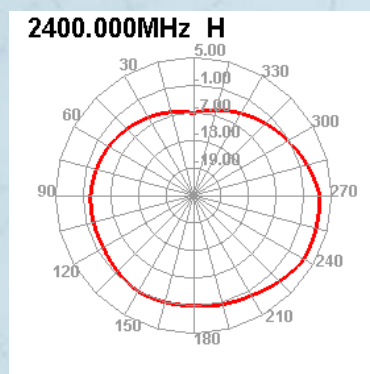
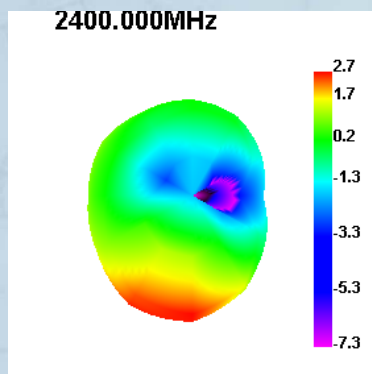
WIFI天线S11

Passive test data

WIFI antenna gain efficiency:

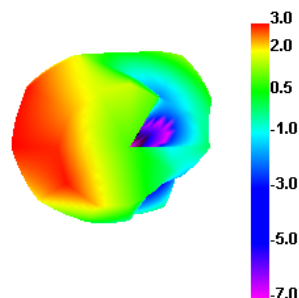
Passive Test For 2.4G-2.5G, 5.15G-5.85G							
Freq (MHz)	Effi (%)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	AttH (dB)	AttV (dB)
2400	69.09	2.71	0.56	30.327	38.768	46.87	46.81
2410	70.12	2.81	0.66	31.091	39.026	47.08	47.17
2420	70.09	2.72	0.57	31.175	38.915	47.06	47.12
2430	66.63	2.46	0.31	29.572	37.054	47	47.09
2440	73.78	2.97	0.82	32.884	40.894	47.5	47.69
2450	73.49	3	0.85	32.951	40.543	47.48	47.63
2460	74.39	3.11	0.96	33.808	40.586	47.73	47.89
2470	78.64	3.3	1.15	36.049	42.587	47.81	48.06
2480	72.96	2.83	0.68	33.733	39.229	47.79	47.96
2490	75.48	3.02	0.87	34.759	40.718	48.2	48.46
2500	75.76	2.78	0.63	35.298	40.46	47.83	48.01
5150	58.5	3.05	0.9	37.236	21.26	52.27	51.98
5200	55.32	2.79	0.64	35.679	19.644	52.76	52.44
5250	48.79	2.19	0.04	32.07	16.724	53.06	52.77
5300	50.26	2.47	0.32	33.719	16.54	52.79	52.82
5350	45.39	1.97	-0.18	30.871	14.52	52.81	52.75
5400	42.76	1.67	-0.48	29.348	13.411	53.19	53.19
5450	37.29	1.19	-0.96	26.107	11.18	53.26	53.33
5500	34.59	1.1	-1.05	24.211	10.379	53.11	53.03
5550	32	0.82	-1.33	22.459	9.546	53.41	53.58
5600	32.59	1.06	-1.09	22.908	9.679	52.72	52.91
5650	33.75	1.09	-1.06	23.754	9.997	52.95	52.66
5700	36.75	1.33	-0.82	26.062	10.691	52.76	52.75
5750	36.22	1.21	-0.94	25.522	10.695	53.58	53.05
5800	37.28	1.43	-0.72	26.496	10.787	52.84	52.87
5850	38.66	1.63	-0.52	27.313	11.349	52.84	52.44

WiFi antenna radiation pattern

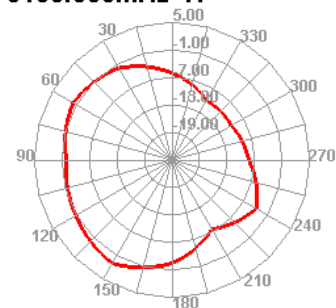


WiFi antenna radiation pattern

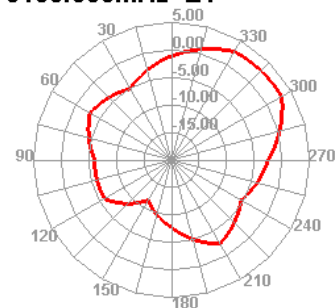
5150.000MHz



5150.000MHz H



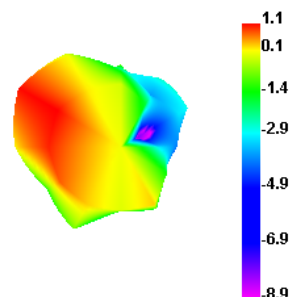
5150.000MHz E1



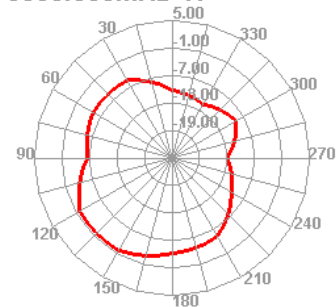
5150.000MHz E2



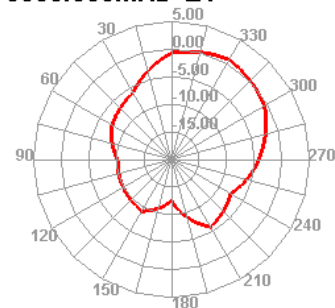
5500.000MHz



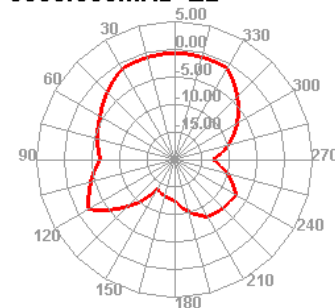
5500.000MHz H



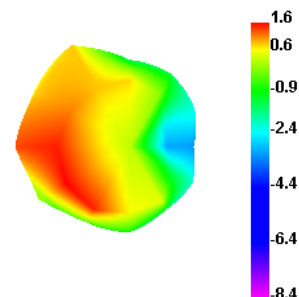
5500.000MHz E1



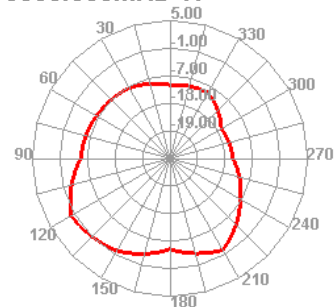
5500.000MHz E2



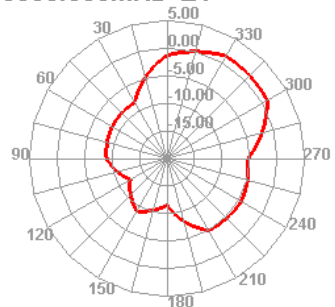
5850.000MHz



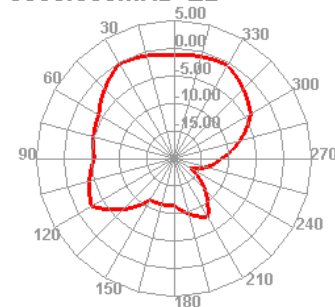
5850.000MHz H



5850.000MHz E1



5850.000MHz E2



Passive test data



蓝牙天线S11

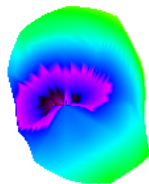
Passive test data

Bluetooth antenna gain efficiency:

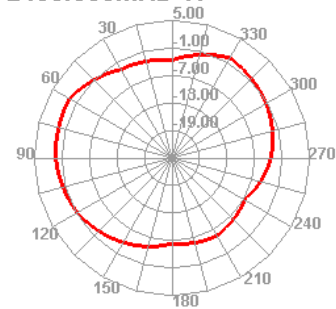
Passive Test For 2.4G-2.5G							
Freq (MHz)	Effi (%)	Gain (dBi)	Gain (dBd)	UHIS (%)	DHIS (%)	AttH (dB)	AttV (dB)
2400	65.69	3.67	1.52	21.886	43.805	46.87	46.81
2410	63.39	3.32	1.17	21.495	41.895	47.08	47.17
2420	64.59	3.21	1.06	22.499	42.09	47.06	47.12
2430	58.94	2.76	0.61	21.044	37.894	47	47.09
2440	65.66	3.05	0.9	24.211	41.446	47.5	47.69
2450	68.17	3.12	0.97	25.857	42.314	47.48	47.63
2460	63.6	2.6	0.45	24.92	38.677	47.73	47.89
2470	66.6	2.61	0.46	26.579	40.023	47.81	48.06
2480	64.35	2.32	0.17	26.087	38.267	47.79	47.96
2490	63.59	2.25	0.1	26.018	37.575	48.2	48.46
2500	67.98	2.48	0.33	28.393	39.591	47.83	48.01

Bluetooth antenna radiation pattern

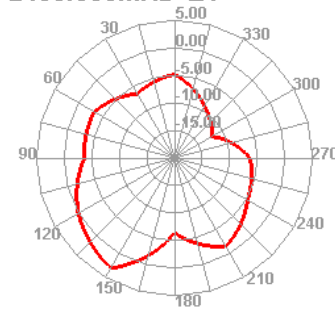
2400.000MHz



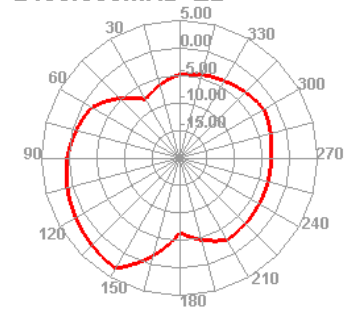
2400.000MHz H



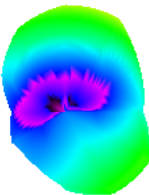
2400.000MHz E1



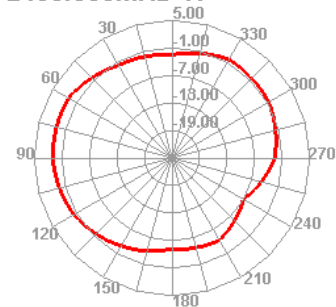
2400.000MHz E2



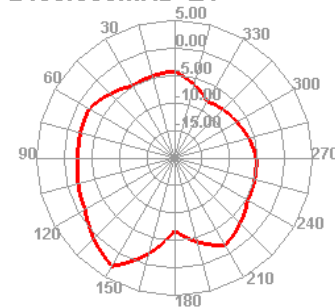
2450.000MHz



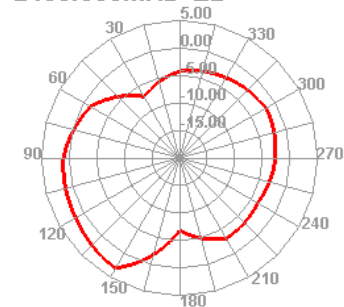
2450.000MHz H



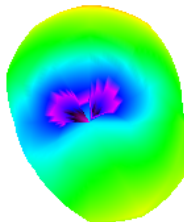
2450.000MHz E1



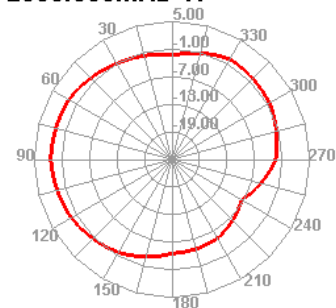
2450.000MHz E2



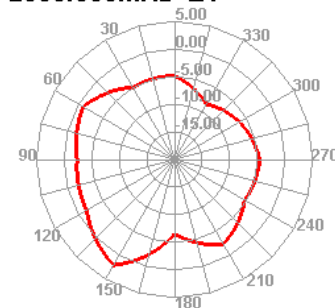
2500.000MHz



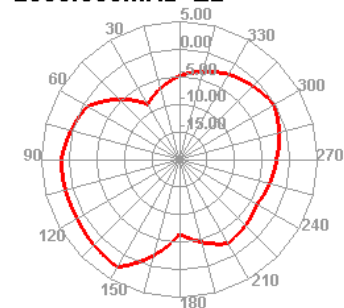
2500.000MHz H



2500.000MHz E1



2500.000MHz E2



Active test data

Complete machine test data

Mode b (11M)	Darkroom ☒ Triangular pyramid ☐ Shielding box ☐		
Band	2. 4G		
Channel	1	7	13
TRP	20.5	19.9	20.2
TIS	-73.5	-76.8	-80.2

Conduction test data

Mode b	Darkroom ☒ Triangular pyramid ☐ Shielding box ☐		
Band	2. 4G		
Channel	1	7	13
Power	22.8	22.5	22.6
Reception sensitivity	-87	-88	-88

Active test data

Complete machine test data

Mode a (54M)	Darkroom ☒ Triangular pyramid ☐ Shielding box ☐		
Band	5G		
Channel	36	100	165
TRP	10.5	15.9	12.3
TIS	-71.3	-71.4	-70.4

Conduction test data

Mode a (54M)	Darkroom ☒ Triangular pyramid ☐ Shielding box ☐		
Band	5G		
Channel	36	100	165
Power	14.8	17.2	16.8
Reception sensitivity	-75	-75	-75

深圳市天达通信有限公司

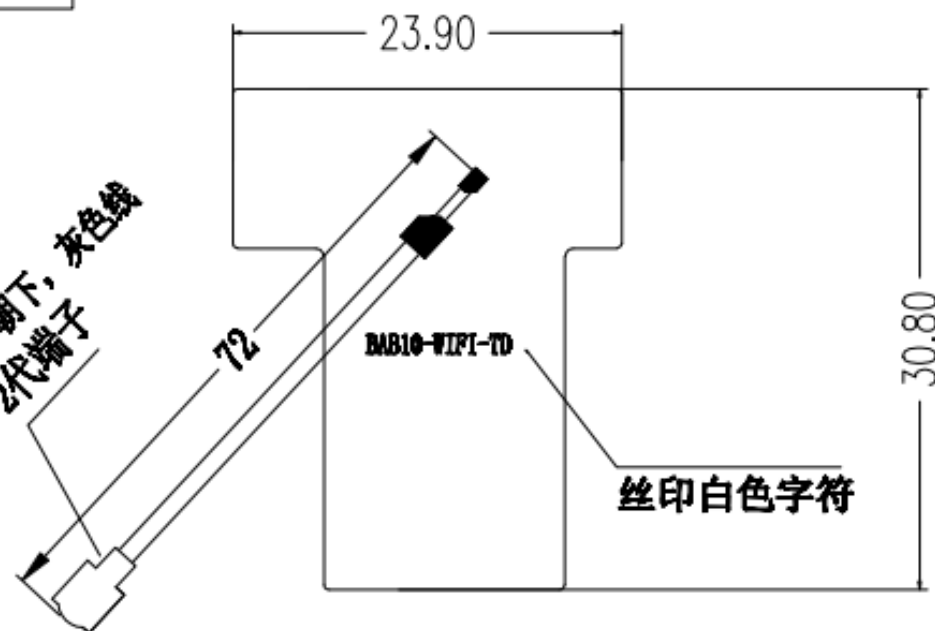
ShenZhen TianDa Communication CO.,
LTD.

深圳市宝安区福海街道宝安大道6267号世峰大厦902

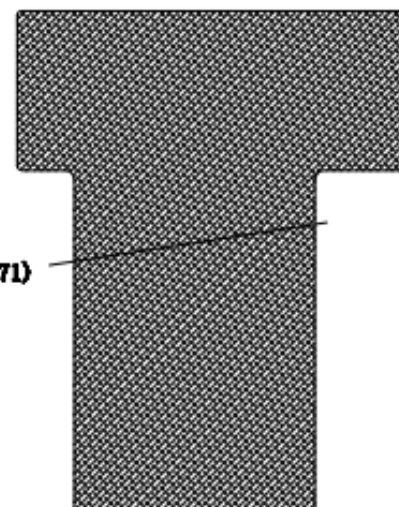
No.902, Shifeng Building, No.6267, Ba'ao Avenue, Fuhai
Sub-district, Bao'an District, Shenzhen City.



焊接时端子朝下,灰色线
2代端子



此面背胶(3M9471)



备注:

1. FPC材料:电解铜,PI一对半材质(18/25)。
2. 反面背胶(3M9471)。
3. 未标公差尺寸,模具冲出尺寸公差为 ± 0.1 , 铜箔线条尺寸公差为 ± 0.05 ,标重点的孔公差为 ± 0.05 。
4. 斜线为铜箔线路,画十字线的为镀点,镀点镀镍。
5. 表面黑油(哑光),丝印白色字符
6. 各零件中Pb、Hg、Cr+6、PBBs、PBDEs各项小于500PPM, Cd小于50PPM

TiND

深圳市天达通信有限公司
ShenZhen TianDa Communication Co.,Ltd



Third Angle

0~10	± 0.05		0.02
10~18	± 0.10		± 0.03
18~30	± 0.12		0.02
30~40	± 0.15		0.04
40~	± 0.20		Angle $\pm 0.5^\circ$

Project

BAB10

Date

Part Name

WIFI-FPC

Designed by

Part No.

WK-BA-H1-WF-A

Checked by

Material

PI

Approved by

Unit

mm

Scale

1:1

A New drawing

20250411

Rev	Description	Date	Remark
-----	-------------	------	--------

1

2

3

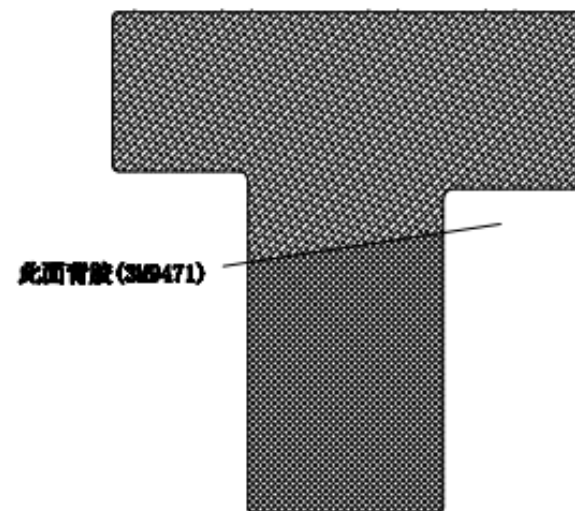
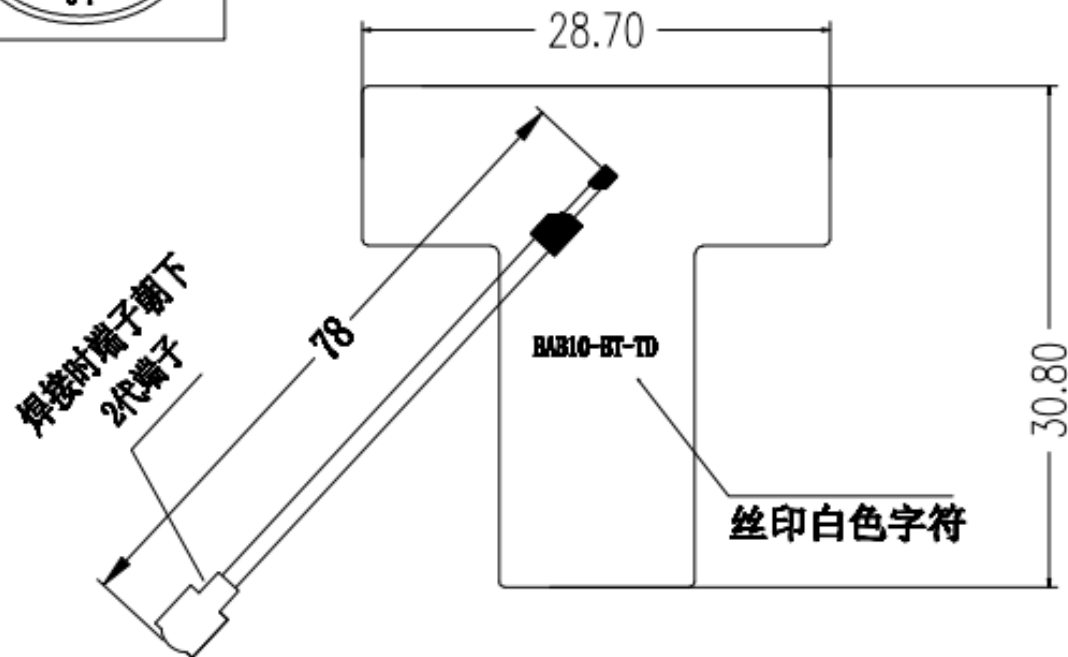
4

5

6

7

8



备注：

1. FPC材料: 电解铜, PI一对半材质 (18/25) .
2. 反面背胶(3M9471).
3. 未标公差尺寸, 模具冲出尺寸公差为 ± 0.1 , 铜箔线条尺寸公差为 ± 0.05 , 标重点的孔公差为 ± 0.05 .
4. 斜线为铜箔线路, 画十字线的为横点, 横点横线.
5. 表面黑油(哑光), 丝印白色字符
6. 各零件中Pb、Hg、Cr+6、PBBs、PBDEs各项小于500PPM, Cd小于50PPM

TiAND

深圳市天达通信有限公司
ShenZhen TianDa Communication Co., Ltd



Third Angle

0~10	± 0.05	0.02
10~18	± 0.10	± 0.03
18~30	± 0.12	0.02
30~40	± 0.15	0.04
40~	± 0.20	Angle $\pm 0.5^\circ$

Project

BAB10

Date

Part Name

HT-FPC

Designed by

Part No.

WE-BA-H1-HT-A

Checked by

Material

PI

Approved by

Unit mm

Scale 1:1

Rev	Description	Date	Remark
A	New drawing	20250411	