

天线规格书
Antenna specification for approval

客户名称 Customer name	Jumper		
机型 Model	Z3-15 inch metal shell tablet - Jiangyuan NF196 motherboard -MT8781 controller		
天线功能 Antenna function	1. 575GHz&2. 4GHz&5GHz		
天线类型 Antenna type	GPS&WIFI&BT&5Gwifi Antenna		
天线材质 Antenna material	FPC	FPC 颜色 FPC color	black
型号 model	ST1863A-1B2-A		
料号 Material number	ST1863A-1L24B-165-A		
客户料号 Customer Part Number			
索沃德承认签章 Ward accepted the signature		客户承认签章 Client acknowledges signature	
结构 structure		采购 Purchase	
文控 Document control		结构 structure	
射频 radio frequency		工程 engineering	
审核 To examine		品质 QC	
承办人 Responsible 李婷婷		审核 To examine	
日期 date 2025. 04. 22	盖章区 Seal area	日期 date 2025. 04. 22	盖章区 Seal area

(1)Antenna performance

- 1.This approval sheet supports for MID project. FPC antennas include in this project. This report is for the performance of GPS&WIFI&BT antenna.
- 2.Antenna shape size: Meet the requirement of MID
- 3.Antenna band: 1570MHz~1580MHz, 2400MHz~2500MHz&5400MHz
- 4.Antenna material: Antenna material meet the requirement of MID
- 5.Adhesive performance: Adhesive performance meet the requirement of MID
- 6.Antenna performance meet the spec below:

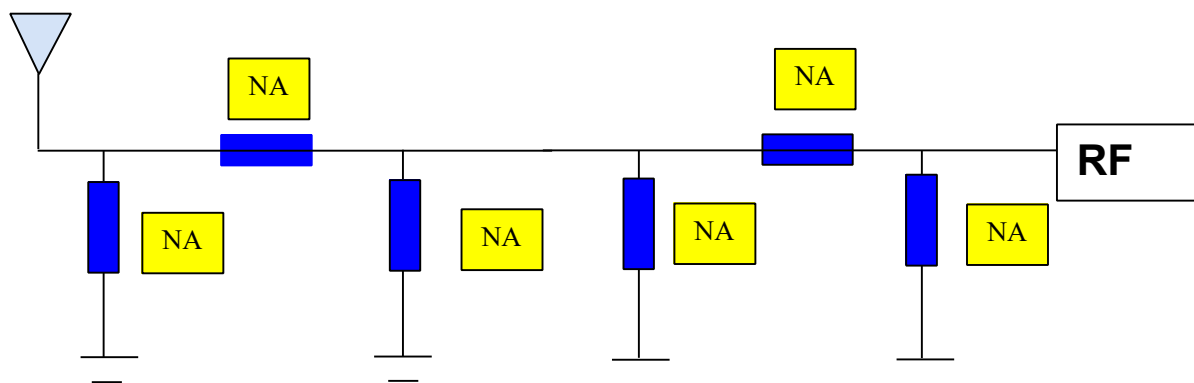
Description	1.57GHz~1.58GHz 2.4GHz~2.5GHz&5GHz	Units
VSWR	≤ 2.0	
Average Antenna Gain	≥ -4.5	dB
Feed Impedance	50 ohms	
Operating Temperature	-40 to +85 deg C	
Polarization / Azimuth	Linear / Omni-directional	

(2)Mechanical Information

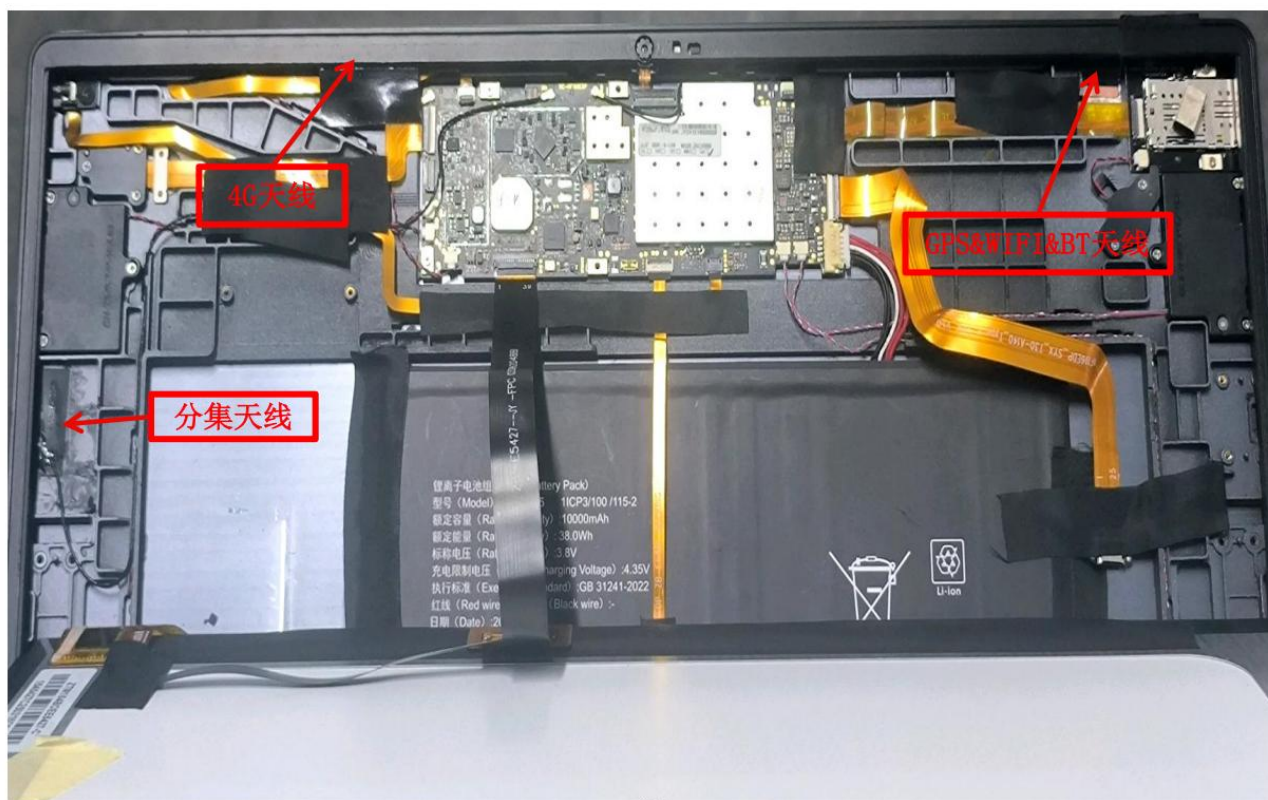
Mechanical Dimension	
Cable Length	165mm/black
Description	GPS&WIFI&BT antenna
Material	FPC
Coaxial Cable	50Ω /O. D. 0.81mm
Environmental	
Operation Temperature	-40 to +85 deg C
Storage Temperature	-40 to +85 deg C

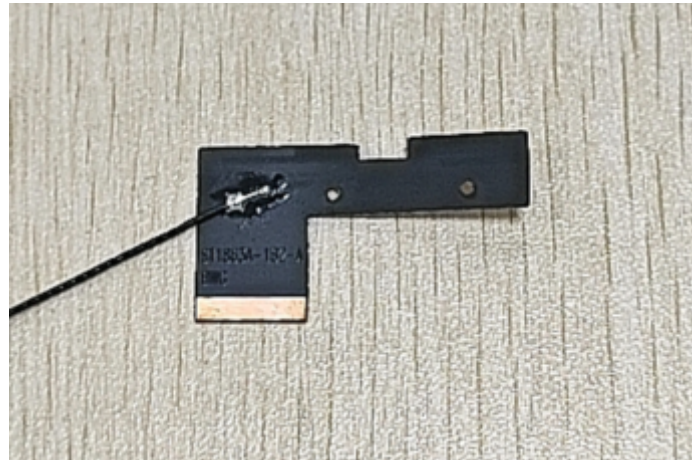
Matching circuit&Machine Pictures&Antenna Picture

(1) Matching circuit

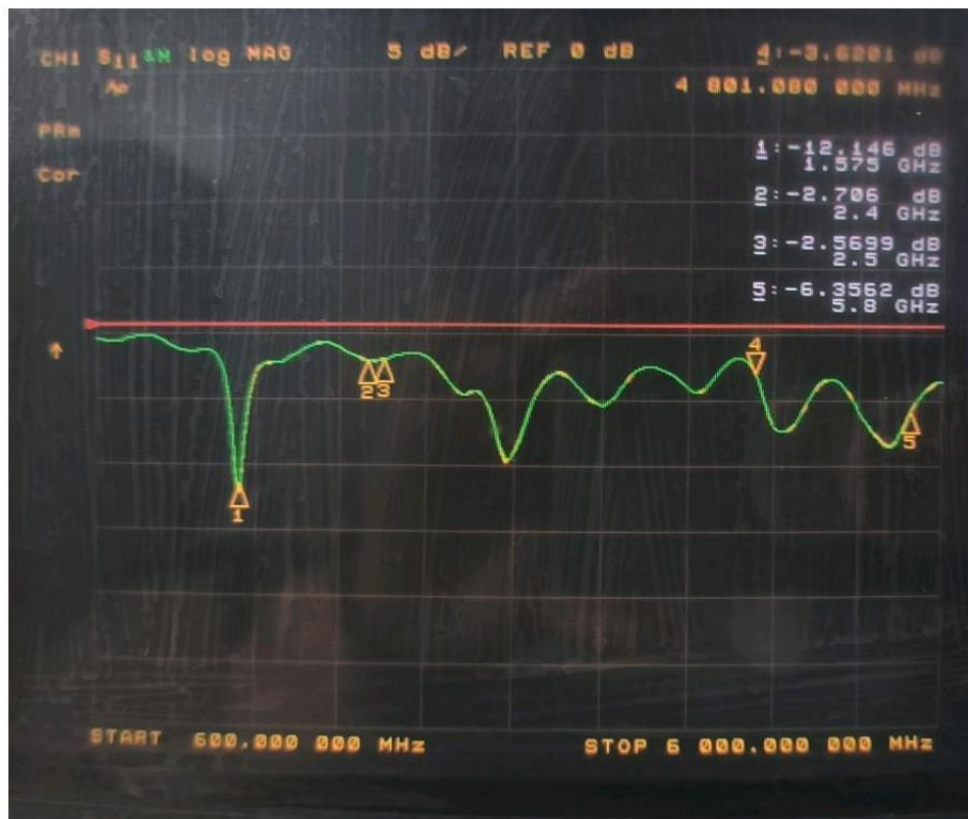


(2) Machine Pictures&Antenna Picture





Antenna Standing Wave Ratio & Efficiency

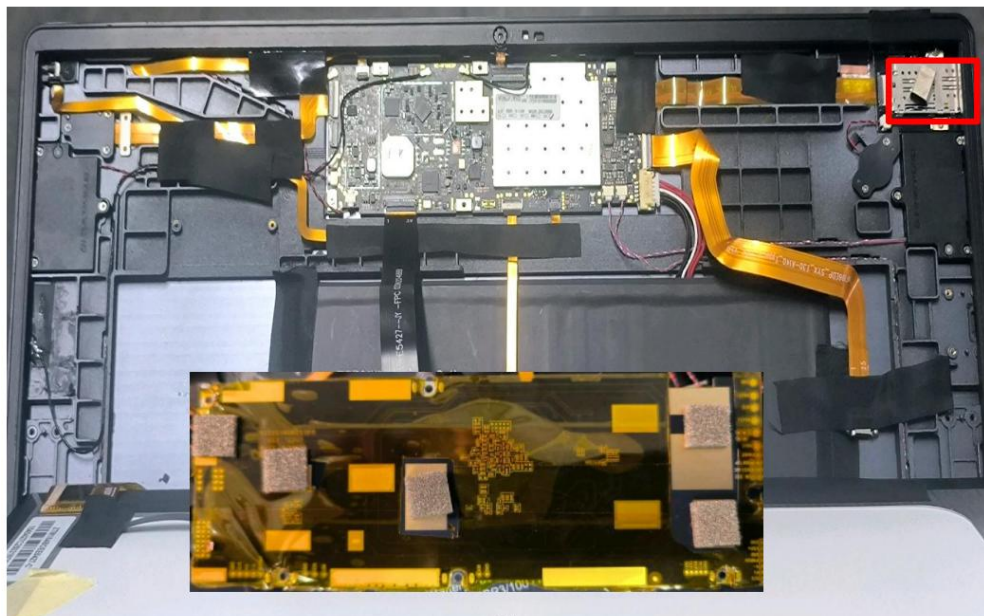


Passive Test For 2.4Gwifi								
Freq	Effi	Effi	Gain	Gain	UHS	DHS	Max	Min
(MHz)	(%)	(dB)	(dBi)	(dBd)	(%)	(%)	(dB)	(dB)
2400	21.29	-6.72	-2.37	-4.52	10.921	12.313	-2.37	-22.65
2410	26.86	-5.71	-2.8	-4.95	9.755	10.884	-2.8	-20.7
2420	27.33	-5.63	-2.68	-4.83	10.065	11.083	-2.68	-18.52
2430	29.64	-5.28	-2.87	-5.02	9.634	10.747	-2.87	-19.26
2440	26.98	-5.69	-3.02	-5.17	9.273	10.123	-3.02	-19.73
2450	23.23	-6.34	-4.69	-6.84	6.275	6.738	-4.69	-21.45
2460	20.64	-6.85	-5.36	-7.51	5.112	5.586	-5.36	-21.9
2470	21.15	-6.75	-7.08	-9.23	3.498	3.918	-7.08	-22.24
2480	20.38	-6.91	-7.45	-9.6	3.237	3.646	-7.45	-23.78
2490	19.4	-7.12	-7.88	-10.03	3.097	3.446	-7.88	-25.93
2500	13.01	-8.86	-6.93	-9.08	3.848	4.266	-6.93	-27.26

Passive Test For 5Gwifi								
Freq	Effi	Effi	Gain	Gain	UHS	DHS	Max	Min
(MHz)	(%)	(dB)	(dBi)	(dBd)	(%)	(%)	(dB)	(dB)
5000	11	-9.58	-4.48	-6.63	5.051	5.954	-4.48	-18.76
5100	9.09	-10.41	-4.55	-6.7	4.239	4.85	-4.55	-20.4
5200	9.21	-10.36	-4.27	-6.42	5.124	4.09	-4.27	-24.87
5300	8.45	-10.73	-4.08	-6.23	5.337	3.108	-4.08	-22.3
5400	17.7	-7.52	2.35	0.2	10.525	7.172	2.35	-23.38
5500	27.17	-5.66	3.47	1.32	16.929	10.237	3.47	-22.92
5600	32.33	-4.9	3.15	1	19.012	13.313	3.15	-21.71
5700	35.79	-4.46	3.99	1.84	21.905	13.884	3.99	-17.33
5800	33.74	-4.72	4.28	2.13	20.573	13.166	4.28	-21.49
5900	30.33	-5.18	2.3	0.15	18.264	12.067	2.3	-18.69
6000	35.53	-4.49	3.07	0.92	21.271	14.257	3.07	-22.03

Passive Test For GPS2								
Freq	Effi	Effi	Gain	Gain	UHS	DHS	Max	Min
(MHz)	(%)	(dB)	(dBi)	(dBd)	(%)	(%)	(dB)	(dB)
1570	19.92	-7.01	-1.3	-3.45	9.045	10.871	-1.3	-14.2
1571	20.01	-6.99	-1.24	-3.39	9.047	10.964	-1.24	-14.18
1572	20.13	-6.96	-1.2	-3.35	9.073	11.059	-1.2	-14.08
1573	20.26	-6.93	-1.13	-3.28	9.105	11.155	-1.13	-14.12
1574	20.32	-6.92	-1.12	-3.27	9.086	11.23	-1.12	-14.2
1575	20.39	-6.91	-1.08	-3.23	9.112	11.28	-1.08	-13.92
1576	20.21	-6.94	-1.05	-3.2	8.985	11.227	-1.05	-14.16
1577	20.03	-6.98	-1.09	-3.24	8.878	11.155	-1.09	-14.24
1578	19.78	-7.04	-1.13	-3.28	8.735	11.048	-1.13	-14.32
1579	19.5	-7.1	-1.16	-3.31	8.58	10.922	-1.16	-14.37
1580	19.17	-7.17	-1.22	-3.37	8.414	10.753	-1.22	-14.47

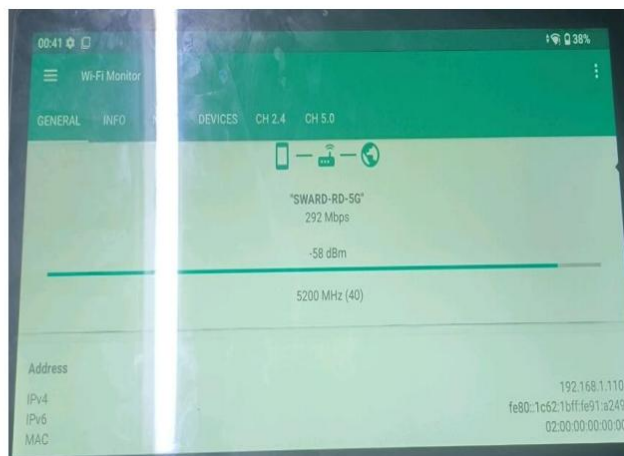
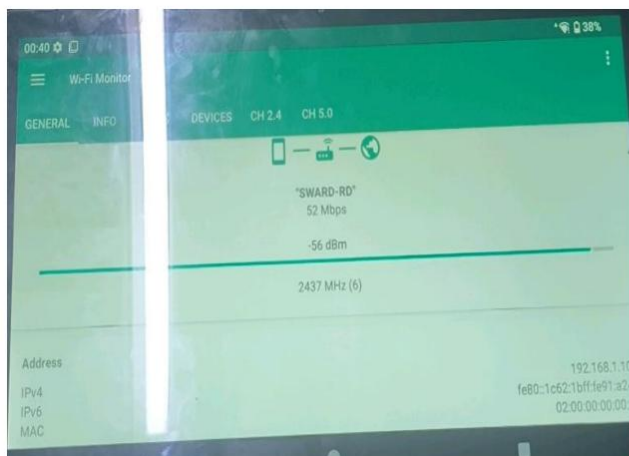
Environmental treatment



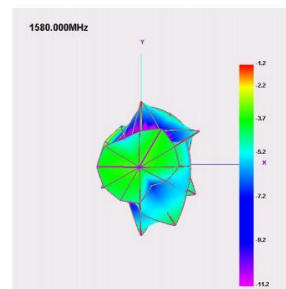
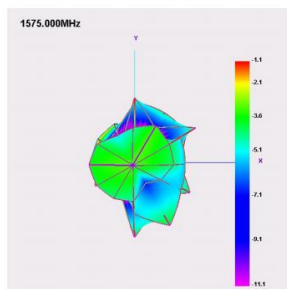
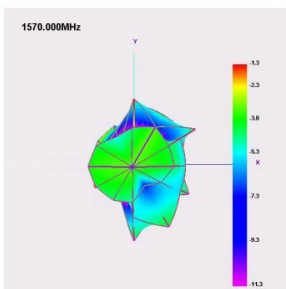
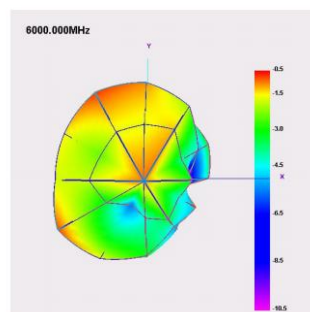
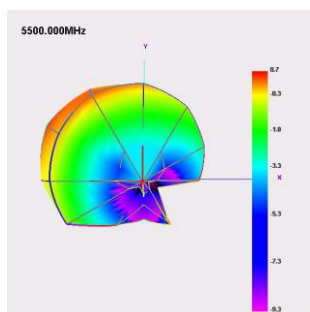
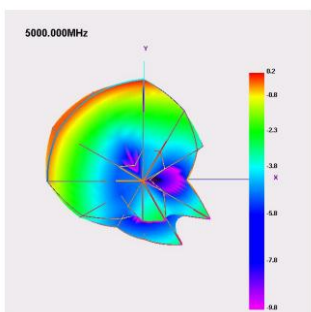
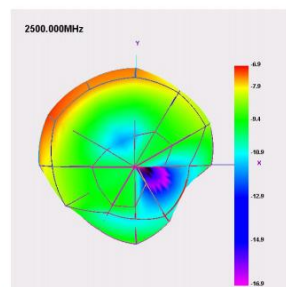
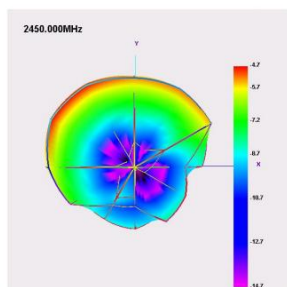
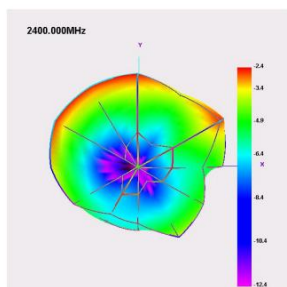
- 1.主板各处环境处理按客户自带，如上未改动；
- 2.红框处，SIM卡槽贴导电泡棉与金属背壳相接。

Antenna measurement diagram

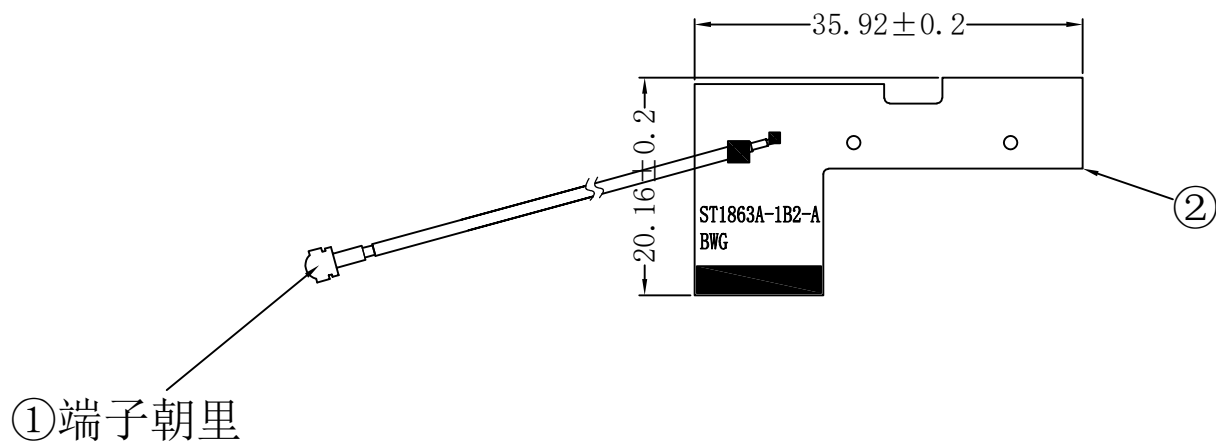
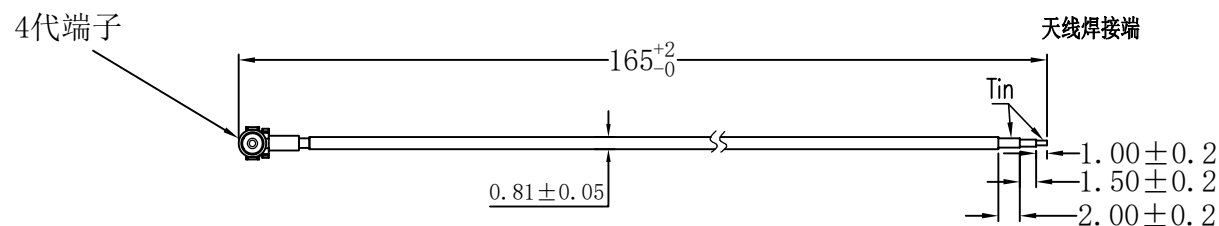
实测效果	
机型编号	1
测试环境	索沃德研发中心
测试设备	华为AM08
测试距离	> 10 米



七:3D pattern



八:结构图纸



技术要求:

1. 打*为重点尺寸;
2. 尺寸符合图纸要求;
3. 焊点无虚焊、假焊。要求圆润、饱满。
4. 网分测试通过（出现指定波形）。
5. 线形尺寸未注公差按照SJ/T 10628 1995 6级，公差值由上下偏差均分;

5											
4											
3							签名	年月日	量产	签名	年月日
2	FPC		黑色	1	ST1863A-1B2-A	RD	ZYA	2025. 4. 19	Q C		
1	同轴线	4代端子	黑色	1	φ=0.81mm	RF					
序号	名称	材料	颜色	数量	描述	审核			批准		

SWARD						索沃德通讯技术有限公司					
						ST1863A-1L24B-165-A					
阶段标记						比例					
1			A			1 : 1					
共 1 张				第 1 张		ROHS					