

# SUNNYWAY TECHNOLOGY(CHINA)

## ANTENNA SPEC

Customer name: Tianbo (Shenzhen) Co., Ltd		Entry name: T20
Working band: WiFi(2.4G/5G)		
Motherboard version:		
<b>Sunnyway Material specification</b>		
Specification type	Sunnyway number	Customer number
WIFI Antenna	SZ22060IB77-3	

<b>Revision history</b>			
Date of preparation/change	Change content	Altered person	Edition
2023.06.08	New issue	Chen min	A

<b>Sunnyway Countersign column</b>				
R&D	ME:	To examine:	QE:	Approval:
	RF:	To examine:		
<b>Customer will sign the column</b>				
Electronic Engineer	Project manager	Structural Engineer	Quality Engineer	

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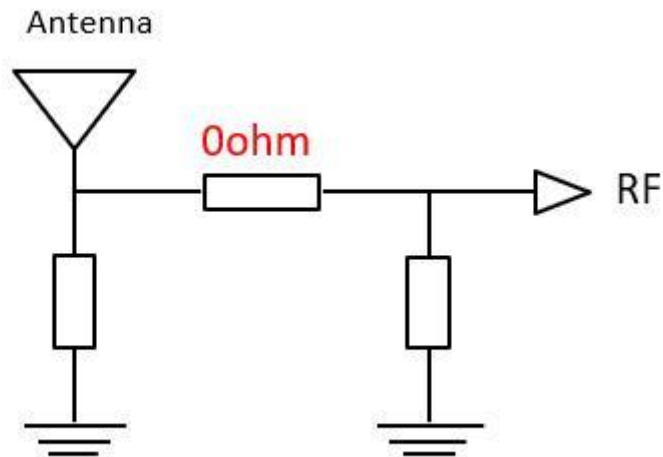
Email: sales@sunnyway-iot.com Web: www.sunnyway-iot.com

## 1. Project information

### 1.1 Mockup picture



## 2. Matching circuit



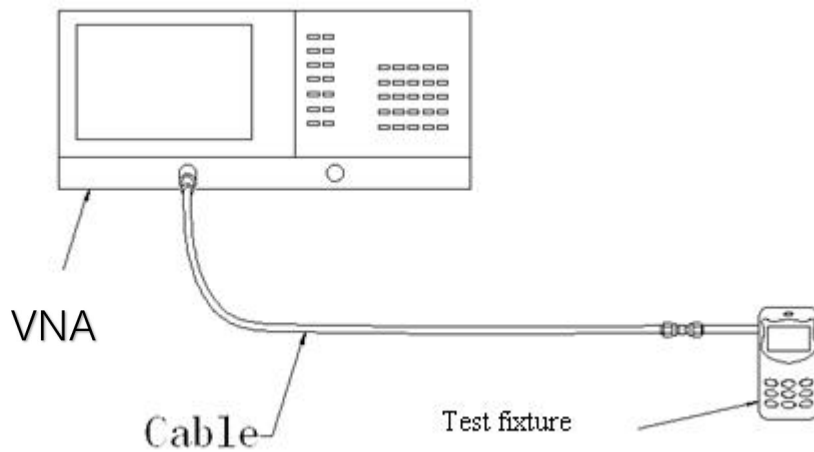
## 3. Antenna passive testing data

### 3.1 S11 Description of the test method

Test the equipment: Vector network analyzer (Agilent E5071C)

Test methodology: Use a 50 ohm CABLE cable to export from the instrument test port, use the calibration piece to calibrate and connect the SMA connector of the test fixture, and record the return loss and standing wave ratio corresponding to the relevant frequency point.

Below is a schematic picture of the test:

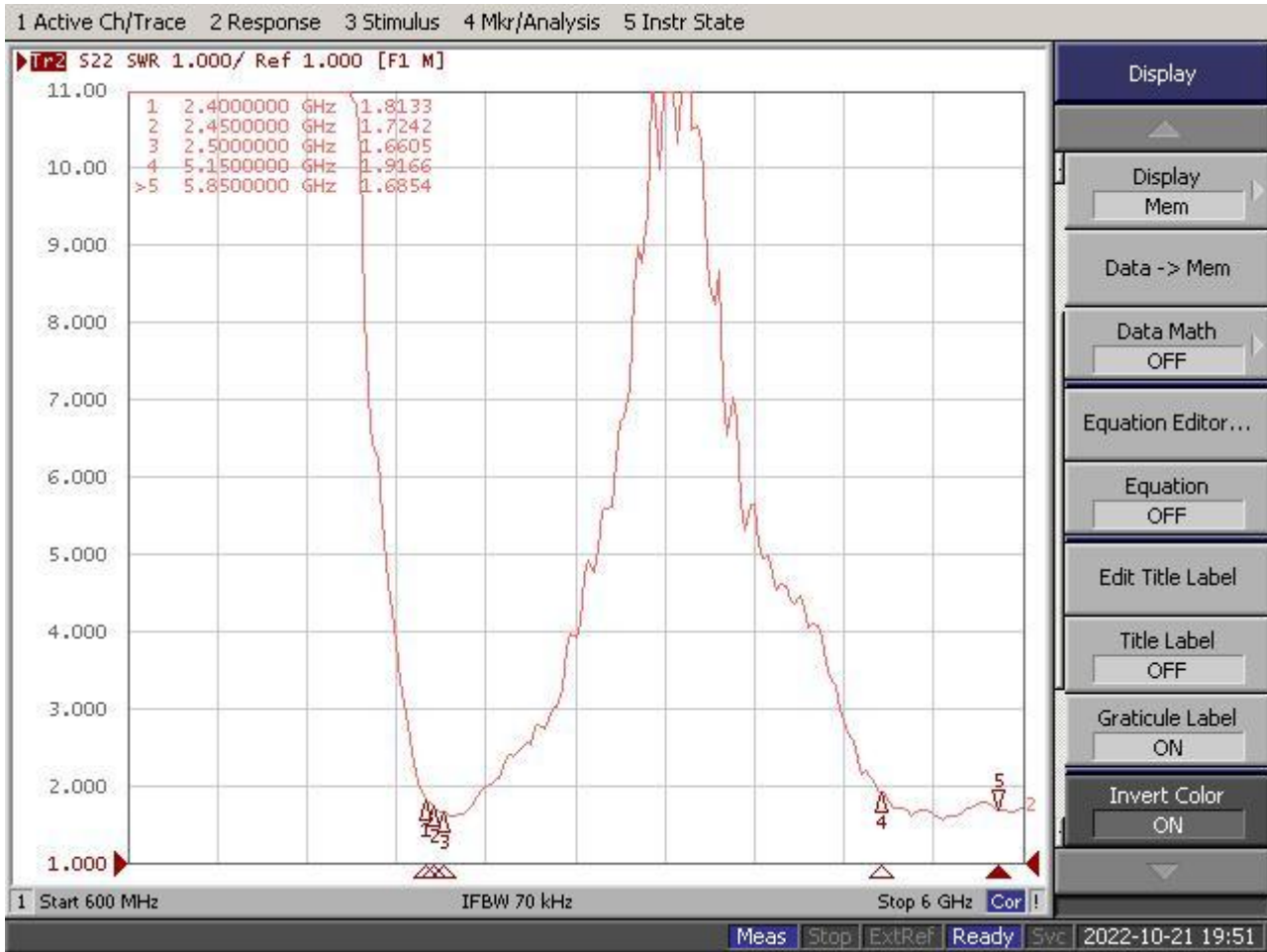


Test schematic diagram

### 3.2 S11 Test parameters

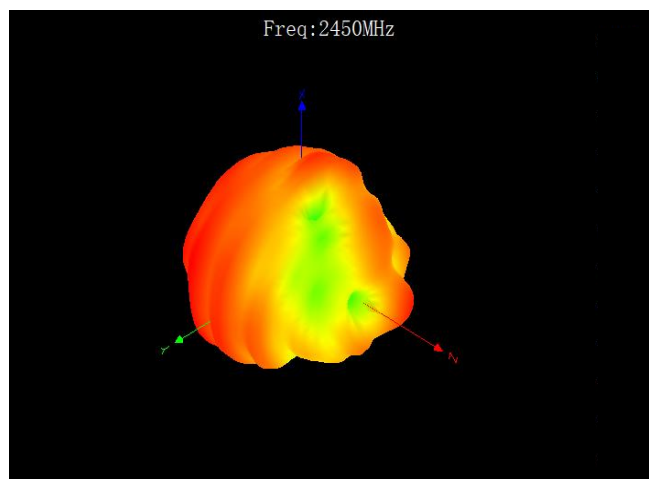
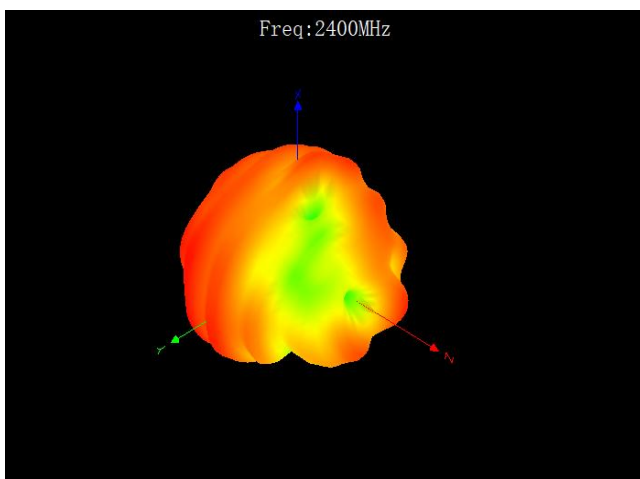
(Freq.) MHz	2400	2450	2500	5150	5850
VSWR	1.8	1.7	1.6	1.9	1.6

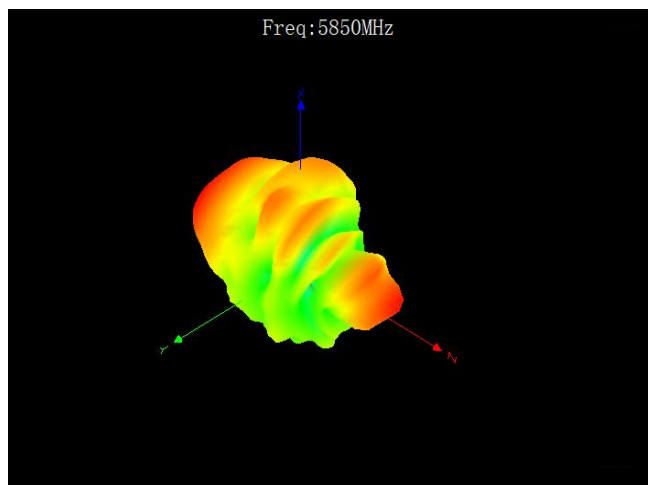
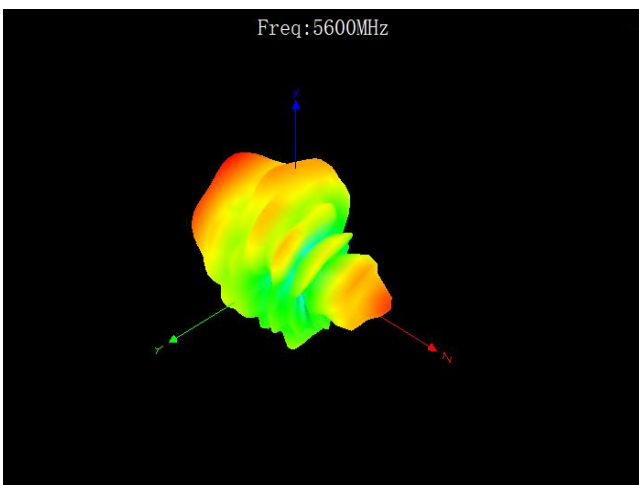
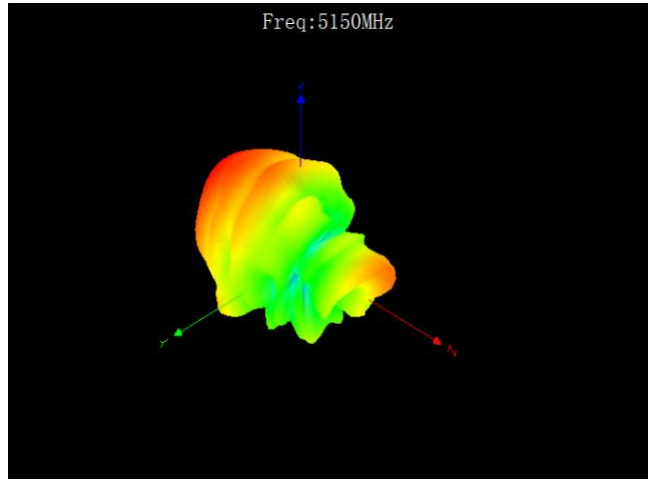
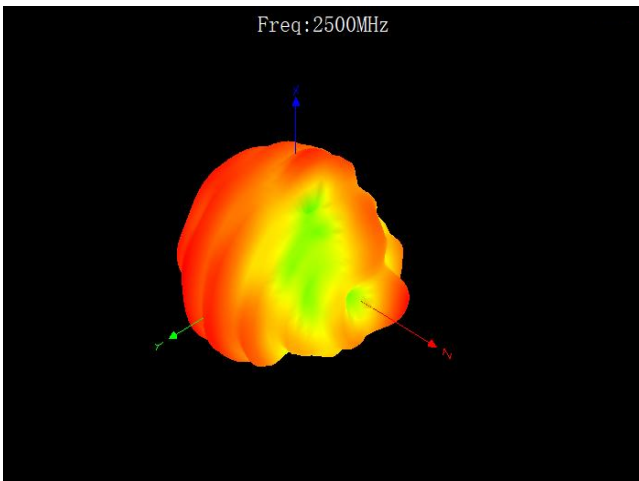
VSWR



## 3.3.1 Antenna

Frequency Range(MHz)	2400~2500	5150-5850
Antenna Specification <sup>#</sup>	2.16dBi	0dBi





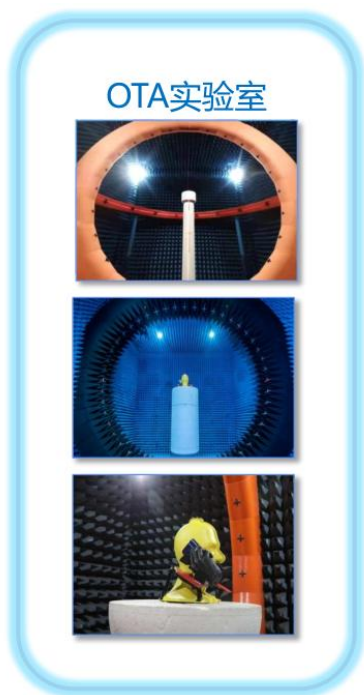
## 4. Antenna active testing data

### 4.1 Test the environment

Test the system: Multi-probe OTA measurement system (XH-IoT)

Test the environment: Temperature  $22^{\circ}\text{C}\pm 3^{\circ}\text{C}$ , humidity  $50\%\pm 15\%$

Test the equipment: When testing passive data, use the network analyzer R&S ZND/ Agilent E5071C  
When testing active data, use the Agilent 8960/CMW500/SP9500E/SP8315



## 4.2 OTA Active testing data

### 4.2.1 WIFI Testing data

Standard	Band	Channel	Total
WIFI (AP)	WIFI_B (11M)	1	14.3
WIFI (AP)	WIFI_B (11M)	6	15.43
WIFI (AP)	WIFI_B (11M)	11	15.73
WIFI (AP)	WIFI_B (11M)	11	-85.26
WIFI (AP)	WIFI_G (54M)	1	13.32
WIFI (AP)	WIFI_G (54M)	6	13.96
WIFI (AP)	WIFI_G (54M)	11	13.69
WIFI (AP)	WIFI_G (54M)	11	-72.35
WIFI (AP)	WIFI_N_ISM (65M)	1	11.66
WIFI (AP)	WIFI_N_ISM (65M)	6	12.2
WIFI (AP)	WIFI_N_ISM (65M)	11	11.5
WIFI (AP)	WIFI_N_ISM (65M)	11	-67.27

Standard	Band	Channel	Total
WIFI (AP)	WIFI_A (54M)	36	12.77
WIFI (AP)	WIFI_A (54M)	149	12.93
WIFI (AP)	WIFI_A (54M)	165	13.63
WIFI (AP)	WIFI_A (54M)	165	-70.95
WIFI (AP)	WIFI_N_UNII (65M)	36	10.35
WIFI (AP)	WIFI_N_UNII (65M)	149	11.53
WIFI (AP)	WIFI_N_UNII (65M)	165	11.15
WIFI (AP)	WIFI_N_UNII (65M)	165	-65.54

## 5. Standard for mass production antennas

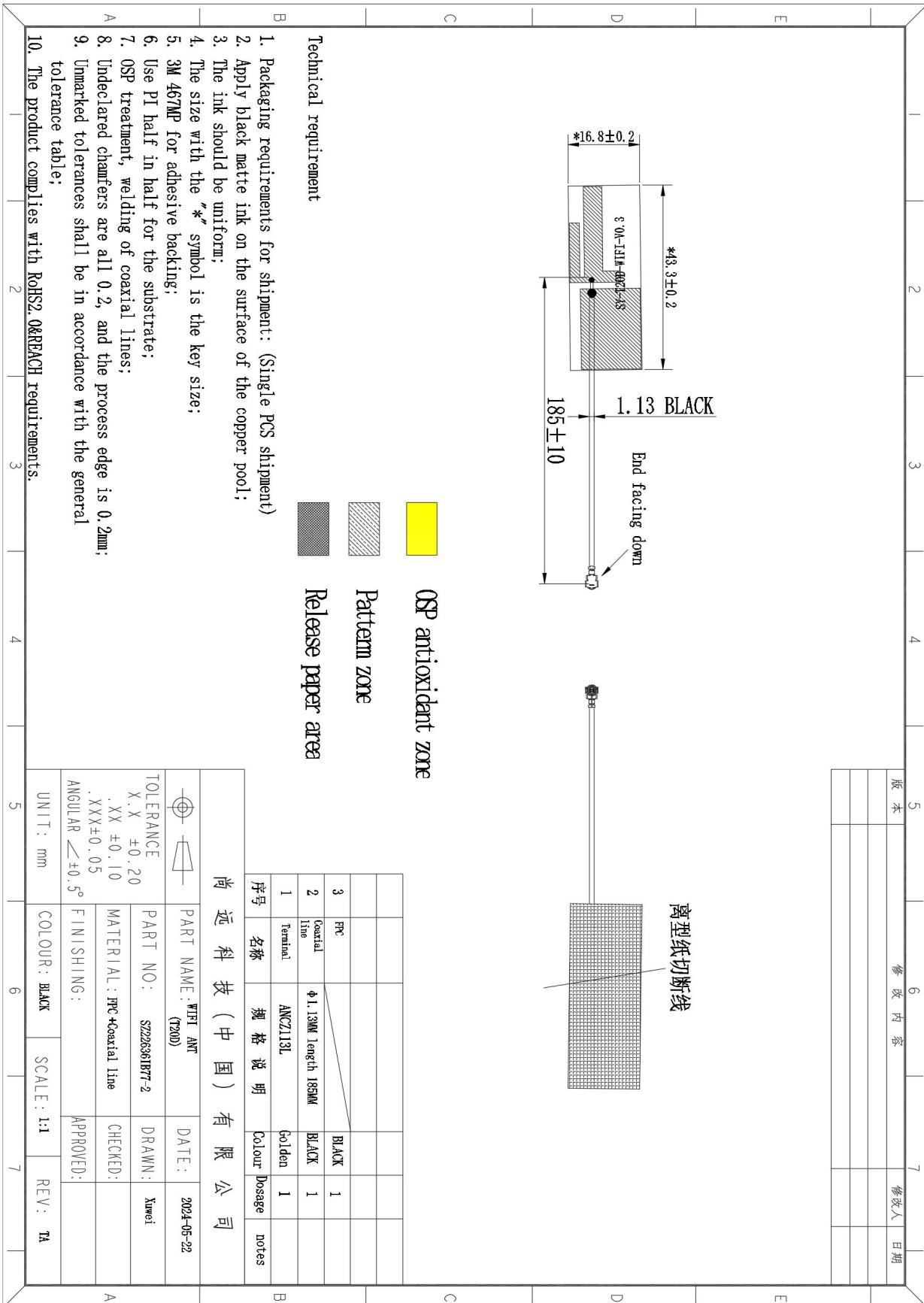
When the antenna is mass-produced, the VSWR is used as the mass production test standard.

According to the differences in the project itself, the following criteria are given:

Freq. (MHz)	Mass production standards
2400-2500	$VSWR(\text{Production performance}) < VSWR(\text{Confirmed performance}) + 0.5$
5150-5850	$VSWR(\text{Production performance}) < VSWR(\text{Confirmed performance}) + 0.5$






Engineering drawings




Technical requirement

1. Packaging requirements for shipment: (Single PCS shipment)
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. 3M 467MP for adhesive backing;
6. Use PI half in half for the substrate;
7. OSP treatment, welding of coaxial lines;
8. Undeclared chamfers are all 0.2, and the process edge is 0.2mm;
9. Unmarked tolerances shall be in accordance with the general tolerance table;
10. The product complies with RoHS2, REACH requirements.

	OSP antioxidant zone
	Pattern zone
	Release paper area

尚远科技(中国)有限公司

序号	名称	规格说明	Colour	Dosage	notes
1	Terminal	ANC2113L	golden	1	
2	Coaxial line	$\phi 1.13$ mm length 185mm	BLACK	1	
3	PPC		BLACK	1	

		PART NAME: W1F1 ANT (1700) DATE: 2024-05-22	
TOLERANCE X.X ±0.20 .XX ±0.10 .XXX ±0.05 ANGULAR $\leq \pm 0.5^\circ$		DRAWN: Xuwei	
PART NO: SZ22361B77-2		CHECKED:	
MATERIAL: PPC+Coaxial line		APPROVED:	
FINISHING:		SCALE: 1:1	
UNIT: mm		REV: TA	
COLOUR: BLACK		SCALE: 1:1	

版本	修改内容	修改人	日期