

# Sunnyway Technology (China) Co., Ltd.

## Antenna SPEC

Customer name:Mobiletek		Project name:P51AE-G
Operating Band: EMTC B1/2/3/4/5/8/12/13/18/19/20/25/26/27/28/66		
Motherboard version:A502-V1 20200109		
Material specifications		
Specifications and models	Material No	Customer data
Main antenna	SH22343IA65	

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SUNNYWAY Will sign the box			
R & D	ME:	Audit:	Approved:
	RF:	Audit:	
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# 1. Project information

## Machine Information



## Antenna information

Motherboard	
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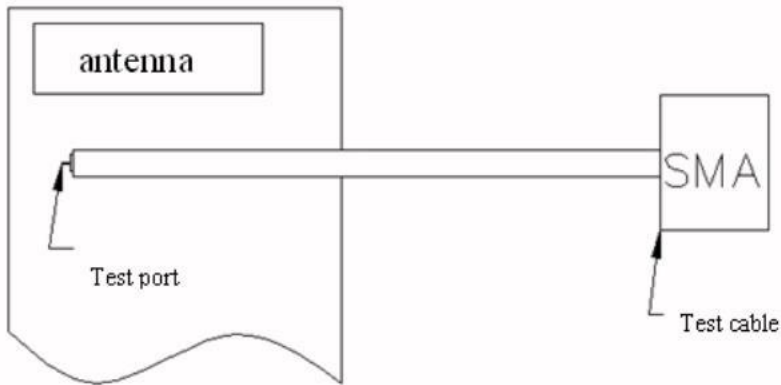


The final verification antenna performance prototype is kept in our company for at least one year to facilitate the analysis and resolution of antenna production anomalies, Ensure the quality of antenna shipment

## 2. Test fixture

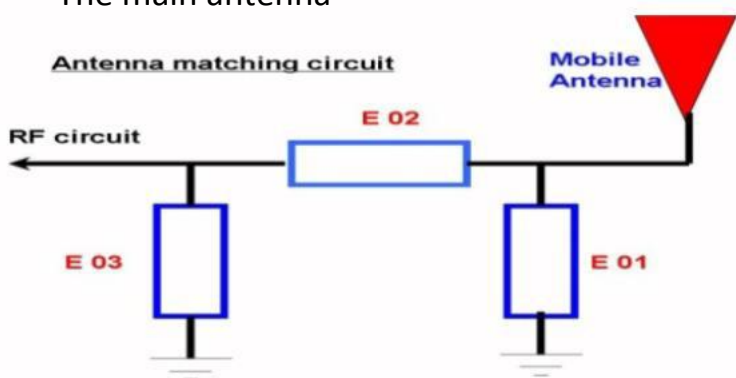
Purpose: To test antenna passive parameters as accurately as possible.

methods: the fixture is to use a 50 ohm coaxial cable, one end is connected to the pad after the antenna 's matching circuit (the front of the antenna switch) , and the other end is connected to the SMA connector.



## 3. Matching circuit

The main antenna



Element	Value
E1	6.8nH
E2	0 Ω
E3	N/A

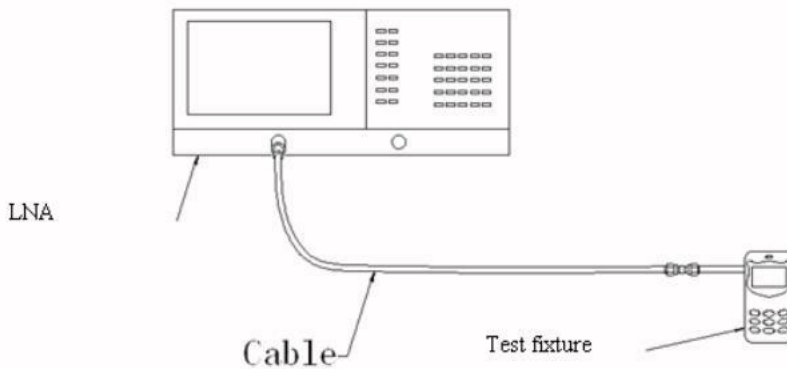
## 4. S11 Test

### 4.1 S11 test method instructions

Test equipment: LNA (E5062A)

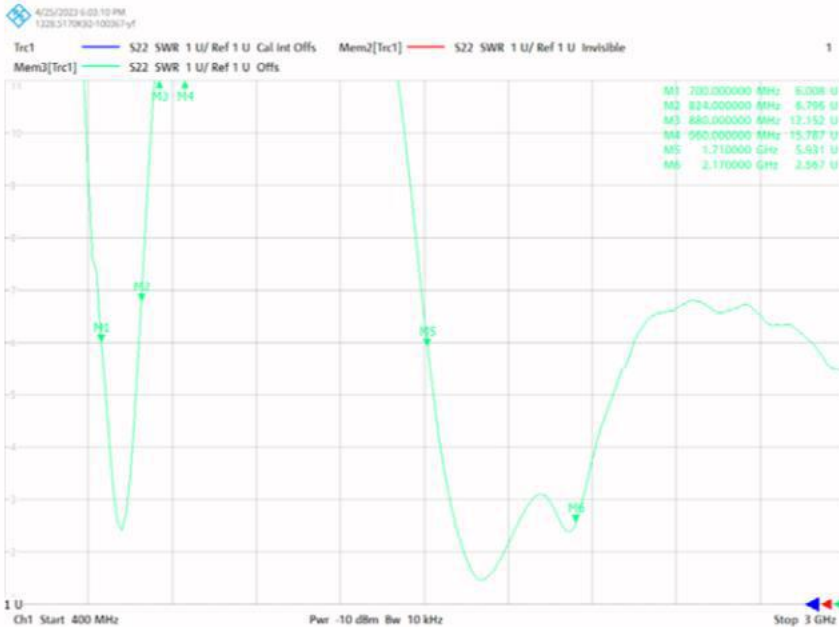
Test method: With a 50 ohm CABLE ,CABLE export from instrument testing port , After the calibration with calibration Key, connected to the SMA connector, Records the return loss and VSWR of the related frequency points.

Test schematic diagram is as follows:



### 4.2 S11 Parameter

The main antenna



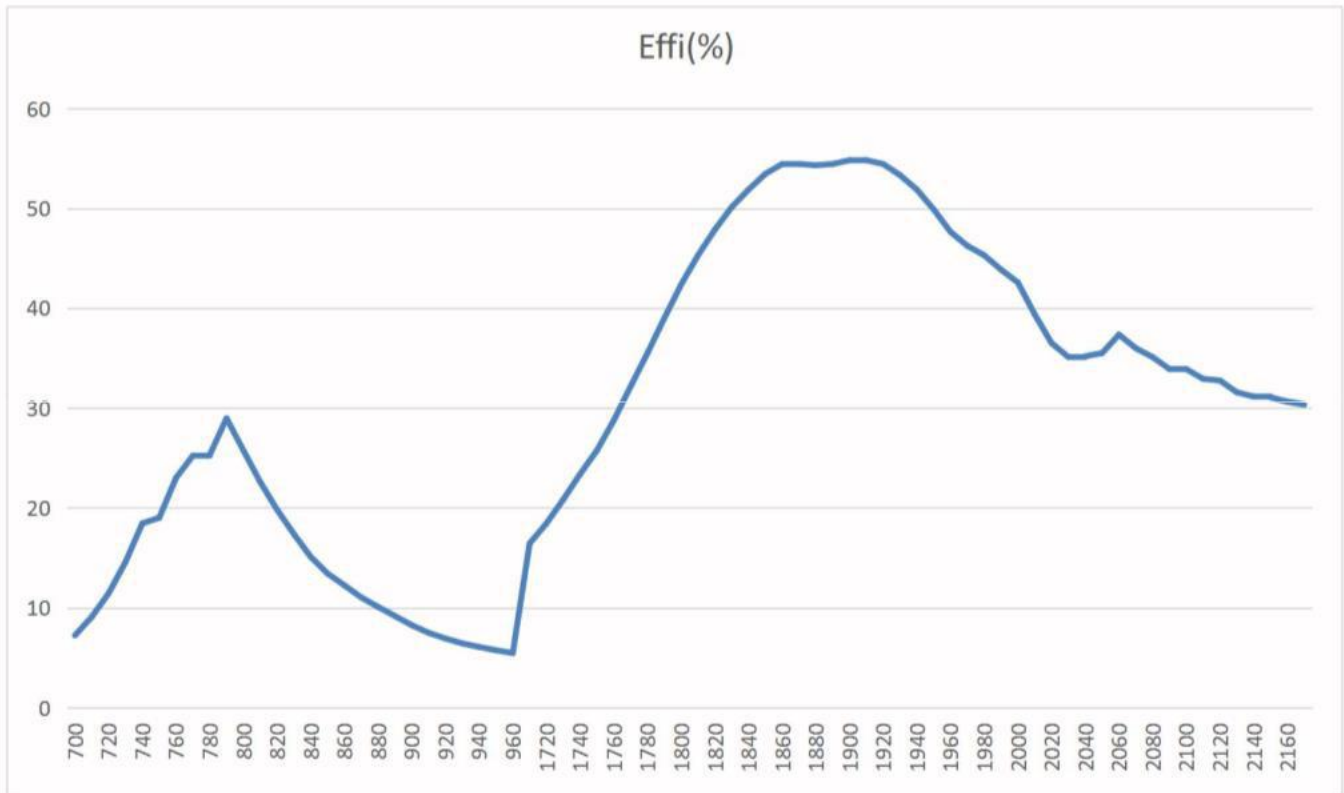
FRq (MHz)	VSWR
700	6.0
824	6.79
880	12.1
960	15.7
1710	5.9
2170	2.56

**5.**Anechoic Chamber test data test system: SHIELDED  
 ANECHOIC chamber test environment: temperature  $22\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$ ,  
 humidity  $50\% \pm 15\%$  test equipment: when testing passive data,  
 when testing active data using Network analyzer Agilent  
 E5062C, agilent 8960/CMW500/E4438C was used

**5.1** Passive test data

Passive efficiency of the main antennas

The main antenna



Chanel	Band2	Band4	Band12	Band13
Gain(dB)	3	-0.5	-7.5	-2.5

## 5.2 Active test data

The main antenna active test data (free space, screen off)

Band	Channel	OTA (dBm)	
		TRP (dB)	TIS (dB)
EMTC FDD Band 1	L	17.52	
	M	17.48	
	H	16.89	-94.77
EMTC FDD Band 2	L	17.62	
	M	17.79	
	H	17.53	-94.76
EMTC FDD Band 3	L	15.69	
	M	16.28	
	H	16.33	-94.59
EMTC FDD Band 4	L	15.55	
	M	16.79	
	H	16.88	-93.96
EMTC FDD Band 5	L	13.25	
	M	13.79	
	H	13.58	-93.29
EMTC FDD Band 8	L	13.73	
	M	12.61	
	H	12.47	-92.66
EMTC FDD Band 18	L	13.22	
	M	13.35	
	H	13.5	-93.77
EMTC FDD Band 25	L	16.12	
	M	16.22	
	H	16.33	-93.66

Band	Channel	OTA (dBm)	
		TRP (dB)	TIS (dB)
EMTC FDD Band 19	L	13.68	
	M	13.87	
	H	13.35	-93.28
EMTC FDD Band 20	L	13.28	
	M	13.39	
	H	13.44	-94.45
EMTC FDD Band26	L	13.36	
	M	13.79	
	H	13.22	-93.48
EMTC FDD Band12	L	13.79	
	M	13.85	
	H	13.89	-94.82
EMTC FDD Band13	L	14.22	
	M	14.53	
	H	14.25	-94.79
EMTC FDD Band 27	L	13.66	
	M	13.79	
	H	13.69	-94.12
EMTC FDD Band 28	L	13.84	
	M	13.89	
	H	13.93	-94.87
EMTC FDD Band 66	L	15.26	
	M	16.47	
	H	16.52	-94.72

## 6. Ground handling of the prototype

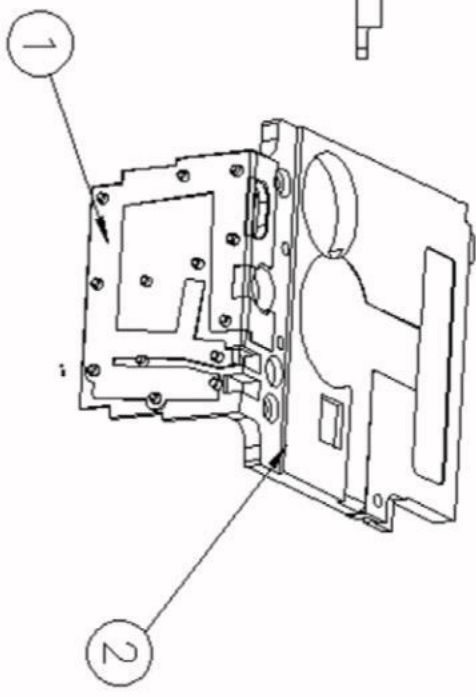
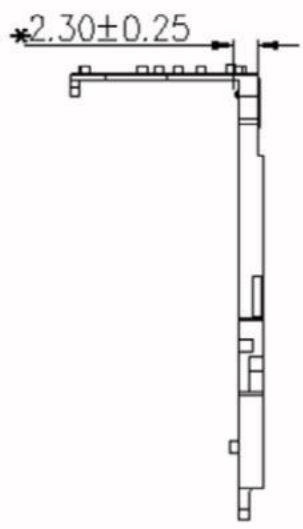
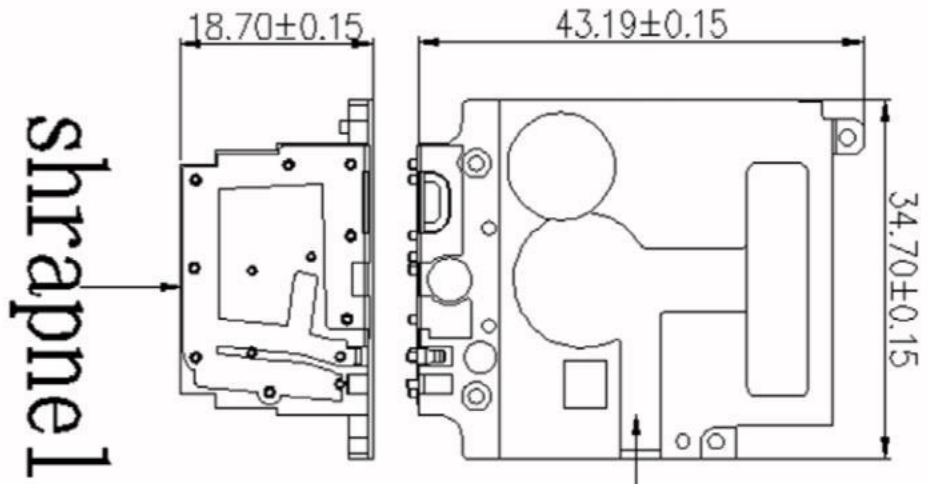
**Note: No additional environmental treatment.**

7. The standing wave ratio (SWR) is used as the test standard for antenna mass production. Based on the differences of the project itself, the following criteria are given:

Frequence	SPEC ,Mass Production
700MHz--960MHz 1710MHz--2170MHz	VSWR (MP performance) <VSWR (Verify performance)+1



8 Engineering drawings



SH22343IA65