

Specification of BM5510 Antenna

Supplier: Shenzhen qianzun Technology Co., Ltd

Supplier Address: Area F, 4th Floor, Building A, Junxiangda Building, Zhongshan Garden Road, Nanshan District, Shenzhen

Client: Aratek Biometrics Co., Ltd.

Antenna Band: GSM850/1900, WCDMA 2/5, LTE 2/5/7/8, WIFI/GPS/BT/NFC **Material:** FPC

Material Description: Main Antenna/BT+WIFI+GPS Antenna/Diversity Antenna/NFC Antenna

Version: v1.0

Material Code:

Number	Name of Antenna	Material in Aratek
1	Main Antenna	3.34.BM5510-0040
2	Diversity Antenna	3.34.BM5510-0041
3	BT+WIFI+GPS Antenna	3.34.BM5510-0042
4	NFC Antenna	3.34.BM5510-0043

Signature:

Approved by Aratek		
RF Director	Construction Director	Antenna Director
ID Director	RF Controller	Quality Manager

Approved by supplier			
Project Auditor	RF Auditor	ME Auditor	RF Auditor

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Date: 20/08/2022

1. Picture of Antenna

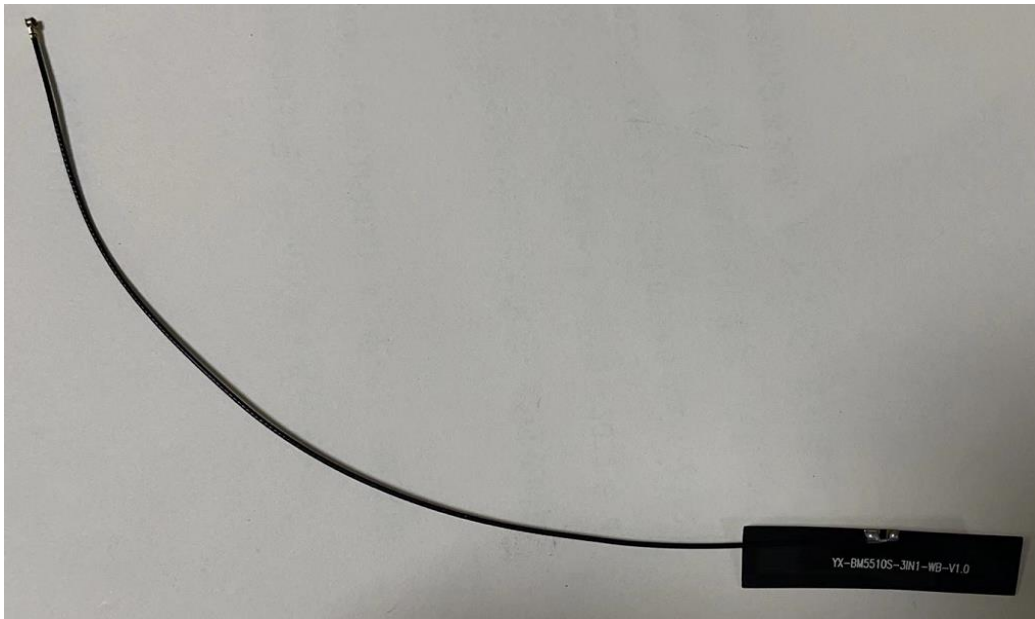
Main Antenna



Diversity Antenna



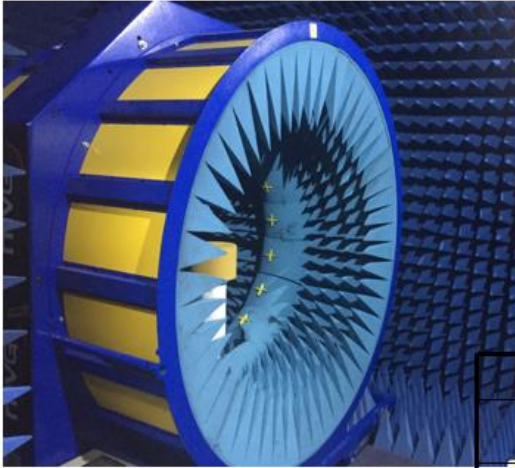
BT+WIFI+GPS Antenna



NFC Antenna

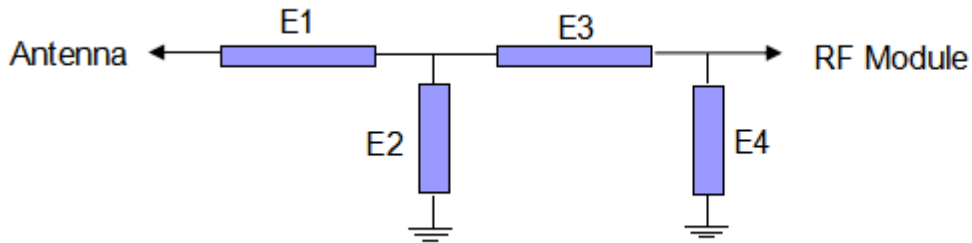


2. Test Environment



Test case	Test equipment
S11、S12、VSWR、LOSS	网络分析仪E5071B、E5062A
Efficiency、Gain 3D Radiation Pattern	Satimo SG16暗室、GP7*4*3暗室、E5071B
TRP、TIS	Satimo SG16暗室、GP7*4*3暗室、8960、 CMW500、MT8820C、E4438C、

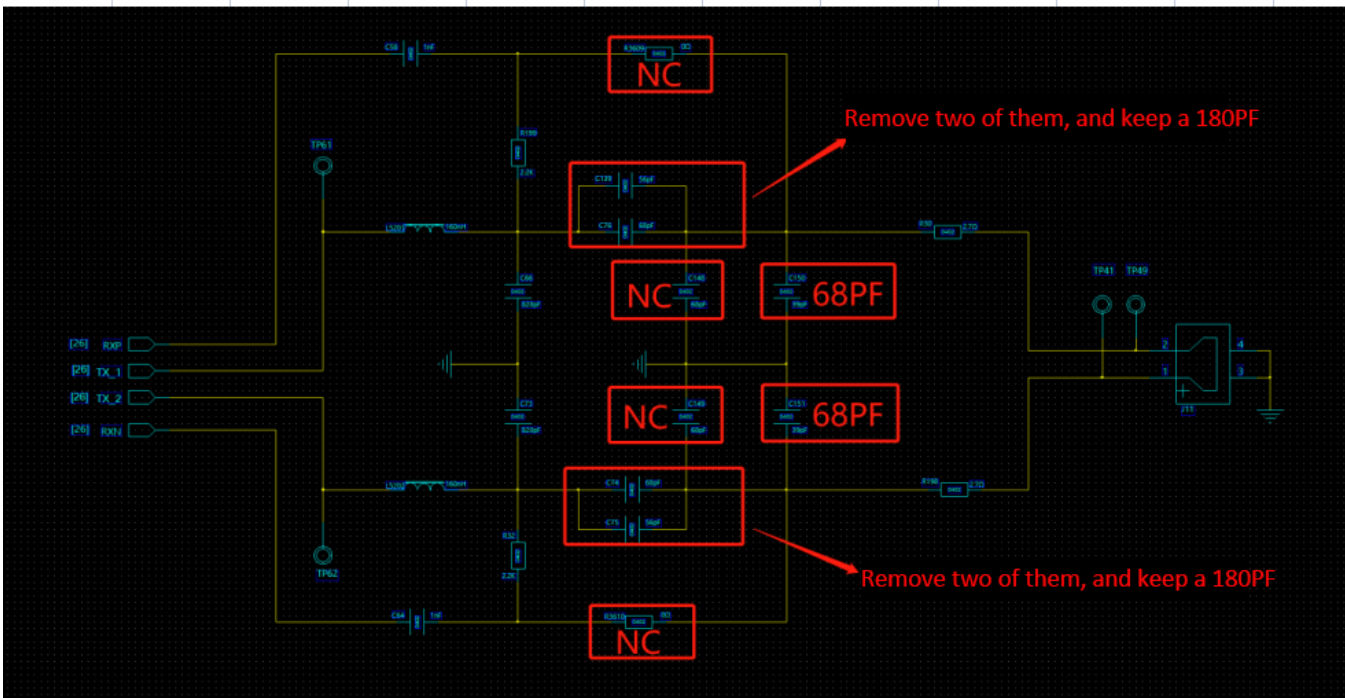
3. Antenna condition and environmental treatment

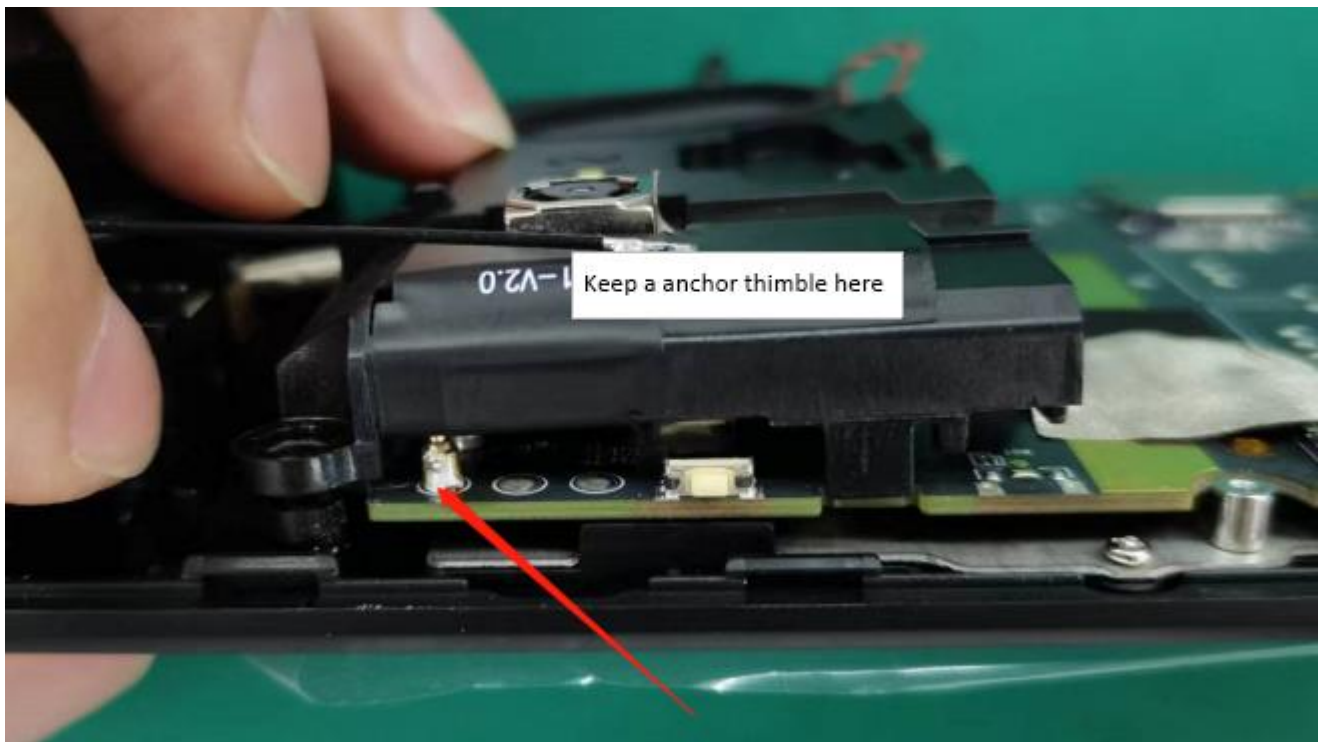
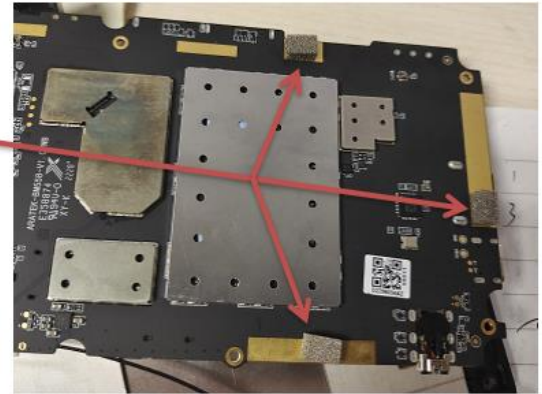
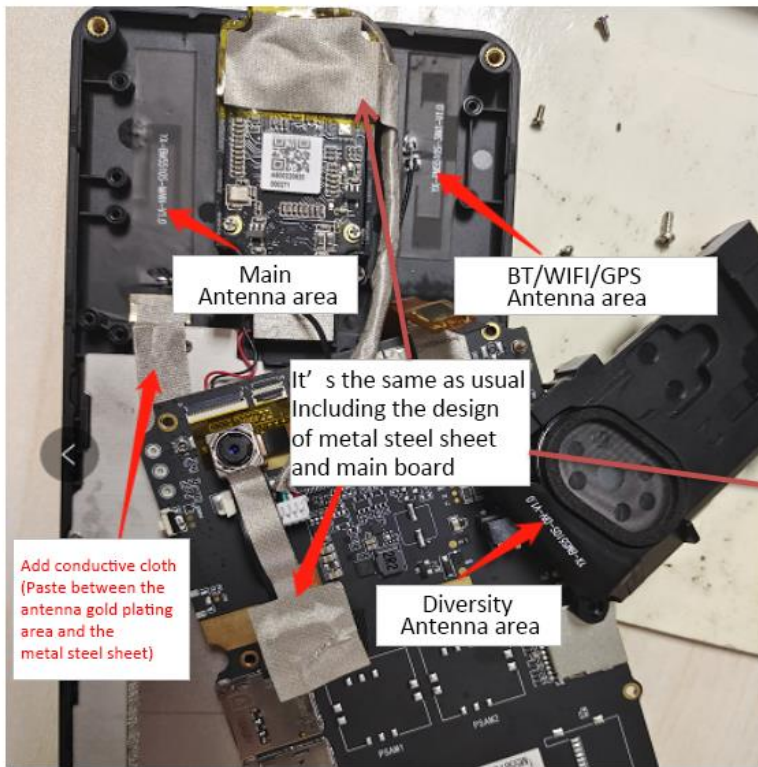


Main Antenna		Element	Value
		E1	0 Ω
		E2	N/A
		E3	0 Ω
		E4	N/A

PS:
Pay attention to the import of matching circuit

NFC test and matching modification





4. TRP&TIS Measurement

(WB Mainboard) FS/WIFI active test data											
FS	Channel	TX (dBm)	RX (dBm)	FS	Channel	TX (dBm)	RX (dBm)	FS	Channel	TX (dBm)	RX (dBm)
GSM850	L	27.59		WCDMA 1	L	20.94		WIFI-2.4G 11M	1	11.19	
	M	28.43			M	19.22			6	11.95	
	H	28.64	-105.9		H	19.42	-105.23		11	11.22	-80.34
GSM900	L	27.87		WCDMA 2	L	21.14		WIFI-5.8G 54M	36	10.22	
	M	27.71			M	21.41			149	10.4	
	H	27.27	-105.66		H	21.04	-105.21		165	10.93	-70.11
GSM1800	L	25.19		WCDMA 5	L	19.13					
	M	25.35			M	19.45					
	H	25.43	-105.48		H	19.63	-107.18				
GSM1900	L	25.33		WCDMA 8	L	19.22					
	M	25.28			M	19.48					
	H	25.53	-104.32		H	20.17	-106.89				
LTE-1	L	20.38		LTE-7	L	19.24					
	M	19.5			M	19.41					
	H	19.06	-94.97		H	19.47	-90.47				
LTE-2	L	19.39		LTE-8	L	18.28					
	M	20.65			M	19.41					
	H	20.4	-92.22		H	19.89	-94.09				
LTE-3	L	18.92		LTE-20	L	19.29					
	M	19.85			M	19.56					
	H	20.4	-94.22		H	19.07	-92.04				
LTE-4	L	18.96		LTE-28	L	19.27					
	M	19.46			M	18.71					
	H	19.97	-93.27		H	18.16	-92.86				
LTE-5	L	19.34									
	M	19.6									
	H	19.45	-94.46								

NFC Reality Test



NFC reality test distance:
Passport: 20mm
ID card: 30mm
NFC test card: 60mm

5. Antenna gain

GSM/GPRS	GSM850:0.8DBi PCS1900:1.1DBi
UMTS (WCDMA)	B2:1.0DBi B5:0.8DBi
E-UTRA (LTE)	B2:1DBi B4:1.1DBi B5:0.8DBi B7:1.5DBi
Bluetooth	1.5DBi
WLAN	2.4G WIFI 1.5DBi 5G WIFI 2.5DBi
RFID/NFC	2.5DBi