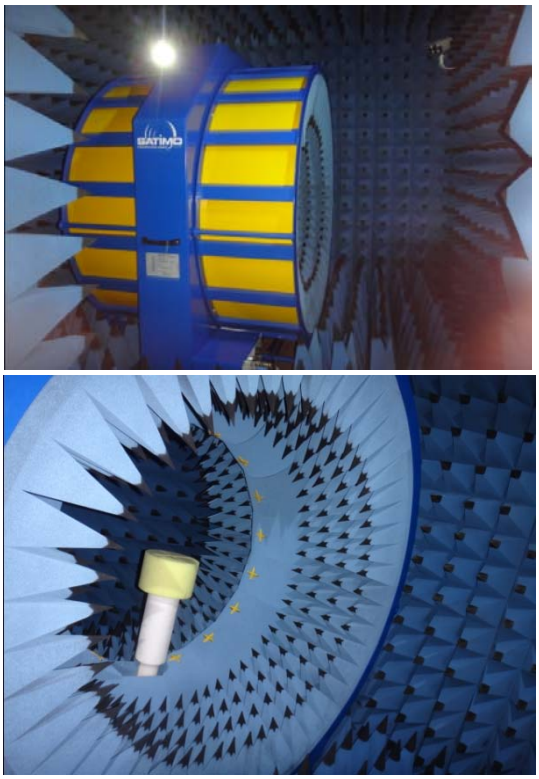
AFTtEch

AFT tech Electronic Co., Ltd. (Shenzhen)

Antenna Test Report

Model	T1	Trademark	AFTtEch
Debug Band	2G/3G/4G、WIFI、BT	Structure	LDS+FPC
RF engineer	Mr. Liu	Structural engineer	Du Qiang
Antenna type	PIFA	Date	2022-07-16



Originally imported from the French SATIMO company's StarLab 3D laboratory, it can accurately and quickly test the parameter data such as TRP, TIS, efficiency, gain, apple map, and pattern of communication terminal products such as mobile phones, tablet computers and notebooks.

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- Each antenna matching circuit and passive parameters
- Conducted data
- Main antenna OTA test data
- GPS measured effect
- The whole environment processing
- Risk warning during debugging
- Summarize

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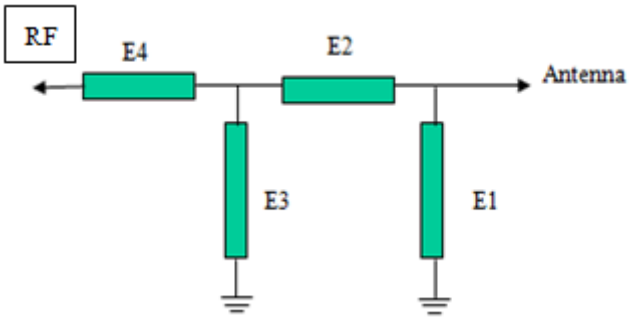
Report version

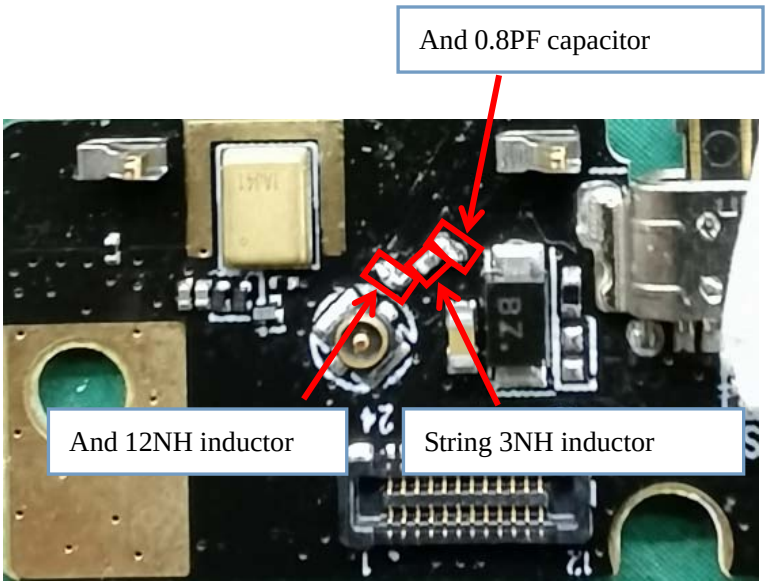
Version	Date	Content overview
V1.0	2022-07-12	Antenna Test Report
V2.0	2022-07-16	Antenna Test Report

Main Antenna Matching Circuit

Element	E1	E2	E3	E4
Value	0.8 PF	3 NH	12 NH	

Our company has made changes to the main antenna matching circuit!





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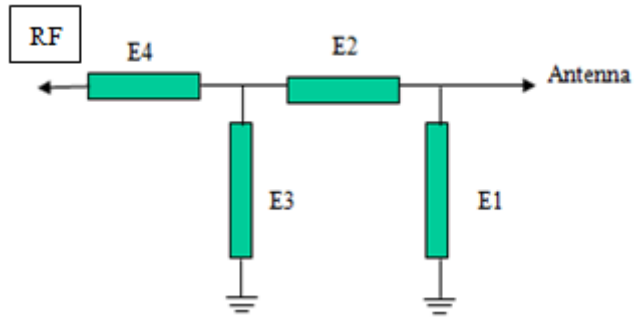
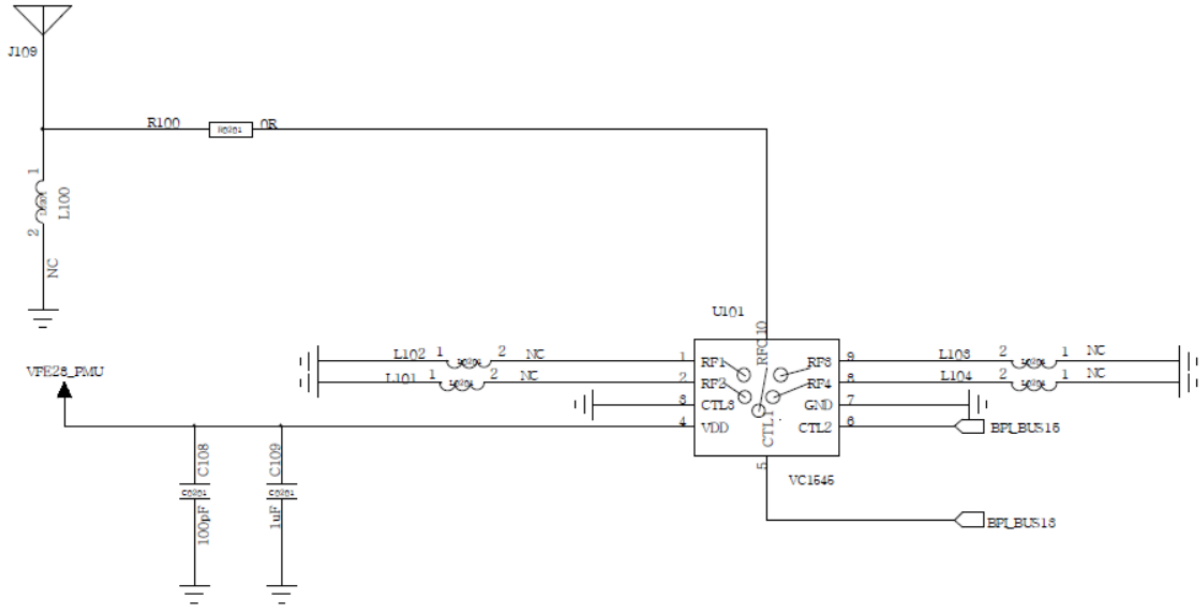
GPS/WIFI Antenna Matching Circuit

Element	E1	E2	E3	E4
Value				

Our company has not changed the diversity antenna matching circuit!





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RF1 paste 0Ω resistor here, antenna debugging frequency band

GSM: 900, 1800, 1900

W: B1, B2, B8 4G: B1, B2, B3, B4, B7, B8, B38, B39, B40, B41

RF2 paste 2.7NH inductor here, antenna debugging frequency band GSM: 850 W: B5, B6, B19 4G: B5, B18, B19, B20, B26

RF3 paste 12NH inductor here, antenna debugging frequency band 4G: B12, B17

RF4 paste 27NH inductor here Antenna debugging frequency band 4G:B21

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Motherboard conduction data:

Band	Channal	power (dBm)	Sensitivity (dBm)	Band	Channal	power (dBm)	Sensitivity (dBm)
GSM 900	L	32.1		DCS 1800	L	28.6	
	M	32.0			M	28.7	
	H	32.0	-108.5		H	28.7	-106.8
GSM 850	L	30.0		PCS 1900	L	28.8	
	M	30.0			M	28.9	
	H	30.1	-109.5		H	28.9	-105.8
WCDMA 850	L	22.1		WCDMA 900	L	21.9	
	M	22.0			M	21.9	
	H	21.9	-107.5		H	22.1	-107.8
WCDMA 1900	L	21.8		WCDMA 2100	L	22.0	
	M	21.9			M	21.9	
	H	21.8	-109.0		H	22.0	-109.0
LTE-B1 (10M)	L	22.5		LTE-B2 (10M)	L	22.1	
	M	22.5			M	22.2	
	H	22.5	-97.5		H	22.3	-98.0
LTE-B3 (10M)	L	22.0		LTE-B4 (10M)	L	22.4	
	M	22.0			M	22.5	
	H	22.1	-97.7		H	22.5	-97.8
LTE-B5 (10M)	L	22.0		LTE-B7 (10M)	L	22.4	
	M	22.1			M	22.4	
	H	22.2	-97.5		H	22.4	-97.8
LTE-B8 (10M)	L	22.4		LTE-B12 (10M)	L	21.8	
	M	22.4			M	21.8	
	H	22.4	-96.7		H	21.8	-96.8
LTE-B17 (10M)	L	21.7		LTE-B18 (10M)	L	21.8	
	M	21.6			M	21.8	
	H	21.6	-96.9		H	21.9	-97.4
LTE-B19 (10M)	L	22.2		LTE-B20 (10M)	L	21.9	
	M	22.1			M	21.9	
	H	22.2	-96.8		H	22.0	-97.5
LTE-B21 (10M)	L	22.1		LTE-B26 (10M)	L	22.2	
	M	22.1			M	22.2	

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	H	22.2	-97.4		H	22.3	-98.0
LTE-B38 (20M)	L	22.5		LTE-B39 (20M)	L	22.5	
	M	22.5			M	22.6	
	H	22.6	-95.4		H	22.6	-95.5
LTE-B40 (20M)	L	22.2		LTE-B41 (20M)	L	22.4	
	M	22.3			M	22.5	
	H	22.3	-95.6		H	22.4	-94.9

4G power conduction calibrated to 22.5, FDD 10M sensitivity -97.5

Main Antenna Fs OTA Data

Band	Channal	TRP(dBm)	TIS(dBm)	Band	Channal	TRP(dBm)	TIS(dBm)
GSM 900	L	25.4		DCS 1800	L	25.4	
	M	23.8			M	25.7	
	H	23.5	-101.2		H	26.4	-103.4
GSM 850	L	21.8		PCS 1900	L	26.5	
	M	22.8			M	26.6	
	H	23.6	-102.7		H	26.1	-103.4
WCDMA 850	L	10.6		WCDMA 900	L	17.0	
	M	11.2			M	16.0	
	H	10.9	-103.4		H	15.3	-100.7
WCDMA 6	L	16.5		WCDMA 19	L	14.5	
	M	16.6			M	14.6	
	H	16.4	-104.9		H	14.2	-103.4
WCDMA 1900	L	19.2		WCDMA 2100	L	19.2	
	M	18.5			M	19.4	
	H	17.7	-105.5		H	19.5	-105.6
LTE-B1 (10M)	L	18.9		LTE-B2 (10M)	L	18.5	
	M	19.2			M	18.6	
	H	19.5	-93.6		H	18.4	-93.8
LTE-B3 (10M)	L	17.8		LTE-B4 (10M)	L	17.9	
	M	18.2			M	18.4	
	H	18.5	-90.8		H	18.8	-92.3
LTE-B5 (10M)	L	16.1		LTE-B7 (10M)	L	18.0	
	M	16.5			M	18.1	
	H	16.5	-91.5		H	18.3	-92.6
LTE-B8	L	16.4		LTE-B12	L	14.5	

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（10M）	M	16.0		（10M）	M	14.6	
	H	15.5	-89.6		H	14.8	-89.8
LTE-B17（10M）	L	14.5		LTE-B18（20M）	L	16.1	
	M	14.6			M	16.5	
	H	14.5	-88.5		H	16.4	-91.4
LTE-B19（10M）	L	16.4		LTE-B20（10M）	L	16.8	
	M	16.5			M	16.9	
	H	16.3	-91.4		H	17.2	-91.7
LTE-B21（10M）	L	15.1		LTE-B26（10M）	L	15.7	
	M	15.2			M	16.0	
	H	15.2	-89.4		H	16.0	-91.7
LTE-B38（20M）	L	18.5		LTE-B39（20M）	L	18.2	
	M	18.7			M	18.2	
	H	18.6	-90.4		H	18.7	-91.4
LTE-B40（20M）	L	18.1		LTE-B41（20M）	L	18.5	
	M	18.3			M	18.8	
	H	18.5	-90.6		H	18.5	-89.7

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Antenna Gain:

	Band	Gain
		(dBi)
GSM	GSM850	0.27
	GSM900	0.32
	DCS1800	0.98
	PCS1900	1.14
WCDMA	B1	1.24
	B2	1.14
	B5	0.27
	B6	0.27
	B8	0.32
	B19	0.27
LTE	LTE-B1	1.24
	LTE-B2	1.14
	LTE-B3	0.98
	LTE-B4	0.98
	LTE-B5	0.27
	LTE-B7	1.44
	LTE-B8	0.32
	LTE-B12	0.21
	LTE-B17	0.21
	LTE-B18	0.27
	LTE-B19	0.27
	LTE-B20	0.27
	LTE-B21	0.75
	LTE-B26	0.27
	LTE-B38	1.44
	LTE-B39	0.98
	LTE-B40	1.36
	LTE-B41	1.44
WIFI 5G		1.35
WIFI 2.4G		1.27
BT		1.27
GPS		0.94

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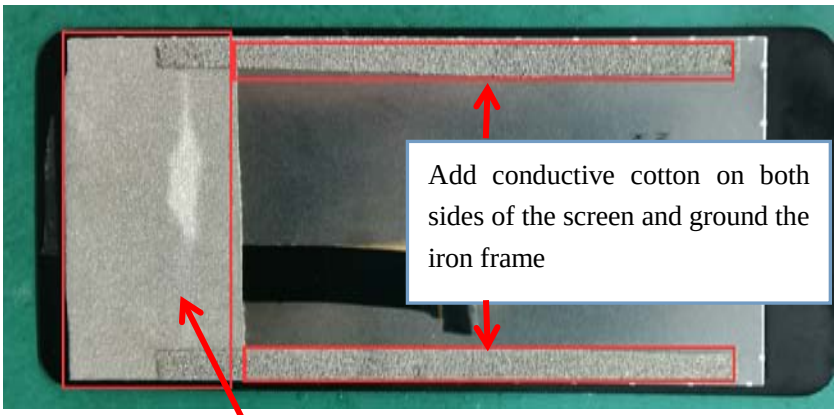
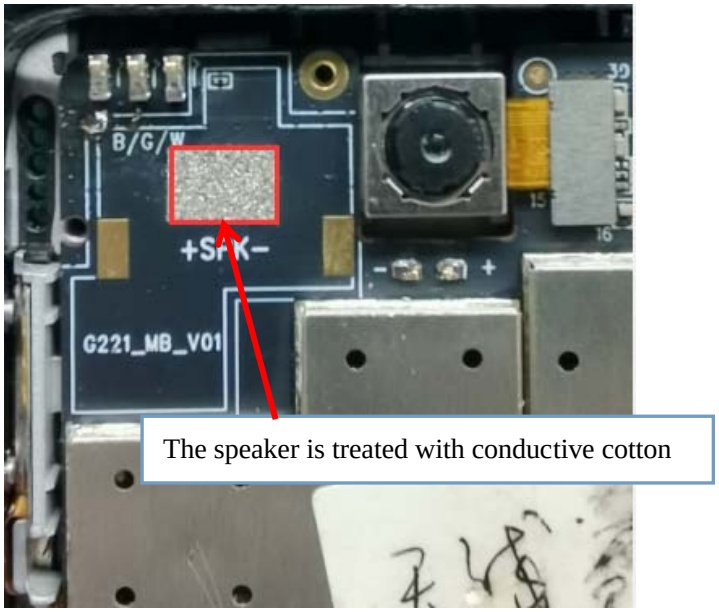
Environmental treatment：





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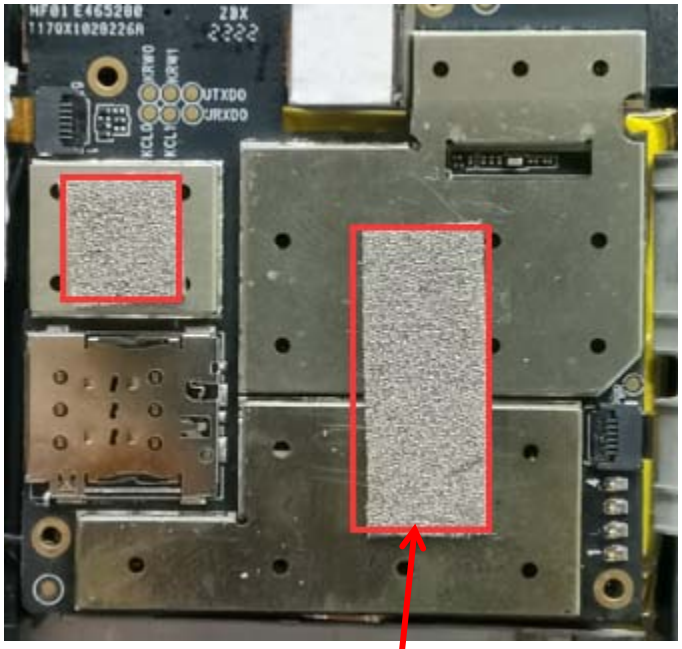
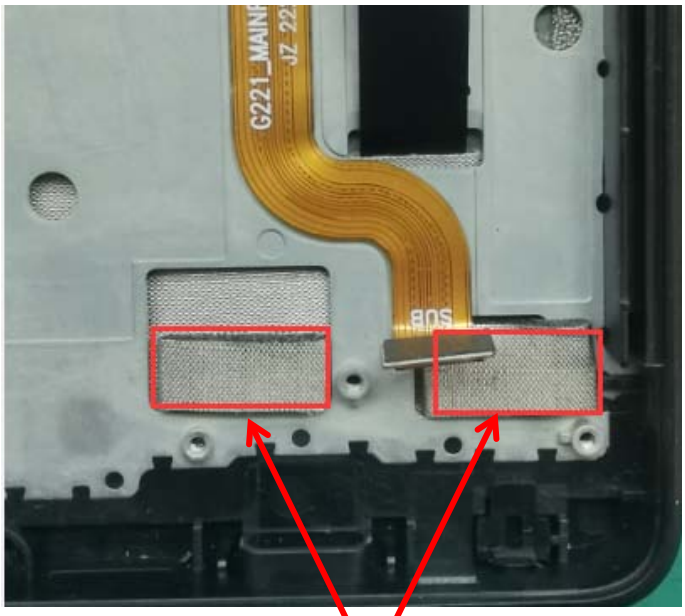


Conductive cotton grounding for motherboard



Small board grounding treatment

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Precautions:

1. This antenna is a mold-like antenna. Changes in the material of the motherboard SPCB or RF circuit, and changes in mobile phone accessories (such as cameras, screens, speakers, motors, batteries, and case technology) must be tested and verified by our company. use.

2. If your company needs to conduct third-party or solution company verification for this project, please send the prototype to our company for re-testing at least one working day in advance and then send it for testing, because the motherboard and environmental treatment will affect the performance of the antenna, avoid secondary or Sending tests many times delays the progress of the project!

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