

Material Acknowledgement

Suppliers: Shenzhen Maya Communication Equipment Co., Ltd

Model: A97

Product Name: On the antenna assembly

Specifications / Models: _____

Antenna trademark:  _____

Color: black

Address: _____

Contact / Phone: _____

Supplier (with official seal)

Structural Department	R&D Department	Quality Department	Project Department	

Customer review

ID Department	Structural Department /	Hardware Department	Packaging engineering	Quality Department
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	Special Project			

Specifications

The report mainly provides A91 GSM +LTE,performance parameter test, antenna for built-in antenna:

2、Electrical performance

2-1Specification Standard

The A91 antenna operates in the LTE700/850/900 1800/1900/2100/2300/2700Mhz/3500Mhz/5000Mhz band, which generates resonances in this ;The following table shows the mass production performance test indicators for the A89 design antenna:

3.Standing Wave Ratio(VSWR)test

3-1Test settings

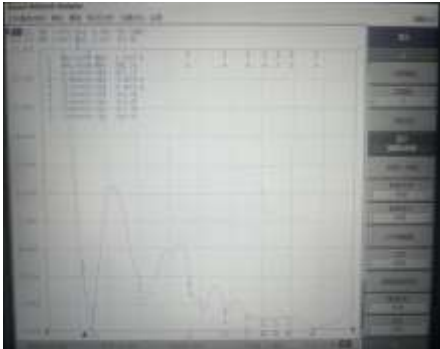
The VSWR test units are connected in turn: E5071B Network Analyzer → 50 ohm coaxial

Cable → 156mm long copper tube /b110> → Test fixtures. Processing of the test fixture: A hard cable is used from the antenna 50 ohm test point on the pcb of the mobile phone to lead out the SMA-J connector, connect it to the copper tube with a choke, and then connect the other devices in turn.

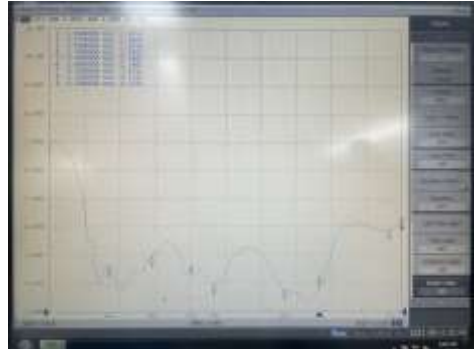
3-2 VWR test

The following table shows the value of the standing wave ratio of the edge frequency point of the GSM+LTE antenna operating band, , the return loss, VSWR, and the relevant waveform plot is shown in the annex:

A97 ANT1 VSWR/Return Loss

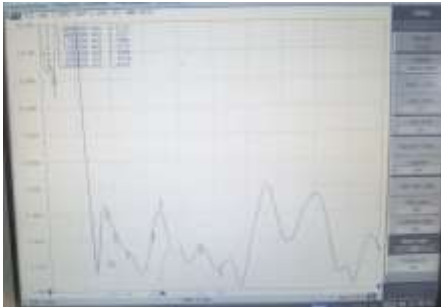


A97 ANT2 VSWR/Return Loss

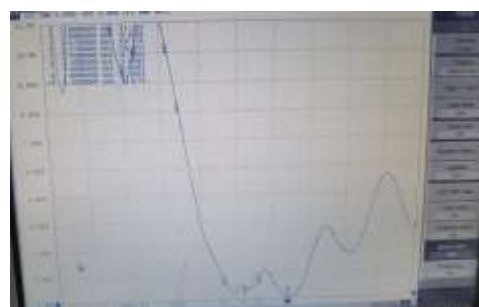


3-3test results

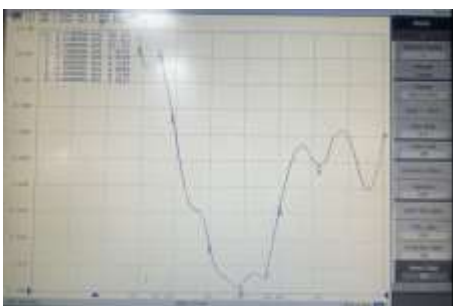
A97 ANT3 VSWR/Return Loss



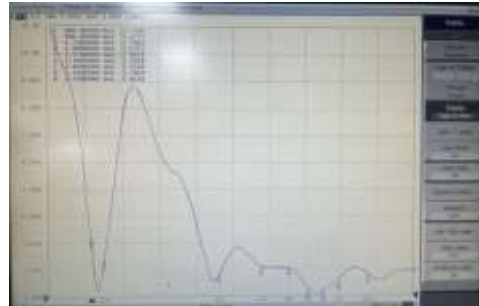
A97 ANT4 VSWR/Return Loss



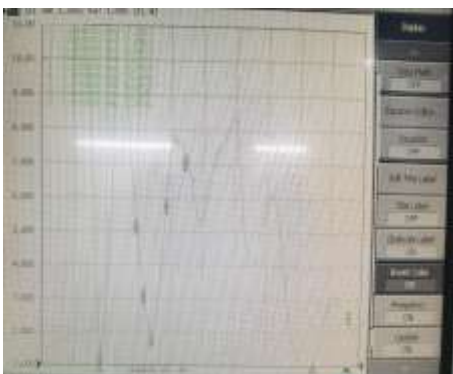
A96	ANT7	VSWR/Return	Loss
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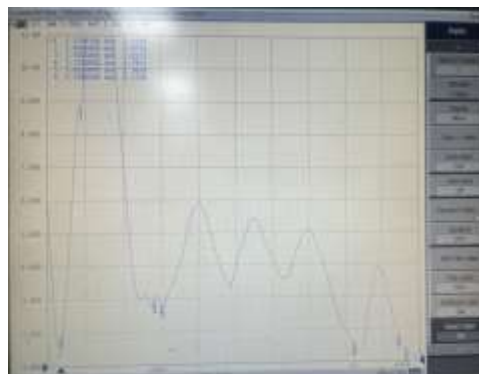
A97 ANT0 VSWR/Return Loss



A97	WIFI	1	VSWR/Return	Loss
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A97 WIFI 2 VSWR/Return Loss



3-4 gain test

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ANT0 Gain

700	-2.9	1400	-4	2120	-1.6
710	-2.8	1420	-4	2140	-1.4
720	-2.6	1440	-3.9	2160	-1.2
730	-2.6	1460	-3.8	2180	-1.1
740	-2.6	1480	-3.8	2300	-1.2
750	-2.7	1500	-4	2320	-1.3
760	-2.7	1700	-3.9	2340	-1.5
770	-2.7	1720	-3.6	2360	-1.7
780	-3.0	1740	-3.1	2380	-1.7
790	-3.1	1760	-3	2400	-1.7
800	-2.7	1780	-2.8	2420	-1.7
810	-2.5	1800	-2.5	2440	-1.6
820	-2.3	1820	-3.3	2460	-1.4
830	-2.2	1840	-2.8	2480	-1.2
840	-2.1	1860	-2.9	2500	-1.1
850	-2.0	1880	-2.9	2520	-1.2
860	-2.1	1900	-2.8	2540	-1.3
870	-2.2	1920	-2.8	2560	-1.5
880	-2.3	1940	-2.7	2580	-1.7
890	-2.4	1960	-2.7	2600	-1.7
900	-2.5	1980	-2.9	2620	-1.7
910	-2.3	2000	-2.8	2640	-1.7
920	-2.4	2020	-2.9	2660	-1.6
930	-2.4	2040	-3.1	2680	-1.4
940	-2.5	2060	-3.1	2700	-1.2
950	-2.5	2080	-2.9		
960	-2.7	2100	-2.9		

ANT1 Gain

Freq	Gain	Freq	Gain	Freq	Gain
700	-2	950	-2.5	2160	-1.7
710	-2	960	-2.5	2180	-1.9
720	-2	1700	-1.5	2300	-3.8
730	-1	1720	-1.5	2320	-4.2
740	-1	1740	-1.6	2340	-4.1
750	-1.7	1760	-1.7	2360	-3.4
760	-2.1	1780	-1.6	2380	-4.1
770	-2.5	1800	-1.8	2400	-4.2

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780	-2.1	1820	-1.7	2420	-4.0
790	-2.1	1840	-1.6	2440	-4.2
800	-2.5	1860	-1.6	2460	-4.3
810	-2.2	1880	-1.7	2480	-4.1
820	-1.6	1900	-1.8	2500	-4.0
830	-1.5	1920	-1.7	2520	-4.1
840	-1.9	1940	-1.7	2540	-4.3
850	-1.9	1960	-1.8	2560	-4.2
860	-2.7	1980	-1.8	2580	-3.9
870	-2.7	2000	-1.8	2600	-3.7
880	-2.7	2020	-1.9	2620	-4.1
890	-2.8	2040	-1.9	2640	-4.1
900	-2.7	2060	-2.0	2660	-4.0
910	-2.8	2080	-2.1	2680	-4.4
920	-2.8	2100	-1.9	2700	-4.3
930	-2.9	2120	-1.8		
940	-2.9	2140	-1.8		

ANT2 Gain

Freq	Gain	Freq	Gain	Freq	Gain	Freq	Gain
1700	-3.2	2500	-2.2	3300	-1.7	3760	-1.9
1720	-3.3	2520	-2.2	3320	-1.9	3780	-1.9
1740	-3.3	2540	-2.4	3340	-2.5	3800	-2.1
1760	-3.3	2560	-2.3	3360	-2.3	3820	-2.1
1780	-3.3	2580	-2.3	3380	-2.2	3840	-1.8
1800	-3.3	2600	-2.2	3400	-2.3	3860	-1.7
1820	-3.3	2620	-2.4	3420	-2.4	3880	-1.6
1840	-3.3	2640	-2.3	3440	-2.5	3900	-1.6
1860	-3.3	2660	-2.4	3460	-2.6	3920	-1.6
1880	-3.3	2680	-2.5	3480	-2.6	3940	-1.6
1900	-3.6	2700	-2.5	3500	-2.7	3960	-1.7
1920	-3.2			3520	-2.6	3980	-1.7
1940	-3.3			3540	-2.6	4000	-1.8
1960	-3.7			3560	-2.5	4020	-1.8
1980	-3.5			3580	-2.5	4040	-1.7
2000	-3.6			3600	-2.4	4060	-1.7
2020	-3.2			3620	-2.4	4080	-1.7
2040	-2.6			3640	-2.3	4100	-1.7
2060	-2.7			3660	-2.3	4120	-1.5
2080	-2.7			3680	-2.5	4140	-1.5
2100	-2.8			3700	-2.5	4160	-1.5
2120	-2.9			3720	-2.6	4180	-1.7

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2140	-3.1			3740	-2.6	4200	-1.6
2160	-3.2						
2180	-3.3						

ANT3 Gain

Freq	Gain	Freq	Gain	Freq	Gain	Freq	Gain
1700	-2.3	2500	-2.1	3300	-1.6	3760	-1.7
1720	-2.1	2520	-2.2	3320	-1.9	3780	-1.8
1740	-2.0	2540	-2.3	3340	-2.0	3800	-1.9
1760	-2.2	2560	-2.2	3360	-2.1	3820	-1.9
1780	-2.5	2580	-2.2	3380	-2.1	3840	-1.9
1800	-2.6	2600	-2.2	3400	-2.2	3860	-1.8
1820	-2.7	2620	-2.2	3420	-2.2	3880	-1.9
1840	-2.7	2640	-2.3	3440	-2.2	3900	-2.0
1860	-2.7	2660	-2.3	3460	-2.3	3920	-2.1
1880	-2.7	2680	-2.3	3480	-2.6	3940	-2.0
1900	-2.8	2700	-2.2	3500	-2.3	3960	-1.9
1920	-2.8			3520	-2.4	3980	-1.9
1940	-2.8			3540	-2.4	4000	-1.8
1960	-2.6			3560	-2.2	4020	-1.8
1980	-2.7			3580	-2.2	4040	-1.7
2000	-2.8			3600	-2.3	4060	-1.7
2020	-2.7			3620	-2.3	4080	-1.7
2040	-2.7			3640	-2.2	4100	-1.8
2060	-2.7			3660	-2.1	4120	-1.7
2080	-2.7			3680	-2.0	4140	-1.8
2100	-2.7			3700	-2.1	4160	-1.7
2120	-2.6			3720	-2.0	4180	-1.8
2140	-2.7			3740	-2.0	4200	-1.8
2160	-2.6						

ANT4 Gain

Freq	Gain	Freq	Gain
3300	-1.6	3760	-1.7
3320	-1.5	3780	-1.7
3340	-1.5	3800	-1.7
3360	-1.6	3820	-1.6
3380	-1.7	3840	-1.6

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3400	-1.6	3860	-1.6
3420	-1.8	3880	-1.7
3440	-1.7	3900	-1.8
3460	-1.6	3920	-1.8
3480	-1.6	3940	-1.8
3500	-1.8	3960	-1.9
3520	-1.8	3980	-1.7
3540	-1.9	4000	-1.7
3560	-1.9	4020	-1.6
3580	-1.8	4040	-1.6
3600	-1.8	4060	-1.6
3620	-2.0	4080	-1.6
3640	-1.9	4100	-1.8
3660	-1.8	4120	-1.8
3680	-1.8	4140	-1.6
3700	-1.7	4160	-1.6
3720	-1.7	4180	-1.6
3740	-1.6	4200	-1.

ANT5 Gain

Freq	Gain	Freq	Gain
3300	-1.9	3760	-2.1
3320	-1.9	3780	-2.0
3340	-2.0	3800	-2.2
3360	-2.0	3820	-2.1
3380	-2.1	3840	-2.0
3400	-2.2	3860	-1.8
3420	-2.3	3880	-1.8
3440	-2.4	3900	-1.8
3460	-2.5	3920	-1.8
3480	-2.6	3940	-1.8
3500	-2.6	3960	-2.0
3520	-2.6	3980	-2.0
3540	-2.6	4000	-2.0
3560	-2.6	4020	-2.1
3580	-2.6	4040	-2.1
3600	-2.7	4060	-2.0
3620	-2.7	4080	-2.0
3640	-2.7	4100	-1.9
3660	-2.7	4120	-1.9
3680	-2.8	4140	-1.8
3700	-2.7	4160	-1.8

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3720	-2.6	4180	-1.7
3740	-2.6	4200	-1.7

GPS/WIFI/BT L1

Freq	Gain	Freq	Gain	Freq	Gain
1560	-1.2	2400	-1.5	5100	-1.1
1570	-1.2	2420	-1.5	5200	-1.1
1580	-1.2	2440	-1.5	5300	-1.0
1590	-1.2	2460	-1.6	5400	-0.9
		2480	-1.6	5500	-0.9
		2500	-1.6	5600	-0.8
				5700	-0.8
				5800	-0.7

GPS/WIFI/BT L2

Freq	Gain	Freq	Gain	Freq	Gain
1160	-2.0	2400	-1.0	5100	-1.0
1170	-2.1	2420	-1.1	5200	-1.0
1180	-2.1	2440	-1.2	5300	-1.0
		2460	-1.1	5400	-0.9
		2480	-1.1	5500	-0.8
		2500	-1.1	5600	-0.7
				5700	-0.7
				5800	-0.6

