

Product performance and specification

Indexing

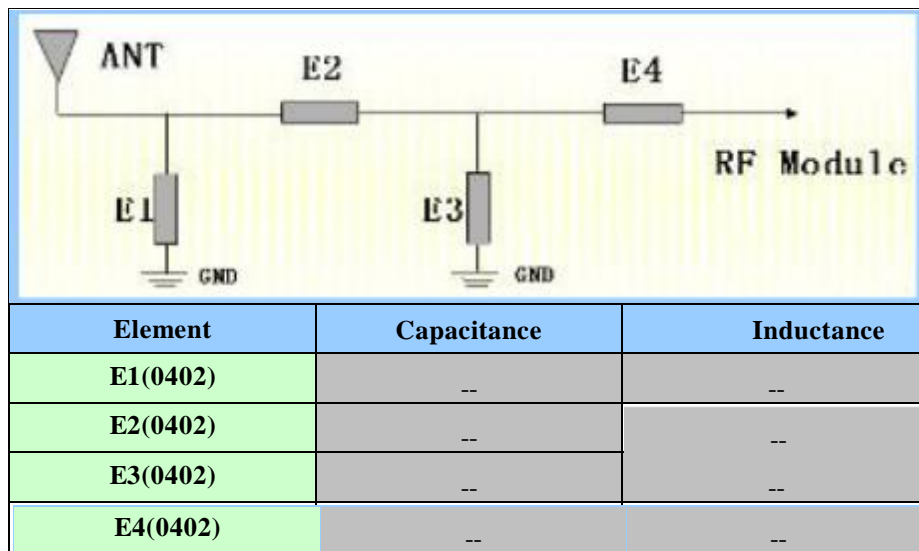
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1.1 Project drawing



IPC-A

1.1.1 Antenna matching pattern



The match says: has the match been changed according to the original motherboard

2.1 Purpose

Regulate the product specifications and test methods of mobile communication terminal antennas produced by Shenzhen Tianwei Wireless Technology Co., Ltd.

Fan, avoid errors caused by different test conditions and methods

3.1 Antenna

3.1.1 Electrical specifications and materials of antennas

This report mainly provides the test status of the structural performance parameters of the IPC-A antenna.



Physical drawing

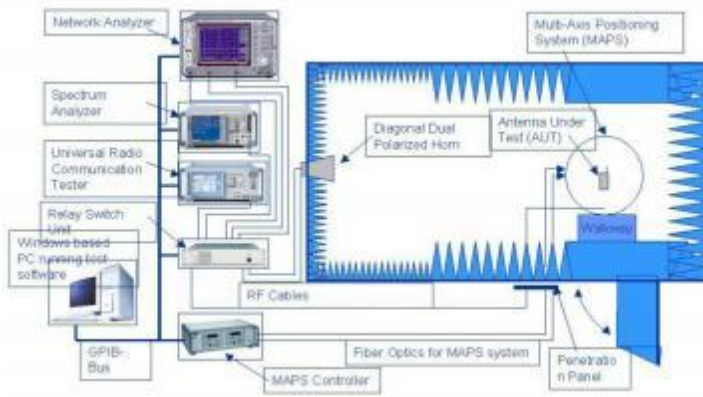
3.1.2 Antenna form:

Implementation type: PIFA antenna material: FPC+ coaxial line

3.1.3 Working band of antenna design:

The antenna operates in the frequency band 2412MHz ~ 2472MHz\ 5100MHz~5820MHz

3.1.4 Measurement data of main Antenna in ETS-SG24SYSTEM 3D Test system



picture (1) ETS test system



picture(2) Three-dimensional positioning device for mobile phone in darkroom

Passive performance index:

Main antenna

Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Point Values											
Ant. Port Input Pwr. (dBm)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot. Rad. Pwr. (dBm)	-2.92	-3.00	-3.01	-3.09	-3.11	-2.92	-2.84	-2.98	-2.87	-3.08	-2.91
Peak EIRP (dBm)	2.06	2.02	2.03	2.08	2.15	2.34	2.42	2.23	2.23	2.03	2.15
Directivity (dBi)	4.98	5.03	5.05	5.17	5.26	5.26	5.26	5.21	5.10	5.11	5.06
Efficiency (dB)	-2.92	-3.00	-3.01	-3.09	-3.11	-2.92	-2.84	-2.98	-2.87	-3.08	-2.91
Efficiency (%)	51.10	50.10	50.00	49.10	48.90	51.00	52.00	50.40	51.60	49.20	51.20
Gain (dBi)	2.06	2.02	2.03	2.08	2.15	2.34	2.42	2.23	2.23	2.03	2.15

Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	5700.0	5710.0	5720.0	5730.0	5740.0	5750.0	5760.0	5770.0	5780.0	5790.0	5800.0
Point Values											
Ant. Port Input Pwr. (dBm)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot. Rad. Pwr. (dBm)	-2.79	-2.88	-2.72	-2.68	-2.60	-2.83	-2.94	-2.90	-2.52	-2.34	-2.43
Peak EIRP (dBm)	3.57	3.89	3.66	3.73	3.92	3.68	3.51	3.66	4.02	4.26	4.12
Directivity (dBi)	6.37	6.78	6.39	6.41	6.53	6.51	6.45	6.56	6.54	6.60	6.55
Efficiency (dB)	-2.79	-2.88	-2.72	-2.68	-2.60	-2.83	-2.94	-2.90	-2.52	-2.34	-2.43
Efficiency (%)	52.60	51.50	53.40	53.90	54.90	52.20	50.80	51.30	56.00	58.40	57.20
Gain (dBi)	3.57	3.89	3.66	3.73	3.92	3.68	3.51	3.66	4.02	4.26	4.12

AUX antenna

Frequency ID	1	3	5	7	9	11	13	15	17	19	21
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Point Values											
Ant. Port Input Pwr. (dBm)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot. Rad. Pwr. (dBm)	-3.30	-3.21	-3.26	-3.25	-3.28	-3.18	-3.24	-3.19	-3.12	-3.06	-2.95
Peak EIRP (dBm)	1.87	1.94	1.88	1.81	1.70	1.73	1.59	1.54	1.61	1.69	1.79
Directivity (dBi)	5.17	5.15	5.14	5.07	4.98	4.91	4.82	4.73	4.73	4.75	4.74
Efficiency (dB)	-3.30	-3.21	-3.26	-3.25	-3.28	-3.18	-3.24	-3.19	-3.12	-3.06	-2.95
Efficiency (%)	46.70	47.80	47.20	47.30	47.00	48.10	47.40	47.90	48.70	49.40	50.70
Gain (dBi)	1.87	1.94	1.88	1.81	1.70	1.73	1.59	1.54	1.61	1.69	1.79

Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	5700.0	5710.0	5720.0	5730.0	5740.0	5750.0	5760.0	5770.0	5780.0	5790.0	5800.0
Point Values											
Ant. Port Input Pwr. (dBm)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot. Rad. Pwr. (dBm)	-2.35	-2.50	-2.50	-2.51	-2.50	-2.69	-2.73	-2.79	-2.55	-2.45	-2.59
Peak EIRP (dBm)	4.75	4.47	4.40	4.63	4.48	4.29	4.73	4.45	4.51	4.67	4.66
Directivity (dBi)	7.09	6.98	6.90	7.14	6.98	6.98	7.46	7.24	7.05	7.12	7.25
Efficiency (dB)	-2.35	-2.50	-2.50	-2.51	-2.50	-2.69	-2.73	-2.79	-2.55	-2.45	-2.59
Efficiency (%)	58.20	56.20	56.30	56.10	56.20	53.80	53.40	52.60	55.60	56.90	55.10
Gain (dBi)	4.75	4.47	4.40	4.63	4.48	4.29	4.73	4.45	4.51	4.67	4.66

3.1.5 Data of main antenna measured by network analyzer



SWR



Return loss

Main antenna



SWR



Return loss

AUX antenna

3.1.6 Actual test results of antenna

```
#304: [39.80Mbits/s]
```

[ID]	interval	transfer	bandwidth
[304]	100.0-101.0 sec	4.93 MBytes	41.4 Mbits/sec
[304]	101.0-102.0 sec	4.88 MBytes	40.9 Mbits/sec
[304]	102.0-103.0 sec	4.48 MBytes	37.6 Mbits/sec
[304]	103.0-104.0 sec	4.19 MBytes	35.1 Mbits/sec
[304]	104.0-105.0 sec	3.79 MBytes	31.8 Mbits/sec
[304]	105.0-106.0 sec	4.30 MBytes	36.0 Mbits/sec
[304]	106.0-107.0 sec	4.74 MBytes	39.8 Mbits/sec
[304]	107.0-108.0 sec	5.03 MBytes	42.2 Mbits/sec
[304]	108.0-109.0 sec	4.95 MBytes	41.5 Mbits/sec
[304]	109.0-110.0 sec	4.97 MBytes	41.7 Mbits/sec
[304]	110.0-111.0 sec	4.85 MBytes	40.7 Mbits/sec
[304]	111.0-112.0 sec	4.97 MBytes	41.7 Mbits/sec
[304]	112.0-113.0 sec	4.72 MBytes	39.6 Mbits/sec
[304]	113.0-114.0 sec	5.15 MBytes	43.2 Mbits/sec
[304]	114.0-115.0 sec	4.48 MBytes	37.6 Mbits/sec
[304]	115.0-116.0 sec	4.98 MBytes	41.8 Mbits/sec
[304]	116.0-117.0 sec	5.08 MBytes	42.6 Mbits/sec
[304]	117.0-118.0 sec	4.88 MBytes	41.0 Mbits/sec
[304]	118.0-119.0 sec	5.12 MBytes	42.9 Mbits/sec
[304]	119.0-120.0 sec	5.00 MBytes	41.9 Mbits/sec
[ID]	Interval	Transfer	Bandwidth
[304]	0.0-120.0 sec	569 MBytes	39.8 Mbits/sec

Done.

2.4G

```
#304: [251.00Mbits/s]
```

[ID]	interval	transfer	bandwidth
[304]	100.0-101.0 sec	29.1 MBytes	244 Mbits/sec
[304]	101.0-102.0 sec	28.8 MBytes	242 Mbits/sec
[304]	102.0-103.0 sec	30.1 MBytes	252 Mbits/sec
[304]	103.0-104.0 sec	30.0 MBytes	252 Mbits/sec
[304]	104.0-105.0 sec	29.8 MBytes	250 Mbits/sec
[304]	105.0-106.0 sec	29.5 MBytes	248 Mbits/sec
[304]	106.0-107.0 sec	29.3 MBytes	246 Mbits/sec
[304]	107.0-108.0 sec	28.1 MBytes	235 Mbits/sec
[304]	108.0-109.0 sec	30.4 MBytes	255 Mbits/sec
[304]	109.0-110.0 sec	29.7 MBytes	249 Mbits/sec
[304]	110.0-111.0 sec	29.6 MBytes	249 Mbits/sec
[304]	111.0-112.0 sec	29.5 MBytes	248 Mbits/sec
[304]	112.0-113.0 sec	28.3 MBytes	238 Mbits/sec
[304]	113.0-114.0 sec	30.4 MBytes	255 Mbits/sec
[304]	114.0-115.0 sec	30.1 MBytes	253 Mbits/sec
[304]	115.0-116.0 sec	29.8 MBytes	250 Mbits/sec
[304]	116.0-117.0 sec	28.7 MBytes	241 Mbits/sec
[304]	117.0-118.0 sec	28.9 MBytes	242 Mbits/sec
[304]	118.0-119.0 sec	30.1 MBytes	252 Mbits/sec
[304]	119.0-120.0 sec	30.4 MBytes	255 Mbits/sec
[ID]	Interval	Transfer	Bandwidth
[304]	0.0-120.0 sec	3596 MBytes	251 Mbits/sec

Done.

5G