

Global United Technology Services Co., Ltd.

Report No.: GTSE13040056001

TEST REPORT

TAE Electronics CO., LTD **Applicant:**

No.8 Area D Xiongxing Industrial Park, Gaoxing District, **Address of Applicant:**

Qingyuan city, Guangdong province, China

Equipment Under Test (EUT)

Product Name: Tablet PC

Model No.: V1003, M1003, M1004, M1005, M1006, MA1001, MA1002,

MA1003, MA1004

FCC ID: 2AAB3V1003

FCC CFR Title 47 Part 15 Subpart B:2012 **Applicable standards:**

May 14, 2013 Date of sample receipt:

May 14-17, 2013 **Date of Test:**

May 20, 2013 Date of report issue:

PASS * Test Result:

Authorized Signature:

Robinson Lo **Laboratory Manager**

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the GTS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of GTS International Electrical Approvals or testing done by GTS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by GTS International Electrical Approvals in writing.

This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

^{*} In the configuration tested, the EUT complied with the standards specified above.



2 Version

Version No.	Date	Description
00	May 20, 2013	Original

Prepared By:	hank. yan	Date:	May 20, 2013	
	Project Engineer			
Check By:	Hams. Hu	Date:	May 20, 2013	
	Reviewer	_		



3 Contents

			Page
1	COV	/ER PAGE	1
2	VER	SION	2
3	CON	NTENTS	3
4	TES	T SUMMARY	4
5	GEN	IERAL INFORMATION	5
	5.1	CLIENT INFORMATION	5
	5.2	GENERAL DESCRIPTION OF EUT	
	5.3	TEST MODE	
	5.4	TEST FACILITY	6
	5.5	TEST LOCATION	
	5.6	DESCRIPTION OF SUPPORT UNITS	
	5.7	DEVIATION FROM STANDARDS	
	5.8	ABNORMALITIES FROM STANDARD CONDITIONS	
	5.9	OTHER INFORMATION REQUESTED BY THE CUSTOMER	
6	TES	T INSTRUMENTS LIST	8
7	TES	T RESULTS AND MEASUREMENT DATA	9
	7.1	CONDUCTED EMISSIONS	9
	7.2	RADIATED EMISSION	
8	TES	T SETUP PHOTO	9
9	EUT	CONSTRUCTIONAL DETAILS	g



4 Test Summary

Test Item	Section in CFR 47	Result	
Conducted Emission	Part15.107	PASS	
Radiated Emissions	Part15.109	PASS	

PASS: The EUT complies with the essential requirements in the standard.



5 General Information

5.1 Client Information

Applicant:	TAE Electronics CO., LTD	
Address of Applicant:	No.8 Area D Xiongxing Industrial Park, Gaoxing District, Qingyuan city Guangdong province, China	
Manufacturer :	TAE Electronics CO., LTD	
Address of Manufacturer :	No.8 Area D Xiongxing Industrial Park, Gaoxing District, Qingyuan city, Guangdong province, China	

5.2 General Description of EUT

Product Name:	Tablet PC
Model No.:	V1003, M1003, M1004, M1005, M1006, MA1001, MA1002, MA1003 MA1004
Remark:	Only the Model No. V1003 was tested, since the electrical circuit design PCB layout, Electrical Parts and Figure are identical to the basic mode except the model name and appearance color for commercial purpose.
Power supply:	Model No. :JOD-050200 Input: AC 100-240V 50/60Hz 0.3A Output: DC 5.0V 2.0A Or DC 3.7V Li-ion Battery

5.3 Test mode

Test mode:				
Playing mode	Keep the EUT in Playing mode			
Video Record mode	Keep the EUT in Video Recording mode			
PC mode	Keep the EUT in exchanging data mode.			
HDMI mode	Keep the EUT in video playing with HDMI output mode.			

Shenzhen, China 518102

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960



5.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• CNAS —Registration No.: CNAS L5775

CNAS has accredited Global United Technology Services Co., Ltd. To ISO/IEC 17025 General Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• FCC —Registration No.: 600491

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fuly described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, July 20, 2010.

• Industry Canada (IC)

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. Has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-1.

5.5 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen,

China

Tel: 0755-27798480 Fax: 0755-27798960

5.6 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC ID/DoC
HP	Printer	CB495A	05257893	DoC
DELL	PC	OPTIPLEX745	GTS312	DoC
DELL	MONITOR	E178FPC	N/A	DoC
DELL	KEYBOARD	SK-8115	N/A	DoC
DELL	MOUSE	MOC5UO	N/A	DoC
PHILIPS	LCD TV	19PFL3120/T3	AU1A1212002906	DoC

Shenzhen, China 518102

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960



5.7 Deviation from Standards

Biconical, log.per. antenna and horn antenna were used instead of dipole antenna. Semi-anechoic Chamber was used as alternation of open air test sites, and all test suites were performed with radiated method in it.

5.8 Abnormalities from Standard Conditions

None.

5.9 Other Information Requested by the Customer

None.



6 Test Instruments list

Radi	Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)	
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.0(L)*6.0(W)* 6.0(H)	GTS250	Mar. 29 2013	Mar. 28 2014	
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A	
3	ESU EMI Test Receiver	R&S	ESU26	GTS203	Jul. 07 2012	Jul. 06 2013	
4	BiConiLog Antenna	SCHWARZBECK	VULB9163	GTS214	Mar. 09 2013	Mar. 08 2014	
5	Double -ridged waveguide horn	SCHWARZBECK	9120D	GTS208	Mar. 9 2013	Mar. 08 2014	
6	RF Amplifier	HP	8347A	GTS204	Jul. 07 2012	Jul. 06 2013	
7	Preamplifier	HP	8349B	GTS206	Jul. 07 2012	Jul. 06 2013	
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A	
9	Coaxial cable	GTS	N/A	GTS210	Jul. 07 2012	Jul. 06 2013	
10	Coaxial Cable	GTS	N/A	GTS211	Jul. 07 2012	Jul. 06 2013	
11	Thermo meter	N/A	N/A	GTS256	Jul. 07 2012	Jul. 06 2013	

Con	Conducted Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)	
1	Shielding Room	ZhongYu Electron	7.0(L)x3.0(W)x3.0(H)	GTS264	Sep. 08 2011	Sep. 07 2013	
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	Jul. 03 2012	Jul. 02 2013	
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	Jul. 03 2012	Jul. 02 2013	
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	Jul. 03 2012	Jul. 02 2013	
5	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	Jul. 03 2012	Jul. 02 2013	
6	Coaxial Cable	GTS	N/A	GTS227	Jul. 03 2012	Jul. 02 2013	
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A	

Gene	General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)	
1	Barometer	ChangChun	DYM3	GTS257	July 10 2012	July 09 2013	

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960



7 Test Results and Measurement Data

7.1 Conducted Emissions

Test Requirement:	FCC Part15 B Section 15.107				
Test Method:	ANSI C63.4:2003				
Test Frequency Range:	150KHz to 30MHz				
Class / Severity:	Class B				
Receiver setup:	RBW=9KHz, VBW=30KHz, Sv	weep time=auto			
Limit:	Fraguency range (MHz)	Limit (c	lBuV)		
	Frequency range (MHz)	Quasi-peak	Average		
	0.15-0.5	66 to 56*	56 to 46*		
	0.5-5	56	46		
	5-30 * Decreases with the logarithm	60	50		
Test setup:	Reference Plane	ir or the frequency.			
·	LISN 40cm 80cm Filter AC power Equipment E.U.T Equipment Under Test LISN: Line Impedence Stabilization Network Test table height=0.8m				
Test procedure:	 The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement. 				
Test Instruments:	Refer to section 6 for details				
Test mode:	Pre-scan all modes in section 5.3, and found the PC mode which is the worst mode, so only the data of worst mode was show on the test report.				
Test results:	Pass				

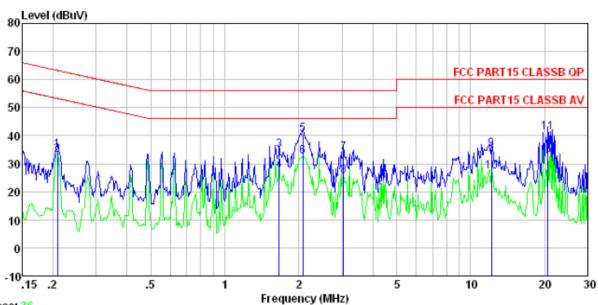
Shenzhen, China 518102

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960



Measurement Data

Line:



Trace: 36

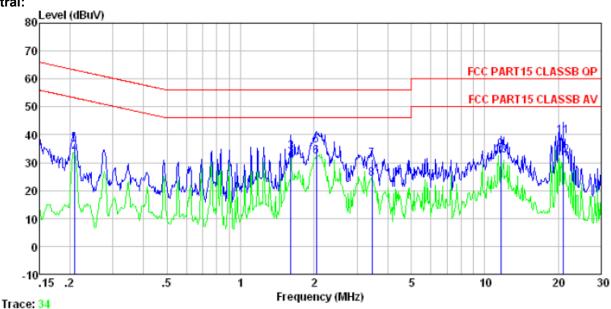
Condition : FCC PART15 CLASSB QP LISN-2012 LINE

Job No. : 560RF Test mode : PC mode Test Engineer: Jim

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBu₹	dB	d₿	dBu₹	dBuV	dB	
1	0.208	35.11	-0.23	0.10	34.98		-28. 29	
2 3	0.208	33. 23	-0.23	0.10	33.10			Average
	1.662	34.80	-0.23	0.10	34.67		-21.33	•
4	1.662	27.82	-0.23	0.10	27.69	46.00	-18.31	Average
4 5	2.077	40.69	-0.24	0.10	40.55	56.00	-15.45	QP
6	2.077	32.59	-0.24	0.10	32.45	46.00	-13.55	Average
7	3.041	33.84	-0.25	0.10	33.69	56.00	-22.31	QP
8	3.041	25.79	-0.25	0.10	25.64	46.00	-20.36	Average
9	12.188	35.26	-0.45	0.20	35.01	60.00	-24.99	QP
10	12.188	27.33	-0.45	0.20	27.08	50.00	-22.92	Average
11	20.594	41.70	-0.64	0.21	41.27	60.00	-18.73	QP
12	20.594	33.68	-0.64	0.21	33.25	50.00	-16.75	Average



Neutral:



Condition : FCC PART15 CLASSB QP LISN-2012 NEUTRAL

Job No. : 560RF Test mode : PC mode Test Engineer: Jim

CSC	Freq	Read	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBu₹	dBuV	dB	
1	0.208	36.96	-0.09	0.10	36.97		-26.30	
2 3	0.208	33.87	-0.09	0.10	33.88	53. 27	-19.39	Average
3	1.610	33.90	-0.10	0.10	33.90	56.00	-22.10	QP
4	1.610	30.87	-0.10	0.10	30.87	46.00	-15.13	Average
4 5	2.044	36.27	-0.11	0.10	36.26	56.00	-19.74	QP
6	2.044	32.33	-0.11	0.10	32.32	46.00	-13.68	Average
7	3.454	31.18	-0.13	0.10	31.15	56.00	-24.85	QP
8	3.454	24. 22	-0.13	0.10	24.19	46.00	-21.81	Average
9	11.621	34.67	-0.31	0.20	34.56	60.00	-25.44	QP
10	11.621	32.72	-0.31	0.20	32.61	50.00	-17.39	Average
11	20.924	39.78	-0.55	0.21	39.44		-20.56	
12	20.924	32.81	-0.55	0.21	32.47	50.00	-17.53	Average

Remark: If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

Notes:

- 1. An initial pre-scan was performed on the line and neutral lines with peak detector.
- 2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
- 3. Final Level =Receiver Read level + LISN Factor + Cable Loss

Global United Technology Services Co., Ltd.

2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District,

Shenzhen, China 518102

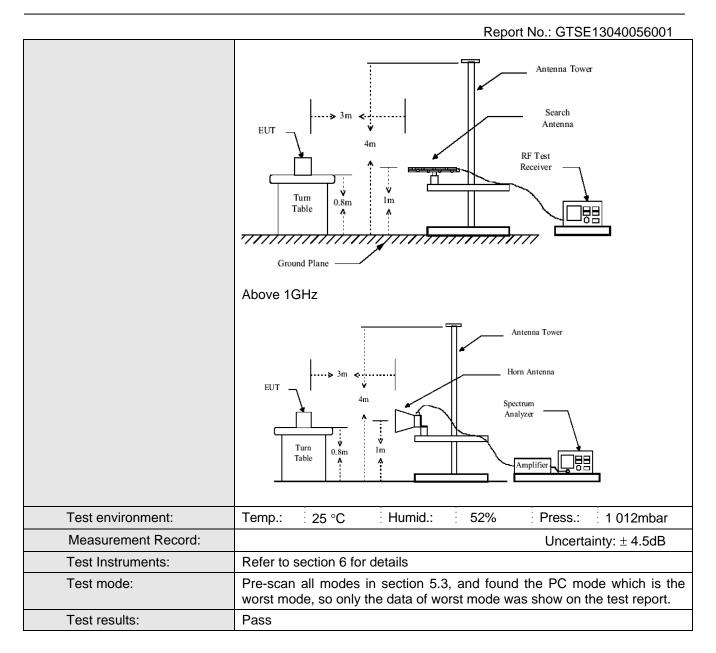
Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960



7.2 Radiated Emission

Test Requirement:	FCC Part15 B Section 15.109							
Test Method:	ANSI C63.4:2003							
Test Frequency Range:	30MHz to 6GHz							
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)							
Receiver setup:	Frequency 30MHz-	Detector Quasi-peal	RBW 120kHz	VBW 300kHz	Remark Quasi-peak Value			
	Above 1GHz	1GHz Above 1GHz Peak Peak		3MHz 10Hz	Peak Value Average Value			
Limit:			•					
Littit.	Freque	ency	Limit (dBuV/	/m @3m)	Remark			
	30MHz-8	8MHz	40.0	0	Quasi-peak Value			
	88MHz-2	16MHz	43.5	0	Quasi-peak Value			
	216MHz-9	60MHz	46.0	0	Quasi-peak Value			
	960MHz-	·1GHz	54.0	0	Quasi-peak Value			
	Above 1	GH ₇	54.0	0	Average Value			
	Above	GHZ	74.0	0	Peak Value			
Test Procedure:	The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. The EUT was set 3 meters away from the interference-receiving							
	tower.		·		ole-height antenna			
	ground to de	termine the n d vertical pol	naximum value	e of the field	r meters above the d strength. Both are set to make the			
	and then the	antenna was table was tur	tuned to heig	hts from 1 r	ed to its worst case meter to 4 meters 0 degrees to find the			
	5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.							
	6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.							
Test setup:	Below 1GHz							





Note:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

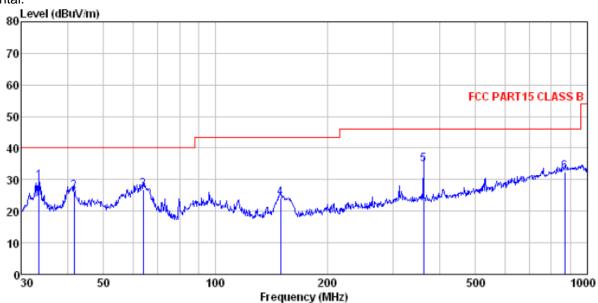
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor - Preamplifier Factor



Measurement Data

Below 1GHz

Horizontal:



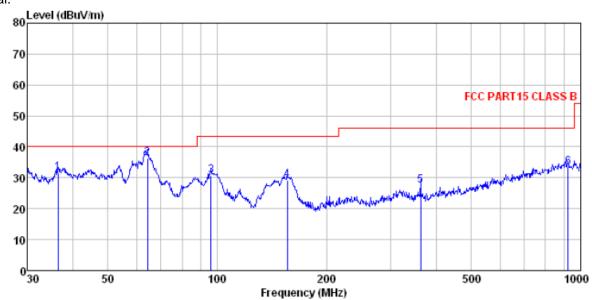
: 3m chamber : FCC PART15 CLASS B 3m VULB9163 -2012-05 HORIZONTAL : 560RF

Site : 3m chaml
Condition : FCC PAR'
Job No. : 560RF
Test Mode : PC mode
Test Engineer: Edward

621	rugineer.	Edward							
		ReadAntenna		Cable	Preamo		Limit	Over	
	Free		Factor						Romark
	rreq	rever	Pactor	LUSS	ractor	Peact	Line	LIMIT	Kemark
	MHz	dBu∀	dB/m	dB	dB	dBuV/m	dBuV/m	dΒ	
1	33.562	45 10	15.78	0.59	32 06	29.50	40.00	-10 E0	OP
1	33.002	40.19	10.10	0.09	32.00	20.00	40.00	-10.00	QI.
2	41.713	41.19	16.58	0.68	32.04	26.41	40.00	-13.59	QP
3	63.983	43 16	14.88	0.89	31 92	27.01	40 00	-12 99	ΩP
_									
4	149.486	43.35	11.31	1.56	31.98	24.24	43.50	-19.26	QP
5	362.985	47.80	16.45	2.68	31.99	34.94	46.00	-11.06	QΡ
6	869.130	35.10	23.78	4.74	31.22	32.40	46.00	-13.60	QP



Vertical:



Site

: 3m chamber : FCC PART15 CLASS B 3m VULB9163 -2012-05 VERTICAL : 560RF

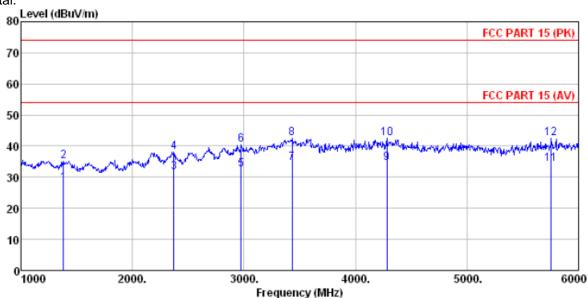
Condition : FCC PAR'
Job No. : 560RF
Test Mode : PC mode
Test Engineer: Edward

030	THE THECT.	Edward							
		Read	Antenna	Cable	Preamp		Limit	Over	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
		20002		2000		20001	22110	22312	1103114111
	MHz	dBuV	dB/m	dB		dBuV/m	JP., 77-	dB	
	JiLTIZ	abuv	CD/ JIL	ш	ш	and a / m	apa s/m	ш	
1	36.509	46.76	16.13	0.62	32.06	31.45	40.00	-8.55	QP
2	64.208	52.47	14.74	0.90	31.91	36.20	40.00	-3.80	QP
3	96.099	45.35	15.99	1.16	31.75	30.75	43.50	-12.75	QP
4	155.910			1.60		29.15			
5	362.985				31.99				
6	922.516	35.64	24.01	4.93	31.19	33.39	46.00	-12.61	QP



Above 1GHz

Horizontal:



: 3m chamber : FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) HORIZONTAL : 560RF

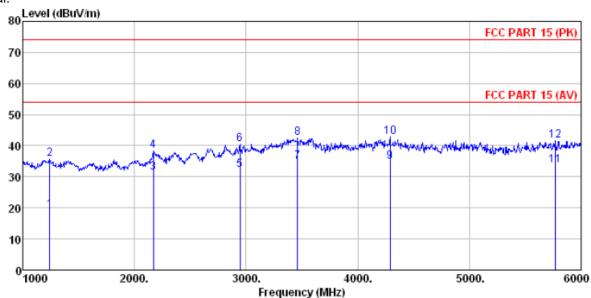
Site Condition Job No. Test Mode : PC mode Test Engineer: Edward

		ReadAntenna		Cable	Preamp		Limit	Over	
	Freq	Level	Factor		Factor		Line	Limit	Remark
	MHz	dBu∜	dB/m	₫B		dBuV/m	dBuV/m	<u>d</u> B	
1	1380.000	31.30	25.64	4.60	33.39	28.15	54.00	-25.85	Average
2	1380.000	38.30	25.64	4.60	33.39	35.15	74.00	-38.85	Peak
3	2370.000	32.50	27.65	5.36	34.03	31.48	54.00	-22.52	Average
4	2370.000	39.22	27.65	5.36	34.03	38.20	74.00	-35.80	Peak
5	2975.000	31.60	28.45	5.90	33.35	32.60	54.00	-21.40	Average
6	2975.000	39.35	28.45	5.90	33.35	40.35	74.00	-33.65	Peak
7	3430.000	31.94	28.72	6.82	32.83	34.65	54.00	-19.35	Average
8	3430.000	39.77	28.72	6.82	32.83	42.48	74.00	-31.52	Peak
9	4280.000	27.69	30.58	8.14	31.86	34.55	54.00	-19.45	Average
10	4280.000	35.55	30.58	8.14	31.86	42.41	74.00	-31.59	Peak
11	5755.000	24.19	32.59	9.86	32.27	34.37	54.00	-19.63	Average
12	5755.000	32.37	32.59	9.86	32.27	42.55	74.00	-31.45	Peak

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960



Vertical:



Site

3m chamber FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) VERTICAL Condition

Job No. Test Mode Test Engir 560RF PC mode

est	Engineer:		Ant enna	Cable	Preamp		Limit	Over	
	Freq		Factor		Factor	Level	Line		Remark
	MHz	dBu∜	<u>dB</u> /m	₫B	dB	dBuV/m	dBuV/m	<u>d</u> B	
1	1240.000	22.30	25.50	4.50	33.16	19.14	54.00	-34.86	Average
2	1240.000	38.93	25.50	4.50	33.16	35.77	74.00	-38.23	Peak
3	2170.000	32.60	27.74	5.15	34.27	31.22	54.00	-22.78	Average
4	2170.000	39.74	27.74	5.15	34.27	38.36	74.00	-35.64	Peak
5	2945.000	31.40	28.43	5.88	33.39	32.32	54.00	-21.68	Average
6	2945.000	39.52	28.43	5.88	33.39	40.44	74.00	-33.56	Peak
7	3460.000	31.79	28.84	6.88	32.79	34.72	54.00	-19.28	Average
8	3460.000	39.59	28.84	6.88	32.79	42.52	74.00	-31.48	Peak
9	4290.000	27.89	30.65	8.15	31.84	34.85	54.00	-19.15	Average
10	4290.000	35.74	30.65	8.15	31.84	42.70	74.00	-31.30	Peak
11	5765.000	23.59	32.59	9.88	32.27	33.79	54.00	-20.21	Average
12	5765.000	31.28	32.59	9.88	32.27	41.48	74.00	-32.52	Peak



8 Test Setup Photo

Radiated Emission







Conducted Emission





9 EUT Constructional Details

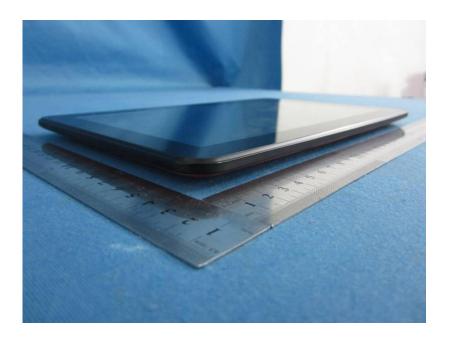




Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960













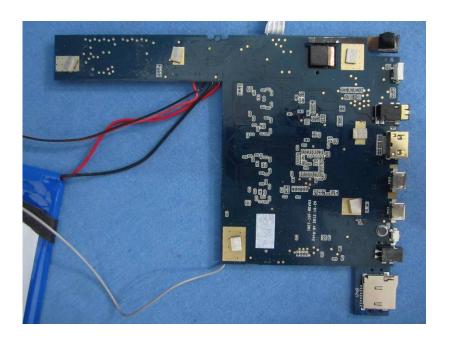




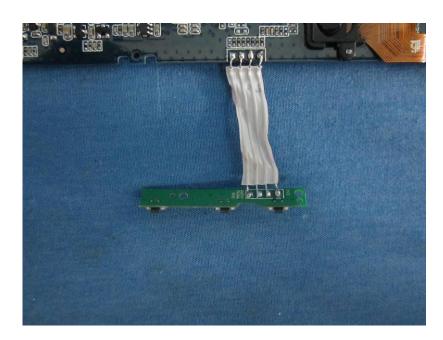


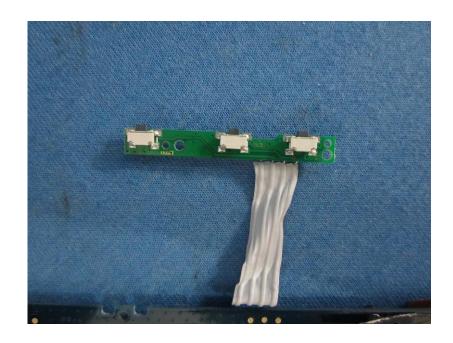
















----- end-----