

Global United Technology Services Co., Ltd.

Report No.: GTS201607000335E05

FCC Report

AOC Applicant:

14F-5, No. 258, Liancheng Rd., Zhonghe Dist., New Taipei City **Address of Applicant:**

Equipment Under Test (EUT)

Tablet PC **Product Name:**

Model No.: A724G AOC Trade mark:

FCC ID: 2AEB5-A724G

Applicable standards: FCC CFR Title 47 Part 15 Subpart B:2015

July 25, 2016 Date of sample receipt:

Date of Test: July 25-28, 2016

July 29, 2016 Date of report issue:

Test Result: PASS *

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

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.

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2 Version

Version No.	Date	Description
00	July 29, 2016	Original

Prepared By:	Edward. Pan	Date:	July 29, 2016
	Project Engineer		
Check By:	Andy w	Date:	July 29, 2016
	Reviewer		



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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.

Remark: Test according to ANSI C63.4:2014

Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz ~ 30MHz	± 4.34dB	(1)
Radiated Emission	30MHz ~ 1000MHz	± 4.24dB	(1)
Radiated Emission	1GHz ~ 26.5GHz	± 4.68dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	± 3.45dB	(1)

Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.



5 General Information

5.1 Client Information

Applicant:	AOC
Address of Applicant:	14F-5, No. 258, Liancheng Rd., Zhonghe Dist., New Taipei City Taiwan
Manufacturer:	AOC
Address of Manufacturer:	14F-5, No. 258, Liancheng Rd., Zhonghe Dist., New Taipei City Taiwan

5.2 General Description of EUT

Product Name:	Tablet PC
Model No.:	A724G
Power supply:	Adapter Model No.: JHD-AP013U-050150BB-A Input: AC 100-240V, 50/60Hz, 0.35A Output: DC 5.0V, 1500mA or DC 3.7V 2400mAh Li-ion Battery

5.3 Test mode

Test mode:	
PC mode	Keep the EUT in exchanging data mode.
Video Playing mode	Keep the EUT in video plyaing mode.
REC mode	Keep the EUT in video recording mode.

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:

• FCC —Registration No.: 600491

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, June 22, 2016.

• Industry Canada (IC) —Registration No.: 9079A-2

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-2, June 26, 2013.

5.5 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrrial Zone, Xixiang

Road, Baoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480 Fax: 0755-27798960

5.6 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC Approval
Apple	PC	A1278	C1MN99ERDTY3	FCC DoC
DELL	KEYBOARD	SK-8115	N/A	FCC DoC
DELL	MOUSE	MOC5UO	N/A	FCC DoC
DELTA	ADAPTER	ADP-60ADT	N/A	FCC DoC

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.

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6 Test Instruments list

Radia	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	July. 03 2015	July. 02 2020
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	July. 02 2016	July. 01 2017
4	BiConiLog Antenna	SCHWARZBECK	VULB9163	GTS214	July. 05 2016	July. 04 2017
5	Double -ridged waveguide horn	SCHWARZBECK	9120D	GTS208	July. 05 2016	July. 04 2017
6	RF Amplifier	HP	8347A	GTS204	July. 02 2016	July. 01 2017
7	Broadband Preamplifier	SCHWARZBECK	BBV9718	GTS535	July. 02 2016	July. 01 2017
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial cable	GTS	N/A	GTS210	July. 04 2016	July. 03 2017
10	Coaxial Cable	GTS	N/A	GTS211	July. 04 2016	July. 03 2017
11	Thermo meter	N/A	N/A	GTS256	July. 05 2016	July. 04 2017

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	7.3(L)x3.1(W)x2.9(H)	GTS252	May. 16 2014	May. 15 2019	
2	EMI Test Receiver	R&S	ESCI 7	GTS552	April. 28 2016	April. 27 2017	
3	Pulse Limiter	R&S	ESH3-Z2	GTS224	July. 02 2016	July. 01 2017	
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	July. 02 2016	July. 01 2017	
5	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	July. 02 2016	July. 01 2017	
6	Coaxial Cable	GTS	N/A	GTS227	July. 04 2016	July. 03 2017	
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A	
8	Thermo meter	KTJ	TA328	GTS233	July. 06 2016	July. 05 2017	

Gen	General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)	
1	Barometer	ChangChun	DYM3	GTS257	July. 06 2016	July. 05 2017	



7 Test Results and Measurement Data

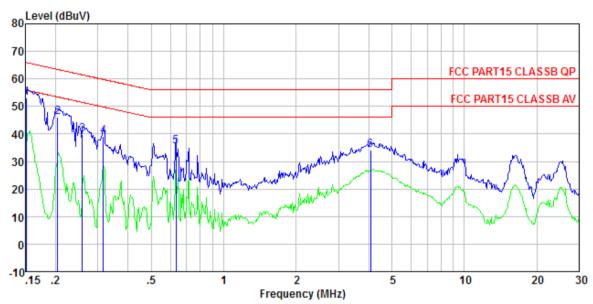
7.1 Conducted Emissions

Test Requirement:	FCC Part15 B Section 15.107						
Test Method:	ANSI C63.4:2014						
Test Frequency Range:	150KHz to 30MHz						
Class / Severity:	Class B						
Receiver setup:	RBW=9KHz, VBW=30KHz, Sv	weep time=auto					
Limit:	Frequency range (MHz)	Limit (c	dBuV)				
		Quasi-peak	Average				
	0.15-0.5	66 to 56*	56 to 46*				
	0.5-5	56	46				
	5-30	60	50				
	* Decreases with the logarithn	n of the frequency.					
Test setup:	Reference Plane		_				
	AUX Filter AC power Equipment E.U.T Test table/Insulation plane Remark E.U.T. Equipment Under Test LISN: Line Impedence Stabilization Network Test table height=0.8m						
Test procedure:	The E.U.T and simulators a line impedance stabilization 50ohm/50uH coupling impe	n network (L.I.S.N.). Th	nis provides a				
	2. The peripheral devices are also connected to the main power throughout the coupling impedance with 50ohn termination. (Please refer to the block diagram of the test setup an photographs).						
	3. 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 change according to ANSI C63.4:2014 on conducted measurement.						
Test Instruments:	Refer to section 6 for details						
Test mode:	Pre-scan all modes in section worst mode, so only the data of						
Test results:	Pass						
	•						



Measurement Data

Line:



Site : Shielded room

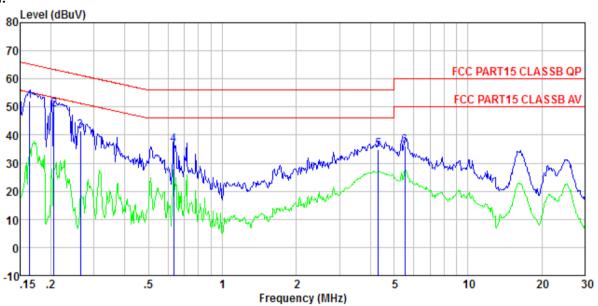
Condition : FCC PART15 CLASSB QP LISN-2013 LINE

Job No. : 0335 Test mode : PC mode Test Engineer: Boy

	Freq		LISN Factor					Remark
	MHz	dBuV	dB	d₿	dBu₹	dBu√	dB	
1 2 3 4 5	0. 204 0. 259 0. 317	45. 86 39. 42 39. 09	0.15 0.13 0.12 0.11 0.13	0.13 0.11 0.10	46.12 39.65 39.30	63. 45 61. 47 59. 80	-17.33 -21.82 -20.50	QP QP QP
6			0.10					-



Neutral:



Site : Shielded room

Condition : FCC PART15 CLASSB QP LISN-2013 NEUTRAL

Job No. : 0335 Test mode : PC mode Test Engineer: Boy

,,,,	Freq	Read	LISN Factor				Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBu₹	dB	
1 2 3 4	0. 206 0. 264 0. 634	41.30 36.33	0. 07 0. 07 0. 06 0. 07	0.13 0.11 0.13	52. 20 49. 11 41. 47 36. 53	63.36 61.29 56.00	-14. 25 -19. 82 -19. 47	QP QP QP
5 6			0.15 0.16		34.85 36.10			•

Notes:

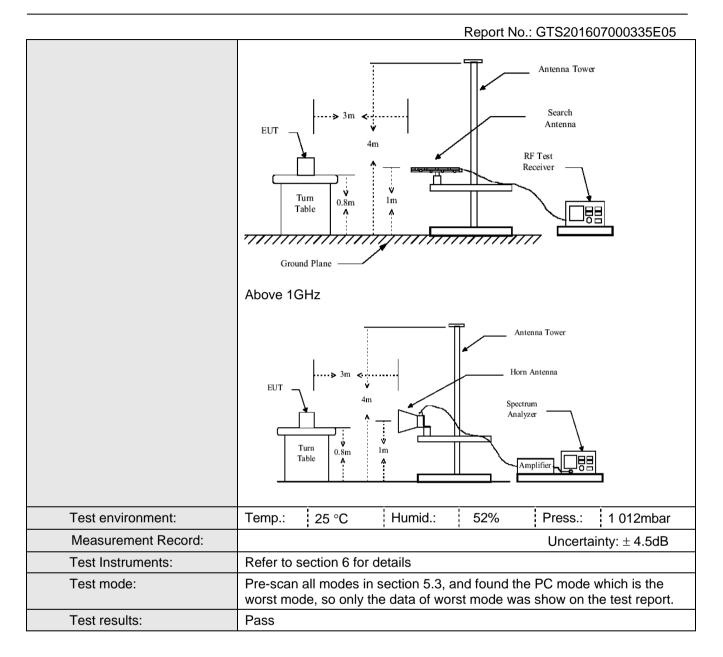
- 1. An initial pre-scan was performed on the line and neutral lines with peak detector.
- 2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
- 3. Final Level =Receiver Read level + LISN Factor + Cable Loss
- 4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.



7.2 Radiated Emission

 Naulateu Lillission							
Test Requirement:	FCC Part15 B Section 15.109						
Test Method:	ANSI C63.4:2014						
Test Frequency Range:	30MHz to 25GHz						
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)						
Receiver setup:							
	Frequency Detector RBW VBW Remark 30MHz- Quasi-peak 120kHz 300kHz Quasi-peak Val						
	1GHz	Quasi-pea	K 120KHZ	300KI 12	Quasi-peak value		
	Above 1GHz	Peak	1MHz	3MHz	Peak Value		
	710010 10112	Peak	1MHz	10Hz	Average Value		
Limit:					T		
	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		46.0	0	Quasi-peak Value		
	960MHz-	-1GHz	54.0	0	Quasi-peak Value		
	Above 1	IGHz	54.0	0	Average Value		
	7,5000		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						
			•		ole-height antenna		
	ground to de	termine the r	naximum valu	e of the field	r meters above the d strength. Both are set to make the		
	4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.						
	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

For above 1GHz test,1GHz to 25GHz all have been tested, only worse case 1GHz to 6GHz is reported, from 6GHz to 25GHz, no emission is found

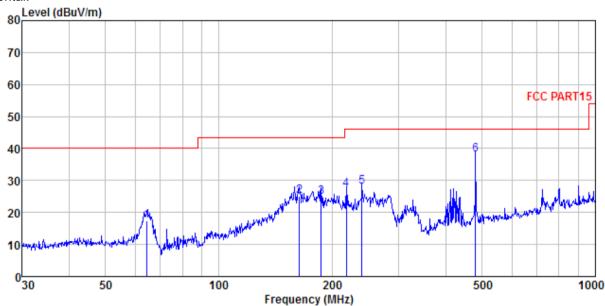
Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960



Measurement Data

Below 1GHz

Horizontal:



Site

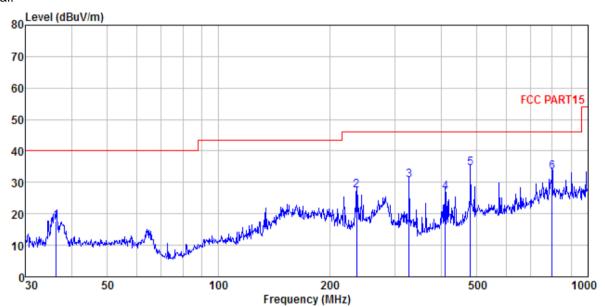
: 3m chamber : FCC PART15 3m VULB9163-2013M HORIZONTAL : 0335 Condition

Job No. Test Mode : PC mode Test Engineer: Sky

	Freq		Antenna Factor						Remark
	MHz	dBu∜	dB/m			$\overline{dBuV/m}$	$\overline{dBuV/m}$		
1 2 3 4 5 6	64.433 163.755 187.096 218.309 239.987 480.528	41.94 39.83 41.34 41.41	10.77 12.32 13.13 14.09	1.65 1.78 1.95 2.07	29.34 29.25 29.38 29.56	24.68 27.04 28.01	43.50 43.50 46.00 46.00	-18.48 -18.82 -18.96 -17.99	Peak Peak Peak Peak



Vertical:



Site Condition

3m chamber FCC PART15 3m VULB9163-2013M VERTICAL

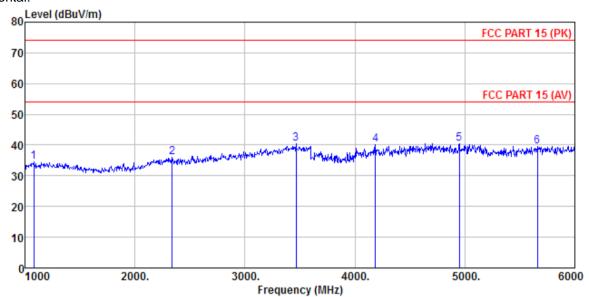
: PC TAN : 0335 : PC mode Job No. Test Mode : Test Engineer

62(rugineer:									
		Read	Ant enna	Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark	
	-									
	MHz	dBu∀	dB/m	dB	B	dBuV/m	dBuV/m	dB		•
			,	_	_			_		
1	36.381	32.39	14.68	0.62	30.06	17.63	40.00	-22.37	Peak	
2	236.645			2.05	29.54					
3	327.887	42.36	15.66	2.51	29.84	30.69	46.00	-15.31	Peak	
4	410.383	36.07	17.26	2.91	29.48	26.76	46.00	-19.24	Peak	
5	480.528	42.70	18.07	3.22	29.34	34.65	46.00	-11.35	Peak	
6	798.980	36.17	22.06	4.45	29.20	33.48	46.00	-12.52	Peak	



Above 1GHz

Horizontal:



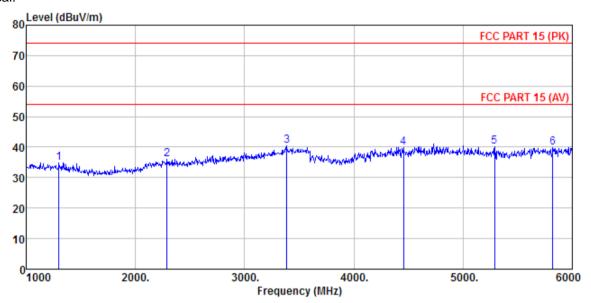
: 3m chamber : FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) HORIZONTAL : 0335

Site Condition Job No. Test Mode Test Engir : PC mode

:St	Engineer:	эку							
		Read	Intenna	Cable	Preamp		Limit	0ver	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
	MHz	dBu∀	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1080.000	38.30	24.70	4.37	32.89	34.48	74.00	-39.52	Peak
2	2340.000	37.10	27.77	5.33	34.07	36.13	74.00	-37.87	Peak
3	3465.000	37.58	28.87	6.89	32.79	40.55	74.00	-33.45	Peak
4	4185.000	33.96	30.18	8.04	31.98	40.20	74.00	-33.80	Peak
5	4950.000	32.08	31.91	8.71	32.16	40.54	74.00	-33.46	Peak
6	5660,000				32, 34				



Vertical:



Site

: 3m chamber : FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) VERTICAL : 0335 Condition

Job No. Test Mode Test Engi : PC mode

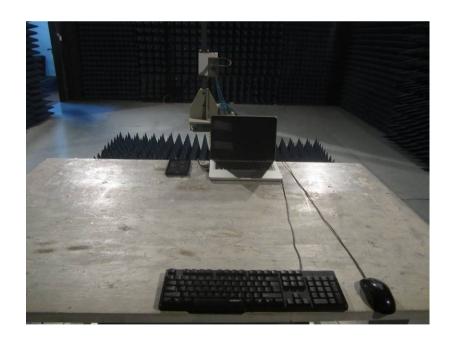
est	Engineer:	эку							
	-	Read	Antenna	Cable	Preamp		Limit	Over	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
	MHz	dBu∀	αD/m	аb	dB	abuv/m	abuv/m	ав	
1	1300.000	38.00	25.63	4.54	33.27	34.90	74.00	-39.10	Peak
2	2290.000	36.78	27.98		34.13				
3	3385.000	38.05	28.57	6.74	32.89	40.47	74.00	-33.53	Peak
4	4455.000	32.13	31.23	8.30	31.91	39.75	74.00	-34.25	Peak
5	5290.000	31.59	31.72	9.19	32.32	40.18	74.00	-33.82	Peak
6	5820.000	29.45	32.68	9.95	32.23	39.85	74.00	-34.15	Peak



8 Test Setup Photo

Radiated Emission







Conducted Emission



9 EUT Constructional Details

Reference to the test report No. GTS201607000335E01

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