

FCC PART 15B, CLASS B
MEASUREMENT AND TEST REPORT

For

Archos S.A

12, Rue Ampere 91430 Igny, France

FCC ID: SOVAC101XS2

Report Type: Original Report	Product Type: 10.1 inch Tablet PC
Test Engineer: <u>Rocky Kang</u>	<i>Rocky Kang</i>
Report Number: <u>RSZ130628002-00A</u>	
Report Date: <u>2013-07-26</u>	
Reviewed By: <u>RF Leader</u>	<i>Alvin Huang</i>
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Note: This test report is prepared for the customer shown above and for the equipment described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp.

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The Archos S.A's product, model number: AC101XS2 (FCC ID: SOVAC101XS2) or the "EUT" as referred to in this report was a 10.1 inch Tablet PC, which was measured approximately: 27.0 cm (L) x 16.8 cm (W) x 0.8 cm (H), rated input voltage: DC 3.7V rechargeable Li-ion battery and DC 5.0V charging from adapter. The highest operating frequency is 1.6 GHz.

Adapter information:

Model: HND050200X

Input: 100-240V 50/60Hz 0.35A MAX

Output: 5.0V 2.0A

Note: The product 10.1 inch Tablet PC, model AC101XS2 has three kinds of screen, and the difference between them is just manufactured by different suppliers, and the screen size and relative specification are the same, which was explained by the applicant in the attached declaration letter.

** All measurement and test data in this report was gathered from production sample serial number: 1306106 (Assigned by the BACL, Shenzhen). The EUT supplied by the applicant was received on 2013-06-28.*

Objective

This report is prepared on behalf of Archos S.A in accordance with Part 2-Subpart J, Part 15- Subparts A and B of the Federal Communication Commissions rules.

The objective of the manufacturer is to determine the compliance of EUT with FCC Part 15B, Class B.

Related Submittal(s)/Grant(s)

FCC Part 15.247 DTS (Wi-Fi) and 15.247 DSS (BT) submissions with FCC ID: SOVAC101XS2.

Test Facility

The test site used by Bay Area Compliance Laboratories Corp.(Shenzhen) to collect test data is located on the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on December 06, 2010. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a typical mode which is provided by manufacture.

EUT operation mode: Downloading & Charging & HDMI Playing

EUT Exercise Software

“winthrax” exercise software was used for downloading mode testing.

Equipment Modifications

No modification was made to the EUT tested.

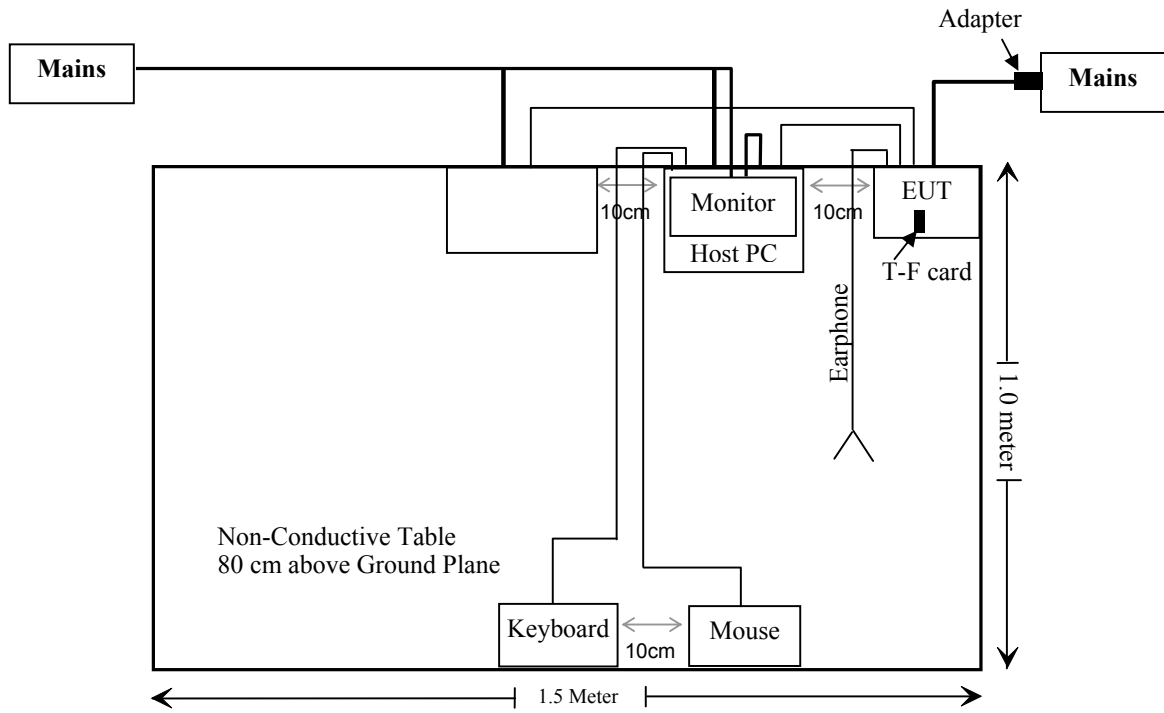
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
HU NIU	Adapter	HND050200X	N/A
N/A	Earphone	N/A	N/A
Kingston	T-F Card	SD-CO2G	N/A
DAHAN	Mouse	Hm-213	N/A
Dell	Keyboard	SK-8115	CN-ODJ313-71616-0CE-0ATP
Dell	Monitor	E1910Hc	0901137-12
Dell	PC	Inspiron660	CN-03VFMF-70163-286-04G6-A00
Samsung	HDMI Monitor	225MS	N/A

External I/O Cable

Cable Description	Length (m)	From/Port	To
Unshielded Undetachable AC Cable	1.2	Adapter	EUT
Unshielded Undetachable Earphone Cable	1.1	Earphone	EUT
Shielded Undetachable Mouse Cable	1.5	Mouse	PC
Shielded Undetachable Keyboard Cable	1.5	Keyboard	PC
Shielded Detachable HDMI Cable	1.0	HDMI Monitor	EUT
Shielded Detachable USB Cable	1.2	PC	EUT
Shielded Detachable VGA Cable	1.0	Monitor	PC
Unshielded Detachable AC Cable	1.2	Monitor	Mains
Unshielded Detachable AC Cable	1.2	PC	Mains
Unshielded Detachable AC Cable	1.2	HDMI monitor	Mains

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§15.107	AC Line Conducted Emissions	Compliance
§15.109	Radiated Emissions	Compliance

FCC §15.107 – AC LINE CONDUCTED EMISSIONS

Applicable Standard

According to FCC §15.107

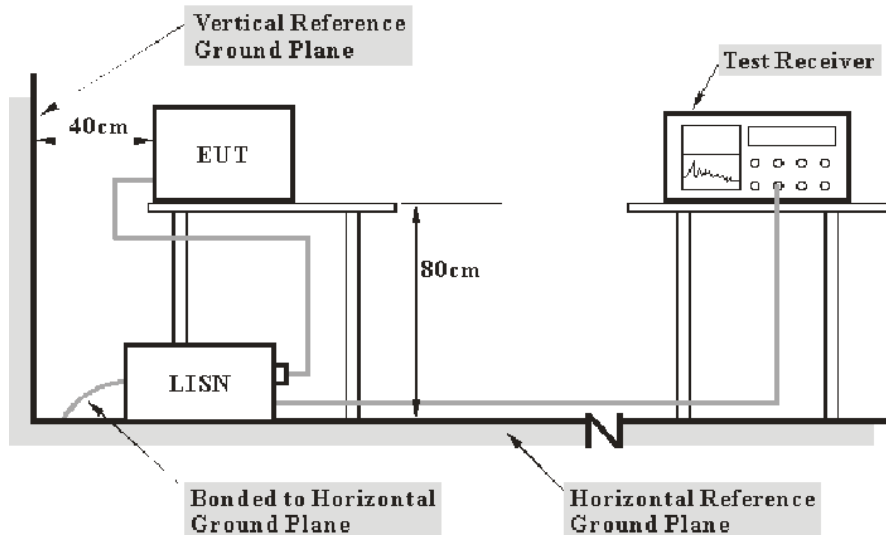
Measurement Uncertainty

Input quantities to be considered for conducted disturbance measurements may be receiver reading, attenuation of the connection between AMN/ISN and receiver, AMN/ISN voltage division factor, AMN/ISN VDF frequency interpolation and receiver related input quantities, etc.

Based on CISPR 16-4-2:2011, the expanded combined standard uncertainty of conducted disturbance test at Bay Area Compliance Laboratories Corp. (Shenzhen) is shown as below. And the uncertainty will not be taken into consideration for the test data recorded in the report

Port	Measurement uncertainty
AC Mains	3.26 dB (k=2, 95% level of confidence)
CAT 3	3.70 dB (k=2, 95% level of confidence)
CAT 5	3.86 dB (k=2, 95% level of confidence)
CAT 6	4.64 dB (k=2, 95% level of confidence)

EUT Setup



- Note: 1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The measurement procedure of EUT setup is according with ANSI C63.4-2009. The related limit was specified in FCC Part 15.107 Class B.

The spacing between the peripherals was 10 cm.

The host PC was connected to an AC 120V/60 Hz power source

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emissions, the host PC was connected to the first LISN, the the other relevant equipments were connected to the second LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCS30	100176	2013-06-17	2014-06-17
Rohde & Schwarz	LISN	ESH2-Z5	892107/021	2012-08-22	2013-08-22
Rohde & Schwarz	Transient limiter	ESH3Z2	DE25985	2012-08-09	2013-08-09

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Corrected Factor & Margin Calculation

The Corrected factor is calculated by adding LISN/ISN VDF (Voltage Division Factor), Cable Loss and Pulse Limiter Attenuation. The basic equation is as follows:

$$\text{Correction Factor} = \text{LISN VDF} + \text{Cable Loss} + \text{Pulse Limiter Attenuation}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Results Summary

According to the recorded data in following table, with the worst margin reading of:

9.8 dB at 0.254000 MHz in the Line conducted mode

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level is in compliance with the limit if

$$L_m + U_{(L_m)} \leq L_{lim} + U_{cispr}$$

in our lab., $U_{(L_m)}$ is less than U_{cispr} , if L_m is less than L_{lim} , it implies that the EUT complies with the limit.

Test Data

Environmental Conditions

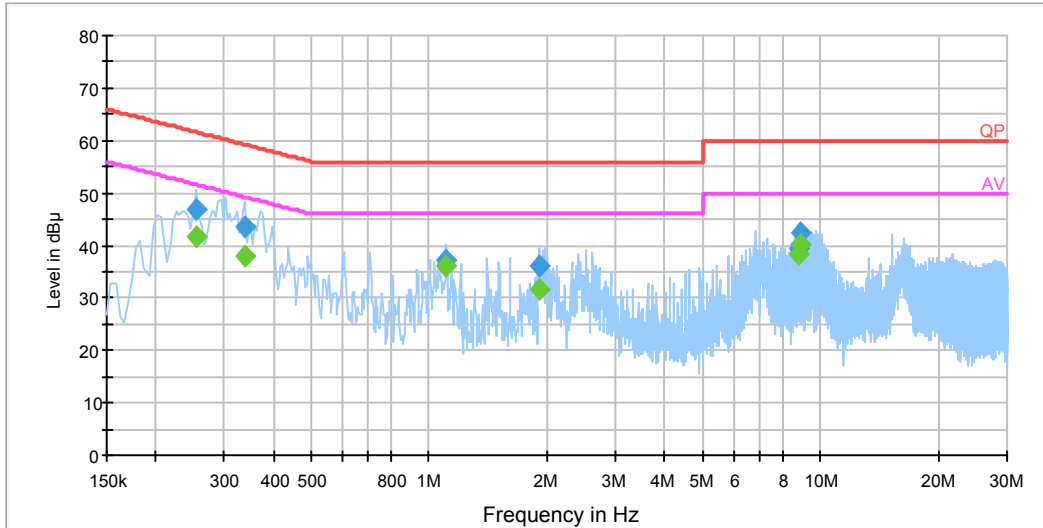
Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.1 kPa

The testing was performed by Rocky Kang on 2013-07-26.

EUT operation mode: Downloading & Charging & HDMI Playing

AC 120V/60 Hz, Line

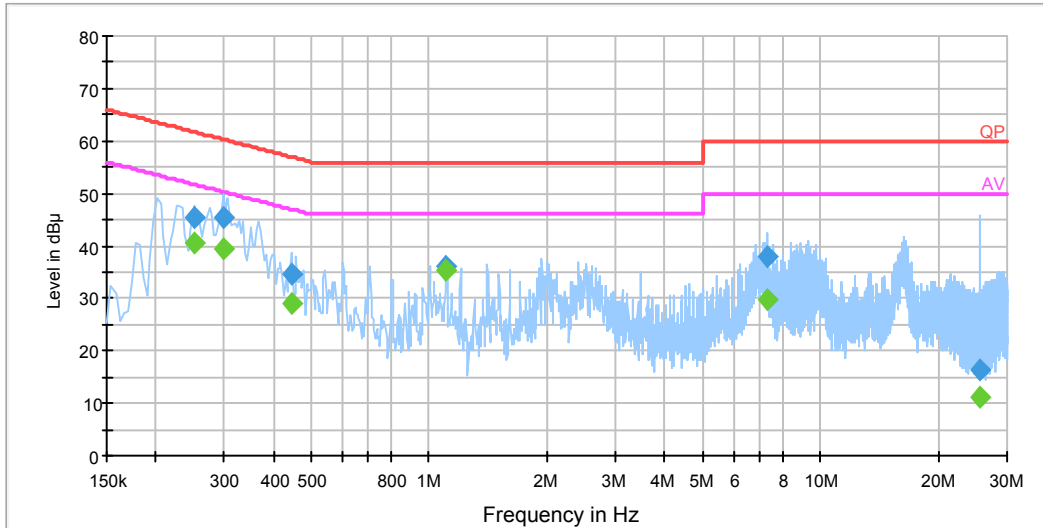
EMI Auto Test L



Frequency (MHz)	Corrected Amplitude (dBμV)	Correction Factor (dB)	Limit (dBμV)	Margin (dB)	Detector (PK/QP/Ave.)
0.254000	41.8	19.5	51.6	9.8	Ave.
1.106000	36.1	19.5	46.0	9.9	Ave.
8.850000	40.1	19.7	50.0	9.9	Ave.
0.338000	37.9	19.5	49.3	11.4	Ave.
8.750000	38.2	19.7	50.0	11.8	Ave.
1.914000	31.5	19.5	46.0	14.5	Ave.
0.254000	47.1	19.5	61.6	14.5	QP
0.338000	43.4	19.5	59.3	15.9	QP
8.850000	42.3	19.7	60.0	17.7	QP
1.106000	37.2	19.5	56.0	18.8	QP
1.914000	36.0	19.5	56.0	20.0	QP
8.750000	39.5	19.7	60.0	20.5	QP

AC 120V/60 Hz, Neutral

EMI Auto Test N



Frequency (MHz)	Corrected Amplitude (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/ QP/Ave.)
1.106000	35.4	19.5	46.0	10.6	Ave.
0.298000	39.4	19.5	50.3	10.9	Ave.
0.250000	40.5	19.5	51.8	11.3	Ave.
0.298000	45.3	19.5	60.3	15.0	QP
0.250000	45.5	19.5	61.8	16.3	QP
0.446000	28.9	19.5	46.9	18.0	Ave.
1.106000	36.2	19.5	56.0	19.8	QP
7.290000	29.6	19.8	50.0	20.4	Ave.
7.290000	37.9	19.8	60.0	22.1	QP
0.446000	34.7	19.5	56.9	22.2	QP
25.410000	11.3	20.4	50.0	38.7	Ave.
25.410000	16.4	20.4	60.0	43.6	QP

FCC §15.109 - RADIATED EMISSIONS

Applicable Standard

According to FCC §15.109

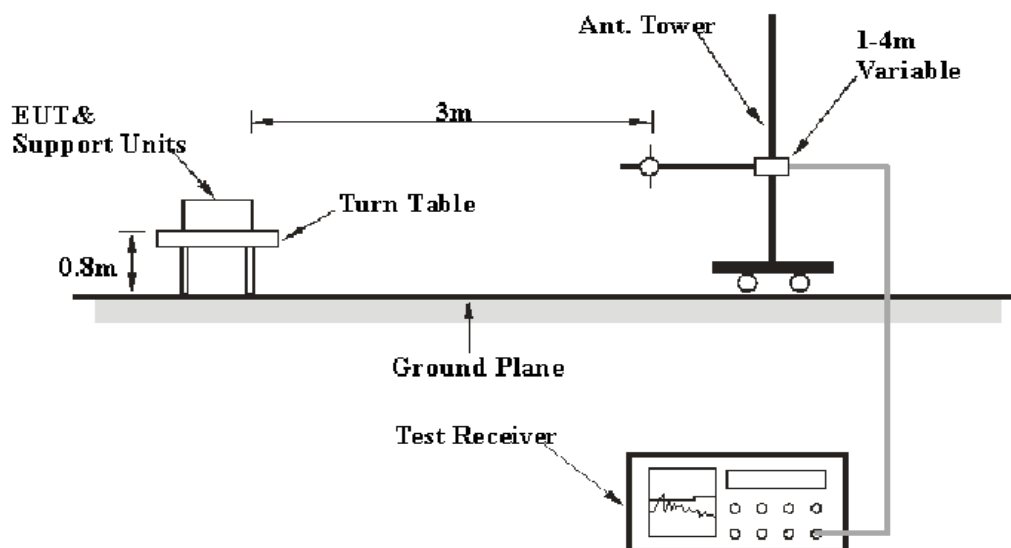
Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR 16-4-2:2011, the expanded combined standard uncertainty of radiation emissions at Bay Area Compliance Laboratories Corp. (Shenzhen) is shown in below table. And the uncertainty will not be taken into consideration for the test data recorded in the report

Frequency	Polarity	Measurement uncertainty
30MHz~200MHz	Horizontal	4.62 dB (k=2, 95% level of confidence)
	Vertical	4.54 dB (k=2, 95% level of confidence)
200MHz~1GHz	Horizontal	4.84 dB (k=2, 95% level of confidence)
	Vertical	5.91 dB (k=2, 95% level of confidence)
1 GHz~6 GHz	Horizontal/Vertical	4.68 dB (k=2, 95% level of confidence)
Above 6 GHz	Horizontal/Vertical	4.92 dB (k=2, 95% level of confidence)

EUT Setup



The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.4-2009. The specification used was the FCC Part 15.109 Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

The host PC was connected to an AC 120V/60 Hz power source.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 8 GHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz	/	Ave.

Test Procedure

During the radiated emissions, the host PC, monitor and modem were connected to the AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the Quasi-peak detection mode from 30 MHz to 1 GHz, Peak and average detection mode above 1 GHz.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	8447E	1937A01046	2012-11-24	2013-11-23
Rohde & Schwarz	EMI Test Receiver	ESCI	101122	2013-05-09	2014-05-09
Sunol Sciences	Broadband Antenna	JB1	A040904-2	2011-11-28	2014-11-27
Mini-Circuits	Amplifier	ZVA-213+	N/A	2012-11-24	2013-11-23
Sunol Sciences	Horn Antenna	DRH-118	A052304	2011-12-01	2014-11-30
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2012-11-24	2013-11-23

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Loss and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Correction Factor} = \text{Antenna Loss} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Results Summary

According to the data in the following table, with the worst margin reading of:

1.2 dB at 445.487000 MHz in the Horizontal polarization

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level is in compliance with the limit if

$$L_m + U_{(Lm)} \leq L_{lim} + U_{cispr}$$

in our lab., $U_{(Lm)}$ is less than U_{cispr} , if L_m is less than L_{lim} , it implies that the EUT complies with the limit.

Test Data

Environmental Conditions

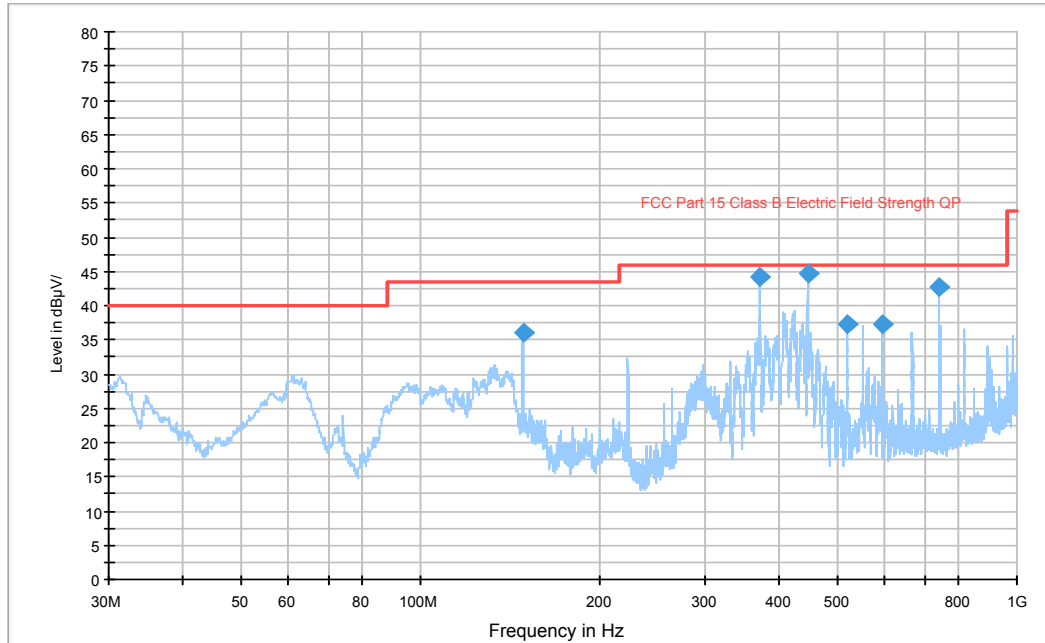
Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.1 kPa

The testing was performed by Rocky Kang on 2013-07-26.

EUT operation mode: Downloading

1) 30 MHz ~ 1 GHz

Auto Test(FCC part 15 Class B)



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna height (cm)	Antenna Polarity	Turntable position (deg)	Correction Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
445.487000	44.8	198.0	H	161.0	-11.3	46.0	1.2
371.231400	44.2	100.0	H	148.0	-13.0	46.0	1.8
742.505700	42.8	101.0	H	212.0	-6.5	46.0	3.2
148.461250	36.1	118.0	V	221.0	-14.8	43.5	7.4
594.055000	37.3	182.0	V	124.0	-9.3	46.0	8.7
519.728750	37.2	149.0	V	179.0	-10.0	46.0	8.8

2) 1 GHz ~ 8 GHz

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dB μ V/m)	FCC Part 15.109	
	Reading (dB μ V)	Detector (PK/QP/Ave.)		Height (m)	Polar (H/V)			Limit (dB μ V/m)	Margin (dB)
1110.2	45.87	Ave.	14	1.2	H	-0.58	45.29	54	8.71
1110.2	61.54	PK	14	1.2	H	-0.58	60.96	74	13.04
2032.4	37.68	Ave.	150	1.4	H	3.23	40.91	54	13.09
1711.4	38.57	Ave.	146	1.5	H	2.24	40.81	54	13.19
1362.7	39.66	Ave.	40	1.4	V	0.68	40.34	54	13.66
1711.4	56.36	PK	146	1.5	H	2.24	58.60	74	15.40
2593.1	30.69	Ave.	118	1.5	V	7.40	38.09	54	15.91
2032.4	53.17	PK	150	1.4	H	3.23	56.40	74	17.60
1362.7	55.37	PK	40	1.4	V	0.68	56.05	74	17.95
2593.1	45.31	PK	118	1.5	V	7.40	52.71	74	21.29

DECLARATION LETTER



Archos S.A.
12, Rue Ampere 91430 Igny France
Tel: 33(0)1 69 33 1690 Fax: 33(0)1 69 33 1699

Product Similarity Declaration

July 24, 2013

To:

Bay Area Compliance Labs Corp.(ShenZhen)
6/F, the 3rd Phase of Wan Li Industrial Bldg., Shihua Rd.,
FuTian Free Trade Zone, Shenzhen, China
Tel: +86 755 33320018
Fax: +86 755 33320008

Dear Sir or Madam:

We, Archos S.A, hereby declare that our product: 10.1inch Tablet pc, Model: AC101XS2 was tested by BACL.

Due to our marketing purpose, we would like to display the same device with different screens under one model No., the difference between three kinds of screen is just manufactured by different suppliers, and the screen size and relative specification are the same. No other changes are made to them.

Best Regards,

Signature:

Yves Gregoire
Head of Research and Development

*****END OF REPORT*****