SGS-CSTC Standards Technical Services Co., Ltd.

No. 1 Workshop, M-10, Middle section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057

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FCC REPORT

Application No. :	SZEM1205002561IT
Applicant:	ARCHOS SA
Manufacturer:	ARCHOS SA
Product Name:	Home Tablet
Model No.(EUT):	AC97CA
FCC ID:	SOVAC97CA
Standards:	FCC CFR Title 47 Part 15B (2011)
Date of Receipt:	2012-05-17
Date of Test:	2012-05-21 to 2012-06-14
Date of Issue:	2012-07-05
Test Result:	**PASS ***

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

Authorized Signature:

Jack Zhang
EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. 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 SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.
The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

2 Test Summary

Test Item	Test Requirement	Test method	Result
Radiated Emission (30MHz to 6GHz)	FCC CFR Title 47 Part 15B	ANSI C63.4 (2009)	PASS
Conducted Emission (150KHz to 30MHz)	FCC CFR Title 47 Part 15B	ANSI C63.4 (2009)	PASS

3 Contents

4 General Information

4.1 Client Information

Applicant:	ARCHOS SA
Address of Applicant:	12,Rue Ampere 91430 Igny France
Manufacturer:	ARCHOS SA
Address of Manufacturer:	12,Rue Ampere 91430 Igny France

4.2 General Description of EUT

Product Name:	Home Tablet	
Model No.:	AC97CA	
Trade Mark:	ARCHOS	
Sample Type:	Portable production	
Antenna Type:	Integral	
Power Supply:	AC Adapter:	MODEL: HNO090200X INPUT: AC 100-240V-50/60Hz 0.6A MAX OUTPUT: 9.0V ⎓ 2.0A
Test Voltage:	120V~60Hz	
DC Cable:	120cm	
Earphone Cable:	85cm	
USB Cable:	135cm Shield with two core	
HDMI Cable:	150cm Shield	

4.3 Test Environment and Mode

Operating Environment:	
Temperature:	23.0 °C
Humidity:	51 % RH
Atmospheric Pressure:	1006 mbar
Test mode:	
Communicate with PC mode:	Build the connection between EUT and PC, keep data exchanging.
HDMI mode:	The EUT that connect the TV through the HDMI Play the Video.
USB mode:	Playing Video via the U-Disk.
Charge mode:	The EUT charge by the AC adapter.

4.4 Description of Support Units

The EUT has been tested with associated equipment below

PC	DELL	DCSM
LCD-displaying	DELL	SP2208WFPt
KEYBOARD	DELL	SK-8115
MOUSE	Lenovo	MO28UOL
PC	IBM	8172
LCD-displaying	Lenovo	L1711pC
KEYBOARD	IBM	SK-8115
MOUSE	Lenovo	MO28UOA
Coder	HengTong ELECTRON	HT4000
Printer	Canon	BJC-1000SP
DELL Television	DELL	SP2208WFPt
SD card	Kingston	

4.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch E&E Lab,

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.6 Test Facility

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

- **CNAS (No. CNAS L2929)**
  CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 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.
- **VCCI**
  The 3m Semi-anechoic chamber, Full-anechoic Chamber and Shielded Room (7.5m x 4.0m x 3.0m) of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2197, G-416, T-1153 and C-2383 respectively.
- **FCC – Registration No.: 556682**
  SGS-CSTC Standards Technical 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 our files. Registration No.: 556682.
- **Industry Canada (IC)**
  The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1.

4.7 Deviation from Standards

None.

4.8 Abnormalities from Standard Conditions

None.

4.9 Other Information Requested by the Customer

None.

4.10 Test Instruments List

RE in Chamber					
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Due date (yyyy-mm-dd)**
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEL0017	2013-06-10
2	EMI Test Receiver	Rohde & Schwarz	ESIB26	SEL0023	2013-05-17
3	EMI Test software	AUDIX	E3	SEL0050	N/A
4	Coaxial cable	SGS	N/A	SEL0028	2013-05-29
5	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0015	2012-10-29
6	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEL0053	2013-05-17
7	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEL0006	2012-10-29
8	Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEL0076	2012-10-29
9	Band filter	Amindeon	Asi 3314	SEL0094	2013-05-17
10	Active Loop Antenna	Beijing Daze	ZN30900A	SEL0097	2012-10-28
11	EMI Test Receiver (9K-3GHz)	Rohde & Schwarz	ESCI	SEL0175	2013-05-17

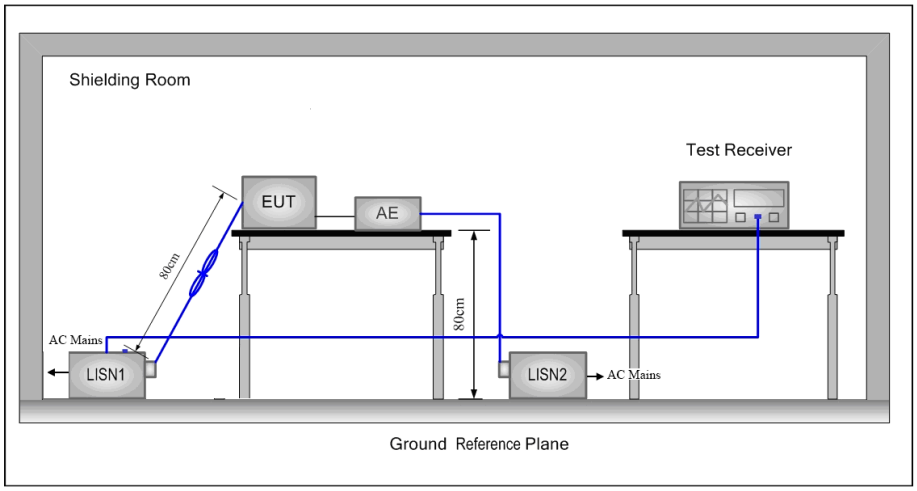
Conducted Emission					
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Due date (yyyy-mm-dd)**
1	Shielding Room	ZhongYu Electron	GB-88	SEL0042	2013-06-10
2	LISN	Rohde & Schwarz	ENV216	SEL0152	2012-10-23
3	LISN	ETS-LINDGREN	3816/2	SEL0021	2013-5-17
4	8 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T8-02	EMC0120	2012-11-11
5	4 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T4-02	EMC0121	2012-11-11
6	2 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T2-02	EMC0122	2012-11-11
7	EMI Test Receiver	Rohde & Schwarz	ESCI	SEL0022	2013-5-17
8	Coaxial Cable	SGS	N/A	SEL0025	2013-05-29

General used equipment					
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Due date (yyyy-mm-dd)**
1	Humidity/ Temperature Indicator	Shanghai	ZJ1-2B	SEL0102 to SEL0103	2012-10-27
2	Humidity/ Temperature Indicator	Shanghai	ZJ1-2B	SEL0101	2012-10-27
3	Barometer	ChangChun	DYM3	SEL0088	2013-05-17

5 Test results and Measurement Data

5.1 Conducted Emissions

Test Requirement:	FCC Part15 B
Test Method:	ANSI C63.4: 2009
Test frequency range:	150kHz to 30MHz
Limit:	Frequency range (MHz) / Limit (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 logarithm of the frequency.
Test Procedure:	1) The mains terminal disturbance voltage test was conducted in a shielded room. 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded. 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2. 5) 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: 2009 on conducted measurement.

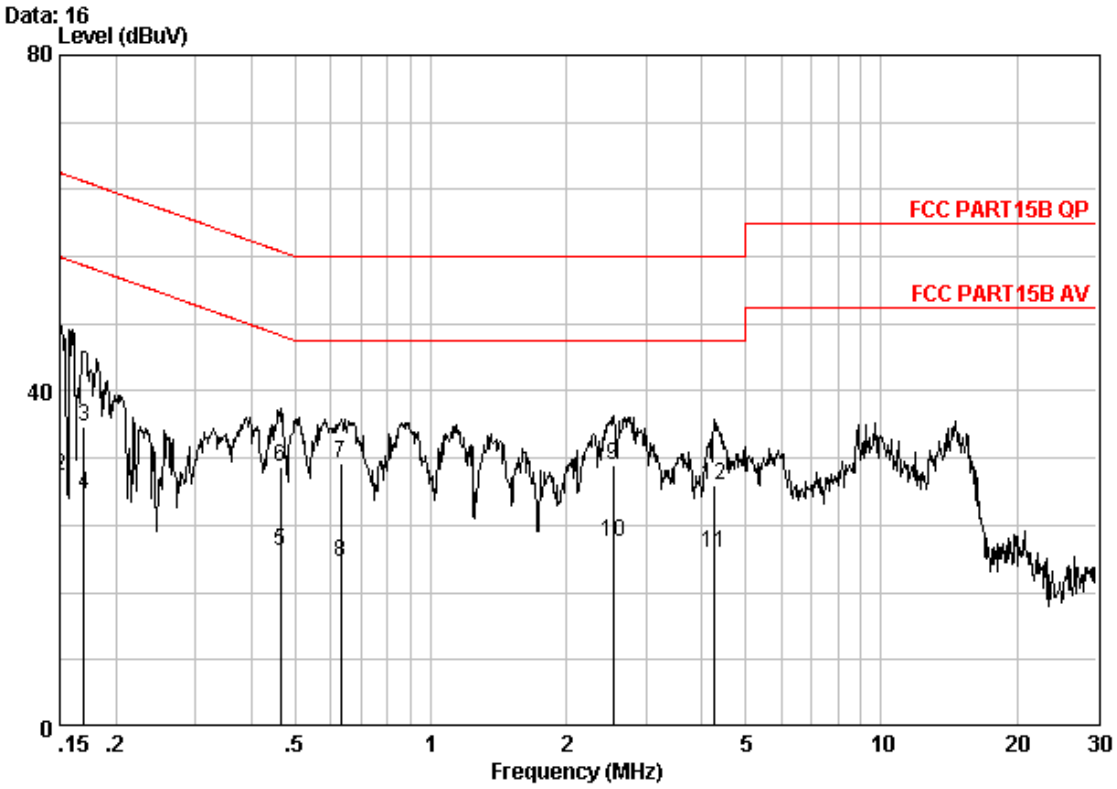
Test Setup:	
Instruments Used:	Refer to section 4.10 for details
Exploratory Test Mode:	Communicate with PC mode, HDMI mode, USB mode and Charge mode
Final Test Mode:	Pretest the EUT at Communicate with PC mode, HDMI mode, USB mode and Charge mode and found the HDMI mode which it is worse case, the test worst case mode is recorded in the report.
Test Results:	Pass

Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

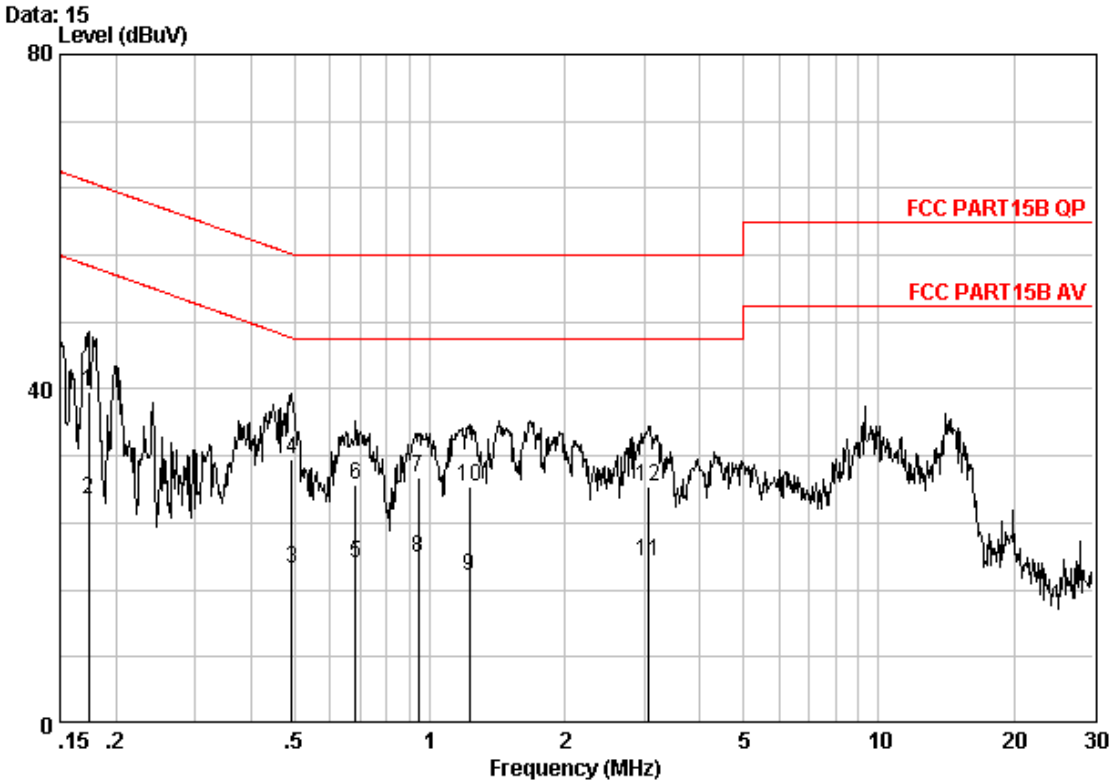
Live Line:



Site : Shielding Room
Condition : FCC PART15B QP CE-20101216 LINE
Job No. : 2560IT
Mode : HDMI

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.15000	0.04	9.60	29.13	38.77	66.00	-27.23	QP
2	0.15000	0.04	9.60	20.19	29.83	56.00	-26.17	Average
3	0.16944	0.04	9.60	26.15	35.79	64.99	-29.20	QP
4	0.16944	0.04	9.60	18.15	27.79	54.99	-27.20	Average
5	0.46367	0.06	9.60	11.25	20.91	46.63	-25.72	Average
6	0.46367	0.06	9.60	21.24	30.90	56.63	-25.73	QP
7	0.63048	0.06	9.67	21.66	31.39	56.00	-24.61	QP
8	0.63048	0.06	9.67	9.97	19.70	46.00	-26.30	Average
9	2.540	0.13	9.73	21.29	31.15	56.00	-24.85	QP
10 @	2.540	0.13	9.73	12.20	22.06	46.00	-23.94	Average
11	4.269	0.16	9.78	10.69	20.63	46.00	-25.37	Average
12	4.269	0.16	9.78	18.87	28.81	56.00	-27.19	QP

Neutral Line:



Site : Shielding Room
Condition : FCC PART15B QP CE-20101216 NEUTRAL
Job No. : 2560IT
Mode : HDMI

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.17399	0.04	9.60	29.93	39.57	64.77	-25.20	QP
2	0.17399	0.04	9.60	17.25	26.89	54.77	-27.88	Average
3	0.49150	0.06	9.60	8.90	18.56	46.14	-27.59	Average
4	0.49150	0.06	9.60	21.87	31.53	56.14	-24.61	QP
5	0.68263	0.06	9.69	9.45	19.21	46.00	-26.79	Average
6	0.68263	0.06	9.69	18.86	28.61	56.00	-27.39	QP
7	0.94308	0.08	9.70	19.65	29.43	56.00	-26.57	QP
8	0.94308	0.08	9.70	9.99	19.77	46.00	-26.23	Average
9	1.223	0.09	9.70	7.91	17.70	46.00	-28.30	Average
10	1.223	0.09	9.70	18.51	28.30	56.00	-27.70	QP
11	3.074	0.14	9.75	9.56	19.44	46.00	-26.56	Average
12	3.074	0.14	9.75	18.47	28.36	56.00	-27.64	QP

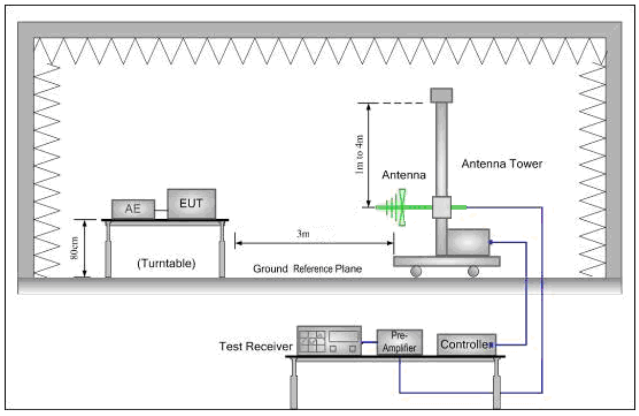
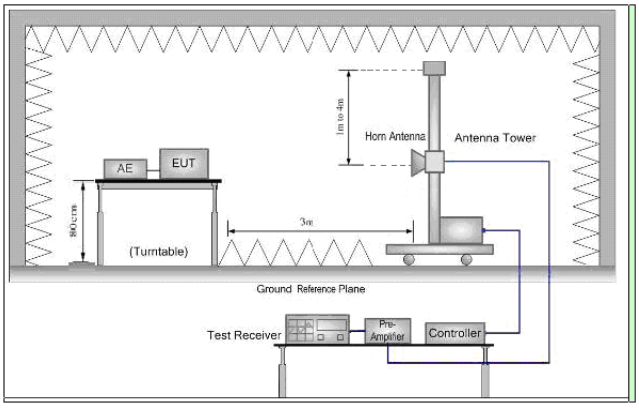
Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:

2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.

5.2 Radiated Emission

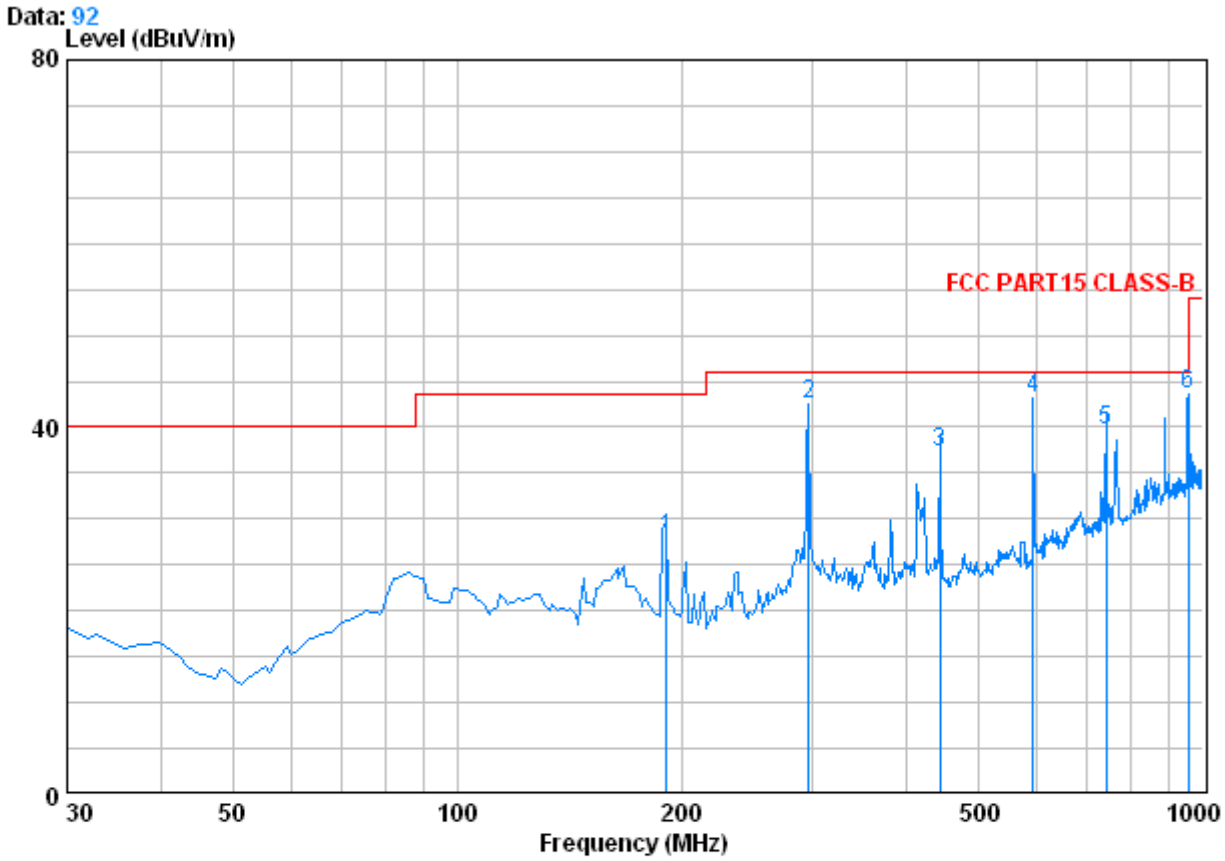
<table>
<tr><td>Test Requirement:</td><td>FCC Part15 B</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.4: 2009</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m (Semi-Anechoic Chamber)</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>100kHz</td><td>300kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td>30MHz-88MHz</td><td>40.0</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>43.5</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>46.0</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>54.0</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.0</td><td>Average Value</td></tr>
<tr><td>74.0</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Test Procedure:</td><td>
a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. 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 rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. 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.
g. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.
</td></tr>
</table>

Test Setup:	
 Figure 1. 30MHz to 1GHz	 Figure 2. Above 1 GHz
Instruments Used:	Refer to section 4.10 for details
Exploratory Test Mode:	Communicate with PC mode, HDMI mode, USB mode and Charge mode
Final Test Mode:	Pretest the EUT at Communicate with PC mode, HDMI mode, USB mode and Charge mode and found the HDMI mode which it is worse case, the test worst case mode is recorded in the report.
Test Results:	Pass

QP value:

Below 1GHz

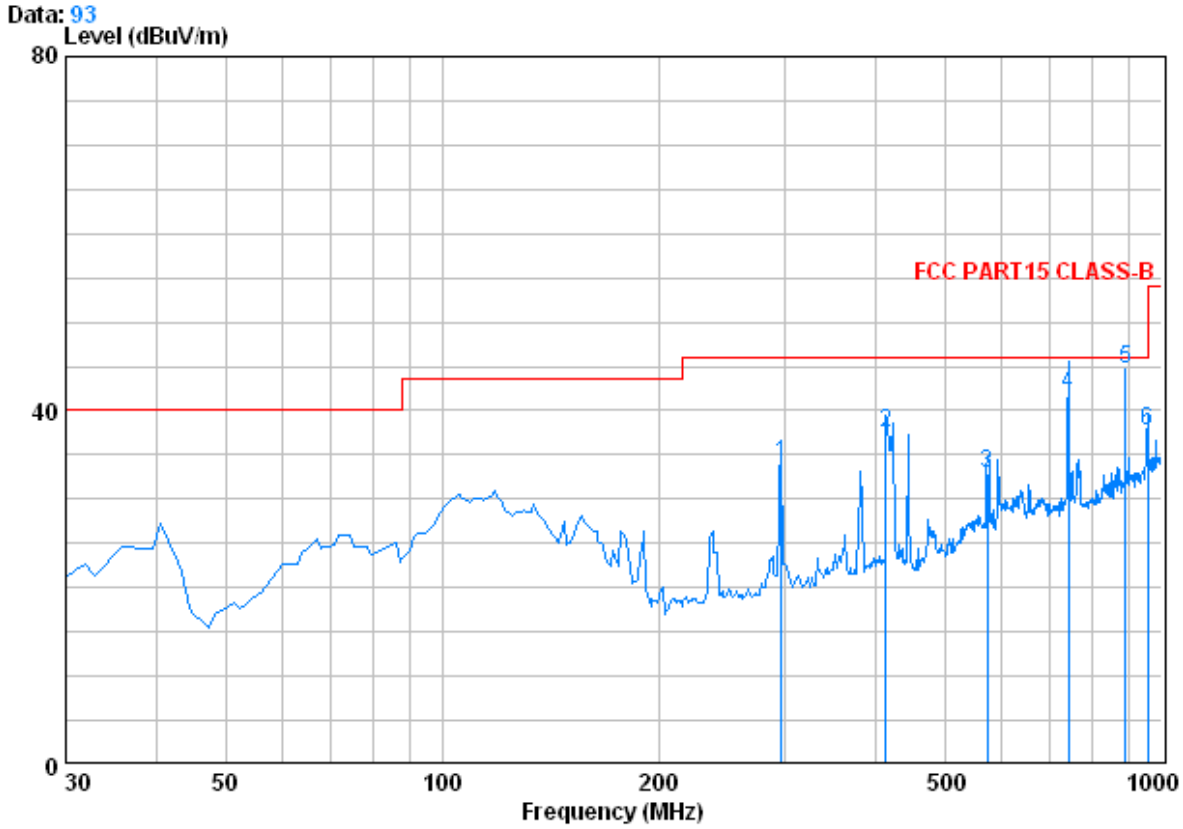
Horizontal



Condition : FCC PART15 CLASS-B 3m 0042673 HORIZONTAL
Job No. : 2561IT
test mode : HDMI

	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	191.020	1.39	10.11	26.73	43.16	27.93	43.50	-15.57
2	295.780	1.88	13.72	26.41	53.36	42.55	46.00	-3.45
3	444.190	2.39	16.78	27.40	45.57	37.34	46.00	-8.66
4 @	591.630	2.69	19.57	27.55	48.38	43.08	46.00	-2.92
5	741.980	3.03	21.67	27.36	42.27	39.61	46.00	-6.39
6 @	955.380	3.66	23.50	26.51	42.95	43.60	46.00	-2.40

Vertical



Condition : FCC PART15 CLASS-B 3m 0042673 VERTICAL
Job No. : 2561IT
test mode : HDMI

	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	295.780	1.88	13.72	26.41	44.91	34.10	46.00	-11.90
2	413.150	2.26	16.35	27.21	46.02	37.41	46.00	-8.59
3	572.230	2.68	19.08	27.58	38.68	32.86	46.00	-13.14
4	742.471	3.03	21.67	27.36	44.50	41.84	46.00	-4.16
5 @	889.420	3.56	23.11	26.82	44.92	44.78	46.00	-1.22
6	956.350	3.66	23.50	26.51	37.01	37.66	46.00	-8.34

Above 1GHz

Peak value:

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
1770	2.690	30.070	39.470	70.270	63.560	74	-10.440	Vertical
2190	2.910	32.140	39.710	65.290	60.630	74	-13.370	Vertical
2510	3.040	32.720	39.930	63.260	59.090	74	-14.910	Vertical
3515	3.750	33.220	40.670	65.820	62.120	74	-11.880	Vertical
4275	4.340	34.590	41.230	63.140	60.840	74	-13.160	Vertical
4650	4.590	34.950	41.510	61.740	59.770	74	-14.230	Vertical
1415	2.470	27.940	39.320	61.240	52.330	74	-21.670	Horizontal
1935	2.790	31.310	39.540	61.570	56.130	74	-17.870	Horizontal
2235	2.920	32.230	39.740	61.160	56.570	74	-17.430	Horizontal
2675	3.140	32.960	40.060	58.400	54.440	74	-19.560	Horizontal
3030	3.330	33.390	40.330	59.080	55.470	74	-18.530	Horizontal
3610	3.840	33.340	40.740	59.210	55.650	74	-18.350	Horizontal

Average value:

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
1770	2.690	30.070	39.470	41.620	34.910	54	-19.090	Vertical
2190	2.910	32.140	39.710	38.080	33.420	54	-20.580	Vertical
2510	3.040	32.720	39.930	39.810	35.640	54	-18.360	Vertical
3515	3.750	33.220	40.670	39.580	35.880	54	-18.120	Vertical
4275	4.340	34.590	41.230	38.690	36.390	54	-17.610	Vertical
4650	4.590	34.950	41.510	36.260	34.290	54	-19.710	Vertical
1415	2.470	27.940	39.320	50.550	41.640	54	-12.360	Horizontal
1935	2.790	31.310	39.540	50.110	44.670	54	-9.330	Horizontal
2235	2.920	32.230	39.740	51.320	46.730	54	-7.270	Horizontal
2675	3.140	32.960	40.060	45.860	41.900	54	-12.100	Horizontal
3030	3.330	33.390	40.330	46.750	43.140	54	-10.860	Horizontal
3610	3.840	33.340	40.740	46.310	42.750	54	-11.250	Horizontal

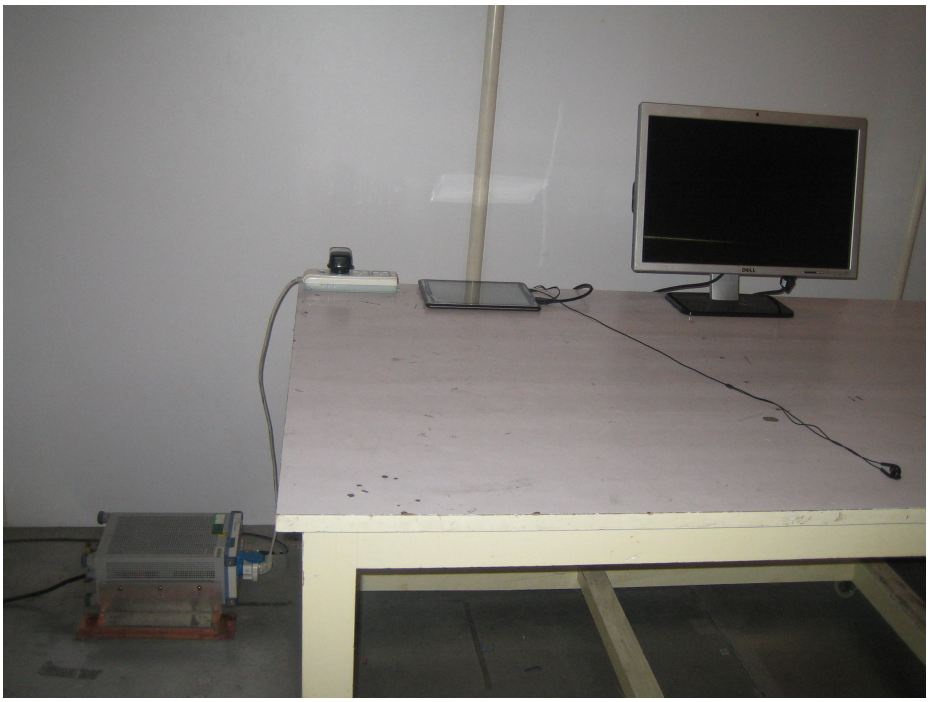
Remark:

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

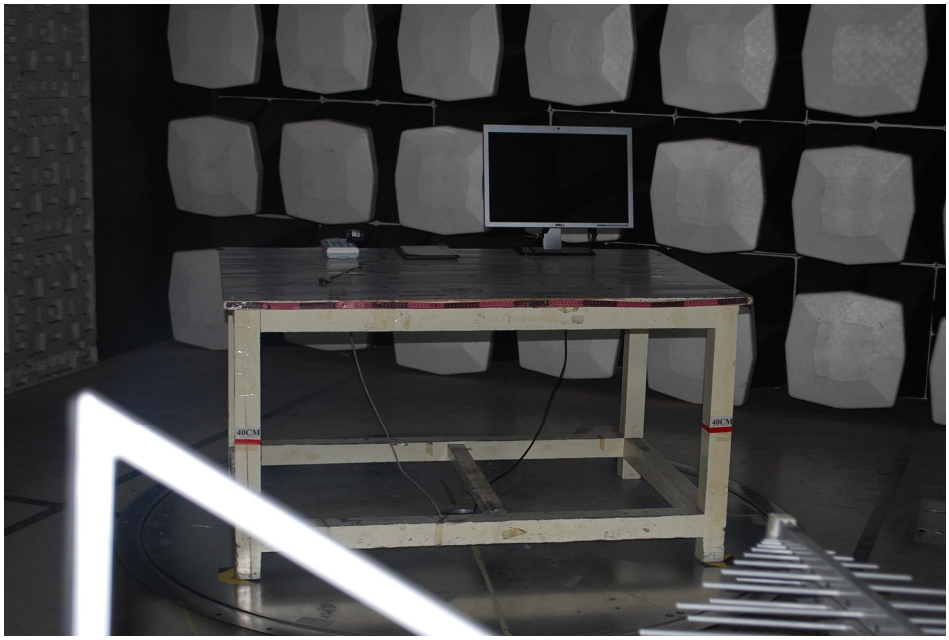
Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

6 Photographs - EUT Test Setup (Test model No.:AC97CA)

6.1 Conducted Emission Test Setup



6.2 Radiatd Emission Test Setup



7 Photographs - EUT Constructional Details

Refer to Report No. SZEM120500256101 for EUT external and internal photos.