



# Variant FCC/IC Test Report

APPLICANT : Quanta Computer Inc  
EQUIPMENT : Laptop Computer  
BRAND NAME : OLPC  
MODEL NAME : XO-1.75/XO-1.75HS  
FCC ID : T5U-EM113MV  
STANDARD : ICES-003 Issue 4  
FCC 47 CFR FCC Part 15 Subpart B  
CLASSIFICATION : Declaration of Conformity

This is a variant report which is only valid together with the original test report. The product was received on Sep. 18, 2012 and completely tested on Oct. 16, 2012. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown the compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:

Jones Tsai / Manager



**SPORTON INTERNATIONAL INC.**

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FCC ID : T5U-EM113MV

Page Number : 1 of 25

Report Issued Date : Oct. 22, 2012

Report Version : Rev. 01



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### REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FD260503-01	Rev. 01	This is a variant report for XO-1.75/XO-1.75HS. The difference between previous and current is adding a 1GHz CPU. All test cases were performed on original report which can be referred to SPORTON Report Number FD172910 as Appendix C. Based on the original test report, only the worse case was verified for the differences.	Oct. 22, 2012



### SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.107	7.2.4	AC Conducted Emission	< 15.107 limits < RSS-Gen table 2 limits	PASS	Under limit 4.6 dB at 0.150 MHz
3.2	15.109	7.2.3.2	Radiated Emission	< 15.109 limits or < RSS-Gen table 1 limits (Section 6)	PASS	Under limit 2.12 dB at 598.200 MHz for Quasi-Peak



## 1. General Description

### 1.1. Applicant

**Quanta Computer Inc**

No.188, Wen Hwa 2nd Rd., Kuei Shan Hsiang, Tao Yuan Shien, TaiWan

### 1.2. Manufacturer

**Quanta Computer Inc**

No.188, Wen Hwa 2nd Rd., Kuei Shan Hsiang, Tao Yuan Shien, TaiWan

### 1.3. Feature of Equipment Under Test

Product Feature	
Equipment	Laptop Computer
Brand Name	OLPC
Model Name	XO-1.75/XO-1.75HS
FCC ID	T5U-EM113MV
EUT supports Radios application	WLAN 11bg
HW Version	N/A
SW Version	N/A
EUT Stage	Identical Prototype

**Remark:**

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. The difference between sample 1(XO-1.75HS) and sample 2 (XO-1.75) is only for keyboard. The others are the same including circuit design, PCB board, structure and all components. It is special to declare.

Product Specification subjective to this standard	
Tx Frequency	802.11b/g: 2412 MHz ~ 2462 MHz
Rx Frequency Range	802.11b/g: 2412 MHz ~ 2462 MHz
Antenna Type	PIFA Antenna
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g : OFDM (BPSK / QPSK / 16QAM / 64QAM)



### 1.4. Test Site

<b>Test Site</b>	SPORTON INTERNATIONAL INC.		
<b>Test Site Location</b>	No. 52, Hwa Ya 1 <sup>st</sup> Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978		
<b>Test Site No.</b>	<b>Sporton Site No.</b>		<b>FCC/IC Registration No.</b>
	CO05-HY	03CH06-HY / 03CH07-HY	722060/4086B-1

### 1.5. Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC 47 CFR FCC Part 15 Subpart B
- IC ICES-003 Issue 4
- ANSI C63.4-2003
- IC RSS-Gen Issue 3

**Remark:**

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. The test results for FCC compliance, indicating that these results are deemed satisfactory evidence of compliance with **Industry Canada Interference-Causing Equipment Standard ICES-003**.

### 1.6. Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	WLAN AP	D-link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
2.	USB Dongle	Kingston	Data Traveler 100	N/A	N/A	N/A
3.	USB Dongle	Kingston	Data Traveler 100	N/A	N/A	N/A
4.	USB Dongle	Adata	C008	N/A	N/A	N/A
5.	Earphone + Mic	Ergotech	ET-E200	FCC DoC	Unshielded, 1.8 m	N/A



## 2. Test Configuration of Equipment Under Test

### 2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Frequency range investigated: conduction (150 KHz to 30 MHz), radiation (30MHz to the 5th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

The following tables are showing the test modes as the worst cases and recorded in this report.

Item	EUT Configuration	Test Condition		
		EMI AC	EMI RE<1G	EMI RE≥1G
1.	Charging Mode (EUT with adapter)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

**Abbreviations:**

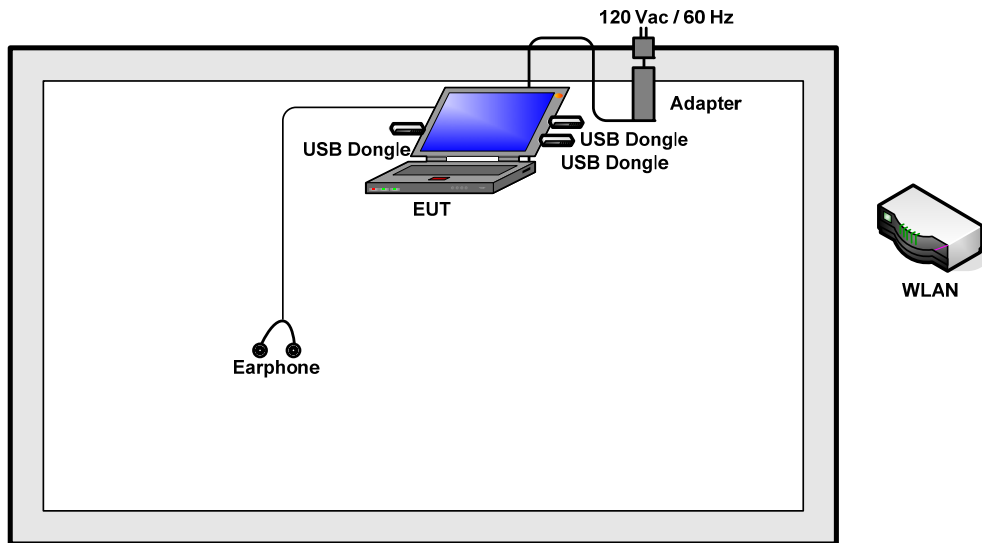
- EMI AC: AC conducted emissions
- EMI RE ≥ 1G: EUT radiated emissions ≥ 1GHz
- EMI RE < 1G: EUT radiated emissions < 1GHz



Test Items	EUT Configure Mode	Function Type
AC Conducted Emission	1	Mode 1: WLAN Idle(EM113-MV) + Adapter 2 + RAM1GB + TC for Sample 1 Mode 2: WLAN Idle(EM113-MV) + Adapter 4 + RAM1GB + TC for Sample 2
Radiated Emissions < 1GHz	1	Mode 1: WLAN Idle(EM113-MV) + Adapter 2 + RAM1GB + TC for Sample 1 Mode 2: WLAN Idle(EM113-MV) + Adapter 4 + RAM1GB + TC for Sample 2
Radiated Emissions ≥ 1GHz	1	Mode 1: WLAN Idle(EM113-MV) + Adapter 4 + RAM1GB + TC for Sample 2
<b>Remark:</b> <ol style="list-style-type: none"><li>The worst case of AC Conducted Emission is mode 2; only the test data of this mode was reported.</li><li>The worst case of Radiated Emissions is mode 2; only the test data of this mode was reported.</li><li>TC stands for Test Configuration, and consists of USB Dongles and Earphone.</li></ol>		



## 2.2. Connection Diagram of Test System





## **2.3. Test Software**

The EUT was attached to the WLAN AP, and was in WLAN idle mode during the testing. Data application is transferred between EUT and USB Dongle. Using the terminal to make EUT execute "H Pattern"; capture images and play MP3 file.

### 3. Test Result

#### 3.1. Test of AC Conducted Emission Measurement

##### 3.1.1 Limits of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 KHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted 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.

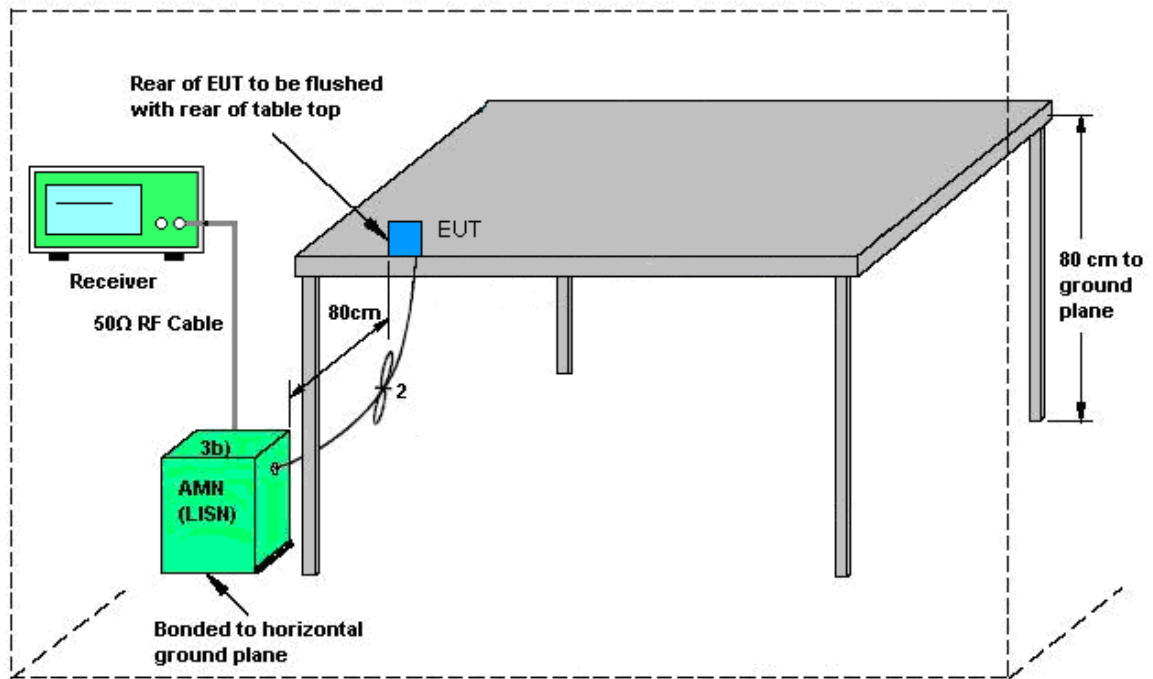
##### 3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

##### 3.1.3 Test Procedure

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 KHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

### 3.1.4 Test Setup

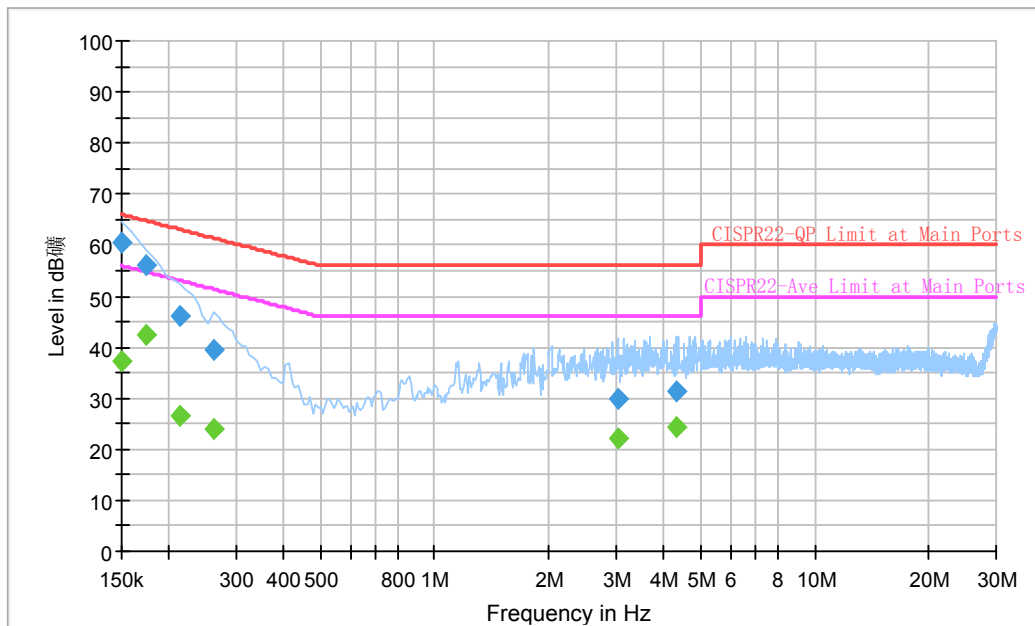


AMN = Artificial mains network (LISN)  
AE = Associated equipment  
EUT = Equipment under test  
ISN = Impedance stabilization network

### 3.1.5 Test Result of AC Conducted Emission

Test Mode :	Mode 2	Temperature :	20~22°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN Idle(EM113-MV) + Adapter 4 + RAM1GB + TC for Sample 2		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

ENV216 Auto Test



#### Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	60.6	Off	L1	19.4	5.4	66.0
0.174000	56.2	Off	L1	19.4	8.6	64.8
0.214000	46.2	Off	L1	19.4	16.8	63.0
0.262000	39.5	Off	L1	19.4	21.9	61.4
3.022000	29.9	Off	L1	19.6	26.1	56.0
4.334000	31.2	Off	L1	19.6	24.8	56.0

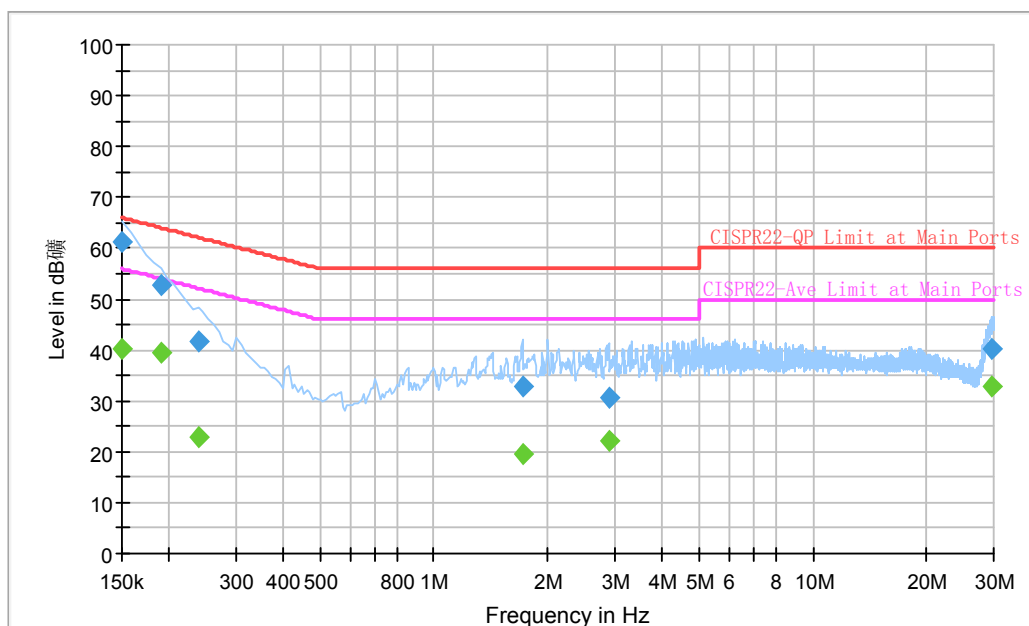
#### Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	37.2	Off	L1	19.4	18.8	56.0
0.174000	42.6	Off	L1	19.4	12.2	54.8
0.214000	26.6	Off	L1	19.4	26.4	53.0
0.262000	23.9	Off	L1	19.4	27.5	51.4
3.022000	22.2	Off	L1	19.6	23.8	46.0
4.334000	24.5	Off	L1	19.6	21.5	46.0



Test Mode :	Mode 2	Temperature :	20~22°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN Idle(EM113-MV) + Adapter 4 + RAM1GB + TC for Sample 2		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

ENV216 Auto Test



Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	61.4	Off	N	19.4	4.6	66.0
0.190000	52.6	Off	N	19.4	11.4	64.0
0.238000	41.8	Off	N	19.5	20.4	62.2
1.710000	32.7	Off	N	19.5	23.3	56.0
2.886000	30.6	Off	N	19.6	25.4	56.0
29.614000	40.3	Off	N	20.1	19.7	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	40.1	Off	N	19.4	15.9	56.0
0.190000	39.6	Off	N	19.4	14.4	54.0
0.238000	22.9	Off	N	19.5	29.3	52.2
1.710000	19.4	Off	N	19.5	26.6	46.0
2.886000	22.0	Off	N	19.6	24.0	46.0
29.614000	32.9	Off	N	20.1	17.1	50.0



### **3.2. Test of Radiated Emission Measurement**

#### **3.2.1. Limit of Radiated Emission**

The emissions from an unintentional radiator shall not exceed the field strength levels specified in the following table:

<b>Frequency (MHz)</b>	<b>Field Strength (microvolts/meter)</b>	<b>Measurement Distance (meters)</b>
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

#### **3.2.2. Measuring Instruments**

See list of measuring instruments of this test report.



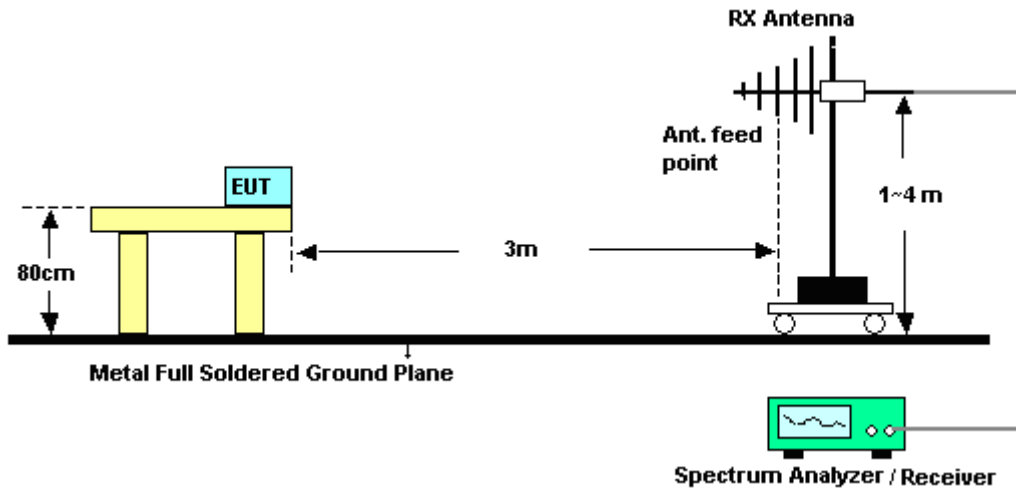
### **3.2.3. Test Procedures**

1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna height is adjusted between one to four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported.
8. Emission level (dBuV/m) = 20 log Emission level (uV/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

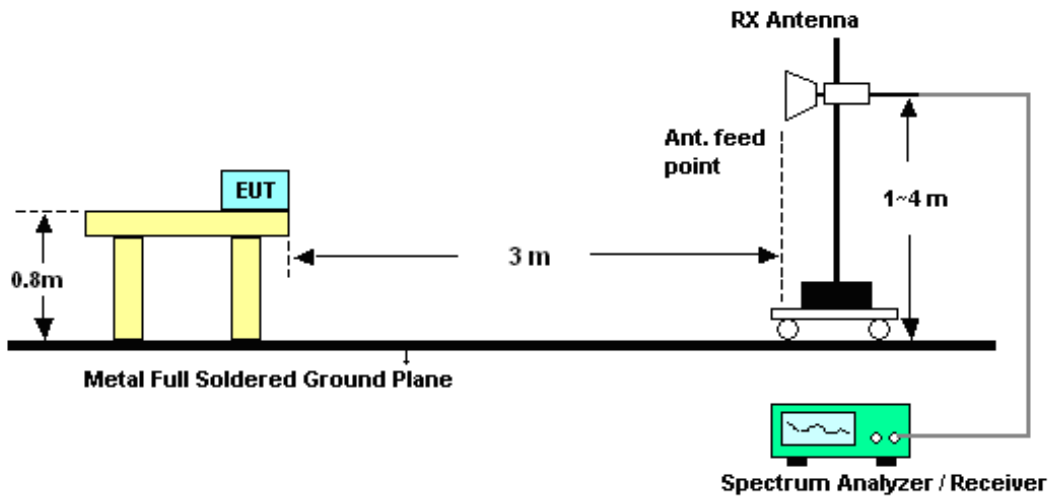


### 3.2.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz



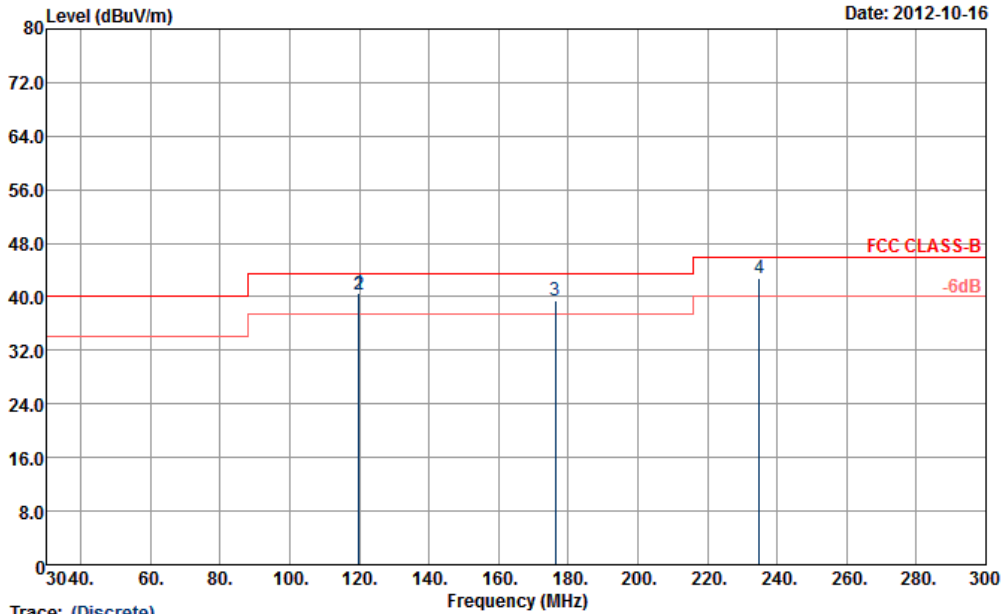
For radiated emissions above 1GHz





3.2.5. Test Result of Radiated Emission

Test Mode :	Mode 2	Temperature :	23~24°C
Test Engineer :	Ken Chen	Relative Humidity :	45~46%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	WLAN Idle(EM113-MV) + Adapter 4 + RAM1GB + TC for Sample 2		

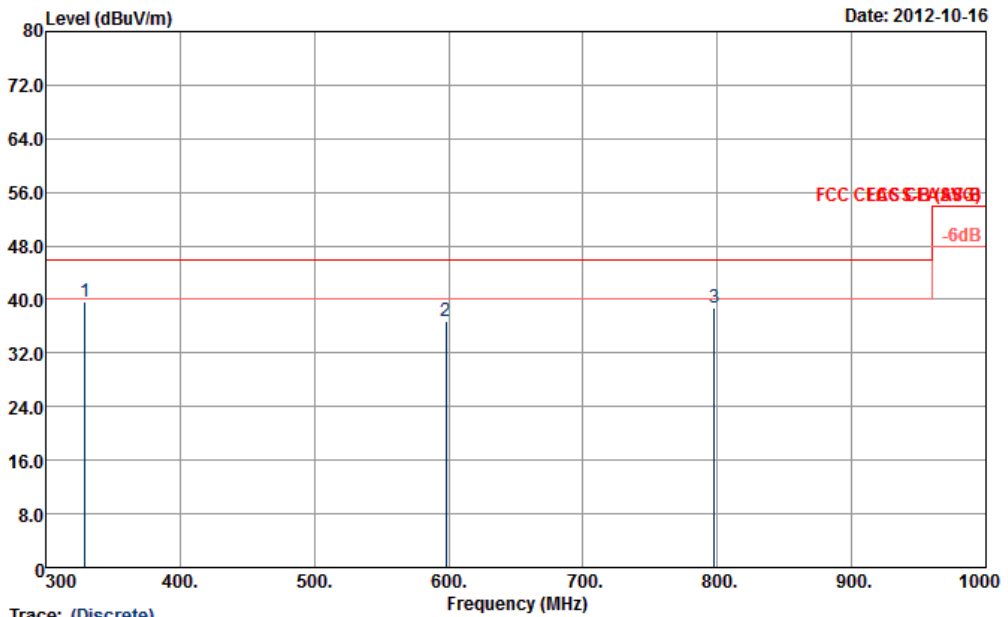


Trace: (Discrete)  
 Site : 03CH07-HY  
 Condition : FCC CLASS-B 3m LF-ANT(111116) HORIZONTAL

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	119.91	40.58	-2.92	43.50	59.40	11.70	1.10	31.62	284	89	Peak
2	119.91	40.30	-3.20	43.50	59.12	11.70	1.10	31.62	284	89	QP
3	176.34	39.47	-4.03	43.50	60.42	9.03	1.24	31.22	---	---	Peak
4	234.93	42.71	-3.29	46.00	60.89	11.52	1.50	31.20	---	---	Peak



Test Mode :	Mode 2	Temperature :	23~24°C
Test Engineer :	Ken Chen	Relative Humidity :	45~46%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	WLAN Idle(EM113-MV) + Adapter 4 + RAM1GB + TC for Sample 2		

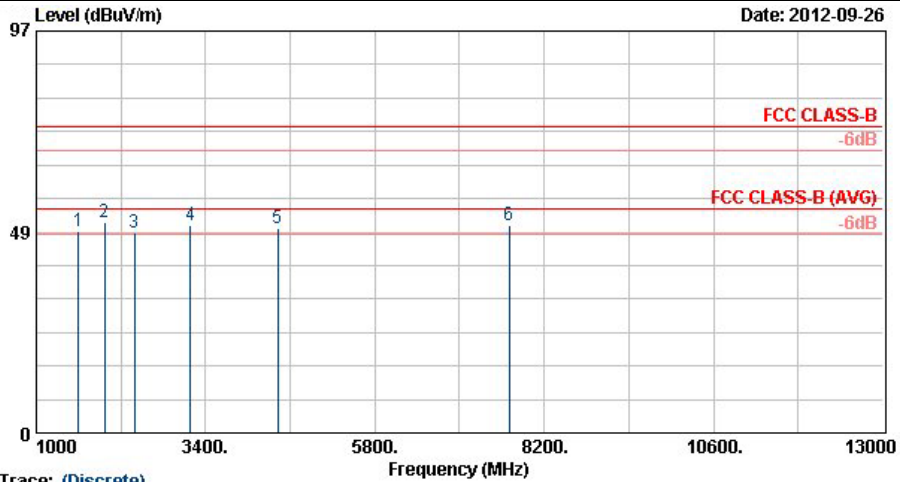


Trace: (Discrete)  
 Site : 03CH07-HY  
 Condition : FCC CLASS-B 3m LF-ANT(111116) HORIZONTAL

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB	cm	deg	
1	329.40	39.73	-6.27	46.00	55.02	14.11	1.85	31.25	---	---	Peak
2	598.20	36.71	-9.29	46.00	44.83	19.77	2.68	30.57	---	---	Peak
3	797.70	38.78	-7.22	46.00	43.75	22.06	3.14	30.17	---	---	Peak



Test Mode :	Mode 2	Temperature :	23~24°C
Test Engineer :	Ken Chen	Relative Humidity :	45~46%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	WLAN Idle(EM113-MV) + Adapter 4 + RAM1GB + TC for Sample 2		

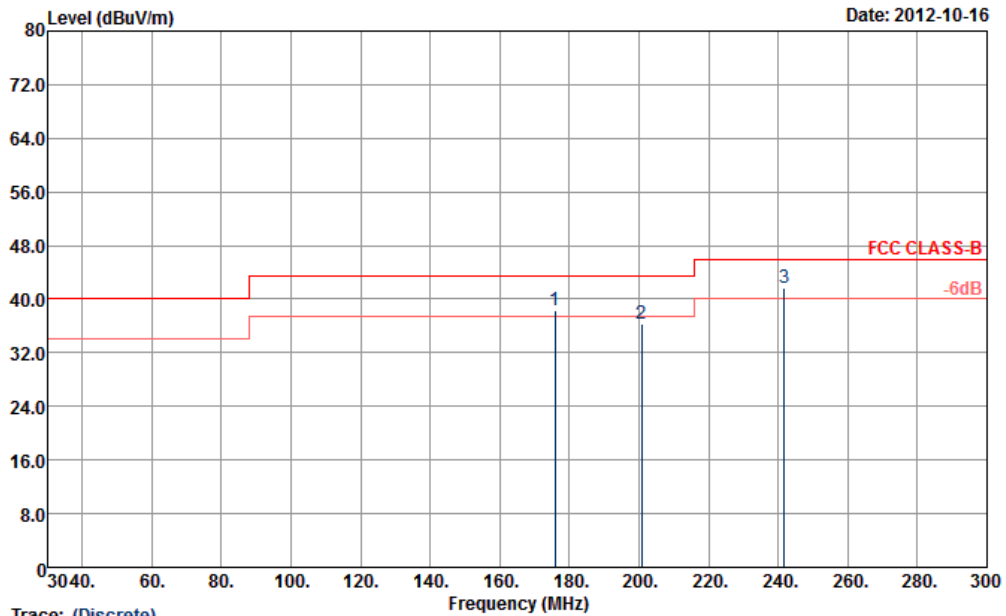


Site : 03CH06-HV  
 Condition : FCC CLASS-B HF-ANT\_120601 HORIZONTAL

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	1594.00	48.81	-25.19	74.00	69.18	28.60	4.95	53.92	---	---	Peak
2 @	1968.00	50.90	-23.10	74.00	67.57	31.53	5.79	53.99	100	43	Peak
3	2388.00	48.28	-25.72	74.00	63.40	32.36	6.45	53.92	---	---	Peak
4	3188.00	49.95	-24.05	74.00	63.13	33.10	7.76	54.04	---	---	Peak
5	4428.00	49.25	-24.75	74.00	59.50	34.84	9.90	54.99	---	---	Peak
6	7704.00	50.05	-23.95	74.00	58.85	36.10	10.92	55.82	---	---	Peak



Test Mode :	Mode 2	Temperature :	23~24°C
Test Engineer :	Ken Chen	Relative Humidity :	45~46%
Test Distance :	3m	Polarization :	Vertical
Function Type :	WLAN Idle(EM113-MV) + Adapter 4 + RAM1GB + TC for Sample 2		

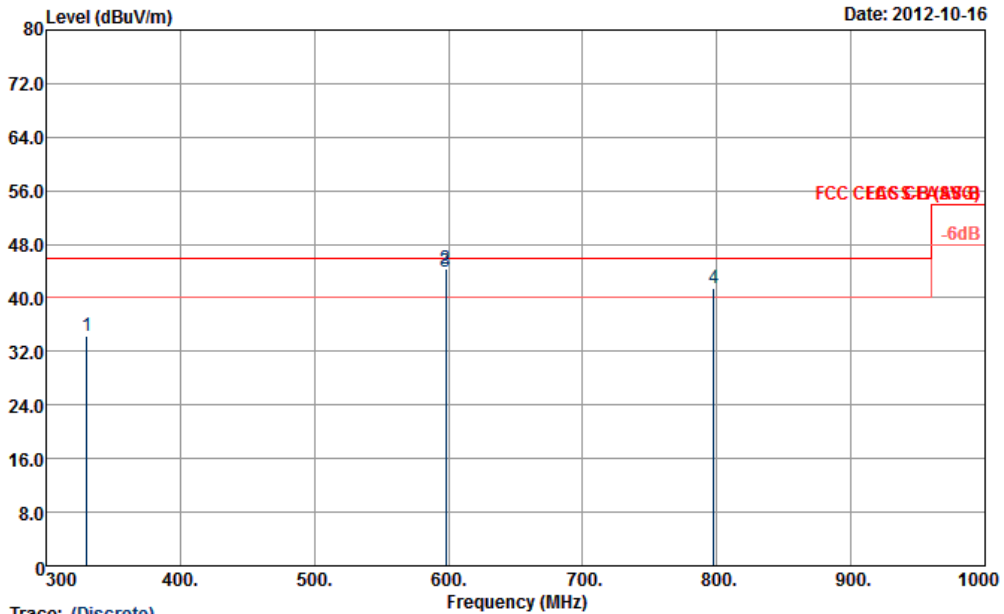


Trace: (Discrete)  
 Site : 03CH07-HY  
 Condition : FCC CLASS-B 3m LF-ANT(111116) VERTICAL

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	175.80	38.43	-5.07	43.50	59.34	9.07	1.24	31.22	---	---	Peak
2	200.64	36.41	-7.09	43.50	57.24	9.17	1.32	31.32	---	---	Peak
3	241.68	41.74	-4.26	46.00	59.41	11.99	1.53	31.19	---	---	Peak



Test Mode :	Mode 2	Temperature :	23~24°C
Test Engineer :	Ken Chen	Relative Humidity :	45~46%
Test Distance :	3m	Polarization :	Vertical
Function Type :	WLAN Idle(EM113-MV) + Adapter 4 + RAM1GB + TC for Sample 2		

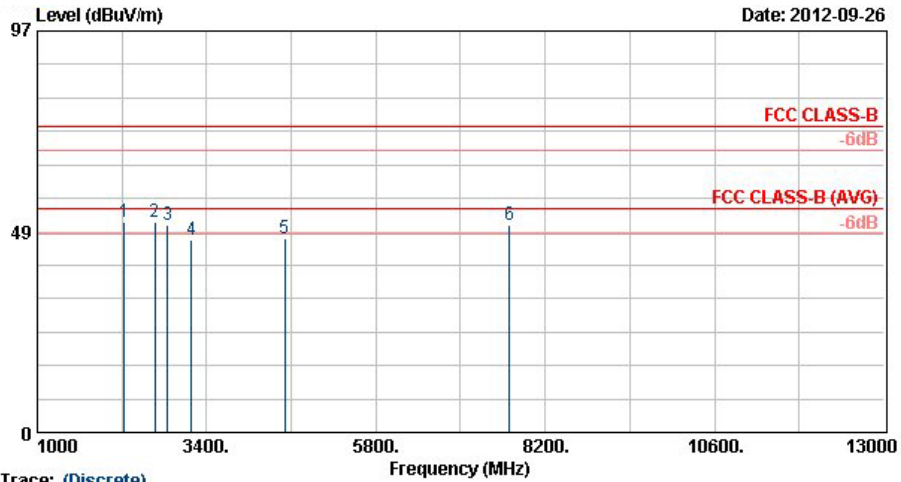


Trace: (Discrete)  
 Site : 03CH07-HY  
 Condition : FCC CLASS-B 3m LF-ANT(111116) VERTICAL

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	330.10	34.40	-11.60	46.00	49.70	14.11	1.85	31.26	---	---	Peak
2 !	598.20	44.30	-1.70	46.00	52.42	19.77	2.68	30.57	100	352	Peak
3 !	598.20	43.88	-2.12	46.00	52.00	19.77	2.68	30.57	100	352	QP
4 !	797.70	41.49	-4.51	46.00	46.46	22.06	3.14	30.17	---	---	Peak



Test Mode :	Mode 2	Temperature :	23~24°C
Test Engineer :	Ken Chen	Relative Humidity :	45~46%
Test Distance :	3m	Polarization :	Vertical
Function Type :	WLAN Idle(EM113-MV) + Adapter 4 + RAM1GB + TC for Sample 2		



Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B HF-ANT\_120801 VERTICAL

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	Level	Factor	Loss	Factor	Pos	Pos	
					dBuV	dB/m	dB	dB	cm	deg	
1 @	2238.00	50.82	-23.18	74.00	67.41	32.14	5.23	53.95	100	86	Peak
2	2668.00	50.77	-23.23	74.00	66.27	32.70	5.73	53.93	---	---	Peak
3	2844.00	49.95	-24.05	74.00	65.10	32.90	5.92	53.97	---	---	Peak
4	3188.00	46.60	-27.40	74.00	61.22	33.10	6.32	54.04	---	---	Peak
5	4504.00	46.87	-27.13	74.00	59.11	35.00	7.76	55.00	---	---	Peak
6	7694.00	50.27	-23.73	74.00	58.94	36.10	11.05	55.82	---	---	Peak



### 4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receive	R&S	ESCI 7	100724	9kHz~7GHz	Aug. 22, 2012	Sep. 27, 2012	Aug. 21, 2013	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz – 30MHz	Dec. 03, 2011	Sep. 27, 2012	Dec. 02, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz – 30MHz	Dec. 01, 2011	Sep. 27, 2012	Nov. 30, 2012	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Sep. 27, 2012	N/A	Conduction (CO05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2726	30MHz ~ 1GHz	Oct. 22, 2011	Sep. 26, 2012	Oct. 21, 2012	Radiation (03CH07-HY)
Spectrum Analyzer	R&S	FSP30	101067	9KHz ~ 30GHz	Dec. 06, 2011	Sep. 26, 2012	Dec. 05, 2012	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10-1000MHz.32dB .GAIN	Mar. 29, 2012	Sep. 26, 2012	Mar. 28, 2013	Radiation (03CH07-HY)
EMI TEST RECEIVER	R&S	ESCI 7	100724	9kHz~7GHz	Aug. 22, 2012	Sep. 26, 2012	Aug. 21, 2013	Radiation (03CH07-HY)
Spectrum Analyzer	R&S	FSP40	100057	9KHz-40GHz	Oct. 27, 2011	Oct. 16, 2012	Oct. 26, 2012	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESVS10	834468/003	20MHz-1000MHz	May 10, 2012	Oct. 16, 2012	May 09, 2013	Radiation (03CH06-HY)
Loop Antenna	R&S	HFH2-Z2	860004/00	9G-30GHz	Jul. 28, 2012	Oct. 16, 2012	Jul. 27, 2013	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz~18GHz	Aug. 01, 2012	Oct. 16, 2012	Jul. 31, 2013	Radiation (03CH06-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz- 40GHz	Oct. 21, 2012	Oct. 16, 2012	Oct. 20, 2013	Radiation (03CH06-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1GHz- 26.5GHz	Apr. 14, 2012	Oct. 16, 2012	Apr. 13, 2013	Radiation (03CH06-HY)





## 5. Uncertainty of Evaluation

### Uncertainty of Conducted Emission Measurement (150 KHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.26
---	------

### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.54
---	------

### Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.72
---	------



## **Appendix A. Photographs of EUT**

Please refer to Sporton report number EP260503-01 as below.



1. External Photograph of EUT

Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS



**Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS**



Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS





**Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS**





**Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS**







Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS







Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS



Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS





Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS

Sample 2 (XO-1.75)





2. Photograph of Accessory

Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS

List of Accessory:

Specification of Accessory		
AC Adapter 1	Brand Name	DARFON
	Model Name	BB0J-C
AC Adapter 2	Brand Name	Bestec
	Model Name	NA0241WAA
AC Adapter 3	Brand Name	DARFON
	Model Name	BX24-1203 (X=U or P that for different market)
AC Adapter 4	Brand Name	Bestec
	Model Name	BT-AG250SDF
Battery	Brand Name	OLPC
	Model Name	CL1

Remark: For accessories equipped with this EUT, please refer to the following photos.

Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS

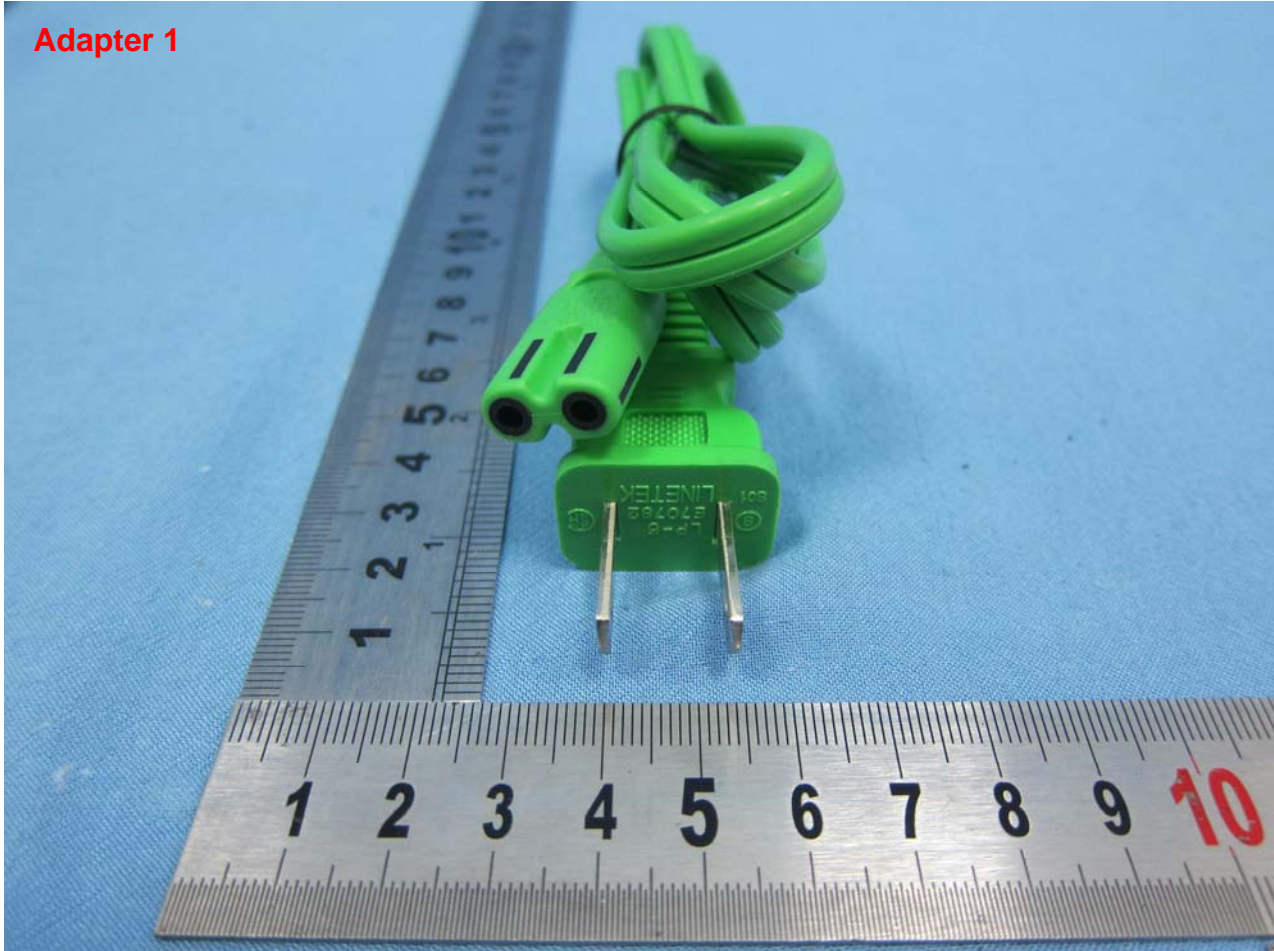






Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS

Adapter 1





Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS





Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS





Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS



Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS

Adapter 2

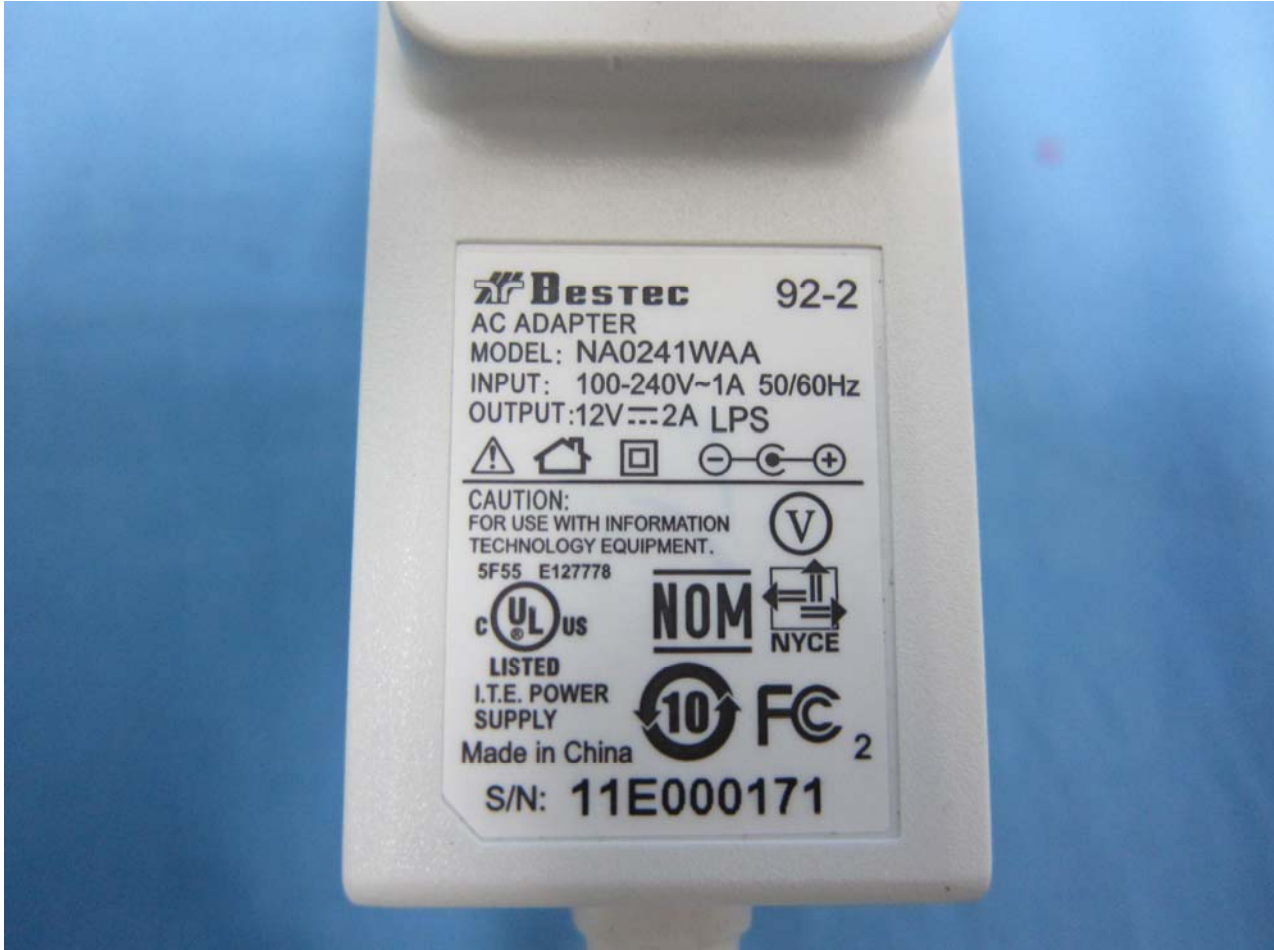




Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS



Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS







Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS

Adapter 3





**Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS**



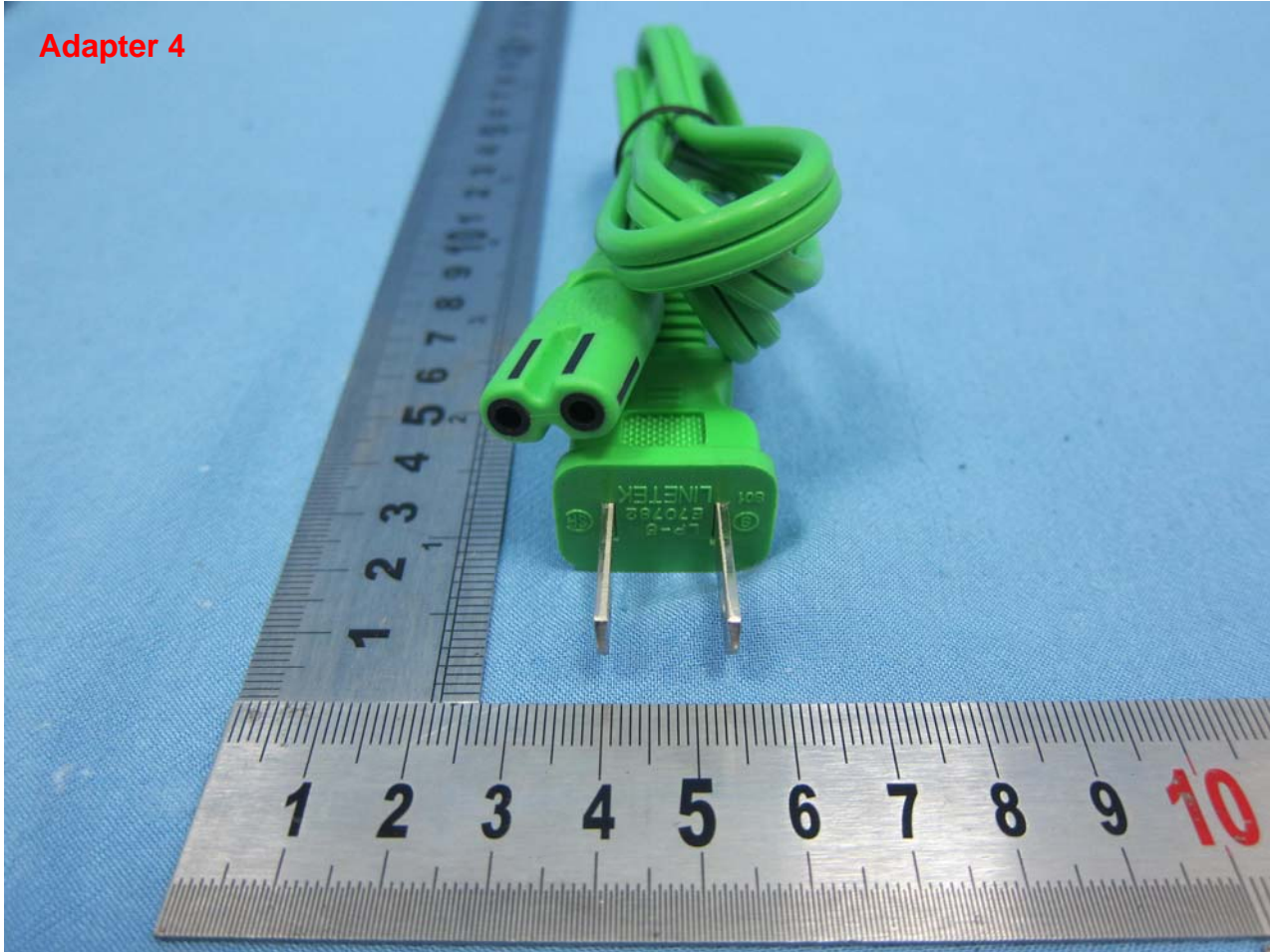


Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS



Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS

Adapter 4







Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS





Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS



Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS



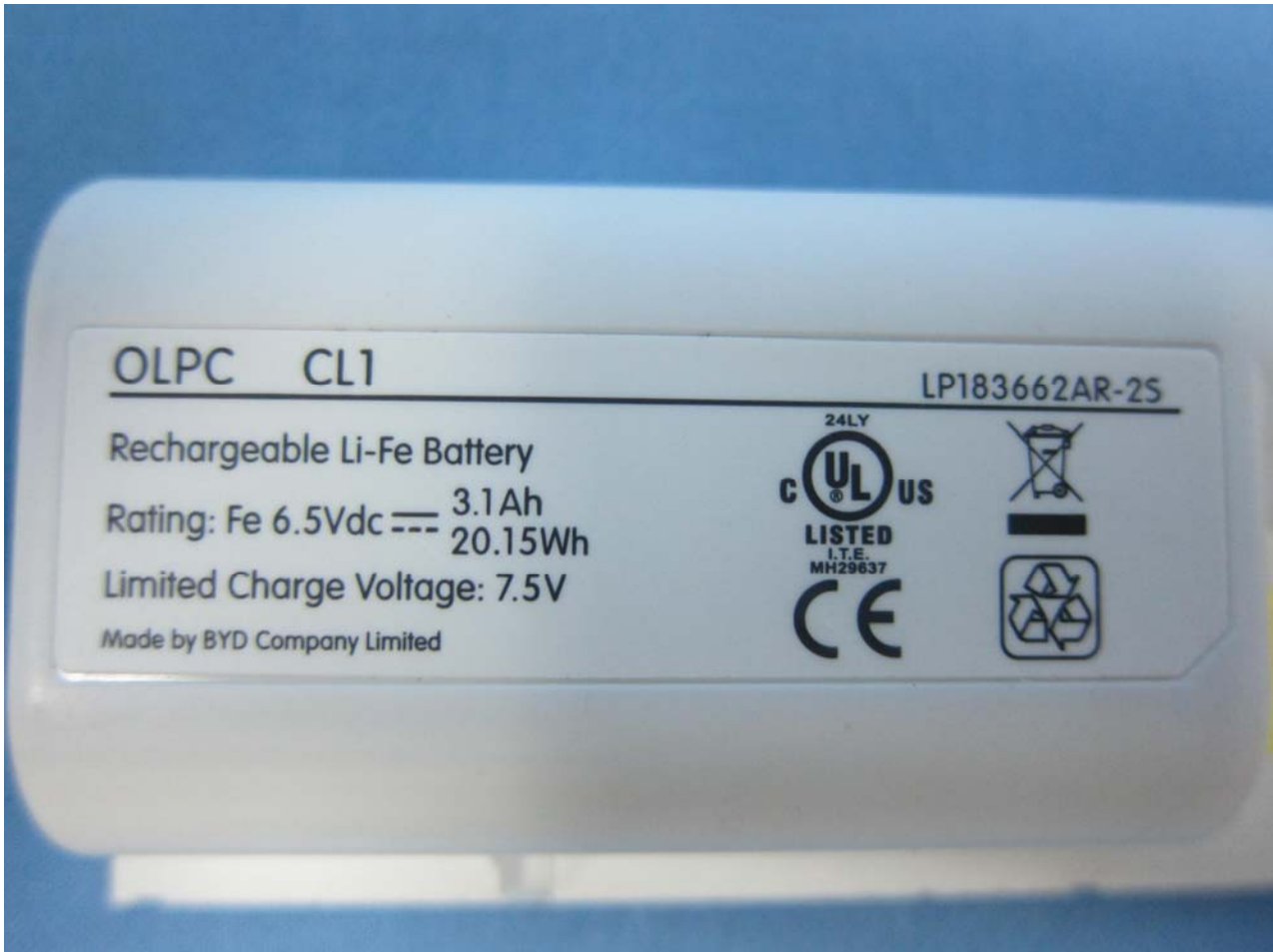




Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS



Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS





Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS





### 3. Internal Photograph of EUT

Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS





Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS

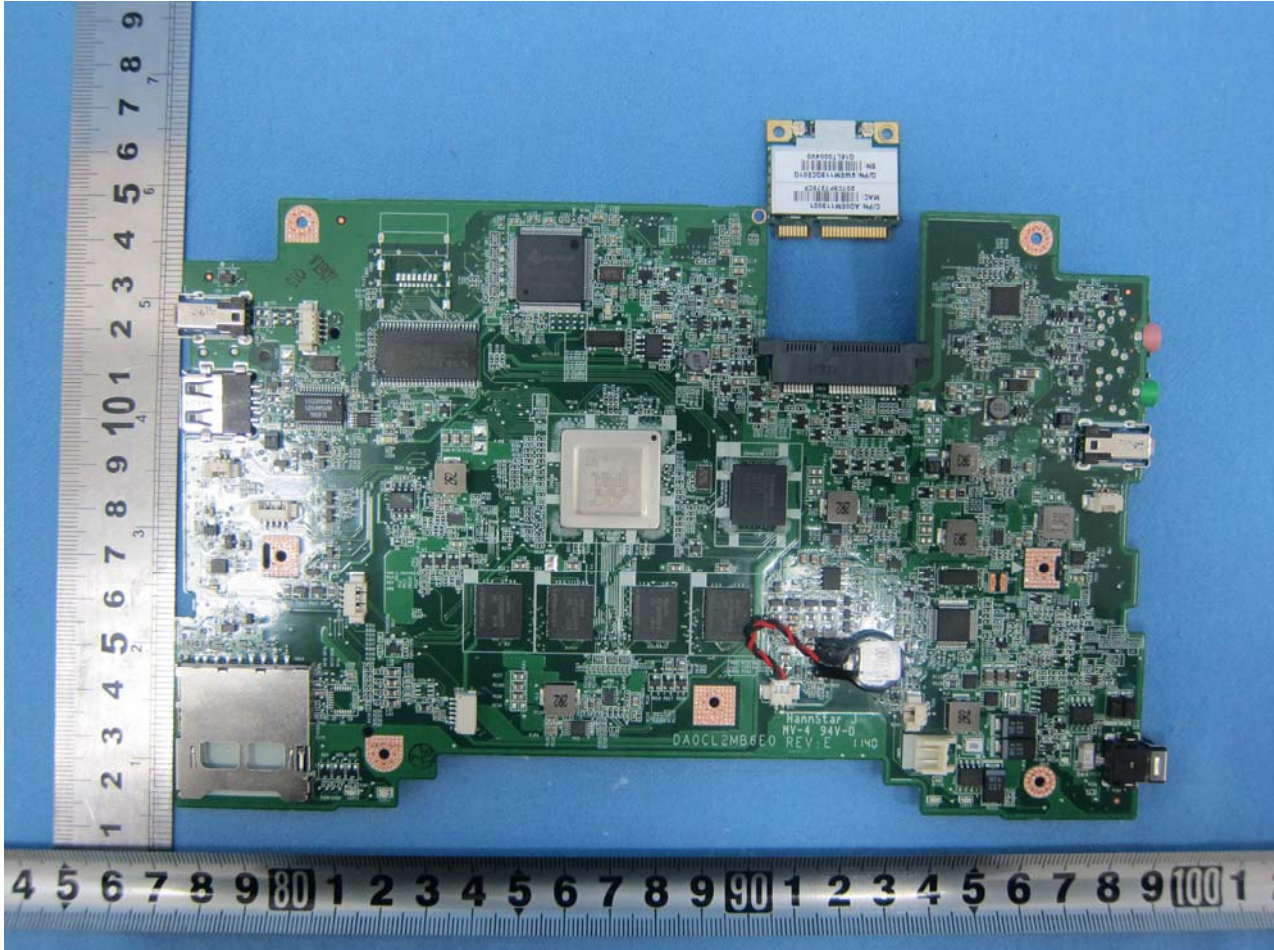




Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS

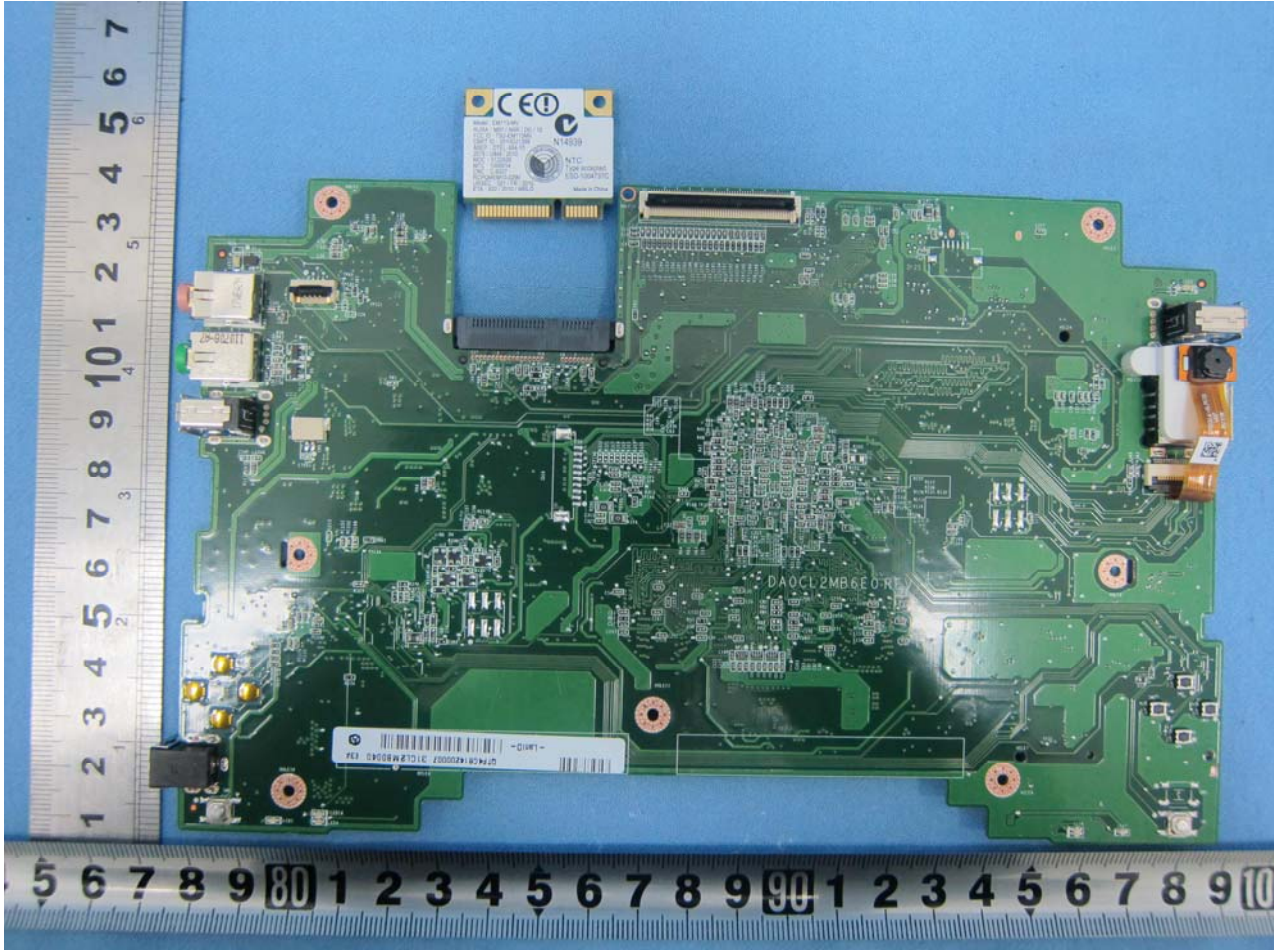


Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS

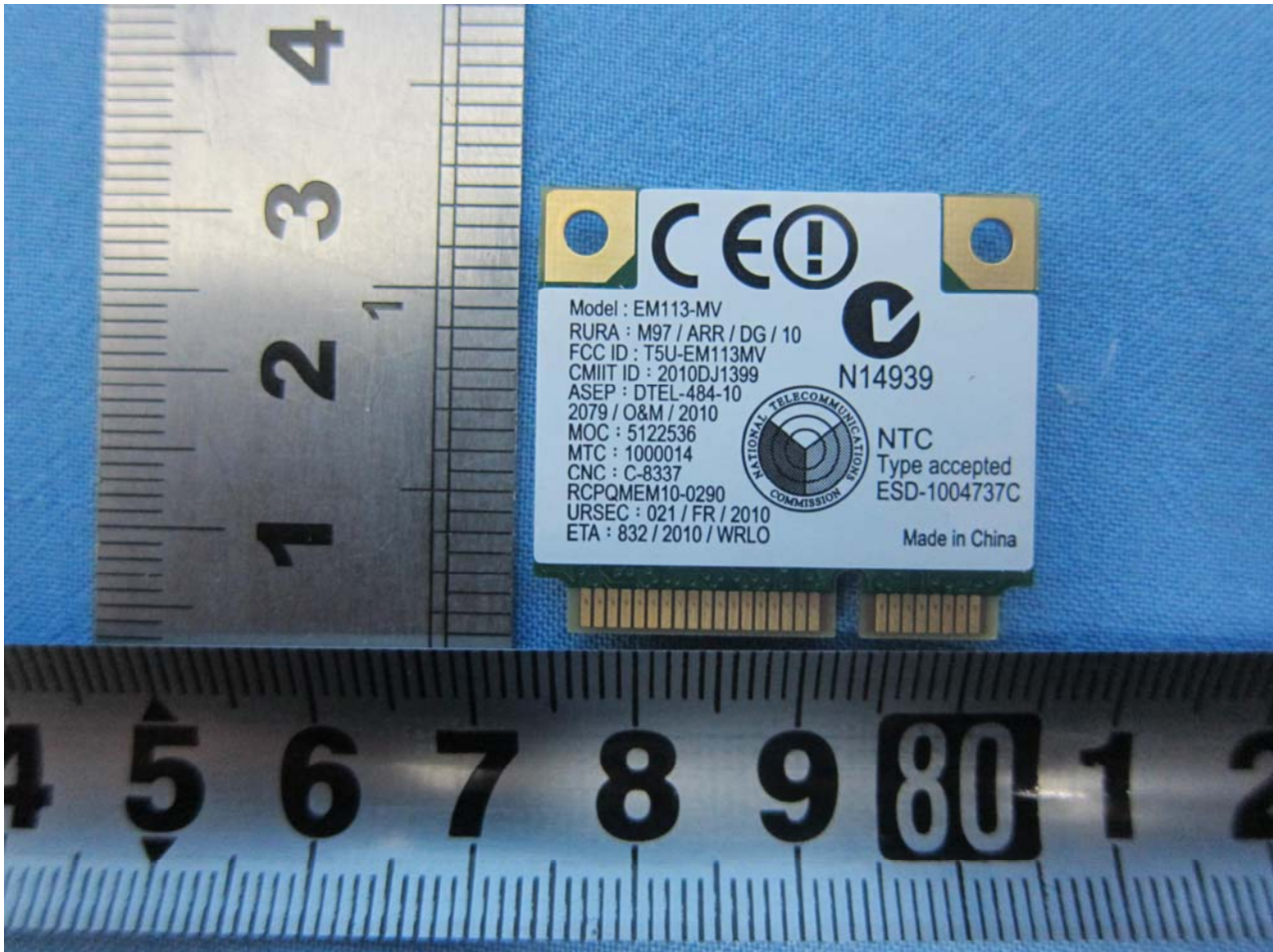




Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS



Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS







Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS



**Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS**

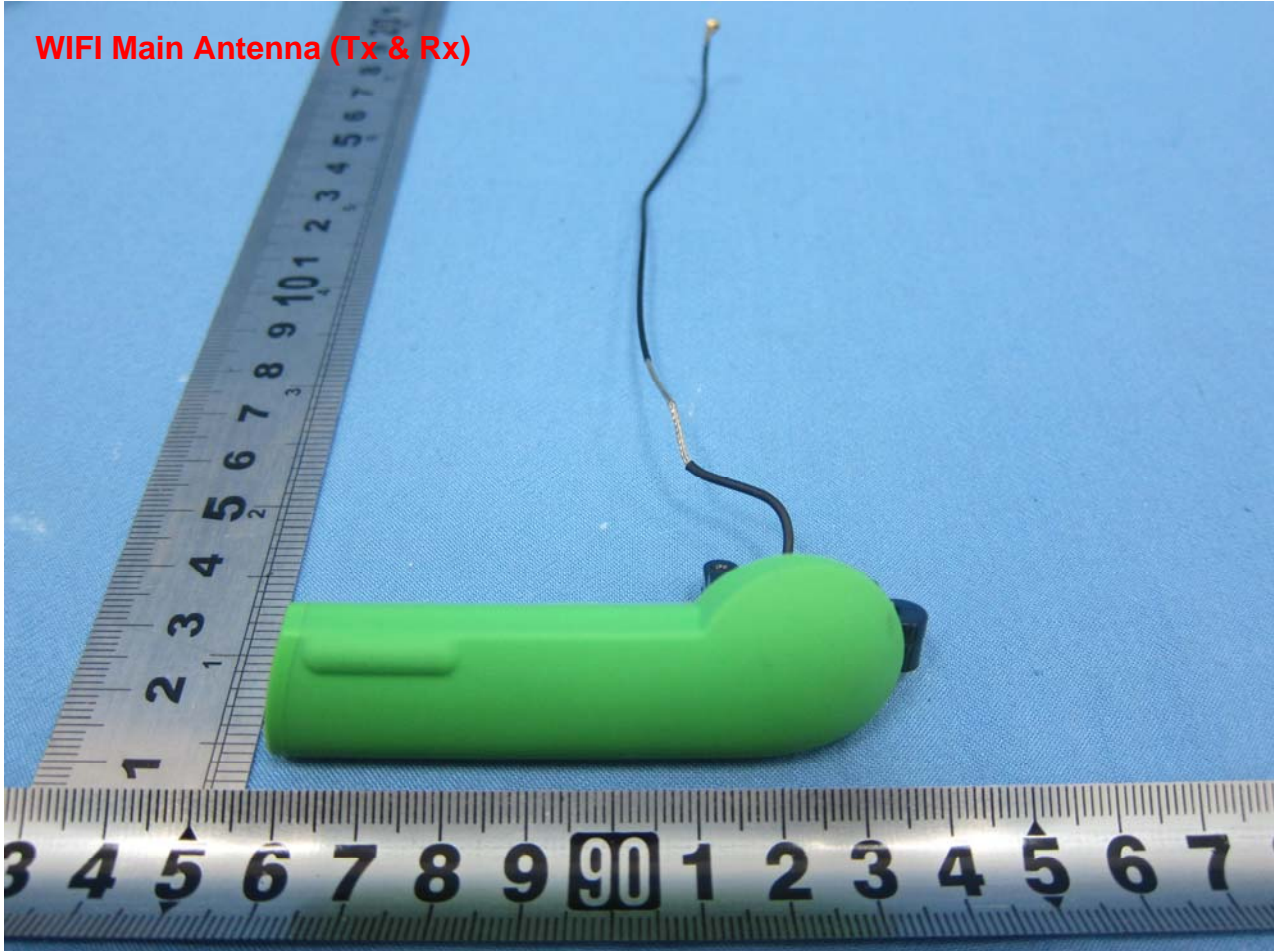






Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS

WIFI Main Antenna (Tx & Rx)





Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS

WIFI AUX Antenna (Rx)

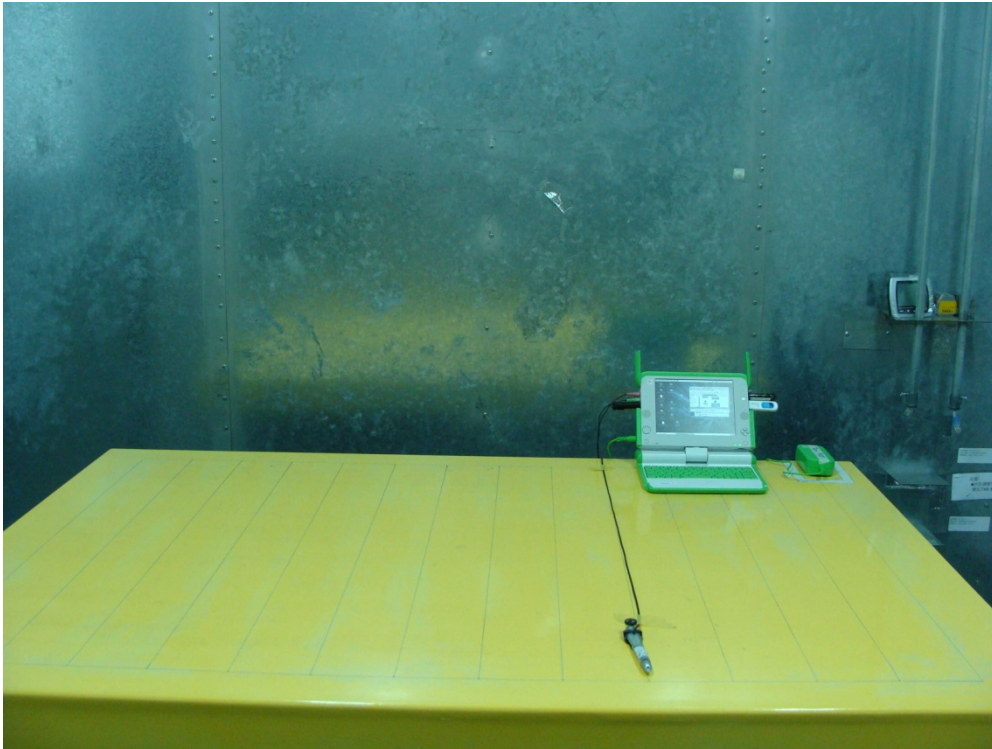




## Appendix B. Setup Photographs

<Conducted Emission>

Mode 2



<Radiated Emission>

Mode 2

LF



HF





## **Appendix C. Original Report**

Please refer to Sporton report number FD172910 as below.

# FCC/IC Test Report

**APPLICANT** : Quanta Computer Inc  
**EQUIPMENT** : Laptop Computer  
**BRAND NAME** : OLPC  
**MODEL NAME** : XO-1.75; XO-1.75HS  
**FCC ID** : T5U-EM113MV  
**STANDARD** : ICES-003 Issue 4  
FCC 47 CFR FCC Part 15 Subpart B  
**CLASSIFICATION** : Declaration of Conformity

The product was received on Nov. 16, 2011 and completely tested on Nov. 30, 2011. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown the compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:



Jones Tsai / Manager



## **SPORTON INTERNATIONAL INC.**

**No. 52, Hwa Ya 1<sup>st</sup> Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.**



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**APPENDIX A. PHOTOGRAPHS OF EUT**

**APPENDIX B. SETUP PHOTOGRAPHS**







### SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.107	7.2.2	AC Conducted Emission	< 15.107 limits < RSS-Gen table 2 limits	PASS	Under limit 12.5 dB at 0.15 MHz
3.2	15.109	7.2.3.2	Radiated Emission	< 15.109 limits or < RSS-Gen table 1 limits (Section 6)	PASS	Under limit 3.40 dB at 596.80 MHz

## 1. General Description

### 1.1. Applicant

**Quanta Computer Inc**

No.188, Wen Hwa 2nd Rd., Kuei Shan Hsiang, Tao Yuan Shien, TaiWan

### 1.2. Manufacturer

**Quanta Computer Inc**

No.188, Wen Hwa 2nd Rd., Kuei Shan Hsiang, Tao Yuan Shien, TaiWan

### 1.3. Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Laptop Computer
Brand Name	OLPC
Model Name	XO-1.75; XO-1.75HS
FCC ID	T5U-EM113MV
Tx Frequency Range	2400 MHz ~ 2483.5 MHz
Rx Frequency Range	2400 MHz ~ 2483.5 MHz
Antenna Type	PIFA Antenna
HW Version	N/A
SW Version	N/A
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g : OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Identical Prototype

**Remark:**

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. The difference between sample 1(XO-1.75HS) and sample 2 (XO-1.75) is only for keyboard. The others are the same including circuit design, PCB board, structure and all components. It is special to declare.



List of Accessory:

Specification of Accessory		
AC Adapter 1	Brand Name	DARFON
	Model Name	BB0J-C
AC Adapter 2	Brand Name	Bestec
	Model Name	NA0241WAA
AC Adapter 3	Brand Name	DARFON
	Model Name	BU24-1203
AC Adapter 4	Brand Name	Bestec
	Model Name	BT-AG250SDF
Battery	Brand Name	OLPC
	Model Name	CL1

Remark: For accessories equipped with this EUT, please refer to Appendix A.

### 1.4. Test Site

<b>Test Site</b>	SPORTON INTERNATIONAL INC.		
<b>Test Site Location</b>	No. 52, Hwa Ya 1 <sup>st</sup> Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978		
<b>Test Site No.</b>	<b>Sporton Site No.</b>		<b>FCC/IC Registration No.</b>
	CO05-HY	03CH06-HY	TW1022/4086B-1

### 1.5. Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC 47 CFR FCC Part 15 Subpart B
- IC ICES-003 Issue 4
- ANSI C63.4-2003
- IC RSS-Gen Issue 3

**Remark:**

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. The test results for FCC compliance, indicating that these results are deemed satisfactory evidence of compliance with **Industry Canada Interference-Causing Equipment Standard ICES-003**.

### 1.6. Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	WLAN AP	D-link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
2.	Earphone + Mic	Ergotech	ET-E200	FCC DoC	Unshielded, 1.8 m	N/A
3.	iPod 4	Apple	A1285	FCC DoC	shielded, 1.0 m	N/A
4.	USB Dongle	Kingston	Data Traveler 100	FCC DoC	N/A	N/A

## 2. Test Configuration of Equipment Under Test

### 2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Frequency range investigated: conduction (150 kHz to 30 MHz), radiation (30MHz to the 5th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

The following tables are showing the test modes as the worst cases and recorded in this report.

Item	EUT Configuration	Test Condition		
		EMI AC	EMI RE<1G	EMI RE≥1G
1.	Charging Mode (EUT with adapter)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

**Abbreviations:**

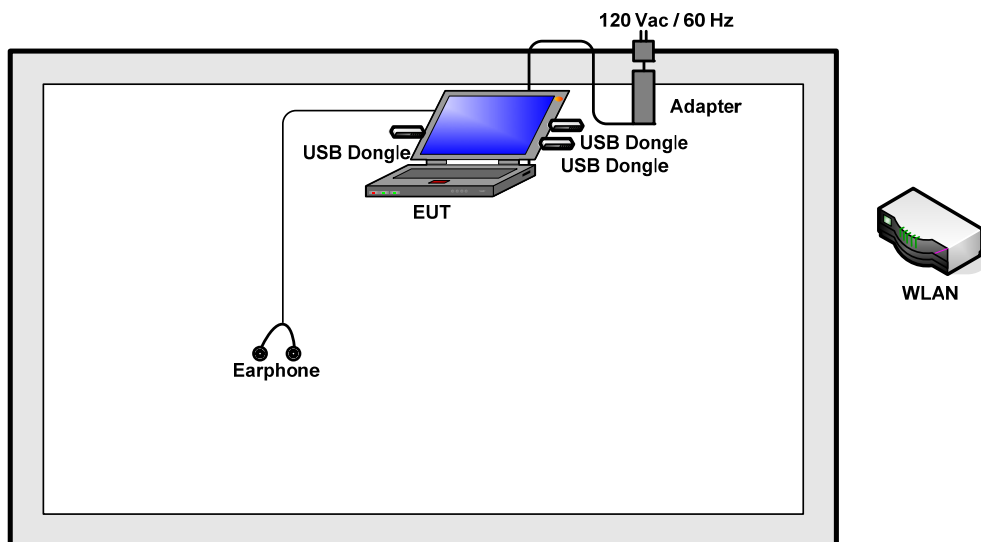
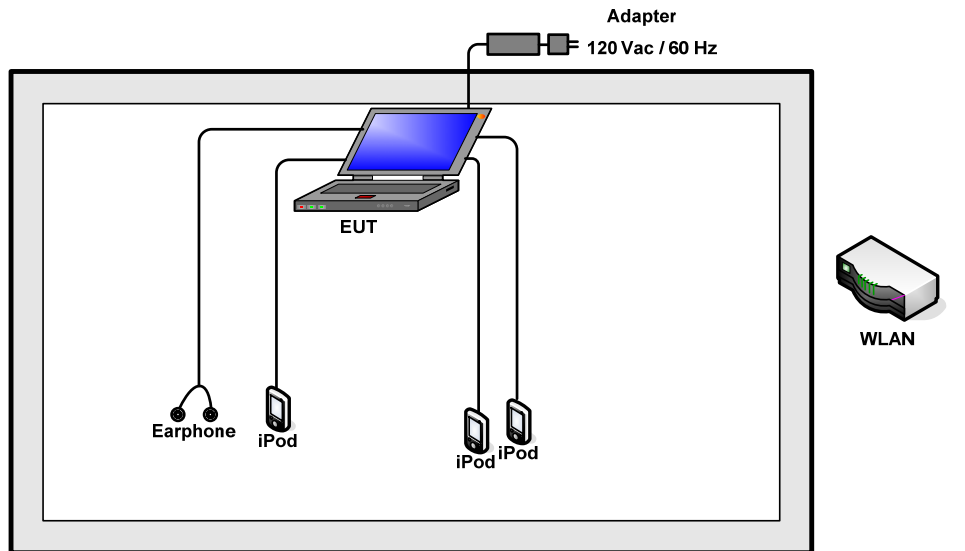
- EMI AC: AC conducted emissions
- EMI RE ≥ 1G: EUT radiated emissions ≥ 1GHz
- EMI RE < 1G: EUT radiated emissions < 1GHz



Test Items	EUT Configure Mode	Function Type
AC Conducted Emission	1	Mode 1: WLAN Idle(EM113-MV) + Adapter 1 + RAM512MB + TC for Sample 1 Mode 2: WLAN Idle(EM113-MV) + Adapter 2 + RAM1GB + TC for Sample 1 Mode 3: WLAN Idle(EM113-MV) + Adapter 3 + RAM512MB + TC for Sample 2 Mode 4: <b>WLAN Idle(EM113-MV) + Adapter 4 + RAM1GB + TC for Sample 2</b>
Radiated Emissions < 1GHz	1	Mode 1: WLAN Idle(EM113-MV) + Adapter 1 + RAM512MB + TC for Sample 1 Mode 2: WLAN Idle(EM113-MV) + Adapter 2 + RAM1GB + TC for Sample 1 Mode 3: WLAN Idle(EM113-MV) + Adapter 3 + RAM512MB + TC for Sample 2 Mode 4: <b>WLAN Idle(EM113-MV) + Adapter 4 + RAM1GB + TC for Sample 2</b>
Radiated Emissions ≥ 1GHz	1	Mode 1: WLAN Idle(EM113-MV) + Adapter 4 + RAM1GB + TC for Sample 2
<b>Remark:</b> <ol style="list-style-type: none"> <li>The worst case of AC Conducted Emission is mode 4; only the test data of this mode was reported.</li> <li>The worst case of RE &lt; 1G is mode 4; only the test data of this mode was reported.</li> <li>TC stands for Test Configuration, and consists of iPods, USB Dongles and Earphone.</li> </ol>		

## 2.2. Connection Diagram of Test System

<EUT with Adapter Mode>





## **2.3. Test Software**

The EUT was attached to the WLAN AP, and was in WLAN idle mode during the testing. Using the terminal, and then execute the test program “./usb-test.sh”, installed in the EUT for active sync files transfer with iPod or USB dongle.

### 3. Test Result

#### 3.1. Test of AC Conducted Emission Measurement

##### 3.1.1 Limits of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted 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.

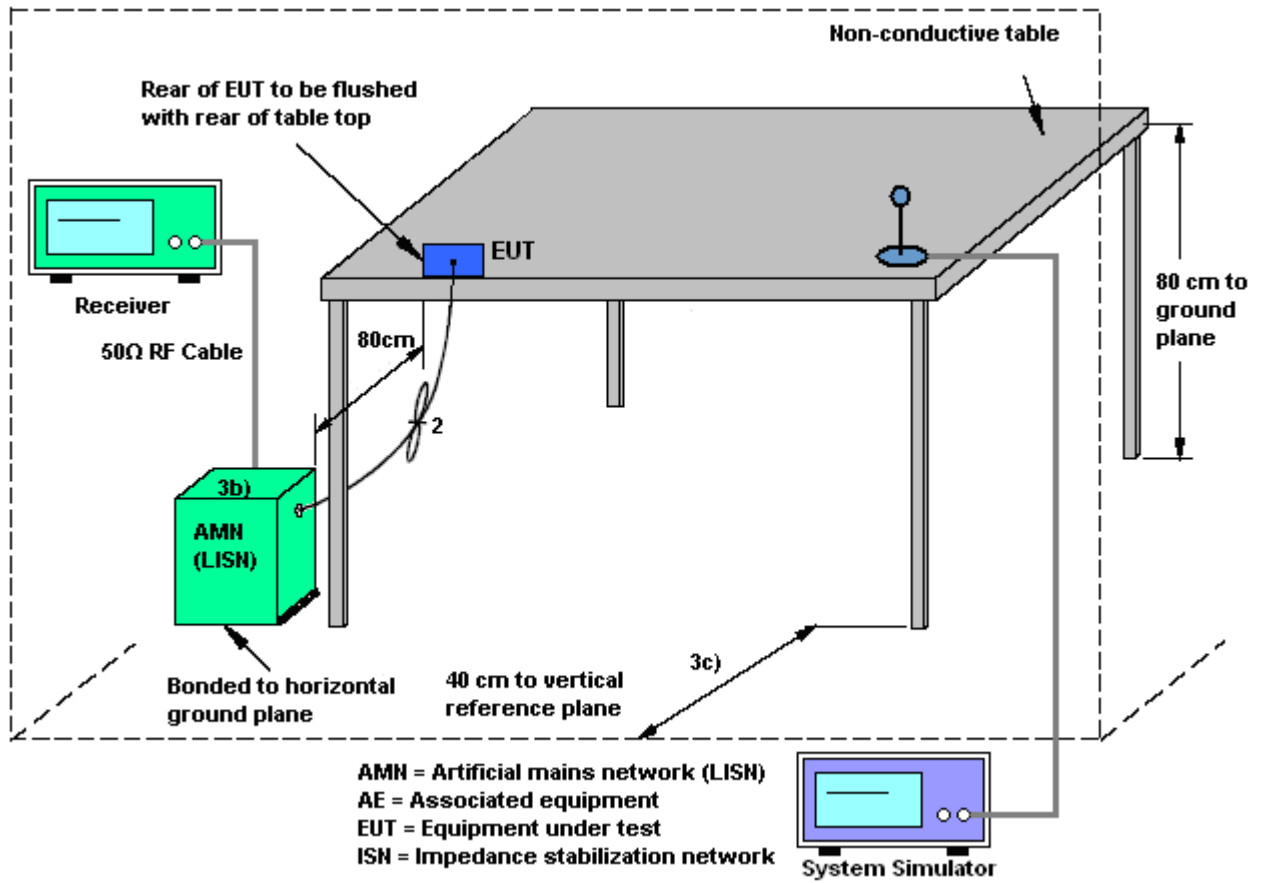
##### 3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

##### 3.1.3 Test Procedure

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

### 3.1.4 Test Setup

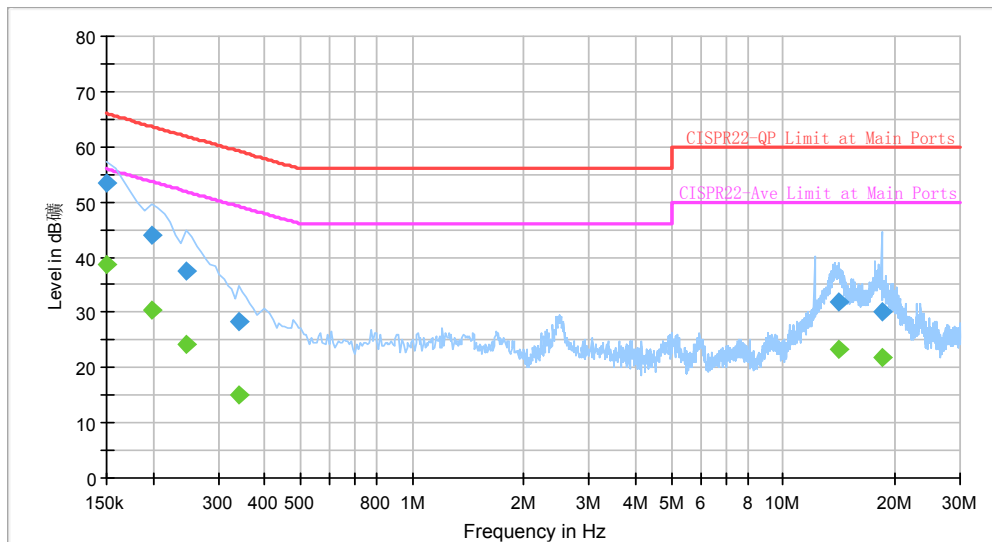




3.1.5 Test Result of AC Conducted Emission

Test Mode :	Mode 4	Temperature :	21~23°C
Test Engineer :	Kai-Chan Chu	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN Idle(EM113-MV) + Adapter 4 + RAM1GB + TC for Sample 2		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

ENV216 Auto Test ESCI7



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	53.4	Off	L1	19.4	12.6	66.0
0.198000	44.1	Off	L1	19.4	19.6	63.7
0.246000	37.6	Off	L1	19.4	24.3	61.9
0.342000	28.5	Off	L1	19.4	30.7	59.2
14.054000	32.0	Off	L1	19.6	28.0	60.0
18.398000	30.2	Off	L1	19.7	29.8	60.0

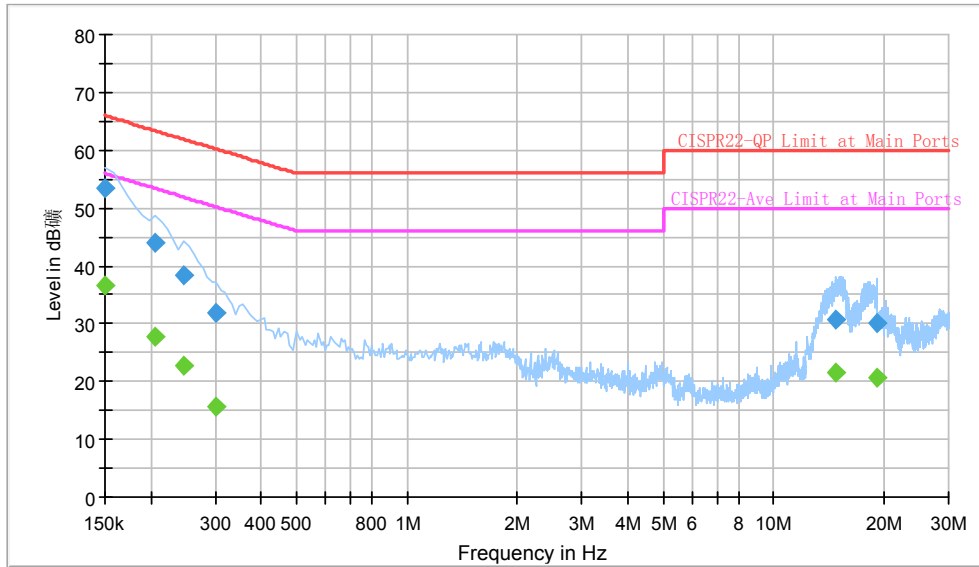
Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	38.8	Off	L1	19.4	17.2	56.0
0.198000	30.4	Off	L1	19.4	23.3	53.7
0.246000	24.3	Off	L1	19.4	27.6	51.9
0.342000	15.2	Off	L1	19.4	34.0	49.2
14.054000	23.2	Off	L1	19.6	26.8	50.0
18.398000	21.9	Off	L1	19.7	28.1	50.0



Test Mode :	Mode 4	Temperature :	21~23
Test Engineer :	Kai-Chan Chu	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN Idle(EM113-MV) + Adapter 4 + RAM1GB + TC for Sample 2		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

ENV216 Auto Test ESCI7



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	53.5	Off	N	19.4	12.5	66.0
0.206000	43.9	Off	N	19.4	19.5	63.4
0.246000	38.5	Off	N	19.4	23.4	61.9
0.302000	31.9	Off	N	19.4	28.3	60.2
14.758000	30.7	Off	N	19.7	29.3	60.0
19.054000	30.1	Off	N	19.7	29.9	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	36.7	Off	N	19.4	19.3	56.0
0.206000	27.8	Off	N	19.4	25.6	53.4
0.246000	22.7	Off	N	19.4	29.2	51.9
0.302000	15.7	Off	N	19.4	34.5	50.2
14.758000	21.5	Off	N	19.7	28.5	50.0
19.054000	20.6	Off	N	19.7	29.4	50.0

## 3.2. Test of Radiated Emission Measurement

### 3.2.1. Limit of Radiated Emission

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

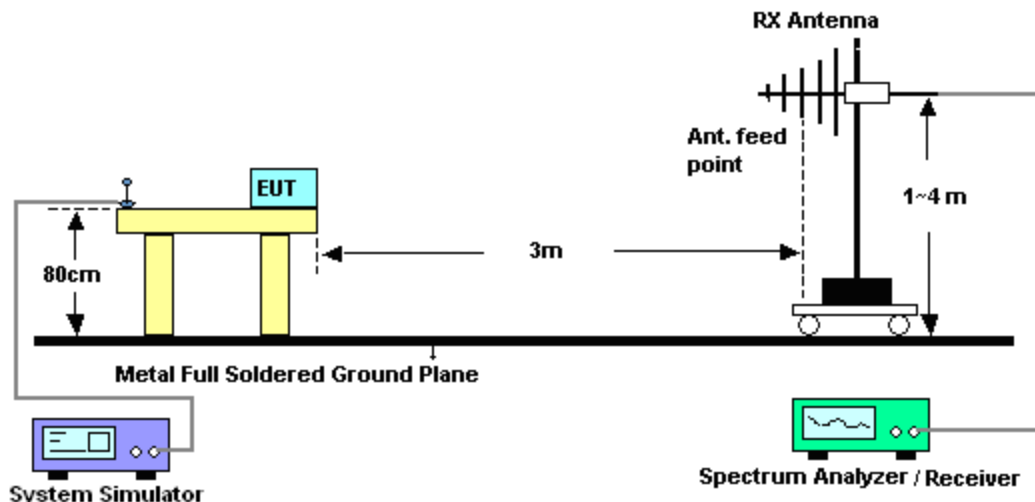
### 3.2.2. Measuring Instruments

See list of measuring instruments of this test report.

### 3.2.3. Test Procedures

1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna is a Bi-Log antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the quasi-peak method and reported
8. Emission level (dBuV/m) = 20 log Emission level (uV/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

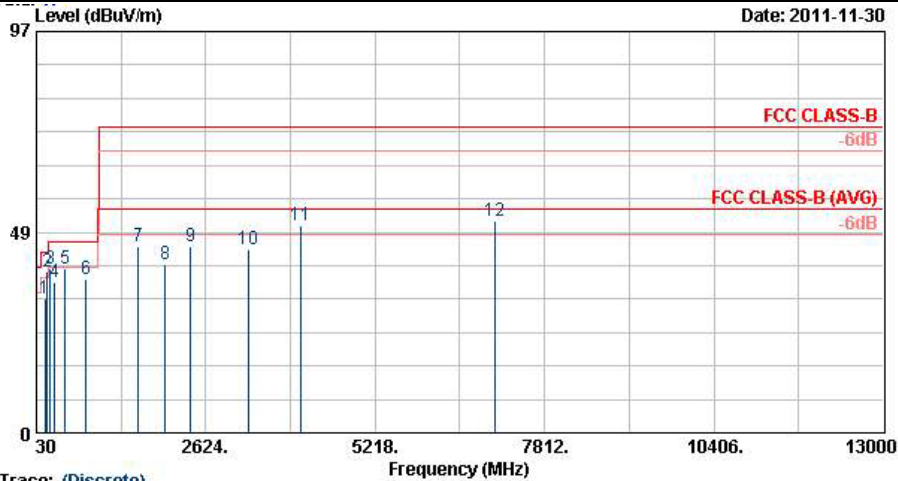
### 3.2.4. Test Setup of Radiated Emission





3.2.5. Test Result of Radiated Emission

Test Mode :	Mode 4	Temperature :	22~23°C
Test Engineer :	Wii Chang	Relative Humidity :	53~54%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	WLAN Idle(EM113-MV) + Adapter 4 + RAM1GB + TC for Sample 2		



Trace: (Discrete)  
 Site : 03CH06-RY  
 Condition : FCC CLASS-B HF-ANT\_110802 HORIZONTAL

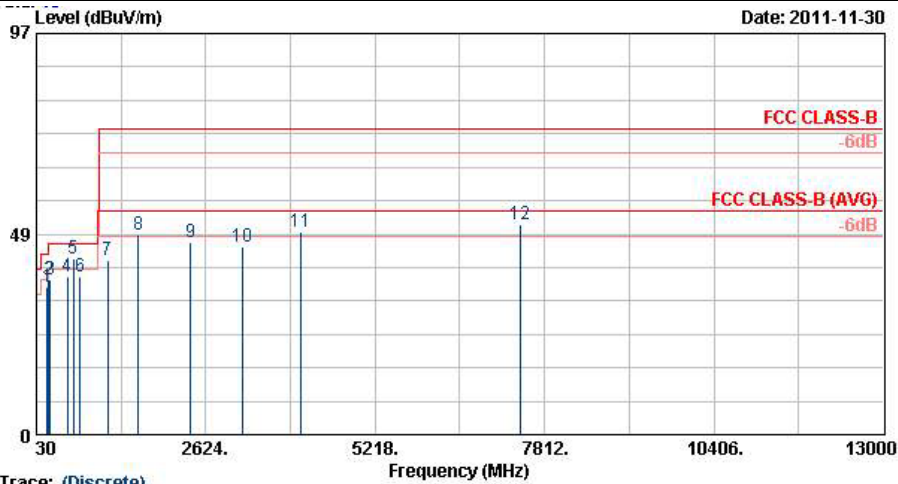
	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	160.14	32.44	-11.06	43.50	52.63	9.90	1.56	31.65	---	---	Peak
2 !	199.83	38.90	-4.60	43.50	59.31	9.30	1.94	31.65	100	55	Peak
3	239.79	39.68	-6.32	46.00	57.79	11.30	2.24	31.65	---	---	Peak
4	309.80	36.57	-9.43	46.00	52.38	13.47	2.37	31.64	---	---	Peak
5	467.30	39.68	-6.32	46.00	51.68	17.17	2.65	31.82	---	---	Peak
6	796.30	37.22	-8.78	46.00	45.79	19.96	3.45	31.98	---	---	Peak
7	1590.00	45.12	-28.88	74.00	66.40	28.54	4.27	54.09	---	---	Peak
8	2004.00	40.60	-33.40	74.00	58.42	31.50	4.93	54.25	---	---	Peak
9	2390.00	45.19	-28.81	74.00	62.25	31.90	5.40	54.36	---	---	Peak
10	3284.00	44.41	-29.59	74.00	60.02	32.61	6.43	54.66	---	---	Peak
11	4070.00	50.05	-23.95	74.00	64.55	33.35	7.41	55.25	---	---	Peak
12	7062.00	51.12	-22.88	74.00	61.00	35.76	10.79	56.43	100	0	Peak



# FCC Test Report

Report No. : FD172910

Test Mode :	Mode 4	Temperature :	22~23°C
Test Engineer :	Wii Chang	Relative Humidity :	53~54%
Test Distance :	3m	Polarization :	Vertical
Function Type :	WLAN Idle(EM113-MV) + Adapter 4 + RAM1GB + TC for Sample 2		



Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B HP-ANT\_110802 VERTICAL

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	199.83	35.85	-7.65	43.50	56.26	9.30	1.94	31.65	---	---	Peak
2	219.54	37.51	-8.49	46.00	58.02	9.08	2.09	31.68	---	---	Peak
3	238.98	37.34	-8.66	46.00	55.57	11.19	2.23	31.65	---	---	Peak
4	509.30	38.15	-7.85	46.00	49.32	17.69	2.94	31.80	---	---	Peak
5 @	596.80	42.60	-3.40	46.00	52.88	18.80	3.03	32.11	100	31	Peak
6	701.80	38.18	-7.82	46.00	47.62	19.02	3.55	32.01	---	---	Peak
7	1118.00	42.27	-31.73	74.00	64.94	27.80	3.55	54.01	---	---	Peak
8	1596.00	48.48	-25.52	74.00	69.76	28.54	4.27	54.09	---	---	Peak
9	2390.00	46.60	-27.40	74.00	63.66	31.90	5.40	54.36	---	---	Peak
10	3188.00	45.59	-28.41	74.00	61.32	32.58	6.32	54.62	---	---	Peak
11	4070.00	49.14	-24.86	74.00	63.63	33.35	7.41	55.25	---	---	Peak
12	7444.00	50.92	-23.08	74.00	60.36	35.53	11.29	56.26	100	0	Peak





### 4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receive	R&S	ESCI 7	100724	9kHz~7GHz	Aug. 22, 2011	Nov. 29, 2011	Aug. 21, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz – 30MHz	Dec. 03, 2010	Nov. 29, 2011	Dec. 02, 2011	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz – 30MHz	Dec. 01, 2010	Nov. 29, 2011	Nov. 30, 2011	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Nov. 29, 2011	N/A	Conduction (CO05-HY)
Spectrum Analyzer	R&S	FSP40	100057	9KHz-40GHz	Oct. 27, 2011	Nov. 30, 2011	Oct. 26, 2012	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESVS10	834468/003	20MHz-1000MHz	May 10, 2011	Nov. 30, 2011	May 09, 2012	Radiation (03CH01-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz -2GHz	Oct. 22, 2011	Nov. 30, 2011	Oct. 21, 2012	Radiation (03CH06-HY)
Loop Antenna	R&S	HFH2-Z2	860004/00	9G-30GHz	Jul. 28, 2011	Nov. 30, 2011	Jul. 27, 2012	Radiation (03CH01-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz~18GHz	Aug. 01, 2011	Nov. 30, 2011	Jul. 31, 2012	Radiation (03CH06-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170 251	15GHz- 40GHz	Oct. 21, 2011	Nov. 30, 2011	Oct. 20, 2012	Radiation (03CH06-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1GHz- 26.5GHz	Apr. 14, 2011	Nov. 30, 2011	Apr. 13, 2012	Radiation (03CH06-HY)
Amplifier	Agilent	310N	186713	9KHz~1GHz	Apr. 14, 2011	Nov. 30, 2011	Apr. 13, 2012	Radiation (03CH06-HY)
System Simulator	R&S	CMU200	117591	N/A	Oct. 16, 2011	Nov. 30, 2011	Oct. 15, 2012	Radiation (03CH06-HY)

## 5. Uncertainty of Evaluation

### Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

Contribution	Uncertainty of $X_i$		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.10	Normal (k=2)	0.05
Cable Loss	0.10	Normal (k=2)	0.05
AMN Insertion Loss	2.50	Rectangular	0.63
Receiver Specification	1.50	Rectangular	0.43
Site Imperfection	1.39	Rectangular	0.80
Mismatch	+0.34 / -0.35	U-Shape	0.24
<b>Combined Standard Uncertainty <math>Uc(y)</math></b>	<b>1.13</b>		
<b>Measuring Uncertainty for a Level of Confidence of 95% (<math>U = 2Uc(y)</math>)</b>	<b>2.26</b>		

### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Contribution	Uncertainty of $X_i$		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.41	Normal (k=2)	0.21
Antenna Factor Calibration	0.83	Normal (k=2)	0.42
Cable Loss Calibration	0.25	Normal (k=2)	0.13
Pre-Amplifier Gain Calibration	0.27	Normal (k=2)	0.14
RCV/SPA Specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site Imperfection	1.43	Rectangular	0.83
Mismatch	+0.39 / -0.41	U-Shape	0.28
<b>Combined Standard Uncertainty <math>Uc(y)</math></b>	<b>1.27</b>		
<b>Measuring Uncertainty for a Level of Confidence of 95% (<math>U = 2Uc(y)</math>)</b>	<b>2.54</b>		



**Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)**

Contribution	Uncertainty of $X_i$		$u(X_i)$	$C_i$	$C_i * u(X_i)$
	dB	Probability Distribution			
Receiver Reading	$\pm 0.10$	Normal (k=2)	0.10	1	0.10
Antenna Factor Calibration	$\pm 1.70$	Normal (k=2)	0.85	1	0.85
Cable Loss Calibration	$\pm 0.50$	Normal (k=2)	0.25	1	0.25
Receiver Correction	$\pm 2.00$	Rectangular	1.15	1	1.15
Antenna Factor Directional	$\pm 1.50$	Rectangular	0.87	1	0.87
Site Imperfection	$\pm 2.80$	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20\text{Log}(1-\Gamma_1*\Gamma_2)$	+0.34 / -0.35	U-Shape	0.244	1	0.244
<b>Combined Standard Uncertainty <math>U_c(y)</math></b>	<b>2.36</b>				
<b>Measuring Uncertainty for a Level of Confidence of 95% (<math>U = 2U_c(y)</math>)</b>	<b>4.72</b>				



## **Appendix A. Photographs of EUT**

Please refer to Sporton report number EP172910 as below.



1. External Photograph of EUT

Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS



Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS





Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS



Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS





**Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS**





Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS





Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS





Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS







Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS

Sample 2 (XO-1.75)





2. Photograph of Accessory

Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS

List of Accessory:

Specification of Accessory		
AC Adapter 1	Brand Name	DARFON
	Model Name	BB0J-C
AC Adapter 2	Brand Name	Bestec
	Model Name	NA0241WAA
AC Adapter 3	Brand Name	DARFON
	Model Name	BU24-1203
AC Adapter 4	Brand Name	Bestec
	Model Name	BT-AG250SDF
Battery	Brand Name	OLPC
	Model Name	CL1

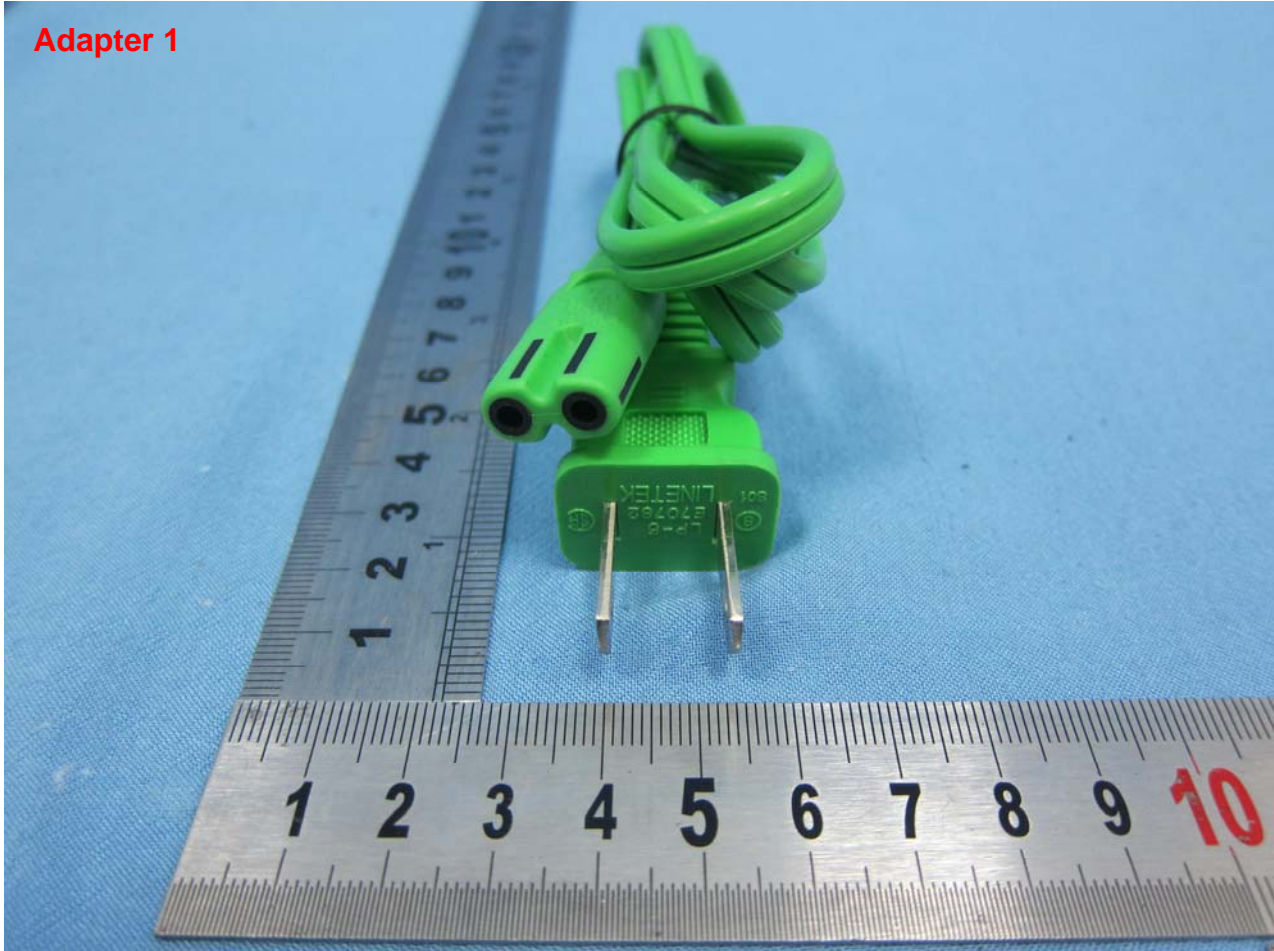
Remark: For accessories equipped with this EUT, please refer to the following photos.

Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS



Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS

**Adapter 1**





Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS







Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS





Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS



Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS

Adapter 2

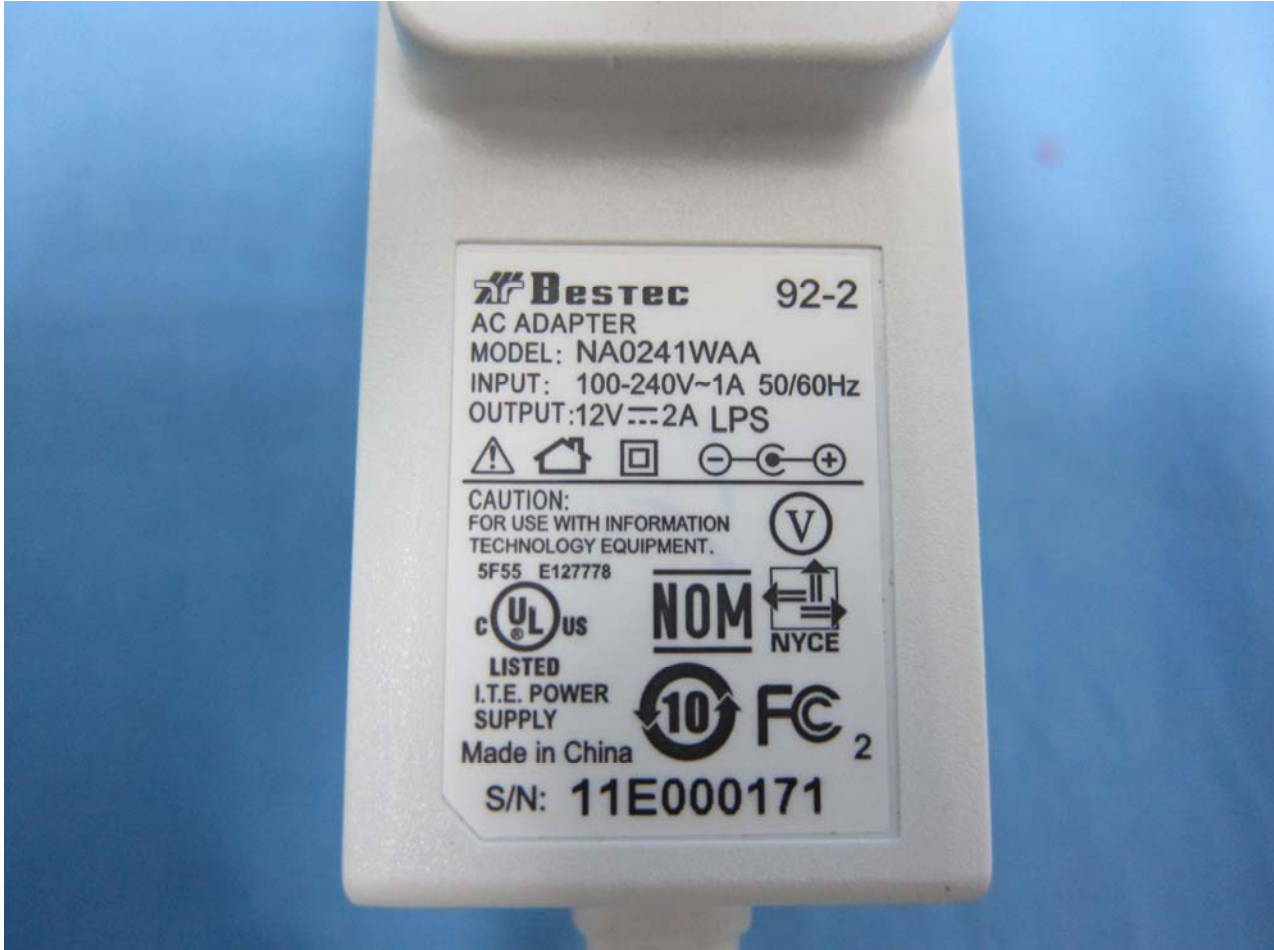




Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS



Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS





Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS

**Adapter 3**



Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS



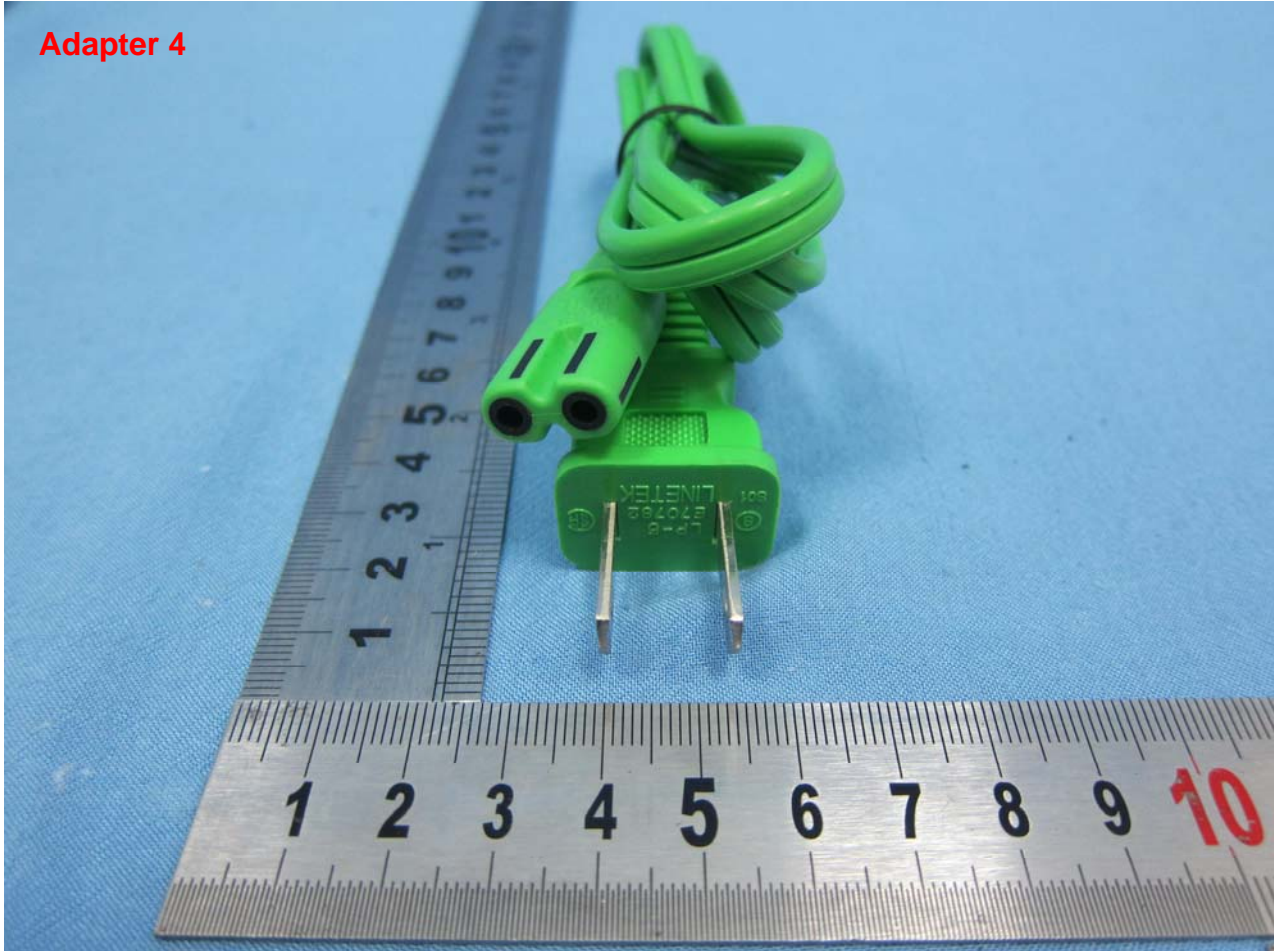


Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS



Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS

**Adapter 4**





Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS





Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS





Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS



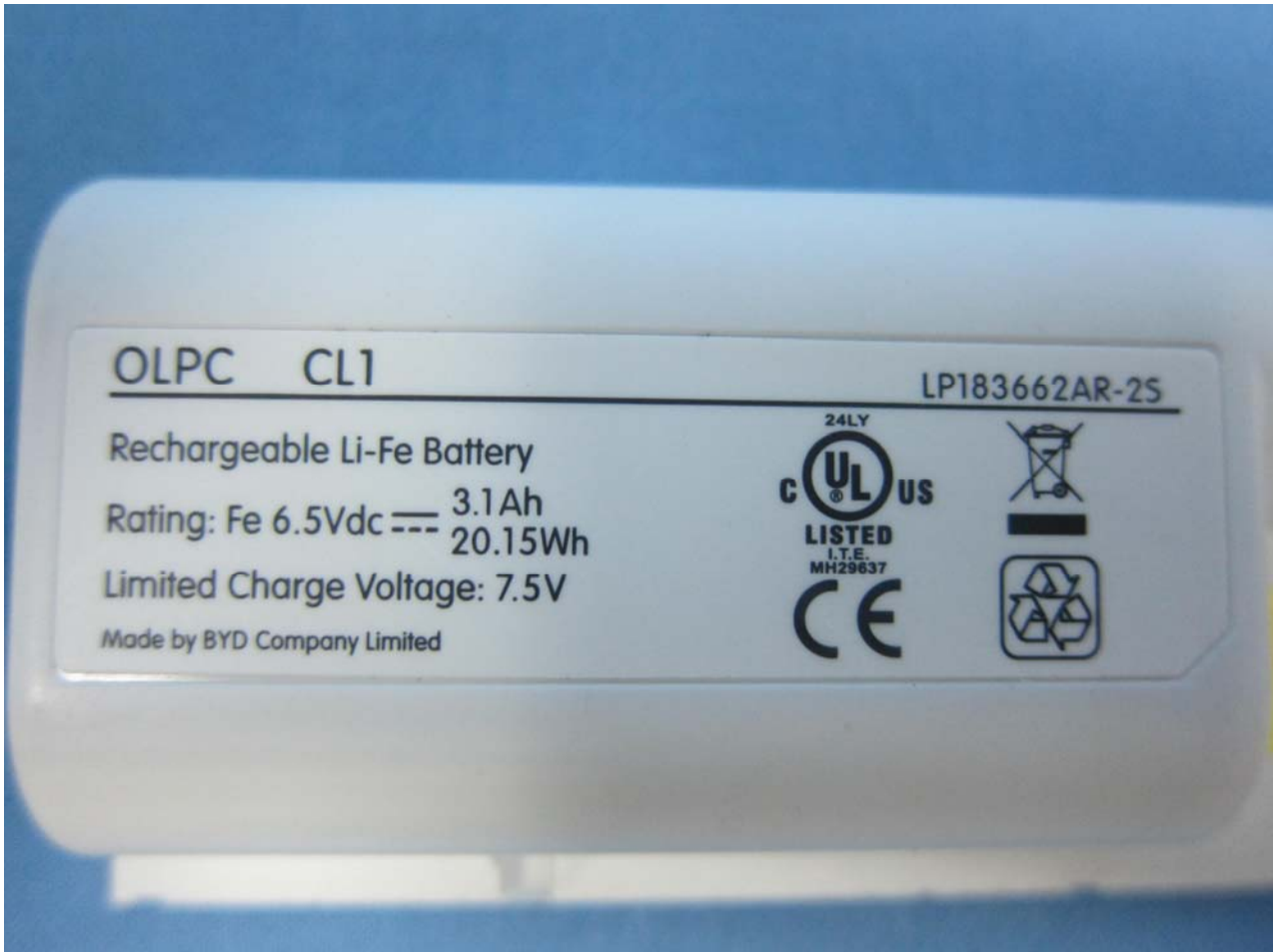


Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS





Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS





Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS



### 3. Internal Photograph of EUT

Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS



Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS

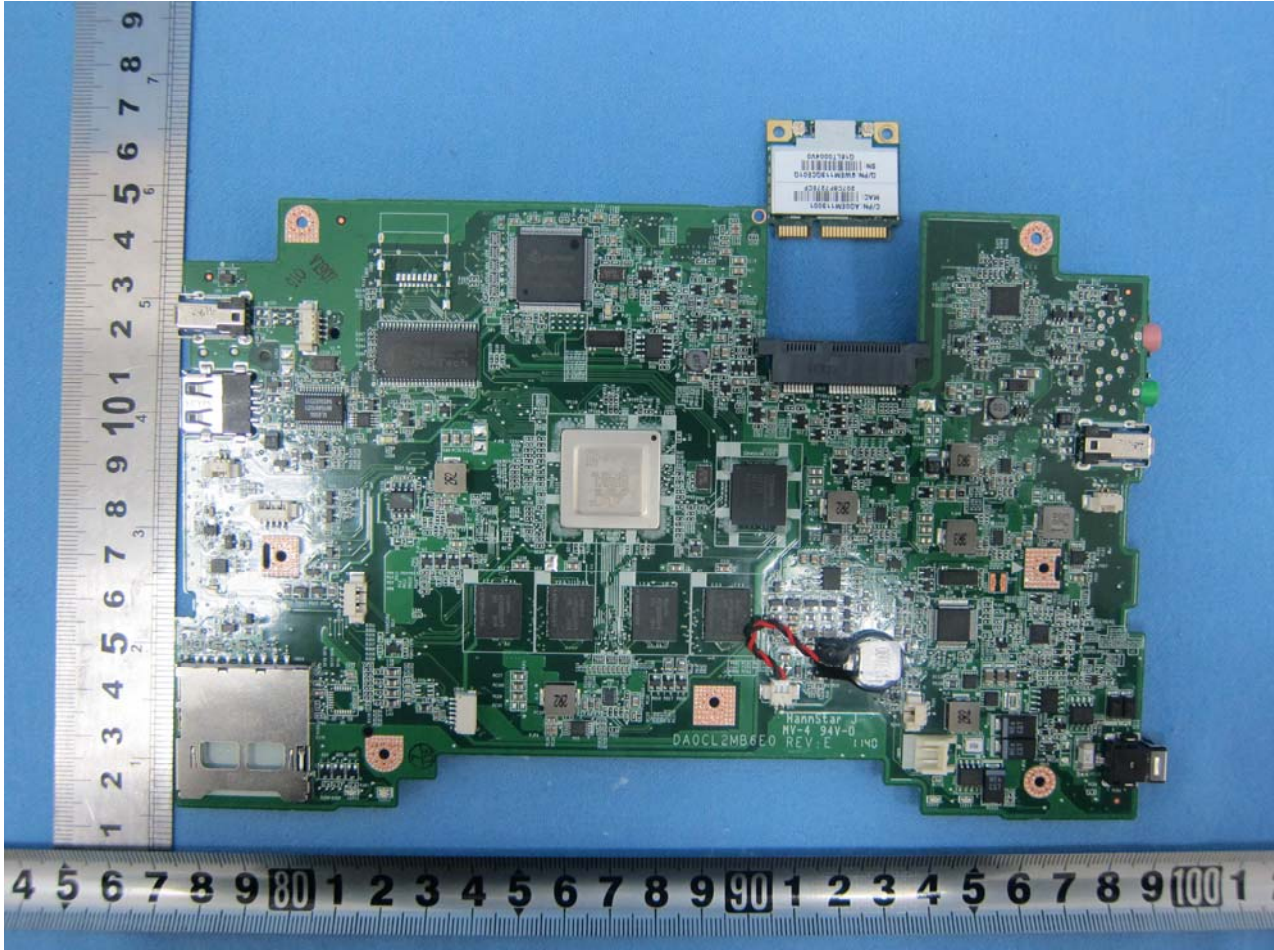




Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS

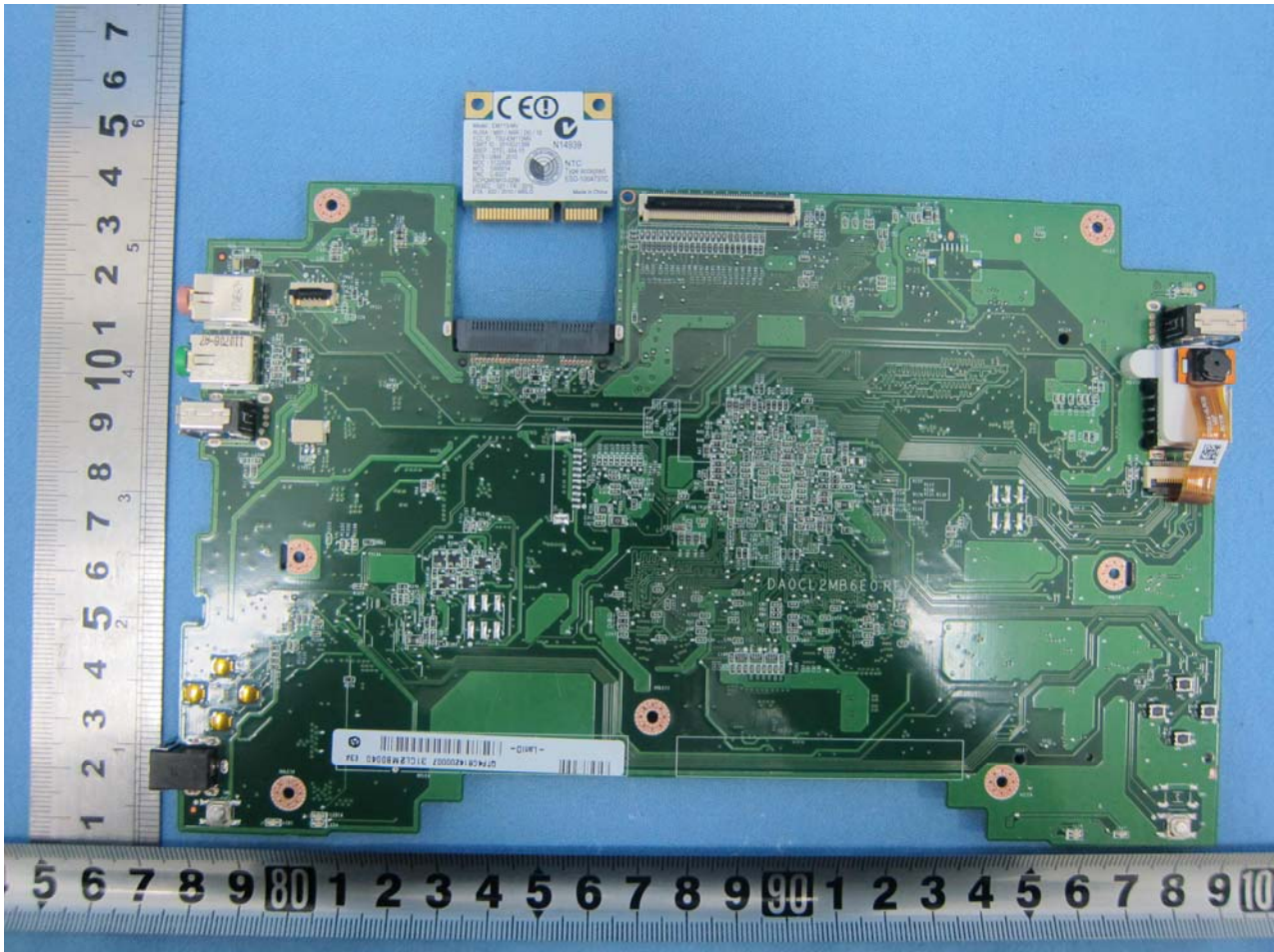


Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS

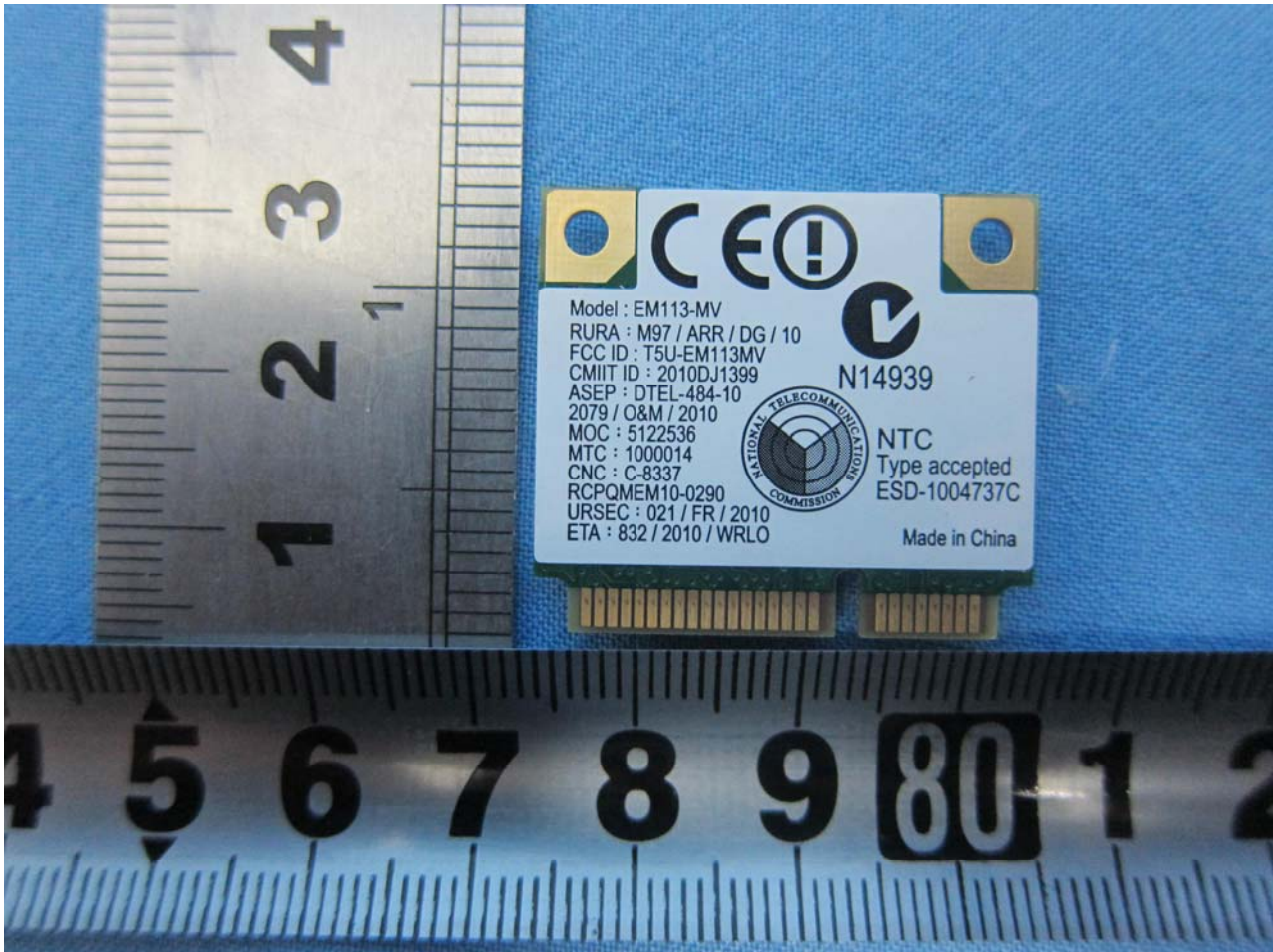




Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS



Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS





Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS



**Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS**

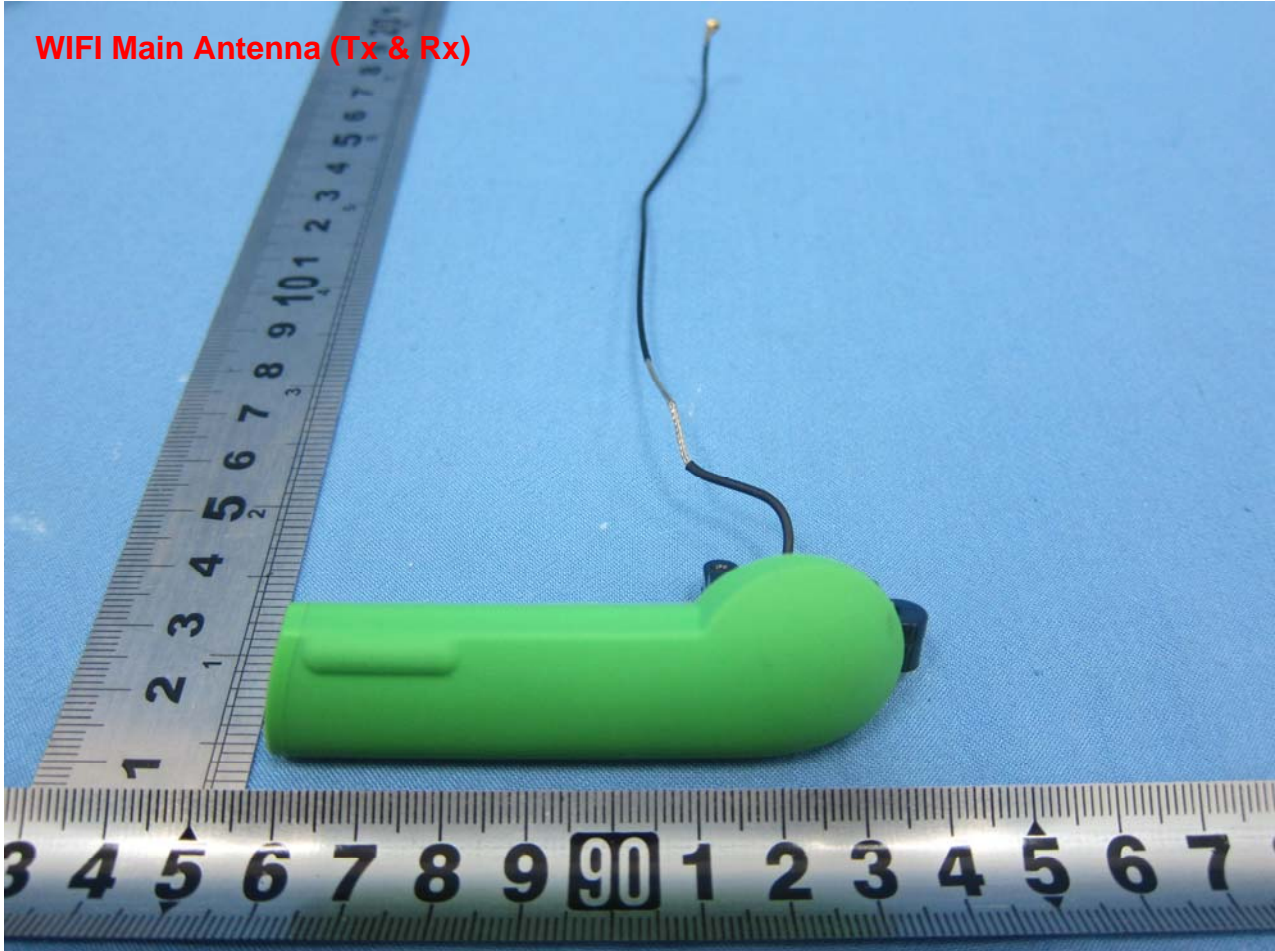






Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS

WIFI Main Antenna (Tx & Rx)







Brand Name: OLPC / Model Name: XO-1.75; XO-1.75HS

WIFI AUX Antenna (Rx)



## Appendix B. Setup Photographs

<Conducted Emission>

Mode 4

Front View



## &lt;Radiated Emission&gt;

Mode 4

LF



HF

