FCC RADIO TEST REPORT

According to

47 CFR FCC Part 15 Subpart C § 15.225

Equipment	:	**GSM/WCDMA TRI-BAND PHONE WITH BT, WLAN, AND NFC**
Brand Name	:	**LG**
Model No.	:	**LG-E960, E960, LGE960**
Marketing Name		
Applicant	:	**LG ELECTRONICS MOBILECOMM U.S.A., INC.**
Manufacturer		1000 SYLVAN AVENU ENGLEWOOD CLIFFS, NEW JERSEY 07632
FCC ID	:	**ZNFE960**
Received Date	:	Sep. 14, 2012
Final Test Date	:	Sep. 25, 2012

Statement

The test result in this report refers exclusively to the presented test model / sample.

Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.

The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in **ANSI C63.4-2003** and **47 CFR FCC Part 15 Subpart C**.

The test equipment used to perform the test is calibrated and traceable to NML/ROC.

Testing Laboratory
1190

SPORTON International Inc.

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

Table of Contents

History of This Test Report

Original Issue Date: Sep. 26, 2012
Report No.: FR291007-01
■ No additional attachment.
□ Additional attachment were issued as following record:

Attachment No.	Issue Date	Description

CERTIFICATE OF COMPLIANCE

According to

47 CFR FCC Part 15 Subpart C § 15.225

Equipment	:	GSM/WCDMA TRI-BAND PHONE WITH BT, WLAN, AND NFC
Brand Name	:	LG
Model	:	LG-E960, E960, LGE960
Applicant	:	LG ELECTRONICS MOBILECOMM U.S.A., INC. 1000 SYLVAN AVENU ENGLEWOOD CLIFFS, NEW JERSEY 07632

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Sep. 14, 2012 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

Wayne Hsu / Assistant Manager

SPORTON International Inc.

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

1. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart C				
Part	**Rule Section**	**Description of Test**	**Result**	**Under Limit**
3.1	15.207	AC Power Line Conducted Emissions	Complies	0.92 dB
3.2	15.225(a)	Field Strength of Fundamental Emissions	Complies	73.11 dB
3.3	15.215(c)	20dB Spectrum Bandwidth	N/A	-
3.4	15.225(d)	Radiated Emissions	Complies	1.63 dB
3.5	15.225(e)	Frequency Stability	N/A	-
3.6	15.203	Antenna Requirements	Complies	-

Remind: The test data of part 3.3 and 3.5, please refer to original report.

Test Items	Uncertainty	Remark
AC Power Line Conducted Emissions	±2.3dB	Confidence levels of 95%
Field Strength of Fundamental Emissions	±0.8dB	Confidence levels of 95%
Radiated / Band Edge Emissions (9kHz~30MHz)	±0.8dB	Confidence levels of 95%
Radiated Emissions (30MHz~1000MHz)	±1.9dB	Confidence levels of 95%
Temperature	±0.7℃	Confidence levels of 95%
Humidity	±3.2%	Confidence levels of 95%
DC / AC Power Source	±1.4%	Confidence levels of 95%

2. GENERAL INFORMATION

2.1 Product Details

Items	Description
Power Type	5Vdc from AC Adapter ; 3.7Vdc from Li-ion battery
Modulation	ASK
Channel Number	1
Max. Field Strength	50.89 dBuV/m at 3m (QP)
Test Freq. Range	13.553 ~ 13.567MHz
Carrier Frequencies	13.56 MHz (Ch. 1)
Antenna	Integrate Antenna (Without any antenna connector)

2.2 Accessories

Accessories Information				
AC Adapter 1	Brand Name	SUNLIN	Model Name	MCS-01WR
	Power Rating	I/P: 100-240V~50/60Hz, 0.2A ; O/P: 5.0V, 1.2A		
AC Adapter 2	Brand Name	TENPAO	Model Name	MCS-01WT
	Power Rating	I/P: 100-240~50/60Hz, 0.2A ; O/P: 5.0Vdc, 1.2A		
AC Adapter 3	Brand Name	DONG DO	Model Name	MCS-01WD
	Power Rating	I/P: 100-240~50/60Hz, 0.2A ; O/P: 5.0Vdc, 1.2A		
USB Cable 1	Brand Name	INTERFACESAMIL	Model Name	EAD62330101
	Signal Line	1.1meter shielded cable without ferrite core		
USB Cable 2	Brand Name	NINGBO	Model Name	EAD62330102
	Signal Line	1.1meter shielded cable without ferrite core		
Earphone	Brand Name	N/A	Model Name	N/A
	Signal Line	1.1meter non-shielded cable without ferrite core		
Battery	Brand Name	LG	Model Name	BL-T5
	Power Rating	3.8 Vdc, 2100 mAh	Type	Li-ion
Wireless charging pad	Brand Name	N/A	Model Name	WCP-500
	Power Rating	I/P: 5.2V, 2A ; O/P: 5V, 1A		
Wireless charging pad Adapter	Brand Name	LG	Model Name	PSTA-D01WT
	Power Rating	I/P: 100-240V~50/60Hz, 0.5A ; O/P: 5.2V, 2A		

2.3 Table for Test Modes

Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode	Channel
AC Power Line Conducted Emissions	Transmitting Mode	-
Field Strength of Fundamental Emissions	CTX	1
Radiated Emissions	CTX	1

Note: CTX=continuously transmitting.

2.4 Table for Testing Locations

Test Site No.	Site Category	Location
CO04-HY	Conduction	Hwa Ya
TH01-HY	OVEN Room	Hwa Ya
03CH02-HY	SAC	Hwa Ya

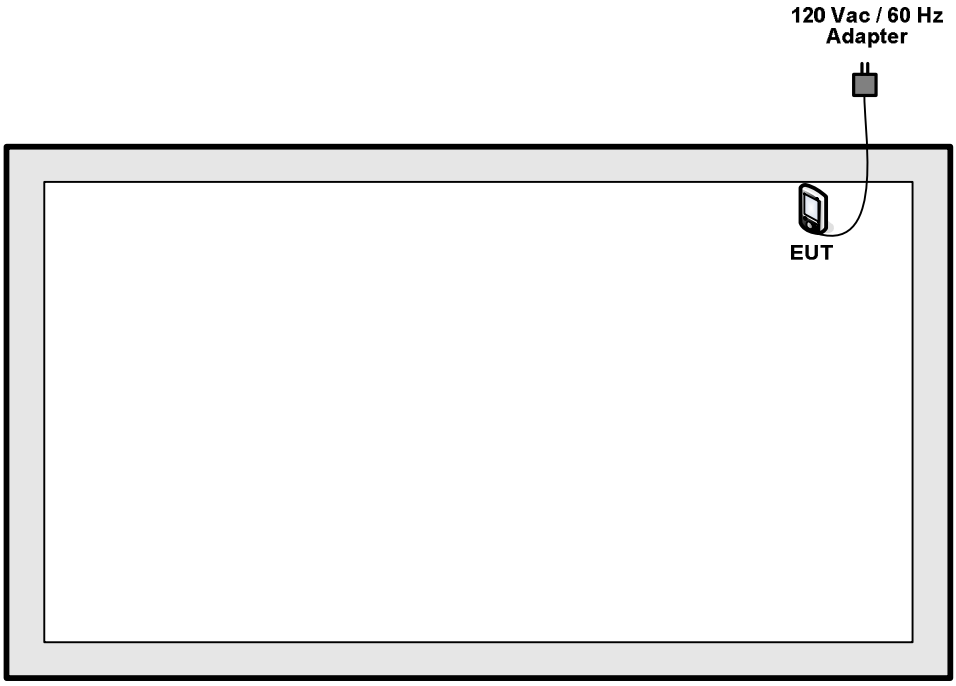
Semi Anechoic Chamber (SAC).

2.5 Table for Supporting Units

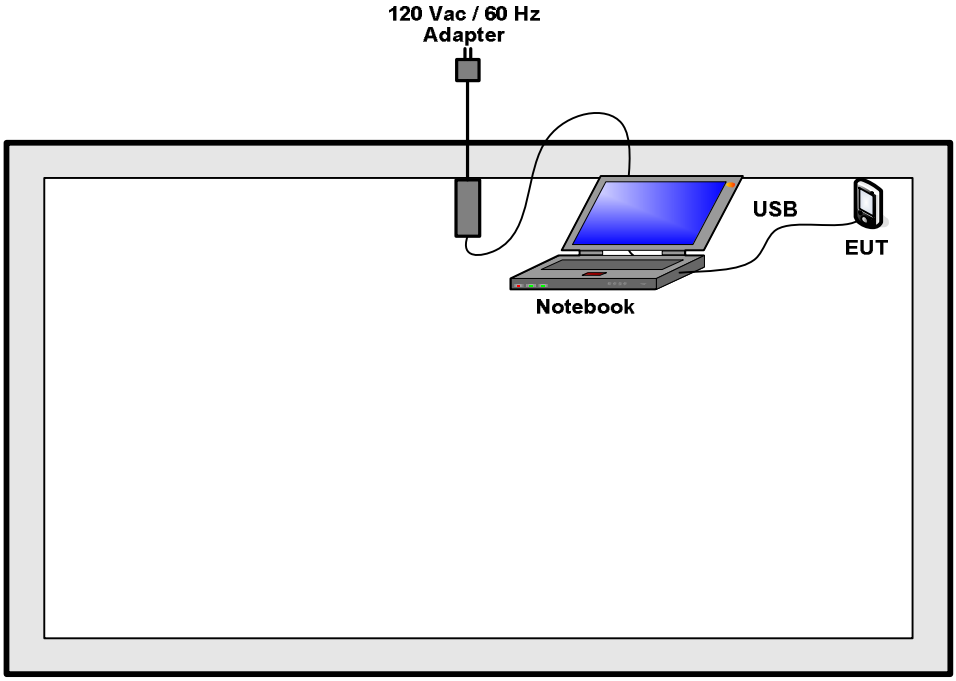
Support Unit	Brand	Model	FCC ID
Notebook	DELL	E5500	DoC

2.6 Test Configurations

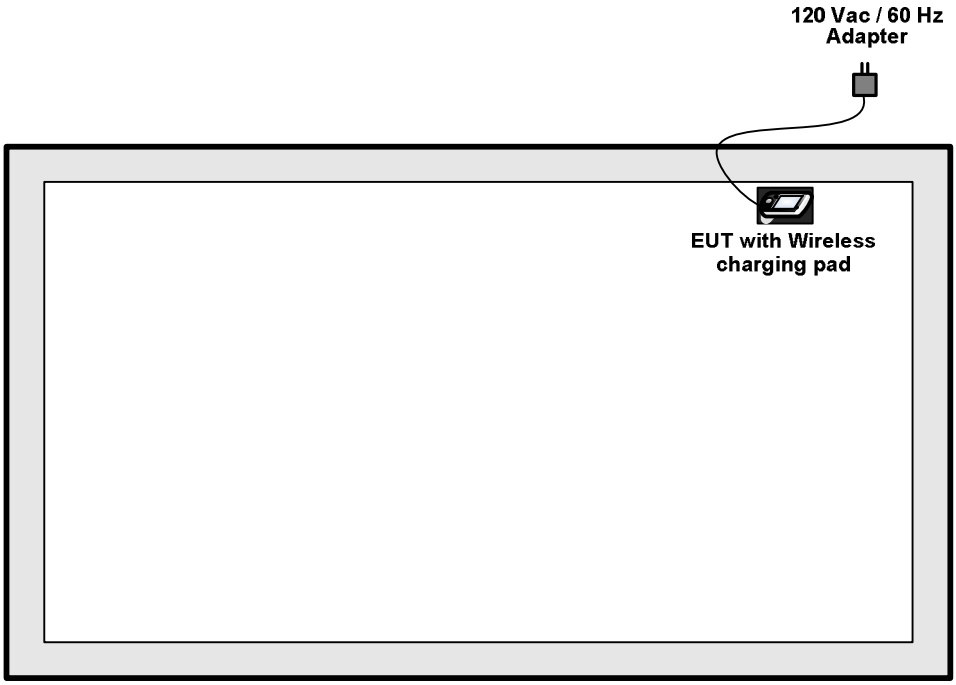
Test Setup Diagram – AC Line Conducted Emission Test	
Operating Mode	Adapter Mode



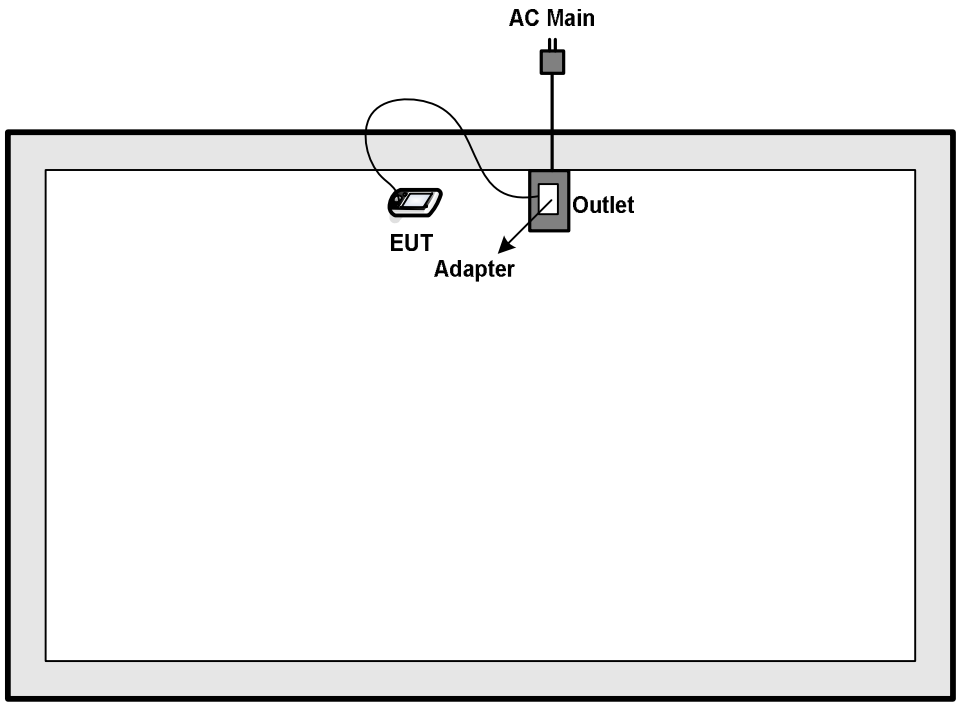
Operating Mode	USB Mode



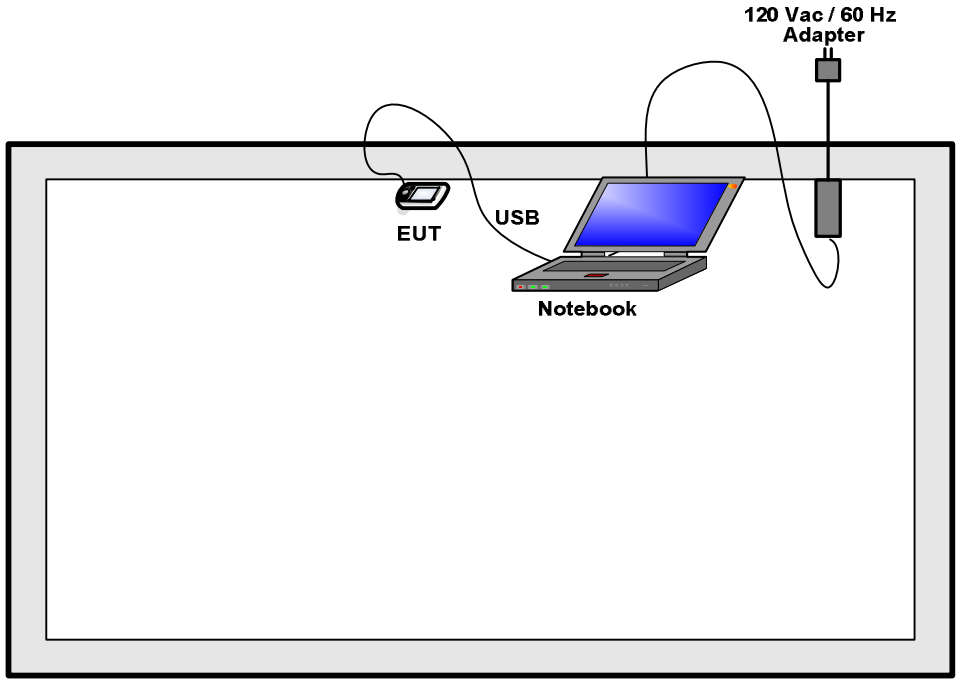
Operating Mode	Wireless charging pad



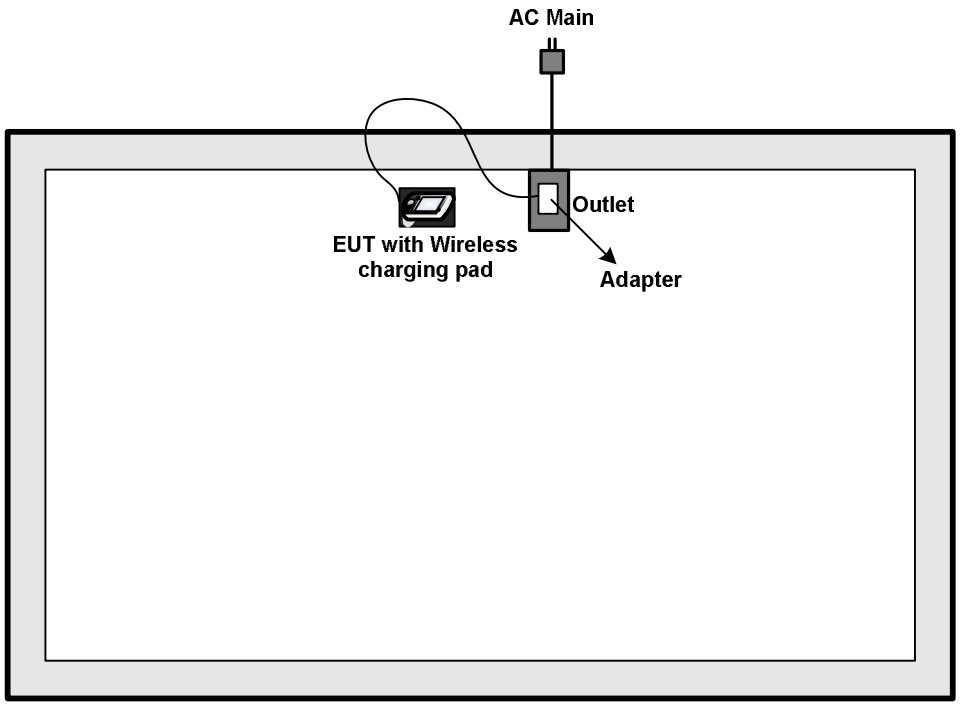
Test Setup Diagram – AC Line Conducted Emission Test	
Operating Mode	Adapter Mode



Operating Mode	USB Mode



Operating Mode	Wireless charging pad



3. TEST RESULT

3.1 AC Power Line Conducted Emissions Measurement

3.1.1 Limit

For a Low-power Radio-frequency device which is designed to be connected to the 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 below limits table.

Frequency (MHz)	QP Limit (dBuV)	AV Limit (dBuV)
0.15~0.5	66~56	56~46
0.5~5	56	46
5~30	60	50

3.1.2 Measuring Instruments and Setting

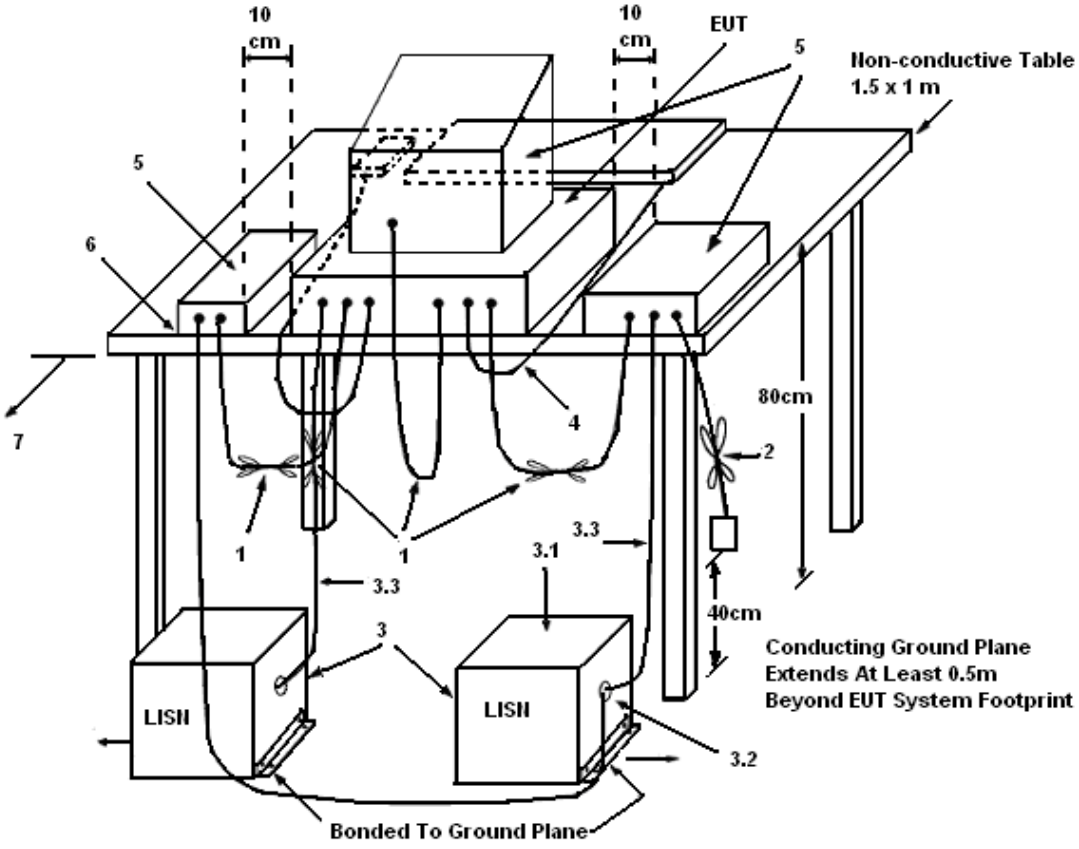
Please refer to section 4 of equipments list in this report. The following table is the setting of the receiver.

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.1.3 Test Procedures

1. The EUT was warmed up for 15 minutes before testing started.
2. The EUT was placed on a desk 0.8 meters height from the metal ground plane and 0.4 meter from the conducting wall of the shielding room and it was kept at least 0.8 meters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All the support units are connect to the other LISN.
5. The LISN provides 50 ohm coupling impedance for the measuring instrument.
6. The CISPR states that a 50 ohm, 50 microhenry LISN should be used.
7. Both sides of AC line were checked for maximum conducted interference.
8. The frequency range from 150 kHz to 30 MHz was searched.
9. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

3.1.4 Test Setup Layout



LEGEND:
(1) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
(2) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
(3) EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω. LISN can be placed on top of, or immediately beneath, reference ground plane.
(3.1) All other equipment powered from additional LISN(s).
(3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.
(3.3) LISN at least 80 cm from nearest part of EUT chassis.
(4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.
(5) Non-EUT components of EUT system being tested.
(6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.
(7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

3.1.5 Test Deviation

There is no deviation with the original standard.

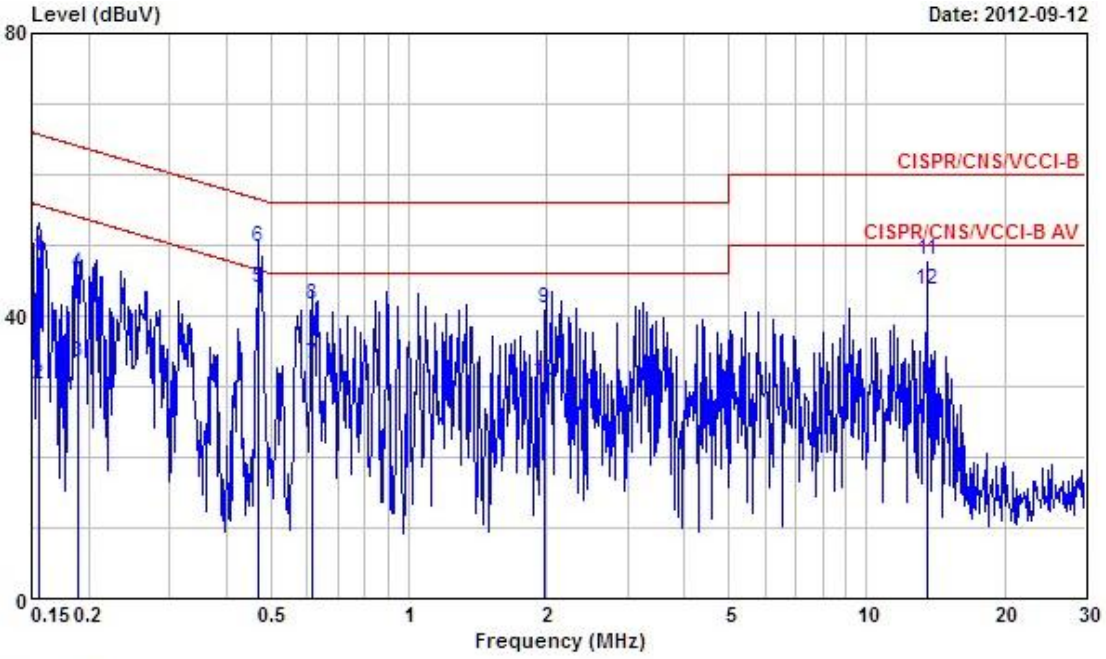
3.1.6 EUT Operation during Test

The EUT was placed on the test table and programmed in transmitting function.

3.1.7 Results of AC Power Line Conducted Emissions Measurement

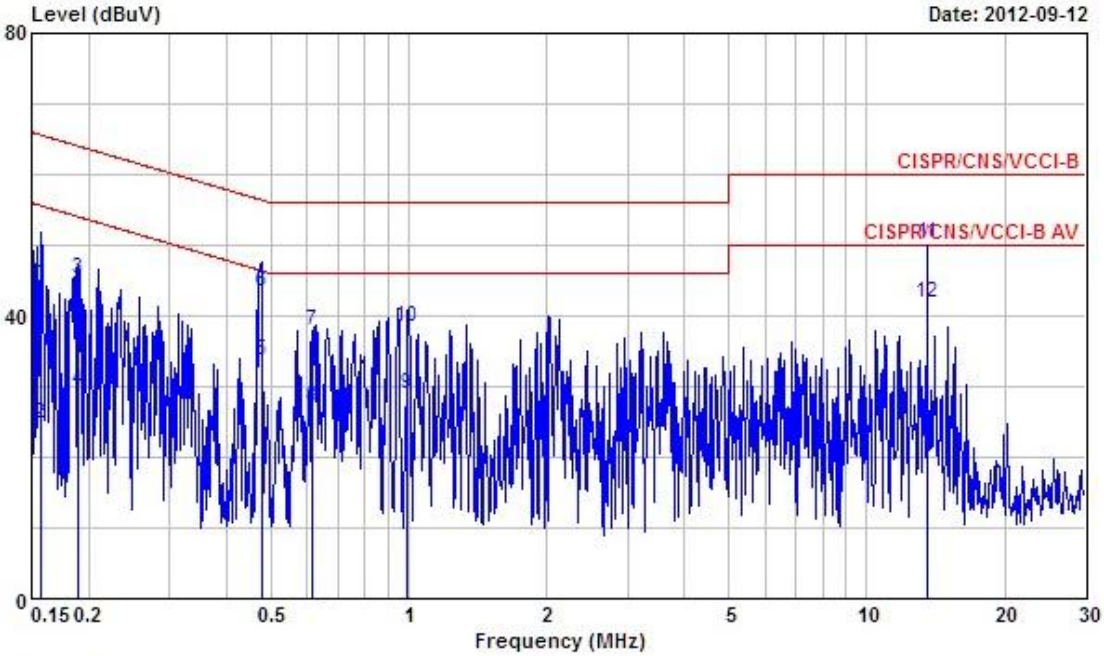
Final Test Date	Sep. 12, 2012	Test Site No.	CO04-HY
Temperature	25.3℃	Humidity	51%
Test Engineer	Bill	Configuration	Transmitting Mode (Adapter Mode)

Line



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1556680	48.44	-17.25	65.69	47.90	0.24	0.30	QP
2	0.1556680	30.14	-25.55	55.69	29.60	0.24	0.30	Average
3	0.1895800	33.46	-20.59	54.05	32.93	0.23	0.30	Average
4	0.1895800	46.15	-17.90	64.05	45.62	0.23	0.30	QP
5	@0.4711010	43.93	-2.56	46.49	43.41	0.22	0.30	Average
6	0.4711010	49.83	-6.66	56.49	49.31	0.22	0.30	QP
7	0.6131960	33.27	-12.73	46.00	32.75	0.22	0.30	Average
8	0.6131960	41.61	-14.39	56.00	41.09	0.22	0.30	QP
9	1.986	41.14	-14.86	56.00	40.49	0.25	0.40	QP
10	1.986	30.85	-15.15	46.00	30.20	0.25	0.40	Average
11	13.560	47.96	-12.04	60.00	47.08	0.48	0.40	QP
12	13.560	43.57	-6.43	50.00	42.69	0.48	0.40	Average

Neutral

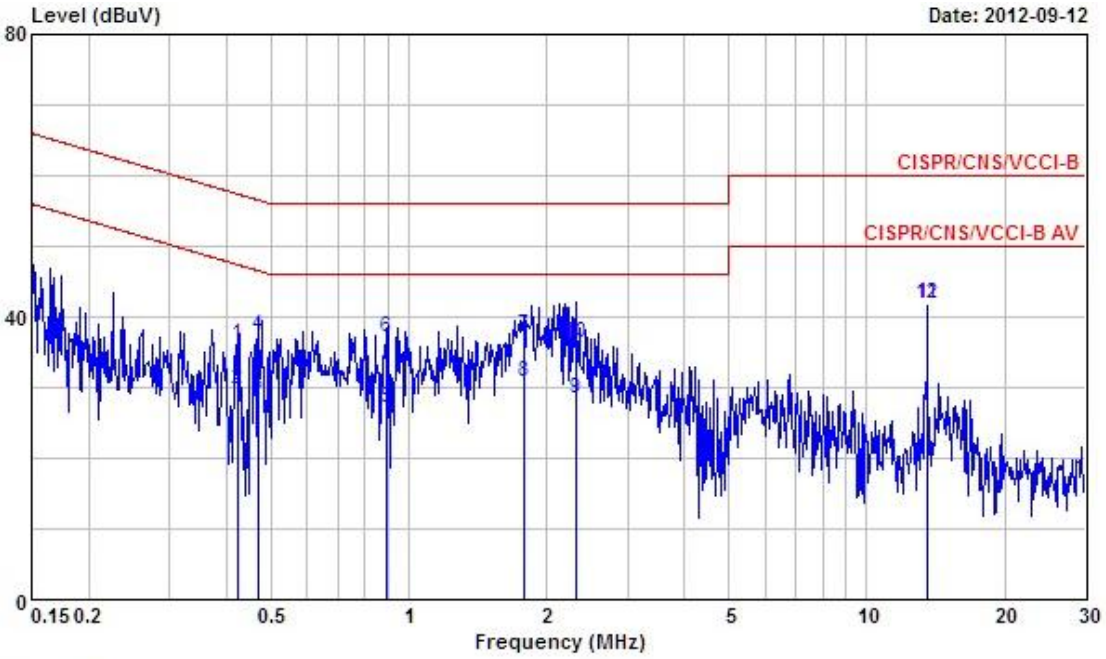


	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1564950	44.59	-21.06	65.65	44.18	0.11	0.30	QP
2	0.1564950	24.78	-30.87	55.65	24.37	0.11	0.30	Average
3	0.1893810	45.14	-18.92	64.06	44.73	0.11	0.30	QP
4	0.1893810	29.59	-24.47	54.06	29.18	0.11	0.30	Average
5	0.4761190	33.58	-12.83	46.41	33.18	0.10	0.30	Average
6	0.4761190	43.40	-13.01	56.41	43.00	0.10	0.30	QP
7	0.6166470	37.90	-18.10	56.00	37.50	0.10	0.30	QP
8	0.6166470	27.12	-18.88	46.00	26.72	0.10	0.30	Average
9	0.9943950	28.96	-17.04	46.00	28.55	0.11	0.30	Average
10	0.9943950	38.37	-17.63	56.00	37.96	0.11	0.30	QP
11	13.560	50.37	-9.63	60.00	49.70	0.27	0.40	QP
12	13.560	41.91	-8.09	50.00	41.24	0.27	0.40	Average

Note:
Level = Read Level + LISN Factor + Cable Loss.

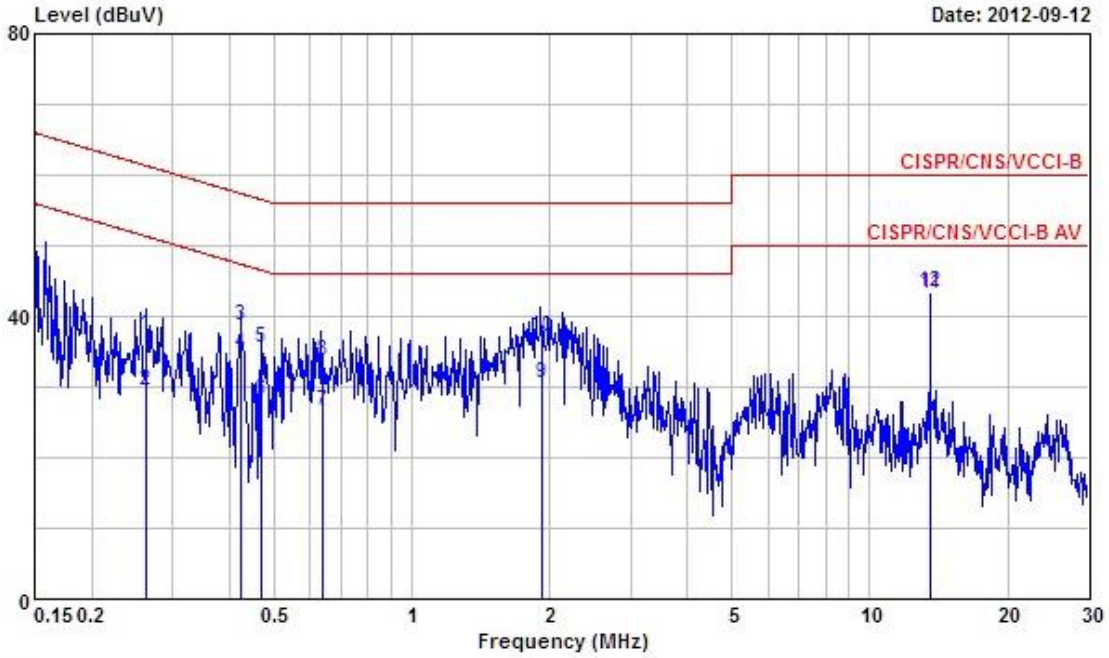
Final Test Date	Sep. 12, 2012	Test Site No.	CO04-HY
Temperature	25.2℃	Humidity	51%
Test Engineer	Bill	Configuration	Transmitting Mode (USB Mode)

Line



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.4247850	36.13	-21.22	57.35	35.61	0.22	0.30	QP
2	0.4247850	29.82	-17.53	47.35	29.30	0.22	0.30	Average
3	0.4711010	29.07	-17.42	46.49	28.55	0.22	0.30	Average
4	0.4711010	37.32	-19.17	56.49	36.80	0.22	0.30	QP
5	0.8975650	27.06	-18.94	46.00	26.53	0.23	0.30	Average
6	0.8975650	37.19	-18.81	56.00	36.66	0.23	0.30	QP
7	1.780	37.47	-18.53	56.00	36.84	0.25	0.38	QP
8	1.780	30.70	-15.30	46.00	30.07	0.25	0.38	Average
9	2.310	28.43	-17.57	46.00	27.79	0.26	0.38	Average
10	2.310	36.36	-19.64	56.00	35.72	0.26	0.38	QP
11	13.560	41.81	-18.19	60.00	40.93	0.48	0.40	QP
12	13.560	41.79	-8.21	50.00	40.91	0.48	0.40	Average

Neutral

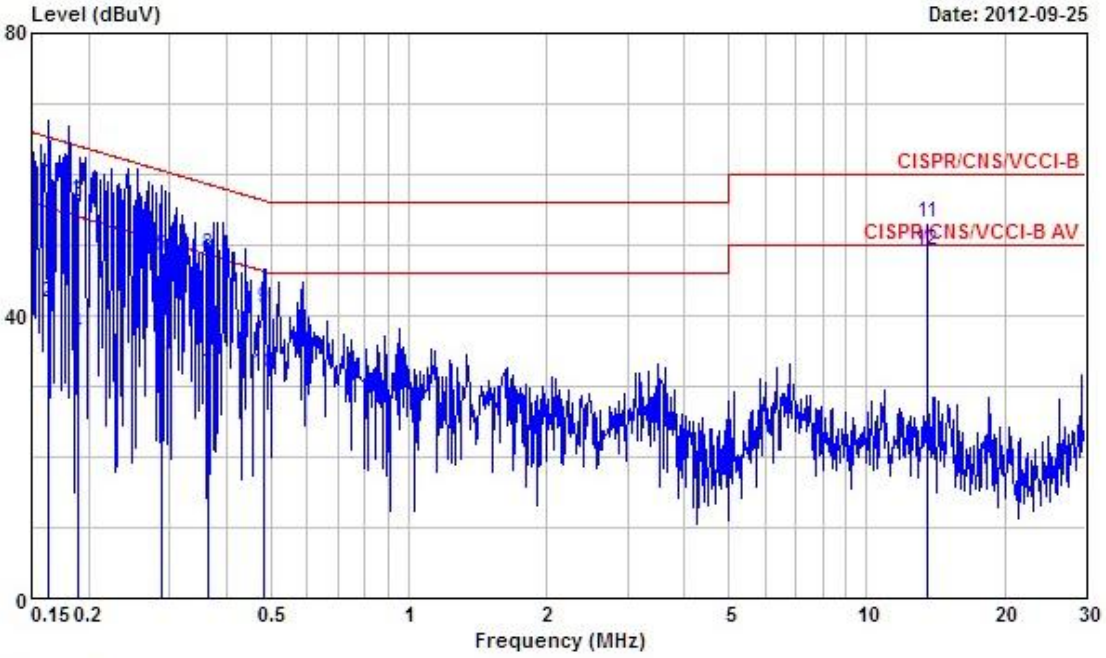


	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.2630270	37.47	-23.87	61.34	37.06	0.11	0.30	QP
2	0.2630270	29.48	-21.86	51.34	29.07	0.11	0.30	Average
3	0.4214950	38.66	-18.76	57.42	38.26	0.10	0.30	QP
4	0.4214950	34.64	-12.78	47.42	34.24	0.10	0.30	Average
5	0.4711010	35.57	-20.92	56.49	35.17	0.10	0.30	QP
6	0.4711010	28.13	-18.36	46.49	27.73	0.10	0.30	Average
7	0.6368790	26.56	-19.44	46.00	26.15	0.11	0.30	Average
8	0.6368790	33.57	-22.43	56.00	33.16	0.11	0.30	QP
9	1.931	30.58	-15.42	46.00	30.05	0.13	0.40	Average
10	1.931	37.13	-18.87	56.00	36.60	0.13	0.40	QP
11	13.560	43.21	-16.79	60.00	42.54	0.27	0.40	QP
12	13.560	43.29	-6.71	50.00	42.62	0.27	0.40	Average

Note:
Level = Read Level + LISN Factor + Cable Loss.

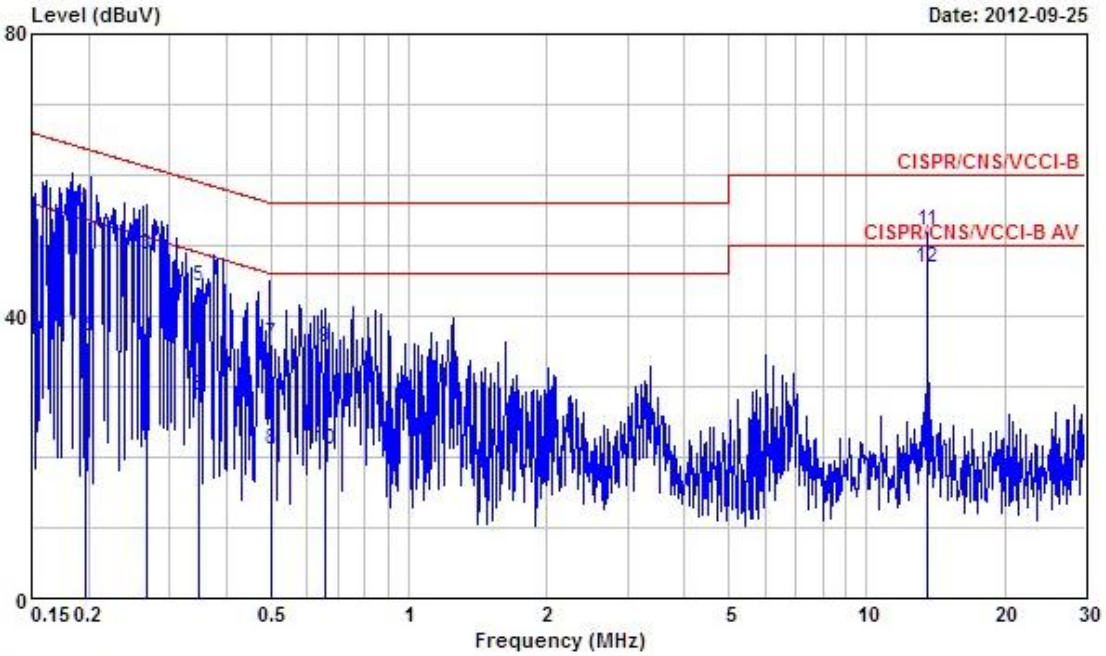
Final Test Date	Sep. 25, 2012	Test Site No.	CO04-HY
Temperature	25.3℃	Humidity	51%
Test Engineer	Bill	Configuration	Transmitting Mode (Wireless charging pad)

Line



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1632710	58.74	-6.56	65.30	58.20	0.24	0.30	QP
2	0.1632710	41.74	-13.56	55.30	41.20	0.24	0.30	Average
3	0.1895220	55.93	-8.13	64.06	55.40	0.23	0.30	QP
4	0.1895220	37.43	-16.63	54.06	36.90	0.23	0.30	Average
5	0.2893470	48.32	-12.22	60.54	47.80	0.22	0.30	QP
6	0.2893470	33.85	-16.69	50.54	33.33	0.22	0.30	Average
7	0.3641300	31.60	-17.03	48.63	31.08	0.22	0.30	Average
8	0.3641300	48.57	-10.06	58.63	48.05	0.22	0.30	QP
9	0.4823180	41.02	-15.28	56.30	40.50	0.22	0.30	QP
10	0.4823180	31.72	-14.58	46.30	31.20	0.22	0.30	Average
11	13.560	53.10	-6.90	60.00	52.22	0.48	0.40	QP
12	13.560	49.08	-0.92	50.00	48.20	0.48	0.40	Average

Neutral



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1974300	55.01	-8.71	63.72	54.60	0.11	0.30	QP
2	0.1974300	37.11	-16.61	53.72	36.70	0.11	0.30	Average
3	0.2686610	48.79	-12.37	61.16	48.38	0.11	0.30	QP
4	0.2686610	29.87	-21.29	51.16	29.46	0.11	0.30	Average
5	0.3471190	44.10	-14.93	59.03	43.70	0.10	0.30	QP
6	0.3471190	28.80	-20.23	49.03	28.40	0.10	0.30	Average
7	0.5001090	36.10	-19.90	56.00	35.70	0.10	0.30	QP
8	0.5001090	21.00	-25.00	46.00	20.60	0.10	0.30	Average
9	0.6577770	35.61	-20.39	56.00	35.20	0.11	0.30	QP
10	0.6577770	21.07	-24.93	46.00	20.66	0.11	0.30	Average
11	13.560	52.07	-7.93	60.00	51.40	0.27	0.40	QP
12	13.560	46.97	-3.03	50.00	46.30	0.27	0.40	Average

Note:
Level = Read Level + LISN Factor + Cable Loss.

3.2 Field Strength of Fundamental Emissions and Mask Measurement

3.2.1 Limit

Field strength of fundamental emissions limit:
The field strength of fundamental emissions shall not exceed 15848 micorvolts/meter at 30 meters. The emissions limit in this paragraph is based on measurement instrumentation employing a QP detector.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Field Strength (dBμV/m) at 10m	Field Strength (dBμV/m) at 3m
13.553 ~ 13.567MHz	15848 at 30m	103.08 (QP)	124 (QP)

Mask limit:

Rules and specifications	RSS-210 A2.6				
Description	Compliance with the spectrum mask is tested using a spectrum analyzer with RB set to a 1kHz for the band 13.553~13.567MHz				
Limit	Freq. of Emission (MHz)	Field Strength (uV/m) at 30m	Field Strength (dBuV/m) at 30m	Field Strength (dBuV/m) at 10m	Field Strength (dBuV/m) at 3m
	1.705~13.110	30	29.5	48.58	69.5
	13.110~13.410	106	40.5	59.58	80.5
	13.410~13.553	334	50.5	69.58	90.5
	13.553~13.567	15848	84.0	103.08	124.0
	13.567~13.710	334	50.5	69.58	90.5
	13.710~14.010	106	40.5	59.58	80.5
	14.010~30.000	30	29.5	48.58	69.5

3.2.2 Measuring Instruments and Setting

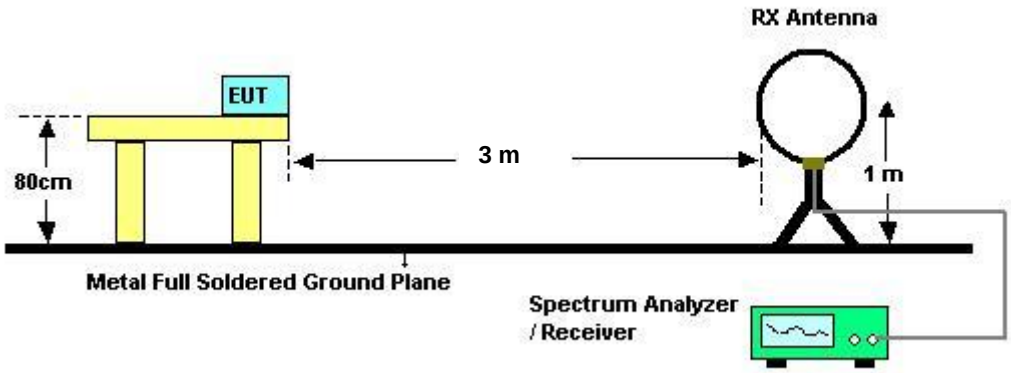
Please refer to section 4 of equipments list in this report. The following table is the setting of the receiver.

Receiver Parameter	Setting
Attenuation	Auto
Center Frequency	Fundamental Frequency
RB	10 kHz
Detector	QP

3.2.3 Test Procedures

1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the loop receiving antenna mounted antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the receiving antenna was fixed at one meter above ground to find the maximum emissions field strength.
4. For Fundamental emissions, use the receiver to measure QP reading.
5. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
6. Compliance with the spectrum mask is tested using a spectrum analyzer with RB set to a 10kHz for the band 13.553~13.567MHz.

3.2.4 Test Setup Layout



3.2.5 Test Deviation

There is no deviation with the original standard.

3.2.6 EUT Operation during Test

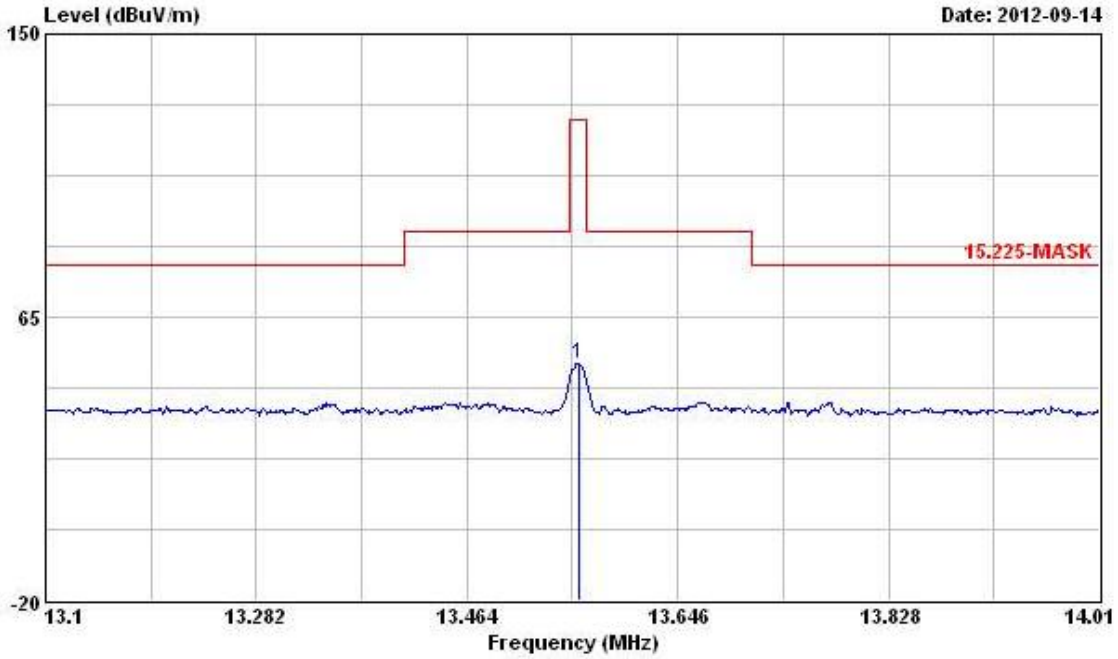
The EUT was programmed to be in continuously transmitting mode.

3.2.7 Test Result of Field Strength of Fundamental Emissions

Final Test Date	Sep. 14, 2012	Test Site No.	03CH02-HY
Temperature	23.9℃	Humidity	61%
Test Engineer	Streak	Configurations	Ch. 1

Freq. (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m) at 3m	Remark
13.56 MHz	50.89	-73.11	124	QP

VERTICAL



Note:
Emission level (dBuV/m) = 20 log Emission level (uV/m).

3.3 Radiated Emissions Measurement

3.3.1 Limit

The field strength of any emissions which appear outside of 13.553 ~ 13.567MHz band shall not exceed the general radiated emissions limits in Section 15.209(a)

Frequencies (MHz)	Field Strength (micorvolts/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

3.3.2 Measuring Instruments and Setting

Please refer to section 4 of equipments list in this report. The following table is the setting of receiver.

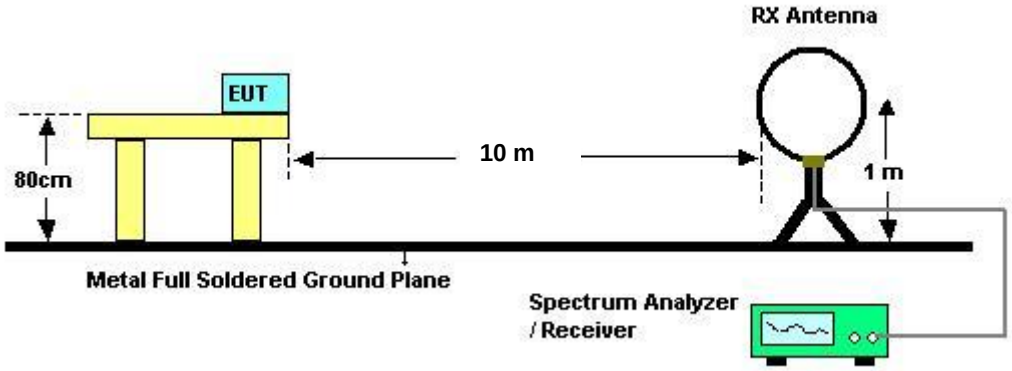
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.3.3 Test Procedures

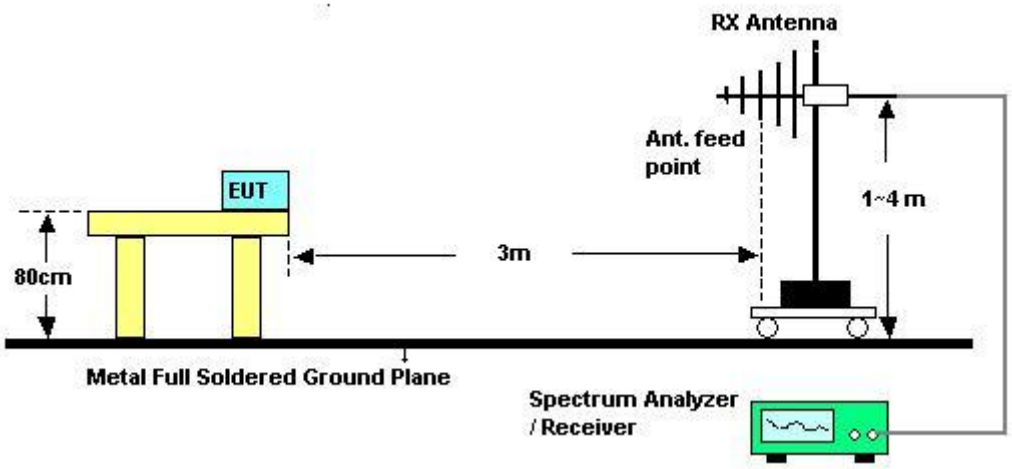
1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
7. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.

3.3.4 Test Setup Layout

For radiated emissions below 30MHz



For radiated emissions above 30MHz



3.3.5 Test Deviation

There is no deviation with the original standard.

3.3.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

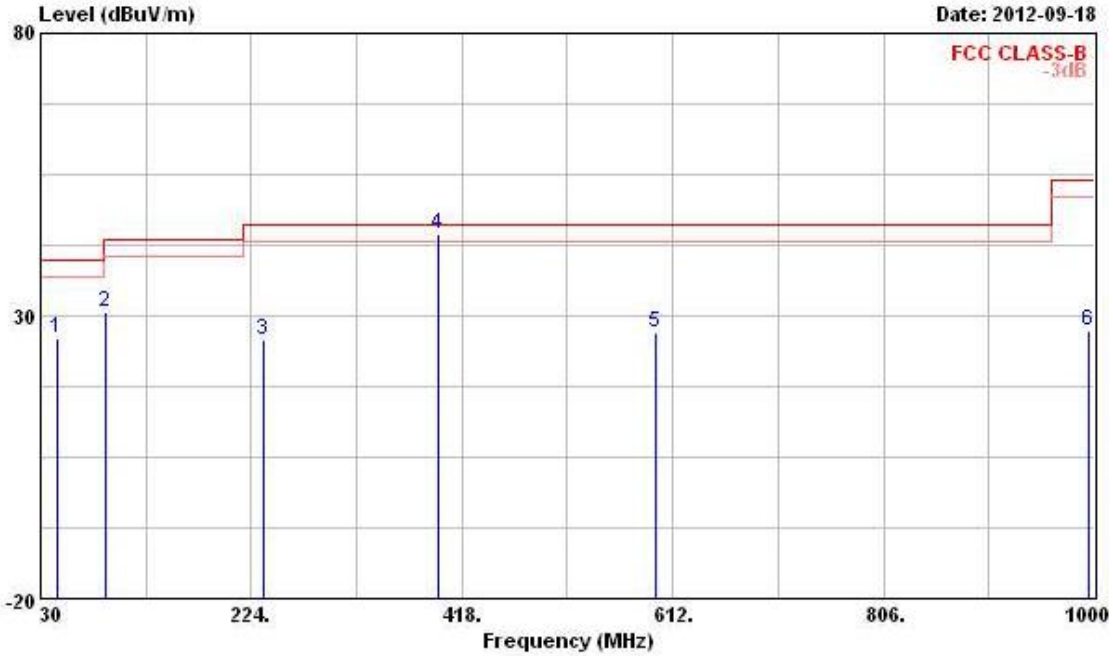
3.3.7 Results of Transmitter Spurious Emissions (9kHz~30MHz)

All spurious emissions (9kHz-30MHz) are below fundamental emissions field strength and the levels exceed the level of 20 dB below the applicable limit.

3.3.8 Results for Radiated Emissions (30MHz~1GHz)

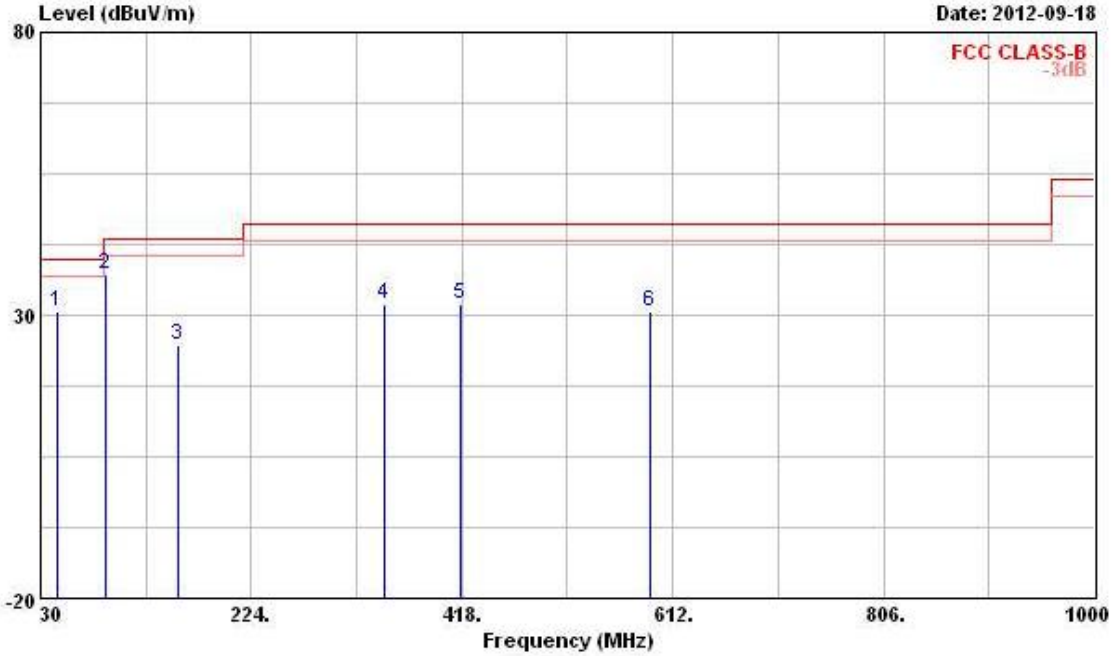
Final Test Date	Sep. 18, 2012	Test Site No.	03CH02-HY
Temperature	23.9℃	Humidity	61%
Test Engineer	Streak	Configuration	Ch.1 (Adapter Mode)

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	44.550	25.95	-14.05	40.00	40.71	12.02	1.10	27.88	Peak	---	---
2	90.140	30.61	-12.89	43.50	47.38	9.50	1.58	27.85	Peak	---	---
3	234.670	25.61	-20.39	46.00	37.77	12.49	2.67	27.32	Peak	---	---
4 !	396.660	44.37	-1.63	46.00	53.62	15.21	3.39	27.85	QP	---	---
5	595.510	27.08	-18.92	46.00	31.28	20.04	4.22	28.46	Peak	---	---
6	995.150	27.22	-26.78	54.00	26.42	22.38	5.66	27.24	Peak	---	---

Vertical

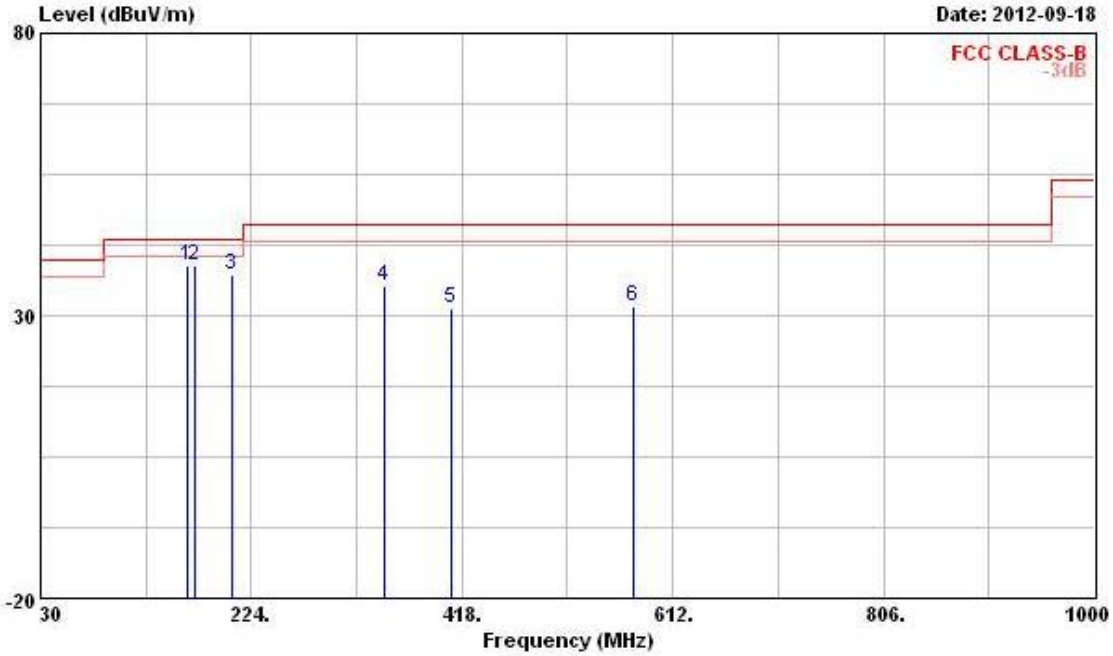


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	44.550	30.81	-9.19	40.00	45.57	12.02	1.10	27.88	Peak	---	---
2	90.140	37.32	-6.18	43.50	54.09	9.50	1.58	27.85	Peak	---	---
3	156.100	24.78	-18.72	43.50	39.68	10.64	2.06	27.60	Peak	---	---
4	346.220	31.93	-14.07	46.00	41.84	14.42	3.16	27.49	Peak	---	---
5	416.060	31.95	-14.05	46.00	40.85	15.59	3.46	27.95	Peak	---	---
6	591.630	30.61	-15.39	46.00	34.92	19.93	4.21	28.45	Peak	---	---

Note:
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Emission level (dBuV/m) = 20 log Emission level (uV/m).
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

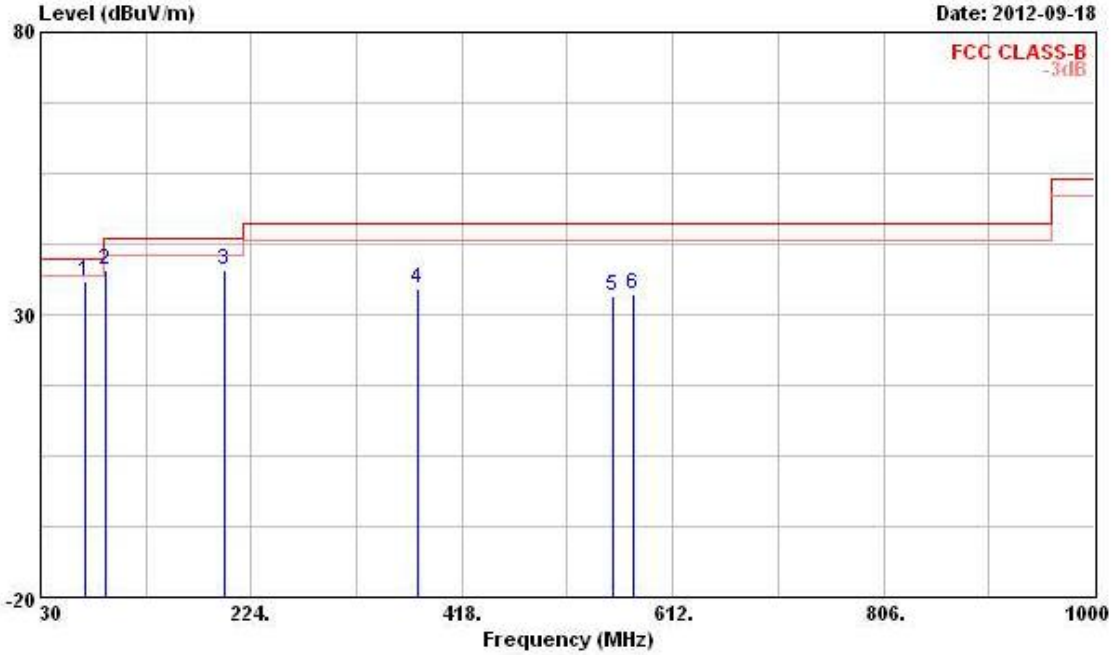
Final Test Date	Sep. 18, 2012	Test Site No.	03CH02-HY
Temperature	23.9℃	Humidity	61%
Test Engineer	Streak	Configuration	Ch.1 (USB Mode)

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	164.830	38.97	-4.53	43.50	54.05	10.34	2.14	27.56	Peak	---	---
2	171.620	38.94	-4.56	43.50	54.21	10.05	2.22	27.54	Peak	---	---
3	206.540	37.37	-6.13	43.50	50.72	11.57	2.47	27.39	Peak	---	---
4	347.190	35.26	-10.74	46.00	45.15	14.43	3.17	27.49	Peak	---	---
5	408.300	31.19	-14.81	46.00	40.24	15.43	3.43	27.91	Peak	---	---
6	575.140	31.74	-14.26	46.00	36.59	19.45	4.14	28.44	Peak	---	---

Vertical

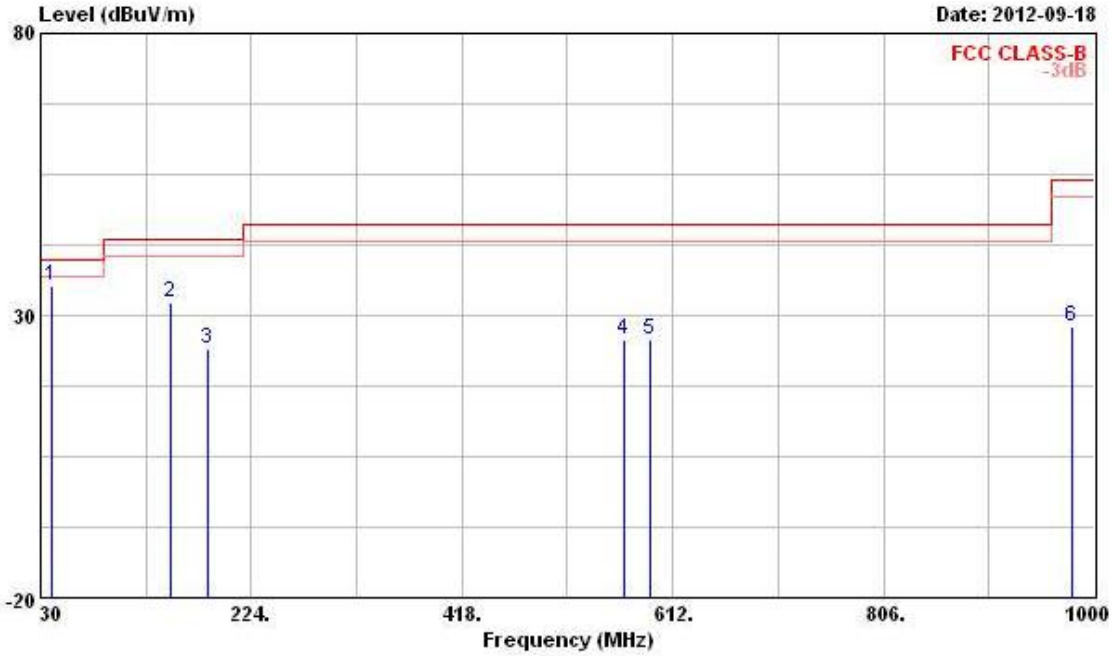


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	70.740	36.00	-4.00	40.00	55.65	6.78	1.42	27.85	Peak	---	---
2	90.140	37.96	-5.54	43.50	54.73	9.50	1.58	27.85	Peak	---	---
3	199.750	37.86	-5.64	43.50	51.50	11.35	2.42	27.41	Peak	---	---
4	377.260	34.49	-11.51	46.00	44.00	14.90	3.30	27.71	Peak	---	---
5	556.710	33.40	-12.60	46.00	38.84	18.91	4.07	28.42	Peak	---	---
6	575.140	33.50	-12.50	46.00	38.35	19.45	4.14	28.44	Peak	---	---

Note:
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Emission level (dBuV/m) = 20 log Emission level (uV/m).
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

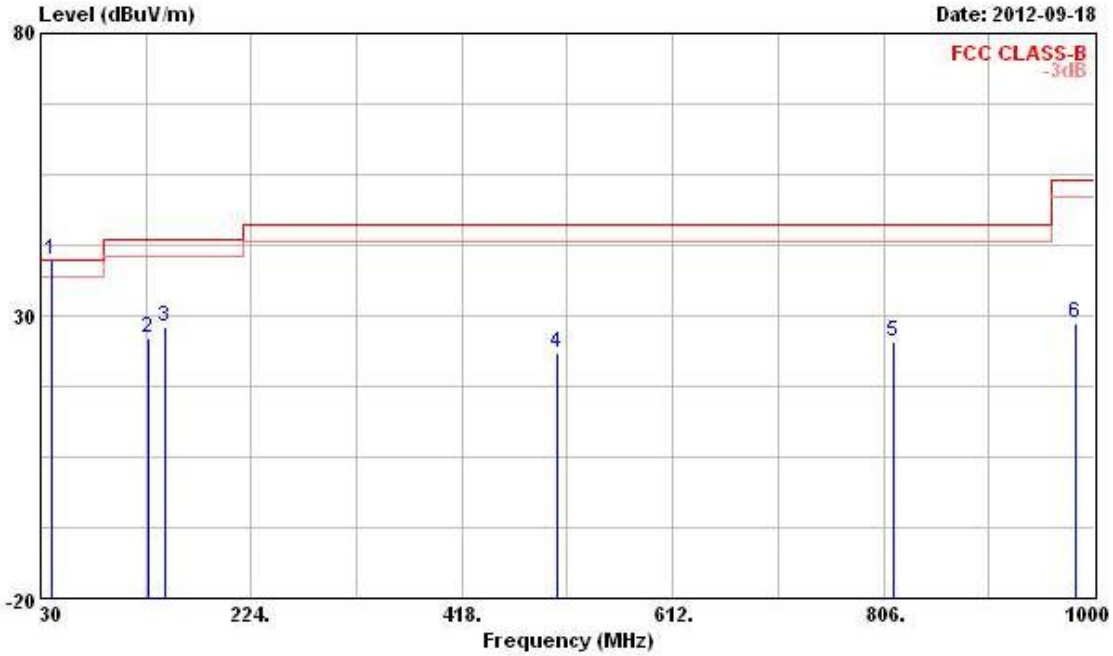
Final Test Date	Sep. 18, 2012	Test Site No.	03CH02-HY
Temperature	23.9℃	Humidity	61%
Test Engineer	Streak	Configuration	Ch.1 (Wireless charging pad)

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	40.670	35.39	-4.61	40.00	49.23	13.01	1.05	27.90	Peak	---	---
2	149.310	32.36	-11.14	43.50	47.07	10.90	2.02	27.63	Peak	---	---
3	183.260	23.94	-19.56	43.50	39.00	10.12	2.30	27.48	Peak	---	---
4	567.380	25.82	-20.18	46.00	30.92	19.22	4.11	28.43	Peak	---	---
5	591.630	25.73	-20.27	46.00	30.04	19.93	4.21	28.45	Peak	---	---
6	979.630	27.93	-26.07	54.00	27.62	22.00	5.61	27.30	Peak	---	---

Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	40.670	39.88	-0.12	40.00	53.72	13.01	1.05	27.90	QP	---	---
2	129.910	26.18	-17.32	43.50	39.21	12.80	1.89	27.72	Peak	---	---
3	144.460	28.09	-15.41	43.50	42.34	11.40	2.01	27.66	Peak	---	---
4	505.300	23.52	-22.48	46.00	30.58	17.45	3.86	28.37	Peak	---	---
5	815.700	25.54	-20.46	46.00	28.25	20.23	4.94	27.88	Peak	---	---
6	983.510	28.83	-25.17	54.00	28.41	22.09	5.62	27.29	Peak	---	---

Note:
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Emission level (dBuV/m) = 20 log Emission level (uV/m).
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

3.4 Antenna Requirements

3.4.1 Limit

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited.

3.4.2 Antenna Connector Construction

Please refer to section 2.1 in this test report; antenna connector complied with the requirements.

4. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMC Receiver	R&S	ESCS 30	100132	9kHz ~ 2.75GHz	Feb. 08, 2012	Conduction (CO01-HY)
LISN	MessTec	NNB-2/16Z	2001/004	9kHz ~ 30MHz	Jan. 12, 2012	Conduction (CO01-HY)
LISN (Support Unit)	MessTec	NNB-2/16Z	2001/009	9kHz ~ 30MHz	Feb. 20, 2012	Conduction (CO01-HY)
EMI Filter	LINDGREN	LRE-2060	1004	< 450Hz	N/A	Conduction (CO01-HY)
EMI Filter	LINDGREN	N6006	201052	0 ~ 60Hz	N/A	Conduction (CO01-HY)

Note: Calibration Interval of instruments listed above is one year.

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum Analyzer	R&S	FSP40	100593	9kHz ~ 40GHz	Sep. 14, 2012	Radiation (03CH02-HY)
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	30MHz ~ 1GHz 3m	May 10, 2012	Radiation (03CH02-HY)
Amplifier	Agilent	8447D	2944A11146	100kHz ~ 1.3GHz	Jul. 23, 2012	Radiation (03CH02-HY)
RF Cable-R03m	Jye Bao	RG142	CB021	30MHz ~ 1GHz	Nov. 11, 2011	Radiation (03CH02-HY)
Bilog Antenna	SCHAFFNER	CBL61128	2723	30MHz ~ 2GHz	Oct. 22, 2011	Radiation (03CH02-HY)
Turn Table	HD	DS 420	420/649/00	0~ 360 degree	N/A	Radiation (03CH02-HY)
Antenna Mast	HD	MA 240	240/559/00	1 ~ 4 m	N/A	Radiation (03CH02-HY)

Note: Calibration Interval of instruments listed above is one year.

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz ~ 30 MHz	Jul. 03, 2012*	Radiation (03CH02-HY)

Note: Calibration Interval of instruments listed above is two year.

5. TEST LOCATION

SHIJR	ADD	:	6Fl., No. 106, Sec. 1, Shintai 5th Rd., Shijr City, Taipei 221, Taiwan, R.O.C.
	TEL	:	886-2-2696-2468
	FAX	:	886-2-2696-2255
HWA YA	ADD	:	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.
	TEL	:	886-3-327-3456
	FAX	:	886-3-327-0973
LINKOU	ADD	:	No. 30-2, Dingfu Vil., Linkou Dist., New Taipei City 244, Taiwan, R.O.C.
	TEL	:	886-2-2601-1640
	FAX	:	886-2-2601-1695
DUNGHU	ADD	:	No. 3, Lane 238, Kangle St., Neihu Chiu, Taipei 114, Taiwan, R.O.C.
	TEL	:	886-2-2631-4739
	FAX	:	886-2-2631-9740
JUNGHE	ADD	:	7Fl., No. 758, Jungjeng Rd., Junghe City, Taipei 235, Taiwan, R.O.C.
	TEL	:	886-2-8227-2020
	FAX	:	886-2-8227-2626
NEIHU	ADD	:	4Fl., No. 339, Hsin Hu 2nd Rd., Taipei 114, Taiwan, R.O.C.
	TEL	:	886-2-2794-8886
	FAX	:	886-2-2794-9777
JHUBEI	ADD	:	No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C.
	TEL	:	886-3-656-9065
	FAX	:	886-3-656-9085

6. TAF CERTIFICATE OF ACCREDITATION

Certificate No. : L1190-120405

財團法人全國認證基金會
Taiwan Accreditation Foundation

Certificate of Accreditation

This is to certify that

Sporton International Inc.
EMC & Wireless Communications Laboratory
No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.

is accredited in respect of laboratory

Accreditation Criteria	:	ISO/IEC 17025:2005
Accreditation Number	:	1190
Originally Accredited	:	December 15, 2003
Effective Period	:	January 10, 2010 to January 09, 2013
Accredited Scope	:	Testing Field, see described in the Appendix
Specific Accreditation Program	:	Accreditation Program for Designated Testing Laboratory for Commodities Inspection Accreditation Program for Telecommunication Equipment Testing Laboratory Accreditation Program for BSMI Mutual Recognition Arrangment with Foreign Authorities

Jay-San Chen
President, Taiwan Accreditation Foundation
Date:April 05, 2012

P1, total 24 pages