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FCC EMC TEST REPORT

Applicant's company	**Intel Corporation**
Applicant Address	100 Center Point Circle Suite 200 Columbia, SC 29210
FCC ID	**PD962205ANSU**
IC	**1000M-62205ANSU**
Manufacturer's company	**Intel Corporation**
Manufacturer Address	2111 NE 25th Avenue, Hillsboro, OR 97124 USA

Product Name	Intel Centrino Advanced-N 6205
Brand Name	Intel
Model Name	62205ANSFF
Test Standard	47 CFR FCC Part 15 Subpart B IC ICES-003
Classification of ITE	Class B
Received Date	Dec. 01, 2011
Final Test Date	Dec. 28, 2011
Submission Type	Original Equipment

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 C63.4-2009** and **47 CFR FCC Part 15 Subpart B** and **IC ICES-003**.

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

Testing Laboratory
1190

Table of Contents

History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FD1D1211	Rev. 01	Initial issue of report	Jan. 18, 2012

1. CERTIFICATE OF COMPLIANCE

Product Name	:	Intel Centrino Advanced-N 6205
Brand Name	:	Intel
Model Name	:	62205ANSFF
Applicant	:	Intel Corporation
Test Standard	:	47 CFR FCC Part 15 Subpart B
		IC ICES-003

Sporton International as requested by the applicant to evaluate the EMI performance of the product sample received on Dec. 01, 2011 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 EMI nature.

Leo Huang 2012. 1.19

Leo Huang/ Manager

SPORTON INTERNATIONAL INC.

2. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart B and IC ICES-003						
Part	FCC Rule Section	RSS Rule Part	Description of Test	Under Limit	Under Limit	Result
4.1	15.107	RSS GEN Table 2	AC Power Line Conducted Emissions	49.79dBμV @0.19758MHz	3.92 dB	Complies
4.2	15.109		Radiated Emissions	26.90dBμV/m @99.87 MHz	3.10 dB	Complies

Note: Testing above 1GHz against FCC 15.109(a) requirements was not required because the highest frequency generated in the EUT's digital circuitry (40MHz) was less than 108 MHz.

Test Items	Uncertainty	Remark
AC Power Line Conducted Emissions	±2.3dB	Confidence levels of 95%
Radiated Emissions	±1.9dB	Confidence levels of 95%

3. GENERAL INFORMATION

3.1. Product Details

For 5GHz Band

802.11n for Band 1~3

Items	Description
Product Type	WLAN (1TX, 1RX/ 2TX, 2RX)
Radio Type	Intentional Transceiver
Power Type	From Host System
Modulation	see the below table for 802.11n
Data Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	see the below table for 802.11n
Frequency Range	5150 ~ 5350MHz / 5470 ~ 5725MHz
Channel Number	19 for 20MHz bandwidth ; 9 for 40MHz bandwidth
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

IEEE 802.11a Band 1~3

Items	Description
Product Type	WLAN (1TX, 1RX)
Radio Type	Intentional Transceiver
Power Type	From Host System
Modulation	OFDM for IEEE 802.11a
Data Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	OFDM (6/9/12/18/24/36/48/54)
Frequency Range	5150 ~ 5350MHz / 5470 ~ 5725MHz
Channel Number	Band 1~2: 8 ; Band 3: 11
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

802.11n for Band 4

Items	Description
Product Type	WLAN (2TX, 2RX)
Radio Type	Intentional Transceiver
Power Type	From Host System
Modulation	see the below table for 802.11n
Data Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	see the below table for 802.11n
Frequency Range	5725 ~ 5850MHz
Channel Number	5 for 20MHz bandwidth ; 2 for 40MHz bandwidth
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

IEEE 802.11a Band 4

Items	Description
Product Type	WLAN (1TX, 1RX)
Radio Type	Intentional Transceiver
Power Type	From Host System
Modulation	OFDM for IEEE 802.11a
Data Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	OFDM (6/9/12/18/24/36/48/54)
Frequency Range	5725 ~ 5850MHz
Channel Number	5
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

For 2.4GHz Band

802.11n

Items	Description
Product Type	WLAN (2TX, 2RX)
Radio Type	Intentional Transceiver
Power Type	From Host System
Modulation&	see the below table for 802.11n
Data Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	see the below table for 802.11n
Frequency Range	2400 ~ 2483.5MHz
Channel Number	11 for 20MHz bandwidth ; 7 for 40MHz bandwidth
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

802.11b/g

Items	Description
Product Type	WLAN (1TX, 1RX)
Radio Type	Intentional Transceiver
Power Type	From Host System
Modulation	DSSS for IEEE 802.11b ; OFDM for IEEE 802.11g
Data Modulation	DSSS (BPSK / QPSK / CCK) ; OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	DSSS (1/ 2/ 5.5/11) ; OFDM (6/9/12/18/24/36/48/54)
Frequency Range	2400 ~ 2483.5MHz
Channel Number	11
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

Antenna & Band width

Antenna	Single (TX)		Two (TX)	
Band width Mode	20 MHz	40 MHz	20 MHz	40 MHz
IEEE 802.11a	V	X	X	X
IEEE 802.11b	V	X	X	X
IEEE 802.11g	V	X	X	X
IEEE 802.11n	V	V	V	V

802.11n Spec

MCS Index	Nss	Modulation	R	NBPSC	NCBPS		NDBPS		Datarate(Mbps)			
									800nsGI		400nsGI	
					20MHz	40MHz	20MHz	40MHz	20MHz	40MHz	20MHz	40MHz
0	1	BPSK	1/2	1	52	108	26	54	6.5	13.5	7.200	15
1	1	QPSK	1/2	2	104	216	52	108	13.0	27.0	14.400	30
2	1	QPSK	3/4	2	104	216	78	162	19.5	40.5	21.700	45
3	1	16-QAM	1/2	4	208	432	104	216	26.0	54.0	28.900	60
4	1	16-QAM	3/4	4	208	432	156	324	39.0	81.0	43.300	90
5	1	64-QAM	2/3	6	312	648	208	432	52.0	108.0	57.800	120
6	1	64-QAM	3/4	6	312	648	234	486	58.5	121.5	65.000	135
7	1	64-QAM	5/6	6	312	648	260	540	65.0	135.0	72.200	150
8	2	BPSK	1/2	1	104	216	52	108	13.0	27.0	14.444	30
9	2	QPSK	1/2	2	208	432	104	216	26.0	54.0	28.889	60
10	2	QPSK	3/4	2	208	432	156	324	39.0	81.0	43.333	90
11	2	16-QAM	1/2	4	416	864	208	432	52.0	108.0	57.778	120
12	2	16-QAM	3/4	4	416	864	312	648	78.0	162.0	86.667	180
13	2	64-QAM	2/3	6	624	1296	416	864	104.0	216.0	115.556	240
14	2	64-QAM	3/4	6	624	1296	468	972	117.0	243.0	130.000	270
15	2	64-QAM	5/6	6	624	1296	520	1080	130.0	270.0	144.444	300

802.11n Bandwidth

Symbol	Explanation
NSS	Number of spatial streams
R	Code rate
NBPSC	Number of coded bits per single carrier
NCBPS	Number of coded bits per symbol
NDBPS	Number of data bits per symbol
GI	guard interval

3.2. Accessories

N/A

3.3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)			
					2.4GHz	5GHz		
						5.15~5.35 GHz	5.47~5.725 GHz	5.725~5.850 GHz
A	Shanghai Universe Communication Electron Co., Ltd.	N/A	PIFA Antenna	UFL	3.2	3.7	4.8	5
B	Shanghai Universe Communication Electron Co., Ltd.	N/A	PIFA Antenna	UFL	3.2	3.7	4.8	5

Note: There are two sets of antenna provided to this EUT and all of them can be used as transmitting and receiving antenna

For IEEE 802.11n mode (2TX/2RX)

Antenna A and Antenna B could transmit/receive simultaneously.

For IEEE 802.11n mode (1TX/1RX)

The EUT supports the antenna with TX/RX diversity function.

For IEEE 802.11abg mode (1TX/1RX):

The EUT supports the antenna with TX/RX diversity function.

3.4. Table for Carrier Frequenciess

For 2.4GHz Band: Frequency Allocation for 802.11b/g

For IEEE 802.11b/g, use Channel 1~Channel 11.
There are two bandwidth systems for 802.11n.
For both 20MHz bandwidth systems, use Channel 1~Channel 11.
For both 40MHz bandwidth systems, use Channel 3~Channel 9.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
2400~2483.5MHz	1	2412 MHz	7	2442 MHz
	2	2417 MHz	8	2447 MHz
	3	2422 MHz	9	2452 MHz
	4	2427 MHz	10	2457 MHz
	5	2432 MHz	11	2462 MHz
	6	2437 MHz	-	-

For 5GHz Band: Frequency Allocation for 802.11a

For IEEE 802.11a, use Channel 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 149, 153, 157, 161, 165.
There are two bandwidth systems for 802.11n.
For both 20MHz bandwidth systems, use Channel 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 149, 153, 157, 161, 165.
For both 40MHz bandwidth systems, use Channel 38, 46, 54, 62, 102, 110, 118, 126, 134, 151, 159.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5150~5250 MHz Band 1	36	5180 MHz	44	5220 MHz
	38	5190 MHz	46	5230 MHz
	40	5200 MHz	48	5240 MHz
5250~5350 MHz Band 2	52	5260 MHz	60	5300 MHz
	54	5270 MHz	62	5310 MHz
	56	5280 MHz	64	5320 MHz
5470~5725 MHz Band 3	100	5500 MHz	120	5600 MHz
	102	5510 MHz	124	5620 MHz
	104	5520 MHz	126	5630 MHz
	108	5540 MHz	128	5640 MHz
	110	5550 MHz	132	5660 MHz
	112	5560 MHz	134	5670 MHz
	116	5580 MHz	136	5680 MHz
	118	5590 MHz	140	5700 MHz
5725~5850 MHz Band 4	149	5745 MHz	159	5795 MHz
	151	5755 MHz	161	5805 MHz
	153	5765 MHz	165	5825 MHz
	157	5785 MHz	-	-

3.5. 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
AC Power Line Conducted Emissions	Normal Link
Radiated Emissions	Normal Link

Note: CRX=continuously receiving

3.6. Table for Testing Locations

Test Site No.	Site Category	Location	FCC Reg. No.	IC File No.	VCCI Reg. No
03CH01-CB	SAC	Hsin Chu	187376	IC 4086D	-
CO01-CB	Conduction	Hsin Chu	187376	IC 4086D	-

Open Area Test Site (OATS); Semi Anechoic Chamber (SAC); Fully Anechoic Chamber (FAC).

Please refer section 6 for Test Site Address.

3.7. Table for the EUT consisted of the following component(s)

Manufacturer	Model Name	Description	MAC address	FCC ID / IC UPN
Intel Corporation	62205ANSFF	PCIe Half Mini Card 802.11a/b/g/n wireless network	001500633B2C	PD962205ANSU 1000M-62205ANSU

3.8. Table for Supporting Units

Support Unit	Brand	Model	FCC ID
PC	DELL	T3400	N/A
LCD Monitor	HP	FW660AA	DoC
Mouse	iCooky	AMS0706W	DoC
Keyboard	iCooky	SK068	DoC

3.9. EUT Operation during Test

An executive program, EMCTEST.EXE under WIN XP, which generates a complete line of continuously repeating " H " pattern was used as the test software.

The program was executed as follows :

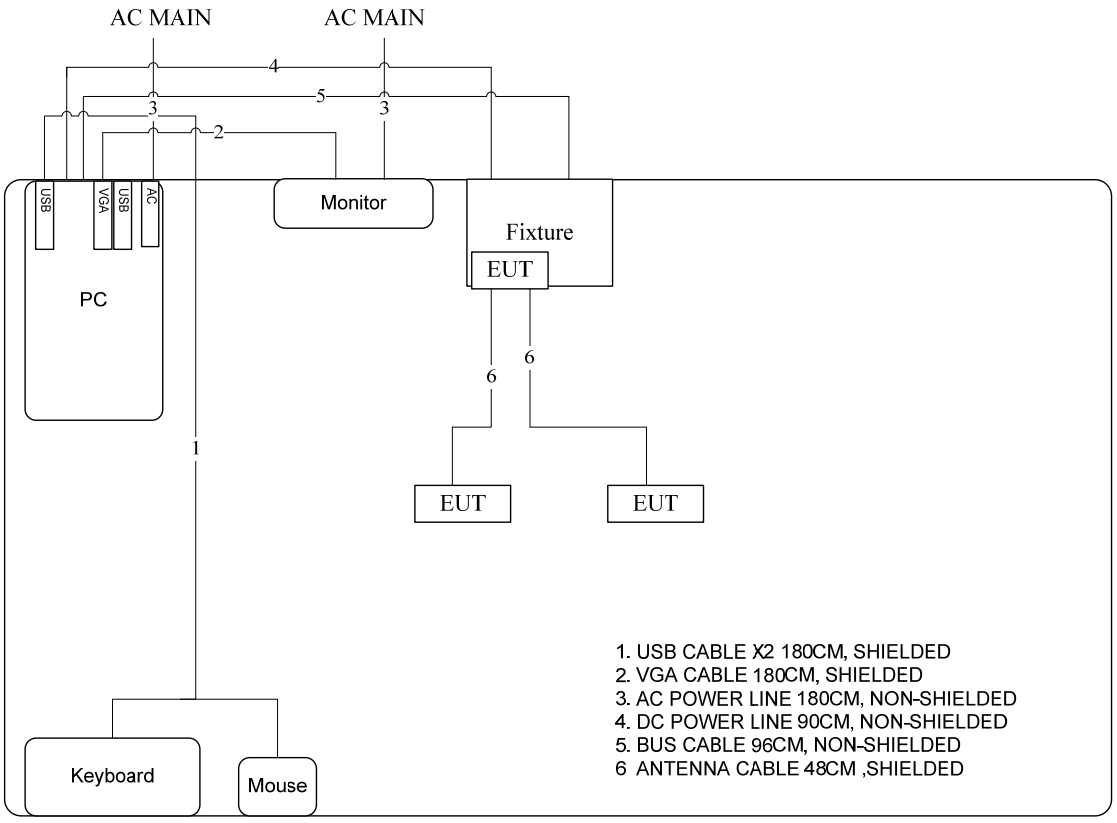
a. Turn on the power of all equipment.

b. The PC sends " H" messages to the monitor, and the monitor displays " H " patterns on the screen.

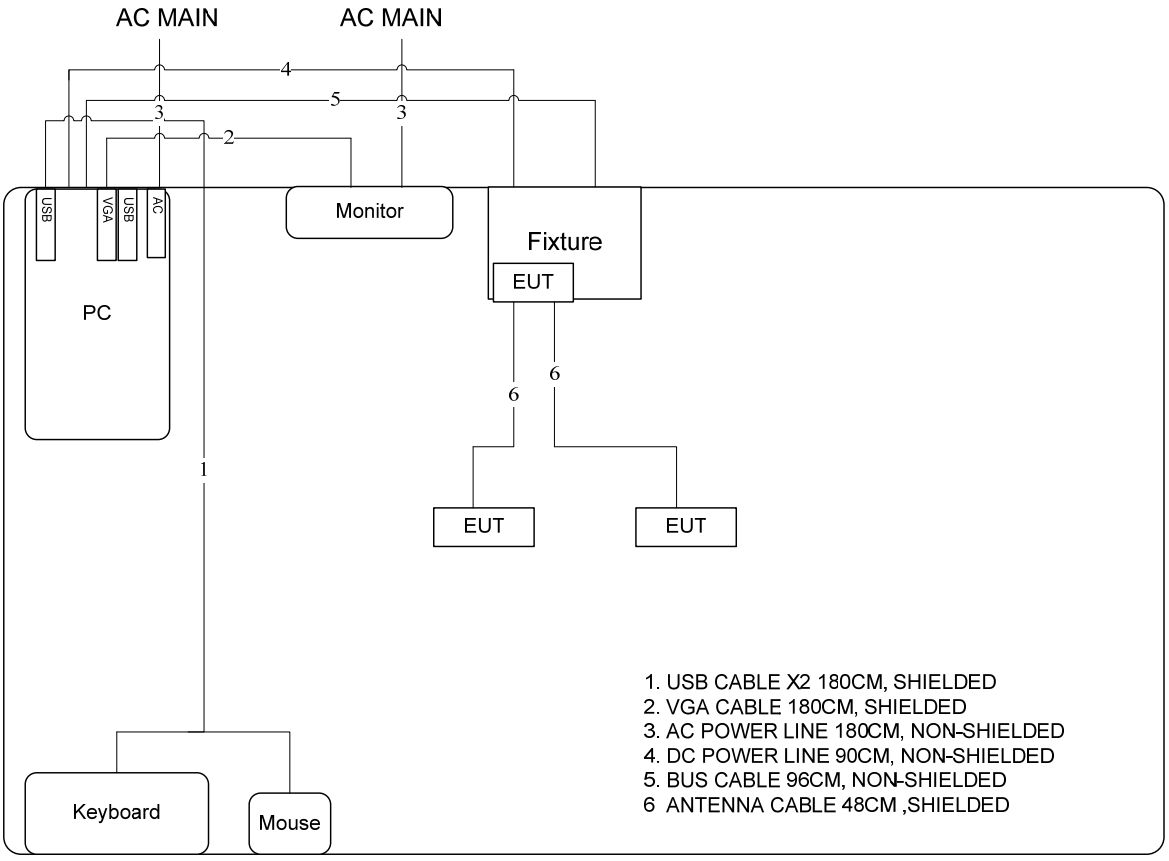
c. Repeat the steps b.

3.10. Test Configurations

3.10.1. Radiation Emissions Test Configuration



3.10.2. AC Power Line Conduction Emissions Test Configuration



4. TEST RESULT

4.1. AC Power Line Conducted Emissions Measurement

4.1.1. Summary of Test Results

Test #	Test Performed	Limit	Result	Under Limit (dB)
1	CE, AC Power,120V/60Hz	FCC 15.107/RSS GEN	Pass	3.92dB

4.1.2. Limit

For this product 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

4.1.3. Measuring Instruments and Setting

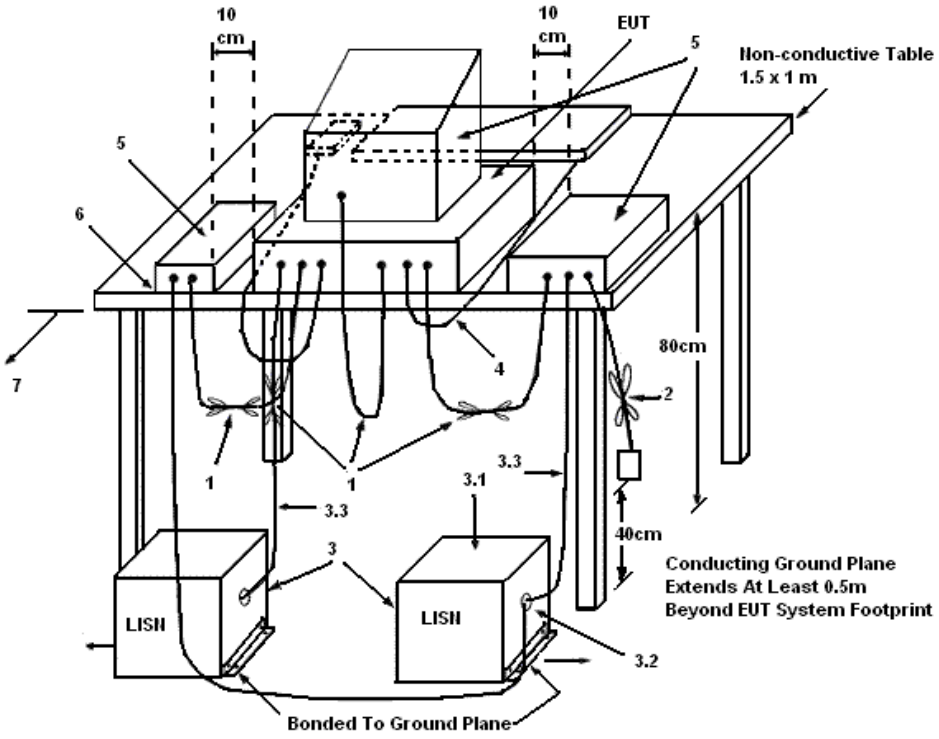
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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

4.1.4. Test Procedures

1. The EUT or host of EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
4. The frequency range from 150 KHz to 30 MHz was searched.
5. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. The measurement has to be done between each power line and ground at the power terminal.

4.1.5. 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.

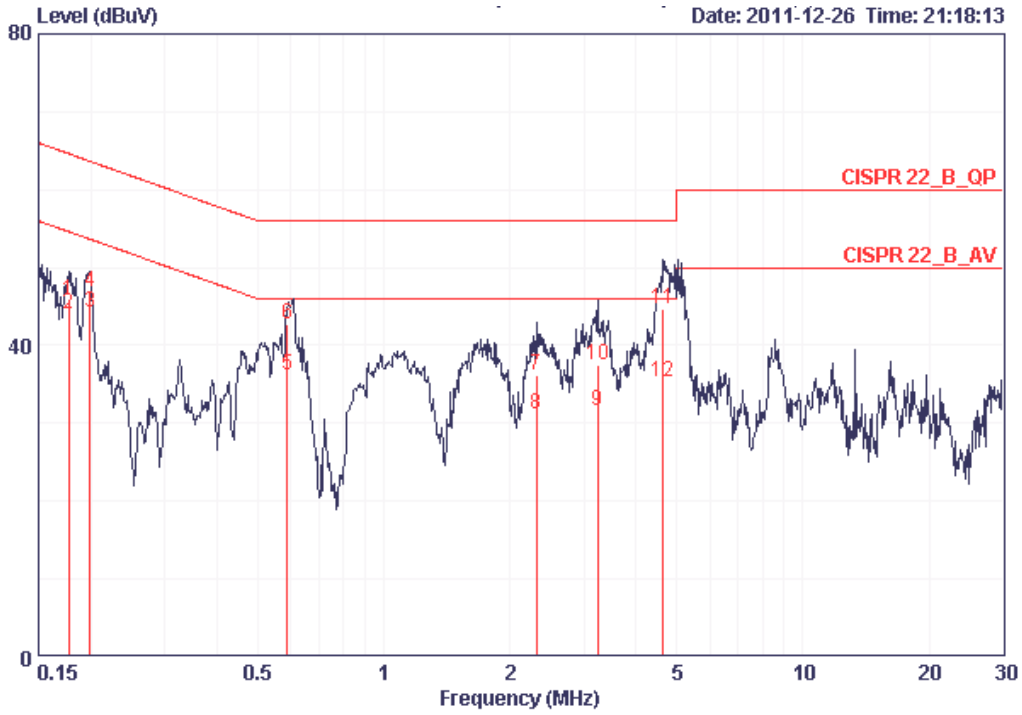
(7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

4.1.6. Test Deviation

There is no deviation with the original standard.

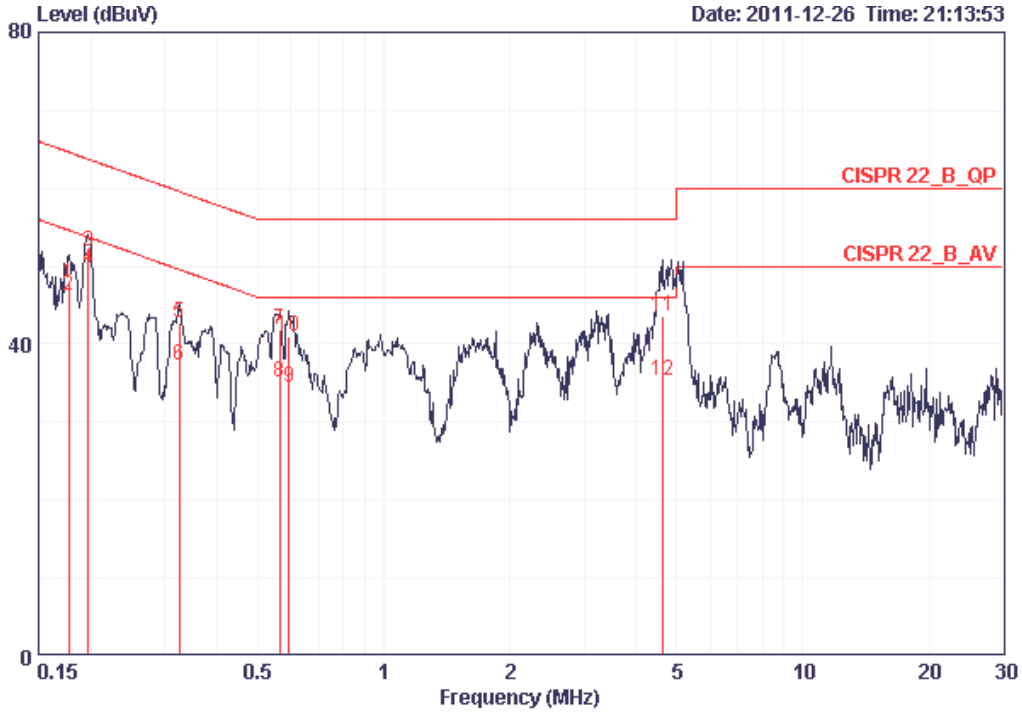
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	22°C	Humidity	61%
Test Engineer	Simon Yang	Phase	Line



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.17678	45.75	-18.89	64.64	45.49	0.06	0.20	QP
2	0.17678	44.12	-10.52	54.64	43.86	0.06	0.20	AVERAGE
3	0.19863	44.27	-9.40	53.67	44.02	0.05	0.20	AVERAGE
4	0.19863	46.78	-16.89	63.67	46.53	0.05	0.20	QP
5	0.58925	36.21	-9.79	46.00	35.98	0.03	0.20	AVERAGE
6	0.58925	42.70	-13.30	56.00	42.47	0.03	0.20	QP
7	2.309	36.20	-19.80	56.00	35.94	0.06	0.20	QP
8	2.309	31.20	-14.80	46.00	30.94	0.06	0.20	AVERAGE
9	3.241	31.59	-14.41	46.00	31.25	0.08	0.25	AVERAGE
10	3.241	37.59	-18.41	56.00	37.25	0.08	0.25	QP
11	4.622	44.75	-11.25	56.00	44.31	0.14	0.30	QP
12	4.622	35.21	-10.79	46.00	34.77	0.14	0.30	AVERAGE

Temperature	22°C	Humidity	61%
Test Engineer	Simon Yang	Phase	Neutral



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.17678	47.80	-16.84	64.64	47.51	0.09	0.20	QP
2	0.17678	46.32	-8.32	54.64	46.03	0.09	0.20	AVERAGE
3	0.19758	51.78	-11.93	63.71	51.50	0.08	0.20	QP
4 @	0.19758	49.79	-3.92	53.71	49.51	0.08	0.20	AVERAGE
5	0.32512	42.68	-16.89	59.57	42.41	0.07	0.20	QP
6	0.32512	37.23	-12.34	49.57	36.96	0.07	0.20	AVERAGE
7	0.56409	41.82	-14.18	56.00	41.55	0.07	0.20	QP
8	0.56409	35.18	-10.82	46.00	34.91	0.07	0.20	AVERAGE
9	0.59478	34.38	-11.62	46.00	34.11	0.07	0.20	AVERAGE
10	0.59478	41.00	-15.00	56.00	40.73	0.07	0.20	QP
11	4.622	43.56	-12.44	56.00	43.08	0.18	0.30	QP
12	4.622	35.42	-10.58	46.00	34.94	0.18	0.30	AVERAGE

Note:

Level = Read Level + LISN Factor + Cable Loss

4.2. Radiated Emissions Measurement

4.2.1. Summary of Test Result

MAC Address: 00:15:00:85:80:1C DRTU Tool Version 1.5.2-0308 Driver version 14.0.4.115

Test#	Test Performed	Limit	Result	Under Limit (dB)
1	Radiated Emissions 30 - 1000 MHz	FCC 15.109/15.209 / RSS 210	Pass	3.10 dB

4.2.2. Limit

Measurements shall be made with a quasi-peak measuring receiver in the frequency range 30 MHz to 5th harmonic of highest frequency. The quasi-peak measuring receiver shall be in accordance with clause 2 of CISPR 16-1. Receivers with peak detectors shall be in accordance with clause 3 of CISPR 16-1, and shall have a 6 dB bandwidth in accordance with clause 2 of CISPR 16-1.

Frequency of Emission (MHz)	Field Strength Average Limit (dBuV/m) at 3m
30~88	40
88~216	43.5
216~960	46
Above 960	54

4.2.3. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of spectrum analyzer and receiver.

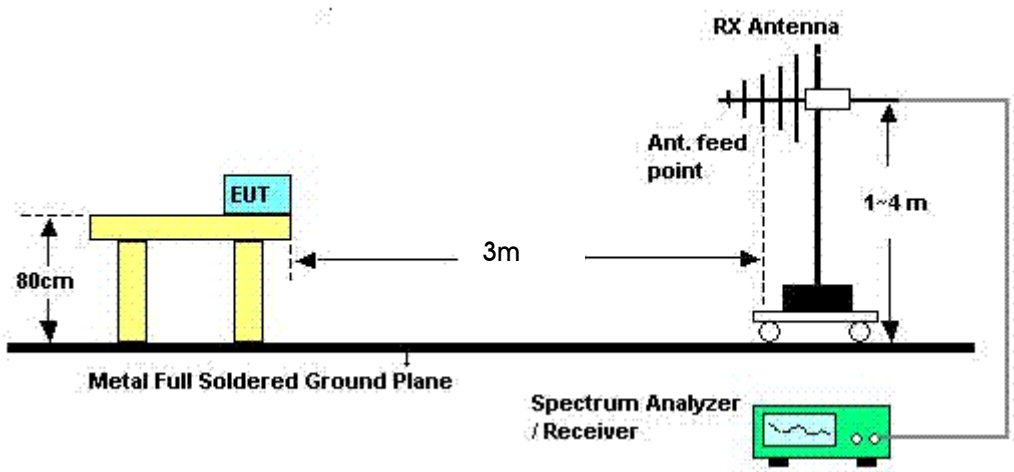
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

Spectrum Parameter	Setting
Start Frequency	1000 MHz
Stop Frequency	5th harmonic of highest frequency
RB / VB	1 MHz / 1MHz for Peak

4.2.4. Test Procedures

1. 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.

4.2.5. Test Setup Layout



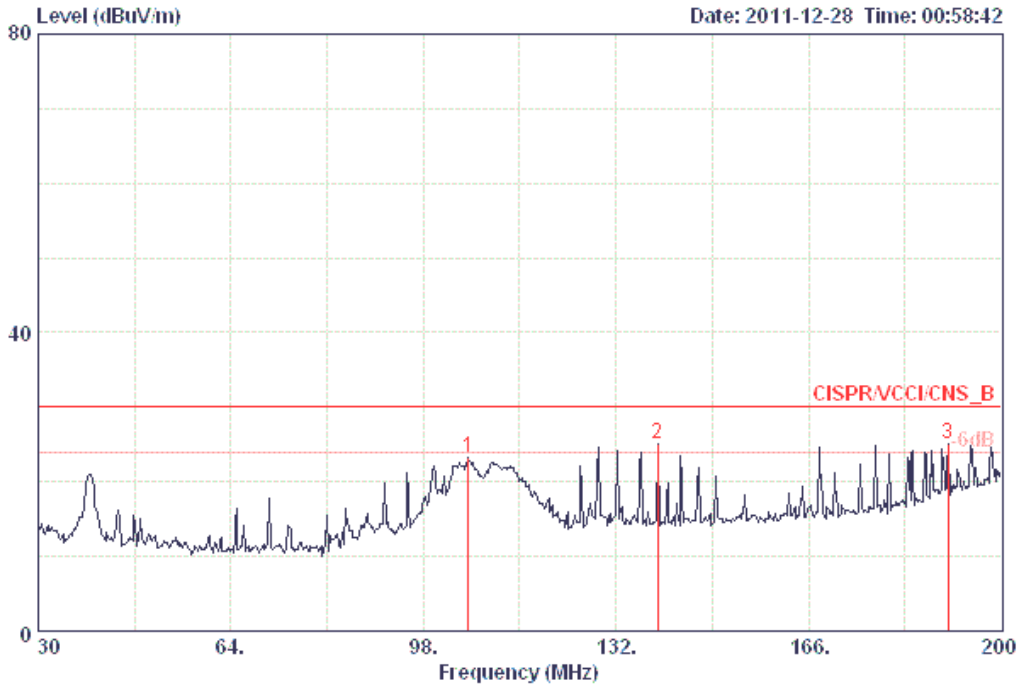
4.2.6. Test Deviation

There is no deviation with the original standard.

4.2.7. Results of Radiated Emissions (30MHz~1GHz)

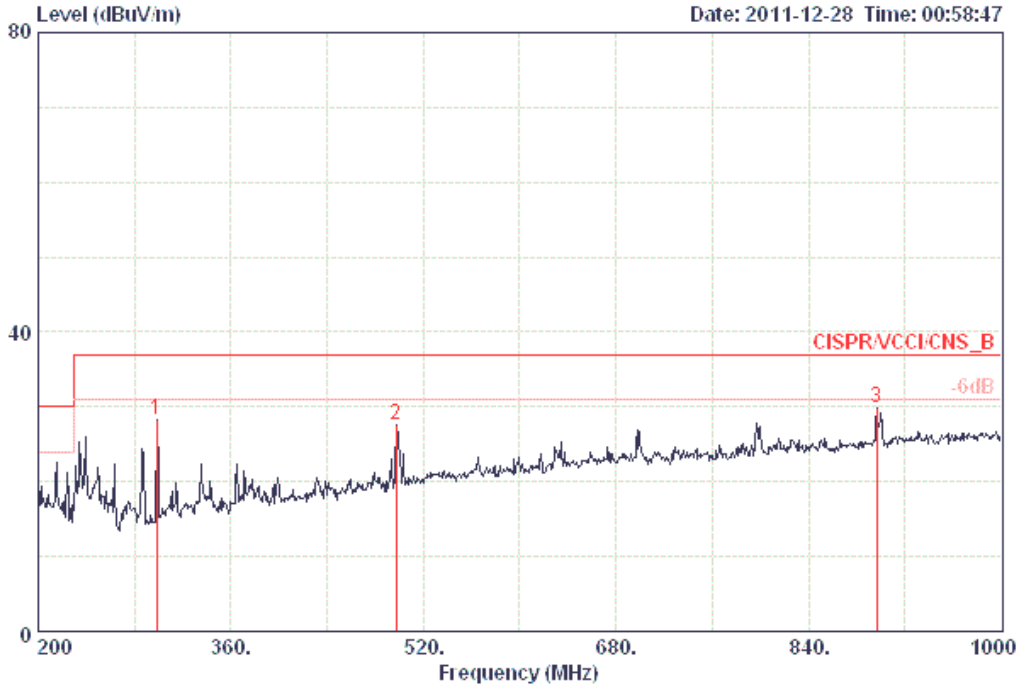
Temperature	22°C	Humidity	63%
Test Engineer	Denis Su		

Horizontal



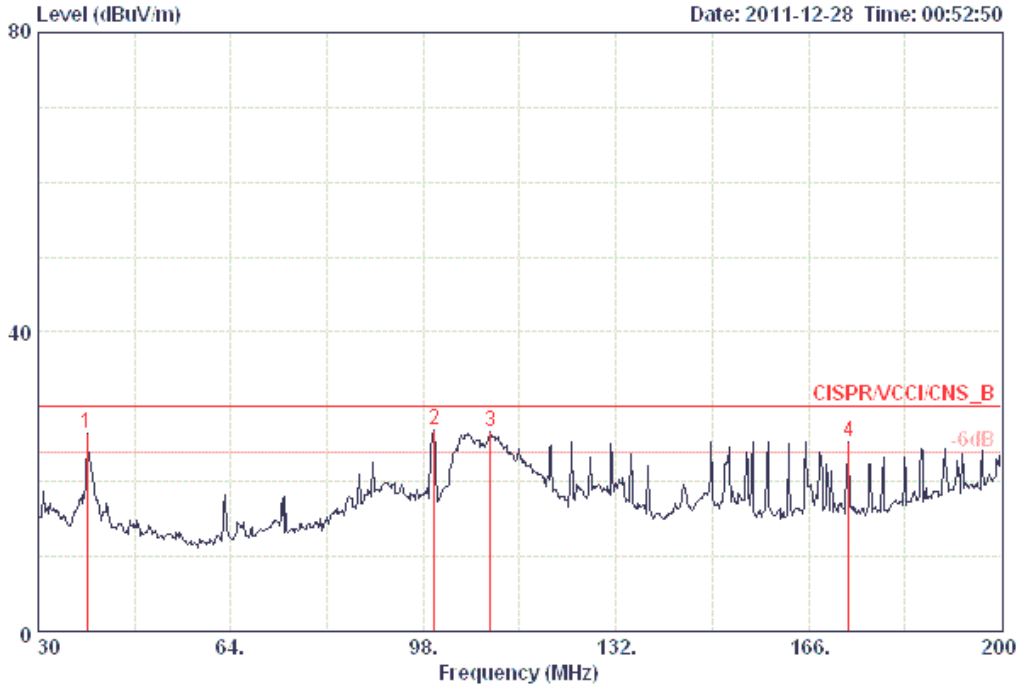
	Freq	Level	Over Limit	Limit Line	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	Table Pos	Ant Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB/m		deg	cm	
1 @	105.990	23.16	-6.84	30.00	38.63	2.74	27.94	9.73	Peak	---	---	HORIZONTAL
2 @	139.310	25.13	-4.87	30.00	38.39	3.21	27.77	11.30	Peak	73	100	HORIZONTAL
3 @	190.650	25.04	-4.96	30.00	33.42	3.75	27.27	15.14	Peak	---	---	HORIZONTAL

Horizontal



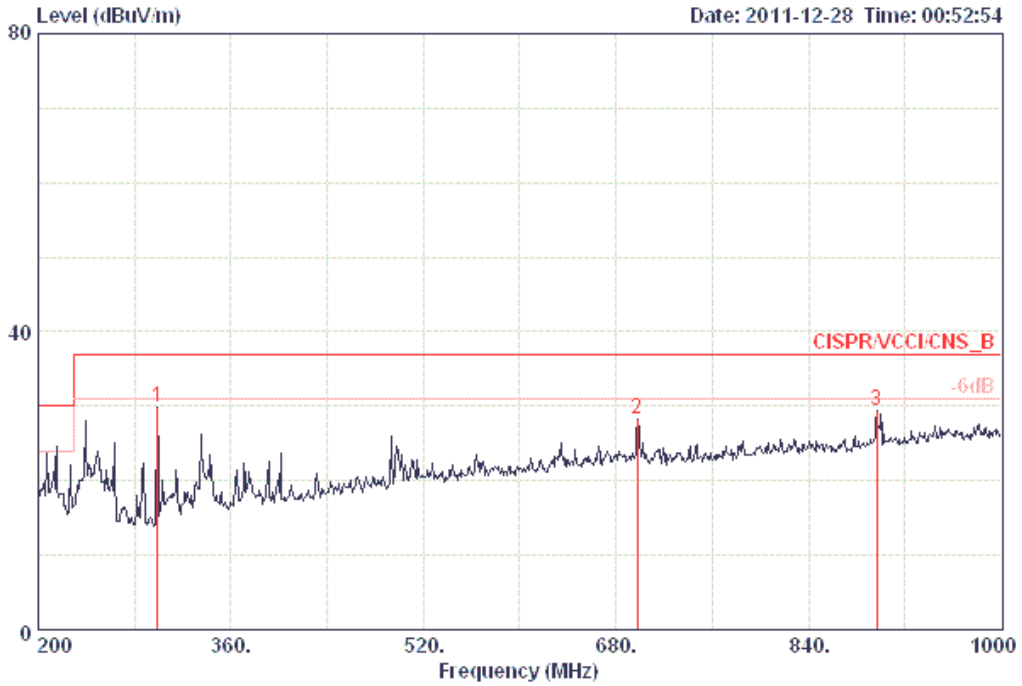
	Freq	Level	Over Limit	Limit Line	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	Table Pos	Ant Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB/m		deg	cm	
1 @	298.400	28.23	-8.77	37.00	38.82	3.31	27.24	13.34	Peak	---	---	HORIZONTAL
2 @	497.600	27.66	-9.34	37.00	34.15	4.38	28.46	17.58	Peak	---	---	HORIZONTAL
3 @	896.800	29.78	-7.22	37.00	28.83	5.72	26.77	21.99	Peak	175	100	HORIZONTAL

Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	Table Pos	Ant Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB/m		deg	cm	
1 @	38.670	26.35	-3.65	30.00	42.48	1.62	28.50	10.75	Peak	---	---	VERTICAL
2 @	99.870	26.90	-3.10	30.00	42.80	2.67	27.96	9.39	Peak	53	100	VERTICAL
3 @	109.900	26.56	-3.44	30.00	41.73	2.79	27.92	9.96	Peak	---	---	VERTICAL
4 @	173.140	25.36	-4.64	30.00	36.60	3.57	27.54	12.74	Peak	---	---	VERTICAL

Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	Table Pos	Ant Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB/m		deg	cm	
1 @	299.200	29.75	-7.25	37.00	40.30	3.33	27.24	13.36	Peak	66	100	VERTICAL
2 @	697.600	28.27	-8.73	37.00	29.87	5.16	27.31	20.55	Peak	---	---	VERTICAL
3 @	896.800	29.37	-7.63	37.00	28.43	5.72	26.77	21.99	Peak	---	---	VERTICAL

Note:

The amplitude of spurious emissions that 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.

5. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMI Test Receiver	R&S	ESCS 30	100377	9kHz ~ 2.75GHz	Sep. 14, 2011	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Oct. 28, 2011	Conduction (CO01-CB)
V- LISN	Schwarzbeck	NSLK 8127	8127-478	9K ~ 30MHz	Nov. 16, 2011	Conduction (CO01-CB)
PULSE LIMITER	R&S	ESH3-Z2	100430	9K~30MHz	Jan. 04, 2011	Conduction (CO01-CB)
COND Cable	-	Cable	-	0.15MHz~30MHz	Dec. 04, 2011	Conduction (CO01-CB)
BILOG ANTENNA	Schaffner	CBL6112D	22021	20MHz ~ 2GHz	Oct. 29, 2011	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz~18GHz	Nov. 22, 2011	Radiation (03CH01-CB)
Horn Antenna	SCHWARZBEAK	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Nov. 22, 2011	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Nov. 17, 2011	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Nov. 23, 2011	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26.5GHz ~ 40GHz	Jul. 29, 2011	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSP40	100056	9KHz~40GHz	Nov. 03, 2011	Radiation (03CH01-CB)
EMI Test Receiver	R&S	ESCS 30	100355	9KHz ~ 2.75GHz	Mar. 22, 2011	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9 kHz - 30 MHz	Sep. 09, 2010*	Radiation (03CH01-CB)
Turn Table	INN CO	CO 2000	N/A	0 ~ 360 degree	N/A	Radiation (03CH01-CB)
Antenna Mast	INN CO	CO2000	N/A	1 m - 4 m	N/A	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-1	N/A	30 MHz - 1 GHz	Nov. 17, 2011	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-1	N/A	1 GHz – 26.5 GHz	Nov. 17, 2011	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-2	N/A	1 GHz – 26.5 GHz	Nov. 17, 2011	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-3	N/A	1 GHz - 40 GHz	Nov. 17, 2011	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-4	N/A	1 GHz - 40 GHz	Nov. 17, 2011	Radiation (03CH01-CB)

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

Note: "*" Calibration Interval of instruments listed above is two years.

6. TEST LOCATION

SHIJR	ADD	:	6Fl., No. 106, Sec. 1, Shintai 5th Rd., Shijr City, Taipei, Taiwan 221, R.O.C.
	TEL	:	886-2-2696-2468
	FAX	:	886-2-2696-2255
HWA YA	ADD	:	No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.
	TEL	:	886-3-327-3456
	FAX	:	886-3-318-0055
LINKOU	ADD	:	No. 30-2, Dingfu Tsuen, Linkou Shiang, Taipei, Taiwan 244, R.O.C
	TEL	:	886-2-2601-1640
	FAX	:	886-2-2601-1695
DUNGHU	ADD	:	No. 3, Lane 238, Kangle St., Neihu Chiu, Taipei, Taiwan 114, R.O.C.
	TEL	:	886-2-2631-4739
	FAX	:	886-2-2631-9740
JUNGHE	ADD	:	7Fl., No. 758, Jungjeng Rd., Junghe City, Taipei, Taiwan 235, 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

7. TAF CERTIFICATE OF ACCREDITATION

Certificate No.：L1190-110702

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 Road, 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：July 02, 2011

P1, total 22 pages

The Appendix forms an integral part of this Certificate, which shall be invalid when use without the Appendix