Variant FCC RF Test Report

APPLICANT	:	Lenovo (Shanghai) Electronics Technology Co., Ltd.
EQUIPMENT	:	Portable Tablet Computer
BRAND NAME	:	lenovo
MODEL NAME	:	Lenovo A3300-H
MARKETING NAME	:	Lenovo A3300-H
FCC ID	:	O57A3300H
STANDARD	:	FCC Part 15 Subpart C §15.247
CLASSIFICATION	:	(DSS) Spread Spectrum Transmitter

This is a variant report which is only valid together with the original test report. This is a variant report which is only valid together with the original test report. The product was received on Sep. 29, 2014 and testing was completed on Oct. 16, 2014. We, SPORTON INTERNATIONAL (SHENZHEN) INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and the testing has shown the tested sample to be in 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 (SHENZHEN) INC., the test report shall not be reproduced except in full.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

Testing Laboratory 2353

SPORTON INTERNATIONAL (SHENZHEN) INC.
No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P.R.C.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR492903A	Rev. 01	This is a variant report for Lenovo A3300-H. The product equality declaration could be referred to Appendix B. Based on the similarity between two models, only the worst case of Radiated Spurious Emission and Conducted Emission from original test report (Sporton Report Number FR450706-01A) was verified.	Oct. 21, 2014

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 4.68 dB at 53.280 MHz
3.2	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 11.00 dB at 4.310 MHz

1 General Description

1.1 Applicant

Lenovo (Shanghai) Electronics Technology Co., Ltd.
No. 68 Building, 199 Fenju Road, Wai Gao Qiao FTZ, Shanghai, China

1.2 Manufacturer

Lenovo PC HK Limited
23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	Portable Tablet Computer
Brand Name	lenovo
Model Name	Lenovo A3300-H
Marketing Name	Lenovo A3300-H
FCC ID	O57A3300H
EUT supports Radios application	GPRS/EGPRS/WCDMA/HSPA/HSPA+(Downlink Only)/ WLAN 2.4GHz 802.11b/g/n HT20/HT40/ Bluetooth v3.0 + EDR/Bluetooth v4.0 LE
HW Version	A977_MB_PCB_V4.0
SW Version	A3300H_A442_01_04_140522_ROW
EUT Stage	Pre-Production

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx/Rx Frequency Range	2402 MHz ~ 2480 MHz
Number of Channels	79
Carrier Frequency of Each Channel	2402+n*1 MHz; n=0~78
Antenna Type	PIFA Antenna
Type of Modulation	Bluetooth BR (1Mbps) : GFSK Bluetooth EDR (2Mbps) : π/4-DQPSK Bluetooth EDR (3Mbps) : 8-DPSK

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Testing Site

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.		
Test Site Location	No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P.R.C. TEL: +86-755-3320-2398		
Test Site No.	**Sporton Site No.**		**FCC Registration No.**
	03CH01-SZ	CO01-SZ	831040

Note: The test site complies with ANSI C63.4 2003 requirement.

1.7 Applicable Standards

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

- FCC Part 15 Subpart C §15.247
- FCC Public Notice DA 00-705
- ANSI C63.4-2003

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

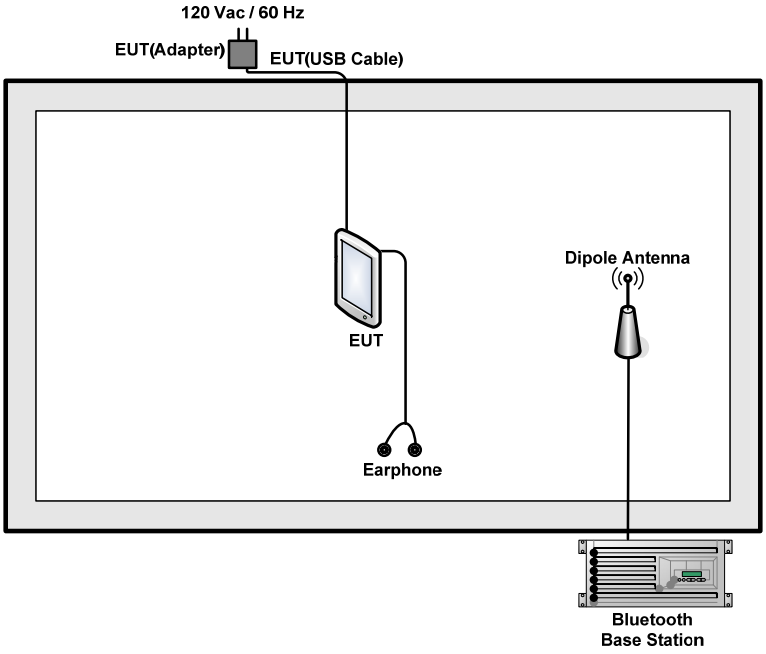
2.1 Test Mode

The following summary table is showing all test modes to demonstrate in compliance with the standard.

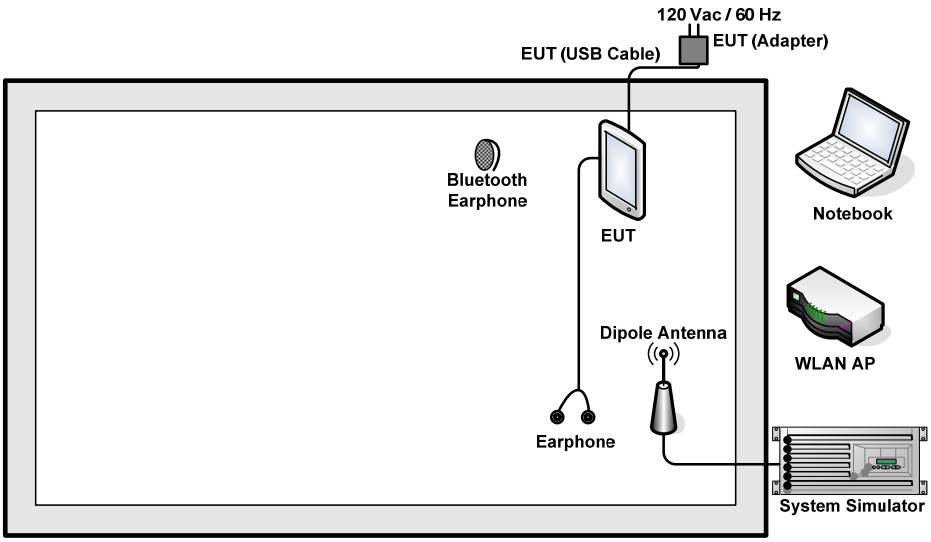
Summary table of Test Cases	
Test Item	**Data Rate / Modulation**
Radiated Test Cases	**Bluetooth BR 1Mbps GFSK**
	Mode 1: CH78_2480 MHz
AC Conducted Emission	Mode 1 :GSM850 (GPRS 8) Idle + Bluetooth Link + WLAN Link + USB Cable (Charging from Adapter) + Earphone
Remark: For radiated test cases, the tests were performed with earphone, adapter and USB cable.	

2.2 Connection Diagram of Test System

<Bluetooth Tx Mode>



<AC Conducted Emission Mode>



2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Bluetooth Base Station	R&S	CBT32	N/A	N/A	Unshielded,1.8m
2.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
3.	WLAN AP	D-Link	DIR-815	KA2IR815A1	N/A	Unshielded, 1.8 m
4.	Notebook	Lenovo	G480	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
5.	Bluetooth Earphone	Lenovo	LBH301	PYAHS-107W	N/A	N/A
6.	Earphone	Lenovo	SH100	N/A	N/A	N/A

2.4 EUT Operation Test Setup

For Bluetooth test items, an engineering test program was provided and enabled to make EUT contact with Bluetooth base station for continuous transmitting and receiving signals.

For AC power line conducted emissions, the EUT was set to connect with the WLAN AP under large package sizes transmission.

3 Test Result

3.1 Radiated Band Edges and Spurious Emission Measurement

3.1.1 Limit of Radiated Band Edges and Spurious Emission

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

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

3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

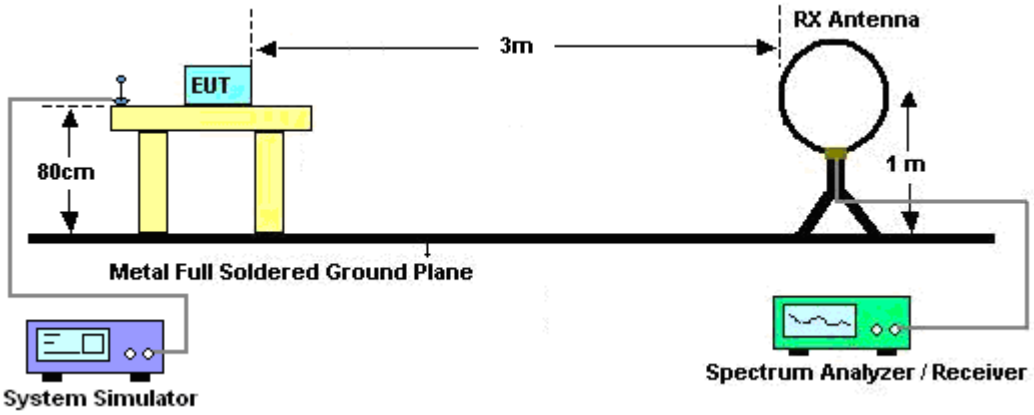
3.1.3 Test Procedures

1. The testing follows the guidelines in Spurious Radiated Emissions of FCC Public Notice DA 00-705 Measurement Guidelines.
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. 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. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
4. Set to the maximum power setting and enable the EUT transmit continuously.
5. Use the following spectrum analyzer settings:
   (1) Span shall wide enough to fully capture the emission being measured;
   (2) Set RBW=100 kHz for f < 1 GHz, RBW=1MHz for f>1GHz ; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold for peak
   (3) For average measurement: use duty cycle correction factor method per 15.35(c).
   Duty cycle = On time/100 milliseconds
   On time = $N_1*L_1+N_2*L_2+...+N_{n-1}*LN_{n-1}+N_n*L_n$
   Where N_1 is number of type 1 pulses, L_1 is length of type 1 pulses, etc.
   Average Emission Level = Peak Emission Level + 20*log(Duty cycle)
6. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

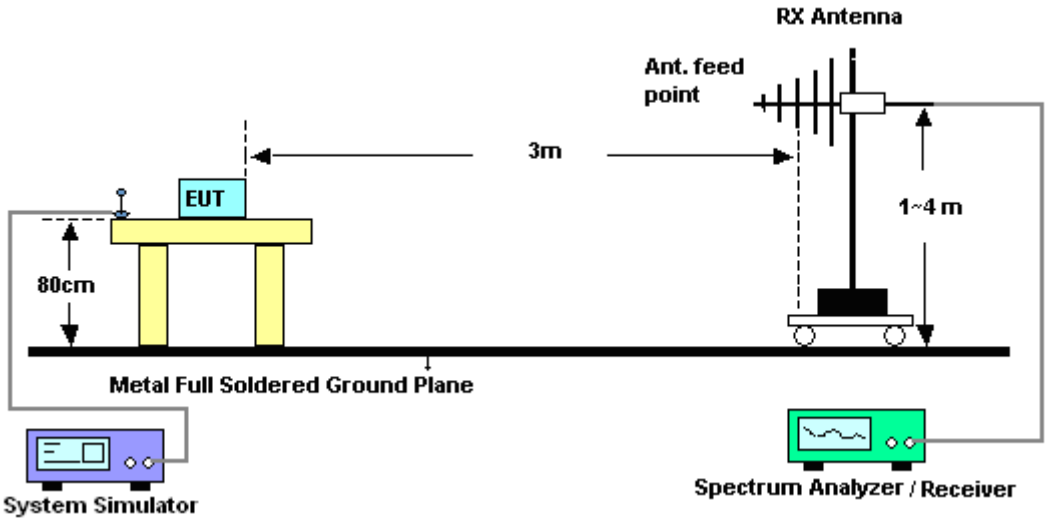
Note: The average levels were calculated from the peak level corrected with duty cycle correction factor (-24.82dB) derived from 20log (dwell time/100ms). This correction is only for signals that hop with the fundamental signal, such as band-edge and harmonic. Other spurious signals that are independent of the hopping signal would not use this correction.

3.1.4 Test Setup

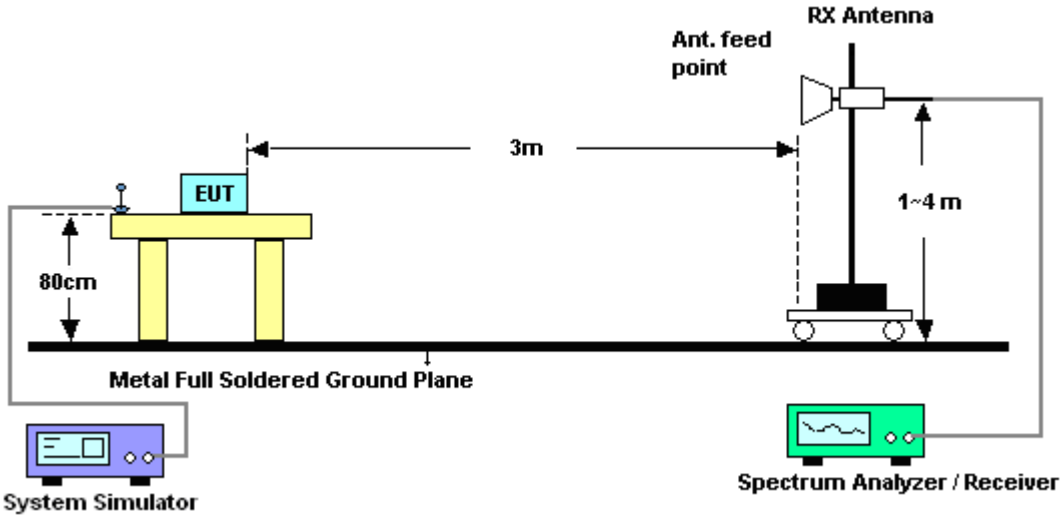
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz

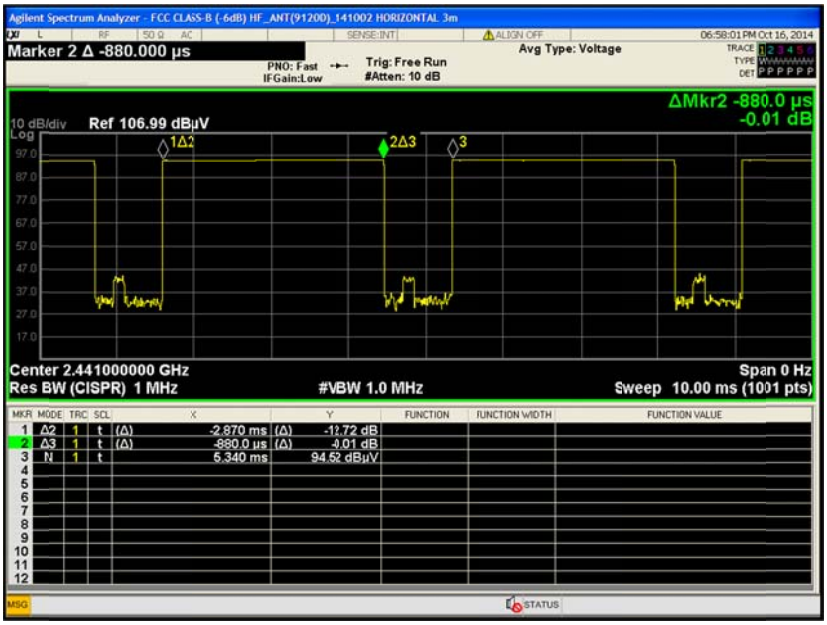


3.1.5 Test Results of Radiated Spurious Emissions (9 kHz ~ 30 MHz)

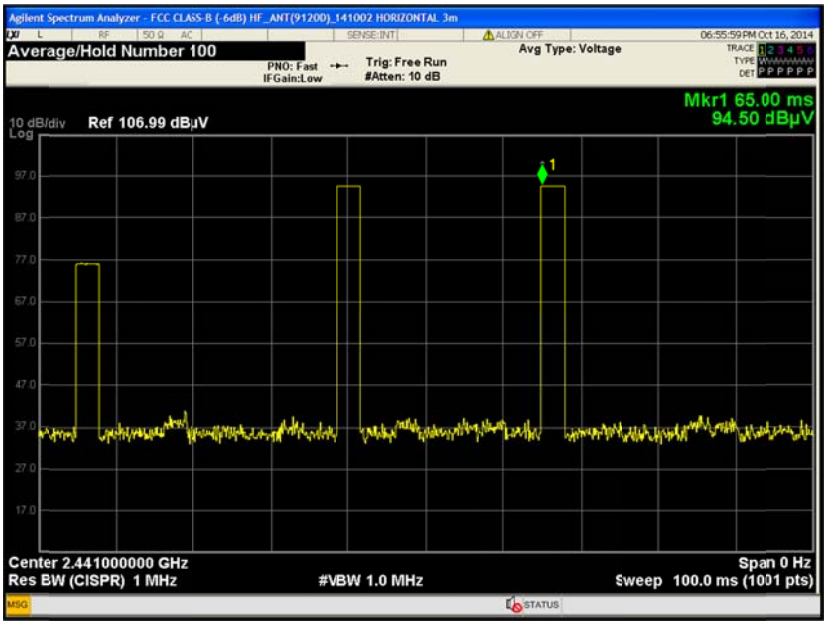
The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

3.1.6 Duty cycle correction factor for average measurement

DH5 on time (One Pulse) Plot on Channel 39



DH5 on time (Count Pulses) Plot on Channel 39



Note:

1. Worst case Duty cycle = on time/100 milliseconds = 2 * 2.87 / 100 = 5.74 %
2. Worst case Duty cycle correction factor = 20*log(Duty cycle) = -24.82 dB
3. DH5 has the highest duty cycle worst case and is reported.

Duty Cycle Correction Factor Consideration for AFH mode:

Bluetooth normal hopping rate is 1600Hz and reduced to 800Hz in AFH mode; due to the reduced number of hopping frequencies, with the same packet configuration the dwell time in each channel frequency within 100msec period is longer in AFH mode than normal mode.

In AFH mode, the minimum hopping frequencies are 20, to get the longest dwell time DH5 packet is observed; the period to have DH5 packet completing one hopping sequence is

2.87 ms x 20 channels = 57.4 ms

There cannot be 2 complete hopping sequences within 100ms period, considering the random hopping behavior, maximum 2 hops can be possibly observed within the period. [100ms / 57.6ms] = 2 hops

Thus, the maximum possible ON time:

2.87 ms x 2 = 5.74 ms

Worst case Duty Cycle Correction factor, which is derived from the maximum possible ON time,

20 x log(5.74 ms/100ms) = -24.82 dB

3.1.7 Test Result of Radiated Spurious at Band Edges

Test Mode :	1Mbps	**Temperature :**	23~25°C
Test Channel :	78	**Relative Humidity :**	48~52%
		Test Engineer :	Kaer Huang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	**Level (dBµV/m)**	**Over Limit (dB)**	**Limit Line (dBµV/m)**	**Read Level (dBµV)**	**Antenna Factor (dB)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Ant Pos (cm)**	**Table Pos (deg)**	**Remark**
2484.56	47.31	-26.69	74	39.9	27.54	9.5	29.63	109	260	Peak
2484.56	22.49	-31.51	54	-	-	-	-	109	260	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	**Level (dBµV/m)**	**Over Limit (dB)**	**Limit Line (dBµV/m)**	**Read Level (dBµV)**	**Antenna Factor (dB)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Ant Pos (cm)**	**Table Pos (deg)**	**Remark**
2487.9	47.03	-26.97	74	39.53	27.6	9.5	29.6	100	119	Peak
2487.9	22.21	-31.79	54	-	-	-	-	100	119	Average

Note: Average Emission Level = Peak Emission Level + duty cycle correction factor(-24.82dB)

3.1.8 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic)

Test Mode :	1Mbps	**Temperature :**	23~25°C
Test Channel :	78	**Relative Humidity :**	48~52%
Test Engineer :	Kaer Huang	**Polarization :**	Horizontal
Remark :	2480 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
136.7	30.18	-13.32	43.5	47.11	11.33	1.68	29.94	100	200	Peak
219.15	29.55	-16.45	46	48.19	9.13	2.16	29.93	-	-	Peak
278.32	24.72	-21.28	46	40.04	12.18	2.43	29.93	-	-	Peak
557.68	23	-23	46	31.44	17.94	3.54	29.92	-	-	Peak
751.68	26.08	-19.92	46	31.36	20.45	4.2	29.93	-	-	Peak
904.94	26.83	-19.17	46	31.14	20.95	4.68	29.94	-	-	Peak
2480	99.7	-	-	92.29	27.54	9.5	29.63	109	260	Peak
2480	74.88	-	-	-	-	-	-	109	260	Average
4960	46.46	-27.54	74	48.17	31.53	12.95	46.19	118	289	Peak
4960	21.64	-32.36	54	-	-	-	-	118	289	Average
7440	44.7	-29.3	74	40.84	36.16	15.15	47.45	158	273	Peak
7440	19.88	-34.12	54	-	-	-	-	158	273	Average

Note: 1. Other harmonics are lower than background noise.

2. Average Emission Level = Peak Emission Level + duty cycle correction factor(-24.82)

Test Mode :	1Mbps	**Temperature :**	23~25°C
Test Channel :	78	**Relative Humidity :**	48~52%
Test Engineer :	Kaer Huang	**Polarization :**	Vertical
Remark :	2480 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
53.28	35.32	-4.68	40	59.58	4.65	1.02	29.93	200	360	Peak
104.69	33.27	-10.23	43.5	50.13	11.6	1.48	29.94	-	-	Peak
238.55	26.23	-19.77	46	42.7	11.21	2.25	29.93	-	-	Peak
474.26	23.06	-22.94	46	32.54	17.22	3.22	29.92	-	-	Peak
818.61	26.92	-19.08	46	32.02	20.4	4.43	29.93	-	-	Peak
946.65	27.31	-18.69	46	31.24	21.17	4.84	29.94	-	-	Peak
2480	98.14	-	-	90.73	27.54	9.5	29.63	100	119	Peak
2480	73.32	-	-	-	-	-	-	100	119	Average
4960	42.16	-31.84	74	48.33	31.53	8.49	46.19	118	289	Peak
4960	17.34	-36.66	54	-	-	-	-	118	289	Average
7440	46.75	-27.25	74	48	36.16	10.04	47.45	158	273	Peak
7440	21.93	-32.07	54	-	-	-	-	158	273	Average

Note: 1. Other harmonics are lower than background noise.

2. Average Emission Level = Peak Emission Level + duty cycle correction factor(-24.82)

3.2 AC Conducted Emission Measurement

3.2.1 Limit 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 (dBμV)	
	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.

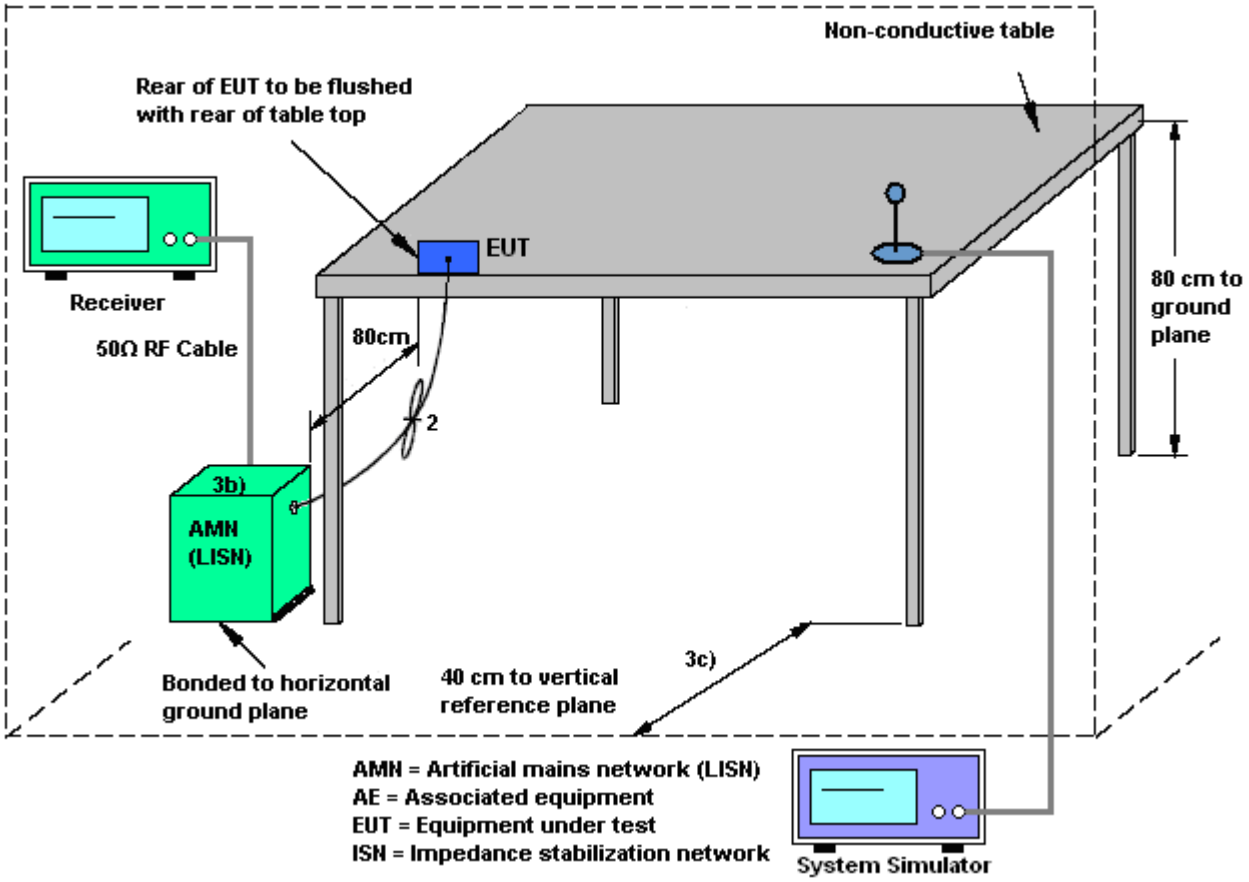
3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.2.3 Test Procedures

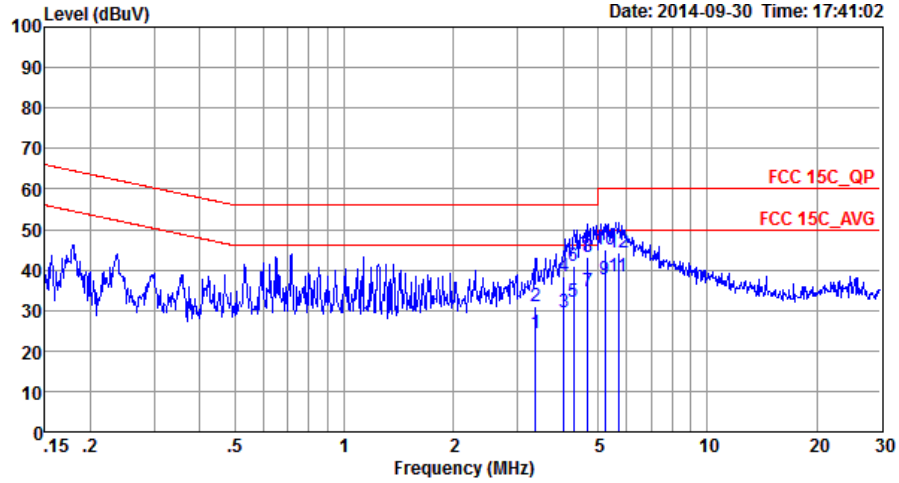
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
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.

3.2.4 Test Setup



3.2.5 Test Result of AC Conducted Emission

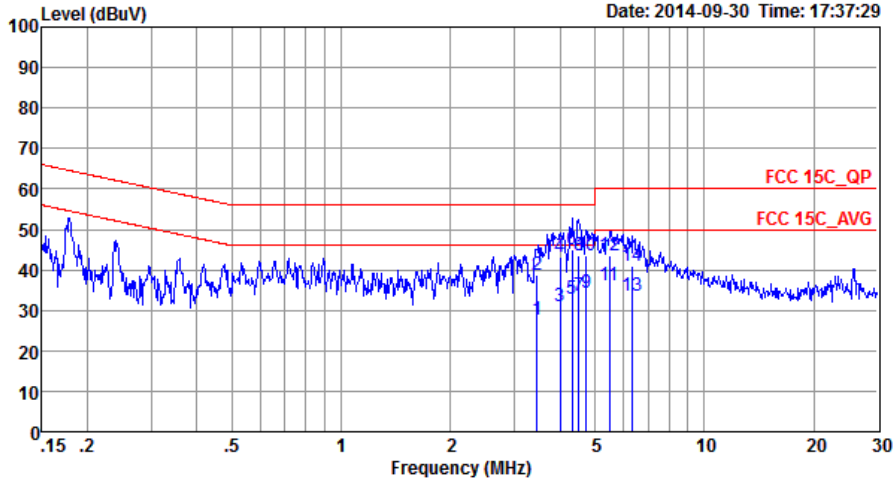
Test Mode :	Mode 1	**Temperature :**	21~22℃
Test Engineer :	Jack Tian	**Relative Humidity :**	41~42%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	GSM850 (GPRS 8) Idle + Bluetooth Link + WLAN Link + USB Cable (Charging from Adapter) + Earphone		



Site : CO01-SZ
Condition: FCC 15C_QP LISN_L_20140304 LINE

		Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
		MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1		3.36	24.35	-21.65	46.00	13.80	0.33	10.22	Average
2		3.36	30.85	-25.15	56.00	20.30	0.33	10.22	QP
3		4.03	29.70	-16.30	46.00	19.10	0.37	10.23	Average
4		4.03	38.50	-17.50	56.00	27.90	0.37	10.23	QP
5		4.29	32.02	-13.98	46.00	21.40	0.39	10.23	Average
6		4.29	41.12	-14.88	56.00	30.50	0.39	10.23	QP
7	*	4.70	34.74	-11.26	46.00	24.09	0.41	10.24	Average
8		4.70	43.24	-12.76	56.00	32.59	0.41	10.24	QP
9		5.22	37.76	-12.24	50.00	27.10	0.42	10.24	Average
10		5.22	45.16	-14.84	60.00	34.50	0.42	10.24	QP
11		5.68	38.36	-11.64	50.00	27.71	0.40	10.25	Average
12		5.68	44.46	-15.54	60.00	33.81	0.40	10.25	QP

Test Mode :	Mode 1	**Temperature :**	21~22℃
Test Engineer :	Jack Tian	**Relative Humidity :**	41~42%
Test Voltage :	120Vac / 60Hz	**Phase :**	Neutral
Function Type :	GSM850 (GPRS 8) Idle + Bluetooth Link + WLAN Link + USB Cable (Charging from Adapter) + Earphone		



Site : CO01-SZ
Condition: FCC 15C_QP LISN_N_20140304 NEUTRAL

		Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
		MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1		3.45	27.76	-18.24	46.00	17.10	0.44	10.22	Average
2		3.45	38.66	-17.34	56.00	28.00	0.44	10.22	QP
3		4.01	30.99	-15.01	46.00	20.30	0.46	10.23	Average
4		4.01	43.29	-12.71	56.00	32.60	0.46	10.23	QP
5		4.31	33.00	-13.00	46.00	22.30	0.47	10.23	Average
6	*	4.31	45.00	-11.00	56.00	34.30	0.47	10.23	QP
7		4.50	33.71	-12.29	46.00	23.00	0.48	10.23	Average
8		4.50	43.71	-12.29	56.00	33.00	0.48	10.23	QP
9		4.72	34.42	-11.58	46.00	23.70	0.48	10.24	Average
10		4.72	43.62	-12.38	56.00	32.90	0.48	10.24	QP
11		5.48	36.33	-13.67	50.00	25.60	0.48	10.25	Average
12		5.48	43.63	-16.37	60.00	32.90	0.48	10.25	QP
13		6.35	33.52	-16.48	50.00	22.80	0.45	10.27	Average
14		6.35	40.82	-19.18	60.00	30.10	0.45	10.27	QP

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
ESCIO TEST Receiver	R&S	ESCI	100724	9kHz~3GHz	Feb. 21, 2014	Oct. 16, 2014	Feb. 20, 2015	Radiation (03CH01-SZ)
Spectrum Analyzer	Agilent Technologies	N9038A	MY52260185	20Hz~26.5GHz	May 26, 2014	Oct. 16, 2014	May 25, 2015	Radiation (03CH01-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	May 09, 2014	Oct. 16, 2014	May 08, 2015	Radiation (03CH01-SZ)
Bilog Antenna	TESEQ	CBL 6112D	23188	30MHz~2GHz	Oct. 26, 2013	Oct. 16, 2014	Oct. 25, 2014	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS Lindgren	3117	00119436	1GHz~18GHz	Oct. 26, 2013	Oct. 16, 2014	Oct. 25, 2014	Radiation (03CH01-SZ)
Double Ridged Horn Antenna	COM-POWER	AH-840	101073	18GHz~40GHz	Jun. 09, 2014	Oct. 16, 2014	Jun. 08, 2015	Radiation (03CH01-SZ)
Amplifier	ADVANTEST	BB525C	E9007003	9kHz~3000MHz	Feb. 21, 2014	Oct. 16, 2014	Feb. 20, 2015	Radiation (03CH01-SZ)
Amplifier	Yiai	AV3860B	04030	2GHz~26.5GHz	May 08, 2014	Oct. 16, 2014	May 07, 2015	Radiation (03CH01-SZ)
AC Source(AVR)	Chroma	61601	616010001985	100Vac~250Vac	Mar. 25, 2014	Oct. 16, 2014	Mar. 24, 2015	Radiation (03CH01-SZ)
Turn Table	EM Electronics	EM 1000	N/A	0~360 degree	NCR	Oct. 16, 2014	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM Electronics	EM 1000	N/A	1 m~4 m	NCR	Oct. 16, 2014	NCR	Radiation (03CH01-SZ)
ESCIO TEST Receiver	R&S	ESCI	100724	9kHz~3GHz	Feb. 21, 2014	Sep. 30, 2014	Feb. 20, 2015	Conduction (CO01-SZ)
AC LISN	EMCO	3816/2SH	00103912	9kHz~30MHz	Mar. 04, 2014	Sep. 30, 2014	Mar. 03, 2015	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	EMCO	3816/2SH	00103892	9kHz~30MHz	Mar. 04, 2014	Sep. 30, 2014	Mar. 03, 2015	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	616020000891	100Vac~250Vac	Dec. 17, 2013	Sep. 30, 2014	Dec. 16, 2014	Conduction (CO01-SZ)

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))	**2.3**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.9**

Appendix B. Product Equality Declaration

Lenovo (Shanghai) Electronics Technology Co., Ltd.

No. 68 Building, 199 Fenju Road, Wai Gao Qiao FTZ , Shanghai , China

Tel: 86-21-50504500-8237

Date: October 21, 2014

Product Equality Declaration

We, Lenovo (Shanghai) Electronics Technology Co., Ltd., declare on our sole responsibility for product of Lenovo A3300-H that the difference between the present product and the original product are listed as below, the LCD and WCDMA PA have different supplier:

number	Part name	Original	Present
1	LCD	Trade name: BOE Model name: BA070WS1-100	Trade name: KingDisplay Model name: KD070D23-39NA-A66
2	PA(WCDMA)	Trade name: Skyworks Model name: SKY77758	Trade name: MURATA Model name: HRPF58723BTB-A
		Trade name: Skyworks Model name: SKY77762	Trade name: Vanchip Model name: VC5342

Should you have any questions or comments regarding this matter, please have my best attention.

Declared by : Li Wei

on behalf of Lenovo (Shanghai) Electronics Technology Co., Ltd.