

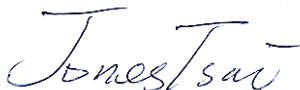
Partial FCC RF Test Report

APPLICANT : Getac Technology Corporation.
EQUIPMENT : WLAN module
BRAND NAME : Intel
MODEL NAME : 7260NGW
FCC ID : QYL7260NGW
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

This is a partial report which is included RF conducted power and AC conducted emission measurement. The product was received on Sep. 17, 2013 and testing was completed on Oct. 30, 2013. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and shown to be compliant 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: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

SPORTON INTERNATIONAL INC.

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

SPORTON INTERNATIONAL INC.

TEL : 886-3-327-3456

FAX : 886-3-328-4978

FCC ID : QYL7260NGW

Page Number : 1 of 27

Report Issued Date : Nov. 12, 2013

Report Version : Rev. 01



TABLE OF CONTENTS

REVISION HISTORY	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION	5
1.1 Applicant	5
1.2 Manufacturer	5
1.3 Feature of Equipment Under Test	5
1.4 Product Specification of Equipment Under Test	6
1.5 Modification of EUT	7
1.6 Testing Site	8
1.7 Applied Standards	8
2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST	9
2.1 Carrier Frequency and Channel	9
2.2 Pre-Scanned RF Power	10
2.3 Test Mode	19
2.4 Connection Diagram of Test System	19
2.5 Support Unit used in test configuration and system	20
3 TEST RESULT	21
3.1 AC Conducted Emission Measurement	21
3.2 Antenna Requirements	25
4 LIST OF MEASURING EQUIPMENT	26
5 UNCERTAINTY OF EVALUATION	27
APPENDIX A. SETUP PHOTOGRAPHS	



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR391715D	Rev. 01	Initial issue of report	Nov. 12, 2013



SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.207	RSS-Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 1.20 dB at 13.558 MHz
3.2	15.203 & 15.407(a)	RSS-210 A9.2	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Getac Technology Corporation.

5F., Building A, No. 209, Sec. 1, Nangang Rd., Nangang Dist., Taipei City 11568, Taiwan, R.O.C.

1.2 Manufacturer

Getac Technology (Kunshan) Co., LTD.

No. 269, No. 2 Avenue, Kunshan Comprehensive Free Trade Zone, Jiangsu Province, P.R.C

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	WLAN module
Brand Name	Intel
Model Name	7260NGW
FCC ID	QYL7260NGW
installed into Tablet	Brand Name: Getac Model Name: V110 Marketing Name: V110
EUT supports Radios application	WLAN 2.4GHz 802.11b/g/n (HT20/HT40) WLAN 5GHz 802.11a/n (HT20/HT40) WLAN 5GHz 11ac (VHT20/VHT40/VHT80) Bluetooth v3.0+EDR/v4.0-LE
EUT Stage	Production Unit

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 Channel Frequency Range	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5580 MHz 5660 MHz ~ 5720 MHz
Maximum Output Power	<Ant. 1> <5180 MHz ~ 5240 MHz> 802.11a : 15.45 dBm / 0.0351 W 802.11n HT20 : 15.56 dBm / 0.0360 W 802.11n HT40 : 15.45 dBm / 0.0351 W 802.11n VHT20 : 15.34 dBm / 0.0342 W 802.11n VHT40 : 15.42 dBm / 0.0348 W 802.11n VHT80 : 7.90 dBm / 0.0062 W <5260 MHz ~ 5320 MHz> 802.11a : 15.41 dBm / 0.0348 W 802.11n HT20 : 15.83 dBm / 0.0383 W 802.11n HT40 : 10.97 dBm / 0.0125 W 802.11n VHT20 : 15.53 dBm / 0.0357 W 802.11n VHT40 : 10.85 dBm / 0.0122 W 802.11n VHT80 : 10.42 dBm / 0.0110 W <5500 MHz ~ 5580 MHz and 5660 MHz ~ 5720 MHz > 802.11a : 16.18 dBm / 0.0415 W 802.11n HT20 : 16.27 dBm / 0.0424 W 802.11n HT40 : 16.29 dBm / 0.0426 W 802.11n VHT20 : 16.03 dBm / 0.0401 W 802.11n VHT40 : 16.30 dBm / 0.0427 W 802.11n VHT80 : 8.59 dBm / 0.0072 W <Ant. 2> <5180 MHz ~ 5240 MHz> 802.11a : 15.41 dBm / 0.0348 W 802.11n HT20 : 15.44 dBm / 0.0350 W 802.11n HT40 : 15.11 dBm / 0.0324 W 802.11n VHT20 : 15.50 dBm / 0.0355 W 802.11n VHT40 : 14.69 dBm / 0.0294 W 802.11n VHT80 : 8.04 dBm / 0.0064 W <5260 MHz ~ 5320 MHz> 802.11a : 15.58 dBm / 0.0361 W 802.11n HT20 : 15.78 dBm / 0.0378 W 802.11n HT40 : 10.96 dBm / 0.0125 W 802.11n VHT20 : 15.73 dBm / 0.0374 W 802.11n VHT40 : 10.79 dBm / 0.0120 W 802.11n VHT80 : 10.49 dBm / 0.0112 W <5500 MHz ~ 5580 MHz and 5660 MHz ~ 5720 MHz > 802.11a : 16.36 dBm / 0.0433 W 802.11n HT20 : 16.05 dBm / 0.0403 W 802.11n HT40 : 16.42 dBm / 0.0439 W 802.11n VHT20 : 16.26 dBm / 0.0423 W 802.11n VHT40 : 16.42 dBm / 0.0439 W 802.11n VHT80 : 8.63 dBm / 0.0073 W

Product Specification subjective to this standard			
Maximum Output Power	MIMO <Ant. 1+2> <5180 MHz ~ 5240 MHz> 802.11n HT20 : 13.27 dBm / 0.0212 W 802.11n HT40 : 12.30dBm / 0.0170 W 802.11n VHT20 : 13.25 dBm / 0.0211 W 802.11n VHT40 : 12.13 dBm / 0.0163 W 802.11n VHT80 : 6.49 dBm / 0.0045 W <5260 MHz ~ 5320 MHz> 802.11n HT20 : 13.44 dBm / 0.0221 W 802.11n HT40 : 9.23 dBm / 0.0084 W 802.11n VHT20 : 13.40 dBm / 0.0219 W 802.11n VHT40 : 9.03 dBm / 0.0080 W 802.11n VHT80 : 8.85 dBm / 0.0077 W <5500 MHz ~ 5580 MHz and 5660 MHz ~ 5720 MHz > 802.11n HT20 : 16.48 dBm / 0.0445 W 802.11n HT40 : 16.40 dBm / 0.0437 W 802.11n VHT20 : 16.45 dBm / 0.0442 W 802.11n VHT40 : 16.40 dBm / 0.0437 W 802.11n VHT80 : 9.19 dBm / 0.0083 W		
	Antenna Type <5180 MHz ~ 5240 MHz> Ant. 1 : PIFA Antenna with gain 2.22 dBi Ant. 2 : PIFA Antenna with gain 2.51 dBi <5260 MHz ~ 5320 MHz> Ant. 1 : PIFA Antenna with gain 2.22 dBi Ant. 2 : PIFA Antenna with gain 3.20 dBi <5500 MHz ~ 5580 MHz and 5660 MHz ~ 5720 MHz > Ant. 1 : PIFA Antenna with gain 2.79 dBi Ant. 2 : PIFA Antenna with gain 2.62 dBi		
Type of Modulation		OFDM (BPSK / QPSK / 16QAM / 64QAM)	
Antenna Function Description		Ant. 1	Ant. 2
	802.11 a	V	V
	802.11 n SISO	V	V
	802.11 n MIMO	V	V

1.5 Modification of EUT

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

1.6 Testing Site

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978	
Test Site No.	Sporton Site No.	
	TH02-HY	CO05-HY

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

1.7 Applied Standards

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

- ♦ FCC Part 15 Subpart E
- ♦ FCC KDB 789033 D01 General UNII Test Procedures v01r03
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02.
- ♦ 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

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 kHz to 30 MHz).

The final configuration from all the combinations and the worst-case data rates were investigated by measuring the maximum power across all the data rates and modulation modes under section 2.2.

Based on the worst configuration found above, the RF power setting is set individually to meet FCC compliance limit for the final conducted and radiated tests shown in section 2.3.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5150-5250 MHz Band 1 (U-NII-1)	36	5180	44	5220
	38	5190	46	5230
	40	5200	48	5240
	42	5210	-	-

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5250-5350 MHz Band 2 (U-NII-2)	52	5260	60	5300
	54	5270	62	5310
	56	5280	64	5320
	58	5290	-	-

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5470-5600 MHz and 5650-5725 MHz Band 3 (U-NII-2ext)	100	5500	116	5580
	102	5510	132	5660
	104	5520	134	5670
	108	5540	136	5680
	110	5550	140	5700
	112	5560	144	5720
	116	5580	-	-

2.2 Pre-Scanned RF Power

Preliminary tests were performed in different data rate and data rate associated with the highest power were chosen for full test in the following tables.

<Ant. 1>

5GHz 802.11a mode Output Power (dBm)			
Channel	CH 36	CH 44	CH 48
Frequency (MHz)	5180	5220	5240
Avg. Power	12.93	15.45	14.63

5GHz 802.11a mode Output Power (dBm)			
Channel	CH 52	CH 60	CH 64
Frequency (MHz)	5260	5300	5320
Avg. Power	12.96	15.41	12.67

5GHz 802.11a mode Output Power (dBm)			
Channel	CH 100	CH 116	CH 140
Frequency (MHz)	5500	5580	5700
Avg. Power	12.85	16.18	12.20

5GHz 802.11n HT20 mode Output Power (dBm)			
Channel	CH 36	CH 44	CH 48
Frequency (MHz)	5180	5220	5240
Avg. Power	12.85	15.56	15.46

5GHz 802.11n HT20 mode Output Power (dBm)			
Channel	CH 52	CH 60	CH 64
Frequency (MHz)	5260	5300	5320
Avg. Power	12.93	15.83	12.60

5GHz 802.11n HT20 mode Output Power (dBm)			
Channel	CH 100	CH 116	CH 140
Frequency (MHz)	5500	5580	5700
Avg. Power	13.29	16.27	12.18

5GHz 802.11n HT40 mode Output Power (dBm)				
Channel	CH 38	CH 46	CH 54	CH 62
Frequency (MHz)	5190	5230	5270	5310
Avg. Power	9.03	15.45	9.24	10.97

5GHz 802.11n HT40 mode Output Power (dBm)			
Channel	CH 102	CH 110	CH134
Frequency (MHz)	5510	5550	5670
Avg. Power	10.35	16.29	15.45

5GHz 802.11n VHT20 mode Output Power (dBm)			
Channel	CH 36	CH 44	CH 48
Frequency (MHz)	5180	5220	5240
Avg. Power	12.67	15.34	15.18

5GHz 802.11n VHT20 mode Output Power (dBm)			
Channel	CH 52	CH 60	CH 64
Frequency (MHz)	5260	5300	5320
Avg. Power	12.78	15.53	12.58

5GHz 802.11n VHT20 mode Output Power (dBm)			
Channel	CH 100	CH 116	CH 140
Frequency (MHz)	5500	5580	5700
Avg. Power	12.58	16.03	11.98

5GHz 802.11n VHT40 mode Output Power (dBm)				
Channel	CH 38	CH 46	CH 54	CH 62
Frequency (MHz)	5190	5230	5270	5310
Avg. Power	8.55	15.42	9.00	10.85

5GHz 802.11n VHT40 mode Output Power (dBm)			
Channel	CH 102	CH 110	CH134
Frequency (MHz)	5510	5550	5670
Avg. Power	10.25	16.30	15.39

5GHz 802.11n VHT80 mode Output Power (dBm)			
Channel	CH 42	CH 58	CH106
Frequency (MHz)	5210	5290	5530
Avg. Power	7.90	10.42	8.59

<Ant. 2>

5GHz 802.11a mode Output Power (dBm)			
Channel	CH 36	CH 44	CH 48
Frequency (MHz)	5180	5220	5240
Avg. Power	12.78	15.41	14.62

5GHz 802.11a mode Output Power (dBm)			
Channel	CH 52	CH 60	CH 64
Frequency (MHz)	5260	5300	5320
Avg. Power	13.15	15.58	13.06

5GHz 802.11a mode Output Power (dBm)			
Channel	CH 100	CH 116	CH 140
Frequency (MHz)	5500	5580	5700
Avg. Power	12.83	16.36	12.24

5GHz 802.11n HT20 mode Output Power (dBm)			
Channel	CH 36	CH 44	CH 48
Frequency (MHz)	5180	5220	5240
Avg. Power	12.70	15.44	15.24

5GHz 802.11n HT20 mode Output Power (dBm)			
Channel	CH 52	CH 60	CH 64
Frequency (MHz)	5260	5300	5320
Avg. Power	13.17	15.78	13.07

5GHz 802.11n HT20 mode Output Power (dBm)			
Channel	CH 100	CH 116	CH 140
Frequency (MHz)	5500	5580	5700
Avg. Power	12.75	16.05	12.07

5GHz 802.11n HT40 mode Output Power (dBm)				
Channel	CH 38	CH 46	CH 54	CH 62
Frequency (MHz)	5190	5230	5270	5310
Avg. Power	9.33	15.11	9.15	10.96

5GHz 802.11n HT40 mode Output Power (dBm)			
Channel	CH 102	CH 110	CH134
Frequency (MHz)	5510	5550	5670
Avg. Power	10.25	16.42	15.40

5GHz 802.11n VHT20 mode Output Power (dBm)			
Channel	CH 36	CH 44	CH 48
Frequency (MHz)	5180	5220	5240
Avg. Power	12.63	15.50	15.38

5GHz 802.11n VHT20 mode Output Power (dBm)			
Channel	CH 52	CH 60	CH 64
Frequency (MHz)	5260	5300	5320
Avg. Power	13.15	15.73	12.98

5GHz 802.11n VHT20 mode Output Power (dBm)			
Channel	CH 100	CH 116	CH 140
Frequency (MHz)	5500	5580	5700
Avg. Power	13.25	16.26	12.06

5GHz 802.11n VHT40 mode Output Power (dBm)				
Channel	CH 38	CH 46	CH 54	CH 62
Frequency (MHz)	5190	5230	5270	5310
Avg. Power	8.55	15.42	9.00	10.85

5GHz 802.11n VHT40 mode Output Power (dBm)			
Channel	CH 102	CH 110	CH134
Frequency (MHz)	5510	5550	5670
Avg. Power	10.25	16.30	15.39

5GHz 802.11n VHT80 mode Output Power (dBm)			
Channel	CH 42	CH 58	CH106
Frequency (MHz)	5210	5290	5530
Avg. Power	7.90	10.42	8.59

MIMO <Ant. 1+2>

5GHz 802.11n HT20 mode Output Power (dBm)			
Channel	CH 36	CH 44	CH 48
Frequency (MHz)	5180	5220	5240
Avg. Power	11.50	12.89	13.27

5GHz 802.11n HT20 mode Output Power (dBm)			
Channel	CH 52	CH 60	CH 64
Frequency (MHz)	5260	5300	5320
Avg. Power	10.85	13.44	11.43

5GHz 802.11n HT20 mode Output Power (dBm)			
Channel	CH 100	CH 116	CH 140
Frequency (MHz)	5500	5580	5700
Avg. Power	13.80	16.48	13.23

5GHz 802.11n HT40 mode Output Power (dBm)				
Channel	CH 38	CH 46	CH 54	CH 62
Frequency (MHz)	5190	5230	5270	5310
Avg. Power	8.22	12.30	8.56	9.23

5GHz 802.11n HT40 mode Output Power (dBm)			
Channel	CH 102	CH 110	CH134
Frequency (MHz)	5510	5550	5670
Avg. Power	10.85	16.40	15.97

5GHz 802.11n VHT20 mode Output Power (dBm)			
Channel	CH 36	CH 44	CH 48
Frequency (MHz)	5180	5220	5240
Avg. Power	11.48	12.81	13.25

5GHz 802.11n VHT20 mode Output Power (dBm)			
Channel	CH 52	CH 60	CH 64
Frequency (MHz)	5260	5300	5320
Avg. Power	10.47	13.40	11.39

5GHz 802.11n VHT20 mode Output Power (dBm)			
Channel	CH 100	CH 116	CH 140
Frequency (MHz)	5500	5580	5700
Avg. Power	13.64	16.45	13.19

5GHz 802.11n VHT40 mode Output Power (dBm)				
Channel	CH 38	CH 46	CH 54	CH 62
Frequency (MHz)	5190	5230	5270	5310
Avg. Power	13.86	17.20	14.01	14.44

5GHz 802.11n VHT40 mode Output Power (dBm)			
Channel	CH 102	CH 110	CH134
Frequency (MHz)	5510	5550	5670
Avg. Power	16.04	22.20	21.39

5GHz 802.11n VHT80 mode Output Power (dBm)			
Channel	CH 42	CH 58	CH106
Frequency (MHz)	5210	5290	5530
Avg. Power	6.49	8.85	9.19

<Straddle Channel>

<Ant. 1>

5GHz 802.11a mode Output Power (dBm)			
Channel	CH 144		
Frequency (MHz)	5720	Lower	Upper
Avg. Power	15.45	14.45	8.56

5GHz 802.11n HT20 mode Output Power (dBm)			
Channel	CH 144		
Frequency (MHz)	5720	Lower	Upper
Avg. Power	15.50	14.58	8.29

5GHz 802.11n HT40 mode Output Power (dBm)			
Channel	CH 142		
Frequency (MHz)	5710	Lower	Upper
Avg. Power	15.28	15.08	1.92

5GHz 802.11n VHT20 mode Output Power (dBm)			
Channel	CH 144		
Frequency (MHz)	5720	Lower	Upper
Avg. Power	15.31	14.29	8.52

5GHz 802.11n VHT40 mode Output Power (dBm)			
Channel	CH 142		
Frequency (MHz)	5710	Lower	Upper
Avg. Power	14.96	14.76	1.55

5GHz 802.11n VHT80 mode Output Power (dBm)			
Channel	CH 138		
Frequency (MHz)	5690	Lower	Upper
Avg. Power	13.52	13.46	-5.13

<Ant. 2>

5GHz 802.11a mode Output Power (dBm)			
Channel	CH 144		
Frequency (MHz)	5720	Lower	Upper
Avg. Power	15.52	14.59	8.37

5GHz 802.11n HT20 mode Output Power (dBm)			
Channel	CH 144		
Frequency (MHz)	5720	Lower	Upper
Avg. Power	15.53	14.52	8.71

5GHz 802.11n HT40 mode Output Power (dBm)			
Channel	CH 142		
Frequency (MHz)	5710	Lower	Upper
Avg. Power	15.34	15.14	1.80

5GHz 802.11n VHT20 mode Output Power (dBm)			
Channel	CH 144		
Frequency (MHz)	5720	Lower	Upper
Avg. Power	15.51	14.60	8.30

5GHz 802.11n VHT40 mode Output Power (dBm)			
Channel	CH 142		
Frequency (MHz)	5710	Lower	Upper
Avg. Power	15.11	14.91	1.66

5GHz 802.11n VHT80 mode Output Power (dBm)			
Channel	CH 138		
Frequency (MHz)	5690	Lower	Upper
Avg. Power	13.30	13.29	-15.17

MIMO <Ant. 1+2>

5GHz 802.11n HT20 mode Output Power (dBm)			
Channel	CH 144		
Frequency (MHz)	5720	Lower	Upper
Avg. Power	15.34	14.36	8.40

5GHz 802.11n HT40 mode Output Power (dBm)			
Channel	CH 142		
Frequency (MHz)	5710	Lower	Upper
Avg. Power	15.33	15.16	1.12

5GHz 802.11n VHT20 mode Output Power (dBm)			
Channel	CH 144		
Frequency (MHz)	5720	Lower	Upper
Avg. Power	15.10	14.09	8.27

5GHz 802.11n VHT40 mode Output Power (dBm)			
Channel	CH 142		
Frequency (MHz)	5710	Lower	Upper
Avg. Power	14.98	14.79	1.39

5GHz 802.11n VHT80 mode Output Power (dBm)			
Channel	CH 138		
Frequency (MHz)	5690	Lower	Upper
Avg. Power	16.08	16.02	-2.53

Remark:

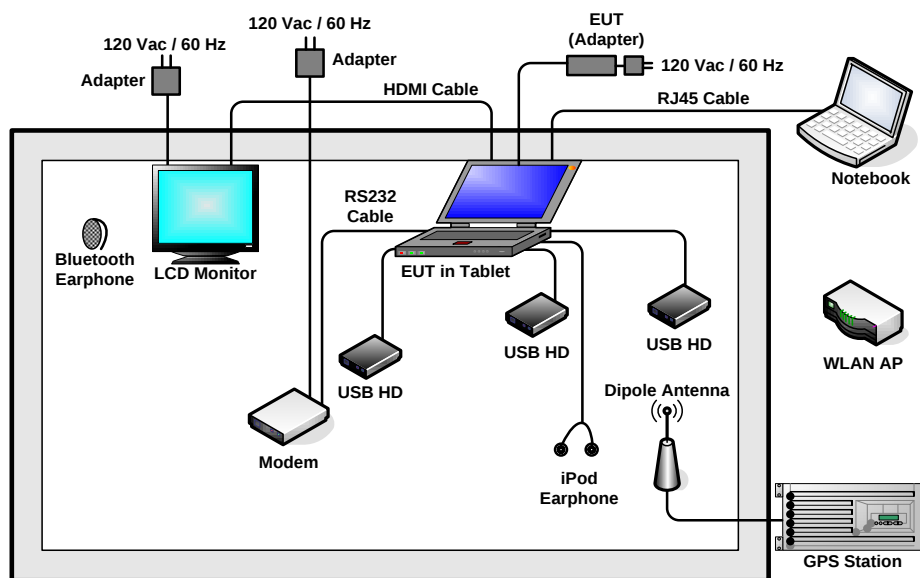
1. The conducted power for each data rate were verified, but only the worst case was reported.
2. The data rates of WLAN 802.11a/n/ac/VHT20/VHT40/VHT80 were set in 6 Mbps for 802.11a, MCS0 for 802.11n HT20, MCS0 for 802.11n HT40, 6Mbps for 802.11ac, MCS0 for 802.11ac VHT20, MCS0 for 802.11ac VHT40, and MCS0 for 802.11ac VHT80 for all the test cases due to the highest RF output power.

2.3 Test Mode

Final results of test modes, data rates and test channels are shown as following table.

Test Cases	
AC Conducted Emission	Mode 1 : WLAN (5GHz) Link + TF + TC
Remark: 1. TC stands for Test Configuration, and consists of Earphone, Adapter 1, USB HD, RJ-45 Link, RS232 (Load with Modem), and LCD Monitor. 2. TF stands for Test Function, and consists of GPS Rx, Camera, MPEG4, H Pattern, NFC on, and Bluetooth Link.	

2.4 Connection Diagram of Test System



2.5 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	GPS Station	Pendulum	GSG-54	N/A	N/A	Unshielded, 1.8 m
2.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
3.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
4.	Notebook	DELL	Latitude E6320	FCC DoC	Unshielded, 3.0m	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
5.	LCD Monitor	DELL	U2410	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
6.	USB HD	WD	WDBAAR3200A BK-PESN	FCC DoC	Unshielded, 0.5 m	N/A
7.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A
8.	NFC Card	N/A	N/A	N/A	N/A	N/A
9.	MODEM	ACEEX	DM1414	IFAXDM141	D-Shielded, 1.15 m	Unshielded, 1.8 m
10.	iPod Earphone	Apple	N/A	Verification	Shielded, 1.0 m	N/A

3 Test Result

3.1 AC Conducted Emission Measurement

3.1.1 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.

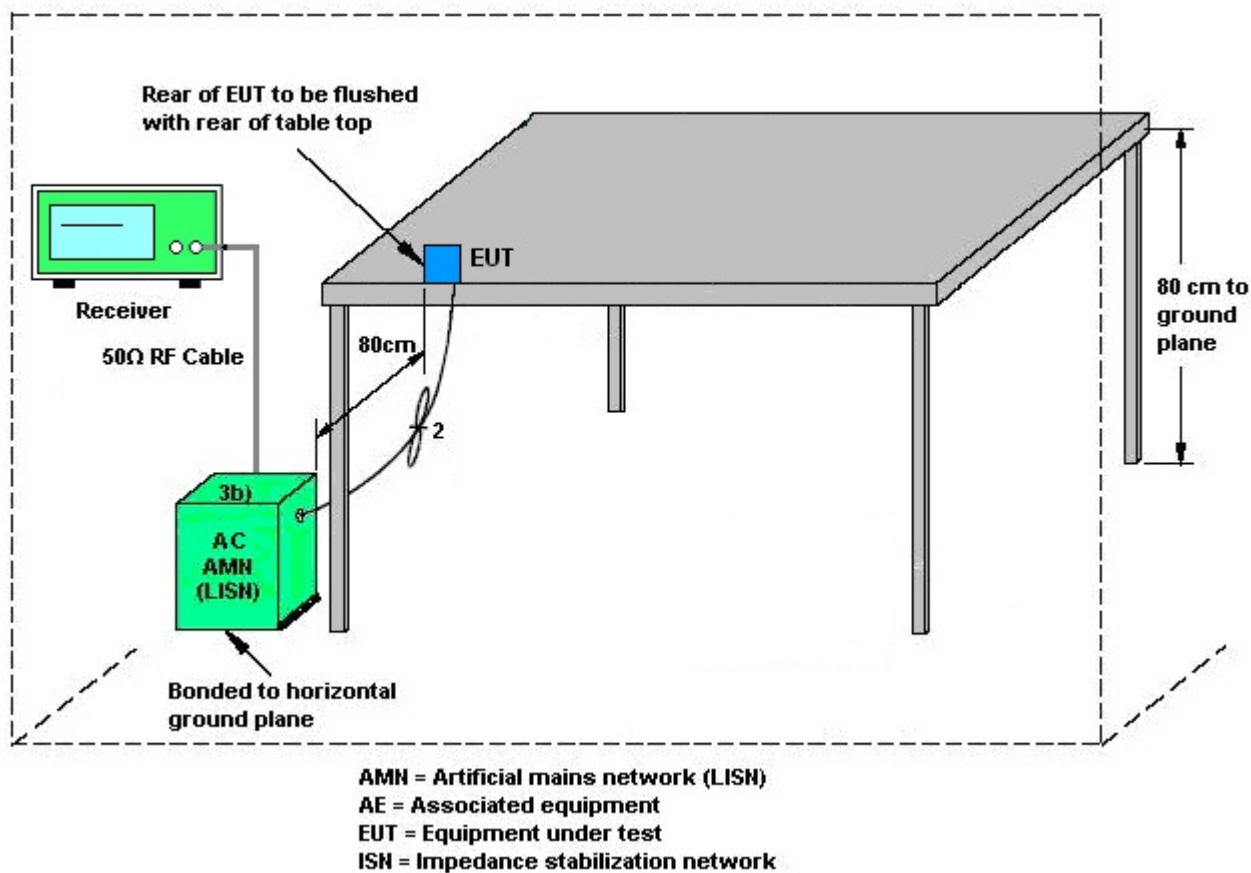
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

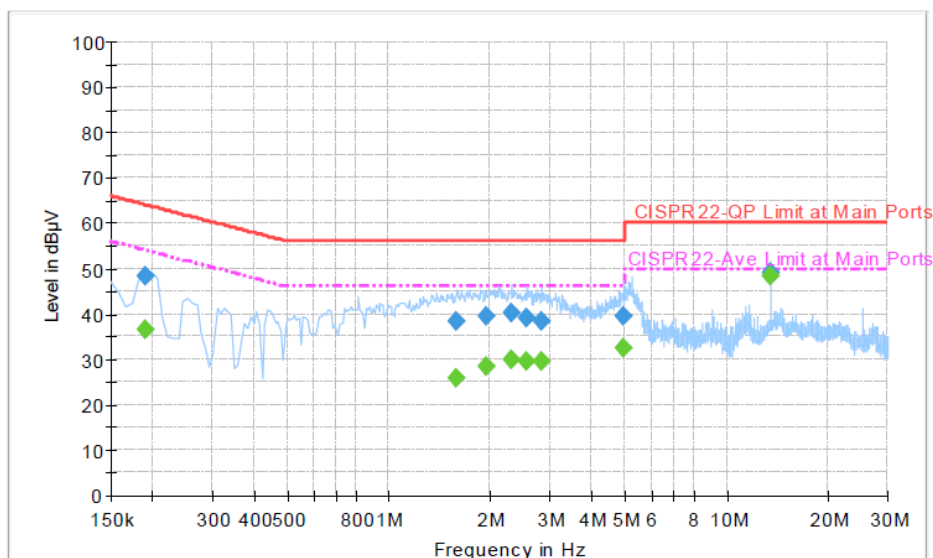
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.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

3.1.4 Test Setup



3.1.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	20~22℃
Test Engineer :	Kai-Chun Chu	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN (5GHz) Link + TF + TC		



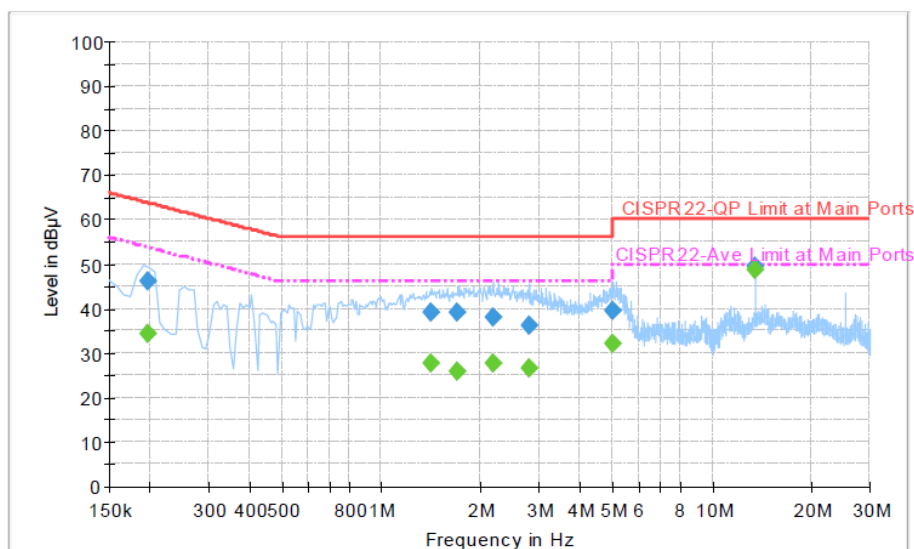
Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.190000	48.2	Off	L1	19.4	15.8	64.0
1.590000	38.4	Off	L1	19.4	17.6	56.0
1.942000	39.3	Off	L1	19.5	16.7	56.0
2.310000	40.1	Off	L1	19.6	15.9	56.0
2.558000	39.1	Off	L1	19.6	16.9	56.0
2.846000	38.5	Off	L1	19.6	17.5	56.0
4.974000	39.6	Off	L1	19.7	16.4	56.0
13.558000	49.0	Off	L1	19.8	11.0	60.0

Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.190000	36.4	Off	L1	19.4	17.6	54.0
1.590000	26.0	Off	L1	19.4	20.0	46.0
1.942000	28.4	Off	L1	19.5	17.6	46.0
2.310000	29.8	Off	L1	19.6	16.2	46.0
2.558000	29.5	Off	L1	19.6	16.5	46.0
2.846000	29.5	Off	L1	19.6	16.5	46.0
4.974000	32.6	Off	L1	19.7	13.4	46.0
13.558000	48.4	Off	L1	19.8	1.6	50.0

Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN (5GHz) Link + TF + TC		


Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.198000	46.3	Off	N	19.3	17.4	63.7
1.422000	39.1	Off	N	19.4	16.9	56.0
1.702000	39.3	Off	N	19.5	16.7	56.0
2.174000	38.0	Off	N	19.6	18.0	56.0
2.798000	36.2	Off	N	19.7	19.8	56.0
5.038000	39.6	Off	N	19.6	20.4	60.0
13.558000	49.4	Off	N	19.9	10.6	60.0

Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.198000	34.3	Off	N	19.3	19.4	53.7
1.422000	27.6	Off	N	19.4	18.4	46.0
1.702000	26.0	Off	N	19.5	20.0	46.0
2.174000	27.7	Off	N	19.6	18.3	46.0
2.798000	26.4	Off	N	19.7	19.6	46.0
5.038000	32.0	Off	N	19.6	18.0	50.0
13.558000	48.8	Off	N	19.9	1.2	50.0

3.2 Antenna Requirements

3.2.1 Standard Applicable

According to FCC 47 CFR Section 15.407(a)(1)(2) ,if transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.2.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.2.3 Antenna Gain

FCC KDB 662911 D01 Multiple Transmitter Output v02

For CDD transmissions, directional gain is calculated as

Directional gain = $G_{ANT} + \text{Array Gain}$, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain = $10 \log(N_{ANT}/N_{SS}=1)$ dB.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$.

The EUT supports CDD mode.

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain "DG" is calculated as following table.

			DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
	Ant 1 (dBi)	Ant 2 (dBi)				
Band I	2.22	2.51	2.37	5.38	0.00	0.00
Band II	2.22	3.20	2.74	5.75	0.00	0.00
Band III	2.79	2.62	2.71	5.72	0.00	0.00

Power limit reduction = Composite gain – 6dBi, (min = 0)

PSD limit reduction = Composite gain + PSD Array gain – 6dBi, (min = 0)

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Power Meter	Anritsu	ML2495A	1036004	300MHz~40GHz	Aug. 17, 2013	Oct. 30 2013	Aug. 16, 2014	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	1027253	300MHz~40GHz	Aug. 17, 2013	Oct. 30 2013	Aug. 16, 2014	Conducted (TH02-HY)
EMI Test Receiver	Rohde & Schwarz	ESCS 30	100356	9kHz ~ 2.75GHz	Nov. 13, 2012	Oct. 03, 2013	Nov. 12, 2013	Conduction (CO05-HY)
Two-LISN (for auxiliary equipment)	Rohde & Schwarz	ENV216	100081	9kHz ~ 30MHz	Dec. 12, 2012	Oct. 03, 2013	Dec. 11, 2013	Conduction (CO05-HY)
Two-LISN	Rohde & Schwarz	ENV216	100080	9kHz ~ 30MHz	Dec. 06, 2012	Oct. 03, 2013	Dec. 05, 2013	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Oct. 03, 2013	N/A	Conduction (CO05-HY)



5 Uncertainty of Evaluation

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

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