

# Partial FCC RF Test Report

**APPLICANT** : Getac Technology Corporation.  
**EQUIPMENT** : WLAN module  
**BRAND NAME** : Intel  
**MODEL NAME** : 7260HMW  
**FCC ID** : QYL7260NGW  
**STANDARD** : FCC Part 15 Subpart C §15.247  
**CLASSIFICATION** : (DSS) Spread Spectrum Transmitter

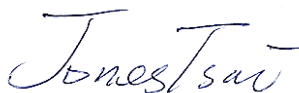
This is a partial report which is included the RF output power and AC conducted emission test item. The product was received on Sep. 17, 2013 and testing was completed on Oct. 07, 2013. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with 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.



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Reviewed by: Joseph Lin / Supervisor



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Approved by: Jones Tsai / Manager



## **SPORTON INTERNATIONAL INC.**

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



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### REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR391715A	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 & 15.247(b)	RSS-210 A8.4	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	
<b>Equipment</b>	WLAN module
<b>Brand Name</b>	Intel
<b>Model Name</b>	7260HMW
<b>FCC ID</b>	QYL7260NGW
<b>installed into Tablet</b>	Brand Name: Getac Model Name: V110 Marketing Name: V110
<b>EUT supports Radios application</b>	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
<b>EUT Stage</b>	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	
<b>Tx/Rx Frequency Range</b>	2402 MHz ~ 2480 MHz
<b>Number of Channels</b>	79
<b>Carrier Frequency of Each Channel</b>	2402+n*1 MHz; n=0~78
<b>Maximum Output Power to Antenna</b>	Bluetooth BR(1Mbps) : 5.15 dBm (0.0033 W) Bluetooth EDR (2Mbps) : 5.27 dBm (0.0034 W) Bluetooth EDR (3Mbps) : 3.81 dBm (0.0024 W)
<b>Antenna Type</b>	PIFA Antenna type with gain 2.2 dBi
<b>Type of Modulation</b>	Bluetooth BR (1Mbps) : GFSK Bluetooth EDR (2Mbps) : $\pi/4$ -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

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

**Note:** 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 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 Descriptions of Test Mode

Preliminary tests were performed in different data rates and recorded the RF output power in the following table:

Channel	Frequency	Bluetooth RF Output Power		
		Data Rate / Modulation		
		GFSK	$\pi/4$ -DQPSK	8-DPSK
		1Mbps	2Mbps	3Mbps
Ch00	2402MHz	3.92 dBm	3.98 dBm	2.33 dBm
Ch39	2441MHz	4.62 dBm	4.71 dBm	3.13 dBm
Ch78	2480MHz	5.15 dBm	5.27 dBm	3.81 dBm

**Remark:** The data rate was set in 2Mbps for all the test items due to the highest RF output power.

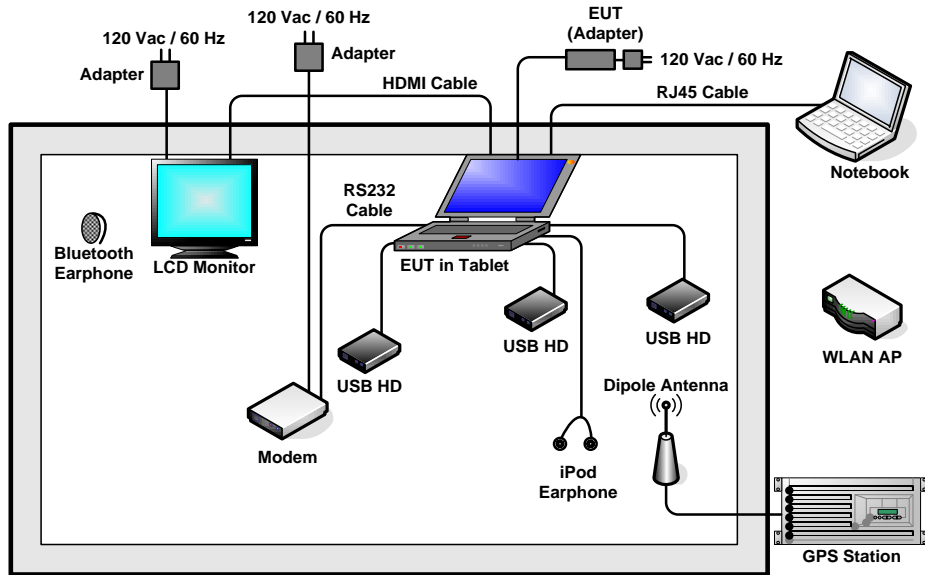
- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction (150 kHz to 30 MHz).
- b. AC power line Conducted Emission was tested under maximum output power.

### 2.2 Test Mode

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

Summary table of Test Cases	
AC Conducted Emission	Mode 1 :WLAN (2.4GHz) Link + TF + TC
<b>Remark:</b> <ol style="list-style-type: none"> <li>TC stands for Test Configuration, and consists of Earphone, Adapter 1, USB HD, RJ45 Link, RS232 (Load with Modem), and LCD Monitor.</li> <li>TF stands for Test Function, and consists of GPS Rx, Camera, MPEG4, H-Pattern, NFC on, and Bluetooth Link.</li> </ol>	

### 2.3 Connection Diagram of Test System



### 2.4 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	WDBAAR320 0ABK-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 (dB $\mu$ V)	
	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.

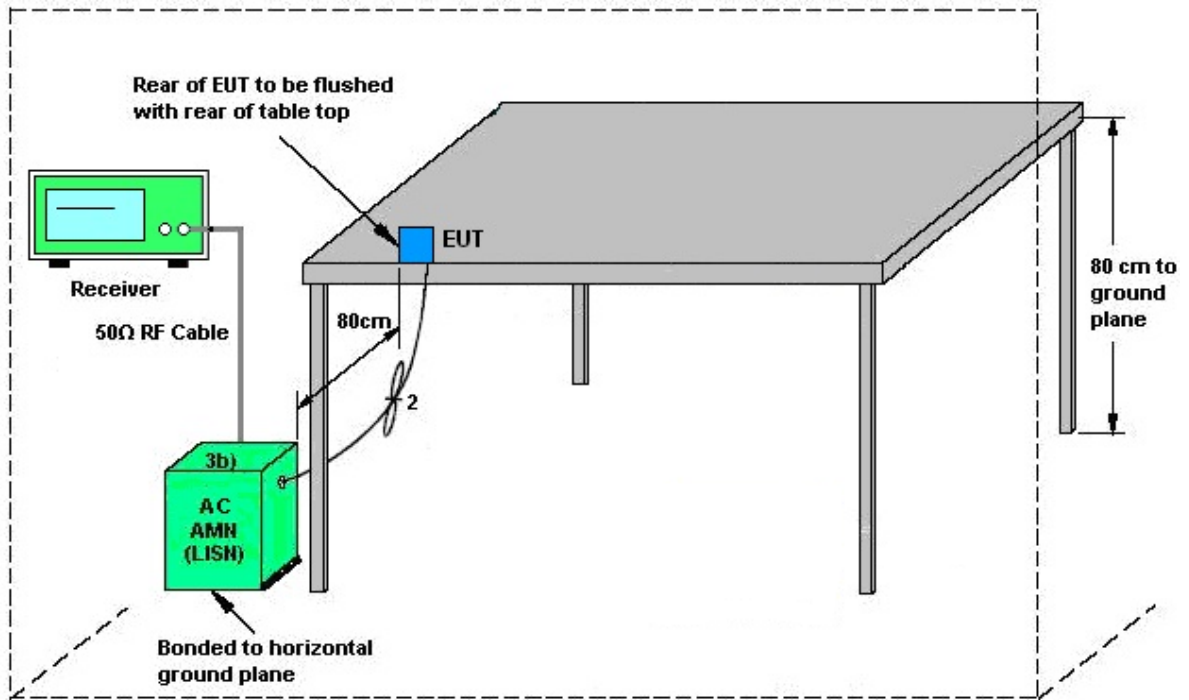
##### **3.1.2 Measuring Instruments**

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.

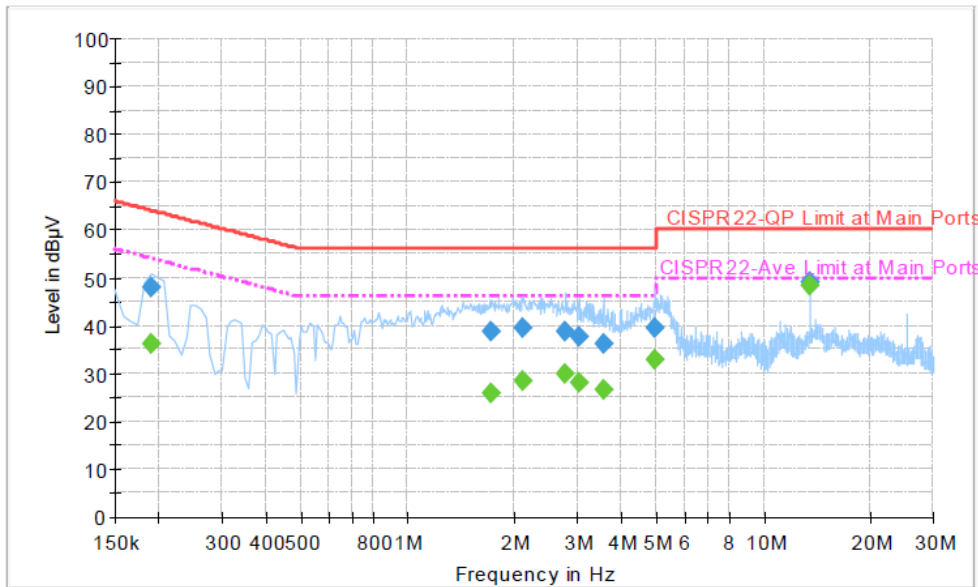
### 3.1.4 Test Setup



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

3.1.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN (2.4GHz) Link + TF + TC		



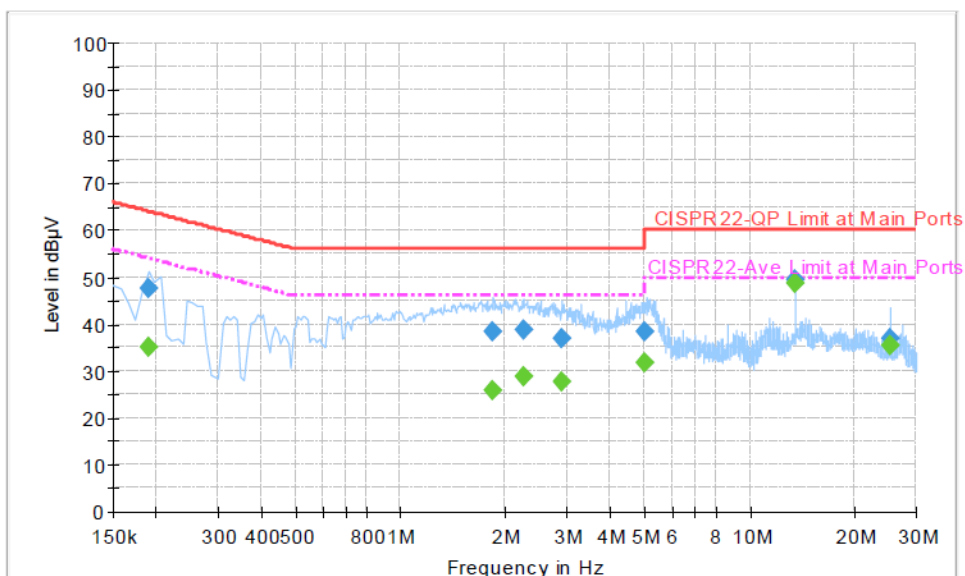
Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.190000	47.9	Off	L1	19.4	16.1	64.0
1.718000	38.8	Off	L1	19.5	17.2	56.0
2.118000	39.3	Off	L1	19.5	16.7	56.0
2.774000	38.6	Off	L1	19.6	17.4	56.0
3.022000	37.5	Off	L1	19.6	18.5	56.0
3.550000	36.1	Off	L1	19.6	19.9	56.0
4.974000	39.5	Off	L1	19.7	16.5	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	36.1	Off	L1	19.4	17.9	54.0
1.718000	26.0	Off	L1	19.5	20.0	46.0
2.118000	28.5	Off	L1	19.5	17.5	46.0
2.774000	29.9	Off	L1	19.6	16.1	46.0
3.022000	28.2	Off	L1	19.6	17.8	46.0
3.550000	26.5	Off	L1	19.6	19.5	46.0
4.974000	32.7	Off	L1	19.7	13.3	46.0
13.558000	48.5	Off	L1	19.8	1.5	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 (2.4GHz) Link + TF + TC		



**Final Result : Quasi-Peak**

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.190000	47.5	Off	N	19.4	16.5	64.0
1.846000	38.5	Off	N	19.5	17.5	56.0
2.246000	38.9	Off	N	19.6	17.1	56.0
2.894000	36.9	Off	N	19.7	19.1	56.0
4.998000	38.3	Off	N	19.7	17.7	56.0
13.558000	49.3	Off	N	19.9	10.7	60.0
25.230000	36.8	Off	N	20.1	23.2	60.0

**Final Result : Average**

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.190000	35.1	Off	N	19.4	18.9	54.0
1.846000	25.8	Off	N	19.5	20.2	46.0
2.246000	28.8	Off	N	19.6	17.2	46.0
2.894000	27.7	Off	N	19.7	18.3	46.0
4.998000	31.6	Off	N	19.7	14.4	46.0
13.558000	48.8	Off	N	19.9	1.2	50.0
25.230000	35.6	Off	N	20.1	14.4	50.0



## **3.2 Antenna Requirements**

### **3.2.1 Standard Applicable**

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. 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 FCC rule.

### **3.2.2 Antenna Anti-Replacement Construction**

An embedded-in antenna design is used.

### **3.2.3 Antenna Gain**

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



## 4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Power Meter	Agilent	E4416A	GB41292344	300MHz~40GHz	Feb. 05, 2013	Oct. 07, 2013	Feb. 04, 2014	Conducted (TH02-HY)
Power Sensor	Agilent	E9327A	US40441548	300MHz~40GHz	Feb. 05, 2013	Oct. 07, 2013	Feb. 04, 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
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