

## CE Test Result for Inspection

Product Name	Intel® Wireless-AC 9260
Model No.	9260NGW

Applicant	INTEL MOBILE COMMUNICATIONS SAS
Address	Le Navigator Bat B, 505 route des Lucioles, 06905 Sophia Antipolis, France

Date of Receipt	Dec. 25, 2017
Issued Date	Jan. 09, 2018
Report No.	17C0327R-RFSRP03V00
Report Version	V1.0

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

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# Test Report

Issued Date : Jan. 09, 2018

Report No. : 17C0327R-RFSRP03V00



Product Name	Intel® Wireless-AC 9260
Applicant	INTEL MOBILE COMMUNICATIONS SAS
Address	Le Navigator Bat B, 505 route des Lucioles, 06905 Sophia Antipolis, France
Manufacturer	INTEL MOBILE COMMUNICATIONS SAS
Model No.	9260NGW
EUT Rated Voltage	DC 3.3V
EUT Test Voltage	AC 230V/50Hz
Trade Name	Intel
Applicable Standard	ETSI EN 300 328:V2.1.1 (2016-11)
Test Result	Complied

Documented By

:

Elephant Chen

(Adm. Assistant / Elephant Chen)

Tested By

:

Yun Che Chen

( Engineer / Yunche Chen)

Approved By

:



( Director / Vincent Lin)

## TABLE OF CONTENTS

Description	Page
<b>1. GENERAL INFORMATION .....</b>	<b>4</b>
1.1. EUT Description.....	4
1.2. Tested System Details.....	6
1.3. Configuration of tested System .....	6
1.4. EUT Exercise Software .....	6
1.5. Test Facility .....	7
1.6. List of Test Equipment .....	8
<b>2. Equivalent Isotropic Radiated Power .....</b>	<b>9</b>
2.1. Test Setup .....	9
2.2. Test Condition .....	9
2.3. Limits.....	9
2.4. Test Specification .....	10
2.5. Uncertainty .....	10
2.6. Test Data of Equivalent Isotropic Radiated Power.....	11
<b>3. Spurious Emission .....</b>	<b>14</b>
3.1. Test Setup .....	14
3.2. Test Condition .....	14
3.3. Limits.....	15
3.4. Test Procedure .....	16
3.5. Uncertainty .....	16
3.6. Test Specification .....	16
3.7. Test Data of Spurious Emission.....	17
Attachment 1: EUT Test Photographs	
Attachment 2: EUT Detailed Photographs	

## 1. GENERAL INFORMATION

### 1.1. EUT Description

Product Name	Intel® Wireless-AC 9260
Trade Name	Intel
Model No.	9260NGW
Frequency Range	802.11b/g/n-20: 2412-2472MHz, 802.11n-40: 2422-2462MHz
Number of Channels	802.11b/g/n-20: 13CH, 802.11n-40: 9CH
Data Rate	802.11b: 1-11Mbps, 802.11a/g: 6-54Mbps, 802.11n: up to 300Mbps
Channel Separation	802.11b/g/n-20MHz: 5 MHz
Type of Modulation	802.11b:DSSS, DBPSK, DQPSK, CCK 802.11g/n: OFDM, BPSK, QPSK, 16QAM, 64QAM, 256QAM
Antenna type	Dipole Antenna
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto

#### Antenna List

No.	Manufacturer	Part No.	Antenna type	Peak Gain
1	WIESON Technologies co., ltd	GY121HT0321-003-H/ GY121C888-001-H (Main) (Aux)	Dipole Antenna	2.89dBi for 2.4GHz

Note: Each antenna has been evaluated and only the worst case (higher gain antenna) is presented in the report.

## 802.11b/g/n-20MHz Center Frequency of Each Channel (WLAN):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2412 MHz	Channel 02:	2417 MHz	Channel 03:	2422 MHz	Channel 04:	2427 MHz
Channel 05:	2432 MHz	Channel 06:	2437 MHz	Channel 07:	2442 MHz	Channel 08:	2447 MHz
Channel 09:	2452 MHz	Channel 10:	2457 MHz	Channel 11:	2462 MHz	Channel 12:	2467 MHz
Channel 13:	2472 MHz						

## 802.11n-40MHz Center Frequency of Each Channel (WLAN):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2422 MHz	Channel 02:	2427 MHz	Channel 03:	2432 MHz	Channel 04:	2437 MHz
Channel 05:	2442 MHz	Channel 06:	2447 MHz	Channel 07:	2452 MHz	Channel 08:	2457 MHz
Channel 09:	2462 MHz						

## Note:

1. The EUT is a Intel® Wireless-AC 9260, Contains functions and so on WLAN (802.11a/b/g/n/ac) with Bluetooth (4.2 and BT3.0+HS) combo card module, this report for 2.4GHz Band.
2. DEKRA has evaluated each test mode of the radiated spurious emission (RSE) exhibit in the report (worse case).
3. DEKRA is verified all construction and function in typical operation. All the test modes were carried out with the EUT in transmitter / receiver modes, which was shown in this test report and defined as:

Test Mode	Mode 1: Transmit
	Mode 2: Receive

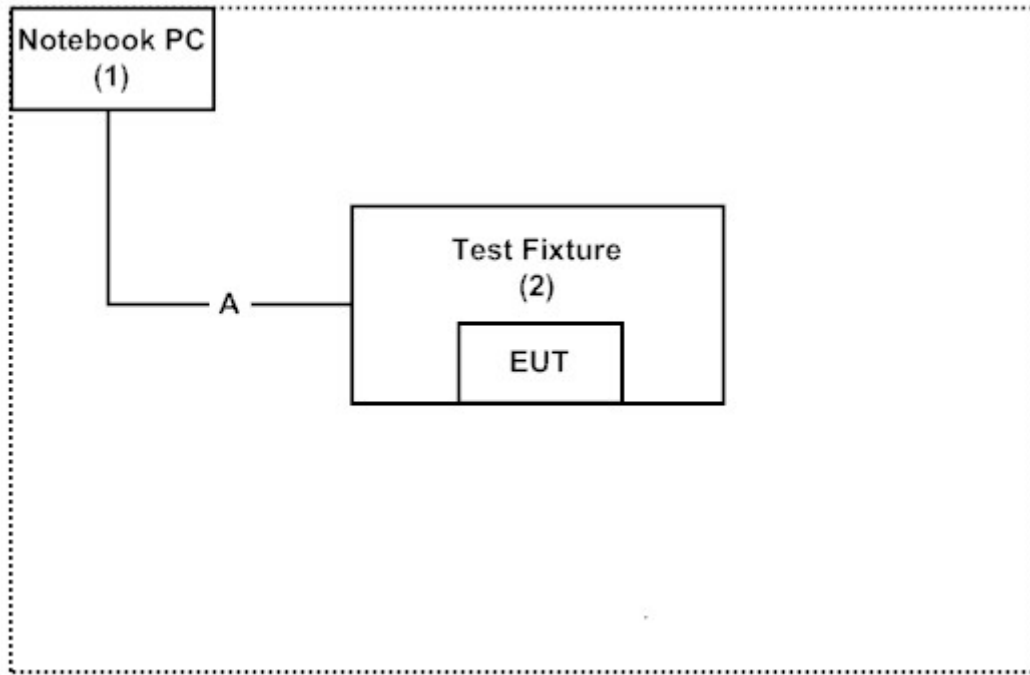
### 1.2. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product	Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook PC	DELL	Latitude E5470	N/A
2	Test Fixture	Intel	N/A	N/A

Signal Cable Type	Signal cable Description
A	Signal Cable
	Non-Shielded, 1m

### 1.3. Configuration of tested System



### 1.4. EUT Exercise Software

- (1) Setup the EUT and peripherals as shown in Section 1.3
- (2) Execute “DRTU v10.1742.0-06126” on the EUT.
- (3) Configure the test mode, the test channel, and the data rate to start the continuous transmit
- (4) Verify that the EUT works properly.

## 1.5. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required	Actual
Temperature (°C)	ETSI EN 300 328	15-35	20-35
Humidity (%RH)		20-75	50-55

The related certificate for our laboratories about the test site and management system can be downloaded from DEKRA Testing and Certification Co., Ltd. Web Site:

<http://www.dekra.com.tw/english/about/certificates.aspx?bval=5>

The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site: [http://www.dekra.com.tw/index\\_en.aspx](http://www.dekra.com.tw/index_en.aspx)

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Accredited Number: 3023

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E-Mail : [info.tw@dekra.com](mailto:info.tw@dekra.com)

## 1.6. List of Test Equipment

### For Conducted measurements /CB3

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Date	Due. Date
	Temperature Chamber	WIT GROUP	TH-1S-B	EQ-201-00146	2017/10/1	2018/9/29
X	Spectrum Analyzer	Agilent	N9010A	MY48030495	2017/7/22	2018/7/21
X	Power Meter	Anritsu	ML2495A	6K00003357	2017/6/23	2018/6/22
X	Pulse power sensor	Anritsu	MA2411B	0846193	2017/6/23	2018/6/22
X	Power Sensor	Agilent	U2021XA	MY53400007	2017/11/26	2018/11/25
X	Power Sensor	Agilent	U2021XA	MY53400006	2017/11/26	2018/11/25
X	Power Sensor	Agilent	U2021XA	MY53360005	2017/11/26	2018/11/25
X	Power Sensor	Agilent	U2021XA	MY53400008	2017/11/26	2018/11/25
X	Signal Generator	Agilent	N5182B	MY53050685	2017/5/31	2018/5/30
X	Analog Signal Geator	Agilent	E8257DK	MY44320633	2017/9/13	2018/9/12

### For Radiated measurements /Site3/CB8/CB10

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Date	Due. Date
X	Spectrum Analyzer	R&S	FSP40	100170	2018/1/5	2019/1/4
	Loop Antenna	Teseq	HLA6121	37133	2017/3/18	2018/3/17
X	Bi-Log Antenna	Schaffner Chase	CBL6112B	2707	2017/6/11	2018/6/10
X	Horn Antenna	ETS-Lindgren	3117	00135205	2017/4/6	2018/4/5
	Horn Antenna	Schwarzbeck	BBHA9170	9170430	2017/1/11	2018/1/10
X	Pre-Amplifier	QTK	AP/0100A	CHM/0901069	2017/6/23	2018/6/22
X	Pre-Amplifier	EMCI	EMC012630SE	980210	2017/1/26	2018/1/24
	Pre-Amplifier	NARDA WE	DBL-1840N506	013	2017/9/30	2018/9/29
X	Filter	MicroTRON	BRM50701	019	2017/11/2	2018/11/1
	Filter	Microwave Circuits	N0257881	36681	2017/12/7	2018/12/6
X	EMI Test Receiver	R&S	ESR26	101385	2017/9/29	2018/9/28
X	Coaxial Cable	QTK(Arnist)	SUCOFLEX 106	L1606-015C	2017/6/23	2018/6/22
X	EMI Test Receiver	R&S	ESCS 30	838251/001	2017/7/21	2018/7/20
X	Coaxial Cable	QTK(Arnist)	RG 214	LC003-RG	2017/6/16	2018/6/15
X	Coaxial signal switch	Anritsu	MP59B	6201415889	2017/6/16	2018/6/15

Note:

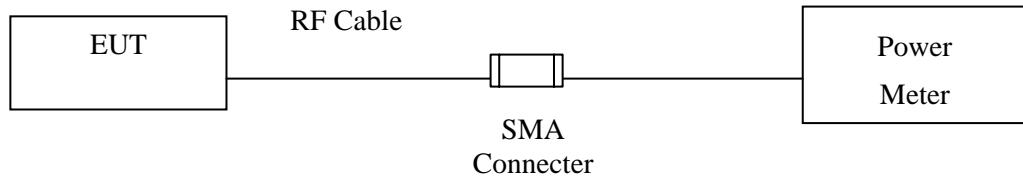
1. All equipments are calibrated every one year.
2. The test instruments marked with "X" are used to measure the final test results.
3. Test Software version : QuieTek EMI 2.0 V2.1.113



## 2. Equivalent Isotropic Radiated Power

### 2.1. Test Setup

Conducted Power Measurement



### 2.2. Test Condition

The normal temperature and humidity conditions for tests shall be any convenient combination of temperature and humidity within the following ranges:

- Temperature: +15°C to +35°C;
- Relative humidity: 20 % to 75 %.

### 2.3. Limits

#### **2.4GHz band: :**

The effective radiated power is defined as the total power of the transmitter and is calculated according to the test procedure. The effective radiated power shall be equal to or less than 20 dBm (100 mW) e.i.r.p.

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## **2.4. Test Specification**

According to ETSI EN 300 328 V2.1.1 (2016-11)

## **2.5. Uncertainty**

$\pm 1.27\text{dB}$

**2.6. Test Data of Equivalent Isotropic Radiated Power**

Product : Intel® Wireless-AC 9260  
 Test Item : Equivalent Isotropic Radiated Power  
 Test Mode : Mode 1: Transmit

**802.11b SISO A**

Antenna Gain: 2.89dBi						
Test Conditions		Channel	Freq. (MHz)	Reading Level (dBm)	Emission Level (dBm)	Limit (dBm)
Tnom (25) °C	Vnom (230) V	1	2412	15.97	18.86	20
		7	2442	16.01	18.90	20
		13	2472	15.99	18.88	20

**802.11b SISO B**

Antenna Gain: 2.89dBi						
Test Conditions		Channel	Freq. (MHz)	Reading Level (dBm)	Emission Level (dBm)	Limit (dBm)
Tnom (25) °C	Vnom (230) V	1	2412	15.96	18.85	20
		7	2442	16.11	19.00	20
		13	2472	15.98	18.87	20

**802.11g SISO A**

Antenna Gain: 2.89dBi						
Test Conditions		Channel	Freq. (MHz)	Reading Level (dBm)	Emission Level (dBm)	Limit (dBm)
Tnom (25) °C	Vnom (230) V	1	2412	16.52	19.41	20
		7	2442	16.75	19.64	20
		13	2472	16.58	19.47	20

**802.11g SISO B**

Antenna Gain: 2.89dBi						
Test Conditions		Channel	Freq. (MHz)	Reading Level (dBm)	Emission Level (dBm)	Limit (dBm)
Tnom (25) °C	Vnom (230) V	1	2412	16.41	19.30	20
		7	2442	16.77	19.66	20
		13	2472	16.77	19.66	20

**802.11n20 SISO A**

Antenna Gain: 2.89dBi						
Test Conditions		Channel	Freq. (MHz)	Reading Level (dBm)	Emission Level (dBm)	Limit (dBm)
Tnom (25) °C	Vnom (230) V	1	2412	16.66	19.55	20
		7	2442	16.66	19.55	20
		13	2472	16.67	19.56	20

**802.11n20 SISO B**

Antenna Gain: 2.89dBi						
Test Conditions		Channel	Freq. (MHz)	Reading Level (dBm)	Emission Level (dBm)	Limit (dBm)
Tnom (25) °C	Vnom (230) V	1	2412	16.54	19.43	20
		7	2442	16.70	19.59	20
		13	2472	16.68	19.57	20

**802.11n40 SISO A**

Antenna Gain: 2.89dBi						
Test Conditions		Channel	Freq. (MHz)	Reading Level (dBm)	Emission Level (dBm)	Limit (dBm)
Tnom (25) °C	Vnom (230) V	3	2422	16.71	19.60	20
		7	2442	16.63	19.52	20
		11	2462	16.74	19.63	20

**802.11n40 SISO B**

Antenna Gain: 2.89dBi						
Test Conditions		Channel	Freq. (MHz)	Reading Level (dBm)	Emission Level (dBm)	Limit (dBm)
Tnom (25) °C	Vnom (230) V	3	2422	16.52	19.41	20
		7	2442	16.57	19.46	20
		11	2462	16.70	19.59	20

**802.11n20 MIMO**

Antenna Gain: 2.89dBi						
Test Conditions		Channel	Freq. (MHz)	Reading Level (dBm)	Emission Level (dBm)	Limit (dBm)
Tnom (25) °C	Vnom (230) V	1	2412	16.60	19.49	20
		7	2442	16.54	19.43	20
		13	2472	16.58	19.47	20

**802.11n40 MIMO**

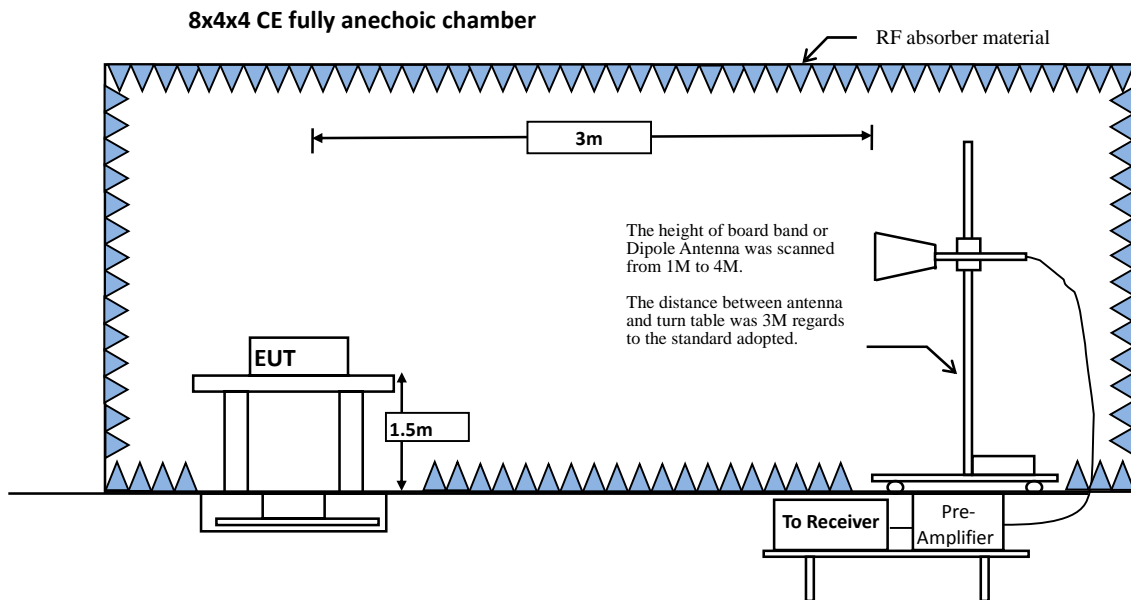
Antenna Gain: 2.89dBi						
Test Conditions		Channel	Freq. (MHz)	Reading Level (dBm)	Emission Level (dBm)	Limit (dBm)
Tnom (25) °C	Vnom (230) V	3	2422	16.88	19.77	20
		7	2442	16.70	19.59	20
		11	2462	16.72	19.61	20

\* Emission Level = Reading Level + Antenna Gain

Test Result	PASS
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### 3. Spurious Emission

#### 3.1. Test Setup



#### 3.2. Test Condition

The normal temperature and humidity conditions for tests shall be any convenient combination of temperature and humidity within the following ranges:

- Temperature: +15°C to +35°C
- Relative humidity: 20 % to 75 %.

### 3.3. Limits

#### 2.4GHz band: (EN 300 328 V2.1.1)

<b>Spurious emissions limits for Transmitter</b>		
Frequency Range	Maximum power	Bandwidth
30 MHz to 47 MHz	-36 dBm	100 kHz
47 MHz to 74 MHz	-54 dBm	100 kHz
74 MHz to 87,5 MHz	-36 dBm	100 kHz
87,5 MHz to 118 MHz	-54 dBm	100 kHz
118 MHz to 174 MHz	-36 dBm	100 kHz
174 MHz to 230 MHz	-54 dBm	100 kHz
230 MHz to 470 MHz	-36 dBm	100 kHz
470 MHz to 862 MHz	-54 dBm	100 kHz
862 MHz to 1 GHz	-36 dBm	100 kHz
1 GHz to 12,75 GHz	-30 dBm	1 MHz

<b>Spurious emissions limits for Receivers</b>		
Frequency Range	Maximum power	Measurement bandwidth
30 MHz to 1 GHz	-57 dBm	100 kHz
1 GHz to 12.75 GHz	-47 dBm	1 MHz

### 3.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 1.5 meters above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Broadband antenna (calibrated bi-log and horn antenna) are used as a receiving antenna.

Both horizontal and vertical polarization of the antenna are set on measurement. And a high frequency preamplifier were used increase the sensitivity of the measuring. In order to find the maximum emission, all of the interface cables must be manipulated according to ETSI EN 300 328:V2.1.1 (2016-11) on radiated measurement.

The additional notch filter below 1GHz was used to measure the level of harmonics radiated emission during field strength of harmonics measurement. The bandwidth below 1GHz setting on the field strength meter is 120 kHz, and 100 kHz bandwidth is adopted above 1GHz. The frequency range from 30MHz to 12.75GHz is checked.

### 3.5. Uncertainty

The measurement uncertainty above 1G is defined as  $\pm 3.9$  dB

under 1G is defined as  $\pm 3.8$  dB

### 3.6. Test Specification

According to ETSI EN 300 328:V2.1.1 (2016-11).



### 3.7. Test Data of Spurious Emission

Product : Intel® Wireless-AC 9260  
 Test Item : Spurious Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit 802.11b SISI A (2442MHz)

Frequency MHz	Measurement Level dBm	Margin dB	Limit dBm
<b>Horizontal</b>			
<b>Peak Detector</b>			
62.980	-62.357	-8.357	-54.000
72.680	-59.937	-5.937	-54.000
241.460	-66.909	-30.909	-36.000
499.480	-80.322	-26.322	-54.000
598.420	-79.708	-25.708	-54.000
699.300	-79.098	-25.098	-54.000
<b>Vertical</b>			
<b>Peak Detector</b>			
41.640	-60.707	-24.707	-36.000
72.680	-58.374	-4.374	-54.000
132.820	-72.174	-36.174	-36.000
243.400	-68.679	-32.679	-36.000
532.460	-80.499	-26.499	-54.000
699.300	-81.221	-27.221	-54.000

Note:

1. All Reading are peak value.
2. " " means this data is the worst emission level.

Product : Intel® Wireless-AC 9260  
 Test Item : Spurious Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit 802.11b SISI A (2442MHz)

Frequency MHz	Measurement Level dBm	Margin dB	Limit dBm
<b>Horizontal</b>			
<b>Peak Detector</b>			
4884.000	-55.722	-25.722	-30.000
7326.000	-55.033	-25.033	-30.000
9768.000	-53.296	-23.296	-30.000
<b>Vertical</b>			
<b>Peak Detector</b>			
4884.000	-54.453	-24.453	-30.000
7326.000	-53.688	-23.688	-30.000
9768.000	-53.088	-23.088	-30.000

Note:

1. All Reading are peak value.
2. “” means this data is the worst emission level.

Product : Intel® Wireless-AC 9260  
 Test Item : Spurious Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit 802.11b SISI B (2442MHz)

Frequency MHz	Measurement Level dBm	Margin dB	Limit dBm
<b>Horizontal</b>			
<b>Peak Detector</b>			
72.680	-59.667	-5.667	-54.000
132.820	-73.846	-37.846	-36.000
241.460	-66.876	-30.876	-36.000
274.440	-69.939	-33.939	-36.000
499.480	-80.194	-26.194	-54.000
699.300	-79.052	-25.052	-54.000
<b>Vertical</b>			
<b>Peak Detector</b>			
72.680	-57.965	-3.965	-54.000
225.940	-68.019	-14.019	-54.000
239.520	-68.753	-32.753	-36.000
266.680	-69.129	-33.129	-36.000
425.760	-79.476	-43.476	-36.000
699.300	-80.856	-26.856	-54.000

Note:

1. All Reading are peak value.
2. "█" means this data is the worst emission level.

Product : Intel® Wireless-AC 9260  
 Test Item : Spurious Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit 802.11b SISI B (2442MHz)

Frequency MHz	Measurement Level dBm	Margin dB	Limit dBm
<b>Horizontal</b>			
<b>Peak Detector</b>			
4884.000	-57.132	-27.132	-30.000
7326.000	-53.183	-23.183	-30.000
9768.000	-53.566	-23.566	-30.000
<b>Vertical</b>			
<b>Peak Detector</b>			
4884.000	-53.313	-23.313	-30.000
7326.000	-52.168	-22.168	-30.000
9768.000	-53.218	-23.218	-30.000

Note:

1. All Reading are peak value.
2. “” means this data is the worst emission level.

Product : Intel® Wireless-AC 9260  
 Test Item : Spurious Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Receive 802.11n20 MIMO (2442MHz)

Frequency	Measurement	Margin	Limit
MHz	Level	dB	dBm
<b>Horizontal</b>			
<b>Peak Detector</b>			
41.640	-62.477	-5.477	-57.000
208.480	-72.165	-15.165	-57.000
241.460	-66.867	-9.867	-57.000
499.480	-80.368	-23.368	-57.000
598.420	-79.931	-22.931	-57.000
699.300	-80.063	-23.063	-57.000
<b>Vertical</b>			
<b>Peak Detector</b>			
72.680	-58.219	-1.219	-57.000
208.480	-70.325	-13.325	-57.000
231.760	-68.209	-11.209	-57.000
266.680	-70.044	-13.044	-57.000
427.700	-78.243	-21.243	-57.000
699.300	-81.061	-24.061	-57.000

Note:

1. All Reading are peak value.
2. "█" means this data is the worst emission level.

Product : Intel® Wireless-AC 9260  
 Test Item : Spurious Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Receive 802.11n20 MIMO (2442MHz)

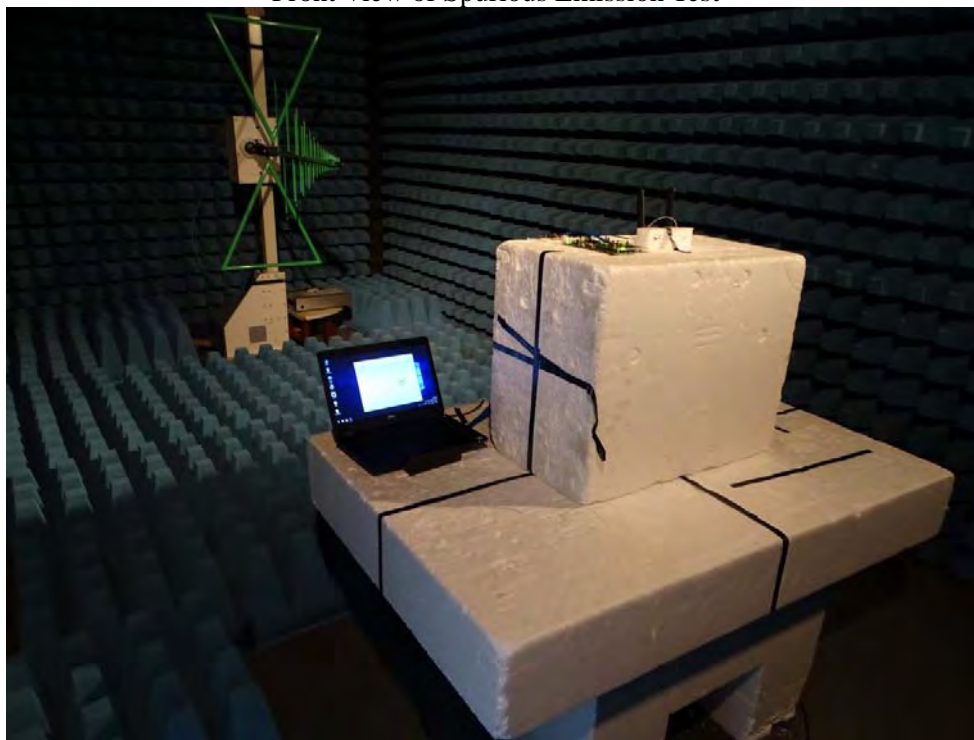
Frequency MHz	Measurement Level dBm	Margin dB	Limit dBm
<b>Horizontal</b>			
<b>Peak Detector</b>			
2442.000	-63.153	-16.153	-47.000
4884.000	-61.656	-14.656	-47.000
7326.000	-55.606	-8.606	-47.000
<b>Vertical</b>			
<b>Peak Detector</b>			
2442.000	-57.641	-10.641	-47.000
4884.000	-61.075	-14.075	-47.000
7326.000	-54.668	-7.668	-47.000

Note:

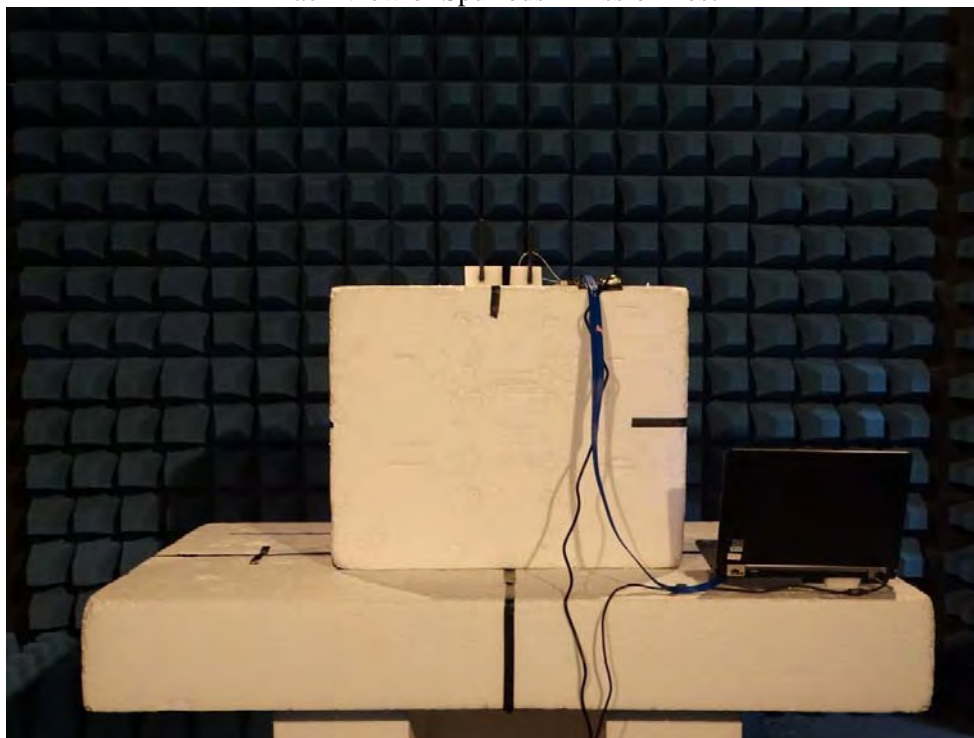
1. All Reading are peak value.
2. “” means this data is the worst emission level.

## Attachment 1: EUT Test Setup Photographs

Front View of Spurious Emission Test



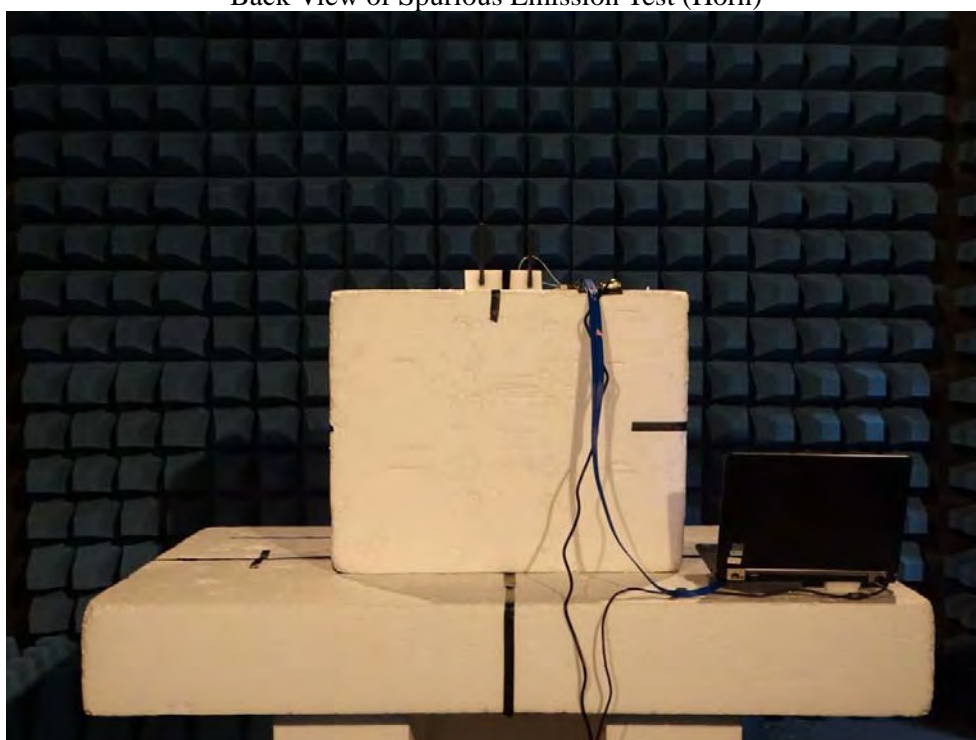
Back View of Spurious Emission Test



Front View of Spurious Emission Test (Horn)



Back View of Spurious Emission Test (Horn)





## Attachment 2 : EUT Detailed Photographs

(1) EUT Photo



(2) EUT Photo





(3) EUT Photo



(4) EUT Photo





(5) EUT Photo



(6) EUT Photo

