



# RF EXPOSURE REPORT

**REPORT NO.:** SA111028C08A

**MODEL NO.:** 21-148603-0B

**FCC ID:** UZ7211486030B

**RECEIVED:** Oct. 28, 2011

**TESTED:** Nov. 23 to 26, 2011

**ISSUED:** Mar. 09, 2012

**APPLICANT:** Motorola Solutions, Inc.

**ADDRESS:** 1 Motorola Plaza, Holtsville, NY  
11742-1300 USA

**ISSUED BY:** Bureau Veritas Consumer Products Services  
(H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory

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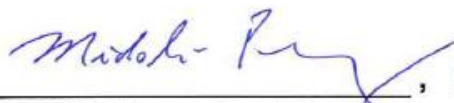
## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA111028C08A	Original release	Mar. 09, 2012

## 1. CERTIFICATION

**PRODUCT:** Radio Module  
**BRAND NAME:** Motorola  
**MODEL NO.:** 21-148603-0B  
**PART NO.:** 21-148603-02  
**TEST SAMPLE:** ENGINEERING SAMPLE  
**APPLICANT:** Motorola Solutions, Inc.  
**TESTED DATE:** Nov. 23 to 26, 2011  
**STANDARDS:** FCC Part 2 (Section 2.1091)  
FCC OET Bulletin 65, Supplement C (01-01)  
IEEE C95.1

The above equipment (Model: 21-148603-0B) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**PREPARED BY** : , **DATE:** Mar. 09, 2012  
( Midoli Peng, Specialist )

**APPROVED BY** : , **DATE:** Mar. 09, 2012  
( May Chen, Deputy Manager )

## 2. RF EXPOSURE LIMIT

### LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

FREQUENCY RANGE (MHz)	ELECTRIC FIELD STRENGTH (V/m)	MAGNETIC FIELD STRENGTH (A/m)	POWER DENSITY (mW/cm <sup>2</sup> )	AVERAGE TIME (minutes)
<b>LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE</b>				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

### 3. MPE CALCULATION FORMULA

$$P_d = (P_{out} * G) / (4 * \pi * r^2)$$

where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

G = gain of antenna in linear scale

$\pi$  = 3.1416

R = distance between observation point and center of the radiator in cm

### 4. CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

## 5. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

### For WLAN: 15.247(2.4GHz)

FREQUENCY BAND (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
2412 - 2462	257.0	2.25	20	0.087	1.00

### For WLAN: 15.247(5GHz)

FREQUENCY BAND (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5745 - 5825	158.5	3.7	20	0.074	1.00

### For WLAN: 15.407(5GHz)

FREQUENCY BAND (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5180 -5240, 5260 - 5320, 5500 - 5580 & 5660 - 5700	102.3	3.7	20	0.048	1.00

### For Bluetooth:

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
2402-2480	14.791	-0.55	20	0.003	1.00

**CONCLUSION:**

Both of the WLAN(5GHz) and Bluetooth can transmit simultaneously, the formula of calculated the MPE is:

$$\text{CPD}_1 / \text{LPD}_1 + \text{CPD}_2 / \text{LPD}_2 + \dots \text{etc.} < 1$$

**CPD = Calculation power density**

**LPD = Limit of power density**

Therefore, the worst-case situation is  $0.074 / 1 + 0.003 / 1 = 0.077$ , which is less than "1". This confirmed that the device comply with FCC 1.1310 MPE limit.

**--- END ---**