

## RF Exposure Report

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**Test Model:** D6220

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### Release Control Record

Issue No.	Description	Date Issued
SA160217E01A	Original release.	Apr. 07, 2016



## 2 RF Exposure

### 2.1 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)
Limits For General Population / Uncontrolled Exposure				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

### 2.2 MPE Calculation Formula

$$Pd = (Pout * G) / (4 * pi * r^2)$$

where

Pd = power density in mW/cm<sup>2</sup>

Pout = 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

### 2.3 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**.

### 2.4 Antenna Gain

Ant. No.	Brand	Model	Antenna Gain (dBi)	Cable Length (mm)	Frequency range (GHz to GHz)	Antenna Type	Connector Type
1	Master Wave	98619	2.62	140	2.4-2.4835	Dipole	i-pex(MHF)
			5.8	140	5.15-5.85		
2	Master Wave	98619	2.42	220	2.4-2.4835	Dipole	i-pex(MHF)
			5.59	220	5.15-5.85		

### 3 Calculation Result Of Maximum Conducted Power

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2412-2462	546.529	5.53	20	0.38846	1
5180-5240	382.476	8.71	20	0.56537	1
5745-5825	330.424	8.71	20	0.48843	1

NOTE:

2.4GHz: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 5.53\text{dBi}$

5GHz: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 8.71\text{dBi}$

#### Conclusion:

The formula of calculated the MPE is:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots\text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + WLAN 5GHz =  $0.38846 + 0.56537 = 0.95383$

**Therefore the maximum calculations of above situations are less than the "1" limit.**

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