



# RF EXPOSURE REPORT

**REPORT NO.:** SA110927C30

**MODEL NO.:** DWL-6600AP

**FCC ID:** KA2WL6600APA1

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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
Original release	N/A	Nov. 07, 2011



## 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)
<b>LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE</b>				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

### 2.2 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

### 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 CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

FREQUENCY BAND (MHz)	MODULATION MODE	MAX POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
2412-2462	802.11b	22.7	3.47	20	0.082	1
	802.11g	26.9	6	20	0.388	1
	802.11n (20MHz)	28.0	6	20	0.500	1
	802.11n (40MHz)	27.3	6	20	0.425	1
5180-5240	802.11a	14.2	8	20	0.033	1
	802.11n (20MHz)	14.3	8	20	0.034	1
	802.11n (40MHz)	14.6	8	20	0.036	1
5745-5825	802.11a	24.9	8	20	0.388	1
	802.11n (20MHz)	24.7	8	20	0.370	1
	802.11n (40MHz)	25.6	8	20	0.456	1

### NOTE:

Antenna gain for Internal and External antenna

#### Internal antenna

Frequency band (GHz)	Gain of TX antenna 1 (dBi)	Gain of TX antenna 2 (dBi)	Total gain (dBi)
2.4	3.47	2.23	5.88
5.2	1.43	4.09	5.87
5.8	4.19	5.23	7.74

#### External antenna

Frequency band (GHz)	Gain of TX antenna 1 (dBi)	Gain of TX antenna 2 (dBi)	Total gain (dBi)
2.4	3	3	6
5.2	5	5	8
5.8	5	5	8

Highest antenna gain for each frequency band is selected to calculate power density.

**CONCLUSION:**

Both of the WLAN 2.4G & 5.0G can transmit simultaneously, the formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

$$\text{WLAN 2.4G} + \text{WLAN 5.0G} = 0.500 + 0.456 = 0.956$$

**Therefore, the maximum calculation of this situation is 0.956, which is less than the “1” limit.**