



# RF EXPOSURE REPORT

**REPORT NO.:** SA140710C17

**MODEL NO.:** C6300BD

**FCC ID:** PY314200260

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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA140710C17	Original release	Oct. 09, 2014



## 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

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

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

### 4. CLASSIFICATION

The antenna of this product, under normal use condition, is at least 35cm away from the body of the user. So, this device is classified as **Mobile Device**.

## 5. ANTENNA GAIN

The antennas provided to the EUT, please refer to the following table:

For 2.4G used						
Ant. No.	Transmitter Circuit	Brand	Model	Antenna Type	Antenna Gain (dBi)	Connector type
1	CHAIN (0)	MASTER WAVE	98P92UIPF030	PCB	2	I-PEX
2	CHAIN (1)		98P92UIPF031		2	
3	CHAIN (2)		98P92UIPF033		2	
For 5G used						
Ant. No.	Transmitter Circuit	Brand	Model	Antenna Type	Antenna Gain (dBi)	Connector type
4	CHAIN (0)	MASTER WAVE	98P92UIPF033	PCB	2	I-PEX
5	CHAIN (1)		98P92UIPF034		2	
6	CHAIN (2)		98P92UIPF034		2	

## 6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

### For WLAN: 15.247(2.4GHz)

#### 802.11b

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
2412 - 2462	683.701	6.77	35	0.21112	1.00

NOTE: Directional gain = 2dBi + 10log(3) = 6.77dBi.

#### 802.11g

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
2412 - 2462	661.388	6.77	35	0.20423	1.00

NOTE: Directional gain = 2dBi + 10log(3) = 6.77dBi.

#### 802.11n (HT20)

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	476.954	6.77	35	0.14728	1.00

NOTE: Directional gain = 2dBi + 10log(3) = 6.77dBi.

#### 802.11n (HT40)

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
2422 - 2452	200.838	6.77	35	0.06202	1.00

NOTE: Directional gain = 2dBi + 10log(3) = 6.77dBi.

**For WLAN: 15.247(5GHz)**

**802.11a**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5745 - 5825	829.037	6.77	35	0.25599	1.00

**NOTE:** Directional gain = 2dBi + 10log(3) = 6.77dBi.

**802.11ac (VHT20)**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5745 - 5825	831.402	6.77	35	0.25672	1.00

**NOTE:** Directional gain = 2dBi + 10log(3) = 6.77dBi.

**802.11ac (VHT40)**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5755 - 5795	814.961	6.77	35	0.25165	1.00

**NOTE:** Directional gain = 2dBi + 10log(3) = 6.77dBi.

**802.11ac (VHT80)**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5775	526.577	6.77	35	0.16260	1.00

**NOTE:** Directional gain = 2dBi + 10log(3) = 6.77dBi.



**For WLAN: 15.407(5GHz)**

**802.11a**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5180 - 5240	221.398	6.77	35	0.06836	1.00

**NOTE:** Directional gain = 2dBi + 10log(3) = 6.77dBi.

**802.11ac (VHT20)**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5180 - 5240	269.654	6.77	35	0.16235	1.00

**NOTE:** Directional gain = 2dBi + 10log(3) = 6.77dBi.

**802.11ac (VHT40)**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5190 - 5230	237.371	6.77	35	0.07330	1.00

**NOTE:** Directional gain = 2dBi + 10log(3) = 6.77dBi.

**802.11ac (VHT80)**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5210	86.452	6.77	35	0.02669	1.00

**NOTE:** Directional gain = 2dBi + 10log(3) = 6.77dBi.

**CONCLUSION:**

Both of the WLAN and can transmit simultaneously, the formula of calculated the MPE is:

$$CPD_1 / LPD_1 + CPD_2 / LPD_2 + \dots \text{etc.} < 1$$

**CPD = Calculation power density**

**LPD = Limit of power density**

Therefore, the worst-case situation is  $0.21112 / 1 + 0.25672 / 1 = 0.468$ , which is less than "1". This confirmed that the device comply with FCC 1.1310 MPE limit.

**--- END ---**