

RF EXPOSURE REPORT

REPORT NO.: SA110323C16

MODEL NO.: AP300

FCC ID: TD6ATGN-AP3001101

ACCORDING: FCC Guidelines for Human Exposure
IEEE C95.1

APPLICANT: Altigen Communications, Inc.

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ISSUED BY: Bureau Veritas Consumer Products Services
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1. 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 ²)	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. MPE CALCULATION FORMULA

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

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

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

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**.

4. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

FCC ID: TD6ATGN-AP3001101
FOR BLUETOOTH OF EUT:

FREQUENCY BAND (MHz)	MAX POWER (dBm)	MAXIMUM ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
2402-2480	0.4	1.36	20	0.0003	1.00

FCC ID: BCGA1241 (iPhone2)
FOR BLUETOOTH OF iPhone2:

FREQUENCY BAND (MHz)	MAX POWER (dBm)	MAXIMUM ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
2402-2480	6.3	2	20	0.0013	1.00

FOR WLAN OF iPhone2:

FREQUENCY BAND (MHz)	MAX POWER (dBm)	MAXIMUM ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
2412-2462	16.89	2	20	0.0154	1.00

FOR WWAN OF iPhone2:

FREQUENCY BAND (MHz)	MAX RADIATED POWER (dBm)	SOURCE-TIME AVERAGE POWER (dBm)	MPE (mW/cm ²)	LIMIT (mW/cm ²)
1850-1910	31.62	25.62	0.073	1.00

FCC ID: BCGA1303A (iPhone3)
FOR BLUETOOTH OF iPhone3:

FREQUENCY BAND (MHz)	MAX POWER (dBm)	MAXIMUM ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
2402-2480	10	1.2	20	0.0026	1.00

FOR WLAN OF iPhone3:

FREQUENCY BAND (MHz)	MAX POWER (dBm)	MAXIMUM ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
2412-2462	25.58	1.2	20	0.0948	1.00

FOR WWAN OF iPhone3:

FREQUENCY BAND (MHz)	MAX RADIATED POWER (dBm)	SOUCE-TIME AVERAGE POWER(dBm)	MPE (mW/cm ²)	LIMIT (mW/cm ²)
824-849	30.96	24.96	0.062	0.55

FCC ID: BCG-E2380B (iPhone4)
FOR BLUETOOTH OF iPhone4:

FREQUENCY BAND (MHz)	MAX POWER (dBm)	MAXIMUM ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
2402-2480	13.5	-1.63	20	0.0031	1.00

FOR WLAN OF iPhone4:

FREQUENCY BAND (MHz)	MAX POWER (dBm)	MAXIMUM ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
2412-2462	26	-1.63	20	0.0544	1.00

FOR WWAN OF iPhone4:

FREQUENCY BAND (MHz)	MAX RADIATED POWER (dBm)	SOUCE-TIME AVERAGE POWER(dBm)	MPE (mW/cm ²)	LIMIT (mW/cm ²)
824-849	30.1	24.1	0.051	0.55
1850-1910	30.1	24.1	0.051	1.00

CONCLUSION:

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

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

CPD = Calculation power density

LPD = Limit of power density

1. BLUETOOTH OF EUT + BLUETOOTH OF iPhone2 + WLAN OF iPhone2 + WWAN OF iPhone2 =
 $0.0003/1 + 0.0013/1 + 0.0154/1 + 0.073/1 = 0.09$
2. BLUETOOTH OF EUT + BLUETOOTH OF iPhone3 + WLAN OF iPhone3 + WWAN OF iPhone3 =
 $0.0003/1 + 0.0026/1 + 0.0948/1 + 0.062/0.55 = 0.2104$
3. BLUETOOTH OF EUT + BLUETOOTH OF iPhone4 + WLAN OF iPhone4 + WWAN OF iPhone4 =
 $0.0003/1 + 0.0031/1 + 0.0544/1 + 0.051/0.55 = 0.1505$

Therefore, the maximum calculation of this situation is 0.2104, which is less than the “1” limit.