



## RF Exposure Report

**Report No.:** SA151111E04A

**FCC ID:** U8G-P1930

**Test Model:** MAX BR1

**Series Model:** MAX, Surf Pro, AP One, AP Pro, Device Connector, Express, Balance, Pismo 930

**Received Date:** Nov. 20, 2015

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### Release Control Record

Issue No.	Description	Date Issued
SA151111E04A	Original release.	Dec. 16, 2015



## 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**.

### 3 Antenna Gain

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

<b>WLAN antenna</b>						
Brand	Model No.	Antenna Gain (dBi)	Frequency range (GHz to GHz)	Antenna Type	Connector Type	
WNC	9E.XCI15.001	5.1	2.40~2.50	Dipole	Reverse SMA Plug	
<b>GPS antenna</b>						
Brand	Model No.	Antenna Gain (dBi)	Frequency range (GHz)	Antenna Type	Connector Type	
Chang Hong	GPS-01	-1	1575.42 (+/- 1.023MHz)	Magnetic	R-SMA Male	
<b>LTE antenna</b>						
PCB Chain No.	Brand	Model No.	Antenna Gain (dBi)	Frequency range (MHz to MHz)	Antenna Type	Connector Type
Cellular Main	Pulse	SPDA24700/2700	2	698~960	Dipole	SMA Male
				1710~2170		
				2500-2700		
Cellular Diversity / Aux	Pulse	SPDA24700/2700	2	698~960	Dipole	SMA Male
				1710~2170		
				2500-2700		

#### 4 Calculation Result Of Maximum Conducted Power

##### WLAN

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	995.405	5.1	20	0.64081	1

##### For WWAN(3G), LTE(4G) module\_FCC ID: N7NMC7355 (Model: MC7354)

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
817-824	500	2	20	0.10090	0.5447

Note: 1. Limit of Power Density = F/1500

2. Calculations for RF Exposure compliance in the cellular and PCS bands are base on the maximum source based time-average power obtained from 2-Slot GPRS operation. The resulting duty cycle factor is 2/8, or 6.02dB.

#### 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

$$WLAN + 2G = 0.64081 + 0.10090/0.5447 = 0.82606$$

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

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