RF Exposure Evaluation declaration

Product Name : 802.11a/b/g/n 2T2R Wireless Lan USB Module

Model No. : WN4508R

FCC ID : PPQ-WN4508R

Applicant : Lite-On Technology Corp.

Address : 4F, 90, Chien 1 Road, Chung Ho, New Taipei City 235, Taiwan, R.O.C.

Date of Receipt : Aug. 23, 2013

Date of Declaration : Sep. 30, 2013

Report No. : 138472R-RFUSP31V01

1. RF Exposure Evaluation

1.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

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)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula

Friis transmission formula: $Pd = (Pout*G)/(4*pi*r^2)$

Where

Pd = power density in mW/cm^2

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

Pd id the limit of MPE, 1 mW/cm^2. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

1.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 18℃and 78％ RH.

1.3. Test Result of RF Exposure Evaluation

Product : 802.11a/b/g/n 2T2R Wireless Lan USB Module
Test Item : RF Exposure Evaluation
Test Site : No.3 OATS

Output Power Into Antenna & RF Exposure Evaluation Distance (5.85dBi):

Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
301.9952	0.231063

Note: Power density in column 4 is much lower than the limit (1 mW/cm2).