RF Exposure Evaluation declaration

Product Name : WHDI Tx board

Model No. : WV300A

FCC ID : PPQ-WV300A

Applicant : LITE-ON Technology Corp.

Address : 4F, No.90, Chien 1 Rd., Chung-Ho, Taipei Hsien 235, Taiwan

Date of Receipt : Sep. 16, 2011

Date of Declaration : Oct. 13, 2011

Report No. : 119315R-RFUSP42V01

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 : WHDI Tx board
Test Item : RF Exposure Evaluation
Test Site : No.3 OATS

(n20-chain A+B+C+D) Output Power Into Antenna & RF Exposure Evaluation Distance (2dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
36	5180.00	32.5087	0.010250
44	5220.00	39.0841	0.012323
48	5240.00	36.5595	0.011527

The RF exposure at 20 cm is below limit.

(n40-chain A+B+C+D) Output Power Into Antenna & RF Exposure Evaluation Distance (2dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
38	5190.00	39.8107	0.012553
46	5230.00	48.4172	0.015266

The RF exposure at 20 cm is below limit.

(n20-chain A+B+C+D) Output Power Into Antenna & RF Exposure Evaluation Distance (2dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
149	5745.00	636.7955	0.200785
157	5785.00	554.6257	0.174876
165	5825.00	517.6068	0.163204

The RF exposure at 20 cm is below limit.

(n40-chain A+B+C+D) Output Power Into Antenna & RF Exposure Evaluation Distance (2dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
151	5755.00	528.4453	0.166621
159	5795.00	618.0164	0.194864

The RF exposure at 20 cm is below limit.