RF Exposure Evaluation declaration

Product Name : MOXA IEEE 802.11 a/b/g/n

Model No. : WAPN008

FCC ID : SLE-WAPN008

Applicant : MOXA Inc.

Address : FL.4, NO. 135. LANE 235, BAOQIAO RD. XINDIAN DIST.,NEW TAIPEI CITY, TAIWAN

Date of Receipt : Feb. 22, 2018

Date of Declaration : July 20, 2018

Report No. : 1820210R-RFUSP02V00

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 : MOXA IEEE 802.11 a/b/g/n
Test Item : RF Exposure Evaluation
Test Site : No.3 OATS

RF Exposure_2.4GHz

Operation Frequency Range	2412~2472, 2422~2462MHz
Maximum Conducted output power	26.83dBm
Antenna gain	9.0dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
481.9478	0.761606

Power density is lower than the limit (1 mW/cm2).

RF Exposure_5GHz

Operation Frequency Range	5180~5320, 5500~5700,5745~5825MHz 5190~5310, 5510~5670, 5755~5795MHz
Maximum Conducted output power	22.08dBm
Antenna gain	9.0dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
161.4359	0.255112

Power density is lower than the limit (1 mW/cm2).