

RF Exposure Evaluation declaration

Product Name : MiiNePort W1 series Embedded Serial Device Server

Model No. : MiiNePort W1

FCC ID : SLE-W1

Applicant : Moxa Inc.

Address : Fl.4, No. 135, Lane 235, Pao-Chiao Rd., Shing Tien City,
Taipei, Taiwan, R.O.C.

Date of Receipt : Jan. 09, 2012

Date of Declaration : Feb. 06, 2012

Report No. : 121211R-RFUSP42V01

The declaration results relate only to the samples calculated.

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

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

P_d is the limit of MPE, 1 mW/cm². 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°C and 78% RH.

1.3. Test Result of RF Exposure Evaluation

Product : MiiNePort W1 series Embedded Serial Device Server
 Test Item : RF Exposure Evaluation
 Test Site : No.3 OATS

(802.11b) Output Power Into Antenna & RF Exposure Evaluation Distance (2dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)
01	2412.00	46.5586	0.014680
06	2437.00	34.5144	0.010883
11	2462.00	36.1410	0.011395

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

(802.11g) Output Power Into Antenna & RF Exposure Evaluation Distance (2dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)
01	2412.00	177.4189	0.055941
06	2437.00	163.3052	0.051491
11	2462.00	167.8804	0.052933

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