

RF Exposure Evaluation declaration

Product Name	Intel® Centrino® Wireless-N 100
Model No.	100BNHMW
FCC ID	PD9100BNH

Applicant	Intel Corporation
Address	100 Center Point Circle Suite 200 Columbia, SC 29210

Date of Receipt	Dec. 22, 2011
Date of Declaration	Jan. 17, 2012
Report No.	11C430R-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: $Pd = (Pout * G) / (4 * \pi * r^2)$

Where

Pd = power density in mW/cm²

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 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 : Intel® Centrino® Wireless-N 100
 Test Item : RF Exposure Evaluation
 Test Site : No.3 OATS

802.11b (1Mbps) Output Power Into Antenna & RF Exposure Evaluation Distance (2.88dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)
1	2412.00	84.3335	0.032563
6	2437.00	85.1138	0.032865
11	2462.00	82.9851	0.032043

The RF exposure at 20 cm is below limit.

802.11g (6Mbps) Output Power Into Antenna & RF Exposure Evaluation Distance (2.88dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)
1	2412.00	104.9542	0.040526
6	2437.00	186.2087	0.071900
11	2462.00	83.7529	0.032339

The RF exposure at 20 cm is below limit.

802.11n-20MHz
Output Power Into Antenna & RF Exposure Evaluation Distance (2.88 dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)
1	2412.00	91.8333	0.035459
6	2437.00	182.8100	0.070588
11	2462.00	100.2305	0.038702

The RF exposure at 20 cm is below limit.

802.11n-40MHz
Output Power Into Antenna & RF Exposure Evaluation Distance (2.88 dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)
03	2422.00	77.9830	0.030111
06	2437.00	113.2400	0.043725
09	2452.00	78.3430	0.030250

The RF exposure at 20 cm is below limit.