

RF Exposure Evaluation Report

Product Name : Intel® Wireless-AC 9461

Model No. : 9461D2W

FCC ID : PD99461D2

Applicant : Intel Mobile Communications

Address : 100 Center Point Circle, Suite 200 Columbia, South Carolina
29210 USA

Date of Receipt : Sep. 21, 2017

Date of Declaration : Jan. 29, 2018

Report No. : 1790287R-RFUSP02V00

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF or any agency of the government.

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Issued Date: Jan. 29, 2018
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Product Name	Intel® Wireless-AC 9461
Applicant	Intel Mobile Communications
Address	100 Center Point Circle, Suite 200 Columbia, South Carolina 29210 USA
Manufacturer	Intel Mobile Communications
Model No.	9461D2W
FCC ID.	PD99461D2
EUT Rated Voltage	DC 3.3V
EUT Test Voltage	AC110/60Hz
Trade Name	Intel
Applicable Standard	FCC 47 CFR 1.1310
Test Result	Complied

Documented By : Jinn Chen
 (Senior Adm. Specialist / Jinn Chen)

Tested By : Henk Huang
 (Senior Engineer / Henk Huang)

Approved By : [Signature]
 (Director / Vincent Lin)

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 : Intel® Wireless-AC 9461
 Test Item : RF Exposure Evaluation
 Test Site : No.3 OATS

RF Exposure BT & WLAN(2.4G):

Operation Frequency	2412-2462MHz, 2422-2452MHz 2402-2480MHz
Maximum Conducted output power	22.66dBm
Antenna gain	2.89dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)
184.5015419	0.0714

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

RF Exposure WLAN(5G):

Operation Frequency	5180-5320MHz, 5500-5700MHz, 5745-5825MHz 5190-5310 MHz, 5510-5670MHz, 5755-5795MHz, 5720, 5710 MHz 5210-5290MHz, 5530-5690MHz, 5775MHz
Maximum Conducted output power	21.34dBm
Antenna gain	4.22dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)
136.1444682	0.0716

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