RF Exposure Evaluation Report

Product Name : Intel® Wi-Fi 6 AX201

Model No. : AX201D2WL

FCC ID : PD9AX201D2L

Applicant : Intel Corporation

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

Date of Receipt : Mar. 30, 2019

Date of Declaration : Mar. 12, 2020

Report No. : 1930506R-SAUSP03V00

Report Version : V1.0

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.
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Issued Date: Mar. 12, 2020
Report No.: 1930506R-SAUSP03V00

Product Name	Intel® Wi-Fi 6 AX201	
Applicant	Intel Corporation	
Address	100 Center Point Circle Suite 200 Columbia, South Carolina 29210, United States	
Manufacturer	Intel Corporation	
Model No.	AX201D2WL	
FCC ID.	PD9AX201D2L	
Trade Name	Intel	
Applicable Standard	KDB 447498 D01 v06	☒ Minimum test separation distance ≥ 20 cm ☐ For low power devices
Test Result	Complied	

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(Senior Engineer / Wen Lee)

Approved By :
(Director / Vincent Lin)

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Intel® Wi-Fi 6 AX201
Trade Name	Intel
Model No.	AX201D2WL
FCC ID.	PD9AX201D2L
Frequency Range	802.11b/g/n/ax-20MHz:2412MHz~2472MHz 802.11a/n/ax-20MHz: 5180-5320MHz, 5500-5700MHz, 5720 MHz, 5745-5825MHz 802.11n/ax-40MHz: 5190-5310MHz, 5510-5670MHz, 5710 MHz, 5755-5795MHz 802.11ac/ax-80MHz: 5210-5290MHz, 5530-5690MHz, 5775MHz 802.11ac/ax-160MHz: 5250MHz, 5570MHz BT : 2402-2480MHz
Channel Number	802.11b/g/n/ax-20MHz: 13, n/ax-40MHz: 9 802.11a/n/ax-20MHz: 25; 802.11n/ax-40MHz: 12 802.11ac/ax-80MHz: 6, 802.11ac/ax-160MHz: 2 BT : 79 , BLE : 40
Type of Modulation	DSSS/OFDM/BPSK/QPSK/16QAM/64QAM/256QAM/1024-QAM FHSS: GFSK(1Mbps) / π /4DQPSK(2Mbps) / 8DPSK(3Mbps)
Antenna Type	Dipole Antenna
Channel Control	Auto
Antenna Gain	Refer to the table “Antenna List”

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	WIESON Technologies co.,Itd.	GY121HT0321-003-H / GY121C888-001-H	Dipole Antenna	2.89dBi for 2.4 GHz 2.92 dBi for 5.15~5.25GHz 3.19 dBi for 5.25~5.35GHz 4.41 dBi for 5.47~5.725GHz 4.22 dBi for 5.725~5.85GHz

2. RF Exposure Evaluation

2.1. Standard Applicable

According to KDB 447498 D01 (7.1), A minimum test separation distance ≥ 20 cm is required between the antenna and radiating structures of the device and nearby persons to apply mobile device exposure limits.

2.2. 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

2.3. Test Result of RF Exposure Evaluation

Product : Intel® Wi-Fi 6 AX201
Test Item : RF Exposure Evaluation

WLAN 2.4G Peak Gain: 2.89dBi

Band	Frequency (MHz)	Conducted maximum Peak Power (dBm)	Worst case Duty Cycle (%)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)	Limit (mW/cm2)	Pass/Fail
2.4G	2442	26.01	88.23	452.255	0.1750	1	Pass

WLAN 5G Peak Gain: 4.41dBi

Band	Frequency (MHz)	Conducted maximum Average Power (dBm)	Worst case Duty Cycle (%)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm^2)	Limit (mW/cm^2)	Pass/Fail
5G	5690	21.50	88.89	158.908	0.0873	1	Pass

Note: The Maximum conducted output power is refer to report No.: 1930506R-RFUSP06V00, 1930506R-RFUSP25V00, 1930506R-RFUSP23V00, 1930506R-RFUSP23V00-A from the DEKRA.