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Report No.: 1510RSU01103
Report Version: V02
Issue Date: 11-05-2015

RF Exposure Evaluation Declaration

FCC ID: 2ADU2-H50317

APPLICANT: Hiro Inc.

Application Type: Certification

Product: wifi adapter

Model No.: H50317, H50316, H50318

Brand Name: HiRO

FCC Classification: Unlicensed National Information Infrastructure (UNII)
Digital Transmission System (DTS)

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The test results relate only to the samples tested.

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

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Revision History

Report No.	Version	Description	Issue Date
1510RSU01103	Rev. 01	Initial report	10-30-2015
1510RSU01103	Rev. 02	Corrected test separation distance	11-05-2015

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name	wifi adapter
Model No.	H50317, H50316, H50318
Brand Name	HiRO
Frequency Range	For 2.4GHz: 2412~2462MHz; For 5.8GHz: 5745~5825MHz

1.2. Operation Frequency / Channel list

For 2.4GHz band:

802.11b/g/n-HT20

Channel	Frequency	Channel	Frequency	Channel	Frequency
01	2412 MHz	02	2417 MHz	03	2422 MHz
04	2427 MHz	05	2432 MHz	06	2437 MHz
07	2442 MHz	08	2447 MHz	09	2452 MHz
10	2457 MHz	11	2462 MHz	N/A	N/A

802.11n-HT40

Channel	Frequency	Channel	Frequency	Channel	Frequency
03	2422 MHz	04	2427 MHz	05	2432 MHz
06	2437 MHz	07	2442 MHz	08	2447 MHz
09	2452 MHz	N/A	N/A	N/A	N/A

For 5GHz band:

802.11a/n-HT20/ac-VHT20

Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745 MHz	153	5765 MHz	157	5785 MHz
161	5805 MHz	165	5825 MHz	--	--

802.11n-HT40/ac-VHT40

Channel	Frequency	Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz	--	--

802.11ac-VHT80

Channel	Frequency	Channel	Frequency	Channel	Frequency
155	5775 MHz	--	--	--	--

1.3. Antenna Description

Antenna Type	Frequency Band (GHz)	Max Peak Gain (dBi)	Directional Gain (dBi)
Dipole Antenna	2.4	1	4.01
	5.8	2	5.01

2. RF Exposure Evaluation

2.1. 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

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

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, 1mW/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.

2.2. Test Result of RF Exposure Evaluation

Product	wifi adapter
Test Item	RF Exposure Evaluation

Antenna Gain: Refer to Clause 1.3 of antenna description.

Test Mode	Frequency Band (MHz)	Maximum Average Output Power (dBm)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)
802.11b/g/n	2412 ~ 2462	15.47	0.0176	1
802.11a/n/ac	5745 ~ 5825	10.49	0.0071	1

CONCULISON:

The Max Power Density at R (20 cm) = $0.0176\text{mW/cm}^2 < 1\text{mW/cm}^2$.

So the EUT complies with the requirement.

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