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RF Exposure Evaluation Report

Report No. :	CQASZ20190700562E-02
Applicant:	WIZNET CO.,LTD
Address of Applicant:	5F Humax Village,216 Hwangsaeul-ro,Bundang-gu,Seongnam-si,Gyeonggi-Do,Korea
Manufacturer:	Shenzhen Yunlink Technology CO., Ltd
Address of Manufacturer:	B3 Building, An'le Industiral Zone, Hangcheng Road, Gushu, Xixiang Towm, Baoan District, Shenzhen City, Guangdong, P.R.China
Factory:	Shenzhen Yunlink Technology CO., Ltd
Address of Factory:	B3 Building, An'le Industiral Zone, Hangcheng Road, Gushu, Xixiang Towm, Baoan District, Shenzhen City, Guangdong, P.R.China
Equipment Under Test (EUT):	
Product:	WiFi Module
Model No.:	WizFi630S
Brand Name:	Wiznet
FCC ID:	2AKKWWIZFI630S
Standards:	47 CFR Part 1.1307 47 CFR Part 1.1310 KDB447498D01 General RF Exposure Guidance v06
Date of Test:	2019-06-22 to 2019-07-08
Date of Issue:	2019-07-08
Test Result :	**PASS***

Tested By: Martin Lee

(Martin Lee)

Reviewed By: Aaron Ma

(Aaron Ma)

Approved By:

(Jack Ai)

* In the configuration tested, the EUT complied with the standards specified above.

2 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20190700562E-02	Rev.01	Initial report	2019-07-08

3 Contents

4 RF Exposure Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Limits

According to FCC Part1.1310: 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 part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f^2)	6
30–300	61.4	0.163	1.0	6
300–1500	.....	.....	f/300	6
1500–100,000	.....	.....	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f^2)	30
30–300	27.5	0.073	0.2	30
300–1500	.....	.....	f/1500	30
1500–100,000	.....	.....	1.0	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 id 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.

4.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

4.2 EUT RF Exposure Evaluation

Calculated Result and Limit

Mode	Frequency (MHz)	output power (dBm)	output power (mW)	Target power（dBm）	Antenna gain		Power Density (S) (mW /cm2)	Limited of Power Density (S) (mW /cm2)	Test Result
					(dBi)	(Linear)			
IEEE 802.11b	2412	16.01	39.90	16±1	3.2	2.10	0.02088	1	Compiles
	2437	16.05	40.27	16±1	3.2	2.10	0.02088	1	Compiles
	2462	15.41	34.75	15±1	3.2	2.10	0.01663	1	Compiles
IEEE 802.11g	2412	11.54	14.26	11±1	3.2	2.10	0.00660	1	Compiles
	2437	11.72	14.86	11±1	3.2	2.10	0.00660	1	Compiles
	2462	11.54	14.26	11±1	3.2	2.10	0.00660	1	Compiles
IEEE 802.11n HT20	2412	8.09	6.44	8±1	3.2	2.10	0.00332	1	Compiles
	2437	8.32	6.79	8±1	3.2	2.10	0.00332	1	Compiles
	2462	8.81	7.60	8±1	3.2	2.10	0.00332	1	Compiles
IEEE 802.11n HT40	2422	5.47	3.52	5±1	3.2	2.10	0.00166	1	Compiles
	2437	5.22	3.33	5±1	3.2	2.10	0.00166	1	Compiles
	2452	5.34	3.42	5±1	3.2	2.10	0.00166	1	Compiles