

RF Exposure Evaluation Report

Product : WIFI Module
Trade mark : GSD
Model/Type reference : WC0PR1601, WC0PR1601F
Serial Number : N/A
Report Number : EED32L00074903
FCC ID : 2AC23-WC0PR1601
Date of Issue : Jul. 17, 2019
47 CFR Part 1.1307
Test Standards : 47 CFR Part 1.1310
KDB 447498 D01v06
Test result : PASS

Prepared for:

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2 Version

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3 Contents

	Page
1 COVER PAGE	1
2 VERSION	2
3 CONTENTS	3
4 GENERAL INFORMATION	4
4.1 CLIENT INFORMATION.....	4
4.2 GENERAL DESCRIPTION OF EUT.....	4
4.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD.....	4
4.4 TEST LOCATION.....	5
4.5 DEVIATION FROM STANDARDS.....	5
4.6 ABNORMALITIES FROM STANDARD CONDITIONS.....	5
4.7 OTHER INFORMATION REQUESTED BY THE CUSTOMER.....	5
5 RF EXPOSURE EVALUATION	6
5.1 RF EXPOSURE COMPLIANCE REQUIREMENT.....	6
5.1.1 Limits.....	6
5.1.2 Test Procedure.....	6
5.1.3 EUT RF Exposure Evaluation.....	7
PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS	8

4 General Information

4.1 Client Information

Applicant:	Hui Zhou Gaoshengda Technology Co., LTD
Address of Applicant:	NO.75 Zhongkai Development Area, Huizhou, Guangdong, China
Manufacturer:	Hui Zhou Gaoshengda Technology Co., LTD
Address of Manufacturer:	NO.75 Zhongkai Development Area, Huizhou, Guangdong, China
Factory:	Hui Zhou Gaoshengda Technology Co., LTD
Address of Factory:	NO.75 Zhongkai Development Area, Huizhou, Guangdong, China

4.2 General Description of EUT

Product Name:	WIFI Module
Model No.(EUT):	WC0PR1601, WC0PR1601F
Test Model No.:	WC0PR1601
Trade Mark:	GSD
EUT Supports Radios application	2.4G WiFi: IEEE802.11b/g/n(20MHz)/n(40MHz), 2412MHz-2462MHz 5G WiFi: IEEE802.11a/ac(HT20)/ac(HT40)/ac(HT80), 5150-5250MHz, 5725-5850MHz

4.3 Product Specification subjective to this standard

Frequency Range:	2.4G WiFi: IEEE802.11b/g/n(20MHz)/n(40MHz), 2412MHz-2462MHz 5G WiFi: IEEE802.11a/ac(HT20)/ac(HT40)/ac(HT80), 5150-5250MHz, 5725-5850MHz
Antenna Type:	PIFA antenna
Antenna gain:	2.4G WiFi: 2.5dBi, 5G WiFi: 3dBi
Power Supply:	DC 3.3V
Max Conducted Output Power:	2.4GHz 18.31dBm
	5GHz 14.49dBm
	The Max Conducted Output Power data refer to the report EED32L00074901, EED32L00074902
Sample Received Date:	Apr. 04, 2019
Sample tested Date:	Apr. 15, 2019 to Jun. 26, 2019
Remark:	The tested sample(s) and the sample information are provided by the client. Model No.: WC0PR1601,WC0PR1601F Only the model WC0PR1601 was tested, their electrical circuit design, layout, components used and internal wiring are identical, but the SMT connector is different.

4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.

5 RF Exposure Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 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

A rough estimation of the expected exposure in power flux density on a given point can be made with the following equation:

$$S = \frac{P \times G}{4 \times \pi \times R^2}$$

Where:

S = power density

P = power input to the antenna

G = numeric gain of the antenna in the direction of interest relative to an isotropic radiator

R= distance to the centre of radiation of the antenna

EIRP = P*G

The antenna of the product, under normal use condition is at least 20 cm away from the body of the user.

Warning statement to the user for keeping at least 20cm separation distance and the prohibition of operating to a person has been printed on the user's manual. Therefore, the S of the device is calculated with R=20cm, and if it is below the limit S, then we can conclude the device complies with the rules.

5.1.2 Test Procedure

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

5.1.3 EUT RF Exposure Evaluation

Output Power Into Antenna & RF Exposure Evaluation Distance:

Channel	Frequency (MHz)	Max Conducted Output Power(dBm)	Gain (dBi)	EIRP* (dBm)	EIRP (mW)	R (cm)	S (mW/cm ²)	Limit (mW/cm ²)	Result
1	2412	18.31	2.5	20.81	120.50	20	0.0427	1.0	Pass
149	5745	14.49	3	17.49	56.10	20	0.011	1.0	Pass

Note: Refer to report No. EED32L00074901, EED32L00074902 for EUT test Max Conducted Peak Output Power value.

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32L00074901 for EUT external and internal photos.

*** End of Report ***

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