RF Exposure Evaluation Report

Product	:	WIFI Module
Trade mark	:	GSD
Model/Type reference	:	W2MM2510
Serial Number	:	N/A
Report Number	:	EED32L00378902
FCC ID	:	2AC23-W2M
Date of Issue	:	Jan. 16, 2020
Test Standards	:	47 CFR Part 1.1307(2015) 47 CFR Part 1.1310(2015) KDB447498D01v06
Test result	:	PASS

Prepared for:

Hui Zhou Gaoshengda Technology Co., LTD
NO.75 Zhongkai Development Area, Huizhou, Guangdong, China

Prepared by:

Centre Testing International Group Co., Ltd.
Hongwei Industrial Zone, Bao'an 70 District,
Shenzhen, Guangdong, China
TEL: +86-755-3368 3668
FAX: +86-755-3368 3385

Tested By:	mark. chen.	Compiled by:	Smile Zhong
	Mark Chen		Smile Zhong
Reviewed by:	Ware Xin	Approved by:	Sam Chuang
	Ware Xin		Sam Chuang
Date:	Jan. 16, 2020		Check No.: 3096314301

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2 Version

Version No.	Date	Description
00	Jan. 16, 2020	Original

3 Contents

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):	W2MM2510
Trade Mark:	GSD
EUT Supports Radios application:	IEEE 802.11 b/g/n(HT20)(HT40): 2412MHz to 2462MHz

4.3 Product Specification subjective to this standard

Modulation Type:	DSSS,OFDM
Test Power Grade:	Reference Table
Test Software of EUT:	QATool_Dbg.exe
Antenna Type:	PIFA Antenna
Antenna Specification	2.4G WIFI Antenna Gain : 2.00 dBi (Numeric gain: 1.58)
Maximum tune up power	SISO: / IEEE 802.11b Mode: 19.00 dBm (79.433 mW) / IEEE 802.11g Mode: 22.50 dBm (177.828 mW) / IEEE 802.11n HT 20 Mode: 20.00 dBm (100.000 mW) / IEEE 802.11n HT 40 Mode: 20.50 dBm (112.202 mW) / MIMO / IEEE 802.11n HT 20 Mode: 23.50 dBm (223.872 mW) / IEEE 802.11n HT 40 Mode: 24.00 dBm (251.189 mW)
Power Supply:	DC 5V
Sample Received Date:	Dec. 16, 2019
Sample tested Date:	Dec. 16, 2019 to Jan. 07, 2020
The tested sample(s) and the sample information are provided by the client.	

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

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{377}$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

P (mW) = P (W) / 1000 and

d (cm) = d(m) / 100

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2}$$ ***Equation 1***

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

5.2 Maximum Permissible Exposure

Substituting the MPE safe distance using d = 20 cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

SISO

IEEE 802.11b mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
6	2437	79.433	1.58	20	0.0250	1

IEEE 802.11g mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
11	2462	177.828	1.58	20	0.0559	1

IEEE 802.11n HT20 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
11	2462	100.000	1.58	20	0.0314	1

IEEE 802.11n HT40 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
9	2452	112.202	1.58	20	0.0353	1

MIMO

IEEE 802.11n HT20 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
6	2437	223.872	1.58	20	0.0704	1

IEEE 802.11n HT40 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
6	2437	251.189	1.58	20	0.0790	1

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32L00378901 for EUT external and internal photos.

*** End of Report ***