RF Exposure Evaluation Report

Product	:	WIFI Module
Trade mark	:	GSD
Model/Type reference	:	W2HM2001P
Serial Number	:	N/A
Report Number	:	EED32M00207902
FCC ID	:	2AC23-W2HM2001
Date of Issue	:	Nov. 10, 2020
Test Standards	:	47 CFR Part 1.1307 47 CFR Part 1.1310 KDB447498D01v06
Test result	:	PASS

Prepared for:

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

Prepared by:

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Date: Nov. 10, 2020

Check No.:3096372765

2 Version

Version No.	Date	Description
00	Nov. 10, 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):	W2HM2001P
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

Frequency Range:	IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40): 2422MHz to 2452MHz
Modulation Type:	IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g :OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20 and HT40) : OFDM (64QAM, 16QAM,QPSK,BPSK)
Number of Channels:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels IEEE 802.11n HT40: 7 Channels
Test Power Grade:	Default
Test Software of EUT:	QATool_Dbg.exe
Antenna Type:	PIFA antenna
Antenna Specification	2.4GHz | Antenna Gain : | 2.00 dBi | (Numeric gain: | 1.58)
Maximum tune up power	SISO IEEE 802.11b Mode: 18.00 dBm (63.096 mW) IEEE 802.11g Mode: 16.00 dBm (39.811 mW) IEEE 802.11n HT 20 Mode: 14.00 dBm (25.119 mW) IEEE 802.11n HT 40 Mode: 14.00 dBm (25.119 mW) MIMO IEEE 802.11n HT 20 Mode: 16.00 dBm (39.811 mW) IEEE 802.11n HT 40 Mode: 16.50 dBm (44.668 mW)
Power Supply:	DC 3.3V
Sample Received Date:	Jul. 14, 2020
Sample tested Date:	Jul. 14, 2020 to Aug. 04, 2020
Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn’t verified.	

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 / cm^2

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 / cm^2

2.4G WIFI

SISO

IEEE 802.11b mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
6	2437	63.096	1.58	20	0.0198	1

IEEE 802.11g mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
11	2462	39.811	1.58	20	0.0125	1

IEEE 802.11n HT20 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
1	2412	25.119	1.58	20	0.0079	1

IEEE 802.11n HT40 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
9	2452	25.119	1.58	20	0.0079	1

MIMO

IEEE 802.11n HT20 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
6	2437	39.811	1.58	20	0.0125	1

IEEE 802.11n HT40 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
3	2422	44.668	1.58	20	0.0140	1

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32M00207901 for EUT external and internal photos.

*** End of Report ***