



FCC RF EXPOSURE REPORT

For

WIFI Module

MODEL NUMBER: W2ZM2510

FCC ID: 2AC23-W2Z

REPORT NUMBER: 4789160174-2

ISSUE DATE: November 13, 2019

Prepared for

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Prepared by

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$S = PG / (4\pi R^2)$	6



1. ATTESTATION OF TEST RESULTS

Applicant Information

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

Manufacturer Information

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

EUT Description

EUT Name: WIFI Module
Model: W2ZM2510
Series Model: W2ZM2510P
Model difference: Refer to section 3.1.
Brand Name: GSD
Sample Status: Normal
Sample ID: 2536989
Sample Received Date: September 06, 2019
Date of Tested: September 06~ November 13, 2019

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC 47CFR§2.1091	PASS
KDB-447498 D01 V06	

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 447498 D01 General RF Exposure Guidance v06.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	<p>A2LA (Certificate No.: 4102.01) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA.</p> <p>FCC (FCC Designation No.: CN1187) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules</p> <p>ISED(Company No.: 21320) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with Industry Canada. The Company Number is 21320.</p> <p>VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20019 and R-20004 Shielding Room B , the VCCI registration No. is C-20012 and T-20011</p>
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Note 1: All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China

Note 2: The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

Note 3: For below 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30MHz had been correlated to measurements performed on an OFS.



3.1. DESCRIPTION OF EUT

EUT Name	WIFI Module
Model	W2ZM2510
Series Model	W2ZM2510P
Model difference	W2ZM2510P have the same technical construction including circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction with W2ZM2510. The difference lies only the model number and W2ZM2510 has 8 pin fixed ends, W2ZM2510P has 5 pin fixed ends.
Radio Technology	IEEE802.11b/g/n HT20/HT40
Operation frequency	IEEE 802.11b: 2412MHz—2462MHz IEEE 802.11g: 2412MHz—2462MHz IEEE 802.11n HT20: 2412MHz—2462MHz IEEE 802.11n HT40: 2422MHz—2452MHz
Modulation	IEEE 802.11b: DSSS(CCK) IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK, BPSK)
Rated Input	DC 5V



4. REQUIREMENT

LIMIT

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
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/150	30
1500-100,000	--	--	1.0	30

Note 1: f = frequency in MHz, * means Plane-wave equivalent power density

Note 2: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Note 3: The limit value 1.0mW/cm² is available for this EUT.

MPE CALCULATION METHOD

$$S = PG / (4\pi R^2)$$

where: S = power density (in appropriate units, e.g. mW/ cm²)
P = power input to the antenna (in appropriate units, e.g., mW)
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)



CALCULATED RESULTS

Radio Frequency Radiation Exposure Evaluation

WIFI 2.4G (Worst case)					
Operating Mode	Max. Tune up Power	Antenna Gain		Power density	Limit
	(dBm)	(dBi)	(num)	(mW/ cm ²)	
802.11b	16	3.0	2.00	0.0158	1

WIFI 2.4G (Worst case)					
Operating Mode	Max. Tune up Power	Directional Gain		Power density	Limit
	(dBm)	(dBi)	(num)	(mW/ cm ²)	
802.11n HT20	17	6.0	3.98	0.0397	1

Note: Directional gain= $G_{ANT} + 10 \log(N_{ANT})$ dBi=6.0 dBi
 G_{ANT} : Antenna Gain
 N_{ANT} : Antenna numbers

Note: the calculated distance is 20cm.

END OF REPORT