

# MPE REPORT

FCC ID: 2ATZK-DZ

Date of issue: July 11, 2019

Report Number:	MTi19061904-2E2
Sample Description:	WiFi Module
Model(s):	DXS-S1022_R88U(FTV)
Applicant:	Zhuhai Dingzhi Electronic Technology Co., Ltd
Address:	No.301, Floor 3, Complex Building, No.7, Chuangye West 1st Road, Hongqi Town, Jinwan District, Zhuhai City, Guangdong, China
Date of Test:	June 27, 2019 to July 11, 2019

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>

<b>TEST RESULT CERTIFICATION</b>	
Applicant's name:	Zhuhai Dingzhi Electronic Technology Co., Ltd
Address:	No.301, Floor 3, Complex Building, No.7, Chuangye West 1st Road, Hongqi Town, Jinwan District, Zhuhai City, Guangdong, China
Manufacture's Name:	Zhuhai Dingzhi Electronic Technology Co., Ltd
Address:	No.301, Floor 3, Complex Building, No.7, Chuangye West 1st Road, Hongqi Town, Jinwan District, Zhuhai City, Guangdong, China
Product name:	WiFi Module
Trademark:	TOPWELL
Model and/or type reference .:	DXS-S1022_R88U(FTV)
Serial Model.....:	N/A
RF Exposure Procedures.....:	KDB 447498 D01 v06

*This device described above has been tested by Shenzhen Microtest Co., Ltd and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.*

Tested by:

*Ada Xiang*

---

Ada Xiang

July 11, 2019

Reviewed by:

*Blue Zheng*

---

Blue Zheng

July 11, 2019

Approved by:

*Smith Chen*

---

Smith Chen

July 11, 2019

## RF EXPOSURE EVALUATION

According to FCC 1.1310: 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 §1.1307(b)

Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposure</b>				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f <sup>2</sup>	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f <sup>2</sup>	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz \* = Plane-wave equivalent power density

### MPE Calculation Method

Friis transmission formula:  $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

$P_d$  = Power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

$\pi$  = 3.1415926

R = distance between observation point and center of the radiator in cm (20cm)

$P_d$  the limit of MPE, 1mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

## Measurement Result

### WIFI:

Operation Frequency: WIFI 802.11b/g/n HT20: 2412-2462MHz,

802.11n HT40: 2422-2452MHz,

Power density limited: 1mW/ cm<sup>2</sup>

Antenna Type: Wifi Antenna: FPC Mounted Embedded Antenna;

WIFI antenna gain: 1dBi

R=20cm

$mW=10^{(dBm/10)}$

antenna gain Numeric= $10^{(dBi/10)}=10^{(1/10)}=1.26$

Channel Freq. (MHz)	modulation	conducted power (dBm)	Tune-up power (dBm)	Max		Antenna Gain Numeric	Evaluation result at 20cm Power density(mW/cm <sup>2</sup> )	Power density Limits (mW/cm <sup>2</sup> )
				tune-up power				
				(dBm)	(dBm)	(dBm)	(mW)	Ant A
2412	802.11b	12.6	12±1	13	19.952623	1.26	0.00500	1
2437		11.99	12±1	13	19.952623	1.26	0.00500	1
2462		11.65	12±1	13	19.952623	1.26	0.00500	1
2412	802.11g	8.69	8±1	9	7.9432823	1.26	0.00199	1
2437		7.82	8±1	9	7.9432823	1.26	0.00199	1
2462		7.81	8±1	9	7.9432823	1.26	0.00199	1
2412	802.11n H20	8.97	8±1	9	7.9432823	1.26	0.00199	1
2437		8.42	8±1	9	7.9432823	1.26	0.00199	1
2462		8.29	8±1	9	7.9432823	1.26	0.00199	1
2422	802.11n H40	8.26	8±1	9	7.9432823	1.26	0.00199	1
2437		7.38	8±1	9	7.9432823	1.26	0.00199	1
2452		7.51	8±1	9	7.9432823	1.26	0.00199	1

### Conclusion:

For the max result: 0.00500 ≤ 1.0 for 1g SAR, No SAR is required.

----END OF REPORT----