



RF Exposure Evaluation Declaration

FCC ID: 2AS2S-DM563U0

Applicant: Xi'an Bazhuayu Electronic Technology Co., Ltd

Application Type: Certification

Product: Wireless Module

Model No.: DM563U0

Brand Name: Rockeetech

FCC Classification: Unlicensed National Information Infrastructure (UNII)

Test Procedure(s): KDB 447498 D01 General RF Exposure Guidance v06

Reviewed By:

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Approved By:

Robin Wu

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The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

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Revision History

Report No.	Version	Description	Issue Date	Note
1903RSU032-U2	Rev. 01	Initial Report	04-25-2019	Valid

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name:	Wireless Module
Model No.:	DM563U0
Brand Name:	Rocheetech
Wi-Fi Specification:	802.11a/n/ac
Power Type:	DC 3.3V

1.2. Product Specification Subjective to this Report

Frequency Range:	For 802.11a/n-HT20/ac-VHT20: 5180~5240MHz, 5745~5825MHz For 802.11n-HT40/ac-VHT40: 5190~5230MHz, 5755~5795MHz For 802.11ac-VHT80: 5210MHz, 5775MHz
Type of Modulation:	802.11a/n/ac: OFDM
Data Rate:	802.11a: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 450Mbps 802.11ac: up to 1299.9Mbps

1.3. Antenna Description

Antenna Type	Frequency Band (MHz)	Tx Paths	Max Antenna Gain (dBi)	CDD Directional Gain (dBi)	
				For Power	For PSD
External Antenna	5150 ~ 5250 5725 ~ 5850	3	2.5	2.5	7.27

Note:

1. 802.11a support single transmission only.
2. The EUT supports Cyclic Delay Diversity (CDD) mode, and CDD signals are correlated. For CDD transmissions, directional gain is calculated as follows, $N_{ANT} = 3$, $N_{SS} = 1$. If all antennas have the same gain, G_{ANT} , Directional gain = $G_{ANT} + \text{Array Gain}$, where Array Gain is as follows.
 - a. For power spectral density (PSD) measurements on all devices,
 Array Gain = $10 \log(N_{ANT}/N_{SS})$ dB = 4.77;
 - b. For power measurements on IEEE 802.11 devices,
 Array Gain = 0 dB for $N_{ANT} \leq 4$

1.4. Description of Antenna RF Port

Software Control Port	5GHz RF Port		
	Ant 1	Ant 2	Ant 3

2. RF Exposure Evaluation

2.1. Limits

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 ²)	Averaging Time (Minutes)
(A) Limits for Occupational/ Control 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
300-1,500	--	--	f/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
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
300-1,500	--	--	f/1500	30
1,500-100,000	--	--	1.0	30

f= Frequency in MHz

* = Plane-wave equivalent power density

Calculation Formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

r = distance between observation point and center of the radiator in cm

P_d is the limit of MPE, 1mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

2.2. Test Result of RF Exposure Evaluation

Product	Wireless Module
Test Item	RF Exposure Evaluation

Antenna Gain: Refer to Clause 1.3 of antenna description.

Test Mode	Frequency Band (MHz)	Maximum Output Power (dBm)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)
802.11a/n/ac	5180 ~ 5240 5745 ~ 5825	24.79	0.0599	1

CONCLUSION:

The Max Power Density at R (20 cm) = 0.0599mW/cm² < 1mW/cm².

So the EUT complies with the requirement.

_____ The End _____

Appendix A - EUT Photograph

Refer to "1903RSU032-UE" file.