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Issue Date:

Report Version: 04-25-2019

Report No.: 1903RSU032-U2

RF Exposure Evaluation Declaration

FCC ID: 2AS2S-DM563U0

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

Application Type: Certification

Product: Wireless Module

Model No.: DM563U0

Brand Name: Rockeetech

Unlicensed National Information Infrastructure (UNII) **FCC Classification:**

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

Reviewed By:

Approved By:





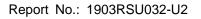
The test results relate only to the samples tested.

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.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

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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:	Rockeetech
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	Tx	Max Antenna	CDD Directional Gain (dBi)	
	(MHz)	Paths	Gain (dBi)	For Power	For PSD
External	5150 ~ 5250	2	2.5	2.5	7.07
Antenna	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.

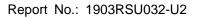
For CDD transmissions, directional gain is calculated as follows, $N_{\text{ANT}} = 3$, $N_{\text{SS}} = 1$.

If all antennas have the same gain, G_{ANT} , Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

b. For power measurements on IEEE 802.11 devices,

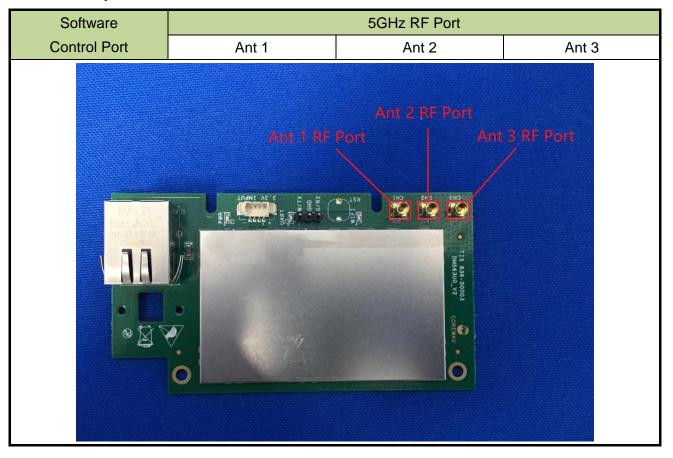
Array Gain = 0 dB for $N_{ANT} \le 4$

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1.4. Description of Antenna RF Port





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	Electric Field	Magnetic Field	Power Density	Averaging Time	
(MHz)	Strength (V/m)	Strength (A/m)	(mW/cm ²)	(Minutes)	
	(A) Limits for	Occupational/ Conti	rol Exposures		
0.3-3.0	614	1.63	*100	6	
3.0-30	1842/f	4.89/f	*900/f2	6	
30-300	61.4	0.163	1.0	6	
300-1,500	-1		f/300	6	
1,500-100,000	-1		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/f2	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

Calculation Formula: $Pd = (Pout*G)/(4*pi*r^2)$

Where

Pd = power density in mW/cm²

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

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

Pd 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.

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^{* =} Plane-wave equivalent power density



2.2. Test Result of RF Exposure Evaluation

Product	Wireless Module
Test Item	RF Exposure Evaluation

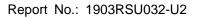
Antenna Gain: Refer to Clause 1.3 of antenna description.

Test Mode	Frequency Band (MHz)	Maximum Output Power (dBm)	Power Density at $R = 20 \text{ cm}$ (mW/cm^2)	Limit (mW/cm²)
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.