

MPE REPORT

FCC ID: 2AS7P-SIPEED-M1W

Date of issue: May 08, 2019

Report Number:	MTi190507E019
Sample Description:	Sipeed M1w
Model(s):	Sipeed M1w
Applicant:	Shenzhen Sipeed Technology Co., Ltd
Address:	Room 401, BLDG A, Huafeng Smart Innovation Port, Gushu, Bao'an, Shenzhen, China
Date of Test:	Apr. 24, 2019 to May 08, 2019

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>

TEST RESULT CERTIFICATION	
Applicant's name:	Shenzhen Sipeed Technology Co., Ltd
Address:	Room 401, BLDG A, Huafeng Smart Innovation Port, Gushu, Bao'an, Shenzhen, China
Manufacture's Name:	Shenzhen Sipeed Technology Co., Ltd
Address:	Room 401, BLDG A, Huafeng Smart Innovation Port, Gushu, Bao'an, Shenzhen, China
Product name:	Sipeed M1w
Trademark:	S Sipeed
Model and/or type reference .:	Sipeed M1w
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:



Demi Mu

May 08, 2019

Reviewed by:



Blue Zheng

May 08, 2019

Approved by:



Smith Chen

May 08, 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 ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
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 Exposure				
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

MPE Calculation Method

Friis transmission 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 = Numeric gain of the antenna relative to isotropic antenna

π = 3.1415926

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

P_d the limit of MPE, 1mW/cm². 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: 2412-2462MHz

Power density limited: 1mW/ cm²

Antenna Type: FPCB Antenna;
antenna gain: 2.5dBi

R=20cm

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

antenna gain Numeric= $10^{(dBi/10)}=10^{(2.5/10)}=1.78$

Channel Freq. (MHz)	modulation	conducted power	Tune-up power	Max		Antenna	Evaluation result at 20cm	Power density Limits
		(dBm)	(dBm)	tune-up power		Gain	Power density(mW/cm ²)	(mW/cm ²)
				(dBm)	(mW)	Numeric		
				Ant A	Ant A	Ant A		
2412	802.11b	12.56	12±1	13	19.952623	1.78	0.00707	1
2437		12.07	12±1	13	19.952623	1.78	0.00707	1
2462		12.07	12±1	13	19.952623	1.78	0.00707	1
2412	802.11g	11.46	11±1	12	15.848932	1.78	0.00561	1
2437		11.28	11±1	12	15.848932	1.78	0.00561	1
2462		10.42	11±1	12	15.848932	1.78	0.00561	1
2412	802.11n H20	11.23	11±1	12	15.848932	1.78	0.00561	1
2437		11.46	11±1	12	15.848932	1.78	0.00561	1
2462		10.23	11±1	12	15.848932	1.78	0.00561	1

Conclusion:

For the max result: $0.00707 \leq 1.0$ for 1g SAR, No SAR is required.

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