TEST REPORT

REPORT NUMBER:I21W00040-Rev1

ON

Type of Equipment:	Wireless communication module
Type of Designation:	SNM900
Manufacturer:	MeiG Smart Technology Co., Ltd
FCC ID:	2APJ4-SNM900

ACCORDING TO

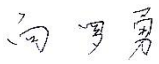
FCC CFR 47 Part 2.1091《Radiofrequency radiation exposure evaluation: mobile devices》
FCC CFR 47 Part1.1310《Radiofrequency radiation exposure limits》

Chongqing Academy of Information and Communication Technology

Month date, year

Dec,22, 2021

Signature



Xiang Luoyong

Director

Note:
The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of Chongqing Academy of Information and Communications Technology.

Revision Version

Report Number	Revision	Date	Memo
I21W00040	01	2021-12-16	Initial creation of test report
I21W00040-Rev1	02	2021-12-22	First change of test report

CONTENTS

1. Test Laboratory

1.1. Testing Location

Company Name:	Chongqing Academy of Information andCommunications Technology
Address:	No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China
Postal Code:	401336
Telephone:	0086-23-88069965
Fax:	0086-23-88608777

1.2. Testing Environment

Normal Temperature:	21.3℃
Relative Humidity:	65%

1.3. Project Data

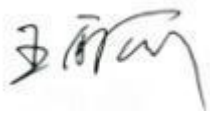
Testing Start Date:	2021-12-16
Testing End Date:	2021-12-22

1.4. Signature

2021-12-22

Fu Bohao
(Prepared this test report)

Date



2021-12-22

Wang Lili
(Reviewed this test report)

Date

2021-12-22

Xiang Luoyong
Director of the laboratory
(Approved this test report)

Date

2. Client Information

2.1. Applicant Information

Company Name:	MeiG Smart Technology Co., Ltd
Address /Post:	Floor 2, No.5 Office Building, Lingxia Road, Fenghuang Community, Fuyong Street, Bao 'an District, Shenzhen
Telephone:	021-54278676
Fax:	--
Email:	louxinwei@meigsmart.com
Contact Person:	louxinwei

2.2. Manufacturer Information

Company Name:	MeiG Smart Technology Co., Ltd
Address /Post:	Floor 2, No.5 Office Building, Lingxia Road, Fenghuang Community, Fuyong Street, Bao 'an District, Shenzhen
Telephone:	021-54278676
Fax:	--
Email:	louxinwei@meigsmart.com
Contact Person:	louxinwei

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description:	Wireless communication module
Model name:	SNM900
WLAN Frequency Band	2.4G/5G
Bluetooth Frequency Band	--
Note：Photographs of EUT are shown in ANNEX A of this test report.	

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
S3	M900332GYA111300009	SNM900_MB_V1.01_PCB	SNM900Q_EQ000_2774.DCF921C.0452224_201104_100_V01_T04	2021-10-27

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE used during the test

EUT ID*	SN	Description
NA	NA	NA

*AE ID: is used to identify the test sample in the lab internally.

4. Reference Documents

4.1. Applicable Standards

The MPE report was carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Part 2.1091.

FCC CFR 47 Part 2.1091: Radiofrequency radiation exposure evaluation: mobile devices

4.2. Test Limits

Systems operating under the provisions of this section shall be operated in a mannerthat ensures that the public is not exposed to radio frequency energy level in excesslimit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2Subpart J, section 2.1091 this device has been defined as a mobile device whereby adistance of 0.2m normally can be maintained between the user and the device.

MPE for the upper tier (people in controlled environments)

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
300-1500	--	--	f/300	6
1500-100000	--	--	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
300-1500	--	--	f/1500	30
1500-100000	--	--	1.0	30

Note: f=frequency in MHz; *Plane-wave equivalent power density

For the DUT, the limits for the general public when an RF safety program is unavailable.

5. Test Results

5.1. RF Power Output

Frequency Band	Highest Averaged Power Output(dBm)	Highest Frame-Averaged Output Power (dBm)	Antenna Gain(dBi)
Bluetooth	12.44	12.44	5.84
WIFI	25.88	25.88	5.84
UNII 1	16.74	16.74	6.49
UNII 2A	16.62	16.62	6.49
UNII 2C	14.79	14.79	6.49
UNII 3	16.24	16.24	6.49

5.2. Calculation Information

For conservative evaluation consideration, only maximum power of each frequency band based on the tighter limits respectively are used to calculate the boundary power density.

Based on the FCC KDB 447498 D01 and 47 CFR §2.1091, the DUT is evaluated as a mobile device.

$$S = \frac{PG}{4\pi d^2}$$

Where
P = Power in Watts
G = Numeric antenna gain
d = Distance in meters
S = Power density in milliwatts / square centimeter

5.3. Results

Frequency range	Limit(mW/cm^2)	Results(mW/cm^2)	Verdict
Bluetooth	1.00	0.013	Pass
WIFI 2.4G	1.00	0.296	Pass
UNII 1	1.00	0.042	Pass
UNII 2A	1.00	0.041	Pass
UNII 2C	1.00	0.027	Pass
UNII 3	1.00	0.037	Pass

5.4. Result of Bluetooth

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 2402.0～2480.0 MHz; The maximum conducted is 12.44 dBm. The maximum gain is 5.84 dBi. Therefore, maximum limit for general public RF exposure: 1.0 mW/cm^2.

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna（17.539 mW）
G = antenna gain（3.837numeric）
r = distance to the center of radiation of antenna (in meter)=20 cm

S=(17.539*3.837)/(4 π*20^2)=0.013mW/cm^2

Therefore, at 20 cm the spectral power density is less than the 1.0 mW/cm^2 limit for uncontrolled exposure.

5.5. Result of WIFI 2.4G

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 2412.0～2484.00 MHz; The maximum conducted is 25.88 dBm. The maximum gain is 5.84 dBi. Therefore, maximum limit for general public RF exposure: 1.00 mW/cm^2.

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna（387.258 mW）
G = antenna gain（3.837numeric）
r = distance to the center of radiation of antenna (in meter)=20 cm

S=(387.258*3.837)/(4 π*20^2)=0.296mW/cm^2

Therefore, at 20 cm the spectral power density is less than the 1.00mW/cm^2 limit for uncontrolled exposure.

5.6. Result of WIFI 5G UNII 1

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 5150.0～5250.0 MHz; The maximum conducted is 16.74 dBm. The maximum gain is 6.49 dBi. Therefore, maximum limit for general public RF exposure: 1.00 mW/cm^2.

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna（47.206 mW）
G = antenna gain（4.457numeric）
r = distance to the center of radiation of antenna (in meter)=20 cm

S=(47.206*4.457)/(4 π*20^2)=0.042mW/cm^2

Therefore, at 20 cm the spectral power density is less than the 1.00 mW/cm^2 limit for uncontrolled exposure.

5.7. Result of WIFI 5G UNII 2A

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 5250.0～5350.0 MHz; The maximum conducted is 16.62 dBm. The maximum gain is 6.49 dBi. Therefore, maximum limit for general public RF exposure: 1.00 mW/cm^2.

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna（45.920 mW）
G = antenna gain（4.457numeric）
r = distance to the center of radiation of antenna (in meter)=20 cm

S=(45.920 *4.457)/(4 π*20^2)=0.041mW/cm^2

Therefore, at 20 cm the spectral power density is less than the 1.00mW/cm^2 limit for uncontrolled exposure.

5.8. Result of WIFI 5G UNII 2A

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 5250.0～5350.0 MHz; The maximum conducted is 16.62 dBm. The maximum gain is 6.49 dBi. Therefore, maximum limit for general public RF exposure: 1.00 mW/cm^2.

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna（45.920 mW）
G = antenna gain（4.457numeric）
r = distance to the center of radiation of antenna (in meter)=20 cm

S=(45.920 *4.457)/(4 π*20^2)=0.041mW/cm^2

Therefore, at 20 cm the spectral power density is less than the 1.00mW/cm^2 limit for uncontrolled exposure.

5.9. Result of WIFI 5G UNII 2C

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 5470.0～5725.0 MHz; The maximum conducted is 14.79 dBm. The maximum gain is 6.49 dBi. Therefore, maximum limit for general public RF exposure: 1.00 mW/cm^2.

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna（30.130 mW）
G = antenna gain（4.457numeric）
r = distance to the center of radiation of antenna (in meter)=20 cm

S=(30.130 *4.457)/(4 π*20^2)=0.027mW/cm^2

Therefore, at 20 cm the spectral power density is less than the 1.00mW/cm^2 limit for uncontrolled exposure.

5.10. Result of WIFI 5G UNII 3

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 5725.0～5850.0 MHz; The maximum conducted is 16.24 dBm. The maximum gain is 6.49 dBi. Therefore, maximum limit for general public RF exposure: 1.00 mW/cm^2.

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna（42.073 mW）

G = antenna gain（4.457numeric）

r = distance to the center of radiation of antenna (in meter)=20 cm

S=(42.073 *4.457)/(4 π*20^2)=0.037mW/cm^2

Therefore, at 20 cm the spectral power density is less than the 1.00mW/cm^2 limit for uncontrolled exposure.

ANNEX A: EUT photograph

See the document" SNM900 -External Photos".

*****END OF REPORT*****