

TEST REPORT

FCC ID. :	2APJ4-SLM550	
Test Report No..... :	TCT221019E908	
Date of issue..... :	Oct. 27, 2022	
Testing laboratory	SHENZHEN TONGCE TESTING LAB	
Testing location/ address:	2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China	
Applicant's name..... :	MeiG Smart Technology Co., Ltd	
Address..... :	2nd Floor, Office Building, No.5 Lingxia Road, Fenghuang, Fuyong Street, Bao'an District, shenzhen, China	
Manufacturer's name ... :	MeiG Smart Technology Co., Ltd	
Address..... :	2nd Floor, Office Building, No.5 Lingxia Road, Fenghuang, Fuyong Street, Bao'an District, shenzhen, China	
Standard(s)	FCC CFR Title 47 Part 1.1307	
Product Name..... :	Smart module	
Trade Mark	MEIGLink	
Model/Type reference..... :	SLM550	
Rating(s)..... :	DC 3.8V	
Date of receipt of test item	Oct. 19, 2022	
Date (s) of performance of test..... :	Jul. 14, 2022 - Oct. 27, 2022	
Tested by (+signature) ... :	Rleo LIU	
Check by (+signature).... :	Beryl ZHAO	
Approved by (+signature):	Tomsin	
Remark..... :	This test report was based on TCT220714E039; Only the software version and software control band have been updated.	

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1. General Product Information

1.1. EUT description

Product Name.....:	Smart module
Model/Type reference.....:	SLM550
Sample Number.....:	TCT220714E017-0101
Operation Frequency	For BT/BLE: 2402MHz~2480MHz For 2.4G WIFI: 2412MHz~2462MHz (802.11b/802.11g/802.11n(HT20)) 2422MHz~2452MHz (802.11n(HT40)) For 5G WIFI: Band 1: 5180 MHz ~ 5240 MHz Band 2A: 5260 MHz ~ 5320 MHz Band 2C: 5500 MHz ~ 5700 MHz Band 3: 5745 MHz ~ 5825 MHz For GSM: GSM/GPRS/EGPRS 850: TX: 824.2MHz ~ 848.8MHz, RX: 869.2MHz ~ 893.8MHz GSM/GPRS/EGPRS 1900: TX: 1850.2MHz ~ 1909.8MHz, RX: 1930.2MHz ~ 1989.8MHz For WCDMA: WCDMA Band V: TX: 826.4MHz ~ 846.6MHz, RX: 871.4MHz ~ 891.6MHz WCDMA Band II: TX: 1852.4MHz ~ 1907.6MHz, RX: 1932.4MHz ~ 1987.6MHz LTE Band 2: TX: 1850 MHz ~ 1910 MHz, RX: 1930 MHz ~ 1990 MHz LTE Band 4: TX: 1710 MHz ~ 1755 MHz, RX: 2110 MHz ~ 2155 MHz LTE Band 5: TX: 824 MHz ~ 849 MHz, RX: 869 MHz ~ 894 MHz LTE Band 7: TX: 2500 MHz ~ 2570 MHz, RX: 2620 MHz ~ 2690 MHz LTE Band 25: TX: 1850 MHz ~ 1915 MHz, RX: 1930 MHz ~ 1995 MHz LTE Band 66: TX: 1710 MHz ~ 1780 MHz, RX: 2110 MHz ~ 2180 MHz
Modulation Type	For BT: GFSK, $\pi/4$-DQPSK, 8DPSK For BLE: GFSK For 2.4G WIFI: DSSS(802.11b), OFDM (802.11g/802.11n) For 5G WIFI: 256QAM, 64QAM, 16QAM, BPSK, QPSK For GSM: GSM/GPRS/EGPRS: GMSK For WCDMA: QPSK for HSDPA and HSUPA For LTE: QPSK, 16-QAM
Antenna Type.....:	External Antenna

Antenna Gain.....:	BT/BLE: 2.2dBi 2.4G WIFI: 2.2dBi 5G WIFI: 2.52dBi GSM/GPRS/EGPRS 850: 3.52dBi GSM/GPRS/EGPRS 1900: 3.58dBi WCDMA Band V: 3.52dBi WCDMA Band II: 3.58dBi LTE Band 2: 3.58dBi LTE Band 4: 4.00dBi LTE Band 5: 3.52dBi LTE Band 7: 5.19dBi LTE Band 25: 3.58dBi LTE Band 66: 4.00dBi
Rating(s).....:	DC 3.8V

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

1.2. Model(s) list

None.

2. General Information

2.1. Test environment and mode

Item	Normal condition
Temperature	+25°C
Voltage	DC 3.8V
Humidity	56%
Atmospheric Pressure:	1008 mbar
Test Mode:	
Engineering mode:	Keep the EUT in continuous transmitting by select channel

2.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
/	/	/	/	/

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.
3. For conducted measurements (Output Power, 20dB Occupied Bandwidth, Carrier Frequencies Separation, Hopping Channel Number, Dwell Time, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

3. Facilities and Accreditations

3.1. Facilities

The test facility is recognized, certified, or accredited by the following organizations:

- FCC - Registration No.: 645098

SHENZHEN TONGCE TESTING LAB

Designation Number: CN1205

The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- IC - Registration No.: 10668A-1

SHENZHEN TONGCE TESTING LAB

CAB identifier: CN0031

The testing lab has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

3.2. Location

SHENZHEN TONGCE TESTING LAB

Address: 2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China

TEL: +86-755-27673339

4. Test Results and Measurement Data

According to §1.1307(b), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

Remark: 1)

- For BT:** The maximum output power for antenna is 7.11dBm (5.14mW) at 2480MHz, 2.2dBi antenna gain(with 1.66 numeric antenna gain.)
- For BLE:** The maximum output power for antenna is 6.69dBm (4.67mW) at 2440MHz, 2.2dBi antenna gain(with 1.66 numeric antenna gain.)
- For 2.4G WIFI:** The maximum output power for antenna is 16.55dBm (45.19mW) at 2412MHz, 2.2dBi antenna gain(with 1.66 numeric antenna gain.)
- For 5G WIFI:** The maximum output power for antenna is 13.44dBm (22.08mW) at 5270MHz, 2.52dBi antenna gain(with 1.79 numeric antenna gain.)
- For GSM 850:** The maximum output power for antenna is 32.42dBm (1745.82mW) at 824.2MHz, 3.52dBi antenna gain(with 2.25 numeric antenna gain.)
- For GSM 1900:** The maximum output power for antenna is 29.85dBm (966.05mW) at 1909.8MHz, 3.58dBi antenna gain(with 2.28 numeric antenna gain.)
- For WCDMA Band V:** The maximum output power for antenna is 23.60dBm (229.09mW) at 836.4MHz, 3.52dBi antenna gain(with 2.25 numeric antenna gain.)
- For WCDMA Band II:** The maximum output power for antenna is 23.62dBm (230.14mW) at 1907.6MHz, 3.58dBi antenna gain(with 2.28 numeric antenna gain.)
- For LTE Band 2:** The maximum output power for antenna is 23.82dBm (240.99mW) at 1860MHz, 3.58dBi antenna gain(with 2.28 numeric antenna gain.)
- For LTE Band 4:** The maximum output power for antenna is 23.64dBm (231.21mW) at 1732.5MHz, 4.00dBi antenna gain(with 2.51 numeric antenna gain.)
- For LTE Band 5:** The maximum output power for antenna is 23.24dBm (210.86mW) at 848.3MHz, 3.52dBi antenna gain(with 2.25 numeric antenna gain.)
- For LTE Band 7:** The maximum output power for antenna is 23.38dBm (217.77mW) at 2510MHz, 5.19dBi antenna gain(with 3.30 numeric antenna gain.)
- For LTE Band 25:** The maximum output power for antenna is 22.93dBm (196.34mW) at 1882.5MHz, 3.58dBi antenna gain(with 2.28 numeric antenna gain.)
- For LTE Band 66:** The maximum output power for antenna is 23.85dBm (242.66mW) at 1745MHz, 4.00dBi antenna gain(with 2.51 numeric antenna gain.)

- 2) For mobile or fixed location transmitters, no SAR consideration applied. The minimum separation generally be used is at least 20cm, even if the calculation indicate that the MPE distance would be lesser.

Calculation:

Given $E = \frac{\sqrt{30 \cdot P \cdot G}}{d}$ & $S = \frac{E^2}{3770}$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Substituting the MPE safe distance using $d=20\text{cm}$ into above equation.

Yields: $S=0.000199 \cdot P \cdot G$

Mode	Power(mW)	numeric antenna gain	Power density (mW/cm ²)	Limit (mW/cm ²)	Result
BT	5.14	1.66	0.001698	1.0	PASS
BLE	4.67	1.66	0.001543		
2.4G WIFI	45.19	1.66	0.014928		
5G WIFI	22.08	1.79	0.007865		
GSM 850	1745.82	2.25	0.781691		
GSM 1900	966.05	2.28	0.438316		
WCDMA Band V	229.09	2.25	0.102575		
WCDMA Band II	230.14	2.28	0.104419		
LTE Band 2	240.99	2.28	0.109342		
LTE Band 4	231.21	2.51	0.115487		
LTE Band 5	210.86	2.25	0.094413		
LTE Band 7	217.77	3.30	0.143010		
LTE Band 25	196.34	2.28	0.089083		
LTE Band 66	242.66	2.51	0.121206		

The device contain transmitters (BT & 2.4GWIFI & GSM, BT & 5GWIFI & GSM, BT & 2.4GWIFI & WCDMA, BT & 5GWIFI & WCDMA, BT & 2.4GWIFI & LTE, BT & 5GWIFI & LTE) can transmit multiple transmission modes at the same time.

Maximum Emissions Level			
Mode	Power density	Limit	Result
BT & 2.4GWIFI & GSM	0.798317	1.0	Pass
BT & 5GWIFI & GSM	0.791254		
BT & 2.4GWIFI & WCDMA	0.121045		
BT & 5GWIFI & WCDMA	0.113982		
BT & 2.4GWIFI & LTE	0.159636		
BT & 5GWIFI & LTE	0.152573		

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