

MRT Technology (Suzhou) Co., Ltd Phone: +86-512-66308358

Web: www.mrt-cert.com

Report No.: 2205RSU044-U7 Report Version: V01 Issue Date: 2023-04-21

RF Exposure Evaluation Declaration

FCC ID: 2APJ4-SLM156

Applicant: MeiG Smart Technology Co., Ltd

Product: CAT-M Module

Model No.: SLM156

Brand Name: MEIGLink

FCC Rule Part(s) FCC Part 2.1091

Test Procedure KDB 447498 D04 Interim General RF Exposure

Guidance v01

Result: Complies

Approved By:

Reviewed By:

Vincent Yu

Robin Wu

Vincent Yu

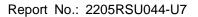
ACCREDITED

TESTING LABORATORY
CERTIFICATE #3628.01

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.





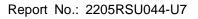
Revision History

Report No.	Version	Description	Issue Date	Note
2205RSU044-U7	Rev. 01	Initial Report	2023-04-21	Valid



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1. General Information

1.1. Applicant

MeiG Smart Technology Co., Ltd

2nd Floor, Office Building, No.5 Lingxia Road, Fenghuang, Fuyong Street, Bao 'an District, Shenzhen, China

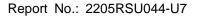
1.2. Manufacturer

MeiG Smart Technology Co., Ltd

2nd Floor, Office Building, No.5 Lingxia Road, Fenghuang, Fuyong Street, Bao 'an District, Shenzhen, China

1.3. Testing Facility

\boxtimes	Test Site – MRT Suzhou Laboratory							
	Laboratory Location (Suzhou - Wuzhong) D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China							
	Laboratory Loca	tion (Suzhou - SIF	')					
	4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China							
	Laboratory Accr	Laboratory Accreditations						
	A2LA: 3628.01		CNAS	S: L10551				
	FCC: CN1166		ISED: CN0001					
		□R-20025	□G-20034	□C-20020	□T-20020			
	VCCI:	□R-20141	□G-20134	□C-20103	□T-20104			
	Test Site – MRT Shenzhen Laboratory							
	Laboratory Location (Shenzhen)							
	1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China							
	Laboratory Accreditations							
	A2LA: 3628.02	CNAS: L10551						
	FCC: CN1284	ISED: CN0105						
	Test Site – MRT Taiwan Laboratory							
	Laboratory Location (Taiwan)							
	No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)							
	Laboratory Accreditations							
	TAF: L3261-1907	25						
	FCC: 291082, TW	/3261	ISED:	TW3261				





1.4. Product Information

Product Name	CAT-M Module		
Model No.	SLM156		
IMEI	Conducted Measurement: 868510050004513		
	Radiated Measurement: 868510050007318		
Operating Temperature	-35 ~ 75 °C		
Hardware Version	SLM156_V1.01_PCB		
Software Version	SLM156_5.0.12_EQ100		
Power Type	3.3 ~ 4.2Vdc, typical 3.8Vdc		
GSM Specification			
Band	GSM850, PCS1900		
Modulation	GMSK, 8PSK		
E-UTRA Specification			
Single Band Cat M Band 2, 4, 5, 12, 13, 14, 25, 26, 66			
	NB-IoT Band 2, 4, 5, 12, 13, 25, 26, 66, 71		
Modulation	Cat M: Uplink up to 16QAM, Downlink up to 16QAM		
	NB-IoT: Uplink BPSK, QPSK; Downlink QPSK		
Remark:			

Remark:

The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.

1.5. Antenna Details

Frequency Range (MHz)	Antenna Type	Max Peak Gain (dBi)
1850 ~ 1910		0.78
1710 ~ 1755		-0.10
824 ~ 849		0.44
699 ~ 716	PCB Antenna	1.72
777 ~ 787		1.59
788 ~ 798		0.66
1850 ~ 1915		0.71
814 ~ 849		0.49
1710 ~ 1780		-0.10
663 ~ 698		-2.38

Note: All antenna information (Antenna type and Peak Gain) is provided by the manufacturer.



1.6. Device Classification

According to the user manual, the antenna of this device is at least 20cm away from the body of the user, this device is classified as a **Mobile Device**. Therefore, the RF exposure evaluation requirements of FCC Part 2.1091 for mobile device exposure conditions subject to MPE limits.



2. RF Exposure Evaluation

2.1. Test Limits

According to FCC Part 2.1091, A mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 cm is normally maintained between the RF source's radiating structure(s) and the body of the user or nearby persons.

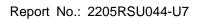
According to FCC Part 1.1307(b)(3)(i)(C), for the exemption in Table 1 to apply, R must be at least $\lambda/2\pi$, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole.

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source Frequency (MHz)	Threshold ERP (watts)			
0.3-1.34	1.920 R ²			
1.34-30	3.450 R ² /f ²			
30-300	3.83 R ²			
300-1500	0.0128 R ² f			
1500-100,000	19.2 R ²			
f = frequency in MHz, R = minimum separation distance in meters.				

According to FCC Part 1.1307(b)(3)(ii)(B), in the case of fixed RF sources operating in the same time-averaging period, or of multiple mobile or portable RF sources within a device operating in the same time averaging period, if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1 as indicated in the following equation.

$$\sum_{i=1}^{a} \frac{P_i}{P_{\text{th},i}} + \sum_{j=1}^{b} \frac{ERP_j}{ERP_{\text{th},j}} + \sum_{k=1}^{c} \frac{Evaluated_k}{Exposure\ Limit_k} \le 1$$





2.2. Test Result

Product	CAT-M Module
Test Item	RF Exposure Evaluation

Test Mode	Frequency Range	Max. Tune-up	Max. Antenna	EIRP (dBm)	ERP (W)	Compliance Distance (R)	Threshold ERP	Result
	(MHz)	Power	Gain	(42111)	(***)	(m)	(W)	
	((dBm)	(dBi)			()	(11)	
GSM 850	824.2~848.8	25.0	0.44	25.44	0.2133	0.20	0.422	Pass
PCS 1900	1850.2~1909.8	22.0	0.78	22.78	0.1156	0.20	0.768	Pass
Cat M Band 2	1850.7~1909.3	23.0	0.78	23.78	0.1455	0.20	0.768	Pass
Cat M Band 4	1710.7~1754.3	23.0	-0.10	22.90	0.1189	0.20	0.768	Pass
Cat M Band 5	824.7~848.3	23.0	0.44	23.44	0.1346	0.20	0.422	Pass
Cat M Band 12	699.7~715.3	23.0	1.72	24.72	0.1807	0.20	0.358	Pass
Cat M Band 13	779.5~784.5	23.0	1.59	24.59	0.1754	0.20	0.399	Pass
Cat M Band 14	790.5~795.5	23.0	0.66	23.66	0.1416	0.20	0.405	Pass
Cat M Band 25	1850.7~1914.3	23.0	0.71	23.71	0.1432	0.20	0.768	Pass
Cat M Band 26	814.7~848.3	23.0	0.49	23.49	0.1361	0.20	0.417	Pass
Cat M Band 66	1710.7~1779.3	23.0	-0.10	22.90	0.1189	0.20	0.768	Pass
NB-IoT Band 2	1850.2~1909.8	23.0	0.78	23.78	0.1455	0.20	0.768	Pass
NB-IoT Band 4	1710.2~1754.8	23.0	-0.10	22.90	0.1189	0.20	0.768	Pass
NB-IoT Band 5	824.2~848.8	23.0	0.44	23.44	0.1346	0.20	0.422	Pass
NB-IoT Band 12	699.2~715.8	23.0	1.72	24.72	0.1807	0.20	0.358	Pass
NB-IoT Band 13	777.2~786.8	23.0	1.59	24.59	0.1754	0.20	0.398	Pass
NB-IoT Band 25	1850.2~1914.8	23.0	0.71	23.71	0.1432	0.20	0.768	Pass
NB-IoT Band 26	814.2~823.8	23.0	0.49	23.49	0.1361	0.20	0.417	Pass
NB-IoT Band 66	1710.2~1779.8	23.0	-0.10	22.90	0.1189	0.20	0.768	Pass
NB-IoT Band 71	663.2~697.8	23.0	-2.38	20.62	0.0703	0.20	0.340	Pass

Note:

- 1. EIRP (dBm) = Max. Tune-up Power (dBm) + Max. Antenna Gain (dBi)
- 2. ERP (W) = $10^{[ERP (dBm) 30]/10}$ = $10^{[EIRP (dBm) 2.15 (dB) 30]/10}$

Therefore, this device meets the RF Exposure requirements when it is installed and operated with a minimum distance of 20cm between the radiator and user.

— The End –	
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