NVLAP LAB CODE 600341-0

MAXIMUM PERMISSIBLE EXPOSURE EVALUATION REPORT

Applicant:	**Fujian Newland Payment Technology Co.,Ltd.**
Address:	**No. B602, Building #1, Haixia Jingmao Plaza, Fuzhou Bonded Area 350015, Fujian, China**
Product Name:	**Multi-mode Smart LTE Module**
FCC ID:	**2AM6U-SC200ENA**
Standard(s):	**47 CFR §1.1310, 47 CFR §2.1091, 47 CFR §15.247(i), 47 CFR §15.407(f)**
Report Number:	**2402U80022E-RF-00E**
Report Date:	**2024/8/9**

The above device has been tested and found compliant with the requirement of the relative standards by Bay Area Compliance Laboratories Corp. (Dongguan).

Reviewed By: Gavin Xu	**Approved By:** Ivan Cao
Title: RF Engineer	Title: EMC Manager

Bay Area Compliance Laboratories Corp. (Dongguan)
No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China
Tel: +86-769-86858888
Fax: +86-769-86858891
www.baclcorp.com.cn

CONTENTS

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	2402U80022E-RF-00E	Original Report	2024/8/9

1. GENERAL INFORMATION

1.1 General Description Of Equipment under Test

EUT Name:	Multi-mode Smart LTE Module
EUT Model:	SC200E-NA
Rated Input Voltage:	DC 3.8V
EUT Received Date:	2024/6/15
EUT Received Status:	Good

Output Power And Antenna Gain Information:

Operation Modes	Frequency (MHz)	Antenna Gain (dBi)	Conducted output power including Tune-up Tolerance (dBm)	EIRP/ERP (dBm)	Limit (dBm)
Bluetooth BDR/EDR	2402-2480	-1.48	10	8.52	/
2.4G Wifi	2412-2462	-1.48	19.5	18.02	/
5G Wifi	5150-5850	1.51	18.5	20.01	/
LTE B2	1850-1910	0.29	25	25.29	33.0
LTE B4	1710-1755	0.99	25	25.99	30.0
LTE B5	824-849	0.26	25	25.26	38.45
LTE B7	2500-2570	-2.56	25	22.44	33.0
LTE B12	699-716	0.37	25	25.37	34.77
LTE B13	777-787	-0.07	25	24.93	34.77
LTE B14	788-798	0.19	25	25.19	34.77
LTE B17	704-716	0.37	25	25.37	34.77
LTE B25	1850-1915	0.29	25	25.29	30.00
LTE B26	814-824	0.19	25	25.19	38.45
LTE B26	824-849	0.26	25	25.26	38.45
LTE B41	2496-2690	-0.72	25	24.28	33.0
LTE B66	1710-1780	0.99	25	25.99	30.0
LTE B71	663-698	0.37	25	25.37	34.77
Note: ERP is for operation below 1 GHz and EIRP for above 1 GHz.					

2. RF EXPOSURE EVALUATION (MPE)

2.1 RF Exposure Evaluation

2.1.1 Applicable Standard

According to subpart 15.247(i) ,15.407(f)and subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
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
1500–100,000	/	/	1.0	30

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

According to §1.1310 and §2.1091 RF exposure is calculated.

2.1.2 Calculation formula:

Prediction of power density at the distance of the applicable MPE limit
$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm^2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

2.1.3 Calculated Data:

Operation Modes	Frequency (MHz)	Antenna Gain		Conducted output power including Tune-up Tolerance		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
		(dBi)	(numeric)	(dBm)	(mW)			
Bluetooth BDR/EDR	2402-2480	-1.48	0.71	10	10.00	20.00	0.001	1.0
2.4G Wifi	2412-2462	-1.48	0.71	19.5	89.13	20.00	0.013	1.0
5G Wifi	5150-5850	1.51	1.42	18.5	70.79	20.00	0.020	1.0
LTE B2	1850-1910	0.29	1.07	25	316.23	20.00	0.067	1.0
LTE B4	1710-1755	0.99	1.26	25	316.23	20.00	0.079	1.0
LTE B5	824-849	0.26	1.06	25	316.23	20.00	0.067	0.55
LTE B7	2500-2570	-2.56	0.55	25	316.23	20.00	0.035	1.0
LTE B12	699-716	0.37	1.09	25	316.23	20.00	0.069	0.47
LTE B13	777-787	-0.07	0.98	25	316.23	20.00	0.062	0.52
LTE B14	788-798	0.19	1.04	25	316.23	20.00	0.066	0.52
LTE B17	704-716	0.37	1.09	25	316.23	20.00	0.069	0.47
LTE B25	1850-1915	0.29	1.07	25	316.23	20.00	0.067	1.0
LTE B26	814-824	0.19	1.04	25	316.23	20.00	0.066	0.54
LTE B26	824-849	0.26	1.06	25	316.23	20.00	0.067	0.55
LTE B41	2496-2690	-0.72	0.85	25	316.23	20.00	0.053	1.0
LTE B66	1710-1780	0.99	1.26	25	316.23	20.00	0.079	1.0
LTE B71	663-698	0.37	1.09	25	316.23	20.00	0.069	0.44

Note:
The Conducted output power including Tune-up Tolerance provided by manufacturer.

For Simultaneous transmission:

Bluetooth BDR/EDR,2.4G Wifi and 5G Wifi can`t transmit simultaneously,
But Bluetooth BDR/EDR/2.4G Wifi/5G Wifi can transmit simultaneously with WWAN:

$$\sum_i \frac{S_i}{S_{Limit,i}} \le 1$$

$= S_{5G\ Wifi} / S_{limit\text{-}5G\ Wifi} + S_{WWAN} / S_{limit\text{-}WWAN}$

=0.020/1.0+0.069/0.44

=0.177

<1

Result: Compliant. The device compliant Simultaneous transmission at 20cm distances.

APPENDIX A - EUT PHOTOGRAPHS

Please refer to the attachment 2402U80022E-RF-EXP EUT EXTERNAL PHOTOGRAPHS and 2402U80022E-RF-INP EUT INTERNAL PHOTOGRAPHS.

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