

Report No.: SEWA2307000102RG06

Rev.: 01

Page: 1 of 7

# TEST REPORT

**Application No.:** SEWA2307000102RG  
**Applicant:** Quectel Wireless Solutions Co., Ltd.  
**Address of Applicant:** Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233  
**Manufacturer:** Quectel Wireless Solutions Co., Ltd.  
**Address of Manufacturer:** Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233  
**EUT Description:** Smart Module  
**Model No.:** SC200E-GL  
**Trade Mark:** QUECTEL  
**FCC ID:** XMR2023SC200EGL  
**Standards:** 47 CFR Part 2.1091  
 FCC KDB 447498 D01 v06  
**Date of Receipt:** 2023/09/02  
**Date of Issue:** 2023/10/26

<b>Test Result:</b>	<b>PASS*</b>
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\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Well Wei  
 Wireless Laboratory Manager



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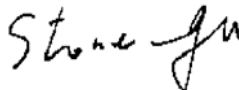
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# 1 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2023/10/26		Original

<b>Prepared By</b>		 <hr/> (Nick Hu) / Test Engineer
<b>Checked By</b>		 <hr/> (Stone Gu) / Reviewer



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## 2 General Information

### 2.1 Client Information

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Manufacturer:	Quectel Wireless Solutions Co., Ltd.
Address of Manufacturer:	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233

### 2.2 Test Facility

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

**• A2LA (Certificate No. 6336.01)**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 6336.01.

**• Innovation, Science and Economic Development Canada**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0120.

IC#: 27594.

**• FCC –Designation Number: CN1312**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized as an accredited testing laboratory.

Designation Number: CN1312.

Test Firm Registration Number: 717327



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### 2.3 General Description of EUT

EUT Description:	Smart Module		
Model No.:	SC200E-GL		
Trade Mark:	QUECTEL		
Hardware Version:	R1.0		
Software Version:	SC200EGLNAR12A03		
Antenna Type:	<input checked="" type="checkbox"/> External, <input type="checkbox"/> Integrated		
Antenna Gain:	GSM850:	2.13dBi	GSM1900: 1.59dBi
	WCDMA Band II:	1.59dBi	WCDMA Band IV: 2dBi
	WCDMA Band V:	2.13dBi	
	LTE Band 2:	1.59dBi	LTE Band 4: 2dBi
	LTE Band 5:	2.29dBi	LTE Band 7: 3dBi
	LTE Band 12:	3.26dBi	LTE Band 13: 4.45dBi
	LTE Band 14:	3.63dBi	LTE Band 17: 3.26dBi
	LTE Band 25:	1.59dBi	LTE Band 26: 2.53dBi
	LTE Band 38:	2.2dBi	LTE Band 41: 2.68dBi
	LTE Band 66:	2dBi	LTE Band 71: 1.66dBi
	Bluetooth	0.47dBi	
	2.4GWIFI:	0.47dBi	
	5150MHz to 5250MHz:	-0.67dBi;	
	5250MHz to 5350MHz:	-0.19dBi;	
	5470MHz to 5725MHz:	1.28dBi;	
	5725MHz to 5850MHz:	1.1dBi;	
Note:	The antenna gain are derived from the gain information report provided by the manufacturer.		
Remark:	As above information is provided and confirmed by the applicant. SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.		



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### 3 RF Exposure Evaluation

#### 3.1 RF Exposure Compliance Requirement

##### 3.1.1 Limits

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	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  
 RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).

Friis Formula

Friis transmission formula:  $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

$G$  = gain of antenna in linear scale

$\pi$  = 3.1416

$R$  = distance between observation point and center of the radiator in cm

$P_d$  is the limit of MPE, 1 mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance  $r$  where the MPE limit is reached.



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### 3.1.2 Test Procedure

Software provided by client enabled the EUT to transmit data at lowest, middle and highest channel individually

### 3.1.3 EUT RF Exposure Evaluation

Output Power Into Antenna & RF Exposure Evaluation Distance:

This confirmed that the device comply with MPE limit.

Operating Band	Frequency (MHz)	Antenna Gain (dBi)	Max Conducted Power (dBm)	EIRP(ERP) (dBm)	EIRP(ERP) Limit (dBm)	Power Density at R = 20 cm (mW/cm2)	Limit (mW/cm2)	Gain according to EIRP(ERP) (dBi)	Gain according to Pd (dBi)	Max Gain Allowed (dBi)	conclusion
GSM850	824.2	2.13	35.00	34.98	38.50	0.1238	0.5495	5.65	8.60	5.65	Pass
GSM1900	1850.2	1.59	31.00	32.59	33.00	0.0435	1.0000	2.00	15.20	2.00	Pass
WCDMA B2	1852.4	1.59	25.00	26.59	33.00	0.0907	1.0000	8.00	12.01	8.00	Pass
WCDMA B4	1712.4	2	25.00	27.00	30.00	0.0997	1.0000	5.00	12.01	5.00	Pass
WCDMA B5	828.4	2.13	25.00	24.98	38.50	0.1027	0.5523	15.65	9.43	9.43	Pass
LTE Band 2	1850.7	1.59	25.00	26.59	33.00	0.0907	1.0000	8.00	12.01	8.00	Pass
LTE Band 4	1710.7	2.00	25.00	27.00	30.00	0.0997	1.0000	5.00	12.01	5.00	Pass
LTE Band 5	824.7	2.29	25.00	25.14	38.45	0.1066	0.5498	15.60	9.41	9.41	Pass
LTE Band 7	2502.5	3.00	25.00	28.00	33.00	0.1255	1.0000	8.00	12.01	8.00	Pass
LTE Band 12	699.7	3.26	25.00	26.11	34.77	0.1333	0.4665	11.92	8.70	8.70	Pass
LTE Band 13	779.5	4.45	25.00	27.30	34.77	0.1753	0.5197	11.92	9.16	9.16	Pass
LTE Band 14	790.5	3.63	25.00	26.48	34.77	0.1451	0.5270	11.92	9.23	9.23	Pass
LTE Band 17	706.5	3.26	25.00	26.11	34.77	0.1333	0.4710	11.92	8.74	8.74	Pass
LTE Band 25	1852.5	1.59	25.00	26.59	33.00	0.0907	1.0000	8.00	12.01	8.00	Pass
LTE Band 26 (814-824)	814.7	2.53	25.00	25.38	NA	0.1126	0.5431	NA	9.36	9.36	Pass
LTE Band 26 (824-849)	824.7	2.53	25.00	25.38	38.45	0.1126	0.5498	15.60	9.41	9.41	Pass
LTE Band 38	2572.5	2.20	25.00	27.20	30.00	0.1044	1.0000	5.00	12.01	5.00	Pass
LTE Band 41	2498.5	2.68	25.00	27.68	33.00	0.1166	1.0000	8.00	12.01	8.00	Pass
LTE Band 66	1710.7	2.00	25.00	27.00	30.00	0.0997	1.0000	5.00	12.01	5.00	Pass
LTE Band 71	665.5	1.66	25.00	24.51	34.77	0.0922	0.4437	11.92	8.48	8.48	Pass
Bluetooth	2402.0	0.47	9.00	9.47	30.00	0.0018	1.0000	N/A	N/A	N/A	Pass
2.4Gwifi	2412.0	0.47	17.00	17.47	30.00	0.0111	1.0000	N/A	N/A	N/A	Pass
5Gwifi	5180.0	1.28	18.00	19.28	30.00	0.0169	1.0000	N/A	N/A	N/A	Pass

Remark:

1. Frame-average power=Burst power+ Division Factors(-9.19)
2. The prototype does not support simultaneous transmission.

---End of Report---



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