

TEST REPORT

Application No.: SUCR2602000130MO
FCC ID: XMR2024RG650VNA
Applicant: Quectel Wireless Solutions Co., Ltd.
Address of Applicant: No. 8 Waipojing Road, Sijing Town, Songjiang District, Shanghai 201601, China
Manufacturer: Quectel Wireless Solutions Co., Ltd.
Address of Manufacturer: No. 8 Waipojing Road, Sijing Town, Songjiang District, Shanghai 201601, China
EUT Description: 5G Sub-6 GHz LGA Module
Model No.: RG650V-NA
Trade Mark: QUECTEL
Standards: 47 CFR Part 2.1091
FCC KDB 447498 D01 v06
Date of Receipt: 2026-02-06
Date of Issue: 2026-03-31

Test Result:	PASS*
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* In the configuration tested, the EUT complied with the standards specified above.

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

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Revision Record			
Version	Description	Date	Remark
00	Original	2026-03-31	/

Authorized for issue by:				
Tested By		Nature Shen		
		Nature Shen/Project Engineer		
Approved By		Cedar cheng		
		Cedar Cheng /Reviewer		

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1 General Information

1.1 Client Information

Applicant:	Quectel Wireless Solutions Co., Ltd.
Address of Applicant:	No. 8 Waipojing Road, Sijing Town, Songjiang District, Shanghai 201601, China
Manufacturer:	Quectel Wireless Solutions Co., Ltd.
Address of Manufacturer:	No. 8 Waipojing Road, Sijing Town, Songjiang District, Shanghai 201601, China

1.2 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).

- **FCC (Designation Number: CN1312)**

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. has been recognized as an accredited testing laboratory. Test Firm Registration Number: 717327

- **ISED (CAB Identifier: CN0120)**

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory.

Company Number: 27594

1.3 General Description of EUT

Hardware Version:	R1.0	
Software Version:	RG650VNA01ADR02A03G8G	
Power Supply:	3.8V	
Antenna Type:	Dipole Antenna	
Feature:	UL 2*2 MIMO: NR Band n2; NR Band n5; NR Band n7; NR Band n25; NR Band n38; NR Band n41; NR Band n48; NR Band n66; NR Band n70; NR Band n71; NR Band n77; NR Band n78;	
Power Class:	Class 2: LTE Band 38; LTE Band 41; LTE Band 42; LTE Band 43; NR Band n2; NR Band n5; NR Band n7; NR Band n25; NR Band n66; NR Band n71; Class 1.5: UL 2*2 MIMO: NR Band n38; NR Band n41; NR Band n77; NR Band n78;	
Antenna Gain:	LTE Band 2:	1.6dBi
	LTE Band 4:	1.2dBi
	LTE Band 5:	0.7dBi
	LTE Band 7:	2.7dBi
	LTE Band 12:	0.5dBi
	LTE Band 13:	0.2dBi
	LTE Band 14:	0.1dBi
	LTE Band 17:	0.5dBi
	LTE Band 25:	1.7dBi
	LTE Band 26:	0.7dBi
	LTE Band 30:	-5.7dBi
	LTE Band 38:	2.4dB
	LTE Band 41:	2.7dBi
	LTE Band 42:	-2.01dBi
	LTE Band 43:	-7.1dBi
	LTE Band 48:	-6.12dBi
	LTE Band 66:	1.4dBi
	LTE Band 71:	1.22dBi
	LTE CA_2C:	1.6dBi
	LTE CA_7C:	2.7dBi
	LTE CA_12B:	0.5dBi
	LTE CA_38C:	2.4dBi
	LTE CA_41C:	2.7dBi
	LTE CA_42C:	-2.01dBi
	LTE CA_43C:	-7.1dBi
	LTE CA_48C:	-6.12dBi
	LTE CA_66C:	1.4dBi
	LTE CA_66B:	1.4dBi
	LTE CA_5B:	0.7dBi
	LTE CA_48B:	-6.12dBi
	NR Band n2:	1.6dBi
	NR Band n5:	0.7dBi
	NR Band n7:	2.7dBi
	NR Band n12:	0.5dBi
	NR Band n13:	0.2dBi
	NR Band n14:	0.1dBi
	NR Band n25:	1.7dBi
	NR Band n26:	0.7dBi
	NR Band n30:	-5.7dBi
	NR Band n38:	2.4dBi
	NR Band n41:	2.7dBi
	NR Band n48:	-6.12dBi
	NR Band n66:	1.4dBi
	NR Band n70:	1.3dBi
	NR Band n71:	1.22dBi
	NR Band n77:	-0.64dBi

	NR Band n78: -0.64dBi LTE CA: LTE CA:12A-25A/12A-30A/12A-66A/12B/13A-66A/14A-30A/14A-66A/ 25A-26A/2A-12A/2A-13A/2A-14A/2A-17A/2A-30A/2A-4A/2A-5A/ 2A-66A/2A-71A/2A-7A/2C/30A-66A/38C/41C/42C/43C/48B/48C/ 4A-12A/4A-13A/4A-17A/4A-30A/4A-5A/4A-71A/4A-7A/5A-25A/5A-30A/ 5A-66A/5A-7A/5B/66B/66C/7A-12A/7A-13A/7A-26A/7A-66A/7C/ 2A-26A/7A-71A/25A-66A/7A-25A ENDC: DC_13A_n66A/DC_5A_n2A/DC_14A_n2A/DC_30A_n2A/DC_2A_n5A/ DC_12A_n5A/DC_30A_n5A/DC_66A_n5A/DC_2A_n12A/DC_30A_n12A/ DC_66A_n12A/DC_2A_n14A/DC_30A_n14A/DC_66A_n14A/DC_2A_n30A/ DC_5A_n30A/DC_12A_n30A/DC_14A_n30A/DC_66A_n30A/DC_2A_n66A/ DC_5A_n66A/DC_12A_n66A/DC_14A_n66A/DC_30A_n66A/DC_12A_n2A/ DC_71A_n2A/DC_71A_n2A/DC_71A_n66A/DC_2A_n71A/DC_66A_n71A/ DC_66A_n25A/DC_66A_n41A/DC_66A_n41A/DC_26A_n41A/DC_7A_n78A/ DC_38A_n78A/DC_5A_n78A/DC_7A_n5A/DC_66A_n78A/DC_2A_n78A/ DC_5A_n71A/DC_7A_n71A/DC_12A_n71A/DC_12A_n78A/DC_13A_n71A/ DC_5A_n7A/DC_12A_n7A/DC_66A_n7A/DC_5A_n41A/DC_71A_n7A/ DC_7A_n12A/DC_13A_n2A/DC_48A_n5A/DC_48A_n66A/DC_7A_n66A/ DC_13A_n78A/DC_41A_n77A/DC_41A_n78A/DC_4A_n41A/DC_66A_n38A/ DC_2A_n38A/DC_12A_n38A/DC_4A_n38A/DC_5A_n38A/DC_4A_n78A/ DC_12A_n25A/DC_7A_n77A/DC_71A_n78A/DC_71A_n38A/DC_13A_n7A/ DC_12A_n41A/DC_2A_n7A/DC_7A_n2A/DC_2A_n77A/DC_5A_n77A/ DC_13A_n77A/DC_66A_n77A/DC_12A_n77A/DC_14A_n77A/ DC_30A_n77A/DC_26A_n78A/DC_71A_n41A/DC_4A_n2A/DC_7A_n25A/ DC_7A_n25A/DC_5A_n25A/DC_5A_n25A/DC_5A_n12A/DC_71A_n12A/ DC_4A_n7A/DC_4A_n7A/DC_25A_n78A/DC_25A_n77A/DC_48A_n71A/ DC_48A_n12A/DC_71A_n77A/DC_48A_n2A/DC_14A_n5A/DC_71A_n5A/ DC_7A_n26A/DC_71A_n48A/DC_4A_n5A NR CA: n25A-n41A/n25A-n41A/n41A-n71A/n41A-n71A/n41A-n71A/n66A-n78A/ n7A-n77A/n2A-n77A/n5A-n77A/n66A-n77A/n30A-n77A/n30A-n77A/ n30A-n77A/n5A-n48A/n5A-n48A/n5A-n48A/n71A-n77A/n12A-n77A/ n14A-n77A/n71A-n78A/n2A-n78A/n25A-n78A/n38A-n66A/n25A-n48A/ n25A-n77A/n25A-n38A/n2A-n41A/n12A-n41A/n12A-n78A/n13A-n77A/ n5A-n41A/n12A-n48A/n70A-n78A/n41A-n70A/n26A-n78A/n26A-n77A/ N38A_N71A 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.

2 RF Exposure Evaluation

2.1 RF Exposure Compliance Requirement

2.1.1 Limits

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 Exposures				
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
1500-100,000	/	/	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
1500-100,000	/	/	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/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

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

P_d is the limit of MPE, 1 mW/cm². 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.

2.1.2 Test Procedure

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

2.1.3 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)	MIMO Directional gain	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
LTE Band 2/LTE CA_2C	1850.7	1.60	NA	25.00	26.60	33.00	0.0909	1.0000	8.00	12.01	8.00	Pass
LTE Band 4	1710.7	1.20	NA	25.00	26.20	30.00	0.0829	1.0000	5.00	12.01	5.00	Pass
LTE Band 5/LTE CA_5B	824.7	0.70	NA	25.00	23.55	38.45	0.0739	0.5498	15.60	9.41	9.41	Pass
LTE Band 7/LTE CA_7C	2502.5	2.70	NA	25.00	27.70	33.00	0.1171	1.0000	8.00	12.01	8.00	Pass
LTE Band 12/LTE CA_12B	699.7	0.50	NA	25.00	23.35	34.77	0.0706	0.4665	11.92	8.70	8.70	Pass
LTE Band 13	779.5	0.20	NA	25.00	23.05	34.77	0.0659	0.5197	11.92	9.16	9.16	Pass
LTE Band 14	790.5	0.10	NA	25.00	22.95	34.77	0.0644	0.5270	11.92	9.23	9.23	Pass
LTE Band 17	706.5	0.50	NA	25.00	23.35	34.77	0.0706	0.4710	11.92	8.74	8.74	Pass
LTE Band 25	1850.7	1.70	NA	25.00	26.70	33.00	0.0931	1.0000	8.00	12.01	8.00	Pass
LTE Band 26(814-824)	814.7	0.70	NA	25.00	23.55	NA	0.0739	0.5431	NA	9.36	9.36	Pass
LTE Band 26(824-849)	824.7	0.70	NA	25.00	23.55	38.45	0.0739	0.5498	15.60	9.41	9.41	Pass
LTE Band 30	2307.5	-5.70	NA	24.00	18.30	23.98	0.0135	1.0000	-0.02	13.01	-0.02	Pass
LTE Band 38	2572.5	2.40	NA	28.00	30.40	33.00	0.2181	1.0000	5.00	9.01	5.00	Pass
LTE CA_38C	2572.5	2.40	NA	25.00	27.40	33.00	0.1093	1.0000	8.00	12.01	8.00	Pass
LTE Band 41	2498.5	2.70	NA	28.00	30.70	33.00	0.2337	1.0000	5.00	9.01	5.00	Pass
LTE CA_41C	2498.5	2.70	NA	25.00	27.70	33.00	0.1171	1.0000	8.00	12.01	8.00	Pass
LTE Band 42(3450-3550)	3452.5	-2.01	NA	28.00	25.99	30.00	0.0790	1.0000	2.00	9.01	2.00	Pass
LTE CA_42C	3452.5	-2.01	NA	25.00	22.99	30.00	0.0396	1.0000	5.00	12.01	5.00	Pass
LTE Band 43(3700-3800)	3702.5	-7.10	NA	28.00	20.90	30.00	0.0245	1.0000	2.00	9.01	2.00	Pass
LTE CA_43C	3702.5	-7.10	NA	25.00	17.90	30.00	0.0123	1.0000	5.00	12.01	5.00	Pass
LTE Band 48/LTE CA_48C/LTE CA_48B	3552.5	-6.12	NA	25.00	18.88	23.00	0.0154	1.0000	-2.00	12.01	-2.00	Pass
LTE Band 66/LTE CA_66B/LTE CA_66C	1710.7	1.40	NA	25.00	26.40	30.00	0.0868	1.0000	5.00	12.01	5.00	Pass
LTE Band 71	665.5	1.22	NA	25.00	24.07	34.77	0.0833	0.4437	11.92	8.48	8.48	Pass

Operating Band	Frequency (MHz)	Antenna Gain (dBi)	MIMO Directional gain	Max Conducted Power (dBm)	EIRP(ERP) (dBm)	EIRP(ERP) Limit (dBm)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)	Gain according to EIRP(ERP) (dBi)	Gain according to Pd (dBi)	Max Gain Allowed (dBi)	conclusion
NR Band n2	1852.5	1.60	NA	25.00	26.60	33.00	0.0909	1.0000	8.00	12.01	8.00	Pass
NR Band n2(MIMO)	1852.5	1.60	1.60	28.00	29.60	33.00	0.1814	1.0000	5.00	9.01	5.00	Pass
NR Band n5	826.5	0.70	NA	25.00	23.55	38.45	0.0739	0.5510	15.60	9.42	9.42	Pass
NR Band n5(MIMO)	826.5	0.70	0.70	28.00	26.55	38.45	0.1475	0.5510	12.60	6.42	6.42	Pass
NR Band n7	2502.5	2.70	NA	25.00	27.70	33.00	0.1171	1.0000	8.00	12.01	8.00	Pass
NR Band n7(MIMO)	2502.5	2.70	2.70	28.00	30.70	33.00	0.2337	1.0000	5.00	9.01	5.00	Pass
NR Band n12	701.5	0.50	NA	25.00	23.35	34.77	0.0706	0.4677	11.92	8.71	8.71	Pass
NR Band n13	779.5	0.20	NA	25.00	23.05	34.77	0.0659	0.5197	11.92	9.16	9.16	Pass
NR Band n14	790.5	0.10	NA	25.00	22.95	34.77	0.0644	0.5270	11.92	9.23	9.23	Pass
NR Band n25	1852.5	1.70	NA	25.00	26.70	33.00	0.0931	1.0000	8.00	12.01	8.00	Pass
NR Band n25(MIMO)	1852.5	1.70	1.70	28.00	29.70	33.00	0.1857	1.0000	5.00	9.01	5.00	Pass
NR Band n26(814-824)	816.5	0.70	NA	25.00	23.55	NA	0.0739	0.5443	NA	9.37	9.37	Pass
NR Band n26(824-849)	826.5	0.70	NA	25.00	23.55	38.45	0.0739	0.5510	15.60	9.42	9.42	Pass
NR Band n30	2307.5	-5.70	NA	24.00	18.30	23.98	0.0135	1.0000	-0.02	13.01	-0.02	Pass
NR Band n38	2575.0	2.40	NA	28.00	30.40	33.00	0.2181	1.0000	5.00	9.01	5.00	Pass
NR Band n38(MIMO)	2575.0	2.40	2.40	30.00	32.40	33.00	0.3457	1.0000	3.00	7.01	3.00	Pass
NR Band n41	2501.0	2.70	NA	28.00	30.70	33.00	0.2337	1.0000	5.00	9.01	5.00	Pass
NR Band n41(MIMO)	2501.0	2.70	2.70	30.00	32.70	33.00	0.3705	1.0000	3.00	7.01	3.00	Pass
NR Band n48	3555.0	-6.12	NA	25.00	18.88	23.00	0.0154	1.0000	-2.00	12.01	-2.00	Pass
NR Band n48(MIMO)	3555.0	-6.12	-6.12	25.00	18.88	23.00	0.0154	1.0000	-2.00	12.01	-2.00	Pass
NR Band n66	1712.5	1.40	NA	25.00	26.40	30.00	0.0868	1.0000	5.00	12.01	5.00	Pass
NR Band n66(MIMO)	1712.5	1.40	1.40	28.00	29.40	30.00	0.1733	1.0000	2.00	9.01	2.00	Pass
NR Band n70	1697.5	1.30	NA	25.00	26.30	30.00	0.0849	1.0000	5.00	12.01	5.00	Pass
NR Band n70(MIMO)	1697.5	1.30	1.30	25.00	26.30	30.00	0.0849	1.0000	5.00	12.01	5.00	Pass
NR Band n71	665.5	1.22	NA	25.00	24.07	34.77	0.0833	0.4437	11.92	8.48	8.48	Pass
NR Band n71(MIMO)	665.5	1.22	1.22	28.00	27.07	34.77	0.1662	0.4437	8.92	5.48	5.48	Pass
NR Band n77 (3450-3550)	3455.0	-0.64	NA	28.00	27.36	30.00	0.1083	1.0000	2.00	9.01	2.00	Pass
NR Band n77 (3450-3550)(MIMO)	3455.0	-0.64	-0.64	30.00	29.36	30.00	0.1717	1.0000	0.00	7.01	0.00	Pass
NR Band n77 (3700-3980)	3705.0	-0.64	NA	28.00	27.36	30.00	0.1083	1.0000	2.00	9.01	2.00	Pass
NR Band n77 (3700-3980)(MIMO)	3705.0	-0.64	-0.64	30.00	29.36	30.00	0.1717	1.0000	0.00	7.01	0.00	Pass
NR Band n78 (3450-3550)	3455.0	-0.64	NA	28.00	27.36	30.00	0.1083	1.0000	2.00	9.01	2.00	Pass
NR Band n78 (3450-3550)(MIMO)	3455.0	-0.64	-0.64	30.00	29.36	30.00	0.1717	1.0000	0.00	7.01	0.00	Pass
NR Band n78 (3700-3800)	3705.0	-0.64	NA	28.00	27.36	30.00	0.1083	1.0000	2.00	9.01	2.00	Pass
NR Band n78 (3700-3800)(MIMO)	3705.0	-0.64	-0.64	30.00	29.36	30.00	0.1717	1.0000	0.00	7.01	0.00	Pass
Bluetooth	2402.0	5.00	NA	23.00	28.00	NA	0.1255	1.0000	NA	NA	NA	NA
WLAN2.4GHz	2412.0	5.00	NA	23.00	28.00	NA	0.1255	1.0000	NA	NA	NA	NA
WLAN5GHz	5180.0	5.00	NA	23.00	28.00	NA	0.1255	1.0000	NA	NA	NA	NA

Note:

- 1.This MPE analysis is applicable to any collocated transmitters with transmit power for WLAN is less than or equal to 28dBm and for Bluetooth is less than or equal to 28dBm.
- 2.A maximum antenna gain of 5dBi for WLAN/BT has been assumed for all collocated antennas.

Due to the EUT support NR ENDC and CA

Both LTE and NR/LTE band can transmit simultaneously, the formula of the calculated the MPE is:

$$\sum_{i=1}^n \frac{S_{E_i} (duty factor)}{MPE_{E_i}} < 1$$

NOTE The corresponding MEs must be expressed in terms of power density in the above summation

Therefore, the worst-case (NR CA_n41A-n71A) situation is $0.3705+0.3746=0.7451$, which is less than “1”, this confirmed that the device comply with MPE limit.

2.1.4 Exposure calculations for multiple sources

In order to ensure compliance with the MPE for a controlled environment, the sum of the ratios of the power density to the corresponding MPE should not exceed unity. That is

$$\sum_{i=1}^n \frac{S_i}{MPE_i} \leq 1$$

The product also has multiple transmitters The Simultaneous Transmission Possibilities are as below:

Simultaneous Tx Combination	Configuration
1	WWAN + WiFi 2.4G + WiFi 5G + Bluetooth

No.	Mode	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)	Result Ratio	Total Ratio	Limit	Result
1	NR Band n71(MIMO)*	0.1662	0.4437	0.3746	0.7511	1.0000	Pass
	Bluetooth	0.1255	1.0000	0.1255			
	WiFi 2.4G	0.1255	1.0000	0.1255			
	WiFi 5G	0.1255	1.0000	0.1255			

Remark*: This WWAN Band was recalculated on worst Band.

Note: Considering the WWAN module collocation with the WLAN and Bluetooth transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 3 collocated transmitters is compliant.

---End of Report---