

TEST REPORT

Application No.: KSCR2604000849AT
FCC ID: XMRAG591EROWL
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
Equipment Under Test (EUT):
EUT Name: Automotive Module
Model No.: AG591E-ROWL
Trade Mark: QUECTEL
Standards: 47 CFR Part 2.1091
FCC KDB 447498 D01 v06
Date of Receipt: 2026-04-18 to 2026-07-07
Date of Issue: 2026-07-21

Test Result:**PASS***

* 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.

Revision Record			
Version	Description	Date	Remark
00	Original	2026-07-21	/

Authorized for issue by:			
Tested By		Tommie Tang	
		Tommie_Tang/Project Engineer	
Approved By		Terry Hou	
		Terry Hou /Reviewer	



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1 General Information

1.1 General Description of EUT

Powe Supply:	DC 3.8V	
HVIN:	AG591E-ROWL	
PMN:	QUECTEL AG591E-ROWL	
FVIN:	AG591EROWLECR01A01M8G_OCPU	
IMEI:	869331070132252	
Antenna Type:	Dipole Antenna	
Antenna Gain:	GSM 850:	0.1 dBi (Provided by manufacturer)
	GSM 1900:	1.5 dBi (Provided by manufacturer)
	WCDMA Band II:	1.2 dBi (Provided by manufacturer)
	WCDMA Band IV:	1.1 dBi (Provided by manufacturer)
	WCDMA Band V:	0.1 dBi (Provided by manufacturer)
	LTE Band 2:	1.2 dBi (Provided by manufacturer)
	LTE Band 4:	1.1 dBi (Provided by manufacturer)
	LTE Band 5:	0.1 dBi (Provided by manufacturer)
	LTE Band 7:	1.2 dBi (Provided by manufacturer)
	LTE Band 26:	0.1 dBi (Provided by manufacturer)
	LTE Band 38:	1.4 dBi (Provided by manufacturer)
	LTE Band 41:	1.2 dBi (Provided by manufacturer)
	LTE CA_2C:	1.2 dBi (Provided by manufacturer)
	LTE CA_5B:	0.1 dBi (Provided by manufacturer)
	LTE CA_7C:	1.2 dBi (Provided by manufacturer)
	LTE CA_38C:	1.4 dBi (Provided by manufacturer)
	LTE CA_41C:	1.2 dBi (Provided by manufacturer)
	NR Band n2:	1.2 dBi (Provided by manufacturer)
	NR Band n41:	1.2 dBi (Provided by manufacturer)
	NR Band n77:	-3.48 dBi (Provided by manufacturer)
	NR Band n78:	-3.48 dBi (Provided by manufacturer)
	ENDC: DC_2A_n77A; DC_2A_n78A; DC_4A_n78A; DC_5A_n77A; DC_5A_n78A; DC_7A_n77A; DC_7A_n78A; DC_26A_n78A; DC_38A_n78A; DC_41A_n77A; DC_41A_n78A NR-CA: CA_n2A-n77A; CA_n2A-n78A	

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 complies with MPE limit.

Band	Frequency (MHz)	Max Conducted Power (dBm)	Antenna Gain (dBi)	EIRP(ERP) (dBm)	Distance R (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Max Gain according to EIRP(ERP) (dBi)	Max Gain according to Pd (dBi)	Max Gain Allowed (dBi)	Result
GSM 850*	824.2	27.99	0.10	25.94	20.0	0.08	0.55	12.61	9.02	9.02	Pass
PCS 1900*	1850.2	23.99	1.50	25.49	20.0	0.07	1.00	9.02	13.02	9.02	Pass
WCDMA Band II	1852.4	25	1.20	26.20	20.0	0.08	1.00	8.01	12.01	8.01	Pass
WCDMA Band IV	1712.4	25	1.10	26.10	20.0	0.08	1.00	5.00	12.01	5.00	Pass
WCDMA Band V	826.4	25	0.10	22.95	20.0	0.04	0.55	15.60	12.01	12.01	Pass
LTE Band 2/LTE CA 2C	1850.7	25	1.20	26.20	20.0	0.08	1.00	8.01	12.01	8.01	Pass
LTE Band 4	1710.7	25	1.10	26.10	20.0	0.08	1.00	5.00	12.01	5.00	Pass
LTE Band 5/LTE CA 5B	824.7	25	0.10	22.95	20.0	0.04	0.55	15.60	12.01	12.01	Pass
LTE Band 7/LTE CA 7C	2502.5	25	1.20	26.20	20.0	0.08	1.00	8.01	12.01	8.01	Pass
LTE Band 26(814-824)	816.5	25	0.10	22.95	20.0	0.04	0.54	27.15	12.01	12.01	Pass
LTE Band 26(824-849)	824.7	25	0.10	22.95	20.0	0.04	0.55	15.60	12.01	12.01	Pass
LTE Band 38/LTE CA 38C	2572.5	25	1.40	26.40	20.0	0.09	1.00	8.01	12.01	8.01	Pass
LTE Band 41/LTE CA 41C	2498.5	28	1.20	29.20	20.0	0.17	1.00	5.01	9.01	5.01	Pass
NR Band n2	1852.5	25	1.20	26.20	20.0	0.08	1.00	8.01	12.01	8.01	Pass
NR Band n41	2685.0	28	1.20	29.20	20.0	0.17	1.00	5.01	9.01	5.01	Pass
NR Band n77(3700-3980)	3705.0	28	-3.48	24.52	20.0	0.06	1.00	2.00	9.01	2.00	Pass
NR Band n77(3450-3550)	3455.0	28	-3.48	24.52	20.0	0.06	1.00	2.00	9.01	2.00	Pass
NR Band n78(3700-3800)	3705.0	28	-3.48	24.52	20.0	0.06	1.00	2.00	9.01	2.00	Pass
NR Band n78(3450-3550)	3455.0	28	-3.48	24.52	20.0	0.06	1.00	2.00	9.01	2.00	Pass

*Note: For GSM850 and PCS1900:

Band	Burst Tune up Power (dBm)	Division Factors (dB)	Time-Averaged Tune up Power (dBm)
GSM 850 (1TX slots)	35	-9.03	25.97
GSM 850 (2TX slots)	33	-6.02	26.98
GSM 850 (3TX slots)	31	-4.26	26.74
GSM 850 (4TX slots)	31	-3.01	27.99
GSM 1900 (1TX slots)	32	-9.03	22.97
GSM 1900 (2TX slots)	30	-6.02	23.98
GSM 1900 (3TX slots)	28	-4.26	23.74
GSM 1900 (4TX slots)	27	-3.01	23.99

Division Factors To average the power, the division factor is as follows:

1Txslot = 1 transmit time slot out of 8 time slots => conducted power divided by (8/1) => -9.03 dB

2Txslots = 2 transmit time slots out of 8 time slots => conducted power divided by (8/2) => -6.02 dB

3Txslots = 3 transmit time slots out of 8 time slots => conducted power divided by (8/3) => -4.26 dB

4Txslots = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.01 dB

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:

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

NOTE: The corresponding MEs must be expressed in terms of power density in the above summation. Therefore, the worst-case (DC_41A_n77A) situation is $0.17/1+0.06/1=0.23$, which is less than “1”, this confirmed that the device comply with MPE limit.

----End of Report---