

MPE TEST REPORT

Applicant Quectel Wireless Solutions Company Limited
FCC ID XMR201808EC25AF
Product LTE Module
Brand Quectel
Model EC25-AF; EC25-AF MINIPCIE
Report No. EFTA25080400-IE-03-M1
Issue Date October 15, 2025

Eurofins TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC 47 CFR Part 1 §1.1310, §2.1091**. The test results show that the equipment tested can demonstrate the compliance with the requirements as documented in this report.



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1 Test Laboratory

1.1 Notes of the Test Report

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1.2 Test Facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

1.3 Testing Location

Company: Eurofins TA Technology (Shanghai) Co., Ltd.
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1.4 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25°C
Relative humidity	Min. = 20%, Max. = 80%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

2 Description of Equipment Under Test

Client Information

Applicant	Quectel Wireless Solutions Company Limited
Applicant address	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China, 200233
Manufacturer	Quectel Wireless Solutions Company Limited
Manufacturer address	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China, 200233

General Technologies

EUT Description			
Model	EC25-AF; EC25-AF MINIPCIE		
IMEI	EC25-AF: 866834040000767 EC25-AF MINIPCIE: 866834040002375		
Hardware Version	R1.0		
Software Version	EC25AFFAR07A02M4G		
Frequency	Band	TX (MHz)	RX (MHz)
	WCDMA B2	1850 ~ 1910	1930 ~ 1990
	WCDMA B4	1710 ~ 1755	2110 ~ 2155
	WCDMA B5	824 ~ 849	869 ~ 894
	LTE Band 2	1850 ~ 1910	1930 ~ 1990
	LTE Band 4	1710 ~ 1755	2110 ~ 2155
	LTE Band 5	824 ~ 849	869 ~ 894
	LTE Band 12	699 ~ 716	729 ~ 746
	LTE Band 13	777 ~ 787	746 ~ 756
	LTE Band 14	788 ~ 798	758 ~ 768
	LTE Band 66	1710 ~ 1780	2110 ~ 2180
	LTE Band 71	663 ~ 698	617 ~ 652
Date of Sample Received	August 28, 2025		
Note: 1. The EUT is sent from the applicant to Eurofins TA and the information of the EUT is declared by the applicant. 2. All indications of Pass/Fail in this report are opinions expressed by Eurofins TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.			

The series model number is: EC25-AF; EC25-AF MINIPCIE. The difference of these models are have different marketing requirement.

Accessory equipment	
Evaluation Board	RF Cable
RS232-to-USB Cable	Antenna: Dipole Antenna
Headset	DC 5V Adaptor

3 Maximum Conducted Output Power

Band	Maximum Conducted Output Power	
	(dBm)	(mW)
WCDMA B2	25.00	316.23
WCDMA B4	25.00	316.23
WCDMA B5	25.00	316.23
LTE Band 2	25.00	316.23
LTE Band 4	25.00	316.23
LTE Band 5	25.00	316.23
LTE Band 12	25.00	316.23
LTE Band 13	25.00	316.23
LTE Band 14	25.00	316.23
LTE Band 66	25.00	316.23
LTE Band 71	25.00	316.23

4 MPE Limit

According to section 1.1310 of FCC 47 CFR Part 1, limits for maximum permissible exposure (MPE) are as following.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(i) LIMITS FOR OCCUPATIONAL/CONTROLLED EXPOSURE				
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
300-1,500			f/300	<6
1,500-100,000			5	<6
(ii) 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
300-1,500			f/1500	<30
1,500-100,000			1.0	<30

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

Note1. Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational / controlled limits apply provided he or she is made aware of the potential for exposure.

Note2: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

The maximum permissible exposure for 300~1500 MHz is f/1500, for 1500~100,000MHz is 1.0. So

Band	The Maximum Permissible Exposure (mW/cm ²)
WCDMA B2	1.000
WCDMA B4	1.000
WCDMA B5	0.549
LTE Band 2	1.000
LTE Band 4	1.000
LTE Band 5	0.549
LTE Band 12	0.466
LTE Band 13	0.518
LTE Band 14	0.525
LTE Band 66	1.000
LTE Band 71	0.442

5 RF Exposure Evaluation Result

RF exposure evaluation method is based on KDB 447498 D01, this calculation is based on the conducted power, maximum power and antenna gain with provides the minimum separation distance. The formula shown below is from OET Bulletin 65 Edition 97-01 Per KDB 447498 D01:

$$S = PG / 4\pi R^2$$

Where: S = power density (in appropriate units, e.g. mW/cm²)

P = Time-average maximum tune up procedure (in appropriate units, e.g., mW)

G = the numeric gain of the antenna

R = distance to the center of radiation of the antenna (20 cm = limit for MPE)

Band	Maximum Conducted Output Power (dBm)	EIRP limit (dBm)	Margin1 (dB)	Power density Limit		Margin2 (dB)	Final Margin (dB)
				(mW/cm ²)	(dBm)		
WCDMA II	25.000	33.000	8.000	1.000	37.013	12.013	8.000
WCDMA IV	25.000	30.000	5.000	1.000	37.013	12.013	5.000
WCDMA V	25.000	40.600	15.600	0.550	34.416	9.416	9.416
LTE Band 2	25.000	33.000	8.000	1.000	37.013	12.013	8.000
LTE Band 4	25.000	30.000	5.000	1.000	37.013	12.013	5.000
LTE Band 5	25.000	40.600	15.600	0.550	34.416	9.416	9.416
LTE Band 12	25.000	36.920	11.920	0.470	33.734	8.734	8.734
LTE Band 13	25.000	36.920	11.920	0.520	34.173	9.173	9.173
LTE Band 14	25.000	36.920	11.920	0.530	34.255	9.255	9.255
LTE Band 66	25.000	30.000	5.000	1.000	37.013	12.013	5.000
LTE Band 71	25.000	36.920	11.920	0.450	33.545	8.545	8.545

Note: 1. The Maximum allowed antenna gain per Band should be less than or equal to the Final Margin.

2. The Final Margin is determined and selected to the worst-case of Margin1 and Margin2.

3. Margin1=EIRP Limit(dBm)-Maximum Conducted Power (dBm). EIRP limit reference standard part22/ part24/part27and part90 for each band, EIRP = ERP + 2.15 (dB).

4. Margin2=Power density Limit(dBm)-Maximum Conducted Power (dBm). Power density Limit(dBm): The max. obtained by MPE with 20cm.

Band	Maximum Conducted Output Power (dBm)	MAX. antenna gain (dBi)	PG		Test Result (mW/cm ²)	Limit Value (mW/cm ²)	Conclusion
			(dBm)	(mW)			
WCDMA II	25.00	8.000	33.000	1995.262	0.397	1.000	Pass
WCDMA IV	25.00	5.000	30.000	1000.000	0.199	1.000	Pass
WCDMA V	25.00	9.416	34.416	2764.394	0.550	0.550	Pass
LTE Band 2	25.00	8.000	33.000	1995.262	0.397	1.000	Pass
LTE Band 4	25.00	5.000	30.000	1000.000	0.199	1.000	Pass
LTE Band 5	25.00	9.416	34.416	2764.394	0.550	0.550	Pass
LTE Band 12	25.00	8.734	33.734	2362.653	0.470	0.470	Pass
LTE Band 13	25.00	9.173	34.173	2613.966	0.520	0.520	Pass
LTE Band 14	25.00	9.255	34.255	2663.790	0.530	0.530	Pass
LTE Band 66	25.00	5.000	30.000	1000.000	0.199	1.000	Pass
LTE Band 71	25.00	8.545	33.545	2262.039	0.450	0.450	Pass
Note: $R = 20\text{cm}$ $\Gamma = 3.1416$							

This device does not support transmit simultaneously.

Note: For this device, minimum separation distance is 20cm, even if calculations indicate MPE distance is less

ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.

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