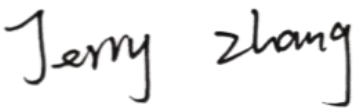
RF Test Report

Applicant:	Quectel Wireless Solutions Co., Ltd.
Address:	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233
Product:	Wi-Fi & Bluetooth Module
Model No.:	FLM142D
Brand Name:	QUECTEL
FCC ID:	XMR2024FLM142D
Standards:	FCC CFR47 Part 2.1091 FCC KDB 447498 D01 v06
Report No.:	PD20240175-R3C
Issue Date:	2025/01/17
Test Result:	PASS *

* **Testing performed at Hefei Panwin Technology Co., Ltd. on the above equipment indicates the product meets the requirements of the relevant standards.**



Reviewed By: Jerry Zhang **Approved By:** Alec Yang

Hefei Panwin Technology Co., Ltd.

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Revision History

Report No.	Version	Description	Issue Date	Note
PD20240175-R3C	01	Initial Report	2025/01/17	Valid

Remark:

We, Hefei Panwin Technology Co., Ltd., would like to declare that the tested sample has been evaluated in accordance with the procedures given in FCC CFR47 Part 2.1091 and shown compliance with the applicable technical standards. The evaluation related to FCC CFR47 Part 2 is not within the scope of A2LA accreditation.

CONTENTS

1 Test Laboratory

1.1 Notes of the Test Report

This report is invalid without signature of auditor and approver or with any alterations. The report shall not be partially reproduced without written approval of the testing company. Entrusted test results are only responsible for incoming samples. If there is any objection to the testing report, it shall be raised to the testing company within 15 days from the date of receiving the report. In the test results, "NA" means "not applicable", and the test items marked with "Δ" are subcontracted projects.

1.2 Testing Laboratory

Company Name	Hefei Panwin Technology Co., Ltd.
Address	Floor 1, Zone E, Plant 2#, Mingzhu Industrial Park, No.106 Chuangxin Avenue, High-tech Zone, Hefei City, Anhui Province,China
Telephone	+86-0551-63811775
Post Code	230031

2 General Description of Equipment under Test

2.1 Details of Application

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

2.2 Details of EUT

Product	Wi-Fi & Bluetooth Module
Model	FLM142D
HW Version	R1.0
SW Version	FLM142DAAR02A01M02
Antenna Type	PCB Antenna
Mode of Operation	Bluetooth LE Wi-Fi 2.4G
Max Antenna Gain	Bluetooth LE & Wi-Fi 2.4G: -1.85dBi
Rated Power Supply Voltage	Typical 3.3Vdc
Note : The declared of product specification for EUT and/or Antenna presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.	

3 Test Condition

3.1 Laboratory Environment

Temperature	Min.= 18℃, Max.=25℃
Relative Humidity	Min.= 30%, Max.=70%
Ground System Resistance	< 1 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.

4 Maximum Permissible Exposure (EMF)

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

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/f2)	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/f2)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

The MPE was calculated at 20 cm to show compliance with the power density limit.
The following formula was used to calculate the Power Density:

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

Where:

S = Power density (in appropriate units, e.g. mW/cm^2)

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)

-------- THE END --------

ANNEX A: Test Results

A.1 Maximum Measured Conducted Output Power and Antenna Gain

Band	TX Freq. (MHz)	Maximum Tune up power (dBm)	Maximum Antenna Gain (dBi)
Bluetooth LE	2402 to 2480	8.00	-1.85
Wi-Fi 2.4G	2412 to 2462	20.00	-1.85

A.2 Test Results of Maximum Permissible Exposure

Band	Maximum Power (dBm)	Antenna Gain(dBi)	Maximum EIRP(dBm)	PG (mW)	Test Result (mW/cm^2)	Limit Value (mW/cm^2)
Bluetooth LE	8.00	-1.85	6.15	4.121	0.001	1.000
Wi-Fi 2.4G	20.00	-1.85	18.15	65.313	0.013	1.000

Note 1: According to the EUT characteristic, Bluetooth and Wi-Fi 2.4G can't transmit simultaneously.

Note 2: For mobile or fixed location transmitters, minimum separation distance is 20cm, even if calculations indicate EMF distance is less.

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.

ANNEX B:The EUT Appearance

The EUT Appearance (internal and external photographs) are submitted separately.