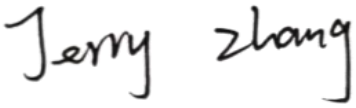
RF Test Report

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.:	FME164Q
Brand Name:	QUECTEL
FCC ID:	XMR2025FME164Q
Standards:	FCC CFR47 Part 15E
Report No.:	PD20250010-R3D
Issue Date:	2025/05/09
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.

Floor 1, Zone E, Plant 2#, Mingzhu Industrial Park, No.106 Chuangxin Avenue, High-tech Zone, Hefei City, Anhui Province,China

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Revision History

Report No.	Version	Description	Issue Date	Note
PD20250010-R3D	1	Initial Report	2025/05/09	Valid

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Summary of Test Results

No.	Test Case	FCC Rules	Verdict
1	Occupied Bandwidth Measurement	15.407(e)	PASS
2	Maximum Conducted Output Power Measurement	15.407(a)	PASS
3	Power Spectral Density Measurement	15.407(a)	PASS
4	Unwanted Emissions Measurement	15.407(b)	PASS
5	AC Conducted Emission Measurement	15.207	NA
6	Antenna Requirements	15.203 & 15.407(a)	PASS
7	Frequency Stability[Note1]	15.407(g)	NA

Date of Testing: 2025/02/06 to 2025/05/08
Date of Sample Received: 2025/01/24

• We, Hefei Panwin Technology Co., Ltd., would like to declare that the tested sample has been evaluated in accordance with the procedures given in applied standard(s) in **Section 2.3** of this report and shown compliance with the applicable technical standards.

• All indications of PASS/FAIL in this report are based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.

Note1: Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

1 General Information

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 Test Facility

A2LA (Certificate Number: 6849.01)

Hefei Panwin Technology Co., Ltd. has been accredited by American Association for Laboratory Accreditation to perform measurement.

FCC (Designation Number: CN1361, Test Firm Registration Number: 473156)

Hefei Panwin Technology Co., Ltd. has been accredited on the US Federal Communications Commission list of test facilities recognized to perform measurements.

1.3 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 General Information

Product	Wi-Fi & Bluetooth Module
Model	FME164Q
SN	Conducted: D1N24GG0E000064 Radiated: D1N24GG0E000065 & D1N24GG0E000079
Hardware Version	R1.0
Software Version	/
Antenna Type	External Antenna
Max. Conducted Power	Wi-Fi 5G: 20.08dBm
WLAN Mode Supported:	802.11a 802.11n 20M/40M 802.11ac 20M/40M/80M 802.11ax 20M/40M/80M
Antenna Gain	5150MHz to 5250MHz: -0.70dBi(Ant1),-0.70dBi(Ant2) 5250MHz to 5350MHz: -0.80dBi(Ant1),-0.80dBi(Ant2) 5470MHz to 5725MHz: -1.20dBi(Ant1),-1.20dBi(Ant2) 5725MHz to 5850MHz: -1.50dBi(Ant1),-1.50dBi(Ant2)
Test Band	U-NII-1(5150MHz-5250MHz) U-NII-2A(5250MHz-5350MHz) U-NII-2C(5470MHz-5725MHz) U-NII-3(5725MHz-5850MHz)
Operating voltage	Typical 3.3Vdc
Modulation Type	802.11a/n/ac/ax: BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM
Remark: 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.

2.3 Application Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 15 Subpart E
- FCC KDB 789033 D02 General UN ll Test Procedures New Rules v02r01
- ANSI C63.10-2013

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

3 Test Condition

3.1 Test Configuration

Test mode

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). The worst cases were recorded in this report.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes (Z, X, Y axis), receiver antenna polarization (horizontal and vertical), the worst emission was found in Z position and the worst case was recorded.This report presents the data for the worst polarity.

Test Mode	Data Rate(Mbps)
802.11a_CDD	6
802.11n 20M_MIMO	MCS0
802.11n 40M_MIMO	MCS0
802.11ac 20M_MIMO	MCS0
802.11ac 40M_MIMO	MCS0
802.11ac 80M_MIMO	MCS0
802.11ax 20M_MIMO	MCS0
802.11ax 40M_MIMO	MCS0
802.11ax 80M_MIMO	MCS0

Directional gain calculations

According to KDB 662911 D01Multiple Transmitter Output v02r01 2)f(i):

If all antennas have the same gain, Directional gain = G_{ANT} + Array Gain,

• For power spectral density (PSD) measurements on all devices,

Array Gain = 10 log(N_{ANT}/NSS=1) dB.

• For power measurements on IEEE 802.11 devices.

Array Gain = 0 dB (i.e., no array gain) for N_{ANT} ≤4;

Array Gain = 0 dB (i.e., no array gain) for channel widths≥40 MHz for any N_{ANT};

Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less, for 20-MHz channel widths with N_{ANT}≥5.

The Power and PSD limit should be modified if the directional gain of EUT is over 6dBi.

Operation Band (MHz)	Antenna1 Gain(dBi)	Antenna2 Gain(dBi)	Directional Gain For Power (dBi)	Directional Gain For PSD (dBi)	Power Limit Reduction (dBm)	PSD Limit Reduction (dBm)
5150 to 5250	-0.70	-0.70	-0.70	2.31	0	0
5250 to 5350	-0.80	-0.80	-0.80	2.21	0	0
5470 to 5725	-1.20	-1.20	-1.20	1.81	0	0
5725 to 5850	-1.50	-1.50	-1.50	1.51	0	0

3.2 Wireless Technology and Frequency Range

Wireless Technology	Bandwidth		Channel	Frequency
Wi-Fi	U-NII-1	20MHz	36	5180 MHz
			40	5200 MHz
			44	5220 MHz
			48	5240 MHz
		40MHz	38	5190 MHz
			46	5230 MHz
		80MHz	42	5210 MHz
	U-NII-2A	20MHz	52	5260 MHz
			56	5280 MHz
			60	5300 MHz
			64	5320 MHz
		40MHz	54	5270 MHz
			62	5310 MHz
		80MHz	58	5290 MHz
	U-NII-2C	20MHz	100	5500 MHz
			104	5520 MHz
			108	5540 MHz
			112	5560 MHz
			116	5580 MHz
			120	5600 MHz
			124	5620 MHz
			128	5640 MHz
			132	5660 MHz
			136	5680 MHz
			140	5700 MHz
			144	5720 MHz
		40MHz	102	5510 MHz
			110	5550 MHz
			118	5590 MHz
			126	5630 MHz
			134	5670 MHz
			142	5710 MHz
		80MHz	106	5530 MHz
			122	5610 MHz
			138	5690 MHz
	U-NII-3	20MHz	149	5745 MHz