RF MEASUREMENT REPORT

FCC ID:	XMR2022EM060KGL
Applicant:	Quectel Wireless Solutions Co., Ltd
Product:	LTE-A Cat 6 M.2 Module
Model No.:	EM060K-GL
Brand Name:	QUECTEL
FCC Rule(s):	Part 2, 22 (H), 24 (E), 27, 90(R), 90(S), 96
Result:	Complies
Received Date:	2024-01-05
Test Date:	2024-01-07 ~ 2024-01-15

Reviewed By: Sunny Sun

Approved By: Robin Wu

The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.26-2015. Test results reported herein relate only to the item(s) tested.

Revision History

Report No.	Version	Description	Issue Date	Note
2401RSU008-U1	V01	Initial Report	2024-01-29	Valid
2401RSU008-U1	V02	Update equipment calibration date	2024-01-31	Valid

Note: This report is prepared for FCC Class II permissive supplement to FCC ID: XMR2022EM060KGL adding new antenna.

CONTENTS

1. General Information

1.1. Applicant

Quectel Wireless Solutions Company Limited

Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233

1.2. Manufacturer

Quectel Wireless Solutions Company Limited

Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233

1.3. Testing Facility

☒	**Test Site – MRT Suzhou Laboratory**				
	Laboratory Location (Suzhou - Wuzhong)				
	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China				
	Laboratory Location (Suzhou - SIP)				
	4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China				
	Laboratory Accreditations				
	A2LA: 3628.01		CNAS: L10551		
	FCC: CN1166		ISED: CN0001		
	VCCI:	☐R-20025	☐G-20034	☐C-20020	☐T-20020
		☐R-20141	☐G-20134	☐C-20103	☐T-20104
☐	**Test Site – MRT Shenzhen Laboratory**				
	Laboratory Location (Shenzhen)				
	1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China				
	Laboratory Accreditations				
	A2LA: 3628.02		CNAS: L10551		
	FCC: CN1284		ISED: CN0105		
☐	**Test Site – MRT Taiwan Laboratory**				
	Laboratory Location (Taiwan)				
	No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)				
	Laboratory Accreditations				
	TAF: 3261				
	FCC: 291082, TW3261		ISED: TW3261		

1.4. Product Information

Product Name	LTE-A Cat 6 M.2 Module
Model No.	EM060K-GL
Brand Name	Quectel
IMEI	867228050091213
3GPP Specification	WCDMA Band II/IV/V LTE Band 2, 4, 5, 7, 12, 13, 14, 17, 25, 26, 30, 38, 41, 42, 43, 46, 48, 66, 71
GNSS Specification	GPS, GLONASS, Bei Dou, Galileo
Temperature Operating Range	-25 ~ 75 °C
Power Supply Rating	3.135 ~ 4.4Vdc, typical 3.7Vdc
Remark: The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.	

1.5. Radio Specification under Testing

UTRA Specification	
TX Frequency Range	WCDMA Band II: 1850 ~ 1910MHz, WCDMA Band IV: 1710 ~ 1755MHz WCDMA Band V: 824 ~ 849MHz
RX Frequency Range	WCDMA Band II: 1930 ~ 1990MHz, WCDMA Band IV: 2110 ~ 2155MHz WCDMA Band V: 869 ~ 894MHz
E-UTRA Specification	
TX Frequency Range	LTE Band 2: 1850 ~ 1910MHz, LTE Band 4: 1710 ~ 1755MHz LTE Band 5: 824 ~ 849MHz, LTE Band 7: 2500 ~ 2570MHz LTE Band 12: 699 ~ 716MHz, LTE Band 13: 777 ~ 787MHz LTE Band 14: 788 ~ 798MHz, LTE Band 17: 704 ~ 716MHz LTE Band 25: 1850 ~ 1915MHz, LTE Band 26: 814 ~ 849MHz LTE Band 30: 2305 ~ 2315MHz, LTE Band 38: 2570 ~ 2620MHz LTE Band 41: 2496 ~ 2690MHz, LTE Band 42: 3450 ~ 3550MHz, LTE Band 43: 3700 ~ 3800MHz, LTE Band 48: 3550 ~ 3700MHz LTE Band 66: 1710 ~ 1780MHz, LTE Band 71: 663 ~ 698MHz
RX Frequency Range	LTE Band 2: 1930 ~ 1990MHz, LTE Band 4: 2110 ~ 2155MHz LTE Band 5: 869 ~ 894MHz, LTE Band 7: 2620 ~ 2690MHz LTE Band 12: 729 ~ 746MHz, LTE Band 13: 746 ~ 756MHz LTE Band 14: 758 ~ 768MHz, LTE Band 17: 734 ~ 746MHz LTE Band 25: 1930 ~ 1995MHz, LTE Band 26: 859 ~ 894MHz LTE Band 30: 2350 ~ 2360MHz, LTE Band 38: 2570 ~ 2620MHz LTE Band 41: 2496 ~ 2690MHz, LTE Band 42: 3450 ~ 3550MHz, LTE Band 43: 3700 ~ 3800MHz, LTE Band 48: 3550 ~ 3700MHz LTE Band 66: 2110 ~ 2200MHz, LTE Band 71: 617 ~ 652 MHz
Modulation	UL up to 16QAM & DL up to 64QAM
Power Class	3

1.6. Description of Available Antennas

Technology	Frequency Range (MHz)	Antenna Type	P/N	Max Peak Gain (dBi)
WCDMA & LTE Band 2	1850 ~ 1910	PIFA	Y0QUE00ABAA	3.87
WCDMA & LTE Band 4	1710 ~ 1755		Y0QUE00ABAA	3.91
WCDMA & LTE Band 5	824 ~ 849		Y0QUE00ABBA	3.32
LTE Band 7	2500 ~ 2570		Y0QUE00ABBA	3.16
LTE Band 12	699 ~ 716		Y0QUE00ABDA	3.19
LTE Band 13	777 ~ 787		Y0QUE00ABBA	3.28
LTE Band 14	788 ~ 798		Y0QUE00ABBA	3.25
LTE Band 17	704 ~ 716		Y0QUE00ABDA	3.19
LTE Band 25	1850 ~ 1915		Y0QUE00ABAA	3.87
LTE Band 26	814 ~ 849		Y0QUE00ABBA	3.32
LTE Band 30	2305 ~ 2315		Y0QUE00ABCA	0.98
LTE Band 38	2570 ~ 2620		Y0QUE00ABBA	3.07
LTE Band 41	2496 ~ 2690		Y0QUE00ABBA	3.16
LTE Band 42	3400 ~ 3600		Y0QUE00ABDA	2.35
LTE Band 43	3600 ~ 3800		Y0QUE00ABDA	1.91
LTE Band 48	3550 ~ 3700		Y0QUE00ABCA	1.00
LTE Band 66	1710 ~ 1780		Y0QUE00ABAA	3.91
LTE Band 71	663 ~ 698		Y0QUE00ABAA	3.07

Note: All antenna information (Antenna type and Peak Gain) is provided by the manufacturer.

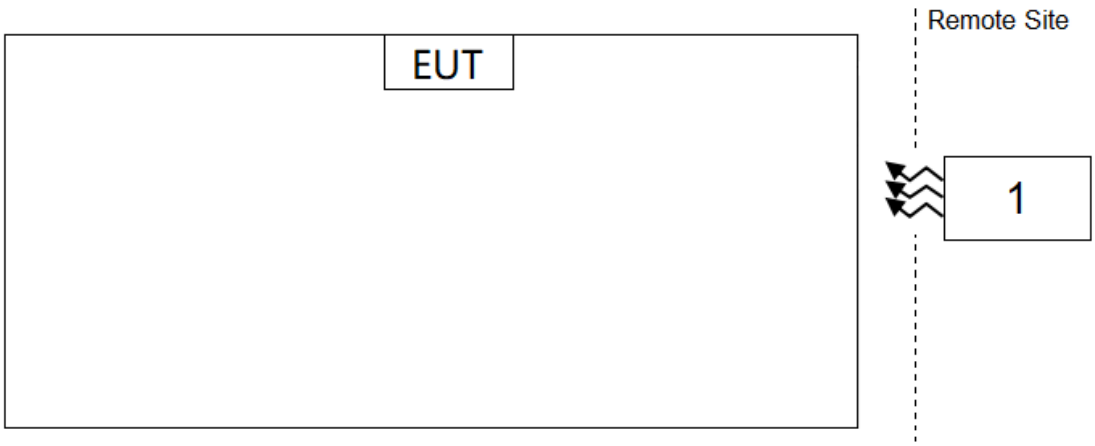
1.7. Test Methodology

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

- ANSI C63.26:2015
- FCC CFR 47 Part 2, Part 22, Part 24, Part 27, Part 90, Part 96
- FCC KDB 971168 D01 v03r01: Power Meas License Digital Systems
- FCC KDB 412172 D01 v01r01: Determining ERP and EIRP

2. Test Configuration

2.1. Test System Connection Diagram



Product		Manufacturer	Model No.
1	Wideband Radio Communication Tester	R&S	CMW 500

2.2. Test Environment Condition

Ambient Temperature	15 ~ 35°C
Relative Humidity	20% ~ 75%RH

3. Measuring Instrument

Instrument	Manufacturer	Model No.	Asset No.	Cali. Interval	Cali. Due Date	Test Site
Communication Tester	R&S	CMW500	MRTSUE06243	1 year	2024-09-27	SIP-SR1
Thermohygrometer	testo	622	MRTSUE06629	1 year	2024-12-21	SIP-SR1
Communication Tester	R&S	CMW500	MRTSUE06881	1 year	2024-05-23	SIP-SR1
Signal Analyzer	Keysight	N9010B	MRTSUE06559	1 year	2024-12-17	SIP-SR1
DC POWER MODULE	Keysight	N6743B	MRTSUE06905	N/A	N/A	SIP-SR1
DC POWER MODULE	Keysight	N6743B	MRTSUE06906	N/A	N/A	SIP-SR1
Signal Analyzer	Keysight	N9021B	MRTSUE06915	1 year	2024-12-17	SIP-SR1
Temperature Chamber	BAOYT	BYG-80CL	MRTSUE06932	1 year	2024-02-12	SIP-SR1
Shielding Room	MIX-BEP	SIP-SR1	MRTSUE06948	N/A	N/A	SIP-SR1
Directional Coupler	MVE	MVE4816-10	MRTSUE11117	1 year	2024-08-24	SIP
Communication Tester	R&S	CMW500	MRTSUE06243	1 year	2024-09-27	SIP-AC3
EMI Test Receiver	R&S	ESR3	MRTSUE06185	1 year	2024-12-17	SIP-AC3
Signal Analyzer	Keysight	N9010B	MRTSUE06559	1 year	2024-05-23	SIP-AC3
Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06599	1 year	2024-09-24	SIP-AC3
Preamplifier	EMCI	EMC051845SE	MRTSUE06642	1 year	2024-05-23	SIP-AC3
Preamplifier	EMCI	EMC184045SE	MRTSUE06602	1 year	2024-10-09	SIP-AC3
Signal Analyzer	Keysight	N9020B	MRTSUE06604	1 year	2024-10-23	SIP-AC3
Horn Antenna	R&S	HF907	MRTSUE06611	1 year	2024-06-17	SIP-AC3
EMI Test Receiver	R&S	ESR3	MRTSUE06613	1 year	2024-05-23	SIP-AC2
Thermohygrometer	testo	608-H1	MRTSUE06622	1 year	2024-11-03	SIP-AC2
Preamplifier	EMCI	EMC001330	MRTSUE06643	1 year	2024-01-12	SIP-AC3
Preamplifier	EMCI	EMC001330	MRTSUE06643	1 year	2025-01-11	SIP-AC3
TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06646	1 year	2024-07-13	SIP-AC3
Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06598	1 year	2024-11-04	SIP-AC2
Preamplifier	EMCI	EMC051845SE	MRTSUE06601	1 year	2024-11-02	SIP-AC2
Preamplifier	EMCI	EMC184045SE	MRTSUE06602	1 year	2024-10-09	SIP-AC2
Signal Analyzer	Keysight	N9010B	MRTSUE06603	1 year	2024-09-27	SIP-AC2
TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06647	1 year	2024-06-17	SIP-AC2
EMI Test Receiver	R&S	ESR3	MRTSUE06185	1 year	2024-12-17	SIP-AC2
Signal Analyzer	Keysight	N9010B	MRTSUE06559	1 year	2024-05-23	SIP-AC2
Signal Analyzer	Keysight	N9020B	MRTSUE06604	1 year	2024-10-23	SIP-AC2
EMI Test Receiver	R&S	ESR3	MRTSUE06613	1 year	2024-05-23	SIP-AC2
Anechoic Chamber	RIKEN	SIP-AC2	MRTSUE06781	1 year	2024-12-21	SIP-AC2

Software	Version	Function
EMI Software	V3.0.0	EMI Test Software
Controller_MF 7802	2.03C	RE Antenna & Turntable

4. Decision Rules and Measurement Uncertainty

4.1. Decision Rules

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

4.2. Measurement Uncertainty

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Radiated Spurious Emissions	
The maximum measurement uncertainty is evaluated as:	
Coaxial:	9kHz~30MHz: 2.59dB
Coplanar:	9kHz~30MHz: 2.60dB
Horizontal:	30MHz~200MHz: 3.85dB
	200MHz~1GHz: 4.36dB
	1GHz~40GHz: 4.98dB
Vertical:	30MHz~200MHz: 4.06dB
	200MHz~1GHz: 5.28dB
	1GHz~40GHz: 4.91dB

5. Test Result

5.1. Summary

FCC Part Section(s)	Test Description	Test Condition	Test Result
2.1051, 22.917(a), 24.238(a) 27.53(a)(4) (c) (f) (g) (h) (m)(4) (l)(2) (n)(2) 90.543(e)(3) (f), 90.691(a) 96.41(e)	Spurious Emissions	Radiated	Pass

Notes:

1) The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
2) All supported modulation types were evaluated. The worst-case emission of modulation was selected. Therefore, the Radiated Spurious Emission were presented the worst-case in the test report.
3) For radiated emission tests, every axis (X, Y, Z) was also verified. The test results shown in the following sections represent the worst-case emissions.
4) LTE Band 25 (1850 ~ 1915 MHz) overlaps the entire frequency range of LTE Band 2 (1850 ~ 1910 MHz). Therefore, test data provided in this report covers Band 2 as well as Band 25.
   LTE Band 66 (1710 ~ 1780 MHz) overlaps the entire frequency range of LTE Band 4 (1710 ~ 1755 MHz). Therefore, test data provided in this report covers Band 4 as well as Band 66.
   LTE Band 41 (2496 ~ 2690 MHz) overlaps the entire frequency range of LTE Band 38 (2570 ~ 2620 MHz). Therefore, test data provided in this report covers Band 38 as well as Band 41.
   LTE Band 48 (3550 ~ 3700 MHz) overlaps the entire frequency range of LTE Band 42 (3550 ~ 3600 MHz) and LTE Band 43 (3600 ~ 3700 MHz). Therefore, test data provided in this report covers Band 42/43 as well as Band 48.
5) LTE band 26 transmit frequency for part 90 rule is 814 ~ 824MHz and part 22 rule is 824 ~ 849MHz. ERP over 15MHz bandwidth complies the ERP limit line of part 22 rule, therefore ERP of the partial frequency spectrum which falls within part 22 also complies.

5.2. Radiated Spurious Emissions Measurement

5.2.1. Test Limit

The power of any emission outside of theauthorized operating frequency ranges must be attenuated below the transmitting power (P) by a factorof at least 43 + 10 log(P) dB. The emission limit equal to -13dBm.

For operations in the 746-758 MHz, 775-788 MHz, 758-775 MHz and 788-805 MHz and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz (-40dBm/MHz) equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW (-50dBm) EIRP for discrete emissions of less than 700 Hz bandwidth.

For Band 7, 38/41, the powerof any emission outside of theauthorized operating frequency ranges must be attenuated below the transmitting power (P) by a factorof at least 55 + 10 log(P) dB. The emission limit equal to -25dBm.

For Band 48, the power of any emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz.

E (dBμV/m) = EIRP (dBm) - 20 log D + 104.8; where D is the measurement distance in meters. The emission limit equal to 82.3dBμV/m or 70.3dBμV/m or 55.3dBμV/m.

5.2.2. Test Procedure

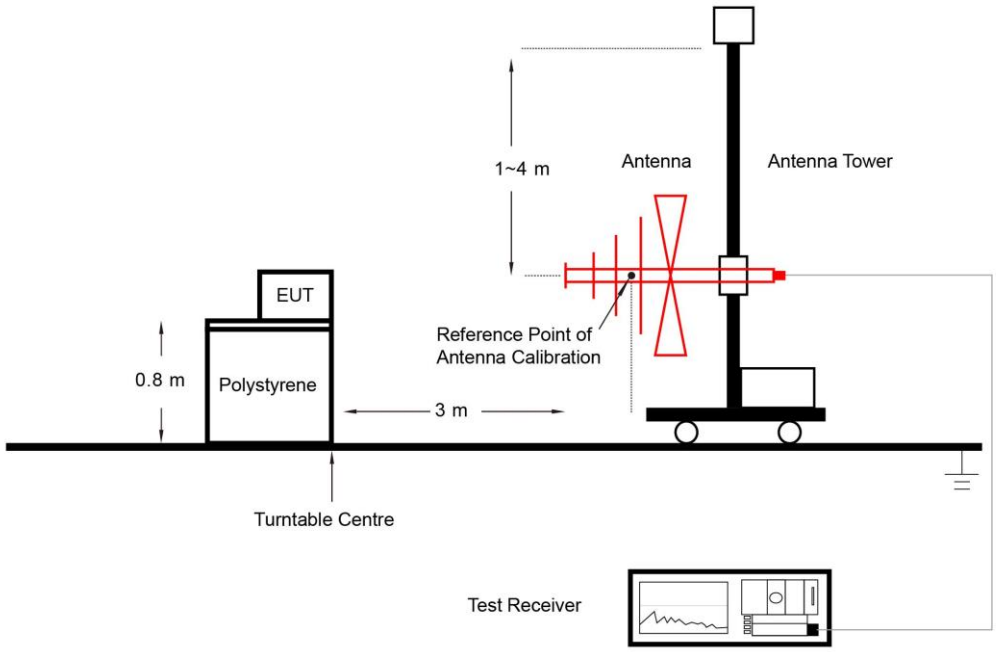
ANSI C63.26-2015 - Section 5.2.7 & 5.5

5.2.3. Test Setting

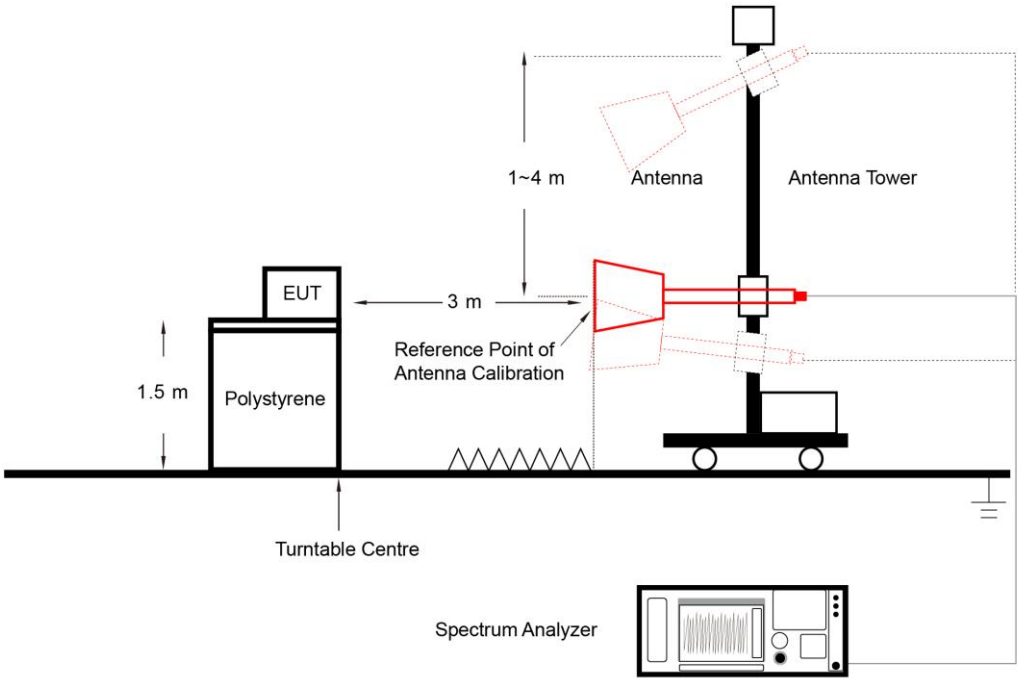
1. RBW = 1MHz
2. VBW ≥ 3*RBW
3. Sweep time ≥ 10 × (number of points in sweep) × (transmission symbol period)
4. Detector = Peak
5. Trace mode = max hold
6. The trace was allowed to stabilize

5.2.4. Test Setup

Below 1GHz Test Setup:



Above 1GHz Test Setup:



5.2.5. Test Result

Refer to Appendix A.1.

Appendix A - Test Result

A.1 Radiated Spurious Emissions Test Result

Test Site	SIP-AC2 & AC3	Test Engineer	Justin Guo & Mero Zhou
Test Date	2024-01-08 ~ 2024-01-15	Test Band	WCDMA Band II, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Middle Channel							
106.6	16.3	14.6	30.9	82.3	-51.4	Quasi-peak	Horizontal
872.4	-5.7	29.1	23.4	82.3	-58.9	Quasi-peak	Horizontal
67.8	11.7	15.9	27.6	82.3	-54.7	Quasi-peak	Vertical
106.6	15.0	14.6	29.6	82.3	-52.7	Quasi-peak	Vertical
8947.5	50.0	-2.1	47.9	82.3	-34.4	Peak	Horizontal
17175.5	48.9	6.6	55.5	82.3	-26.8	Peak	Horizontal
13716.0	49.0	1.9	50.9	82.3	-31.4	Peak	Vertical
17898.0	47.4	8.1	55.5	82.3	-26.8	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Test Site	SIP-AC2 & AC3	Test Engineer	Justin Guo & Mero Zhou
Test Date	2024-01-08 ~ 2024-01-15	Test Band	WCDMA Band IV, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Middle Channel							
51.9	-1.1	17.8	16.7	82.3	-65.6	Quasi-peak	Horizontal
948.6	-3.1	29.5	26.4	82.3	-55.9	Quasi-peak	Horizontal
47.9	5.9	17.9	23.8	82.3	-58.5	Quasi-peak	Vertical
948.6	-3.3	29.5	26.2	82.3	-56.1	Quasi-peak	Vertical
8811.5	48.4	-2.1	46.3	82.3	-36.0	Peak	Horizontal
17974.5	43.9	9.7	53.6	82.3	-28.7	Peak	Horizontal
8157.0	49.4	-3.4	46.0	82.3	-36.3	Peak	Vertical
17549.5	45.2	7.7	52.9	82.3	-29.4	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Test Site	SIP-AC2 & AC3	Test Engineer	Justin Guo & Mero Zhou
Test Date	2024-01-08 ~ 2024-01-15	Test Band	WCDMA Band V, QPSK

Frequency (MHz)	Reading Level (dBµV)	Factor (dB/m)	Measure Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Polarization
Middle Channel							
719.7	7.6	27.1	34.7	82.3	-47.6	Quasi-peak	Horizontal
992.2	7.0	30.0	37.0	82.3	-45.3	Quasi-peak	Horizontal
755.6	11.5	28.4	39.9	82.3	-42.4	Quasi-peak	Vertical
988.4	12.4	29.9	42.3	82.3	-40.0	Quasi-peak	Vertical
4336.0	52.2	-8.1	44.1	82.3	-38.2	Peak	Horizontal
7676.0	51.4	-4.2	47.2	82.3	-35.1	Peak	Horizontal
4368.0	52.3	-8.2	44.1	82.3	-38.2	Peak	Vertical
7564.0	51.8	-4.5	47.3	82.3	-35.0	Peak	Vertical

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB/m)
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Test Site	SIP-AC2 & AC3	Test Engineer	Justin Guo & Mero Zhou
Test Date	2024-01-08 ~ 2024-01-15	Test Band	LTE Band 2/25, 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Middle Channel							
78.9	4.5	13.6	18.1	82.3	-64.2	Quasi-peak	Horizontal
117.3	6.5	15.6	22.1	82.3	-60.2	Quasi-peak	Horizontal
49.8	6.2	17.9	24.1	82.3	-58.2	Quasi-peak	Vertical
117.8	6.0	15.6	21.6	82.3	-60.7	Quasi-peak	Vertical
3762.5	56.1	-10.4	45.7	82.3	-36.6	Peak	Horizontal
17991.5	37.4	16.3	53.7	82.3	-28.6	Peak	Horizontal
15059.0	42.9	8.6	51.5	82.3	-30.8	Peak	Vertical
17991.5	36.4	16.3	52.7	82.3	-29.6	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Test Site	SIP-AC2 & AC3	Test Engineer	Justin Guo & Mero Zhou
Test Date	2024-01-08 ~ 2024-01-15	Test Band	LTE Band 4/66, 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Middle Channel							
117.8	8.6	15.6	24.2	82.3	-58.1	Quasi-peak	Horizontal
174.6	8.2	17.2	25.4	82.3	-56.9	Quasi-peak	Horizontal
50.9	6.6	17.8	24.4	82.3	-57.9	Quasi-peak	Vertical
118.8	10.2	15.7	25.9	82.3	-56.4	Quasi-peak	Vertical
13954.0	43.9	7.3	51.2	82.3	-31.1	Peak	Horizontal
18000.0	37.5	16.7	54.2	82.3	-28.1	Peak	Horizontal
14625.5	38.7	8.7	47.4	82.3	-34.9	Peak	Vertical
17940.5	37.3	16.1	53.4	82.3	-28.9	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Test Site	SIP-AC2 & AC3	Test Engineer	Justin Guo & Mero Zhou
Test Date	2024-01-08 ~ 2024-01-15	Test Band	LTE Band 5, 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Middle Channel							
44.6	22.3	17.9	40.2	82.3	-42.1	Quasi-peak	Horizontal
994.2	23.7	30.1	53.8	82.3	-28.5	Quasi-peak	Horizontal
39.7	23.1	17.5	40.6	82.3	-41.7	Quasi-peak	Vertical
741.5	23.6	28.1	51.7	82.3	-30.6	Quasi-peak	Vertical
1672.0	56.3	-17.0	39.3	82.3	-43.0	Peak	Horizontal
8036.0	42.8	0.8	43.6	82.3	-38.7	Peak	Horizontal
2128.0	48.8	-14.4	34.4	82.3	-47.9	Peak	Vertical
7992.0	43.3	0.9	44.2	82.3	-38.1	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Test Site	SIP-AC2 & AC3	Test Engineer	Justin Guo & Mero Zhou
Test Date	2024-01-08 ~ 2024-01-15	Test Band	LTE Band 7, 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Middle Channel							
80.5	8.5	13.3	21.8	70.3	-48.5	Quasi-peak	Horizontal
117.3	10.6	15.6	26.2	70.3	-44.1	Quasi-peak	Horizontal
53.8	5.5	17.7	23.2	70.3	-47.1	Quasi-peak	Vertical
118.3	7.6	15.7	23.3	70.3	-47.0	Quasi-peak	Vertical
15195.0	45.7	7.7	53.4	70.3	-16.9	Peak	Horizontal
17949.0	37.7	16.1	53.8	70.3	-16.5	Peak	Horizontal
10129.0	49.4	2.9	52.3	70.3	-18.0	Peak	Vertical
15195.0	47.6	7.7	55.3	70.3	-15.0	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Test Site	SIP-AC2 & AC3	Test Engineer	Justin Guo & Mero Zhou
Test Date	2024-01-08 ~ 2024-01-15	Test Band	LTE Band 12, 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Middle Channel							
45.5	16.5	17.9	34.4	82.3	-47.9	Quasi-peak	Horizontal
962.2	16.1	29.5	45.6	82.3	-36.7	Quasi-peak	Horizontal
107.6	22.2	14.7	36.9	82.3	-45.4	Quasi-peak	Vertical
970.4	15.2	29.6	44.8	82.3	-37.5	Quasi-peak	Vertical
2701.0	52.0	-12.6	39.4	82.3	-42.9	Peak	Horizontal
5413.5	50.4	-7.2	43.2	82.3	-39.1	Peak	Horizontal
4741.5	51.2	-7.4	43.8	82.3	-38.5	Peak	Vertical
6309.5	50.9	-6.7	44.2	82.3	-38.1	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Test Site	SIP-AC2 & AC3	Test Engineer	Justin Guo & Mero Zhou
Test Date	2024-01-08 ~ 2024-01-15	Test Band	LTE Band 13, 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Middle Channel							
37.8	16.8	17.3	34.1	82.3	-48.2	Quasi-peak	Horizontal
996.7	17.9	30.1	48.0	82.3	-34.3	Quasi-peak	Horizontal
37.3	15.4	17.3	32.7	82.3	-49.6	Quasi-peak	Vertical
983.9	15.4	29.9	45.3	82.3	-37.0	Quasi-peak	Vertical
1560.0	52.8	-16.9	35.9	55.3	-19.4	Peak	Horizontal
2337.0	55.6	-13.6	42.0	82.3	-40.3	Peak	Horizontal
1560.0	53.6	-16.9	36.7	55.3	-18.6	Peak	Vertical
7422.5	43.4	-0.5	42.9	82.3	-39.4	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Test Site	SIP-AC2 & AC3	Test Engineer	Justin Guo & Mero Zhou
Test Date	2024-01-08 ~ 2024-01-15	Test Band	LTE Band 14, 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Middle Channel							
48.0	15.2	17.9	33.1	82.3	-49.2	Quasi-peak	Horizontal
900.0	16.3	29.7	46.0	82.3	-36.3	Quasi-peak	Horizontal
55.3	15.3	17.6	32.9	82.3	-49.4	Quasi-peak	Vertical
924.9	16.2	29.5	45.7	82.3	-36.6	Quasi-peak	Vertical
1581.0	55.9	-17.0	38.9	55.3	-16.4	Peak	Horizontal
7051.5	43.9	-1.3	42.6	82.3	-39.7	Peak	Horizontal
1581.0	48.3	-17.0	31.3	55.3	-24.0	Peak	Vertical
7972.0	42.9	0.5	43.4	82.3	-38.9	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Test Site	SIP-AC2 & AC3	Test Engineer	Justin Guo & Mero Zhou
Test Date	2024-01-08 ~ 2024-01-15	Test Band	LTE Band 17, 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Middle Channel							
57.2	13.2	17.4	30.6	82.3	-51.7	Quasi-peak	Horizontal
995.6	14.6	30.1	44.7	82.3	-37.6	Quasi-peak	Horizontal
107.2	22.1	14.7	36.8	82.3	-45.5	Quasi-peak	Vertical
892.9	16.2	29.7	45.9	82.3	-36.4	Quasi-peak	Vertical
2463.0	54.2	-13.5	40.7	82.3	-41.6	Peak	Horizontal
6201.0	50.4	-6.7	43.7	82.3	-38.6	Peak	Horizontal
2435.0	55.8	-13.7	42.1	82.3	-40.2	Peak	Vertical
5588.5	50.4	-7.1	43.3	82.3	-39.0	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Test Site	SIP-AC2 & AC3	Test Engineer	Justin Guo & Mero Zhou
Test Date	2024-01-08 ~ 2024-01-15	Test Band	LTE Band 26, 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Middle Channel							
51.9	14.6	17.8	32.4	82.3	-49.9	Quasi-peak	Horizontal
710.5	15.4	26.9	42.3	82.3	-40.0	Quasi-peak	Horizontal
54.8	15.3	17.6	32.9	82.3	-49.4	Quasi-peak	Vertical
998.1	16.3	30.2	46.5	82.3	-35.8	Quasi-peak	Vertical
1640.0	55.0	-16.5	38.5	82.3	-43.8	Peak	Horizontal
7044.0	50.5	-5.2	45.3	82.3	-37.0	Peak	Horizontal
2424.0	52.5	-13.7	38.8	82.3	-43.5	Peak	Vertical
5944.0	49.5	-7.0	42.5	82.3	-39.8	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Test Site	SIP-AC2 & AC3	Test Engineer	Justin Guo & Mero Zhou
Test Date	2024-01-08 ~ 2024-01-15	Test Band	LTE Band 30 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Middle Channel							
52.3	-1.0	17.8	16.8	55.3	-38.5	Quasi-peak	Horizontal
900.6	-2.6	29.7	27.1	55.3	-28.2	Quasi-peak	Horizontal
47.9	5.5	17.9	23.4	55.3	-31.9	Quasi-peak	Vertical
902.6	-1.0	29.7	28.7	55.3	-26.6	Quasi-peak	Vertical
7043.5	49.7	-5.2	44.5	55.3	-10.8	Peak	Horizontal
13860.5	48.5	2.4	50.9	55.3	-4.4	Peak	Horizontal
7791.5	48.8	-4.2	44.6	55.3	-10.7	Peak	Vertical
16529.5	45.8	6.2	52.0	55.3	-3.3	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Test Site	SIP-AC2 & AC3	Test Engineer	Justin Guo & Mero Zhou
Test Date	2024-01-08 ~ 2024-01-15	Test Band	LTE Band 71 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Middle Channel							
67.8	30.5	15.9	46.4	82.3	-35.9	Quasi-peak	Horizontal
986.9	22.3	29.9	52.2	82.3	-30.1	Quasi-peak	Horizontal
50.4	22.6	17.9	40.5	82.3	-41.8	Quasi-peak	Vertical
856.9	23.5	29.0	52.5	82.3	-29.8	Quasi-peak	Vertical
1348.0	52.8	-16.7	36.1	82.3	-46.2	Peak	Horizontal
6562.0	43.3	-3.2	40.1	82.3	-42.2	Peak	Horizontal
1348.0	51.8	-16.7	35.1	82.3	-47.2	Peak	Vertical
6601.0	42.9	-2.8	40.1	82.3	-42.2	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Test Site	SIP-AC2 & AC3	Test Engineer	Justin Guo & Mero Zhou
Test Date	2024-01-08 ~ 2024-01-15	Test Band	LTE Band 38/41 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Middle Channel							
79.9	7.4	13.4	20.8	70.3	-49.5	Quasi-peak	Horizontal
117.3	8.8	15.6	24.4	70.3	-45.9	Quasi-peak	Horizontal
50.9	5.5	17.8	23.3	70.3	-47.0	Quasi-peak	Vertical
79.9	9.1	13.4	22.5	70.3	-47.8	Quasi-peak	Vertical
5182.0	52.7	-6.8	45.9	70.3	-24.4	Peak	Horizontal
18000.0	36.7	16.7	53.4	70.3	-16.9	Peak	Horizontal
10367.0	46.1	3.6	49.7	70.3	-20.6	Peak	Vertical
17983.0	37.4	16.0	53.4	70.3	-16.9	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Test Site	SIP-AC2 & AC3	Test Engineer	Justin Guo & Mero Zhou
Test Date	2024-01-08 ~ 2024-01-15	Test Band	LTE Band 42 1RB, QPSK (3450 ~ 3550MHz)

Frequency (MHz)	Reading Level (dBµV)	Factor (dB/m)	Measure Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Polarization
Middle Channel							
52.3	-1.5	17.8	16.3	82.3	-66.0	Quasi-peak	Horizontal
870.5	-3.4	29.1	25.7	82.3	-56.6	Quasi-peak	Horizontal
68.3	5.2	15.8	21.0	82.3	-61.3	Quasi-peak	Vertical
836.5	-3.4	28.6	25.2	82.3	-57.1	Quasi-peak	Vertical
10197.0	48.2	-1.7	46.5	82.3	-35.8	Peak	Horizontal
16266.0	46.4	5.4	51.8	82.3	-30.5	Peak	Horizontal
9109.0	49.4	-2.5	46.9	82.3	-35.4	Peak	Vertical
17430.5	46.0	7.3	53.3	82.3	-29.0	Peak	Vertical

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB/m)
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Test Site	SIP-AC2 & AC3	Test Engineer	Justin Guo & Mero Zhou
Test Date	2024-01-08 ~ 2024-01-15	Test Band	LTE Band 43 1RB, QPSK (3700 ~ 3800MHz)

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Middle Channel							
53.3	-1.5	17.7	16.2	82.3	-66.1	Quasi-peak	Horizontal
896.2	-3.3	29.7	26.4	82.3	-55.9	Quasi-peak	Horizontal
47.8	3.5	17.9	21.4	82.3	-60.9	Quasi-peak	Vertical
902.0	-3.7	29.7	26.0	82.3	-56.3	Quasi-peak	Vertical
8769.0	49.3	-2.1	47.2	82.3	-35.1	Peak	Horizontal
16266.0	46.1	5.4	51.5	82.3	-30.8	Peak	Horizontal
11149.0	49.3	-1.4	47.9	82.3	-34.4	Peak	Vertical
17634.5	46.1	7.8	53.9	82.3	-28.4	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Test Site	SIP-AC2 & AC3	Test Engineer	Justin Guo & Mero Zhou
Test Date	2024-01-08 ~ 2024-01-15	Test Band	LTE Band 42&43/48 1RB, QPSK (3550 ~ 3700MHz)

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Middle Channel							
53.8	1.0	17.7	18.7	55.3	-36.6	Quasi-peak	Horizontal
893.3	-3.5	29.7	26.2	55.3	-29.1	Quasi-peak	Horizontal
47.9	5.5	17.9	23.4	55.3	-31.9	Quasi-peak	Vertical
884.6	-2.7	29.5	26.8	55.3	-28.5	Quasi-peak	Vertical
9015.5	47.4	-2.2	45.2	55.3	-10.1	Peak	Horizontal
16742.0	33.3	6.9	40.2	55.3	-15.1	Average	Horizontal
9211.0	48.4	-2.0	46.4	55.3	-8.9	Peak	Vertical
16971.5	33.4	6.5	39.9	55.3	-15.4	Average	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Appendix B - Test Setup Photograph

Refer to “2401RSU008-UT” file.

Appendix C - EUT Photograph

Refer to “2401RSU008-UE” file.

The End