



# FCC Part 96.47 Test Report

**Applicant** : Quectel Wireless Solutions Co., Ltd.  
**Equipment** : 5G Sub-6 GHz LGA Module  
**Brand Name** : Quectel  
**Model Name** : RG500L-NA  
**FCC ID** : XMR2023RG500LNA  
**Standard** : FCC Part 96.47  
**Test Date(s)** : Jan. 16, 2023

We, Sporton International Inc. (Kunshan), would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Kunshan), the test report shall not be reproduced except in full.

Jason Jia

Approved by: Jason Jia



**Sporton International Inc. (Kunshan)**

**No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300  
People's Republic of China**



# Table of Contents

**1 GENERAL DESCRIPTION ..... 5**

1.1 APPLICANT ..... 5

1.2 MANUFACTURER ..... 5

1.3 PRODUCT FEATURE OF EQUIPMENT UNDER TEST..... 5

1.4 PRODUCT SPECIFICATION OF EQUIPMENT UNDER TEST ..... 5

1.5 TESTING LOCATION..... 6

1.6 TEST SOFTWARE ..... 6

1.7 APPLICABLE STANDARDS..... 6

**2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST ..... 7**

2.1 CONNECTION DIAGRAM OF TEST SYSTEM ..... 7

**3 END USER DEVICE ADDITIONAL REQUIREMENT ..... 8**

3.1 TEST REQUIREMENT ..... 8

3.2 TEST PROCEDURE..... 8

3.3 TEST RESULT ..... 9

**4 LIST OF MEASURING EQUIPMENT .....11**

**APPENDIX A. TEST SETUP PHOTO**



### History of this test report

Report No.	Version	Description	Issued Date
FG2D0201L	01	Initial issue of report	Jun. 02, 2023

**Declaration of Conformity:**

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

**Comments and Explanations:**

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.



### Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3	96.47	End User Device additional requirement	Pass	-



# 1 General Description

## 1.1 Applicant

**Quectel Wireless Solutions Co., Ltd.**

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

## 1.2 Manufacturer

**Quectel Wireless Solutions Co., Ltd.**

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

## 1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	5G Sub-6 GHz LGA Module
Brand Name	Quectel
Model Name	RG500L-NA
FCC ID	XMR2023RG500LNA
SN	D1Q22JB30000010
HW Version	R1.0
SW Version	RG500LNAAAR04A02E32_OCPU
EUT Stage	Identical Prototype

**Remark:** The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

## 1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	5G NR n48: 3550 MHz ~ 3700 MHz
Rx Frequency	5G NR n48: 3550 MHz ~ 3700 MHz
Antenna Gain	5G NR n48: -4.29 dBi
Type of Modulation	DFT-s-OFDM (PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM) CP-OFDM (QPSK / 16QAM / 64QAM / 256QAM)



### 1.5 Testing Location

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

<b>Test Firm</b>	Sporton International (Kunshan) Inc.		
<b>Test Site Location</b>	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158		
<b>Test Site No.</b>	<b>Sporton Site No.</b>	<b>FCC Designation No.</b>	<b>FCC Test Firm Registration No.</b>
	DFS01-KS	CN1257	314309
<b>Test Engineer</b>	Chad Wang		
<b>Temperature</b>	20 ~ 24.5 °C		
<b>Relative Humidity</b>	40 ~ 60 %		

### 1.6 Test Software

Item	Site	Manufacturer	Name	Version
1.	DFS01-KS	Sporton	DFS & Adaptivity Test Tools	1.0

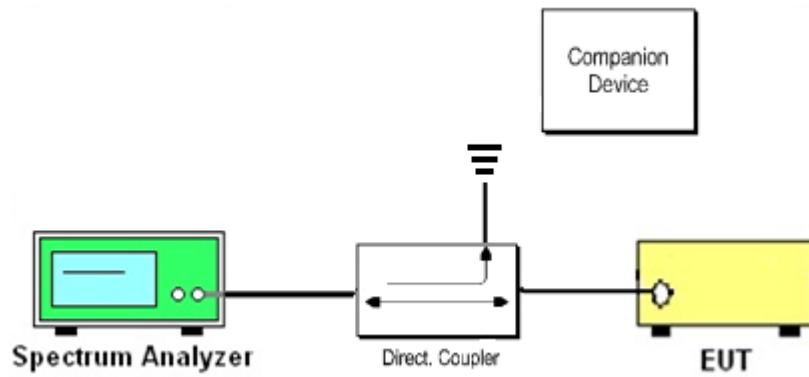
### 1.7 Applicable Standards

- ♦ FCC Part 96.47
- ♦ FCC KDB 940660 D01 Part 96 CBRS Eqpt v03
- ♦ WINNF-TS-0122-V1.0.2 CBRS CBSD Test Specification

**Remark:** All test items were verified and recorded according to the standards and without any deviation during the test.

## 2 Test Configuration of Equipment Under Test

### 2.1 Connection Diagram of Test System



The companion device is certified CBRS (FCC ID: PIDAS2900)



### 3 End User Device additional requirement

#### 3.1 Test Requirement

FCC Part 96.47

(a) End User Devices may operate only if they can positively receive and decode an authorization signal transmitted by a CBSD, including the frequencies and power limits for their operation.

(1) An End User Device must discontinue operations, change frequencies, or change its operational power level within 10 seconds of receiving instructions from its associated CBSD.

#### 3.2 Test Procedure

Following procedure can be done by applying WINNF-TS-0122-V1.0.2 CBRS CBSD Test Specification, use the certified 5G NR CBSD (FCC ID: PIDAS2900) as companion device to show compliance with Part 96.47 requirement for End User Device (EUD):

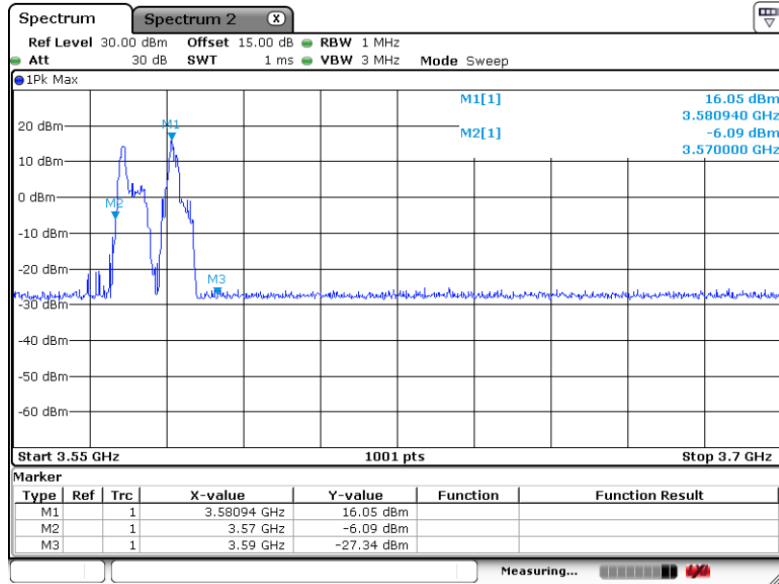
1. Configure SAS granted CBSD to operate at frequency 3600-3620MHz & power level 17dBm/MHz
2. Enable AP service from Ruckus Cloud management
3. Check EUD Tx Frequency and power
4. Disable AP service from Ruckus Cloud management
  - a. Check EUD stops transmission within 10seconds.
  
5. Configure SAS granted CBSD to operate at frequency 3670-3690MHz & power level 7dBm/MHz
6. Enable AP service from Ruckus Cloud management
7. Check EUD Tx Frequency and power
8. Disable AP service from Ruckus Cloud management
  - a. Check EUD stops transmission within 10seconds.



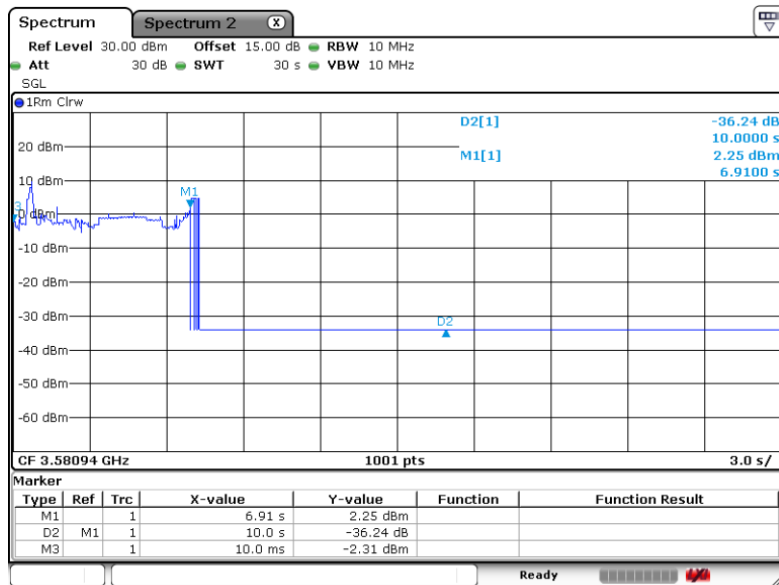
### 3.3 Test Result

[Step 1] Configure SAS granted CBSD to operate at frequency 3570-3590MHz & power level 34dBm/MHz

[Step 3] Check EUD Tx Frequency and power



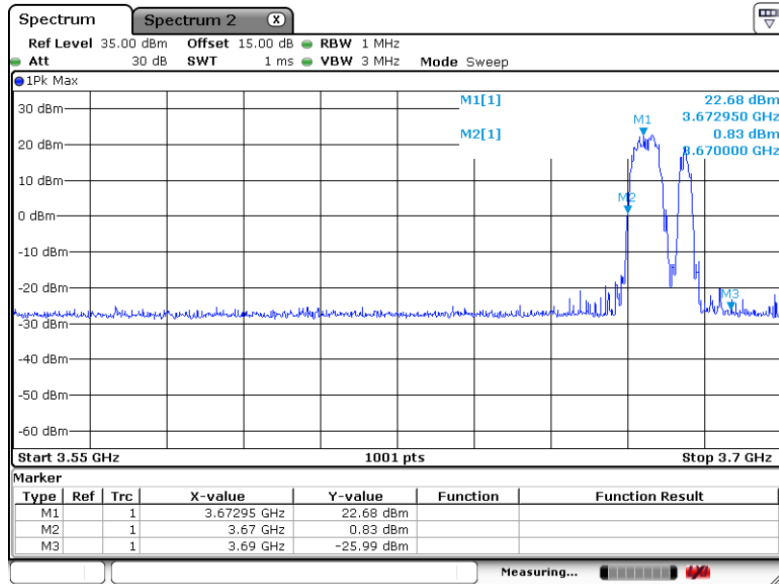
[Step 4.a.] EUD stops transmission within 10 seconds of receiving instructions from its associated CBSD.





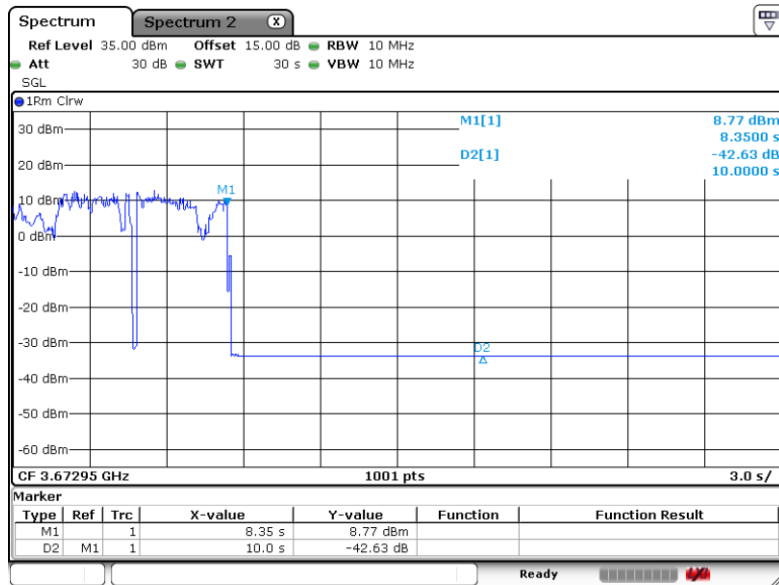
[Step 5] Configure SAS granted CBSD to operate at frequency 3670-3690MHz & power level 20dBm/MHz

[Step 7] Check EUD Tx Frequency and power



[Step 8.a.] After changing the frequency and power level,

The module (EUT) discontinues operations, change frequencies, or change its operational power level within 10 seconds of receiving instructions from its associated CBSD. Test result is PASS.





## 4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Signal Analyzer	R&S	FSV7	101472	10Hz~7GHz	Jan. 05, 2023	Jan. 16, 2023	Jan. 04, 2024	Conducted (DFS01-KS)
Combiner	MTJ Cooperation	MTJ7112	N/A	0.4-6GHz	NCR	Jan. 16, 2023	NCR	Conducted (DFS01-KS)

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