

RF Exposure Report

Report No.: SABDTL-WTW-P21060469

FCC ID: VUI-DAV001

Test Model: AG521R-NA

Received Date: Feb. 15, 2022

Test Date: Mar. 15 ~ Apr. 13, 2022

Issued Date: May 18, 2022

Applicant: PEGATRON CORPORATION

Address: 5F, NO. 76, LIGONG ST., BEITOU DISTRICT, TAIPEI CITY 112, TAIWAN

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lin Kou Laboratories

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

Test Location: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City
33383, Taiwan

**FCC Registration /
Designation Number:** 788550 / TW0003



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Table of Contents

Release Control Record	3
1 Certificate of Conformity	4
2 RF Exposure	5
2.1 Limits for Maximum Permissible Exposure (MPE).....	5
2.2 MPE Calculation Formula	5
2.3 Classification	5
3 Calculation Result of Maximum Conducted Power	6

Release Control Record

Issue No.	Description	Date Issued
SABDTL-WTW-P21060469	Original release	May 18, 2022

1 Certificate of Conformity

Product: LTE Module

Brand: Quectel

Test Model: AG521R-NA

Sample Status: DV

Applicant: PEGATRON CORPORATION

Test Date: Mar. 15 ~ Apr. 13, 2022

Standards: FCC Part 2 (Section 2.1091)

References Test Guidance: KDB 447498 D01 General RF Exposure Guidance v06

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by : Pettie Chen , **Date:** May 18, 2022
Pettie Chen / Senior Specialist

Approved by : Jeremy Lin , **Date:** May 18, 2022
Jeremy Lin / Project Engineer

2 RF Exposure

2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
300-1500	F/1500	30
1500-100,000	1.0	30

F = Frequency in MHz

2.2 MPE Calculation Formula

$$P_d = (P_{out} * G) / (4 * \pi * r^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Calculation Result of Maximum Conducted Power

Band	ERP Power (dBm)	EIRP Power (dBm)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
Module 1					
LTE B2	-	23.24	20	0.042	1.00
LTE B4	-	23.18	20	0.041	1.00
LTE B5	22.2	24.35	20	0.054	0.54
LTE B7	-	23.28	20	0.042	1.00
LTE B12	20.41	22.56	20	0.036	0.46
LTE B13	20.25	22.40	20	0.035	0.52
LTE B14	21.21	23.36	20	0.043	0.53
LTE B25	-	23.28	20	0.042	1.00
LTE B26 (Part 22)	22.31	24.46	20	0.056	0.54
LTE B26 (Part 90)	22.38	24.53	20	0.056	0.54
LTE B66	-	23.23	20	0.042	1.00
LTE B71	20.91	23.06	20	0.040	0.44

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. $EIRP = ERP + 2.15dB$

Band	ERP Power (dBm)	EIRP Power (dBm)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
Module 2					
LTE B2	-	23.23	20	0.042	1.00
LTE B4	-	23.44	20	0.044	1.00
LTE B5	22.33	24.48	20	0.056	0.54
LTE B7	-	23.20	20	0.042	1.00
LTE B12	20.29	22.44	20	0.035	0.46
LTE B13	20.35	22.50	20	0.035	0.52
LTE B14	21.48	23.63	20	0.046	0.53
LTE B25	-	23.17	20	0.041	1.00
LTE B26 (Part 22)	22.64	24.79	20	0.060	0.54
LTE B26 (Part 90)	22.41	24.56	20	0.057	0.54
LTE B66	-	23.27	20	0.042	1.00
LTE B71	20.87	23.02	20	0.040	0.44
Module 3					
LTE B2	-	23.22	20	0.042	1.00
LTE B4	-	23.29	20	0.042	1.00
LTE B5	22.10	24.25	20	0.053	0.54
LTE B7	-	23.18	20	0.041	1.00
LTE B12	20.38	22.53	20	0.036	0.46
LTE B13	19.62	21.77	20	0.030	0.52
LTE B14	20.90	23.05	20	0.040	0.53
LTE B25	-	23.21	20	0.042	1.00
LTE B26 (Part 22)	22.00	24.15	20	0.052	0.54
LTE B26 (Part 90)	21.72	23.87	20	0.048	0.54
LTE B66	-	23.44	20	0.044	1.00
LTE B71	20.67	22.82	20	0.038	0.44

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. EIRP = ERP + 2.15dB

Conclusion:

The formula of calculated the MPE is:

$$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

The simultaneous operation mode was determined by client.

WWAN (module 1) + WWAN (module 2) + WWAN (module 3)

$$= 0.056/0.54 + 0.060/0.54 + 0.053/0.54 = 0.313$$

Therefore the maximum calculations of above situations are less than the "1" limit.

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