

RF Exposure Report

Report No.: SA191015C02

FCC ID: RC6-GRN70C

Test Model: GRN70C

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FCC Registration /
Designation Number: 788550 / TW0003



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Release Control Record

Issue No.	Description	Date Issued
SA191015C02	Original Release	Dec. 09, 2019

1 Certificate of Conformity

Product: 4G Mesh Router

Brand: Amigo

Test Model: GRN70C

Sample Status: ENGINEERING SAMPLE

Applicant: Amigo Technology Inc.

Date of Evaluation: Dec. 09, 2019

Standards: FCC Part 2 (Section 2.1091)

References Test Guidance : KDB 447498 D01 General RF Exposure Guidance v06
IEEE C95.3 -2002

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 :



Date:

Dec. 09, 2019

Gina Liu / Specialist

Approved by :



Date:

Dec. 09, 2019

Dylan Chiou / 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				
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	...	...	f/1500	30
1500-100,000	...	...	1.0	30

f = Frequency in MHz ; *Plane-wave equivalent power density

2.2 MPE Calculation Formula

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

where

Pd = power density in mW/cm²

Pout = output power to antenna in mW

G = gain of antenna in linear scale

pi = 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 21cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Calculation Result of Maximum Conducted Power

Band	Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
LTE 2	1850-1910	23.47	4.7	21	0.118	1.00
LTE 4	1710-1755	23.08	4.7	21	0.108	1.00
LTE 5	824-849	23.93	3.5	21	0.100	0.55
LTE 7	2500-2570	23.88	4.7	21	0.130	1.00
WLAN	2412-2462	24.50	5.68	21	0.188	1.00
	5180-5240	25.58	8.14	21	0.425	1.00
	5745-5825	27.35	8.14	21	0.639	1.00

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. 2.4GHz: Directional gain = 2.67 dBi + 10log(2) = 5.68 dBi
5.0GHz: Directional gain = 5.13 dBi + 10log(2) = 8.14 dBi

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

$WLAN\ 2.4GHz + WLAN\ 5GHz + WWAN = 0.188/1 + 0.639/1 + 0.130/1 = 0.957$

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

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