

RF Exposure Report

Report No.: SABENL-WTW-P22010777

FCC ID: 2A4C6-GMP02

Test Model: WPEA-251ACNI(BT)

Received Date: 2022/1/24

Test Date: 2022/3/9

Issued Date: 2022/4/7

Applicant: KONICA MINOLTA, INC.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Hsin Chu Laboratory

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Test Location: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,
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**FCC Registration /
Designation Number:** 723255 / TW2022

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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
2.4 Antenna Gain	6
2.5 Calculation Result	7

Release Control Record

Issue No.	Description	Date Issued
SABENL-WTW-P22010777	Original release.	2022/4/7

1 Certificate of Conformity

Product: 802.11ac/b/g/n Wi-Fi+BT Module

Brand: Sparklan

Test Model: WPEA-251ACNI(BT)

Sample Status: Engineering sample


Applicant: KONICA MINOLTA, INC.


Test Date: 2022/3/9

Standards: FCC Part 2 (Section 2.1091)

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 EMC characteristics under the conditions specified in this report.

Prepared by :  , **Date:** 2022/4/7
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Approved by :  , **Date:** 2022/4/7
May Chen / Manager

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

$$Pd = (Pout * G) / (4 * \pi * r^2)$$

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 20cm away from the body of the user.

So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

Antenna No.	RF Chain No.	Brand	Model	Antenna Net Gain (dBi)	Frequency Range (GHz)	Antenna Type	Connector Type
WIFI 0 BT	0	RTI	C0255-ANG0027	2.8	2.4~2.4835	PCB	ipex(MHF)
				6.6	5.15~5.85		
WIFI 1	1	RTI	C0255-ANG0029	2.8	2.4~2.4835	PCB	ipex(MHF)
				6.6	5.15~5.85		

Note: The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

2.5 Calculation Result

Operation Mode	Evaluation Frequency (MHz)	Max. Average Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Result
WLAN (2.4GHz)	2412~2462	314.804	2.8	20	0.11934	1	Pass
WLAN (U-NII-1)	5180~5250	103.561	6.6	20	0.09417	1	Pass
WLAN (U-NII-2A)	5250~5320	102.716	6.6	20	0.0934	1	Pass
WLAN (U-NII-2C)	5500~5720	102.244	6.6	20	0.09298	1	Pass
WLAN (U-NII-3)	5745~5825	139.998	6.6	20	0.12731	1	Pass
BT-EDR	2402~2480	5.408	2.8	20	0.00205	1	Pass
BT-LE	2402~2480	1.879	2.8	20	0.00071	1	Pass

NOTE:

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

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

$$\text{WLAN 5GHz+ Bluetooth} = 0.12731 / 1 + 0.00205 / 1 = 0.12936$$

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

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