RF Exposure Report

Report No.:	SABBQJ-WTW-P21030490
FCC ID:	ACJ9TGWW18A
Test Model:	WW18A
Received Date:	Mar. 26, 2021
Date of Evaluation:	Apr. 28, 2021
Issued Date:	May 03, 2021
Applicant:	Panasonic Corporation of North America
Address:	Two Riverforont Plaza, 9th Floor,Newark, NJ 07102-5490, USA
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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Release Control Record

Issue No.	Description	Date Issued
SABBQJ-WTW-P21030490	Original Release	May 03, 2021

1 Certificate of Conformity

Product:	Radio Module
Brand:	Panasonic
Test Model:	WW18A
Sample Status:	Engineering Sample
Applicant:	Panasonic Corporation of North America
Date of Evaluation:	Apr. 28, 2021
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 : Gina Liu , **Date:** May 03, 2021

Gina Liu / Specialist

Approved by : , **Date:** May 03, 2021

Dylan Chiou / Senior 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

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

where

Pd = power density in mW/cm^2

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 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 48	3552.5 ~ 3697.5	17.81	3.65	20	0.028	1.00
WLAN	2412-2462	21.11	4.84	20	0.078	1.00
	5180-5240	21.25	4.13	20	0.069	1.00
	5260-5320	21.29	4.13	20	0.069	1.00
	5500-5700	21.55	4.47	20	0.080	1.00
	5745-5825	21.24	4.6	20	0.076	1.00
BT	2402-2480	10.05	1.83	20	0.003	1.00

Note:

1. The WLAN module (Model : AX210NGW, FCC ID : ACJ9TGWL20B), Refer to WLAN module report (Intel report No.: 180717-02.TR01, 180717-02.TR02, 180717-02.TR03, 180717-02.TR04 and 180717-02.TR05) for the WLAN Power.
2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
3. 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

Conclusion:

Both of the WWAN, WLAN and BT can transmit simultaneously, the formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

WWAN + WLAN + BT = 0.028/1 + 0.080/1 + 0.003/1 = 0.111

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

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