

TEST REPORT

FCC MPE Test for WW21B

APPLICANT

Panasonic Corporation of North America

REPORT NO.

HCT-RF-2201-FC053-R1

DATE OF ISSUE

January 14, 2022

Tested by
Jae Ryang Do



Technical Manager
Kwon Jeong



HCT CO., LTD.
Bongjai Huh
BongJai Huh / CEO



HCT Co., Ltd.

74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA
Tel. +82 31 634 6300 Fax. +82 31 645 6401

**TEST
REPORT**

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Additional Model

-

Applicant

Panasonic Corporation of North America

Two Riverfront Plaza, 9th Floor, Newark, NJ 07102-5490, USA

**Eut Type
Model Name**

Wireless Module
WW21B

FCC ID

ACJ9TGWW21B

The result shown in this test report refer only to the sample(s) tested unless otherwise stated.

This test results were applied only to the test methods required by the standard.

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	January 07, 2022	Initial Release
1	January 14, 2022	- Added the note 3, 4 on page 5 - Removed the unit of note 2

Engineering Statement:

The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of the FCC Rules under normal use and maintenance.

If this report is required to confirmation of authenticity, please contact to www.hct.co.kr



RF Exposure Statement

1. Limit

According to § 1.1310, § 2.1091 RF exposure is calculated.

(B) Limits for General Population/Uncontrolled Exposures

Frequency range (MHz)	Electric field Strength (V/m)	Magnetic field Strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
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. Maximum Permissible Exposure Prediction

Prediction of MPE limit at a given distance

$$S = PG/4\pi R^2$$

S = Power density

P = Power input to antenna

G = Power gain to the antenna in the direction of interest relative to an isotropic radiator

R = Distance to the center of radiation of the antenna

3. RESULTS

- LTE Band 41 Uplink CA -

Max Peak output Power at antenna input terminal	24.50	dBm
Max Peak output Power at antenna input terminal	281.84	mW
Prediction distance	20.00	cm
Prediction frequency	2506.0 ~ 2680.0	MHz
Antenna Gain including Cable (typical)	2.29	dBi
Antenna Gain including Cable (numeric)	1.69	-
Power density at prediction frequency(S)	0.0950	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

EIRP	26.79	(dBm)
ERP	24.64	(dBm)
ERP	0.291	(W)
ERP Limit	3.00	(W)
MARGIN	10.13	(dB)

Note:

1. All bands of operation were calculated and the worst case result is reported.
 (Worst case: LTE Band 41 Uplink CA)
2. WWAN MPE Ratio Worst + WLAN SAR Ratio Worst ≤ 1
 -> (MPE Limit Ratio = 0.095) + 0.11875 (0.19/1.6)= 0.21375 ≤ 1
3. WLAN SAR ratio is for the collocated WLAN module being approved in a Class II Permissive change for FCC ID ACJ9TGWL20B installed and collocated with this WWAN transmitter in portable host FZ-40.
4. SAR Report Number: HCT-SR-2112-FC005