

RF Exposure Report

Report No.: SABARR-WTW-P21030485

FCC ID: RAS-MT7922A22M

Test Model: MT7922A22M

Received Date: Mar. 12, 2021

Test Date: Mar. 20 to Apr. 22, 2021

Issued Date: May 26, 2021

Applicant: MEDIATEK 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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Release Control Record

Issue No.	Description	Date Issued
SABARR-WTW-P21030485	Original release.	May 26, 2021

1 Certificate of Conformity

Product: 2TX 11ax (WiFi6E) BW160 + BT/BLE Combo Card

Brand: MediaTek

Test Model: MT7922A22M

Sample Status: Engineering sample

Applicant: MEDIATEK Inc.

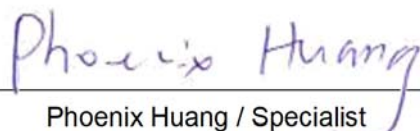
Test Date: Mar. 20 to Apr. 22, 2021

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 :


Phoenix Huang / Specialist

Date:

May 26, 2021

Approved by :



Clark Lin / Technical Manager

Date:

May 26, 2021

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 20 cm 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	Cable Length (mm)
1	Chain0	PSA	RFMTA340718EMLB302	3.18 4.92	2.4~2.4835 5.15~5.85	PIFA	i-pex(MHF)	200
2	Chain1	PSA	RFMTA340718EMLB302	3.18 4.92	2.4~2.4835 5.15~5.85	PIFA	i-pex(MHF)	200
3	Chain0	PSA	RFMTA311020EMMB301	1.71 4.82 4.76 4.29 4.61 4.09	2.4~2.4835 5.15~5.85 5.925~6.425 6.425~6.525 6.525~6.875 6.875~7.125	PIFA	i-pex(MHF)	200
4	Chain1	PSA	RFMTA311020EMMB301	1.71 4.82 4.76 4.29 4.61 4.09	2.4~2.4835 5.15~5.85 5.925~6.425 6.425~6.525 6.525~6.875 6.875~7.125	PIFA	i-pex(MHF)	200

Note: Max. gain was selected for the final test.

* 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 of Maximum Conducted Power

Operation Mode	Evaluation Frequency (MHz)	Max. Average Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN (2.4GHz)	2412~2472	305.167	6.19	20	0.2525	1
WLAN (U-NII-1)	5180~5250	197.711	7.93	20	0.24421	1
WLAN (U-NII-2A)	5250~5320	195.456	7.93	20	0.24142	1
WLAN (U-NII-2C)	5500~5720	186.872	7.93	20	0.23082	1
WLAN (U-NII-3)	5745~5825	250.93	7.93	20	0.30994	1
BT-EDR	2402~2480	22.029	3.18	20	0.00911	1
BT-LE	2402~2480	21.827	3.18	20	0.00903	1

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. 2.4GHz: The directional gain = 3.18 dBi + 10log(2) = 6.19 dBi
3. 5GHz: The directional gain = 4.92 dBi + 10log(2) = 7.93 dBi
4. 2.4GHz & 5GHz technology cannot transmit at same time.

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

$$WLAN (5GHz) + Bluetooth = 0.30994 / 1 + 0.00911 / 1 = 0.31905$$

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

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