

RF Exposure Report

Report No.: SABARR-WTW-P21100969

FCC ID: RAS-MT7902

Test Model: MT7902

Received Date: 2021/10/28

Test Date: 2021/11/10 ~ 2022/1/18

Issued Date: 2022/1/27

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-P21100969	Original release.	2022/1/27

1 Certificate of Conformity

Product: 1TX 11ax (WiFi6E) BW160 + BT/BLE Combo Card
Brand: MediaTek
Test Model: MT7902
Sample Status: Engineering sample
Applicant: MediaTek Inc.
Test Date: 2021/11/10 ~ 2022/1/18
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.

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Phoenix Huang / Specialist

Approved by : Clark Lin, **Date:** 2022/1/27
Clark Lin / Technical 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

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

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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 Set 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	2.4~2.4835	PIFA	ipex(MHF)	200
				4.92	5.15~5.895			
	Chain1 (only Diversity Sample)	PSA	RFMTA340718EMLB302	3.18	2.4~2.4835	PIFA	ipex(MHF)	200
				4.92	5.15~5.895			
2	Chain0	PSA	RFMTA311020EMMB301	1.71	2.4~2.4835	PIFA	ipex(MHF)	200
				4.82	5.15~5.895			
				4.76	5.925~6.425			
				4.29	6.425~6.525			
				4.61	6.525~6.875			
				4.09	6.875~7.125			
	Chain1 (only Diversity Sample)	PSA	RFMTA311020EMMB301	1.71	2.4~2.4835	PIFA	ipex(MHF)	200
				4.82	5.15~5.895			
				4.76	5.925~6.425			
				4.29	6.425~6.525			
				4.61	6.525~6.875			
				4.09	6.875~7.125			

Note:

1. The Bluetooth technology will fix transmission on Chain 0.
2. 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)	Pass/Fail
WLAN (2.4GHz)	2412-2472	274.789	3.18	20	0.11369	1	Pass
WLAN (U-NII-1)	5180-5250	147.231	4.92	20	0.09093	1	Pass
WLAN (U-NII-2A)	5250-5320	154.525	4.92	20	0.09544	1	Pass
WLAN (U-NII-2C)	5500-5720	159.221	4.92	20	0.09834	1	Pass
WLAN (U-NII-3)	5745-5825	177.419	4.92	20	0.10958	1	Pass
WLAN (U-NII-4)	5845-5885	193.197	4.92	20	0.11932	1	Pass
WLAN (U-NII-5)	5955-6415	35.481	4.76	20	0.02112	1	Pass
WLAN (U-NII-6)	6435-6525	35.645	4.29	20	0.01904	1	Pass
WLAN (U-NII-7)	6525-6855	36.983	4.61	20	0.02127	1	Pass
WLAN (U-NII-8)	6875-7115	36.813	4.09	20	0.01878	1	Pass
BT-EDR	2402-2480	79.983	3.18	20	0.03309	1	Pass
BT-LE	2402-2480	84.918	3.18	20	0.03513	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

WLAN (5.9GHz) + Bluetooth = $0.11932 / 1 + 0.03513 / 1 = 0.15445$

WLAN (6GHz) + Bluetooth = $0.02127 / 1 + 0.03513 / 1 = 0.05640$

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

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