RF Exposure Report

Report No.:	SABEOO-WTW-P21020573
FCC ID:	MAD-G2021-49-01B
Test Model:	G2021-49-01B
Received Date:	Mar. 31, 2021
Test Date:	Jun. 04 ~ Jun. 28, 2021
Issued Date:	Jun. 30, 2021

Applicant:	Microelectronics Technology Inc.
Address:	No. 1, Innovation Road II, Hsinchu Science Park, Hsinchu 300, Taiwan, R.O.C.
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

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
SABEOO-WTW-P21020573	Original release	Jun. 30, 2021

1   Certificate of Conformity

Product: Dual Mid Band RU

Brand: MTI

Test Model: G2021-49-01B

Sample Status: Engineering sample

Applicant: Microelectronics Technology Inc.

Test Date: Jun. 04 ~ Jun. 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 : _Pettie Chen_ , **Date:** Jun. 30, 2021

Pettie Chen / Senior Specialist

Approved by : _Bruce Chen_ , **Date:** Jun. 30, 2021

Bruce Chen / 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 443cm away from the body of the user. So, this device is classified as fixed station and installations by professional service personnel device.

3   General Description of Antenna Gain

The antennas provided to the EUT, please refer to the following table:

Antenna Type	Directional Cross-Polarized Sector antenna with :
	Band n66 Gain = 15 dBi
	Band n70 Gain = 17 dBi
Antenna Connector	4x4.3-10 Female

Note:

1.   The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

2.   Based on the maximum RF power (conducted & EIRP) listed in this report, considerations pertaining to the maximum allowed EIRP (conducted power level), signal type and antenna gain should be considered for each installation.

4   Calculation Result of Maximum Conducted Power

For 5G NR Band n66
5MHz (Single Carrier): 16QAM

Frequency Band (MHz)	Conducted Average Power - Per Chain (dBm/MHz)				Max Conducted Average Power - Totaol (dBm/MHz)	Directional Gain (dBi)	Max EIRP Power (dBm/MHz)	Max EIRP Power (mW/MHz)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
	ANT0	ANT1	ANT2	ANT3							
2155	38.87	38.80	38.66	38.80	44.80	15	59.80	955821.3453	443	0.387	1

For 5G NR Band n70
5MHz (Single Carrier): 16QAM

Frequency Band (MHz)	Conducted Average Power - Per Chain (dBm/MHz)				Max Conducted Average Power - Totaol (dBm/MHz)	Directional Gain (dBi)	Max EIRP Power (dBm/MHz)	Max EIRP Power (mW/MHz)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
	ANT0	ANT1	ANT2	ANT3							
2007.5	38.80	38.83	38.66	38.70	44.77	17	61.77	1503141.966	443	0.610	1

Note:
1.   EIRP Power = Conducted Power+ Antenna gain
2.   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 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

Band n66 + Band n70= 0.387/1+0.610/1 = 0.997

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

--- END ---