RF Exposure Report

Report No.: SABEOO-WTW-P21020574

FCC ID: MADG060708-50-01B

Test Model: G060708-50-01B

Received Date: Feb. 26, 2021

Test Date: June 05, 2021

Issued Date: July 13, 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 Hsin Chu Laboratory

Lab Address: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan

Test Location: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan

FCC Registration / Designation Number: 723255 / TW2022

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Release Control Record

Issue No.	Description	Date Issued
SABEOO-WTW-P21020574	Original release.	July 13, 2021

1 Certificate of Conformity

Product:	Triple Low Band RU
Brand:	MTI
Test Model:	G060708-50-01B
Sample Status:	Engineering sample
Applicant:	Microelectronics Technology Inc.
Test Date:	June 05, 2021
Standards:	FCC Part 2 (Section 2.1091)
	IEEE C95.3 -2002
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 EMC characteristics under the conditions specified in this report.

Prepared by : _____ , **Date:** _____ July 13, 2021 _____

Claire Kuan / Specialist

Approved by : _____ , **Date:** _____ July 13, 2021 _____

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/cm2)	Average Time (minutes)
(A)Limits For Occupational / Control Exposures				
300-1500	…	…	F/300	6
1500-100,000	…	…	5	6
(B)Limits For General Population / Uncontrolled Exposure				
300-1500	…	…	F/1500	30
1500-100,000	…	…	1.0	30

F = Frequency in MHz

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/MHz

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 860 cm 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 26 Gain = 16 dBi Band 29 Gain = 18 dBi Band 71 Gain = 18 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

For 5G NR Band n26_5M Single Carrier : QPSK

Frequency Band (MHz)	Conducted Average Power - Per Chain (dBm)		Max Conducted Average Power - Totaol (dBm)	Directional Gain (dBi)	Max EIRP Power (dBm)	Max EIRP Power (mW)	Distance (cm)	Power Density (mW/cm²)	Limit (mW/cm²)
	ANT2	ANT3							
866.5	42.76	42.72	45.75	16.00	61.75	1496235.66	860	0.16099	0.57767

For 5G NR Band n29_5M Single Carrier : QPSK

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/cm²)	Limit (mW/cm²)
	ANT0	ANT1							
719.5	40.78	40.70	43.75	18.00	61.75	1496235.7	860	0.16099	0.47967

For 5G NR Band n71_5M Single Carrier : QPSK

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/cm²)	Limit (mW/cm²)
	ANT0	ANT1	ANT2	ANT3							
634.5	37.70	37.76	37.78	37.82	43.79	18.00	61.79	1510080.15	860	0.16248	0.42300

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 n26 + Band n29+ Band n71=0.16099/0.57767+0.16099/0.47967+0.16248/0.423=0.99843

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

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