

## RF Exposure Report

**Report No.:** SA191122C08 R1

**FCC ID:** UJH-R1LOW

**Test Model:** R1LOW

**Received Date:** Nov. 22, 2019

**Test Date:** Dec. 29, 2019 ~ Jan. 03, 2020

**Issued Date:** Apr. 01, 2020

**Applicant:** Mitsubishi Electric Corporation Sanda Works

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**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
Lin Kou Laboratories

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**Test Location:** No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City  
33383, Taiwan

**FCC Registration /  
Designation Number:** 788550 / TW0003



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### Release Control Record

| Issue No.      | Description      | Date Issued   |
|----------------|------------------|---------------|
| SA191122C08    | Original release | Jan. 10, 2020 |
| SA191122C08 R1 | Revised brand    | Apr. 01, 2020 |

## 1 Certificate of Conformity

**Product:** Display Audio

**Brand:** Mitsubishi Electric

**Test Model:** R1LOW

**Sample Status:** DV

**Applicant:** Mitsubishi Electric Corporation Sanda Works

**Test Date:** Dec. 29, 2019 ~ Jan. 03, 2020

**Standards:** FCC Part 2 (Section 2.1093)  
IEEE C95.1-1992

**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:** Apr. 01, 2020  
Pettie Chen / Senior Specialist

**Approved by :** Bruce Chen , **Date:** Apr. 01, 2020  
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 <sup>2</sup> ) | 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 <sup>2</sup> )*              | 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<sup>2</sup>

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 20cm away from the body of the user. So, this device is classified as Mobile Device.

### 3 Calculation Result of Maximum Conducted Power

| Frequency Band (MHz) | Max Power (dBm) | Antenna Gain (dBi) | Distance (cm) | Power Density (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) |
|----------------------|-----------------|--------------------|---------------|-------------------------------------|-----------------------------|
| Module 1             |                 |                    |               |                                     |                             |
| WLAN 2412~2462       | 14.51           | 5.07               | 20            | 0.0181                              | 1                           |
| WLAN 5180~5240       | 6.31            | 6.07               | 20            | 0.0034                              | 1                           |
| WLAN 5260~5320       | 6.63            | 6.07               | 20            | 0.0037                              | 1                           |
| WLAN 5500~5700       | 6.73            | 6.07               | 20            | 0.0038                              | 1                           |
| WLAN 5745~5825       | 6.46            | 6.07               | 20            | 0.0036                              | 1                           |
| BT EDR 2402~2480     | -0.80           | 3                  | 20            | 0.0003                              | 1                           |
| BT LE 2402~2480      | -1.15           | 3                  | 20            | 0.0003                              | 1                           |
| Module 2             |                 |                    |               |                                     |                             |
| BT LE 2402~2480      | 4.08            | 3                  | 20            | 0.0010                              | 1                           |

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

WLAN 2.4GHz: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 5.07\text{dBi}$

WLAN 5.0GHz: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 6.07\text{dBi}$

#### Conclusion:

Module 1:5GHz Band & Module 2: BT LE can transmit at same time.

The formula of calculated the MPE is:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

Module 1: WLAN 5GHz Band + Module 2: BT LE =  $0.0038 / 1 + 0.0010 / 1 = 0.0048$

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

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