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Report No.: 1808WSU011-U6 Report Version: V01 Issue Date: 11-30-2018

RF Exposure Evaluation Declaration

FCC ID: VPYLBEE5ZZ1PJ

APPLICANT: Murata Manufacturing Co., Ltd.

Application Type: Certification

Product: W-LAN + Bluetooth Module

Model No.: 1PJ

FCC Classification: FCC Part 15 Spread Spectrum Transmitter(DSS)

Digital Transmission System (DTS)

Unlicensed National Information Infrastructure (NII)

Reviewed By:

Kevin Guo)

Approved By:

ilac-MRA



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.





Revision History

| Report No. | Version | Description | Issue Date | Note |
|---------------|---------|----------------|------------|-------|
| 1808WSU011-U6 | Rev. 01 | Initial report | 11-30-2018 | Valid |
| | | | | |



1. PRODUCT INFORMATION

1.1. Equipment Description

| Product Name: | W-LAN + Bluetooth Module |
|-------------------------|--------------------------|
| Model No.: | 1PJ |
| Brand Name: | Murata |
| Work Voltage | DC 3.3V |
| WiFi Specification | 802.11 a/b/g/n/ac |
| Bluetooth Specification | V5.0 dual mode |



2. RF Exposure Evaluation

2.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

| Frequency Range | Electric Field | Magnetic Field | Power Density | Average Time |
|--|---------------------|----------------------|-----------------------|--------------|
| (MHz) | Strength (V/m) | Strength (A/m) | (mW/cm ²) | (Minutes) |
| (A) Limits for Occupational/ Control Exposures | | | | |
| 300-1500 | | | f/300 | 6 |
| 1500-100,000 | | | 5 | 6 |
| | (B) Limits for Gene | ral Population/ Unco | ntrolled Exposures | |
| 300-1500 | | | f/1500 | 6 |
| 1500-100,000 | | | 1 | 30 |

f= Frequency in MHz

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

Pd is the limit of MPE, 1mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

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2.2. Test Result of RF Exposure Evaluation

| Product | W-LAN + Bluetooth Module |
|-----------|--------------------------|
| Test Item | RF Exposure Evaluation |

| Test Mode | Frequency Band (MHz) | Maximum EIRP (dBm) | Power Density at $R = 20 \text{ cm}$ (mW/cm^2) | Limit (mW/cm²) |
|----------------|-------------------------|-----------------------|---|-------------------|
| Bluetooth | 2402 ~ 2480 | 10.20 | 0.0021 | 1 |
| 802.11b/g/n/ac | 2412 ~ 2462 | 20.92 | 0.0246 | 1 |
| 802.11a/n/ac | 5180 ~ 5825 | 15.98 | 0.0079 | 1 |

CONCULISON:

The max Power Density at R (20 cm) = 0.0021mW/cm² < 1 mW/cm² for Bluetooth.

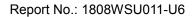
The max Power Density at R (20 cm) = 0.0246mW/cm² < 1 mW/cm² for 2.4G WLAN.

The max Power Density at R (20 cm) = 0.0079mW/cm² < 1 mW/cm² for 5G WLAN.

The Ratio of Simultaneously transmitting for Bluetooth and Wi-Fi is less than 1.

Therefore, the Min Safety Distance is 20cm.

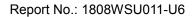
| The End |
|---------|
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Appendix A – Test Setup Photograph

Refer to "1808WSU011-UT" file.





Appendix B – EUT Photograph

Refer to "1808WSU011-UE" file.