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)

Test Procedure(s):   KDB 447498 D01v06

Test Date: May 16, 2019

Reviewed By: _(Kevin Guo)_

Approved By: _(Robin Wu)_

ilac-MRA

A2LA
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TESTING LABORATORY
CERTIFICATE #3628.01

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.

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Revision History

Report No.	Version	Description	Issue Date	Note
1904WSU022-U5	Rev. 01	Initial report	05-24-2019	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
Wi-Fi Specification	802.11a/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 (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	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 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/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

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.

2.2. Test Result of RF Exposure Evaluation

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

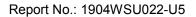| Test Mode	Frequency Band (MHz)	Maximum EIRP (dBm)	Power Density at R = 20 cm (mW/cm^2)	Limit (mW/cm^2)
Bluetooth	2402 ~ 2480	11.59	0.0029	1
802.11b/g/n/ac	2412 ~ 2462	22.06	0.0320	1
802.11a/n/ac	5180 ~ 5825	18.36	0.0136	1

CONCULISON:

The max Power Density at R (20 cm) = 0.0029mW/cm^2 < 1 mW/cm^2 for Bluetooth.

The max Power Density at R (20 cm) = 0.0320mW/cm^2 < 1 mW/cm^2 for 2.4G WLAN.

The max Power Density at R (20 cm) = 0.0136mW/cm^2 < 1 mW/cm^2 for 5G WLAN.

Therefore, the Min Safety Distance is 20cm.

—————— The End ——————

Appendix A – EUT Photograph

Refer to "1904WSU022-UE" file.