Shenzhen Most Technology Service Co., Ltd.
No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park, Nanshan, Shenzhen, Guangdong, China.

RF Exposure Evaluation Report

Report Reference No.....:	**MTWG22030192-H**
FCC ID..... :	**2AWDBTWG009BW**
Compiled by (position+printed name+signature)..:	File administrators Alisa Luo
Supervised by (position+printed name+signature)..:	Test Engineer Sunny Deng
Approved by (position+printed name+signature)..:	Manager Yvette Zhou
Date of issue.....:	**August 15,2022**
Representative Laboratory Name .:	**Shenzhen Most Technology Service Co., Ltd.**
Address .....:	No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park, Nanshan, Shenzhen, Guangdong, China.
Applicant's name.....:	**Fujian Baldr Technology Co., Ltd**
Address .....:	2F Jin Shan Ya Yuan,No. 36 Jin Rong North Road,Fuzhou,China
Test specification/ Standard .....**:**	**47 CFR Part 1.1307**
	47 CFR Part 2.1093
TRF Originator.....:	Shenzhen Most Technology Service Co., Ltd.

Test item description .....:	WiFi Gateway Hub
Trade Mark .....:	Rainpoint
Model/Type reference.....:	TWG009BW
Listed Models .....:	N/A
Modulation Type .....:	CCK/DSSS/ OFDM
Operation Frequency.....:	From 2412 - 2462MHz
Rating .....:	AC110-240V/ 50-60Hz
Hardware version .....:	V03
Software version .....:	V1.3.2
Result.....:	**PASS**

TEST REPORT

Equipment under Test	:	WiFi Gateway Hub
Model /Type	:	TWG009BW
Listed Models	:	N/A
Remark	:	N/A
Applicant	:	**Fujian Baldr Technology Co., Ltd**
Address	:	2F Jin Shan Ya Yuan,No. 36 Jin Rong North Road,Fuzhou,China
Manufacturer	:	**Fujian Baldr Technology Co., Ltd**
Address	:	2F Jin Shan Ya Yuan,No. 36 Jin Rong North Road,Fuzhou,China

Test Result:	**PASS**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

1. Revision History

Revision	Issue Date	Revisions	Revised By
00	2022.08.15	Initial Issue	Alisa Luo

2. SAR Evaluation

2.1 RF Exposure Compliance Requirement

According to FCC Part1.1310: 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 part1.1307(b)

TABLE 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)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*($900/f^2$)	6
30–300	61.4	0.163	1.0	6
300–1500	.....	.....	f/300	6
1500–100,000	.....	.....	5	6
(B) 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
Friis Formula
Friis transmission 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 id the limit of MPE, 1 mW/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.

2.1.3 EUT RF Exposure

Measurement Data

Wifi 2.4G

802.11b			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2412MHz)	3.88	3.88±1	4.88
Middle(2437MHz)	3.63	3.63±1	4.63
Highest(2462MHz)	4.16	4.16±1	5.16

802.11g			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2412MHz)	-3.36	-3.36±1	-2.36
Middle(2437MHz)	-1.88	-1.88±1	-0.88
Highest(2462MHz)	-0.90	-0.90±1	0.10

802.11n(HT20)			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2412MHz)	-4.00	-4.00±1	-3.00
Middle(2437MHz)	-3.36	-3.36±1	-2.36
Highest(2462MHz)	-1.01	-1.01±1	-0.01

Worst case: 802.11b						
Channel	Maximum Peak Conducted Output Power (dBm)	Maximum Peak Conducted Output Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm2)	Limit	Result
Highest(2462 MHz)	5.16	3.28	1.88	0.001	1.0	Pass

Note: 1) Refer to report **MTWG22030192-R1** for EUT test Max Conducted average Output Power value.
Note: 2) Pd = (Pout*G)/(4* Pi * R2)=(3.28*1.54)/(4*3.1416*20^2)=0.001
Note: 3)EUT's Bluetooth module is more than 20cm away from the human body.

BLE

GFSK				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	2.086	2.086±1	3.086	2.03
Middle(2440MHz)	2.698	2.698±1	3.698	2.34
Highest(2480MHz)	0.179	0.179±1	1.179	1.31

Worst case: GFSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Maximum Peak Conducted Output Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm2)	Limit	Result
Lowest(2440MHz)	3.698	2.34	1.88	0.0007	1.0	Pass

Note: 1) Refer to report **MTWG22040297-R2** for EUT test Max Conducted average Output Power value.
Note: 2) Pd = (Pout*G)/(4* Pi * R2)=(2.34*1.54)/(4*3.1416*202)=0.0007
Note: 3)EUT's Bluetooth module is more than 20cm away from the human body.

.....THE END OF REPORT.....