

RF Exposure Evaluation Report

Report Reference No......: **MTWG22020111-H**

FCC ID.....: **2AWDBHWS388WRF**

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Representative Laboratory Name..: **Shenzhen Most Technology Service Co., Ltd.**

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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.

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Test item description: WIFI WEATHER STATION GATEWAY

Trade Mark: RainPoint

Model/Type reference.....: HWS388WRF

Listed Models: HWS019FRF

Modulation Type: CCK/DSSS/ OFDM

Operation Frequency.....: From 2412 - 2462MHz

Rating: DC4.5V(by Batteries)

DC 5V (by Adapter)

Hardware version: HWS388WRF-V7 20211215

Software version: V1.1

Result.....: **PASS**

Test item description: WIFI WEATHER STATION GATEWAY

TEST REPORT

Equipment under Test : WIFI WEATHER STATION GATEWAY

Model /Type : HWS388WRF

Listed Models : HWS019FRF

Remark : Only the model name is different.

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
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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	2022.03.04	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: $P_d = (P_{out} * G) / (4 * \pi * R^2)$ Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

P_d is 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)	13.254	13.254 ± 1	14.254
Middle(2437MHz)	13.541	13.541 ± 1	14.541
Highest(2462MHz)	13.652	13.652 ± 1	14.652

802.11g			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2412MHz)	8.954	8.954 ± 1	9.954
Middle(2437MHz)	10.021	10.021 ± 1	11.021
Highest(2462MHz)	9.654	9.654 ± 1	10.654

802.11n(HT20)			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2412MHz)	8.954	8.954 ± 1	9.954
Middle(2437MHz)	9.854	9.854 ± 1	10.854
Highest(2462MHz)	8.954	8.954 ± 1	9.954

802.11n(HT40)			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2422MHz)	5.946	5.946 ± 1	6.946
Middle(2437MHz)	6.654	6.654 ± 1	7.654
Highest(2452MHz)	4.325	4.325 ± 1	5.325

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/cm ²)	Limit	Result
Highest(2462 MHz)	14.652	29.19	0	0.006	1.0	Pass

Note: 1) Refer to report **MTWG22010046-R2** for EUT test Max Conducted average Output Power value.

Note: 2) $P_d = (P_{out} * G) / (4 * \pi * R^2) = (29.19 * 1) / (4 * 3.1416 * 20^2) = 0.006$

Note: 3) EUT's Bluetooth module is more than 20cm away from the human body.

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