

RF Exposure Evaluation Declaration

FCC ID: SFK-WF808

Applicant: CIG Shanghai Co., Ltd.

Application Type: Certification

Product: WiFi 6 Extender

Model No.: WF-808

Brand Name: CIG

FCC Classification: Digital Transmission System (DTS)
Unlicensed National Information Infrastructure (NII)

Test Procedure(s): FCC part 2.1091

Reviewed By:

Sunny Sun

Approved By:

Robin Wu



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
2105RSU006-U6	Rev. 01	Initial Report	09-30-2021	Valid

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1.4. Product Information

Product Name	WiFi 6 Extender
Model No.	WF-808
Brand Name	CIG
Operating Temperature	0 ~ 40°C
Wi-Fi Specification	802.11a/b/g/n/ac
Bluetooth Specification	v4.0 single mode
Antenna Information	Refer to section 1.5
Power Type	AC/DC Adapter
Accessory	
AC to DC Adapter	Model: ADS0248T-W050250 Input: 100-240V ~ 50-60Hz 0.6A Output: 5V, 2.5A
Remark: 1. The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.	

1.5. Description of Available Antennas

Antenna Type	Frequency (MHz)	TX Path	Max Antenna Gain (dBi)	Uncorrelated Antenna Gain (dBi)
Wi-Fi Antenna				
PCB Antenna	2400 ~ 2483.5	2	3.0	0.51
PCB Antenna	5150 ~ 5350	4	6.5	1.95
PCB Antenna	5470 ~ 5725	4	7.2	1.97
Bluetooth Antenna				
PCB Antenna	2400 ~ 2483.5	1	1.9	--
Remark 1. The device supports SISO Mode for 802.11a and support MIMO mode for 802.11b/g/n/ac and supports the STBC mode only. 2. Due to the same modulation & power setting between 802.11n and 802.11ac, so 802.11n-HT20 and HT40 are covered by 802.11ac-VHT20 and VHT40 in this report.				

2. RF Exposure Evaluation

2.1. Limit of Maximum Permissible Exposure

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: $Pd = (Pout \cdot G) / (4 \cdot \pi \cdot r^2)$

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.

2.2. Calculated Results

Product	WiFi 6 Extender
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)
Wi-Fi	2412 ~ 2462	23.15	0.0411	1
	5150 ~ 5350	27.10	0.1020	1
	5470 ~ 5725			
	5725 ~ 5850			
Bluetooth	2402 ~ 2480	1.14	0.0003	1

CONCLUSION:

Therefore, the Max Power Density at R (20 cm) = $0.0411 \text{ mW/cm}^2 + 0.1020 \text{ mW/cm}^2 + 0.0003 \text{ mW/cm}^2 = 0.1434 \text{ mW/cm}^2 < 1 \text{ mW/cm}^2$.

So the safety distance is 20cm for WiFi 6 Extender installed without any other radio equipment.

_____ The End _____

Appendix A - EUT Photograph

Refer to "2105RSU006-UE" file.