



FCC RF EXPOSURE REPORT

Applicant : Johnson Controls Inc

Address : 507 East Michigan Street, Milwaukee, WI 53202

Equipment : Building Automation Systems

Model No. : FW-28

Trade Name : EASYIO

FCC ID. : OEJFW28L

I HEREBY CERTIFY THAT :

The sample was received on Nov. 23, 2022 and the testing was completed on Dec. 16, 2022 at CerpPASS Technology Corp. The test result refers exclusively to the test presented test model / sample. Without written approval of CerpPASS Technology Corp., the test report shall not be reproduced except in full.

Approved by:



Leevin Li /Supervisor



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History of this test report

■ Original.

□ Additional attachment as following record:

Attachment No.	Issue Date	Description
DEFJ2211103	Dec. 30, 2022	Initial Issue



1. Test Configuration of Equipment under Test

1.1 Feature of Equipment

Equipment	Building Automation Systems
Model Name	FW-28
Model Discrepancy	N/A
Frequency Range	2400MHz-2483.5MHz
Modulation Type	802.11b: CCK, DQPSK, DBPSK 802.11g/n: BPSK, QPSK, 16QAM, 64QAM
Data Rate	802.11b: 1, 2, 5.5, 11Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n: MCS0 – MCS15, HT20/40
Antenna Type	Dipole Antenna
Working Temperature	0°C to +65°C
Operating Voltage	24V AC/DC, 0.3A, 7.2W, 60Hz
Antenna number	2
Antenna Gain	2dBi

Note: 1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2) EUT supports CDD mode, so 802.11b, 802.11g, 802.11n support MIMO Mode.

1.2 General Information of Test

Test Site	Cerpass Technology Corporation(Cerpass Laboratory) Address: Room 102, No. 5, Xing'an Road, Chang'an Town, Dongguan City, Guangdong Province Tel: +86-769-8547-1212 Fax: +86-769-8547-1912
FCC Designation No.:	CN1288



2. Radio Frequency Exposure

Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation)
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm ²) ☒ General Population/Uncontrolled exposure (S=1mW/cm ²)
Antenna diversity	☐ Single antenna ☒ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☒ Tx/Rx diversity
Evaluation applied	☒ MPE Evaluation* ☐ SAR Evaluation ☐ N/A

TEST RESULTS

No non-compliance noted.

Calculation

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{3770}$

Where E = Field strength in Volts / meter
 P = Power in Watts
 G = Numeric antenna gain
 d = Distance in meters
 S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{3770 d^2}$$

Changing to units of mW and cm, using:

$$P \text{ (mW)} = P \text{ (W)} / 1000 \text{ and}$$

$$d \text{ (cm)} = d \text{ (m)} / 100$$

Yields

$$S = \frac{30 \times (P/1000) \times G}{3770 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \quad \text{Equation 1}$$

Where d = Distance in cm
 P = Power in mW
 G = Numeric antenna gain
 S = Power density in mW / cm²

**Maximum Permissible Exposure**

Modulation Type	Channel Frequency (MHz)	Max. Conducted output power (dBm)	Max. Tune up power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)
802.11 g	2412-2462	23.25	25.25	2	20	0.106

Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

-----End of the report -----