

RF EXPOSURE REPORT

FOR

Applicant	:	Globe Electric Company Inc.
Address	:	150 Oneida, Montreal, Quebec, Canada, H9R 1A8
Equipment under Test	:	Ceiling fan
Model No.	:	GE27105(27105), GE27107(27107), GE27109(27109)
Trade Mark	:	Globe
FCC ID	:	2AQUQGE27109
Manufacturer	:	Globe Electric Company Inc.
Address	:	150 Oneida, Montreal, Quebec, Canada, H9R 1A8

Issued By: Guangdong Dongdian Testing Service Co., Ltd.

Add.: Unit 2,Building 1,No.17,Zongbu 2nd Road, Songshan Lake Park, Dongguan,
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REPORT

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Test Report Declare

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Address	:	150 Oneida, Montreal, Quebec, Canada, H9R 1A8
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Model No.	:	GE27105(27105), GE27107(27107), GE27109(27109)
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Standard Used: KDB447498 D01 General RF Exposure Guidance v06

We Declare:

The equipment described above is assessed by Guangdong Dongdian Testing Service Co., Ltd. and in the configuration assessed the equipment complied with the standards specified above. The assessed results are contained in this report and Guangdong Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these assess.

After evaluation, our opinion is that the equipment In Accordance with above standard.

Report No:	DDT-RE23072405-2E03		
Date of Receipt:	Aug. 08, 2023	Date of Test:	Aug. 08, 2023 ~ Sep. 05, 2023

Prepared By:

Tiger Mo

Tiger Mo/Engineer

Approved By:



Damon Hu/EMC Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Guangdong Dongdian Testing Service Co., Ltd.

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Sep. 05, 2023	

1. General Information

1.1. Description of equipment

EUT* Name	: Ceiling fan
Model Number	: GE27109, GE27107, GE27105
Difference of models	: All the models are electrical identical including the same hardware design (i.e., circuit design, PCB Layout, RF module/circuit, antenna type(s) and antenna location, components on PCB, etc.), only the Model Number, software version and appearance are different for all the models, therefore the test performed on the model GE27109(27109).
EUT function description	: Please reference user manual of this device
Power Supply	: AC 120V/60Hz
Radio Specification	: Bluetooth V5.2, IEEE 802.11b/g/n
Operation Frequency	: BLE:2402 MHz - 2480 MHz 2.4G WIFI : IEEE 802.11b: 2412MHz-2462MHz IEEE 802.11g: 2412MHz-2462MHz IEEE 802.11n HT20: 2412MHz-2462MHz IEEE 802.11n HT40: 2422MHz-2452MHz
Modulation	: BLE: GFSK 2.4G WIFI : IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20, HT40: OFDM (64QAM, 16QAM, QPSK, BPSK)
Data Rate	: BLE:1 Mbps 2.4G WIFI : IEEE 802.11b: up to 11 Mbps IEEE 802.11g: up to 54 Mbps IEEE 802.11n HT20: up to 72.2 Mbps IEEE 802.11n HT40: up to 150 Mbps
Antenna Gain	: Built-in FPC antenna, Maximum PK gain: 1.36 dBi
Serial Number	: S23072405-04 for conductive S23072405-04, S23072405-05, S23072405-06 for radiation

1.2. Assess laboratory

Guangdong Dongdian Testing Service Co., Ltd.

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CNAS Accreditation No. L6451; A2LA Accreditation Number: 3870.01

FCC Designation Number: CN1182, Test Firm Registration Number: 540522

Innovation, Science and Economic Development Canada Site Registration Number: 10288A

Conformity Assessment Body identifier: CN0048

VCCI facility registration number: C-20087, T-20088, R-20123, R-20155, G-20118

2. RF Exposure Evaluation

2.1. Requirement

Systems operating under the provisions of FCC 47 CFR section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device, and below RF Permissible Exposure limit shall comply with.

Limits for General Population/Uncontrolled Exposure

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

2.2. Calculation method

$$E(\text{V/m}) = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } S(\text{mW/cm}^2) = \frac{E^2}{377}$$

E = Electric field (V/m)

P = Peak RF output power (mW)

G = EUT Antenna numeric gain (numeric)=

d = Separation distance between radiator and human body (m)

The formula can be changed to

We can change the formula to:

$$S = \frac{30 \times P \times G}{377 \times d^2} \quad \text{or, } d = \sqrt{\frac{30 \times P \times G}{377 \times S}}$$

From the peak EUT RF output power, the minimum mobile separation distance, d= 0.2 m, as well as the gain of the used antenna, the RF power density can be obtained.

2.3. Estimation result

Mode	Maximum Output power (dBm)	Output power (mW)	tune up power (dBm)	Antenna Gain (dBi)	Antenna Gain (linear)	MPE Values (mW/cm ²)	MPE Limit (mW/cm ²)
BLE	3.99	2.51	4	1.36	1.37	0.00068	1
2.4G WIFI	18.91	77.80	19	1.36	1.37	0.02162	1

Note: The estimation distance is 20 cm

Simultaneous transmission MPE(worst case):

The ratio= $MPE_{BLE} / \text{limit} + MPE_{2.4G\ WIFI} / \text{limit} = 0.00068/1 + 0.02162/1 = 0.0223 < 1.0$

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

END OF REPORT