



Test Report No.: FM2008WDG0007

# RF EXPOSURE REPORT

Applicant	Consumer Lighting (U.S.) LLC dba GE Lighting, a Savant company.
Address	1975 Noble Road, Cleveland, Ohio 44112, United States.

Manufacturer or Supplier	Consumer Lighting (U.S.) LLC dba GE Lighting, a Savant company.
Address	1975 Noble Road, Cleveland, Ohio 44112, United States.
Product	ON/OFF Smart Switch
Brand Name	GE
Model	CSWONBLTWF1NN
Additional Model & Model Difference	CSWONBLPWF1NN
Date of tests	Aug. 21, 2020 ~ Aug. 26, 2020

- FCC Part 2 (Section 2.1091)
- KDB 447498 D01
- IEEE C95.1

**CONCLUSION: The submitted sample was found to COMPLY with the test requirement**

Tested by Tom Chen  
Project Engineer / EMC Department

Approved by Glyn He  
Assistant Manager / EMC Department

Date: Sep. 07, 2020

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Bureau Veritas Shenzhen Co., Ltd.  
Dongguan Branch

No. 96, Guantai Road (Houjie Section), Houjie  
Town, Dongguan City, Guangdong Province.  
523942. People's Republic of China.

Tel: +86 769 8998 2098  
Fax: +86 769 8593 1080  
Email: [customerservice.dg@cn.bureauveritas.com](mailto:customerservice.dg@cn.bureauveritas.com)



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VERITAS**

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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FS2008WDG0007	Original release	Sep. 07, 2020

**Bureau Veritas Shenzhen Co., Ltd.  
Dongguan Branch**

**No. 96, Guantai Road (Houjie Section), Houjie  
Town, Dongguan City, Guangdong Province.  
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Email: [customerservice.dg@cn.bureauveritas.com](mailto:customerservice.dg@cn.bureauveritas.com)



## 1. CERTIFICATION

<b>FCC ID:</b>	PUU-CSWONBLXWF2NN
<b>PRODUCT:</b>	ON/OFF Smart Switch
<b>BRAND NAME:</b>	GE
<b>MODEL NO.:</b>	CSWONBLTWF1NN
<b>ADDITIONAL NO.:</b>	CSWONBLPWF1NN
<b>TEST SAMPLE:</b>	Engineering Sample
<b>APPLICANT:</b>	Consumer Lighting (U.S.) LLC dba GE Lighting, a Savant company.
<b>STANDARDS:</b>	FCC Part 2 (Section 2.1091)
	KDB 447498 D01
	IEEE C95.1



## 2. RF EXPOSURE LIMIT

### LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

FREQUENCY RANGE (MHz)	ELECTRIC FIELD STRENGTH (V/m)	MAGNETIC FIELD STRENGTH (A/m)	POWER DENSITY (mW/cm <sup>2</sup> )	AVERAGE TIME (minutes)
<b>LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE</b>				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

## 3. MPE CALCULATION FORMULA

$$Pd = (Pout * G) / (4 * pi * r^2)$$

where

Pd = power density in mW/cm<sup>2</sup>

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

## 4. CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.



## 5. ANTENNA GAIN

The antennas provided to the EUT, please refer to the following table:

Mode	Transmitter Circuit	Peak Gain (dBi)	Antenna Type
BT	Chain 0	1.2	PCB Antenna
WIFI	Chain 0	1.6	PCB Antenna

## 6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

The tuned conducted Average Power (declared by client)

Mode	Frequency (MHz)	Target Power (dBm)	Tolerance (dBm)	Lower Tolerance (dBm)	Upper Tolerance (dBm)
BT-LE (GFSK)	2402-2480MHz	3	+1	2	4
802.11b	2412-2462MHz	15	+1	14	16
802.11g	2412-2462MHz	14	+1	13	15
802.11n HT20	2412-2462MHz	13	+1	12	14
802.11n HT40	2422-2452MHz	14	+1	13	15

The measured conducted Average Power

Mode	Frequency (MHz)	Averaged Power (dBm)
BT-LE (GFSK)	2480	2.64
802.11b	2462	15.87
802.11g	2462	14.68
802.11n HT20	2412	12.97
802.11n HT40	2422	14.11

FREQUENCY BAND (MHz)	MAX AVERAGE POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
BT 2402-2480	4	1.2	20	0.000659	1.0
WiFi 2412-2462	16	1.6	20	0.011448	1.0



**CONCLUSION:**

The BT and WLAN can transmit simultaneously, the formula of calculated the MPE is:

$$\text{CPD1} / \text{LPD1} + \text{CPD2} / \text{LPD2} + \dots \text{etc.} < 1$$

**CPD = Calculation power density**

**LPD = Limit of power density**

$$(0.000659/1)+(0.011448/1) = 0.012107 < 1, \text{ which is less than the "1" limit.}$$

--- END ---