

RF Exposure Evaluation Report

Product : SMART WIRELESS DOOR OPENER
Trade mark : N/A
Model/Type reference : GD810/GD811/GD812
Serial Number : N/A
Report Number : EED32L00337603
FCC ID : 2AU7E-GD81X
Date of Issue : Mar. 27, 2020
Test Standards : 47 CFR Part 1.1310
47 CFR Part 1.1307
KDB447498D01v06
Test result : PASS

Prepared for:

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2 Version

Version No.	Date	Description
00	Mar. 27, 2020	Original

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4 General Information

4.1 Client Information

Applicant:	ShenZhen SigmaWit Technology Co., Ltd
Address of Applicant:	11th floor, Lingyun Building Honglang North 2nd Road, Bao'an, ShenZhen, China
Manufacturer:	ShenZhen SigmaWit Technology Co., Ltd
Address of Manufacturer:	11th floor, Lingyun Building Honglang North 2nd Road, Bao'an, ShenZhen, China
Factory:	ShenZhen SigmaWit Technology Co., Ltd
Address of Factory:	11th floor, Lingyun Building Honglang North 2nd Road, Bao'an, ShenZhen, China

4.2 General Description of EUT

Product Name:	SMART WIRELESS DOOR OPENER
Model No.(EUT):	GD810/GD811/GD812
Test Model No.:	GD810
Trade Mark:	N/A
EUT Supports Radios application:	2.4G WIFI: IEEE 802.11 b/g/n(HT20): 2412MHz to 2462MHz 2.4G SRD:2402MHz to 2478MHz

4.3 Product Specification subjective to this standard

Frequency Range:	2412MHz to 2462MHz; 2402MHz to 2478MHz		
Modulation Type:	GFSK,DSSS,OFDM		
Test Power Grade:	2.4G WIFI:B:1008/756/504; G:12/12/12 ; N20:12/12/20 2.4G SRD :Tx power :8dBm		
Test Software of EUT:	2.4G WIF:XCOS V2.0.exe; 2.4G SRD:SecureCRT.exe		
Antenna Type:	2.4G WIFI:PCB Antenna 2.4G SRD:PCB Antenna		
Antenna Specification	2.4GHz	Antenna Gain :	2.50 dBi (Numeric gain: 1.78)
	SRD	Antenna Gain :	0.00 dBi (Numeric gain: 1.00)
Maximum tune up power	SRD:	4.50 dBm	(2.818 mW)
	IEEE 802.11b Mode:	19.00 dBm	(79.433 mW)
	IEEE 802.11g Mode:	18.00 dBm	(63.096 mW)
	IEEE 802.11n HT 20 Mode:	17.00 dBm	(50.119 mW)
Power Supply:	2.4G WIFI	Adapter	MODEL:XSC-0501000SU INPUT:100-240V~50/60Hz 0.4A OUTPUT:5V---1000mA
	2.4G SRD	LITHIUM BATTERY	MODEL:CR2450, DC 3V
Sample Received Date:	Nov. 13, 2019		
Sample tested Date:	Nov. 13, 2019 to Jan. 06, 2020		
The tested sample(s) and the sample information are provided by the client. Model No.:GD810/GD811/GD812 Only the model GD810 was tested, Their electrical circuit design, layout, components used and internal wiring are identical, Only the type the name,number of external keys is different			

4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.

5 RF Exposure Evaluation

5.1 RF Exposure Compliance Requirement

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{377}$

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:

$$S = \frac{30 \times P \times G}{377 d^2}$$

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

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \quad \text{Equation 1}$$

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

5.2 Maximum Permissible Exposure

Substituting the MPE safe distance using $d = 20$ cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

2.4G SRD:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
8	2440	2.818	1	20	0.0006	1

2.4G WIFI

IEEE 802.11b mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
6	2437	79.433	1.78	20	0.0281	1

IEEE 802.11g mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
6	2437	63.096	1.78	20	0.0223	1

IEEE 802.11n HT20 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
6	2437	50.119	1.78	20	0.0178	1

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32L00337601 for EUT external and internal photos.

*** End of Report ***

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