Maximum Permissible Exposure Evaluation

FCC ID: 2AKBP-SW1

1. Client Information

Applicant	:	Shenzhen Hysiry Technology Co., Ltd.
Addres	:	No.524, BLDG A, One square world NET Industry Park, Xia Wei Yuan Wan Li Hua Industrial Zone, XiXiang Street, BaoAn District, ShenZhen, China
Manufacturer	:	Shenzhen Hysiry Technology Co., Ltd.
Address	:	No.524, BLDG A, One square world NET Industry Park, Xia Wei Yuan Wan Li Hua Industrial Zone, XiXiang Street, BaoAn District, ShenZhen, China

2. General Description of EUT

EUT Name	:	Smart Light Switch	
Models No.	:	SW1, SW2	
Model Different	:	All models are identical in the same PCB layout interior structure and electrical circuits, The only difference is appearance.	
Product Description	:	Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz
		RF Output Power:	802.11b: 0.71dBm 802.11g: 11.11dBm 802.11n (HT20): 10.92dBm
		Antenna Gain:	1dBi PCB Antenna
		Modulation Type:	802.11b: DSSS(CCK, DQPSK, DBPSK) 802.11g/n: OFDM(BPSK,QPSK,16QAM, 64QAM)
Power Supply	:	AC Voltage supplied	
Power Rating	:	Input: AC 100~240V, 10A, 50/ 60Hz	
Software Version	:	N/A	
Hardware Version	:	N/A	
Connecting I/O Port(S)	:	Please refer to the User's Manual	

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MPE Calculations for WIFI

1. Antenna Gain:

PCB Antenna: 1dBi.

2. EUT Operation Condition:

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

3. Exposure Evaluation:

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S=(PG)/4\pi R^2$$

Where

S: power density

P: power input to the antenna

G: power gain of the antenna in the direction of interest relative to an isotropic radiator.

R: distance to the center of radiation of the antenna

4. Test Result:

Mode	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/cm^2) [S]
802.11b	0.71	0±1	1	1	20	0.00032
802.11g	11.11	11±1	12	1	20	0.00397
802.11n (HT20)	10.92	10±1	11	1	20	0.00315

5. Conclusion:

As specified in Table 1B of 47 CFR 1.1310- Limits for Maximum Permissible Exposure (MPE),

Limits for General Population/ Uncontrolled Exposure

Frequency Range (MHz)	Power density (mW/cm^2)
300-1,500	F/1500
1,500-100,000	1.0

For 802.11b/g/n:2412~2462 MHz
MPE limit S: $1mW/cm^2$
The MPE is calculated as ***$0.00397mW/cm^2 < limit\ 1mW/cm^2$***. So, RF exposure limit warning or SAR test are not required.

The EUT will only be used with a separation of 20cm or greater between the antenna and nearby persons and can therefore be considered a mobile transmitter per 47 CFR2.1091 (b).

The RF Exposure Information page from the manual is included here for reference.

Note

For a more detailed features description, please refer to the RF Test Report.

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