REPORT No. : SZ17070160S01

RF EXPOSURE EVALUATION REPORT

APPLICANT	:	Shenzhen Medica Technology Development Co.,Ltd
PRODUCT NAME	:	Smart Sleep Light
MODEL NAME	:	SA1001
TRADE NAME	:	N/A
BRAND NAME	:	N/A
FCC ID	:	2ADIOSA1001
STANDARD(S)	:	47CFR 2.1091 KDB 447498 D01 General RF Exposure Guidance v06
ISSUE DATE	:	2017-10-27

SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.

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DIRECTORY

Change History		
Issue	Date	Reason for change
1.0	2017-10-27	First edition

TEST REPORT DECLARATION

Applicant	Shenzhen Medica Technology Development Co.,Ltd
Applicant Address	2F Building A, Tongfang Information Harbor, No. 11, East Langshan Road, Nanshan District, Shenzhen, P.R. China
Manufacturer	Shenzhen Medica Technology Development Co.,Ltd
Manufacturer Address	2F Building A, Tongfang Information Harbor, No. 11, East Langshan Road, Nanshan District, Shenzhen, P.R. China
Product Name	Smart Sleep Light
Model Name	SA1001
Brand Name	N/A
HW Version	V1.0
SW Version	V0.85
Test Standards	47CFR 2.1091; KDB 447498 D01 General RF Exposure Guidance v06
Issue Date	2017-10-27
SAR Evaluation	Not Required

Tested by : Peng Fuwei

Peng Fuwei (Test engineer)

Approved by : Peng Huarui

Peng Huarui (Supervisor)

1. TECHNICAL INFORMATION

Note: the following data is based on the information by the applicant.

1.1. Identification of Applicant

Company Name:	Shenzhen Medica Technology Development Co.,Ltd
Address:	2F Building A, Tongfang Information Harbor, No. 11, East Langshan Road, Nanshan District, Shenzhen, P.R. China

1.2. Identification of Manufacturer

Company Name:	Shenzhen Medica Technology Development Co.,Ltd
Address:	2F Building A, Tongfang Information Harbor, No. 11, East Langshan Road, Nanshan District, Shenzhen, P.R. China

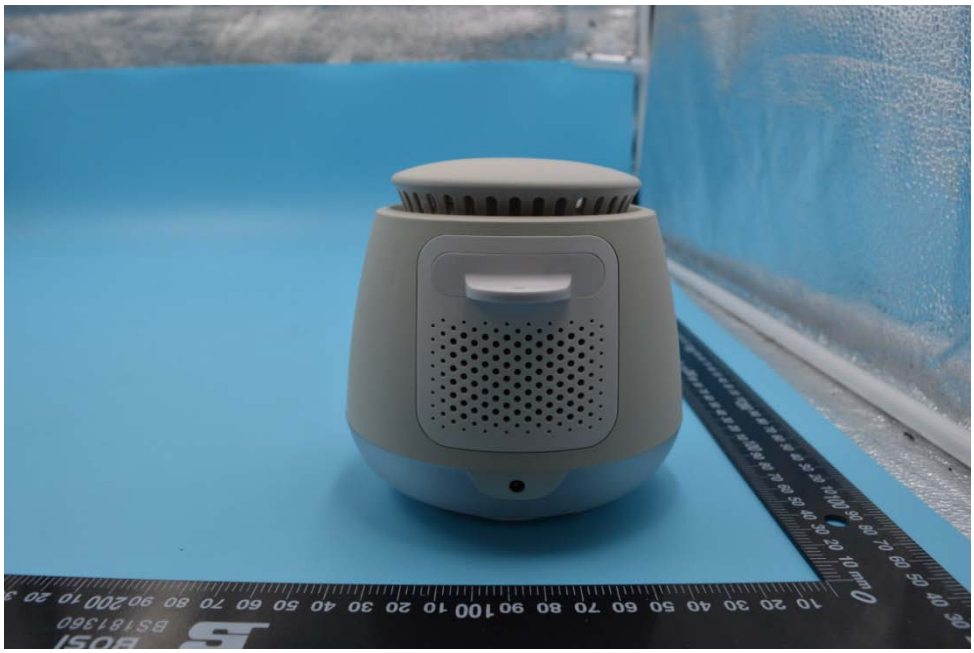
1.3. Equipment Under Test (EUT)

Model Name:	SA1001
Trade Name:	N/A
Brand Name:	N/A
Hardware Version:	V1.0
Software Version:	V0.85
Frequency Bands:	Bluetooth 2.1+EDR;Bluetooth 4.1LE:2402-2480MHz; 802.11b/g/n-20MHz:2.412GHz-2.462GHz;
Modulation Mode:	Bluetooth 2.1+EDR :FHSS; Bluetooth 4.1LE: GFSK; 802.11b/g/n-20MHz:11;
Antenna type:	Ceramic Antenna
Development Stage:	Identical prototype

1.3.1. Photographs of the EUT

1. EUT front view

2. EUT rear view



1.3.2. Identification of all used EUT

The EUT identity consists of numerical and letter characters, the letter character indicates the test sample, and the following two numerical characters indicate the software version of the test sample.

EUT Identity	Hardware Version	Software Version
1#	V1.0	V0.85

1.4. Applied Reference Documents

Leading reference documents for testing:

No.	Identity	Document Title
1	**47 CFR§2.1091**	Radiofrequency Radiation Exposure Evaluation: mobile devices
2	**KDB 447498 D01v06**	General RF Exposure Guidance

2. DEVICE CATEGORY AND RF EXPOSURE LIMIT

Per user manual, Based on 47CFR 2.1091, this device belongs to mobile device category with General Population/Uncontrolled exposure.

Mobile Devices:

47CFR 2.1091(b)

For purposes of this section, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. In this context, the term “fixed location” means that the device is physically secured at one location and is not able to be easily moved to another location. Transmitting devices designed to be used by consumers or workers that can be easily re-located, such as wireless devices associated with a personal computer, are considered to be mobile devices if they meet the 20 centimeter separation requirement.

GENERAL POPULATION / UNCONTROLLED EXPOSURE

The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity. Warning labels placed on low-power consumer devices such as cellular telephones are not considered sufficient to allow the device to be considered under the occupational/controlled category, and the general population/uncontrolled exposure limits apply to these devices.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*($180/f^2$)	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

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

3. MEASUREMENT OF CONDUCTED PEAK OUTPUT POWER

1. Bluetooth Peak output power

Band	Channel	Output Power(dBm)		
		GFSK	π/4-DQPSK	8-DPSK
BT 2.1+EDR	0	9.87	8.50	8.52
	39	10.01	7.35	7.52
	78	9.35	5.14	5.37

Band	Channel	Frequency (MHz)	Output Power(dBm)
			GFSK
BT4.1LE	0	2402	8.41
	19	2440	7.29
	39	2480	5.28

2. 2.4G Wifi average output power

Band	Channel	Frequency (MHz)	Output Power(dBm)		
			802.11B	802.11G	802.11N 20
Wifi	1	2412	13.05	15.64	14.17
	6	2437	13.12	15.73	14.36
	11	2462	13.19	15.91	14.55

4 RF EXPOSURE EVALUATION

Standalone transmission MPE evaluation

Bands	Frequency (MHz)	Antenna Gain (dBi)	Conducted Average Power (dBm)	Time-averaging EIRP (mW)	Power density (mW/cm²)	Limit for MPE (mW/cm²)
BT2.1+EDR	2441	2.41	10.5	21.34	0.0042	1.0
BT4.1 LE	2402	2.41	8.5	12.33	0.0025	1.0
2.4GHz	2462	2.41	16	69.34	0.0138	1.0

1. MPE calculation method

Power Density = EIRP/4πR²

Where: EIRP = P·G

P = Peak out power

G = Antenna gain

R = Separation distance (20cm)

ANNEX C GENERAL INFORMATION

1. Identification of the Responsible Testing Laboratory

Company Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Department:	Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Responsible Test Lab Manager:	Mr. Su Feng
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

***** END OF REPORT *****