REPORT No. : SZ16100009S01

RF EXPOSURE EVALUATION REPORT

APPLICANT	:	National Electronics & Watch Co. Ltd.
PRODUCT NAME	:	Smart Wristband with Optical Heart Rate
MODEL NAME	:	M16-470
TRADE NAME	:	N/A
BRAND NAME	:	N/A
FCC ID	:	UH5M16-470DBSG
STANDARD(S)	:	47CFR 2.1093 KDB 447498 D01 General RF Exposure Guidance v06
ISSUE DATE	:	2016-10-13

SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.

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DIRECTORY

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Change History		
Issue	Date	Reason for change
1.0	2016-10-13	First edition

TEST REPORT DECLARATION

Applicant	National Electronics & Watch Co. Ltd.
Applicant Address	15/F.,SHING DAO IND.BLDG.,232 ABERDEEN MAIN ROAD,ABERDEEN,HONG KONG
Manufacturer	National Electronics & Watch Co. Ltd.
Manufacturer Address	15/F.,SHING DAO IND.BLDG.,232 ABERDEEN MAIN ROAD,ABERDEEN,HONG KONG
Product Name	Smart Wristband with Optical Heart Rate
Model Name	M16-470
Brand Name	N/A
HW Version	M16-470
SW Version	01-234
Test Standards	47CFR 2.1093; KDB 447498 D01 General RF Exposure Guidance v06
Issue Date	2016-10-13
SAR Evaluation	Not Required

Tested by : Chen Shengkui

Chen Shengkui

Reviewed by : Liu Jun

Liu Jun

Approved by : Zeng Dexin

Zeng Dexin

1. TECHNICAL INFORMATION

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

1.1. Identification of Applicant

Company Name:	National Electronics & Watch Co. Ltd.
Address:	15/F.,SHING DAO IND.BLDG.,232 ABERDEEN MAIN ROAD, ABERDEEN, HONG KONG

1.2. Identification of Manufacturer

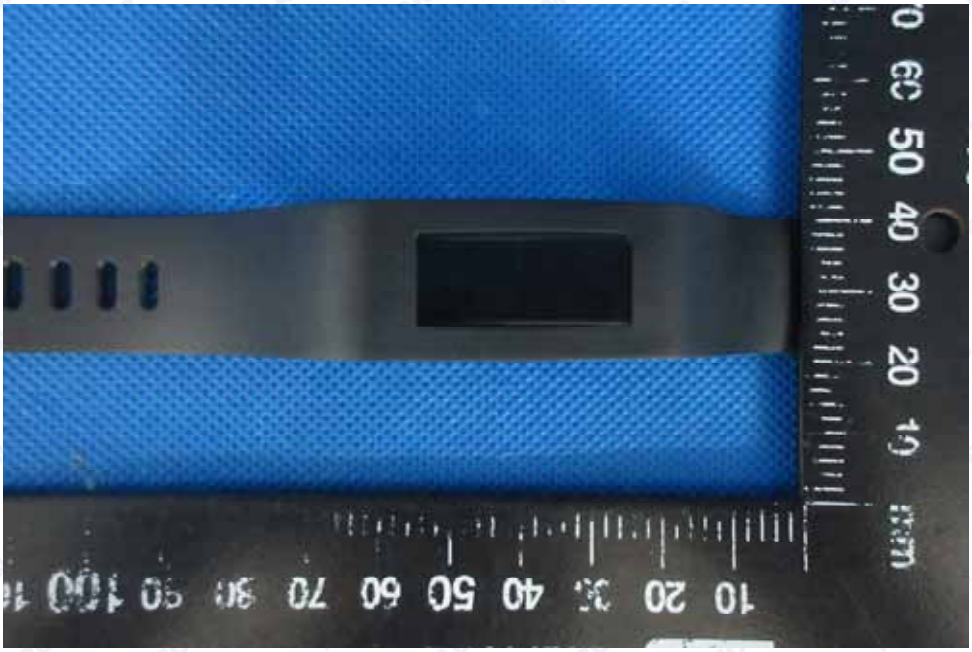
Company Name:	National Electronics & Watch Co. Ltd.
Address:	15/F.,SHING DAO IND.BLDG.,232 ABERDEEN MAIN ROAD, ABERDEEN, HONG KONG

1.3. Equipment Under Test (EUT)

Model Name:	M16-470
Trade Name:	N/A
Brand Name:	N/A
Hardware Version:	M16-470
Software Version:	01-234
Frequency Bands:	Bluetooth 4.0:2402-2480MHz;
Modulation Mode:	Bluetooth 4.0: GFSK;
Antenna type:	Fixed Internal 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#	N/A	N/A

1.4. Applied Reference Documents

Leading reference documents for testing:

No.	Identity	Document Title
1	**47 CFR§2.1093**	Radiofrequency Radiation Exposure Evaluation: portable devices
2	**KDB 447498 D01v06**	General RF Exposure Guidance

2. DEVICE CATEGORY AND RF EXPOSURE LIMIT

Per user manual, this device is a Bluetooth Wrist Band. Based on 47CFR 2.1093, this device belongs to portable device category with General Population/Uncontrolled exposure.

Portable Devices:

47CFR 2.1093(b)

For purposes of this section, a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user.

GENERAL POPULATION / UNCONTROLLED EXPOSURE

47CFR 2.1093(d) (2)

Limits for General Population/Uncontrolled exposure: 0.08 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 1.6 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 4 W/kg, as averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). General Population/Uncontrolled limits apply when the general public may be exposed, or when persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or do not exercise control over their exposure. Warning labels placed on consumer devices such as cellular telephones will not be sufficient reason to allow these devices to be evaluated subject to limits for occupational/controlled exposure in paragraph (d)(1) of this section.

3. MEASUREMENT OF CONDUCTED PEAK OUTPUT POWER

1. Bluetooth Average output power

Band	Channel	Frequency (MHz)	Output Power(dBm)
			GFSK
BT	0	2402	-2.17
	19	2440	-2.17
	39	2480	-2.13

4. RF EXPOSURE EVALUATION

The device only incorporates a Bluetooth transmitter, so standalone SAR evaluation is required for Bluetooth and simultaneous SAR is not required.

Standalone transmission SAR evaluation

According to KDB 447498 section 4.3.1, the 1-g SAR test exclusion thresholds at test separation Distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)] ≤ 3.0
The maximum tune-up limit power is **0.61mW @ 2.480GHz**
When Bluetooth Watch is worn on the hand, so use **5mm** as the most conservative minimum test separation distance,
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)] =**0.19** ≤ 3.0

So SAR evaluation is not required for this device.

ANNEX A GENERAL INFORMATION

1. Identification of the Responsible Testing Laboratory

Company Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Department:	Morlab Laboratory
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Responsible Test Lab Manager:	Mr. Su Feng
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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 *****