



REPORT No. : SZ17090054S02

RF EXPOSURE EVALUATION REPORT

APPLICANT : Sturgill & Co. AB

PRODUCT NAME : Pins Collective

MODEL NAME : PIN ONE

TRADE NAME : N/A

BRAND NAME : N/A

FCC ID : 2ANO7-PINONE

STANDARD(S) : 47CFR 2.1093
KDB 447498 D01 General RF Exposure
Guidance v06

ISSUE DATE : 2017-10-26

SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.

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Change History		
Issue	Date	Reason for change
1.0	2017-10-26	First edition

**TEST REPORT DECLARATION**

Applicant	Sturgill & Co. AB
Applicant Address	Frejgatan 32 , 113 26 Stockholm, Sweden
Manufacturer	Sturgill & Co. AB
Manufacturer Address	Frejgatan 32 , 113 26 Stockholm, Sweden
Product Name	Pins Collective
Model Name	PIN ONE
Brand Name	N/A
HW Version	displaypin CS3 170618 R1.0A
SW Version	displaypin-1.0.0
Test Standards	47CFR 2.1093; KDB 447498 D01 General RF Exposure Guidance v06
Issue Date	2017-10-26
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:	Sturgill & Co. AB
Address:	Frejgatan 32 , 113 26 Stockholm, Sweden

1.2. Identification of Manufacturer

Company Name:	Sturgill & Co. AB
Address:	Frejgatan 32 , 113 26 Stockholm, Sweden

1.3. Equipment Under Test (EUT)

Model Name:	PIN ONE
Trade Name:	N/A
Brand Name:	N/A
Hardware Version:	displaypin CS3 170618 R1.0A
Software Version:	displaypin-1.0.0
Frequency Bands:	Bluetooth 4.2:2402-2480MHz;
Modulation Mode:	Bluetooth 4.2: GFSK;
Antenna Type:	Wire Antenna
Antenna Gain:	-5.12 dBi

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#	displaypin CS3 170618 R1.0A	displaypin-1.0.0

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 Pins Collective. 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 Peak output power

Band	Channel	Frequency (MHz)	Output Power(dBm)
			GFSK
BT4.0LE	0	2402	-5.91
	19	2440	-6.17
	39	2480	-7.28

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:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$

The maximum tune-up limit power is **0.26mW @ 2.402GHz**

When Pins Collective is worn on the chest, so use **5mm** as the most conservative minimum test separation distance,

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] = 0.88 \leq 3.0$

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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2. Identification of the Responsible Testing Location

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