

## 1 Cover Page

# RF Exposure Evaluation Report

Application No.:	KSCR2503000461AT
FCC ID:	2AC8UA2445
IC:	21806-A2445
Applicant:	Anhui Huami Information Technology Co., Ltd.
Address of Applicant:	7/F, Building B2, Huami Global Innovation Center, No. 900, Wangjiang West Road, High-tech Zone, Hefei City, China (Anhui) Pilot Free Trade Zone (230088)
Manufacturer:	Anhui Huami Information Technology Co., Ltd.
Address of Manufacturer:	7/F, Building B2, Huami Global Innovation Center, No. 900, Wangjiang West Road, High-tech Zone, Hefei City, China (Anhui) Pilot Free Trade Zone (230088)
Equipment Under Test (EUT):	
EUT Name:	Smart band
Model No.:	A2445
Trade Mark:	AMAZFIT
Standard(s) :	FCC Rules 47 CFR §2.1093 KDB 447498 D04 interim General RF Exposure Guidance v01 RSS-102 Issue 6 (December 15, 2023)
Date of Receipt:	2025-03-17
Date of Test:	2025-04-11 to 2025-04-15
Date of Issue:	2025-04-16

Test Result:	Pass*
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\* In the configuration tested, the EUT complied with the standards specified above.

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Revision Record			
Version	Description	Date	Remark
00	Original	2025-04-16	/

Authorized for issue by:			
Tested By		Damon Zhou	
		Damon_Zhou/Project Engineer	
Approved By		Terry Hou	
		Terry Hou /Reviewer	

## 2 Contents

	Page
<b>1 COVER PAGE.....</b>	<b>1</b>
<b>2 CONTENTS .....</b>	<b>3</b>
<b>3 GENERAL INFORMATION.....</b>	<b>4</b>
3.1 GENERAL DESCRIPTION OF E.U.T.....	4
3.2 DETAILS OF E.U.T.....	4
3.3 SEPARATION DISTANCE.....	4
3.4 TEST LOCATION .....	5
3.5 TEST FACILITY.....	5
<b>4 FCC RADIOFREQUENCY RADIATION EXPOSURE LIMITS.....</b>	<b>6</b>
4.1 BLANKET 1 MW BLANKET EXEMPTION.....	6
4.2 MPE-BASED EXEMPTION .....	7
4.3 SAR-BASED EXEMPTION.....	8
<b>5 IC SAR EXEMPTION LIMITS.....</b>	<b>10</b>
<b>6 MEASUREMENT AND CALCULATION .....</b>	<b>11</b>
6.1 MAXIMUM TRANSMIT POWER .....	11
6.2 RF EXPOSURE CALCULATION .....	11

### 3 General Information

#### 3.1 General Description of E.U.T.

Power supply:	DC 3.87V by Rechargeable Li-ion Battery Battery model: PL431924 Rated Capacity:232mAh /0.90Wh Nominal Voltage:3.87V Limit Charge:4.45V
Product Type:	<input checked="" type="checkbox"/> Portable device <input type="checkbox"/> Mobile device <input type="checkbox"/> Fixed device

#### 3.2 Details of E.U.T.

Operation Frequency:	2402MHz to 2480MHz
Modulation Type:	GFSK
Number of Channels:	40
Channel Spacing:	2MHz
Antenna Type:	FPC Antenna
Antenna Gain:	-3.47dBi (Provided by the manufacturer)
S/N:	244585E1G11549
Firmware Version:	2.1

#### 3.3 Separation Distance

Separation distance between the antenna to person (R):	<5mm
Remark: This minimum test separation distance is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander.	

### 3.4 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc.

No.10 Weiye Rd, Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.

Tel: +86 512 5735 5888 Fax: +86 512 5737 0818

No tests were sub-contracted.

Note:

1. SGS is not responsible for wrong test results due to incorrect information (e.g. max. clock frequency, highest internal frequency, antenna gain, cable loss, etc ) is provided by the applicant. (if applicable).
2. SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (if applicable).
3. Sample source: sent by customer.

### 3.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **A2LA**

Compliance Certification Services (Kunshan) Inc. is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 2541.01.

- **FCC**

Compliance Certification Services (Kunshan) Inc. has been recognized as an accredited testing laboratory. Designation Number: CN1172.

- **ISED**

Compliance Certification Services (Kunshan) Inc. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory. Company Number: 2324E

- **VCCI**

The 3m and 10m Semi-anechoic chamber and Shielded Room of Compliance Certification Services (Kunshan) Inc. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-20134, R-11600, C-11707, T-11499, G-10216 respectively.

## 4 FCC Radiofrequency radiation exposure limits

Test exemptions apply for devices used in general population/uncontrolled exposure environments, according to the SAR-based, or MPE-based exemption thresholds.

### 4.1 Blanket 1 mW Blanket Exemption

The 1 mW Blanket Exemption of §1.1307(b)(3)(i)(A) applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power of no more than 1 mW, regardless of separation distance.

The 1-mW blanket exemption applies at separation distances less than 0.5 cm, including where there is no separation. This exemption shall not be used in conjunction with other exemption criteria other than those for multiple RF sources in paragraph §1.1307(b)(3)(ii)(A).

The 1-mW exemption is independent of service type and covers the full range of 100 kHz to 100 GHz, but it shall not be used in conjunction with other exemption criteria or in devices with higher-power transmitters operating in the same time-averaging period. Exposure from such higher-power transmitters would invalidate the underlying assumption that exposure from the lower-power transmitter is the only contributor to SAR in the relevant volume of tissue.

## 4.2 MPE-based Exemption

General frequency and separation-distance dependent MPE-based effective radiated power (ERP) thresholds are in Table B.1 [Table 1 of §1.1307(b)(1)(i)(C)] to support an exemption from further evaluation from 300 kHz through 100 GHz.

**Table B.1—Thresholds For Single RF Sources Subject to Routine Environmental Evaluation**

RF Source Frequency		Minimum Distance			Threshold ERP
$f_L$ MHz	$f_H$ MHz	$\lambda_L / 2\pi$	$\lambda_H / 2\pi$	W	
0.3	—	159 m	—	35.6 m	$1,920 R^2$
1.34	—	35.6 m	—	1.6 m	$3,450 R^2/f^2$
30	—	1.6 m	—	159 mm	$3.83 R^2$
300	—	159 mm	—	31.8 mm	$0.0128 R^2 f$
1,500	—	31.8 mm	—	0.5 mm	$19.2 R^2$

Subscripts L and H are low and high;  $\lambda$  is wavelength.  
From §1.1307(b)(3)(i)(C), modified by adding Minimum Distance columns.

The table applies to any RF source (i.e. single fixed, mobile, and portable transmitters) and specifies power and distance criteria for each of the five frequency ranges used for the MPE limits. These criteria apply at separation distances from any part of the radiating structure of at least  $\lambda/2\pi$ . The thresholds are based on the general population MPE limits with a single perfect reflection, outside of the reactive near-field, and in the main beam of the radiator.

For mobile devices that are not exempt per Table B.1 [Table 1 of §1.1307(b)(1)(i)(C)] at distances from 20 cm to 40 cm and in 0.3 GHz to 6 GHz, evaluation of compliance with the exposure limits in §1.1310 is necessary if the ERP of the device is greater than  $ERP_{20\text{cm}}$  in Formula (B.1) [repeated from §2.1091(c)(1); also in §1.1307(b)(1)(i)(B)].

$$P_{th} (\text{mW}) = ERP_{20\text{cm}} (\text{mW}) = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B.1})$$

If the ERP is not easily obtained, then the available maximum time-averaged power may be used (i.e., without consideration of ERP only if the physical dimensions of the radiating structure(s) do not exceed the electrical length of  $\lambda/4$  or if the antenna gain is less than that of a half-wave dipole).

SAR-based exemptions are constant at separation distances between 20 cm and 40 cm to avoid discontinuities in the threshold when transitioning between SAR-based and MPE-based exemption criteria at 40 cm, considering the importance of reflections.

Limit calculation			
Frequency range	Frequency(MHz)	$R(\lambda/2\pi)(\text{m})$	Threshold ERP(W)
300~1500MHz	<b>915</b>	0.0522	0.032
1500~100000MHz	<b>2480</b>	0.0193	0.007

#### 4.3 SAR-based Exemption

SAR-based thresholds are derived based on frequency, power, and separation distance of the RF source. The formula defines the thresholds in general for either available maximum time-averaged power or maximum time-averaged ERP, whichever is greater.

If the ERP of a device is not easily determined, such as for a portable device with a small form factor, the applicant may use the available maximum time-averaged power exclusively if the device antenna or radiating structure does not exceed an electrical length of  $\lambda/4$ .

As for devices with antennas of length greater than  $\lambda/4$  where the gain is not well defined, but always less than that of a half-wave dipole (length  $\lambda/2$ ), the available maximum time-averaged power generated by the device may be used in place of the maximum time-averaged ERP, where that value is not known. The separation distance is the smallest distance from any part of the antenna or radiating structure for all persons, during operation at the applicable ERP. In the case of mobile or portable devices, the separation distance is from the outer housing of the device where it is closest to the antenna.

The SAR-based exemption formula of §1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold  $P_{th}$  (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive).  $P_{th}$  is given by Formula (B.2).

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}}(d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases} \quad (\text{B.2})$$

where

$$x = -\log_{10} \left( \frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and  $f$  is in GHz,  $d$  is the separation distance (cm), and  $ERP_{20\text{cm}}$  is per Formula (B.1).

Example values shown in Table B.2 are for illustration only.

**Table B.2—Example Power Thresholds (mW)**

Frequency (MHz)	Distance(mm)									
	5	10	15	20	25	30	35	40	45	50
300	39	65	88	110	129	148	166	184	201	217
450	22	44	67	89	112	135	158	180	203	226
835	9	25	44	66	90	116	145	175	207	240
1900	3	12	26	44	66	92	122	157	195	236
2450	3	10	22	38	59	83	111	143	179	219
3600	2	8	18	32	49	71	96	125	158	195
5800	1	6	14	25	40	58	80	106	136	169

	Limit calculation					
Position	Frequency range(GHz)	Frequency(GHz)	X	Distance(cm)	Pth (mW)	
Head	1.5~6	<b>2.48</b>	1.905	<b>0.5</b>	<b>2.717</b>	

## 5 IC SAR exemption limits

According to RSS-102 issue 6 section 6.3, devices operating at or below the applicable output power levels (adjusted for tune-up tolerance) specified in table 1, based on the separation distance, are exempt from SAR evaluation. The separation distance, defined as the distance between the user and/or bystander and the antenna and/or radiating element of the device or the outer surface of the device, shall be less than or equal to 20 cm for these exemption limits to apply.

Table 1: Power limits for exemption from routine SAR evaluation based on the separation distance

MHz	5	10	15	20	25	30	35	40	45	50	mm
≤300	45	116	139	163	189	216	246	280	319	362	mW
450	32	71	87	104	124	147	175	208	248	296	
835	21	32	41	54	72	96	129	172	228	298	
1900	6	10	18	33	57	92	138	194	257	323	
2450	3	7	16	32	56	89	128	170	209	245	
3500	2	6	15	29	50	72	94	114	134	158	
5800	1	5	13	23	32	41	54	74	102	128	

The exemption limits in table 1 Table 1 are based on measurements and simulations of half-wave dipole antennas at separation distances of 5 mm to 50 mm from a flat phantom, which provides a SAR value of approximately 0.4 W/kg for 1 g of tissue. For limb-worn devices where the 10 gram of tissue applies, the exemption limits for routine evaluation in table 1 are multiplied by a factor of 2.5. For controlled-use devices where the 8 W/kg for 1 gram of tissue applies, the exemption limits for routine evaluation in table 1 are multiplied by a factor of 5.

When the operating frequency of the device is between two frequencies located in table 1, linear interpolation shall be applied for the applicable separation distance. If the separation distance of the device is between two distances located in table 1, linear interpolation may be applied for the applicable frequency. Alternatively, the limit corresponding to the smaller distance may be employed. For example, in case of a 7 mm separation distance, either use the exception value for a 5 mm separation distance or interpolate between the limits corresponding to 5 mm and 10 mm separation distances.

For implanted medical devices, the exemption limit for routine SAR evaluation is set at an output power of 1 mW, regardless of frequency.

The practical use condition for this device is as a hand hold accessories, but during use, it can come into contact with the head. So the applicable limit is 1-g extremity SAR.

For 2.4G band device, the limit is 3mW

## 6 Measurement and Calculation

### 6.1 Maximum transmit power

The Power Data is based on the RF Test Report KSCR250300046101.

Test Mode	Test Channel	Power (dBm)	Peak Power (mW)
1M	2402	0.54	1.13
	2440	-0.65	0.86
	2480	-0.82	0.83
2M	2402	0.26	1.06
	2440	0.13	1.03
	2480	0.20	1.05

### 6.2 RF Exposure Calculation

**For FCC:**

**For single RF source:**

The Max Conducted Output Power is 1.13mW. The best case gain of the antenna is -3.47dBi.

-3.47dBi logarithmic terms convert to numeric result is nearly 0.45.

According to the formula. calculate the Max Conducted Output Power test result:

**Remark:** we used the maximum power between the conducted power or ERP to perform RF exposure exemption evaluation.

	Evaluation method	Separation distance between the antenna to person (R)	Exempt Limit(mW)	Verdict
<input type="checkbox"/>	Blanket 1 mW Blanket Exemption	No distance requirement	1mW	N/A
<input type="checkbox"/>	MPE-based Exemption(ERP)	$(\lambda/2\pi) \leq R$	7mW(ERP)	N/A
<input checked="" type="checkbox"/>	SAR-based Exemption( $P_{th}$ )	$0.5\text{cm} \leq R \leq 40\text{cm}$	2.717mW	Yes

So, the device is to qualify for SAR test exemption, the exemption report is in lieu of the SAR report.

**For IC:**

The Max Conducted Output Power = 1.13 mW <3mW

So, the device is to qualify for FCC & IC SAR test exemption, the exemption report is in lieu of the SAR report.

-End of the Report-