



# RF Exposure Evaluation Report

**Applicant:** Shenzhen HOPE Microelectronics Co., Ltd

**Address of Applicant:** 30th floor of 8th Building, C Zone Vanke Cloud City, Xili Sub-district, Nanshan Shenzhen, Guangdong China

**Equipment Under Test (EUT)**

Product Name: RFM380F32-433S2

Model No.: RFM380F32

Trade mark: HOPERF

**FCC ID:** 2ASEORFM380F32

**Applicable standards:** KDB 447498 D01 General RF Exposure Guidance v06

**Date of sample receipt:** 29 Sep., 2022

**Date of Test:** 30 Sep., to 18 Oct., 2022

**Date of report issue:** 31 Oct., 2022

**Test Result:** PASS

**Tested by:**

*Mike Ou*  
Test Engineer

**Date:**

31 Oct., 2022

**Reviewed by:**

*Wenwen Zhang*  
Project Engineer  
检验检测专用章

**Date:**

31 Oct., 2022

**Approved by:**

*Wenwen Zhang*  
Manager

**Date:**

31 Oct., 2022

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in above the application standard version. Test results reported herein relate only to the item(s) tested.

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## 1 Version

Version No.	Date	Description
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01	31 Oct., 2022	Updated page 4/6

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### 3 General Information

#### 3.1 Client Information

Applicant:	Shenzhen HOPE Microelectronics Co., Ltd
Address:	30th floor of 8th Building, C Zone Vanke Cloud City, Xili Sub-district, Nanshan Shenzhen, Guangdong China
Manufacturer/Factory:	Shenzhen HOPE Microelectronics Co., Ltd
Address:	30th floor of 8th Building, C Zone Vanke Cloud City, Xili Sub-district, Nanshan Shenzhen, Guangdong China

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

Product Name:	RFM380F32-433S2
Model No.:	RFM380F32
Operation Frequency:	433.92 MHz
Modulation technology:	FSK
Antenna Type:	Spring Antenna
Antenna gain:	-3.555 dBi
Power Supply:	DC 1.8V-3.6V
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

### 3.3 Operating Modes

Operating mode	Detail description
Tx mode	Keep the EUT in continuously transmitting mode

### 3.4 Additions to, Deviations, or Exclusions from the Method

No
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### 3.5 Laboratory Facility

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

● **FCC - Designation No.: CN1211**

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

● **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

● **CNAS - Registration No.: CNAS L15527**

JianYan Testing Group Shenzhen Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L15527.

● **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <https://portal.a2la.org/scopepdf/4346-01.pdf>

### 3.6 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.

Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.

Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info-JYTee@lets.com, Website:<http://jyt.lets.com>

## 4 Technical Requirements Specification

### 4.1 Limits

According to 447498 D01 General RF Exposure Guidance v06 Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$  for 1-g SAR and  $\leq 7.5$  for 10-g extremity SAR, where

- $f(\text{GHz})$  is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

### 4.2 Result

According to the calculation formula of power:

$$\text{EIRP} = P \cdot G = (E \cdot d)^2 / 30$$

Where:

P = transmitter output power in watts,

G = numeric gain of the antenna in the direction of interest relative to an isotropic radiator (unitless),

E = electric field strength in V/m, ---  $10^{((\text{dBuV/m})/20)}/10^6$ ,

d = measurement distance in meters (m)---3m,

So,

$$P = (E \cdot d)^2 / 30 \cdot G$$

Frequency (MHz)	Maximum field strength@3m ( dBuV/m)	Maximum field strength@3m (V/m)	Antenna Gain (dBi)	Antenna Gain (numeric)	Distance (m)	Output power (mW)
433.92	60.43	0.0011	-3.555	0.441	3	0.00015

Thus, Worse case below:

Frequency (MHz)	Max Output power (mW)	Min test distance (mm)	Result	Limit of 10-g SAR test exclusion thresholds
433.92	0.00015	5	0.000019	7.5

### 4.3 Conclusion

Cuz  $0.0002 < 7.5$  for 10-g SAR, the device is exempt from the SAR test and satisfies RF exposure evaluation.

-----End of report-----