

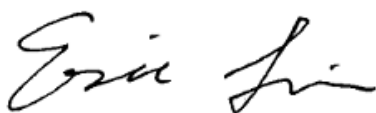
1 Cover Page

RF Exposure REPORT

Application No.: KSCR2112000317AT
FCC ID: 2AXVM-HM-TR33
Applicant: Hangzhou Microimage Software Co., Ltd.
Address of Applicant: Room 313, Unit B, Building 2, 399 Danfeng Road, Xixing Subdistrict, Binjiang District, Hangzhou, Zhejiang
Manufacturer: Hangzhou Microimage Software Co., Ltd.
Address of Manufacturer: Room 313, Unit B, Building 2, 399 Danfeng Road, Xixing Subdistrict, Binjiang District, Hangzhou, Zhejiang
Factory: Hangzhou Microimage Intelligent Technology Co., Ltd.
Address of Factory: Floor 2, Building A1, 299 Qiushi Road, Tonglu Economic Development Zone, Tonglu County, Hangzhou City, Zhejiang Province
Equipment Under Test (EUT):
EUT Name: Thermal Image Scope/Digital Night Vision Scope
Model No.: SH35, SH50, SQ35, SQ50, A50T
Trade mark: HIKMICRO
Standard(s) : FCC Rules 47 CFR §2.1093
KDB447498 D01 General RF Exposure Guidance v06
Date of Receipt: 2021-12-14
Date of Test: 2021-12-14 to 2021-12-16
Date of Issue: 2021-12-16

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



Eric Lin
Laboratory Manager



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Revision Record			
Version	Description	Date	Remark
00	Original	2021-12-16	/

Authorized for issue by:			
		Damon Zhou	
		Damon Zhou / Project Engineer	
		Eric Lin	
		Eric Lin / Reviewer	



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3 General Information

3.1 General Description of E.U.T.

Power supply:	DC 3.6V Recharge battery
	Recharge battery:
	Model:18650 MJ1
	Rate Voltage:3.635V
	Rated Capacity: 3350mAh 12.18Wh

3.2 Details of E.U.T.

BT

Antenna Gain:	2.44dBi (Provided by the manufacturer)
Antenna Type:	PCB Antenna
Bluetooth Version:	V4.1 Classic
Channel Spacing:	1MHz
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Number of Channels:	79
Operation Frequency:	2402MHz to 2480MHz
Spectrum Spread Technology:	Frequency Hopping Spread Spectrum(FHSS)

2.4G

Antenna Gain:	2.44dBi (Provided by the manufacturer)
Antenna Type:	PCB Antenna
Channel Spacing:	5MHz
Modulation Type:	802.11b: DSSS (CCK, DQPSK, DBPSK) 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
Number of Channels:	802.11b/g/n(HT20):11 802.11n(HT40):7
Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz 802.11n(HT40): 2422MHz to 2452MHz



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3.3 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

3.4 Test Facility

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

• **CNAS (No. CNAS L4354)**

CNAS has accredited Compliance Certification Services (Kunshan) Inc. to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• **A2LA (Certificate No. 2541.01)**

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

• **FCC (Designation Number: CN1172)**

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

• **ISED (CAB identifier: CN0072)**

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 (Member No.: 1938)**

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.



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4 Test Standards and Limits

4.1 FCC Radiofrequency radiation exposure limits

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

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

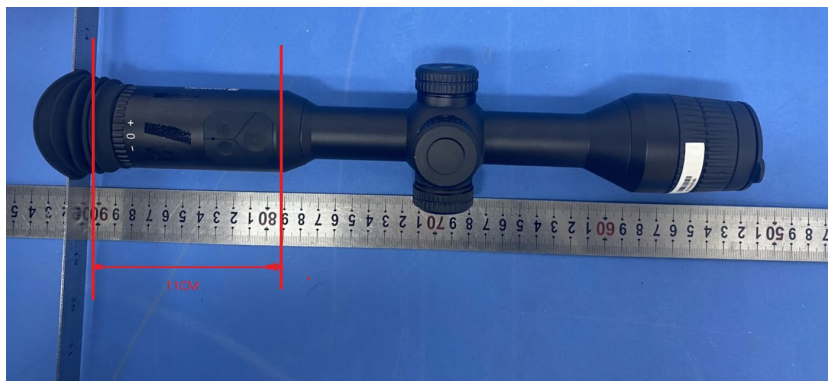
- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm, and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 4.1 f) is applied to determine SAR test exclusion.

b) For 100 MHz to 6 GHz and test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following (also illustrated in Appendix B):32

- 1) $\{[\text{Power allowed at numeric threshold for } 50 \text{ mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz})/150)]\}$ mW, for 100 MHz to 1500 MHz
- 2) $\{[\text{Power allowed at numeric threshold for } 50 \text{ mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot 10]\}$ mW, for > 1500 MHz and ≤ 6 GHz

4.2 DUT Antenna Locations



Note 1) The distance between WIFI antenna and handle of the EUT < 5 mm.

2) The distance between WIFI antenna and the head of human is 11 cm.

For the hand: $P_{\text{max}} \leq 7.5 \cdot D_{\text{min}} / \sqrt{f} = 7.5 \cdot 5 / \sqrt{2.480} = 23.81 \text{ mW}$

For the head, the limit of worse case is $P_{\text{max}} \leq 3 \cdot D_{\text{min}} / f = 3 \cdot 50 / 2.480 + [(110 - 50) \cdot 10] = 695.25 \text{ mW}$



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5 Measurement and Calculation

5.1 Maximum transmit power

The Power Data is based on the RF Test Report KSCR211200031701, KSCR211200031702

Test Data:

BT

Test Mode	Frequency (MHz)	Power (dBm)	Power (mW)
GFSK	2402	7.79	6.01
	2441	7.54	5.68
	2480	7.37	5.46
Pi/4DQPSK	2402	6.47	4.44
	2441	6.26	4.23
	2480	5.88	3.87
8DPSK	2402	6.83	4.82
	2441	6.60	4.57
	2480	6.23	4.20

2.4G

Test Mode	Channel	Antenna 1 Power[dBm]	Antenna 1 Power[mW]
11B SISO	2412	9.91	9.79
11B SISO	2437	10.16	10.38
11B SISO	2462	10.33	10.79
11G SISO	2412	10.38	10.91
11G SISO	2437	10.29	10.69
11G SISO	2462	10.45	11.09
11N20 SISO	2412	9.80	9.55
11N20 SISO	2437	9.72	9.38
11N20 SISO	2462	9.81	9.57
11N40 SISO	2422	9.92	9.82
11N40 SISO	2437	10.01	10.02
11N40 SISO	2452	10.07	10.16



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5.2 RF Exposure Calculation

The Max Conducted Peak Output Power is 6.01 mW and 11.09mW. The best case gain of the antenna is 2.44dBi.

2.44dBi logarithmic terms convert to numeric result is nearly 1.75

According to the formula, calculate the EIRP test result:

$$\text{EIRP} = P \times G = 6.01\text{mW} \times 1.75 = 10.52\text{mW} < 23.81\text{mW} < 695.25\text{mW}$$

$$\text{EIRP} = P \times G = 11.09\text{mW} \times 1.75 = 19.41\text{mW} < 23.81\text{mW} < 695.25\text{mW}$$

So the SAR report is not required.

--End of the Report--



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