

Report No.: KSCR210900004402

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1 Cover Page

RF Exposure Evaluation Report

 Application No.:
 KSCR2109000044AT

 FCC ID:
 2AXVM-HM-TS12

 IC:
 26572-HMTS12

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 Telescope **Model No.:** HM-TS12-10XG/W

Add Model No: HM-TS12-15XG/W;HM-TS11-06XF/W;HM-TS12-10FH1G/W;HM-TS12-

15FH1G/W;HM-TS11-06FH1F/W

Trade mark: HIKMICRO

Standard(s): FCC Rules 47 CFR §2.1093

KDB447498 D01 General RF Exposure Guidance v06 RSS-102 Issue 5 Amendment 1 (February 2, 2021)

Date of Receipt: 2021-09-13

Date of Test: 2021-09-16 to 2021-09-30

Date of Issue: 2021-10-04

Test Result: Pass*

Eric Lin EMC Lab Manager

Ina fin

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Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@css.com

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^{*} In the configuration tested, the EUT complied with the standards specified above.



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Revision Record							
Version Description Date Remark							
00	Original	2021-10-04	1				

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



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For IC: HM-TS12-10XG/W HM-TS12-15XG/W



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3 General Information

3.1 General Description of E.U.T.

Power supply:	DC 3.6V by rechargeable lithium battery charged by DC 5V adapter		
	Battery Model: 1643-CT-1P1S18650-O 1ICR18/65		
	Voltage: 3.6V		
	Capacity:3.30Ah		
	Energy: 11.88Wh		

3.2 Technical Specifications

2.4GHz

2.40112	-		
Antenna Gain:	-1dBi (Provided by the manufacturer)		
Antenna Type:	PCB Antenna		
Channel Spacing:	5MHz		
Data Rate:	802.11b: 1/2/5.5/11Mbps,		
	802.11g: 6/9/12/18/24/36/48/54Mbps		
	802.11n: MCS 0 to 7 for HT20MHz; MCS 0 to 7 for HT40MHz		
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 (ISED) Canada as an accredited testing laboratory.

CAB Identifier: CN0072.

• 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-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:

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

- · f(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

$$P_{\text{max}} \le 3^* D_{\text{min}} / \sqrt{f} = 3^* 5 / \sqrt{2.462} = 9.56 \text{ mW}$$

The test exclusions are applicable only when the minimum test separation distance is \leq 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.

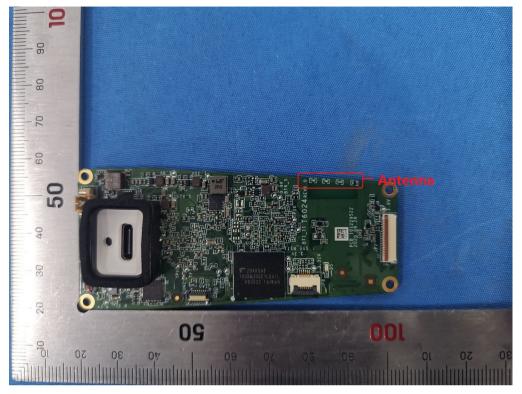
- b) For 100 MHz to 6 GHz and test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following (also illustrated in Appendix B):32
- 1) {[Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance 50 mm) (f(MHz)/150)]} mW, for 100 MHz to 1500 MHz
- 2){[Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance 50mm) 10]} mW, for > 1500 MHz and \leq 6 GHz

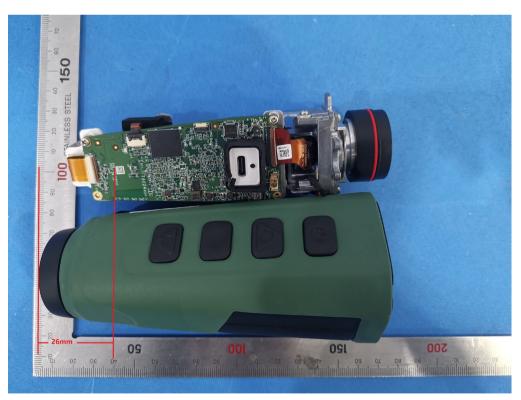




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4.2 DUT Antenna Locations





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

- 2) The distance between WIFI antenna and the head of human is 26mm.
- 3) Only the handle is in contact with human hand in practical use condition.





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4.3 IC Radiofrequency radiation exposure limits:

According to RSS-102 section 2.5.1, SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20 cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance defined in Table 1.

Table 1: SAR evaluation - Exemption limits for routine evaluation based on frequency and separation distance 4,5

on nequency and separation distance					
	Exemption Limits (mW)				
Frequency	At separation	At separation	At separation	At separation	At separation
(MHz)	distance of ≤5	distance of 10	distance of 15	distance of 20	distance of 25
	mm	mm	mm	mm	mm
≤300	71 mW	101 mW	132 mW	162 mW	193 mW
450	52 mW	70 mW	88 mW	106 mW	123 mW
835	17 mW	30 mW	42 mW	55 mW	67 mW
1900	7 mW	10 mW	18 mW	34 mW	60 mW
2450	4 mW	7 mW	15 mW	30 mW	52 mW
3500	2 mW	6 mW	16 mW	32 mW	55 mW
5800	1 mW	6 mW	15 mW	27 mW	41 mW

	Exemption Limits (mW)				
Frequency	At separation	At separation	At separation	At separation	At separation
(MHz)	distance of 30	distance of 35	distance of 40	distance of 45	distance of ≥
	mm	mm	mm	mm	50 mm
≤300	223 mW	254 mW	284 mW	315 mW	345 mW
450	141 mW	159 mW	177 mW	195 mW	213 mW
835	80 mW	92 mW	105 mW	117 mW	130 mW
1900	99 mW	153 mW	225 mW	316 mW	431 mW
2450	83 mW	123 mW	173 mW	235 mW	309 mW
3500	86 mW	124 mW	170 mW	225 mW	290 mW
5800	56 mW	71 mW	85 mW	97 mW	106 mW





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Output power level shall be the higher of the maximum conducted or equivalent isotropically radiated power (e.i.r.p.) source-based, time-averaged output power. For controlled use devices where the 8 W/kg for 1 gram of tissue applies, the exemption limits for routine evaluation are multiplied by a factor of 5. For limb-worn devices where the 10 gram value applies, the exemption limits for routine evaluation in Table 1 are multiplied by a factor of 2.5. If the operating frequency of the device is between two frequencies located in Table 1, linear interpolation shall be applied for the applicable separation distance. For test separation distance less than 5 mm, the exemption limits for a separation distance of 5 mm can be applied to determine if a routine evaluation is required.

The practical use condition for this device is as a limb-worn accessories. So the applicable limit is 10-g aextremity SAR

For the hand: 4*2.5=10mW

For the head: 52mW



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5 Measurement and Calculation

5.1 Maximum transmit power

The Power Data is based on the RF Test Report KSCR210900004401

2.4GHz

Test Mode	Test Channel	Ant	Power [dBm]	Power [mW]
11B	2412	Ant1	9.15	8.22
11B	2437	Ant1	9.06	8.05
11B	2462	Ant1	9.11	8.15
11G	2412	Ant1	8.95	7.85
11G	2437	Ant1	9.52	8.95
11G	2462	Ant1	9.05	8.04
11N20SISO	2412	Ant1	9.29	8.49
11N20SISO	2437	Ant1	9.40	8.71
11N20SISO	2462	Ant1	8.96	7.87
11N40SISO	2422	Ant1	9.65	9.23
11N40SISO	2437	Ant1	9.31	8.53
11N40SISO	2452	Ant1	9.19	8.30

5.2 MPE Calculation

The Max Conducted Peak Output Power is 9.23mW. The best case gain of the antenna is -1dBi logarithmic terms convert to numeric result is nearly 0.79

For FCC:

P = 9.23 mW < 9.56 mW

For IC:

E.I.R.P.= P*G = 9.23 * 0.79 = 7.29mW < 10mW < 52mW

So the SAR report is not required.

-- End of the Report--