



中国认可
国际互认
检测
TESTING
CNAS L0446



TEST REPORT

Verified Code: 003375

Report No.:	E20210426746801-7	Application No.:	E20210426746801
Client:	Lumi United Technology Co., Ltd.		
Address:	8th Floor, JinQi Wisdom Valley, No.1 Tangling Road, Liuxian Ave, Taoyuan Residential District, Nanshan District, Shenzhen.China		
Sample Description:	Camera Hub G3		
Model:	CH-H03		
Test Specification:	EN 50665:2017 Generic standard for assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz - 300 GHz) EN 62311:2008 Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields(0 Hz to 300GHz)		
Receipt Date:	2021-06-09		
Test Date:	2021-08-10 to 2021-08-14		
Issue Date:	2021-08-23		
Test Result:	Pass		
Prepared By: Test Engineer <i>Yu ShanShan.</i>	Reviewed By: Technical Manager <i>Wu Haoting</i>	Approved By: Manager <i>Johnson</i>	
Other Aspects:			
Note: /			
Abbreviations: ok / P = passed; fail / F = failed; n.a. / N = not applicable;			
The test result in this test report refers exclusively to the presented test sample. This report shall not be reproduced except in full, without the written approval of GRGT.			



DIRECTIONS OF TEST

- 1. This station carries out test task according to the national regulation of verifications which can be traced to National Primary Standards and BIPM.**
- 2. The test report merely corresponds to the test sample. It is not permitted to copy extracts of these test result without the written permission of the test laboratory.**
- 3. If there is any objection concerning the test, the client should inform the laboratory within 15 days from the date of receiving the test report.**

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1 GENERAL DESCRIPTION OF EUT

1.1 APPLICANT INFORMATION

Name: Lumi United Technology Co., Ltd.
Address: 8th Floor, JinQi Wisdom Valley, No.1 Tangling Road, Liuxian Ave,
Taoyuan Residential District, Nanshan District, Shenzhen.China

1.2 MANUFACTURER

Name: Lumi United Technology Co., Ltd.
Address: 8th Floor, JinQi Wisdom Valley, No.1 Tangling Road, Liuxian Ave,
Taoyuan Residential District, Nanshan District, Shenzhen.China

1.3 BASIC DESCRIPTION OF EUT

Product Name: Camera Hub G3
Product Model: CH-H03
Adding Model: /
Trade Name: Aqara
Adapter 1-EU Plug
Model:A70-050200U-EU1
Input:100-240V~ 50/60Hz 0.35A
Output:5.0V  2.0A 10.0W
Power Supply:
Adapter 2-UK Plug
Model:A812-050200U-UK1
Input:100-240V~ 50/60Hz 0.35A
Output:5.0V  2.0A 10.0W
Zigbee:
2405MHz-2475MHz
2.4G Wi-Fi:
2412MHz-2472MHz for 802.11b/g/n HT20,
Frequency Band: 2422MHz-2462MHz for 802.11n HT40
5G Wi-Fi(Band 1-3)
5150MHz-5320MHz ; 5500MHz-5700MHz
SRD:
5745MHz-5825MHz
Zigbee: OQPSK
2.4G Wi-Fi:
DSSS(CCK, DQPSK, DBPSK) for 802.11b
OFDM for 802.11g/n HT20/40
Modulation Type: 5G Wi-Fi(Band 1-3)
OFDM (BPSK, QPSK,16-QAM, 64-QAM)
SRD:
OFDM(BPSK, QPSK,16-QAM, 64-QAM)
Antenna Type: Internal antenna

Antenna Gain: Zigbee: 2dBi
2.4G Wi-Fi: 3dBi
5G Wi-Fi: 2dBi

Hardware Version: A20-GHC01-MIAN-X4

Software Version: 3.2.8_0003.0004

Sample submitting way: Provided by customer Sampling

Sample No: E20210426746801-0004

Note: /

2 LABORATORY AND ACCREDITATIONS

2.1 LABORATORY

The tests & measurements refer to this report were performed by Shenzhen EMC Laboratory of Guangzhou GRG Metrology & Test Co., Ltd.

Add.: No.1301 Guanguang Road Xinlan Community, Guanlan Street, Longhua District Shenzhen, 518110, People's Republic of China.
P.C.: 518000
Tel : 0755-61180008
Fax: 0755-61180008

2.2 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to GB/T 27025(ISO/IEC 17025:2017)

USA	A2LA(Certificate#:2861.01)
China	CNAS(L0446)

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada	Industry Canada
USA	FCC

Copies of granted accreditation certificates are available for downloading from our web site, <http://www.grgtest.com>

3 TECHNICAL REQUIREMENTS SPECIFICATION IN

3.1 RF EXPOSURE EVALUATION

This European Standard applies to electronic and electrical equipment for which no dedicated Harmonized product – or product family standard, or standard relating to low power equipment, regarding human exposure not. Annex A lists such harmonized standards available at the time of writing This list may change with time. The current list of standards harmonized under each directive should be consulted at the time of use of this standard.

The measurements and calculations to demonstrate equipment compliance shall be made according to EN 62311:2008, Clause 4 and 5. The general considerations as defined in EN 62311:2008, Clause 4 and 5 shall apply to all equipment.

The product is deemed to fulfil the requirements of this standard if the calculated and/or measured values are less than or equal to the limits.

NOTE In the setting of basic restrictions and the derived reference levels, safety factors have been taken into account. In the specification of the assessment method, uncertainty has been constrained. This is the reason for not requiring that the measured values shall be compared to the limit reduced by the measurement uncertainty.

Reference levels for electric, magnetic and electromagnetic fields (0 Hz to 300 GHz, unperturbed rms values)				
Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (μT)	Equivalent plane wave power density S_{eq} (W/m ²)
0-1 Hz	—	$3,2 \times 10^4$	4×10^4	—
1-8 Hz	10 000	$3,2 \times 10^4/f^2$	$4 \times 10^4/f^2$	—
8-25 Hz	10 000	$4\,000/f$	$5\,000/f$	—
0,025-0,8 kHz	$250/f$	$4/f$	$5/f$	—
0,8-3 kHz	$250/f$	5	6,25	—
3-150 kHz	87	5	6,25	—
0,15-1 MHz	87	$0,73/f$	$0,92/f$	—
1-10 MHz	$87/f^{1/2}$	$0,73/f$	$0,92/f$	—
10-400 MHz	28	0,073	0,092	2
400-2 000 MHz	$1,375 f^{1/2}$	$0,0037 f^{1/2}$	$0,0046 f^{1/2}$	$f/200$
2-300 GHz	61	0,16	0,20	10

Notes

- f as indicated in the frequency range column.
- For frequencies between 100 kHz and 10 GHz, S_{eq} , E^2 , H^2 , and B^2 are to be averaged over any six-minute period.
- For frequencies exceeding 10 GHz, S_{eq} , E^2 , H^2 , and B^2 are to be averaged over any $68/f^{1.05}$ -minute period (f in GHz).
- No E-field value is provided for frequencies < 1 Hz, which are effectively static electric fields. For most people the annoying perception of surface electric charges will not occur at field strengths less than 25 kV/m. Spark discharges causing stress or annoyance should be avoided.

3.2 EVALUATION RESULTS

Modulation Type: 2.4GHz Wi-Fi

Operating Mode with Modulation		
Packet	EIRP Level (dBm)	EIRP Level (mW)
802.11b	18.77	75.336

For the 2.4GHz band the reference level is E field strength 7.52V/m

The Formula

$$r = \frac{\sqrt{30P(\theta, \phi)}}{E}$$

Whereas,

Θ Φ = elevation and azimuth angles to point of investigation

r=distance from observation point to the antenna

P=the maximum output power of transmitter.

r=0.2m

The maximum e.i.r.p of the transmitter is 18.77dBm= 75.336mW= 0.075336W

Since e.i.r.p is used for this calculation, the antenna gain is assumed as 3dBi=1.995dB

Station mode:

Modulation Type: 5GHz Wi-Fi

Operating Mode with Modulation		
Packet	EIRP Level (dBm)	EIRP Level (mW)
802.11ac VHT20	15.10	32.359

The maximum e.i.r.p of the transmitter is 15.10dBm= 32.359mW= 0.032359W

Since e.i.r.p is used for this calculation, the antenna gain is assumed as 2dBi=1.585dB

For the 5GHz band the reference level is E field strength 4.93V/m.

The Formula

$$r = \frac{\sqrt{30P(\theta, \phi)}}{E}$$

Whereas,

Θ Φ = elevation and azimuth angles to point of investigation

r=distance from observation point to the antenna

P=the maximum output power of transmitter.

r=0.2m

Modulation Type: Zigbee

Operating Mode with Modulation		
Packet	EIRP Level (dBm)	EIRP Level (mW)
OQPSK	9.82	9.594

The maximum e.i.r.p of the transmitter is 9.82dBm= 9.594mW= 0.009594W
 Since e.i.r.p is used for this calculation, the antenna gain is assumed as 2dBi=1.585dB

For the Zigbee the reference level is E field strength 2.68V/m.

The Formula

$$r = \frac{\sqrt{30P(\theta, \phi)}}{E}$$

Whereas,

Θ Φ= elevation and azimuth angles to point of investigation

r=distance from observation point to the antenna

P=the maximum output power of transmitter.

r=0.2m

The antenna of the product, under normal use condition is at least 7cm away from the body of the user. Warning statement to the user for keeping at least 20cm separation distance and the prohibition of operating to a person has been printed on the user's manual. So, this product under normal use is located on electromagnetic far field between the human body.

4 APPENDIX A:PHOTOGRAPH OF THE EUT

Please refer to the attached document E20210426746801-1-EUT Photo.

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