



Test report No. : 4789544899-US-R1-V0
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Issued date : Sep. 2, 2020
FCC ID : 2APLE18300409

Maximum Permissible Exposure Report

Product : Essential Spotlight Camera
Model Name : VMC2030
Series Model : VMC2032
FCC ID : 2APLE18300409
Test Regulation : 47 CFR FCC Part 2.1091
Received Date : Jul. 31, 2020
Issued Date : Sep. 2, 2020
Applicant : Arlo Technologies Inc
2200 Faraday Avenue, Suite 150, Carlsbad, CA 92008, USA
Issued By : Underwriters Laboratories Taiwan Co., Ltd.
Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd.,
Zhudong Township, Hsinchu County, Taiwan



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1. Attestation of Test Results

APPLICANT: Arlo Technologies Inc
 2200 Faraday Avenue, Suite 150, Carlsbad, CA 92008, USA

MANUFACTURER Funing Precision Component Co., Ltd.
 Lot B, Que Vo Industrial Zone, Van Duong Ward, Bac Ninh City, Bac Ninh Province, VIETNAM

EUT DESCRIPTION: Essential Spotlight Camera

BRAND: Arlo

MODEL: VMC2030

SERIES MODEL: VMC2032

SAMPLE STAGE: Identical Prototype

APPLICABLE STANDARDS	
STANDARD	Test Results
47 CFR FCC PART 2.1091	PASS

Underwriters Laboratories Taiwan Co., Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by Underwriters Laboratories Taiwan Co., Ltd. based on interpretations and/or observations of test results. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Underwriters Laboratories Taiwan Co., Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Underwriters Laboratories Taiwan Co., Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Prepared By:

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 Project Handler

Date : Sep. 2, 2020

Approved and Authorized By:

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Waternil Guan Date : Sep. 2, 2020
 Engineer

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2. Test Methodology and Reference Procedures

The tests documented in this report were performed in accordance with KDB 447498 D01 General RF Exposure Guidance v06.

3. Facilities and Accreditation

Test Location	Underwriters Laboratories Taiwan Co., Ltd.
Address	Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan
Accreditation Certificate	Underwriters Laboratories Taiwan Co., Ltd. is accredited by TAF, Laboratory Code 3398. The full scope of accreditation can be viewed at http://accreditation.taftw.org.tw/taf/public/basic/viewApplyItems.action?unitNo=3398

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4. Equipment Under Test

4.1. Description of EUT

Product Name	Essential Spotlight Camera	
Brand Name	Arlo	
Model Name	VMC2030	
Series Model	VMC2032	
Operating Frequency	WLAN	2.4GHz: 2412MHz ~ 2462MHz
Modulation	WLAN	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Number of Channel	WLAN	2.4GHz: 802.11b, 802.11g, 802.11n (HT20): 11
Normal Voltage	5Vdc (adapter or host equipment) 3.63Vdc for battery	
Hardware Version	DV2	
SW/FW version	20200324-2_mfg	

Note:

- This report is as a supplementary report of UL TW report no.: 4789445245-US-R1-V0. The difference compared with original report are list as below.

Model Name	Difference
VMC2032	<ul style="list-style-type: none"> - The housing size is different from VMC2030. - Change C3937 from 1.3pF to 0.8Nh (Antenna matching). - Remove C3939 component (Antenna matching). - Add 1.2pF to C112(Antenna matching). - Change C3938 from 1.2pF to 0ohm.(Antenna matching). - Remove C3940 component (Antenna matching). - Change R183 component size from 0603 to 1206. - Remove the CN5 connector and the original place has been cover by the shielding case with the same material. - Antenna gain changed. - Change Battery Cell from 1S2P to 1S4P. *

*: It is only for new model VMC2032.

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2. The EUT incorporates a SISO diversity function. Physically, the EUT provides one completed transmitter and one receiver.

Modulation Mode	Tx,Rx Function
802.11b	1TX,1RX
802.11g	1TX,1RX
802.11n (HT20)	1TX,1RX

3. The EUT contains following accessory devices

Product	Brand	Model	Description
Security Mount	Arlo	300-11092-01	-
Mount Screw kit	Arlo	422-50002-01	-
USB Cable	Arlo	310-50001-01	Length: 0.3m

Product	Manufacturer / Trademark	Model	Description
Rechargeable Li-ion Battery	CELXPERT ENERGY CORP	A-11	3.63Vdc, 47.19Wh

4. The above EUT information is declared by manufacturer and for more detailed features description, please refer the manufacturer's or user's manual.

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4.2. Description Of Available Antennas

WLAN 2.4GHz

Antenna	Brand Name	Model Name	Antenna Type	Antenna Gain(dBi)
Ant 0	Masterwave	902P00239S0	Monopole	1.7
Ant 1	Masterwave	902P00239S0	Monopole	2.0

Note: The above antenna information was provided from customer and for more detailed features description, please refer the manufacturer's specification or user's manual.

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5. Requirement

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

Note 1: f = frequency in MHz, * means Plane-wave equivalent power density

Note 2: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Power Density (S) is calculated by the following formula:

$$S = (P \cdot G) / 4\pi R^2$$

where: S = power density (in appropriate units, e.g. mW/ cm²)

P = power input to the antenna (in appropriate units, e.g., mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

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6. Radio Frequency Radiation Exposure Evaluation

WLAN 2.4GHz

Evaluation Frequency	Max. Average Power	Antenna Gain	Max. EIRP	Max. EIRP	Power density @ 20 cm	Limit
(MHz)	(dBm)	(dBi)	(dBm)	(mW)	(mW/cm ²)	(mW/cm ²)
2412 ~ 2462	24.11	2	26.11	408.319	0.081	1

Note:

1. Max. EIRP (dBm) = Max. Average power (dBm) + Antenna Gain (dBi)
2. Max. EIRP (mW) = $10^{(\text{Max. EIRP (dBm)} / 10)}$
3. Power density (mW/cm²) = Max. EIRP (mW) / [$4 \times \pi \times (\text{calculated distance})^2$], the calculated distance is 20 cm.

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.

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