

RF EXPOSURE REPORT



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

Product Name: Go 2 LTE/Wi-Fi Security Camera

Brand Name: Arlo

Model No.: VML2030

Model Difference: N/A

Report Number: ER/2021/70072

FCC ID 2APLE18300416

Issue Date: Aug. 25, 2021

Date of EUT Received: Jul. 22, 2021

Approved By _____

John Yeh

We hereby certify that:

The above equipment was evaluate by SGS Taiwan Ltd. The evaluation in this report is in compliance with FCC Rule Part §2.1091 and RSS-102.

The results of this report relate only to the sample identified in this report.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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SGS Taiwan Ltd.
台灣檢驗科技股份有限公司

No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號

t (886-2) 2299-3279 f (886-2) 2298-0488

www.sgs.com.tw

Revision History

Report Number	Revision	Description	Issue Date	Revised By
ER/2021/70072	Rev.00	Original.	Aug. 25, 2021	Yami Kuo

Note:

- 1、Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.

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1 DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

1.1 Product Description

Product Name:	Go 2 LTE/Wi-Fi Security Camera	
Brand Name:	Arlo	
Model No.:	VML2030	
Model Difference:	N/A	
Hardware Version:	H4	
Firmware Version:	EC25V.R02.A14	
EUT Series No.:	A8KU1679A00D0	
WWAN Module:	Model No.:EC25-V Supplier:Quectel Wireless Solutions Company Limited	
Power Supply:	3.6Vdc from Rechargeable Li-polymer Battery or 5 / 9 / 12 / 15 / 20Vdc from AC/DC Adapter	
	Battery:	Model No.: A-14 Supplier: Celxpert
IMEI:	353150660000460	

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1.2 Antenna Information:

1.2.1 WWAN

Antenna Type	Antenna Part No.	Main
PIFA	Ant0	Main

Operating Frequency (MHz)				Ant 0 Peak Gain (dBi)
LTE-Band 4	1710	~	1755	2.5
LTE-Band 13	777	~	787	-0.8

1.3 Rated Power

1.3.1 WWAN:

Operating Frequency (MHz)		Module	Max. Output Power (dBm)	Antenna Gain (dBi)	EIRP / ERP (dBm)	FCC				ISED		
						Operation Distance (cm)	Power Density (mW/cm ²)	Margin	FCC Worst Case	Power Density (W/m ²)	Margin	IC Worst Case
LTE-Band 4	1710 ~ 1755	EC-25_V	23.50	2.50	26.00	20	0.08	-0.92		0.79	-3.45	
LTE-Band 13	777 ~ 787		23.50	-0.80	22.70	20	0.04	-0.48	V	0.37	-2.10	V

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2 FCC MAXIMUM PERMISSIBLE EXPOSURE (MPE)

2.1 FCC Standard Applicable

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission’s guideline.

This is a Mobile device, the MPE is required.

According to §1.1310 and §2.1091 RF exposure is calculated.

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for General Population/Uncontrolled Exposure				
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
1500-100000	/	/	1.0	30

f = frequency in MHz

* = Plane-wave equipment power density

Prediction of MPE limit at a given distance

$$S = PG / 4\pi R^2$$

Where: S = Power density

P = Power input to antenna

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

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2.2 ISED Standard Applicable

This submittal(s) (test report) is intended to comply with RSS-102 issue 5 Radio frequency Radiation Exposure requirement.

This is a Mobile device, the MPE is required.

Limits for Maximum Permissible Exposure (MPE)

RF Field Strength Limits for Devices Used by the General Public (Uncontrolled Environment)				
Frequency Range (MHz)	Electric Field (V/m rms)	Magnetic Field Strength (A/m rms)	Power Density (W/m ²)	Reference Period (minutes)
0.003-10	83	90	-	Instantaneous*
0.1-10	-	0.73/ <i>f</i>	-	6**
1.1-10	87/ <i>f</i> ^{0.5}	-	-	6**
10-20	27.46	0.0728	2	6
20-48	58.07/ <i>f</i> ^{0.25}	0.1540/ <i>f</i> ^{0.25}	8.944/ <i>f</i> ^{0.5}	6
48-300	22.06	0.05852	1.291	6
300-6000	3.142 <i>f</i> ^{0.3417}	0.008335 <i>f</i> ^{0.3417}	0.02619 <i>f</i> ^{0.6834}	6
6000-15000	61.4	0.163	10	6
15000-150000	61.4	0.163	10	616000/ <i>f</i> ^{1.2}
150000-300000	0.158 <i>f</i> ^{0.5}	4.21 x 10 ⁻⁴ <i>f</i> ^{0.5}	6.67 x 10 ⁻⁵ <i>f</i>	616000/ <i>f</i> ^{1.2}

F = frequency in MHz

* = Based on nerve stimulation (NS).

** = Based on specific absorption rate (SAR)

Maximum Permissible Exposure (MPE) Evaluation

Prediction of MPE limit at a given distance

$$S = PG / 4\pi R^2$$

Where: S = Power density

P = Power input to antenna

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

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2.3 Power Density Calculation (Worst Case)

FCC Standalone MPE

Operation Mode	Evaluation Frequency (MHz)	Operation Distance (cm)	Max. output Power (dBm)	Antenna Gain (dBi)	Max. output Power EIRP (mW)	Power Density (PD) (mW/cm ²)	Limit (mW/cm ²)	Pass / Fail	Power Density / Limit
LTE-Band 4	1755.00	20	23.5	2.50	398.11	0.079	1.000	Pass	0.079
LTE-Band 13	777.00	20	23.5	-0.80	186.21	0.037	0.518	Pass	0.072

ISED Standalone MPE

Operation Mode	Evaluation Frequency (MHz)	Operation Distance (cm)	Max. output Power (dBm)	Antenna Gain (dBi)	Output Power EIRP (mW)	Power Density (PD) (W/m ²)	Limit (W/m ²)	Pass / Fail	Power Density / Limit
LTE-Band 4	1755.00	20	23.5	2.50	398.11	0.792	4.318	Pass	0.184
LTE-Band 13	777.00	20	23.5	-0.80	186.21	0.371	2.474	Pass	0.150

Note: For conservativeness, the lowest uplink frequency of each band is used to determine the MPE limit of that band.

~ End of Report ~

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