RF Exposure Report

Report No.:	SA181130E07
FCC ID:	2APLE18300393
Test Model:	PGZNG1 v2
Received Date:	Nov. 30, 2018
Test Date:	Jan. 15, 2019
Issued Date:	Jan. 24, 2019
Applicant:	Arlo Technologies, Inc.
Address:	2200 Faraday Ave. Suite 150, Carlsbad, CA 92008, United States
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
FCC Registration / Designation Number:	723255 / TW2022

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Release Control Record

Issue No.	Description	Date Issued
SA181130E07	Original release.	Jan. 24, 2019

1 Certificate of Conformity

Product:	ADT Pulse Gateway
Brand:	ADT
Test Model:	PGZNG1 v2
Sample Status:	ENGINEERING SAMPLE
Applicant:	Arlo Technologies, Inc.
Test Date:	Jan. 15, 2019
Standards:	FCC Part 2 (Section 2.1091) KDB 447498 D01 General RF Exposure Guidance v06 IEEE C95.1-1992

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by : Mary Ko , **Date:** Jan. 24, 2019

Mary Ko / Specialist

Approved by : , **Date:** Jan. 24, 2019

May Chen / Manager

2 RF Exposure

2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (minutes)
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
1500-100,000	…	…	1.0	30

f = Frequency in MHz ; *Plane-wave equivalent power density

2.2 MPE Calculation Formula

$Pd = (Pout*G) / (4*pi*r^2)$

where

Pd = power density in mW/cm^2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

For WLAN					
Ant No.	RF Chain No.	Antenna Net Gain (dBi)	Frequency range(GHz)	Antenna type	Connector type
1	Chain (1)	3.85	2.4~2.4835	PIFA	i-pex(MHF)
2	Chain (2)	4.01	2.4~2.4835	PIFA	i-pex(MHF)

For Z-Wave			
Antenna Net Gain (dBi)	Frequency range(MHz)	Antenna type	Connector type
3.1	908~916	Dipole	i-pex(MHF)

2.5 Calculation Result

Z-Wave Field Strength Conversion:

Evaluation Frequency (MHz)	Field Strength of Fundamental (dBuV/m) @3m	EIRP (dBm)	EIRP (mW)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
908.4	93.8	-1.43	0.7194	20	0.00014312	0.6056

Note: 1. Pout EIRP (dBm) = Field Strength of Fundamental (dBuV/m) - 95.23 (dB)
2. Power Density Limit = F/1500

Operation Mode	Evaluation Frequency (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WLAN 2.4GHz	2437	244.438	6.94	20	0.24038	1

Note: Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 6.94$

Conclusion:

The formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + Z-wave = 0.24038 / 1 + 0.00014312 / 0.6056 = 0.24061

Therefore the maximum calculations of above situations are less than the "1" limit.

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