RF Exposure Report

Report No.:	SA181217C36 R1
FCC ID:	A4RH2A
Model Name:	H2A
Received Date:	Dec. 17, 2018
Date of Evaluation:	Mar. 21, 2019
Issued Date:	Apr. 11, 2019
Applicant:	Google LLC
Address:	**1600 Amphitheatre Parkway, Mountain View, CA 94043, USA**
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.
Test Location:	No. 19, Hwa Ya 2nd Rd, Wen Hwa Vil, Kwei Shan Dist., Taoyuan City 33383, Taiwan (R.O.C)
FCC Registration / Designation Number:	788550 / TW0003

Testing Laboratory
2021

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
SA181217C36	Original Release	Mar. 22, 2019
SA181217C36 R1	Added H/W, S/W and revised WLAN 2.4G Max power	Apr. 11, 2019

1 Certificate of Conformity

Product:	Interactive Video Streaming Device
Test Model:	H2A
Sample Status:	Engineering Sample
Applicant:	Google LLC
HW Version:	EVT
SW Version:	173539
Date of Evaluation:	Mar. 21, 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 RF characteristics under the conditions specified in this report.

Prepared by : Gina Liu , **Date:** Apr. 11, 2019

Gina Liu / Specialist

Approved by : , **Date:** Apr. 11, 2019

Dylan Chiou / Project Engineer

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

Antenna Type	Antenna Gain (dBi)		
PIFA	2.4 G WLAN / BT	5G WLAN	Thread
	1.7	5.0	2.2

2.5 Calculation Result of Maximum Conducted Power

Band	Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WLAN	2412-2472	20.0	1.7	20	0.029	1.00
	5180-5240	17.0	5.0	20	0.032	1.00
	5260-5320	19.0	5.0	20	0.050	1.00
	5500-5720	19.0	5.0	20	0.050	1.00
	5745-5825	19.0	5.0	20	0.050	1.00
BT	2402-2480	9.0	1.7	20	0.002	1.00
Thread	2405-2475	20.5	2.2	20	0.037	1.00

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 + Thread = 0.029/1 + 0.037/1 = 0.066

WLAN 5GHz + Thread = 0.050/1 + 0.037/1 = 0.087

BT + Thread = 0.002/1 + 0.037/1 = 0.039

WLAN 5GHz + BT + Thread = 0.050/1 + 0.002/1 + 0.037/1 = 0.089

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

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