RF Exposure Report

Report No.:	SA180416E05
FCC ID:	AK8J20H098
Test Model:	J20H098
Received Date:	Apr. 16, 2018
Test Date:	Apr. 30, 2018
Issued Date:	May 28, 2018
Applicant:	Sony Corporation
Address:	1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan
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
SA180416E05	Original release.	May 28, 2018

1   Certificate of Conformity

Product:	WLAN/BT Module
Brand:	FOXCONN
Test Model:	J20H098
Sample Status:	ENGINEERING SAMPLE
Applicant:	Sony Corporation
Test Date:	Apr. 30, 2018
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:** May 28, 2018

Mary Ko / Specialist

Approved by : , **Date:** May 28, 2018

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 20m away from the body of the user. So, this device is classified as **Mobile Device**.

2.4　Antenna Gain

For WLAN				
Ant No.	Antenna Gain (dBi)	Frequency rang (MHz)	Antenna type	Connector type
1	-0.26	2412~2472	Metal PIFA	none
	1.89	5180~5240		
	2.3	5260~5320		
	3.14	5500~5700		
	1.53	5745~5825		
2	0.52	2412~2472	Metal PIFA	none
	3.73	5180~5240		
	3.01	5260~5320		
	2.12	5500~5700		
	1.15	5745~5825		
For Bluetooth				
Ant No.	Antenna Gain (dBi)	Frequency rang (GHz)	Antenna type	Connector type
1	0.85	2.4~2.4835	Metal PIFA	none

2.5   Calculation Result

WLAN:

Frequency Band (MHz)	Max. Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm²)	Limit (mW/cm²)
2412-2462	702.041	3.15	20	0.28846	1
5180-5240	248.775	5.87	20	0.19122	1
5260-5320	237.912	5.67	20	0.17464	1
5500-5700	198.167	5.66	20	0.14513	1
5745-5825	328.118	4.35	20	0.17773	1

Note:

2.4GHz: Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2]$ = 3.15dBi

5GHz:

UNII-1: Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2]$ = 5.87dBi

UNII-2a: Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2]$ = 5.67dBi

UNII-2c: Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2]$ = 5.66dBi

UNII-3: Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2]$ = 4.35dBi

BT-EDR:

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm²)	Limit (mW/cm²)
2402-2480	9.183	0.85	20	0.00222	1

BT-LE:

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm²)	Limit (mW/cm²)
2402-2480	3.199	0.85	20	0.00077	1

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 + Bluetooth = 0.28846 / 1 + 0.00222 / 1 = 0.29068

WLAN 5GHz + Bluetooth = 0.19122 / 1 + 0.00222 / 1 = 0.19344

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

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