

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

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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**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 :

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, **Date:** May 28, 2018

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Approved by :

May Chen

, **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/cm²

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/cm ²)	Limit (mW/cm ²)
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 = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 3.15\text{dBi}$

5GHz:

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

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

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

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

BT-EDR:

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
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/cm ²)	Limit (mW/cm ²)
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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