

## RF Exposure Report

**Report No.:** SA170822E13

**FCC ID:** AK8J20H095

**Test Model:** J20H095

**Received Date:** Aug. 22, 2017

**Test Date:** Sep. 12 to 13, 2017

**Issued Date:** Oct. 24, 2017

**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  
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## Table of Contents

<b>Release Control Record .....</b>	<b>3</b>
<b>1     Certificate of Conformity .....</b>	<b>4</b>
<b>2     RF Exposure .....</b>	<b>5</b>
2.1   Limits For Maximum Permissible Exposure (MPE) .....	5
2.2   MPE Calculation Formula .....	5
2.3   Classification .....	5
2.4   Antenna Gain .....	6
2.5   Calculation Result Of Maximum Conducted Power .....	7

### Release Control Record

Issue No.	Description	Date Issued
SA170822E13	Original release.	Oct. 24, 2017

## 1 Certificate of Conformity

**Product:** WLAN/BT Module

**Brand:** FOXCONN

**Test Model:** J20H095

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** Sony Corporation

**Test Date:** Sep. 12 to 13, 2017

**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 :**



**Date:**

Oct. 24, 2017

Wendy Wu / Specialist

**Approved by :**



**Date:**

Oct. 24, 2017

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 <sup>2</sup> )	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 <sup>2</sup> )*	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

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

where

Pd = power density in mW/cm<sup>2</sup>

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.	Antenna Gain (dBi)	Frequency rang (GHz)	Antenna type	Connector type
1	-0.84	2.4~2.5	Metal PIFA	none
	0.45	5.15~5.25		
	1.14	5.25~5.35		
	0.34	5.47~5.725		
	-0.13	5.725~5.85		
2	3.87	2.4~2.5	Metal PIFA	none
	3.21	5.15~5.25		
	3.67	5.25~5.35		
	3.56	5.47~5.725		
	3.38	5.725~5.85		
For Bluetooth				
Ant No.	Antenna Gain (dBi)	Frequency rang (GHz)	Antenna type	Connector type
1	4.23	2.4~2.4835	Metal PIFA	none

## 2.5 Calculation Result of Maximum Conducted Power

### For WLAN:

Frequency Band (MHz)	Max. Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2412-2462	691.119	4.84	20	0.41907	1
5180-5240	233.419	4.95	20	0.14517	1
5260-5320	186.215	5.51	20	0.13175	1
5500-5700	201.905	5.11	20	0.13028	1
5745-5825	404.291	4.81	20	0.24346	1

NOTE:

2.4GHz: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 4.84\text{dBi}$

5GHz:

UNII-1: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 4.95\text{dBi}$

UNII-2A: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 5.51\text{dBi}$

UNII-2C: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 5.11\text{dBi}$

UNII-3: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 4.81\text{dBi}$

### For Bluetooth:

#### BT-EDR

Frequency Band (MHz)	Max. Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2402-2480	7.568	4.23	20	0.00399	1

#### BT-LE

Frequency Band (MHz)	Max. Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2402-2480	3.048	4.23	20	0.00161	1

### Conclusion:

The formula of calculated the MPE is:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + Bluetooth =  $0.41907 / 1 + 0.00399 / 1 = 0.42306$

WLAN 5GHz + Bluetooth =  $0.24346 / 1 + 0.00399 / 1 = 0.24745$

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

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