RF Exposure Report

Report No.:	SABHQC-WTW-P21090134
FCC ID:	AK8J20H103
Test Model:	J20H103
Received Date:	2021/9/3
Test Date:	2021/10/28
Issued Date:	2021/12/1
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
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

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Release Control Record

Issue No.	Description	Date Issued
SABHQC-WTW-P21090134	Original release.	2021/12/1

1 Certificate of Conformity

Product:	2TX 11ax (WiFi6E) + BT/BLE Combo Card
Brand:	FOXCONN
Test Model:	J20H103
Sample Status:	Engineering sample
Applicant:	Sony Corporation
Test Date:	2021/10/28
Standards:	FCC Part 2 (Section 2.1091) KDB 447498 D01 General RF Exposure Guidance v06

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 : Vivian Huang , **Date:** 2021/12/1

Vivian Huang / Specialist

Approved by : , **Date:** 2021/12/1

Clark Lin / Technical 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 20 cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

For WLAN					
Antenna NO.	RF Chain NO.	Antenna Net Gain(dBi)	Frequency range (GHz)	Antenna Type	Connector Type
0	0	-0.33	2.4~2.4835	Monopole	none
		1.45	5.15~5.25		
		1.52	5.25~5.35		
		1.58	5.47~5.725		
		1.22	5.725~5.85		
		1.72	5.955~6.415		
		0.29	6.435~6.515		
		0.2	6.535~6.855		
		2.08	6.875~7.115		
1	1	-0.2	2.4~2.4835	Monopole	none
		1.97	5.15~5.25		
		2.16	5.25~5.35		
		1.12	5.47~5.725		
		0.89	5.725~5.85		
		1.81	5.955~6.415		
		-0.06	6.435~6.515		
		-0.05	6.535~6.855		
		1.29	6.875~7.115		

For Bluetooth				
Antenna NO.	Antenna Net Gain(dBi)	Frequency range (GHz)	Antenna Type	Connector Type
0	-3.1	2.4~2.4835	PIFA	none
1	-3.13	2.4~2.4835	PIFA	none

*The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

2.5 Calculation Result

Operation Mode	Evaluation Frequency (MHz)	Max. Average Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Pass/ Fail
WiFi 2.4GHz	2412-2462	335.401	-0.2	20	0.06372	1	Pass
WiFi 5GHz (U-NII-1)	5180-5240	234.698	1.97	20	0.07349	1	Pass
WiFi 5GHz (U-NII-2A)	5240-5320	235.18	2.16	20	0.07694	1	Pass
WiFi 5GHz (U-NII-2C)	5500-5720	245.798	1.58	20	0.07036	1	Pass
WiFi 5GHz (U-NII-3)	5745-5825	631.459	1.22	20	0.16637	1	Pass
BT-EDR	2402-2480	22.336	-3.1	20	0.00218	1	Pass
BT-LE	2402-2480	99.541	-3.1	20	0.00970	1	Pass

Operation Mode	Evaluation Frequency (MHz)	Max. EIRP (mW)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Result
WLAN 6GHz (U-NII-5)	5955-6415	33.189	20	0.0066	1	Pass
WLAN 6GHz (U-NII-6)	6425-6525	34.754	20	0.00692	1	Pass
WLAN 6GHz (U-NII-7)	6525-6875	33.806	20	0.00673	1	Pass
WLAN 6GHz (U-NII-8)	6875-7115	24.491	20	0.00487	1	Pass

Note:
Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

Simultaneously transmission condition:

Condition	Technology	
1	WLAN (2.4GHz)	WLAN (6GHz)
2	WLAN (2.4GHz)	WLAN (5GHz)
3	WLAN (6GHz)	Bluetooth
4	WLAN (5GHz)	Bluetooth
5	WLAN (2.4GHz)	Bluetooth

Conclusion:

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

Condition 1: WLAN 2.4GHz + WLAN 6GHz = 0.06372 / 1 + 0.00692 / 1 = 0.07064

Condition 2: WLAN 2.4GHz + WLAN 5GHz = 0.06372 / 1 + 0.16637 / 1 = 0.23009

Condition 3: WLAN 6GHz + Bluetooth = 0.00692 / 1 + 0.00970 / 1 = 0.01662

Condition 4: WLAN 5GHz + Bluetooth = 0.16637 / 1 + 0.00970 / 1 = 0.17607

Condition 5: WLAN 2.4GHz + Bluetooth = 0.06372 / 1 + 0.00970 / 1 = 0.07342

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

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