WPT Evaluation Report

FCC ID	:	**PY7-16813Y**
Equipment	:	**GSM/WCDMA/LTE/5G Phone with BT, DTS/UNII a/b/g/n/ac/ax, GPS, WPC and NFC**
Brand Name	:	**Sony**
Applicant	:	**Sony Corporation 1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan**
Standard	:	**FCC CFR 47 part 1, 1.1307(b) and 1.1310 KDB 680106 D01v03r01**

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA0D2217B	Rev. 01	Initial issue of report	Apr. 08, 2021
FA0D2217B	Rev. 02	Update section 5	Apr. 14, 2021
FA0D2217B	Rev. 03	Add note4 in section5	Apr. 19, 2021

1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	GSM/WCDMA/LTE/5G Phone with BT, DTS/UNII a/b/g/n/ac/ax, GPS, WPC and NFC
Brand Name	Sony
FCC ID	PY7-16813Y
Frequency Range	110KHz ~ 148KHz
Moudlation Type	ASK
Date of Test	Apr. 02, 2021 ~ Apr. 12, 2021

2. RF Exposure Limit Introduction

§ 1.1310 The criteria listed in table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency(RF) radiation as specified in § 1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of § 2.1093 of this chapter.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	* 100	6
3.0-30	1842/f	4.89/f	* $900/f^2$	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) 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
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz

* = Plane-wave equivalent power density

(1) Occupational/controlled exposure limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when a person is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure. The phrase fully aware in the context of applying these exposure limits means that an exposed person has received written and/or verbal information fully explaining the potential for RF exposure resulting from his or her employment. With the exception of transient persons, this phrase also means that an exposed person has received appropriate training regarding work practices relating to controlling or mitigating his or her exposure. Such training is not required for transient persons, but they must receive written and/or verbal information and notification (for example, using signs) concerning their exposure potential and appropriate means available to mitigate their exposure. The phrase exercise control means that an exposed person is allowed to and knows how to reduce or avoid exposure by administrative or engineering controls and work practices, such as use of personal protective equipment or time averaging of exposure.

(2) General population/uncontrolled exposure limits apply in situations in which the general public may be exposed, or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

3. Test Mode

This device has been tested in the following charging conditions as below:

Test Mode	Test Setup Configuration	Charging Current Condition
TM1	Test w/ Client Device installed	< 1% Battery status
TM2	Test w/ Client Device installed	50% Battery status
TM3	Test w/ Client Device installed	Near 100% Battery status

4. Measurement Equipment

Instrument	Manufacturer	Model No.	Serial No.	Freq Rang	Last Cal.	Due Date
Electric and Magnetic field Probe-Analyzey	Narda S.T.S / PMM	EHP 200AC	170WX80309	3KHz~30MHz	Sep. 12, 2020	Sep. 11, 2021

5. RF Exposure Evaluation

1. The device support Wireless Power Consortium (WPC or commonly referred to as Qi) standard EPP (Extended Power Profile) as a receiver, with a maximum power transfer of 15W to the phone. It also supports the WPC standard Basic Power Profile (BPP) as a receiver. In addition, the device can be used in reverse, as a transmitter to another wireless charging receiver. In this case can be transmitted to the external receiver.
2. According to 201911 TCBC workshop, for portable devices that do not physically attach to phone, desktop WPT testing guidance from FCC KDB 680106 D01v03r01.
3. There is no mechanical / magnetic connection mechanism between client and smart phone (this application) so charging is only supported for desktop/tabletop use.
4. The device power transfer frequency is less than 1MHz and the output power from each primary coil is less than or equal to 15 watts and the system just one source primary coil and the client device is placed directly in contact with the transmitter and the device is meet mobile exposure condution also the test result is meet 0% of the applicable MPE limit, so the device is meet KDB 680106 section 5.b additional KDB inquiry unnecessary.
5. The equipment under test was placed on a wooden desk inside of shield room. The isotropic field probe was used to measure the field strength for 6 EUT surfaces, the detail setup photo please refer to Appendix A.
6. Per KDB 680106 D01v03r01, RF exposure evaluation at 15 cm for all positions. Emissions between 50 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 1.63 A/m and aggregate H-field strengths from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

Position	H-Field Measurement (A/m)								
	A (15cm)	B (15cm)	C (15cm)	D (15cm)	E (15cm)	F (15cm)	G (15cm)	H (15cm)	50% of limit
TM1	0.0543	0.0527	**0.0646**	0.0627	0.0444	0.0555	0.0491	0.0611	0.815
TM2	0.0524	0.0520	0.0611	0.0597	0.0459	0.0552	0.0457	0.0587	
TM3	0.0524	0.0526	0.0624	0.0606	0.0466	0.0534	0.0464	0.0592	

Conclusion:

The field strength limit refers to Part 1.1310 and the test result of exposure evaluation is compliant with 50% of the MPE limit.