RF Exposure Report

Report No.:	SA180323D03-1
FCC ID:	R4V-SDIZ90N
Test Model:	SDIZ90N
Received Date:	Mar. 23, 2018
Issued Date:	Dec. 20, 2018
Applicant:	Western Digital Technologies, Inc.
Address:	951 SanDisk Dr. Milpitas, California, 95035, USA
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.
FCC Registration / Designation Number:	198487 / TW2021

Testing Laboratory
2021

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
SA180323D03-1	Original release.	Dec. 20, 2018

1 Certificate of Conformity

Product:	iXpand Wireless Charger
Brand:	SANDISK
Test Model:	SDIZ90N
Sample Status:	Engineering sample
Applicant:	Western Digital Technologies, Inc.
Test Date:	Nov. 23, 2018
Standards:	FCC Part 1 (Section 1.1307(b), 1.1310)

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 RF characteristics under the conditions specified in this report.

Prepared by : Jessica Cheng , **Date:** Dec. 20, 2018

Jessica Cheng / Senior Specialist

Approved by : Rex. Lai , **Date:** Dec. 20, 2018

Rex Lai / Associate Technical Manager

2 General Information

2.1 General Description of EUT

Product	iXpand Wireless Charger
Brand	SANDISK
Test Model	SDIZ90N
Status of EUT	Engineering sample
Nominal Voltage	12Vdc from adapter
Modulation Type	Load Modulation
Tested Frequency	127.7kHz
Antenna Type	Loop antenna
Antenna Connector	N/A
Accessory Device	Refer to Note as below
Data Cable Supplied	N/A
Maximum power output from the charging coil	10W

Note:

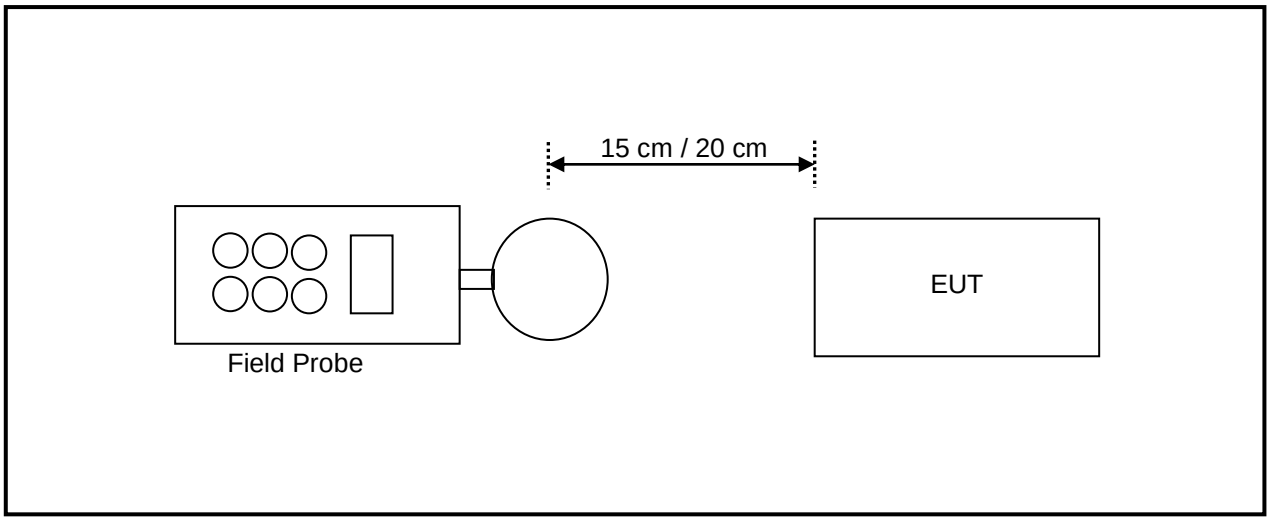
1. The EUT uses following adapter.

Brand	Ktec
Model	KSA-18F-120150D5
Input Power	100-240Vac 50/60Hz 0.5A
Output Power	12Vdc 1.5A
Power Cord	AC 2-Pin Non-shielded DC cable (1.8m)

2. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3 RF Exposure

3.1 Test Setup



Note: Measurements should be made from all sides and the top of the primary/client pair, with the 15 cm or 20 cm measured from the center of the probe(s) to the edge of the device.

3.2 Test Instruments

Description	Brand	Model No.	Frequency Range	Calibrated Date	Calibrated Until
Broadband Field Meter	NARDA	NBM-550	-	Mar. 28, 2018	Mar. 27, 2020
Magnetic Field Meter	NARDA	ELT-400	1 – 400kHz	Apr. 12, 2018	Apr. 11, 2020
Magnetic Probe	NARDA	HF-3061	300kHz – 30MHz	Apr. 16, 2018	Apr. 15, 2020
Magnetic Probe	NARDA	HF-0191	27 – 1000MHz	Apr. 17, 2018	Apr. 16, 2020
Broadband Field Meter	NARDA	NBM-550	-	Mar. 28, 2018	Mar. 27, 2020
Electric Field Meter	COMBINOVA	EFM 200	5Hz – 400kHz	Dec. 6, 2017	Dec. 5, 2019
E-Field Probe	NARDA	EF-0391	100kHz – 3GHz	Mar. 28, 2018	Mar. 27, 2020
E-Field Probe	NARDA	EF-6091	100MHz – 60GHz	Mar. 29, 2018	Mar. 28, 2020

NOTE: 1. The calibration interval of the above test instruments is 12/24 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Chia Pau RF Chamber

3.3 Limits For Maximum Permissible Exposure (MPE)

§ 1.1310 The criteria listed in table 1 shall be used to evaluate the environmental impact of human exposure to radiofrequency(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.

TABLE 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)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
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
300–1500	.....	.....	f/300	6
1500–100,000	.....	.....	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
300–1500	.....	.....	f/1500	30
1500–100,000	.....	.....	1.0	30

f = frequency in MHz
* = Plane-wave equivalent power density

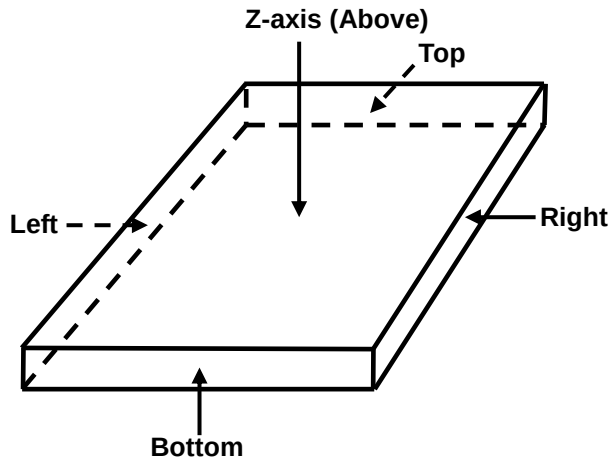
NOTE 1 TO TABLE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2 TO TABLE 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

680106 D01 RF Exposure Wireless Charging App v03

The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

3.4 Test Point Description



4 Calculation Result Of Maximum Conducted Power

127.7kHz Charging Mode with Load Charge 10%

E-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-field (V/m)	1.0900	0.9500	0.9300	0.9200	0.8200
Limit (V/m)	614	614	614	614	614
Margin (V/m)	-612.9100	-613.0500	-613.0700	-613.0800	-613.1800
50 % Limit (V/m)	307	307	307	307	307
50 % Margin (V/m)	-305.9100	-306.0500	-306.0700	-306.0800	-306.1800

H-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-field (uT)	0.1950	0.2570	0.1100	0.1320	0.3970
Max H-field (A/m)	0.1560	0.2056	0.0880	0.1056	0.3176
Limit (A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.4740	-1.4244	-1.5420	-1.5244	-1.3124
50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50 % Margin (A/m)	-0.6590	-0.6094	-0.7270	-0.7094	-0.4974

Measurements were made from all sides and the top of the primary/client pair, with the 15 cm or 20 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

127.7kHz Charging Mode with Load Charge 50%

E-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-field (V/m)	1.3700	0.9400	0.4700	0.9200	1.3500
Limit (V/m)	614	614	614	614	614
Margin (V/m)	-612.6300	-613.0600	-613.5300	-613.0800	-612.6500
50 % Limit (V/m)	307	307	307	307	307
50 % Margin (V/m)	-305.6300	-306.0600	-306.5300	-306.0800	-305.6500

H-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-field (uT)	0.3310	0.2610	0.2150	0.1680	0.5680
Max H-field (A/m)	0.2648	0.2088	0.1720	0.1344	0.4544
Limit (A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.3652	-1.4212	-1.4580	-1.4956	-1.1756
50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50 % Margin (A/m)	-0.5502	-0.6062	-0.6430	-0.6806	-0.3606

Measurements were made from all sides and the top of the primary/client pair, with the 15 cm or 20 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

127.7kHz Charging Mode with Full Load Charge

E-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-field (V/m)	0.9500	1.5900	0.7300	0.9500	2.6000
Limit (V/m)	614	614	614	614	614
Margin (V/m)	-613.0500	-612.4100	-613.2700	-613.0500	-611.4000
50 % Limit (V/m)	307	307	307	307	307
50 % Margin (V/m)	-306.0500	-305.4100	-306.2700	-306.0500	-304.4000

H-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-field (uT)	0.1450	0.2650	0.2050	0.1050	0.1550
Max H-field (A/m)	0.1160	0.2120	0.1640	0.0840	0.1240
Limit (A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.5140	-1.4180	-1.4660	-1.5460	-1.5060
50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50 % Margin (A/m)	-0.6990	-0.6030	-0.6510	-0.7310	-0.6910

Measurements were made from all sides and the top of the primary/client pair, with the 15 cm or 20 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

127.7kHz Standby Mode

E-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-field (V/m)	0.6400	1.0100	0.6500	1.1200	1.3800
Limit (V/m)	614	614	614	614	614
Margin (V/m)	-613.3600	-612.9900	-613.3500	-612.8800	-612.6200
50 % Limit (V/m)	307	307	307	307	307
50 % Margin (V/m)	-306.3600	-305.9900	-306.3500	-305.8800	-305.6200

H-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-field (uT)	0.0930	0.1050	0.0980	0.0940	0.2420
Max H-field (A/m)	0.0744	0.0840	0.0784	0.0752	0.1936
Limit (A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.5556	-1.5460	-1.5516	-1.5548	-1.4364
50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50 % Margin (A/m)	-0.7406	-0.7310	-0.7366	-0.7398	-0.6214

Measurements were made from all sides and the top of the primary/client pair, with the 15 cm or 20 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

5 Photographs of the Test Configuration

Please refer to the attached file (Test Setup Photo).

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