

RF Exposure Evaluation Report

Product Name	WIRELESS POWER CHARGER UNIT
Model No.	NMOK-401W
FCC ID.	2AV76-NMOK-401W

Applicant	NIDEC MOBILITY KOREA CORPORATION
Address	790-12, Bogaewonsam-ro, Bogae-myeon, Anseong-si, Gyeonggi-do, Republic of Korea

Date of Receipt	Jun. 11, 2021
Date of Declaration	Nov. 30, 2021
Report No.	2160470R-RFUSMPEV01
Report Version	V2.0

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF or any agency of the government.

The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Issued Date: Nov. 30, 2021

Report No.: 2160470R-RFUSMPEV01



Product Name	WIRELESS POWER CHARGER UNIT	
Applicant	NIDEC MOBILITY KOREA CORPORATION	
Address	790-12, Bogaewonsam-ro, Bogae-myeon, Anseong-si, Gyeonggi-do, Republic of Korea	
Manufacturer	NIDEC MOBILITY KOREA CORPORATION	
Model No.	NMOK-401W	
FCC ID.	2AV76-NMOK-401W	
EUT Rated Voltage	DC 12V Power by Battery	
EUT Test Voltage	DC 12V Power by Battery	
Trade Name	NIDEC MOBILITY KOREA	
Applicable Standard	KDB 447498 D01 v06	<input checked="" type="checkbox"/> For Field Strength Test
Exposure Category	General Population/ Uncontrolled Exposures	
Test Result	Complied	

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Tested By : Ivan Chuang
(Senior Engineer / Ivan Chuang)

Approved By : Alan Chen
(Senior Engineer / Alan Chen)

Revision History

Report No.	Version	Description	Issued Date
2160470R-RFUSMPEV01	V1.0	Initial issue of report.	Aug. 11, 2021
2160470R-RFUSMPEV01	V2.0	Update test data	Nov. 30, 2021

1. RF Exposure Evaluation

1.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Specification	Last Cal.
X	EM Field Meter	Wavecontrol	SMP2 / 18SN0746	1 Hz - 60 GHz	Apr., 2021
X	Isotropic EM Field Probe	Wavecontrol	WP400-3 / 18WP120014	1 Hz - 400 KHz	Apr., 2021
X	Isotropic EM Field Probe	Wavecontrol	WP400 / 18WP100392	1 Hz - 400 KHz	Apr., 2021
X	Isotropic EM Field Probe	Wavecontrol	WPF8 / 18WP040835	100 KHz - 8 GHz	Apr., 2021

1.2. Support Units

	Equipment	Manufacturer	Model No./Serial No.
X	Mobile Phone	SONY	H8296 / 43027566
X	Battery	YUASA	55B24L-CMF II

1.3. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

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)
(A) Limits for Occupational/ Control 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	6
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/F	2.19/F	*(180/F ²)	30
300-1500	27.5	0.073	0.2	30
300-1500	--	--	F/1500	30
1500-100,000	--	--	1	30

Note:

1. RF Exposure evaluation should be conducted assuming a separation distance of 10 cm
2. The EUT is including four models for different marketing requirement.

1.4. Test Procedure

The aggregate H-field strengths at 15cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils per the FCC 's request. (reference KDB 680106 D01 RF Exposure Wireless Charging Apps v03r01)

The temperature and related humidity: 18°C and 62% RH.

1.5. Test Result of RF Exposure Evaluation for WPT

<i>Items to be covered</i>	<i>Answer from applicant</i>
Power transfer frequency is less than 1 MHz.	The device operation in the frequency range is 120 ~125kHz
Output power from each primary coil is less than or equal to 15 watts.	Max 15W
The system may consist of more than one source primary coils, charging one or more clients. If more than one primary coil is present, the coil pairs may be powered on at the same time.	Yes, the transfer system includes single coil that is able to detect receiver device.
Client device is placed directly in contact with the transmitter.	Client device is placed directly in contact with the transmitter.
Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).	The device is meet mobile exposure requirements.
The aggregate H-field strengths anywhere at or beyond 15 cm surrounding the device, and 20 cm away from the surface from all coils that by design can simultaneously transmit, and while those coils are simultaneously energized, are demonstrated to be less than 50% of the applicable MPE limit.	<p>*Electric Field Strength (V/m) @20cm = 3.7V/m (< 307 V/m) Electric Field Strength (V/m) @15cm = 7.2V/m (< 307 V/m) MPE Limit (614 V/m) *50% =307 V/m</p> <p>*Magnetic Field Strength (A/m) @20cm =0.06A/m (< 0.815 A/m) Magnetic Field Strength (A/m) @15cm =0.12A/m (< 0.815 A/m) MPE Limit (1.63 A/m) *50%= 0.815 A/m</p>

Product : WIRELESS POWER CHARGER UNIT
 Test Item : RF Exposure Evaluation
 Test Site : ACB1 Chamber
 Test Date : 2021/11/30

E-Field Emissions

Test Position	Frequency (MHz)	Measurement Level @10cm (V/m)	Limit (V/m)	50% Limit (V/m)	Result
Side 1	0.123	6.07	614.0	307.0	PASS
Side 2	0.123	8.60	614.0	307.0	PASS
Side 3	0.123	4.50	614.0	307.0	PASS
Side 4	0.123	3.20	614.0	307.0	PASS
Top	0.123	12.40	614.0	307.0	PASS
Bottom	0.123	2.60	614.0	307.0	PASS

Test Position	Frequency (MHz)	Measurement Level @15m (V/m)	Limit (V/m)	50% Limit (V/m)	Result
Side 1	0.123	3.10	614.0	307.0	PASS
Side 2	0.123	4.60	614.0	307.0	PASS
Side 3	0.123	2.54	614.0	307.0	PASS
Side 4	0.123	2.10	614.0	307.0	PASS
Top	0.123	7.20	614.0	307.0	PASS
Bottom	0.123	1.14	614.0	307.0	PASS

Test Position	Frequency (MHz)	Measurement Level @20m (V/m)	Limit (V/m)	50% Limit (V/m)	Result
Side 1	0.123	2.10	614.0	307.0	PASS
Side 2	0.123	2.50	614.0	307.0	PASS
Side 3	0.123	1.50	614.0	307.0	PASS
Side 4	0.123	1.30	614.0	307.0	PASS
Top	0.123	3.70	614.0	307.0	PASS
Bottom	0.123	0.80	614.0	307.0	PASS

H-Field Emissions

Test Position	Frequency (MHz)	Measurement Level @10cm (A/m)	Limit (A/m)	50% Limit (A/m)	Result
Side 1	0.123	0.16	1.63	0.815	PASS
Side 2	0.123	0.14	1.63	0.815	PASS
Side 3	0.123	0.12	1.63	0.815	PASS
Side 4	0.123	0.15	1.63	0.815	PASS
Top	0.123	0.32	1.63	0.815	PASS
Bottom	0.123	0.19	1.63	0.815	PASS

Test Position	Frequency (MHz)	Measurement Level @15cm (A/m)	Limit (A/m)	50% Limit (A/m)	Result
Side 1	0.123	0.07	1.63	0.815	PASS
Side 2	0.123	0.06	1.63	0.815	PASS
Side 3	0.123	0.05	1.63	0.815	PASS
Side 4	0.123	0.07	1.63	0.815	PASS
Top	0.123	0.12	1.63	0.815	PASS
Bottom	0.123	0.10	1.63	0.815	PASS

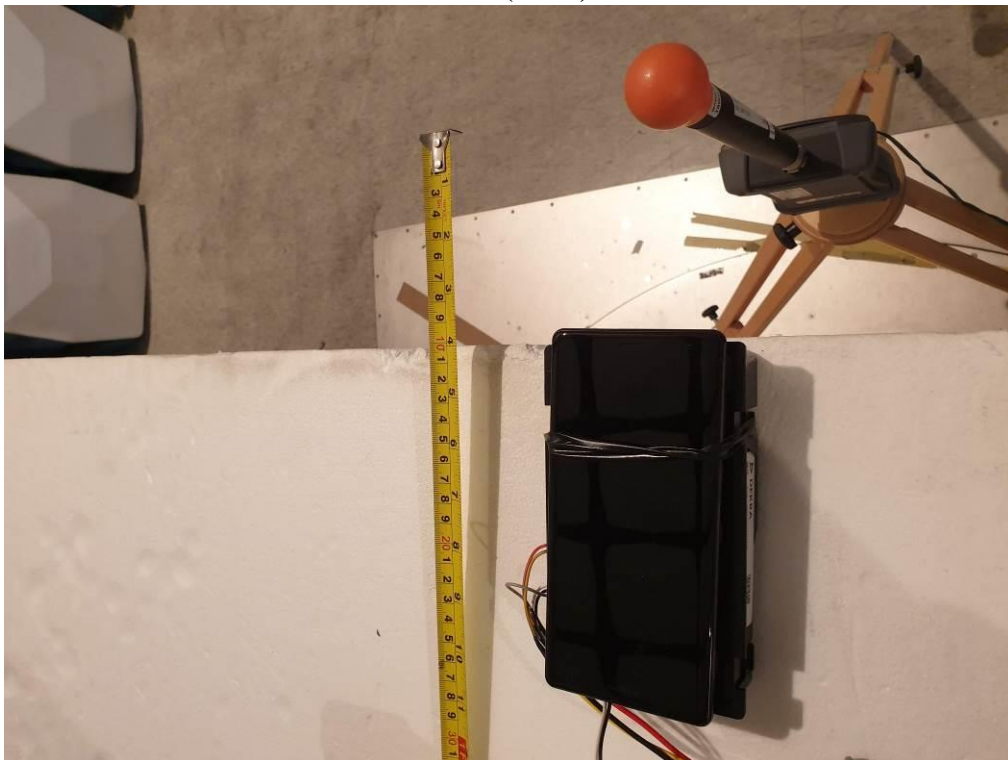
Test Position	Frequency (MHz)	Measurement Level @20cm (A/m)	Limit (A/m)	50% Limit (A/m)	Result
Side 1	0.123	0.04	1.63	0.815	PASS
Side 2	0.123	0.03	1.63	0.815	PASS
Side 3	0.123	0.03	1.63	0.815	PASS
Side 4	0.123	0.04	1.63	0.815	PASS
Top	0.123	0.06	1.63	0.815	PASS
Bottom	0.123	0.05	1.63	0.815	PASS

1.6. EUT Test Setup Photographs

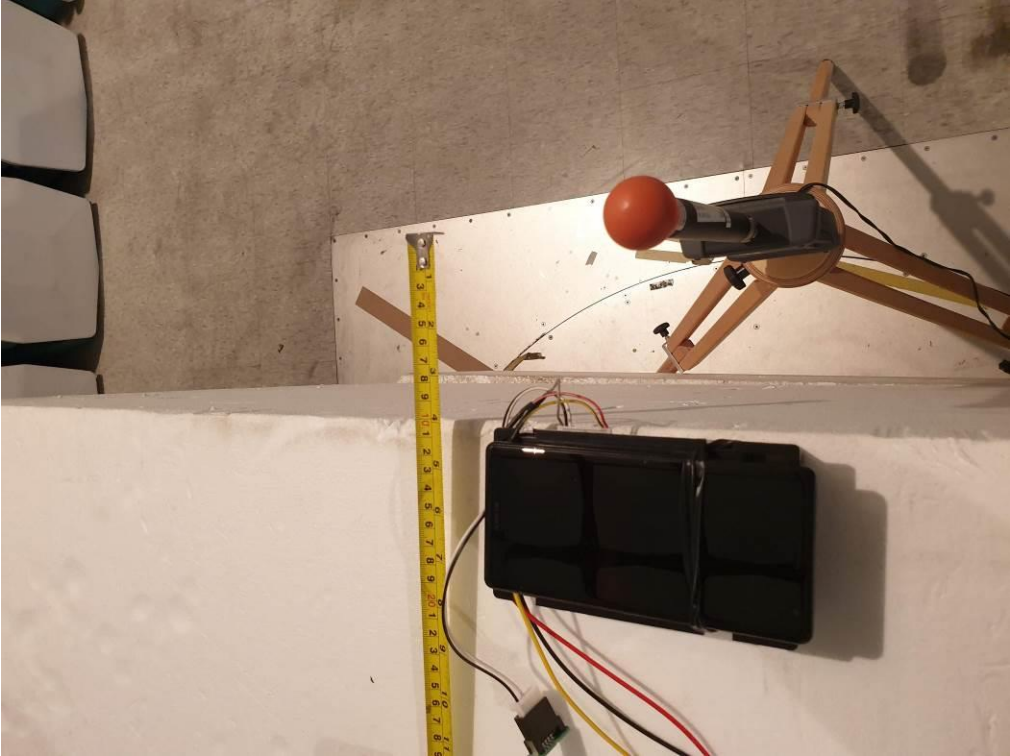
Side 1(10cm)



Side 2(10cm)



Side 3(10cm)



Side 4(10cm)



Top(10cm)



Bottom(10cm)

