

# TEST REPORT



**CTK Co., Ltd.**  
(Ho-dong), 113, Yejik-ro, Cheoin-gu,  
Yongin-si, Gyeonggi-do, Korea  
Tel: +82-31-339-9970  
Fax: +82-31-624-9501

Report No.:  
CTK-2019-02771  
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## 1. Client

- Name : SEOYON ELECTRONICS CO., LTD.
- Address : 100, Saneop-ro, 156beon-gil, Gwonseon-gu, Suwon-si, Gyeonggi-do, South Korea
- Date of Receipt : 2019-06-19

## 2. Manufacturer

- Name : SEOYON ELECTRONICS CO., LTD.
- Address : 100, Saneop-ro, 156beon-gil, Gwonseon-gu, Suwon-si, Gyeonggi-do, South Korea

## 3. Use of Report : For FCC Certification

## 4. Test Sample / Model : Wireless Charging System / SYECNWPC1909

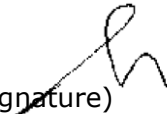

## 5. Date of Test : 2019-06-28

## 6. Test Standard(method) used : FCC 47 CFR part 2 subpart J 2.1091

## 7. Testing Environment: Temp.: (23 ± 1) °C, Humidity: (48 ± 5) % R.H

## 8. Test Results : Compliance

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This Test Report cannot be reproduced, except in full.

Affirmation	Tested by Bong-seok Kim: (Signature) 	Technical Manager Young-taek Lee: (Signature) 
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2019-07-19

Republic of KOREA **CTK Co., Ltd.**



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## REPORT REVISION HISTORY

Date	Revision	Page No
2019-07-19	Issued (CTK-2019-02771)	all

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## 1. General Product Description

### 1.1 Client Information

<b>Company</b>	SEYON ELECTRONICS CO., LTD.
<b>Contact Point</b>	100, Saneop-ro, 156beon-gil, Gwonseon-gu, Suwon-si, Gyeonggi-do, South Korea
<b>Contact Person</b>	Name : Hee tack Ryu E-mail : shadow@seoyonelec.com Tel : +82-31-420-3481

### 1.2 Product Information

<b>FCC ID</b>	NYOSYECNWPC1909
<b>IC</b>	3109A-SYECNWPC199
<b>Product Description</b>	Wireless Charging System
<b>Model name</b>	SYECNWPC1909
<b>Variant Model name</b>	-
<b>FVIN</b>	-
<b>Operating Frequency Range</b>	13.56 MHz
<b>RF Output Power</b>	62.1 dBuV/m @ 3 m
<b>Antenna Type</b>	PCB antenna(Loop antenna)
<b>Power Source</b>	DC 12 V



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## 2. Facility and Accreditations

### 2.1 Test Facility

The measurement facility is located at (Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea.

### 2.2 Laboratory Accreditations and Listings

Country	Agency	Registration Number
USA	FCC	805871
CANADA	ISED	8737A-2
KOREA	NRRA	KR0025

### 2.3 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less. All test equipment calibrations are traceable to the Korea Research Institute of Standards and Science (KRISS), therefore, all test data recorded in this report is traceable to KRISS.



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### 3. RF Exposure Assessment

#### 3.1 Maximum Permissible Exposure

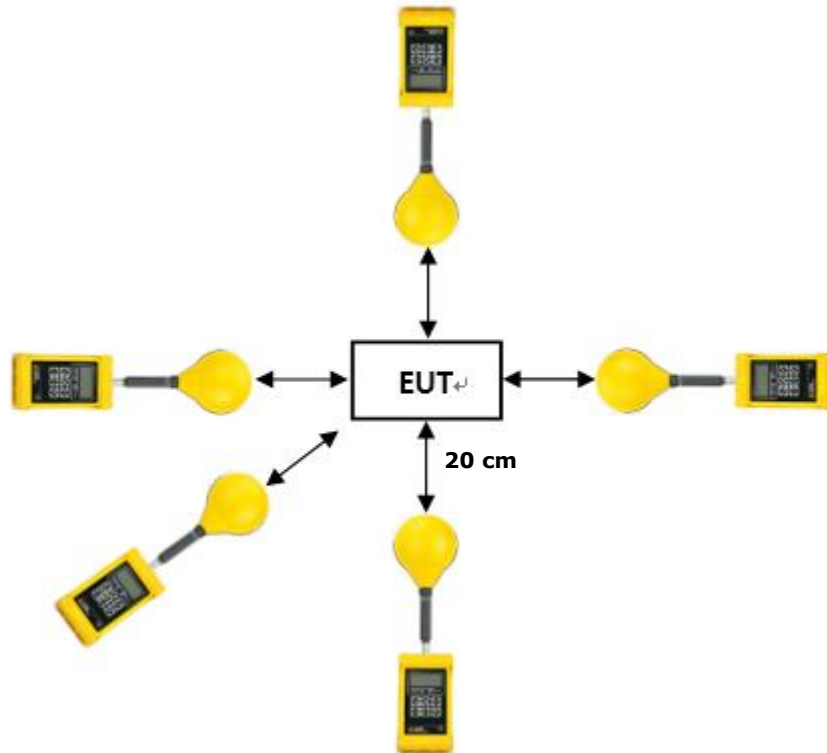
##### Limit

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposure</b>				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f <sup>2</sup>	6
30-300	61.4	0.163	1.0	6
300-1,500	-	-	f/300	6
1,500-100,000	-	-	5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*100	30
<b>1.34-30</b>	<b>824/f</b>	<b>2.19/f</b>	*180/f <sup>2</sup>	30
30-300	27.5	0.073	0.2	30
300-1,500	-	-	f/1500	30
1,500-100,000	-	-	1.0	30
Note 1 : f = frequency in MHz; *Plane-wave equivalent power density				
Note 2 : For the applicable limit, see FCC 1.1310				

##### Test method

- a) Performed aggregate both leakage E-field and H-field at surrounding the device from all simultaneous transmitting coils.
- b) During testing, the EUT was placed on a non-conductive table top and the ancillary equipment (e.g., mobile phone) was placed on the EUT for charging. Maximum E-field and H-field measurement were tested 20cm from each side of the EUT. Along the side of the EUT to center of E-field probe and H-field probe were positioned at the location to search maximum field strength.

## Test Setup





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## Test results

Maximum Permissible Exposure				
Charging Condition	Separation	Probe from EUT Side	E-field (V/m)	H-field (A/m)
Operating	20 cm	right	0.35	0.0145
Operating	20 cm	bottom	0.36	0.0117
Operating	20 cm	left	0.36	0.0133
Operating	20 cm	top	0.39	0.0130
Operating	20 cm	Y-axis above EUT	<b>0.47</b>	<b>0.0436</b>
<b>Limit</b>			<b>60.77</b>	<b>0.162</b>
<b>Margin Limit</b>			0.77 %	27.00 %





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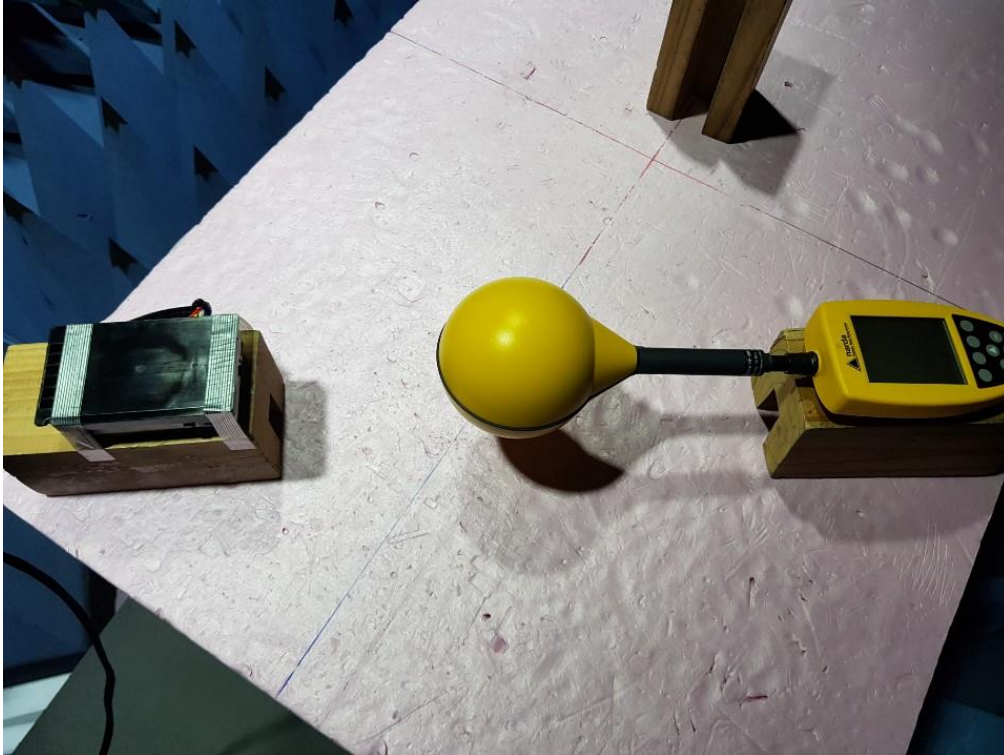
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## APPENDIX A – Test Equipment Used For Tests

No.	Name of Equipment	Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date
1	H-Field Probe	Narda	NBM-550	D-0477	2018-09-05	2019-09-05
2	Broadband Field Meter	Narda	NBM-550	G-0500	2018-09-05	2019-09-05
3	Electric Field Probe & Meter	SCHAFFNER-CHASE	EMC-20	R-0029	2018-06-29	2019-06-29

## APPENDIX B – Test Photos

**H-field**



**E-field**

