

TEST REPORT



CTK Co., Ltd.
(Ho-dong), 113, Yejik-ro, Cheoin-gu,
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Report No.:
CTK-2019-02655
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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 / SYECWPC1909

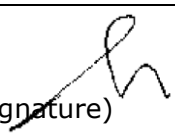
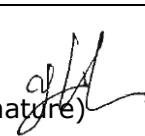
5. Date of Test : 2019-06-24 to 2019-06-27

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	Technical Manager
	Bong-seok Kim: (Signature) 	Young-taek Lee: (Signature) 

2019-07-13

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



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REPORT REVISION HISTORY

Date	Revision	Page No
2019-07-13	Issued (CTK-2019-02655)	all

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1. General Product Description

1.1 Client Information

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

1.2 Product Information

FCC ID	NYOSYECWPC1909
Product Description	Wireless Charging System
Model name	SYECWPC1909
Variant Model name	-
Operating Frequency Range	112 kHz - 148 kHz
Charging Frequency	115 kHz
RF Output Power	89.2 dBuV/m @ 3 m
Power Transfer Method	Magnetic induction and only single primary coil coupling secondary coil
Output power from each primary coil	<15W
That may have multiple primary coils	No
Antenna Type	Coil
Charging Method	Directly contact
Power Source	DC 12 V

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.

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 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

Note 1 : f = frequency in MHz; *Plane-wave equivalent power density
Note 2 : For the applicable limit, see FCC 1.1310

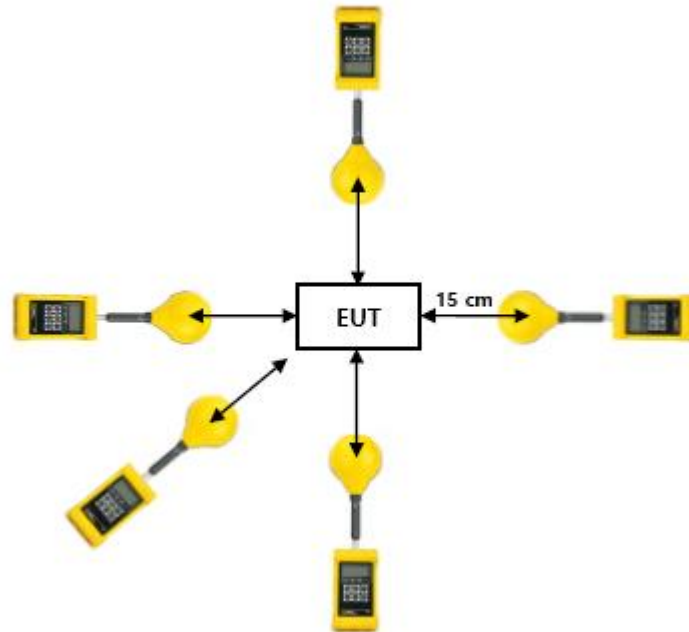
Test method

- Performed aggregate both leakage E-field and H-field at surrounding the device from all simultaneous transmitting coils.
- 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 15cm 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.

The Worst Condition

Ancillary Equipment	Charging Condition
Fixture Load	Charging Mode

Test Setup



Test results

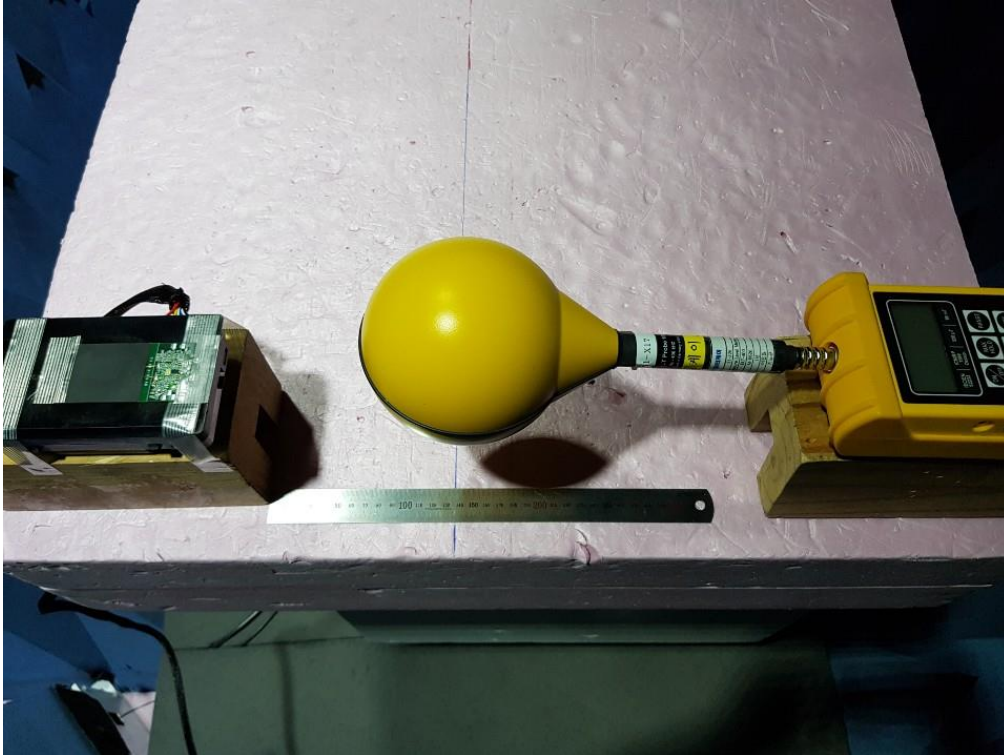
Maximum Permissible Exposure				
Charging Condition	Separation	Probe from EUT Side	E-field (V/m)	H-field (A/m)
Operating	15 cm	right	0.64	0.141
Operating	15 cm	bottom	0.81	0.165
Operating	15 cm	left	0.57	0.157
Operating	15 cm	top	0.64	0.170
Operating	15 cm	Y-axis above EUT	1.94	0.930
Limit			614	1.63
Margin Limit			0.32 %	57.06 %

APPENDIX A – Test Equipment Used For Tests

No.	Name of Equipment	Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date
1	Exposure Level Probe	Narda	ELT-400	M-0626	2019-05-22	2020-05-22
2	Exposure Level Meter	Narda	ELT-400	N-0181	2019-05-22	2020-05-22
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

