

# 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-2022-01216  
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## 1. Applicant

- Name : MOBASE ELECTRONICS CO., LTD.
- Address : 100, Saneop-ro 156beon-gil, Gwonseon-gu, Suwon-si, Gyeonggi-do, Republic of Korea
- Date of Receipt : 2022-03-14

## 2. Manufacturer

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

**3. Use of Report :** For FCC Certification, For ISED Certification

**4. Test Sample / Model :** Wireless Charging System/ MBECNWPC2207

**5. Date of Test :** 2022-04-19

**6. Test Standard(method) used :** FCC 47 CFR part 2 subpart J 2.1091,  
RSS-102 Issue 5


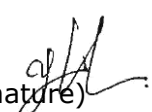
**7. Testing Environment:** Temp.: (22.3 ± 0.5) °C, Humidity: (30 ± 3) % R.H

**8. Test Results :** Compliance

**9. Location of Test :**  Permanent Testing Lab     On Site Testing

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

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

Remark. This report is not related to KOLAS accreditation and relevant regulation.

2022-04-22

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## REPORT REVISION HISTORY

Date	Revision	Page No
2022-04-22	Issued (CTK-2022-01216)	all

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## 1. General Product Description

### 1.1 Client Information

<b>Company</b>	MOBASE ELECTRONICS CO., LTD.
<b>Contact Point</b>	100, Saneop-ro 156beon-gil, Gwonseon-gu, Suwon-si, Gyeonggi-do, Republic of Korea
<b>Contact Person</b>	Name : Hee-Tack Ryu E-mail : shadow@mobaseelec.com Tel : +82-31-8091-2611

### 1.2 Product Information

<b>FCC ID</b>	NYOMBECNWPC2207
<b>IC</b>	3109A-MBECNWPC227
<b>Product Description</b>	Wireless Charging System
<b>Model name</b>	MBECNWPC2207
<b>Variant Model name</b>	-
<b>Operating Frequency</b>	13.56 MHz
<b>RF Output Power</b>	64.8 dBuV/m @ 3m
<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 142, Dongbu-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, Republic of 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

##### FCC 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>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*100	30
<b><u>1.34-30</u></b>	<b><u>824/f</u></b>	<b><u>2.19/f</u></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

##### ISED Limit

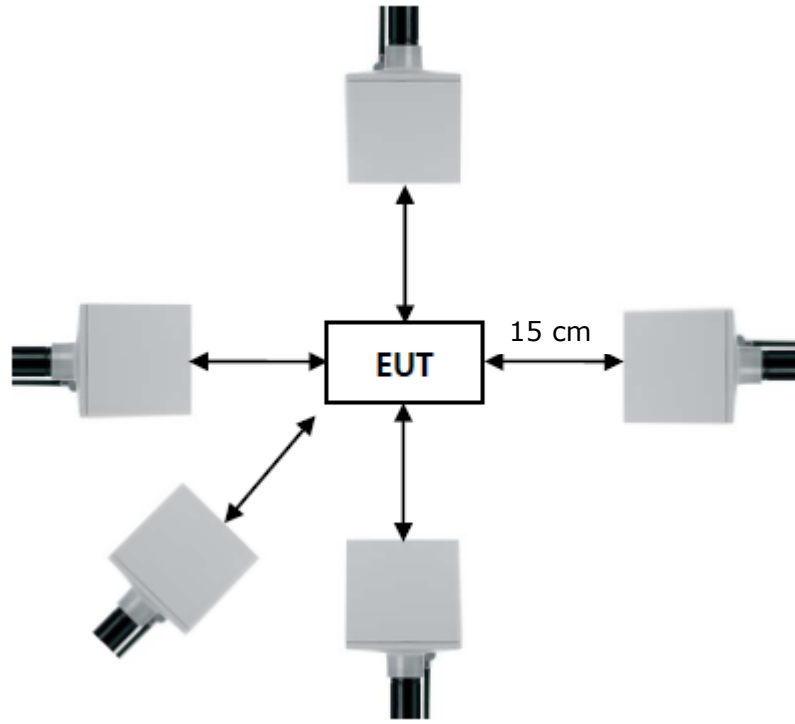
<b>RF Field Strength Limits for Devices Used by the General Public (Uncontrolled Environment)</b>				
Frequency Range (MHz)	Electric Field (V/m rms)	Magnetic Field (A/m rms)	Power Density (W/m <sup>2</sup> )	Reference Period (minutes)
0.003-10	83	90	-	Instantaneous*
0.1-10	-	0.73/ f	-	6**
1.1-10	87/ f <sup>0.5</sup>	-	-	6**
<b><u>10-20</u></b>	<b><u>27.46</u></b>	<b><u>0.0728</u></b>	-2	6
20-48	58.07/ f <sup>0.25</sup>	0.1540/ f <sup>0.25</sup>	8.944/ f <sup>0.5</sup>	6
48-300	22.06	0.05852	1.291	6
300-6000	3.142 f <sup>0.3417</sup>	0.008335 f <sup>0.3417</sup>	0.02619 f <sup>0.6834</sup>	6
6000-15000	61.4	0.163	10	6
15000-150000	61.4	0.163	10	616000/ f <sup>1.2</sup>
150000-300000	0.158 f <sup>0.5</sup>	4.21 x 10 <sup>-4</sup> f <sup>0.5</sup>	6.67 x 10 <sup>-5</sup> f	616000/f <sup>1.2</sup>

**Note:** f is frequency in MHz.  
 \* Based on nerve stimulation (NS).  
 \*\* Based on specific absorption rate (SAR).

##### 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 15 cm from each side of the EUT. Along the side of the EUT to side 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	15 cm	right	0.42	0.02
Operating	15 cm	bottom	0.43	0.02
Operating	15 cm	left	0.42	0.02
Operating	15 cm	top	0.42	0.02
Operating	15 cm	Y-axis above EUT	<b>0.80</b>	<b>0.02</b>
<b>Limit</b>			<b>27.46</b>	<b>0.0728</b>
<b>Margin Limit(Measurement value / Limit * 100)(%)</b>			<b>2.91 %</b>	<b>27.47 %</b>

## Maximum Measurement Uncertainty

The value of the measurement uncertainty for the measurement of each parameter.  
 Coverage factor  $k = 2$ , Confidence levels of 95 %

item	Uncertainty
H-field	15 % (C.L. : Approx. 95 %, $k = 2$ )
E-field	15 % (C.L. : Approx. 95 %, $k = 2$ )





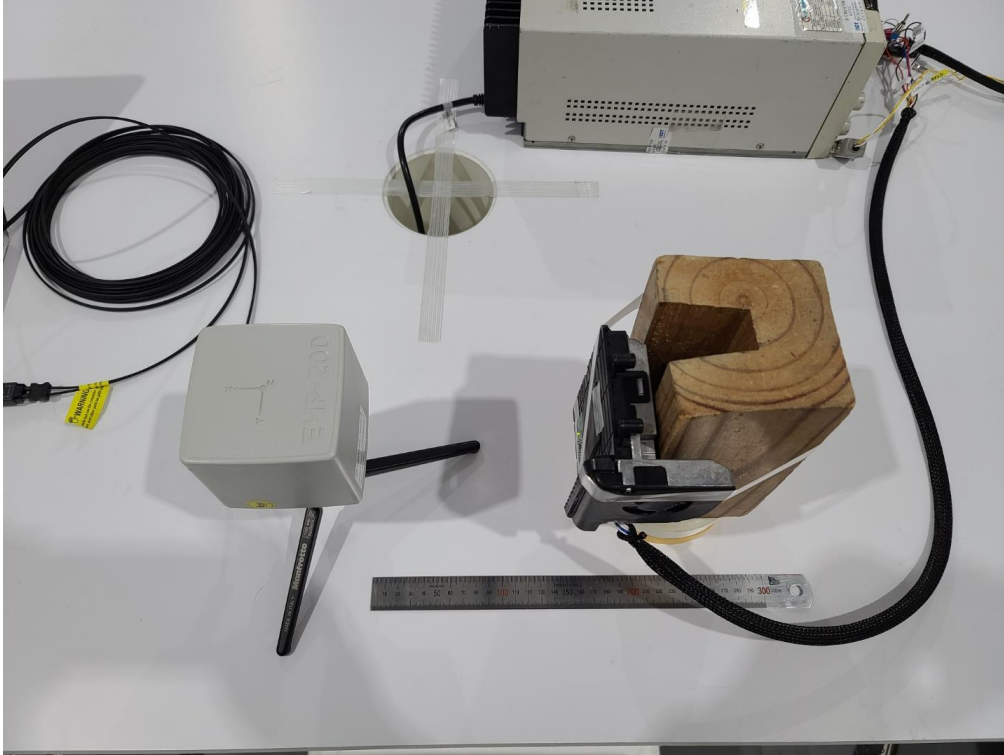
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## APPENDIX A – Test Equipment Used For Tests

No.	Name of Equipment	Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date
1	Electric and Magnetic Field Analyzer	Narda	EHP-200AC	170WX91010	2021-10-27	2022-10-27
2	EHP200-TS Software	Narda	EHP200-TS	650.000.207	-	-
3	Note Computer	HP	15-bs563TU	CND7253QRM	-	-

## APPENDIX B – Test Photos



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