RF EXPOSURE REPORT

Test item	:	Wireless Charger
Model No.	:	4CH58AP000, 4CH58AP010
Order No.	:	DEMC1310-03224
Date of receipt	:	2013-10-22
Test duration	:	2013-12-23 ~ 2013-12-26
Date of issue	:	2013-12-31
Use of report	:	FCC Original Grant

Applicant : MCNEX CO.,LTD
Hanshin IT Tower 2, 60-18, Gasan-dong, Geumcheon-gu, Seoul, Korea

Test laboratory : Digital EMC Co., Ltd.
683-3, Yubang-Dong, Cheoin-Gu, Yongin-Si, Kyunggi-Do, 449-080, Korea

Test specification : FCC Part 1.1310

Test environment : See appended test report

Tested by:

Engineer
JaeJin Lee

Reviewed by:

General Manager
Geunki Son

Test Report Version

Test Report No.	Date	Description
DRTFCC1312-1221	Dec. 27, 2013	Initial issue
DRTFCC1312-1221(1)	Dec. 31, 2013	Revised for FCC only

CONTENTS

1. Equipment information

1.1 Equipment description

FCC Equipment Class	Part 15 Low Power Transmitter Below 1705 kHz (DCD)
Equipment type	Wireless Charger
Equipment model name	4CH58AP000
Equipment add model name	4CH58AP010
Equipment serial no.	Identical prototype
Frequency range	112 ~ 205kHz
Output power	Max : 5 W
Power	DC 12 V
Antenna type	Coil Antenna X 3ea[Note]

Note: This device has 3 coil antennas but only one antenna is used for transmitting at a time after selection of the best coil antenna,

1.2 Support equipment

Equipment	Model No.	Serial No.	Manufacturer	Note
Wireless Charging Cover	MWC-R525T	N/A	M.Cloud	-
Mobile Phone	GT-I9505	-I9505GSMH	SAMSUNG	FCC ID : A3LGTI9505

Note: The supporting equipments were supported by manufacturer.

2. Information about test items

2.1 Test Configuration and Mode

▪Test configuration

The field strength of both E-field and H-field were measured at 10 cm using RF exposure survey meter with E-field and H-field probes for determining compliance with the MPE requirements of FCC Part 1.1310
During measurements, the wireless charging pad (EUT) was wirelessly charging a battery housed inside a portable handset and was loaded with the client device using the resistor as described below summary table for test modes and conditions.
The RF power density was measured with the battery at 2 different charge conditions: battery at almost 0 % and 50 % status, 3 resistive load conditions: 300 mA, 600 mA, 1000 mA (Max. charging current with 5 Ω resister).
These testing were performed at test configuration as test setup diagram on clause 3 of this test report.
EUT was placed on a non-conductive turntable, and the portable handset with charging cover for charging a battery or client device with resistive load for drawing various load current.
This device uses a wireless charging circuit for power transfer operating at the frequency of 112 KHz ~ 205 KHz. Thus, the 300 KHz RF exposure limits were used as below table.

▪Test mode

This device has been tested in all the configuration of charging mode in each coil antennas.

Test Mode	Charging Current	Support Equipment
1	300mA	Wireless Charging Cover (M/N: MWC-R525T)
2	600mA	
3	1000mA(Max)	
4	@ < 1% battery status	Mobile Phone(M/N: GT-I9505)
5	@ 50% battery status	

▪ Limit

	Frequency	E-Field limit	H-Field limit
FCC Part 1.1310	300 KHz ~ 3MHz	614 V/m	1.63 A/m

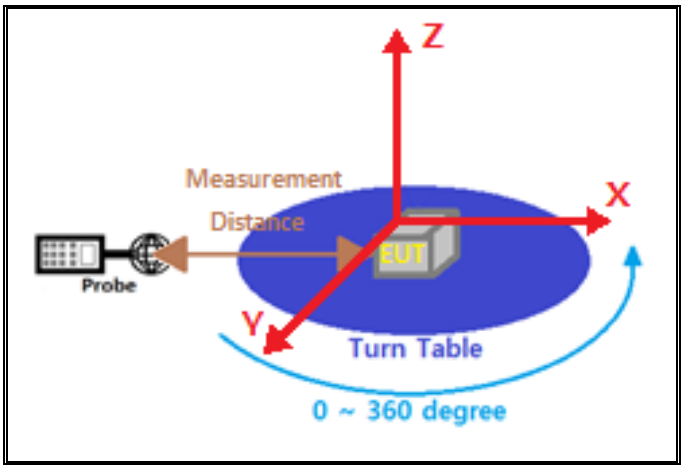
2.2 Tested environment

Temperature	:	22 ~ 23℃
Relative humidity content	:	36 ~ 38 % R.H.
Details of power supply	:	DC 12 V

3. E and H field strength

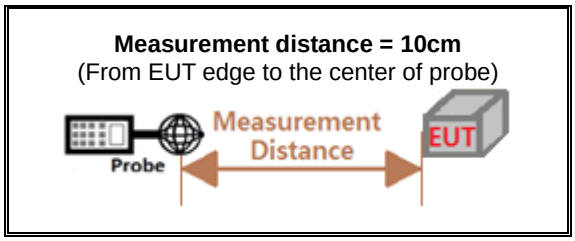
For RF exposure purposes, the E and H field strengths are measured separately with E and H probes and meters at different locations surrounding the test setup.

▪ Test setup diagram



Note: For desktop charger like this device, Z-axis were not tested since top and bottom side of the desktop charger shall be separated far from the human body in actual usage condition.

▪ Measurement distance information



▪ Measurement procedure

These testing were performed at test configuration as above diagram.
EUT was placed on a turntable, and the measurement probe was placed at a measurement distance of 10 cm from the EUT, the turn table was rotated 360 degrees to capture the highest signal.

▪Test equipment list

	Type	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next. Cal.Date (yy/mm/dd)	S/N
☒	EMF Meter	NARDA	ELT-400	13/05/11	15/05/11	N-0181
☒	EMF probe	NARDA	B-Field Probe	13/05/12	15/05/12	M-0626
☒	Electric Field Meter	Combinova	EFM200	12/01/13	14/01/17	185(N2443)

▪Measurement data:

Coil1

Test Mode	Result		Limit	
	E-field(V/m)	H-field(A/m)	E-field(V/m)	H-field(A/m)
300mA Load	0.94	0.31	614	1.63
600mA Load	**0.96**	**0.31**		
1000mA Load	0.92	0.29		
1% battery	0.68	0.07		
50% battery	0.67	0.05		

Coil2

Test Mode	Result		Limit	
	E-field(V/m)	H-field(A/m)	E-field(V/m)	H-field(A/m)
300mA Load	0.85	0.29	614	1.63
600mA Load	**0.85**	0.29		
1000mA Load	0.84	**0.30**		
1% battery	0.63	0.26		
50% battery	0.60	0.24		

Coil3

Test Mode	Result		Limit	
	E-field(V/m)	H-field(A/m)	E-field(V/m)	H-field(A/m)
300mA Load	**1.08**	0.36	614	1.63
600mA Load	1.05	0.36		
1000mA Load	1.07	**0.37**		
1% battery	0.63	0.08		
50% battery	0.58	0.09		

Note : The worst case data were reported.