



RF Exposure Evaluation Declaration

FCC ID: 2ATJC-95560ANFC

Applicant: Aptiv Electrical Centers (Shanghai) Co.,Ltd

Product: WIRELESS CHARGER

Model No.: Wireless Charging With NFC

Brand Name: Aptiv

FCC Classification: Part 15 Low Power Transmitter Below 1705 kHz (DCD)

Test Date: October 22 ~ December 30, 2021

Reviewed By:

Vincent Yu



Approved By:

Robin Wu

The test results relate only to the samples tested.

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

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
2109RSU066-U2	Rev. 01	Initial Report	01-29-2022	Valid

CONTENTS

Description	Page
1. GENERAL INFORMATION	4
1.1. Applicant.....	4
1.2. Manufacturer	4
1.3. Testing Facility.....	4
1.4. Product Information	5
1.5. Radio Specification	5
2. TEST EQUIPMENT CALIBRATION DATE	6
3. RF EXPOSURE EVALUATION	7
3.1. Test Limit.....	7
3.2. Equipment Approval Considerations on KDB 680106 D01v03r01	8
3.3. Test Setup	9
3.4. Test Mode.....	9
3.5. Test Environment Condition.....	9
3.6. Test Result	10
Appendix A - EUT Photograph	12
Appendix B - Test Setup Photograph	13

1. GENERAL INFORMATION

1.1. Applicant

Aptiv Electrical Centers (Shanghai) Co.,Ltd

Zone A, Building 7, No.60, Yuanguo Road, Anting Town, Jiading District, Shanghai, China

1.2. Manufacturer

Aptiv Electrical Centers (Shanghai) Co.,Ltd

Zone A, Building 7, No.60, Yuanguo Road, Anting Town, Jiading District, Shanghai, China

1.3. Testing Facility

<input checked="" type="checkbox"/>	Test Site – MRT Suzhou Laboratory
	Laboratory Location (Suzhou - Wuzhong)
	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China
	Laboratory Location (Suzhou - SIP)
	4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China
<input type="checkbox"/>	Laboratory Accreditations
	A2LA: 3628.01
	CNAS: L10551
	FCC: CN1166
	ISED: CN0001
	VCCI: <input type="checkbox"/> R-20025 <input type="checkbox"/> G-20034 <input type="checkbox"/> C-20020 <input type="checkbox"/> T-20020 <input type="checkbox"/> R-20141 <input type="checkbox"/> G-20134 <input type="checkbox"/> C-20103 <input type="checkbox"/> T-20104
<input type="checkbox"/>	Test Site – MRT Shenzhen Laboratory
	Laboratory Location (Shenzhen)
	1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China
	Laboratory Accreditations
	A2LA: 3628.02
<input type="checkbox"/>	CNAS: L10551
	FCC: CN1284
	ISED: CN0105
	Test Site – MRT Taiwan Laboratory
	Laboratory Location (Taiwan)
<input type="checkbox"/>	No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)
	Laboratory Accreditations
	TAF: L3261-190725
	FCC: 291082, TW3261
<input type="checkbox"/>	ISED: TW3261

1.4. Product Information

Product Name	WIRELESS CHARGER
Model No.	Wireless Charging With NFC
Brand Name	Aptiv
Test Device S/N	A003135528-001
Wireless Charging Specification	127.7kHz
NFC Specification	13.56MHz
Power Type	DC 12V
Output Power	10W MAX
Remark:	<p>The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.</p>

1.5. Radio Specification

Working Frequency	127.7kHz
Channel Number	1
Modulation Type	FSK
Antenna Type	Coil Antenna

2. TEST EQUIPMENT CALIBRATION DATE

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Exposure Level Tester	narda	ELT-400	MRTSUE06920	3 years	2023/11/29
Broadband EM Field Meter	ar	SM40G	MRTSUE06358	3 years	2024/05/05
E-field sensor head	ar	SHE100K6z5G	MRTSUE06444	3 years	2024/05/05
Probe	narda	B-Field	MRTSUE06919	3 years	2024/02/14
Thermohygrometer	testo	608-H1	MRTSUE06402	1 year	2022/06/28

3. RF EXPOSURE EVALUATION

3.1. Test Limit

§1.1310 Radiofrequency radiation exposure limits.

Below sets forth limits for Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields

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/ 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	1.0	6
300-1,500	--	--	f/300	6
1,500-100,000	--	--	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
30-300	27.5	0.073	0.2	30
300-1,500	--	--	f/1500	30
1,500-100,000	--	--	1.0	30

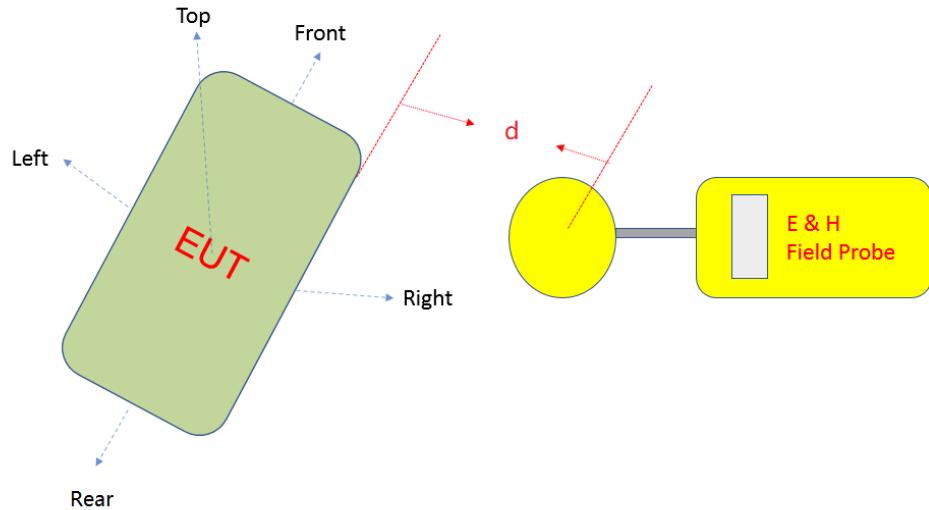
f= Frequency in MHz

* = Plane-wave equivalent power density

3.2. Equipment Approval Considerations on KDB 680106 D01v03r01

Equipment Approval Considerations	Comply
1) Power transfer frequency is less than 1 MHz	Yes. Wireless operating frequency: 127.7kHz
2) Output power from each primary coil is less than or equal to 15 watts.	Yes. Wireless maximum transmitted power: 10W Max.
3) 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 system consists of three source primary coils, charging one client. The three primary coils are powered on at the same time.
4) Client device is placed directly in contact with the transmitter.	Yes. Placed directly.
5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).	Yes. Mobile exposure conditions only.
6) 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.	Yes.

3.3. Test Setup



Note:

1. This shall be measured as the distance from the edge of the device to the center of the measurement probe.
2. d is the test distance at cm. Detailed information please refer to clause 3.7 of this report.

3.4. Test Mode

Test Mode
Mode 1: Standby Mode
Mode 2: Charging the Load

Note 1: The charging load is provided by the manufacturer and it can make the EUT to work at the maximum output power.

Note 2: Charging load is provided by the manufacturer.

3.5. Test Environment Condition

Ambient Temperature	15°C ~ 35°C
Relative Humidity	20%RH ~ 75%RH

3.6. Test Result

Test Site	WZ-SR5	Test Engineer	Hyde Yu
Test Time	2021/10/22	Test Mode	Mode 1

Electric Field Emissions					
Test Position	Test Distance (d) (cm)	Measure Value (V/m)	Limit (V/m)	50% Limit (V/m)	Result
Front	15	0.02	614	307	Pass
Rear	15	0.22	614	307	Pass
Left	15	0.03	614	307	Pass
Right	15	0.12	614	307	Pass
Top	20	0.01	614	307	Pass

Magnetic Field Emissions					
Test Position	Test Distance (d) (cm)	Measure Value (A/m)	Limit (A/m)	50% Limit (A/m)	Result
Front	15	0.398	1.63	0.815	Pass
Rear	15	0.290	1.63	0.815	Pass
Left	15	0.335	1.63	0.815	Pass
Right	15	0.312	1.63	0.815	Pass
Top	20	0.660	1.63	0.815	Pass

Test Site	WZ-SR5	Test Engineer	Hyde Yu
Test Time	2021/12/30	Test Mode	Mode 2

Electric Field Emissions					
Test Position	Test Distance (d) (cm)	Measure Value (V/m)	Limit (V/m)	50% Limit (V/m)	Result
Front	15	0.46	614	307	Pass
Rear	15	0.41	614	307	Pass
Left	15	0.39	614	307	Pass
Right	15	0.36	614	307	Pass
Top	20	0.28	614	307	Pass
Magnetic Field Emissions					
Test Position	Test Distance (d) (cm)	Measure Value (A/m)	Limit (A/m)	50% Limit (A/m)	Result
Front	15	0.41	1.63	0.815	Pass
Rear	15	0.34	1.63	0.815	Pass
Left	15	0.31	1.63	0.815	Pass
Right	15	0.30	1.63	0.815	Pass
Top	20	0.52	1.63	0.815	Pass

The End

Appendix A - EUT Photograph

Refer to "2109RSU066-UE" file.

Appendix B - Test Setup Photograph

Refer to "2109RSU066-UT" file.