Test Report

Verified code:

Report No.: Report 报告编号

Customer:	Faurecia Clarion Electronics (Xiamen) Co., Ltd.
Address:	6F,No.40,Guanri Road, Software Park Stage II,Xiamen, China
Sample Name:	RN WCBS
Sample Model:	Z0003NI
Receive Sample Date:	2023-07-26
Test Date:	2023-08-31 ~ 2023-08-31
Reference Document:	CFR47 FCC Part 1: Subpart I Section 1.1310 CFR47 FCC Part 1: Subpart I Section 1.1307 CFR 47FCC Part 2: Subpart J Section 2.1091
Test Result:	Pass

Prepared by: Reviewed by: Approved by:

GRG METROLOGY & TEST GROUP CO., LTD.

Issued Date:

Statement

1. The report is invalid without "special seal for inspection and testing"; some copies are invalid; The report is invalid if it is altered or missing; The report is invalid without the signature of the person who prepared, reviewed and approved it.

2. The sample information is provided by the client and responsible for its authenticity; The content of the report is only valid for the samples sent this time.

3. When there are reports in both Chinese and English, the Chinese version will prevail when the language problems are inconsistent.

4. If there is any objection concerning the report, please inform us within 15 days from the date of receiving the report.

5. Without the agreement of the laboratory, the client is not authorized to use the test results for unapproved propaganda.

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REPORT ISSUED HISTORY

Report Version	Report No.	Description	Compile Date
1.0	E20230717807601-4	Original Issue	2023-09-05

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1. GENERAL DESCRIPTION OF EUT

1.1 APPLICANT

Name:	Faurecia Clarion Electronics (Xiamen) Co., Ltd.
Address:	6F,No.40,Guanri Road, Software Park Stage II,Xiamen, China

1.2 MANUFACTURER

Name:	Faurecia Clarion Electronics (Xiamen) Co., Ltd.
Address:	6F,No.40,Guanri Road, Software Park Stage II,Xiamen, China

1.3 FACTORY

Name 1:	Faurecia Clarion Electronics (Fengcheng) Co. Ltd.
Address 1:	No.12 High-Tech Road, Fengcheng High Technology Industry Park, Yi chun City, Jiangxi Province, P.R, China
Name 2:	ELECTRÓ NICA CLARION, S.A. DE C.V.
Address 2:	Av. Nueve Oriente No. 3, Col. Zona Industrial Valle de Oro. 76803 – San Juan del Río (Mexico)

1.4 BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

Product Name:	RN WCBS
Product Model:	Z0003NI
Adding Model:	/
Model Difference:	/
Trade Name:	,
Power Supply:	DC 9V-16V by battery, typical voltage DC 12V,Rating current ≤2.54A
Frequency Band:	120kHz for wireless charger, 13.56MHz for NFC
FCC ID:	WY2Z0003NI
Antenna Type:	Coil Antenna for wireless charger and NFC
Modulation type:	FSK for wireless charger, ASK for NFC
Sample submitting way:	■Provided by customer □Sampling

Sample No:	E20230717807601-0001
Temperature Range:	-30℃ ~ +60℃
Hardware version:	285J95096R
Software version:	283H57049R
Note:	The basic description of the EUT is provided by the applicant. This report is made Solel yon the basis of such data and/or information.We accept no responsibility for the authenticity and completeness of the above data and information and the validity of the results and/or conclusions.

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2. LABORATORY AND MEASUREMENT UNCERTAINTY

2.1 LABORATORY

The tests & measurements refer to this report were performed by Shenzhen EMC Laboratory of GRG METROLOGY & TEST group CO., LTD.

Add	:	No.1301 Guanguang Road Xinlan Community, Guanlan Street, Longhua District Shenzhen, 518110, People's Republic of China
P.C.	:	518110
Tel	:	0755-61180008
Fax	:	0755-61180008

2.2 MEASUREMENT UNCERTAINTY

Parameter	Worst Case Uncertainty	Max. Uncertainty
E/H-Field Level Tester	12.6%	<30%

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95%.
This uncertainty represents an expanded uncertainty factor of *k*=2.

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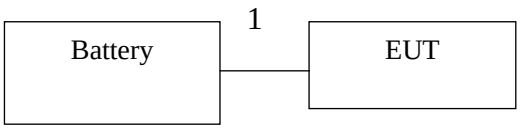
3. TEST MODE AND SUPPORTIVE INSTRUMENTS

3.1 TEST MODE

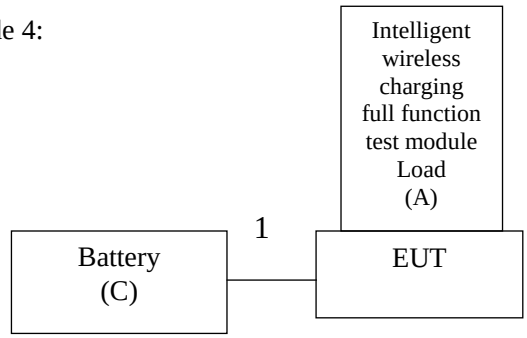
Mode No.	Description of the modes
Mode 1	EUT Standby Mode
Mode 2	EUT charging mode + RX load(5W)
Mode 3	EUT charging mode + RX load(10W)
Mode 4	EUT charging mode + RX load(15W)
Mode 5	EUT NFC communication with NFC card

3.2 BLOCK DIAGRAM

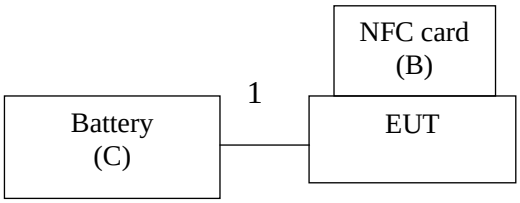
Mode 1:



Mode 2 to mode 4:



Mode 5:



3.3 LOCAL SUPPORTIVE INSTRUMENTS

No.	Name of Equipment	Manufacturer	Model	Serial Number
A	Intelligent wireless charging full function test module Load	/	/	/
B	NFC card	/	/	/
C	Battery	/	L2-400	D8J16H288-0610

No.	Cable Type	Qty.	Shielded Type	Ferrite Core(Qty.)	Note
1	DC Cable	1	No	0	Unshielded 1.0m

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4. LIST OF USED TEST EQUIPMENT AT GRGT

4.1 LIST OF USED TEST EQUIPMENT

Name of equipment	Manufacturer	Model	Serial number	Calibration due
Long, medium and short wave electromagnetic field frequency selective analyzer	narda	EHP-200A	180ZX00611	2023-09-04

Note: The calibration interval of the test instruments is 12 months.

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5. TECHNICAL REQUIREMENTS SPECIFICATION

5.1 TEST LIMIT

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(i) 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
(ii) 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

f = frequency in MHz. * = Plane-wave equivalent power density.

The EUT does comply with requirements of KDB 680106 D01.
1)Power transfer frequency is less than 1MHz
Yes, the operating frequency of the device is 120kHz.
2)Output power from each primary coil is less than or equal to 15 watts.
Yes, the maximum output power of the primary coil is 15W.
3)The transfer system includes only single primary and secondary coils.This includes charging systems that may have multiple primary coils and clients that able to detect and allow coupling only between individual pair of coils.
Yes, the transfer system includes only single primary and secondary coils.
4)Client device is inserted in or placed directly in contact with the transmitter.
Yes, client device is placed directly in contact with the transmitter.
5)Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).
Yes, the EUT is a mobile Wireless Charger.
6)The aggregate H-field strengths at 15cm surrounding the device and 20cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.
Yes, the EUT field strength levels are less than 50% of the MPE limit.

Exposure category: General population/uncontrolled environment
EUT Type: Production Unit
Device Type: Mobile Device
Refer Standard: KDB 447498 D01 General RF Exposure Guidance v06
FCC Part 2 §2.1091

Systems operating under the provisions of FCC 47 CFR section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.
In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as mobile device whereby a distance of 0.2m normally can be maintained between the user and the device, and below RF Permissible Exposure limit shall comply with.
In accordance with KDB447498D01 for Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneous transmitting antennas incorporated in a host device, based on the calculated/estimated, numerically modeled or measured field strengths or power density, is ≤1.0. The MPE ratio of each antenna is determined at the minimum test separation distance required by the operating configurations and exposure conditions of the host device, according to the ratio of field strengths or power density to MPE limit, at the test frequency. Either the maximum peak or spatially averaged results from measurements or numerical simulations may be used to determine the MPE ratios. Spatial averaging does not

apply when MPE is estimated using simple calculations based on far-field plane-wave equivalent conditions. The antenna installation and operating requirements for the host device must meet the minimum test separation distances required by all antennas, in both standalone and simultaneous transmission operations, to satisfy compliance.

(B)Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength(H) (A/m)**	**Power Density (S) (mw/cm^2)**	**Averaging Time$[E]^2$, $[H]^2$ or S (minutes)**
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	F/1500	30
1500-100,000	/	/	1.0	30

Note: f=frequency in MHz; *Plane-wave equivalent power density

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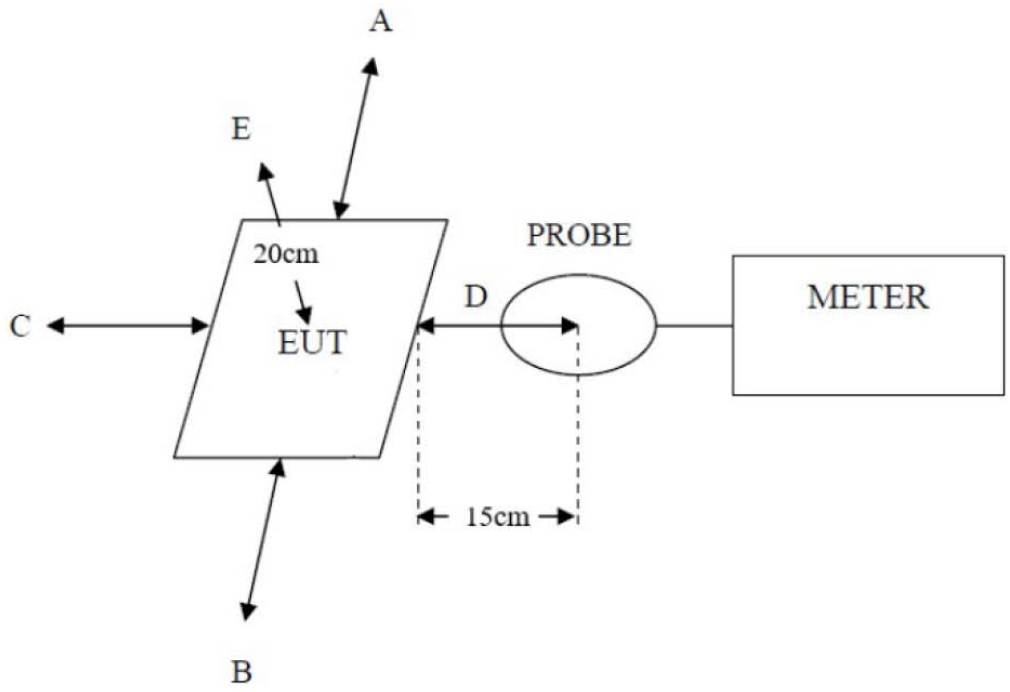
5.2 TEST PROCEDURES



Note：Measurements should be made from all sides and the top of EUT,with the 15cm measured from the center of the probe(s) to the edge of the device and the 20cm measured from the center of the probe(s) to the top of the device. Position A is the front of the EUT, position B is the rear of the EUT, position C is the left of the EUT, position D is the right of the EUT, position E is the top of the EUT.

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5.3 TEST RESULT

Date of testing:	2023-08-31
Ambient temperature:	24.0°C
Relative humidity:	60%RH
Ambient Pressure:	101kPa
Test by:	Zhang Zishan

H-Field Strength at 15 cm from the edges surrounding the EUT and 20cm from the top surface of the EUT.

EUT Test Mode	Measured H-Field Strength Values(A/m)					50% Limit(A/m)	Limit (A/m)	Result
	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E			
Mode 1	0.0977	0.0975	0.0978	0.0974	0.0973	0.815	1.63	Pass
Mode 2	0.1995	0.1837	0.2036	0.1287	0.4380	0.815	1.63	Pass
Mode 3	0.4076	0.2960	0.4774	0.3178	0.7379	0.815	1.63	Pass
Mode 4	0.3149	0.3141	0.2222	0.2185	0.7376	0.815	1.63	Pass

E-Field Strength at 15 cm from the edges surrounding the EUT and 20cm from the top surface of the EUT.

EUT Test Mode	Measured E-Field Strength Values(V/m)					50% Limit(V/m)	Limit (V/m)	Result
	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E			
Mode 1	0.4253	0.4251	0.4253	0.4253	0.4253	307	614	Pass
Mode 2	0.6982	0.6437	0.6236	0.5948	1.7956	307	614	Pass
Mode 3	1.1611	0.7859	1.2664	1.7901	1.1761	307	614	Pass
Mode 4	1.0035	0.8284	0.6996	0.7466	1.1140	307	614	Pass

Predication of MPE limit at a given distance
Equation from OET Bulletin 65, Edition 97-01
$S=PG/4\pi R^2$
Where: S=power density
P=power input to antenna
G=power gain of the antenna in the direction of interest relative to anisotropic radiator
R=distance to the center of radiation of the antenna
From the EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the maximum gain of the used as following information, the RF power density can be obtained.

Frequency Band	Antenna type	Maximum antenna gain
13.56MHz	Coil antenna	-35.66dBi

Maximum E-Field at 3m (dBμV/m)	Output power (dBm)	Output power (mW)
-11.34	-106.57	2.20E-11

Note:
1. EIRP=E(dBμV/m)@3m+20log(d)-104.77 =-11.34+20log(3)-104.77=-106.57dBm;
2. mW=10^(EIRP/10)= 10^(-106.57/10)=2.20E-11 mW;

3. The EUT antenna gain is provided by the applicant. This report is made solely on the basis of such data and/or information. We accept no responsibility for the authenticity and completeness of the above data and information and the validity of the results and/or conclusions.

Frequency Band	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm^2)	MPE Limits (mW/cm^2)
	(dBm)	(mW)				
13.56MHz	-106.57	2.20293E-11	-35.66	0.0003	0.0000	13.27

Note: MPE Limits (mW/cm^2)=180/f=180/13.56MHz=13.27 mW/cm^2.
$S=PG/4\pi R^2$=2.20293E-11*0.0003/4/3.14/400=1.3E-18=0.0000

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6. PHOTOGRAPHS OF TEST SET-UP

Please refer to the attached document E20230717807601-9 test setup photo.

7. PHOTOGRAPHS OF THE EUT

Please refer to the attached document E20230717807601-10 EUT photo.

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