

FCC RF EXPOSURE EVALUATION REPORT

Product Name: Wireless Charger&UV Sanitizer
Trade Mark: Ansbabe
Model No.: ANS-ZY-C-001
Add. Model No.: N/A
Report Number: 190320022RFC-3
Test Standards: FCC 47 CFR Part 1 Subpart I
FCC ID: 2ASXJANSZYC001
Test Result: PASS
Date of Issue: April 29, 2019

Prepared for:

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Version

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1. GENERAL INFORMATION

1.1 CLIENT INFORMATION

Applicant:	Shenzhen Ansbabe Technology Co., Ltd.
Address of Applicant:	7th Floor, Block B, Huai'de Business Building, Fu'yong, Bao'an, Shenzhen, Guangdong, China
Manufacturer:	Shenzhen Ansbabe Technology Co., Ltd.
Address of Manufacturer:	7th Floor, Block B, Huai'de Business Building, Fu'yong, Bao'an, Shenzhen, Guangdong, China

1.2 EUT INFORMATION

Product Name:	Wireless Charger&UV Sanitizer	
Model No.:	ANS-ZY-C-001	
Add. Model No.:	N/A	
Trade Mark:	Ansbabe	
DUT Stage:	Identical Prototype	
EUT Supports Function:	2.4 GHz ISM Band:	IEEE 802.11b/g/n
	WPT systems:	110 kHz-205 kHz
Sample Received Date:	March 20, 2019	
Sample Tested Date:	March 20, 2019 to April 23, 2019	

Description of Accessories

Cable	
Description:	USB Type-C Plug Cable
Cable Type:	Shielded without ferrite
Length:	1.00 Meter

Support Equipment

Description	Manufacturer	Model No.	Serial Number	Supplied by
Adapter	Lenovo	C-P45	N/A	UnionTrust
Mobile Phone	Mi	D5X	N/A	UnionTrust

1.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD

For 2.4 GHz ISM Band of Wi-Fi	
Frequency Band:	2400 MHz to 2483.5 MHz
Frequency Range:	2412 MHz to 2462 MHz
Support Standards:	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n-HT20
Type of Modulation:	IEEE 802.11b: DSSS(CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM(64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n-HT20: OFDM(64-QAM, 16-QAM, QPSK, BPSK)
Data Rate:	IEEE 802.11b: Up to 11 Mbps IEEE 802.11g: Up to 54 Mbps IEEE 802.11n-HT20: Up to MCS7
Number of Channels:	IEEE 802.11b: 11 IEEE 802.11g: 11 IEEE 802.11n-HT20: 11
Channel Separation:	5 MHz
Antenna Type:	PCB Antenna
Maximum Peak Power:	IEEE 802.11b: 19.57 dBm IEEE 802.11g: 22.99 dBm IEEE 802.11n-HT20: 22.2 dBm

WPT systems:	
Frequency Range:	110 kHz to 205 kHz

1.4 OTHER INFORMATION

Test channels for 2.4 GHz ISM Band of Wi-Fi				
Mode	Tx/Rx Frequency	Test RF Channel Lists		
		Lowest(L)	Middle(M)	Highest(H)
IEEE 802.11b	2412 MHz to 2462 MHz	Channel 1	Channel 6	Channel 11
		2412 MHz	2437 MHz	2462 MHz
IEEE 802.11g	2412 MHz to 2462 MHz	Channel 1	Channel 6	Channel 11
		2412 MHz	2437 MHz	2462 MHz
IEEE 802.11n-HT20	2412 MHz to 2462 MHz	Channel 1	Channel 6	Channel 11
		2412 MHz	2437 MHz	2462 MHz

1.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product, according to the specifications of the manufacturers. It must comply with the requirements of the following standards:

FCC 47 CFR Part 1 Subpart I

All test items have been performed and recorded as per the above standards

1.6 TEST LOCATION

All tests were performed at:

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: 16/F, Block A, Building 6, Baoneng Science and Technology Park, Qingxiang Road No.1, Longhua New District, Shenzhen, China 518109
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1.7 TEST FACILITY

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L9069

The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable under the ISO/IEC/EN 17025 to international or national standards. Equipment has been calibrated by accredited calibration laboratories.

A2LA-Lab Certificate No.: 4312.01

Shenzhen UnionTrust Quality and Technology Co., Ltd. has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

ISED Wireless Device Testing Laboratories

CAB identifier: CN0032

FCC Accredited Lab.

Designation Number: CN1194

Test Firm Registration Number: 259480

1.8 DEVIATION FROM STANDARDS

None.

1.9 ABNORMALITIES FROM STANDARD CONDITIONS

None.

1.10 OTHER INFORMATION REQUESTED BY THE CUSTOMER

None.

2. EQUIPMENT LIST

Conducted Emission Test Equipment List						
Used	Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm dd, yyyy)	Cal. Due date (mm dd, yyyy)
☒	B-field sensor	narda	ELT-400 2034/03	C-0014	Mar. 14, 2019	Mar. 13, 2019
☒	3M Chamber & Accessory Equipment	ETS-LINDGREN	3M	N/A	Dec. 03, 2018	Dec. 03, 2021

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3. MPE EVALUATION

3.1 REFERENCE DOCUMENTS FOR EVALUATION

No.	Identity	Document Title
1	FCC 47 CFR Part 1 Subpart I	PROCEDURES IMPLEMENTING THE NATIONAL ENVIRONMENTAL POLICY ACT OF 1969
2	KDB 447498 D01 General RF Exposure Guidance v06	RF EXPOSURE PROCEDURES AND EQUIPMENT AUTHORIZATION POLICIES FOR MOBILE AND PORTABLE DEVICES

3.2 MPE COMPLIANCE REQUIREMENT

3.2.1 Limits

According to §1.1307(b)(1), system operating under the provisions of this section shall be operating in a manner that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure.

Limits for Occupational / Controlled Exposure

Frequency range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	F/300	6
1500-100000	/	/	5	6

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 Times 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
1500-100000	/	/	1	30

Note: f = frequency in MHz: * = Plane-wave equivalents power density.

3.2.2 Test Procedure

For WiFi

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

For WPT systems

Enabled the EUT to transmit and receive data continue

- The field strength of both E-field and H-field was measured at 15 cm surrounding the device and 20 cm above the top surface using the equipment list above for determining compliance with the MPE requirements of FCC Part 1.1310.
- The RF power density was measured with the battery at 3 different charge conditions: battery at less than 1 % , battery at 50% charger, battery at 99% charger,.
- Maximum E-field and H-field measurements were made 15cm from each side of the EUT. Along the side of the EUT and still 15cm away from the edge of the EU T, the field probes were positioned at the location where there is maximum field strength. The maximum E-field and H-field is reported below.

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d. This device uses a wireless charging circuit for power transfer operating at the frequency of 110-205 kHz. Thus, the 300 kHz limits were used: E-field Limit = 614 (V/m); H-field limit = 1.63 (A/m).

3.3 MPE CALCULATION METHOD

$$S = PG/4\pi R^2 = EIRP/4\pi R^2$$

S = power density (in appropriate units, e.g., mw/cm²)

P = power input to the antenna (in appropriate units, e.g., mw)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor is normally numeric gain.

R = distance to the center of radiation of the antenna (in appropriate units, e.g., cm)

3.4 MPE CALCULATION RESULTS

Note: For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

3.4.1 For WLAN

For Wi-Fi function, operating at 2412MHz to 2462 MHz for IEEE802.11b/g/n

3.4.1.1 Antenna Type:

Chain 0: PCB Antenna

3.4.1.2 Antenna Gain:

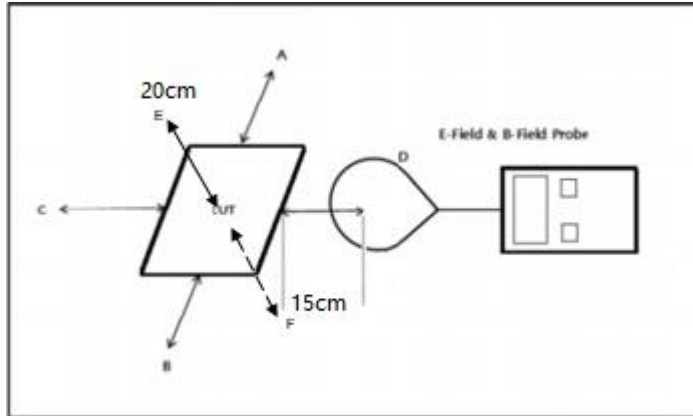
Chain 0: 2412MHz to 2462 MHz: 1.2 dBi

3.4.1.3 Results for WLAN

Operating Mode		Freq.	Declared maximum conducted average output power	Max. positive tolerance according manufacturer	Antenna Gain	Calculated maximum EIRP	Declared maximum EIRP	MPE Limit	MPE Value
		(MHz)	(dBm)		(dBi)	(dBm)	(mW)	(mw/cm ²)	
WLAN	IEEE 802.11b	2412	17.0	1.0	1.2	19.2	83.1764	1	0.0165
		2437	17.0	1.0	1.2	19.2	83.1764	1	0.0165
		2462	17.0	1.0	1.2	19.2	83.1764	1	0.0165
	IEEE 802.11g	2412	13.5	1.0	1.2	15.7	37.1535	1	0.0074
		2437	13.5	1.0	1.2	15.7	37.1535	1	0.0074
		2462	13.5	1.0	1.2	15.7	37.1535	1	0.0074
	IEEE 802.11n-HT20	2412	12.5	1.0	1.2	14.7	29.5121	1	0.0059
		2437	12.5	1.0	1.2	14.7	29.5121	1	0.0059
		2462	12.5	1.0	1.2	14.7	29.5121	1	0.0059

3.4.2 For WPT systems

3.4.2.1 Test setup:



Note

- The RF exposure test is performed in the shield room
- The test distance is between the edge of the charger and the geometric center of probe
- The aggregate at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated.

3.4.2.2 Results

H-Field Strength (10cm)

Test Mode	Battery status	Probe Position Front (A/m)	Probe Position Rear (A/m)	Probe Position Left (A/m)	Probe Position Right (A/m)	Probe Position Top (A/m)	Probe Position Bottom (A/m)	Limits (A/m)
Mode 1	<1% Battery status	0.188	0.181	0.154	0.067	0.173	0.126	1.63
Mode 2	50% Battery status	0.183	0.172	0.146	0.063	0.166	0.120	1.63
Mode 3	99% Battery status	0.185	0.180	0.147	0.062	0.171	0.122	1.63

3.4.3 Simultaneous Multi-band Transmission MPE Analysis

3.4.4.1 List of Mode for Simultaneous Multi-band Transmission

No.	Configurations	Support/Not Support
1	2.4G_WLAN + WPT Systems	Support

3.4.4.2 Results for transmit simultaneously

$$\text{Transmit simultaneously MPE} = \sum \text{of MPE ratios} = 0.0165/1 + 0.188/1.63 = 0.132 < 1$$

Note 1: According to KDB 447498 D01 General RF Exposure Guidance v06, At the transmit simultaneously calculation method is as follows:

$$\begin{aligned} \text{Transmit simultaneously MPE} &= \sum \text{of MPE ratios} \\ \text{MPE ratios} &= \text{Field strengths or power density} / \text{MPE limit at the test frequency} \end{aligned}$$

APPENDIX 1 PHOTOS OF TEST SETUP

See test photos attached in Appendix 1 for the actual connections between Product and support equipment.

APPENDIX 2 PHOTOS OF EUT CONSTRUCTIONAL DETAILS

Refer to Appendix 2 for EUT external and internal photos.

*** End of Report ***

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