



FCC TEST REPORT

FCC ID: 2AXYJ-201452FRE

On Behalf of

VERVE Limited

Wireless Charging Power Bank

**Model No.: CTF-T-ATE-201452FREBLK, CTF-T-ATE-201452,
CTF-T-ATE-201452FREXXX (XXX means various color
versions, e.g. PKX, BGX, YEX,BLK, WHX, etc)**

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Revision History

Revision	Issue Date	Revisions	Revised By
V0	September 22, 2020	Initial released Issue	Lucas Pang

1. Test Result Summary

Requirement	CFR 47 Section	Result
RF EXPOSURE	§1.1307(b)(1) & KDB680106	PASS

Note:

1. *PASS: Test item meets the requirement.*
2. *Fail: Test item does not meet the requirement.*
3. *N/A: Test case does not apply to the test object.*
4. *The test result judgment is decided by the limit of test standard.*

2. EUT Description

2.1. Description Of Device (EUT)

EUT Name	:	Wireless Charging Power Bank
Model No.	:	CTF-T-ATE-201452FREBLK , CTF-T-ATE-201452, CTF-T-ATE-201452FREXXX (XXX means various color versions, e.g. PKX, BGX, YEX,BLK, WHX, etc)
DIFF.	:	There is no difference except for the color and model name. So all the test were performed on the model CTF-T-ATE-201452FREBLK
Trademark	:	VERVE
Power supply	:	Input : DC 5V/2A(Type-C) Output : DC 5V/2A(Type-C) Output : DC 5V/2A(USB-A) Output : 5W(Wireless) Total Output : 2A
Operation frequency	:	112~205KHz
Modulation	:	MSK
Antenna Type	:	Coil Antenna, Maximum Gain is 0dBi (This value is supplied by applicant).
Software version	:	V1.0
Hardware version	:	FR1448A-WX2
Intend use environment	:	Residential, commercial and light industrial environment

Conditions requirement	Answers
Power transfer frequency is less than 1 MHz.	After measuring the product the transfer frequency is 0.112-0.205KHz
Output power from each primary coil is less than or equal to 15 watts.	After measuring the product the each primary coil power is 10 watts
The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.	The transfer system includes only single primary.
Client device is placed directly in contact with the transmitter.	Client device is placed directly in contact with the transmitter.
Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).	Mobile exposure conditions only.
The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.	After measuring the product the Max H-field Strength is 0.648A/m Far less than 50% of the MPE limit.

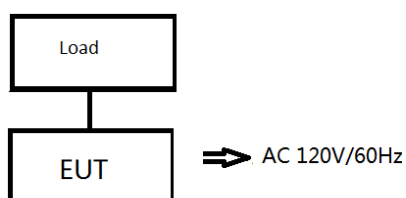
2.2. Accessories Of Device (EUT)

Accessories1 : /
 Manufacturer : /
 Model : /
 Ratings : /

2.3. Tested Supporting System Details

No.	Description	Manufacturer	Model	Serial Number	Certification
1	Load	--	--	--	--
2	Adapter	N/A	N/A	--	--

2.4. Block Diagram Of Connection Between EUT And Simulators



2.5. Description Of Test Modes

Channel	Frequency (KHz)
1	122

2.6. Test Conditions

Items	Required	Actual
Temperature range:	15-35°C	24°C
Humidity range:	25-75%	56%
Pressure range:	86-106kPa	98kPa

2.7. Test Facility

Shenzhen Alpha Product Testing Co., Ltd

Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen, Guangdong, China

June 21, 2018 File on Federal Communication Commission
Registration Number: 293961

July 15, 2019 Certificated by IC
Registration Number: CN0085

2.8. Measurement Uncertainty

(95% confidence levels, k=2)

Item	Uncertainty
Uncertainty for H-Field	2.39dB
Uncertainty for E-Field	2.45dB
Uncertainty for conducted RF Power	0.65dB
Uncertainty for temperature	0.2°C
Uncertainty for humidity	1%
Uncertainty for DC and low frequency voltages	0.06%

3. Test Results and Measurement Data

3.1. Rf Exposure Test

3.1.1. Test Specification

Test Requirement:	FCC Rules and Regulations KDB680106
Test Method:	§1.1307(b)(1) & KDB680106
Limits:	According to §1.1307(b)(1), systems operating under the provisions of this 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. According to §1.1310 and §2.1093 RF exposure is calculated. According KDB680106 D01v03: RF Exposure Wireless Charging.
Test Setup:	<p>E to position is 20cm.</p>
Test Mode:	Charging + Transmitting Mode
Test Procedure:	<ol style="list-style-type: none"> 1. The RF exposure test was performed on 360 degree turn table in anechoic chamber. 2. The measurement probe was placed at test distance (15cm) which is between the edge of the charger and the geometric centre of probe. 3. The turn table was rotated 360d degree to search of highest strength. 4. The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed. 5. The EUT were measured according to the dictates of KDB 680106D01v03.
Test Result:	PASS

3.1.2. Test Instruments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Exposure Level Tester	narda	ELT-400	N-0231	2020.09.02	1 Year
2	Magnetic field probe 100cm2	narda	ELT probe 100cm2	M0675	2020.09.02	1 Year
3	Isotropic Electric Field Probe	narda	EP-601	511WX60706	2020.09.02	1 Year

3.1.3. Test data

For Full load mode:

E-Field Strength at 15 cm for position A,B,C,D 20cm for position E from the edges surrounding the EUT (V/m)

Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limit (50%) (V/m)	Limits Test (V/m)
0.112-0.205	1.847	1.156	1.393	1.568	1.606	307	614

H-Filed Strength at 15 cm for position A,B,C,D 20cm for position E from the edges surrounding the EUT (A/m)

Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limit (50%) (A/m)	Limits Test (A/m)
0.112-0.205	0.648	0.564	0.642	0.630	0.598	0.815	1.63

For Half load mode:

E-Field Strength at 15 cm for position A,B,C,D 20cm for position E from the edges surrounding the EUT (V/m)

Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limit (50%) (V/m)	Limits Test (V/m)
0.112-0.205	1.672	1.479	1.544	1.738	1.559	307	614

H-Filed Strength at 15 cm for position A,B,C,D 20cm for position E from the edges surrounding the EUT (A/m)

Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limit (50%) (A/m)	Limits Test (A/m)
0.112-0.205	0.611	0.550	0.504	0.614	0.584	0.815	1.63

For Null load mode:

E-Field Strength at 15 cm for position A,B,C,D 20cm for position E from the edges surrounding the EUT (V/m)

Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limit (50%) (V/m)	Limits Test (V/m)
0.112-0.205	1.490	1.341	1.635	1.240	1.644	307	614

H-Filed Strength at 15 cm for position A,B,C,D 20cm for position E from the edges surrounding the EUT (A/m)

Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limit (50%) (A/m)	Limits Test (A/m)
0.112-0.205	0.618	0.567	0.532	0.570	0.597	0.815	1.63

4. Photos of test setup

For Full load mode



For No load mode



5. Photographs of EUT

Refer to test report A2006117-C01-R05.

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