



FCC TEST REPORT

Test report

On Behalf of

Volterman Inc.

For

Smart Terminal.

**Model No.: Wallet 1, Wallet 2, Wallet 3, Luggage 1, Luggage 2, Luggage 3, Bag
1, Bag 2, Smart 1, Smart 2, Smart 3**

FCC ID: 2AS23-WALLET

Prepared for : Volterman Inc.

2035 Sunset Lake Road, Suite B-2, Newark, Delaware, United States*

Prepared By : Shenzhen HUAKE Testing Technology Co., Ltd.

**1F, B2 Building, Junfeng Zhongcheng Zhizao Innovation Park, Fuhai Street,
Bao'an District, Shenzhen City, China**



TEST RESULT CERTIFICATION

Applicant's name.....: **Volterman Inc.**

Address.....: 2035 Sunset Lake Road, Suite B-2, Newark, Delaware, United States*

Manufacture's Name: **Shenzhen Smart NRE Technology Co., Ltd.**

Address.....: 4/F, D building, Xinda Technology Park, Baotian 2nd Road, Xixiang, Bao'an, Shenzhen,China

Product description

Trade Mark: Volterman

Product name.....: Smart Terminal.

Model and/or type reference ...: Wallet 1, Wallet 2, Wallet 3, Luggage 1, Luggage 2, Luggage 3, Bag 1, Bag 2, Smart 1, Smart 2, Smart 3
FCC CFR 47 part1, 1.1310

Standards.....: KDB 680106 D01 v03

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Date of Test..... :

Date (s) of performance of tests : Feb. 07, 2019 ~. Mar. 28, 2019

Date of Issue : Mar. 28, 2019

Test Result..... : **Pass**

Testing Engineer : *Gary Qian*

(Gary Qian)

Technical Manager : *Eden Hu*

(Eden Hu)

Authorized Signatory : *Jason Zhou*

(Jason Zhou)



Contents

1.	<u>SUMMARY</u>	<u>4</u>
1.1.	Product Description	4
1.2.	Equipment Under Test	4
1.3.	Modifications	4
2.	<u>TEST ENVIRONMENT</u>	<u>5</u>
2.1.	Address of the test laboratory	5
2.2.	Test Description	5
2.3.	Statement of the measurement uncertainty	5
2.4.	Equipments Used during the Test	5
3.	<u>TEST CONDITIONS AND RESULTS</u>	<u>6</u>
3.1.	Applicable Standard	6
3.2.	Limit	6
3.3.	Test Setup	6
3.4.	Measurement Procedure	7
3.5.	Test Result of E and H field Strength	7
3.6.	Equipment Approval Considerations	8
3.7.	Conclusion	8
4.	<u>TEST SETUP PHOTOS OF THE EUT</u>	<u>8</u>



1. SUMMARY

1.1. Product Description

Product Name:	Smart Terminal.
Model/Type reference:	Wallet 1, Wallet 2, Wallet 3, Luggage 1, Luggage 2, Luggage 3, Bag 1, Bag 2, Smart 1, Smart 2, Smart 3
Power supply:	DC 3.8V from battery charged by DC 5V
Adapter(Auxiliary test Provided by the laborator)	Mode:EP-TA20CBC Input:AC100-240V-50/60Hz, 0.5A Output:DC 5V,2A
Wireless Charger	
Antenna Type	Coil Antenna
Antenna Gain	1.0dBi
Operation frequency	110-205KHz
Modulation Type	ASK

1.2. Equipment Under Test Power supply system utilised

Power supply voltage	:	<input type="radio"/> 230V / 50 Hz	<input type="radio"/> 120V / 60Hz
		<input type="radio"/> 12 V DC	<input type="radio"/> 24 V DC
		<input checked="" type="radio"/> Other (specified in blank below)	

DC 5.0V From adapter

Description of the test mode

Operation Frequency each of channel	
Channel	Frequency
1	125KHz

Operating Mode

The mode is used: Transmitting mode

1.3. Modifications

No modifications were implemented to meet testing criteria.



2. TEST ENVIRONMENT

2.1. Address of the test laboratory

Shenzhen HUAKE Testing Technology Co., Ltd.
1F, B2 Building, Junfeng Zhongcheng Zhizao Innovation Park, Fuhai Street, Bao'an District, Shenzhen City, China

2.2. Test Description

DESCRIPTION OF TEST	RESULT
Electric Field Strength (E) (V/m)	Compliant
Magnetic Field Strength (H) (A/m)	Compliant

2.3. Statement of the measurement uncertainty

Measurement Uncertainty

Radiated emission expanded uncertainty(9kHz-30MHz) = 3.08dB, k=2

2.4. Equipments Used during the Test

Description	Brand	Model No.	Frequency Range	Calibrated Date	Calibrated Until
Broadband Field Meter	NARDA	NBM-550	-	Dec. 28, 2018	Dec. 27, 2019
Magnetic Field Meter	NARDA	ELT-400	1 – 400kHz	Dec. 28, 2018	Dec. 27, 2019
Magnetic Probe	NARDA	HF-3061	300kHz – 30MHz	Dec. 28, 2018	Dec. 27, 2019
Magnetic Probe	NARDA	HF-0191	27 – 1000MHz	Dec. 28, 2018	Dec. 27, 2019
Broadband Field Meter	NARDA	NBM-550	-	Dec. 28, 2018	Dec. 27, 2019
Electric Field Meter	COMBINOVA	EFM 200	5Hz – 400kHz	Dec. 28, 2018	Dec. 27, 2019
E-Field Probe	NARDA	EF-0391	100kHz – 3GHz	Dec. 28, 2018	Dec. 27, 2019
E-Field Probe	NARDA	EF-6091	100MHz – 60GHz	Dec. 28, 2018	Dec. 27, 2019

The calibration interval is 1 year.

3. TEST CONDITIONS AND RESULTS

3.1. Applicable Standard

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 §2.1091 RF exposure is calculated.

According KDB 680106 D01 RF Exposure Wireless Charging App v03

3.2. Limit

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
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 – 100,000	/	/	5	6

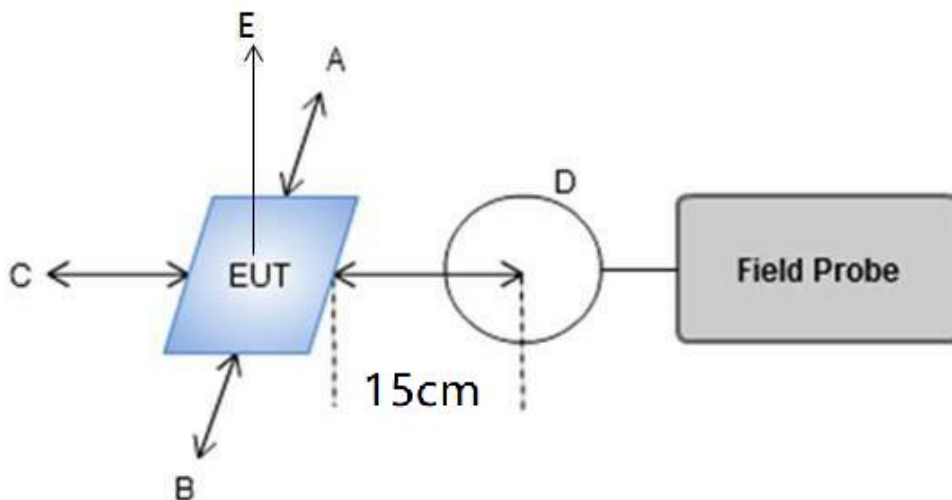
Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	30
3.0 – 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

F=frequency in MHz

*=Plane-wave equivalent power density

3.3. Test Setup



Note: A, B, C, D, E for five surfaces of the product.



3.4. Measurement Procedure

- a) The RF exposure test was performed on 360 degree turn table in anechoic chamber.
- b) The measurement probe was placed at test distance (10cm) which is between the edge of the charger and the geometric centre of probe.
- c) The turn table was rotated 360d degree to search of highest strength.
- d) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed.
- e) The EUT were measured according to the dictates of KDB 680106 D01 RF Exposure Wireless Charging App v03.

3.5. Test Result of E and H field Strength

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

Charging Battery Level	Frequency Range (MHz)	Measured E-Field Strength Values (V/m)					FCC E-Field Strength 50% Limits (V/m)	FCC E-Field Strength Limits (V/m)
		Test Position A	Test Position B	Test Position C	Test Position D	Test Position E		
1%	0.125	8.26	8.02	8.30	8.01	8.53	307.0	614.0
50%	0.125	7.98	7.62	7.55	7.90	8.01	307.0	614.0
99%	0.125	7.85	7.25	7.51	7.43	7.92	307.0	614.0

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

Charging Battery Level	Frequency Range (MHz)	Measured E-Field Strength Values (A/m)					FCC H-Field Strength 50% Limits (A/m)	FCC H-Field Strength Limits (A/m)
		Test Position A	Test Position B	Test Position C	Test Position D	Test Position E		
1%	0.125	0.462	0.451	0.480	0.432	0.445	0.815	1.63
50%	0.125	0.395	0.382	0.359	0.352	0.389	0.815	1.63
99%	0.125	0.374	0.381	0.376	0.385	0.379	0.815	1.63

H-Field Strength at 20cm from the top surface of the EUT

Charging Battery Level	Frequency Range (MHz)	Measured E-Field Strength Values (A/m)	FCC H-Field Strength 50% Limits (A/m)	FCC H-Field Strength Limits (A/m)
		Test Position E		
1%	0.125	0.286	0.815	1.63
50%	0.125	0.294	0.815	1.63
99%	0.125	0.289	0.815	1.63



3.6. Equipment Approval Considerations

The EUT does comply with KDB 680106 D01 as follow table.

Requirements of KDB 680106 D01	Yes / No	Description
Power transfer frequency is less than 1 MHz	Yes	The device operate in the frequency range 110KHz~205KHz
Output power from each primary coil is less than 15 watts	Yes	The maximum output power for each primary coil is 5W.
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.	Yes	The transfer system includes only one primary coil.
Client device is placed directly in contact with the transmitter.	Yes	Client device is placed directly in contact with the transmitter.
Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).	Yes	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.	Yes	The EUT 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.

3.7. Conclusion

The detected emissions with a distance of 15cm surrounding the device and 20 cm above the top surface of the device are below the FCC E-Field Strength & H-Field Strength limits; and comply with the requirements of FCC KDB 680106 D01.

4. Test Setup Photos of the EUT



.....End of Report.....