Test Report

Report No.:	MTi230905018-01E2
Date of issue:	2023-11-9
Applicant:	HANK ELECTRONICS VIETNAM LTD
Product:	Classic Stone
Model(s):	WPCS, WPCSWCC3S300US (Classic Stone | White Marble US), WPCSBMC3S300US (Classic Stone | Black Marble US), WPCSCRC4S400US (Classic Stone | Cream Marble US)
FCC ID:	2A9G4-WPCS

Shenzhen Microtest Co., Ltd.

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Instructions

1. This test report shall not be partially reproduced without the written consent of the laboratory.

2. The test results in this test report are only responsible for the samples submitted

3. This test report is invalid without the seal and signature of the laboratory.

4. This test report is invalid if transferred, altered, or tampered with in any form without authorization.

5. Any objection to this test report shall be submitted to the laboratory within 15 days from the date of receipt of the report.

Contents

Test Result Certification	
Applicant:	HANK ELECTRONICS VIETNAM LTD
Address:	No. 7,11 Street VSIP Tu Son. 16353 Bac Ninh Province. Vietnam.
Manufacturer:	HANK ELECTRONICS VIETNAM LTD
Address:	No. 7,11 Street VSIP Tu Son. 16353 Bac Ninh Province. Vietnam.
Product description	
Product name:	Classic Stone
Trademark:	EINOVA
Model name:	WPCS
Series Model:	WPCSWCC3S300US (Classic Stone | White Marble US), WPCSBMC3S300US (Classic Stone | Black Marble US), WPCSCRC4S400US (Classic Stone | Cream Marble US)
Standards:	FCC CFR 47 PART 1, § 1.1310
Test method:	KDB 680106 D01 Wireless Power Transfer v04
Date of Test	
Date of test:	2023-09-07 to 2023-10-26
Test result:	Pass

Test Engineer : Yanice Xie

(Yanice.Xie)

Reviewed By: : Leon chen

(Leon Chen)

Approved By: : Tom Xue

(Tom Xue)

1 General Description

1.1 Description of the EUT

Product name:	Classic Stone
Model name:	WPCS
Series Model:	WPCSWCC3S300US (Classic Stone | White Marble US), WPCSBMC3S300US (Classic Stone | Black Marble US), WPCSCRC4S400US (Classic Stone | Cream Marble US)
Model difference:	All the models are the same circuit and module, except the product name and color.
Electrical rating:	Input: DC 5V/2A,9V/1.67A Wireless output:5W,7.5W,10W max
Accessories:	N/A
Hardware version:	1.0
Software version:	V01.02
RF specification:	
Operation frequency:	115 kHz – 205 kHz
Modulation type:	ASK
Antenna type:	Coil Antenna

1.2 Description of test modes

All the test modes were carried out with the EUT in normal operation, the final test mode of the EUT was the worst test mode for emission test, which was shown in this report and defined as:

No.	Emission test modes
Mode 1	Wireless output(5W)
Mode 2	Wireless output(7.5W)
Mode 3	Wireless output(10W)
Mode 4	Stand-by
The test data only show worst test mode: Mode 3	

1.3 Description of support units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Support equipment list			
Description	Model	Serial No.	Manufacturer
Mobile phone	S9+	/	SAMSUNG
AC Adapter	HKAP3891-30US	/	CELLHELMET
Support cable list			
Description	Length (m)	From	To
/	/	/	/

2 Measurement uncertainty

Parameter	Expanded Uncertainty
Magnetic field measurement (9kHz~30MHz)	±18.6%
Electric field measurements (9kHz~30MHz)	±18.6%

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3 Test facilities and accreditations

3.1 Test laboratory

Test laboratory:	Shenzhen Microtest Co., Ltd.
Test site location:	101, No. 7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Telephone:	(86-755)88850135
Fax:	(86-755)88850136
CNAS Registration No.:	CNAS L5868
FCC Registration No.:	448573

4 List of test equipment

No.	Equipment	Manufacturer	Model	Serial No.	Cal. date	Cal. Due
MTi-E115	Electric and Magnetic Field Probe – Analyzer	Narda	EHP-200A	101166	2022/08/14	2023/08/13
MTi-E115	Electric and Magnetic Field Probe – Analyzer	Narda	EHP-200A	101166	2023/08/14	2024/08/13

5 Test result

5.1.1 Requirement

§1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of FCC part 2.1093 of this chapter.

Table 1 to §1.1310(e)(1) - Limits for Maximum Permissible Exposure (MPE)

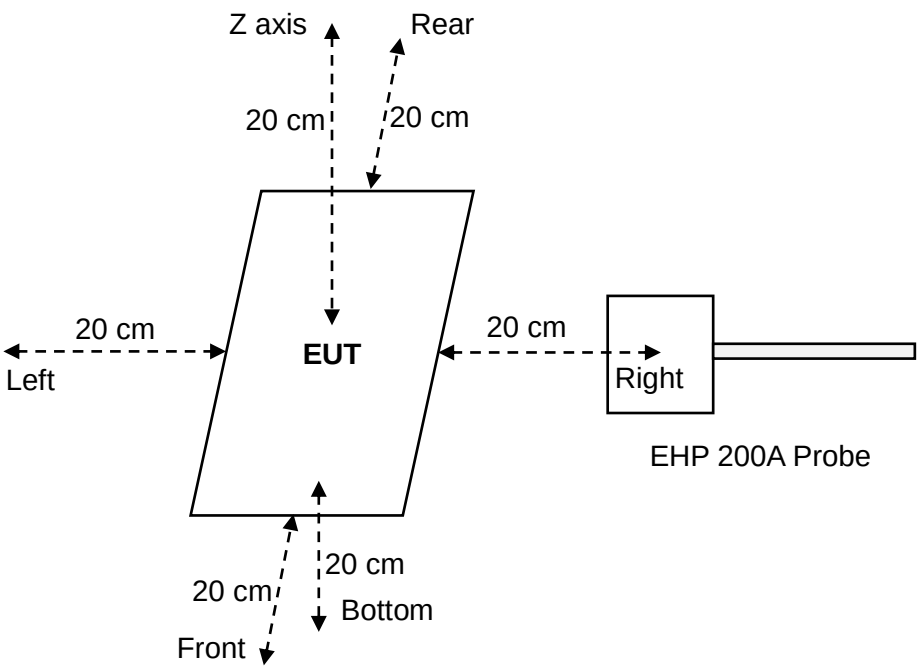
Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*($900/f^2$)	<6
30-300	61.4	0.163	1.0	<6
300-1500			f/300	<6
1500-100000			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
300-1500			f/1500	<30
1500-100000			1.0	<30

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

Note 1: Occupational/controlled exposure limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure.

Note 2: General population/uncontrolled exposure limits apply in situations in which the general public may be exposed, or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

5.2 Test setup



5.3 Test Procedures

a. The RF exposure test was performed in anechoic chamber.

b. E and H-field measurements should be made with these devices considered to meet the § 2.1091-Mobile conditions (“generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the RF source's radiating structure(s) and [the nearest person]”).

c. The highest emission level was recorded and compared with limit.

d. The EUT was measured according to the dictates of KDB 680106 D01 Wireless Power Transfer v04.

5.4 Equipment Approval Considerations section 5.1 of KDB 680106 D01 Wireless Power Transfer v04

Requirement	Device
1. The power transfer frequency is below 1 MHz.	Yes. The operating frequencies are: 115 kHz – 205 kHz
2. The output power from each transmitting element (e.g., coil) is less than or equal to 15 watts.	Yes. The maximum output power is: 10W
3.A client device providing the maximum permitted load is placed in physical contact with the transmitter (i.e., the surfaces of the transmitter and client device enclosures need to be in physical contact)	Yes. The client device is placed directly in contact with the transmitter.
4. Only § 2.1091-Mobile exposure conditions apply (i.e., this provision does not cover § 2.1093-Portable exposure conditions).	Yes. Mobile exposure conditions only.
5. The E-field and H-field strengths, at and beyond 20 cm surrounding the device surface, are demonstrated to be less than 50% of the applicable MPE limit, per KDB 447498, Table 1. These measurements shall be taken along the principal axes of the device, with one axis oriented along the direction of the estimated maximum field strength, and for three points per axis or until a 1/*d* (inverse distance from the emitter structure) field strength decay is observed. Symmetry considerations may be used for test reduction purposes. The device shall be operated in documented worst-case compliance scenarios (i.e., the ones that lead to the maximum field components), and while all the radiating structures (e.g., coils or antennas) that by design can simultaneously transmit are energized at their nominal maximum power.	Yes. See the test result in item 5.5.
6.For systems with more than one radiating structure, the conditions specified in (5) must be met when the system is fully loaded (i.e., clients absorbing maximum power available), and with all the radiating structures operating at maximum power at the same time, as per design conditions. If the design allows one or more radiating structures to be powered at a higher level while other radiating structures are not powered, then those cases must be tested as well. For instance, a device may use three RF coils powered at 5 W, or one coil powered at 15 W: in this case, both scenarios shall be tested.	Yes. The EUT has a radiating structure and all scenarios have been tested.

5.5 Test results

Test condition 1: Mode 3 operating mode with client device (1 % battery status of client device)

Antenna	Probe Position	E –field (V/m)			H–field (A/m)		
		Measurement	Limit	Percentage (%)	Measurement	Limit	Percentage (%)
1	Z axis	2.2223	614	0.64%	0.0885	1.63	19.92%
	Left	3.9402			0.3029		
	Right	1.1313			0.0823		
	Front	1.2621			0.0578		
	Rear	1.3629			0.3247		
	bottom	1.5435			0.0923		

Test condition 2: Mode 3 operating mode with client device (50 % battery status of client device)

Antenna	Probe Position	E –field (V/m)			H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)	Measurement	Limit	Max. Percentage (%)
1	Z axis	2.2349	614	0.64%	0.0831	1.63	19.47%
	Left	3.9383			0.2959		
	Right	1.146			0.0778		
	Front	1.2493			0.0489		
	Rear	1.3541			0.3174		
	Bottom	1.5445			0.0909		

Test condition 3: Mode 3 operating mode with client device (99 % battery status of client device)

Antenna	Probe Position	E –field (V/m)			H–field (A/m)		
		Measurement	Limit	Percentage (%)	Measurement	Limit	Percentage (%)
1	Z axis	2.2157	614	0.64%	0.0848	1.63	19.34%
	Left	3.9262			0.2951		
	Right	1.1211			0.0743		
	Front	1.2554			0.0543		
	Rear	1.3592			0.3153		
	bottom	1.5431			0.0888		

Photographs of the Test Setup

See the Appendix - Test Setup Photos.

Photographs of the EUT

See the Appendix - EUT Photos.

----End of Report----