

FCC TEST REPORT

for

Borqs BeiJing Ltd.

Bennu wireless charging

Model Number: XD6

FCC ID: 2ABDK-XD6

Prepared for : Borqs BeiJing Ltd.

Address : Tower A, Building B23, Universal Business Park, No. 10
Jiuxianqiao Road, Chaoyang District Beijing, 100015 China

Prepared by : Keyway Testing Technology Co., Ltd.

Address : Baishun Industrial Zone, Zhangmutou Town,
Dongguan, Guangdong, China

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Report No. : 15KWE042419F

Date of Test : Apr. 2~3, 2015

Date of Report : Apr. 7, 2015

TABLE OF CONTENTS

Test Report Declaration	Page
1. GENERAL PRODUCT INFORMATION	4
1.1. Product Function.....	4
1.2. Description of Device (EUT)	4
1.3. Independent Operation Mode.....	4
1.4. Difference between Model Numbers	4
1.5. Test Supporting System	4
2. TEST SITES	5
2.1. Test Facilities	5
2.2. List of Test and Measurement Instruments	6
3. TEST SET-UP AND OPERATION MODES	7
3.1. Principle of Configuration Selection.....	7
3.2. Block Diagram of Test Set-up.....	7
3.3. Test Operation Mode and Test Software	7
3.4. Special Accessories and Auxiliary Equipment.....	7
3.5. Countermeasures to Achieve EMC Compliance	7
4. EMISSION TEST RESULTS.....	8
4.1. Conducted Emission at the Mains Terminals Test.....	8
4.2. Radiated Emission Test.....	11
5. PHOTOGRAPHS OF TEST SET-UP	15
6. PHOTOGRAPHS OF THE EUT	17

Keyway Testing Technology Co., Ltd.

Applicant:	Borqs BeiJing Ltd.		
Address:	Tower A, Building B23, Universal Business Park, No. 10 Jiuxianqiao Road, Chaoyang District Beijing, 100015 China		
Manufacturer:	ShenZhen VLG Wireless Technology CO., LTD		
Address:	3rd floor, 1st Building, 1st Park of Taohuayuan Hi-tech and Innovation Park, Tiegang, Xixiang, Bao'an, Shenzhen, China 518102		
E.U.T:	Bennu wireless charging		
Model Number:	XD6		
Trade Name:	-----	Serial No.:	-----
Date of Receipt:	Apr. 2, 2015	Date of Test:	Apr. 2~3, 2015
Test Specification:	FCC Part 15, October 1: 2014 ANSI C63.4:2014		
Test Result:	The equipment under test was found to be compliance with the requirements of the standards applied.		
Issue Date: Apr. 7, 2015			
Tested by:		Reviewed by:	Approved by:
 Jack Bu / Engineer		 Andy Gao / Supervisor	 Jade Yang / Supervisor
Other Aspects:			
None.			
Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested			
This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Keyway Testing Technology Co., Ltd.			

1. GENERAL PRODUCT INFORMATION

1.1. Product Function

Refer to Technical Construction Form and User Manual.

1.2. Description of Device (EUT)

Description : Bennu wireless charging
Model No. : XD6
Power Input : DC 5.0V/ 900mA
Operation frequency : 110~200kHz

1.3. Independent Operation Mode

The basic operation mode is:

1.3.1. Charging

1.4. Difference between Model Numbers

None.

1.5. Test Supporting System

Note:

Adapter

Description : Switching Adapter
Model No. : ASUC41a-050120
Power Input : AC 100-240V~50/60Hz 0.2A
Output : DC 5.0V/ 1200mA
USB Line : Unshielded, Detachable 3m
Mobile phone
Applicant : Borqs BeiJing Ltd.
Description : 6" Tablet Remote
Model No. : XR6

2. TEST SITES

2.1. Test Facilities

Lab Qualifications : 944 Shielded Room built by ETS-Lindgren, USA
Date of completion: March 28, 2011

966 Chamber built by ETS-Lindgren, USA
Date of completion: March 28, 2011

Certificated by TUV Rheinland, Germany.
Registration No.: UA 50207153
Date of registration: July 13, 2011

Certificated by UL, USA
Registration No.: 100567237
Date of registration: September 5, 2012

Certificated by Intertek
Registration No.: 2011-RTL-L1-31
Date of registration: October 11, 2011

Certificated by Industry Canada
Registration No.: 9868A
Date of registration: December 8, 2011

Certificated by FCC, USA
Registration No.: 370994
Date of registration: February 21, 2012

Certificated by CNAS China
Registration No.: CNAS L5783
Date of registration: August 8, 2012

Name of Firm : Keyway Testing Technology Co., Ltd.

Site Location : Baishun Industrial Zone, Zhangmutou Town,
Dongguan, Guangdong, China

2.2. List of Test and Measurement Instruments

2.2.1. For conducted emission at the mains terminals test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESCI	101156	Apr. 27,14	Apr. 27,15
Artificial Mains Network	Rohde&Schwarz	ENV216	101315	Apr. 27,14	Apr. 27,15
Artificial Mains Network (AUX)	Rohde&Schwarz	ENV216	101314	Apr. 27,14	Apr. 27,15
RF Cable	FUJIKURA	3D-2W	944 Cable	Apr. 27,14	Apr. 27,15

2.2.2. For radiated emission test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESCI	101156	Apr 27,14	Apr 27,15
Bilog Antenna	ETS-LINDGREN	3142D	00135452	Apr 27,14	Apr 27,15
Spectrum Analyzer	Agilent	8593E	3911A04271	Apr 27,14	Apr 27,15
3m Semi-anechoic Chamber	ETS-LINDGREN	966	KW01	Apr 27,14	Apr 27,15
Signal Amplifier	SONOMA	310	187303	Apr 27,14	Apr 27,15
RF Cable	IMRO	IMRO-400	966 Cable 1#	Apr 27,14	Apr 27,15
MULTI-DEVICE Controller	ETS-LINDGREN	2090	126913	N/A	N/A
Antenna Holder	ETS-LINDGREN	2070B	00109601	N/A	N/A

3. TEST SET-UP AND OPERATION MODES

3.1. Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

3.2. Block Diagram of Test Set-up

System Diagram of Connections between EUT and Simulators



(EUT: Bennu wireless charging)

3.3. Test Operation Mode and Test Software

Refer to Test Setup in clause 4.

3.4. Special Accessories and Auxiliary Equipment

None.

3.5. Countermeasures to Achieve EMC Compliance

None.

4. EMISSION TEST RESULTS

4.1. Conducted Emission at the Mains Terminals Test

Result : **Pass**
Test Procedure : ANSI C63.4:2014
Frequency Range : 0.15 to 30 MHz
Test Site : 944 Shielded Room
Limits : FCC Part 15, October 1: 2014

Test Setup

M/N : XD6
Input Voltage : DC 5V from adapter input AC 120V/60Hz
Operation Mode : Charging

The EUT was put on a wooden table which was 0.8 m high above the ground and connected to the AC mains through the Artificial Mains Network (AMN). Where the mains cable supplied by the manufacture was longer than 1 m, the excess was folded back and forth parallel to the cable at the centre so as to form a bundle no longer than 0.4 m.

The EUT was kept 0.4 m from any other earthed conducting surface. Both sides of AC line were checked to find out the maximum conducted emission levels according to the test procedure during the conducted emission test.

The frequency range from 150 kHz to 30 MHz was investigated.

The bandwidth of the test receiver was set at 9 kHz.

All the test data were reported on the following page.

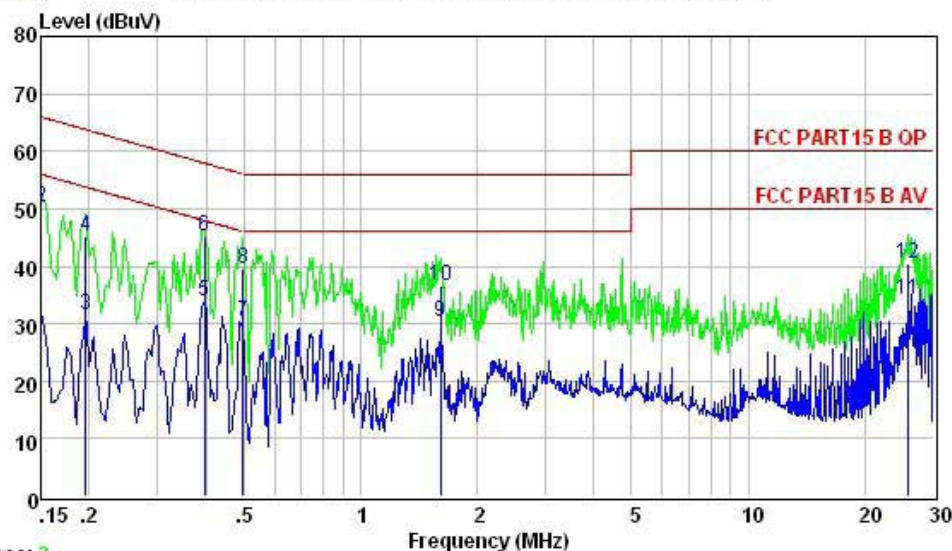
Note: Measurement Uncertainty: ± 2.6 dB at a level of confidence of 95%.



**Keyway
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Data: 4 File: F:\944 Data\conduction\15Report\15KW033002B.EM6 (12)



Trace: 3

Site : 944 Shielded Room
Condition : FCC PART15 B QP NEUTRAL
EUT : Bennu wireless charging
POWER : DC 5V from adapter input AC 120V/60Hz
M/N : XD6
Test Engineer: Jack
Comment : Temp:24.9'; Humi:56%; Press:101.52kPa
Test Mode : Charging

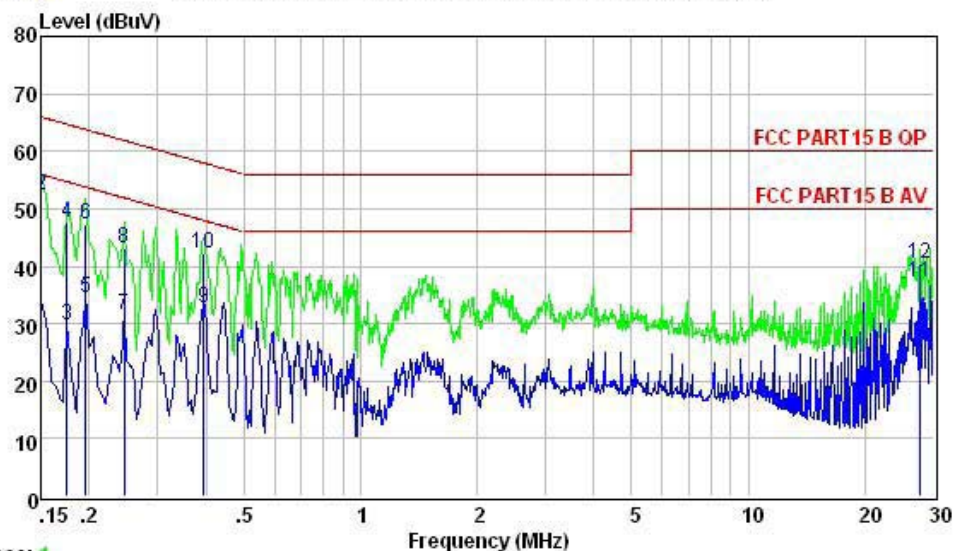
	Freq	Level	Limit	Over	
	MHz	dBuV	Line	Limit	Remark
			dBuV	dB	
1	0.150	31.74	56.00	-24.26	Average
2	0.150	50.37	66.00	-15.63	QP
3	0.195	31.53	53.80	-22.27	Average
4	0.195	45.26	63.80	-18.54	QP
5	0.396	33.99	47.95	-13.96	Average
6	0.396	45.23	57.95	-12.72	QP
7	0.499	30.40	46.01	-15.61	Average
8	0.499	39.66	56.01	-16.35	QP
9	1.610	30.38	46.00	-15.62	Average
10	1.610	36.65	56.00	-19.35	QP
11	25.727	34.12	50.00	-15.88	Average
12	25.727	40.37	60.00	-19.63	QP



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Data: 2 File: F:\944 Data\conduction\15Report\15KW033002B.EM6 (12)



Trace: 1

Site : 944 Shielded Room
Condition : FCC PART15 B QP LINE
EUT : Bennu wireless charging
POWER : DC 5V from adapter input AC 120V/60Hz
M/N : XD6
Test Engineer: Jack
Comment : Temp:24.9'; Humi:56%; Press:101.52kPa
Test Mode : Charging

	Freq	Level	Limit	Over	
	MHz	dBuV	Line	Limit	Remark
			dBuV	dB	
1	0.150	33.97	56.00	-22.03	Average
2	0.150	52.33	66.00	-13.67	QP
3	0.175	29.62	54.72	-25.10	Average
4	0.175	47.65	64.72	-17.07	QP
5	0.195	34.63	53.80	-19.17	Average
6	0.195	47.35	63.80	-16.45	QP
7	0.246	31.54	51.91	-20.37	Average
8	0.246	43.26	61.91	-18.65	QP
9	0.393	32.63	47.99	-15.36	Average
10	0.393	42.12	57.99	-15.87	QP
11	27.708	37.12	50.00	-12.88	Average
12	27.708	40.33	60.00	-19.67	QP

4.2. Radiated Emission Test

Result : **Pass**
Test Procedure : ANSI C63.4:2014
Frequency Range : 0.009 to 1000 MHz
Test Site : 966 Chamber
Limits :

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	$20\log^{(2400/F(kHz))} + 80$
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	$20\log^{(24000/F(kHz))} + 40$
1.705 ~ 30	30	30	100 * 30	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

Test Setup

M/N : XD6
Input Voltage : DC 5V from adapter input AC 120V/60Hz
Operation Mode : Charging

The EUT was placed on a turn table which was 0.8 m above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was set 3 m away from the receiving antenna which was mounted on an antenna tower. The measuring antenna moved up and down to find out the maximum emission level. It moved from 1 m to 4 m for both horizontal and vertical polarizations.

The highest frequency of the internal sources of the EUT was less than 108 MHz, so the measurement was only made up to 1 GHz.

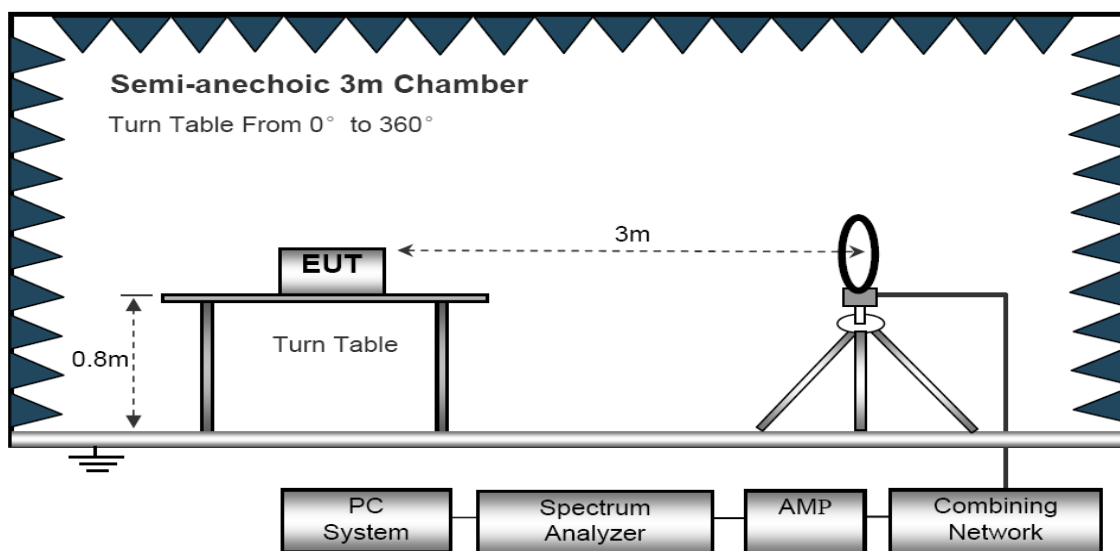
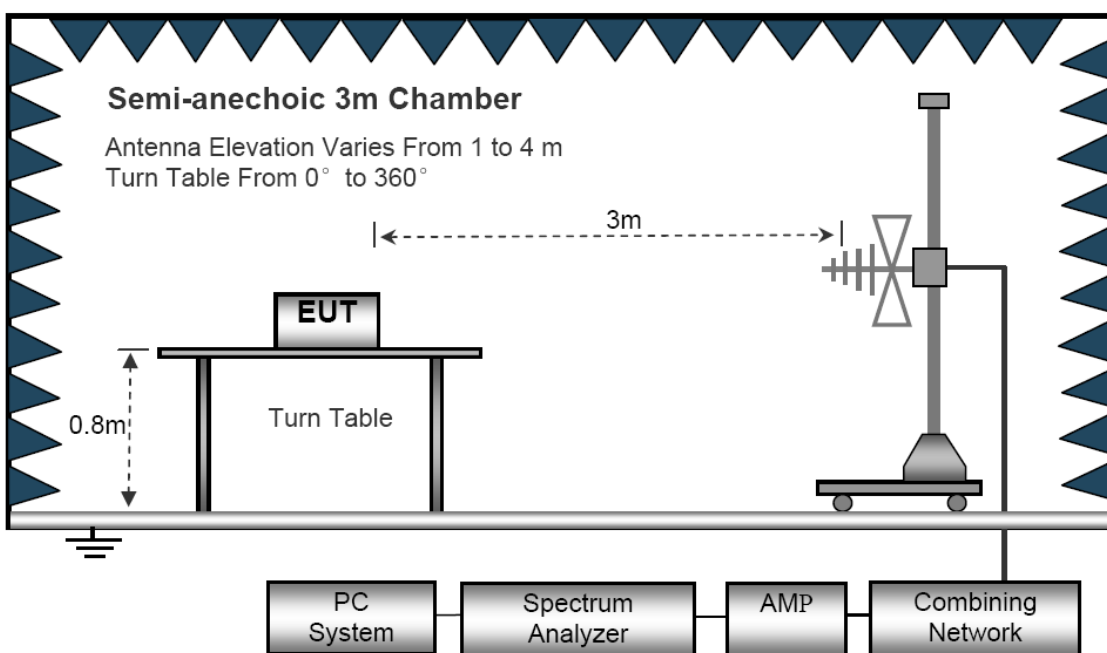
The EUT was tested in the Chamber Site. It was pre-scanned with a Peak detector from the spectrum, and all the final readings from the test receiver were measured with the Quasi-Peak detector.

The bandwidth setting on the test receiver was 120 kHz.

All the test data were reported on the following pages.

Notes:

1. Emission Level = Antenna Factor + Cable Loss + Meter Reading-Preamp Factor.
2. Measurement Uncertainty: ± 3.6 dB at a level of confidence of 95%.
3. The emission below 30MHz was background noise and met the limit, so no data show it.

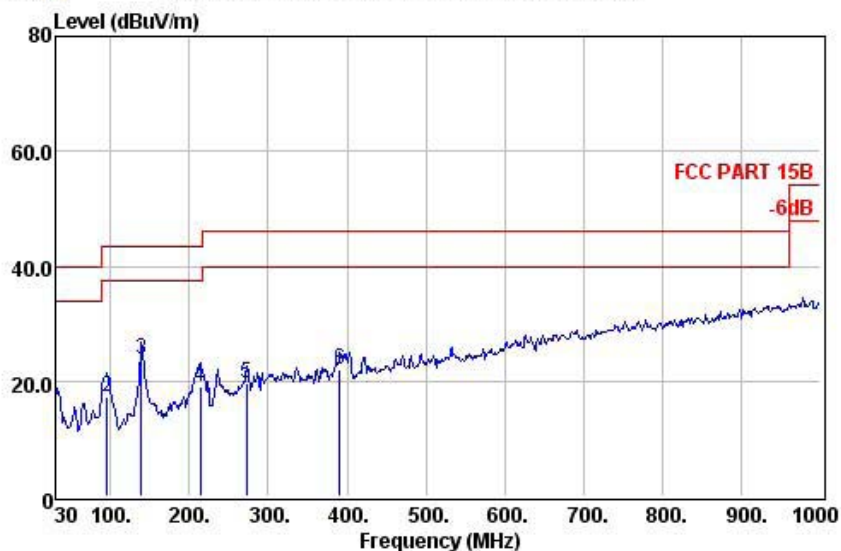
Below 30MHz**30MHz~1GHz**



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Data: 2 File: D:\966 data\15Report\15KW033002B.EM6 (6)



Site : 966 Chamber
Condition: FCC PART 15B 3m 3142D HORIZONTAL
EUT : Benu wireless charging
M/N : XD6
Power : DC 5V from adapter input AC 120V/60Hz
Test By : Jack
Comment : Temp:24.8°C Humi:56% Press:101.52kPa
Test Mode: Charging

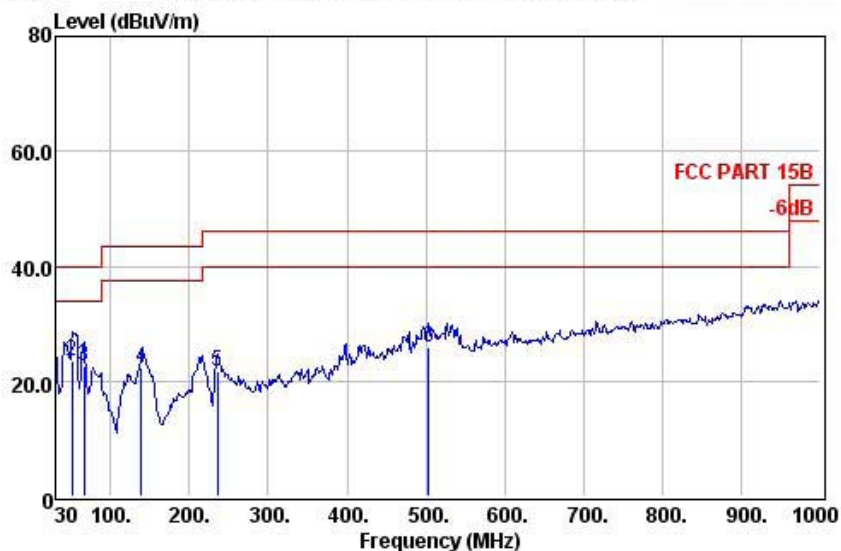
		Preamp	Read	Cable		Limit	Over	
	Freq	Factor	Level	Loss	Level	Line	Limit	Remark
	MHz		dBuV	dB	dBuV/m	dBuV/m	dB	
1	30.00	31.41	30.70	0.56	18.65	40.00	-21.35	QP
2	95.96	31.35	38.40	0.94	17.39	43.50	-26.11	QP
3	138.64	31.21	45.32	1.22	23.72	43.50	-19.78	QP
4	214.30	31.04	36.95	1.53	19.13	43.50	-24.37	QP
5	272.50	30.95	35.78	1.78	19.60	46.00	-26.40	QP
6	390.84	30.63	34.05	2.37	22.05	46.00	-23.95	QP



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Data: 1 File: D:\966 data\15Report\15KW033002B.EM6 (6)



Site : 966 Chamber
Condition: FCC PART 15B 3m 3142D VERTICAL
EUT : Bennu wireless charging
M/N : XD6
Power : DC 5V from adapter input AC 120V/60Hz
Test By : Jack
Comment : Temp:24.8°C Humi:56% Press:101.52kPa
Test Mode: Charging

		Preamplifier	Read	Cable		Limit	Over	
	Freq	Factor	Level	Loss	Level	Line	Limit	Remark
	MHz		dBuV	dB	dBuV/m	dBuV/m	dB	
1	30.00	31.41	40.00	0.56	27.95	40.00	-12.05	QP
2	51.34	31.38	45.62	0.75	23.59	40.00	-16.41	QP
3	66.86	31.31	45.71	0.85	22.69	40.00	-17.31	QP
4	138.64	31.21	43.97	1.22	22.37	43.50	-21.13	QP
5	235.64	30.94	38.59	1.61	21.76	46.00	-24.24	QP
6	503.36	30.60	34.98	2.85	26.00	46.00	-20.00	QP

5. PHOTOGRAPHS OF TEST SET-UP

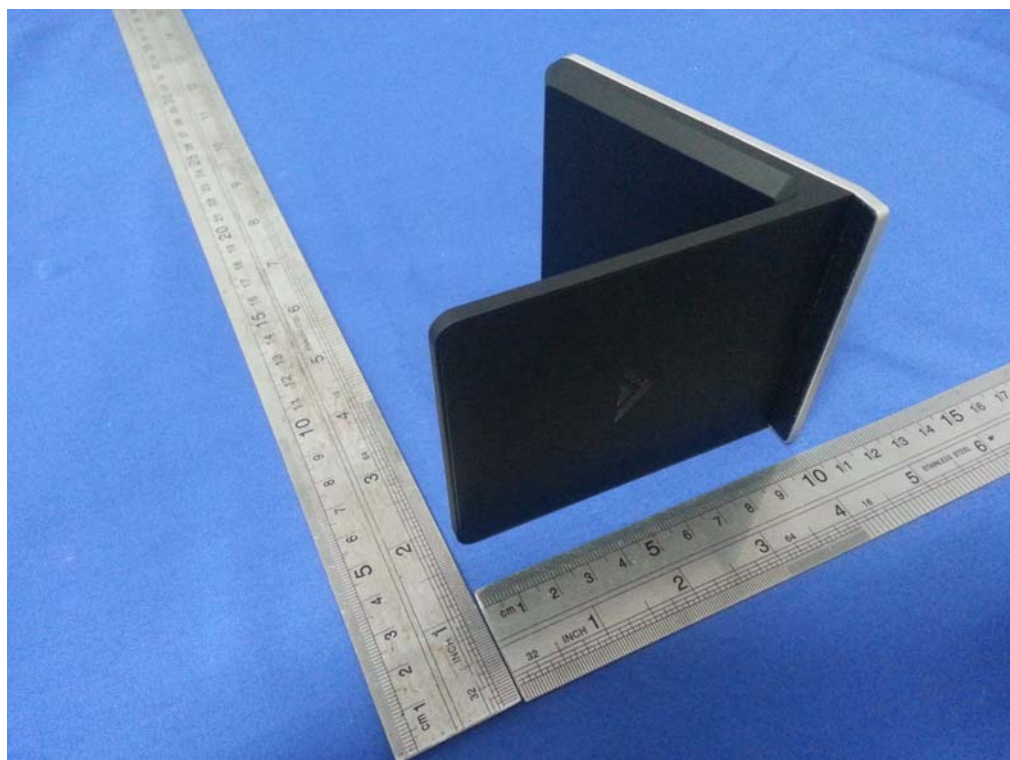
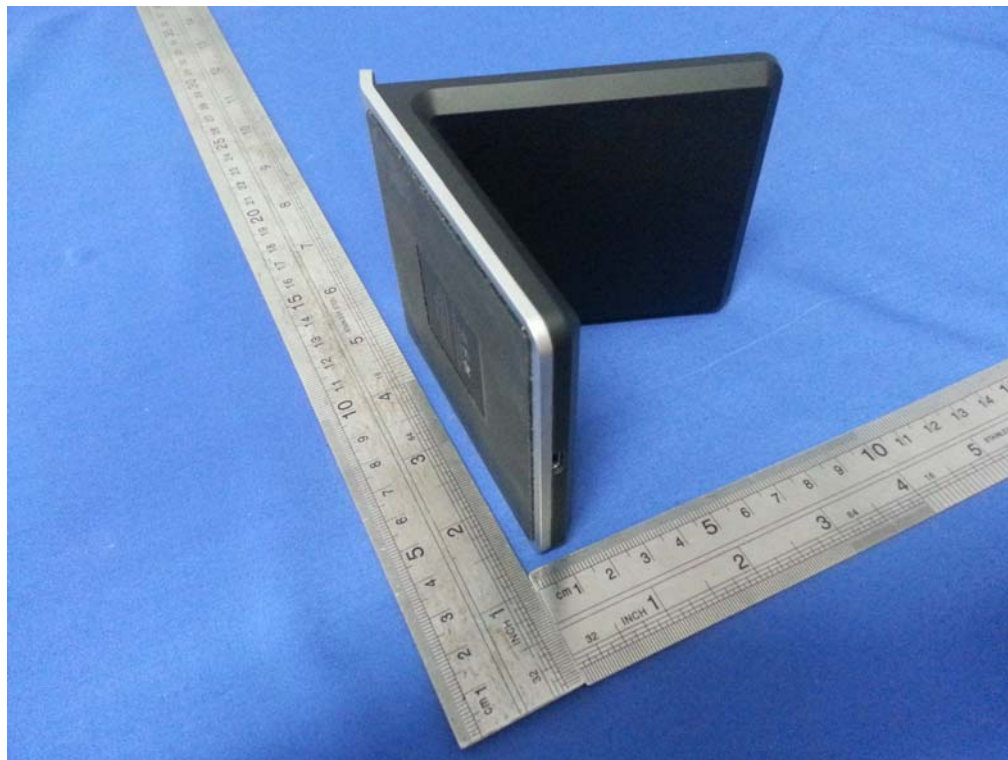
Conducted Emission at the Mains Terminals Test

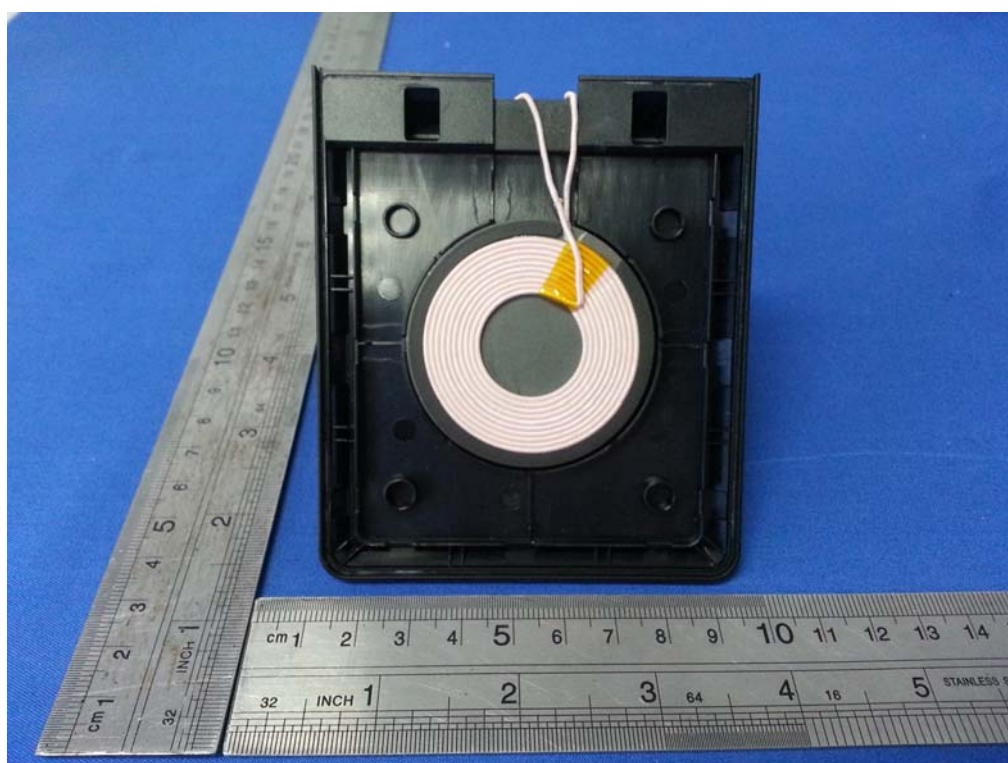
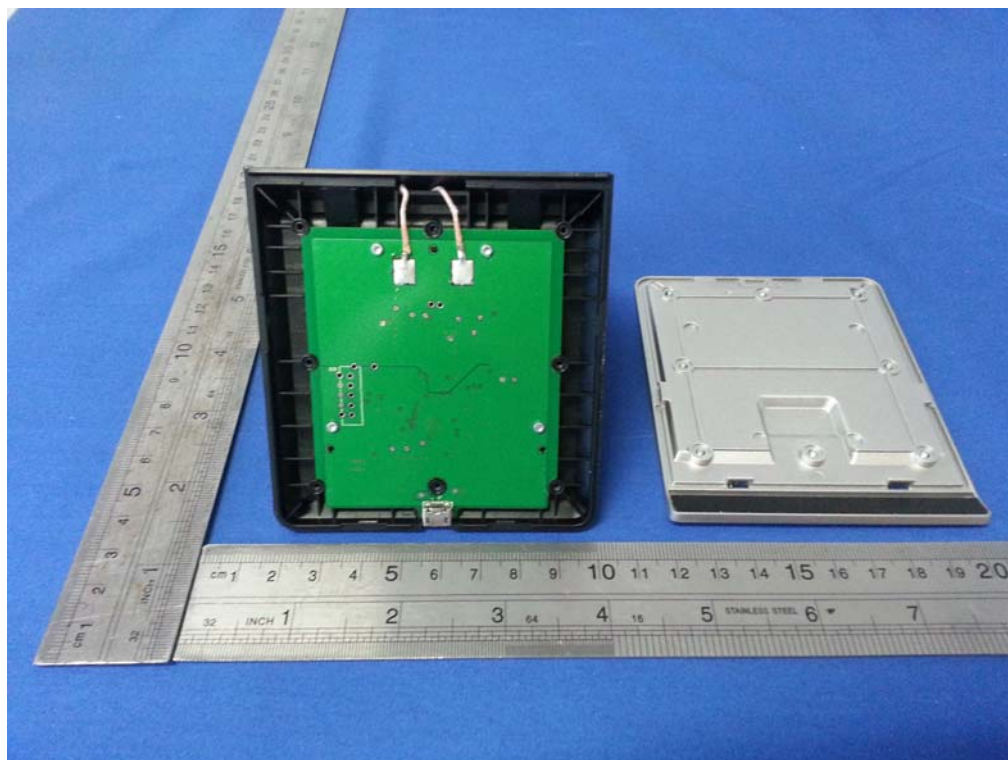


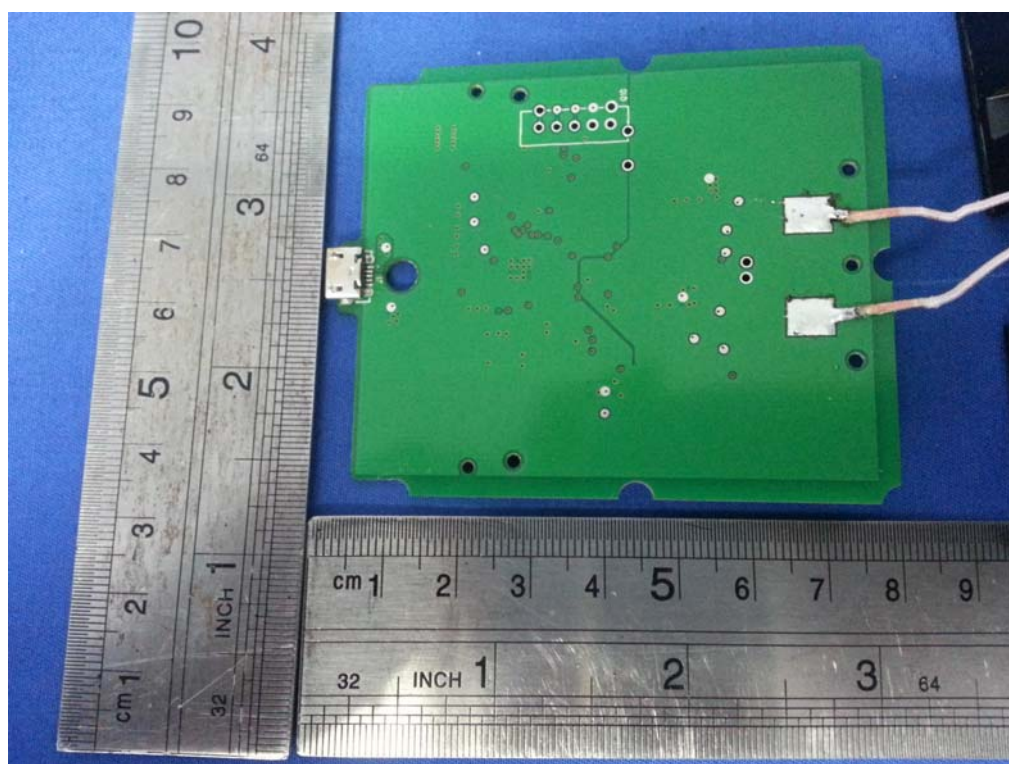
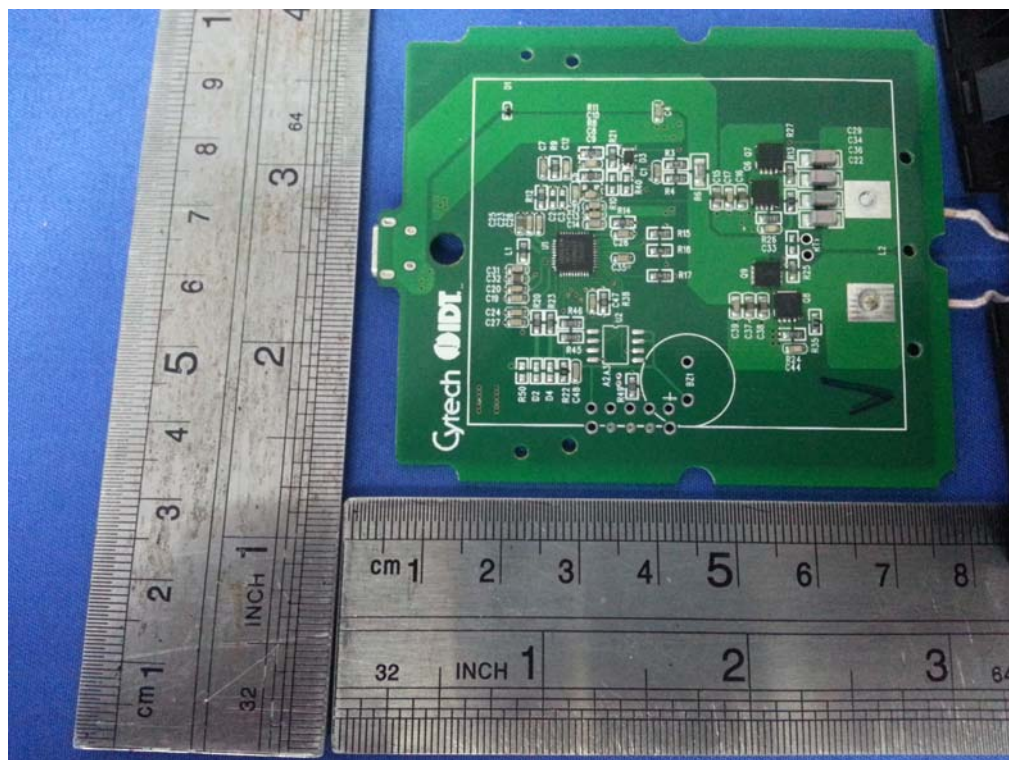
Radiated Emission Test



6. PHOTOGRAPHS OF THE EUT







END