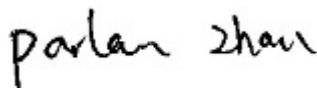


TEST REPORT

Application No.:	SHEM1908016200CR
FCC ID:	2AMIN-WPB100
Applicant:	ZIMI CORPORATION
Address of Applicant:	Room A913, No.159 Chengjiang Road, Jiangyin City, Jiangsu Province, 214431, P.R.C
Manufacturer:	ZIMI CORPORATION
Address of Manufacturer:	Room A913, No.159 Chengjiang Road, Jiangyin City, Jiangsu Province, 214431, P.R.C
Factory:	1, Dongguan DBK Energy Technology Co.,Ltd. 2, Tianjin Zowee Technology Development Co., Limited 3, Kunshan Xuanchuang Electronic Co., Ltd.
Address of Factory:	1, No.51 Zhangshen Middle Road, Xuzhen Community, Zhangmutou Town, Dongguan, Guangdong, P.R.China. 2, No.71 South Street Xinhuan West Zone Economic Development Zone of Tianjin, Tianjin, China. 3, No.218 Changxing Ease Road, Zhoushi Town, Kunshan City, Jiangsu Province, 215300, P.R.C.
Equipment Under Test (EUT):	
EUT Name:	Wireless Charge Power Bank
Model No.:	WPB100
Standard(s) :	47 CFR Part 18
Date of Receipt:	2019-08-14
Date of Test:	2019-09-17 to 2019-09-22
Date of Issue:	2019-09-25
Test Result:	Pass*

* In the configuration tested, the EUT complied with the standards specified above.



Parlam Zhan
E&E Section Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /Inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@sgs.com



NO.588 West Jindu Road, Songjiang District, Shanghai, China 201612
中国·上海·松江区金都西路588号

邮编: 201612

t(86-21) 61915666 f(86-21) 61915678 www.sgsgroup.com.cn
t(86-21) 61915666 f(86-21) 61915678 sgs.china@sgs.com



Revision Record			
Version	Description	Date	Remark
00	Original	2019-09-25	/

Authorized for issue by:			
		Bill Wu	
		Bill Wu / Project Engineer	
		Parlam Zhang	
		Parlam /Reviewer	



2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Radiated Emissions (30MHz-1GHz)	47 CFR Part 18	FCC OST/MP-5:1986	Part 18.305	Pass
Radiated Emissions (Magnetic field Strength) (9kHz- 30MHz)	47 CFR Part 18	FCC OST/MP-5:1986	Class B	Pass

3 Contents

	Page
1 COVER PAGE	1
2 TEST SUMMARY	3
3 CONTENTS.....	4
4 GENERAL INFORMATION	5
4.1 DETAILS OF E.U.T.	5
4.2 DESCRIPTION OF SUPPORT UNITS.....	5
4.3 MEASUREMENT UNCERTAINTY.....	5
4.4 TEST LOCATION	6
4.5 TEST FACILITY	6
4.6 DEVIATION FROM STANDARDS	6
4.7 ABNORMALITIES FROM STANDARD CONDITIONS.....	6
5 EQUIPMENT LIST	7
6 EMISSION TEST RESULTS.....	8
6.1 RADIATED EMISSIONS (30MHz-1GHz)	8
6.2 RADIATED EMISSIONS (MAGNETIC FIELD STRENGTH) (9kHz-30MHz)	16
7 TEST SETUP PHOTOGRAPHS.....	20
8 EUT CONSTRUCTIONAL DETAILS.....	20

4 General Information

4.1 Details of E.U.T.

Power supply: DC 3.7V 10000mAh rechargeable battery
Input: DC 5V 3A; 9V 2A; 12V 1.5A by USB-C
DC 5V 2.4A by Lightning
Output: DC 5V 3A; 9V 2A; 12V 1.5A by USB-C only
DC 5V 2.1A by USB-A only
DC 5V 3A by USB-A & USB-C
Wireless & cable charging simultaneously output:
Wireless: 5W
USB-A only: 5V 2.1A
USB-C only: 5V 2.5A
USB-A & USB-C: 5V 2.1A (USB-A); 5V 1A (USB-C)
Wireless charging only: 5W/7.5W/10W
Cable: Lightning cable 40cm
Operation frequency: 110-205 kHz
Antenna type: Inductive Loop Coil Antenna
Remark: Tests were conducted in three loads and the worst case is reported only.

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Load Resistor	/	/	/

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	$\pm 8.4 \times 10^{-8}$
2	Timeout	$\pm 2s$
3	Duty cycle	$\pm 0.37\%$
4	Occupied Bandwidth	$\pm 3\%$
5	RF conducted power	$\pm 0.6\text{dB}$
6	RF power density	$\pm 2.84\text{dB}$
7	Conducted Spurious emissions	$\pm 0.75\text{dB}$
8	RF Radiated power	$\pm 4.6\text{dB}$ (Below 1GHz) $\pm 4.1\text{dB}$ (Above 1GHz)
9	Radiated Spurious emission test	$\pm 4.2\text{dB}$ (Below 30MHz) $\pm 4.4\text{dB}$ (30MHz-1GHz) $\pm 4.8\text{dB}$ (1GHz-18GHz) $\pm 5.2\text{dB}$ (Above 18GHz)
10	Temperature test	$\pm 1^\circ\text{C}$
11	Humidity test	$\pm 3\%$
12	Supply voltages	$\pm 1.5\%$
13	Time	$\pm 3\%$

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

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd. Shanghai Branch
588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China

Tel: +86 21 6191 5666 Fax: +86 21 6191 5678

No tests were sub-contracted.

4.5 Test Facility

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

- CNAS (No. CNAS L0599)**

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- NVLAP (Certificate No. 201034-0)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. is accredited by the National Voluntary Laboratory Accreditation Program(NVLAP). Certificate No. 201034-0.

- FCC –Designation Number: CN5033**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been recognized as an accredited testing laboratory.

Designation Number: CN5033. Test Firm Registration Number: 479755.

- Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

IC Registration No.: 8617A-1. CAB identifier: CN0020.

- VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-13868, C-14336, T-12221, G-10830 respectively.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

5 Equipment List

Radiated Emissions (30MHz-1GHz)						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
EMI test receiver	Rohde & Schwarz	ESU40	SHEM051-1	2018-12-20	2019-12-19	
CONTROLLER	INNCO	CO200	SHEM047-1	N/A	N/A	
ANTENNA MAST	INNCO	MA400-EP	SHEM047-2	N/A	N/A	
TURN DEVICE	INNCO	DE 3600-RH	SHEM047-3	N/A	N/A	
Broadband UHF-VHF ANTENNA	SCHWARZBECK	VULB9168	SHEM048-1	2017-02-28	2020-02-27	
Semi/Fully Anechoic	ST	11*6*6M	SHEM078-2	2017-07-22	2020-07-21	
Low Amplifier	CLAVIIO	BDLNA-0001-412010	SHEM164-1	2019-08-13	2020-08-12	

Radiated Emissions (Magnetic field Strength) (9kHz-30MHz)						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
EMI test receiver	Rohde & Schwarz	ESU40	SHEM051-1	2018-12-20	2019-12-19	
CONTROLLER	INNCO	CO200	SHEM047-1	N/A	N/A	
ANTENNA MAST	INNCO	MA400-EP	SHEM047-2	N/A	N/A	
TURN DEVICE	INNCO	DE 3600-RH	SHEM047-3	N/A	N/A	
Loop antenna	Schwarzbeck - Mess-Elektronik	FMZB1519	SHEM135-1	2018-12-20	2019-12-19	
Low Amplifier	CLAVIIO	BDLNA-0001-412010	SHEM164-1	2019-08-13	2020-08-12	

General used equipment						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
Digital pressure meter	YONGZHI	DYM3-01	SHEM082-1	2018-01-25	2021-01-24	
Temperature&humidity recorder	ShangHai weather meter work	ZJ 1-2B	SHEM042-1~6	2019-08-31	2020-08-30	
Digital Multimeter	FLUKE	17B	SHEM043-3	2019-09-03	2020-09-02	
Autoformer regulator	Guangzhou bao de	TDGC2-5KVA	SHEM150-1	N/A	N/A	
Multi-purpose tong tester	FLUKE	316	SHEM001-1	2018-12-20	2019-12-19	

6 Emission Test Results

6.1 Radiated Emissions (30MHz-1GHz)

Test Requirement: 47 CFR Part 18

Test Method: FCC OST/MP-5:1986

Frequency Range: 30MHz to 1GHz

Measurement Distance: 3m

6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1020 mbar

Test mode: a:Wireless charging mode 1_Keep the load charging via EUT, the load shall be set at full load respectively.(10W;9V/1.1A)

b:Wireless charging mode 2_Keep the load charging via EUT, the load shall be set at half load respectively.(5W;9V/0.55A)

c:Wireless charging mode 3_Keep the load charging via EUT, the load shall be set at empty load respectively.(0W; 9V/0A)

d:Wireless charging mode 4_Keep the load charging via EUT, the load shall be set at full load respectively.(7.5W;5V/1.5A)

e:Wireless charging mode 5_Keep the load charging via EUT, the load shall be set at full load respectively.(5W;5V/1A)

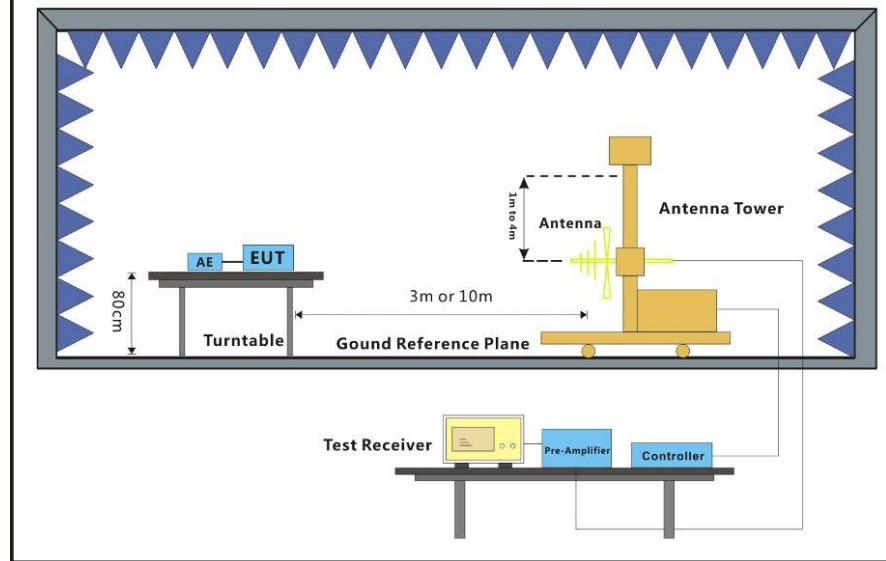
f:Wireless charging mode 6_Keep the load charging via EUT, the load shall be set at empty load respectively.(0W;5V/0A)

Prescan all the mode and found the worst case mode: a:Wireless charging mode 1_Keep the load charging via EUT, the load shall be set at full load respectively.(10W;9V/1.1A)

d:Wireless charging mode 4_Keep the load charging via EUT, the load shall be set at full load respectively.(7.5W;5V/1.5A)

e:Wireless charging mode 5_Keep the load charging via EUT, the load shall be set at full load respectively.(5W;5V/1A)

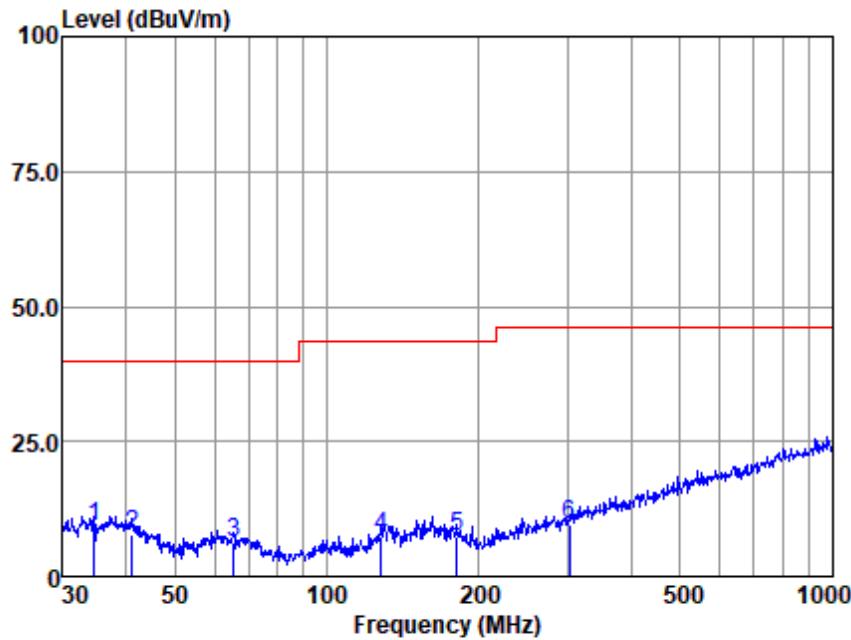
6.1.2 Test Setup Diagram



6.1.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

Mode:a; Polarization:Horizontal



Antenna Polarity :HORIZONTAL

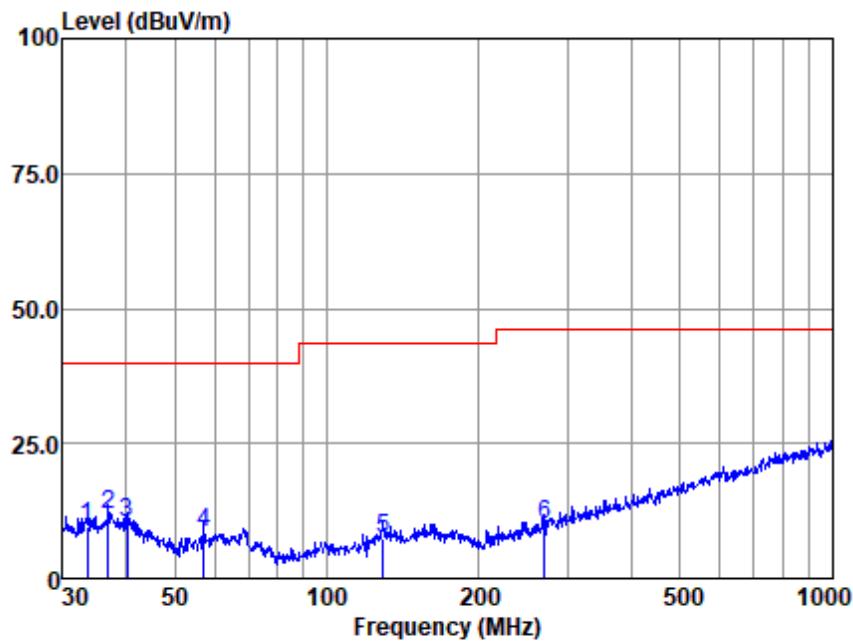
EUT/Project :16200CR

Test mode :a

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	34.639	35.32	15.80	0.37	42.35	9.14	40.00	-30.86	QP
2	41.132	34.13	15.49	0.34	42.33	7.63	40.00	-32.37	QP
3	65.343	36.01	11.95	0.62	42.29	6.29	40.00	-33.71	QP
4	128.113	35.95	12.31	1.41	42.27	7.40	43.50	-36.10	QP
5	180.649	36.28	11.77	1.66	42.20	7.51	43.50	-35.99	QP
6	302.481	35.84	13.26	2.49	42.11	9.48	46.00	-36.52	QP

Note: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Mode:a; Polarization:Vertical



Antenna Polarity : VERTICAL

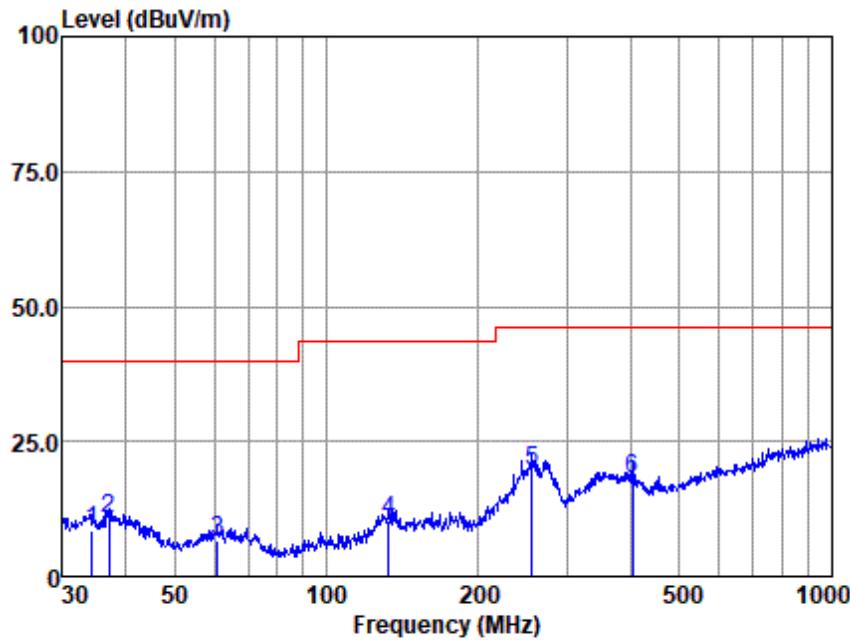
EUT/Project : 16200CR

Test mode : a

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Line	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	33.562	35.67	15.69	0.53	42.36	9.53	40.00	-30.47	QP
2	36.895	37.69	16.03	0.35	42.34	11.73	40.00	-28.27	QP
3	40.276	36.29	16.07	0.31	42.33	10.34	40.00	-29.66	QP
4	57.191	38.09	12.05	0.57	42.33	8.38	40.00	-31.62	QP
5	129.015	35.46	12.64	1.43	42.26	7.27	43.50	-36.23	QP
6	269.428	37.52	12.21	2.21	42.11	9.83	46.00	-36.17	QP

Note: Emission Level = Read Level + Antenna Factor + Cable loss - Preamp Factor

Mode:d; Polarization:Horizontal



Antenna Polarity :HORIZONTAL

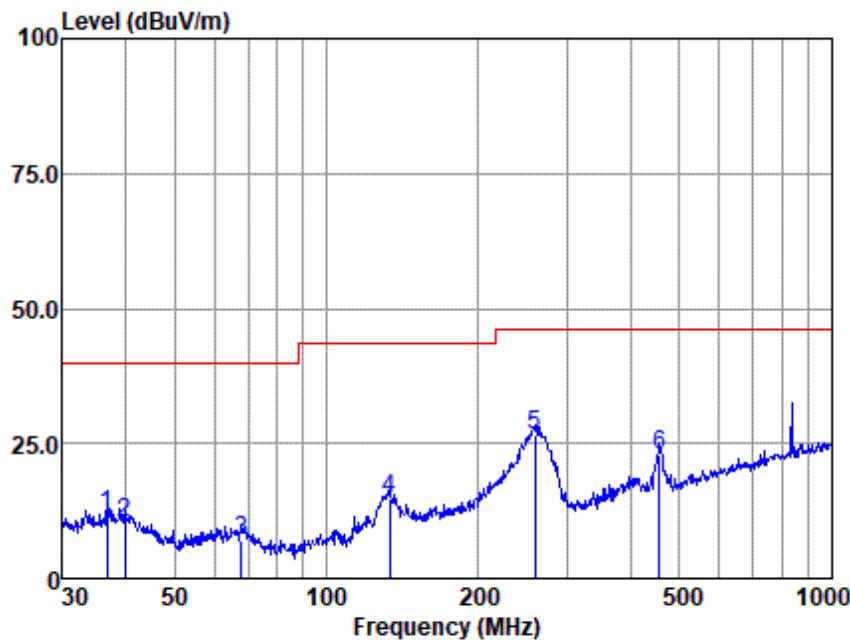
EUT/Project :16200CR

Test mode :d .

	Read Freq	Antenna Level	Cable Factor	Preamp Loss	Emission Factor	Limit Level	Over Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	34.276	34.69	15.77	0.50	42.36	8.60	40.00	-31.40	QP
2	37.155	36.60	16.04	0.42	42.34	10.72	40.00	-29.28	QP
3	60.704	35.68	12.53	0.59	42.32	6.48	40.00	-33.52	QP
4	132.685	38.78	12.36	1.41	42.26	10.29	43.50	-33.21	QP
5	255.623	47.62	11.69	2.21	42.10	19.42	46.00	-26.58	QP
6	403.250	41.64	15.19	3.05	41.90	17.98	46.00	-28.02	QP

Note: Emission Level=Read Level+Antenna Factor+Cable loss+Preamp Factor

Mode:d; Polarization:Vertical

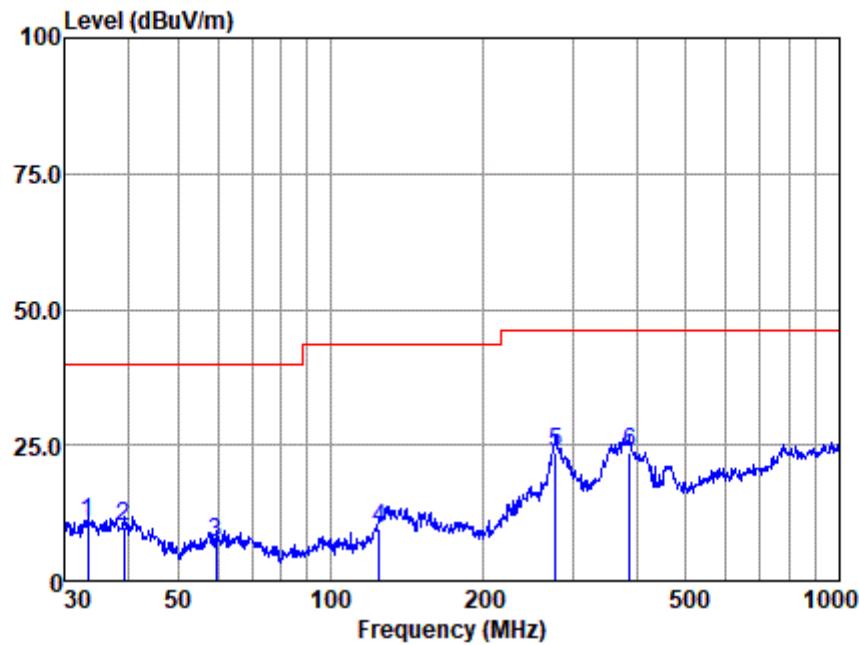


Antenna Polarity : VERTICAL
 EUT/Project : 16200CR
 Test mode : d

	Read Freq	Antenna Level	Cable Factor	Preamp Loss	Emission Factor	Limit Level	Over Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	36.766	37.84	16.01	0.35	42.34	11.86	40.00	-28.14	QP
2	39.854	36.16	16.30	0.31	42.33	10.44	40.00	-29.56	QP
3	67.913	36.90	11.65	0.63	42.27	6.91	40.00	-33.09	QP
4	133.151	43.32	12.27	1.41	42.26	14.74	43.50	-28.76	QP
5	258.326	54.48	11.82	2.21	42.10	26.41	46.00	-19.59	QP
6	457.507	45.11	16.39	3.23	41.74	22.99	46.00	-23.01	QP

Note: Emission Level=Read Level+Antenna Factor+Cable loss+Preamp Factor

Mode:e; Polarization:Horizontal



Antenna Polarity :HORIZONTAL

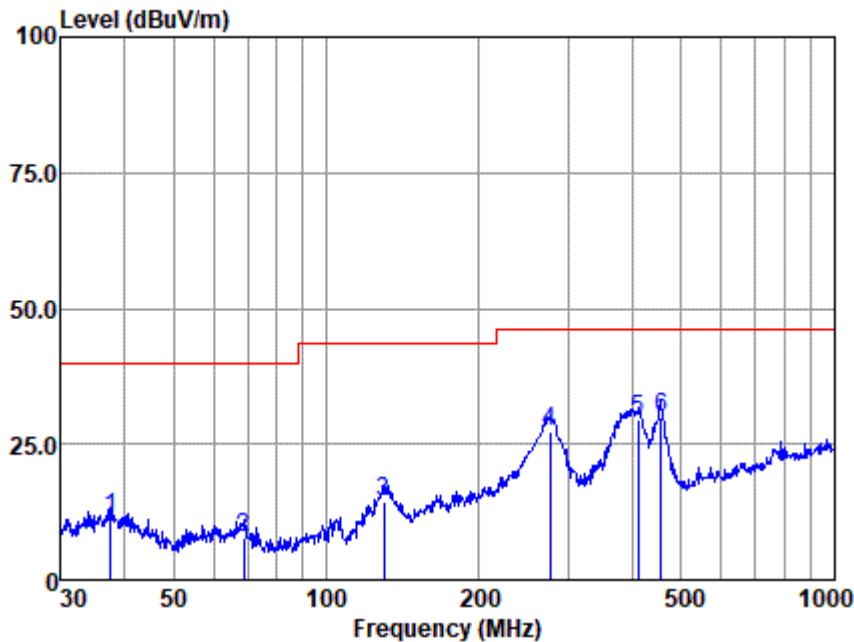
EUT/Project :16200CR

Test mode :

Freq	Read	Antenna	Cable	Preamp	Emission	Limit	Over	Remark
	Level	Factor	Loss	Factor	Level	Line	Limit	
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 33.328	36.86	15.67	0.36	42.36	10.53	40.00	-29.47	QP
2 39.162	35.81	16.24	0.13	42.33	9.85	40.00	-30.15	QP
3 59.441	36.49	12.45	0.58	42.33	7.19	40.00	-32.81	QP
4 124.569	39.34	11.32	1.37	42.27	9.76	43.50	-33.74	QP
5 277.094	51.04	12.47	2.21	42.11	23.61	46.00	-22.39	QP
6 387.992	47.37	14.92	3.07	41.92	23.44	46.00	-22.56	QP

Note:Emission Level=Read Level+Antenna Factor+Cable loss+Preamp Factor

Mode:e; Polarization:Vertical



Antenna Polarity : VERTICAL

EUT/Project : 16200CR

Test mode :

Freq	Read	Antenna	Cable	Preamp	Emission	Limit	Over	Remark
	Level	Factor	Loss	Factor	Level	Line	Limit	
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	37.680	37.04	16.09	0.49	42.34	11.28	40.00	-28.72 QP
2	68.872	37.97	11.55	0.64	42.27	7.89	40.00	-32.11 QP
3	129.923	42.36	12.80	1.43	42.26	14.33	43.50	-29.17 QP
4	276.124	54.88	12.42	2.21	42.11	27.40	46.00	-18.60 QP
5	410.383	53.09	15.36	3.05	41.89	29.61	46.00	-16.39 QP
6	455.906	51.96	16.34	3.23	41.75	29.78	46.00	-16.22 QP

Note: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

6.2 Radiated Emissions (Magnetic field Strength) (9kHz-30MHz)

Test Requirement: 47 CFR Part 18

Test Method: FCC OST/MP-5:1986

Frequency Range: 9kHz to 30MHz

Measurement Distance: 3m

6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1020 mbar

Test mode: a:Wireless charging mode 1_Keep the load charging via EUT, the load shall be set at full load respectively.(10W;9V/1.1A)

b:Wireless charging mode 2_Keep the load charging via EUT, the load shall be set at half load respectively.(5W;9V/0.55A)

c:Wireless charging mode 3_Keep the load charging via EUT, the load shall be set at empty load respectively.(0W; 9V/0A)

d:Wireless charging mode 4_Keep the load charging via EUT, the load shall be set at full load respectively.(7.5W;5V/1.5A)

e:Wireless charging mode 5_Keep the load charging via EUT, the load shall be set at full load respectively.(5W;5V/1A)

f:Wireless charging mode 6_Keep the load charging via EUT, the load shall be set at empty load respectively.(0W;5V/0A)

Prescan all the mode and found the worst case mode: a:Wireless charging mode 1_Keep the load charging via EUT, the load shall be set at full load respectively.(10W;9V/1.1A)

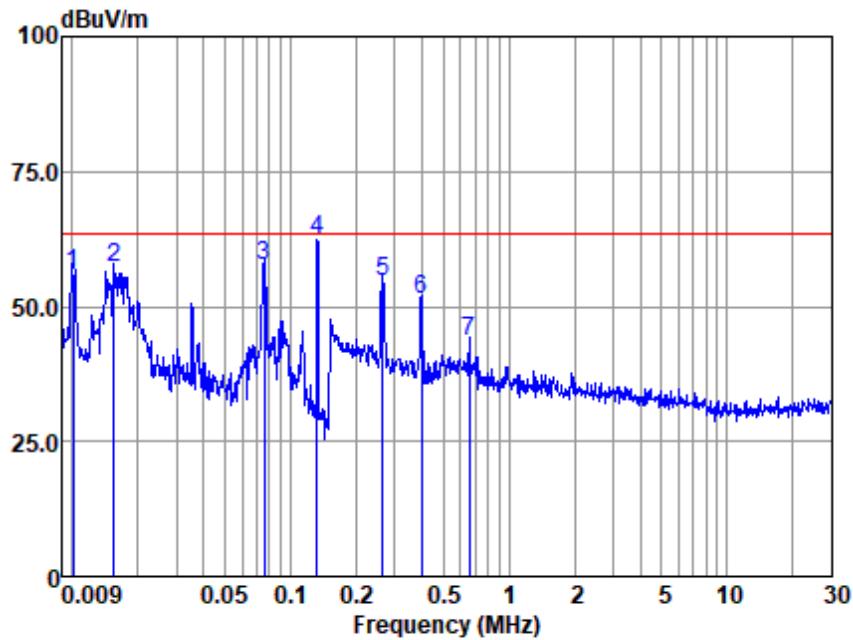
d:Wireless charging mode 4_Keep the load charging via EUT, the load shall be set at full load respectively.(7.5W;5V/1.5A)

e:Wireless charging mode 5_Keep the load charging via EUT, the load shall be set at full load respectively.(5W;5V/1A)

6.2.2 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

Mode:a; Polarization:Vertical



Antenna Polarity : VERTICAL

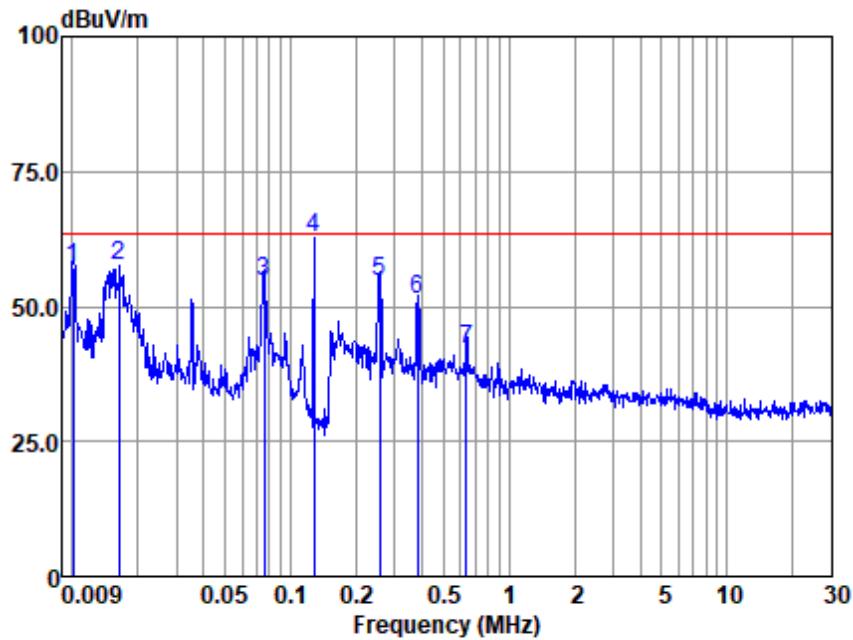
EUT/Project : 16200CR

Test mode : a

Freq	Read Level	Antenna Factor	Cable Loss	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuV	dBuA/uVm	dB	dBuA/m	dBuA/m	dB	
1	0.010	36.37	19.70	0.04	56.11	63.50	-7.39 Average
2	0.015	37.35	19.64	0.02	57.01	63.50	-6.49 Average
3	0.075	37.98	19.71	0.03	57.72	63.50	-5.78 Average
4	0.132	42.46	19.85	0.07	62.38	63.50	-1.12 Average
5	0.263	34.81	19.84	0.08	54.73	63.50	-8.77 Average
6	0.398	31.21	19.90	0.10	51.21	63.50	-12.29 Average
7	0.657	23.13	20.16	0.13	43.42	63.50	-20.08 QP

Note: Emission Level=Read Level+Antenna Factor+Cable loss+Preamp Factor

Mode:d; Polarization:Vertical



Antenna Polarity : VERTICAL

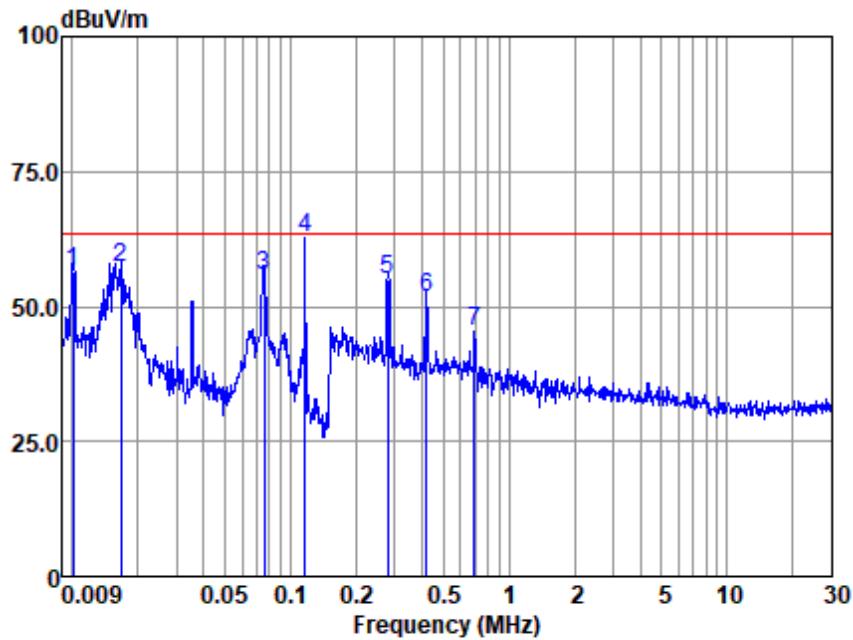
EUT/Project : 16200CR

Test mode : d

	Read Freq	Antenna Level	Cable Factor	Emission Loss	Limit Level	Over Line	Over Limit	Remark
	-----	-----	-----	-----	-----	-----	-----	-----
	MHz	dBuV	dBuA/uVm	dB	dBuA/m	dBuA/m	dB	
1	0.010	37.43	19.70	0.04	57.17	63.50	-6.33	Average
2	0.016	37.95	19.63	0.02	57.60	63.50	-5.90	Average
3	0.076	35.03	19.73	0.03	54.79	63.50	-8.71	Average
4	0.128	42.65	19.86	0.07	62.58	63.50	-0.92	Average
5	0.254	34.61	19.83	0.08	54.52	63.50	-8.98	Average
6	0.382	31.20	19.89	0.10	51.19	63.50	-12.31	Average
7	0.636	21.74	20.14	0.13	42.01	63.50	-21.49	QP

Note: Emission Level=Read Level+Antenna Factor+Cable loss+Preampl Factor

Mode:e; Polarization:Vertical



Antenna Polarity : VERTICAL

EUT/Project : 16200CR

Test mode : g

	Read Freq	Antenna Level	Cable Factor	Emission Loss	Limit Level	Over Line	Over Limit	Remark
	MHz	dBuV	dBuA/uVm	dB	dBuA/m	dBuA/m	dB	
1	0.010	36.71	19.70	0.04	56.45	63.50	-7.05	Average
2	0.017	37.52	19.63	0.03	57.18	63.50	-6.32	Average
3	0.076	35.95	19.73	0.03	55.71	63.50	-7.79	Average
4	0.116	42.69	19.87	0.06	62.62	63.50	-0.88	Average
5	0.278	35.03	19.85	0.08	54.96	63.50	-8.54	Average
6	0.421	31.80	19.92	0.10	51.82	63.50	-11.68	Average
7	0.696	25.27	20.19	0.04	45.50	63.50	-18.00	QP

Note: Emission Level=Read Level+Antenna Factor+Cable loss+Preampl Factor



7 Test Setup Photographs

Refer to the < Test Setup photos-FCC>.

8 EUT Constructional Details

Refer to the < External Photos > & < Internal Photos >.

- End of the Report -