

FCC TEST REPORT
For

Shenzhen Weiming Technology Co., Ltd.

Wireless Charging Transmitter

Model No.: M200

Prepared for	:	Shenzhen Weiming Technology Co., Ltd.
Address	:	2502, Block B, Southern International Plaza, 3013 Yitian Road, Futian District, Shenzhen 518048, China
Prepared by	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
Address	:	1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue, Bao'an District, Shenzhen, Guangdong, China
Date of receipt of test sample	:	February 19, 2014
Number of tested samples	:	1
Serial number	:	Prototype
Date of Test	:	February 19, 2014 - March 10, 2014
Date of Report	:	March 10, 2014

FCC TEST REPORT
FCC CFR 47 PART 18: 2012

Report Reference No. : LCS140225370TF

Date Of Issue : March 10, 2014

Testing Laboratory Name : Shenzhen LCS Compliance Testing Laboratory Ltd.

Address : 1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue, Bao'an District, Shenzhen, Guangdong, China

Testing Location/ Procedure : Full application of Harmonised standards

Partial application of Harmonised standards

Other standard testing method

Applicant's Name : Shenzhen Weiming Technology Co., Ltd.

Address : 2502, Block B, Southern International Plaza, 3013 Yitian Road, Futian District, Shenzhen 518048, China

Test Specification

Standard : FCC CFR 47 PART 18: 2012

Test Report Form No. : LCSEMC-1.0

TRF Originator : Shenzhen LCS Compliance Testing Laboratory Ltd.

Master TRF : Dated 2011-03

Shenzhen LCS Compliance Testing Laboratory Ltd. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen LCS Compliance Testing Laboratory Ltd. is acknowledged as copyright owner and source of the material. Shenzhen LCS Compliance Testing Laboratory Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

Test Item Description : Wireless Charging Transmitter

Trade Mark : Weiming

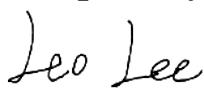
Model/ Type Reference : M200

Ratings : Input DC 5V, 2.0A Max.

Rated Power: $\leq 5W$

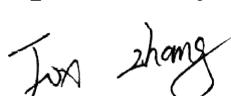
Result : Positive

Compiled by:



Leo Lee/ File administrators

Supervised by:



Fox Zhang/ Technique principal

Approved by:



Gavin Liang/ Manager

FCC TEST REPORT

Test Report No. : **LCS140225370TF**March 10, 2014

Date of issue

Type/ Model..... : M200

EUT..... : Wireless Charging Transmitter

Applicant..... : Shenzhen Weiming Technology Co., Ltd.Address..... : 2502, Block B, Southern International Plaza, 3013 Yitian
Road, Futian District, Shenzhen 518048, China

Telephone..... : /

Fax..... : /

Manufacturer..... : Shenzhen Weiming Technology Co., Ltd.Address..... : 2502, Block B, Southern International Plaza, 3013 Yitian
Road, Futian District, Shenzhen 518048, China

Telephone..... : /

Fax..... : /

Factory..... : Shenzhen Weiming Technology Co., Ltd.Address..... : 2502, Block B, Southern International Plaza, 3013 Yitian
Road, Futian District, Shenzhen 518048, China

Telephone..... : /

Fax..... : /

Test Result**Positive**

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

TABLE OF CONTENTS

1. SUMMARY OF STANDARDS AND RESULTS.....	5
1.1. Description of Standards and Results	5
1.2. Description of Test Modes.....	5
2. GENERAL INFORMATION	6
2.1.Description of Device (EUT).....	6
2.2.Support Equipment List	6
2.3. External I/O Port	6
2.4.Description of Test Facility	6
2.5.Statement of the measurement uncertainty	7
2.6.Measurement Uncertainty	7
3. POWER LINE CONDUCTED MEASUREMENT	8
3.1.Test Equipment	8
3.2.Block Diagram of Test Setup.....	8
3.3.Power Line Conducted Emission Measurement Limits.....	8
3.4.Configuration of EUT on Measurement	8
3.5.Operating Condition of EUT.....	9
3.6.Test Procedure.....	9
3.7.Test Results	9
4. RADIATED EMISSION MEASUREMENT.....	11
4.1.Test Equipment	11
4.2.Block Diagram of Test Setup.....	11
4.3.Radiated Emission Limit.....	12
4.4.EUT Configuration on Measurement.....	12
4.5.Operating Condition of EUT.....	12
4.6.Measuring Setting	12
4.7.Test Procedure.....	13
4.8.Test Results	14
5. MANUFACTURER/ APPROVAL HOLDER DECLARATION.....	16

1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION		
Description of Test Item	Standard	Results
Conducted disturbance at mains terminals	FCC CFR 47 PART 18.307(a): 2012 / MP-5: 1986	PASS
Radiated disturbance	FCC CFR 47 PART 18.305(b): 2012 / MP-5: 1986	PASS

N/A is an abbreviation for Not Applicable.

1.2. Description of Test Modes

Test Modes:		
Mode 1	AC/DC Adapter + EUT + Qi Mobile Phone(Battery Status: <1%)	Record
Mode 2	AC/DC Adapter + EUT + Qi Mobile Phone(Battery Status: <50%)	Pre-tested
Mode 3	AC/DC Adapter + EUT + Qi Mobile Phone(Battery Status: 100%)	Pre-tested
<i>Note: All test modes were pre-tested, but we only recorded the worst case in this report.</i>		

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT : Wireless Charging Transmitter
Model Number : M200
Power Supply : Input DC 5V, 2.0A Max.
 Rated Power: ≤ 5W
Frequency Band : 110KHz~205KHz
Antenna Type : Inductive loop Coil antenna

2.2. Support Equipment List

Manufacturer	Description	Model	Serial Number	Certificate
NOKIA	Qi Mobile Phone	N920	N/A	DOC
SHENZHEN JIYIN SCIENCE & TECHNOLOGY DEVELOPMENT CO LTD	ADAPTOR	JY-05200	N/A	VOC

2.3. External I/O Port

I/O Port Description	Quantity	Cable
USB	1	N/A

2.4. Description of Test Facility

Site Description

EMC Lab. : Accredited by CNAS, June 04, 2010
The Certificate Registration Number. is L4595.

Accredited by FCC, July 14, 2011
The Certificate Registration Number. is 899208.

Accredited by Industry Canada, May. 02, 2011
The Certificate Registration Number. is 9642A-1

Accredited by VCCI, Japan January 30, 2012
The Certificate Registration Number. is C-4260 and R-380

2.5.Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

2.6.Measurement Uncertainty

Test Item	Frequency Range	Uncertainty	Note
Radiation Uncertainty :	9KHz~30MHz	$\pm 3.10\text{dB}$	(1)
	30MHz~200MHz	$\pm 2.96\text{dB}$	(1)
	200MHz~1000MHz	$\pm 3.10\text{dB}$	(1)
	1GHz~26.5GHz	$\pm 3.80\text{dB}$	(1)
	26.5GHz~40GHz	$\pm 3.90\text{dB}$	(1)
Conduction Uncertainty :	150kHz~30MHz	$\pm 1.63\text{dB}$	(1)
Power disturbance	30MHz~300MHz	$\pm 1.60\text{dB}$	(1)

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

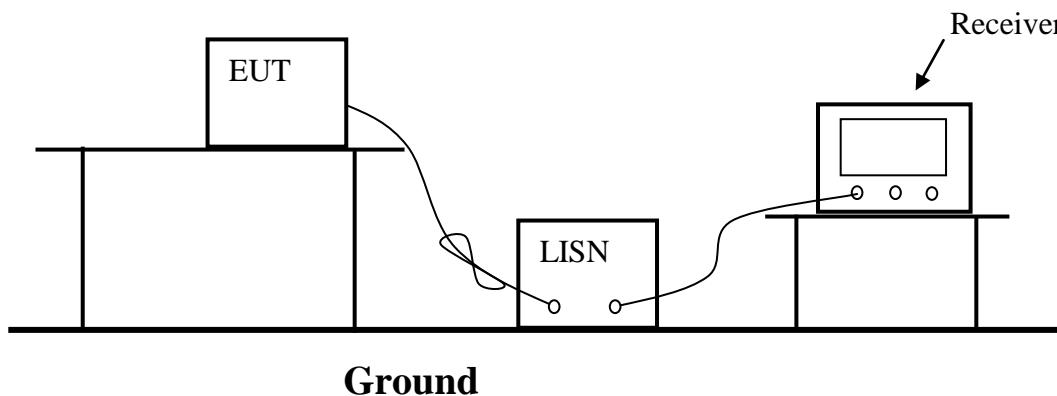
3. POWER LINE CONDUCTED MEASUREMENT

3.1. Test Equipment

The following test equipments are used during the power line conducted measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
1	EMC Receiver	R&S	ESCS30	100174	2013/06/18	2014/06/17
2	L.I.S.N	Mess Tec	NNB-2/16Z	99079	2013/06/18	2014/06/17
3	50ΩCoaxial Switch	R&S	MP59B	M20531	2013/06/18	2014/06/17
4	Pulse Limiter	Anritsu	ESH3-Z2	100006	2013/06/18	2014/06/17
5	Voltage Probe	Rohde & Schwarz	TK9416	N/A	2013/06/18	2014/06/17

3.2. Block Diagram of Test Setup



3.3. Power Line Conducted Emission Measurement Limits

Frequency of Emission (MHz)	Conducted Limit (dB _{UV})	
	Quasi-peak	Average
0.15 ~ 0.50	66 to 56*	56 to 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

3.4. Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

3.5. Operating Condition of EUT

- (1) Setup the EUT and simulator as shown as Section 3.2.
- (2) Turn on the power of all equipment.
- (3) Let the EUT work in worst test mode (Mode 1) and measure it.

3.6. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC/ANSI C63.4-2009 on Conducted Emission Measurement.

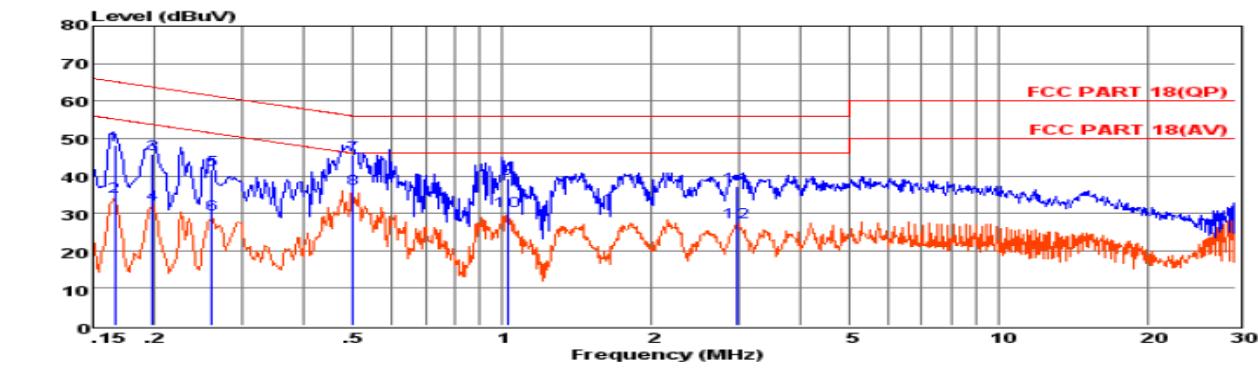
The bandwidth of test receiver is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

3.7. Test Results

PASS.

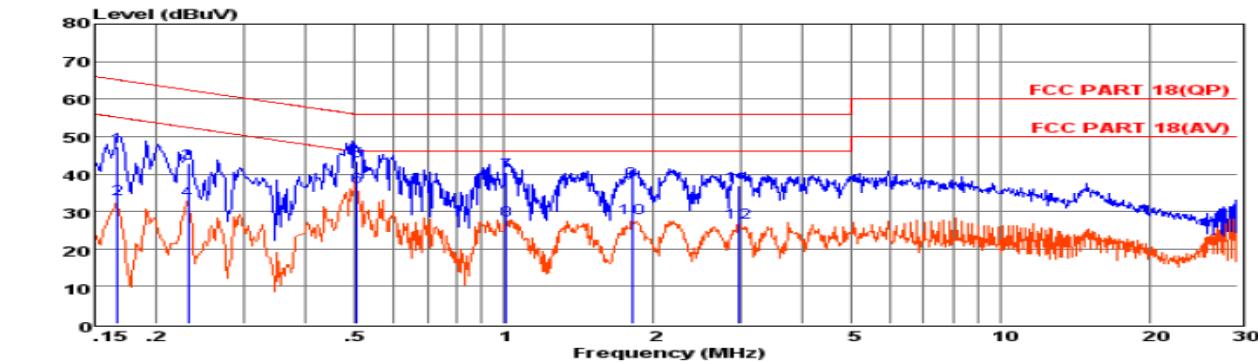
The test data please refer to following page.



Env. Ins: 24*/56%
 EUT: Wireless Charging Transmitter
 M/N: M200
 Power Rating: AC 120V/60Hz
 Test Mode: Mode 1
 Operator: DANNY
 Memo:
 Pol: LINE

Freq	Reading	LisnFac	CabLos	Measured	Limit	Over	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1 0.16589	38.60	9.59	0.02	48.21	65.16	-16.95	QP
2 0.16590	24.99	9.59	0.02	34.60	55.16	-20.56	Average
3 0.19758	36.07	9.63	0.02	45.72	63.71	-17.99	QP
4 0.19759	22.70	9.63	0.02	32.35	53.71	-21.36	Average
5 0.26025	31.91	9.63	0.03	41.57	61.42	-19.85	QP
6 0.26026	20.12	9.63	0.03	29.78	51.42	-21.64	Average
7 0.50203	35.91	9.62	0.04	45.57	56.00	-10.43	QP
8 0.50204	27.07	9.62	0.04	36.73	46.00	-9.27	Average
9 1.02652	29.68	9.63	0.05	39.36	56.00	-16.64	QP
10 1.02752	20.81	9.63	0.05	30.49	46.00	-15.51	Average
11 2.96191	27.58	9.64	0.06	37.28	56.00	-18.72	QP
12 2.96291	17.85	9.64	0.06	27.55	46.00	-18.45	Average

Remarks: 1. Measured = Reading + Lisn Factor + Cable Loss.
 2. The emission levels that are 20dB below the official limit are not reported.



Env. Ins: 24*/56%
 EUT: Wireless Charging Transmitter
 M/N: M200
 Power Rating: AC 120V/60Hz
 Test Mode: Mode 1
 Operator: DANNY
 Memo:
 Pol: NEUTRAL

Freq	Reading	LisnFac	CabLos	Measured	Limit	Over	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1 0.16677	37.57	9.66	0.02	47.25	65.12	-17.87	QP
2 0.16678	23.67	9.66	0.02	33.35	55.12	-21.77	Average
3 0.23162	33.34	9.59	0.03	42.96	62.39	-19.43	QP
4 0.23163	23.42	9.59	0.03	33.04	52.39	-19.35	Average
5 0.50469	33.79	9.62	0.04	43.45	56.00	-12.55	QP
6 0.50470	26.91	9.62	0.04	36.57	46.00	-9.43	Average
7 1.01033	30.69	9.63	0.05	40.37	56.00	-15.63	QP
8 1.01133	17.92	9.63	0.05	27.60	46.00	-18.40	Average
9 1.80957	28.47	9.63	0.05	38.15	56.00	-17.85	QP
10 1.81957	18.70	9.63	0.05	28.38	46.00	-17.62	Average
11 2.97764	27.23	9.64	0.06	36.93	56.00	-19.07	QP
12 2.97864	17.30	9.64	0.06	27.00	46.00	-19.00	Average

Remarks: 1. Measured = Reading + Lisn Factor + Cable Loss.
 2. The emission levels that are 20dB below the official limit are not reported.

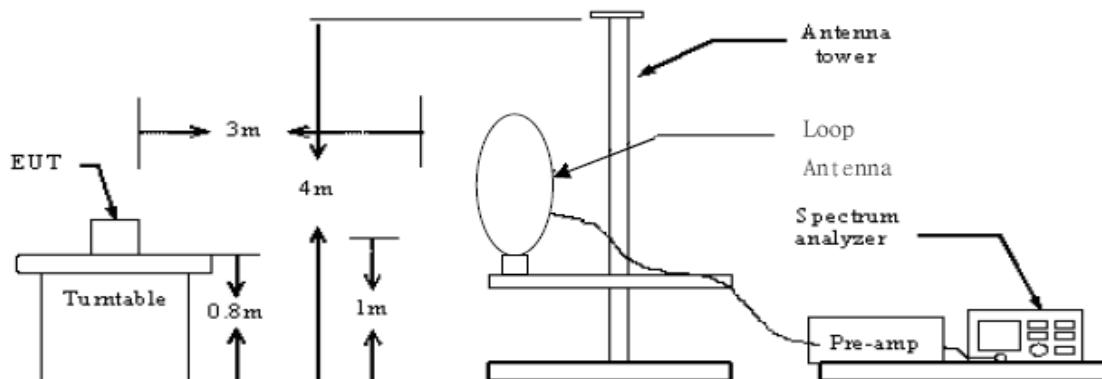
4. RADIATED EMISSION MEASUREMENT

4.1. Test Equipment

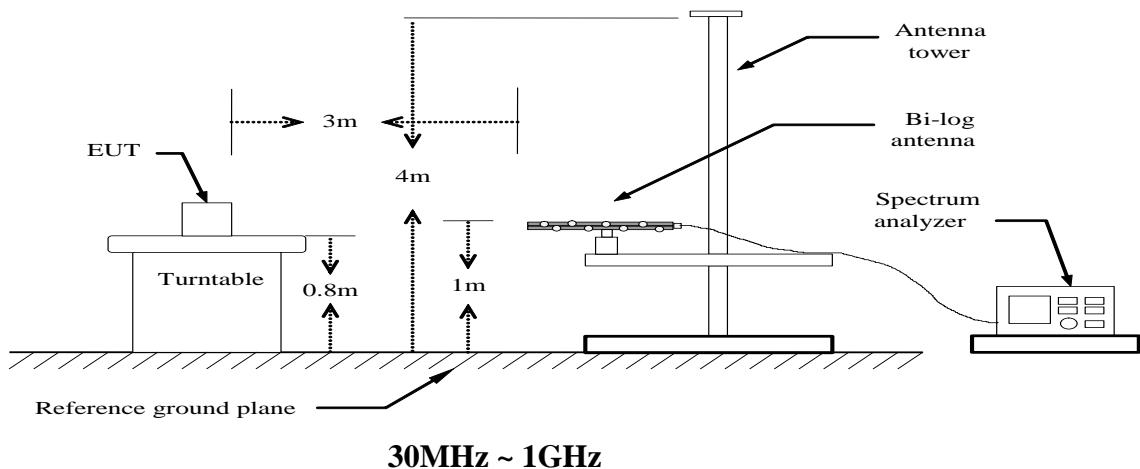
The following test equipments are used during the radiated emission measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2013-06-18	2014-06-17
2	Amplifier	SCHAFFNER	COA9231A	18667	2013-06-18	2014-06-17
3	Amplifier	Agilent	8449B	3008A02120	2013-06-16	2014-06-15
4	Amplifier	MITEQ	AMF-6F-2604 00	9121372	2013-06-16	2014-06-15
5	Spectrum Analyzer	Agilent	E4407B	MY41440292	2013-06-16	2014-06-15
6	Signal analyzer	Agilent	E4448A(External mixers to 40GHz)	US44300469	2013-06-16	2014-06-15
7	Loop Antenna	R&S	HFH2-Z2	860004/001	2013-06-18	2014-06-17
8	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2013-06-10	2014-06-09
9	Horn Antenna	EMCO	3115	6741	2013-06-10	2014-06-09
10	Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	2013-06-10	2014-06-09
11	RF Cable-R03m	Jye Bao	RG142	CB021	2013-06-18	2014-06-17
12	RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	2013-06-18	2014-06-17

4.2. Block Diagram of Test Setup



9KHz ~ 30MHz



4.3.Radiated Emission Limit

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		dB(μ V/m)	Remark
0.009~30MHz	3	103.5	Quasi-peak
30~88	3	40.0	Quasi-peak
88~216	3	43.5	Quasi-peak
216~960	3	46.0	Quasi-peak
960~1000	3	54.0	Quasi-peak

Remark: (1) Emission level $\text{dB}_{\mu\text{V/m}}$ for $0.009\text{~}30\text{MHz} = 20\log(15) + 40\log(300/3)\text{dB}_{\mu\text{V/m}}$;
Calculated according FCC 18.305&ANSI C63.10.

- (2) The smaller limit shall apply at the cross point between two frequency bands.
- (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

4.4.EUT Configuration on Measurement

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

4.5.Operating Condition of EUT

- (1) Setup the EUT as shown in Section 4.2.
- (2) Let the EUT work in worst test mode (Mode 1) and measure it.

4.6.Measuring Setting

Receiver Parameter	Setting
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 100kHz for QP

4.7. Test Procedure

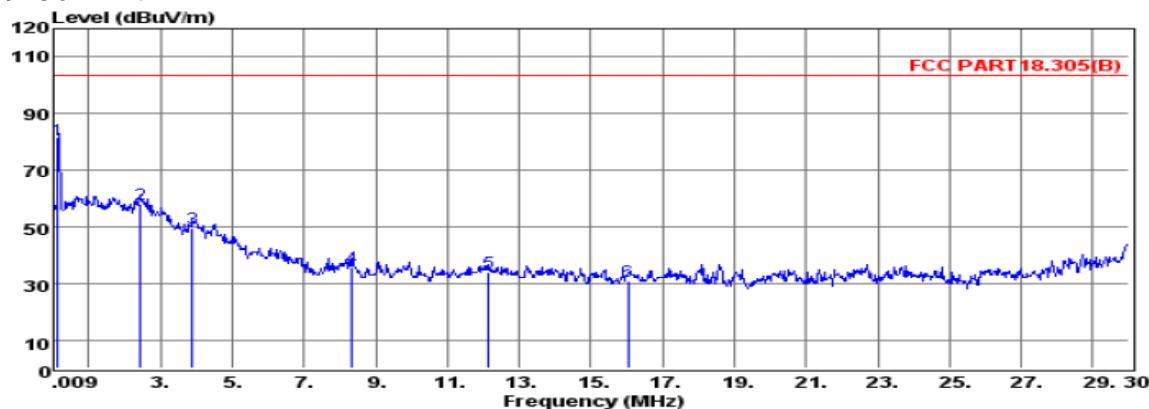
1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 m to 4 m) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.
EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated by-log antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2009 on radiated emission measurement.

4.8. Test Results

PASS.

Only report the worst test data(Mode 1) as following page.

0.009~30MHz:



Env. / Ins:

24 °C / 56%

EUT:

Wireless Charging Transmitter

M/N:

M200

Power Rating:

AC 120V/60Hz

Test Mode:

Mode 1

Operator:

ANDY

Memo:

pol:

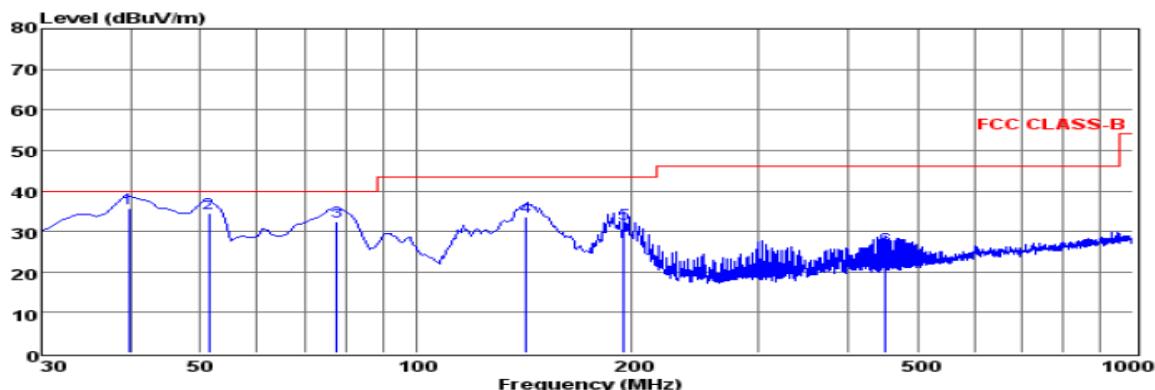
Freq	Reading	CabLoss	Antfac	Measured	Limit	Over	Remark
MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	0.14	57.37	0.01	23.47	80.85	103.50	-22.65
2	2.44	36.66	0.09	21.17	57.92	103.50	-45.58
3	3.88	27.88	0.14	21.63	49.65	103.50	-53.85
4	8.35	12.57	0.29	22.98	35.84	103.50	-67.66
5	12.16	9.09	0.41	24.26	33.76	103.50	-69.74
6	16.02	4.86	0.54	25.60	31.00	103.50	-72.50

Note: 1. All readings are Quasi-peak values.

2. Measured= Reading + Antenna Factor + Cable Loss

3. The emission that ate 20db blow the official limit are not reported

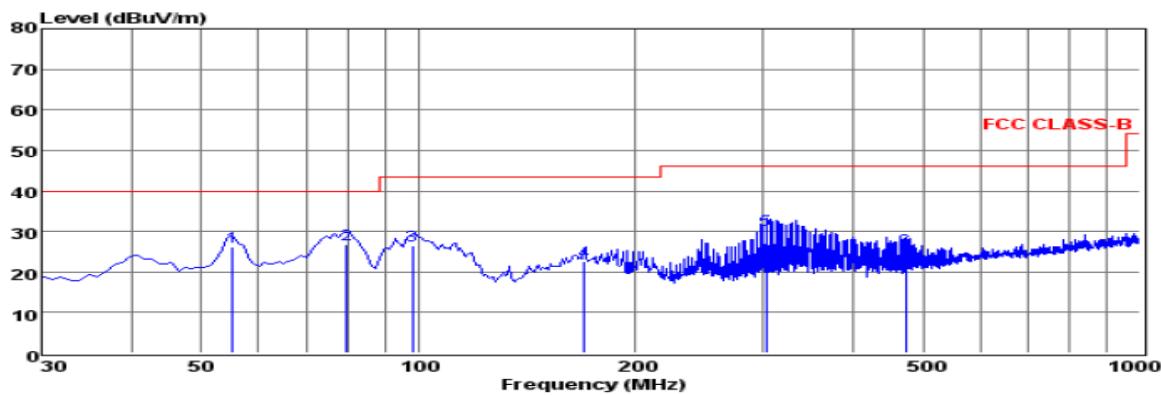
30~1000MHz:



Env. / Ins: 24 °C / 56%
 EUT: Wireless Charging Transmitter
 M/N: M200
 Power Rating: AC 120V / 60Hz
 Test Mode: Mode 1
 Operator: ANDY
 Memo:
 pol: VERTICAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	39.70	21.67	0.38	13.50	35.55	40.00	-4.45	QP
2	51.34	20.73	0.54	13.19	34.46	40.00	-5.54	QP
3	77.53	23.75	0.47	8.17	32.39	40.00	-7.61	QP
4	142.52	24.72	0.71	8.21	33.64	43.50	-9.86	QP
5	194.90	20.34	0.96	10.56	31.86	43.50	-11.64	QP
6	450.98	8.80	1.35	15.58	25.73	46.00	-20.27	QP

Note: 1. All readings are Quasi-peak values.
 2. Measured= Reading + Antenna Factor + Cable Loss
 3. The emission that ate 20db blow the official limit are not reported



Env. / Ins: 24 °C / 56%
 EUT: Wireless Charging Transmitter
 M/N: M200
 Power Rating: AC 120V / 60Hz
 Test Mode: Mode 1
 Operator: ANDY
 Memo:
 pol: HORIZONTAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	55.22	12.76	0.46	13.01	26.23	40.00	-13.77	QP
2	79.47	17.70	0.65	8.46	26.81	40.00	-13.19	QP
3	97.90	12.80	0.61	13.03	26.44	43.50	-17.06	QP
4	169.68	12.98	0.80	8.96	22.74	43.50	-20.76	QP
5	303.54	16.12	1.03	13.11	30.26	46.00	-15.74	QP
6	473.29	8.31	1.38	15.91	25.60	46.00	-20.40	QP

Note: 1. All readings are Quasi-peak values.
 2. Measured= Reading + Antenna Factor + Cable Loss
 3. The emission that ate 20db blow the official limit are not reported

5. MANUFACTURER/ APPROVAL HOLDER DECLARATION

The following Series model(s):

--	--	--	--
----	----	----	----

Belong to the tested device:

Product description : Wireless Charging Transmitter

Model name : M200

Remark: No additional models were tested.

-----THE END OF REPORT-----