

APPLICATION FOR VERIFICATION
On Behalf of
SHENZHEN AVATARCONTROLS CO., LTD.

Wireless Charger

Model No.: AFCC01

FCC ID: 2ANJP-AFCC01

Prepared for : SHENZHEN AVATARCONTROLS CO., LTD.
Address : Room 1008, Weixing building, Keyuan Road Nanshan district, Shenzhen, Guangdong, China, 518000

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Report No. : ATE20172264
Date of Test : Nov. 19, 2017--Nov. 29, 2017
Date of Report : Nov. 30, 2017

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Test Report Declaration

Applicant& address : SHENZHEN AVATARCONTROLS CO., LTD.
Room 1008, Weixing building, Keyuan Road Nanshan district,
Shenzhen, Guangdong, China, 518000

Manufacturer& address : Shenzhen Xinyixin Technology Co., Ltd
Building A17, Fuqiao 3rd Industrial Zone, Fuyong St., Baoan
District, Shenzhen, Guangdong, China(Mainland)

Product : Wireless Charger

Model No. : AFCC01

Trade name : 

AVATARCONTROLS

Measurement Procedure Used:

FCC CFR47 Part 15 Subpart C Section 15.207 and 15.209, 2.1049
ANSI C63.10: 2013

The device described above is tested by Shenzhen Accurate Technology Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits both radiated and conducted emissions. The measurement results are contained in this test report and Shenzhen Accurate Technology Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Shenzhen Accurate Technology Co., Ltd.

Date of Test : Nov. 19, 2017--Nov. 29, 2017
Date of Report : Nov. 30, 2017

Prepared by : 
(Tim, Testing Engineer)

Approved & Authorized Signer : 
(Sean Liu, Manager)

1. TEST RESULTS SUMMARY

Test Items	Test Standard	Test Results
Power Line Conducted Emission	FCC Part 15.207	Pass
Radiated Emission	FCC Part 15.209	Pass
Occupied bandwidth	FCC Part 2.1049	Pass

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

		Wireless Charger
Frequency	:	110-205kHz
Modulation Type	:	ASK
Type of Antenna	:	Coil Antenna
Power Supply	:	DC 24V(Powered by USB Power Socket)

2.2. Special Accessory and Auxiliary Equipment

1. USB Power Socket: Model: AFC01US
 (provided by customer) Input: AC 120V/60Hz
 OUTPUT: 24V or 5V

2. Samsung Mobile phone: Model: S7
 (provided by Laboratory)

2.3. Description of Test Facility

EMC Lab	:	Recognition of accreditation by Federal Communications Commission (FCC) The Designation Number is CN1189 The Registration Number is 708358 Listed by Innovation, Science and Economic Development Canada (ISED) The Registration Number is 5077A-2 Accredited by China National Accreditation Service for Conformity Assessment (CNAS) The Registration Number is CNAS L3193 Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 4297.01
Name of Firm	:	Shenzhen Accurate Technology Co., Ltd
Site Location	:	1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

2.4. Measurement Uncertainty

Conducted emission expanded uncertainty	:	U=2.23dB, k=2
Power disturbance expanded uncertainty	:	U=2.92dB, k=2
Radiated emission expanded uncertainty (9kHz-30MHz)	:	U=3.08dB, k=2
Radiated emission expanded uncertainty (30MHz-1000MHz)	:	U=4.42dB, k=2
Radiated emission expanded uncertainty (Above 1GHz)	:	U=4.06dB, k=2

3. MEASURING DEVICE AND TEST EQUIPMENT

3.1. For Radiated Emission Measurement

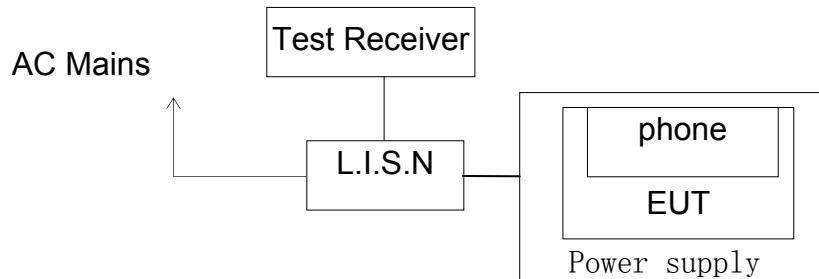
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan.07, 2017	1 Year
2.	Spectrum Analyzer	Rohde&Schwarz	FSV40	101495	Jan.07, 2017	1 Year
3.	Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan.07, 2017	1 Year
4.	Test Receiver	Rohde& Schwarz	ESPI	100396/003	Jan.07, 2017	1 Year
5.	Test Receiver	Rohde& Schwarz	ESPI	101526/003	Jan.07, 2017	1 Year
6.	Test Receiver	Rohde& Schwarz	ESR	101817	Jan.07, 2017	1 Year
7.	Bilog Antenna	Schwarzbeck	VULB9163	9163-194	Jan.13, 2017	1 Year
8.	Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan.13, 2017	1 Year
9.	Log.-Per.Antenna	Schwarzbeck	VUSLP 9111B	9111B-074	Jan.13, 2017	1 Year
10.	Biconical Broad Band Antenna	Schwarzbeck	VHBB 9124+BBA 9106	9124-617	Jan.13, 2017	1 Year
11.	Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan.13, 2017	1 Year
12.	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan.13, 2017	1 Year
13.	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1067	Jan.13, 2017	1 Year
14.	Vertical Active Monopole Antenna	Schwarzbeck	VAMP 9243	9243-370	Jan.13, 2017	1 Year
15.	RF Switching Unit+PreAMP	Compliance Direction	RSU-M2	38322	Jan.07, 2017	1 Year
16.	Pre-Amplifier	Agilent	8447D	294A10619	Jan.07, 2017	1 Year
17.	Pre-Amplifier	Rohde&Schwarz	CBLU11835 40-01	3791	Jan.07, 2017	1 Year
18.	50 Coaxial Switch	Anritsu Corp	MP59B	6200237248	Jan.07, 2017	1 Year
19.	50 Coaxial Switch	Anritsu Corp	MP59B	6200506474	Jan.07, 2017	1 Year
20.	RF Coaxial Cable	Schwarzbeck	N-5m	No.1	Jan.07, 2017	1 Year
21.	RF Coaxial Cable	Schwarzbeck	N-1m	No.6	Jan.07, 2017	1 Year
22.	RF Coaxial Cable	Schwarzbeck	N-1m	No.7	Jan.07, 2017	1 Year
23.	RF Coaxial Cable	SUHNER	N-3m	No.8	Jan.07, 2017	1 Year
24.	RF Coaxial Cable	RESENBERGER	N-3.5m	No.9	Jan.07, 2017	1 Year
25.	RF Coaxial Cable	SUHNER	N-6m	No.10	Jan.07, 2017	1 Year
26.	RF Coaxial Cable	RESENBERGER	N-12m	No.11	Jan.07, 2017	1 Year
27.	RF Coaxial Cable	RESENBERGER	N-0.5m	No.12	Jan.07, 2017	1 Year
28.	RF Coaxial Cable	SUHNER	N-2m	No.13	Jan.07, 2017	1 Year
29.	RF Coaxial Cable	SUHNER	N-0.5m	No.15	Jan.07, 2017	1 Year
30.	RF Coaxial Cable	SUHNER	N-2m	No.16	Jan.07, 2017	1 Year
31.	RF Coaxial Cable	RESENBERGER	N-6m	No.17	Jan.07, 2017	1 Year

3.2.The Equipment Used to Measure Conducted Disturbance (L.I.S.N)

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCS30	100307	Jan.07, 2017	1 Year
2.	Test Receiver	Rohde & Schwarz	ESPI3	100396/003	Jan.07, 2017	1 Year
3.	Test Receiver	Rohde & Schwarz	ESPI3	101526/003	Jan.07, 2017	1 Year
4.	L.I.S.N.	Schwarzbeck	NLSK8126	8126431	Jan.07, 2017	1 Year
5.	L.I.S.N.	Rohde & Schwarz	ESH3-Z5	100305	Jan.07, 2017	1 Year
6.	L.I.S.N.	Rohde & Schwarz	ESH3-Z5	100310	Jan.07, 2017	1 Year
7.	L.I.S.N.	Rohde & Schwarz	ESH3-Z6	100132	Jan.07, 2017	1 Year
8.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100305	Jan.07, 2017	1 Year
9.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100312	Jan.07, 2017	1 Year
10.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100815	Jan.07, 2017	1 Year
11.	50Ω Coaxial Switch	Anritsu Corp	MP59B	6200283936	Jan.07, 2017	1 Year
12.	50Ω Coaxial Switch	Anritsu Corp	MP59B	6200283933	Jan.07, 2017	1 Year
13.	50Ω Coaxial Switch	Anritsu Corp	MP59B	6200506474	Jan.07, 2017	1 Year
14.	VOLTAGE PROBE	Schwarzbeck	TK9416	N/A	Jan.07, 2017	1 Year
15.	RF CURRENT PROBE	Rohde & Schwarz	EZ-17	100048	Jan.07, 2017	1 Year
16.	8-Wire Impedance Stabilisation Network	Schwarzbeck	CAT5 8158	8158-0035	Jan.07, 2017	1 Year
17.	RF Coaxial Cable	SUHNER	N-2m	No.2	Jan.07, 2017	1 Year
18.	RF Coaxial Cable	SUHNER	N-2m	No.3	Jan.07, 2017	1 Year
19.	RF Coaxial Cable	SUHNER	N-2m	No.14	Jan.07, 2017	1 Year

4. POWER LINE CONDUCTED MEASUREMENT

4.1. Block Diagram of Test Setup



(EUT: Wireless Charger)

4.2. Power Line Conducted Emission Measurement Limits

Frequency (MHz)	Limit dB(μ V)	
	Quasi-peak Level	Average Level
0.15 - 0.50	66.0 – 56.0 *	56.0 – 46.0 *
0.50 - 5.00	56.0	46.0
5.00 - 30.00	60.0	50.0

NOTE1: The lower limit shall apply at the transition frequencies.
NOTE2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.

4.3. 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.

4.4. Operating Condition of EUT

4.4.1. Setup the EUT and simulator as shown as Section 4.1.

4.4.2. Turn on the power of all equipment.

4.4.3. Let the EUT work in test mode and measure it.

4.5. Test Procedure

The EUT is put on the plane 0.8 m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines 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 ANSI C63.10: 2013 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

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

4.6. DATA SAMPLE

Frequency (MHz)	Quasi Peak Level (dB μ V)	Average Level (dB μ V)	Transducer value (dB)	QuasiPeak Result (dB μ V)	Average Result (dB μ V)	Quasi Peak Limit (dB μ V)	Average Limit (dB μ V)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XX	29.4	18.3	11.1	40.5	29.4	56.0	56.0	15.5	16.6	Pass

Transducer value = Insertion loss of LISN + Cable Loss

Result = Quasi-peak Level/Average Level + Transducer value

Limit = Limit stated in standard

Calculation Formula:

Margin = Limit – Reading level value – Transducer value

4.7. Power Line Conducted Emission Measurement Results

PASS.

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

Test mode : wireless Charging(worse case)								
Test Voltage: 120V/60Hz								
MEASUREMENT RESULT: "AFC0009_fin"								
11/21/2017 4:16PM								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.195000	35.10	10.5	64	28.7	QP	N	GND	
0.385000	36.00	10.7	58	22.2	QP	N	GND	
0.520000	37.70	10.7	56	18.3	QP	N	GND	
0.690000	28.10	10.8	56	27.9	QP	N	GND	
1.210000	33.20	10.9	56	22.8	QP	N	GND	
18.670000	27.20	11.4	60	32.8	QP	N	GND	
MEASUREMENT RESULT: "AFC0009_fin2"								
11/21/2017 4:16PM								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.195000	29.00	10.5	54	24.8	AV	N	GND	
0.380000	30.20	10.7	48	18.1	AV	N	GND	
0.520000	27.00	10.7	46	19.0	AV	N	GND	
0.690000	19.50	10.8	46	26.5	AV	N	GND	
1.210000	22.90	10.9	46	23.1	AV	N	GND	
18.670000	22.20	11.4	50	27.8	AV	N	GND	
MEASUREMENT RESULT: "AFC0011_fin"								
11/21/2017 4:26PM								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.165000	39.70	10.5	65	25.5	QP	L1	GND	
0.425000	32.70	10.7	57	24.6	QP	L1	GND	
0.740000	28.60	10.8	56	27.4	QP	L1	GND	
1.270000	26.90	10.9	56	29.1	QP	L1	GND	
1.905000	25.00	11.0	56	31.0	QP	L1	GND	
16.090000	24.10	11.4	60	35.9	QP	L1	GND	
MEASUREMENT RESULT: "AFC0011_fin2"								
11/21/2017 4:26PM								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.165000	27.90	10.5	55	27.3	AV	L1	GND	
0.425000	25.30	10.7	47	22.0	AV	L1	GND	
0.740000	22.50	10.8	46	23.5	AV	L1	GND	
1.270000	19.30	10.9	46	26.7	AV	L1	GND	
1.905000	16.70	11.0	46	29.3	AV	L1	GND	
16.090000	17.50	11.4	50	32.5	AV	L1	GND	

Emissions attenuated more than 20 dB below the permissible value are not reported.

The spectral diagrams are attached as below.

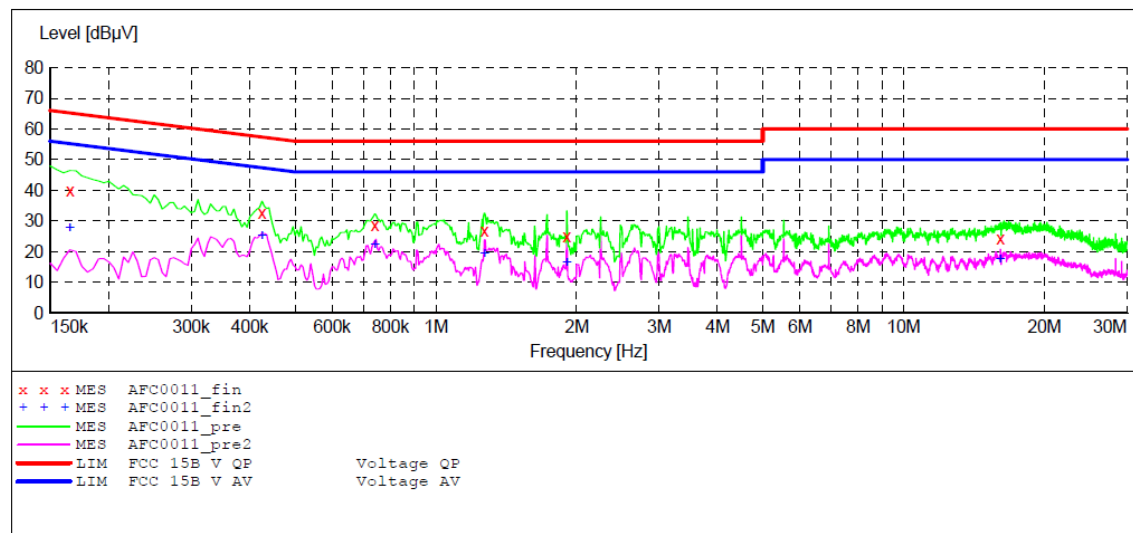
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART 15 B

EUT: Wireless Charger M/N:AFCC01
 Manufacturer: Xinyixin
 Operating Condition: Charging
 Test Site: 1#Shielding Room
 Operator: star
 Test Specification: L 120V/60Hz
 Comment: Report NO.:ATE20172164
 Start of Test: 11/21/2017 / 4:24:39PM

SCAN TABLE: "V 9K-30MHz fin"

Short Description: SUB STD VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 9.0 kHz 150.0 kHz 100.0 Hz QuasiPeak 1.0 s 200 Hz NSLK8126 2008
 Average
 150.0 kHz 30.0 MHz 5.0 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "AFC0011_fin"

11/21/2017 4:26PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.165000	39.70	10.5	65	25.5	QP	L1	GND
0.425000	32.70	10.7	57	24.6	QP	L1	GND
0.740000	28.60	10.8	56	27.4	QP	L1	GND
1.270000	26.90	10.9	56	29.1	QP	L1	GND
1.905000	25.00	11.0	56	31.0	QP	L1	GND
16.090000	24.10	11.4	60	35.9	QP	L1	GND

MEASUREMENT RESULT: "AFC0011_fin2"

11/21/2017 4:26PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.165000	27.90	10.5	55	27.3	AV	L1	GND
0.425000	25.30	10.7	47	22.0	AV	L1	GND
0.740000	22.50	10.8	46	23.5	AV	L1	GND
1.270000	19.30	10.9	46	26.7	AV	L1	GND
1.905000	16.70	11.0	46	29.3	AV	L1	GND
16.090000	17.50	11.4	50	32.5	AV	L1	GND

ACCURATE TECHNOLOGY CO.,LTD

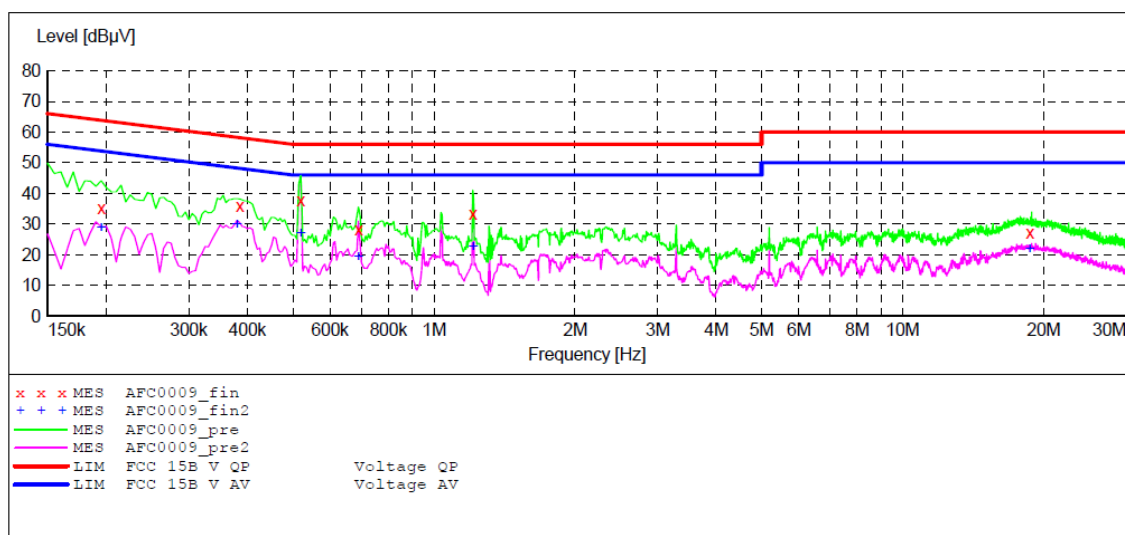
CONDUCTED EMISSION STANDARD FCC PART 15 B

EUT: Wireless Charger M/N:AFCC01
 Manufacturer: Xinyixin
 Operating Condition: Charging
 Test Site: 1#Shielding Room
 Operator: star
 Test Specification: N 120V/60Hz
 Comment: Report NO.:ATE20172164
 Start of Test: 11/21/2017 / 4:12:18PM

SCAN TABLE: "V 9K-30MHz fin"

Short Description: SUB STD VTERM2 1.70

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak Average	1.0 s	200 Hz	NSLK8126 2008
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak Average	1.0 s	9 kHz	NSLK8126 2008



MEASUREMENT RESULT: "AFC0009_fin"

11/21/2017 4:16PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.195000	35.10	10.5	64	28.7	QP	N	GND
0.385000	36.00	10.7	58	22.2	QP	N	GND
0.520000	37.70	10.7	56	18.3	QP	N	GND
0.690000	28.10	10.8	56	27.9	QP	N	GND
1.210000	33.20	10.9	56	22.8	QP	N	GND
18.670000	27.20	11.4	60	32.8	QP	N	GND

MEASUREMENT RESULT: "AFC0009_fin2"

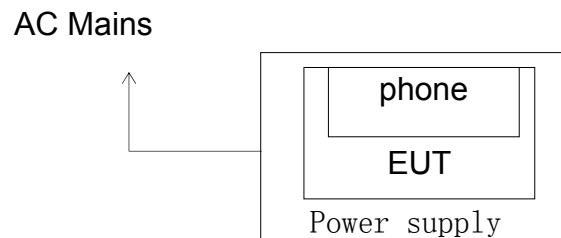
11/21/2017 4:16PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.195000	29.00	10.5	54	24.8	AV	N	GND
0.380000	30.20	10.7	48	18.1	AV	N	GND
0.520000	27.00	10.7	46	19.0	AV	N	GND
0.690000	19.50	10.8	46	26.5	AV	N	GND
1.210000	22.90	10.9	46	23.1	AV	N	GND
18.670000	22.20	11.4	50	27.8	AV	N	GND

5. RADIATED EMISSION MEASUREMENT

5.1. Block Diagram of Test

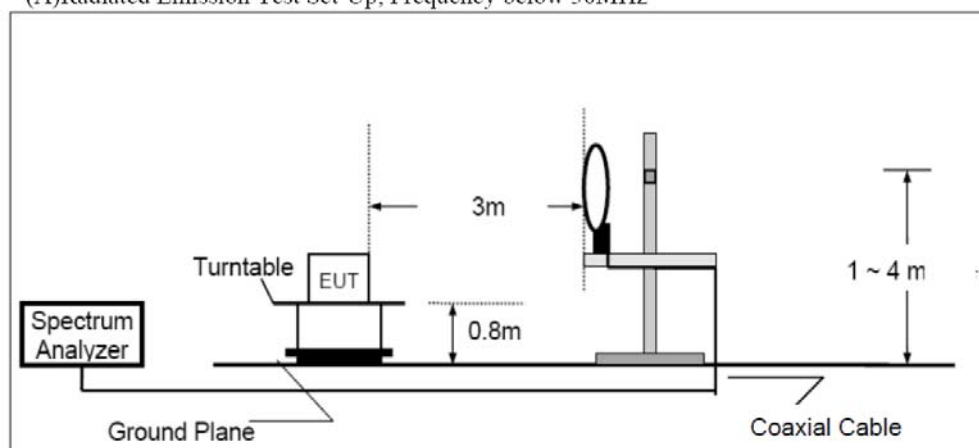
5.1.1. Block diagram of connection between the EUT and simulators



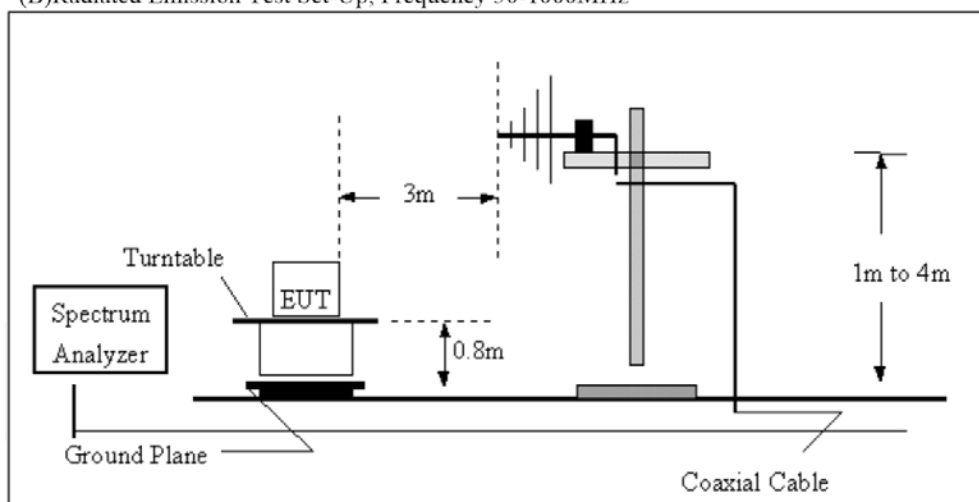
(EUT: Wireless Charger)

5.1.2. Block diagram of test setup (In chamber)

(A) Radiated Emission Test Set-Up, Frequency below 30MHz



(B) Radiated Emission Test Set-Up, Frequency 30-1000MHz



5.2. Radiated Emission Limit (Class B)

Frequency (MHz)	Field Strength Limitation		Field Strength Limitation at 3m Measurement Dist	
	(uV/m)	Dist	(uV/m)	(dBuV/m)
0.009 – 0.490	2400 / F(KHz)	300m	10000 * 2400/F(KHz)	20log 2400/F(KHz) + 80
0.490 – 1.705	24000 / F(KHz)	30m	100 * 24000/F(KHz)	20log 24000/F(KHz) + 40
1.705 – 30.00	30	30m	100 * 30	20log 30 + 40
30.0 – 88.0	100	3m	100	20log 100
88.0 – 216.0	150	3m	150	20log 150
216.0 – 960.0	200	3m	200	20log 200
Above 960.0	500	3m	500	20log 500

Limit: $2400/125=19.2\mu\text{V/m}@300\text{m}$

Distance Correction Factor=40log(test distance/specific distance)

5.3. Manufacturer

The following equipments 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.

5.3.1. Wireless Charger (EUT)

Model Number: AFCC01

Manufacturer: Shenzhen Xinyixin Technology Co., Ltd

5.4. Operating Condition of EUT

5.4.1. Setup the EUT and simulator as shown as Section 5.1.

5.4.2. Turn on the power of all equipment.

5.4.3. Let the EUT work in test mode and measure it.

5.5. DATA SAMPLE

Frequency (MHz)	Reading (dB μV)	Factor (dB/m)	Result (dB $\mu\text{V/m}$)	Limit (dB $\mu\text{V/m}$)	Margin (dB)	Remark
X.XX	49.83	-22.03	27.80	43.50	-15.70	QP

Frequency(MHz) = Emission frequency in MHz

Reading(dB μV) = Uncorrected Analyzer/Receiver reading

Factor (dB/m)= Antenna factor + Cable Loss – Amplifier gain

Result(dB $\mu\text{V/m}$) = Reading + Factor

Limit (dB $\mu\text{V/m}$)= Limit stated in standard

Margin (dB) = Result(dB $\mu\text{V/m}$) - Limit (dB $\mu\text{V/m}$)

Calculation Formula:

$$\text{Margin(dB)} = \text{Result (dB}\mu\text{V/m)} - \text{Limit(dB}\mu\text{V/m)}$$
$$\text{Result(dB}\mu\text{V/m)} = \text{Reading(dB}\mu\text{V)} + \text{Factor(dB/m)}$$

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the limit.

5.1. Test Procedure

The 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 an 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 bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated emission measurement.

From 9kHz to 30MHz at distance 3m The EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.

From 30MHz to 1000MHz at distance 3m The measuring antenna height varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity. The measurements were performed for both vertical and horizontal antenna polarization.

The final measurement will be performed with an EMI Receiver set to Quasi Peak detector for the frequency bands 9kHz to 90kHz and 110 to 490 kHz where an average detector will be used according to Section 15.209(d)(2).

The final level, expressed in dBuV/m, is arrived at by taking the reading from the EMI receiver(Level dBuV) and adding the antenna correction factor and cable loss factor(Factor dB) to it. This result then has to be compared with the relevant FCC limit. The resolution bandwidth during the measurement is as follows:

9kHz – 150kHz: ResBW:200Hz

150kHz – 30MHz: ResBW:9kHz

The bandwidth of the EMI test receiver (R&S ESCS30) is set at 120kHz from 30MHz to 1000MHz.

5.2. Radiated Emission Noise Measurement Result

PASS.

From 9kHz to 30MHz(Low channel 110kHz)

Frequency (MHz)	Quasi Peak (dB μ V/m)	Detector	Azimuth	Height (cm)	Limit @3m (dB μ V/m)	Margin (dB)
0.110	86.12	AV	176	128	106.8	-20.68
2.21	37.20	QP	355	155	69.5	-32.30
2.59	36.42	QP	228	201	69.5	-33.08
0.110	80.39	AV	208	142	106.8	-26.41
2.66	32.31	QP	35	157	69.5	-37.19
3.56	35.38	QP	38	146	69.5	-34.12

From 9kHz to 30MHz(Low channel 157kHz)

Frequency (MHz)	Quasi Peak (dB μ V/m)	Detector	Azimuth	Height (cm)	Limit @3m (dB μ V/m)	Margin (dB)
0.157	85.48	AV	78	124	103.7	-18.22
2.21	36.20	QP	356	150	69.5	-33.30
2.59	35.42	QP	229	202	69.5	-34.08
0.157	79.87	AV	145	145	103.7	-23.83
2.66	31.31	QP	37	154	69.5	-38.19
3.56	34.38	QP	40	148	69.5	-35.12

From 9kHz to 30MHz(Low channel 205kHz)

Frequency (MHz)	Quasi Peak (dB μ V/m)	Detector	Azimuth	Height (cm)	Limit @3m (dB μ V/m)	Margin (dB)
0.205	82.67	AV	176	128	101.4	-18.73
2.21	37.56	QP	315	158	69.5	-31.94
2.59	36.42	QP	228	101	69.5	-33.08
0.205	75.98	AV	208	112	101.4	-25.42
2.66	31.76	QP	323	137	69.5	-37.74
3.56	36.02	QP	130	121	69.5	-33.48

Part 15 Section 15.31(f)(2) (9kHz-30MHz)

Limit at 3m=Limit at 300m-40*log(3(m)/300(m))

Limit at 3m=Limit at 30m-40*log(3(m)/30(m))



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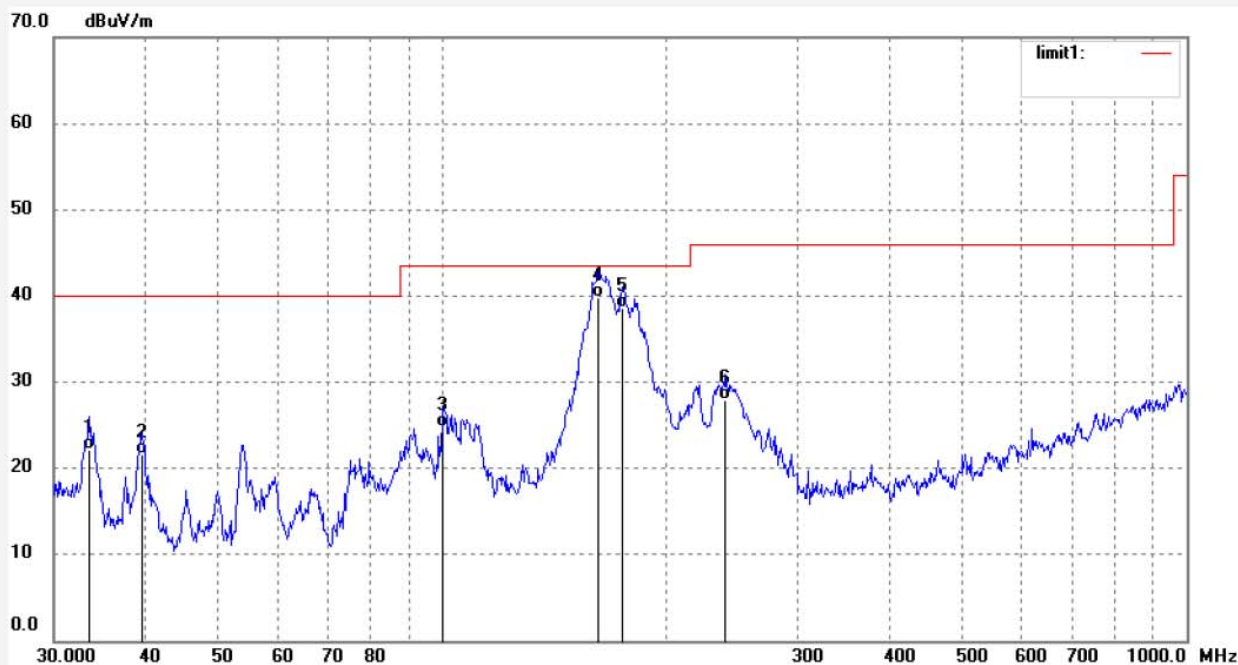
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: star2017 #1139
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Wireless Charger
Mode: Low channel
Model: AFCC01
Manufacturer: Xinyixin

Polarization: Horizontal
Power Source: DC 24V
Date: 2017/11/24
Time: 11:47:22
Engineer Signature: star
Distance: 3m

Note: Report No.:ATE20172264



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	33.4520	43.25	-21.06	22.19	40.00	-17.81	QP			
2	39.4587	45.00	-23.37	21.63	40.00	-18.37	QP			
3	100.1187	52.77	-28.04	24.73	43.50	-18.77	QP			
4	162.0197	66.74	-26.86	39.88	43.50	-3.62	QP			
5	174.4265	65.01	-26.46	38.55	43.50	-4.95	QP			
6	240.1442	51.70	-23.72	27.98	46.00	-18.02	QP			

Job No.: star2017 #1140

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Wireless Charger

Mode: Low channel

Model: AFCC01

Manufacturer: Xinyixin

Polarization: Vertical

Power Source: DC 24V

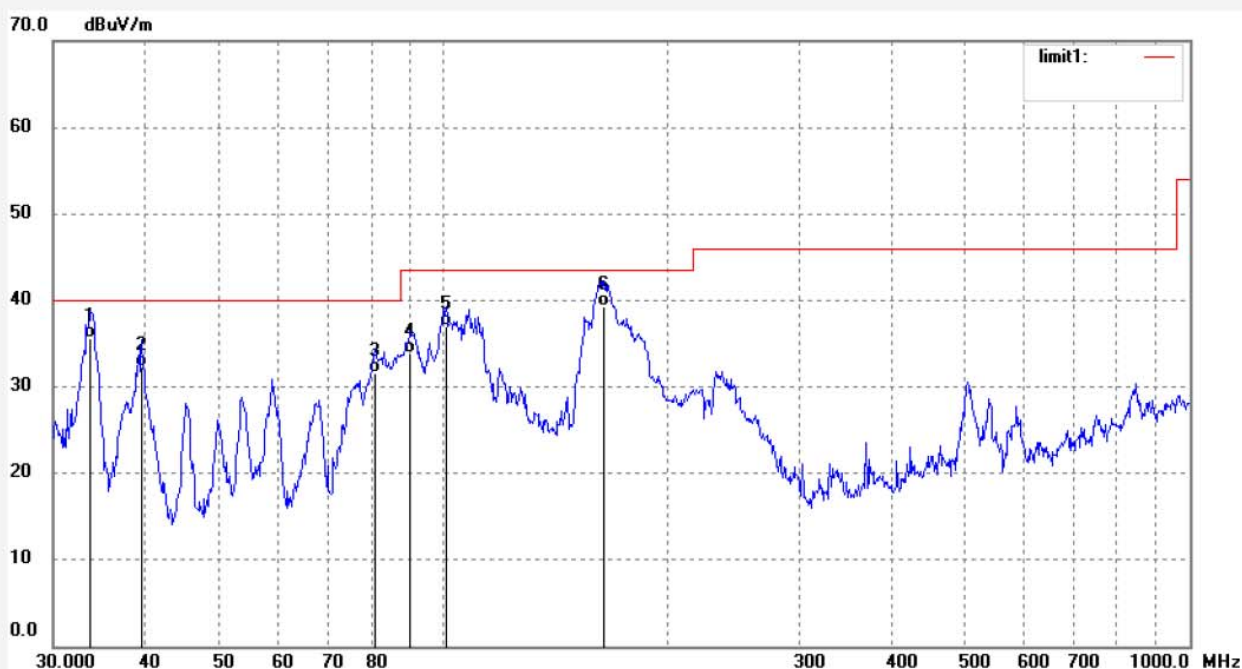
Date: 2017/11/24

Time: 11:48:32

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Distance: 3m

Note: Report No.:ATE20172264

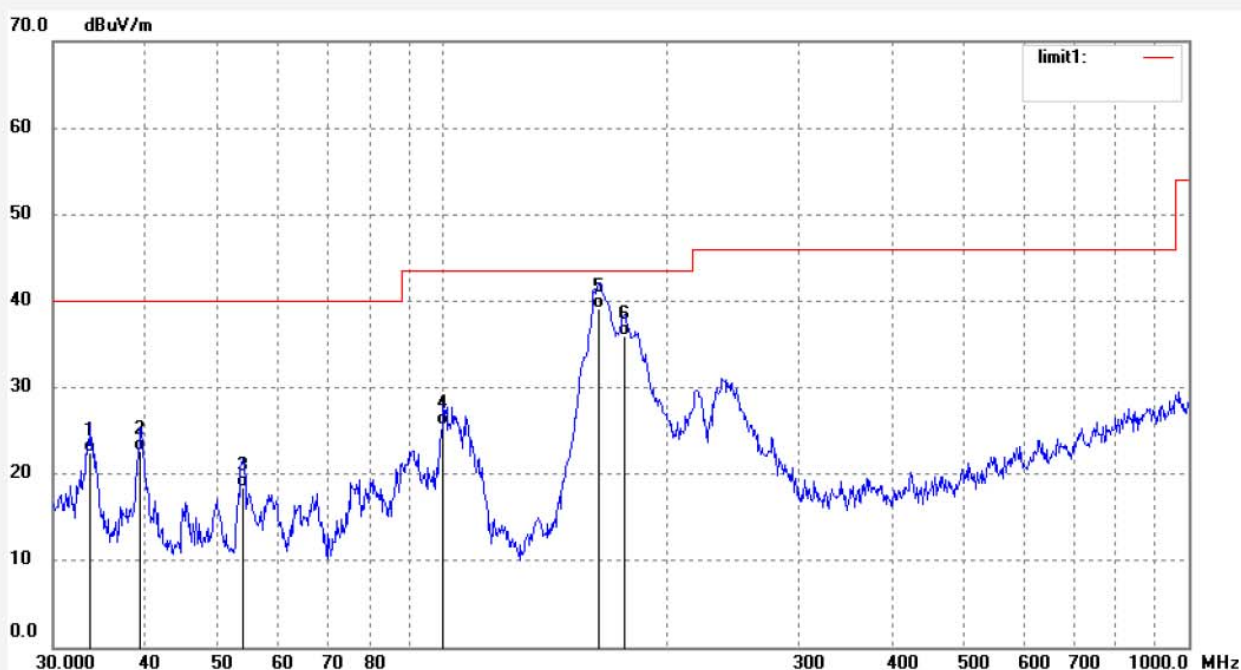


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	33.6880	56.78	-21.12	35.66	40.00	-4.34	QP			
2	39.4587	55.60	-23.37	32.23	40.00	-7.77	QP			
3	81.0885	59.00	-27.42	31.58	40.00	-8.42	QP			
4	90.4196	61.22	-27.42	33.80	43.50	-9.70	QP			
5	100.8247	65.14	-28.05	37.09	43.50	-6.41	QP			
6	164.3129	65.90	-26.61	39.29	43.50	-4.21	QP			

Job No.: star2017 #1142
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Wireless Charger
Mode: Middel channel
Model: AFCC01
Manufacturer: Xinyixin

Polarization: Horizontal
Power Source: DC 24V
Date: 2017/11/24
Time: 11:50:17
Engineer Signature: star
Distance: 3m

Note: Report No.:ATE20172264



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	33.6880	43.67	-21.12	22.55	40.00	-17.45	QP			
2	39.3203	46.01	-23.30	22.71	40.00	-17.29	QP			
3	53.9450	45.38	-26.84	18.54	40.00	-21.46	QP			
4	100.1187	53.68	-28.04	25.64	43.50	-17.86	QP			
5	162.0197	66.00	-26.86	39.14	43.50	-4.36	QP			
6	175.0404	62.40	-26.51	35.89	43.50	-7.61	QP			

Job No.: star2017 #1141

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Wireless Charger

Mode: Middel channel

Model: AFCC01

Manufacturer: Xinyixin

Polarization: Vertical

Power Source: DC 24V

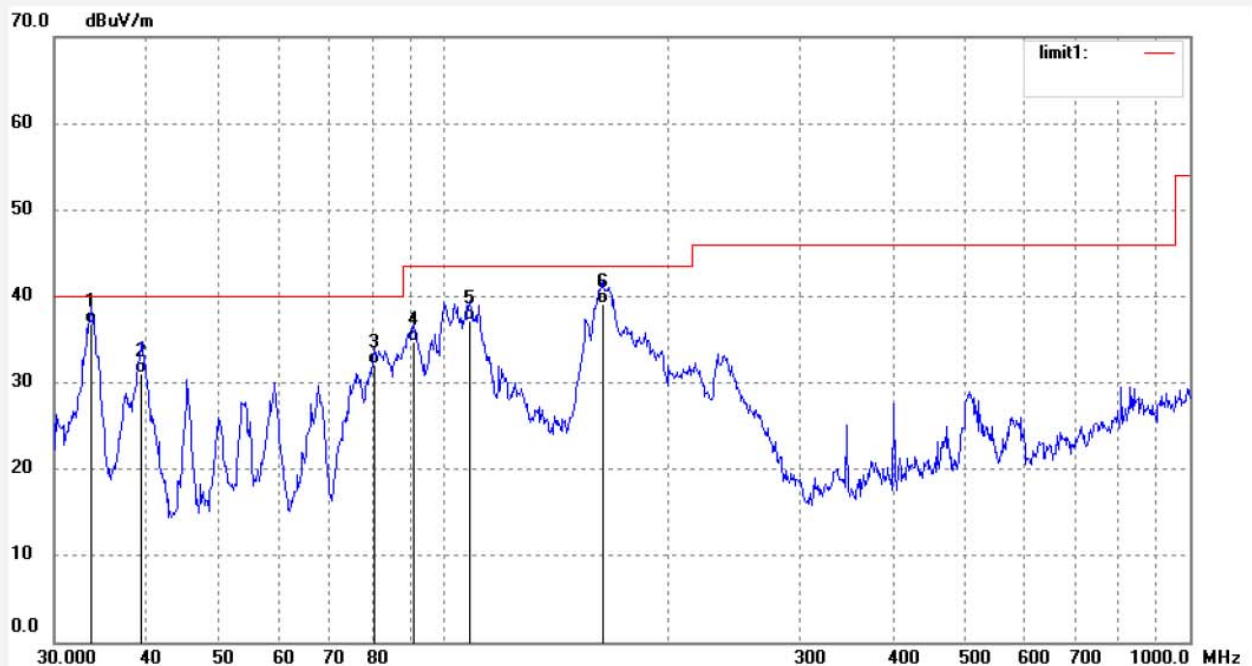
Date: 2017/11/24

Time: 11:49:13

Engineer Signature: star

Distance: 3m

Note: Report No.:ATE20172264



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	33.6880	58.00	-21.12	36.88	40.00	-3.12	QP			
2	39.1824	54.26	-23.24	31.02	40.00	-8.98	QP			
3	80.8041	59.46	-27.40	32.06	40.00	-7.94	QP			
4	91.0574	62.11	-27.41	34.70	43.50	-8.80	QP			
5	108.1647	64.83	-27.60	37.23	43.50	-6.27	QP			
6	163.1622	65.87	-26.73	39.14	43.50	-4.36	QP			



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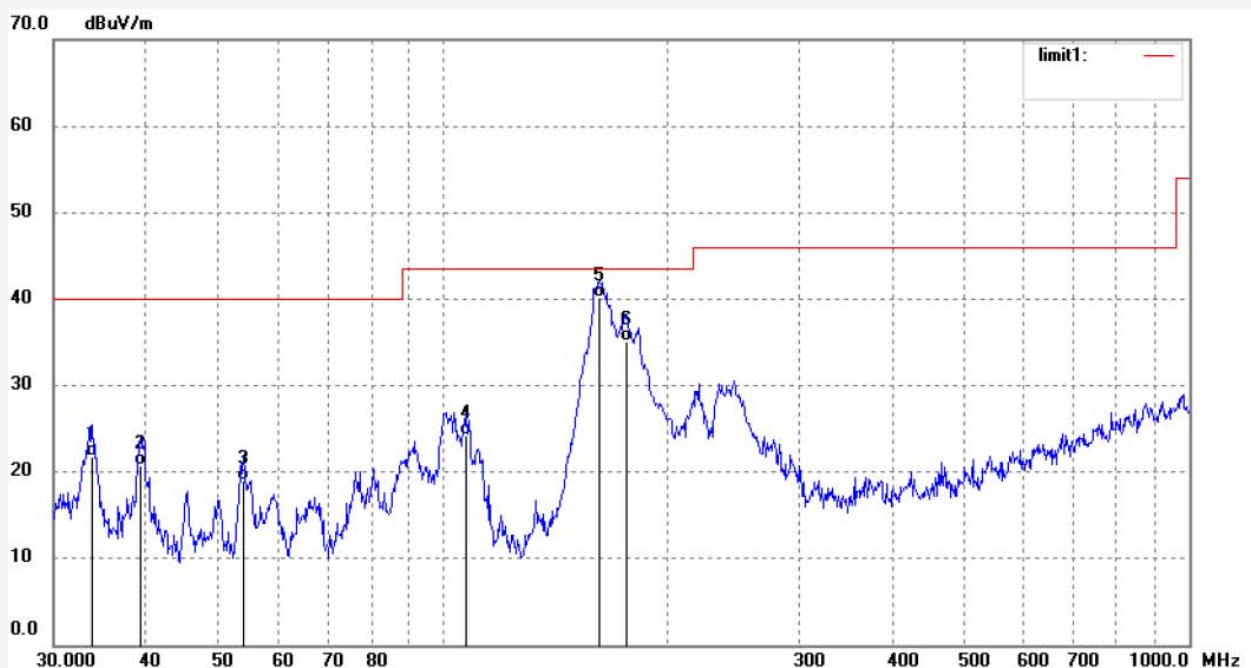
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: star2017 #1143
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Wireless Charger
Mode: High channel
Model: AFCC01
Manufacturer: Xinyixin

Polarization: Horizontal
Power Source: DC 24V
Date: 2017/11/24
Time: 11:50:53
Engineer Signature: star
Distance: 3m

Note: Report No.: ATE20172264



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	33.8066	43.00	-21.16	21.84	40.00	-18.16	QP			
2	39.3203	44.11	-23.30	20.81	40.00	-19.19	QP			
3	53.9450	45.77	-26.84	18.93	40.00	-21.07	QP			
4	107.4073	52.03	-27.73	24.30	43.50	-19.20	QP			
5	162.0197	67.10	-26.86	40.24	43.50	-3.26	QP			
6	176.2747	61.55	-26.39	35.16	43.50	-8.34	QP			



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Job No.: star2017 #1144

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Wireless Charger

Mode: High channel

Model: AFCC01

Manufacturer: Xinyixin

Polarization: Vertical

Power Source: DC 24V

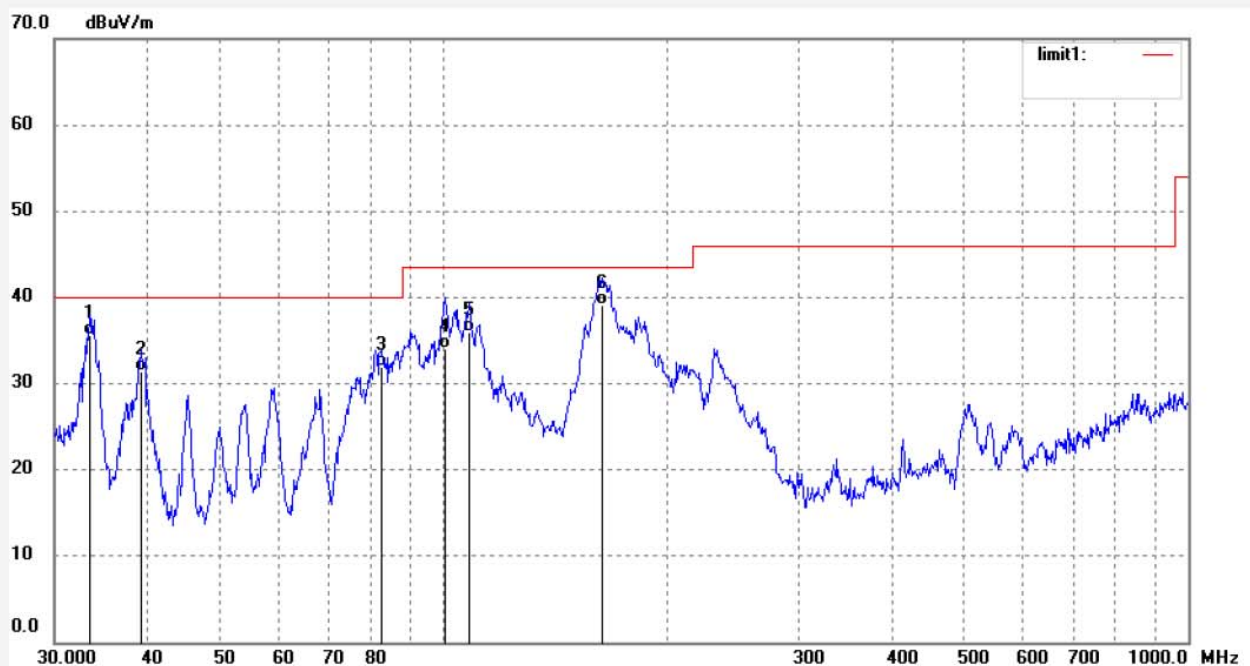
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Engineer Signature: star

Distance: 3m

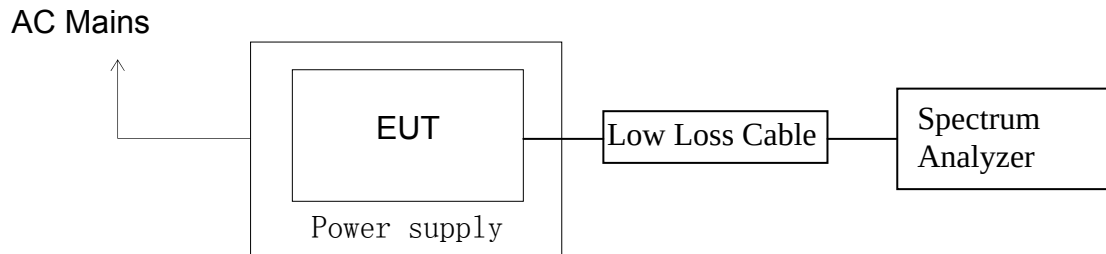
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No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	33.4520	56.73	-21.06	35.67	40.00	-4.33	QP			
2	39.1824	54.62	-23.24	31.38	40.00	-8.62	QP			
3	82.5257	59.33	-27.43	31.90	40.00	-8.10	QP			
4	100.4711	62.06	-28.05	34.01	43.50	-9.49	QP			
5	108.1647	63.50	-27.60	35.90	43.50	-7.60	QP			
6	163.1622	65.81	-26.73	39.08	43.50	-4.42	QP			

6. 99% OCCUPIED BANDWIDTH

6.1. Block Diagram of Test Setup



(EUT: Wireless Charger)

6.2. EUT Configuration on Measurement

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

6.3. Operating Condition of EUT

6.3.1. Setup the EUT and simulator as shown as Section 6.1.

6.3.2. Turn on the power of all equipment.

6.3.3. Let the EUT work in TX modes measure it. The transmit frequency are 110-205kHz. We select 110kHz, 157kHz and 205kHz TX frequency to transmit.

6.4. Test Procedure

6.4.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

6.4.2. Set RBW of spectrum analyzer to 10 Hz and VBW to 30 Hz.

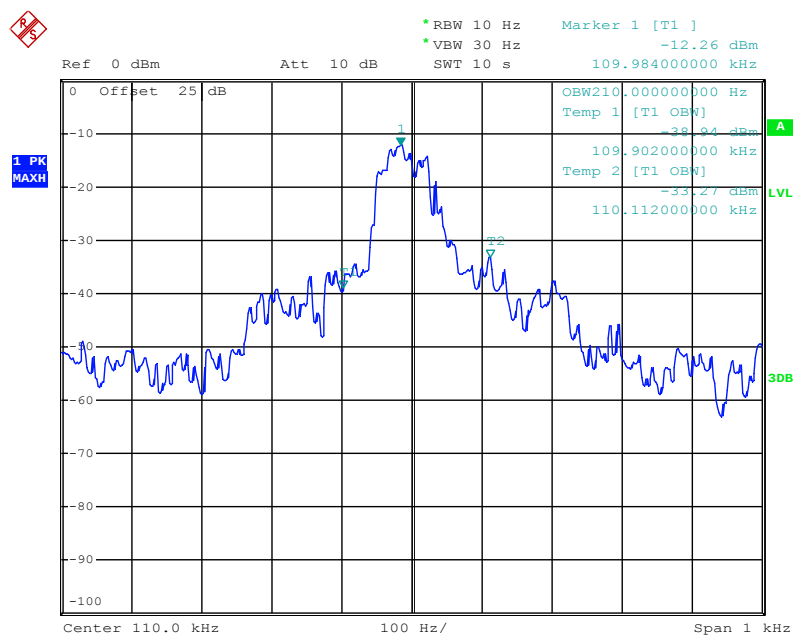
6.4.3. Set SPA "Meas" function, Select "Occupied Bandwidth" function, Select "99% Power Bandwidth". The frequency of the upper and lower markers indicating the edges of the transmitters "99% Power" emission bandwidth shall be recorded to automate by SPA.

6.5.Measurement Result

Frequency (kHz)	99% Occupied Bandwidth (Hz)
110	210
157	200
205	212

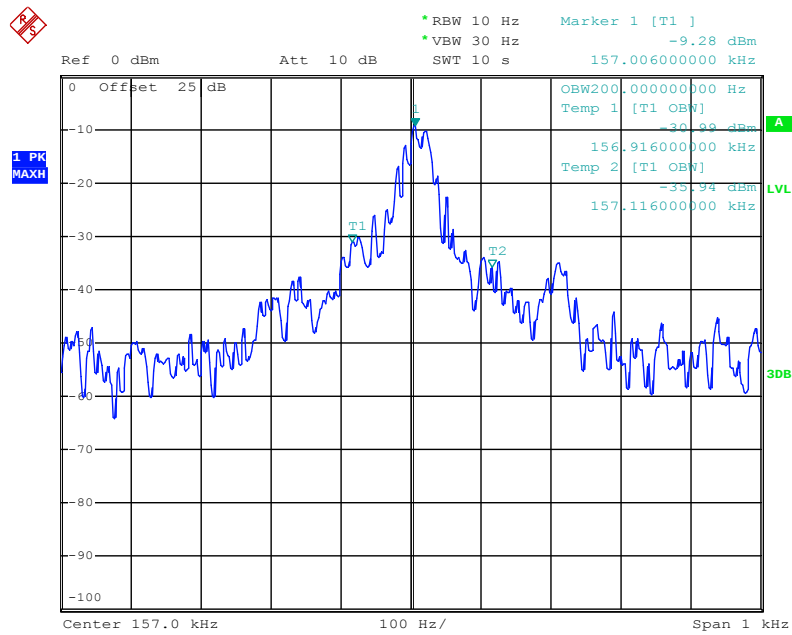
The spectrum analyzer plots are attached as below.

Low Channel



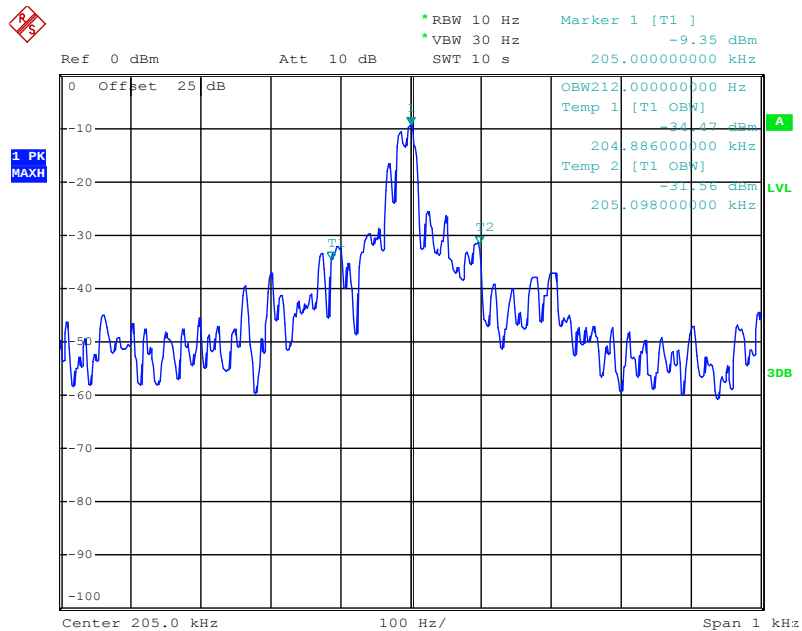
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Middle Channel



Date: 23.NOV.2017 15:35:23

High Channel



Date: 23.NOV.2017 16:09:09

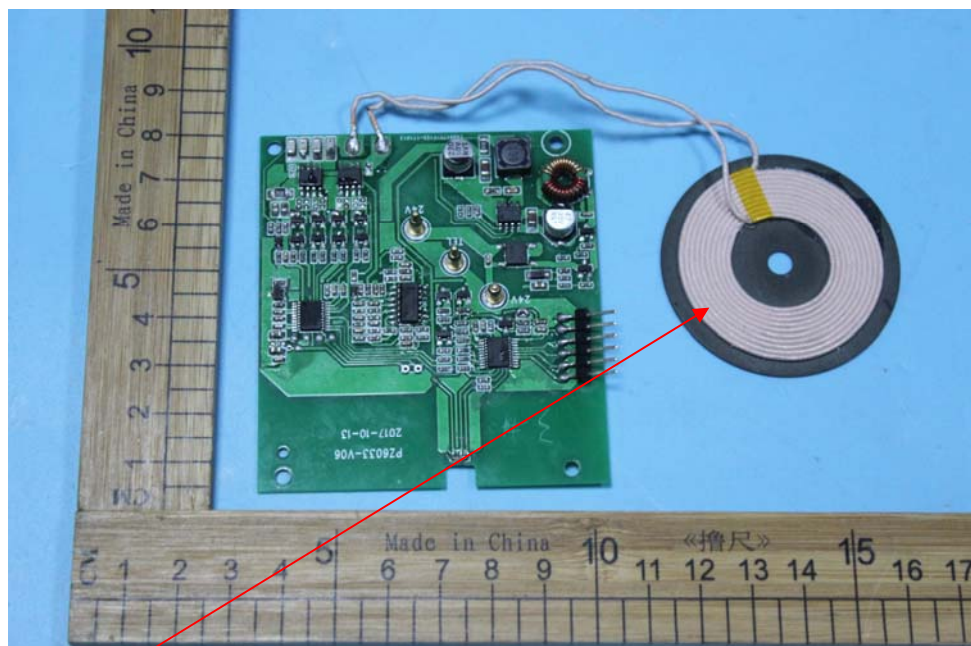
7. ANTENNA REQUIREMENT

7.1.The Requirement

According to Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

7.2.Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The max Antenna gain of EUT is 0dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.



Antenna