

APPLICATION FOR VERIFICATION
On Behalf of
GOOD EVER TRADING LIMITED

Wireless Charging Pad

Model No.: C&B-E101, WCP-24/0140B, WCP-24/0139W, WC-24/1022, C&B-18P, 2199413,
CB-E101

FCC ID: 2AM7T-CB-E101

Prepared for : GOOD EVER TRADING LIMITED
Address : RM 1701, Zhuoyue Building, Fuhua Yi Rd., Futian Central
Zone, Shenzhen, China

Prepared by : Shenzhen Accurate Technology Co., Ltd.
Address : 1/F., Building A, Changyuan New Material Port, Science &
Industry Park, Nanshan District, Shenzhen, Guangdong, P.R.
China

Tel: +86-755-26503290

Fax: +86-755-26503396

Report No. : ATE20181595
Date of Test : August 8, 2018
Date of Report : August 10, 2018

TABLE OF CONTENTS

Description	Page
Test Report Declaration	
1. TEST RESULTS SUMMARY	4
2. GENERAL INFORMATION	5
2.1. Description of Device (EUT).....	5
2.2. Special Accessory and Auxiliary Equipment	5
2.3. Description of Test Facility	6
2.4. Measurement Uncertainty	6
3. MEASURING DEVICE AND TEST EQUIPMENT	7
3.1. The Equipment Used to Measure Conducted Disturbance	7
3.2. The Equipment Used to Measure Radiated Emission.....	8
4. POWER LINE CONDUCTED MEASUREMENT	9
4.1. Block Diagram of Test Setup.....	9
4.2. Power Line Conducted Emission Measurement Limits.....	9
4.3. Configuration of EUT on Measurement	9
4.4. Operating Condition of EUT	9
4.5. Test Procedure	10
4.6. Data Sample.....	10
4.7. Power Line Conducted Emission Measurement Results	10
5. RADIATED EMISSION MEASUREMENT.....	15
5.1. Block Diagram of Test.....	15
5.2. Radiated Emission Limit (Class B).....	16
5.3. EUT Configuration on Measurement	16
5.4. Operating Condition of EUT	16
5.5. Test Procedure	17
5.6. Data Sample.....	18
5.7. Radiated Emission Measurement Result	19
6. 99% OCCUPIED BANDWIDTH	26
6.1. Block Diagram of Test Setup.....	26
6.2. EUT Configuration on Measurement	26
6.3. Operating Condition of EUT	26
6.4. Test Procedure	26
6.5. Measurement Result	27
7. ANTENNA REQUIREMENT.....	29
7.1. The Requirement	29
7.2. Antenna Construction	29
8. PHOTOGRAPHS.....	30
8.1. Photo of Power Line Conducted Emission Measurement	30
8.2. Photo of Radiated Emission Measurement Below 1GHz	30
8.3. Photo of EUT	32

Test Report Declaration

Applicant : GOOD EVER TRADING LIMITED
Address : RM 1701, Zhuoyue Building, Fuhua Yi Rd., Futian Central Zone, Shenzhen, China

Manufacturer : GOOD EVER TRADING LIMITED
Address : RM 1701, Zhuoyue Building, Fuhua Yi Rd., Futian Central Zone, Shenzhen, China

Product : Wireless Charging Pad

Model No. : C&B-E101, WCP-24/0140B, WCP-24/0139W, WC-24/1022, C&B-18P, 2199413, CB-E101
(Note: These samples are same except their model name is different. So we prepare C&B-E101 for test.)

Trade name : n.a.

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 : August 8, 2018
Date of Report : August 10, 2018

Prepared by :
(Bob Wang, 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 Charging Pad
Frequency	:	110-205kHz
Modulation Type	:	ASK
Type of Antenna	:	Coil Antenna
Rating	:	Input: DC 5V/2A Output: DC 5V/1A

2.2. Special Accessory and Auxiliary Equipment

AC/DC Power Adapter (provided by laboratory)	:	Model: TEKA006-0502000UKU
		Input: 100-240V~50/60Hz 0.3A
		Output: DC 5V/2A

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
- 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. The Equipment Used to Measure Conducted Disturbance

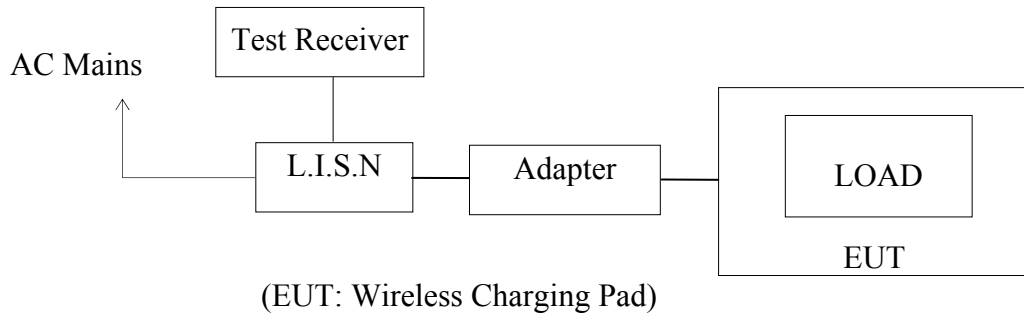
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCS30	100307	Jan. 06, 2018	1 Year
2.	Test Receiver	Rohde & Schwarz	ESPI3	100396/003	Jan. 06, 2018	1 Year
3.	Test Receiver	Rohde & Schwarz	ESPI3	101526/003	Jan. 06, 2018	1 Year
4.	L.I.S.N.	Schwarzbeck	NLSK8126	8126431	Jan. 06, 2018	1 Year
5.	L.I.S.N.	Rohde & Schwarz	ESH3-Z5	100305	Jan. 06, 2018	1 Year
6.	L.I.S.N.	Rohde & Schwarz	ESH3-Z5	100310	Jan. 06, 2018	1 Year
7.	L.I.S.N.	Rohde & Schwarz	ESH3-Z6	100132	Jan. 06, 2018	1 Year
8.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100305	Jan. 06, 2018	1 Year
9.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100312	Jan. 06, 2018	1 Year
10.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100815	Jan. 06, 2018	1 Year
11.	50Ω Coaxial Switch	Anritsu Corp	MP59B	6200283936	Jan. 06, 2018	1 Year
12.	50Ω Coaxial Switch	Anritsu Corp	MP59B	6200283933	Jan. 06, 2018	1 Year
13.	50Ω Coaxial Switch	Anritsu Corp	MP59B	6200506474	Jan. 06, 2018	1 Year
14.	VOLTAGE PROBE	Schwarzbeck	TK9416	N/A	Jan. 06, 2018	1 Year
15.	RF CURRENT PROBE	Rohde & Schwarz	EZ-17	100048	Jan. 06, 2018	1 Year
16.	8-Wire Impedance Stabilisation Network	Schwarzbeck	CAT5 8158	8158-0035	Jan. 06, 2018	1 Year
17.	RF Coaxial Cable	SUHNER	N-2m	No.2	Jan. 06, 2018	1 Year
18.	RF Coaxial Cable	SUHNER	N-2m	No.3	Jan. 06, 2018	1 Year
19.	RF Coaxial Cable	SUHNER	N-2m	No.14	Jan. 06, 2018	1 Year

3.2. The Equipment Used to Measure Radiated Emission

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 06, 2018	1 Year
2.	Spectrum Analyzer	Rohde&Schwarz	FSV40	101495	Jan. 06, 2018	1 Year
3.	Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 06, 2018	1 Year
4.	Test Receiver	Rohde& Schwarz	ESPI	100396/003	Jan. 06, 2018	1 Year
5.	Test Receiver	Rohde& Schwarz	ESPI	101526/003	Jan. 06, 2018	1 Year
6.	Test Receiver	Rohde& Schwarz	ESR	101817	Jan. 06, 2018	1 Year
7.	Bilog Antenna	Schwarzbeck	VULB9163	9163-194	Jan. 06, 2018	1 Year
8.	Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 06, 2018	1 Year
9.	Log.-Per.Antenna	Schwarzbeck	VUSLP 9111B	9111B-074	Jan. 06, 2018	1 Year
10.	Biconical Broad Band Antenna	Schwarzbeck	VHBB 9124+BBA 9106	9124-617	Jan. 06, 2018	1 Year
11.	Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 06, 2018	1 Year
12.	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 06, 2018	1 Year
13.	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1067	Jan. 06, 2018	1 Year
14.	Vertical Active Monopole Antenna	Schwarzbeck	VAMP 9243	9243-370	Jan. 06, 2018	1 Year
15.	RF Switching Unit+PreAMP	Compliance Direction	RSU-M2	38322	Jan. 06, 2018	1 Year
16.	Pre-Amplifier	Agilent	8447D	294A10619	Jan. 06, 2018	1 Year
17.	Pre-Amplifier	Rohde&Schwarz	CBLU11835 40-01	3791	Jan. 06, 2018	1 Year
18.	50 Coaxial Switch	Anritsu Corp	MP59B	6200237248	Jan. 06, 2018	1 Year
19.	50 Coaxial Switch	Anritsu Corp	MP59B	6200506474	Jan. 06, 2018	1 Year
20.	RF Coaxial Cable	Schwarzbeck	N-5m	No.1	Jan. 06, 2018	1 Year
21.	RF Coaxial Cable	Schwarzbeck	N-1m	No.6	Jan. 06, 2018	1 Year
22.	RF Coaxial Cable	Schwarzbeck	N-1m	No.7	Jan. 06, 2018	1 Year
23.	RF Coaxial Cable	SUHNER	N-3m	No.8	Jan. 06, 2018	1 Year
24.	RF Coaxial Cable	RESENBERGER	N-3.5m	No.9	Jan. 06, 2018	1 Year
25.	RF Coaxial Cable	SUHNER	N-6m	No.10	Jan. 06, 2018	1 Year
26.	RF Coaxial Cable	RESENBERGER	N-12m	No.11	Jan. 06, 2018	1 Year
27.	RF Coaxial Cable	RESENBERGER	N-0.5m	No.12	Jan. 06, 2018	1 Year
28.	RF Coaxial Cable	SUHNER	N-2m	No.13	Jan. 06, 2018	1 Year
29.	RF Coaxial Cable	SUHNER	N-0.5m	No.15	Jan. 06, 2018	1 Year
30.	RF Coaxial Cable	SUHNER	N-2m	No.16	Jan. 06, 2018	1 Year
31.	RF Coaxial Cable	RESENBERGER	N-6m	No.17	Jan. 06, 2018	1 Year

4. POWER LINE CONDUCTED MEASUREMENT

4.1. Block Diagram of Test Setup



4.2. Power Line Conducted Emission Measurement Limits

Frequency (MHz)	Limit dB(μV)	
	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)	QuasiPeak Level (dBμv)	Average Level (dBμv)	Transducer value (dB)	QuasiPeak Result (dBμv)	Average Result (dBμv)	QuasiPeak Limit (dBμv)	Average Limit (dBμv)	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.

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

The spectral diagrams are attached as below.

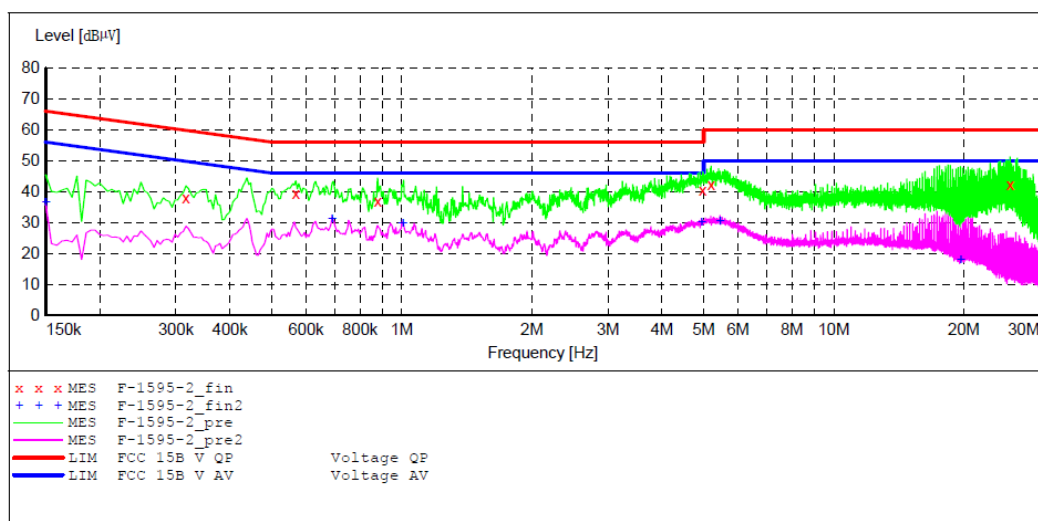
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: Wireless Charging Pad M/N:C&B-E101
 Manufacturer: GOOD EVER TRADING LIMITED
 Operating Condition: MAX LOAD
 Test Site: 2#Shielding Room
 Operator: Frank
 Test Specification: L 120V/60Hz
 Comment: Report NO.:ATE20181595
 Start of Test: 2018-9-8 / 9:34:02

SCAN TABLE: "V 150K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "F-1595-2_fin"

2018-9-8 9:37

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.316500	38.20	10.9	60	21.6	QP	L1	GND
0.568500	39.40	11.0	56	16.6	QP	L1	GND
0.879000	37.00	11.1	56	19.0	QP	L1	GND
4.974000	40.40	11.4	56	15.6	QP	L1	GND
5.199000	42.40	11.4	60	17.6	QP	L1	GND
25.579500	42.30	11.7	60	17.7	QP	L1	GND

MEASUREMENT RESULT: "F-1595-2_fin2"

2018-9-8 9:37

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.150000	36.60	10.8	56	19.4	AV	L1	GND
0.690000	31.10	11.1	46	14.9	AV	L1	GND
1.005000	29.90	11.1	46	16.1	AV	L1	GND
4.942500	30.00	11.4	46	16.0	AV	L1	GND
5.451000	30.60	11.5	50	19.4	AV	L1	GND
19.644000	18.10	11.7	50	31.9	AV	L1	GND

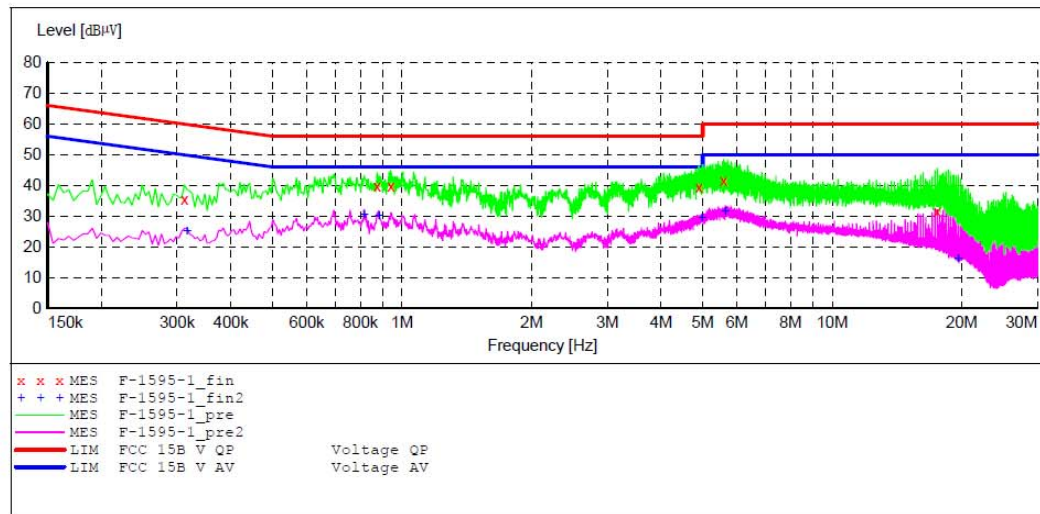
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: Wireless Charging Pad M/N:C&B-E101
 Manufacturer: GOOD EVER TRADING LIMITED
 Operating Condition: MAX LOAD
 Test Site: 2#Shielding Room
 Operator: Frank
 Test Specification: N 120V/60Hz
 Comment: Report NO.:ATE20181595
 Start of Test: 2018-9-8 / 9:28:15

SCAN TABLE: "V 150K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "F-1595-1_fin"

2018-9-8 9:32

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.312000	35.50	10.9	60	24.4	QP	N	GND
0.874500	39.80	11.1	56	16.2	QP	N	GND
0.942000	39.70	11.1	56	16.3	QP	N	GND
4.897500	39.40	11.4	56	16.6	QP	N	GND
5.595000	41.40	11.5	60	18.6	QP	N	GND
17.547000	31.70	11.7	60	28.3	QP	N	GND

MEASUREMENT RESULT: "F-1595-1_fin2"

2018-9-8 9:32

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.316500	25.30	10.9	50	24.5	AV	N	GND
0.816000	30.50	11.1	46	15.5	AV	N	GND
0.883500	30.20	11.1	46	15.8	AV	N	GND
4.978500	29.40	11.4	46	16.6	AV	N	GND
5.635500	31.50	11.5	50	18.5	AV	N	GND
19.630500	16.30	11.7	50	33.7	AV	N	GND

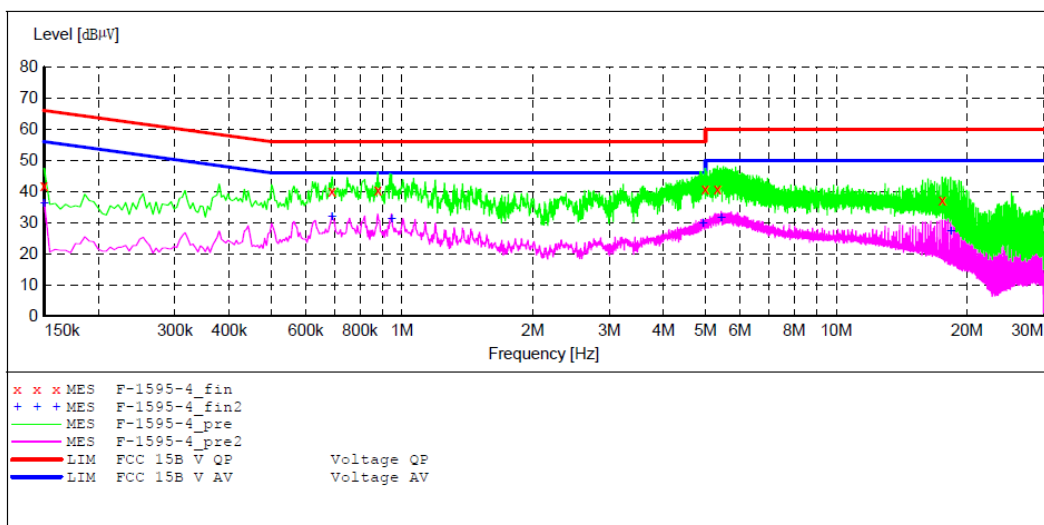
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: Wireless Charging Pad M/N:C&B-E101
 Manufacturer: GOOD EVER TRADING LIMITED
 Operating Condition: MAX LOAD
 Test Site: 2#Shielding Room
 Operator: Frank
 Test Specification: N 240V/60Hz
 Comment: Report NO.:ATE20181595
 Start of Test: 2018-9-8 / 9:43:06

SCAN TABLE: "V 150K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "F-1595-4_fin"

2018-9-8 9:45

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.150000	41.80	10.8	66	24.2	QP	N	GND
0.690000	40.30	11.1	56	15.7	QP	N	GND
0.879000	40.50	11.1	56	15.5	QP	N	GND
4.992000	40.80	11.4	56	15.2	QP	N	GND
5.325000	40.90	11.4	60	19.1	QP	N	GND
17.529000	37.50	11.7	60	22.5	QP	N	GND

MEASUREMENT RESULT: "F-1595-4_fin2"

2018-9-8 9:45

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.150000	36.40	10.8	56	19.6	AV	N	GND
0.690000	31.80	11.1	46	14.2	AV	N	GND
0.946500	31.10	11.1	46	14.9	AV	N	GND
4.933500	29.70	11.4	46	16.3	AV	N	GND
5.433000	31.60	11.5	50	18.4	AV	N	GND
18.339000	27.50	11.7	50	22.5	AV	N	GND

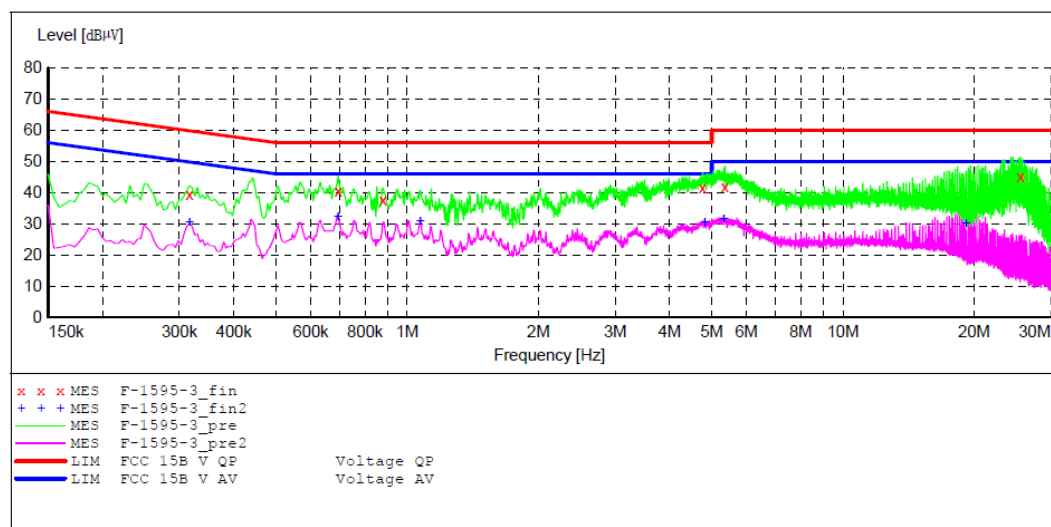
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: Wireless Charging Pad M/N:C&B-E101
 Manufacturer: GOOD EVER TRADING LIMITED
 Operating Condition: MAX LOAD
 Test Site: 2#Shielding Room
 Operator: Frank
 Test Specification: L 240V/60Hz
 Comment: Report NO.:ATE20181595
 Start of Test: 2018-9-8 / 9:39:13

SCAN TABLE: "V 150K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "F-1595-3_fin"

2018-9-8 9:41

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.316500	39.30	10.9	60	20.5	QP	L1	GND
0.694500	40.50	11.1	56	15.5	QP	L1	GND
0.879000	37.50	11.1	56	18.5	QP	L1	GND
4.762500	41.60	11.4	56	14.4	QP	L1	GND
5.361000	41.80	11.5	60	18.2	QP	L1	GND
25.557000	45.10	11.7	60	14.9	QP	L1	GND

MEASUREMENT RESULT: "F-1595-3_fin2"

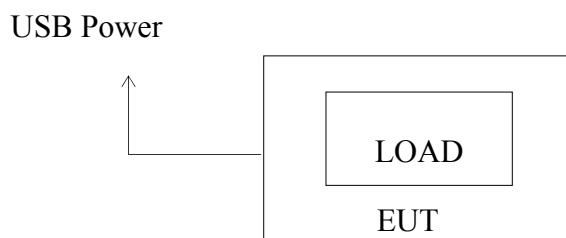
2018-9-8 9:41

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.316500	30.50	10.9	50	19.3	AV	L1	GND
0.694500	32.20	11.1	46	13.8	AV	L1	GND
1.072500	30.70	11.1	46	15.3	AV	L1	GND
4.816500	30.60	11.4	46	15.4	AV	L1	GND
5.325000	31.50	11.4	50	18.5	AV	L1	GND
19.153500	30.30	11.7	50	19.7	AV	L1	GND

5. RADIATED EMISSION MEASUREMENT

5.1. Block Diagram of Test

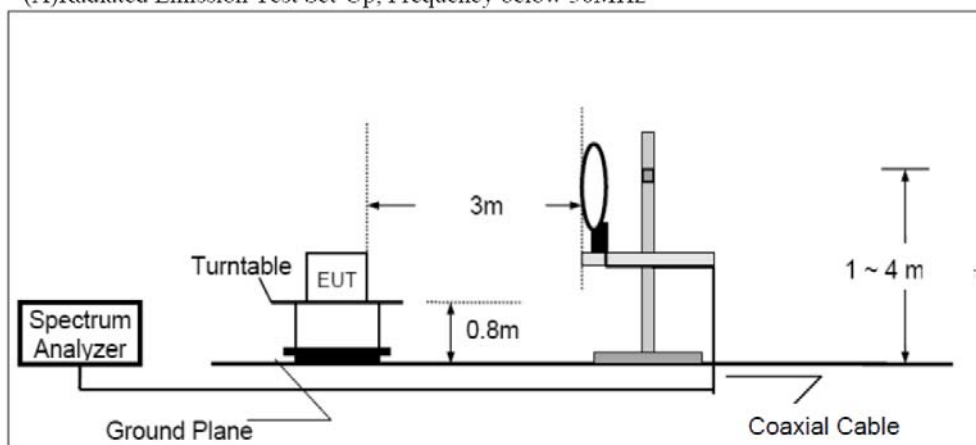
5.1.1. Block diagram of connection between the EUT and simulators



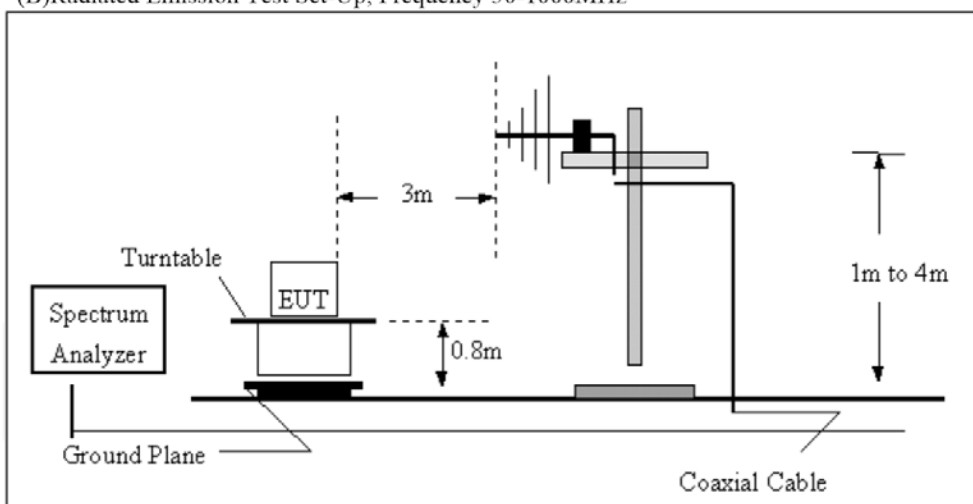
(EUT: Wireless Charging Pad)

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=19.2uV/m@300m](#)

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

5.3.EUT Configuration on Measurement

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 Charging Pad (EUT)

Model Number : C&B-E101

Manufacturer : GOOD EVER TRADING LIMITED

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. 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.

5.6.Data Sample

Frequency(MHz)	Reading (dB μ v)	Factor (dB/m)	Result (dB μ v/m)	Limit (dB μ 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 μ v) = Uncorrected Analyzer/Receiver reading

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

Result(dB μ v/m) = Reading + Factor

Limit (dB μ v/m)= Limit stated in standard

Margin (dB) = Result(dB μ v/m) - Limit (dB μ v/m)

Calculation Formula:

Margin(dB) = Result (dB μ v/m)–Limit(dB μ v/m)

Result(dB μ v/m)= Reading(dB μ v)+ 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.

5.7.Radiated Emission Measurement Result

PASS.

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

Frequency (MHz)	Quasi Peak (dBμV/m)	Detector	Azimuth	Height (cm)	Limit @3m (dBμV/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(Middle channel 157kHz)

Frequency (MHz)	Quasi Peak (dBμV/m)	Detector	Azimuth	Height (cm)	Limit @3m (dBμV/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(High channel 205kHz)

Frequency (MHz)	Quasi Peak (dBμV/m)	Detector	Azimuth	Height (cm)	Limit @3m (dBμV/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))

From 30MHz to 1000MHz



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: STAR2016 #2531

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Wireless Charging Pad

Mode: TX 110KHz

Model: C&B-E101

Manufacturer: GOOD EVER TRADING LIMITED

Polarization: Horizontal

Power Source: DC 5V

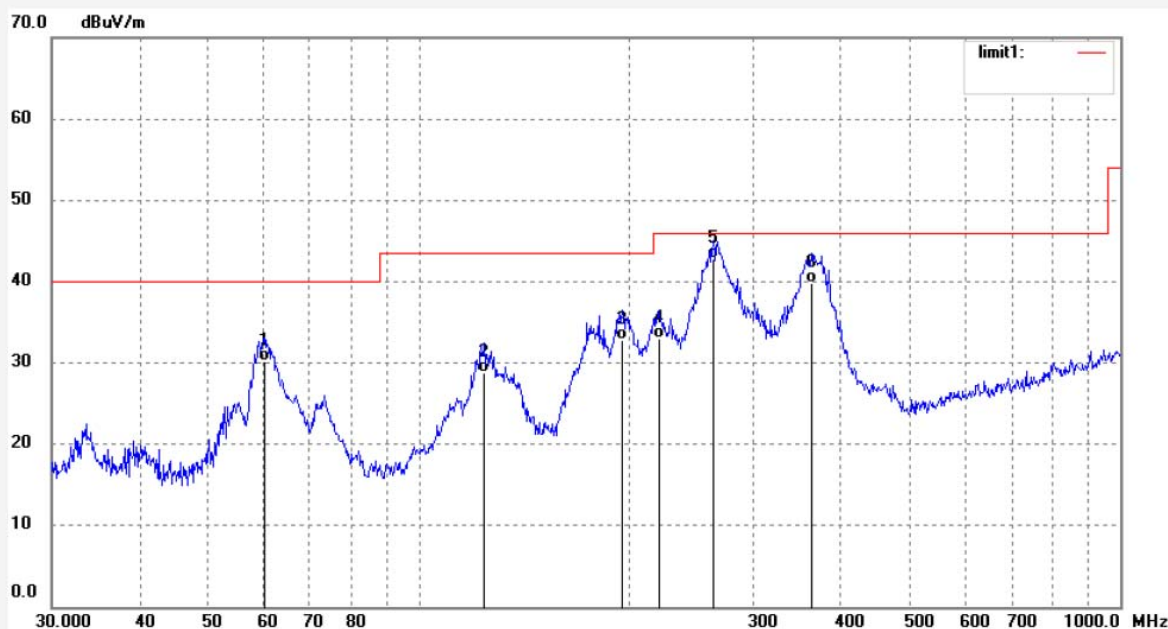
Date: 2018-09-08

Time: 10:00:01

Engineer Signature: star

Distance: 3m

Note: Report No.:ATE20181595



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	60.2800	44.16	-14.01	30.15	40.00	-9.85	QP	200	114	
2	124.1329	42.33	-13.54	28.79	43.50	-14.71	QP	200	252	
3	195.1365	45.09	-12.30	32.79	43.50	-10.71	QP	200	130	
4	219.8447	44.44	-11.51	32.93	46.00	-13.07	QP	200	88	
5	262.8955	53.02	-10.31	42.71	46.00	-3.29	QP	200	301	
6	362.9844	47.12	-7.24	39.88	46.00	-6.12	QP	200	256	



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: STAR2016 #2532

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Wireless Charging Pad

Mode: TX 110KHz

Model: C&B-E101

Manufacturer: GOOD EVER TRADING LIMITED

Polarization: Vertical

Power Source: DC 5V

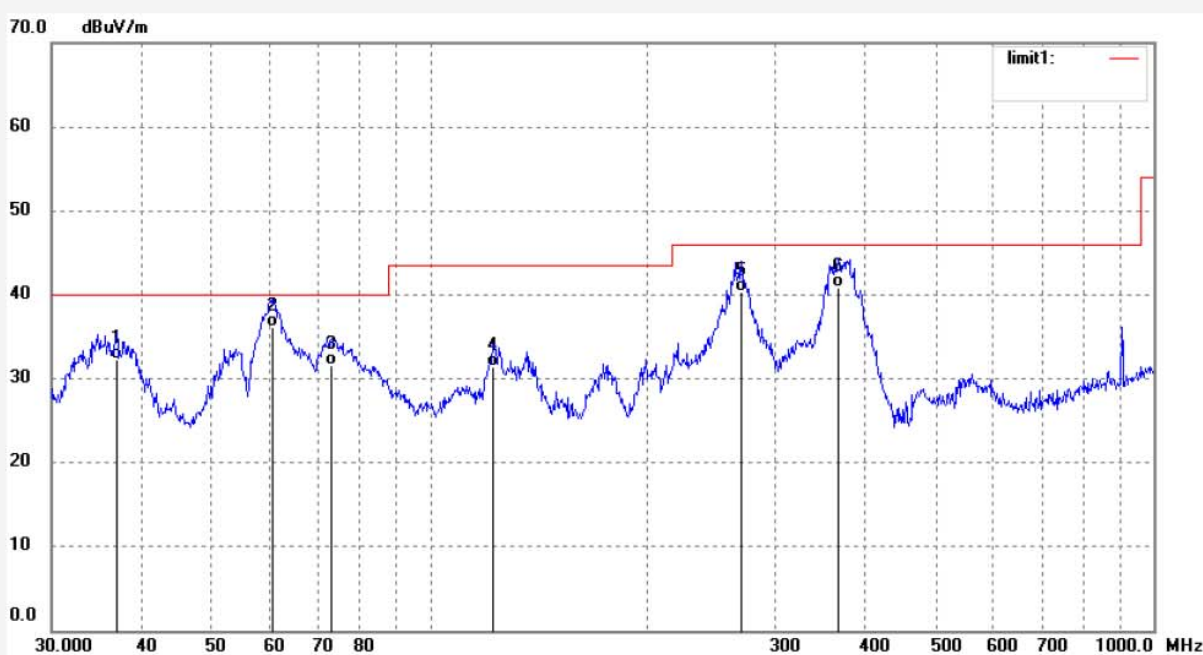
Date: 2018-09-08

Time: 10:03:27

Engineer Signature: star

Distance: 3m

Note: Report No.:ATE20181595



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	36.8952	43.12	-10.84	32.28	40.00	-7.72	QP	100	102	
2	60.7043	50.30	-14.17	36.13	40.00	-3.87	QP	100	145	
3	73.1025	48.13	-16.48	31.65	40.00	-8.35	QP	100	32	
4	121.9754	44.62	-13.29	31.33	43.50	-12.17	QP	100	211	
5	269.4284	50.31	-9.96	40.35	46.00	-5.65	QP	100	195	
6	366.8231	48.00	-7.19	40.81	46.00	-5.19	QP	100	122	

Job No.: STAR2016 #2533

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Wireless Charging Pad

Mode: TX 157KHz

Model: C&B-E101

Manufacturer: GOOD EVER TRADING LIMITED

Polarization: Vertical

Power Source: DC 5V

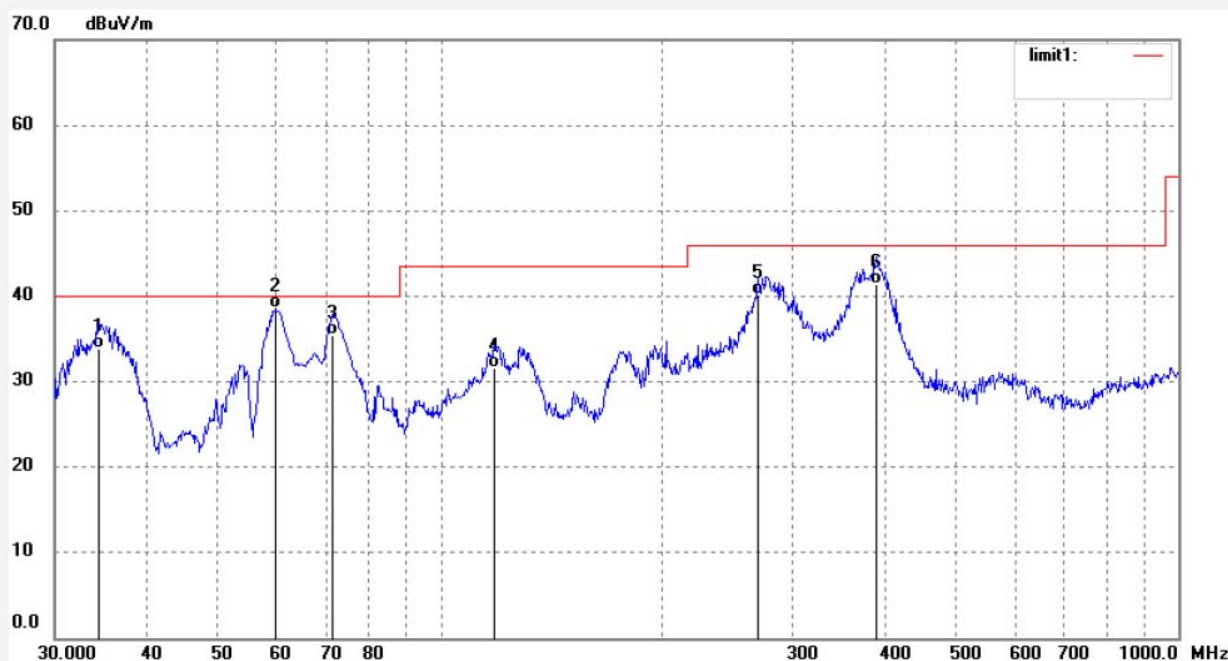
Date: 2018-09-08

Time: 10:08:08

Engineer Signature: star

Distance: 3m

Note: Report No.:ATE20181595



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	34.3963	44.22	-10.36	33.86	40.00	-6.14	QP	100	147	
2	59.8588	52.47	-13.88	38.59	40.00	-1.41	QP	100	225	
3	71.3299	51.67	-16.24	35.43	40.00	-4.57	QP	100	315	
4	118.1861	44.57	-13.06	31.51	43.50	-11.99	QP	100	46	
5	269.4284	50.10	-9.96	40.14	46.00	-5.86	QP	100	322	
6	389.3548	48.20	-6.87	41.33	46.00	-4.67	QP	100	259	



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: STAR2016 #2534

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Wireless Charging Pad

Mode: TX 157KHz

Model: C&B-E101

Manufacturer: GOOD EVER TRADING LIMITED

Polarization: Horizontal

Power Source: DC 5V

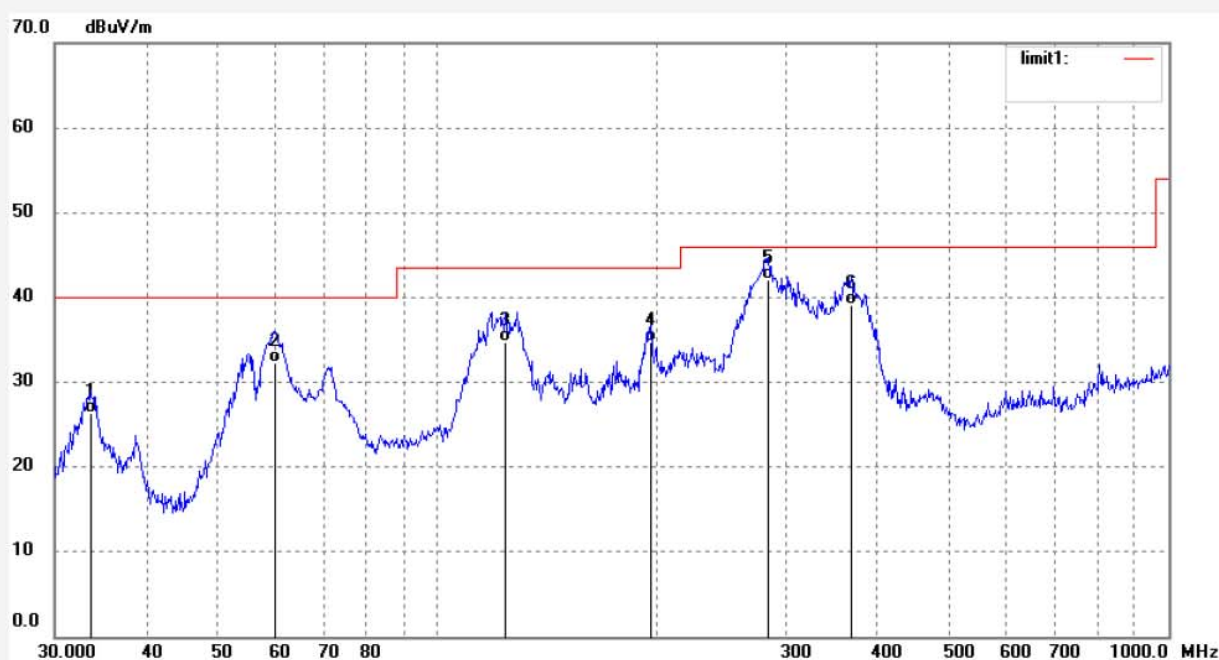
Date: 2018-09-08

Time: 10:11:14

Engineer Signature: star

Distance: 3m

Note: Report No.:ATE20181595



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	33.5624	36.55	-10.27	26.28	40.00	-13.72	QP	200	104	
2	60.0691	46.20	-13.94	32.26	40.00	-7.74	QP	200	114	
3	124.1330	48.25	-13.54	34.71	43.50	-8.79	QP	200	265	
4	195.8220	46.99	-12.30	34.69	43.50	-8.81	QP	200	333	
5	283.9791	51.57	-9.45	42.12	46.00	-3.88	QP	200	91	
6	368.1116	46.20	-7.17	39.03	46.00	-6.97	QP	200	59	



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: STAR2016 #2535

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Wireless Charging Pad

Mode: TX 205KHz

Model: C&B-E101

Manufacturer: GOOD EVER TRADING LIMITED

Polarization: Horizontal

Power Source: DC 5V

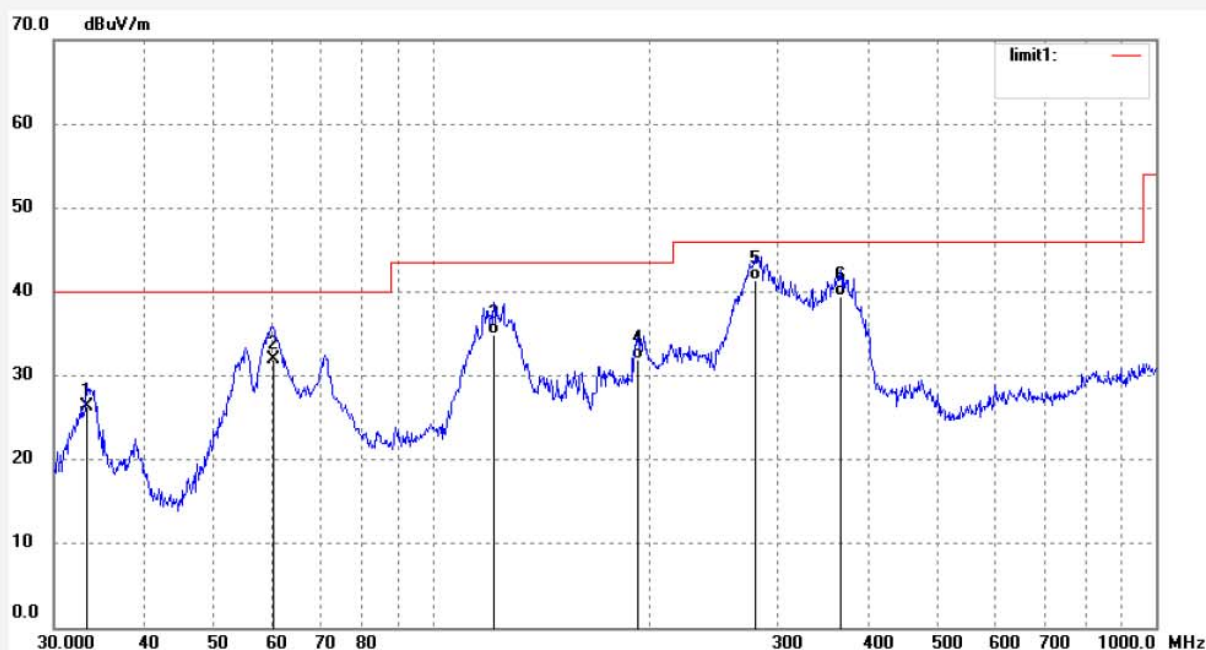
Date: 2018-09-08

Time: 10:15:57

Engineer Signature: star

Distance: 3m

Note: Report No.:ATE20181595



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	33.3278	36.52	-10.25	26.27	40.00	-13.73	peak	200	119	
2	60.2800	46.00	-14.01	31.99	40.00	-8.01	peak	200	325	
3	121.5485	48.15	-13.23	34.92	43.50	-8.58	QP	200	220	
4	192.4185	44.25	-12.39	31.86	43.50	-11.64	QP	200	135	
5	279.0436	50.99	-9.62	41.37	46.00	-4.63	QP	200	108	
6	366.8231	46.72	-7.19	39.53	46.00	-6.47	QP	200	114	



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: STAR2016 #2536

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Wireless Charging Pad

Mode: TX 205KHz

Model: C&B-E101

Manufacturer: GOOD EVER TRADING LIMITED

Polarization: Vertical

Power Source: DC 5V

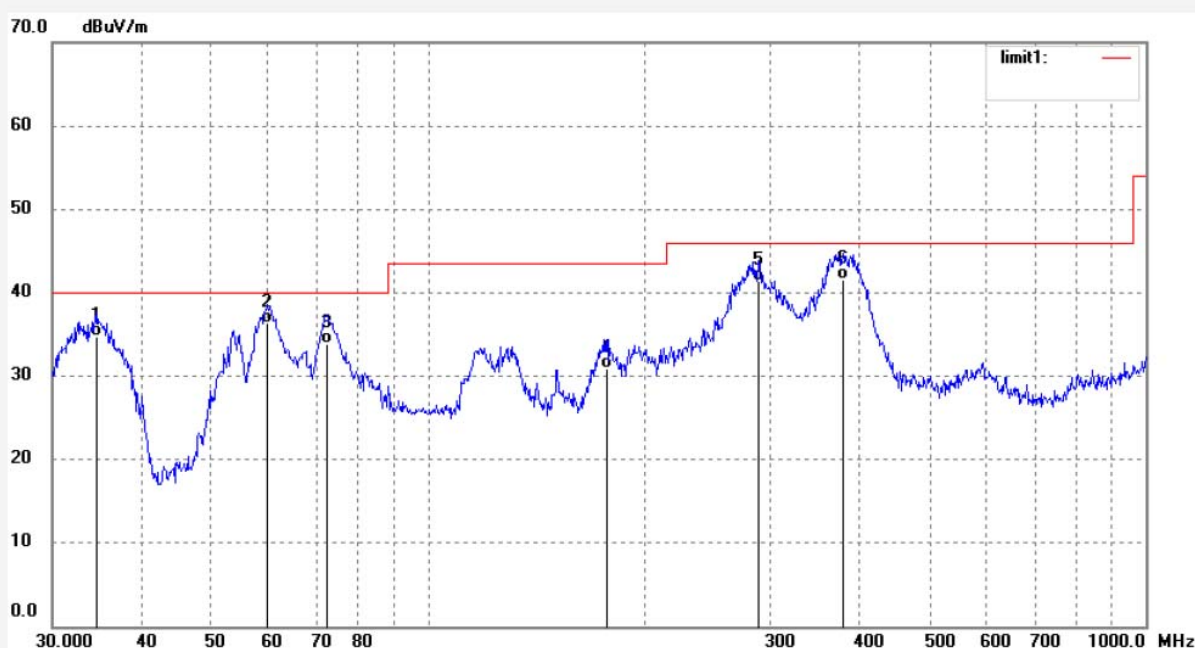
Date: 2018-09-08

Time: 10:18:44

Engineer Signature: star

Distance: 3m

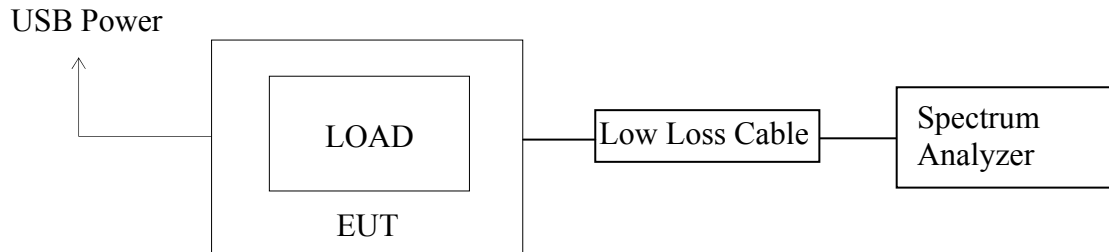
Note: Report No.:ATE20181595



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	34.6385	45.00	-10.32	34.68	40.00	-5.32	QP	100	175	
2	59.8588	50.14	-13.88	36.26	40.00	-3.74	QP	100	120	
3	72.3376	50.27	-16.38	33.89	40.00	-6.11	QP	100	123	
4	177.5092	44.26	-13.41	30.85	43.50	-12.65	QP	100	25	
5	289.0021	50.70	-9.34	41.36	46.00	-4.64	QP	100	129	
6	378.5843	48.56	-7.01	41.55	46.00	-4.45	QP	100	157	

6. 99% OCCUPIED BANDWIDTH

6.1. Block Diagram of Test Setup



(EUT: Wireless Charging Pad)

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.

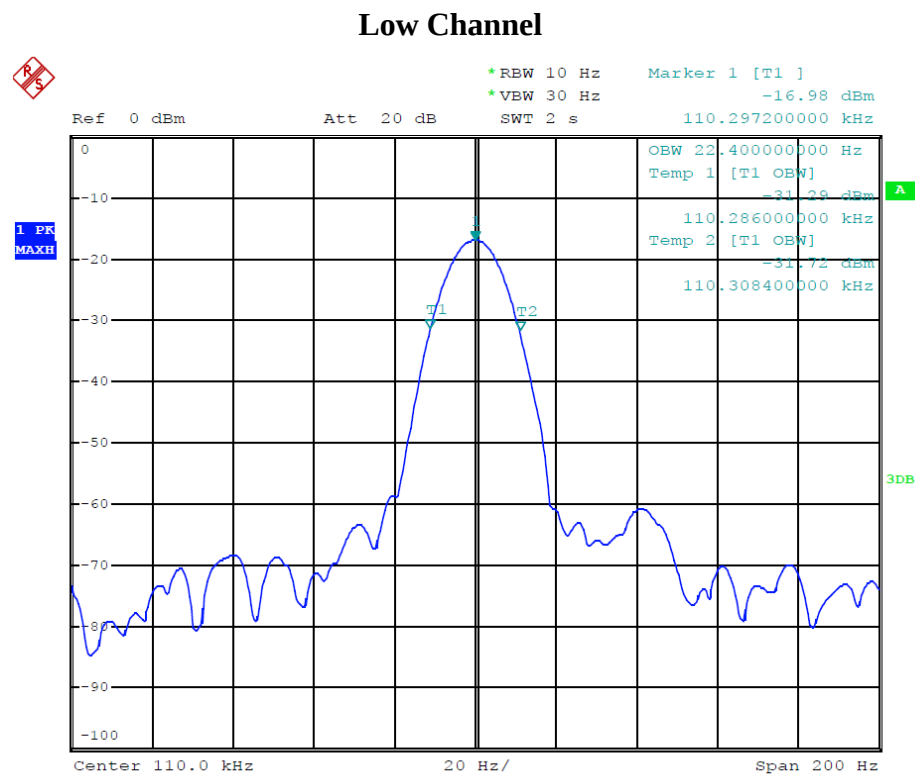
6.4.2. Set RBW of spectrum analyzer to 10Hz and VBW to 30Hz.

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.

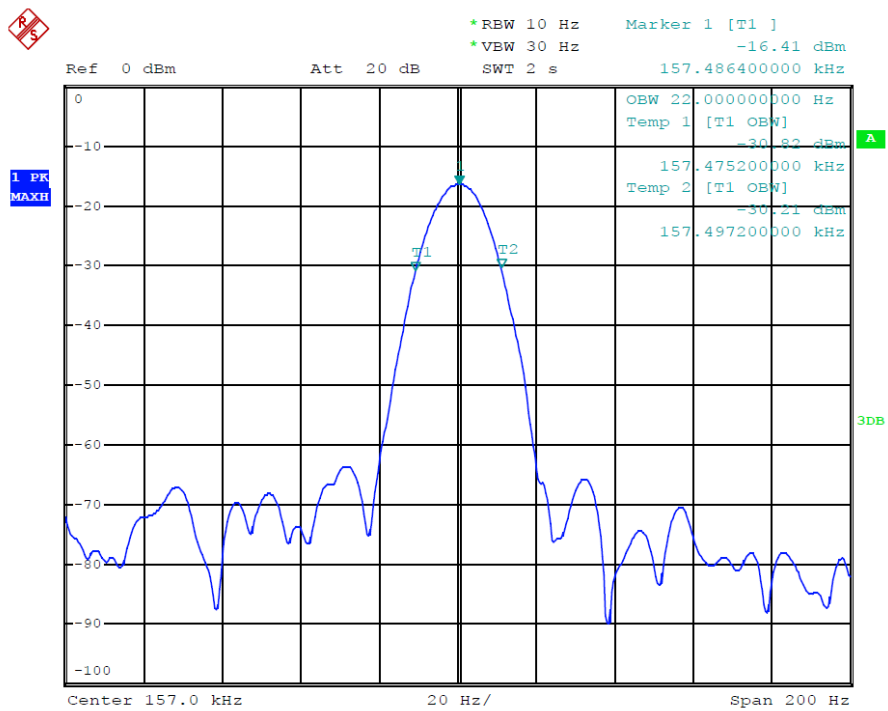
6.5.Measurement Result

Frequency (kHz)	99% Occupied Bandwidth (Hz)
110	22.4
157	22.0
205	22.4

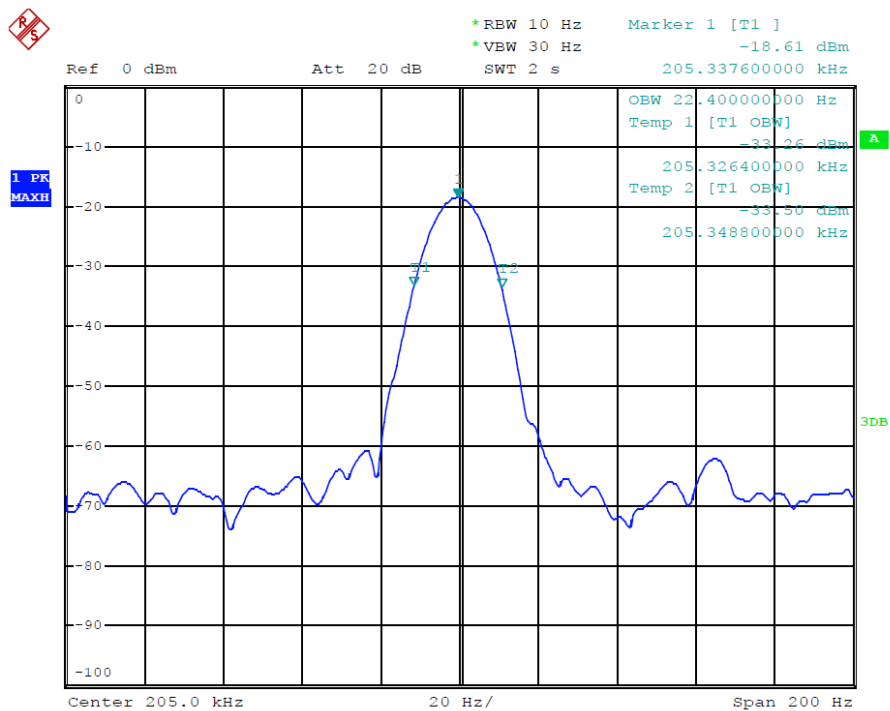
The spectrum analyzer plots are attached as below.



Middle Channel



High Channel



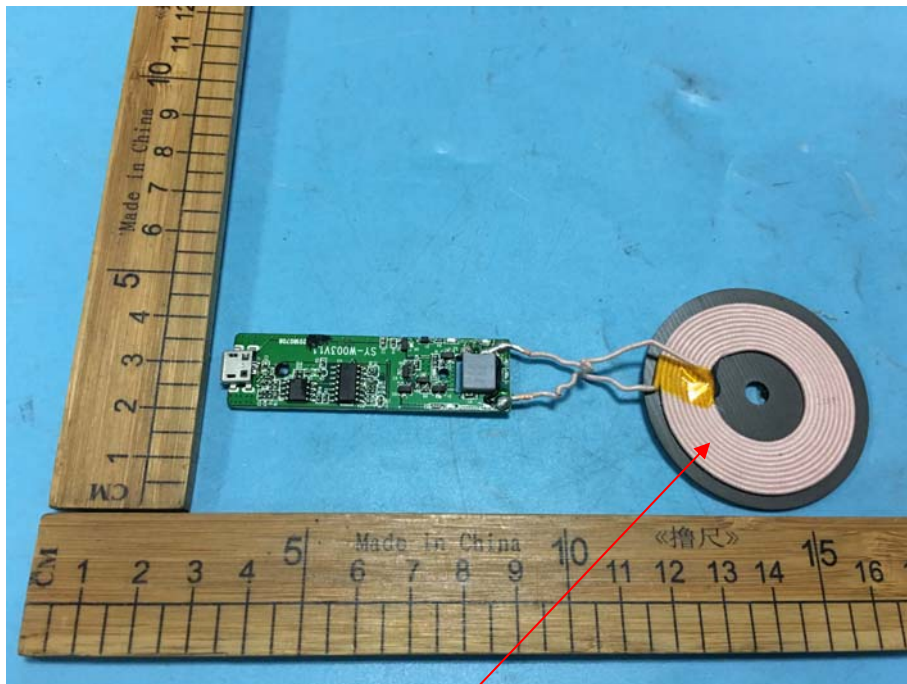
7. ANTENNA REQUIREMENT

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

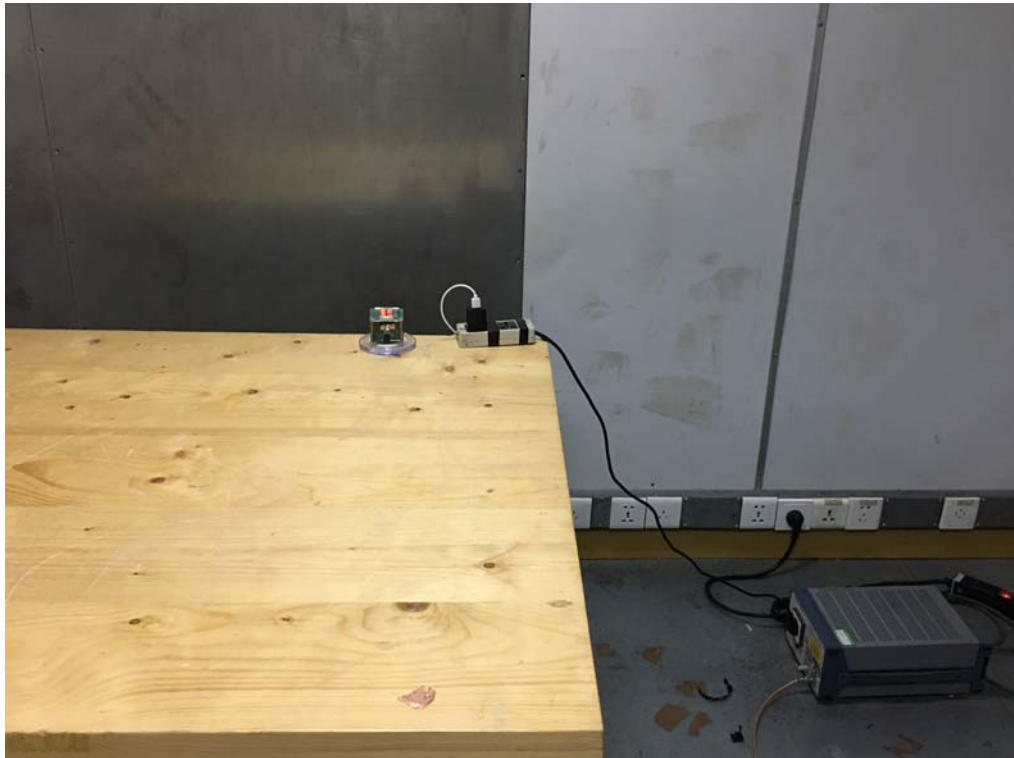
Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The max Antenna gain of EUT is 0dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.



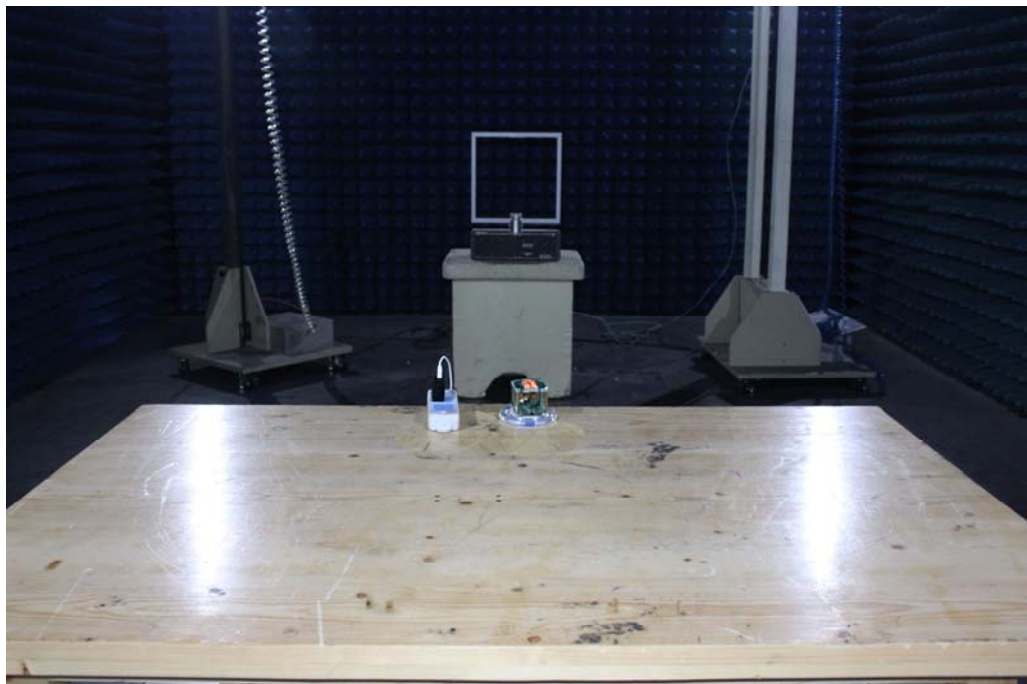
Antenna

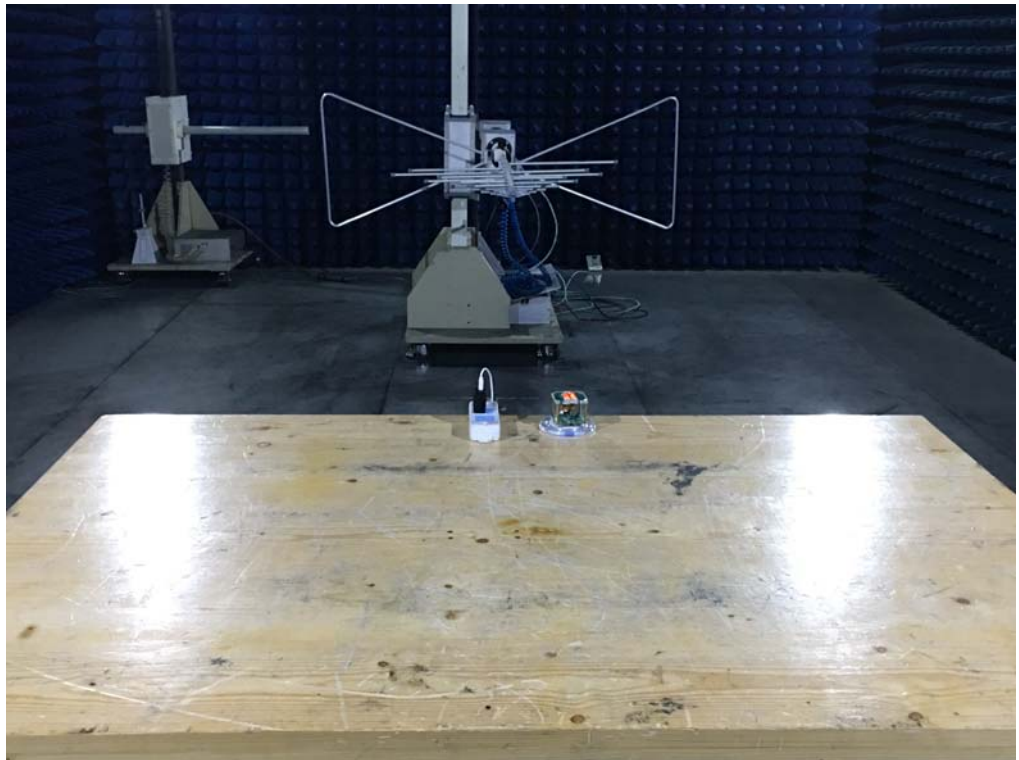
8. PHOTOGRAPHS

8.1.Photo of Power Line Conducted Emission Measurement



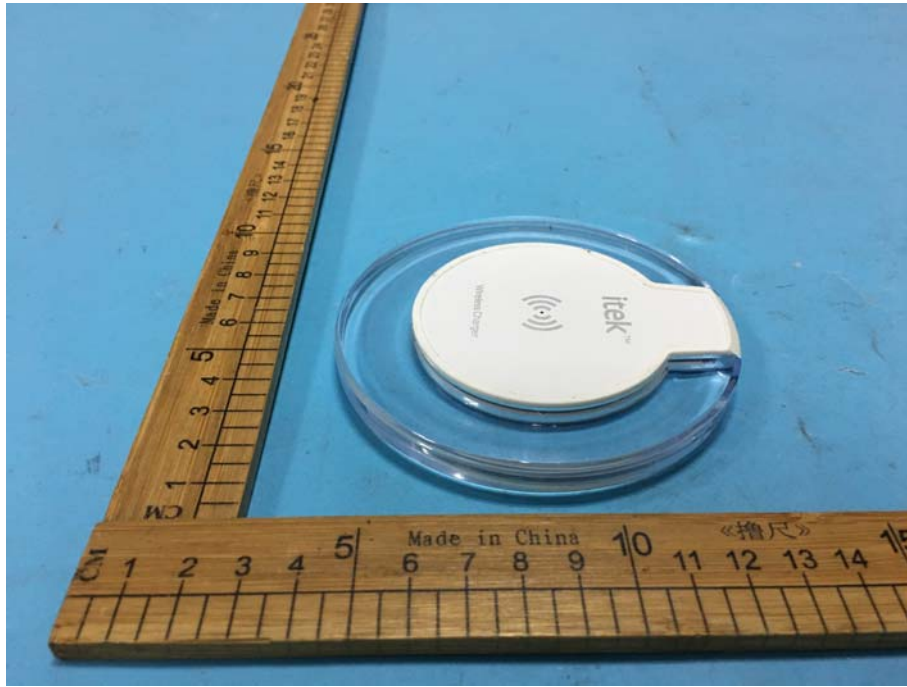
8.2.Photo of Radiated Emission Measurement Below 1GHz

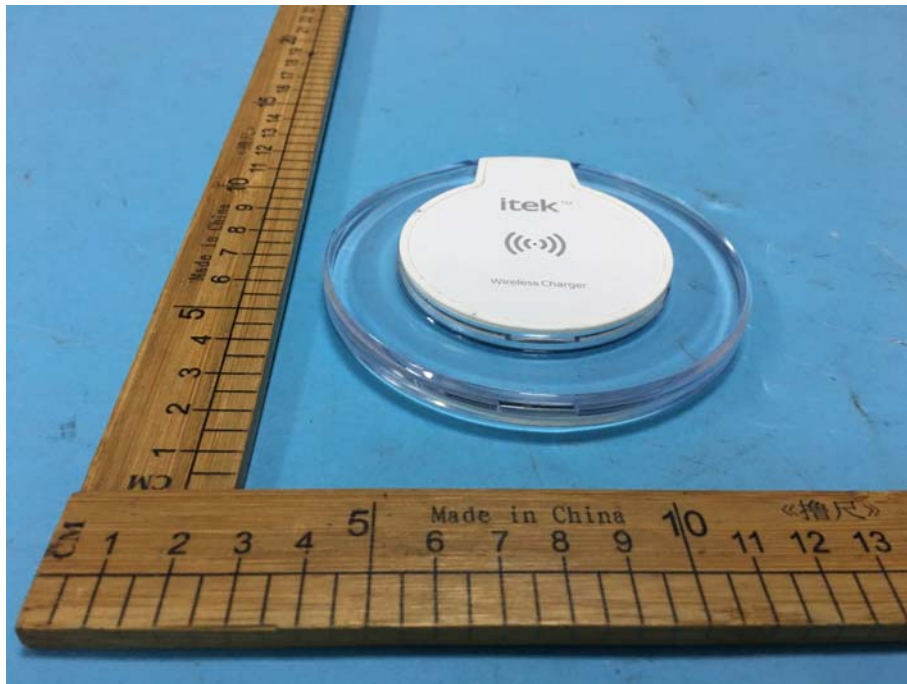
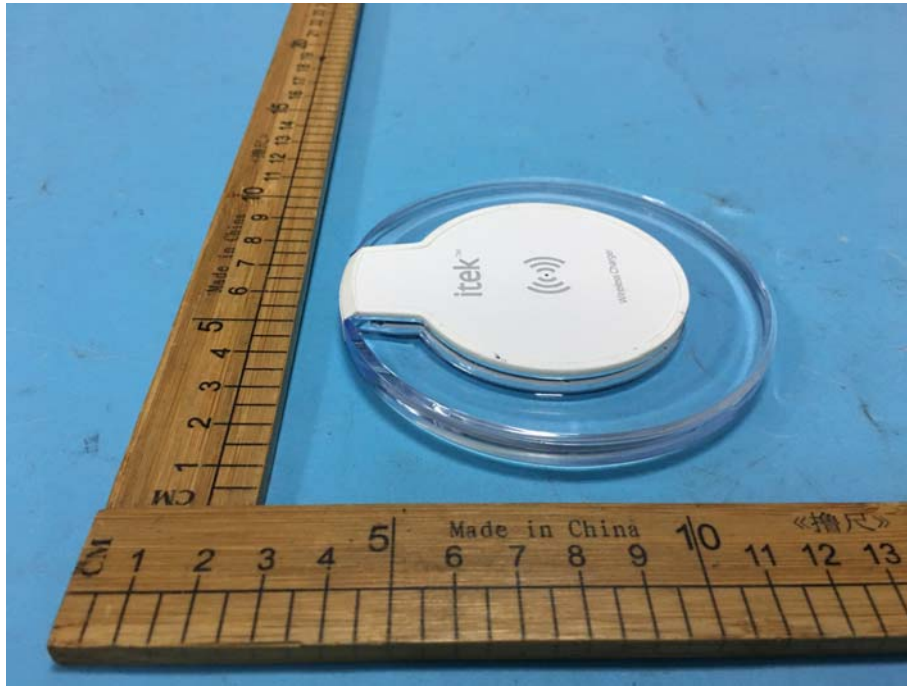


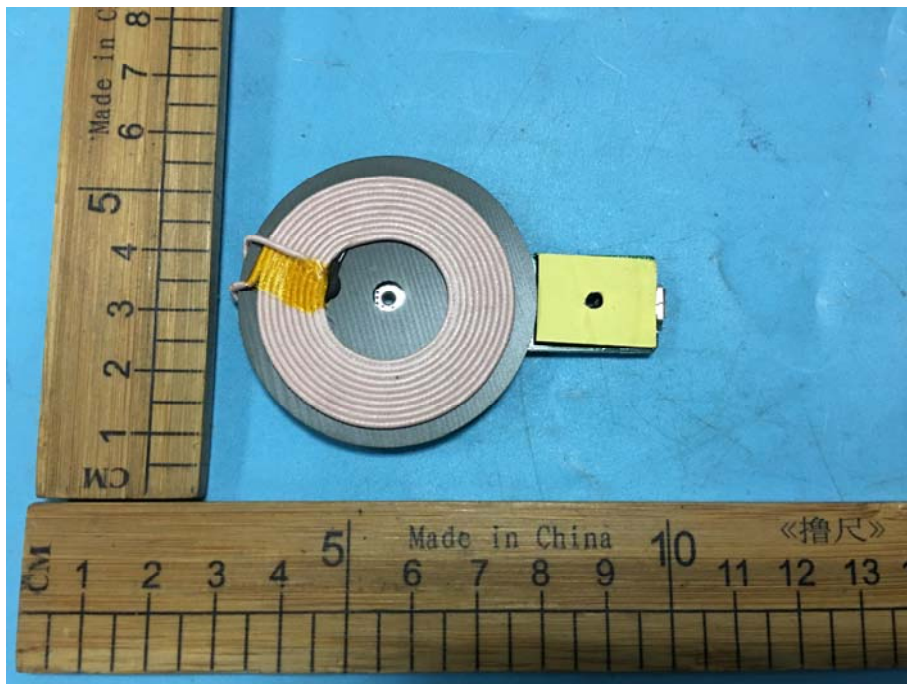
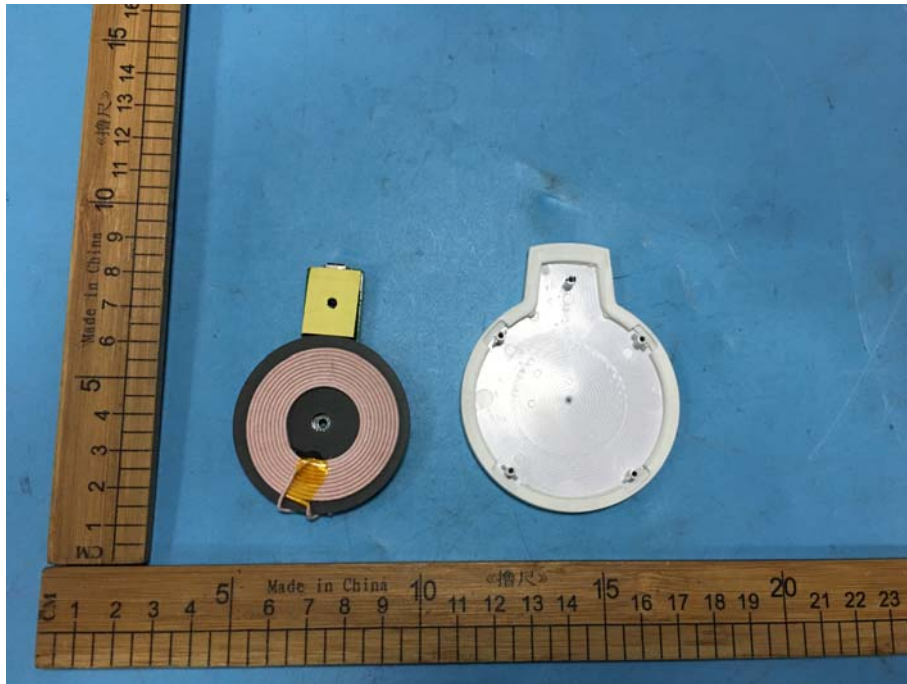


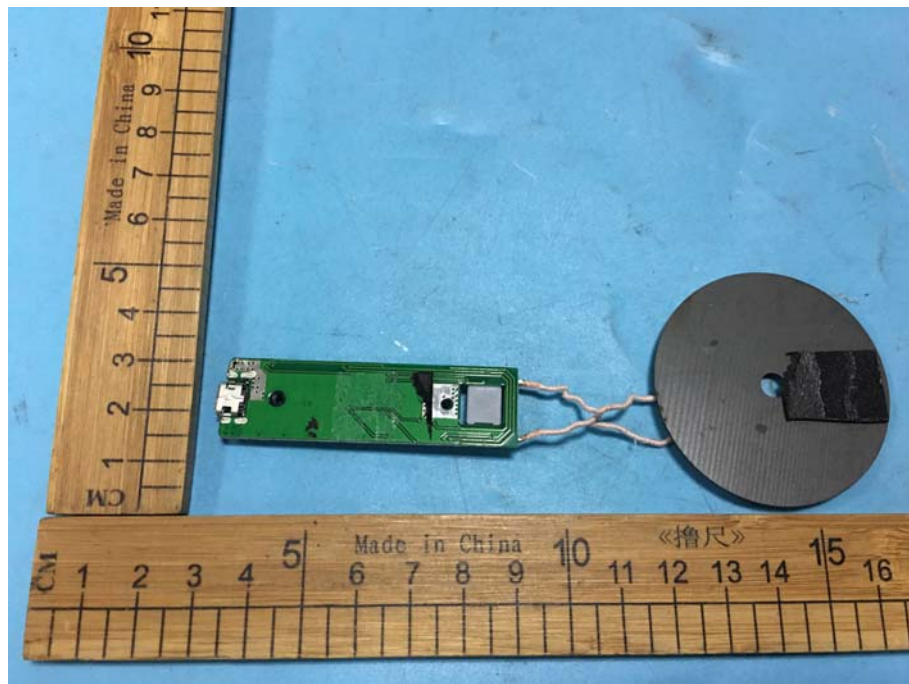
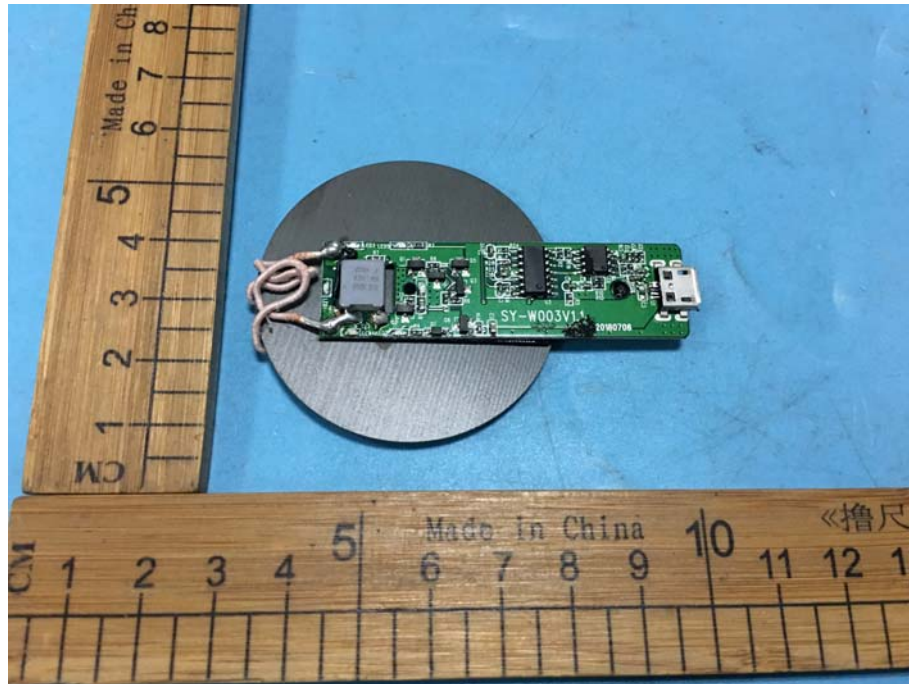
8.3.Photo of EUT



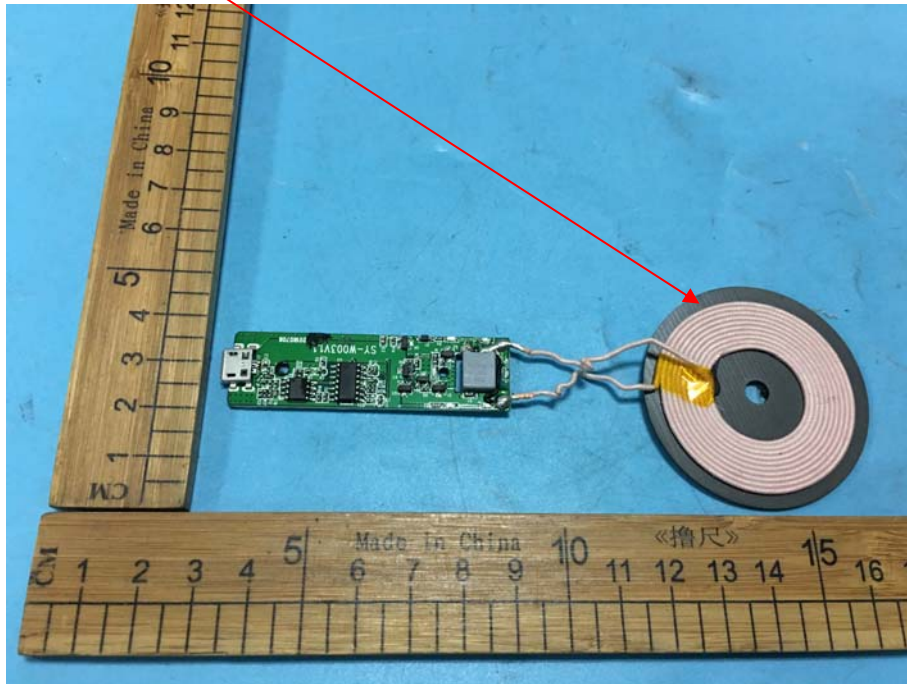








Antenna



***** End of Test Report *****