


## RADIO TEST REPORT

The device described below is tested by Dongguan Nore Testing Center Co., Ltd. to determine the maximum emission levels emanating from the device, the severe levels which the device can endure and E.U.T.'s performance criterion. The test results, data evaluation, test procedures, and equipment of configurations shown in this report were made in accordance with the procedures in ANSI C63.10(2013).

Applicant / Manufacturer : Raffel Systems, LLC  
Address : N112 W14600 Mequon Road Germantown Wisconsin United States  
Factory 1 : FORTRESS ELECTRONICS (XIAMEN) CO.,LTD  
Address 1 : East of the fifth floor, 181 banqiao road, jimei district, Xiamen, Fujian, China  
Factory 2 : ZHUHE (Xiamen) New Energy Technology Co., Ltd.  
Address 2 : Unit 401 NO.32 Xiangyue Road,Torch Hi-Tech Industrial Development  
E.U.T. : Wireless Distance Charger  
Brand Name : Raffel Systems  
Model No. : WCP BL 03, WCP BL 03-XX (For model difference refer to section 1)  
FCC ID : YZHWCPBL03  
Measurement Standard : FCC PART 15 Subpart C  
Date of Receiver : January 14, 2020  
Date of Test : January 14, 2020 to January 18, 2020  
Date of Report : February 22, 2020  
This Test Report is Issued Under the Authority of :

Prepared by

Approved & Authorized Signer

  
Alina Guo / Engineer

  
Iori Fan / Authorized Signatory

This test report is for the customer shown above and their specific product only. This report applies to above tested sample only and shall not be reproduced in part without written approval of Dongguan Nore Testing Center Co., Ltd.

## Table of Contents

<b>1. GENERAL INFORMATION .....</b>	<b>4</b>
1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST .....	4
1.2 RELATED SUBMITTAL(S) / GRANT (S) .....	5
1.3 TEST METHODOLOGY .....	5
1.4 EQUIPMENT MODIFICATIONS .....	5
1.5 SUPPORT DEVICE .....	5
1.6 TEST FACILITY AND LOCATION .....	6
1.7 SUMMARY OF TEST RESULTS .....	6
<b>2. SYSTEM TEST CONFIGURATION .....</b>	<b>7</b>
2.1 EUT CONFIGURATION .....	7
2.2 PECIAL ACCESSORIES .....	7
2.3 DESCRIPTION OF TEST MODES .....	7
2.4 EUT EXERCISE .....	7
<b>3. CONDUCTED EMISSIONS TEST .....</b>	<b>8</b>
3.1 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) .....	8
3.2 TEST CONDITION .....	8
3.3 MEASUREMENT RESULTS .....	8
<b>4. RADIATED EMISSION TEST .....</b>	<b>11</b>
4.1 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) .....	11
4.2 MEASUREMENT PROCEDURE .....	12
4.3 LIMIT .....	13
4.4 MEASUREMENT RESULTS .....	14
<b>5. 20DB BANDWIDTH .....</b>	<b>21</b>
5.1 MEASUREMENT PROCEDURE .....	21
5.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) .....	21
5.3 MEASUREMENT RESULTS .....	21
<b>6. ANTENNA APPLICATION .....</b>	<b>23</b>
6.1 ANTENNA REQUIREMENT .....	23
6.2 MEASUREMENT RESULTS .....	23
<b>7. TEST EQUIPMENT LIST .....</b>	<b>24</b>

## Revision History of This Test Report

Report Number	Description	Issued Date
NTC2001096FV00	Initial Issue	2020-02-22

## 1. GENERAL INFORMATION

### 1.1 Product Description for Equipment under Test

Product name	: Wireless Distance Charger
Main model	: WCP BL 03
Additional model	: WCP BL 03-XX (The XX will use number to show, and each X's range from 0 to 9 is for different DC input cord's length and different connector type and size.)
Model difference	: These models have the same circuit schematic, construction, PCB Layout and critical components. The difference in model number, DC input cord's length and different connector type and size due to trading purpose.
Power Supply	: Input: DC 24-31V Output: DC 9V, 1.1A, 10W Max
Test voltage	: AC 120V 60Hz adapter input.
Adapter	: N/A
Cable	: DC Line: 130cm
Software version	: V1.0
Hardware version	: V1.0
Note	: N/A
Remark	: According to the model difference, all tests were performed on model WCP BL 03.
Frequency Range	: 110.5-130KHz
Test frequency	: 119K
Remark	: N/A

## 1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: YZHWCPBL03 filing to comply with FCC Part 15 (2017), Subpart C Rule.

## 1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.10 (2013). Radiated emission measurement was performed in semi-anechoic chamber and conducted emission measurement was performed in shield room. For radiated emission measurement, preliminary scans were performed in the semi-anechoic chamber only to determine the worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters.

## 1.4 Equipment Modifications

Not available for this EUT intended for grant.

## 1.5 Support Device

Adapter	:	Manufacturer: Vornado
		M/N: PC3-0187
		Input: AC 100-240V 50/60Hz, 1.5A Max
		Output: DC 24V, 2.5A

## 1.6 Test Facility and Location

### Site Description

EMC Lab : Listed by CNAS, August 13, 2018  
 The certificate is valid until August 13, 2024  
 The Laboratory has been assessed and proved to be in compliance with CNAS/CL01  
 The Certificate Registration Number is L5795.

Listed by A2LA, November 01, 2017  
 The certificate is valid until December 31, 2021  
 The Laboratory has been assessed and proved to be in compliance with ISO17025  
 The Certificate Registration Number is 4429.01

Listed by FCC, November 06, 2017  
 The Designation Number is CN1214  
 Test Firm Registration Number: 907417

Listed by Industry Canada, June 08, 2017  
 The Certificate Registration Number. Is 46405-9743  
 Name of Firm : Dongguan Nore Testing Center Co., Ltd.  
 (Dongguan NTC Co., Ltd.)

Site Location : Building D, Gaosheng Science and Technology park, Hongtu road, Nancheng district, Dongguan city, Guangdong province, China

## 1.7 Summary of Test Results

FCC Rules	Description Of Test	Uncertainty	Result
§15.35	20dB Bandwidth	$\pm 1.42 \times 10^{-4}\%$	Compliant
§15.207 (a)	AC Power Conducted Emission	$\pm 1.06\text{dB}$	Compliant
§15.209	Radiated Emission	$\pm 3.70\text{dB}$	Compliant

## **2. System Test Configuration**

### **2.1 EUT Configuration**

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

### **2.2 pecial Accessories**

Not available for this EUT intended for grant.

### **2.3 Description of test modes**

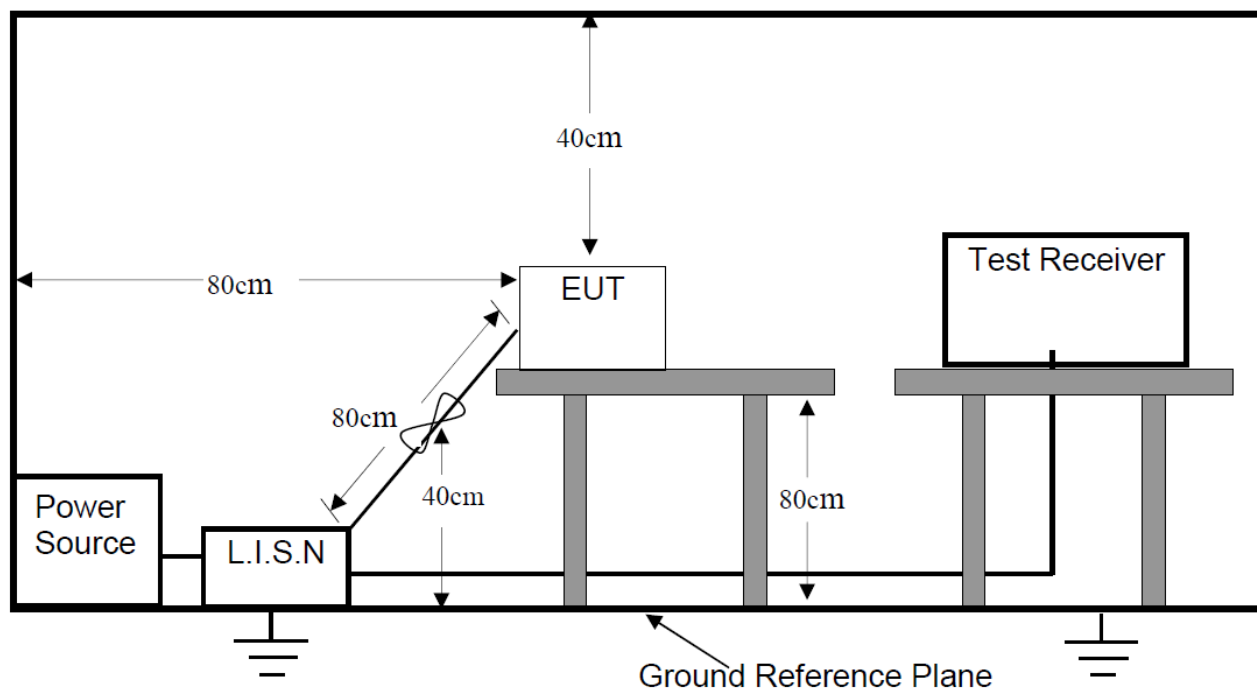
The EUT has been tested under operating condition. Test program used to control the EUT for staying in continuous transmitting and normal mode is programmed. The Lowest, middle and highest channel were chosen for testing.

### **2.4 EUT Exercise**

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements.

### 3. Conducted Emissions Test

#### 3.1 Test SET-UP (Block Diagram of Configuration)



#### 3.2 Test Condition

Test Requirement: FCC Part 15.207

Frequency Range: 150KHz ~ 30MHz

Detector: RBW 9KHz, VBW 30KHz

Operation Mode: Full Load, Half Load, Empty Load

#### 3.3 Measurement Results

Please refer to following plots of the worst case: Full Load.





Dongguan NTC Co., Ltd.  
Tel: +86-769-22022444 Fax: +86-769-22022799  
Web: Http://www.ntc-c.com

### Conducted Emission Measurement

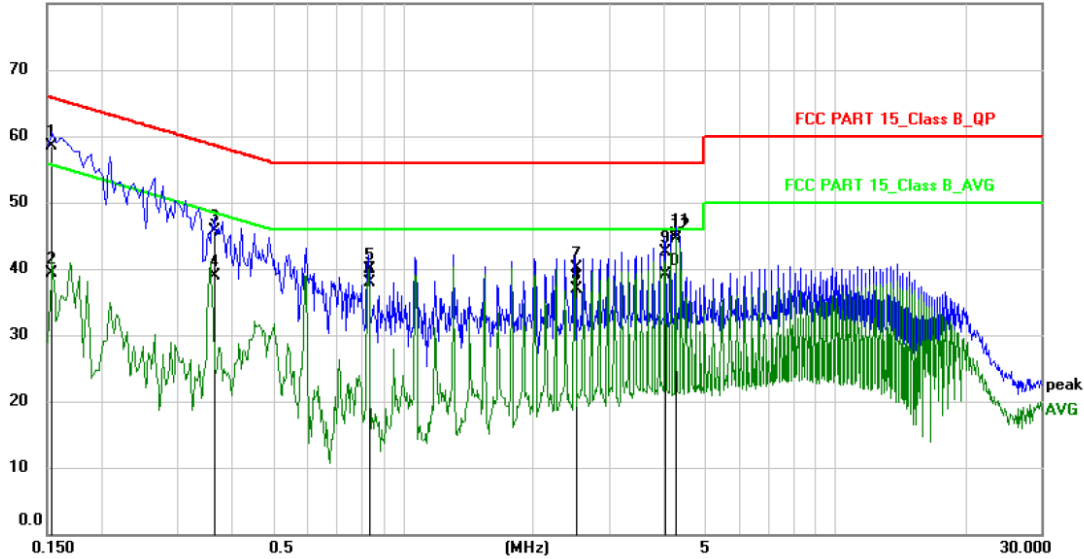
File :WCP BL 03

Data :#5

Date: 2020/1/17

Time: 14:23:18

80.0 dBuV



Site

Phase: **L1**

Temperature: 26

Limit: FCC PART 15\_Class B\_QP

Power: AC120V/60Hz

Humidity: 50 %

EUT: Wireless Distance Charger

M/N: WCP BL 03

Mode: TX

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.1539	48.00	10.60	58.60	65.79	-7.19	QP	
2		0.1539	28.70	10.60	39.30	55.79	-16.49	AVG	
3		0.3660	35.09	10.61	45.70	58.59	-12.89	QP	
4		0.3660	28.39	10.61	39.00	48.59	-9.59	AVG	
5		0.8340	29.32	10.68	40.00	56.00	-16.00	QP	
6		0.8340	27.22	10.68	37.90	46.00	-8.10	AVG	
7		2.5020	29.40	10.70	40.10	56.00	-15.90	QP	
8		2.5020	26.30	10.70	37.00	46.00	-9.00	AVG	
9		4.0460	31.89	10.71	42.60	56.00	-13.40	QP	
10		4.0460	28.49	10.71	39.20	46.00	-6.80	AVG	
11		4.2860	34.39	10.71	45.10	56.00	-10.90	QP	
12	*	4.2860	33.79	10.71	44.50	46.00	-1.50	AVG	



Dongguan NTC Co., Ltd.  
Tel: +86-769-22022444 Fax: +86-769-22022799  
Web: Http://www.ntc-c.com

### Conducted Emission Measurement

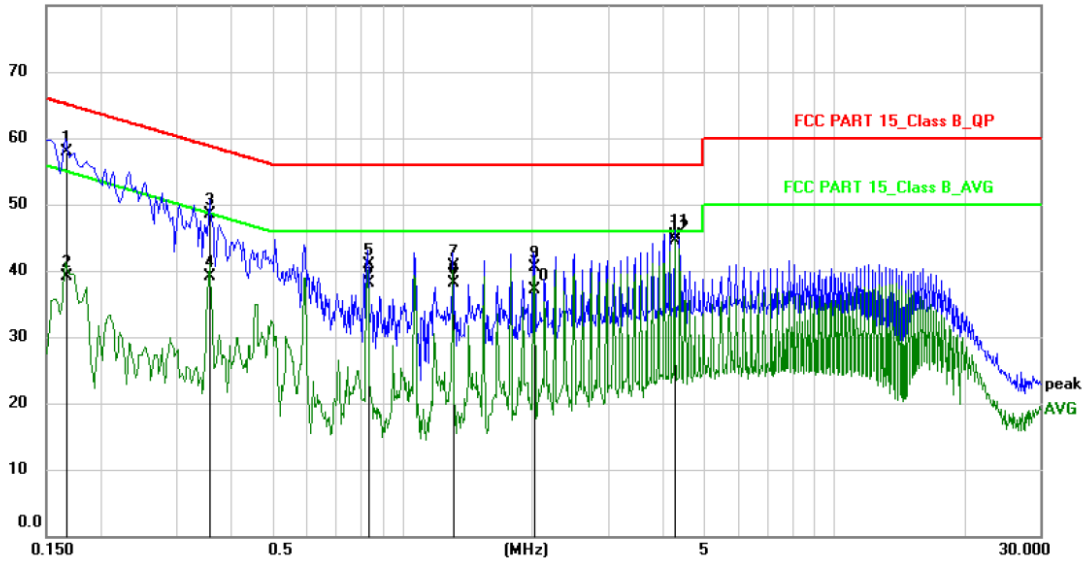
File :WCP BL 03

Data :#6

Date: 2020/1/17

Time: 14:30:34

80.0 dBuV



Site

Phase: **N**

Temperature: 26

Limit: FCC PART 15\_Class B\_QP

Power: AC120V/60Hz

Humidity: 50 %

EUT: Wireless Distance Charger

M/N: WCP BL 03

Mode: TX

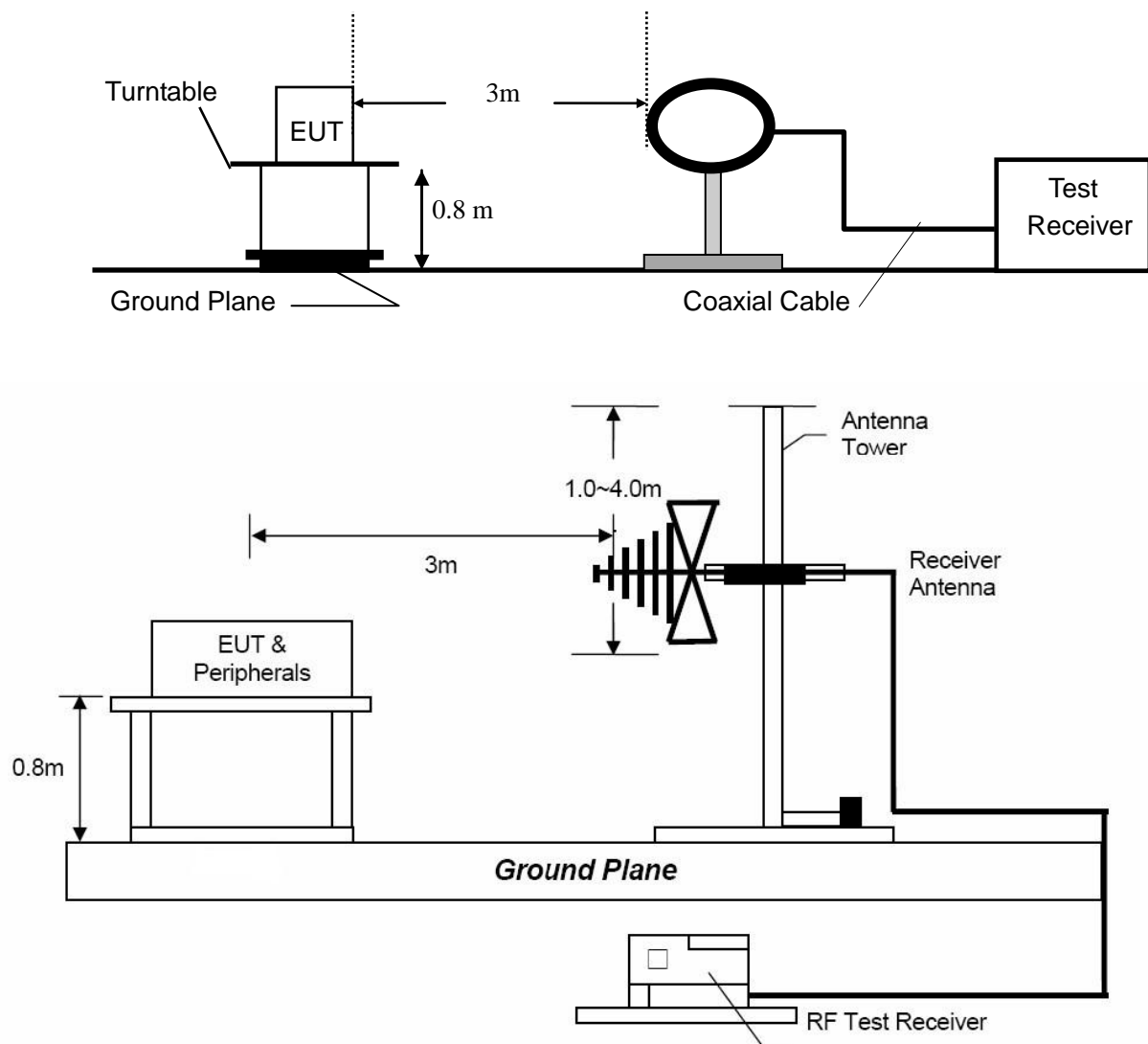
Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	Level	Factor	ment			Detector	Comment
			dBuV	dB	dBuV	dBuV	dB		
1		0.1660	47.30	10.60	57.90	65.16	-7.26	QP	
2		0.1660	28.60	10.60	39.20	55.16	-15.96	AVG	
3		0.3580	37.99	10.61	48.60	58.77	-10.17	QP	
4		0.3580	28.49	10.61	39.10	48.77	-9.67	AVG	
5		0.8340	30.32	10.68	41.00	56.00	-15.00	QP	
6		0.8340	27.42	10.68	38.10	46.00	-7.90	AVG	
7		1.3099	30.00	10.70	40.70	56.00	-15.30	QP	
8		1.3099	27.40	10.70	38.10	46.00	-7.90	AVG	
9		2.0220	29.90	10.70	40.60	56.00	-15.40	QP	
10		2.0220	26.50	10.70	37.20	46.00	-8.80	AVG	
11		4.2860	34.59	10.71	45.30	56.00	-10.70	QP	
12	*	4.2860	33.89	10.71	44.60	46.00	-1.40	AVG	

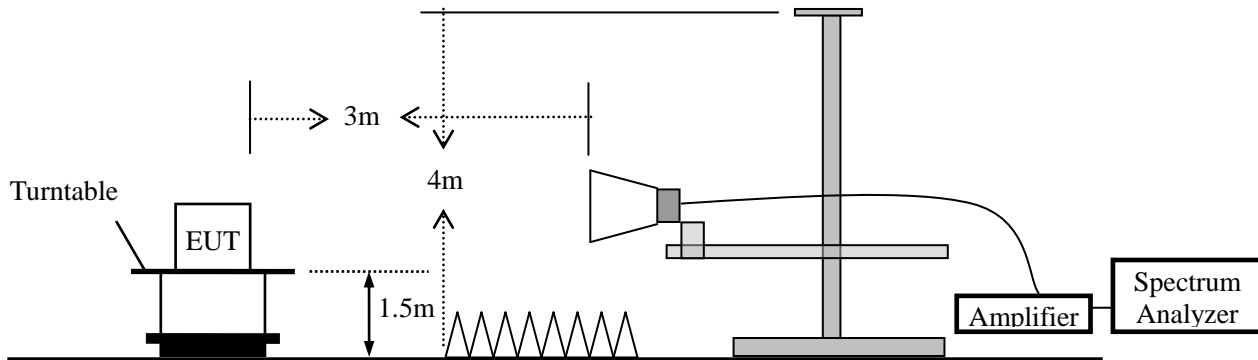
## 4. Radiated Emission Test

### 4.1 Test SET-UP (Block Diagram of Configuration)

#### 4.1.1 Radiated Emission Test Set-Up, Frequency Below 30MHz



#### 4.1.2 Radiated Emission Test Set-Up, Frequency above 1GHz



#### 4.2 Measurement Procedure

- Blow 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi- anechoic chamber room.
- For the radiated emission test above 1GHz:  
The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter full anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. The test-receiver system was set to peak detect function and specified bandwidth with maximum hold mode.
- A Quasi-peak measurement was then made for that frequency point for below 1GHz test. PK and AV for above 1GHz emission test.

During the radiated emission test, the spectrum analyzer was set with the following configurations:

Frequency Band (MHz)	Level	Resolution Bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
Above 1000	Peak	1 MHz	3 MHz
	Average	1 MHz	10 Hz

### 4.3 Limit

Frequency range MHz	Distance Meters	Field Strengths Limit (15.209)
		$\mu\text{V/m}$
0.009 ~ 0.490	300	$2400/F(\text{kHz})$
0.490 ~ 1.705	30	$24000/F(\text{kHz})$
1.705 ~ 30	30	30
30 ~ 88	3	100
88 ~ 216	3	150
216 ~ 960	3	200
Above 960	3	500

- Remark :
- (1) Emission level  $(\text{dB})\mu\text{V} = 20 \log \text{Emission level } \mu\text{V/m}$
  - (2) The smaller limit shall apply at the cross point between two frequency bands.
  - (3) As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.
  - (4) The frequency range scanned is from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or 40 GHz, whichever is lower.

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9KHz~90KHz/ RB 200Hz for AV
	90KHz~110KHz/ RB 200Hz for QP
	110KHz~490KHz/ RB 200Hz for AV
	490KHz~30MHz/ RB 9KHz for QP
	30MHz~1000MHz/ RB 120KHz for QP

FCC 15.209 (d) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90KHz, 110-490KHz and above 1000MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

#### 4.4 Measurement Results

Please refer to following plots of the worst case: Full Load.



Dongguan NTC Co., Ltd.  
Tel: +86-769-22022444 Fax: +86-769-22022799  
Web: [Http://www.ntc-c.com](http://www.ntc-c.com)

### Radiated Emission Measurement

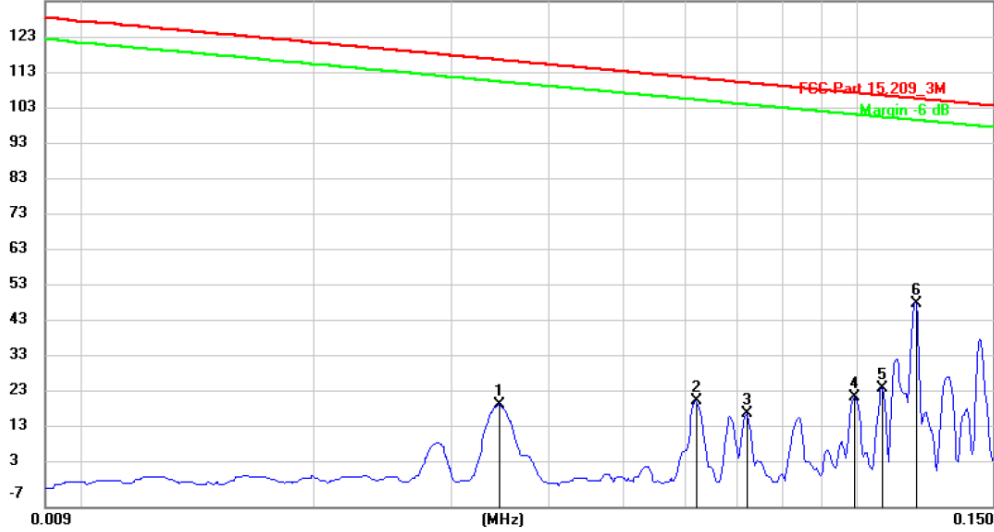
File : WCP BL 03

Data : #1

Date: 2020/1/17

Time: 18:41:00

133.0 dBuA



Site

Polarization: **Horizontal**

Temperature: 26

Limit: FCC Part 15.209\_3M

Power: AC120V/60Hz

Humidity: 60 %

EUT: Wireless Distance Charger

Distance:

M/N: WCP BL 03

Mode: TX

Note:

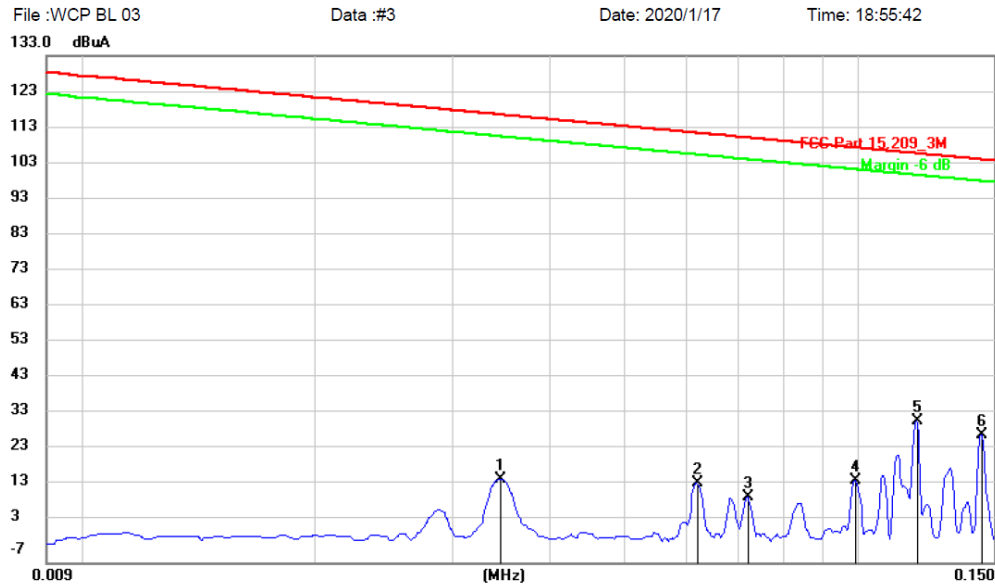
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuA	dBuA	dB	cm	degree	Comment
1		0.0345	-11.24	32.29	21.05	116.72	-95.67	QP		
2		0.0621	-10.15	32.30	22.15	111.64	-89.49	QP		
3		0.0723	-13.71	32.30	18.59	110.33	-91.74	QP		
4		0.0994	-9.19	32.31	23.12	107.58	-84.46	QP		
5		0.1081	-6.54	32.31	25.77	106.85	-81.08	QP		
6	*	0.1192	17.05	32.30	49.35	106.01	-56.66	QP		

Note: When the PEAK level was below the limit of AV level, the AV levels were considered to meet the requirements.



Dongguan NTC Co., Ltd.  
Tel: +86-769-22022444 Fax: +86-769-22022799  
Web: [Http://www.ntc-c.com](http://www.ntc-c.com)

### Radiated Emission Measurement



Site  
Limit: FCC Part 15.209\_3M  
EUT: Wireless Distance Charger  
M/N: WCP BL 03  
Mode: TX  
Note:

Polarization: **Vertical** Temperature: 26  
Power: AC120V/60Hz Humidity: 60 %  
Distance:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuA	dBuA	dB	cm	degree	Comment
1		0.0345	-16.23	32.29	16.06	116.72	-100.66	QP		
2		0.0621	-17.30	32.30	15.00	111.64	-96.64	QP		
3		0.0720	-21.22	32.30	11.08	110.36	-99.28	QP		
4		0.0991	-16.81	32.31	15.50	107.61	-92.11	QP		
5	*	0.1192	-0.33	32.30	31.97	106.01	-74.04	QP		
6		0.1444	-4.07	32.30	28.23	104.35	-76.12	QP		

Note: When the PEAK level was below the limit of AV level, the AV levels were considered to meet the requirements.





Dongguan NTC Co., Ltd.  
Tel: +86-769-22022444 Fax: +86-769-22022799  
Web: <http://www.ntc-c.com>

### Radiated Emission Measurement

File: WCP BL 03

Data: #2

Date: 2020/1/17

Time: 18:48:49

123.0 dBuA



Site

Polarization: **Horizontal**

Temperature: 26

Limit: FCC Part 15.209\_3M

Power: AC120V/60Hz

Humidity: 60 %

EUT: Wireless Distance Charger

Distance:

M/N: WCP BL 03

Mode: TX

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuA	dBuA	dB	cm	degree	Comment
1		0.3366	21.97	32.25	54.22	97.04	-42.82	QP		
2		0.4112	20.10	32.23	52.33	95.31	-42.98	QP		
3	*	1.4932	10.74	32.17	42.91	70.87	-27.96	QP		
4		3.9559	3.14	32.20	35.34	68.30	-32.96	QP		
5		9.4032	-2.14	32.33	30.19	66.02	-35.83	QP		
6		13.5449	-16.41	32.33	15.92	65.06	-49.14	QP		

Note: When the PEAK level was below the limit of AV level, the AV levels were considered to meet the requirements.



Dongguan NTC Co., Ltd.  
Tel:+86-769-22022444 Fax:+86-769-22022799  
Web: <http://www.ntc-c.com>

### Radiated Emission Measurement

File :WCP BL 03

Data :#4

Date: 2020/1/17

Time: 19:02:28

133.0 dBuA



Site

Polarization: **Vertical**

Temperature: 26

Limit: FCC Part 15.209\_3M

Power: AC120V/60Hz

Humidity: 60 %

EUT: Wireless Distance Charger

Distance:

M/N: WCP BL 03

Mode: TX

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuA	dBuA	dB	cm	degree	Comment
1		0.3366	9.15	32.25	41.40	97.04	-55.64	QP		
2	*	0.5604	2.47	32.21	34.68	73.45	-38.77	QP		
3		1.4932	-1.55	32.17	30.62	70.87	-40.25	QP		
4		2.5752	-11.03	32.17	21.14	69.43	-48.29	QP		
5		3.9186	-10.61	32.20	21.59	68.33	-46.74	QP		
6		9.8139	-17.23	32.35	15.12	65.91	-50.79	QP		

Note: When the PEAK level was below the limit of AV level, the AV levels were considered to meet the requirements.



Dongguan NTC Co., Ltd.  
Tel:+86-769-22022444 Fax:+86-769-22022799  
Web: <http://www.ntc-c.com>

### Radiated Emission Measurement

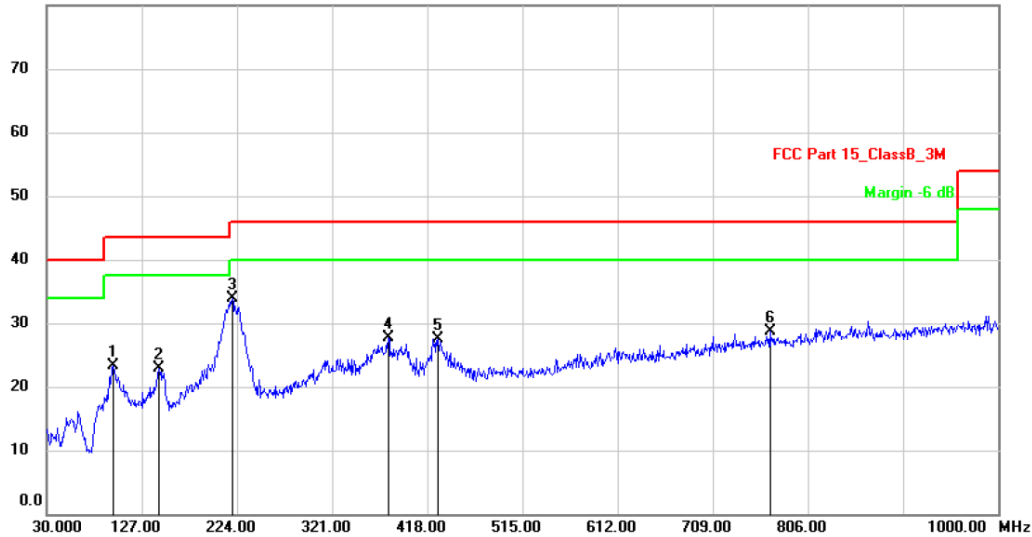
File :WCP BL 03

Data :#6

Date: 2020/1/17

Time: 19:16:07

80.0 dBuV/m



Site

Polarization: **Horizontal**

Temperature: 26

Limit: FCC Part 15\_ClassB\_3M

Power: AC120V/60Hz

Humidity: 47 %

EUT: Wireless Distance Charger

Distance: 3m

M/N: WCP BL 03

Mode: TX

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		97.9000	35.69	-12.40	23.29	43.50	-20.21	QP		
2		144.4600	38.47	-15.60	22.87	43.50	-20.63	QP		
3	*	219.1500	46.82	-13.00	33.82	46.00	-12.18	QP		
4		378.2300	36.87	-9.19	27.68	46.00	-18.32	QP		
5		428.6700	36.03	-8.46	27.57	46.00	-18.43	QP		
6		767.2000	30.99	-2.36	28.63	46.00	-17.37	QP		



Dongguan NTC Co., Ltd.  
Tel: +86-769-22022444 Fax: +86-769-22022799  
Web: <http://www.ntc-c.com>

### Radiated Emission Measurement

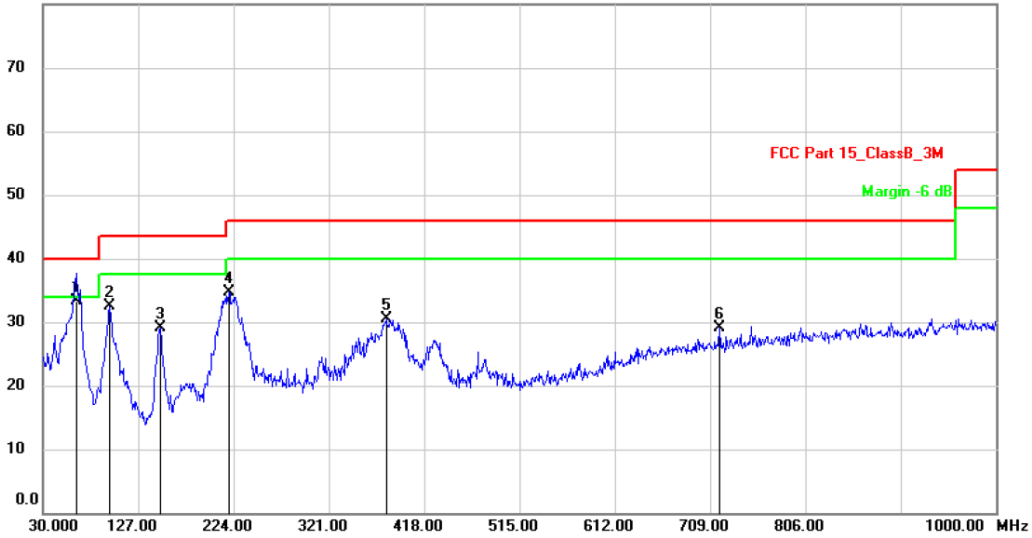
File : WCP BL 03

Data : #5

Date: 2020/1/17

Time: 19:9:58

80.0 dBuV/m



Site

Polarization: **Vertical**

Temperature: 26

Limit: FCC Part 15\_ClassB\_3M

Power: AC120V/60Hz

Humidity: 47 %

EUT: Wireless Distance Charger

Distance: 3m

M/N: WCP BL 03

Mode: TX

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	63.9500	48.60	-15.30	33.30	40.00	-6.70	QP			
2		97.9000	48.57	-15.98	32.59	43.50	-10.91	QP			
3		149.3100	47.65	-18.52	29.13	43.50	-14.37	QP			
4		219.1500	50.62	-16.00	34.62	46.00	-11.38	QP			
5		379.2000	41.77	-11.20	30.57	46.00	-15.43	QP			
6		718.7000	32.40	-3.34	29.06	46.00	-16.94	QP			

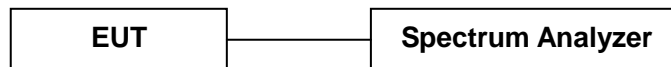
## 5. 20dB Bandwidth

### 5.1 Measurement Procedure

Maximum 20dB RF Bandwidth, FCC Rule 15.35:

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RBW was chosen so that the display was a result of the hopping channel modulation. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. Use the spectrum 20dB down delta function to measure the bandwidth.

### 5.2 Test SET-UP (Block Diagram of Configuration)



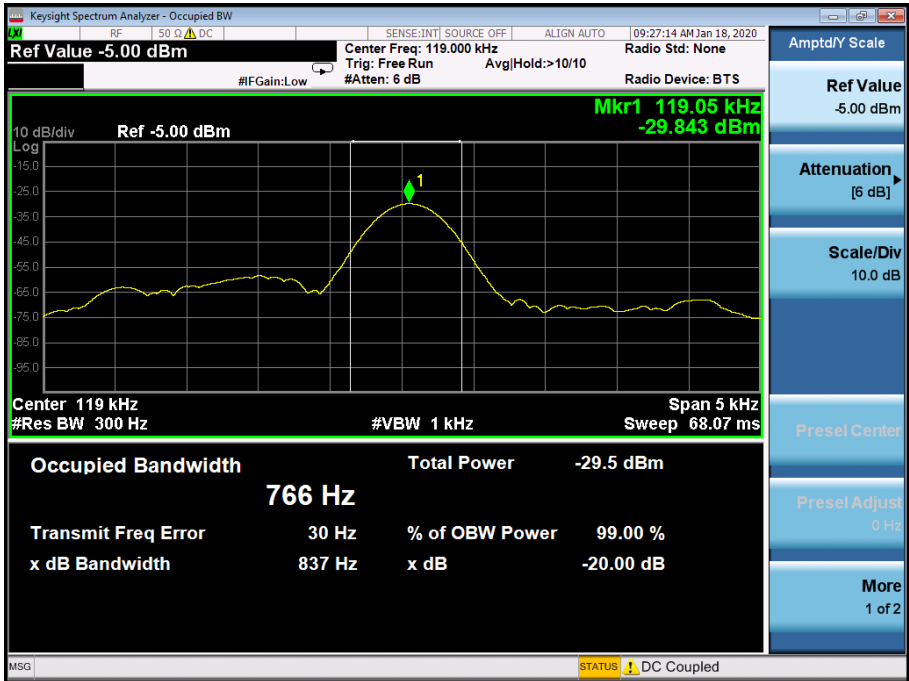
### 5.3 Measurement Results

Refer to attached data chart.

RBW:	300Hz	VBW:	1KHz
Test By:	Sance	Spectrum Detector:	PK
Temperature :	24 °C	Test Date :	January 18, 2020
Test Result:	PASS	Humidity :	50 %

Channel frequency (KHz)	20dB Down BW(Hz)
119	837

Test Channel



## 6. Antenna Application

### 6.1 Antenna requirement

According to of FCC part 15C section 15.203 and 15.240:

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

### 6.2 Measurement Results

The antenna is coil antenna that no antenna other than furnished by the responsible party shall be used with the device, and the best case gain of the antenna is 0dBi, So, the antenna is consider meet the requirement.

## 7. Test Equipment List

Description	Manufacturer	Model Number	Serial Number	Characteristics	Calibration Date	Calibration Due Date
Test Receiver	Rohde & Schwarz	ESC17	100837	9KHz~7GHz	Mar. 13, 2019	Mar. 13, 2020
Antenna	Schwarzbeck	VULB9162	9162-010	30MHz~7GHz	Mar. 22, 2019	Mar. 22, 2020
Spectrum Analyzer	Rohde & Schwarz	FSU26	200409/026	20Hz~26.5GHz	Mar. 13, 2019	Mar. 13, 2020
Spectrum Analyzer	Keysight	N9020A	MY54200831	20Hz~26.5GHz	Apr. 23, 2019	Apr. 23, 2020
Spectrum Analyzer	Rohde & Schwarz	FSV40	101003	10Hz~40GHz	Apr. 23, 2019	Apr. 23, 2020
Horn Antenna	Schwarzbeck	BBHA9170	9170-372	15GHz~40GHz	Mar. 22, 2019	Mar. 22, 2020
Pre-Amplifier	EMCI	EMC 184045	980102	18GHz~40GHz	Apr. 23, 2019	Apr. 23, 2020
Power Sensor	DARE	RPR3006W	15I00041SN O64	100MHz~6GHz	Mar. 13, 2019	Mar. 13, 2020
Communication Tester	Rohde & Schwarz	CMW500	149004	70MHz~6GHz	Mar. 13, 2019	Mar. 13, 2020
Horn Antenna	COM-Power	AH-118	071078	500MHz~18GHz	Mar. 22, 2019	Mar. 22, 2020
Pre-Amplifier	HP	HP 8449B	3008A00964	1GHz~26.5GHz	Mar. 13, 2019	Mar. 13, 2020
Pre-Amplifier	HP	HP 8447D	1145A00203	100KHz~1.3GHz	Mar. 13, 2019	Mar. 13, 2020
Loop Antenna	Schwarzbeck	FMZB 1513	1513-272	9KHz~30MHz	Apr. 23, 2019	Apr. 23, 2020
Temperature & Humidity Chamber	REMAFEE	SYHR225L	N/A	-40~150℃	Apr. 23, 2019	Apr. 23, 2020
DC Source	MY	MY8811	N/A	0~30V	N/A	N/A
Temporary antenna connector	TESCOM	SS402	N/A	9KHz~25GHz	N/A	N/A
Power Meter	Anritsu	ML2495A	1139001	100k-65GHz	Apr. 23, 2019	Apr. 23, 2020
Power Sensor	Anritsu	MA2411B	100345	300M-40GHz	Apr. 23, 2019	Apr. 23, 2020
Test Software	EZ	EZ_EMC	N/A	N/A	N/A	N/A
Test Receiver	Rohde & Schwarz	ESCI	101152	9KHz-3GHz	Mar. 14, 2019	Mar. 13, 2020
L.I.S.N	Rohde & Schwarz	ENV 216	101317	9KHz-30MHz	Mar. 14, 2019	Mar. 13, 2020
RF Switching Unit	Compliance Direction Systems Inc.	RSU-M2	38311	9KHz-3GHz	Mar.14, 2019	Mar. 13, 2020

Note: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

---End---