

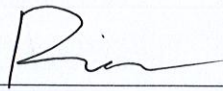
# RADIO TEST REPORT

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 : iOttie, Inc  
Address : 33 West 46th Street, 6th FL. New York, NY 10036 United States  
Manufacturer/Factory : iOttie, Inc  
Address : 33 West 46th Street, 6th FL. New York, NY 10036 United States  
E.U.T. : iTap Wireless Qi Fast Charging Magnetic Car Mount  
Brand Name : **iOttie**  
Model No. : HLCRIO133  
FCC ID : 2AMROHLCRIO133  
Measurement Standard : FCC PART 15 Subpart C  
Date of Receiver : June 30, 2017  
Date of Test : June 30, 2017 to July 10, 2017  
Date of Report : July 10, 2017

This Test Report is Issued Under the Authority of :

Prepared by



Rose Hu / Engineer

Approved & Authorized Signer



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.

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## Revision History of This Test Report

Report Number	Description	Issued Date
NTC1706368FV00	Initial Issue	2017-07-10

## 1. GENERAL INFORMATION

### 1.1 Product Description for Equipment under Test

Model name	: HLCRIO133
Model difference	: None
Power Supply	: DC 9.0V
Adapter	: None
Test voltage	: AC 120V 60Hz Adapter input
Hardware version	: V1.0
Software version	: V1.0
Serial number	: N/A
Note	: None
Frequency Range	: 105.5-204.5KHz

**Note:** The Lowest, middle, and the Highest frequency of channel were selected to perform the test. The selected frequency and test software see below:

Channel	Frequency MHz
1	105.5
51	155.5
100	204.5

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

This submittal(s) (test report) is intended for FCC ID: **2AMROHLCRIO133** filing to comply with FCC Part 15 (2016), 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	:	M/N: EP-TA20CBC
(Provided by		Input: AC100-240V 50-60Hz, 0.5A
manufacturer)		Output: DC 9.0V 1.67A

## 1.6 Test Facility and Location

Listed by CNAS, August 14, 2015  
The certificate is valid until August 13, 2018  
The Laboratory has been assessed and proved to be  
in compliance with CNAS/CL01  
The Certificate Registration Number is L5795.

Listed by FCC, July 03, 2014  
The Certificate Registration Number is 665078.  
Listed by Industry Canada, June 18, 2014  
The Certificate Registration Number is 46405-9743.

Dongguan NTC Co., Ltd.  
(Full Name: Dongguan Nore Testing Center Co., Ltd.)

Building D, Gaosheng Science and Technology Park, Hongtu Road,  
Nancheng District, Dongguan City, Guangdong, China  
(Full Name: Building D, Gaosheng Science & Technology Park,  
Zhouxi Longxi Road, Nancheng District, Dongguan, Guangdong, 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 Special Accessories**

Not available for this EUT intended for grant.

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

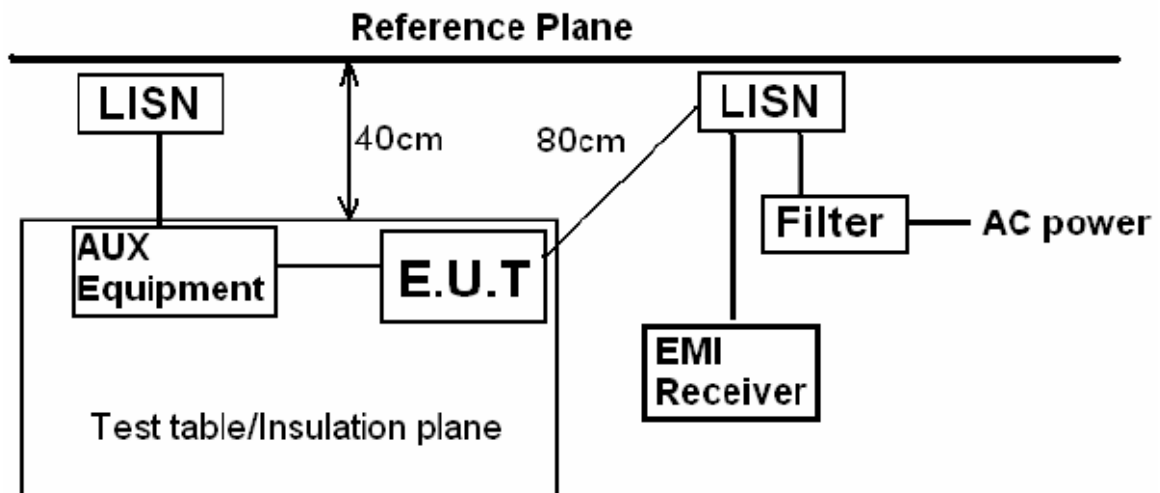
The EUT has been tested under operating condition. Test program used to control the EUT for staying in continuous transmitting and normal mode is programmed. The Lowest, middle and highest channel were chosen for testing.

### **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

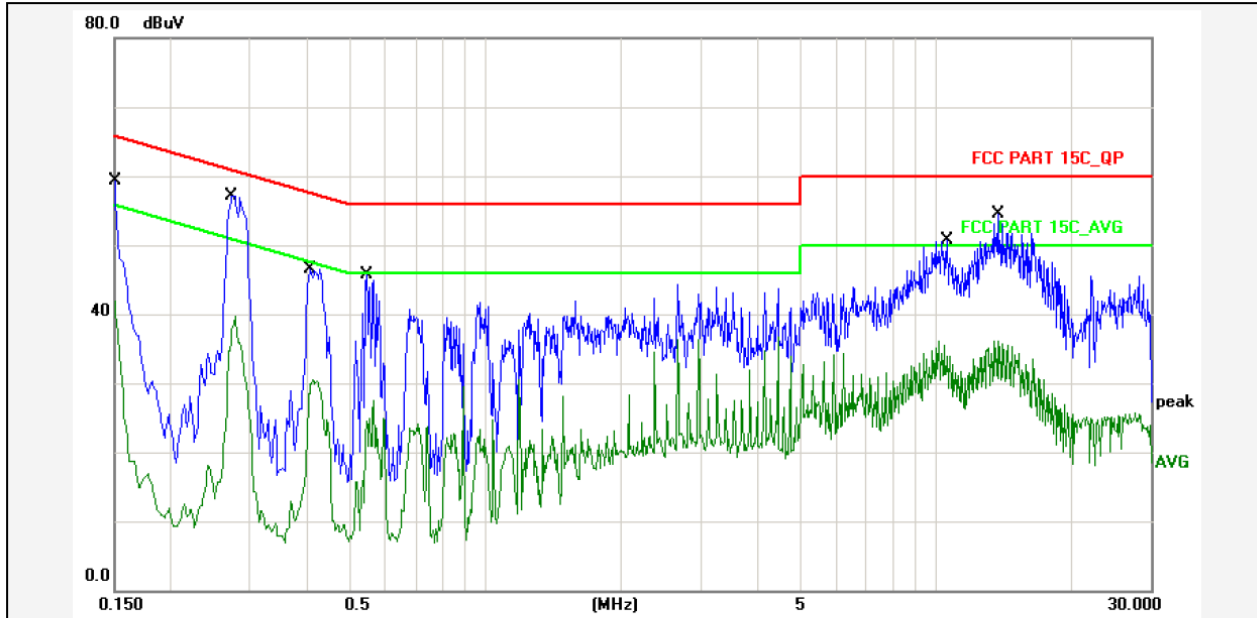
Please refer to following plots of the worst case: Full Load.



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

Site: Conduction

Test Time: 2017-7-8 9:38:53



Report No.: HLCRIO133

Test Standard: FCC PART 15C\_QP

Test item: Conducted Emission

Applicant: iOttie

Product: iTap Wireless Qi Fast Charging Magnetic Car Mount

Model No.: HLCRIO133

Phase: L1

Temp.( )/Hum.(%): 26(C) / 60 %

Power Rating: AC 120V/60Hz

Test Engineer: Ivan

Test Mode: Full Load

Remark:

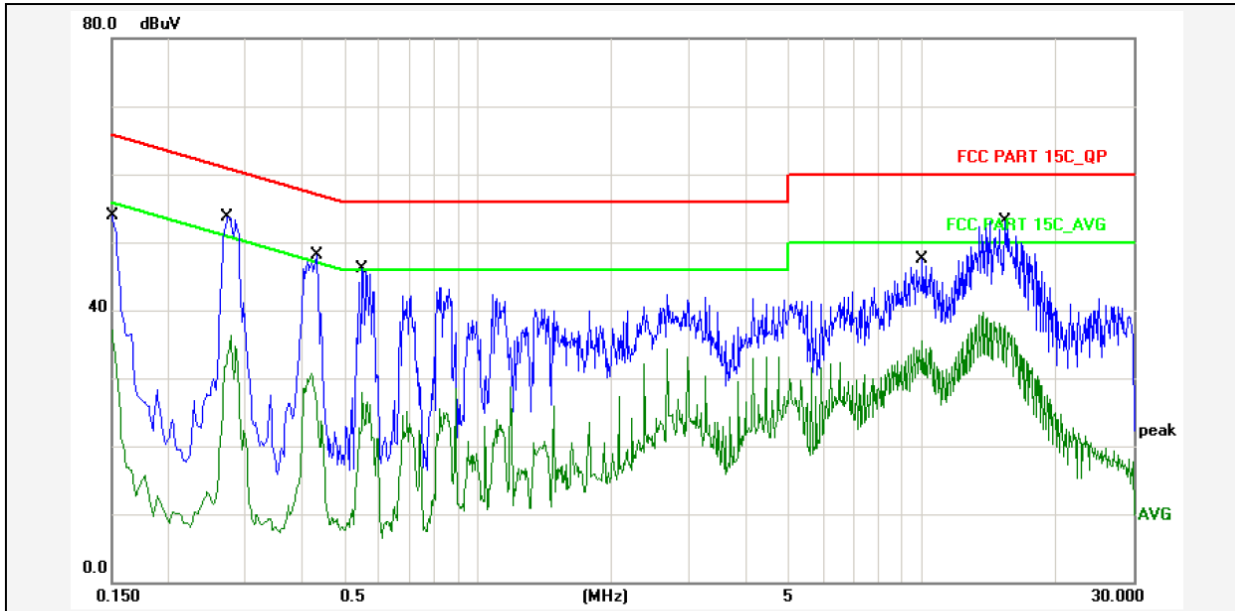
No.	Frequency (MHz)	Factor (dBuV)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1500	10.80	46.60	57.40	65.99	-8.59	QP	P	
2	0.1500	10.80	29.10	39.90	55.99	-16.09	AVG	P	
3	0.2740	10.80	44.30	55.10	60.99	-5.89	QP	P	
4	0.2740	10.80	27.00	37.80	50.99	-13.19	AVG	P	
5	0.4100	10.80	33.80	44.60	57.65	-13.05	QP	P	
6	0.4100	10.80	17.60	28.40	47.65	-19.25	AVG	P	
7	0.5460	10.80	32.90	43.70	56.00	-12.30	QP	P	
8	0.5460	10.80	14.60	25.40	46.00	-20.60	AVG	P	
9	10.5859	10.80	37.90	48.70	60.00	-11.30	QP	P	
10	10.5859	10.80	22.70	33.50	50.00	-16.50	AVG	P	
11	13.7179	10.80	41.80	52.60	60.00	-7.40	QP	P	
12	13.7179	10.80	23.40	34.20	50.00	-15.80	AVG	P	



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Web: [Http://www.ntc-c.com](http://www.ntc-c.com)

Site: Conduction

Test Time: 2017-7-8 9:46:41



Report No.: HLCRIO133

Test Standard: FCC PART 15C\_QP

Test item: Conducted Emission

Applicant: iOttie

Product: iTap Wireless Qi Fast Charging Magnetic Car Mount

Model No.: HLCRIO133

Phase: N

Temp.( )/Hum.(%): 26(C) / 60 %

Power Rating: AC 120V/60Hz

Test Engineer: Ivan

Test Mode: Full Load

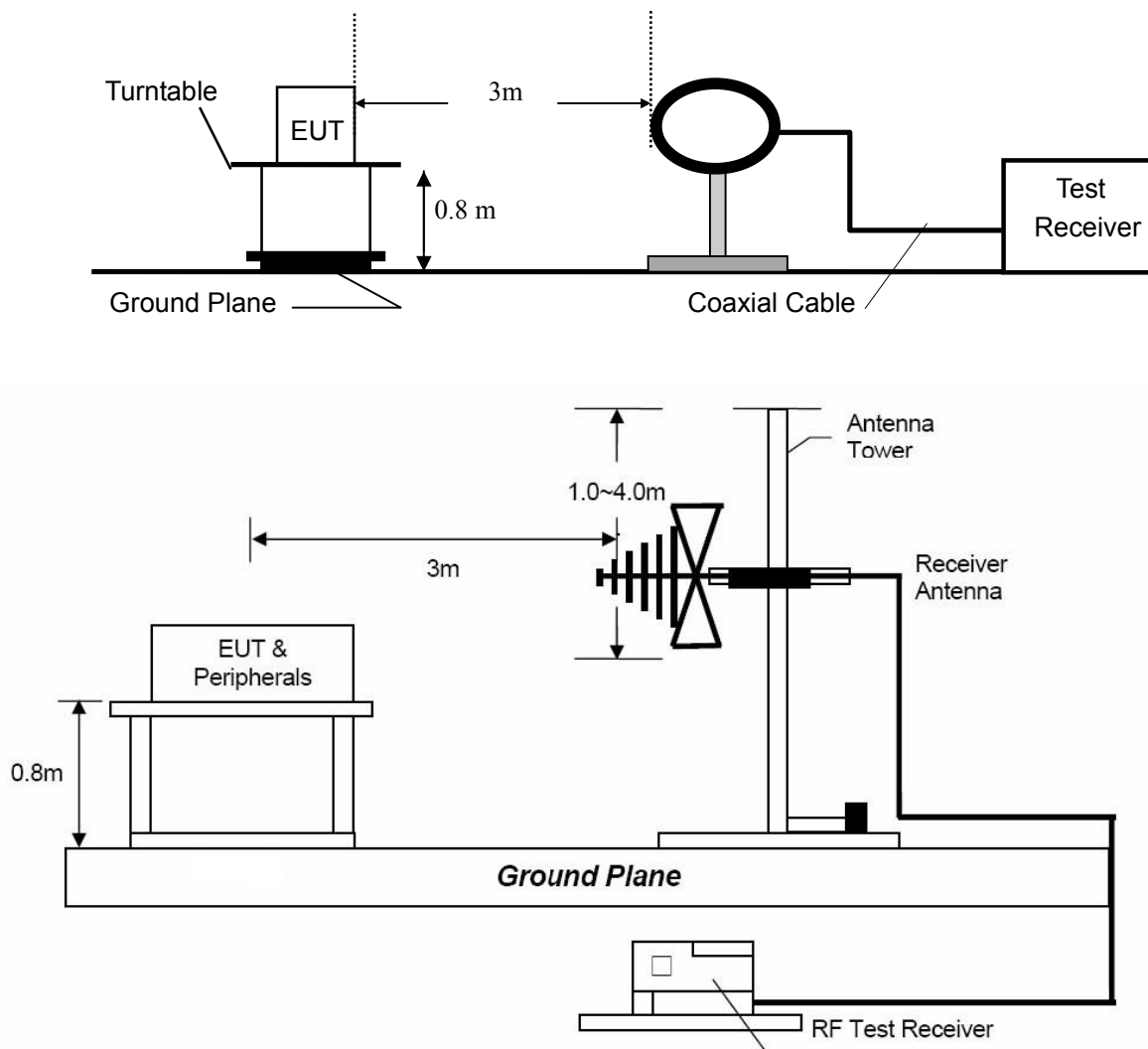
Remark:

No.	Frequency (MHz)	Factor (dBuV)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1500	10.80	41.20	52.00	65.99	-13.99	QP	P	
2	0.1500	10.80	24.30	35.10	55.99	-20.89	AVG	P	
3	0.2740	10.80	40.80	51.60	60.99	-9.39	QP	P	
4	0.2740	10.80	23.50	34.30	50.99	-16.69	AVG	P	
5	0.4340	10.80	35.30	46.10	57.18	-11.08	QP	P	
6	0.4340	10.80	17.90	28.70	47.18	-18.48	AVG	P	
7	0.5500	10.80	33.30	44.10	56.00	-11.90	QP	P	
8	0.5500	10.80	15.20	26.00	46.00	-20.00	AVG	P	
9	10.0699	10.80	34.70	45.50	60.00	-14.50	QP	P	
10	10.0699	10.80	22.70	33.50	50.00	-16.50	AVG	P	
11	15.4379	10.80	40.40	51.20	60.00	-8.80	QP	P	
12	15.4379	10.80	26.90	37.70	50.00	-12.30	AVG	P	

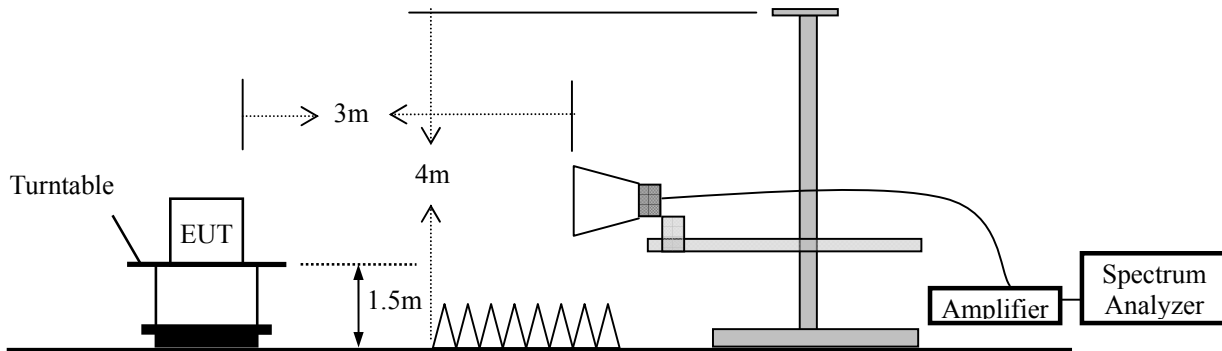
## 4. Radiated Emission Test

### 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 (dB) $\mu\text{V}$  = 20 log 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

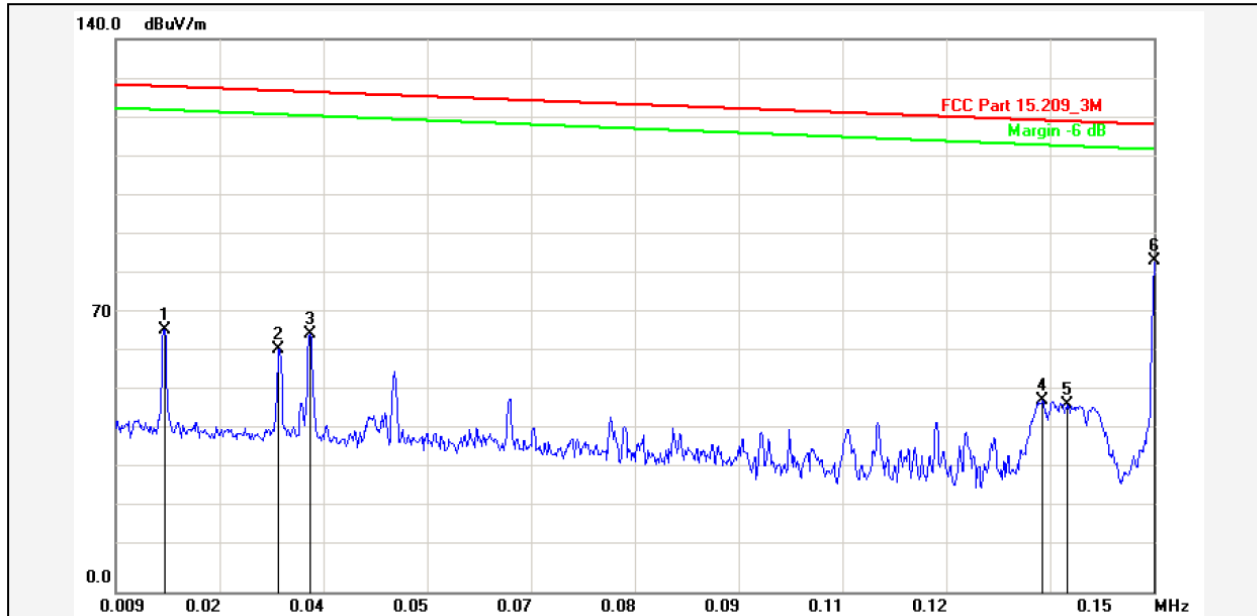
Please refer to following plots of the worst case: Full Load.



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Tel: +86-769-22022444 Fax: +86-769-22022799  
Web: <http://www.ntc-c.com>

Site: Radiation

Test Time: 2017-7-11 8:58:55



Report No.: HLCRIO133

Test Standard: FCC Part 15.209\_3M

Test item: Radiation Emission

Applicant: iOttie

Product: iTap Wireless Qi Fast Charging Magnetic Car Mount

Model No.: HLCRIO133

Test Distance: 3m

Ant. Polarization: Horizontal

Temp.(C)/Hum.(%): 22(C) / 54 %

Power Rating: AC 120V/60Hz

Test Engineer: Eden

Test Mode: Full Load

Remark:

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	0.0156	32.19	34.06	66.25	128.03	-61.78	peak			P	
2	0.0311	25.76	35.79	61.55	126.91	-65.36	peak			P	
3	0.0354	24.84	40.53	65.37	126.60	-61.23	peak			P	
4	0.1349	19.73	28.63	48.36	119.42	-71.06	peak			P	
5	0.1383	19.75	27.68	47.43	119.17	-71.74	peak			P	
6	0.1500	19.82	64.12	83.94	118.33	-34.39	peak			P	

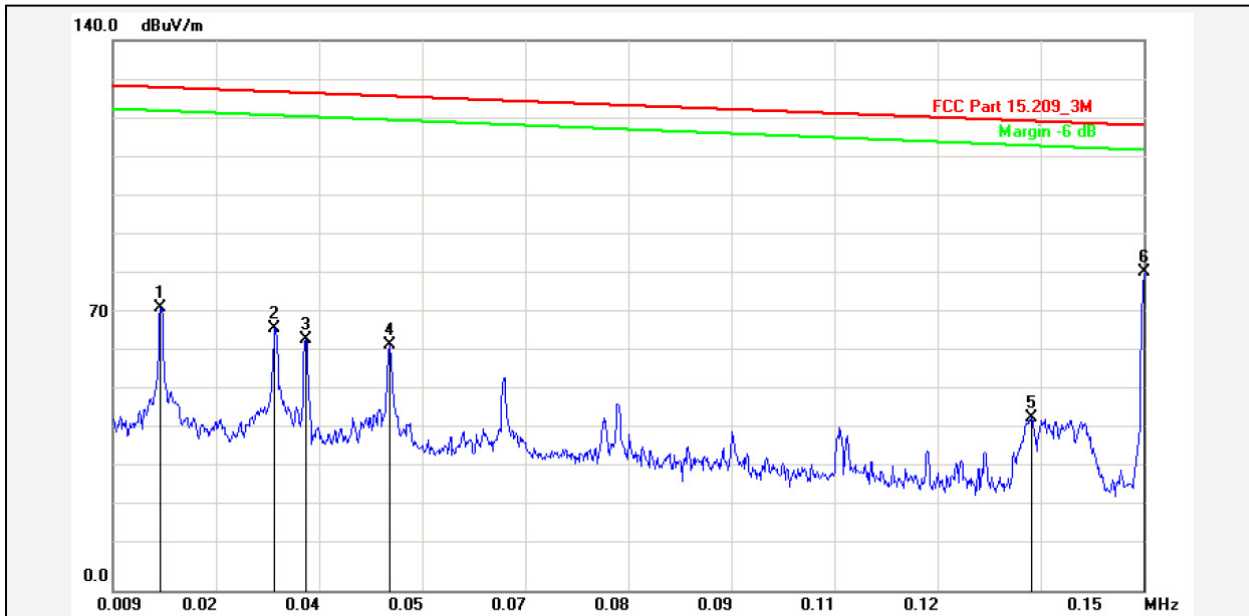
Note: When the PEAK level was below the limit of AV level, the AV levels were considered to meet the requirements.



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Site: Radiation

Test Time: 2017-7-11 9:07:13



Report No.: HLCRIO133

Test Standard: FCC Part 15.209\_3M

Test item: Radiation Emission

Applicant: iOttie

Product: iTap Wireless Qi Fast Charging Magnetic Car Mount

Model No.: HLCRIO133

Test Distance: 3m

Ant. Polarization: Vertical

Temp.(C)/Hum.(%): 22(C) / 54 %

Power Rating: AC 120V/60Hz

Test Engineer: Eden

Test Mode: Full Load

Remark:

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	0.0155	32.23	39.60	71.83	128.04	-56.21	peak			P	
2	0.0311	25.76	40.81	66.57	126.91	-60.34	peak			P	
3	0.0354	24.84	39.13	63.97	126.60	-62.63	peak			P	
4	0.0468	22.40	39.99	62.39	125.78	-63.39	peak			P	
5	0.1346	19.73	24.18	43.91	119.44	-75.53	peak			P	
6	0.1500	19.82	61.29	81.11	118.33	-37.22	peak			P	

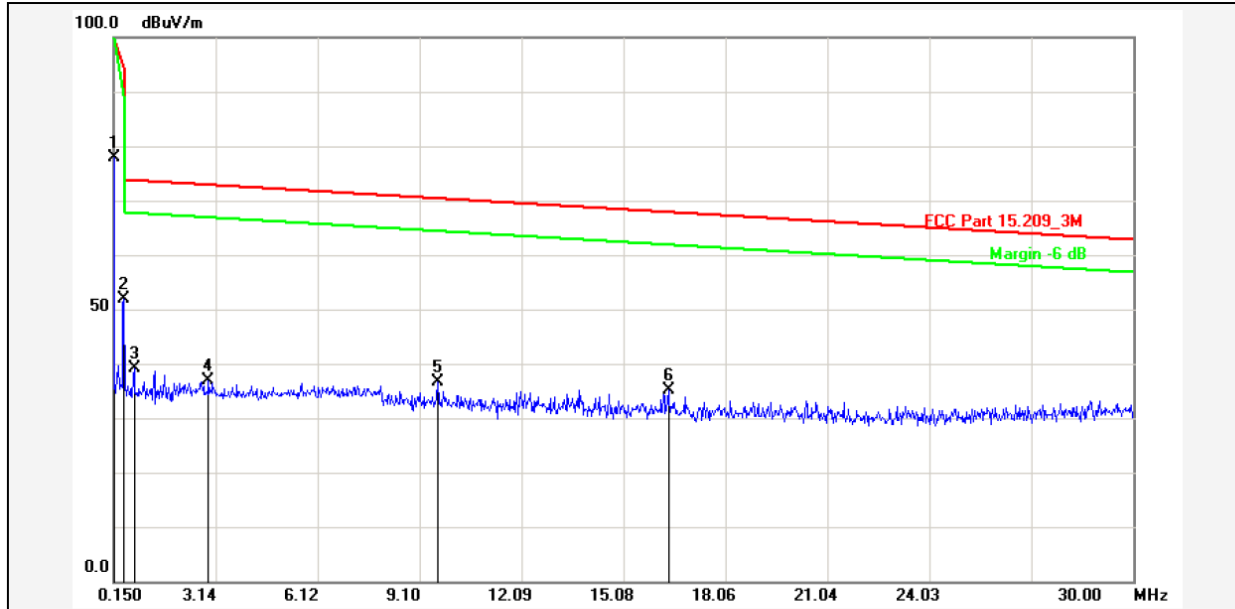
Note: When the PEAK level was below the limit of AV level, the AV levels were considered to meet the requirements.



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Site: Radiation

Test Time: 2017-7-11 9:15:06



Report No.:	HLCRIO133	Test Distance:	3m
Test Standard:	FCC Part 15.209_3M	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Temp.(C)/Hum.(%)	22(C) / 54 %
Applicant:	iOttie	Power Rating:	AC 120V/60Hz
Product:	iTap Wireless Qi Fast Charging Magnetic Car Mount	Test Engineer:	Eden
Model No.:	HLCRIO133		
Test Mode:	Full Load		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	0.1500	19.82	58.05	77.87	118.33	-40.46	peak			P	
2	0.4485	20.13	31.65	51.78	96.79	-45.01	peak			P	
3	0.7470	19.51	19.63	39.14	73.71	-34.57	peak			P	
4	2.9261	18.87	18.03	36.90	72.91	-36.01	peak			P	
5	9.6423	17.52	19.11	36.63	70.44	-33.81	peak			P	
6	16.3884	19.07	16.10	35.17	67.97	-32.80	peak			P	

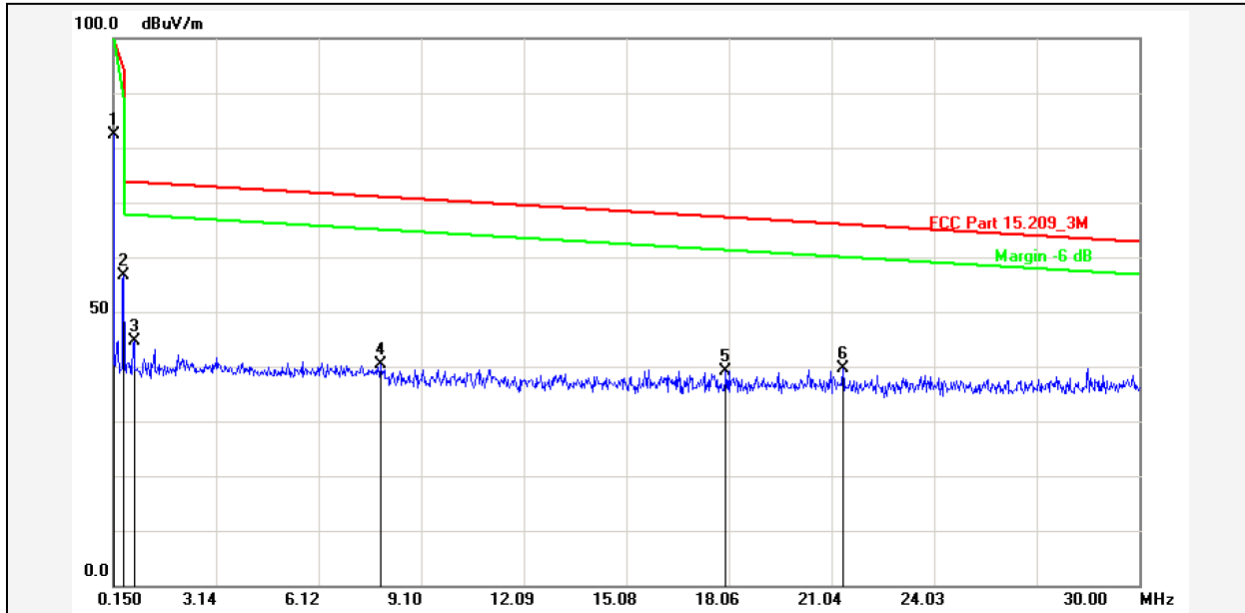
Note: When the PEAK level was below the limit of AV level, the AV levels were considered to meet the requirements.



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Web: [Http://www.ntc-c.com](http://www.ntc-c.com)

Site: Radiation

Test Time: 2017-7-11 9:22:11



Report No.:	HLCRIO133	Test Distance:	3m
Test Standard:	FCC Part 15.209_3M	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Temp.(C)/Hum.(%)	22(C) / 54 %
Applicant:	iOttie	Power Rating:	AC 120V/60Hz
Product:	iTap Wireless Qi Fast Charging Magnetic Car Mount	Test Engineer:	Eden
Model No.:	HLCRIO133		
Test Mode:	Full Load		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	0.1500	19.82	62.68	82.50	118.33	-35.83	peak			P	
2	0.4485	20.13	36.42	56.55	96.79	-40.24	peak			P	
3	0.7470	19.51	25.00	44.51	73.71	-29.20	peak			P	
4	7.9110	16.52	23.76	40.28	71.08	-30.80	peak			P	
5	17.9704	20.12	19.05	39.17	67.38	-28.21	peak			P	
6	21.3733	18.91	20.73	39.64	66.14	-26.50	peak			P	

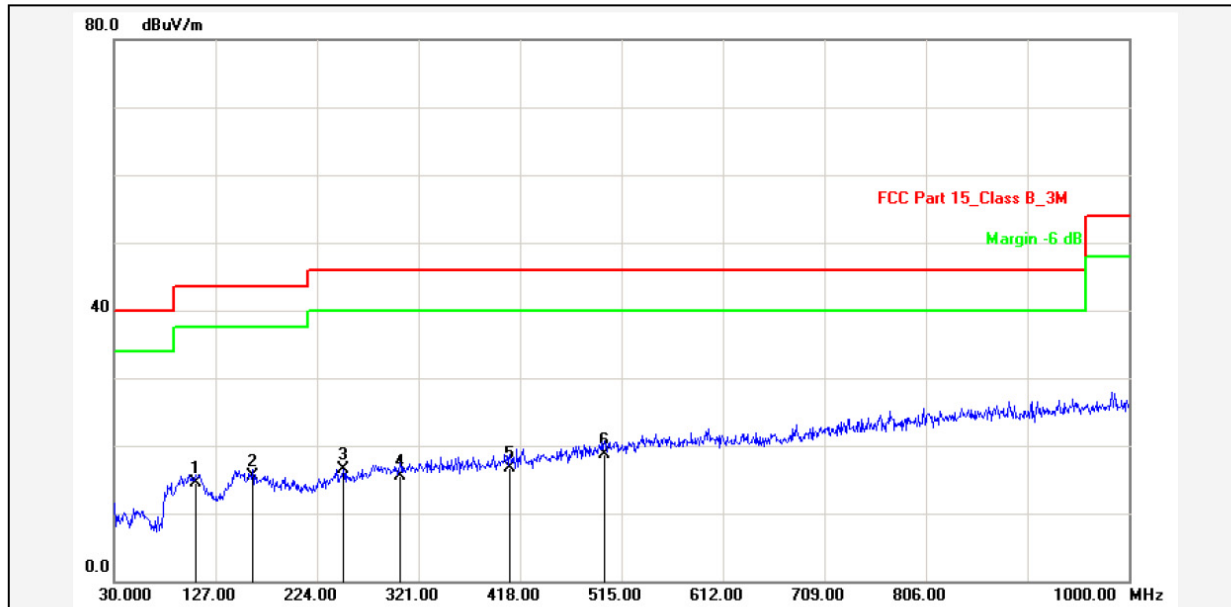
Note: When the PEAK level was below the limit of AV level, the AV levels were considered to meet the requirements.



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Web: <http://www.ntc-c.com>

Site: Radiation

Test Time: 2017-7-5 9:16:50



Report No.: HLCRIO133

Test Standard: FCC Part 15\_Class B\_3M

Test item: Radiation Emission

Applicant: iOttie

Product: iTap Wireless Qi Fast Charging Magnetic Car Mount

Model No.: HLCRIO133

Test Distance: 3m

Ant. Polarization: Horizontal

Temp.(C)/Hum.(%): 22(C) / 54 %

Power Rating: AC 120V/60Hz

Test Engineer: Ryan

Test Mode: Full Load

Remark:

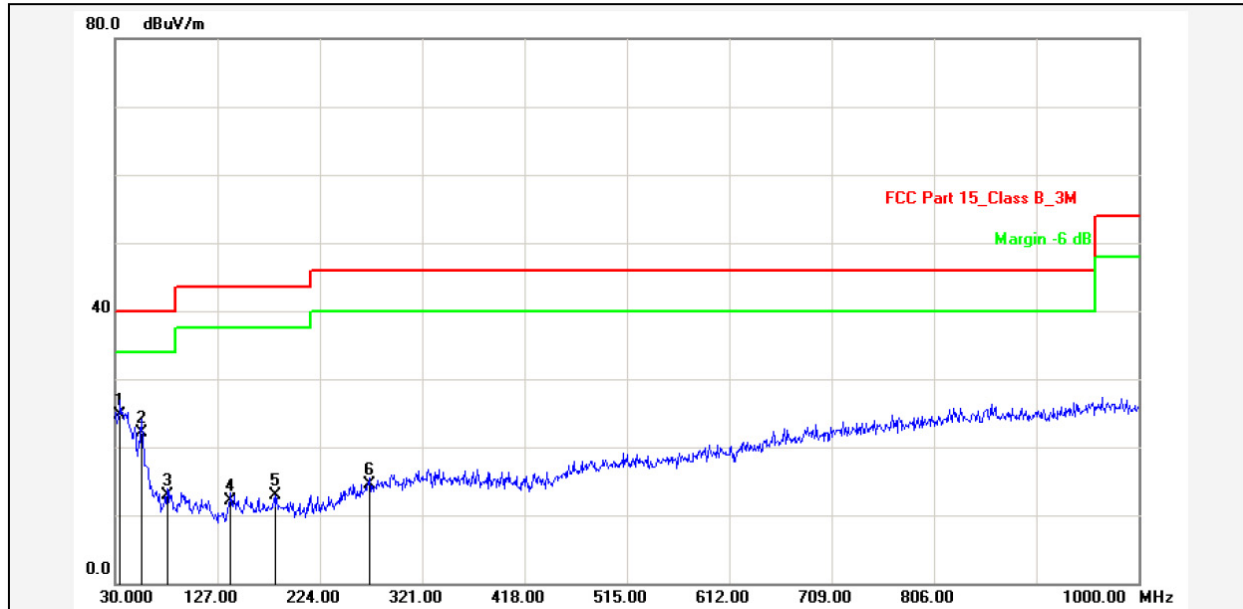
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	108.5699	-12.12	26.58	14.46	43.50	-29.04	QP			P	
2	162.8899	-15.05	30.50	15.45	43.50	-28.05	QP			P	
3	249.2199	-11.72	28.19	16.47	46.00	-29.53	QP			P	
4	303.5400	-10.36	25.85	15.49	46.00	-30.51	QP			P	
5	408.3000	-8.91	25.61	16.70	46.00	-29.30	QP			P	
6	498.5099	-6.79	25.58	18.79	46.00	-27.21	QP			P	



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Tel: +86-769-22022444 Fax: +86-769-22022799  
Web: <http://www.ntc-c.com>

Site: Radiation

Test Time: 2017-7-5 9:25:10



Report No.: HLCRIO133

Test Standard: FCC Part 15\_Class B\_3M

Test item: Radiation Emission

Applicant: iOttie

Product: iTap Wireless Qi Fast Charging Magnetic Car Mount

Model No.: HLCRIO133

Test Distance: 3m

Ant. Polarization: Vertical

Temp.(C)/Hum.(%): 22(C) / 54 %

Power Rating: AC 120V/60Hz

Test Engineer: Ryan

Test Mode: Full Load

Remark:

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	34.8500	-16.17	40.79	24.62	40.00	-15.38	QP			P	
2	55.2199	-13.72	35.84	22.12	40.00	-17.88	QP			P	
3	79.4699	-19.12	31.94	12.82	40.00	-27.18	QP			P	
4	139.6100	-18.57	30.77	12.20	43.50	-31.30	QP			P	
5	182.2899	-17.00	29.86	12.86	43.50	-30.64	QP			P	
6	271.5298	-13.15	27.56	14.41	46.00	-31.59	QP			P	

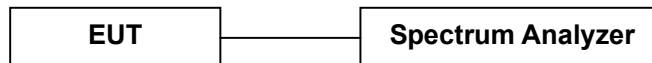
## 5. 20dB Bandwidth

### 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)



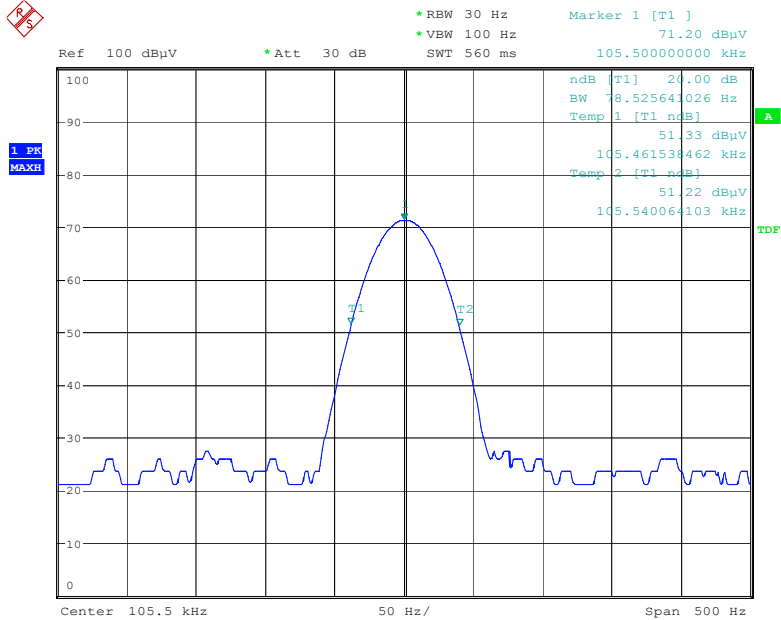
### 5.3 Measurement Results

Refer to attached data chart.

RBW:	30Hz	VBW:	100Hz
Test By:	Sance	Spectrum Detector:	PK
Temperature :	24 °C	Test Date :	July 10, 2017
Test Result:	PASS	Humidity :	50 %

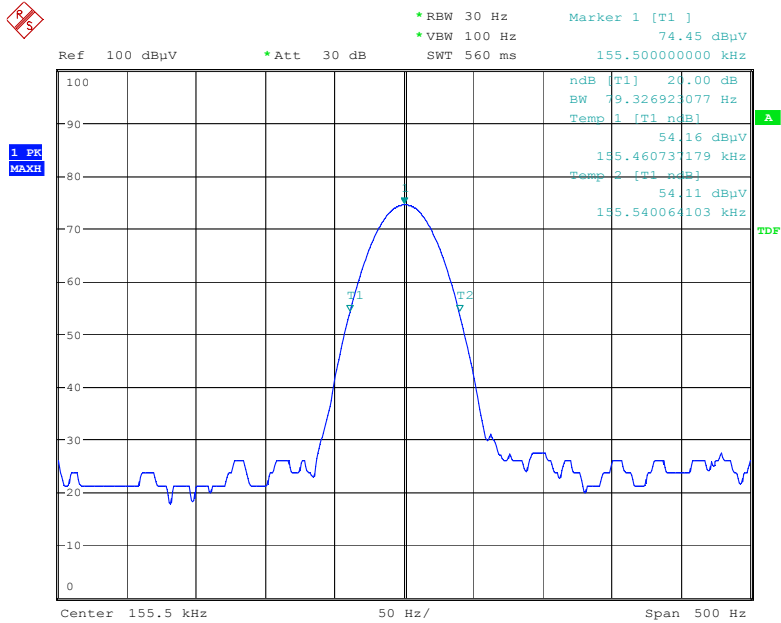
Channel frequency (KHz)	20dB Down BW(Hz)
105.5	78.53
155.5	79.33
204.5	78.53

Lowest Channel



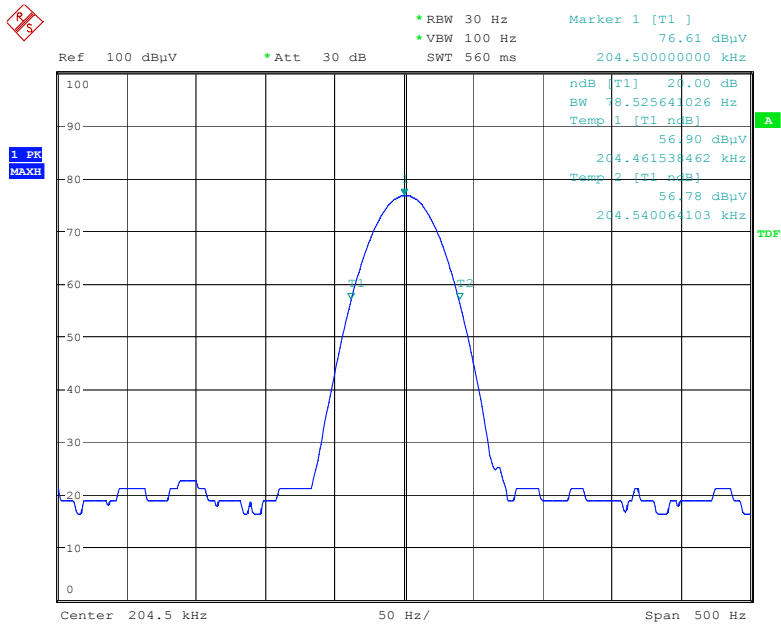
Date: 10.JUL.2017 11:43:16

Middle Channel



Date: 10.JUL.2017 11:44:13

Highest Channel



Date: 10.JUL.2017 11:42:35

## 6. Test Equipment List

Description	Manufacturer	Model Number	Serial Number	Characteristics	Calibration Date	Calibration Due Date
Test Receiver	Rohde & Schwarz	ESCI7	100837	9KHz~7GHz	Nov. 22, 2016	Nov. 21, 2017
Antenna	Schwarzbeck	VULB9162	9162-010	30MHz~7GHz	Nov. 25, 2016	Nov. 24, 2017
Cable	Huber+Suhner	CBL2-NN-1M	22390001	9KHz~7GHz	Nov. 06, 2016	Nov. 05, 2017
Cable	Huber+Suhner	CIL02	N/A	9KHz~7GHz	Nov. 06, 2016	Nov. 05, 2017
RF Cable	Huber+Suhner	SF-104	MY16559/4	9KHz~25GHz	Mar. 05, 2017	Mar. 04, 2018
Power Amplifier	HP	HP 8447D	1145A00203	100KHz~1.3GHz	Nov. 06, 2016	Nov. 05, 2017
Horn Antenna	Schwarzbeck	BBHA9170	9170-242	15GHz~40GHz	Feb.23, 2017	Feb.22, 2018
Horn Antenna	Com-Power	AH-118	071078	1GHz~18GHz	Nov. 04, 2016	Nov. 03, 2017
RF Cable	Huber+Suhner	SF-106	N/A	9KHz~40GHz	April. 06, 2017	April. 04, 2018
Loop antenna	Daze	ZA30900A	0708	9KHz~30MHz	Oct.09, 2016	Oct.08, 2017
Spectrum Analyzer	Rohde & Schwarz	FSU26	200409/026	20Hz~26.5GHz	Aug. 31, 2016	Aug. 30, 2017
Spectrum Analyzer	Rohde & Schwarz	FSV40	101003	10Hz~40GHz	April. 06, 2017	April. 05, 2018
Pre-Amplifier	EMCI	EMC 184045	980102	18GHz~40GHz	Nov. 04, 2016	Nov. 03, 2017
Pre-Amplifier	Agilent	8449B	3008A02964	1GHz~26.5GHz	Nov. 02, 2016	Nov. 01, 2017
L.I.S.N.	Rohde & Schwarz	ENV 216	101317	9KHz~30MHz	Nov. 06, 2016	Nov. 07, 2017
Temporary antenna connector	TESCOM	SS402	N/A	9KHz-25GHz	N/A	N/A
Power Meter	Anritsu	ML2495A	1139001	100k-65GHz	Nov. 04, 2016	Nov. 03, 2017
Power Sensor	Anritsu	MA2411B	100345	300M-40GHz	Nov. 04, 2016	Nov. 03, 2017

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