FCC Radio Test Report

FCC ID: 2AQXQAP-58

Original Grant

Report No.	:	TB-FCC161141
Applicant	:	Shenzhenshi Xinweidu Product Design Co.,Ltd.
Equipment Under Test (EUT)		
EUT Name	:	Wireless Charger
Model No.	:	AP-58
Serial Model No.	:	AP-65, ST-55, ST-53
Brand Name	:	Beacoo, Conido, Cereecoo
Receipt Date	:	2018-07-22
Test Date	:	2018-07-23 to 2018-08-15
Issue Date	:	2018-08-16
Standards	:	FCC Part 15: 2017, Subpart C(15.209)
Test Method	:	ANSI C63.10: 2013
Conclusions	:	**PASS**

In the configuration tested, the EUT complied with the standards specified above,

Test/Witness Engineer	:	Jason Xu
Engineer Supervisor	:	Ivan Su
Engineer Manager	:	Ray Lai

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

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Revision History

Report No.	Version	Description	Issued Date
TB-FCC161141	Rev.01	Initial issue of report	2018-08-16

1. General Information about EUT

1.1 Client Information

Applicant	:	Shenzhenshi Xinweidu Product Design Co.,Ltd.
Address	:	Room C2202, Building 19, Mancheng Graden, Kejiyuan Road, Buji Town, Longgang District, Shenzhen, China
Manufacturer	:	Shenzhenshi Xinweidu Product Design Co.,Ltd.
Address	:	Room C2202, Building 19, Mancheng Graden, Kejiyuan Road, Buji Town, Longgang District, Shenzhen, China

1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	Wireless Charger	
Models No.	:	AP-58, AP-65, ST-55, ST-53	
Model Difference	:	All these models are identical in the same PCB layout and electrica circuit, the only difference is appearance.	
Product Description	:	Operation Frequency:	110KHz-205KHz
		Modulation Type:	MSK
		Antenna:	Coil Antenna
Power Supply	:	Input: 5V/2A, 9V/ 2A Output: 5V/1A, 9V/ 1.1A	
Charging Distance	:	≤8mm	
Software Version	:	N/A	
Hardware Version	:	N/A	
Connecting I/O Port(S)	:	Please refer to the User's Manual	

Note:

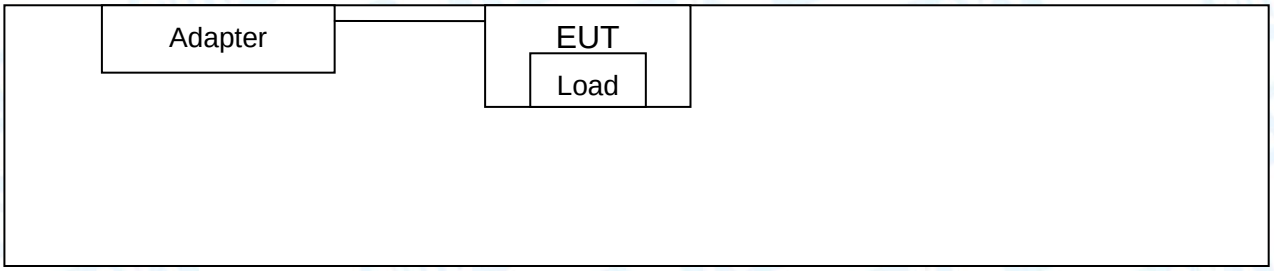
(1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

(2) Channel List:

Low Frequency(KHz)	Middle Frequency(KHz)	High Frequency(KHz)
112	158	205
Note: Operation Frequency=112+1*k, k∈（0,1,2,3.....,93）		

1.3 Block Diagram Showing the Configuration of System Tested

Charging + TX Mode



1.4 Description of Support Units

Name	Model	S/N	Manufacturer	Used " √ "
Load	5V/9V	----	CHIPSVISION	√
Adapter	EP-TA200	----	SAMSUNG	√
Input: AC100-240V,50/60Hz, 0.5A Output: DC 9V, 1.67A or DC 5V, 2A.				

1.5 Description of Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned follow was evaluated respectively.

Pretest Mode	
Final Test Mode	**Description**
Mode 1	TX Mode(Low CH)
Mode 2	TX Mode(Middle CH)
Mode 3	TX Mode(High CH)
Mode 4	Keeping TX Mode(5V/1A)
Mode 5	Keeping TX Mode(9V/1.1A)
For Conducted Test	
Final Test Mode	**Description**
Mode 4	Keeping TX Mode(5V/1A)
Mode 5	Keeping TX Mode(9V/1.1A)

For Radiated Test	
Final Test Mode	**Description**
Mode 4	Keeping TX Mode(5V/1A)
Mode 5	Keeping TX Mode(9V/1.1A)
For Bandwidth Test	
Final Test Mode	**Description**
Mode 1	TX Mode(Low CH)

Note:

(1) For all test, we have verified the construction and function in typical operation. And all the test modes were carried out with the EUT in transmitting operation in maximum power with all kinds of data rate.

According to ANSI C63.10 standards, the measurements are performed at the highest, middle, lowest available channels, and the worst case data rate as follows:

TX Mode: Transmitting mode.

(2) During the testing procedure, the continuously transmitting with the maximum power mode was programmed by the customer.

(3) The EUT is considered a portable unit; in normal use it was positioned on X-plane. The worst case was found positioned on X-plane. Therefore only the test data of this X-plane was used for radiated emission measurement test.

1.6 Description of Test Software Setting

During testing channel& Power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of RF setting.

Test Software Version	**N/A**
Frequency	112-205KHz

1.7 Measurement Uncertainty

The reported uncertainty of measurement y ± U，where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2，providing a level of confidence of approximately 95 %.

Test Item	Parameters	Expanded Uncertainty (U_{Lab})
Conducted Emission	Level Accuracy: 9kHz~150kHz 150kHz to 30MHz	±3.42 dB ±3.42 dB
Radiated Emission	Level Accuracy: 9kHz to 30 MHz	±4.60 dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	±4.40 dB
Radiated Emission	Level Accuracy: Above 1000MHz	±4.20 dB

1.8 Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1A/F., Bldg.6, Yusheng Industrial Zone, The National Road No.107 Xixiang Section 467, Xixiang, Bao'an, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

CNAS (L5813)

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

A2LA Certificate No.: 4750.01

The laboratory has been accredited by American Association for Laboratory Accreditation(A2LA) to ISO/IEC 17025：2005 General Requirements for the Competence of Testing and Calibration Laboratories for the technical competence in the field of Electrical Testing. And the A2LA Certificate No.: 4750.01.

IC Registration No.: (11950A-1)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A-1.

2. Test Summary

FCC Part 15 Subpart C(15.209)			
Standard Section	**Test Item**	**Judgment**	**Remark**
15.203	Antenna Requirement	PASS	N/A
15.207(a)	Conducted Emission	PASS	N/A
15.209(a)(f)	Radiated emissions	PASS	N/A
15.215	Bandwidth	PASS	N/A
Note: N/A is an abbreviation for Not Applicable.			

3. Test Equipment

Conducted Emission Test					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Cal. Due Date**
EMI Test Receiver	Rohde & Schwarz	ESCI	100321	Jul. 18, 2018	Jul. 17, 2019
RF Switching Unit	Compliance Direction Systems Inc	RSU-A4	34403	Jul. 18, 2018	Jul. 17, 2019
AMN	SCHWARZBECK	NNBL 8226-2	8226-2/164	Jul. 18, 2018	Jul. 17, 2019
LISN	Rohde & Schwarz	ENV216	101131	Jul. 18, 2018	Jul. 17, 2019
Radiation Emission Test					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Cal. Due Date**
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 18, 2018	Jul. 17, 2019
EMI Test Receiver	Rohde & Schwarz	ESPI	100010/007	Jul. 18, 2018	Jul. 17, 2019
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Mar.16, 2018	Mar. 15, 2019
Bilog Antenna	ETS-LINDGREN	3142E	00117542	Mar.16, 2018	Mar. 15, 2019
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar.16, 2018	Mar. 15, 2019
Horn Antenna	ETS-LINDGREN	3117	00143209	Mar.16, 2018	Mar. 15, 2019
Loop Antenna	SCHWARZBECK	FMZB 1519 B	1519B-059	Jul. 03, 2018	Jul. 02, 2019
Pre-amplifier	Sonoma	310N	185903	Mar.17, 2018	Mar. 16, 2019
Pre-amplifier	HP	8449B	3008A00849	Mar.17, 2018	Mar. 16, 2019
Cable	HUBER+SUHNER	100	SUCOFLEX	Mar.17, 2018	Mar. 16, 2019
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A
Antenna Conducted Emission					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Cal. Due Date**
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 18, 2018	Jul. 17, 2019
Spectrum Analyzer	Rohde & Schwarz	ESCI	100010/007	Jul. 18, 2018	Jul. 17, 2019
MXA Signal Analyzer	Agilent	N9020A	MY49100060	Oct. 26, 2017	Oct. 25, 2018
Vector Signal Generator	Agilent	N5182A	MY50141294	Oct. 26, 2017	Oct. 25, 2018
Analog Signal Generator	Agilent	N5181A	MY50141953	Oct. 26, 2017	Oct. 25, 2018
RF Power Sensor	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO26	Oct. 26, 2017	Oct. 25, 2018
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO29	Oct. 26, 2017	Oct. 25, 2018
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO31	Oct. 26, 2017	Oct. 25, 2018
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO33	Oct. 26, 2017	Oct. 25, 2018

4. Conducted Emission Test

4.1 Test Standard and Limit

4.1.1Test Standard

FCC Part 15.207

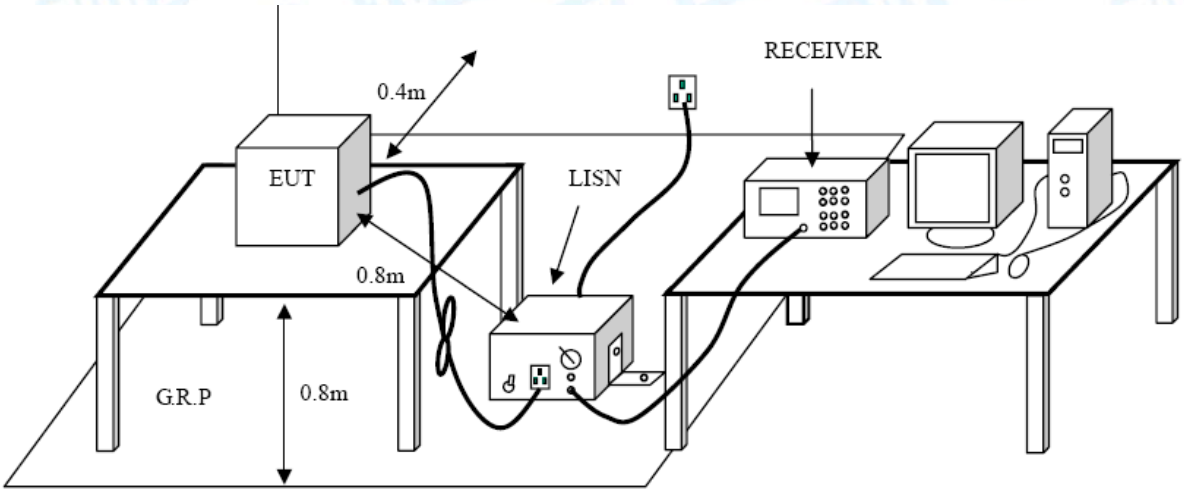
4.1.2 Test Limit

Conducted Emission Test Limit

Frequency	Maximum RF Line Voltage (dBμV)	
	Quasi-peak Level	Average Level
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
500kHz~5MHz	56	46
5MHz~30MHz	60	50

Notes:
(1) *Decreasing linearly with logarithm of the frequency.
(2) The lower limit shall apply at the transition frequencies.
(3) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2 Test Setup



4.3 Test Procedure

The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

LISN at least 80 cm from nearest part of EUT chassis.

The bandwidth of EMI test receiver is set at 9 kHz, and the test frequency band is from 0.15MHz to 30MHz.

4.4 EUT Operating Mode

Please refer to the description of test mode.

4.5 Test Data

Please refer to the Attachment A.

5. Radiated Emission Test

5.1 Test Standard and Limit

5.1.1 Test Standard

FCC Part 15.209(a)(f)

5.1.2 Test Limit

Radiated Emission Limits (9 kHz~1000 MHz)

Frequency (MHz	Field Strength (microvolt/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Radiated Emission Limit (Above 1000MHz)

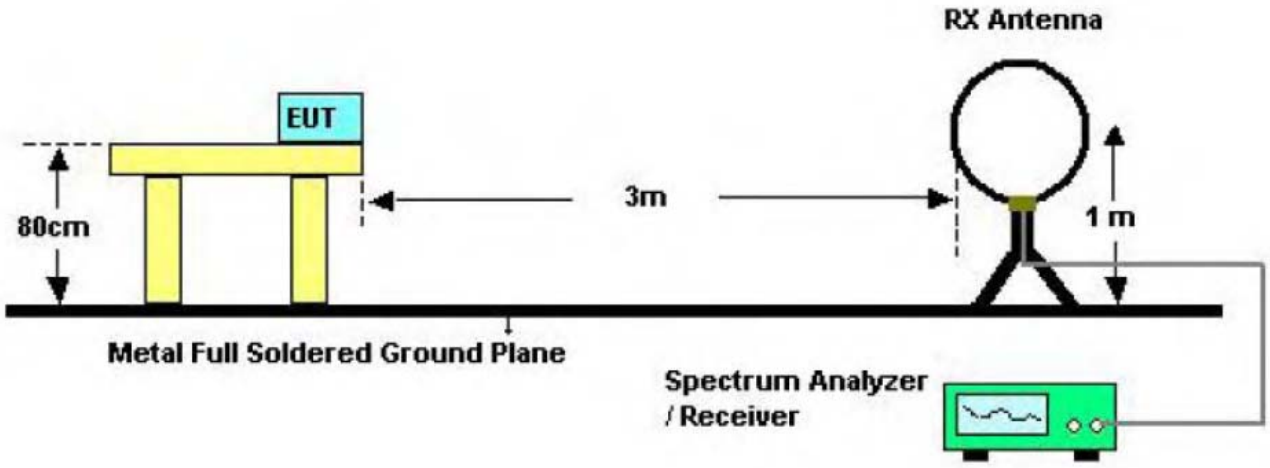
Frequency (MHz)	Distance of 3m (dBuV/m)	
	Peak	Average
Above 1000	74	54

Note:

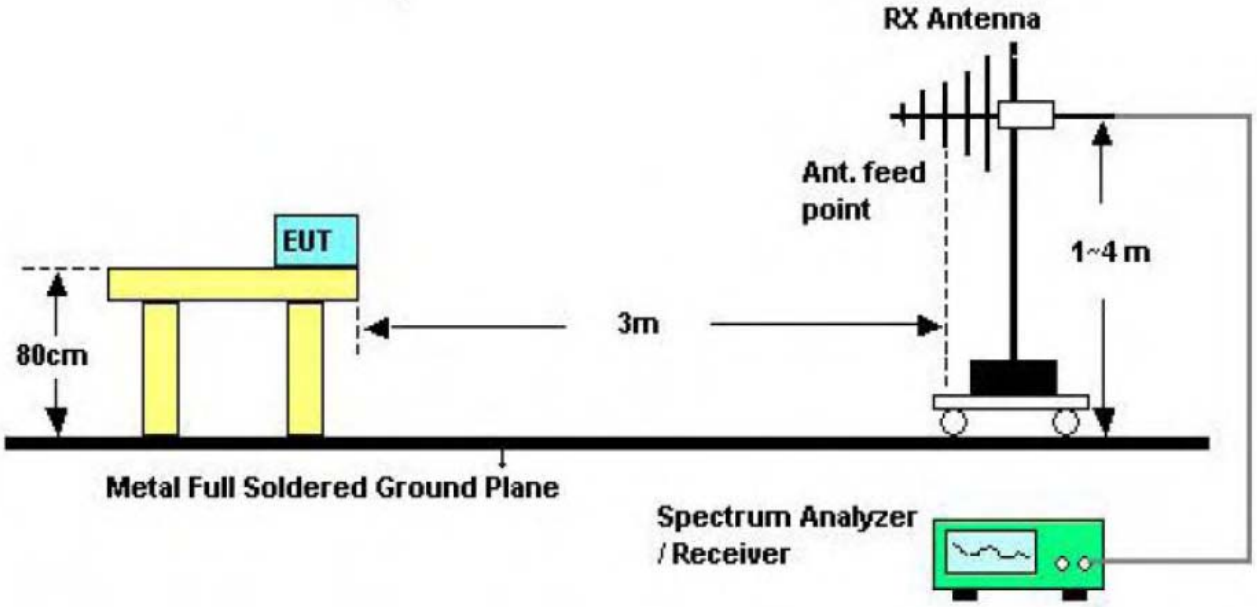
(1) The tighter limit applies at the band edges.

(2) Emission Level(dBuV/m)=20log Emission Level(uV/m)

5.2 Test Setup



Below 30MHz Test Setup



Below 1000MHz Test Setup

5.3 Test Procedure

(1) Measurements at frequency 9KHz~30MHz and Below 1GHz. The EUT was placed on a rotating 0.8m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna.The table was rotated 360 degrees to determine the position of the highest radiation.

(2) 9KHz~30MHz the test antenna 1m away from the ground, Both 0° and 90° antenna are set to make measurement.
Below 1GHz the test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.

(3) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.

(4) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.

(5) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.

(6) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.

(7) For 9kHz to 150kHz, Set the spectrum analyzer as:
RBW= 200Hz, VBW =1kHz, Detector= Quasi-Peak, Trace mode= Max hold,
Sweep- auto couple.
For 150kHz to 30MHz, Set the spectrum analyzer as:
RBW= 9KHz, VBW =30kHz, Detector= Quasi-Peak, Trace mode= Max hold,
Sweep- auto couple

(8) For the actual test configuration, please see the test setup photo.

5.4 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.

5.5 Test Data

Please refer to the Attachment B.

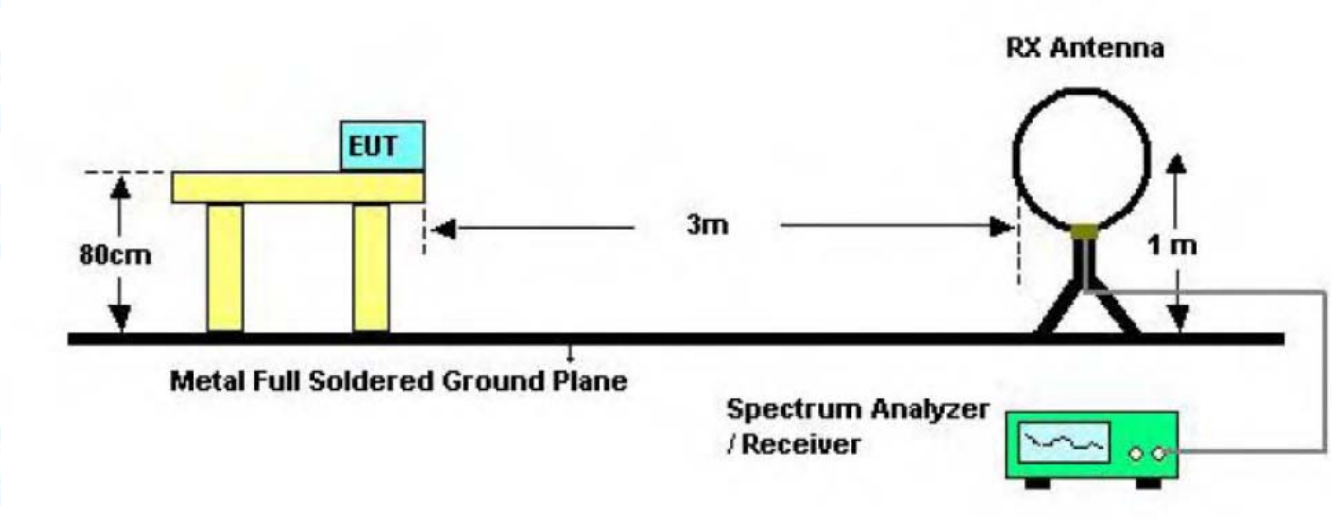
6. Bandwidth Measurement

6.1 Test Standard and Limit

5.1.1 Test Standard

FCC Part 15.215

6.2 Test Setup



6.3 Test Procedure

1. The transmitter shall be operated at its maximum carrier power measured under normal test conditions;
2. The span of the analyzer shall be set to capture all products of the modulation process,including the emission skirts.
3. The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) shall be approximately 3x RBW.

6.4 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.

6.5 Test Data

Please refer to the Attachment C.

7. Antenna Requirement

7.1 Standard Requirement

7.1.1 Standard

FCC Part 15.203

7.1.2 Requirement

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 shall be considered sufficient to comply with the provisions of this Section. 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.

7.2 Antenna Connected Construction

The antenna is Coil Antenna, and the antenna connector is de-signed with permanent attachment and no consideration of replacement. Please see the EUT photo for details.

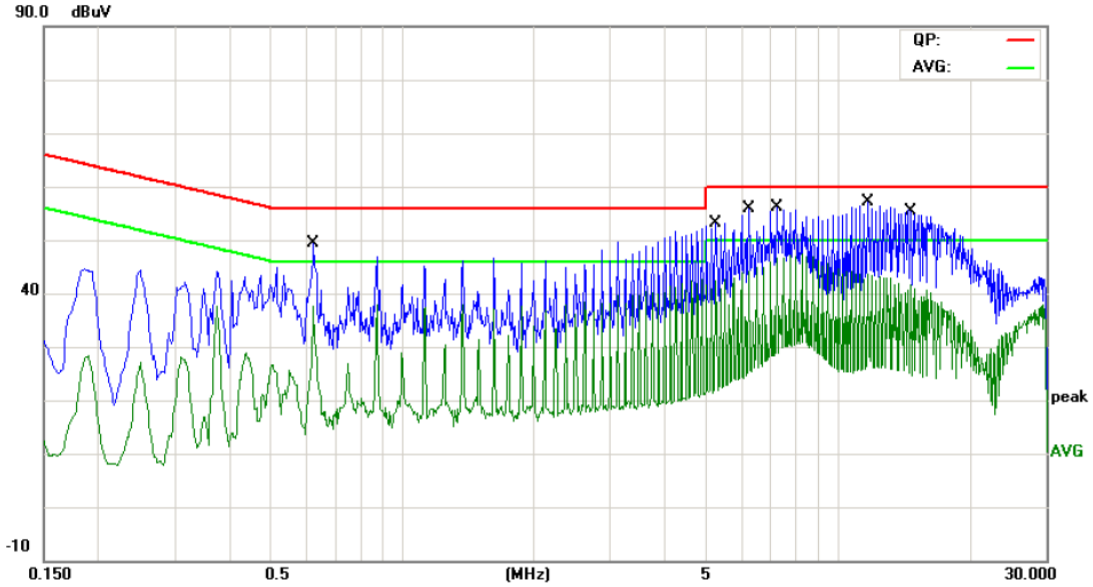
7.3 Result

The EUT antenna is a Coil Antenna. It complies with the standard requirement.

Antenna Type
☒Permanent attached antenna
☐Unique connector antenna
☐Professional installation antenna

Attachment A-- Conducted Emission Test Data

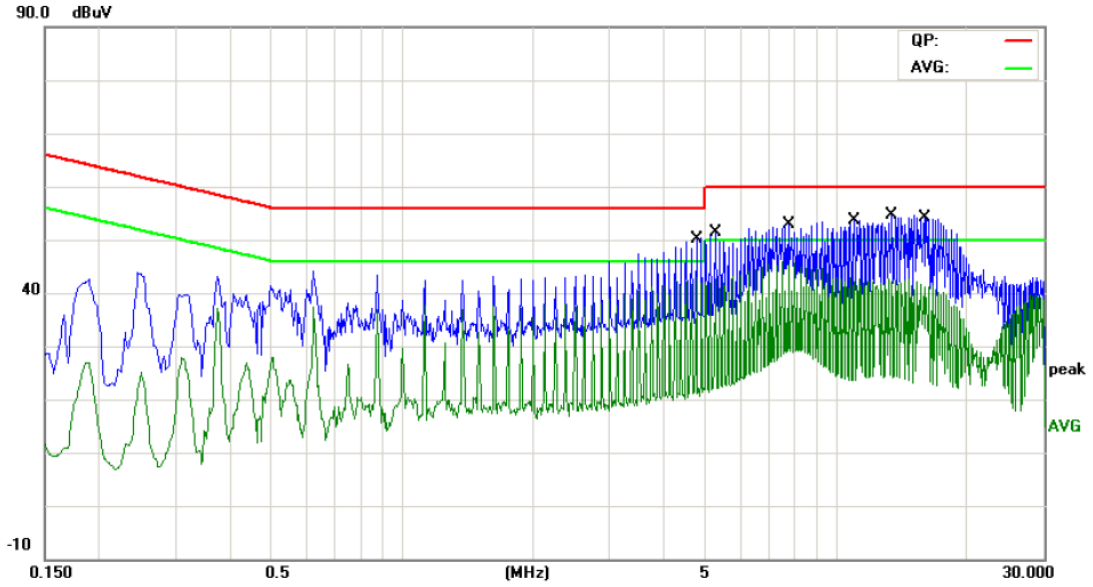
Temperature:	25℃	**Relative Humidity:**	55%
Test Voltage:	AC 120V/60 Hz		
Terminal:	Line		
Test Mode:	TX Mode(9V/1.1A)		
Remark:	Only worse case is reported		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.6260	33.42	9.59	43.01	56.00	-12.99	QP
2	*	0.6260	28.11	9.59	37.70	46.00	-8.30	AVG
3		5.2460	24.58	9.96	34.54	60.00	-25.46	QP
4		5.2460	13.86	9.96	23.82	50.00	-26.18	AVG
5		6.2420	26.08	10.15	36.23	60.00	-23.77	QP
6		6.2420	14.85	10.15	25.00	50.00	-25.00	AVG
7		7.2420	29.29	10.29	39.58	60.00	-20.42	QP
8		7.2420	18.34	10.29	28.63	50.00	-21.37	AVG
9		11.7380	25.22	10.37	35.59	60.00	-24.41	QP
10		11.7380	15.01	10.37	25.38	50.00	-24.62	AVG
11		14.7340	24.52	10.59	35.11	60.00	-24.89	QP
12		14.7340	13.22	10.59	23.81	50.00	-26.19	AVG

Emission Level= Read Level+ Correct Factor

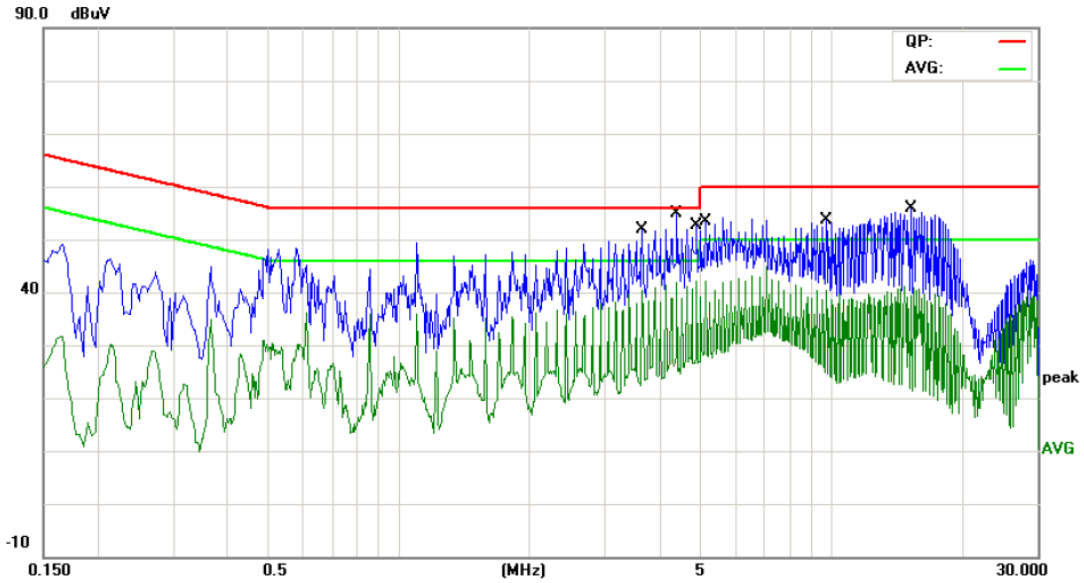
Temperature:	25℃	**Relative Humidity:**	55%
Test Voltage:	AC 120V/60 Hz		
Terminal:	Neutral		
Test Mode:	TX Mode(9V/1.1A)		
Remark:	Only worse case is reported		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		4.7540	35.86	9.86	45.72	56.00	-10.28	QP
2	*	4.7540	31.85	9.86	41.71	46.00	-4.29	AVG
3		5.2540	35.47	9.96	45.43	60.00	-14.57	QP
4		5.2540	31.64	9.96	41.60	50.00	-8.40	AVG
5		7.7540	39.07	10.28	49.35	60.00	-10.65	QP
6		7.7540	35.32	10.28	45.60	50.00	-4.40	AVG
7		11.0060	39.94	10.31	50.25	60.00	-9.75	QP
8		11.0060	31.44	10.31	41.75	50.00	-8.25	AVG
9		13.3820	40.91	10.49	51.40	60.00	-8.60	QP
10		13.3820	31.84	10.49	42.33	50.00	-7.67	AVG
11		15.8860	36.58	10.62	47.20	60.00	-12.80	QP
12		15.8860	26.39	10.62	37.01	50.00	-12.99	AVG

Emission Level= Read Level+ Correct Factor

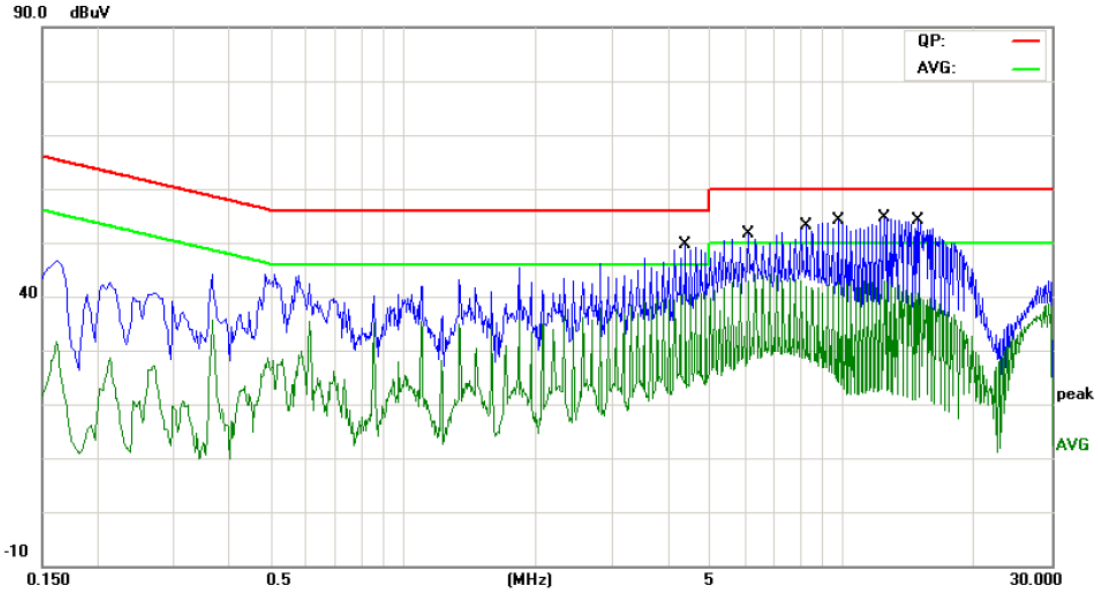
Temperature:	25℃	**Relative Humidity:**	55%
Test Voltage:	AC 240V/60 Hz		
Terminal:	Line		
Test Mode:	TX Mode(9V/1.1A)		
Remark:	Only worse case is reported		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		3.6580	27.64	9.67	37.31	56.00	-18.69	QP
2		3.6580	18.84	9.67	28.51	46.00	-17.49	AVG
3		4.3900	28.99	9.70	38.69	56.00	-17.31	QP
4		4.3900	18.32	9.70	28.02	46.00	-17.98	AVG
5	*	4.3900	32.23	9.70	41.93	46.00	-4.07	AVG
6		4.8780	29.82	9.73	39.55	56.00	-16.45	QP
7		4.8780	18.97	9.73	28.70	46.00	-17.30	AVG
8		5.1220	30.46	9.75	40.21	60.00	-19.79	QP
9		5.1220	19.68	9.75	29.43	50.00	-20.57	AVG
10		9.7540	24.06	10.03	34.09	60.00	-25.91	QP
11		9.7540	13.85	10.03	23.88	50.00	-26.12	AVG
12		15.2380	21.60	10.47	32.07	60.00	-27.93	QP
13		15.2380	9.93	10.47	20.40	50.00	-29.60	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25℃	**Relative Humidity:**	55%
Test Voltage:	AC 240V/60 Hz		
Terminal:	Neutral		
Test Mode:	TX Mode(9V/1.1A)		
Remark:	Only worse case is reported		



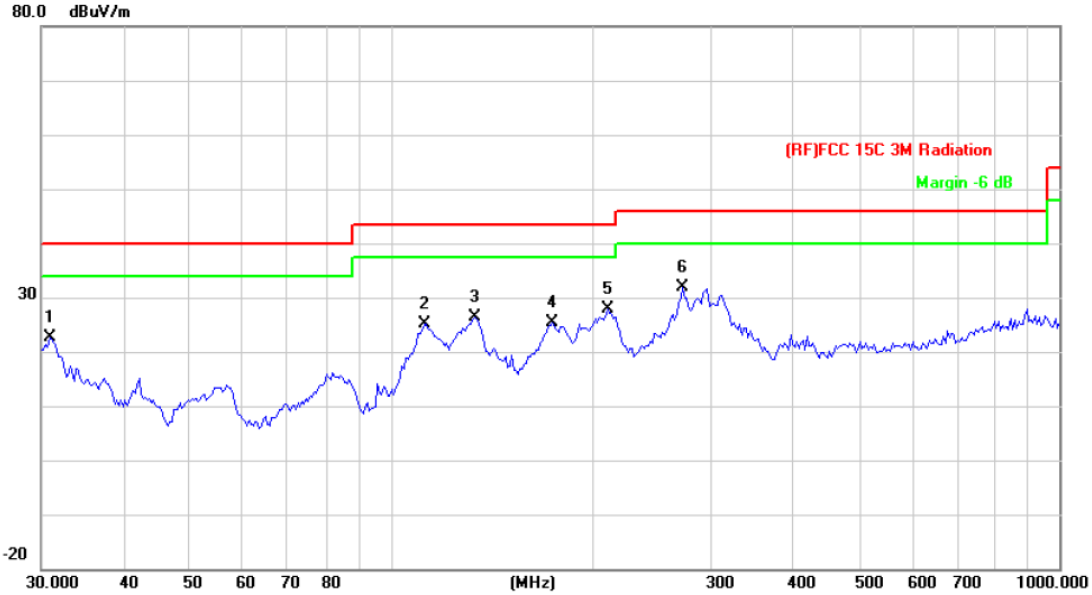
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		4.3980	31.19	9.80	40.99	56.00	-15.01	QP
2		4.3980	26.16	9.80	35.96	46.00	-10.04	AVG
3		6.1060	34.48	10.12	44.60	60.00	-15.40	QP
4		6.1060	30.19	10.12	40.31	50.00	-9.69	AVG
5		8.3020	37.00	10.27	47.27	60.00	-12.73	QP
6		8.3020	30.65	10.27	40.92	50.00	-9.08	AVG
7		9.7700	34.22	10.24	44.46	60.00	-15.54	QP
8		9.7700	24.12	10.24	34.36	50.00	-15.64	AVG
9		12.4540	38.64	10.42	49.06	60.00	-10.94	QP
10		12.4540	29.66	10.42	40.08	50.00	-9.92	AVG
11	*	12.4540	32.49	10.42	42.91	50.00	-7.09	AVG
12		14.8980	31.72	10.60	42.32	60.00	-17.68	QP
13		14.8980	17.93	10.60	28.53	50.00	-21.47	AVG

Emission Level= Read Level+ Correct Factor

Attachment B-- Radiated Emission Test Data

30MHz~1GHz

Temperature:	25℃	**Relative Humidity:**	55%
Test Voltage:	AC 120/60Hz		
Ant. Pol.	Horizontal		
Test Mode:	TX Mode(5V/1A)		
Remark:	Only worse case is reported		

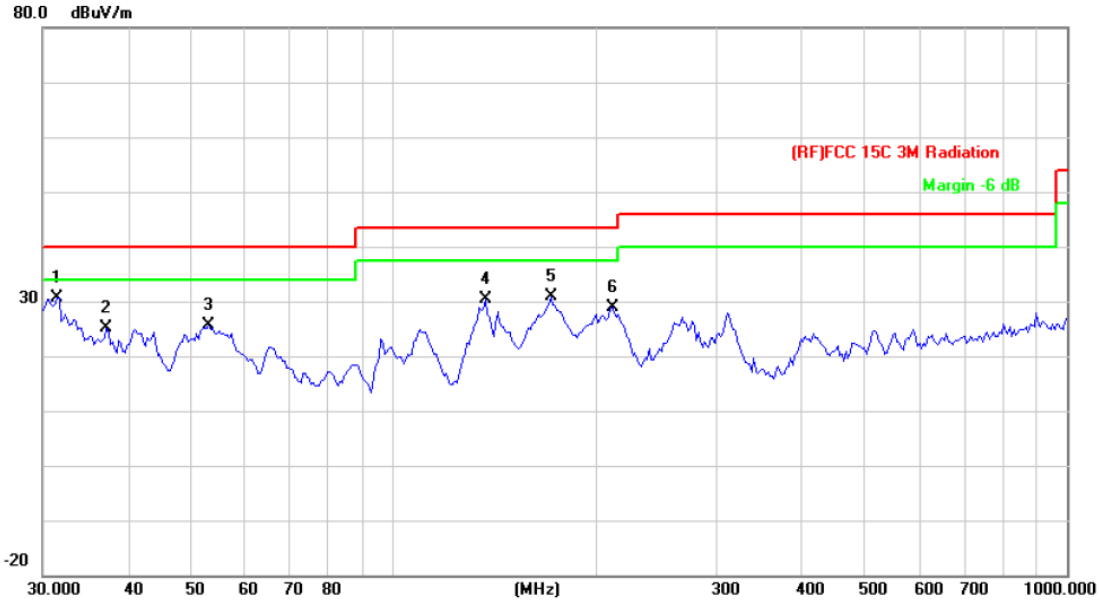


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		30.8535	36.35	-13.64	22.71	40.00	-17.29	peak
2		112.1305	47.50	-22.41	25.09	43.50	-18.41	peak
3		133.6188	48.81	-22.46	26.35	43.50	-17.15	peak
4		174.4241	45.83	-20.37	25.46	43.50	-18.04	peak
5		210.7860	47.22	-19.36	27.86	43.50	-15.64	peak
6	*	273.2341	48.54	-16.73	31.81	46.00	-14.19	peak

*:Maximum data x:Over limit !:over margin

Emission Level= Read Level+ Correct Factor

Temperature:	25℃	**Relative Humidity:**	55%
Test Voltage:	AC 120/60Hz		
Ant. Pol.	Vertical		
Test Mode:	TX Mode(5V/1A)		
Remark:	Only worse case is reported		

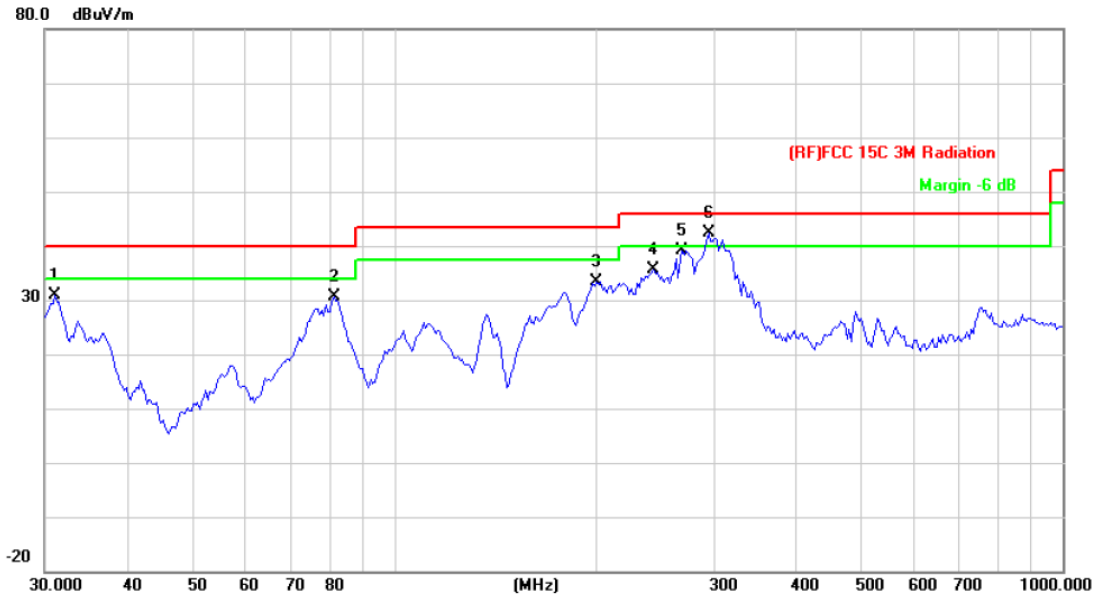


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	31.5095	44.89	-14.14	30.75	40.00	-9.25	peak
2		37.2855	42.90	-17.83	25.07	40.00	-14.93	peak
3		52.9453	49.13	-23.57	25.56	40.00	-14.44	peak
4		136.4598	52.92	-22.46	30.46	43.50	-13.04	peak
5		170.7926	51.26	-20.49	30.77	43.50	-12.73	peak
6		210.7860	48.14	-19.36	28.78	43.50	-14.72	peak

*:Maximum data x:Over limit !:over margin

Emission Level= Read Level+ Correct Factor

Temperature:	25℃	**Relative Humidity:**	55%
Test Voltage:	AC 120/60Hz		
Ant. Pol.	Horizontal		
Test Mode:	TX Mode(9V/1.1A)		
Remark:	Only worse case is reported		

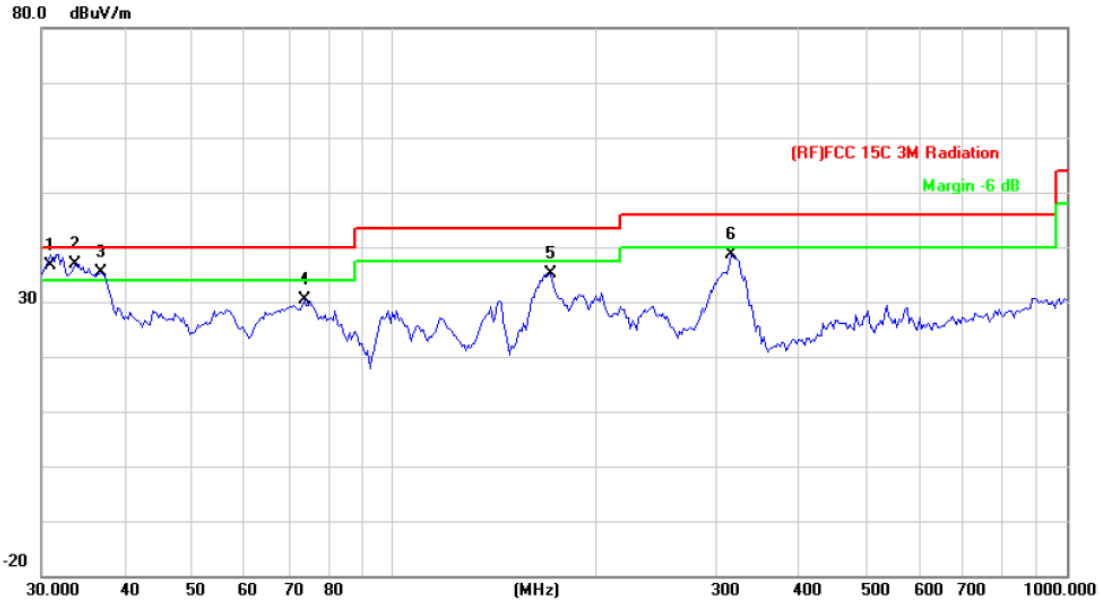


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		31.0706	44.72	-13.80	30.92	40.00	-9.08	peak
2		81.2117	53.01	-22.46	30.55	40.00	-9.45	peak
3		200.6881	53.39	-19.92	33.47	43.50	-10.03	peak
4		244.2321	53.14	-17.50	35.64	46.00	-10.36	peak
5		269.4284	55.91	-16.80	39.11	46.00	-6.89	peak
6	*	295.1469	58.56	-16.30	42.26	46.00	-3.74	peak

*:Maximum data x:Over limit !:over margin

Emission Level= Read Level+ Correct Factor

Temperature:	25℃	**Relative Humidity:**	55%
Test Voltage:	AC 120/60Hz		
Ant. Pol.	Vertical		
Test Mode:	TX Mode(9V/1.1A)		
Remark:	Only worse case is reported		



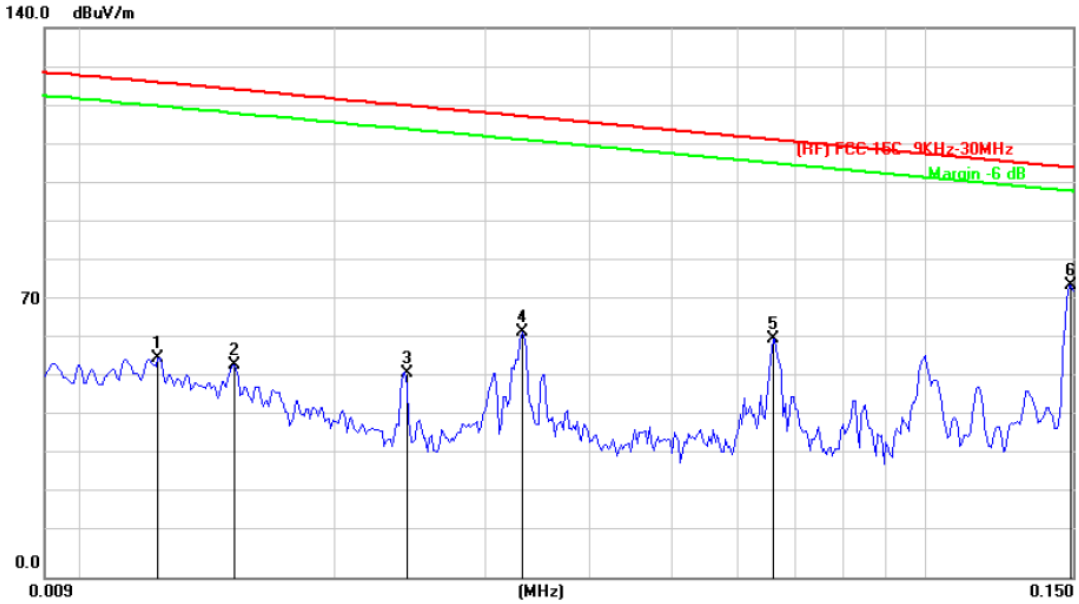
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	!	30.8535	50.34	-13.64	36.70	40.00	-3.30	QP
2	*	33.5624	52.65	-15.68	36.97	40.00	-3.03	peak
3	!	36.7662	52.85	-17.59	35.26	40.00	-4.74	peak
4		73.6170	53.41	-23.15	30.26	40.00	-9.74	peak
5		170.7926	55.67	-20.49	35.18	43.50	-8.32	peak
6		316.5890	54.28	-15.67	38.61	46.00	-7.39	peak

*:Maximum data x:Over limit !:over margin

Emission Level= Read Level+ Correct Factor

9KMz-30MHz

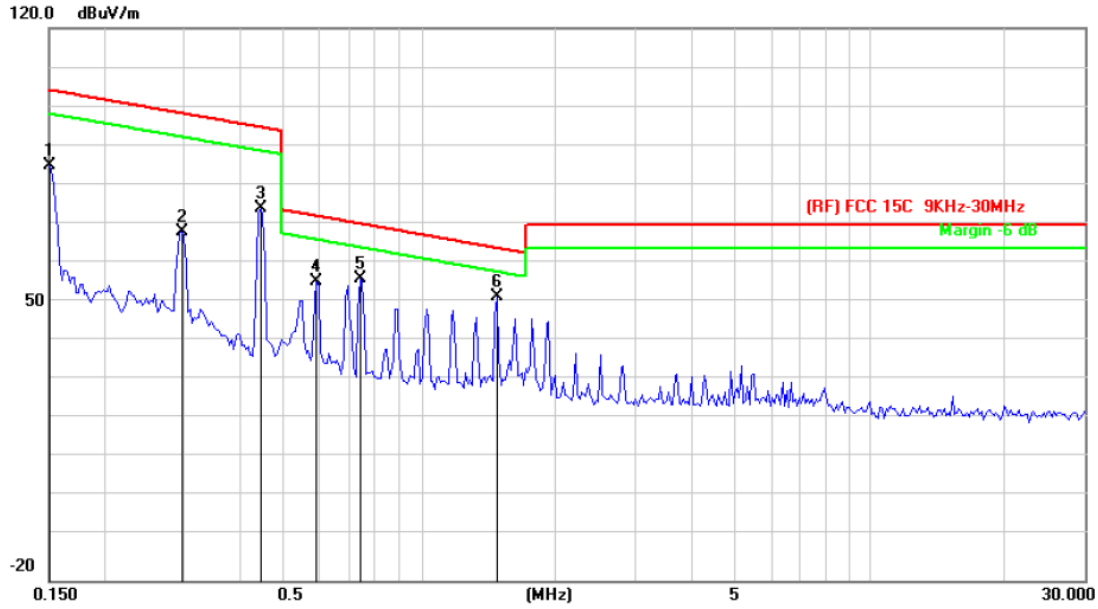
Temperature:	25℃	**Relative Humidity:**	55%
Test Voltage:	AC 120/60Hz		
Ant. Pol.	Ant. 0°		
Test Mode:	TX Mode(5V/1A)		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		0.0123	66.26	-10.33	55.93	126.08	-70.15	peak
2		0.0151	64.33	-10.36	53.97	124.30	-70.33	peak
3		0.0241	62.24	-10.09	52.15	120.23	-68.08	peak
4		0.0331	72.53	-9.90	62.63	117.46	-54.83	peak
5		0.0660	70.81	-10.06	60.75	111.46	-50.71	peak
6	*	0.1491	80.30	-5.77	74.53	104.36	-29.83	peak

Emission Level= Read Level+ Correct Factor

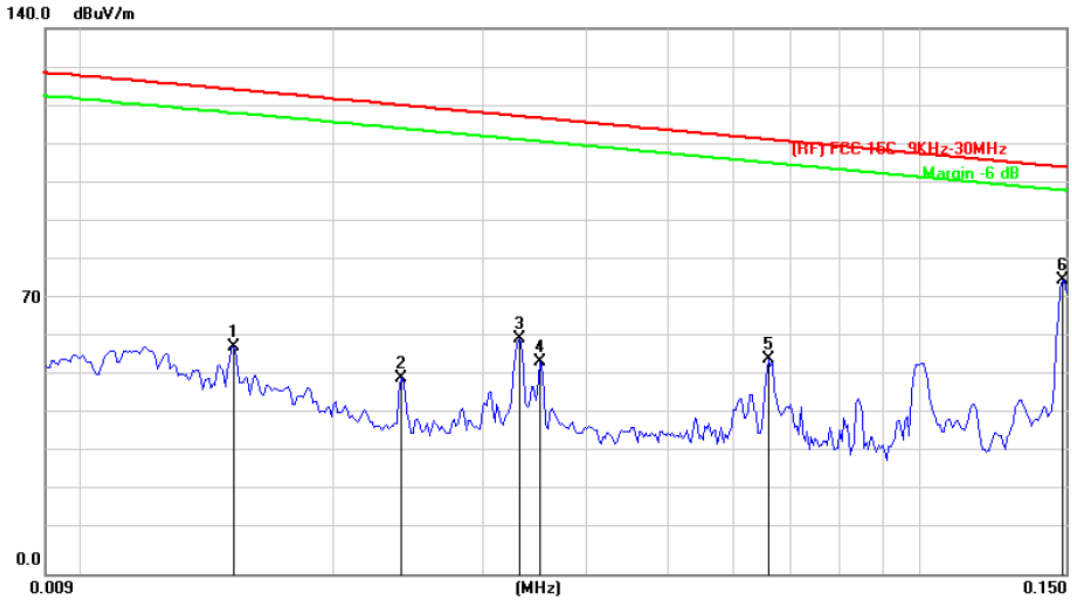
Temperature:	25℃	**Relative Humidity:**	55%
Test Voltage:	AC 120/60Hz		
Ant. Pol.	Ant. 0°		
Test Mode:	TX Mode(5V/1A)		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		0.1500	90.89	-5.81	85.08	104.31	-19.23	peak
2		0.2955	76.58	-8.32	68.26	98.40	-30.14	peak
3		0.4421	83.72	-9.31	74.41	94.90	-20.49	peak
4		0.5885	65.70	-9.83	55.87	72.38	-16.51	peak
5		0.7352	66.39	-10.04	56.35	70.42	-14.07	peak
6	*	1.4796	62.18	-10.33	51.85	64.25	-12.40	peak

Emission Level= Read Level+ Correct Factor

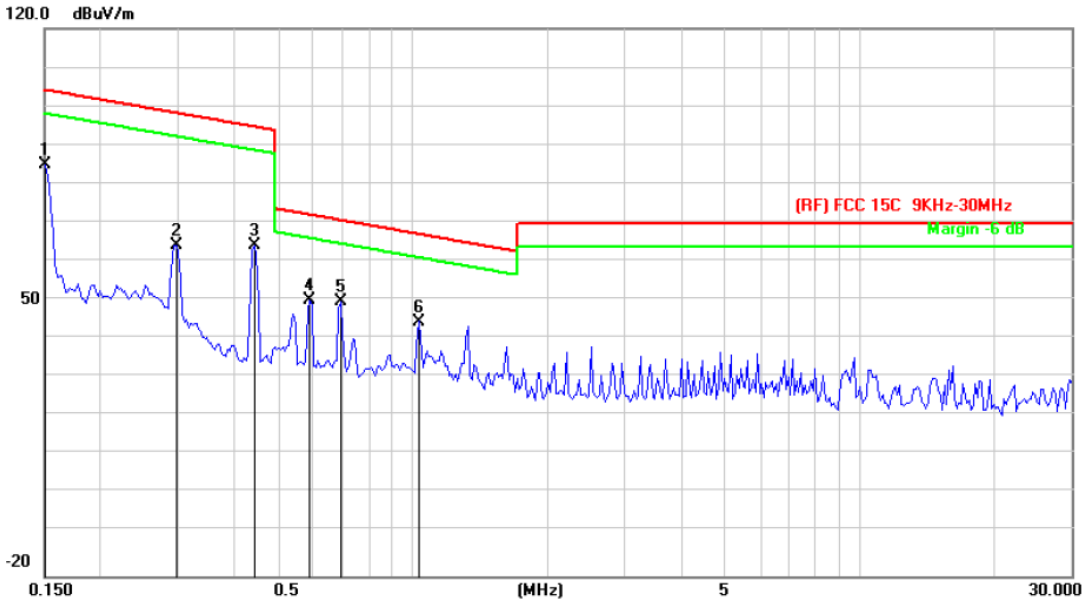
Temperature:	25℃	**Relative Humidity:**	55%
Test Voltage:	AC 120/60Hz		
Ant. Pol.	Ant. 90°		
Test Mode:	TX Mode(5V/1A)		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		0.0151	68.78	-10.36	58.42	124.30	-65.88	peak
2		0.0240	60.29	-10.09	50.20	120.26	-70.06	peak
3		0.0331	70.31	-9.90	60.41	117.46	-57.05	peak
4		0.0351	64.28	-9.98	54.30	116.95	-62.65	peak
5		0.0660	65.16	-10.06	55.10	111.46	-56.36	peak
6	*	0.1483	81.22	-5.74	75.48	104.41	-28.93	peak

Emission Level= Read Level+ Correct Factor

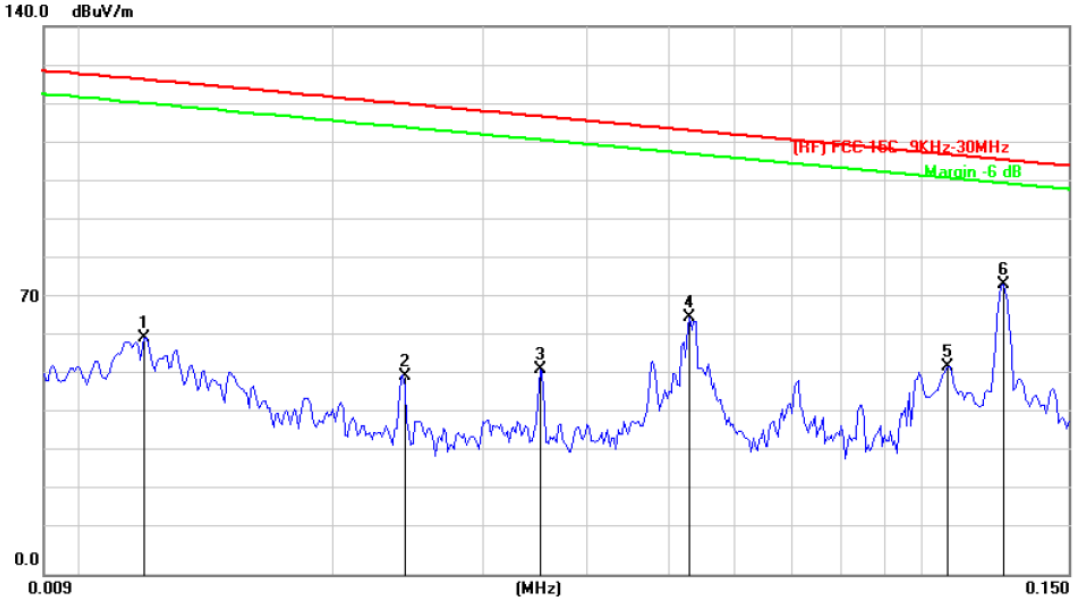
Temperature:	25℃	**Relative Humidity:**	55%
Test Voltage:	AC 120/60Hz		
Ant. Pol.	Ant. 90°		
Test Mode:	TX Mode(5V/1A)		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	0.1500	91.01	-5.81	85.20	104.31	-19.11	peak
2		0.2955	72.98	-8.32	64.66	98.40	-33.74	peak
3		0.4421	73.95	-9.31	64.64	94.90	-30.26	peak
4		0.5885	60.49	-9.83	50.66	72.38	-21.72	peak
5		0.6899	60.28	-9.98	50.30	70.98	-20.68	peak
6		1.0320	55.36	-10.26	45.10	67.43	-22.33	peak

Emission Level= Read Level+ Correct Factor

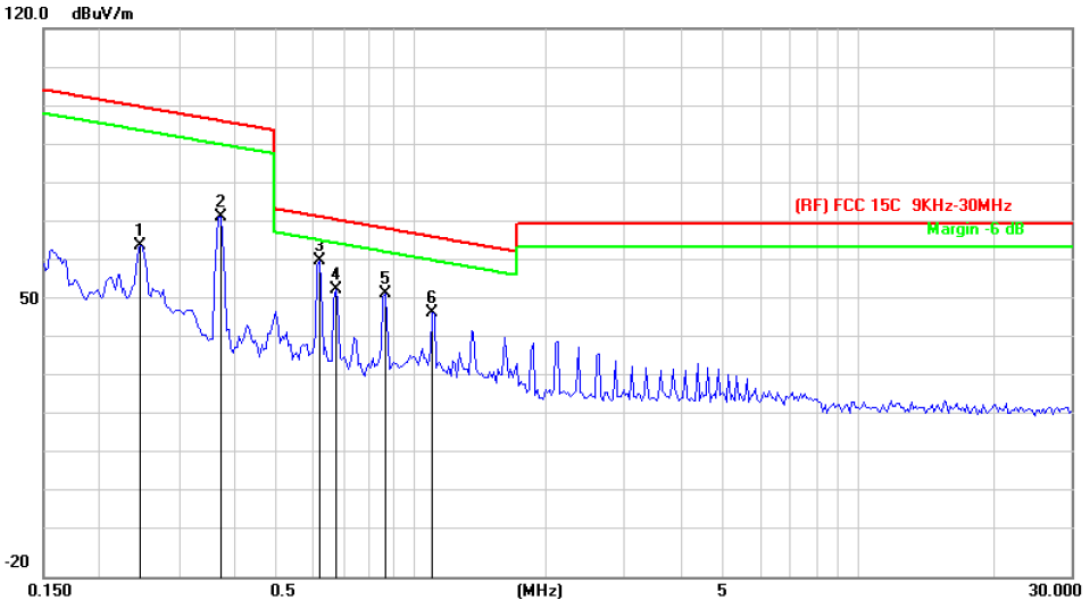
Temperature:	25℃	**Relative Humidity:**	55%
Test Voltage:	AC 120/60Hz		
Ant. Pol.	Ant. 0°		
Test Mode:	TX Mode(9V/1.1A)		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		0.0119	70.62	-10.35	60.27	126.37	-66.10	peak
2		0.0241	60.84	-10.09	50.75	120.23	-69.48	peak
3		0.0351	62.16	-9.98	52.18	116.95	-64.77	peak
4		0.0530	75.58	-10.04	65.54	113.37	-47.83	peak
5		0.1076	57.40	-4.22	53.18	107.20	-54.02	peak
6	*	0.1253	78.81	-4.89	73.92	105.87	-31.95	peak

Emission Level= Read Level+ Correct Factor

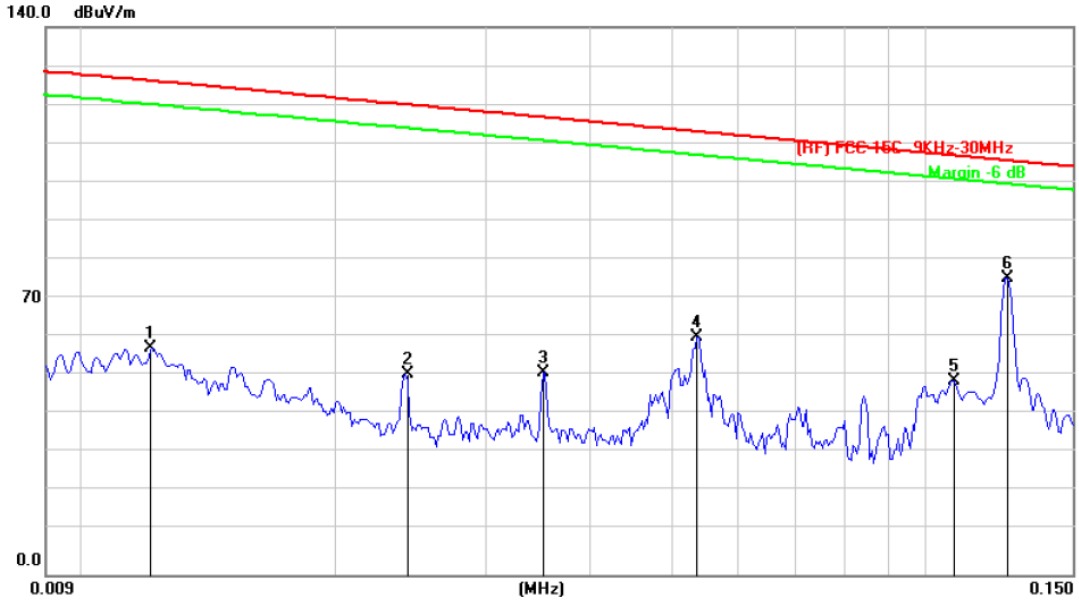
Temperature:	25℃	**Relative Humidity:**	55%
Test Voltage:	AC 120/60Hz		
Ant. Pol.	Ant. 0°		
Test Mode:	TX Mode(9V/1.1A)		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		0.2468	72.60	-7.98	64.62	99.97	-35.35	peak
2		0.3731	80.59	-8.84	71.75	96.37	-24.62	peak
3	*	0.6205	70.58	-9.87	60.71	71.92	-11.21	peak
4		0.6753	63.17	-9.96	53.21	71.17	-17.96	peak
5		0.8710	62.28	-10.17	52.11	68.93	-16.82	peak
6		1.1114	57.54	-10.27	47.27	66.78	-19.51	peak

Emission Level= Read Level+ Correct Factor

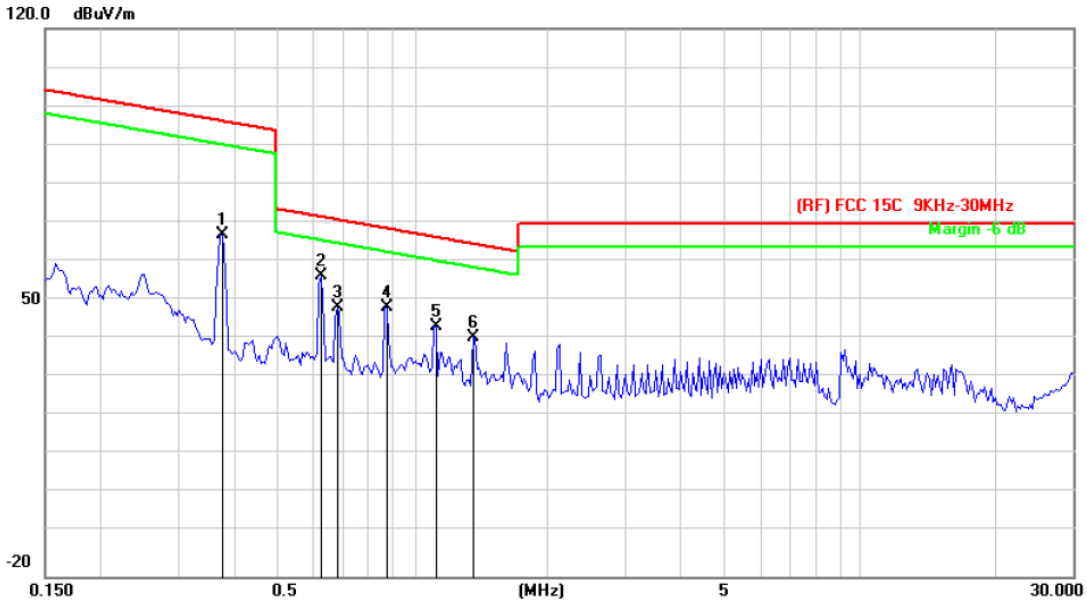
Temperature:	25℃	**Relative Humidity:**	55%
Test Voltage:	AC 120/60Hz		
Ant. Pol.	Ant. 90°		
Test Mode:	TX Mode(9V/1.1A)		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		0.0120	68.33	-10.34	57.99	126.30	-68.31	peak
2		0.0241	61.34	-10.09	51.25	120.23	-68.98	peak
3		0.0351	61.70	-9.98	51.72	116.95	-65.23	peak
4		0.0536	70.77	-10.03	60.74	113.27	-52.53	peak
5		0.1082	53.85	-4.24	49.61	107.15	-57.54	peak
6	*	0.1253	80.83	-4.89	75.94	105.87	-29.93	peak

Emission Level= Read Level+ Correct Factor

Temperature:	25℃	**Relative Humidity:**	55%
Test Voltage:	AC 120/60Hz		
Ant. Pol.	Ant. 90°		
Test Mode:	TX Mode(9V/1.1A)		
Remark:	N/A		

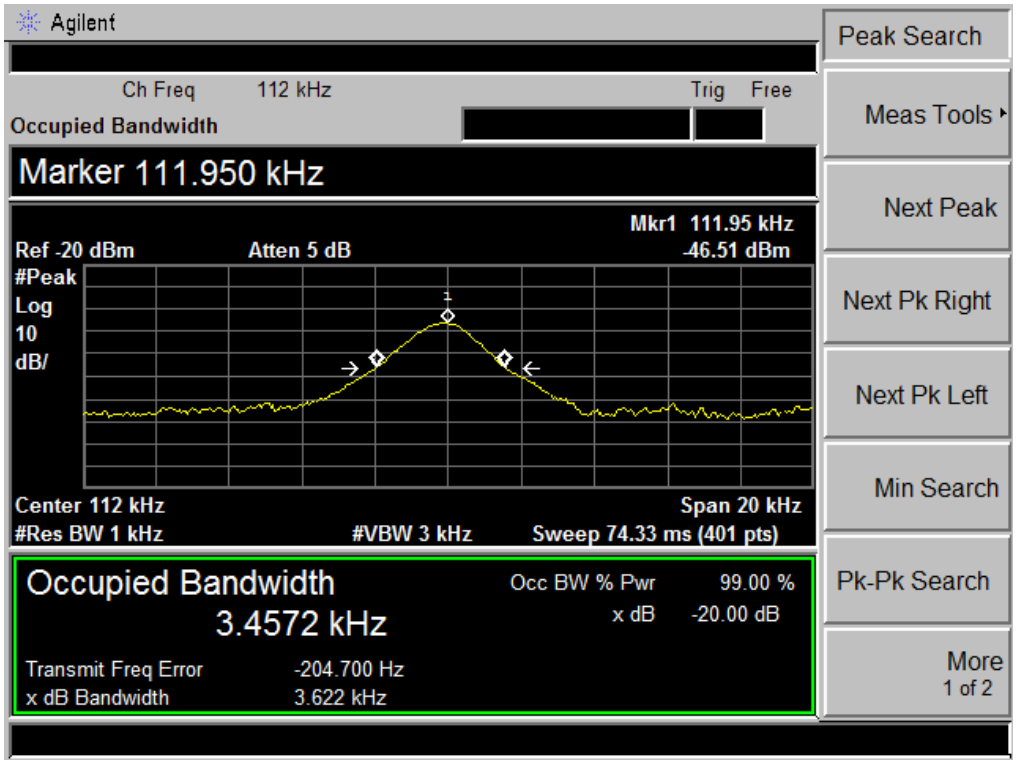


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		0.3731	76.09	-8.84	67.25	96.37	-29.12	peak
2	*	0.6205	66.57	-9.87	56.70	71.92	-15.22	peak
3		0.6753	58.65	-9.96	48.69	71.17	-22.48	peak
4		0.8710	59.01	-10.17	48.84	68.93	-20.09	peak
5		1.1233	54.08	-10.27	43.81	66.68	-22.87	peak
6		1.3593	51.43	-10.31	41.12	65.00	-23.88	peak

Emission Level= Read Level+ Correct Factor

Attachment C-- Bandwidth Measurement Data

Frequency (KHz)	20 dBc Bandwidth (kHz)	99% OBW (kHz)	Result
112	3.622	3.4572	PASS



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