FCC Radio Test Report

FCC ID: 2ARZ3-TX-148

Original Grant

Report No.	:	TB-FCC172827
Applicant	:	Technaxx Deutschland GmbH & Co. KG
Equipment Under Test (EUT)		
EUT Name	:	UV Anti-Virus Disinfection Box
Model No.	:	TX-148
Serial Model No.	:	TX-150
Brand Name	:	TECHNAXX
Receipt Date	:	2020-04-30
Test Date	:	2020-04-30 to 2020-05-13
Issue Date	:	2020-05-14
Standards	:	FCC Part 15, 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	:	Garen
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-FCC172827	Rev.01	Initial issue of report	2020-05-14

1. General Information about EUT

1.1 Client Information

Applicant	:	Technaxx Deutschland GmbH & Co. KG
Address	:	Kruppstrasse 105 60388 Frankfurt am Main Germany
Manufacturer	:	Technaxx Deutschland GmbH & Co. KG
Address	:	Kruppstrasse 105 60388 Frankfurt am Main Germany

1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	UV Anti-Virus Disinfection Box	
Models No.	:	TX-148, TX-150	
Model Difference	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is model name for commercial.	
Product Description	:	Operation Frequency:	110KHz-205KHz
		Modulation Type:	ASK
		Antenna:	Coil Antenna
Power Supply	:	Input: DC 5V, 2A USB Output: DC 5V, 1A Wireless Charger: DC 5V, 1A Max Power: 10W	
Charging Distance	:	≤8mm	
Software Version	:	N/A	
Hardware Version	:	N/A	
Connecting I/O Port(S)	:	Please refer to the User's Manual	

Note:

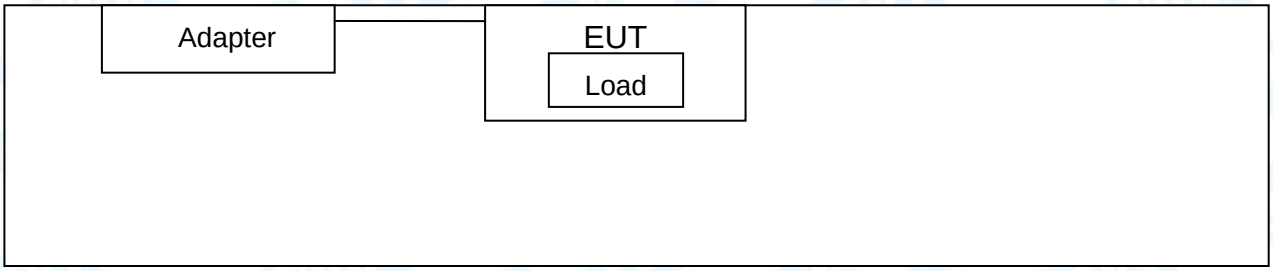
(1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

(2) Channel List:

Low Frequency(KHz)	Middle Frequency(KHz)	High Frequency(KHz)
112	159	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

Equipment Information				
Name	**Model**	**S/N**	**Manufacturer**	**Used " √ "**
Load	5V/9V	----	CHIPSVISION	√
Adapter	HW-050200C01	-------	HUAWEI	√
Cable Information				
Number	**Shielded Type**	**Ferrite Core**	**Length**	**Note**
1	No	No	1m	
Remark: The USB Cable provided by the applicant, the adapter and Load provided by TOBY test lab.				

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
For Conducted Test	
Final Test Mode	**Description**
Mode 4	Keeping TX Mode

For Radiated Test	
Final Test Mode	**Description**
Mode 4	Keeping TX Mode
For Bandwidth Test	
Final Test Mode	**Description**
Mode 2	TX Mode

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	110-205KHz

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	±3.50 dB ±3.10 dB
Radiated Emission	Level Accuracy: 9kHz to 30 MHz	±4.60 dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	±4.50 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. FCC Accredited Test Site Number: 854351.

IC Registration No.: (11950A)

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

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 Software

Test Item	Test Software	Manufacturer	Version No.
Conducted Emission	EZ-EMC	EZ	CDI-03A2
Radiation Emission	EZ-EMC	EZ	FA-03A2RE

4. Test Equipment

Conducted Emission Test					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Cal. Due Date**
EMI Test Receiver	Rohde & Schwarz	ESCI	100321	Jul. 13, 2019	Jul. 12, 2020
RF Switching Unit	Compliance Direction Systems Inc	RSU-A4	34403	Jul. 13, 2019	Jul. 12, 2020
AMN	SCHWARZBECK	NNBL 8226-2	8226-2/164	Jul. 13, 2019	Jul. 12, 2020
LISN	Rohde & Schwarz	ENV216	101131	Jul. 13, 2019	Jul. 12, 2020
Radiation Emission Test					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Cal. Due Date**
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 13, 2019	Jul. 12, 2020
EMI Test Receiver	Rohde & Schwarz	ESPI	100010/007	Jul. 13, 2019	Jul. 12, 2020
Spectrum Analyzer	Rohde & Schwarz	FSVR	1311.006K40-100945-DH	Mar.01, 2020	Feb. 28, 2021
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Mar.01, 2020	Feb. 28, 2021
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar.01, 2020	Feb. 28, 2021
Horn Antenna	ETS-LINDGREN	BBHA 9170	BBHA9170582	Mar.01, 2020	Feb. 28, 2021
Loop Antenna	SCHWARZBECK	FMZB 1519 B	1519B-059	Mar.01, 2020	Feb. 28, 2021
Pre-amplifier	Sonoma	310N	185903	Mar.01, 2020	Feb. 28, 2021
Pre-amplifier	HP	8449B	3008A00849	Mar.01, 2020	Feb. 28, 2021
Pre-amplifier	EMCI	EMC02325	980217	Mar.01, 2020	Feb. 28, 2021
Cable	HUBER+SUHNER	100	SUCOFLEX	Mar.01, 2020	Feb. 28, 2021
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. 13, 2019	Jul. 12, 2020
Spectrum Analyzer	Rohde & Schwarz	ESCI	100010/007	Jul. 13, 2019	Jul. 12, 2020
MXA Signal Analyzer	Agilent	N9020A	MY49100060	Sep. 16, 2019	Sep. 15, 2020
Vector Signal Generator	Agilent	N5182A	MY50141294	Sep. 16, 2019	Sep. 15, 2020
Analog Signal Generator	Agilent	N5181A	MY50141953	Sep. 16, 2019	Sep. 15, 2020
RF Power Sensor	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO26	Sep. 16, 2019	Sep. 15, 2020
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO29	Sep. 16, 2019	Sep. 15, 2020
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO31	Sep. 16, 2019	Sep. 15, 2020
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO33	Sep. 16, 2019	Sep. 15, 2020

5. Conducted Emission Test

5.1 Test Standard and Limit

5.1.1Test Standard

FCC Part 15.207

5.1.2 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

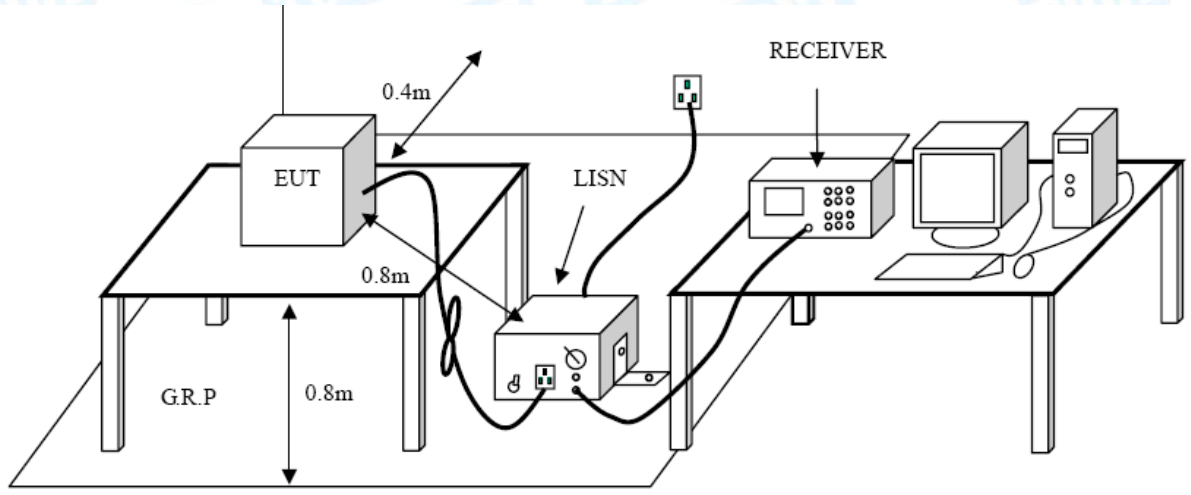
Notes:

(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.

5.2 Test Setup



5.3 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.

5.4 Deviation From Test Standard

No deviation

5.5 EUT Operating Mode

Please refer to the description of test mode.

5.6 Test Data

Please refer to the Attachment A.

6. Radiated Emission Test

6.1 Test Standard and Limit

6.1.1 Test Standard

FCC Part 15.209(a)(f)

6.1.2 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
Note: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.		

Radiated Emission Limit (Above 1000MHz)

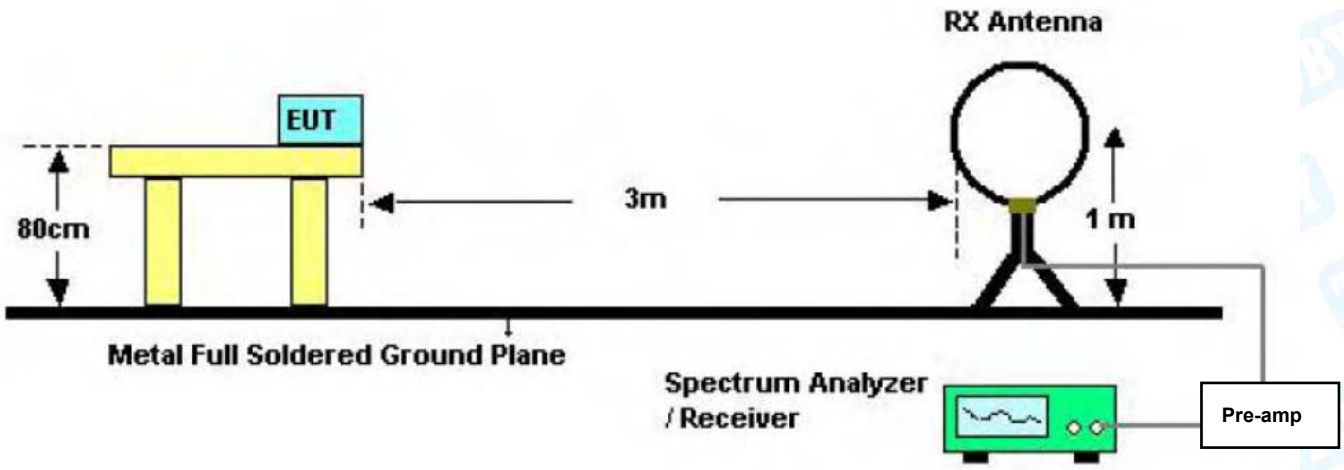
Frequency (MHz)	Distance of 3m (dBuV/m)	
	Peak	Average
Above 1000	74	54

Note:

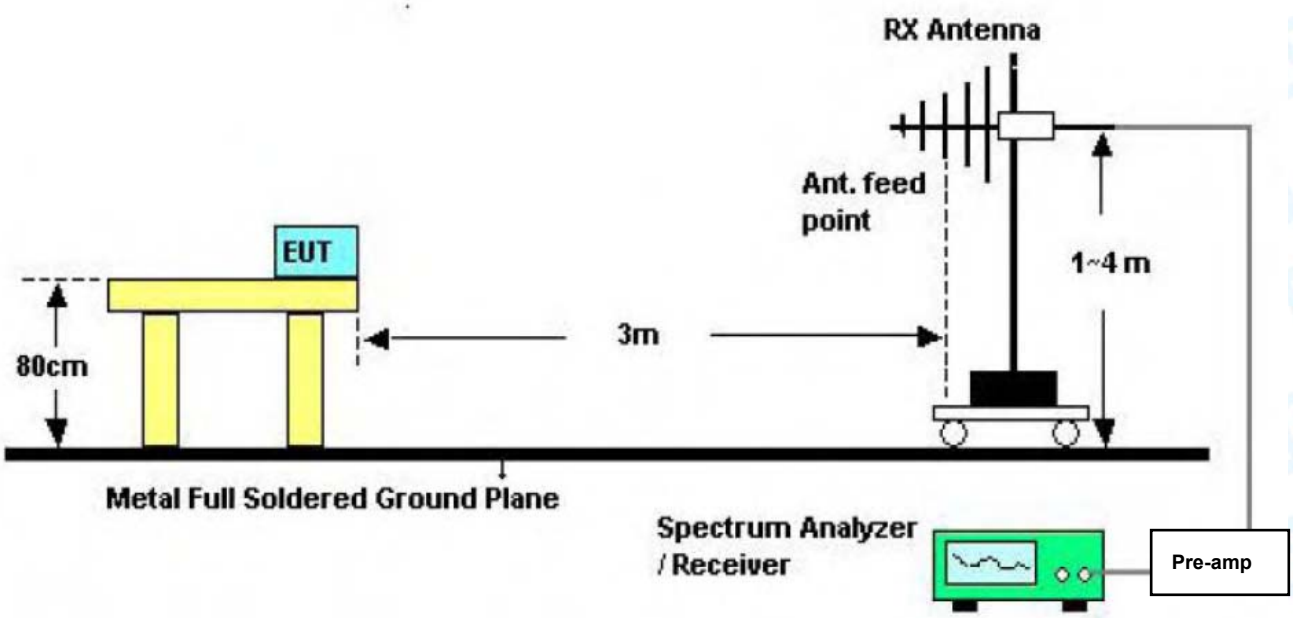
(1) The tighter limit applies at the band edges.

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

6.2 Test Setup



Below 30MHz Test Setup



Below 1000MHz Test Setup

6.3 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.

6.4 Deviation From Test Standard

No deviation

6.5 EUT Operating Condition

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

6.6 Test Data

Please refer to the Attachment B.

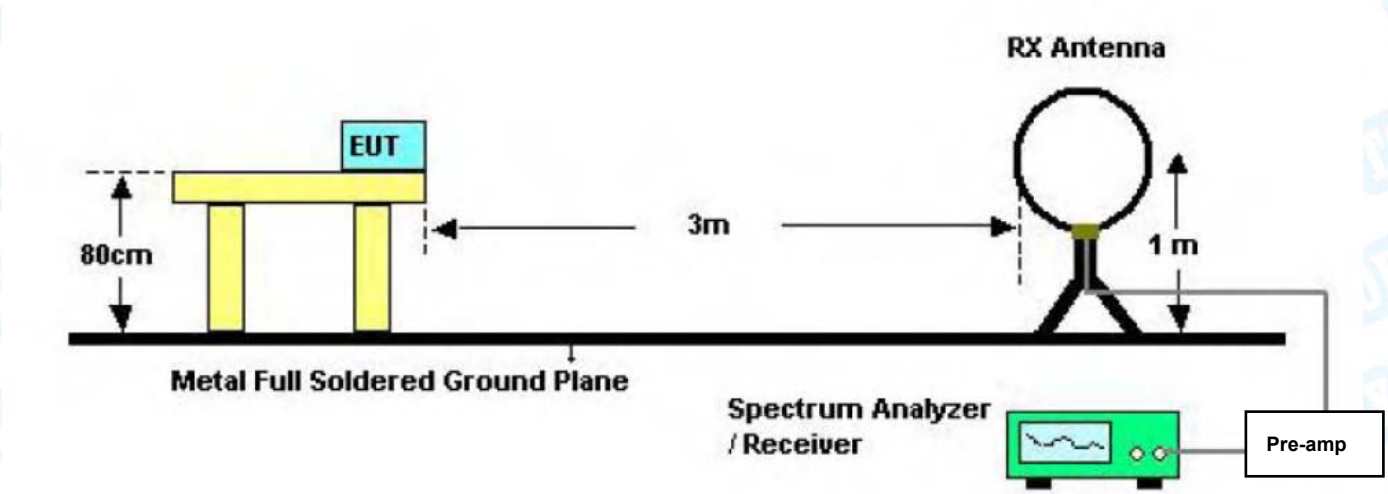
7. Bandwidth Measurement

7.1 Test Standard and Limit

7.1.1 Test Standard

FCC Part 15.215

7.2 Test Setup



7.3 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.

7.4 Deviation From Test Standard

No deviation

7.5 EUT Operating Condition

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

7.6 Test Data

Please refer to the Attachment C.

8. Antenna Requirement

8.1 Standard Requirement

8.1.1 Standard

FCC Part 15.203

8.1.2 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.

8.2 Deviation From Test Standard

No deviation

8.3 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.

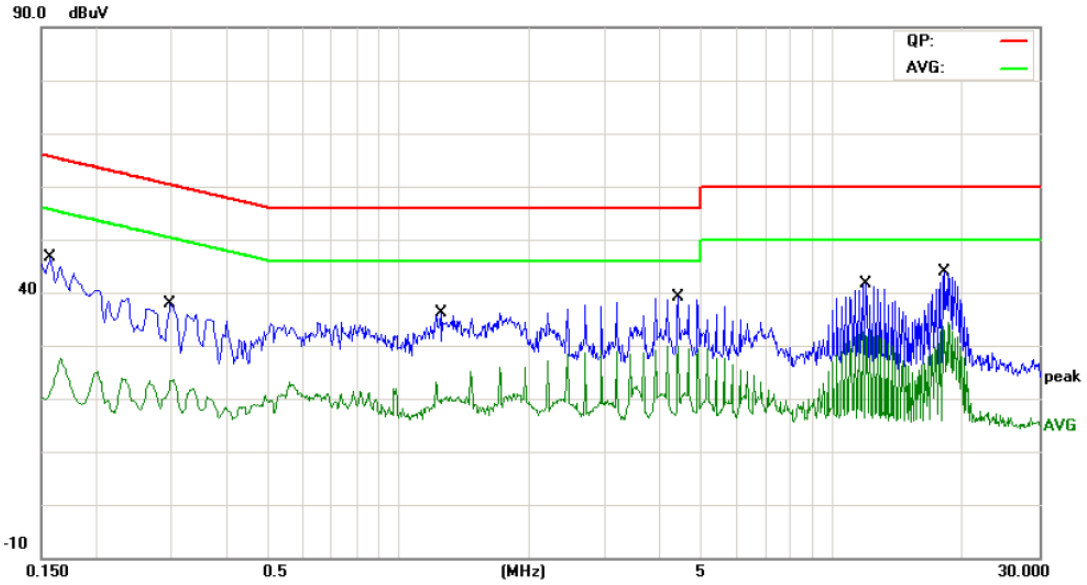
8.4 Result

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

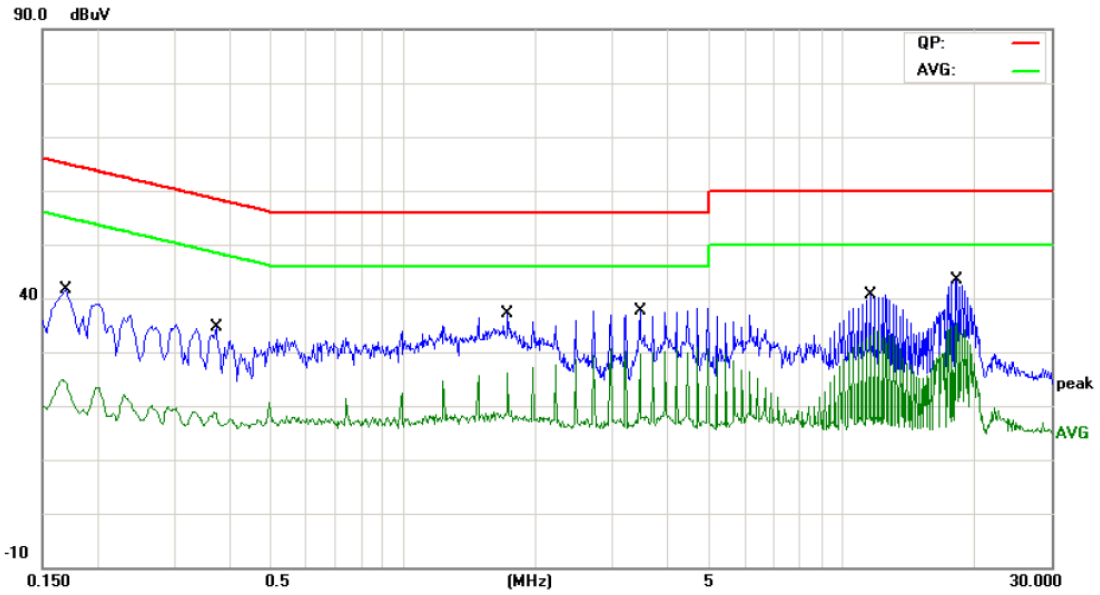
Temperature:	23.5℃	**Relative Humidity:**	45%
Test Voltage:	AC 120V/60 Hz		
Terminal:	Line		
Test Mode:	Mode 4		
Remark:	Only worse case is reported.		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1580	22.18	9.77	31.95	65.56	-33.61	QP
2		0.1580	10.18	9.77	19.95	55.56	-35.61	AVG
3		0.2980	22.91	9.85	32.76	60.30	-27.54	QP
4		0.2980	12.77	9.85	22.62	50.30	-27.68	AVG
5	*	1.2500	20.55	9.69	30.24	56.00	-25.76	QP
6		1.2500	9.68	9.69	19.37	46.00	-26.63	AVG
7		4.4100	15.25	9.85	25.10	56.00	-30.90	QP
8		4.4100	7.99	9.85	17.84	46.00	-28.16	AVG
9		11.9940	12.36	9.82	22.18	60.00	-37.82	QP
10		11.9940	6.62	9.82	16.44	50.00	-33.56	AVG
11		18.2020	10.89	9.85	20.74	60.00	-39.26	QP
12		18.2020	5.71	9.85	15.56	50.00	-34.44	AVG

Remark:
1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) =QuasiPeak/Average (dBuV)-Limit (dBuV)

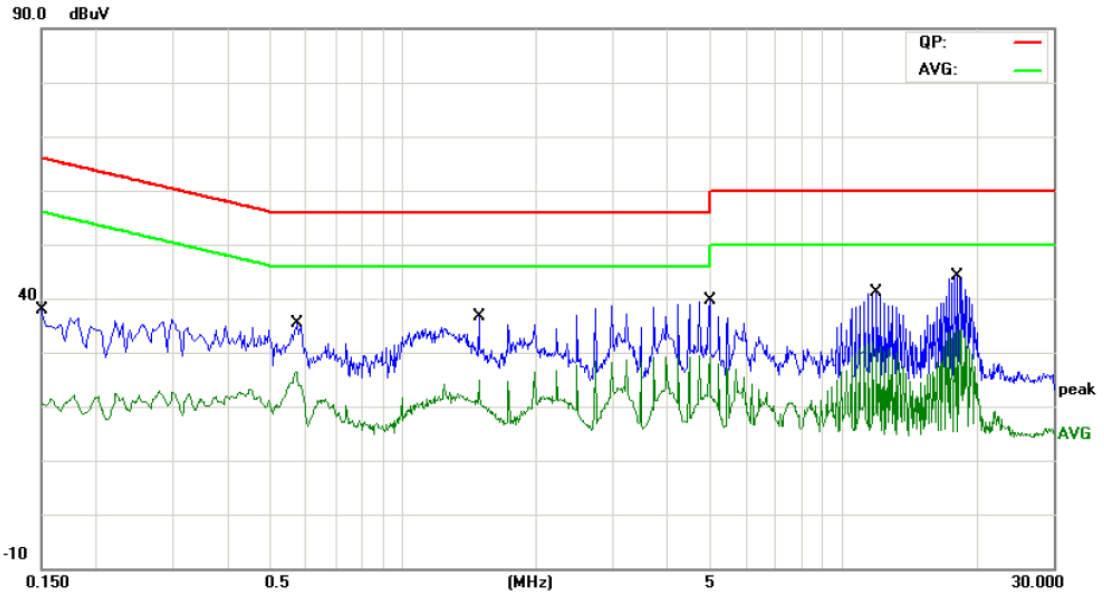
Temperature:	23.5℃	Relative Humidity:	45%
Test Voltage:	AC 120V/60 Hz		
Terminal:	Neutral		
Test Mode:	Mode 4		
Remark:	Only worse case is reported		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1700	27.29	9.62	36.91	64.96	-28.05	QP
2		0.1700	13.11	9.62	22.73	54.96	-32.23	AVG
3		0.3740	17.19	9.74	26.93	58.41	-31.48	QP
4		0.3740	7.46	9.74	17.20	48.41	-31.21	AVG
5		1.7300	23.43	9.84	33.27	56.00	-22.73	QP
6		1.7300	16.66	9.84	26.50	46.00	-19.50	AVG
7		3.4580	21.20	9.85	31.05	56.00	-24.95	QP
8		3.4580	15.36	9.85	25.21	46.00	-20.79	AVG
9		11.5980	14.64	9.86	24.50	60.00	-35.50	QP
10		11.5980	7.21	9.86	17.07	50.00	-32.93	AVG
11		18.2979	31.51	9.70	41.21	60.00	-18.79	QP
12	*	18.2979	25.23	9.70	34.93	50.00	-15.07	AVG

Remark:
1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) =QuasiPeak/Average (dBuV)-Limit (dBuV)

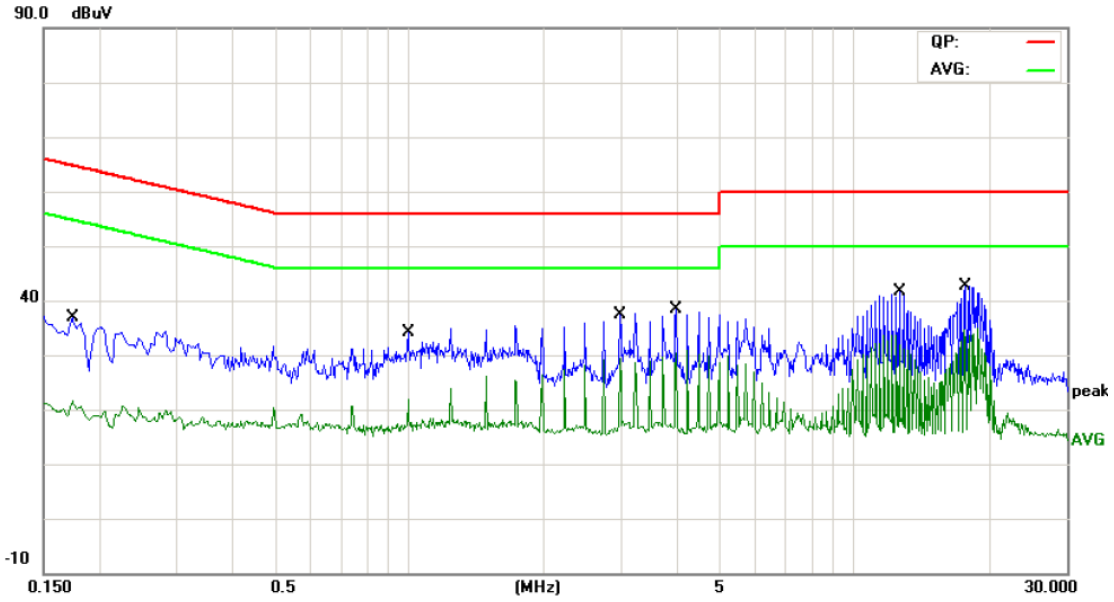
Temperature:	23.5℃	Relative Humidity:	45%
Test Voltage:	AC 240V/60 Hz		
Terminal:	Line		
Test Mode:	Mode 4		
Remark:	Only worse case is reported.		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1500	21.93	9.75	31.68	65.99	-34.31	QP
2		0.1500	10.06	9.75	19.81	55.99	-36.18	AVG
3		0.5740	20.71	9.96	30.67	56.00	-25.33	QP
4	*	0.5740	14.94	9.96	24.90	46.00	-21.10	AVG
5		1.4860	18.34	9.84	28.18	56.00	-27.82	QP
6		1.4860	13.04	9.84	22.88	46.00	-23.12	AVG
7		4.9540	16.06	9.86	25.92	56.00	-30.08	QP
8		4.9540	11.91	9.86	21.77	46.00	-24.23	AVG
9		11.8860	13.41	9.82	23.23	60.00	-36.77	QP
10		11.8860	8.40	9.82	18.22	50.00	-31.78	AVG
11		18.1220	26.56	9.85	36.41	60.00	-23.59	QP
12		18.1220	17.15	9.85	27.00	50.00	-23.00	AVG

Remark:
1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) =QuasiPeak/Average (dBuV)-Limit (dBuV)

Temperature:	23.5℃	**Relative Humidity:**	45%
Test Voltage:	AC 240V/60 Hz		
Terminal:	Neutral		
Test Mode:	Mode 4		
Remark:	Only worse case is reported		



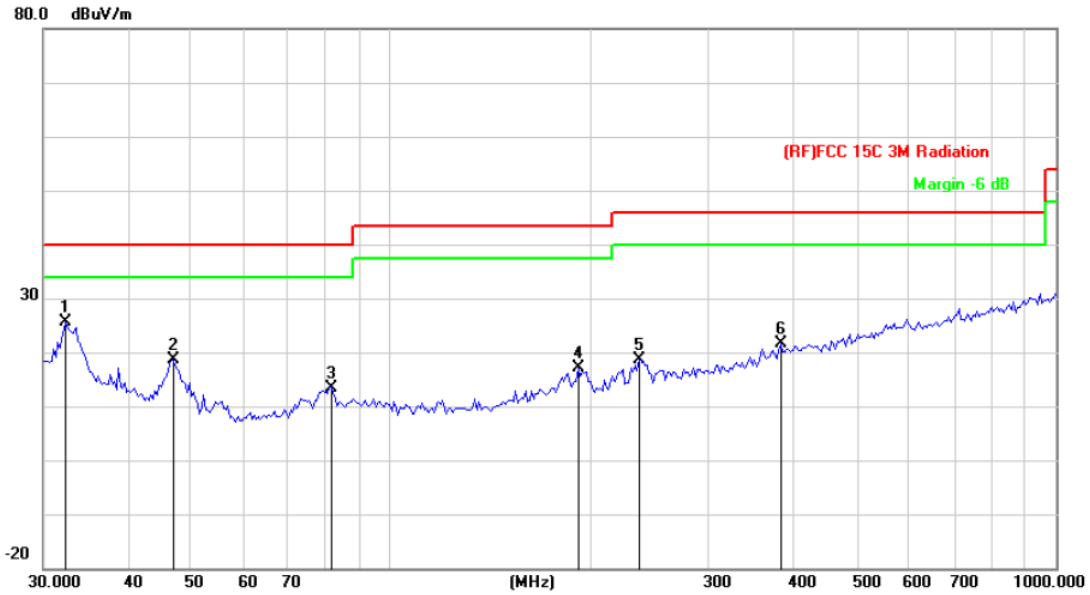
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1740	21.80	9.61	31.41	64.76	-33.35	QP
2		0.1740	9.14	9.61	18.75	54.76	-36.01	AVG
3		0.9900	19.28	9.62	28.90	56.00	-27.10	QP
4		0.9900	12.46	9.62	22.08	46.00	-23.92	AVG
5		2.9739	24.89	9.87	34.76	56.00	-21.24	QP
6	*	2.9739	19.44	9.87	29.31	46.00	-16.69	AVG
7		3.9660	23.89	9.82	33.71	56.00	-22.29	QP
8		3.9660	17.97	9.82	27.79	46.00	-18.21	AVG
9		12.6380	25.21	9.86	35.07	60.00	-24.93	QP
10		12.6380	15.67	9.86	25.53	50.00	-24.47	AVG
11		17.8340	30.16	9.72	39.88	60.00	-20.12	QP
12		17.8340	23.04	9.72	32.76	50.00	-17.24	AVG

Remark:
1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) =QuasiPeak/Average (dBuV)-Limit (dBuV)

Attachment B-- Radiated Emission Test Data

30MHz~1GHz

Temperature:	26℃	**Relative Humidity:**	55%
Test Voltage:	AC 120/60Hz		
Ant. Pol.	Horizontal		
Test Mode:	Mode 4		
Remark:	Only worse case is reported		

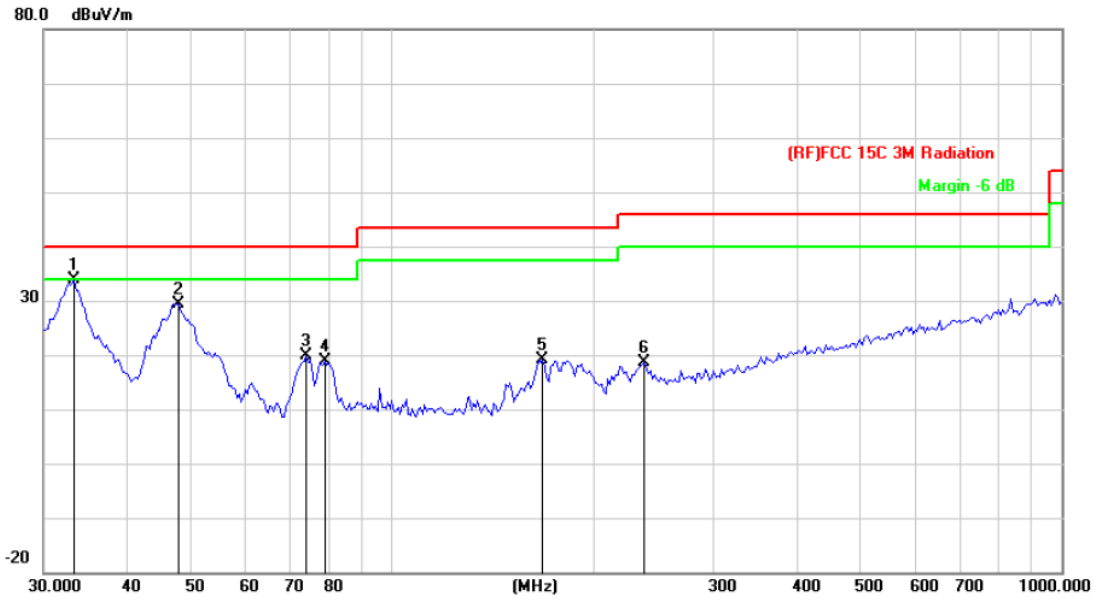


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	32.4059	40.39	-14.82	25.57	40.00	-14.43	peak
2		46.9947	40.95	-22.33	18.62	40.00	-21.38	peak
3		81.2116	35.99	-22.49	13.50	40.00	-26.50	peak
4		191.0738	36.88	-19.77	17.11	43.50	-26.39	peak
5		235.8163	36.43	-17.86	18.57	46.00	-27.43	peak
6		385.2805	34.37	-12.77	21.60	46.00	-24.40	peak

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

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. QuasiPeak (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = QuasiPeak (dBμV/m)-Limit QPK(dBμV/m)

Temperature:	25℃	Relative Humidity:	55%
Test Voltage:	AC 120/60Hz		
Ant. Pol.	Vertical		
Test Mode:	Mode 4		
Remark:	Only worse case is reported		



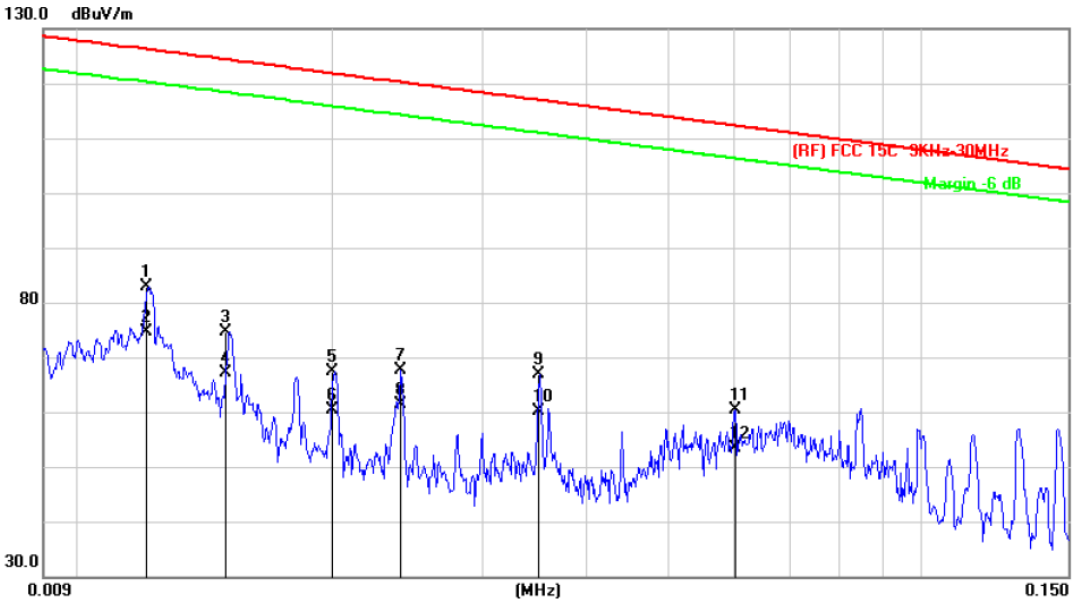
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	33.3279	49.28	-15.52	33.76	40.00	-6.24	peak
2		47.6586	52.04	-22.56	29.48	40.00	-10.52	peak
3		74.1351	42.93	-23.15	19.78	40.00	-20.22	peak
4		78.9652	41.63	-22.66	18.97	40.00	-21.03	peak
5		167.2368	39.64	-20.59	19.05	43.50	-24.45	peak
6		237.4760	36.35	-17.76	18.59	46.00	-27.41	peak

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

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. QuasiPeak (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = QuasiPeak (dBμV/m)-Limit QPK(dBμV/m)

9KMz-30MHz

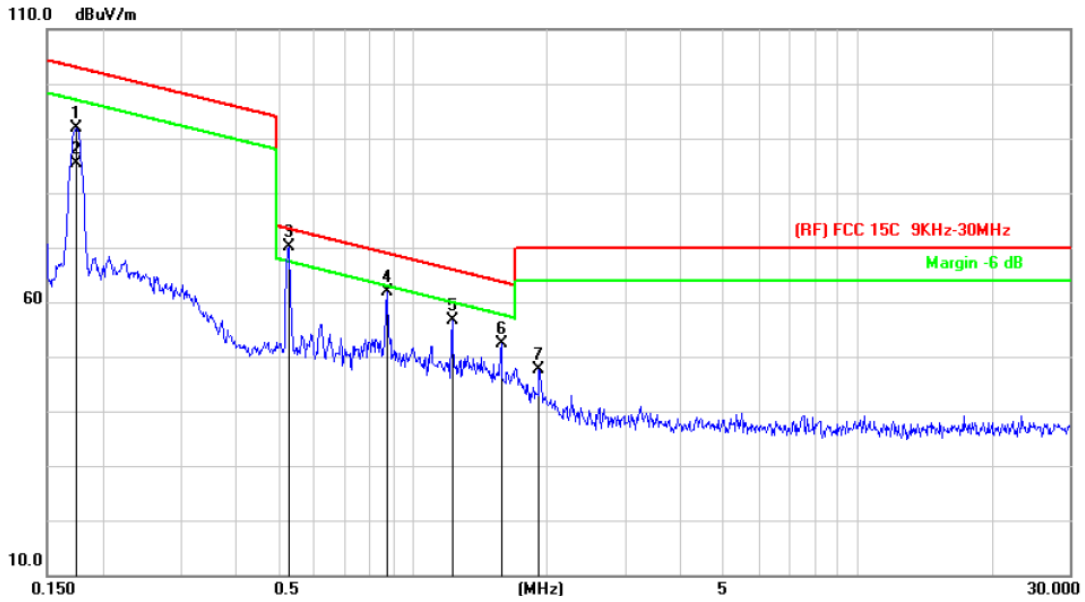
Temperature:	26℃	**Relative Humidity:**	55%
Test Voltage:	AC 120/60Hz		
Ant. Pol.	Ant. 0°		
Test Mode:	Mode 4		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	0.0120	93.26	-10.46	82.80	126.30	-43.50	peak
2		0.0120	85.13	-10.46	74.67	126.30	-51.63	AVG
3		0.0149	85.15	-10.54	74.61	124.41	-49.80	peak
4		0.0149	77.78	-10.54	67.24	124.41	-57.17	AVG
5		0.0200	78.16	-10.68	67.48	121.85	-54.37	peak
6		0.0200	70.96	-10.68	60.28	121.85	-61.57	AVG
7		0.0240	78.36	-10.79	67.57	120.26	-52.69	peak
8		0.0240	72.26	-10.79	61.47	120.26	-58.79	AVG
9		0.0350	77.70	-10.94	66.76	116.98	-50.22	peak
10		0.0350	71.18	-10.94	60.24	116.98	-56.74	AVG
11		0.0601	71.06	-10.74	60.32	112.27	-51.95	peak
12		0.0601	64.03	-10.74	53.29	112.27	-58.98	AVG

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. QuasiPeak/AVG(dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = QuasiPeak/AVG (dBμV/m)-Limit QPK/AVG(dBμV/m)

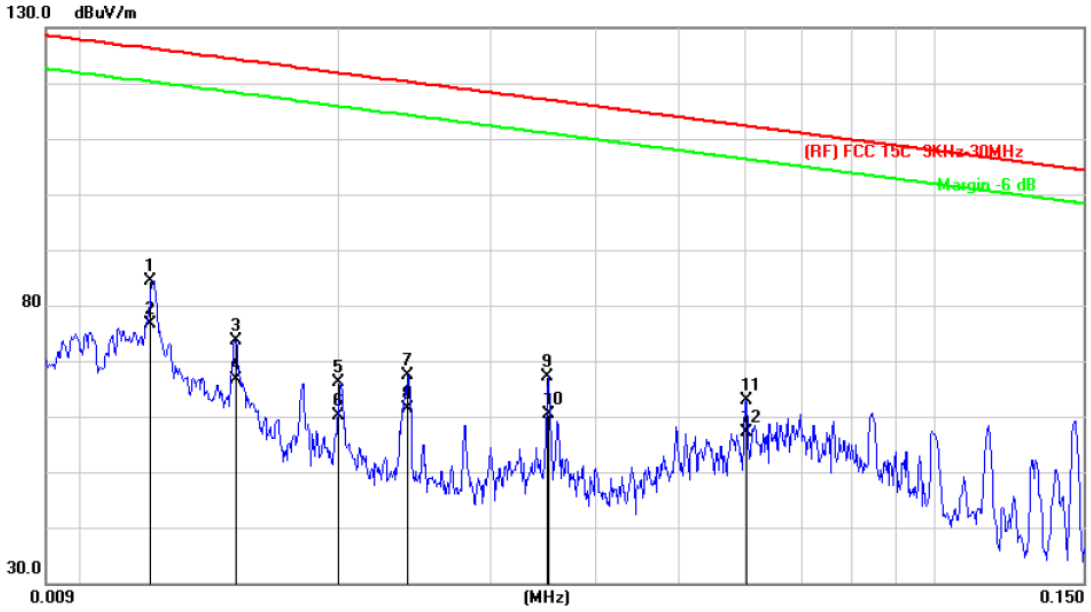
Temperature:	26℃	**Relative Humidity:**	55%
Test Voltage:	AC 120/60Hz		
Ant. Pol.	Ant. 0°		
Test Mode:	Mode 4		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		0.1740	99.63	-7.69	91.94	103.02	-11.08	peak
2		0.1740	93.15	-7.69	85.46	103.02	-17.56	AVG
3	*	0.5237	81.20	-10.97	70.23	73.41	-3.18	peak
4		0.8710	73.17	-11.20	61.97	68.93	-6.96	peak
5		1.2226	67.75	-11.17	56.58	65.93	-9.35	peak
6		1.5766	63.45	-11.14	52.31	63.69	-11.38	peak
7		1.9182	58.65	-11.10	47.55	70.00	-22.45	peak

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. QuasiPeak/AVG(dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = QuasiPeak/AVG (dBμV/m)-Limit QPK/AVG(dBμV/m)

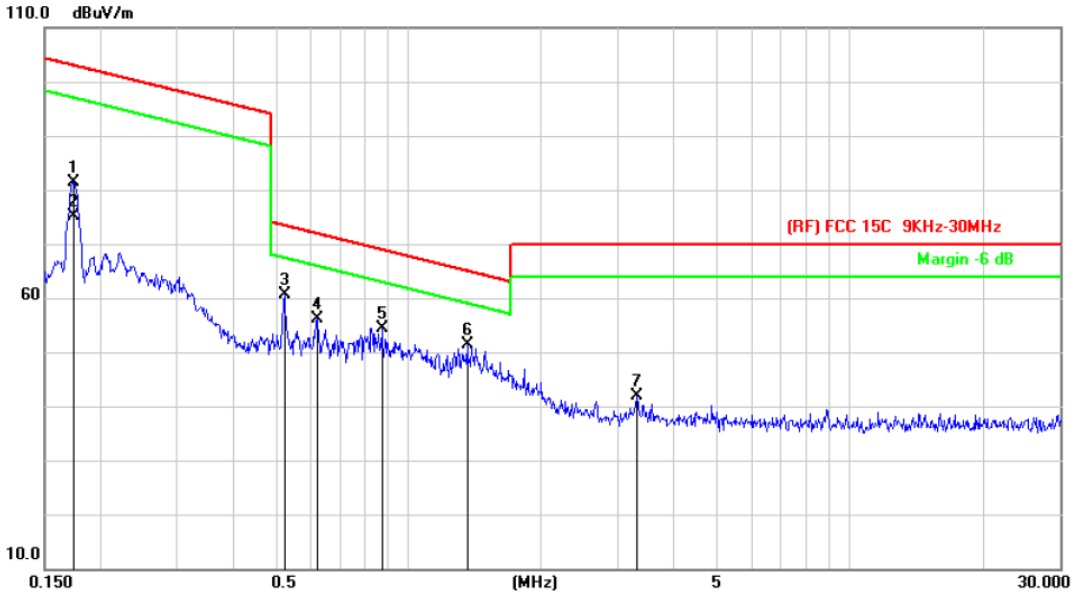
Temperature:	26℃	Relative Humidity:	55%
Test Voltage:	AC 120/60Hz		
Ant. Pol.	Ant. 90°		
Test Mode:	Mode 4		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	0.0120	94.83	-10.46	84.37	126.30	-41.93	peak
2		0.0120	87.03	-10.46	76.57	126.30	-49.73	AVG
3		0.0151	84.15	-10.55	73.60	124.30	-50.70	peak
4		0.0151	77.07	-10.55	66.52	124.30	-57.78	AVG
5		0.0200	76.93	-10.68	66.25	121.85	-55.60	peak
6		0.0200	70.89	-10.68	60.21	121.85	-61.64	AVG
7		0.0240	78.11	-10.79	67.32	120.26	-52.94	peak
8		0.0240	72.08	-10.79	61.29	120.26	-58.97	AVG
9		0.0350	78.00	-10.94	67.06	116.98	-49.92	peak
10		0.0351	71.22	-10.94	60.28	116.95	-56.67	AVG
11		0.0601	73.72	-10.74	62.98	112.27	-49.29	peak
12		0.0601	67.87	-10.74	57.13	112.27	-55.14	AVG

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. QuasiPeak/AVG(dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = QuasiPeak/AVG (dBμV/m)-Limit QPK/AVG(dBμV/m)

Temperature:	26℃	Relative Humidity:	55%
Test Voltage:	AC 120/60Hz		
Ant. Pol.	Ant. 90°		
Test Mode:	Mode 4		
Remark:	N/A		

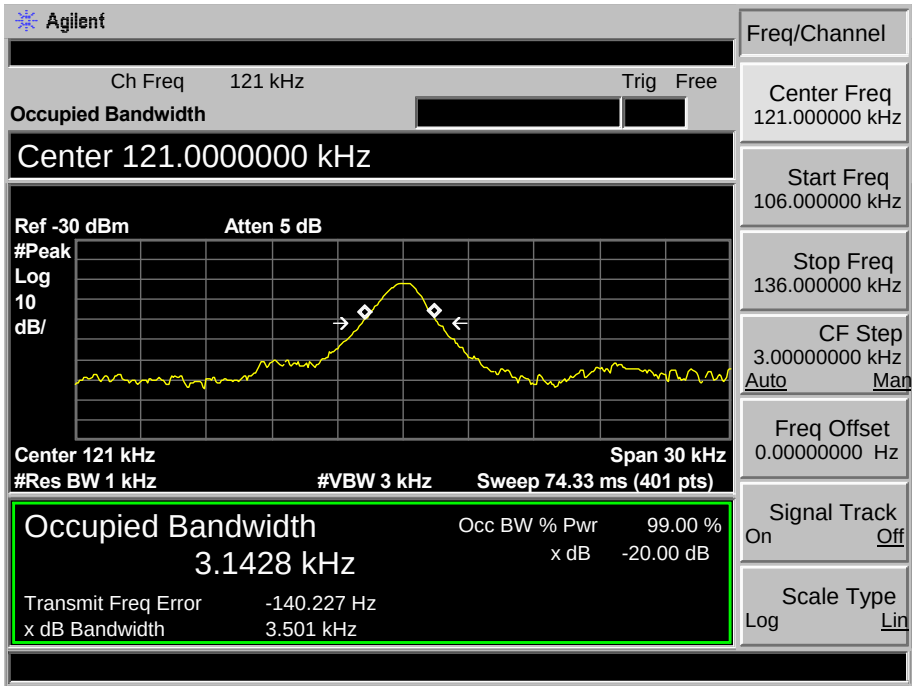


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		0.1740	89.06	-7.69	81.37	103.02	-21.65	peak
2		0.1740	82.93	-7.69	75.24	103.02	-27.78	AVG
3	*	0.5237	71.56	-10.97	60.59	73.41	-12.82	peak
4		0.6205	67.22	-11.04	56.18	71.92	-15.74	peak
5		0.8710	65.57	-11.20	54.37	68.93	-14.56	peak
6		1.3593	62.48	-11.15	51.33	65.00	-13.67	peak
7		3.2930	52.85	-10.99	41.86	70.00	-28.14	peak

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. QuasiPeak/AVG(dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = QuasiPeak/AVG (dBμV/m)-Limit QPK/AVG(dBμV/m)

Attachment C-- Bandwidth Measurement Data

Frequency (KHz)	20 dBc Bandwidth (kHz)	99% OBW (kHz)	Result
121	3.501	3.1428	PASS



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