CTC Laboratories, Inc.

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TEST REPORT

Report No. ·····:	**CTC20230045E01**
FCC ID·····:	**2A48A-WT158**
Applicant·····:	**Shenzhen Fuhaoxuan Technology Co., Ltd.**
Address·····:	301-8,BuildingA,No.409,JihuaRoad,BantianCommunity,Bantian Street,Longgang District,Shenzhen, China
Manufacturer·····:	Shenzhen Fuhaoxuan Technology Co., Ltd.
Address·····:	301-8,BuildingA,No.409,JihuaRoad,BantianCommunity,Bantian Street,Longgang District,Shenzhen, China
Product Name·····:	**wireless charger**
Trade Mark·····:	/
Model/Type reference·····:	WT158
Listed Model(s) ·····:	WT238,WT189,WT189B,WT188,WT188B,WT168,WT168B,WT299,WT299B,WLX-X9,WLX-X9D,WLX-X9M,WLX-H10,WLX-H11,WLX-H12,WLX-H13,WLX-H15
Standard·····:	**47 CFR FCC Part 18**
Date of receipt of test sample…:	March 13, 2023
Date of testing……..:	March 13~26, 2023
Date of issue……....:	March 26, 2023
Result……:	**PASS**

Compiled by: (Printed name+signature)	Zoe Xie	
Supervised by: (Printed name+signature)	Miller Ma	
Approved by: (Printed name+signature)	Totti Zhao	

Testing Laboratory Name…...:	**CTC Laboratories, Inc.**
Address……:	1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Table of Contents Page

1. TEST SUMMARY

1.1. Test Standards

The tests were performed according to following standards:
47 CFR FCC Part 18: Industrial, Scientific, and Medical Equipment Unintentional Radiators.
ANSI C63.4: 2014: American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40GHz.

1.2. Report version

Revised No.	Date of issue	Description
01	March 26, 2023	Original

1.3. Test Description

FCC CFR Title 47 FCC Part 18			
Test Item	**Standard Section**	**Result**	**Test Engineer**
Conducted Emissions Test	18.307(b)	Pass	Eva Feng
Radiated Emission Test	18.305(b),(c)	Pass	Ice Lu

Note: “N/A” is no application.

The measurement uncertainty is not included in the test result.

1.4. Test Facility

Address of the report laboratory

CTC Laboratories, Inc.

Add: 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L5365

CTC Laboratories, Inc. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation. Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2005 General Requirements) f or the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No.: 4340.01

CTC Laboratories, Inc. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in th e identified field of testing.

FCC (Registration No.: 951311, Designation Number CN1208)

CTC Laboratories, Inc. EMC Laboratory has been registered and fully described in a report filed with the (F CC) Federal Communications Commission. The acceptance letter from the FCC is maintained inour files. Registration 951311, Aug 26, 2017.

1.5. Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the CTC Laboratories, Inc. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Below is the best measurement capability for CTC Laboratories, Inc.

Test	Measurement Frequency Range	U (dB)	Note
Conducted Emission	9kHz ~ 30MHz	3.08	Main Power Port
Radiated Emission	0.009MHz ~ 30MHz	5.03	3m chamber 2
Radiated Emission	30MHz ~ 1000MHz	4.51	3m chamber 2

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

1.6. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Normal Temperature:	25°C
Lative Humidity	55 %
Air Pressure	101kPa

2. GENERAL INFORMATION

2.1. Client Information

Applicant:	Shenzhen Fuhaoxuan Technology Co., Ltd.
Address:	301-8,BuildingA,No.409,JihuaRoad,BantianCommunity,Bantian Street,Longgang District,Shenzhen, China
Manufacturer:	Shenzhen Fuhaoxuan Technology Co., Ltd.
Address:	301-8,BuildingA,No.409,JihuaRoad,BantianCommunity,Bantian Street,Longgang District,Shenzhen, China

2.2. General Description of EUT

Product Name:	wireless charger
Marketing Name:	/
Model/Type reference:	WT158
Listed Model(s):	WT238,WT189,WT189B,WT188,WT188B,WT168,WT168B,WT299,WT299B,WLX-X9,WLX-X9D,WLX-X9M,WLX-H10,WLX-H11,WLX-H12,WLX-H13,WLX-H15
Model Difference:	/
Power Supply:	5Vdc/2A
Hardware version:	/
Firmware version:	/
Serial Number:	KJ893
Wireless Charger	
Operation Frequency Range:	115kHz ~ 205kHz
Output Power:	Coil 1:15W Coil 2:15W Coil 3:15W
Antenna Type:	Coil Antenna, 0dBi

2.3. Accessory Equipment information

Equipment Information			
Name	Model	S/N	Manufacturer
Phone	P40 PRO	---	HUAWEI
AC/DC Adapter	CD122	---	UGREEN
Cable Information			
Name	Shielded Type	Ferrite Core	Length
USB Cable	With	Without	1M

2.4. Description of Test Modes

Test mode	Wireless charging (15W) Coil 1	Wireless charging (15W) Coil 2	Wireless charging (15W) Coil 3
1	■		
2		■	
3			■

Note: ■ is operation mode.

1.We pre-tested all coils, and coil 3 is the worst case and recorded it.

2. There are three coils for the wireless charger, but can not work at the same time. Only use one for charging.

2.5. Measurement Instruments List

Conducted emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	LISN	R&S	ENV216	101112	Dec. 25, 2023
2	LISN	R&S	ENV216	101113	Dec. 25, 2023
3	EMI Test Receiver	R&S	ESCS30	100353	Dec. 25, 2023
4	ISN CAT6	Schwarzbeck	NTFM 8158	8158-0046	Dec. 25, 2023

Radiated emission(3m chamber 2)					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	9168-1013	Jan. 12, 2024
2	Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-647	Dec. 24, 2023
3	Loop Antenna	ZHINAN	ZN30900A	/	Dec. 25, 2023
4	Spectrum Analyzer	R&S	FSU26	100105	Dec. 25, 2023
5	Spectrum Analyzer	R&S	FSV40-N	101331	Mar. 15, 2023
6	Pre-Amplifier	SONOMA	310	186194	Dec. 25, 2023
7	Low Noise Pre-Amplifier	EMCI	EMC051835	980075	Dec. 25, 2023
8	Test Receiver	R&S	ESCI7	100967	Dec. 25, 2023
9	3m Chamber	Frankonia	EE025	/	Oct. 23, 2024

Note: The Cal. Interval was one year.

3. EMC EMISSION TEST

3.1. Radiated Emission

LIMIT

FCC CFR Title 47 Part 18 Section 18.305(b):

Equipment	Operating frequency	RF Power generated by equipment (watts)	Field strength limit (uV/m)	Distance (meters)
Any type unless otherwise specified (miscellaneous)	Any ISM frequency	Below 500 500 or more	25 25 × SQRT(power/500)	300 [1]300
	Any non-ISM frequency	Below 500 500 or more	15 15 × SQRT(power/500)	300 [1]300
Industrial heaters and RF stabilized arc welders	On or below 5,725 MHz Above 5,725 MHz	Any Any	10 ([2])	1,600 ([2])
Medical diathermy	Any ISM frequency Any non-ISM frequency	Any Any	25 15	300 300
Ultrasonic	Below 490 kHz	Below 500 500 or more	2,400/F(kHz) 2,400/F(kHz) × SQRT(power/500)	300 [3]300
	490 to 1,600 kHz Above 1,600 kHz	Any Any	24,000/F(kHz) 15	30 30
Induction cooking ranges	Below 90 kHz On or above 90 kHz	Any Any	1,500 300	[4]30 [4]30

[1]Field strength may not exceed 10 μV/m at 1600 meters. Consumer equipment operating below 1000 MHz is not permitted the increase in field strength otherwise permitted here for power over 500 watts.

[2]Reduced to the greatest extent possible.

[3]Field strength may not exceed 10 μV/m at 1600 meters. Consumer equipment is not permitted the increase in field strength otherwise permitted here for over 500 watts.

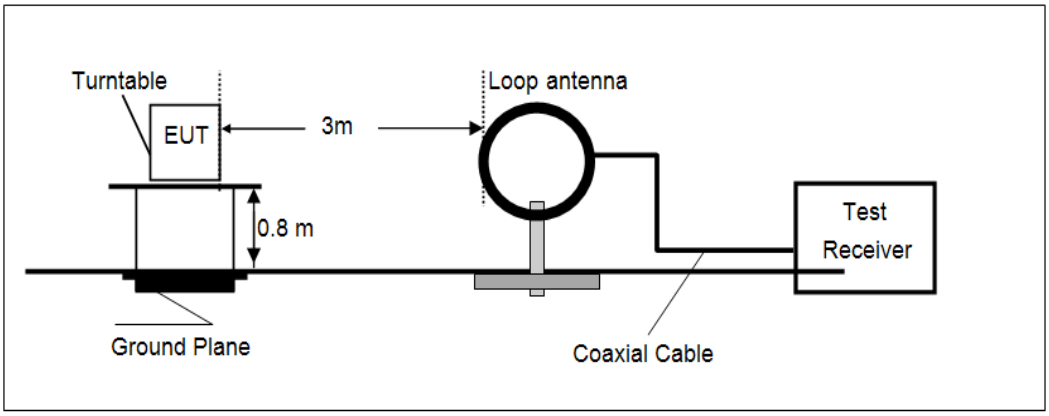
[4]Induction cooking ranges manufactured prior to February 1, 1980, shall be subject to the field strength limits for miscellaneous ISM equipment.

1. This product belongs to non-ISM equipment, the field strength limit is 15uV/m at 300 meter distance.

2. Limit: $20\log^{(15uV/m)} + 40\log^{(300/3)}$ =23.52+80=103.52dBuV/m at 3 meters distance

TEST CONFIGURATION

Radiated Emission Test Set-Up Frequency below 30MHz



TEST PROCEDURE

1. The EUT was tested according to ANSI C63.4:2014.
2. The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated360 degrees to determine the position of the maximum emission level.
3. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna.
5. Use the following spectrum analyzer settings

Span shall wide enough to fully capture the emission being measured;

1) 9kHz – 150kHz, RBW=200Hz, Sweep=auto, Detector function=peak, Trace=max hold;
2) 150kHz – 30MHz, RBW=9kHz, Sweep=auto, Detector function=peak, Trace=max hold; If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

TEST MODE

Please refer to the clause 2.4.

TEST RESULTS

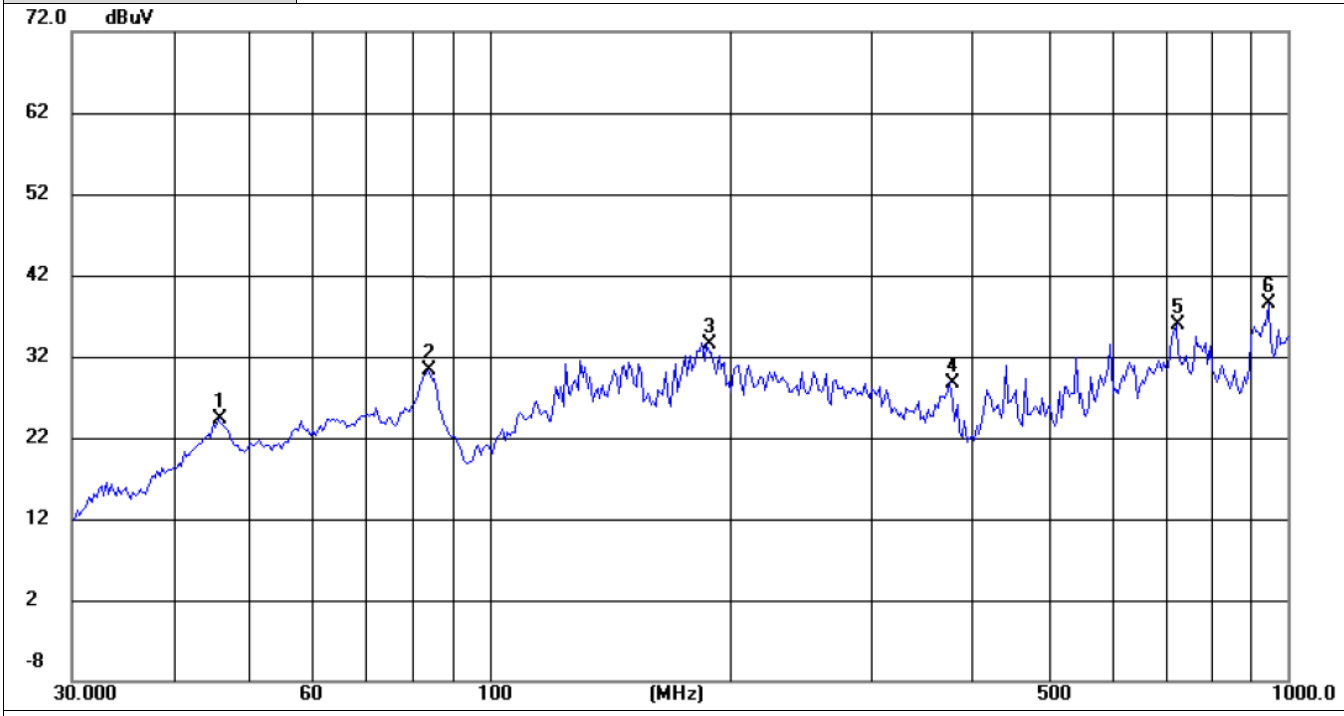
9kHz – 30MHz

Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Polar Coxial/Coplanar	Detector
0.115	52.02	-5.26	46.76	103.25	-56.49	Coxial	QP
0.123	74.74	-5.26	69.48	103.25	-33.77	Coxial	QP
0.209	43.83	-5.7	38.13	103.25	-65.12	Coxial	QP
0.224	43.5	-5.71	37.79	103.25	-65.46	Coxial	QP
0.314	43.72	-5.9	37.82	103.25	-65.43	Coxial	QP
0.414	43.38	-6.01	37.37	103.25	-65.88	Coxial	QP
1.967	16.72	-12.37	4.35	103.25	-98.9	Coxial	QP
0.115	58.4	-5.26	53.14	103.25	-50.11	Coplanar	QP
0.123	68.52	-5.26	63.26	103.25	-39.99	Coplanar	QP
0.209	42.57	-5.7	36.87	103.25	-66.38	Coplanar	QP
0.224	48.54	-5.71	42.83	103.25	-60.42	Coplanar	QP
0.314	48.49	-5.9	42.59	103.25	-60.66	Coplanar	QP
0.414	41.69	-6.01	35.68	103.25	-67.57	Coplanar	QP
1.967	15.68	-12.37	3.31	103.25	-99.94	Coplanar	QP

Remarks:
1. Correct (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2. Result Level= Read Level+ Correct Factor
3. Margin = Result Level-Limit
4. Testing is carried out with frequency rang 9kHz to 30MHz, only recorded the worst case.

30MHz-1GHz

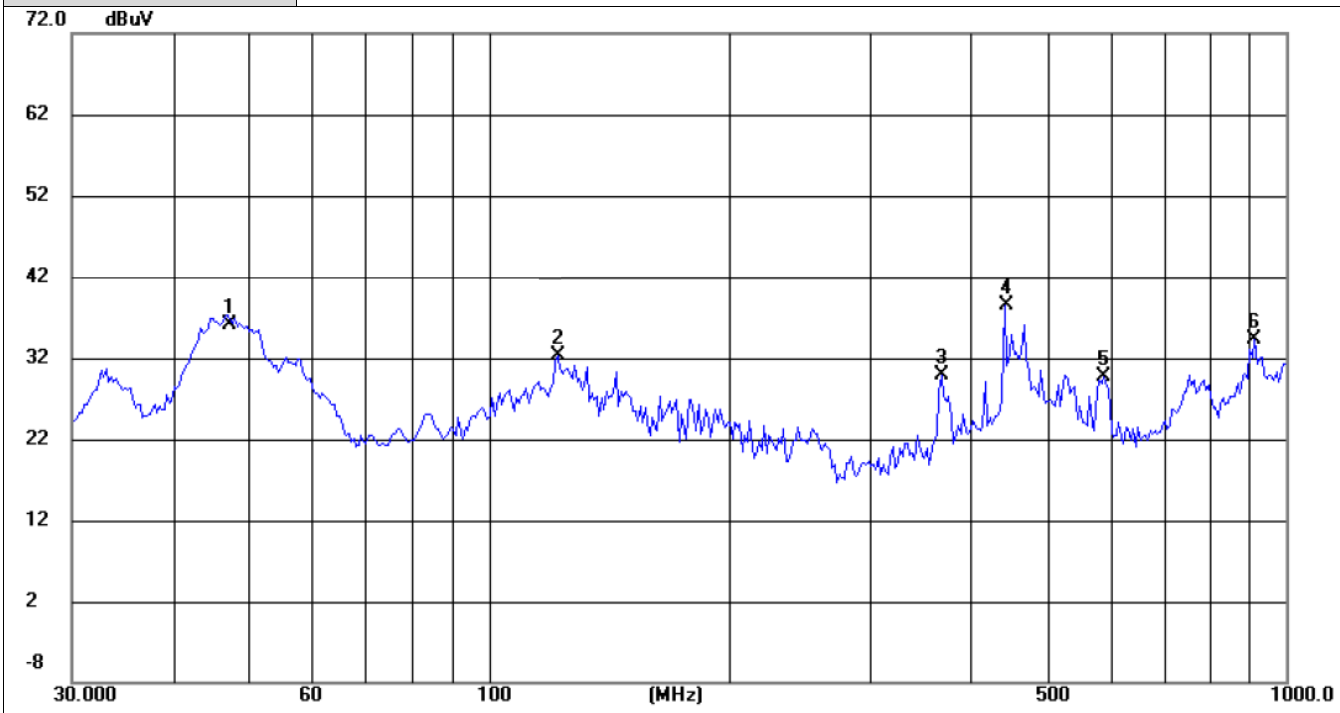
Ant. Pol.	Horizontal
Test Mode:	3
Remark:	Only worse case is reported



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		45.6948	37.94	-13.73	24.21	103.25	-79.04	QP
2		83.5222	49.14	-18.77	30.37	103.25	-72.88	QP
3		187.0958	49.82	-16.25	33.57	103.25	-69.68	QP
4		377.2591	39.86	-11.06	28.80	103.25	-74.45	QP
5		724.2611	39.92	-3.97	35.95	103.25	-67.30	QP
6	*	945.4399	40.90	-2.45	38.45	103.25	-64.80	QP

Remarks:
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2.Measure Level= Read Level+ Correct Factor
3.Over = Limit -Measure Level

Ant. Pol.	Vertical
Test Mode:	3
Remark:	Only worse case is reported



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	46.9948	49.52	-13.42	36.10	103.25	-67.15	QP
2		121.9755	50.01	-17.66	32.35	103.25	-70.90	QP
3		369.4047	41.40	-11.52	29.88	103.25	-73.37	QP
4		443.2943	48.46	-9.94	38.52	103.25	-64.73	QP
5		590.9737	36.50	-6.77	29.73	103.25	-73.52	QP
6		912.8620	35.18	-0.87	34.31	103.25	-68.94	QP

Remarks:
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2.Measure Level= Read Level+ Correct Factor
3.Over = Limit -Measure Level

3.2. Conducted Emission (AC Mains)

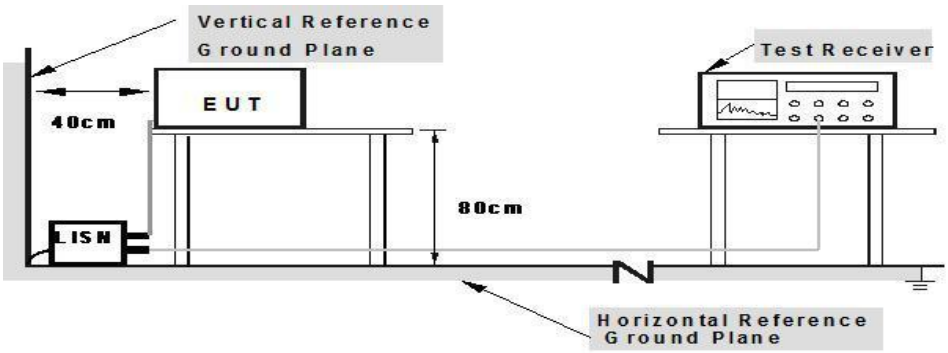
LIMIT

FCC CFR Title 47 Part 18 Section 18.307(b):

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST CONFIGURATION



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

TEST PROCEDURE

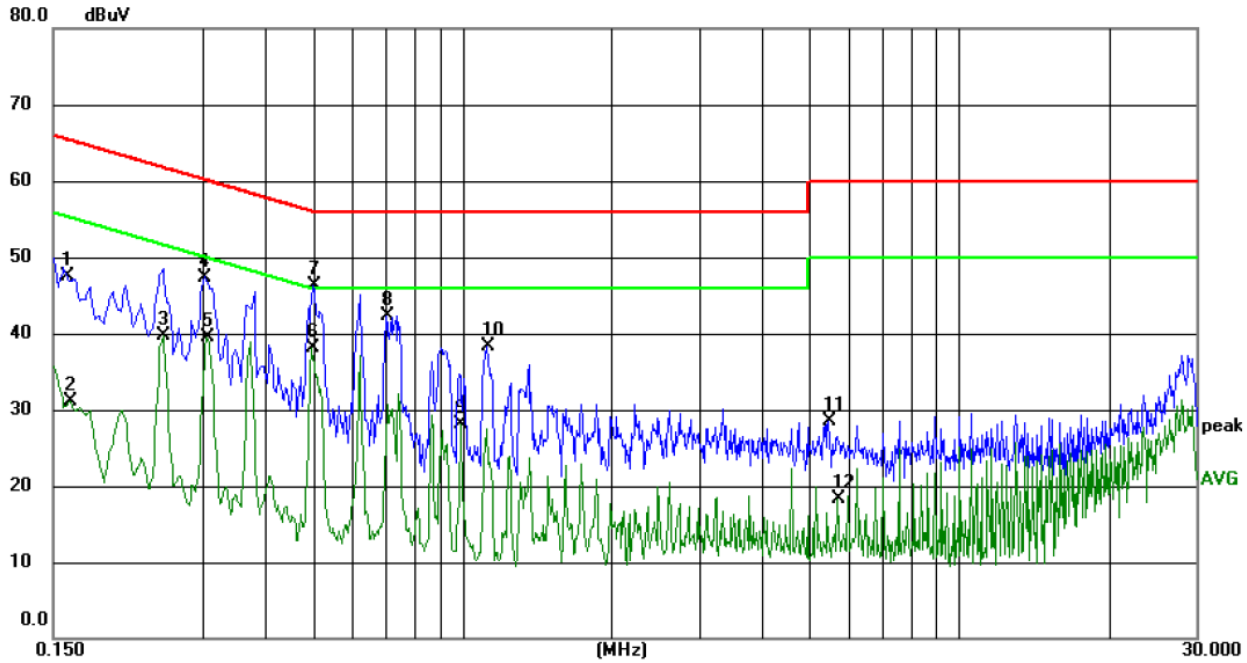
1. The EUT was setup according to ANSI C63.4-2014.
2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.
3. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment.
4. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)
5. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
6. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
7. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHzusing a receiver bandwidth of 9 kHz.
8. During the above scans, the emissions were maximized by cable manipulation.

TEST MODE

Please refer to the clause 2.4.

TEST RESULTS

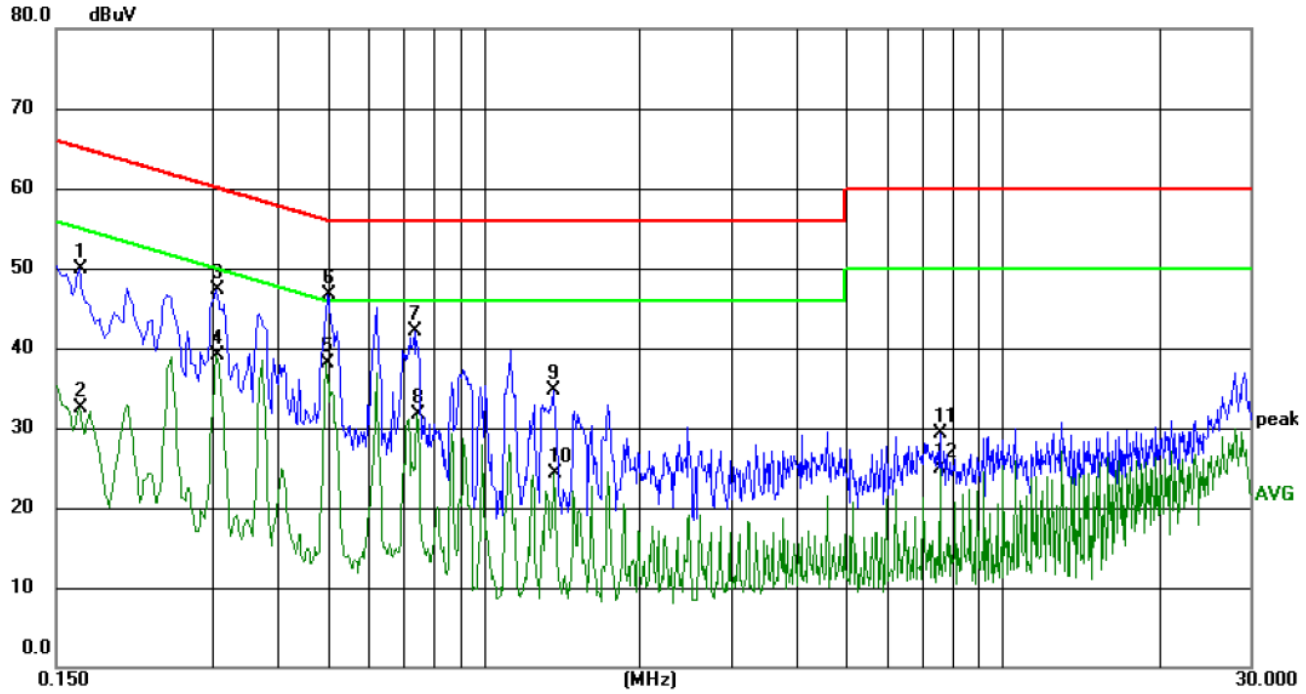
Test mode	3	Terminal	Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1598	38.12	9.45	47.57	65.47	-17.90	QP
2		0.1620	21.68	9.48	31.16	55.36	-24.20	AVG
3		0.2500	29.77	9.98	39.75	51.76	-12.01	AVG
4		0.3020	37.45	9.95	47.40	60.19	-12.79	QP
5		0.3060	29.55	9.94	39.49	50.08	-10.59	AVG
6	*	0.4980	28.26	9.88	38.14	46.03	-7.89	AVG
7		0.5020	36.43	9.88	46.31	56.00	-9.69	QP
8		0.7020	32.40	9.98	42.38	56.00	-13.62	QP
9		0.9940	18.19	9.90	28.09	46.00	-17.91	AVG
10		1.1220	28.40	9.90	38.30	56.00	-17.70	QP
11		5.4700	18.40	10.20	28.60	60.00	-31.40	QP
12		5.6940	8.16	10.22	18.38	50.00	-31.62	AVG

1.Measure Level = Read Level+ Correct Factor
2.Margin = Measure Level-Limit

Test mode	3	Terminal	Neutral



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1660	40.29	9.55	49.84	65.16	-15.32	QP
2		0.1660	22.98	9.55	32.53	55.16	-22.63	AVG
3		0.3060	37.27	9.94	47.21	60.08	-12.87	QP
4		0.3060	29.13	9.94	39.07	50.08	-11.01	AVG
5	*	0.4980	28.19	9.88	38.07	46.03	-7.96	AVG
6		0.5020	36.73	9.88	46.61	56.00	-9.39	QP
7		0.7380	32.06	10.00	42.06	56.00	-13.94	QP
8		0.7460	21.63	10.00	31.63	46.00	-14.37	AVG
9		1.3660	24.53	10.18	34.71	56.00	-21.29	QP
10		1.3700	14.05	10.19	24.24	46.00	-21.76	AVG
11		7.5940	19.06	10.32	29.38	60.00	-30.62	QP
12		7.5940	14.57	10.32	24.89	50.00	-25.11	AVG

1.Measure Level = Read Level+ Correct Factor

2.Margin = Measure Level-Limit

**********THE END**********