Land America Health & Fitness Co., Ltd

RF TEST REPORT

Report Type:
FCC Part 15C RF report

Model:
M-Charge-05

REPORT NUMBER:
2503B1485SHA-001

ISSUE DATE:
March 18, 2025

DOCUMENT CONTROL NUMBER:
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TEST REPORT

Report no.: 2503B1485SHA-001

Applicant	:	Land America Health & Fitness Co., Ltd No. 25 North 2nd Road, Xinglin, Jimei, Xiamen, 361022, China
Manufacturer	:	Land America Health & Fitness Co., Ltd No. 25 North 2nd Road, Xinglin, Jimei, Xiamen, 361022, China
FCC ID	:	2BNWO-WCM123

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:
47CFR Part 15 (2023): Radio Frequency Devices (Subpart C) **ANSI C63.10 (2020):** American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

PREPARED BY:	**REVIEWED BY:**
	
Project Engineer Scout Gong	Reviewer Eric Li

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Revision History

Report No.	Version	Description	Issued Date
2503B1485SHA-001	Rev. 01	Initial issue of report	March 18, 2025

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Measurement result summary

TEST ITEM	FCC REFERANCE	RESULT
Radiated emissions	15.209	Pass
Conducted emissions	15.207	Pass

Notes: 1: NA =Not Applicable
2: Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.
3: Additions, Deviations and Exclusions from Standards: None.

TEST REPORT

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	Wireless Charger Module
Type/Model:	M-Charge-05
Description of EUT:	The product covered by this report is a wireless charge module. It has only one model.
Rating:	Input: 12V DC, Max. 500mA Output: Max.5W
Category of EUT:	Class B
EUT type:	☒ Table top ☐ Floor standing
Software Version:	/
Hardware Version:	/
Sample received date:	March 1, 2025
Date of test:	March 1, 2025 – March 18, 2025

1.2 Technical Specification

Frequency Range:	111KHz-200KHz

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1.3 Description of Test Facility

Name:	Intertek Testing Services (Shanghai FTZ) Co., Ltd.
Address:	Building 86, No. 1198 Qinzhou Road (North), Shanghai 200233, P.R. China
Telephone:	86 21 61278200
Telefax:	86 21 54262353

The test facility is recognized, certified, or accredited by these organizations:	CNAS Accreditation Lab Registration No. CNAS L21189
	FCC Accredited Lab Designation Number: CN0175
	IC Registration Lab CAB identifier: CN0014
	VCCI Registration Lab Registration No.: R-14243, G-10845, C-14723, T-12252
	A2LA Accreditation Lab Certificate Number: 3309.02

2 TEST SPECIFICATIONS

2.1 Standards or specification

47CFR Part 15 (2023)
ANSI C63.10 (2020)

2.2 Mode of operation during the test

Within this test report, EUT was tested under all available operation modes and tested under its rating voltage and frequency. Other voltage and frequency are specified if used.

2.3 Test software list

Test Items	Software	Manufacturer	Version
Conducted emission	ESxS-K1	R&S	V2.1.0
Radiated emission	ES-K1	R&S	V1.71

2.4 Test peripherals list

Item No.	Name	Brand and Model	Description
1	Resistive Load	-	-
2	DC power supply	QJ3003H	0-30V, 0-3A

2.5 Test environment condition:

Test items	Temperature	Humidity
Radiated emission	25°C	54% RH
Power line conducted emission	24°C	54% RH

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2.6 Instrument list

Conducted Emission					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☑	Test Receiver	R&S	ESCS 30	EC 2107	2025-07-15
☑	A.M.N.	R&S	ESH2-Z5	EC 3119	2025-12-07
☐	A.M.N.	R&S	ENV 216	EC 3393	2025-07-04
☐	A.M.N.	R&S	ENV4200	EC 3558	2025-06-10
☑	Shielding room	Zhongyu	-	EC 2838	2026-01-06
Radiated Emission					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☑	Test Receiver	R&S	ESIB 26	EC 3045	2025-09-12
☑	Bilog Antenna	TESEQ	CBL 6112D	EC 4206	2025-05-30
☐	Pre-amplifier	R&S	AFS42-00101800-25-S-42	EC5262	2025-06-10
☐	Horn antenna	R&S	HF 906	EC 3049	2025-11-17
☐	Horn antenna	ETS	3117	EC 4792-1	2026-01-08
☐	Horn antenna	R&S	STLP9149	EC5881	2025-06-19
☑	Active loop antenna	Schwarzbeck	FMZB1519	EC 5345	2026-03-06
☑	Semi-anechoic chamber	Albatross project	-	EC 3048	2025-09-15

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2.7 Measurement uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2)
Conducted emission at mains ports	9kHz ~ 150kHz	3.52 dB
	150kHz ~ 30MHz	3.19 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	4.90 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.02 dB
	6GHz ~ 18GHz	5.28 dB

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3 Radiated emissions

Test result: **Pass**

3.1 Limit

Frequencies (MHz)	Field Strength (microvolts/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

3.2 Measurement Procedure

For Radiated emission below 30MHz:

a) The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
b) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c) Both X and Y axes of the antenna are set to make the measurement.
d) For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e) The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz:

a) The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meters chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c) 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.

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d) 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.

e) The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

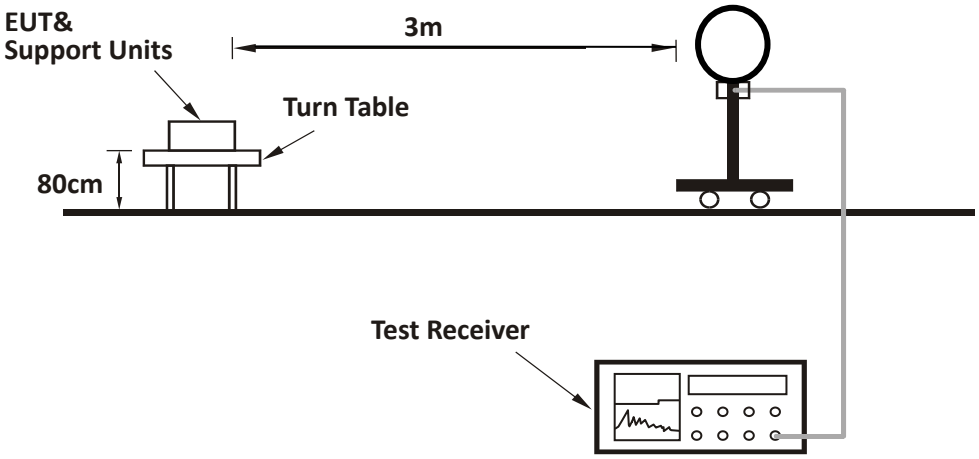
f) The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. All modes of operation were evaluated and the worst-case emissions were reported

3.3 Test Configuration

For Radiated emission below 30MHz:



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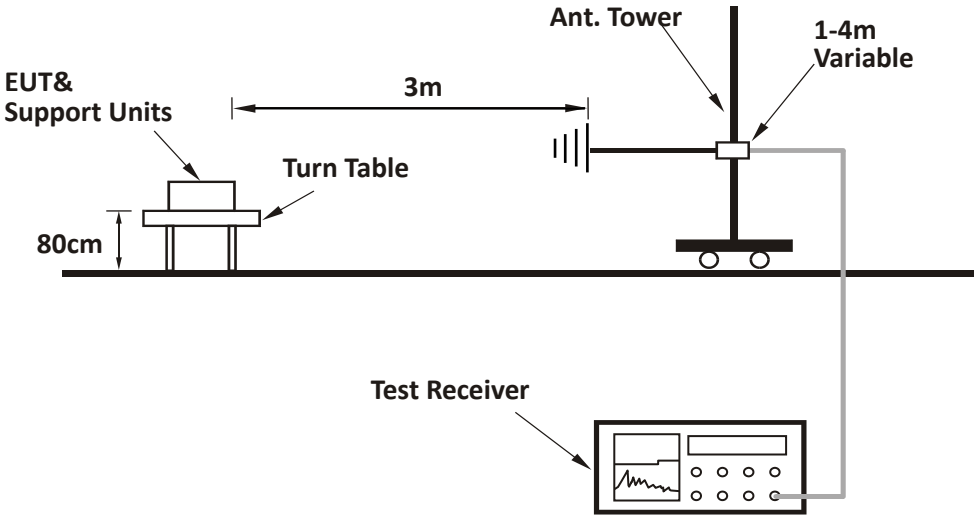
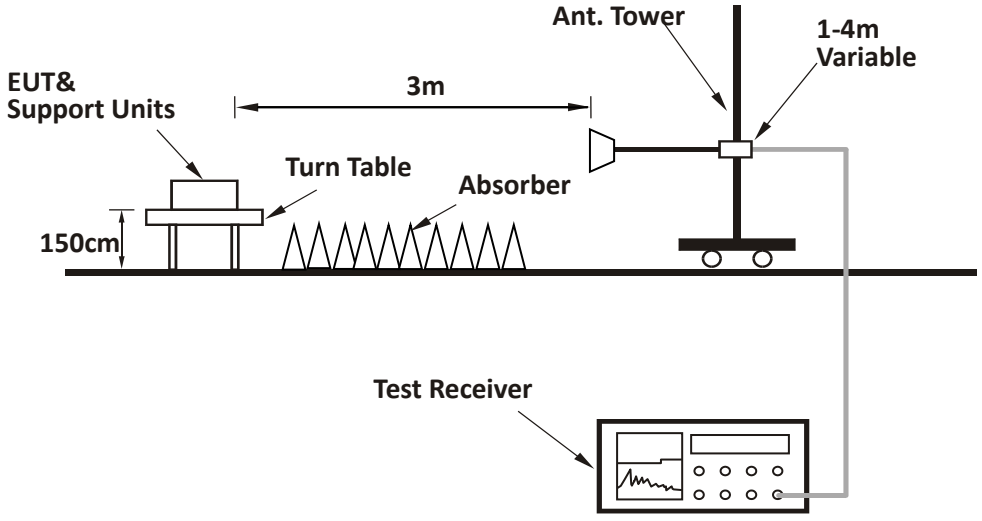
For Radiated emission 30MHz to 1GHz:



For Radiated emission above 1GHz:



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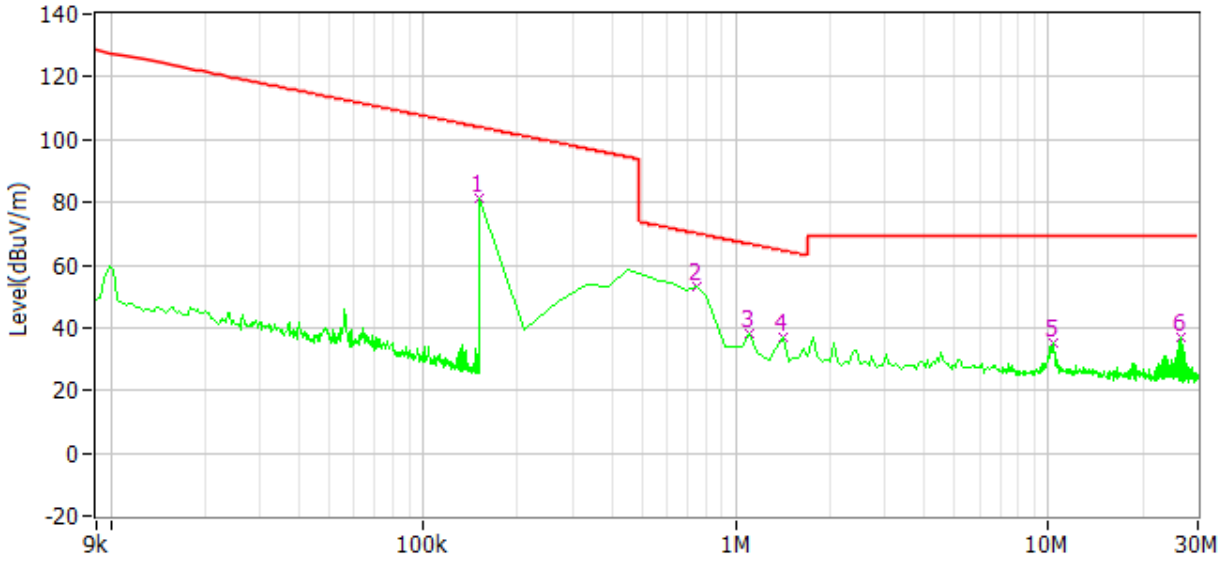
3.4 Test Results of Radiated Emissions

EUT was tested with empty load, half load and full load, the full load is the worst case and we listed the results in the report.

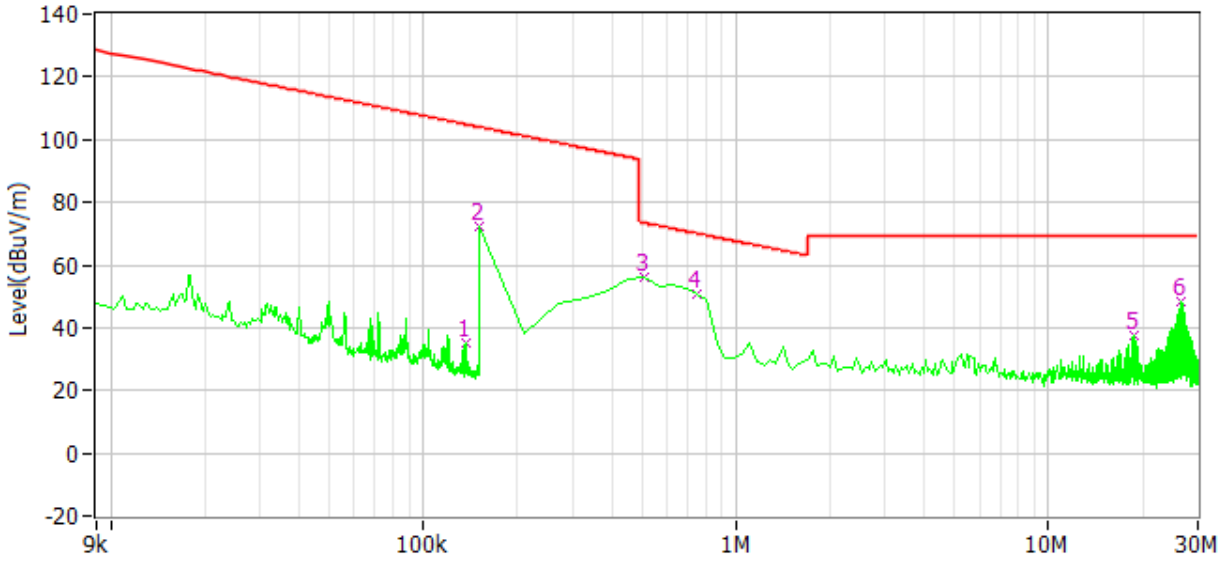
Test data below 30MHz:

Test Curve:

X

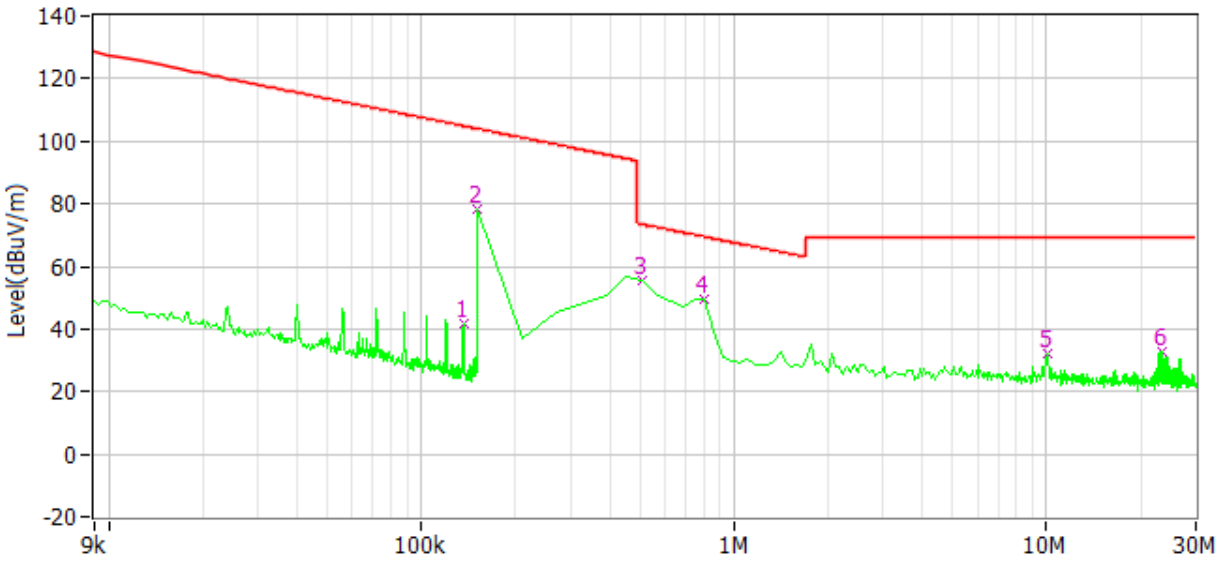


Y



TEST REPORT

Z



Test Data:

Antenna Polarization	Frequency	Limit dBuV/m	Level dBuV/m	Delta dB	Detector	Remark
X	168.000kHz	104.1	81.1	-23.0	PK	Fundamental
X	748.196kHz	70.1	53.4	-16.7	PK	Spurious
X	1.107MHz	66.7	37.9	-28.8	PK	Spurious
X	1.406MHz	64.7	36.7	-28.0	PK	Spurious
X	10.379MHz	69.5	35.0	-34.5	PK	Spurious
X	26.650MHz	69.5	36.9	-32.6	PK	Spurious
Y	136.154kHz	104.9	35.0	-69.9	PK	Spurious
Y	168.000kHz	104.1	72.3	-31.8	PK	Fundamental
Y	508.918kHz	73.5	56.4	-17.1	PK	Spurious
Y	748.196kHz	70.1	51.0	-19.1	PK	Spurious
Y	18.754MHz	69.5	37.3	-32.2	PK	Spurious
Y	26.650MHz	69.5	48.4	-21.1	PK	Spurious
Z	136.154kHz	104.9	41.5	-63.4	PK	Spurious
Z	168.000kHz	104.1	78.3	-25.8	PK	Fundamental
Z	508.918kHz	73.5	55.3	-18.2	PK	Spurious
Z	808.016kHz	69.5	49.5	-20.0	PK	Spurious
Z	10.020MHz	69.5	32.3	-37.2	PK	Spurious
Z	23.300MHz	69.5	32.6	-36.9	PK	Spurious

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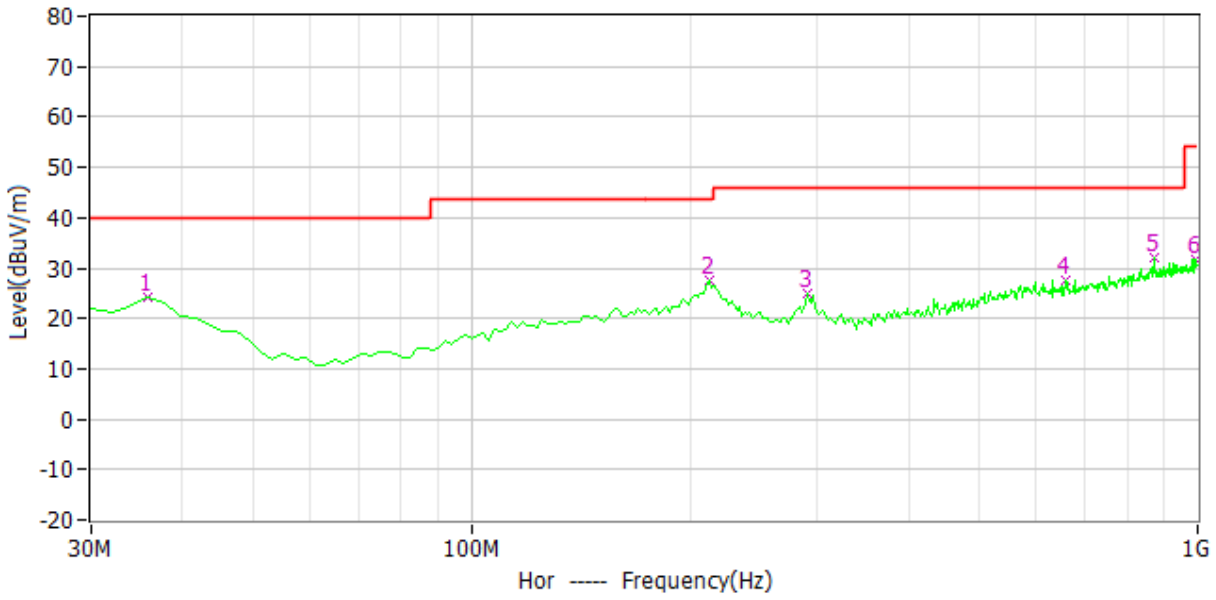
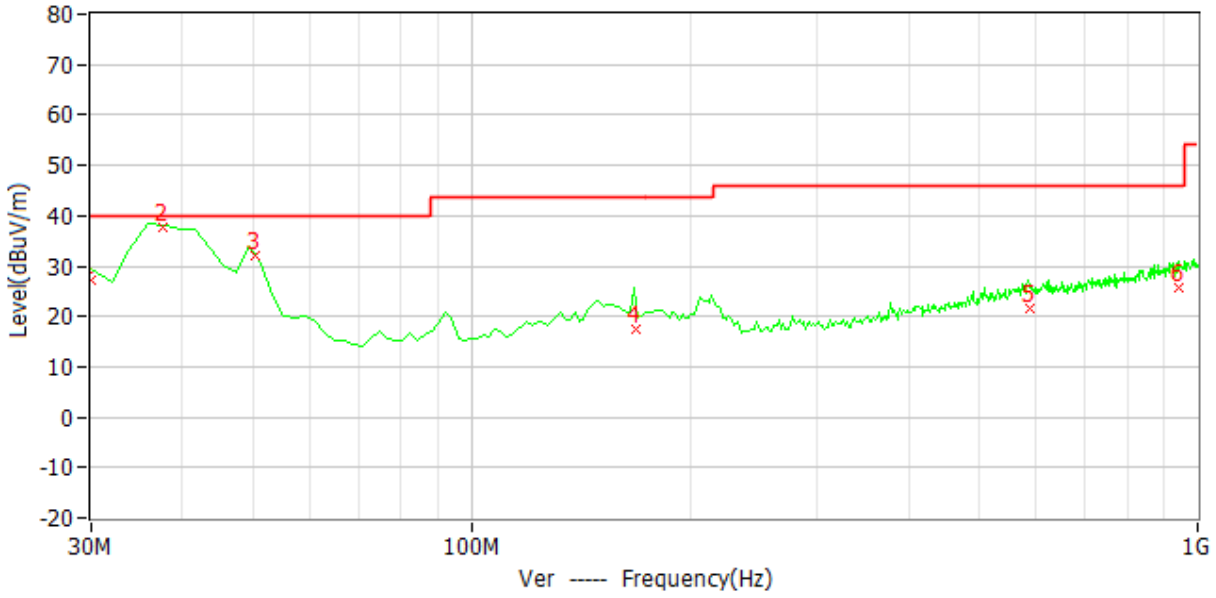
Test data from 30MHz to 1000MHz:

Test Curve:





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Test Data:

No.	Frequency	Limit dBuV/m	Level dBuV/m	Delta dB	Reading dBuV	Factor dB/m	Detector	Polar
1*	35.832MHz	40.00	24.10	-15.90	7.50	16.60	PK	Hor
2*	212.726MHz	43.50	27.60	-15.90	16.70	10.90	PK	Hor
3*	290.481MHz	46.00	24.90	-21.10	9.80	15.10	PK	Hor
4*	657.876MHz	46.00	27.60	-18.40	5.90	21.70	PK	Hor
5*	869.760MHz	46.00	32.10	-13.90	8.40	23.70	PK	Hor
6*	992.224MHz	54.00	31.70	-22.30	6.70	25.00	PK	Hor
7*	30.082MHz	40.00	27.20	-12.80	7.40	19.80	QP	Ver
8*	37.573MHz	40.00	37.70	-2.30	22.10	15.60	QP	Ver
9*	50.331MHz	40.00	31.90	-8.10	22.60	9.30	QP	Ver
10*	168.145MHz	43.50	17.50	-26.00	6.40	11.10	QP	Ver
11*	587.039MHz	46.00	21.70	-24.30	0.50	21.20	QP	Ver
12*	939.330MHz	46.00	25.80	-20.20	1.30	24.50	QP	Ver

Remark: 1. Correct Factor = Antenna Factor + Cable Loss (+ Amplifier, for higher than 1GHz), the value was added to Original Receiver Reading by the software automatically.
2. Level = Original Receiver Reading + Correct Factor
3. Delta = Level - Limit
4. If the PK Level is lower than AV limit, the AV test can be elided.

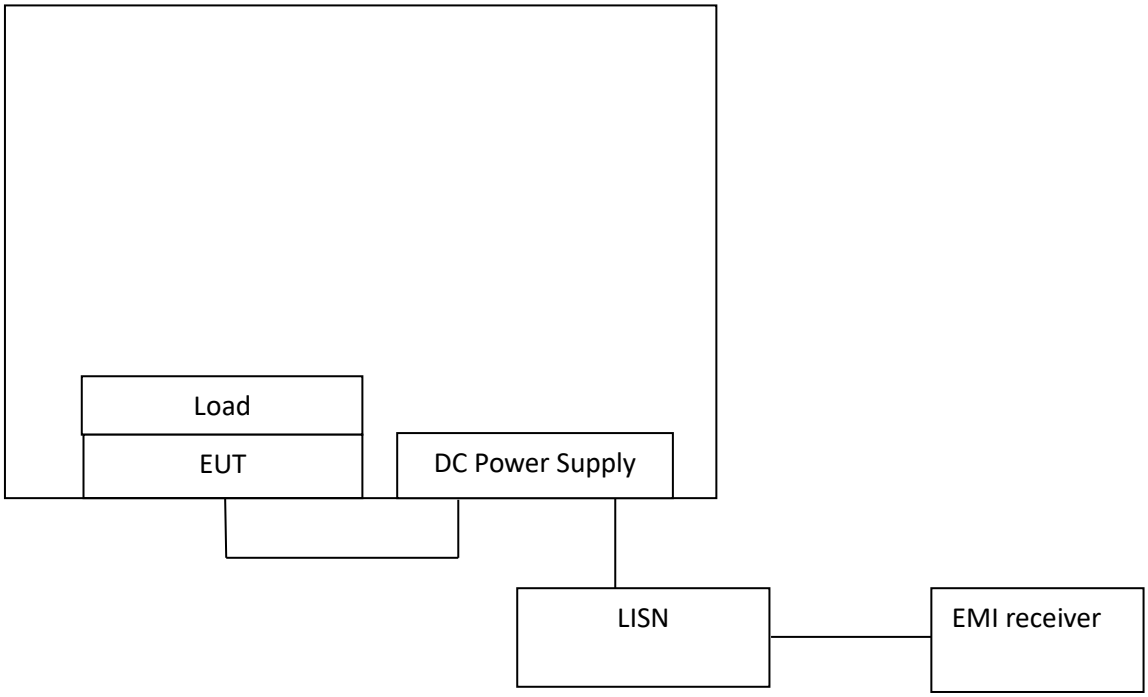
4 Conducted emissions

Test result: **Pass**

4.1 Limit

Frequency of Emission (MHz)	Conducted Emissions Limit (dBuV)	
	QP	AV
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.		

4.2 Test Configuration



4.3 Measurement Procedure

Measured levels of ac power-line conducted emission shall be the emission voltages from the voltage probe, where permitted, or across the 50 Ω LISN port (to which the EUT is connected), where permitted, terminated into a 50 Ω measuring instrument. All emission voltage and current measurements shall be made on each current-carrying conductor at the plug end of the EUT power cord by the use of mating plugs and receptacles on the LISN, if used. Equipment shall be tested with power cords that are normally supplied or recommended by the manufacturer and that have electrical and shielding characteristics that are the same as those cords normally supplied or recommended by the manufacturer. For those measurements using a LISN, the 50 Ω measuring port is terminated by a measuring instrument having 50 Ω input impedance. All other ports are terminated in 50 Ω loads.

Tabletop devices shall be placed on a platform of nominal size 1 m by 1.5 m, raised 80 cm above the reference ground plane. The vertical conducting plane or wall of an RF-shielded (screened) room shall be located 40 cm to the rear of the EUT. Floor-standing devices shall be placed either directly on the reference ground-plane or on insulating material as described in ANSI C63.4. All other surfaces of tabletop or floor-standing EUTs shall be at least 80 cm from any other grounded conducting surface, including the case or cases of one or more LISNs.

The bandwidth of the test receiver is set at 9 kHz.

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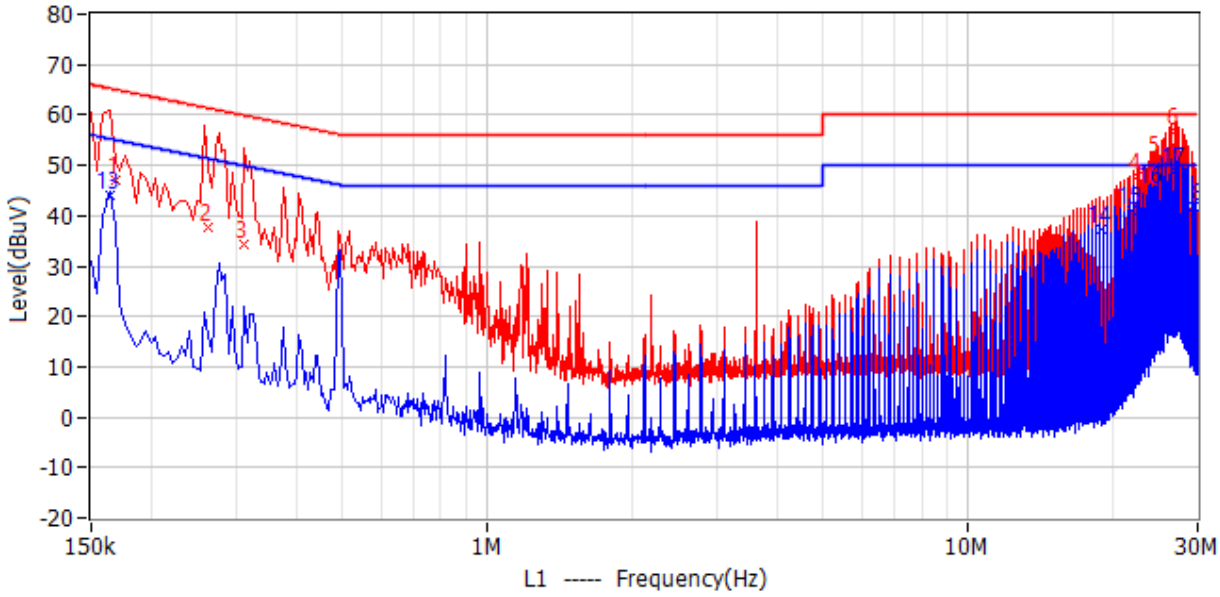
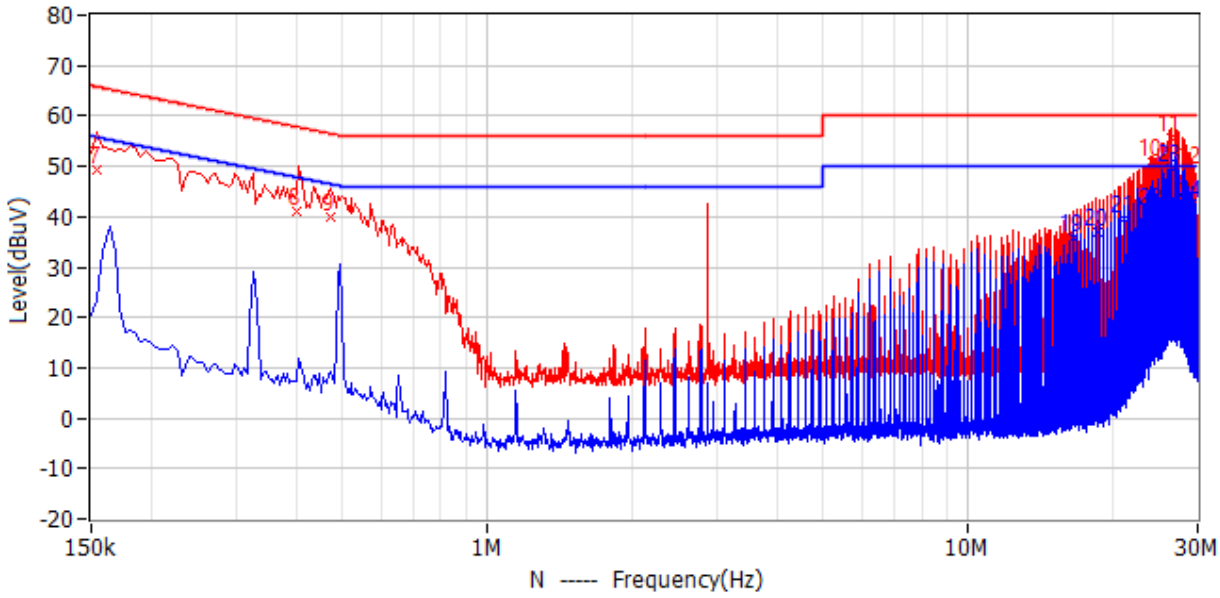
4.4 Test Results of Conducted Emissions

Test Curve:





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Test Data:

No.	Frequency	Limit dBuV	Level dBuV	Delta dB	Reading dBuV	Factor dB	Detector	Phase
1	168.000kHz	65.06	46.99	-18.07	40.89	6.10	QP	L1
2	262.500kHz	61.35	37.79	-23.56	31.59	6.20	QP	L1
3	312.000kHz	59.92	34.47	-25.45	28.27	6.20	QP	L1
4	22.461MHz	60.00	47.84	-12.16	40.44	7.40	QP	L1
5	24.576MHz	60.00	51.06	-8.94	43.56	7.50	QP	L1
6	26.880MHz	60.00	56.84	-3.16	49.14	7.70	QP	L1
7	154.500kHz	65.75	49.47	-16.28	43.27	6.20	QP	N
8	402.000kHz	57.81	40.89	-16.92	34.69	6.20	QP	N
9	474.000kHz	56.44	39.82	-16.62	33.62	6.20	QP	N
10	24.077MHz	60.00	50.78	-9.22	43.38	7.40	QP	N
11	26.525MHz	60.00	55.65	-4.35	48.05	7.60	QP	N
12	29.153MHz	60.00	49.20	-10.80	41.40	7.80	QP	N
13	163.500kHz	55.28	43.95	-11.33	37.75	6.20	CAV	L1
14	18.884MHz	50.00	37.46	-12.54	30.26	7.20	CAV	L1
15	21.800MHz	50.00	41.00	-9.00	33.60	7.40	CAV	L1
16	24.086MHz	50.00	45.02	-4.98	37.52	7.50	CAV	L1
17	26.867MHz	50.00	48.86	-1.14	41.16	7.70	CAV	L1
18	29.495MHz	50.00	41.73	-8.27	33.83	7.90	CAV	L1
19	16.548MHz	50.00	35.73	-14.27	28.73	7.00	CAV	N
20	18.515MHz	50.00	37.02	-12.98	29.82	7.20	CAV	N
21	21.134MHz	50.00	39.60	-10.40	32.30	7.30	CAV	N
22	24.063MHz	50.00	41.14	-8.86	33.74	7.40	CAV	N
23	26.529MHz	50.00	49.61	-0.39	42.01	7.60	CAV	N
24	29.157MHz	50.00	42.56	-7.44	34.76	7.80	CAV	N

Remark: 1. Factor = LISN Factor + Cable Loss, the value was added to Original Receiver Reading by the software automatically.
2. Level = Original Receiver Reading + Factor
3. Delta= Level - Limit
4. If the PK Level is lower than AV limit, the AV test can be elided.

Example: Assuming LISN Factor = 10.00dB, Cable Loss = 2.00dB,
Original Receiver Reading = 10.00dBuV, Limit = 66.00dBuV.
Then Factor = 10.00 + 2.00 = 12.00dB;
Level = 10dBuV + 12.00dB = 22.00dBuV;
Delta = 22.00dBuV - 66.00dBuV = –44.00dB.

********** END **********