

Ningbo Sunpu Led Co.,Ltd.

RF TEST REPORT

Report Type:

RF report

Model:

HG14764A-US, SP-FL180X125W22MW-02

REPORT NUMBER:

260401468HAN-001

ISSUE DATE:

June 15, 2026

DOCUMENT CONTROL NUMBER:

TTRF15.249_V1

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Applicant: Ningbo Sunpu Led Co.,Ltd.
No. 1233 Meixu Road, Hi-Tech Zone Ningbo, 315040, China

Manufacturer: Ningbo Sunpu Led Co.,Ltd.
No. 1233 Meixu Road, Hi-Tech Zone Ningbo, 315040, China

Factory: NINGBO EMITTER SEMICONDUCTOR LIGHTING CO.,LTD
Building B.No.1233 Meixu Road, Hi-Tech Zone Ningbo, 315040, China

FCC ID: 2BWF3-FL180X125

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:

47CFR Part 15 (2024): Radio Frequency Devices (Subpart C)

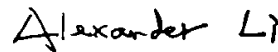
ANSI C63.10-2020 +Cor. 1-2023 +C63.10a-2024 +Errata to C63.10a-2024: American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

PREPARED BY:

REVIEWED BY:



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Reviewer

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TEST REPORT

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Revision History

Report No.	Version	Description	Issued Date
260401468HAN-001	Rev. 01	Initial issue of report	June 15, 2026

Measurement result summary

TEST ITEM	FCC REFERENCE	RESULT
Radiated emission	15.249 & 15.209	Pass
Power line conducted emission	15.207	Pass
Assigned bandwidth (20dB bandwidth)	15.215(c)	Pass
Antenna requirement	15.203	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:	LED Outdoor Floodlight
Type/Model:	HG14764A-US, SP-FL180X125W22MW-02
Description of EUT:	The EUT covered in the report is LED outdoor floodlight with mechanical switch, suitable for dry and damp location use only, which has a transceiver with HF system 5.8GHz. Two models are the same except for the model's name. Therefore, model HG14764A-US was tested.
Rating:	120V~, 60Hz, 22W
Category of EUT:	Class B
EUT type:	☒ Table top ☐ Floor standing
Software Version:	/
Hardware Version:	/
Sample received date:	April 30, 2026
Sample Identification No.:	1260424-05-004
Date of test:	May 10, 2026 ~ May 27, 2026

1.2 Technical Specification

Frequency Range:	5794MHz
Support Standards:	SRD
Type of Modulation:	CW
Product Type:	☐ Mobile ☐ Portable ☒ Fix Location
Channel Number:	1
Antenna Information:	PCB antenna

TEST REPORT**1.3 Description of Test Facility**

Name : Intertek Testing Services Zhejiang Ltd.

Address : Building No. 2, Juanhu Science and Technology Innovation Park,
No. 500 Shuiyueting East Road, Haining City, Zhejiang Province, China

Telephone : +86 573 8713 7201

The test facility is : CNAS Accreditation Lab
recognized, certified, Registration No. CNAS L13980
or accredited by these A2LA Accredited Lab
organizations Certificate Number: 7662.01
FCC Accredited Lab
Designation Number: CN1452
IC Registration Lab
CAB Identifier: CN0197
VCCI Registration Lab
Member No: 4464 (Registration No.: C-20226, T-20227, R-20273, G-20261)

2 TEST SPECIFICATIONS

2.1 Standards or specification

47CFR Part 15 (2024)

ANSI C63.10-2020 +Cor. 1-2023 +C63.10a-2024 +Errata to C63.10a-2024

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 is specified if used.

2.3 Test software list

Test Items	Software	Manufacturer	Version
Conducted emission	EMC-I	SKET	V1.5.0.4
Radiated emission	EMC-I	SKET	V1.5.0.4

2.4 Test peripherals list

Item No.	Name	Band and Model	Description
1	-	-	-

2.5 Test environment condition:

Test items	Temperature	Humidity
Radiated emission	24°C	50% RH
Assigned bandwidth (20dB bandwidth)	24°C	50% RH
Power line conducted emission	23°C	48% RH

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2.6 Instrument list

Conducted Emission					
Used	Equipment	Manufacturer	Type	Internal No.	Due Date
☒	EMI Test Receiver	R&S	ESCI	EZ6376	2027-05-20
☒	Pulse Limiter	R&S	ESH3-Z2	EZ6379	2026-06-11
☒	A.M.N.	R&S	ESH2-Z5	EZ6378	2027-05-20
RF Test					
Used	Equipment	Manufacturer	Type	Internal No.	Due Date
☐	Vector signal generator	R&S	SMM100A	EZ6738	2027-05-23
☐	Signal Generator	R&S	SMB 100A	EZ6739	2027-05-23
☐	Wideband radio communication tester	R&S	CMW500	EZ6758	2026-09-02
☒	Spectrum Analyzer	KEYSIGHT	N9020B	EZ6787	2026-12-03
Radiated Emission					
Used	Equipment	Manufacturer	Type	Internal No.	Due Date
☒	EMI Test Receiver	R&S	ESR7	EZ6331-1	2027-02-08
☒	Spectrum Analyzer	R&S	FSV3044	EZ6331-2	2026-06-11
☒	TRILOG Broadband Antenna	Schwarzbeck	VULB9168	EZ6743	2026-07-08
☒	Horn Antenna	ETS-Lindgren	3117	EZ6331-5	2026-07-01
☒	Pre-amplifier	SKET	LNPA_0118G-50	EZ6331-7	2027-03-17
☒	Horn Antenna	Schwarzbeck	BBHA 9170	EZ6611	2027-01-23
☒	Pre-amplifier	SKET	LNPA_1840G-50	EZ6612	2026-08-07
Tet Site					
Used	Equipment	Manufacturer	Type	Internal No.	Due Date
☒	Shielded Room	SAEMC	MSR953	EZ6441	2027-11-25
☒	Semi-anechoic Chamber	SAEMC	FSAC318	EZ6439	2027-11-24
Additional Instrument					
Used	Equipment	Manufacturer	Type	Internal No.	Due Date
☒	Digital Therom-Hygrograph	TESTO	175H1	EZ1057	2026-09-16
☒	Digital Therom-Hygrograph	TESTO	175H1	EZ6660	2026-09-16

Test software	Manufacturer	Version
EMC-I	SKET	V1.5.0.4
MST 8310	Keysight	V2.0.0.0

TEST REPORT

2.7 Measurement uncertainty

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

Test item	Measurement uncertainty
Maximum peak output power	$\pm 0.74\text{dB}$
Radiated Emissions in restricted frequency bands (9 k – 30MHz)	$\pm 2.06\text{dB}$
Radiated Emissions in restricted frequency bands (30 MHz – 1 000 MHz)	$\pm 5.59\text{dB}$
Radiated Emissions in restricted frequency bands above 1GHz	$\pm 4.20\text{dB}$
Emission outside the frequency band	$\pm 2.89\text{dB}$
Power line conducted emission	$\pm 2.14\text{dB}$

TEST REPORT

3 Radiated emission

Test result: **PASS**

3.1 Limit

Fundamental Frequency (MHz)	Fundamental limit (dBμV/m)	Harmonic limit (dBμV/m)
☐ 902 - 928	94	54
☐ 2400 - 2483.5	94	54
☒ 5725 - 5875	94	54
☐ 24000 - 24250	108	68

The radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits:

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:

- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- Both X and Y axes of the antenna are set to make the measurement.
- 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.
- The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

NOTE:

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

TEST REPORT**For Radiated emission above 30MHz:**

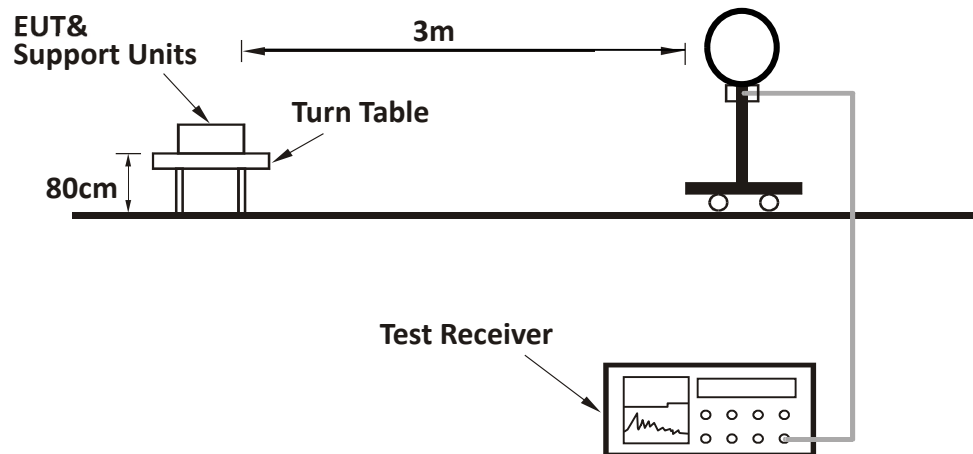
- a) The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b) The EUT was set 3 meters away from the interference-receiving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

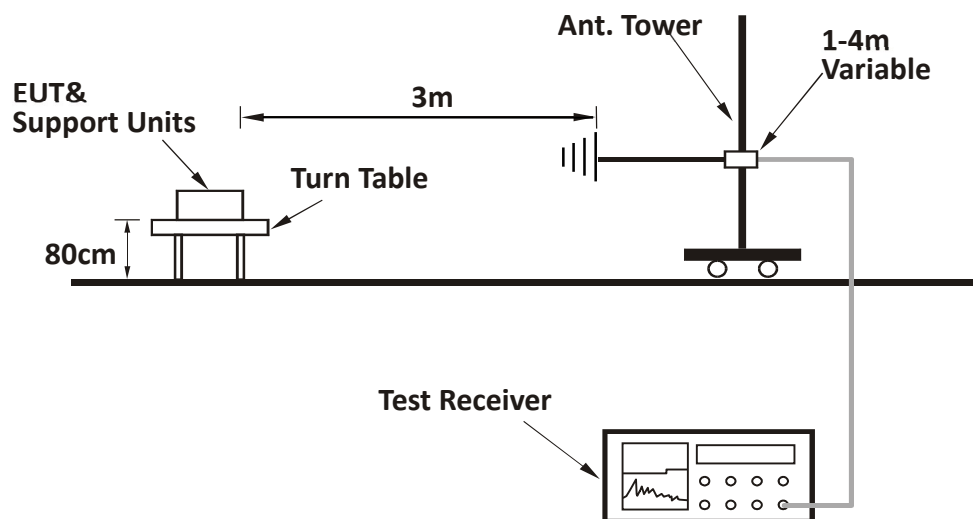
- 1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
- 2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
- 3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 3 x RBW (Duty cycle $\geq$ 98%) for Average detection (AV) at frequency above 1GHz.
- 4. All modes of operation were investigated and the worst-case emissions are reported

3.3 Test Configuration

For Radiated emission below 30MHz:

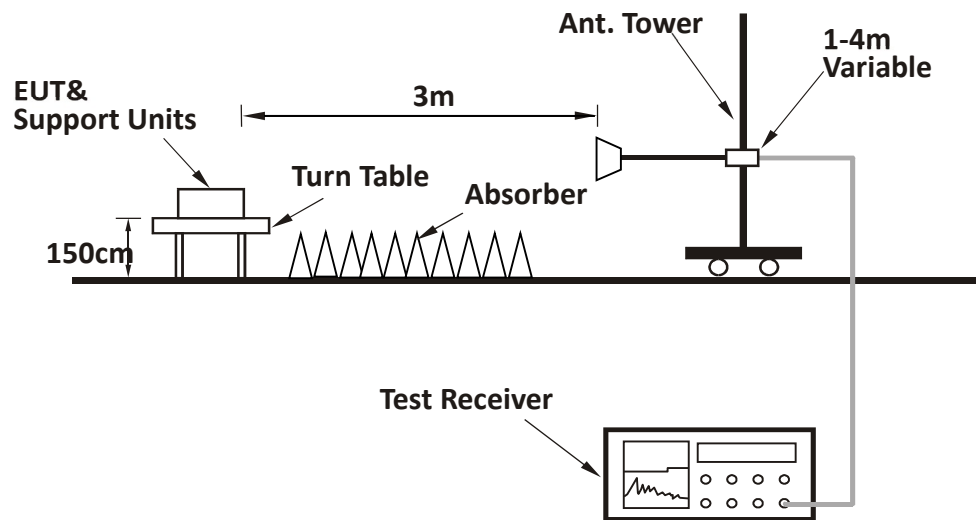


For Radiated emission 30MHz to 1GHz:



TEST REPORT

For Radiated emission above 1GHz:

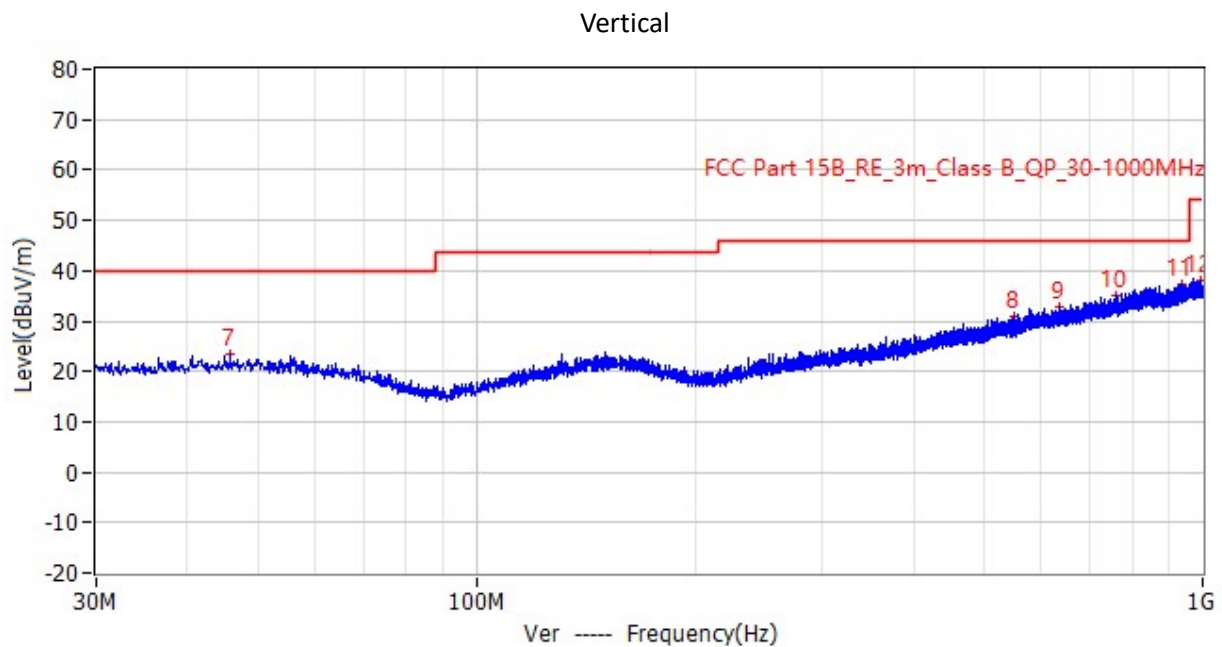
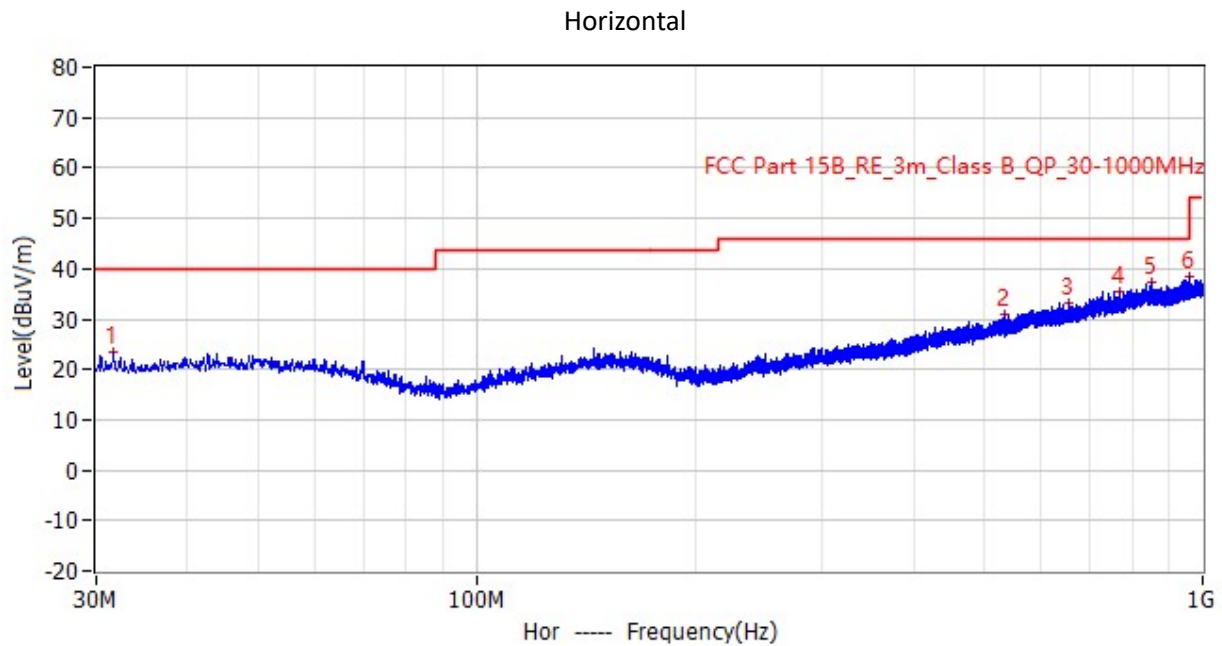


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3.4 Test Results

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

The worst waveform from 30MHz to 1000MHz is listed as below:



TEST REPORT

Test data below 1GHz

Antenna	Frequency (MHz)	Corrected Reading (dBμV/m)	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)	Detector
H	31.746	23.29	13.16	40.00	16.71	QP
H	535.661	30.98	20.23	46.00	15.02	QP
H	655.068	33.25	22.46	46.00	12.75	QP
H	768.364	35.61	24.23	46.00	10.39	QP
H	850.81	37.42	25.25	46.00	8.58	QP
H	957.611	38.55	26.54	46.00	7.45	QP
V	45.811	23.34	14.35	40.00	16.66	QP
V	549.241	30.89	20.21	46.00	15.11	QP
V	635.183	32.80	22.19	46.00	13.20	QP
V	757.597	35.00	24.04	46.00	11.00	QP
V	936.368	37.39	26.11	46.00	8.61	QP
V	994.277	38.16	26.68	54.00	15.84	QP

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. Corrected Reading = Original Receiver Reading + Correct Factor
3. Margin = Limit - Corrected Reading
4. If the PK Corrected Reading is lower than AV limit, the AV test can be elided.

TEST REPORT

Test result above 1GHz:

Antenna	Frequency (MHz)	Corrected Reading (dBμV/m)	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)	Detector
H	2564	44.77	-19.71	74.00	29.23	PK
H	5725	40.20	-14.07	74.00	33.80	PK
H	5794	82.37	-13.77	114.00	31.63	PK
H	5794	79.15	-13.77	94.00	14.85	AV
H	5875	38.80	-13.71	74.00	35.20	PK
H	11588	53.23	-9.09	74.00	20.77	PK
H	11588	51.77	-9.09	54.00	2.23	AV
H	17382	45.40	-4.74	74.00	28.60	PK
H	17382	42.58	-4.74	54.00	11.42	AV
V	2578	49.54	-19.68	74.00	24.46	PK
V	5725	38.00	-14.07	74.00	36.00	PK
V	5794	82.53	-13.77	114.00	31.47	PK
V	5794	79.61	-13.77	94.00	14.39	AV
V	5875	38.40	-13.71	74.00	35.60	PK
V	11588	50.38	-9.09	74.00	23.62	PK
V	11588	47.76	-9.09	54.00	6.24	AV
V	17382	47.74	-4.74	74.00	26.26	PK
V	17382	44.04	-4.74	54.00	9.96	AV

- 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. Corrected Reading = Original Receiver Reading + Correct Factor
3. Margin = Limit - Corrected Reading
4. If the PK Corrected Reading is lower than AV limit, the AV test can be elided.

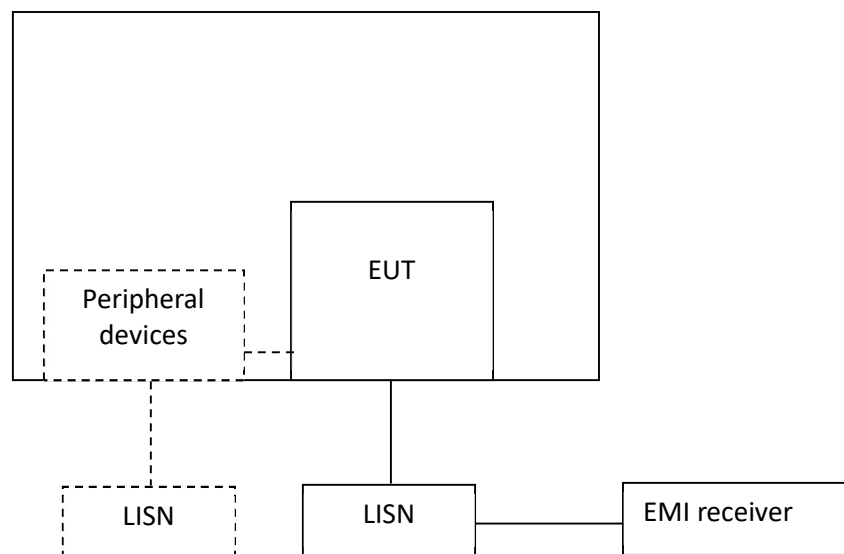
4 Power line conducted emission

Test result: **PASS**

4.1 Limit

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	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



TEST REPORT**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.

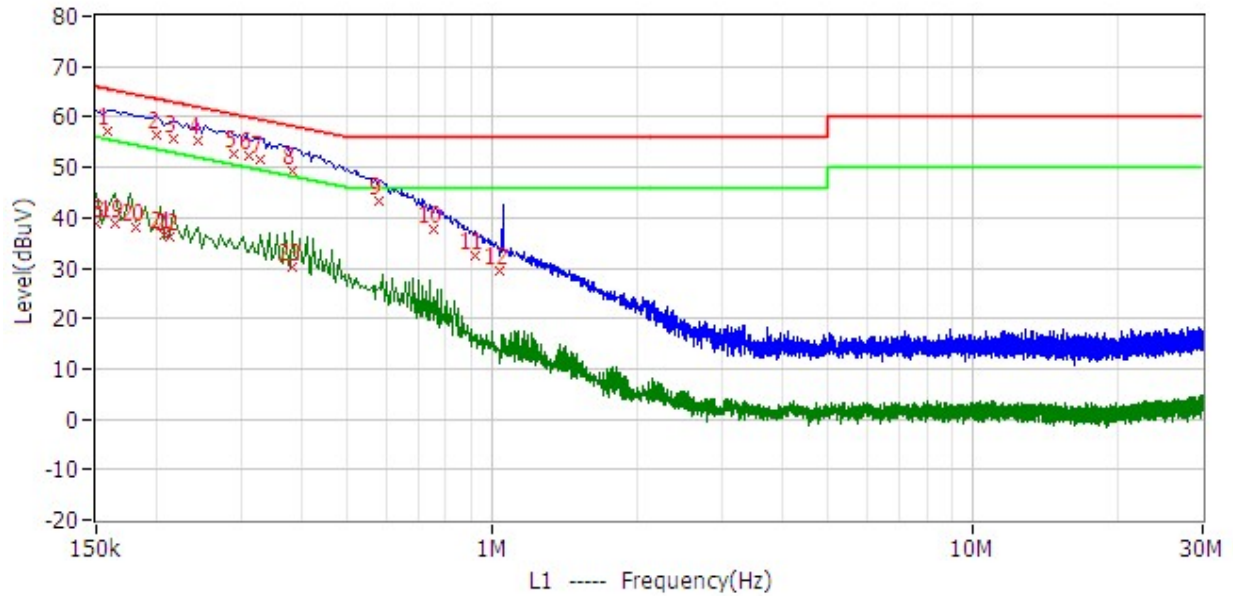
Tabletop devices shall be placed on a platform of nominal size 1 m by 1.5 m, raised 80 cm above the reference ground plane. The vertical conducting plane or wall of an RF-shielded (screened) room shall be located 40 cm to the rear of the EUT. Floor-standing devices shall be placed either directly on 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.

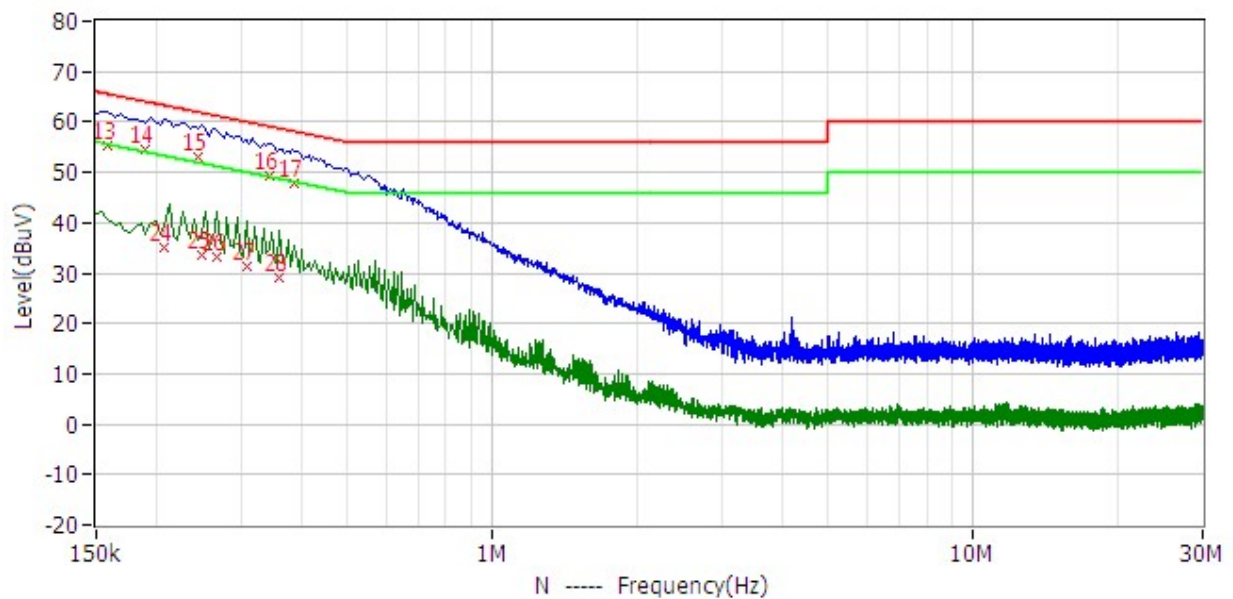
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4.4 Test Results of Power line conducted emission

L line



N line



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No.	Frequency	Limit dB μ V	Corrected Reading dB μ V	Margin dB	Correct Factor dB	Detector	Phase
1	159.000kHz	65.52	57.24	8.28	10.00	QP	L1
2	199.500kHz	63.63	56.43	7.20	10.00	QP	L1
3	217.500kHz	62.91	55.52	7.39	10.00	QP	L1
4	244.500kHz	61.94	55.38	6.56	10.00	QP	L1
5	289.500kHz	60.54	52.75	7.79	10.00	QP	L1
6	312.000kHz	59.92	52.47	7.45	10.00	QP	L1
7	330.000kHz	59.45	51.44	8.01	10.00	QP	L1
8	384.000kHz	58.19	49.46	8.73	10.00	QP	L1
9	582.000kHz	56.00	43.44	12.56	10.00	QP	L1
10	757.500kHz	56.00	37.77	18.23	10.10	QP	L1
11	919.500kHz	56.00	32.53	23.47	10.10	QP	L1
12	1.037MHz	56.00	29.55	26.45	10.10	QP	L1
13	159.000kHz	65.52	55.41	10.11	10.10	QP	N
14	190.500kHz	64.01	54.52	9.49	10.10	QP	N
15	244.500kHz	61.94	53.06	8.88	10.10	QP	N
16	343.500kHz	59.12	49.45	9.67	10.10	QP	N
17	388.500kHz	58.10	47.89	10.21	10.10	QP	N
18	150.000kHz	56.00	38.73	17.27	10.00	CAV	L1
19	163.500kHz	55.28	38.86	16.42	10.00	CAV	L1
20	181.500kHz	54.42	37.99	16.43	10.00	CAV	L1
21	208.500kHz	53.26	36.54	16.72	10.00	CAV	L1
22	213.000kHz	53.09	36.34	16.75	10.00	CAV	L1
23	384.000kHz	48.19	30.06	18.13	10.00	CAV	L1
24	208.500kHz	53.26	35.21	18.05	10.10	CAV	N
25	249.000kHz	51.79	33.53	18.26	10.10	CAV	N
26	267.000kHz	51.21	33.29	17.92	10.10	CAV	N
27	307.500kHz	50.04	31.40	18.64	10.10	CAV	N
28	361.500kHz	48.69	29.15	19.54	10.10	CAV	N

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

5 Assigned bandwidth (20dB bandwidth)

Test result: PASS

5.1 Limit

Intentional radiators must be designed to ensure that the 20 dB bandwidth of the emission is contained within the allocated frequency band.

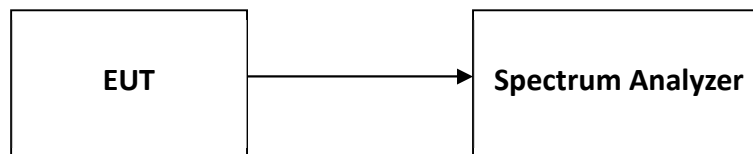
5.2 Measurement Procedure

The 20dB Bandwidth is measured using the Spectrum Analyzer.

Set Span = 2 to 3 times the 20 dB bandwidth, RBW = approximately 1% of the 20 dB bandwidth, VBW>RBW, Sweep = auto, Detector = peak, Trace = max hold.

The test was performed at 1 channels.

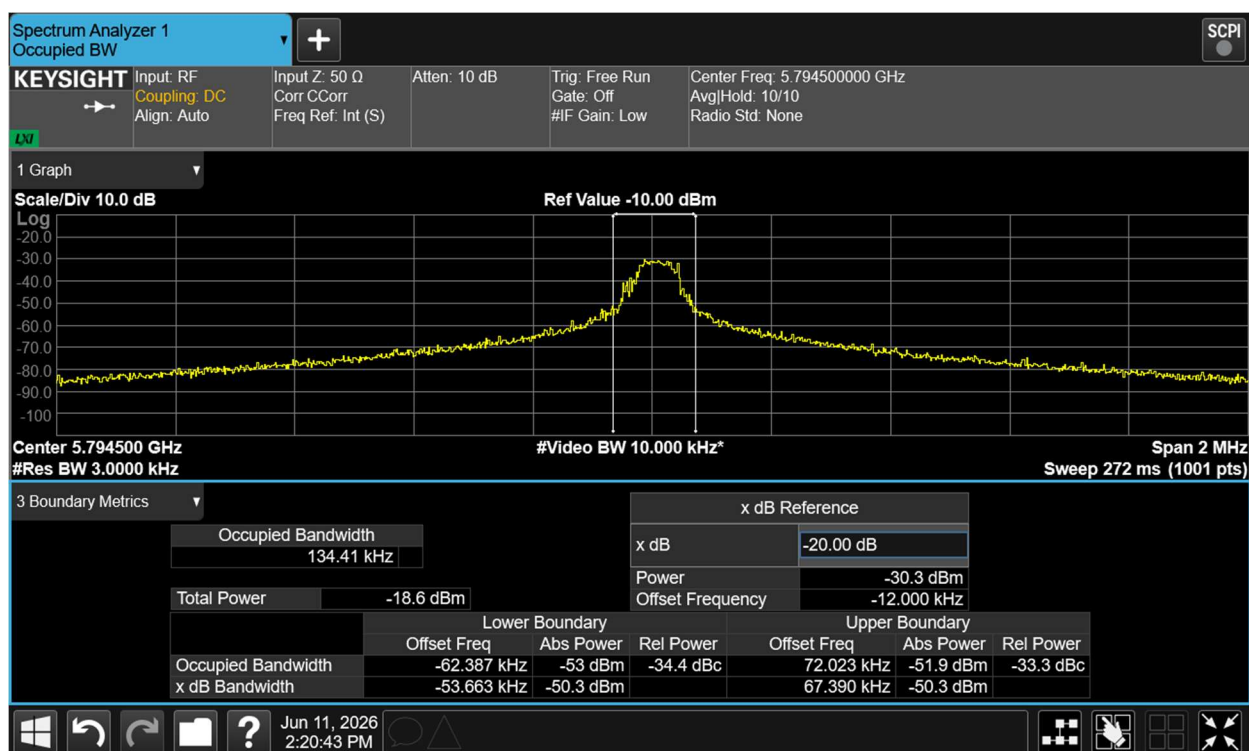
5.3 Test Configuration



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5.4 The results

Frequency (MHz)	20dB Bandwidth (MHz)	99% Bandwidth (MHz)	F _L at 20dB BW (MHz)	F _H at 20dB BW (MHz)
5794	0.1211	0.1334	F _L > 5725	F _H < 5875
Result	Complied			



6 Antenna requirement

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.

Result:

EUT uses permanently attached antenna to the intentional radiator, so it can comply with the provisions of this section.

END of the report