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AEC Lighting Solutions Co., Ltd

RF TEST REPORT

Report Type:
FCC Part 15.249 RF report

Model:
RAL1K1R, RAL501R

REPORT NUMBER:
221100673SHA-001

ISSUE DATE:
Apr 12, 2023

DOCUMENT CONTROL NUMBER:
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TEST REPORT

Report no.: 221100673SHA-001

Applicant:	AEC Lighting Solutions Co., Ltd 2548 Bao'an Highway, Jiading District, Shanghai 201801, China
Manufacturer:	AEC Lighting Solutions Co., Ltd 2548 Bao'an Highway, Jiading District, Shanghai 201801, China
FCC ID:	2ANLP-WALILAMP

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:
47CFR Part 15 (2020): Radio Frequency Devices (Subpart C) **ANSI C63.10 (2013):** American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

PREPARED BY:	**REVIEWED BY:**
Teddy yin	
Project Engineer Teddy Yin	Reviewer Wakeyou Wang

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Revision History

Report No.	Version	Description	Issued Date
221100673SHA-001	Rev. 01	Initial issue of report	Apr 12, 2023

Measurement result summary

TEST ITEM	FCC REFERANCE	IC REFERANCE	RESULT
Radiated emission	15.249 & 15.209	RSS-210 Issue 10 Clause B.10	Pass
Power line conducted emission	15.207	RSS-Gen Issue 5 Clause 8.8	Pass
Assigned bandwidth (20dB bandwidth)	15.215(c)	RSS-Gen Issue 5 Clause 6.7	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:	rechargeable & multifunctional LED area light with human body sensor
Type/Model:	RAL1K1R, RAL501R
Description of EUT:	The EUT is a LED Rechargeable Work Light that contains the microwave modular of 5.8GHz. Both models contain the same microwave modular. Both models were tested and the worst data is listed in the report.
Rating:	DC 5V
Category of EUT:	Class B
EUT type:	☒ Table top ☐ Floor standing
Software Version:	PBA-K58S01-WF-017N-C1 R01
Hardware Version:	KU5206A-E
Sample Identification No.:	0221204-13-002
Sample received date:	Nov 14, 2022
Date of test:	Nov 14, 2022~Jan 4, 2023

1.2 Technical Specification

Frequency Range:	5773-5830MHz
Support Standards:	/
Type of Modulation:	FSK
Channel Number:	20
Data Rate:	/
Channel Separation:	3MHz
Antenna Information:	Panel PCB antenna, 4.75dBi

1.3 Description of Test Facility

Name:	Intertek Testing Services Shanghai
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 L0139
	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 (2020)
ANSI C63.10 (2013)

2.2 Mode of operation during the test

The EUT is a portable device, so three axes (X, Y, Z) were observed while the test receiver worked as "max hold" continuously and the highest reading among the whole test procedure was recorded. Compare with the test results that X axis is the worst case.

The lowest, middle and highest channel were tested as representatives.

Frequency Band (MHz)				5773-5830			
Channel	Frequency (MHz)	**Channel**	**Frequency (MHz)**	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	**5773**	5	5788	10	5803	15	5818
1	5776	6	5791	11	5806	16	5821
2	5779	7	5794	12	5809	17	5824
3	5782	8	5797	13	5812	18	5827
4	5785	**9**	**5800**	14	5815	**19**	**5830**

While testing transmitting mode of EUT, the internal modulation and continuously transmission was applied.

1) Radiated test mode: EUT transmitted signal with internal antenna;

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	Band and Model	Description
1	Charger	SA69-050200U	Input: 100-240V~, 50/60Hz, 0.3A Output: DC 5V, 2A
/	/	/	/
/	/	/	/

2.5 Test environment condition:

Test items	Temperature	Humidity
Radiated emission	25°C	55% RH
Assigned bandwidth (20dB bandwidth)	25°C	55% RH
Power line conducted emission	25°C	55% RH

2.6 Instrument list

Conducted Emission					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☒	Test Receiver	R&S	ESCS 30	EC 2107	2023-07-18
☒	A.M.N.	R&S	ESH2-Z5	EC 3119	2023-11-09
☒	Shielded room	Zhongyu	-	EC 2838	2023-01-11
Radiated Emission					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☒	Test Receiver	R&S	ESIB 26	EC 3045	2023-10-19
☒	Spectrum Analyzer	Keysight	N9030B	EC 6078	2023-06-04
☒	Bilog Antenna	TESEQ	CBL 6112B	EC 6411	2023-08-08
☒	Pre-amplifier	R&S	AFS42-00101800-25-S-42	EC5262	2023-06-04
☒	Horn antenna	ETS	3117	EC 4792-1	2023-06-28
☒	Horn antenna	TOYO	HAP18-26W	EC 4792-3	2023-07-29
☒	Horn antenna	ETS	3116c	EC 5955	2023-06-17
☒	Semi-anechoic chamber	Albatross	-	EC 3048	2023-08-22
RF test					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☒	PXA Signal Analyzer	Keysight	N9030A	EC 5338	2023-03-14
☒	Coaxial cable	ETS	/	/	2023-03-14
Additional instrument					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☒	Therom-Hygrograph	ZJ1-2A	S.M.I.F.	EC 3783	2023-03-24
☒	Therom-Hygrograph	ZJ1-2A	S.M.I.F.	EC 5198	2023-03-08
☒	Therom-Hygrograph	ZJ1-2A	S.M.I.F.	EC 5844	2023-03-08

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	± 0.74dB
Radiated Emissions in restricted frequency bands below 1GHz	± 4.90dB
Radiated Emissions in restricted frequency bands above 1GHz	± 5.02dB
Emission outside the frequency band	± 2.89dB
Occupied Channel Bandwidth	± 0.88 %
Power line conducted emission	± 3.19dB

3 Radiated emission

Test result: **Pass**

3.1 Limit

Fundamental Frequency (MHz)	Fundamental limit (dBuV/m)	Harmonic limit (dBuV/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:

a) The EUT was placed on the top of a rotating table 0.8 meters(0.1 meters for floor-standing device) above the ground at a 3 meter 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, the lowest height of the magnetic antenna was 1 m above the ground.
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.

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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) or 0.1 meters (for floor-standing device) 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.

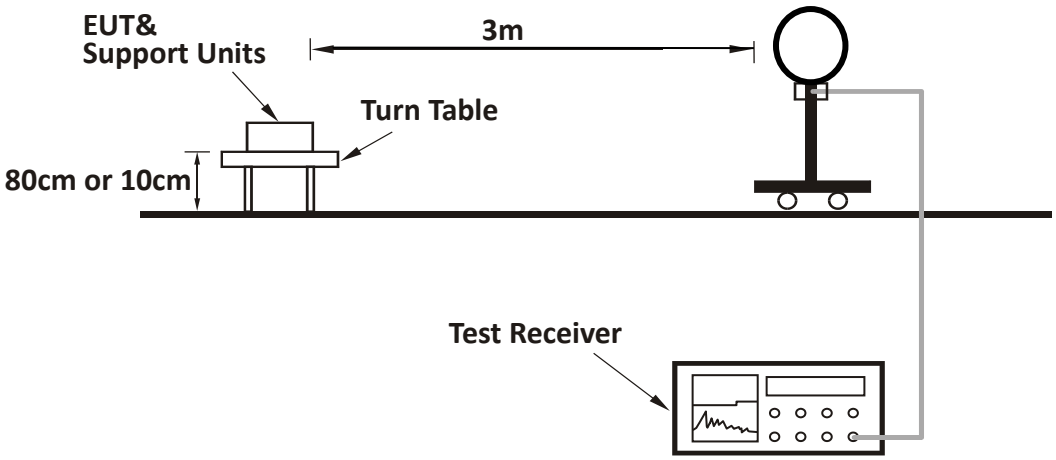
f) The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

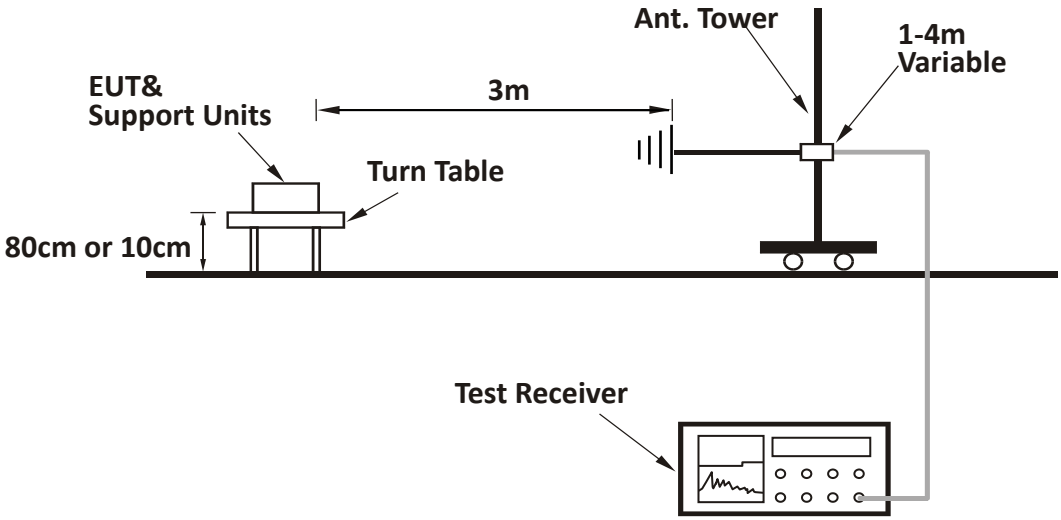
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 3 x RBW (Duty cycle ≥ 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

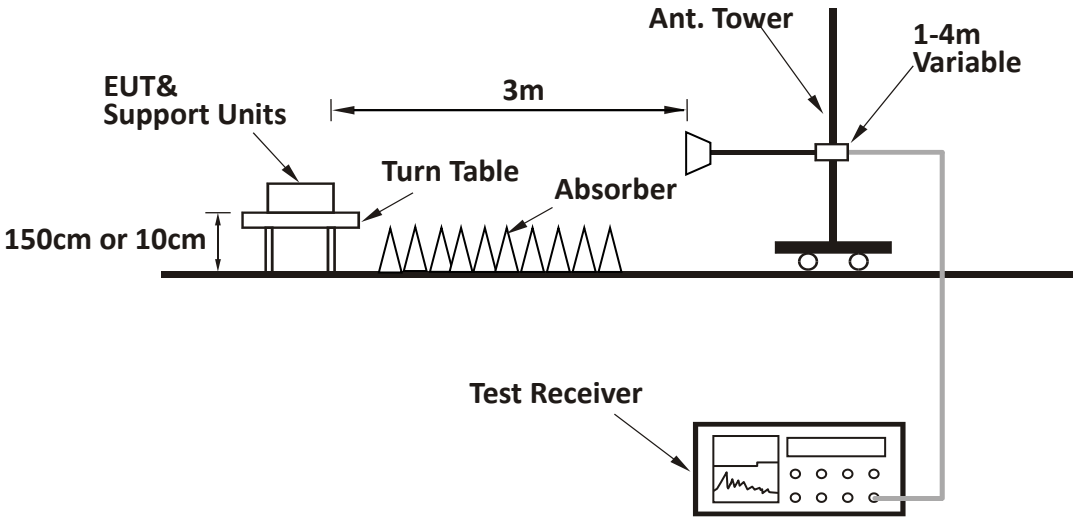
For Radiated emission below 30MHz:



For Radiated emission 30MHz to 1GHz:



For Radiated emission above 1GHz:

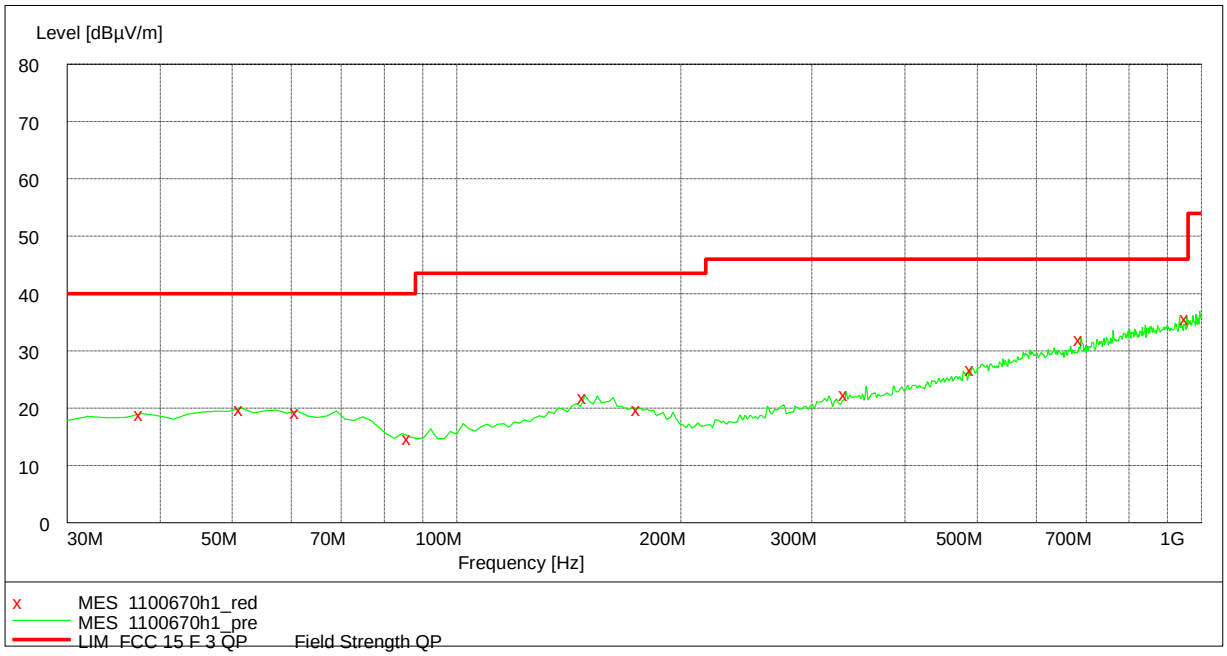


3.4 Test Results of Radiated Emissions

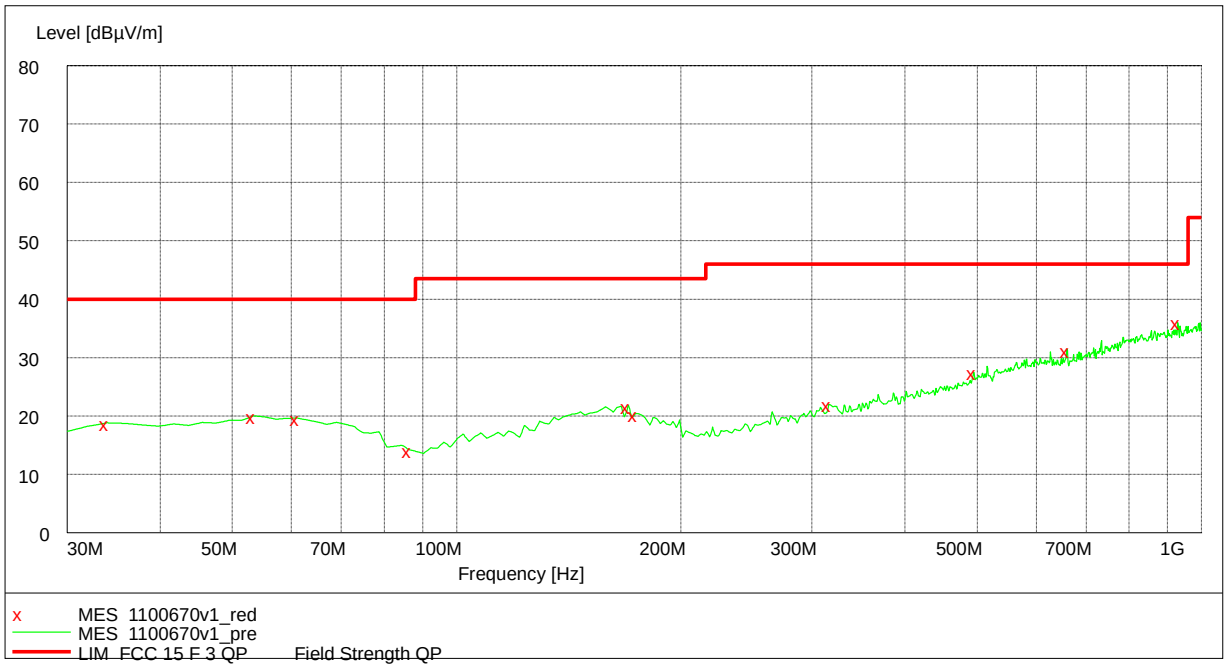
The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

The worst waveform from 30MHz to 1000MHz is listed as below:
Model: RAL1K1R

Horizontal



Vertical



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Test data

Antenna	Frequency (MHz)	Corrected Reading (dBuV/m)	Correct Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector
H	37.78	19.10	13.60	40.00	20.90	PK
H	51.38	20.00	14.50	40.00	20.00	PK
H	61.10	19.50	14.00	40.00	20.50	PK
H	492.65	27.00	20.00	46.00	19.00	PK
H	688.98	32.30	23.40	46.00	13.70	PK
H	955.29	35.90	26.80	46.00	10.10	PK
V	33.89	18.80	13.20	40.00	21.20	PK
V	53.33	20.00	14.40	40.00	20.00	PK
V	61.10	19.60	14.00	40.00	20.40	PK
V	494.59	27.50	20.00	46.00	18.50	PK
V	659.82	31.40	23.00	46.00	14.60	PK
V	930.02	36.00	26.50	46.00	10.00	PK

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.

Example: Assuming Antenna Factor = 30.20dB/m, Cable Loss = 2.00dB,
Gain of Preamplifier = 32.00dB, Original Receiver Reading = 10.00dBuV,
Limit = 40.00dBuV/m.
Then Correct Factor = 30.20 + 2.00 – 32.00 = 0.20dB/m;
Corrected Reading = 10dBuV + 0.20dB/m = 10.20dBuV/m;
Margin = 40.00dBuV/m - 10.20dBuV/m = 29.80dB.

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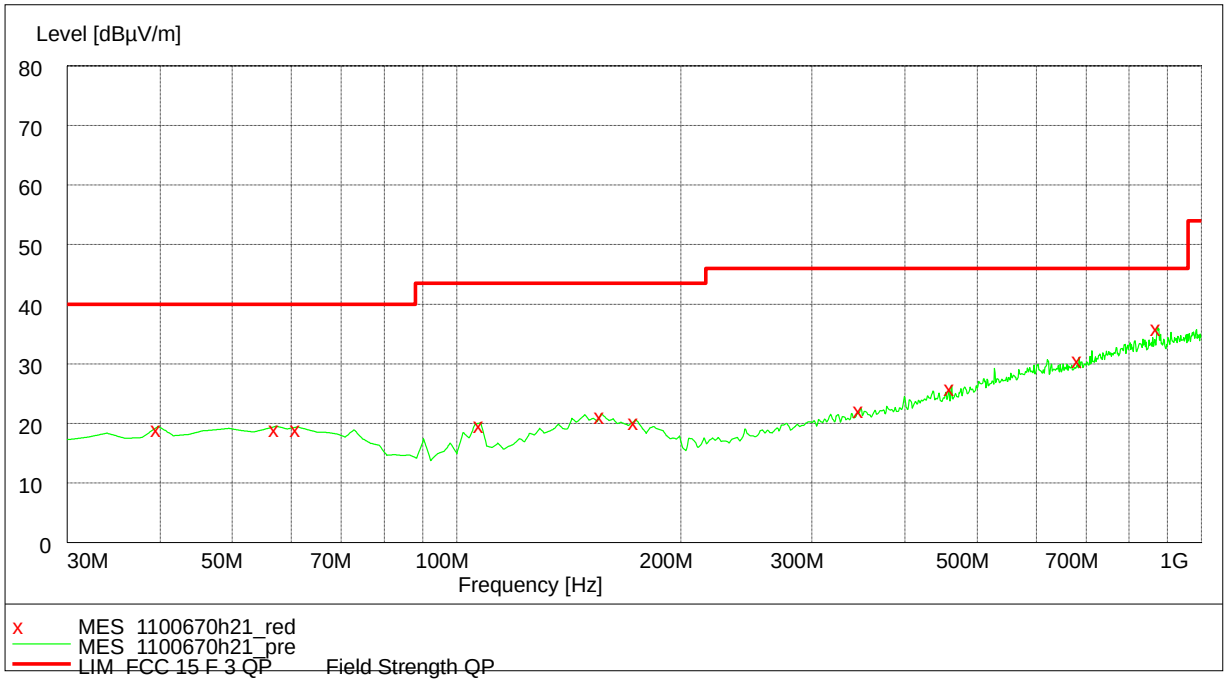
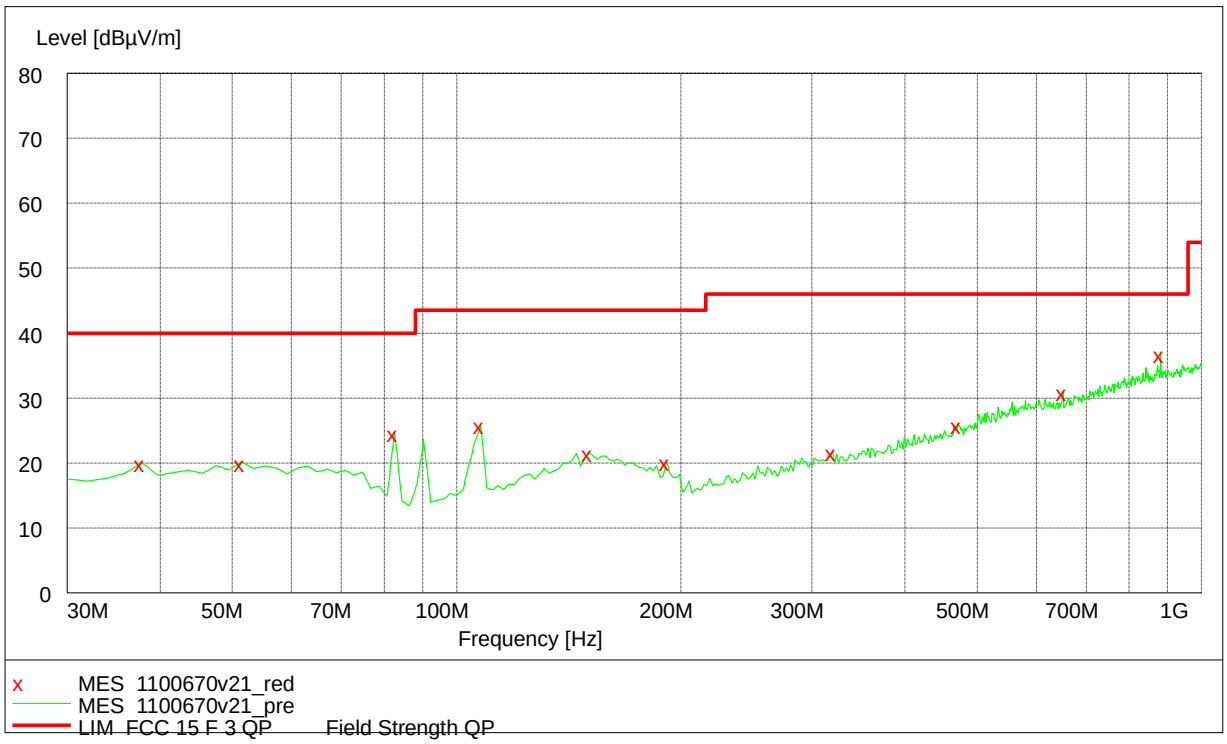
Model: RAL501R

Horizontal



Vertical



TEST REPORT

Test data

Antenna	Frequency (MHz)	Corrected Reading (dBuV/m)	Correct Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector
H	39.72	19.50	13.80	40.00	20.50	PK
H	57.21	19.50	14.20	40.00	20.50	PK
H	61.10	19.40	14.00	40.00	20.60	PK
H	461.54	26.30	19.20	46.00	19.70	PK
H	685.09	31.00	23.30	46.00	15.00	PK
H	873.65	36.30	26.00	46.00	9.70	PK
V	37.78	20.00	13.60	40.00	20.00	PK
V	51.38	20.10	14.50	40.00	19.90	PK
V	82.48	24.60	9.60	40.00	15.40	PK
V	107.76	25.90	10.60	43.50	17.60	PK
V	652.04	30.90	22.90	46.00	15.10	PK
V	881.42	36.80	26.10	46.00	9.20	PK

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.

Example: Assuming Antenna Factor = 30.20dB/m, Cable Loss = 2.00dB,
Gain of Preamplifier = 32.00dB, Original Receiver Reading = 10.00dBuV,
Limit = 40.00dBuV/m.
Then Correct Factor = 30.20 + 2.00 – 32.00 = 0.20dB/m;
Corrected Reading = 10dBuV + 0.20dB/m = 10.20dBuV/m;
Margin = 40.00dBuV/m - 10.20dBuV/m = 29.80dB.

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Test result above 1GHz:

CH	Antenna	Frequency (MHz)	Corrected Reading (dBuV/m)	Correct Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5725.00	64.50	43.50	74.00	9.5	PK
	H	5725.00	50.20	43.50	54.00	3.8	AV
	V	5725.00	64.60	43.50	74.00	9.4	PK
	V	5725.00	50.40	43.50	54.00	3.6	AV
	H	5773.00	94.90	43.50	114.00	19.1	PK
	V	5773.00	91.40	43.50	114.00	22.6	PK
	H	11546.00	53.70	14.2	74.00	20.3	PK
	V	11546.00	51.30	14.2	74.00	22.7	PK
M	H	5800.00	94.40	43.60	114.00	19.6	PK
	V	5800.00	92.10	43.60	114.00	21.9	PK
	H	11600.00	53.50	14.2	74.00	20.5	PK
	V	11600.00	51.70	14.2	74.00	22.3	PK
H	H	5830.00	93.70	43.60	114.00	20.3	PK
	V	5830.00	90.50	43.60	114.00	23.5	PK
	H	5875.00	63.70	43.60	74.00	10.3	PK
	H	5875.00	49.50	43.60	54.00	4.50	AV
	V	5875.00	63.30	43.60	74.00	10.7	PK
	V	5875.00	49.10	43.60	54.00	4.90	AV
	H	11660.00	52.60	14.2	74.00	21.4	PK
	V	11660.00	50.10	14.2	74.00	23.9	PK

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.

Example: Assuming Antenna Factor = 30.20dB/m, Cable Loss = 2.00dB,
Gain of Preamplifier = 32.00dB, Original Receiver Reading = 10.00dBuV,
Limit = 40.00dBuV/m.
Then Correct Factor = 30.20 + 2.00 – 32.00 = 0.20dB/m;
Corrected Reading = 10dBuV + 0.20dB/m = 10.20dBuV/m;
Margin = 40.00dBuV/m - 10.20dBuV/m = 29.80dB.

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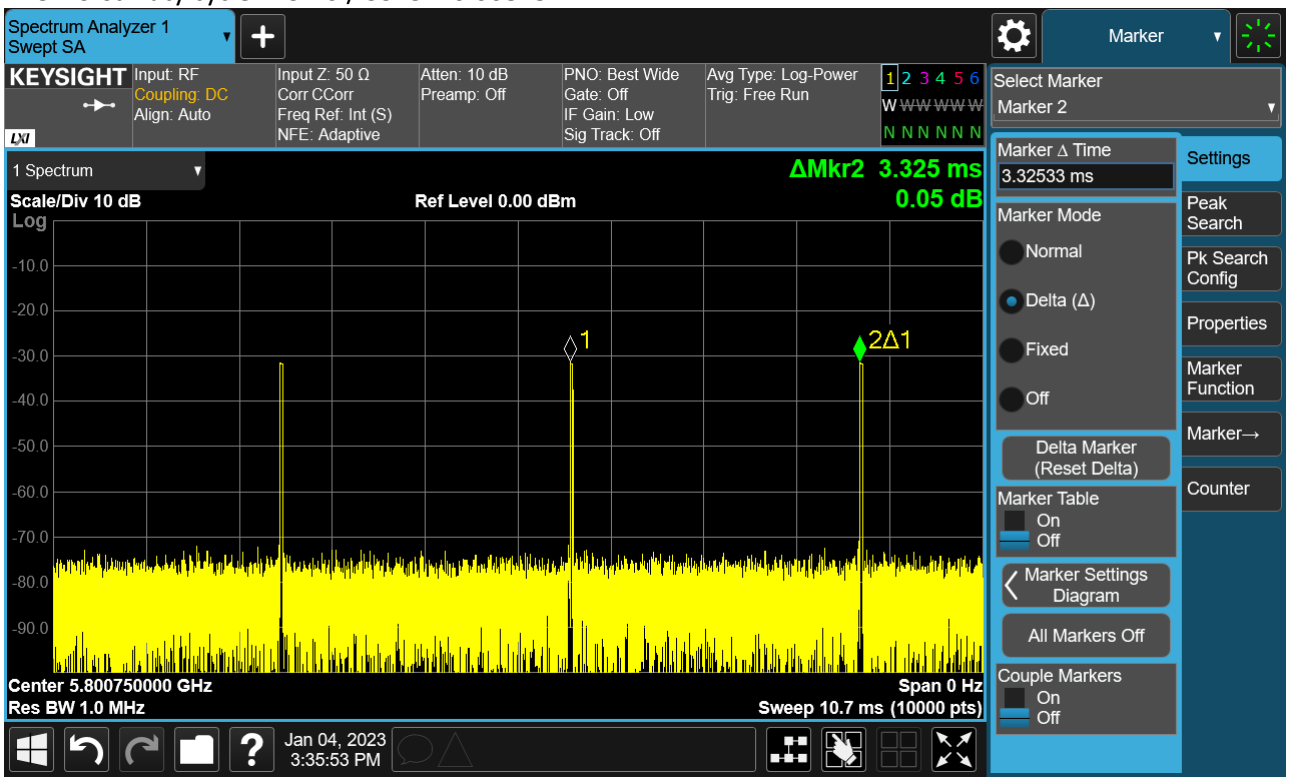
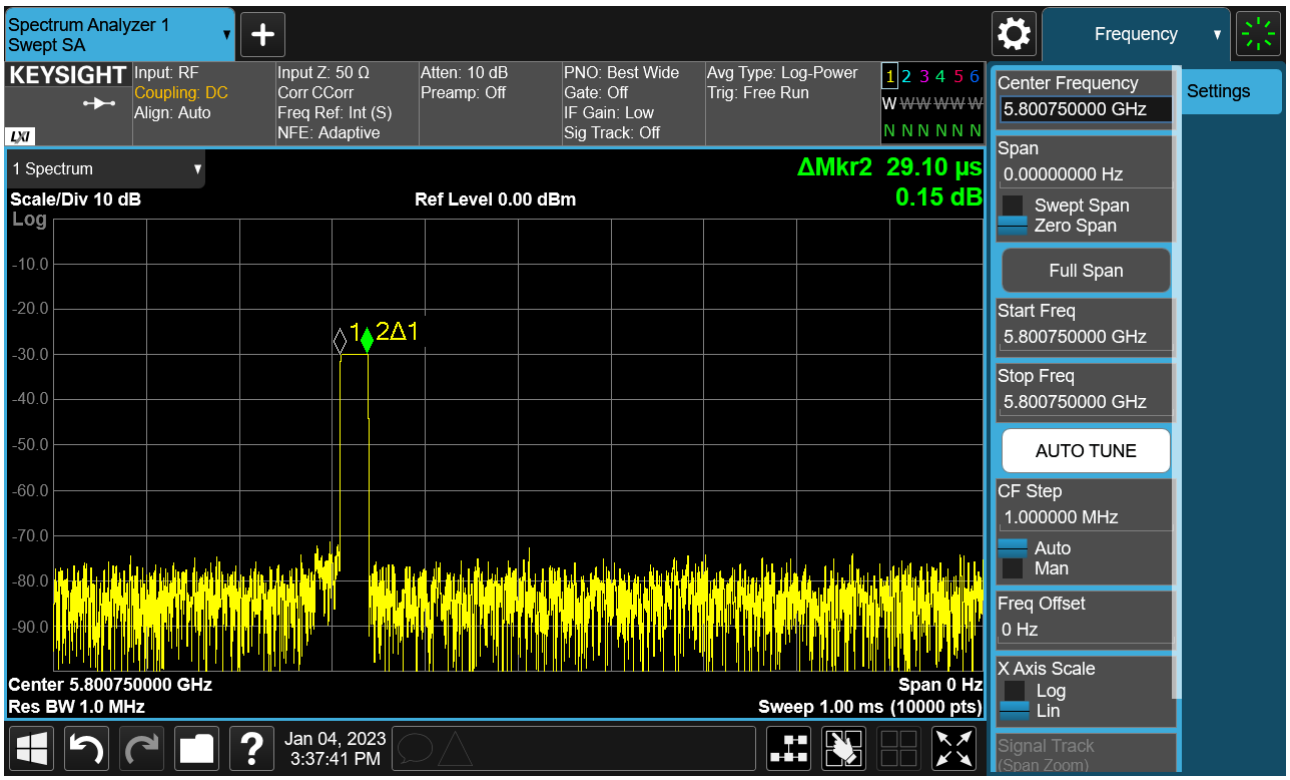
Duty Cycle:

The test data with maximum duty cycle was listed below.

The worst Duty cycle= 29.10 / 3325 = 0.00875





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Calculating the AV value according to the duty cycle

CH	Antenna	Frequency (MHz)	PK Reading (dBuV/m)	Correct Factor (dB)	AV Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)
	H	5773.00	94.90	-41.16	53.74	94	40.26
	V	5773.00	91.40		50.24	94	43.76
	H	11546.00	53.70		12.54	54	41.46
	V	11546.00	51.30		10.14	54	43.86
M	H	5800.00	94.40		53.24	94	40.76
	V	5800.00	92.10		50.94	94	43.06
	H	11600.00	53.50		12.34	54	41.66
	V	11600.00	51.70		10.54	54	43.46
H	H	5830.00	93.70		52.54	94	41.46
	V	5830.00	90.50		49.34	94	44.66
	H	11660.00	52.60		11.44	54	42.56
	V	11660.00	50.10		8.94	54	45.06

Remark:
1. Correct Factor = 20lg (duty cycle) = 20lg (0.00875) = -41.16;
2. AV Reading = PK Reading + Correct Factor;
3. Margin = limit - AV Reading.

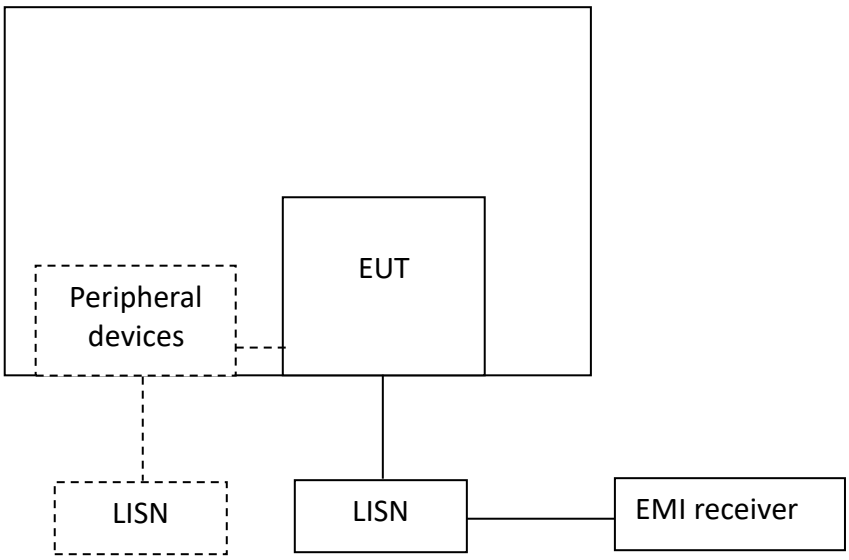
4 Power line conducted emission

Test result: **Pass**

4.1 Limit

Frequency of Emission (MHz)	Conducted 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.

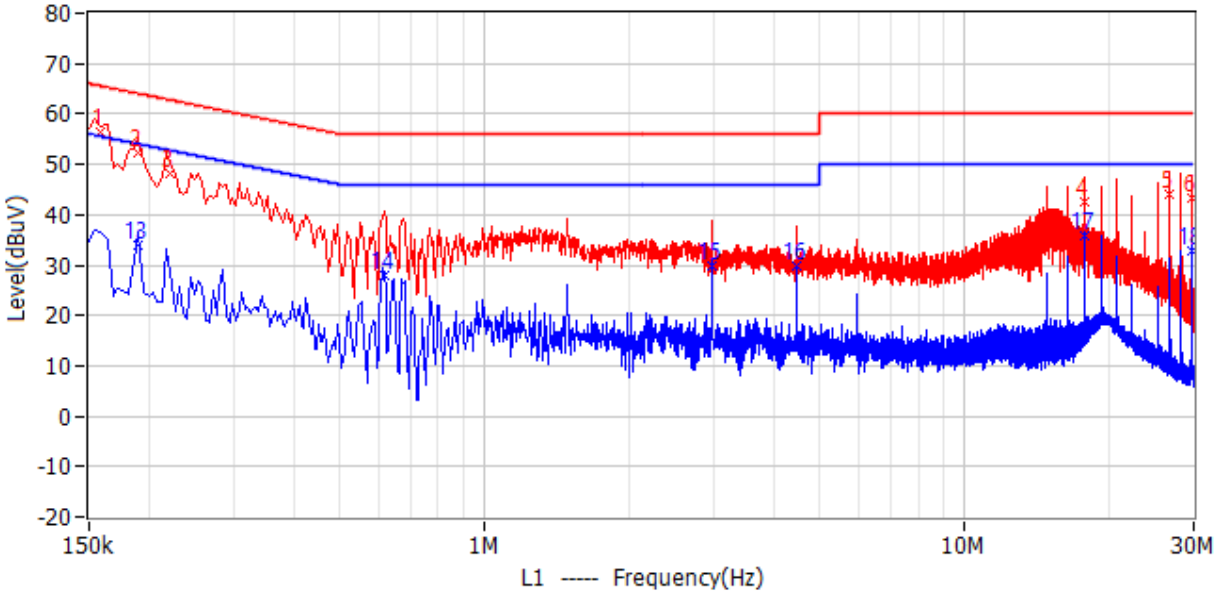
Tabletop devices shall be placed on a platform of nominal size 1 m by 1.5 m, raised 80 cm above the reference ground plane. The vertical conducting plane or wall of an RF-shielded (screened) room shall be located 40 cm to the rear of the EUT. Floor-standing devices shall be placed either directly on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

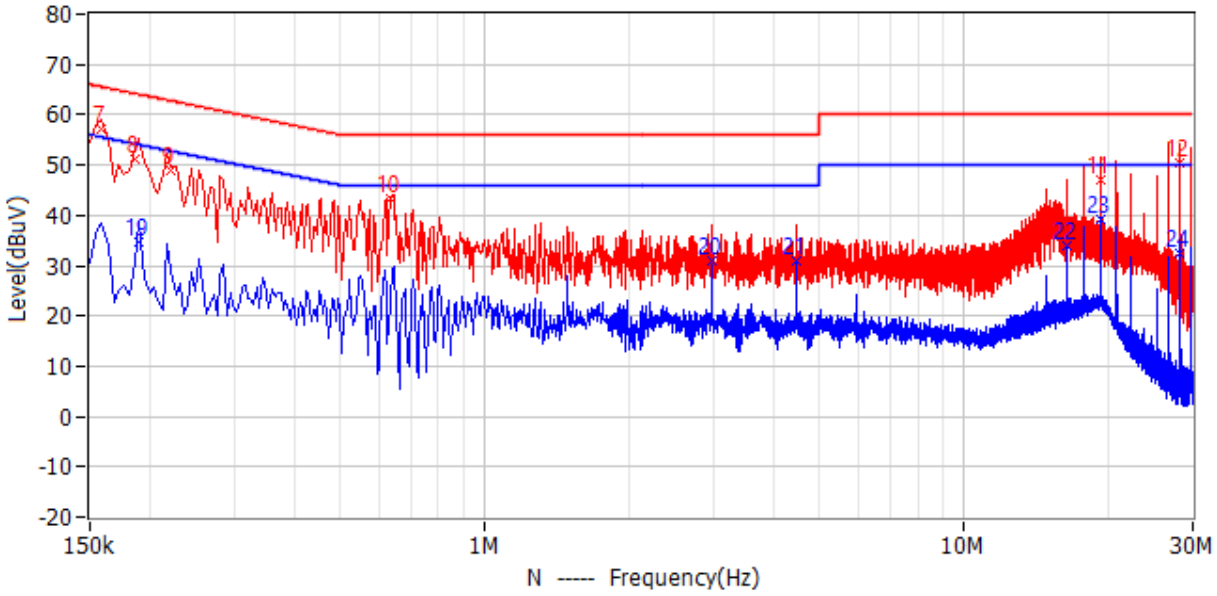
The bandwidth of the test receiver is set at 9 kHz.

4.4 Test Results of Power line conducted emission

Supply Voltage: 120V~, 60Hz

Model: RAL1K1R





No.	Frequency	Limit dBuV	Level dBuV	Delta dB	Reading dBuV	Factor dB	Detector	Phase
1	159.000kHz	65.5	56.4	-9.1	50.2	6.2	QP	L1
2	190.500kHz	64.0	52.1	-11.9	45.9	6.2	QP	L1
3	222.000kHz	62.7	48.1	-14.6	41.9	6.2	QP	L1
4	17.822MHz	60.0	42.4	-17.6	36.0	6.4	QP	L1
5	26.736MHz	60.0	44.0	-16.0	37.5	6.5	QP	L1
6	29.715MHz	60.0	43.4	-16.6	36.8	6.6	QP	L1
7	159.000kHz	65.5	57.0	-8.5	50.7	6.3	QP	N

TEST REPORT

No.	Frequency	Limit dBuV	Level dBuV	Delta dB	Reading dBuV	Factor dB	Detector	Phase
8	186.000kHz	64.2	51.0	-13.2	44.8	6.2	QP	N
9	222.000kHz	62.7	48.8	-13.9	42.5	6.3	QP	N
10	636.000kHz	56.0	43.2	-12.8	36.9	6.3	QP	N
11	19.316MHz	60.0	47.2	-12.8	40.7	6.5	QP	N
12	28.230MHz	60.0	50.5	-9.5	43.9	6.6	QP	N
13	190.500kHz	54.0	33.9	-20.2	27.7	6.2	CAV	L1
14	618.000kHz	46.0	28.0	-18.0	21.8	6.2	CAV	L1
15	2.972MHz	46.0	29.9	-16.1	23.7	6.2	CAV	L1
16	4.457MHz	46.0	30.0	-16.0	23.7	6.3	CAV	L1
17	17.826MHz	50.0	35.7	-14.3	29.3	6.4	CAV	L1
18	29.711MHz	50.0	32.7	-17.3	26.1	6.6	CAV	L1
19	190.500kHz	54.0	34.7	-19.3	28.5	6.2	CAV	N
20	2.972MHz	46.0	30.8	-15.2	24.5	6.3	CAV	N
21	4.457MHz	46.0	30.8	-15.2	24.5	6.3	CAV	N
22	16.337MHz	50.0	33.8	-16.2	27.3	6.5	CAV	N
23	19.311MHz	50.0	39.3	-10.7	32.8	6.5	CAV	N
24	28.226MHz	50.0	32.6	-17.4	26.0	6.6	CAV	N

Remark: 1. Factor = LISN Factor + Cable Loss, the value was added to Original Receiver Reading by the software automatically.

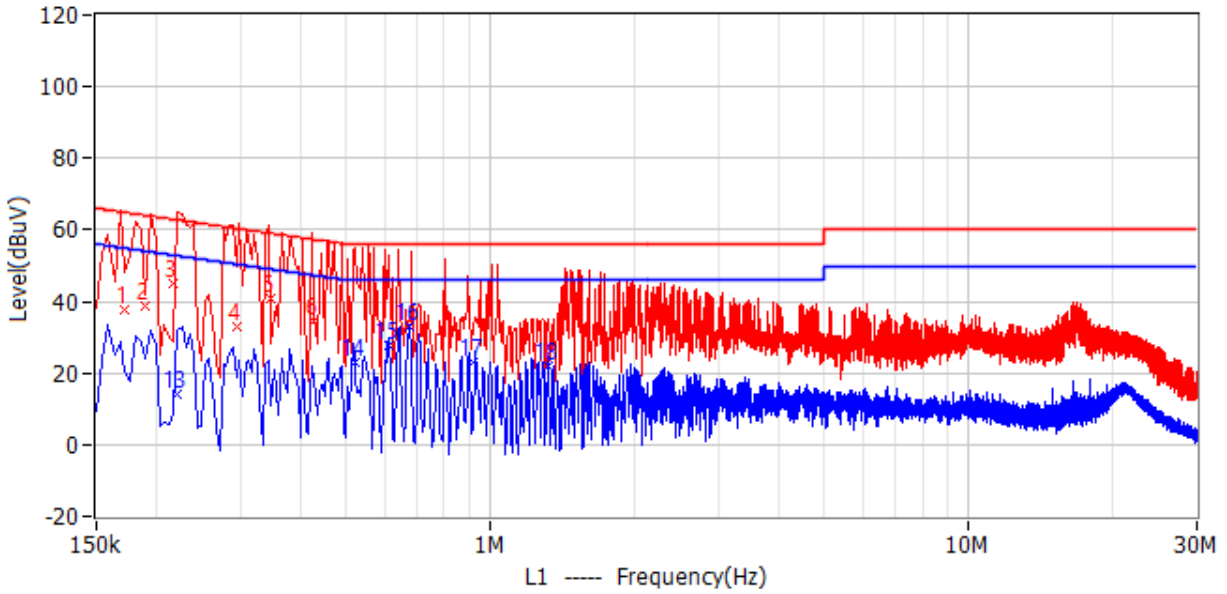
2. Level = Original Receiver Reading + Factor

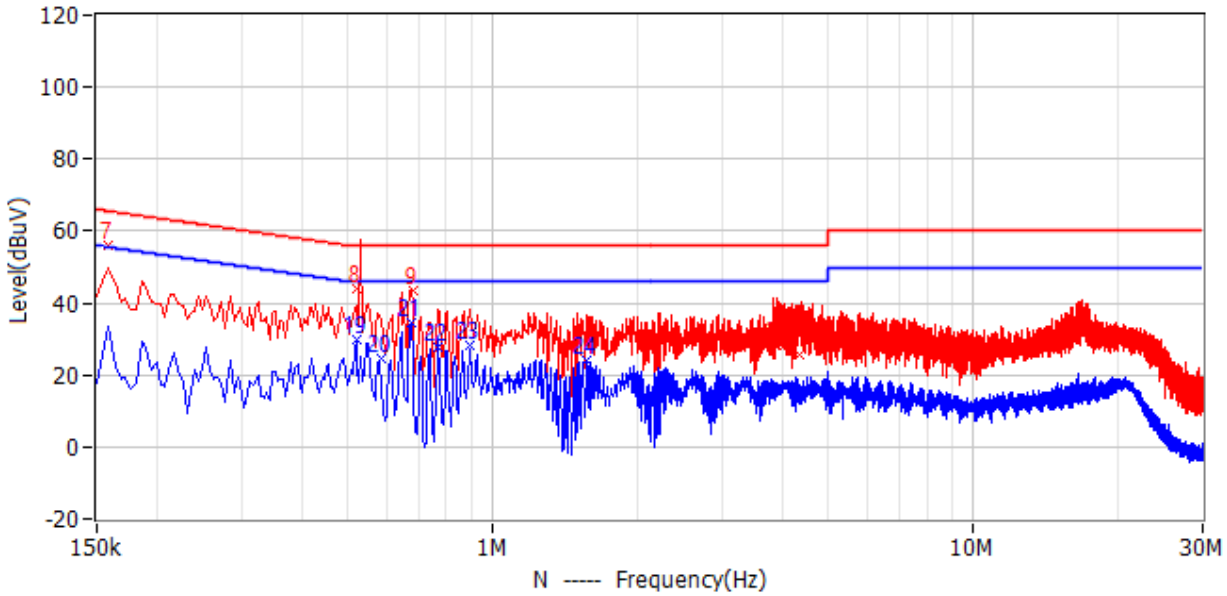
3. Delta = Level- Limit

4. If the PK Corrected Reading is lower than AV limit, the AV test can be elided.

TEST REPORT

Model: RAL501R





No.	Frequency	Limit dBuV	Level dBuV	Delta dB	Reading dBuV	Factor dB	Detector	Phase
1	172.500kHz	64.8	37.5	-27.4	31.4	6.1	QP	L1
2	190.500kHz	64.0	38.7	-25.3	32.5	6.2	QP	L1
3	217.500kHz	62.9	44.9	-18.1	38.7	6.2	QP	L1
4	294.000kHz	60.4	33.1	-27.3	26.9	6.2	QP	L1
5	348.000kHz	59.0	41.0	-18.0	34.8	6.2	QP	L1
6	429.000kHz	57.3	34.6	-22.7	28.4	6.2	QP	L1
7	159.000kHz	65.5	55.8	-9.7	49.5	6.3	QP	N
8	523.500kHz	56.0	43.8	-12.2	37.5	6.3	QP	N
9	681.000kHz	56.0	43.2	-12.8	36.9	6.3	QP	N
10	3.912MHz	56.0	28.1	-27.9	21.8	6.3	QP	N

TEST REPORT

No.	Frequency	Limit dBuV	Level dBuV	Delta dB	Reading dBuV	Factor dB	Detector	Phase
11	4.344MHz	56.0	25.7	-30.3	19.4	6.3	QP	N
12	4.835MHz	56.0	26.7	-29.3	20.4	6.3	QP	N
13	222.000kHz	52.7	14.3	-38.5	8.1	6.2	CAV	L1
14	523.500kHz	46.0	23.1	-22.9	16.9	6.2	CAV	L1
15	613.500kHz	46.0	27.6	-18.4	21.4	6.2	CAV	L1
16	676.500kHz	46.0	33.2	-12.8	27.0	6.2	CAV	L1
17	919.500kHz	46.0	22.8	-23.2	16.6	6.2	CAV	L1
18	1.325MHz	46.0	22.2	-23.8	16.0	6.2	CAV	L1
19	523.500kHz	46.0	29.9	-16.1	23.6	6.3	CAV	N
20	586.500kHz	46.0	24.4	-21.6	18.1	6.3	CAV	N
21	676.500kHz	46.0	34.5	-11.5	28.2	6.3	CAV	N
22	771.000kHz	46.0	27.6	-18.4	21.3	6.3	CAV	N
23	892.500kHz	46.0	28.0	-18.0	21.7	6.3	CAV	N
24	1.568MHz	46.0	24.2	-21.8	17.9	6.3	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 Corrected Reading is lower than AV limit, the AV test can be elided.

5 Assigned bandwidth (20dB bandwidth)

Test result: **Pass**

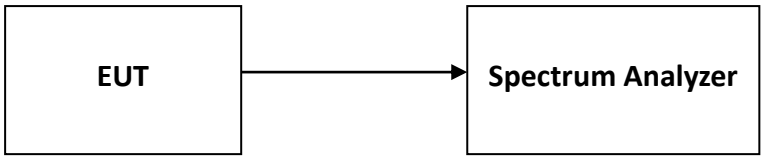
5.1 Limit

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 2 channels (lowest and highest channel).

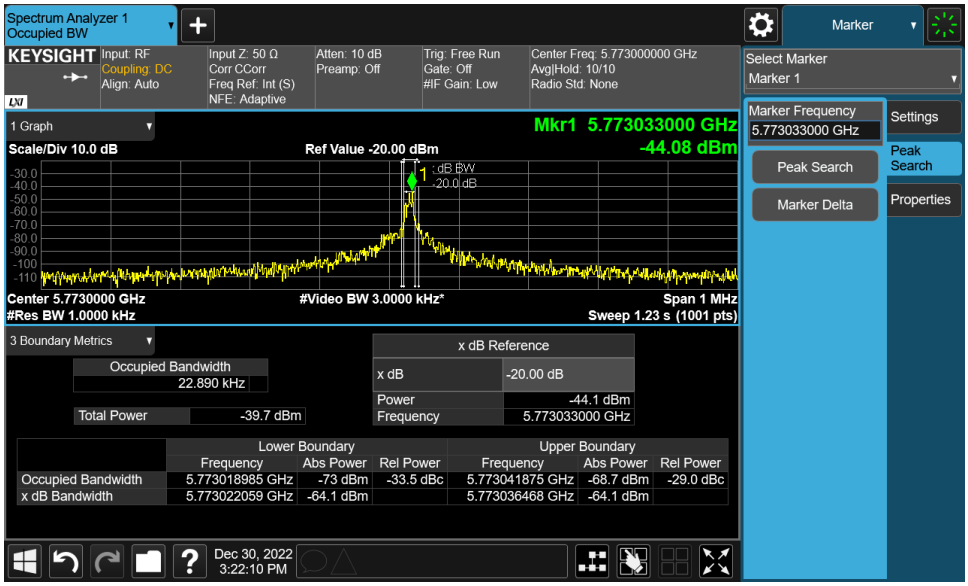
5.3 Test Configuration



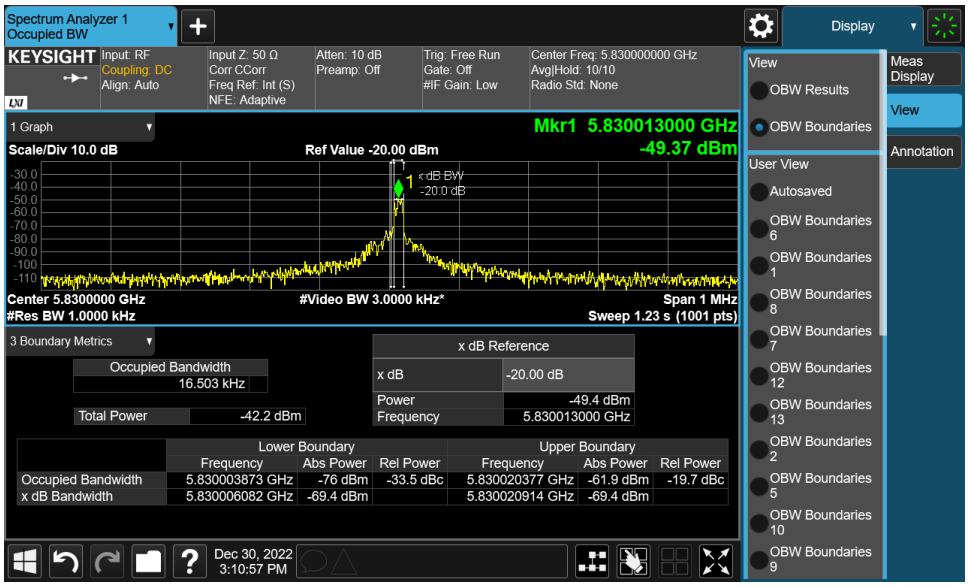
5.4 The results

Test Mode	Frequency (MHz)	20dB Bandwidth (kHz)	99% Bandwidth (kHz)	F_L at 20dB BW (MHz)	F_H at 20dB BW (MHz)
transmit	5773	14.41	22.890	>5725	/
	5830	14.83	16.503	/	<5875
Limit		N/A	N/A	F_L>5725	F_H<5875
Result		**Complied**			

Channel L



Channel H



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 PCB antenna to the intentional radiator, so it can comply with the provisions of this section.

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