

TEST REPORT

Applicant:	Ligtz LLC
Address of Applicant:	48 COTTONWOOD DR HOLLAND PA 18966,
Manufacturer:	Ligtz LLC
Address of Manufacturer:	48 COTTONWOOD DR HOLLAND PA 18966
Product name:	Multifunctional wireless Lighting
Model:	RAIN 10, RAIN 11, RAIN 12, RAIN 13, RAIN 10Lite, RAIN 11Lite, RAIN 12Lite, RAIN 13Lite.
Rating(s):	Lithium battery: DC8.4V, Charge by DC12.0V.
Trademark:	Ligtz
Standards:	47 CFR PART 15 Subpart C: section 15.249
FCC ID:	2A2MA-CF10
Data of Receipt:	2025-12-19
Date of Test:	2025-12-19~2026-01-27
Date of Issue:	202-01-27
Test Result	Pass*

* In the configuration tested, the test item complied with the standards specified above.

Authorized for issue by:

Test by:

Jan. 27, 2026 Chivas Tsang
Project Engineer

Date Name/Position Signature

Reviewed by:

Jan. 27, 2026 Victor Meng
Project Manager

Date Name/Position Signature

Possible test case verdicts:

test case does not apply to the test object ...: N/A

test object does meet the requirement: P (Pass)

test object does not meet the requirement ...: F (Fail)

Testing Laboratory information:

Testing Laboratory Name: ITL Co., LTD

Address.....: No.8, Jinqianling Street 5, Huangjiang, Dongguan, Guangdong, China.

Testing location : Same as above

Tel : 0086-769-39001678

Fax : 0086-20-62824387

E-mail : itl@i-testlab.com

General remarks:

The test results presented in this report relate only to the object tested.

The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.

This report would be invalid test report without all the signatures of testing technician and approver.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

Note:

1.RAIN 10: Spot lamp - Different in LED Lens angle(11 degree) and Lamp holder; Indoor & Out door usage;

2.RAIN 11: Spot lamp - Different in LED Lens angle(14.1 degree) and Lamp holder; Indoor & Out door usage;

3.RAIN 12: Spot lamp - Different in LED Lens angle(26.5 degree) and Lamp holder; Indoor & Out door usage;

4.RAIN 13: Spot lamp - Different in LED Lens angle(38.8 degree), Antenna and Lamp holder; Indoor & Out door usage;

5.RAIN 10Lite: Spot lamp - Different in LED, Lens angle(Ultra narrow degree) and Lamp holder; Indoor & Out door usage;

6.RAIN 11Lite: Spot lamp - Different in LED, Lens angle(Narrow degree) and Lamp holder; Indoor & Out door usage;

7.RAIN 12Lite: Spot lamp - Different in LED, Lens angle(Medium degree) and Lamp holder; Indoor & Out door usage;

8.RAIN 13Lite: Spot lamp - Different in LED, Lens angle(Wide degree) and Lamp holder; Indoor & Out door usage;

All the PCB layouts, schematics, and antenna are the same for all models.

All tests were performed on the model RAIN 10 as representatives.

1 Test Summary

Test	Test Requirement	Test method	Result
Antenna Requirement	FCC PART 15 C Section 15.203	FCC PART 15 C Section 15.203	PASS
Occupied Bandwidth	FCC PART 15 C section 15.215 (c)	ANSI C63.10:2020	PASS
Radiated Emission	FCC PART 15 C section 15.205	ANSI C63.10:2020	PASS
AC power-line conducted emissions	FCC PART 15 C section 15.207	ANSI C63.10:2020	PASS

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3 General Information

3.1 Client Information

Applicant: Ligtz LLC
Address of Applicant: 48 COTTONWOOD DR HOLLAND PA 18966

3.2 General Description of E.U.T.

Name: Multifunctional wireless Lighting
Model No.: RAIN 10
Trade Mark: Ligtz
Operating Frequency: 915MHz
Channel Number: 1
Type of Modulation ISM
Antenna Type: PCB antenna
Antenna gain: 2.1 dBi

3.3 Details of E.U.T.

EUT Power Supply: Lithium battery:DC8.4V, Charge by DC12.0V
Test mode: Keep the EUT in transmitting mode with modulation.
Power cord: /

3.4 Description of Support Units

The EUT has been tested as an independent unit for fixed frequency by testing lab.

3.5 Test Location

All tests were performed at:
ITL Co., Ltd.
No.8, JinQianLing street 5, DongHuan Road, Huangjiang Town, Dongguan, China.
0086-769-39001678
itl@i-testlab.com
No tests were sub-contracted.

3.6 Deviation from Standards

None.

3.7 Abnormalities from Standard Conditions

None.

3.8 Other Information Requested by the Customer

None.

3.9 Test Facility

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

- CNAS(Lab code:L9342)
- FCC (Resignation No.:CN5035)
- IC (Registration NO.:12593A)

3.10 Measurement Uncertainty

The below measurement uncertainties given below are based on a 95% confidence level (base on a coverage factor (k=2).)

Parameter	Uncertainty
Radio frequency	$\pm 1.06 \times 10^{-7}$
total RF power, conducted	1.37 dB
RF power density , conducted	2.89 dB
All emissions, radiated	± 3.35 dB
Temperature	± 0.23 °C
Humidity	± 0.3 %
DC and low frequency voltages	± 0.3 %

4 Instruments Used during Test

No.	Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
DGITL-115	50Ω Coaxial Cable	Mini-circuits	CBL	C001	2025.03.14	2026.03.14
DGITL-182	Test software	2.0.0.0	MTS 8310	/	/	/
DGITL-190	Filter	COM-MW	K6-2400-2483.5-100S5010-007	12230496	2025.01.10 2026.01.14	2026.01.09 2027.01.13
DGITL-191	Filter	COM-MW	K6-5150-5850-100S5010-003	12234382	2025.01.10 2026.01.14	2026.01.09 2027.01.13
DGITL-301	Semi-Anechoic chamber	ETS•Lindgren	9*6*6	CT000874-1181	2023.08.02	2026.08.02
DGITL-307	EMI test receiver	SCHWARZBECK	ESVS10	833616/003	2025.03.14	2026.03.13
DGITL-376	Wideband Radio Communication Tester	SCHWARZBECK	CMW500	LR114195	2025.03.14	2026.03.13
DGITL-349a	Vector Signal Generator	ROHDE&SCHWARZ	SMBV100A	259268	2025.03.14	2026.03.13
DGITL-194	Power Meter	MWRFTest	MW100-PSB	MW202006002	2025.03.14	2026.03.13
DGITL-306	Spectrum Analyzer	Agilent Technologies	N9010A	MY54200334	2025.03.14	2026.03.13
DGITL-352	Pre Amplifier	Mini-Circuits	ZFC-1000HX	SN292801110	2025.03.14	2026.03.13
DGITL-375	Spectrum Analyzer	SCHWARZBECK	FSV40-N	6625-01-588-5515	2025.03.14	2026.03.13
DGITL-309	Horn Antenna	ETS Lindgren	3117	SN00152265	2025.05.13	2026.05.12
DGITL-308	Bilog Antenna	ETS· Lindgren	3142E	156975	2025.05.13	2026.05.12
DGITL-350	Wideband Amplifier Super Ultra	Mini-Circuits	ZVA-183X-S+	SN986401426	2025.03.14	2026.03.12
DGITL-371	Pre Amplifier	teramicrowave	TALA-0040G35	18081001	2025.03.14	2026.03.12
DGITL-363	Active Loop Antenna	SCHWARZBECK	FMZB1519B	00062	2024.05.15	2026.05.14
DGITL-302	Shielded Room	ETS• Lindgren	8*4*3	CT09010	2023.08.02	2026.08.02
DGITL-304	L.I.S.N.#1	R&S	ESH3-Z5	100272	2025.03.13	2026.03.12

5 Test Results

5.1 E.U.T. test conditions

Test Voltage:	Lithium battery DC8.4V
Temperature:	23.2 -25.0 °C
Humidity:	38-50 % RH
Atmospheric Pressure:	1000 -1010 mbar
Requirements:	15.31(e): For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery. 15.32: Power supplies and CPU boards used with personal computers and for which separate authorizations are required to be obtained shall be tested as follows: Testing shall be in accordance with the procedures specified in Section 15.31 of this part.
Test frequencies and frequency range:	According to the 15.31(m) Measurements on intentional radiators or receivers, other than TV broadcast receivers, shall be performed and, if required, reported for each band in which the device can be operated with the device operating at the number of frequencies in each band specified in the following table: According to the 15.33 (a) For an intentional radiator, the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to at least the frequency shown in the following table:

Number of fundamental frequencies to be tested in EUT transmit band

Frequency range in which	Number of	Location in frequency range
1 MHz or less	1	Middle
1 MHz	2	1 near top and 1 near bottom
More than 10 MHz	3	1 near top, 1 near middle and 1 near bottom

Frequency range of radiated emission measurements

Lowest frequency generated	Upper frequency range of measurement
9 kHz to below 10 GHz	10th harmonic of highest fundamental frequency or to 40 GHz,
At or above 10 GHz to below	5th harmonic of highest fundamental frequency or to 100 GHz,
At or above 30 GHz	5th harmonic of highest fundamental frequency or to 200 GHz,

EUT channels and frequencies list:

channel	Frequency (MHz)
1	915

The channel 1 was tested as representatives. (the frequency range<1MHz)

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5.2 Antenna requirement

Standard requirement

15.203 requirement:

For intentional device. According to 15.203. 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.

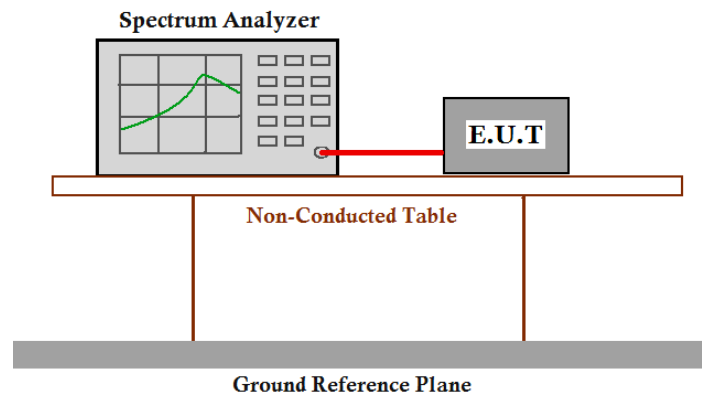
EUT Antenna

The antenna is a PCB antenna and no consideration of replacement. The best case gain of the antenna is 2.15 dBi.

Test result: The unit does meet the FCC requirements.

5.3 Occupied Bandwidth

Test Requirement:	FCC PART 15 C section 15.215(c) (c) Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated
Test Method:	ANSI C63.10:2020
Test Status:	Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, channels and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.
Test Configuration:	



Test Procedure:

1. Remove the antenna from the EUT and then connect a low attention attenuation RF cable (Cable loss =0.5dB) from the antenna port to the spectrum.
 - a) The instrument center frequency was set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer was between 1.5 times and 5.0 times the OBW(20 dB Bandwidth).
 - b) The nominal IF filter bandwidth (3 dB RBW) was in the range of 1% to 5% of the OBW, and VBW was approximately three times the RBW.
 - c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral

envelope was more than $[10 \log (OBW/RBW)]$ below the reference level.

d) Step a) through step c) might require iteration to adjust within the specified range.

e) The dynamic range of the instrument at the selected RBW was more than 10 dB below the target “-20 dB down” requirement; that is, if the requirement calls for measuring the -20 dB OBW, the instrument noise floor at the selected RBW was at least 30 dB below the reference value.

f) Peak detection and max hold mode (until the trace stabilizes) was used.

g) Used the 20dB bandwidth function of the instrument and reported the measured bandwidth.

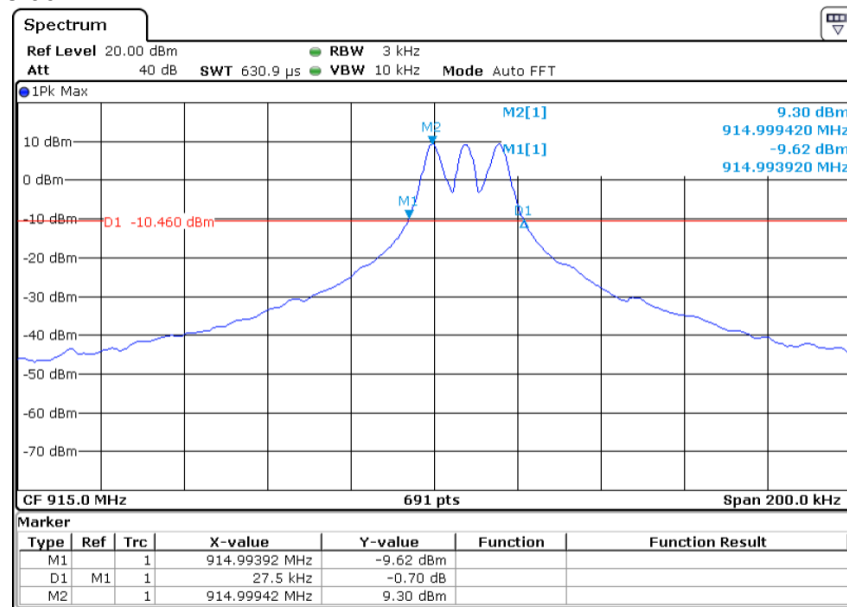
h) The occupied bandwidth was reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division was clearly labeled. Tabular data was reported in addition to the plot(s).

20 dB bandwidth:

Channel No.	Frequency (MHz)	Measured 20dB bandwidth (kHz)	Result
1	915.00	27.50	Pass

Result plot as follows:

Channel 1 :915.00MHz:



5.4 Radiated Spurious Emissions

Test Requirement: FCC PART 15 C section 15.249 (a), (d)

(a) Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Limit:

Fundamental frequency(MHz)	Field strength of fundamental(millivolts/meter)	Field strength of harmonics(microvolts/meter)
902-928	50	500
2400-2483.5	50	500
5725-5875	50	500
24000-24250	250	2500
Remark: The frequencies above 1000MHz are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For fundamental frequency in "902-928MHz", the field strength of fundamental is based on Quasi-Peak.		

(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation.

Test Method: ANSI C63.10:2020 Clause 6.4, 6.5 and 6.6

Test Status: Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, channels and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.

Detector: For PK value:

RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz

VBW $\geq$ RBW Sweep

= auto

Detector function = peak

Trace = max hold

15.209 Limit: 40.0 dB μ V/m between 30MHz & 88MHz

43.5 dB μ V/m between 88MHz & 216MHz

46.0 dB μ V/m between 216MHz & 960MHz

54.0 dB μ V/m above 960MHz

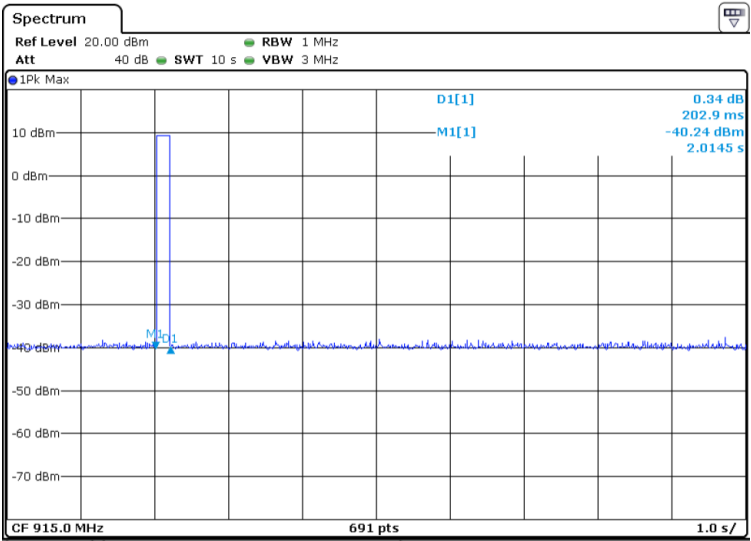
The average correction factor was computed by analyzing the on time in 100ms over one complete pulse train. Analysis of the remote transmitter on time in one complete pulse train, therefore the average value of fundamental frequency was: Average = Peak value + 20log (Duty cycle), where the duty factor is calculated from following formula:

Duty Cycle:

T on time=202.9ms > 100ms, so Duty cycle is 100%

The worst Duty cycle= 100 / 100 = 1
Correct Factor = 20lg (duty cycle) = 20lg (1) = 0

Channel 1 :915.0MHz:

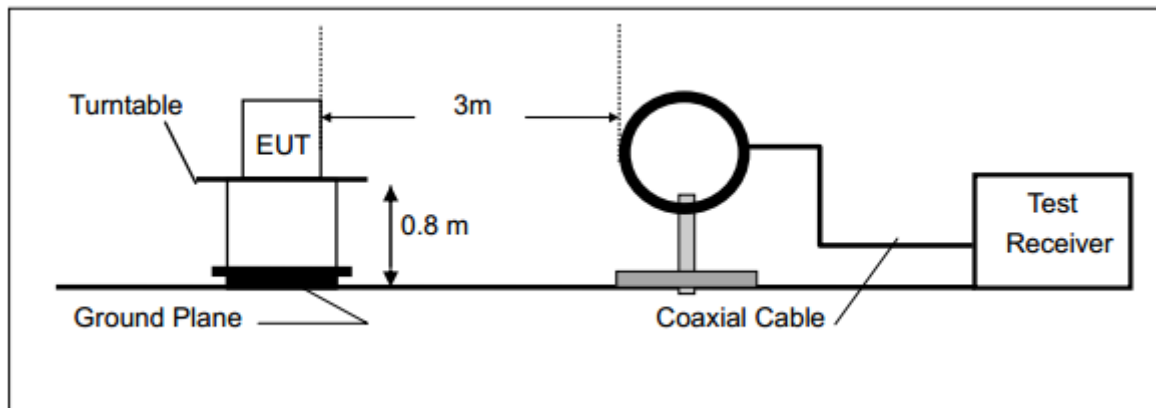


Section 15.205 Restricted bands of operation.

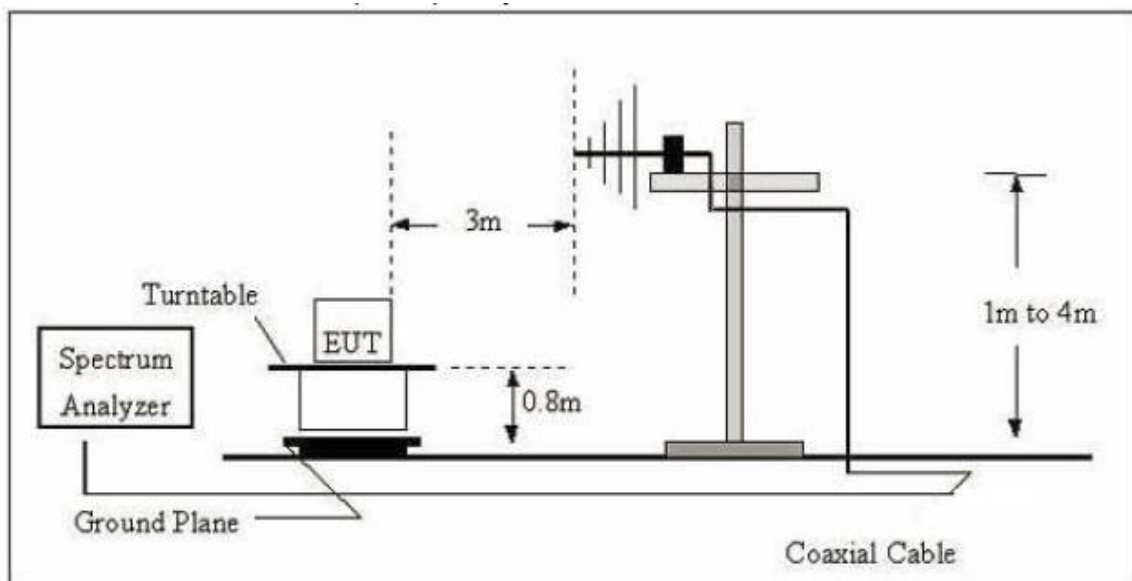
MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
10.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 -	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 - 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	
13.36 - 13.41	322 - 335.4		

Test Configuration:

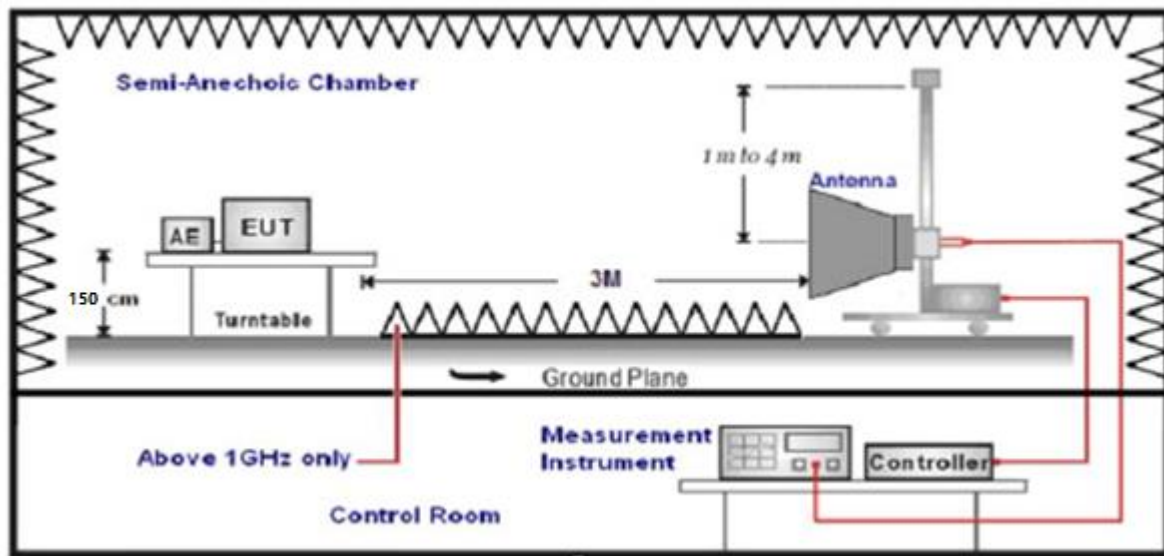
- 1) 9kHz to 30MHz emissions:



- 2) 30 MHz to 1 GHz emissions:



3) 1 GHz to 40 GHz emissions:

**Test Procedure:**

1) 9 kHz to 30 MHz emissions:

For testing performed with the loop antenna. The centre of the loop was positioned 1 m above the ground and positioned with its plane vertical at the special distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane.

2) 30 MHz to 1 GHz emissions:

For testing performed with the bi-log type antenna. The measurement is performed with the EUT rotated 360°, the antenna height scanned between 1m and 4m, and the antenna rotated to repeat the measurement for both the horizontal and vertical antenna polarizations.

3) 1 GHz to 25 GHz emissions:

Test site with RF absorbing material covering the ground plane that met the site validation criterion called out in CISPR 16-1-4:2010 was used to perform radiated emission test above 1 GHz.

For testing performed with the horn antenna. The measurement is performed with the EUT rotated 360°, the antenna height scanned between 1m and 4m, and the antenna rotated to repeat the measurement for both the horizontal and vertical antenna polarizations.

4) The receiver was scanned from 9 kHz to 25 GHz. When an emission was found, the table was rotated to produce the maximum signal strength. An initial pre-scan was performed for in peak detection mode using the receiver. The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes. For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. The worst case emissions were reported.

The measurements with active loop antenna were greater than 20dB below the limit, so the test data were not recorded in the test report.

5.4.1 Harmonic and other spurious emissions

9kHz~30MHz Test result

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

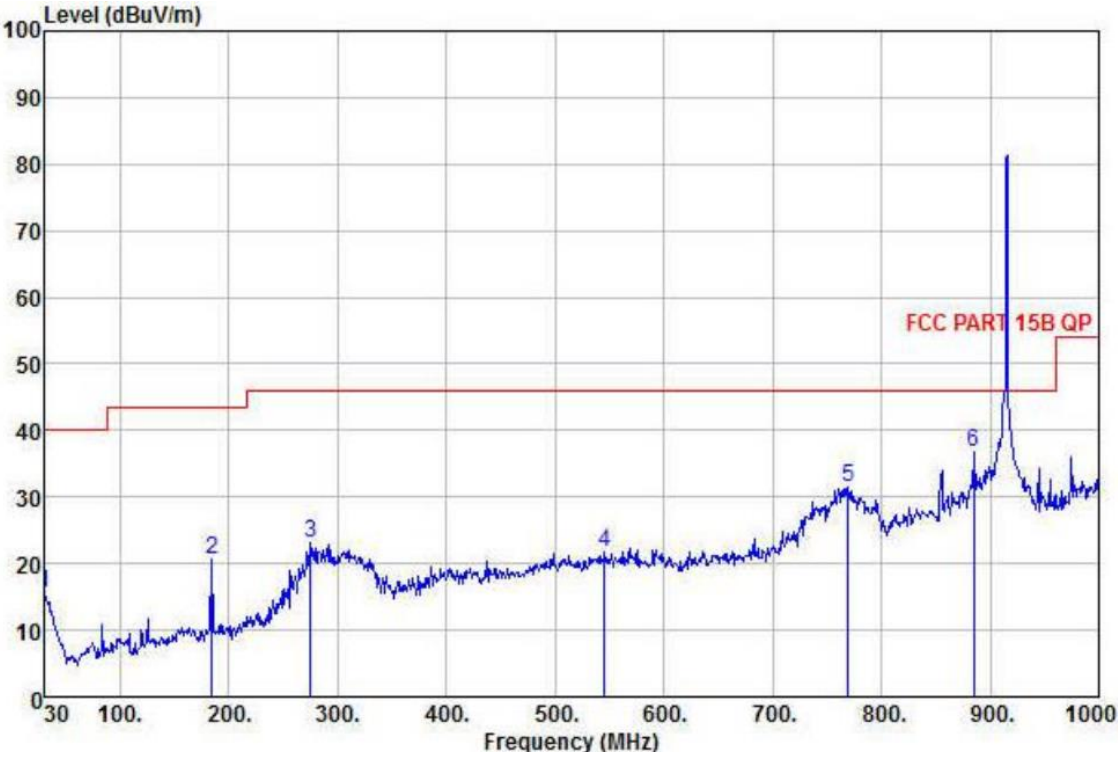
The worst waveform from 30MHz to 1000MHz is listed as below:

Chanel 1: 915.0MHz

Horizontal:

Peak scan

Level (dBμV/m)

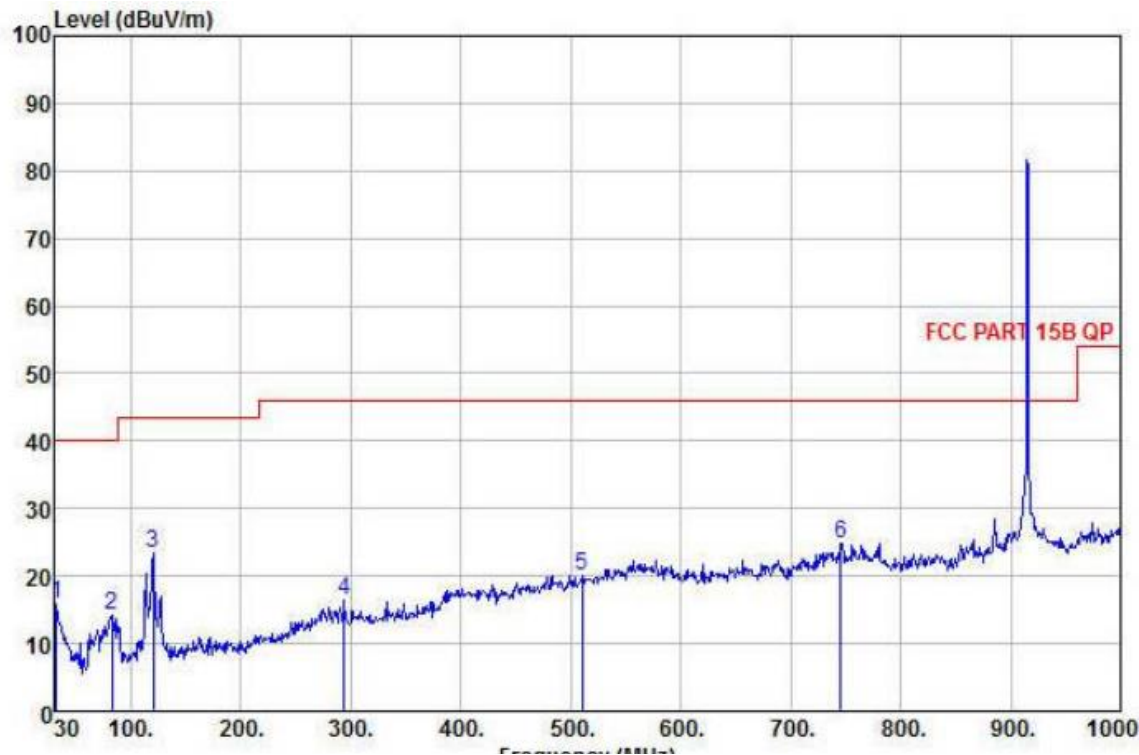


No.	Frequen cy (MHz)	Duty cycle Factor (dB)	Result (dBuV/ m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.000	N/A	15.71	40.00	24.29	QP
2	184.230	N/A	20.59	43.50	22.91	QP
3	275.410	N/A	23.00	46.00	23.00	QP
4	545.070	N/A	21.73	46.00	24.27	QP
5	769.140	N/A	31.36	46.00	14.64	QP
6	884.570	N/A	36.64	46.00	9.36	QP
7	915.000	N/A	81.62	114.00	32.38	Peak
		0	81.62	94.00	12.38	Average

Vertical:

Peak scan

Level (dBµV/m)



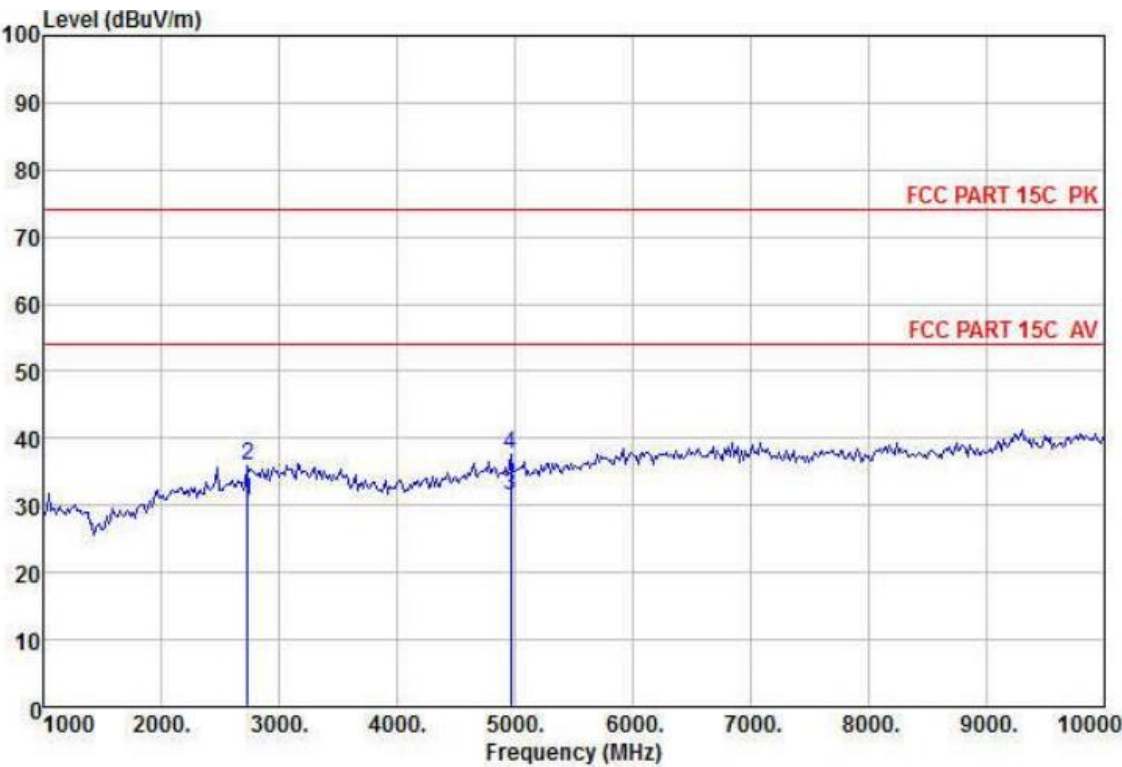
No.	Frequen cy (MHz)	Duty cycle Factor (dB)	Result (dBuV/ m)	Limit (dBuV/m)	Margin (dB)	Detector
1	31.940	N/A	15.79	40.00	24.21	QP
2	82.380	N/A	14.17	40.00	25.83	QP
3	120.210	N/A	23.49	43.50	20.01	QP
4	293.840	N/A	16.31	46.00	29.69	QP
5	510.150	N/A	20.07	46.00	25.93	QP
6	745.860	N/A	24.88	46.00	21.12	QP
7	915.00	N/A	82.13	114.00	31.87	Peak
		0	82.13	94.00	11.87	Average

Above 1G

Chanel 1: 915.0MHz

Horizontal:

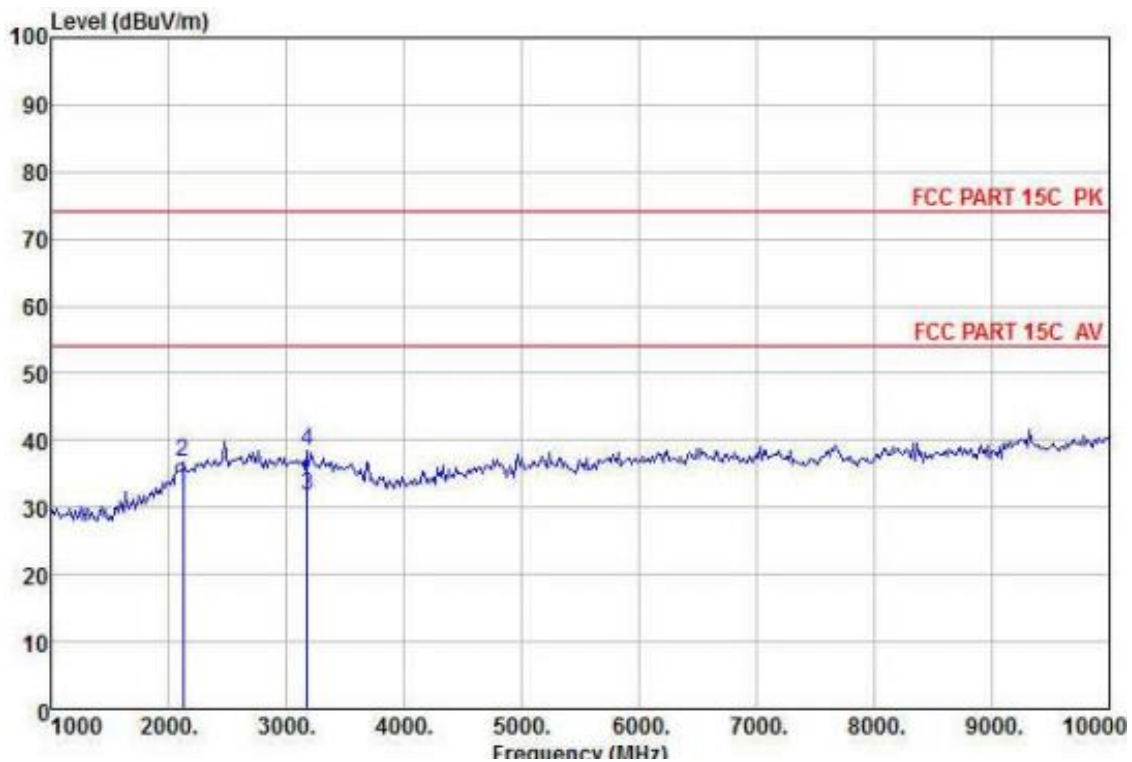
Peak scan



No.	Frequency (MHz)	Duty cycle Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark
1	2734	N/A	35.82	74.00	38.18	Peak
		0	30.71	54.00	23.29	AV
2	4961	N/A	37.65	74.00	36.35	Peak
		0	31.40	54.00	22.60	AV

Vertical:

Peak scan



No.	Frequency (MHz)	Duty cycle Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark
1	2122	N/A	36.85	74.00	37.15	Peak
		0	36.67	54.00	21.33	AV
2	3176	N/A	38.56	74.00	35.44	Peak
		0	31.77	54.00	22.23	AV

Remark:

- 1) .For this intentional radiator operates below 25 GHz. The spectrum shall be investigated to the tenth harmonics of the highest fundamental frequency. And above the third harmonic of this intentional radiator, the disturbance is very low. So the test result only displays to 3rd harmonic.
- 2). As shown in Section, for frequencies above 1000 MHz. the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.
- 3). The test only perform the EUT in transmitting status since the test frequencies were over 1GHz only required transmitting status.

Test result: The unit does meet the FCC requirements.

5.5 Radiated Emissions which fall in the restricted bands

Test Requirement:	FCC Part 15 C section 15.205 (d) In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).
Test Method:	ANSI C63.10:2020
Test Status:	Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, channels and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)
Limit:	40.0 dB μ V/m between 30MHz & 88MHz; 43.5 dB μ V/m between 88MHz & 216MHz; 46.0 dB μ V/m between 216MHz & 960MHz; 54.0 dB μ V/m above 960MHz.

5.5.1 Test Configuration

Detector:	For PK value: RBW = 1 MHz for $f \geq 1$ GHz, 100 KHz for $f < 1$ GHz VBW $\geq$ RBW Sweep = auto Detector function = peak Trace = max hold For AV value: RBW = 1 MHz for $f \geq 1$ GHz, 100 KHz for $f < 1$ GHz VBW = 10Hz Sweep = auto Detector function = peak Trace = max hold
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Section 15.205 Restricted bands of operation.

(a) Except as shown in paragraph (d) of this section. Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 -	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 - 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	
13.36 - 13.41	322 - 335.4		

5.5.2 Test Result (Radiated Emissions which fall in the restricted bands)

Frequency (MHz)	Reading Level (dBμV/m)	Correct (dB/m)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Antenna polarization	Detector
Low Channel							
608.000	32.26	5.15	37.41	74.00	36.59	H	PK
608.000	20.57	5.15	25.72	54.00	28.28	H	AV
614.000	31.33	5.62	36.95	74.00	37.05	V	PK
614.000	22.48	5.62	28.10	54.00	25.90	V	AV
High Channel							
960.000	31.49	6.02	37.51	74.00	36.49	H	PK
960.000	21.36	6.02	27.38	54.00	26.62	H	AV
1240.000	31.52	6.23	37.75	74.00	36.25	V	PK
1240.000	21.41	6.23	27.64	54.00	26.36	V	AV

Remark: No any other emission which falls in restricted bands can be detected and be reported.

Test Result: The unit does meet the FCC requirements.

5.6 AC power-line conducted emissions 150 kHz to 30 MHz

Test Requirement: FCC Part 15 C section 15.207

Test Voltage: AC 120V, 60Hz

Test Method: ANSI C63.10:2020 Section 6.2

Frequency Range: 150 kHz to 30 MHz

Detector: Peak for pre-scan (9 kHz Resolution Bandwidth)

Test Limit

Limits for conducted disturbance at the mains ports of class B

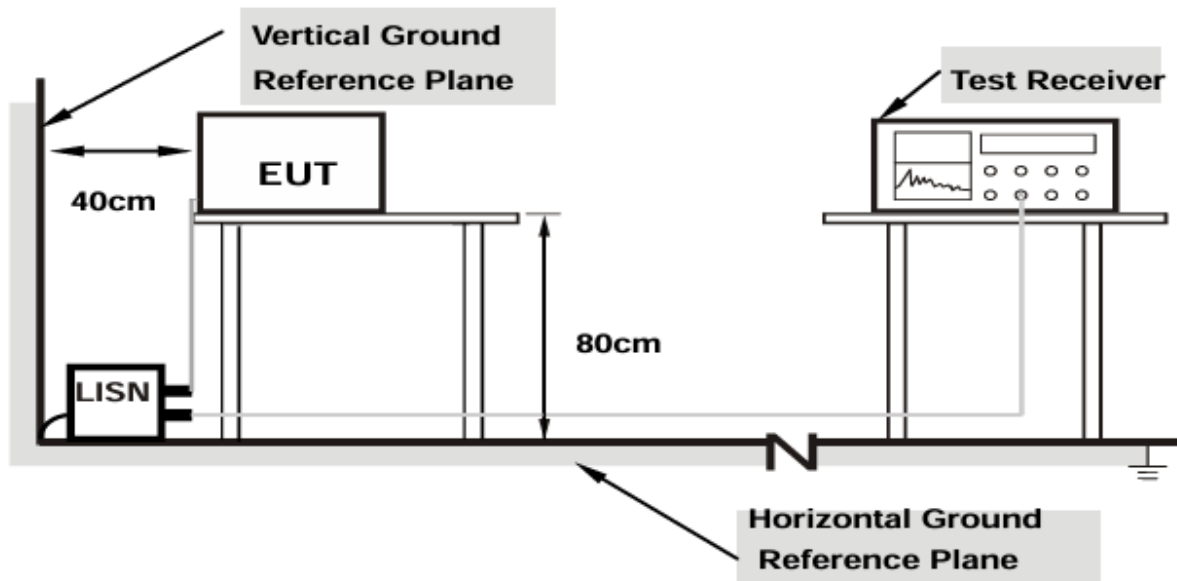
Frequency Range (MHz)	Class B Limit (dB μ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50
NOTE 1: The limit decreases linearly with the logarithm of the frequency in the range 0,15 MHz to 0,50 MHz.		

EUT Operation:

Test in normal operating mode. For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage.

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, channels and antenna ports (if EUT with antenna diversity architecture).

5.6.1 Test Configuration



Test procedure:

1. The mains terminal disturbance voltage test was conducted in a shielded room.
2. The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a $50\Omega/50\mu\text{H} + 5\Omega$ linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
3. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
4. The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0,4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0,8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0,8 m from the LISN 2.

5.6.2 Test Result (AC power-line conducted emissions 150 kHz to 30 MHz)

An initial pre-scan was performed on the live and neutral lines with peak detector.

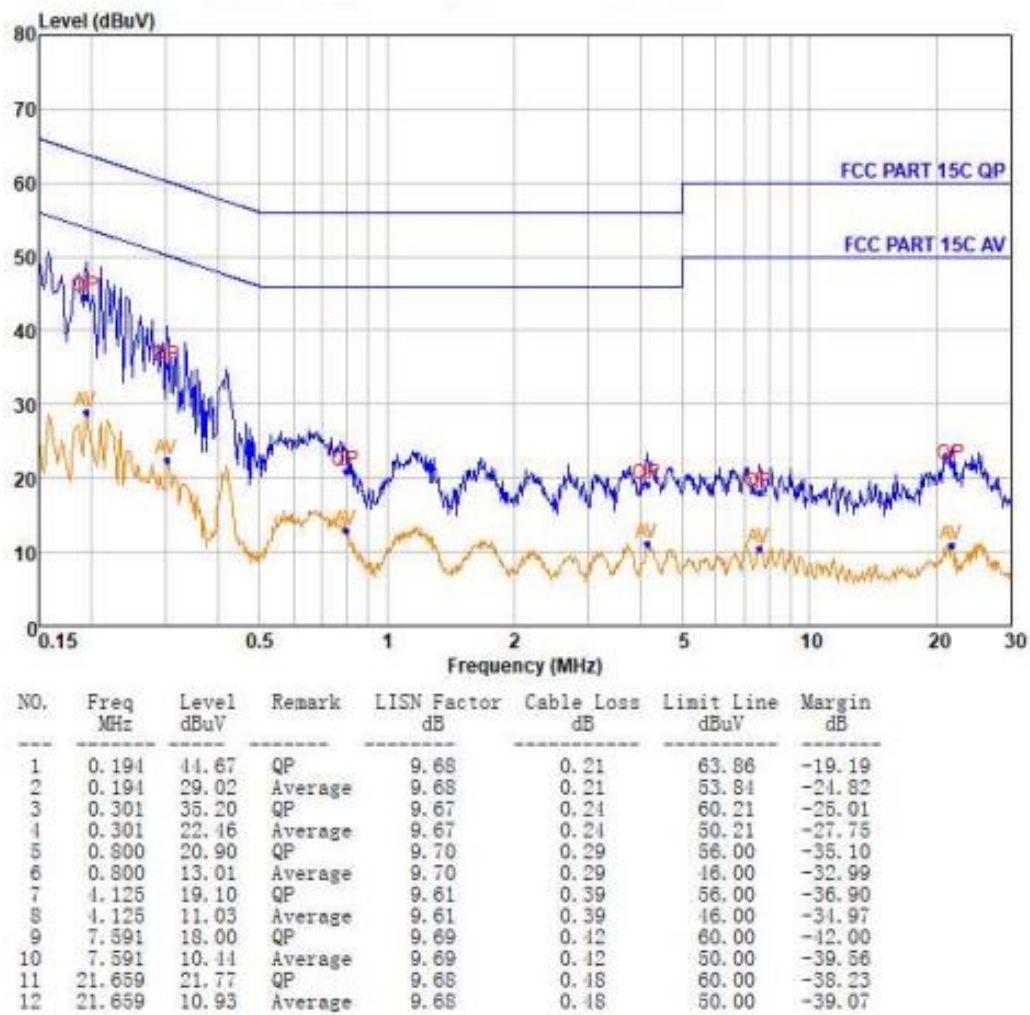
Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected. For EUT the 802.11 b mode was worst case mode.

The following Quasi-Peak and Average measurements were performed on the EUT

Live Line:

Peak scan

Level (dB μ V/m)



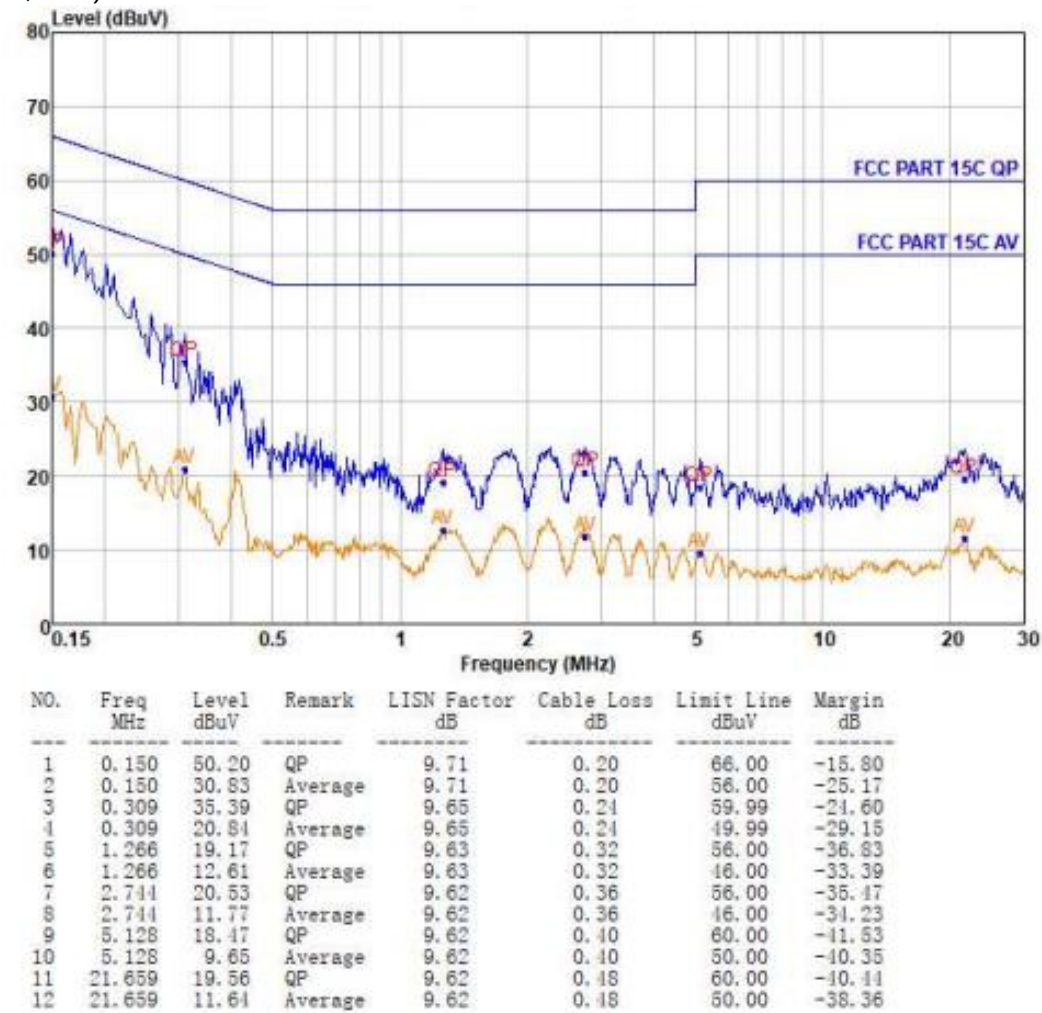
Level=Read Level + LISN Factor + Cable Loss

Quasi-peak and Average measurement

Neutral Line:

Peak scan

Level (dB μ V/m)



Level=Read Level + LISN Factor + Cable Loss

Quasi-peak and Average measurement

Test Result: The unit does meet the FCC requirements.

-- End of test report --