TEST REPORT

Application No.:	DNT2512310921R15602-17912
Applicant:	Shenzhen Nishen Technology Co., LTD
Address of Applicant:	Room 102, Building 214, Laowei, Bantian Community, Bantian Subdistrict, Longgang District, Shenzhen City
EUT Description:	Dog training collar
Model No.:	NK-001
FCC ID:	2BT3I-NK-001
Power Supply:	Input DC 5V; DC 3.7V from rechargeable lithium-ion battery
Trade Mark:	/
Standards:	47 CFR Part 2, Subpart J 47 CFR Part 15, Subpart C ANSI C63.10: 2020
Date of Receipt:	2025/12/31
Date of Test:	2025/12/31 to 2026/01/13
Date of Issue:	2026/01/13
Test Result:	**PASS**

Prepared By: Gale . Lin (Testing Engineer)

Reviewed By: Wayne . Lin (Project Engineer)

Approved By: Kevin Chen (Manager)

Note: If there is any objection to the results in this report, please submit a written inquiry to the company within 15 days from the date of receiving the report. The test report is effective only with both signature and specialized stamp, and is issued by the company in accordance with the requirements of the "Conditions of Issuance of Test Reports" printed in the attached page. Unless otherwise stated, the results presented in this report only apply to the samples tested this time. Partial reproduction of this report is not allowed unless approved by the company in writing.

Dongguan DN Testing Co., Ltd.

Add: No. 1, West Fourth Street, Xingfa South Road, Wusha Community, Chang 'an Town, Dongguan City, Guangdong P.R.China

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Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	January 13, 2026	Valid	Original Report

1 Test Summary

Test Item	Standard Section	Test Result	Result
Antenna Requirement	15.203	Clause 3.1	PASS
20dB Occupied Bandwidth	15.231(c)	Clause 3.2	PASS
Duration time	15.231(a)	Clause 3.3	PASS
Duty Cycle	--	Clause 3.4	PASS
Field Strength	15.231	Clause 3.5	PASS
Radiated Spurious Emissions	15.231, 15.209	Clause 3.6	PASS
AC Power Line Conducted Emissions	15.207	Clause 3.7	PASS

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2 General Information

2.1 Test Location

Company:	Dongguan DN Testing Co., Ltd
Address:	No. 1, West Fourth Street, South Xinfa Road, Wusha Liwu, Chang' an Town, Dongguan City, Guangdong P.R.China
Test engineer:	Gali Lin

2.2 General Description of EUT

Manufacturer:	Shenzhen Nishen Technology Co., LTD
Address of Manufacturer:	Room 102, Building 214, Laowei, Bantian Community, Bantian Subdistrict, Longgang District, Shenzhen City
EUT Description:	Dog training collar
Test Model No.:	NK-001
Additional Model(s):	/
Power Supply:	Input DC 5V; DC 3.7V from rechargeable lithium-ion battery
Chip Type:	300AS949516
Serial number:	PR2512310921R15602
Trade Mark:	/
Hardware Version:	V1.0
Software Version:	V1.0
Operation Frequency:	433MHz
Type of Modulation:	ASK
Sample Type:	Prototype production
Antenna Type:	☐ External, ☒ Integrated
Antenna Ports	☒ Ant 1, ☐ Ant 2, ☐ Ant 3
Antenna Gain*:	☒ Provided by applicant
	-2.12dBi
RF Cable*:	☒ Provided by applicant
	0.5dB(0.6~1GHz); 0.8dB(1.4~2GHz); 1.0dB(2.1~2.7GHz); 1.5dB(3~4GHz); 1.8dB(4.4~6GHz);
Remark: *Since the above data and/or information is provided by the applicant relevant results or conclusions of this report are only made for these data and/or information , DNT is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.	

2.3 Test Environment and Mode

Operating Environment:	
Temperature:	20~25.0 ˚C
Humidity:	45~56 % RH
Atmospheric Pressure:	101.0~101.30 KPa
Test mode:	
Transmitting mode:	Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate.

2.4 Channel List

Channel	Frequency
1	433MHz

2.5 Power Setting of Test Software

Software Name	N/A
Frequency(MHz)	433
Setting	Default

2.6 Assistant equipment used for test

Code	Equipment	Manufacturer	Model No.	Equipment No.
1	Adapter	Xiaomi	HW-100225C00	NA

2.7 Description of Support Units

The EUT has been tested independent unit.

2.8 Test Facility

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

Lab A:

• FCC, USA

Designation Number: CN1348

• A2LA (Certificate No. 7050.01)

DONGGUAN DN TESTING CO., LTD.

• Innovation, Science and Economic Development Canada

DONGGUAN DN TESTING CO., LTD. EMC Laboratory has been recognized by ISED as an accredited testing laboratory. CAB identifier is CN0149.

IC#: 30755.

2.9 Equipment List

For Connect EUT Antenna Terminal Test					
Description	Manufacturer	Model	Serial Number	Cal date	Due date
Signal Generator	Keysight	N5181A-6G	MY48180415	2025-10-21	2026-10-20
Signal Generator	Keysight	N5182B	MY57300617	2025-10-21	2026-10-20
Power supply	Keysight	E3640A	ZB2022656	2025-10-21	2026-10-20
Radio Communication Tester	R&S	CMW500	105082	2025-10-21	2026-10-20
Spectrum Analyzer	Aglient	N9010A	MY52220200	2025-10-21	2026-10-20
BT/WIFI Test Software	Tonscend	JS1120 V3.1.83	NA	NA	NA
RF Control Unit	Tonscend	JS0806-2	22F8060581	NA	NA
Power Sensor	Anritsu	ML2495A	2129005	2025-10-21	2026-10-20
Pulse Power Sensor	Anritsu	MA2411B	1911397	2025-10-21	2026-10-20
temperature and humidity box	SCOTEK	SCD-C40-80PRO	6866682020008	2025-10-21	2026-10-20
RF Cable	ETS-LINDGREN	RFC-NMS-100-NMS-350-IN	NA	2025-10-21	2026-10-20

Test Equipment for Conducted Emission					
Description	Manufacturer	Model	Serial Number	Cal Date	Due Date
Receiver	R&S	ESCI3	101152	2025-10-21	2026-10-20
LISN	R&S	ENV216	102874	2025-10-21	2026-10-20
ISN	R&S	ENY81-CA6	1309.8590.03	2025-10-21	2026-10-20
RF Cable	ETS-LINDGREN	Cable-CE TS01	/	2025-10-21	2026-10-20

Test Equipment for Radiated Emission(30MHz-1000MHz)					
Description	Manufacturer	Model	Serial Number	Cal Date	Due Date
Receiver	R&S	ESR7	102497	2025-10-21	2026-10-20
Test Software	ETS-LINDGREN	TiLE-FULL	NA	NA	NA
RF Cable	ETS-LINDGREN	RE Cable-TS01	NA	2025-10-21	2026-10-20

Log periodic antenna	ETS-LINDGREN	VULB 9168	01475	2025-10-21	2026-10-20
Pre-amplifier	Schwarzbeck	BBV9743B	00423	2025-10-21	2026-10-20
Attenuator 1	Shanghai Huaxiang	TS2-6-18-A	22061803	2025-5-6	2026-5-5
Attenuator 2	Shanghai Huaxiang	TS2-6-6-A	230927163	2025-5-6	2026-5-5

Test Equipment for Radiated Emission(Above 1000MHz)					
Description	Manufacturer	Model	Serial Number	Cal Date	Due Date
Frequency analyser	Keysight	N9010A	MY52221458	2025-10-21	2026-10-20
RF Cable	ETS-LINDGREN	RE Cable-TS02	NA	2025-10-21	2026-10-20
Horn Antenna	ETS-LINDGREN	3117	00252567	2025-10-21	2026-10-20
Double ridged waveguide antenna	ETS-LINDGREN	3116C	00251780	2025-10-21	2026-10-20
Test Software	ETS-LINDGREN	TiLE-FULL	NA	NA	NA
Pre-amplifier	ETS-LINDGREN	3117-PA	252567	2025-10-21	2026-10-20
Pre-amplifier	ETS-LINDGREN	3116C-PA	251780	2025-10-21	2026-10-20

2.10 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Total RF power, conducted	±0.41dB
2	RF power density, conducted	±1.96dB

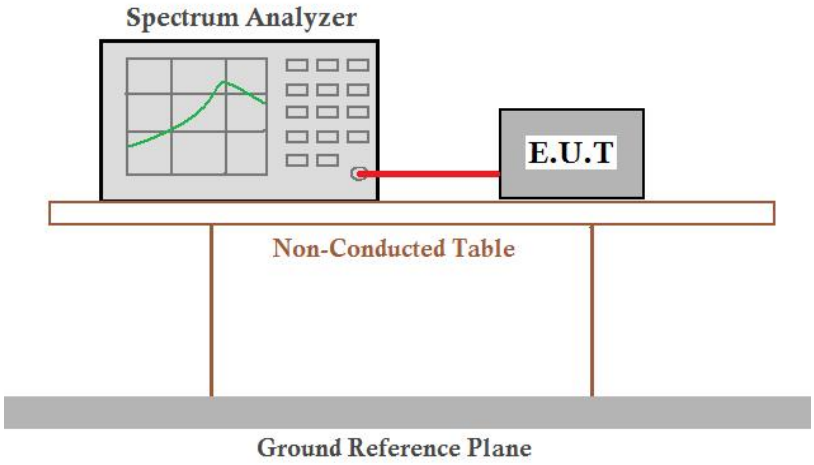
No.	Item	Measurement Uncertainty
1	Conduction Emission	± 3.0dB (150kHz to 30MHz)
2	Radiated Emission	± 4.8dB (Below 1GHz)
		± 4.8dB (1GHz to 6GHz)
		± 4.5dB (6GHz to 18GHz)
		± 5.02dB (Above 18GHz)

3 Test results and Measurement Data

3.1 Antenna requirements

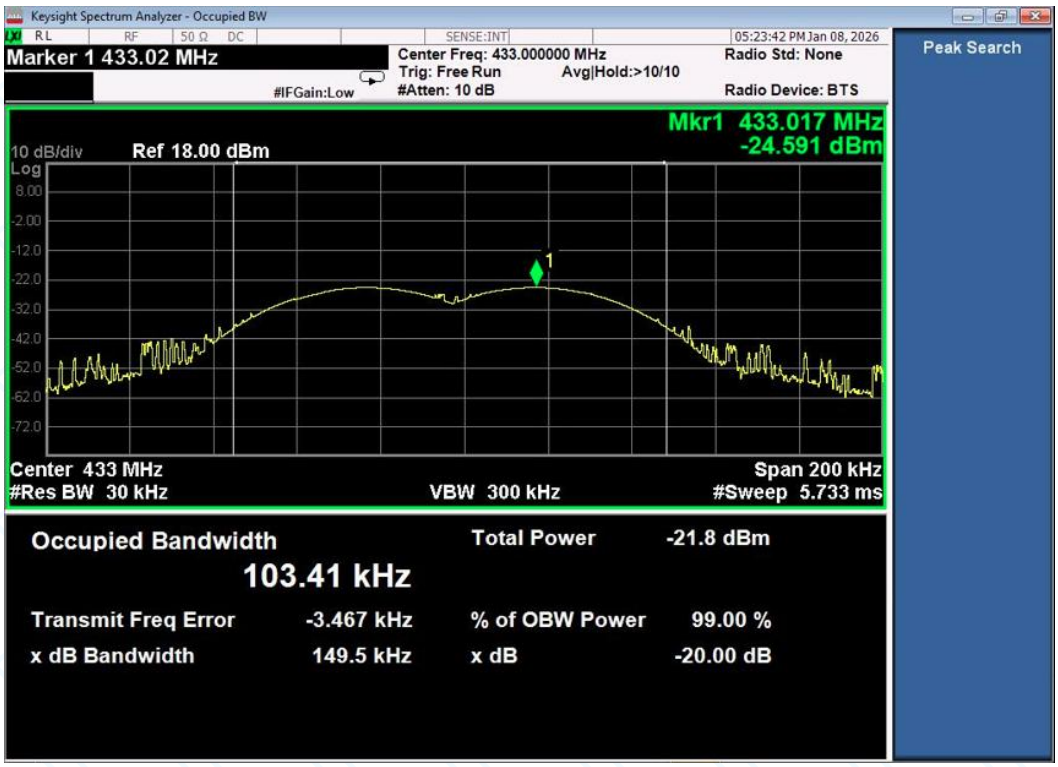
Standard requirement:	47 CFR Part 15C Section 15.203 /247(c)
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §§15.211, 15.213, 15.217, 15.219, 15.221, or §15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.	
The antenna is welded on the main PCB and no consideration of replacement. The best case gain of the antenna is -2.12dBi.	

3.2 20dB Occupied Bandwidth

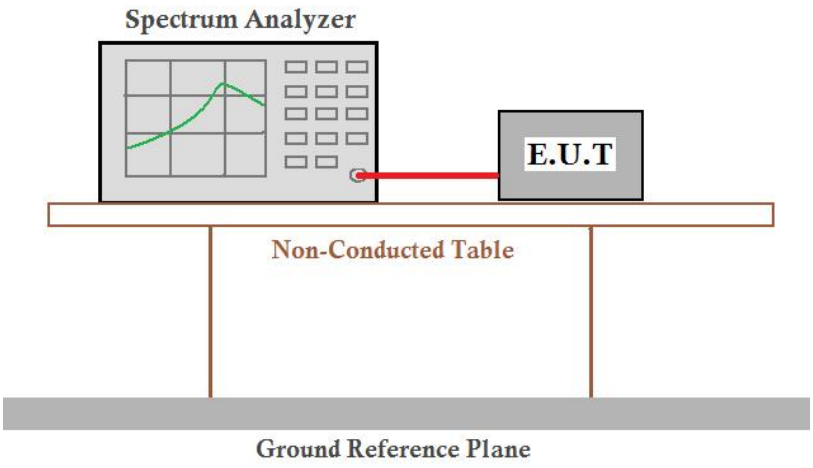
Test Requirement:	47 CFR Part 15C Section 15.231
Test Method:	ANSI C63.10: 2020 Section 6.9.2
Test Setup:	
Instruments Used:	Refer to section 2.9 for details
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Through Pre-scan, find the worst case
Limit:	no wider than 0.25% of the center frequency
Test Results:	Pass

Test Data:

Test Frequency (MHz)	20dB Bandwidth (MHz)	Limit (MHz)	Result
433	0.1495	1.0825	Pass



3.3 Duration time

Test Requirement:	47 CFR Part 15C Section 15.231
Test Setup:	
Instruments Used:	Refer to section 2.9 for details
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Through Pre-scan, find the worst case
Limit:	(1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released. (2) A transmitter activated automatically shall cease transmission within 5 seconds after activation. (3) Periodic transmissions at regular predetermined intervals are not permitted. However, polling or supervision transmissions, including data, to determine system integrity of transmitters used in security or safety applications are allowed if the total duration of transmissions does not exceed more than two seconds per hour for each transmitter. There is no limit on the number of individual transmissions, provided the total transmission time does not exceed two seconds per hour.
Test produce	1. Connect EUT antenna terminal to the spectrum analyzer with RF cable. 2. Spectrum analyzer setting parameters： RBW:1MHz,VBW:1MHz,Span:0Hz. 3. Set the EUT transmit in normal use. 4. Adjust sweep time on the spectrum analyzer to capture at least one period of the pulse train of the EUT. 5. Allow trace to stabilize, use the marker-delta function to measure the on time and off time of the signal. 6. Record the results in the test report.
Test Results:	Pass

Test Data

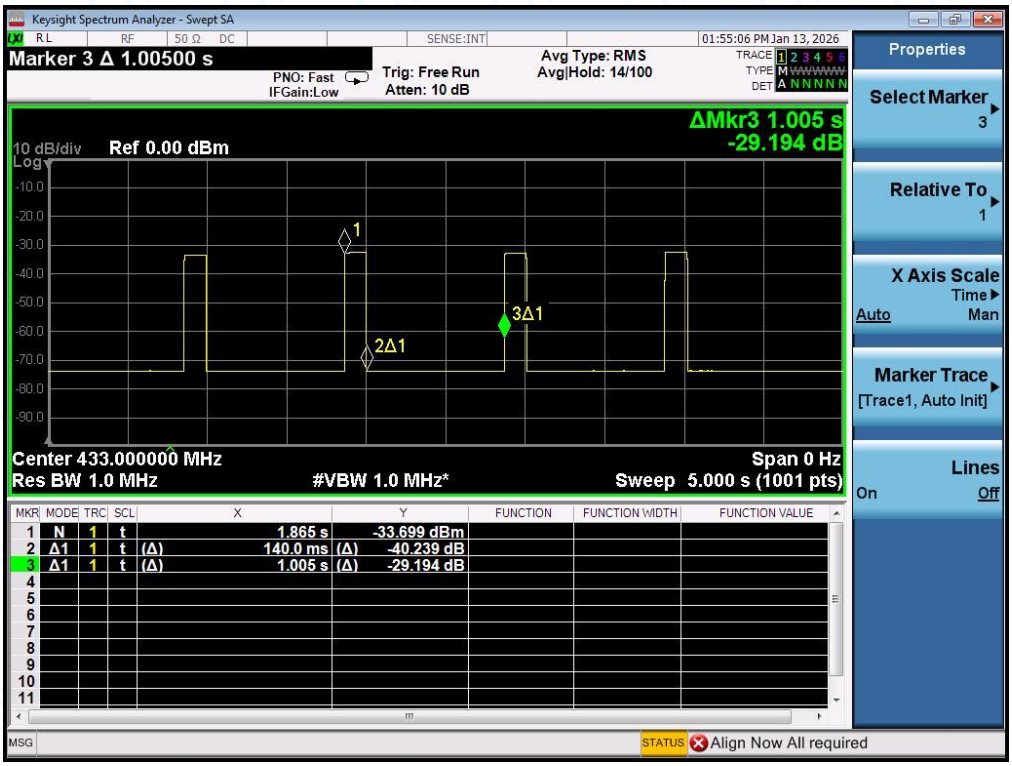
Test Frequency (MHz)	On Time (s)	Limit (s)	Result
433	3.185	5	Pass

Test Graphs

3.4 Duty Cycle

Limit :N/A

Test Graphs



If the pulse train is nonperiodic or is periodic with a period that exceeds 100 ms, or as an alternative to step f), then:

1) Set the TRIGGER on the spectrum analyzer to capture the greatest amount of pulse “ON time” over 100 ms.

2) Find the 100 ms period that contains the maximum “on time”; this may require summing the duration of multiple pulses as described in step f2).

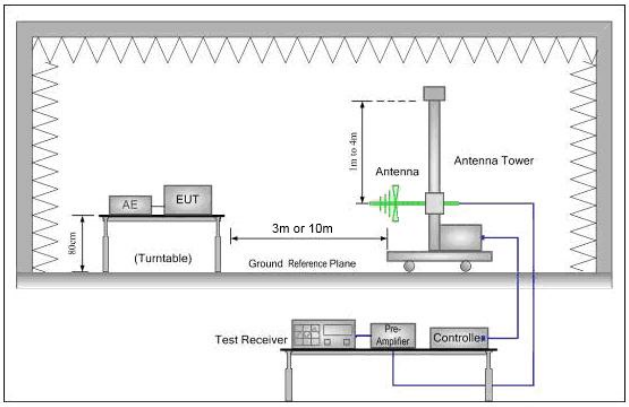
3) Determine the duty cycle by dividing the total maximum “ON time” by 100 ms (T(ON)/100 ms).

For EUT:

Since the single "On time" value is already greater than 100ms, the duty cycle is 100%.

20log(Duty cycle)=0

3.5 Field Strength

Test Requirement:	47 CFR Part 15C Section 15.231
Test Method:	ANSI C63.10 :2020 Section 11.12
Test Setup:	
Test Instruments:	Refer to section 2.9 for details
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Through Pre-scan, find the worst case

Limit:

Fundamental frequency (MHz)	Field strength of fundamental@3m (microvolts/meter)
40.66-40.70	2,250
70-130	1,250
130-174	[1]1,250 to 3,750
174-260	3,750
260-470	[1]3,750 to 12,500
Above 470	12,500

[1]Linear interpolations

The EUT fundamental frequency is 433MHz,So the Average Limit& Peak Limit is show in below table:

Fundamental frequency (MHz)	Field strength of fundamental@3m (dBμV/m)	
	Average Limit	Peak Limit
433	80.79	100.79

Note:

According to ANSI C63.10:2020 section 7.6.2:

The effective limit at the frequency of interest is found by linearly interpolating using the familiarslope-intercept formula, y = mx+b, rewritten as in Equation：

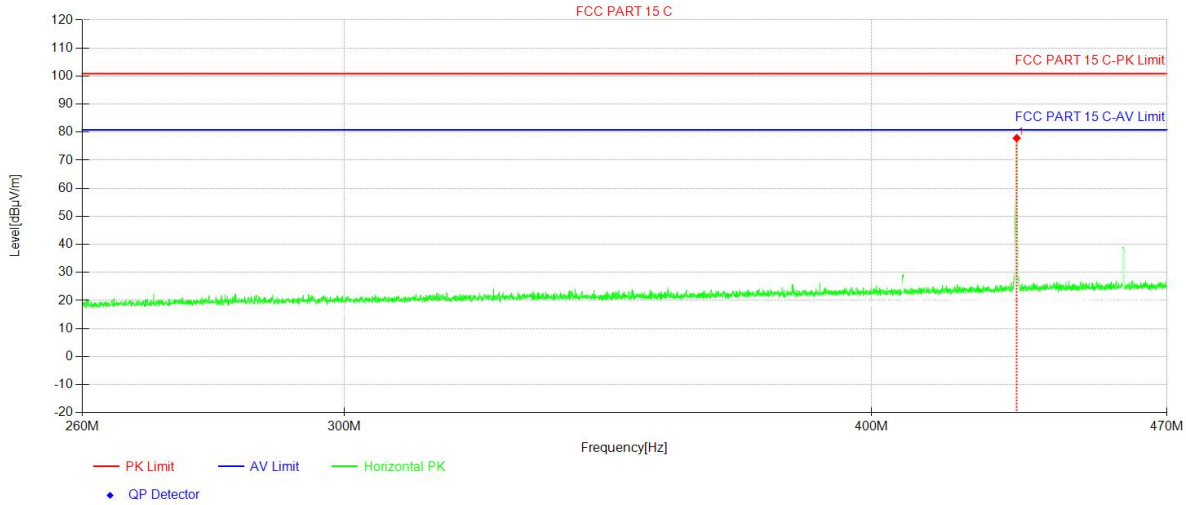
Limit[μV/m]=Limlower+ΔF[(Limupper-Limlower)/(fupper-flower)]

	where Lim_{lower} is the limit at the lower frequency of the intended band of operation Lim_{upper} is the limit at the upper frequency of the intended band of operation f_{lower} is the lower frequency of the intended band of operation f_{upper} is the upper frequency of the intended band of operation ΔF equals $f_c - f_{lower}$ f_c is the center frequency of the emission signal For fundamental frequency 433MHz: Average Limit(μV/m)=3750+(433-260)[(12500-3750)/(470-260)]=10958.33 2.AverageLimit(dBμV/m)=20×LOG[FieldStrength(μV/m)]=20×LOG(10958.33) =80.79 According to §15.35(b): Peak Limit (dBμV/m)= Average Limit (dBμV/m)+20dB=80.79+20=100.79
Test Configuration:	RBW: ≥OBW VBW: 3XRBW Start frequency: 260MHz Stop frequency: 470MHz Sweep Time: Auto Detector: PEAK/AVG Trace Mode: Max Hold
Test Procedure:	a. the EUT was placed on the top of a rotating table 1 meters above the ground at a 3 meter semi-anechoic camber. 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 antenna height 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(for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) 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 Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. g. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case. r. Repeat above procedures until all frequencies measured was complete.
Test Results:	Pass

Test Data

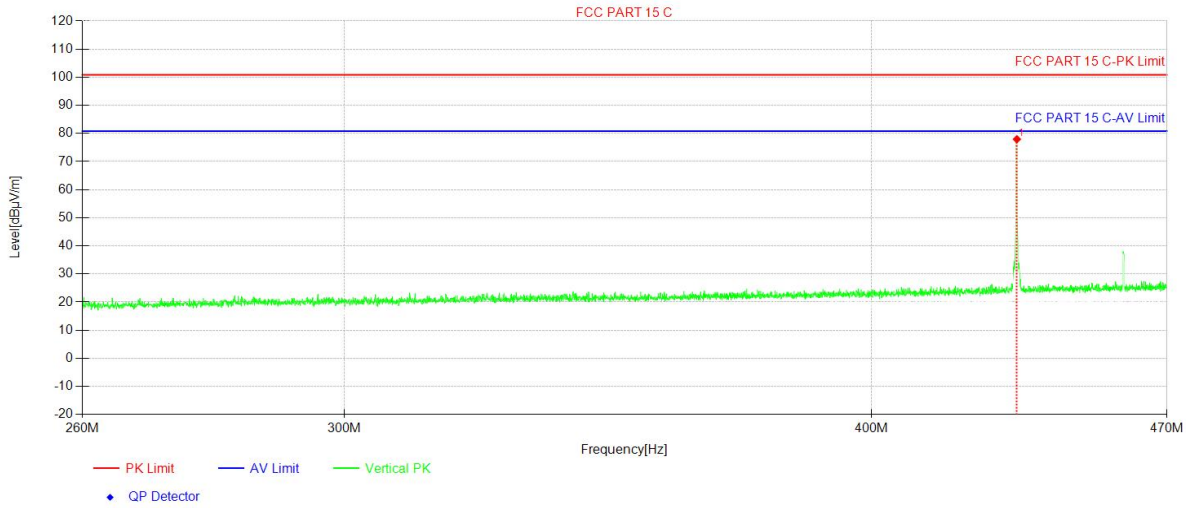
Frequency (MHz)	20log (Duty cycle) (dB)	Peak Level (dBμV/m)	Average Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector Type	Polarity
432.99	0	77.89	77.89	80.79	2.90	AVG	H
433.03	0	77.95	77.95	80.79	2.84	AVG	V

Horizontal:



NO.	Freq. [MHz]	Reading Level [dBμV]	Correct Factor [dB/m]	Result Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	432.99	81.14	-3.25	77.89	100.83	22.94	100	330	PK

Vertical:



NO.	Freq. [MHz]	Reading Level [dBμV]	Correct Factor [dB/m]	Result Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	433.03	81.19	-3.24	77.95	100.83	22.88	100	63	PK

Note

1. The Measurement (Result Level) is calculated by Reading Level adding the Correct Factor(maybe including LISN Factor and the Cable Factor etc.), The basic equation is as follows:

Result Level= Reading Level + Correct Factor(including Ant.Factor ,Cable Factor etc.)

2. Since the Peak value is below the limit set by AV, we conclude that AV also meets the limit requirements.

3.6 Radiated Spurious Emissions

Test Requirement:	47 CFR Part 15C Section 15.231 47 CFR Part 15C Section 15.209				
Test Method:	ANSI C63.10 :2020 Section 11.12				
Test Site:	Measurement Distance: 3m or 10m (Semi-Anechoic Chamber)				
Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
	0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
	0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
	0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
	0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
Limit:	15.209 **Radiated emission limits**				
	Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
	1.705MHz-30MHz	30	-	-	30
	30MHz-88MHz	100	40.0	Quasi-peak	3
	88MHz-216MHz	150	43.5	Quasi-peak	3
	216MHz-960MHz	200	46.0	Quasi-peak	3
	960MHz-1GHz	500	54.0	Quasi-peak	3
	Above 1GHz	500	54.0	Average	3
	Remark:Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device. The limits on the field strength of the spurious emissions in the below table are based on the fundamental frequency of the intentional radiator. Spurious emissions shall be attenuated to the average (or, alternatively, CISPR quasi-peak) limits shown in this table or to the general limits shown in §15.209, whichever limit permits a higher field strength.				

Fundamental frequency (MHz)	Field strength of spurious emission@3m (microvolts/meter)
40.66-40.70	225
70-130	125
130-174	[1]125 to 375
174-260	375
260-470	[1]375 to 1,250
Above 470	1,250
[1]Linear interpolations	

The EUT fundamental frequency is 433MHz,So the Average Limit& Peak Limit is show in below table:

Fundamental frequency (MHz)	Field strength of spurious emission@3m (dBμV/m)	
	Average Limit	Peak Limit
433	60.79	80.79

Note:

According to ANSI C63.10:2020 section 7.6.2:

The effective limit at the frequency of interest is found by linearly interpolating using the familiarslope-intercept formula, y = mx+b, rewritten as in Equation：

Limit[μV/m]=Limlower+ΔF[(Limupper-Limlower)/(fupper-flower)]

where

Lim_{lower} is the limit at the lower frequency of the intended band of operation

Lim_{upper} is the limit at the upper frequency of the intended band of operation

f_{lower} is the lower frequency of the intended band of operation

f_{upper} is the upper frequency of the intended band of operation

ΔF equals $f_c - f_{lower}$

f_c is the center frequency of the emission signal

For fundamental frequency 433MHz:

Average Limit(μV/m)=375+(433-260)[(1250-375)/(470-260)]=1095.833

2.AverageLimit(dBμV/m)=20×LOG[FieldStrength(μV/m)]=20×LOG(1095.833)
=60.79

According to §15.35(b):

Peak Limit (dBμV/m)= Average Limit (dBμV/m)+20dB=60.79+20=80.79

Test Setup:

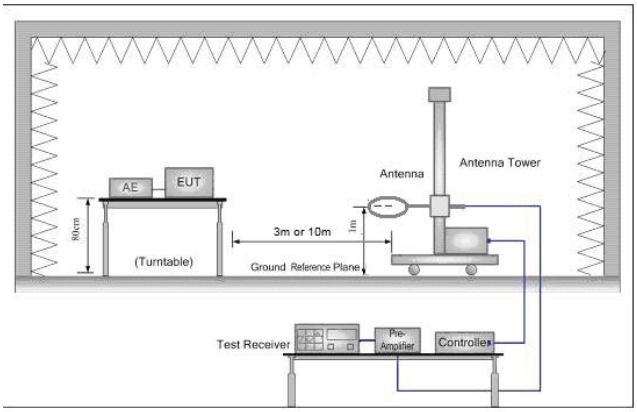


Figure 1. Below 30MHz

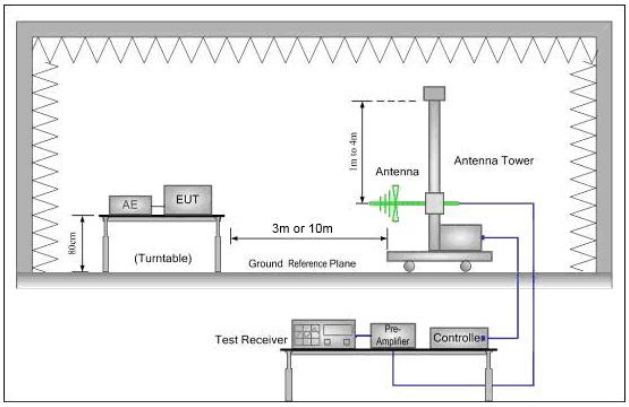


Figure 2. 30MHz to 1GHz

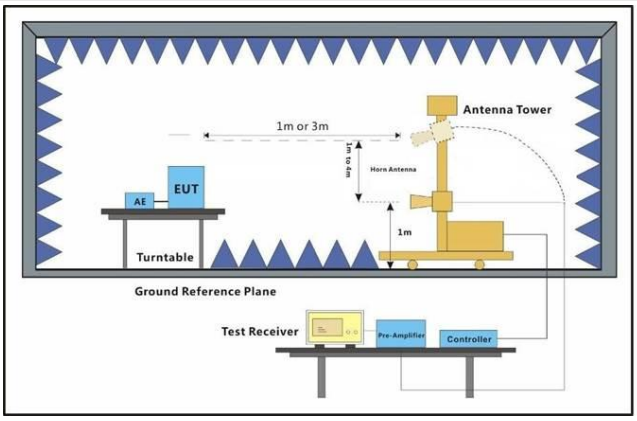


Figure 3. Above 1 GHz

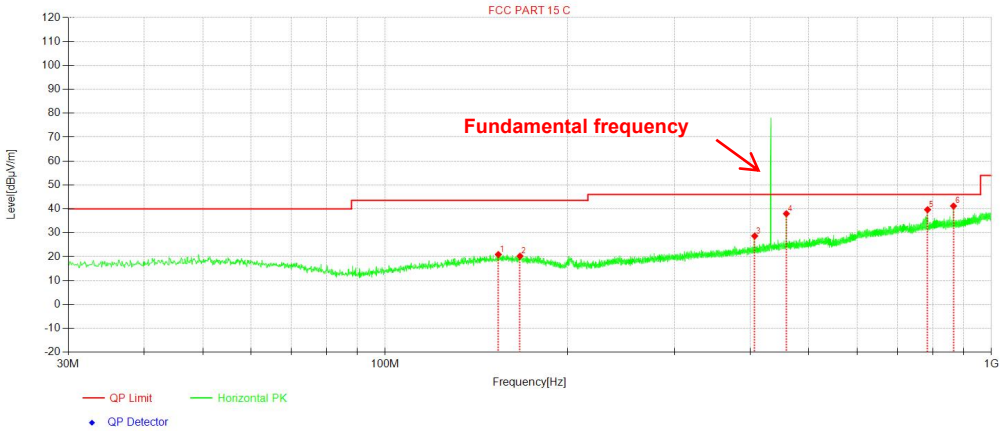
Test Procedure:	h. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation. i. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation j. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. k. The antenna height 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. l. 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(for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. m. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. n. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. o. Test the EUT in the lowest channel, the middle channel ,the Highest channel. p. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case. q. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates. Charge + Transmitting mode.

Final Test Mode:	Pretest the EUT at Charge + Transmitting mode. Through Pre-scan, find the worst case.
Instruments Used:	Refer to section 2.9 for details
Test Results:	Pass

Test data

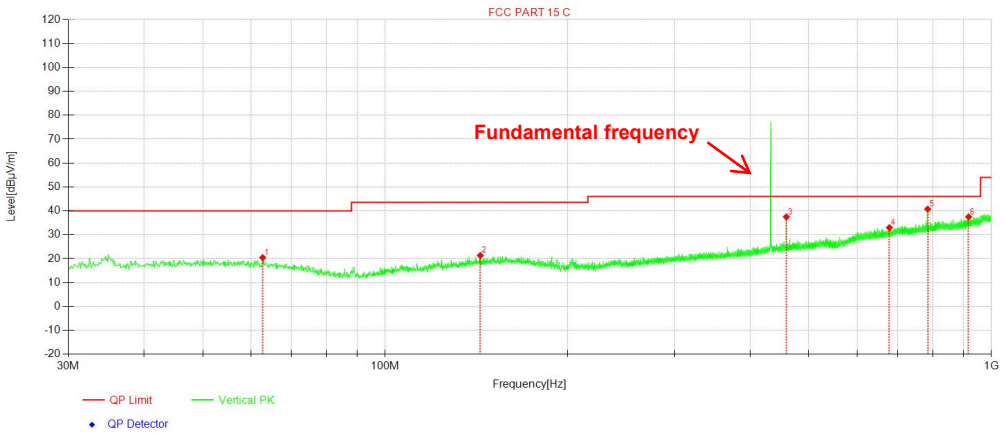
For 30-1000MHz TX

Horizontal:



NO.	Freq. [MHz]	Reading Level [dBμV]	Correct Factor [dB/m]	Result Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	153.69	28.70	-7.79	20.91	43.50	22.59	100	73	PK
2	166.88	28.33	-8.08	20.25	43.50	23.25	100	52	PK
3	406.98	32.86	-4.21	28.65	46.00	17.35	100	316	PK
4	458.98	40.56	-2.58	37.98	46.00	8.02	100	336	PK
5	784.74	35.64	4.03	39.67	46.00	6.33	100	0	PK
6	866.03	36.63	4.57	41.20	46.00	4.80	100	336	PK

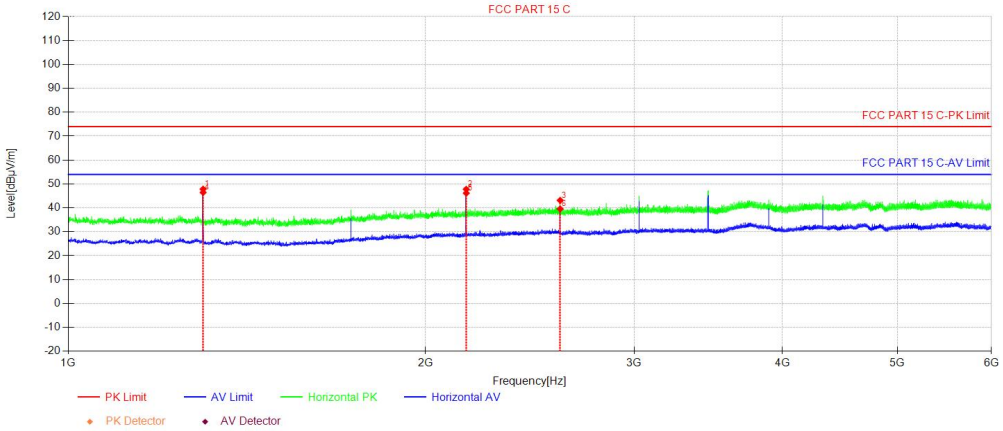
Vertical:



NO.	Freq. [MHz]	Reading Level [dBμV]	Correct Factor [dB/m]	Result Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	62.79	29.51	-9.07	20.44	40.00	19.56	150	125	PK
2	143.50	29.61	-8.26	21.35	43.50	22.15	150	255	PK
3	458.98	40.06	-2.58	37.48	46.00	8.52	150	104	PK
4	678.90	31.03	1.93	32.96	46.00	13.04	150	187	PK
5	785.12	36.71	4.03	40.74	46.00	5.26	150	51	PK
6	917.25	31.76	5.70	37.46	46.00	8.54	150	250	PK

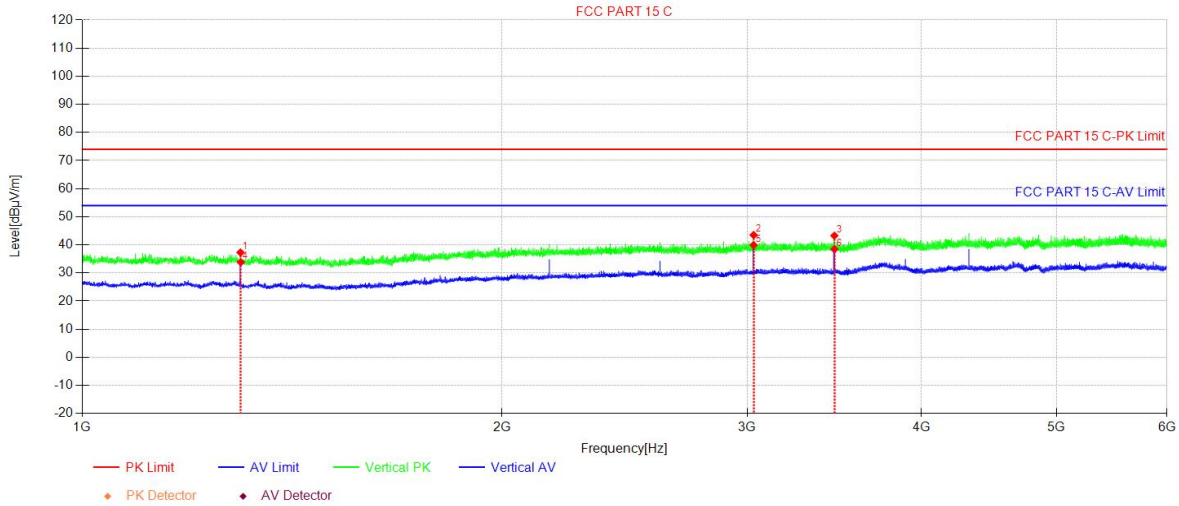
For above 1GHz TX

Horizontal



NO.	Freq. [MHz]	Reading Level [dBμV]	Correct Factor [dB/m]	Result Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	1299.01	63.42	-15.58	47.84	74.00	26.16	150	132	PK
2	2165.06	59.12	-11.33	47.79	74.00	26.21	150	31	PK
3	2598.08	52.38	-9.23	43.15	74.00	30.85	150	146	PK
4	1299.26	62.01	-15.58	46.43	54.00	7.57	150	117	AV
5	2165.31	57.48	-11.33	46.15	54.00	7.85	150	31	AV
6	2598.08	48.79	-9.23	39.56	54.00	14.44	150	3	AV

Vertical:



NO.	Freq. [MHz]	Reading Level [dBμV]	Correct Factor [dB/m]	Result Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	1298.76	52.85	-15.58	37.27	74.00	36.73	150	208	PK
2	3031.10	51.81	-8.31	43.50	74.00	30.50	150	0	PK
3	3463.87	51.18	-7.90	43.28	74.00	30.72	150	66	PK
4	1299.26	49.42	-15.58	33.84	54.00	20.16	150	208	AV
5	3031.10	48.22	-8.31	39.91	54.00	14.09	150	356	AV
6	3464.12	46.38	-7.90	38.48	54.00	15.52	150	110	AV

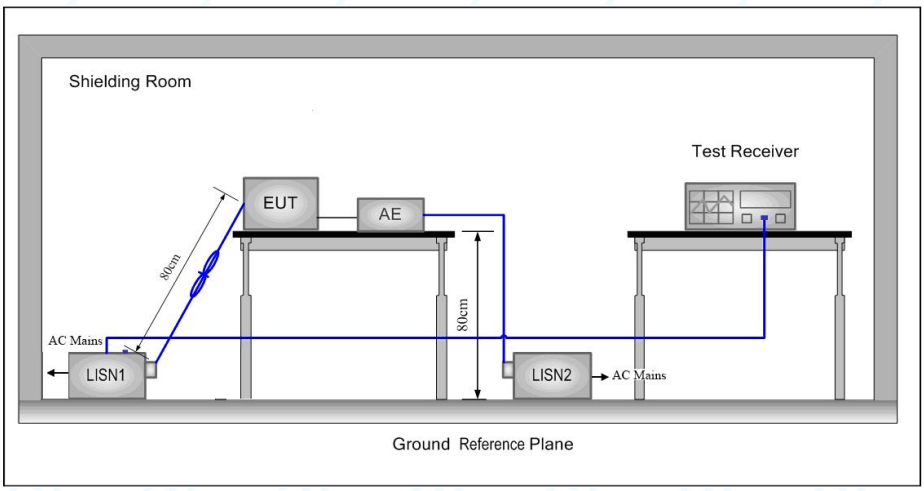
Note:

1. The Measurement (Result Level) is calculated by Reading Level adding the Correct Factor(maybe including Ant.Factor and the Cable Factor etc.), The basic equation is as follows:

Measurement Level= Reading Level + Correct Factor(including LISN Factor ,Cable Factor etc.)

2. The amplitude of 9KHz to 30MHz spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

3.7 AC Power Line Conducted Emissions

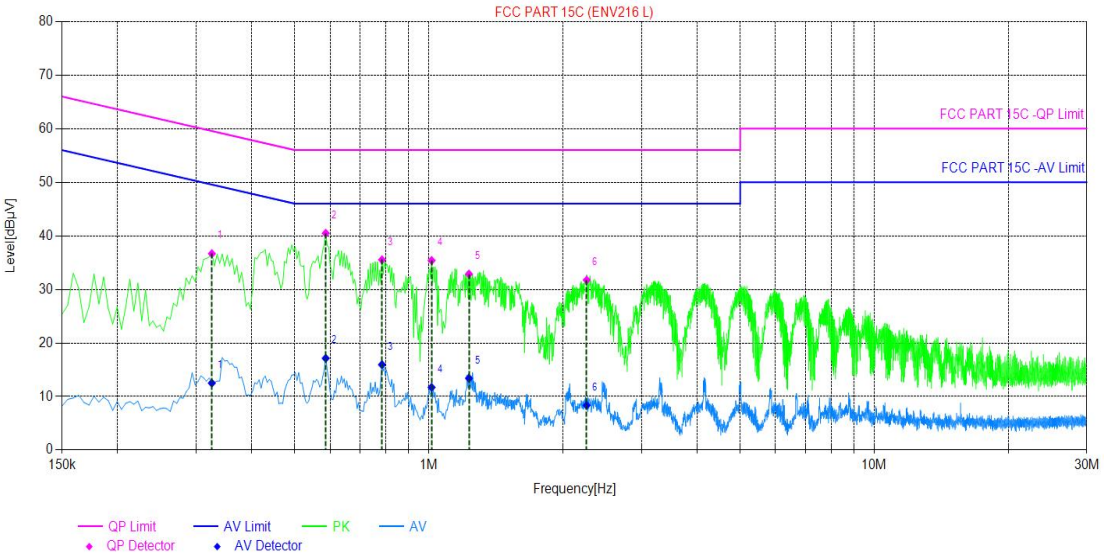
Test Requirement:	47 CFR Part 15C Section 15.207		
Test Method:	ANSI C63.10: 2020		
Test Frequency Range:	150kHz to 30MHz		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
	* Decreases with the logarithm of the frequency.		
Test Procedure:	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 50Ω/50μH + 5Ω 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, 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. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 2020 on conducted measurement.		
Test Setup:			
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.		

	Charge + Transmitting mode.
Final Test Mode:	Through Pre-scan, find the 6.5Mbps of rate of 802.11n(HT20) at lowest channel is the worst case. Charge + Transmitting mode. Only the worst case is recorded in the report.
Instruments Used:	Refer to section 2.9 for details
Test Results:	PASS

Measurement Data

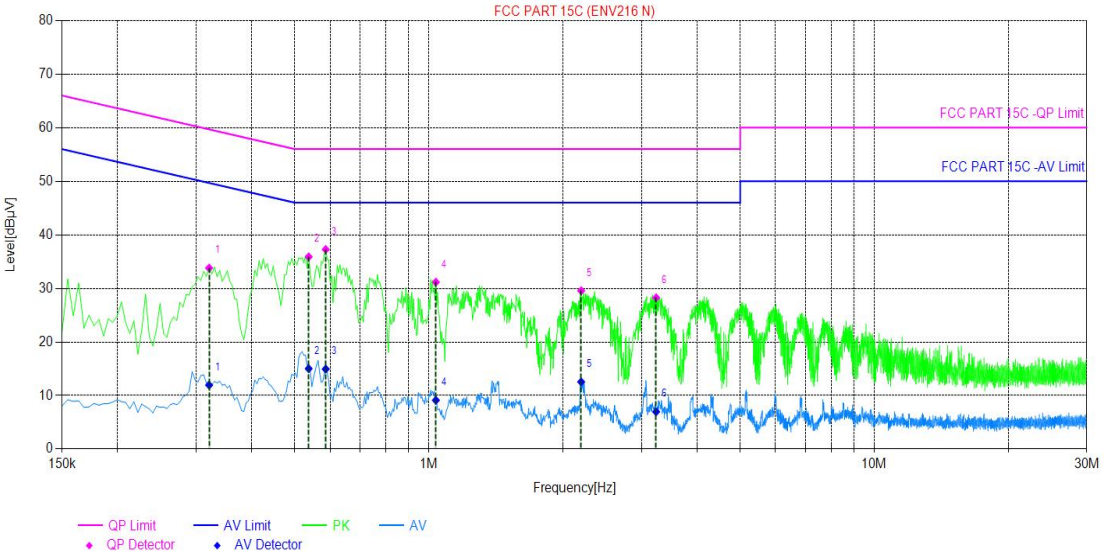
An initial pre-scan was performed on the live and neutral lines with peak detector.
Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Live Line:



Final Data List									
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict
1	0.3255	9.86	36.67	59.57	22.90	12.51	49.57	37.06	PASS
2	0.5865	9.83	40.48	56.00	15.52	17.14	46.00	28.86	PASS
3	0.7845	9.75	35.53	56.00	20.47	15.95	46.00	30.05	PASS
4	1.014	9.72	35.40	56.00	20.60	11.71	46.00	34.29	PASS
5	1.23	9.73	32.86	56.00	23.14	13.40	46.00	32.60	PASS
6	2.2605	9.74	31.74	56.00	24.26	8.36	46.00	37.64	PASS

Neutral Line:



Final Data List									
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict
1	0.321	9.88	33.80	59.68	25.88	11.94	49.68	37.74	PASS
2	0.537	9.73	35.89	56.00	20.11	15.02	46.00	30.98	PASS
3	0.5865	9.77	37.26	56.00	18.74	14.94	46.00	31.06	PASS
4	1.0365	9.69	31.16	56.00	24.84	9.12	46.00	36.88	PASS
5	2.1975	9.79	29.56	56.00	26.44	12.54	46.00	33.46	PASS
6	3.237	9.89	28.25	56.00	27.75	6.97	46.00	39.03	PASS

Remark:

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

2. The Measurement (Result Level) is calculated by Reading Level adding the Correct Factor(maybe including LISN Factor and the Cable Factor etc.), The basic equation is as follows:

Result Level= Reading Level + Correct Factor(including LISN Factor, Cable Factor etc.)

---END REPORT--