TEST REPORT

Applicant:	Aurodi Corporation
Address of Applicant:	Suite 1100, 7887 E Belleview Ave, Denver, CO 80111, United States
Manufacturer:	Jingrui Inspire Co.,Ltd.
Address of Manufacturer:	RM1306, Block 3 (C-1), Runhui Science Park,18 Shenzhou Rd., Huangpu Dist., Guangzhou, Guangdong Prov., P.R. China, 510663
Product name:	4G Temp sensor
Model(s):	VTS11W01, VTS11W02, VTS11W03, VTS11W04, VTS11W05, VTS11W06, VTS11P01
Rating(s):	INPUT: AC 100-240V, 50/60 Hz, 0.5A OUTPUT: DC 5V 2A
Trademark:	V-MARK
Standards:	47 CFR Part 15C 15.225
FCC ID:	2BBTA-VTS11W0X
Data of Receipt:	2025-07-30
Date of Test:	2025-07-30~2025-11-25
Date of Issue:	2025-11-25
Test Result	**Pass***

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

Authorized for issue by:

Test by:

Nov.25, 2025 Chivas Tsang Chivas
Project Engineer

Date Name/Position Signature

Reviewed by:

Nov.25, 2025 Victor Meng Victor
Project Manager

Date Name/Position Signature

Testing Laboratory information:

Testing Laboratory Name ..... :		ITL Co., Ltd
Address	:	No. 8 Jinqianling Street 5, Huangjiang Town, Dongguan, Guangdong, 523757 P.R.C.
Testing location	:	Same as above
Tel	:	0086-769-39001678
Fax	:	0086-20-62824387
E-mail	:	itl@i-testlab.com

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)

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.

General product information:

1.VTS11W02 uses an External digital temperature probe, measurement range: -40℃~105℃.

2.VTS11W03 uses an PT1000 platinum resistance temperature probe, measurement range: -200℃~200℃.

3. VTS11W04 uses an Built-in temperature and humidity probe, measurement range: -40℃~85℃,0~100%RH.

4.VTS11W05 uses an High precision External digital temperature probe, measurement range: -40℃~105℃.

5. VTS11W06 uses an High precision External temperature and humidity probe, measurement range: -40℃~85℃,0~100%RH.

6. VTS11P01 Support multiple temperature/humidity probes, It includes the following types, and only one can be connected at a time：

Ordinary External Digital Temperature Probe;
PT1000 Platinum Resistance Temperature Probe;
High Precision External Digital Temperature Probe;
High Precision External Temperature and Humidity Probe;
These differences do not affect the RF characteristics or EMC performance of the product.
All listed variants are therefore electrically and functionally equivalent to the certified model VTS11W01.

1 Test Summary

Test	Test Requirement	Result
Antenna Requirement	FCC PART 15 C Section 15.203	PASS
Occupied Bandwidth	FCC PART 15 C section 15.215	PASS
Conducted Emission	FCC PART 15 C section 15.207	PASS
Radiated Spurious Emission	FCC PART 15 C section 209(a), 15.225(d)	PASS
Transmitter Frequency Stability (Temperature & Voltage Variation)	FCC PART 15 C section.225(e)	PASS
Band Edge Emission	FCC PART 15C section.209(a), 15.225(a)(b)(c)(d)	PASS

2 Contents

3 General Information

3.1 Client Information

Applicant:	Aurodi Corporation
Address of Applicant:	Suite 1100, 7887 E Belleview Ave, Denver, CO 80111, United States

3.2 General Description of E.U.T.

Name:	4G Temp sensor
Model No.:	VTS11W01
Trade Mark:	V-MARK
Operating Frequency:	13.56 MHz
Modulation:	ASK
Antenna gain:	Coli Antenna with Max Peak 0 dBi gain

3.3 Details of E.U.T.

EUT Power Supply:	INPUT: AC 100-240V, 50/60 Hz, 0.5A OUTPUT: DC 5V 2A
Test mode:	The program used to control the EUT for staying in continuous transmitting.

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, Huangjiang Town, Dongguan, Guangdong, 523757 P.R.C.
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 Designation No.:CN5035**
- **IC Registration No.: 12593A**
- **NVLAP LAB CODE: 600199-0**

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	2.25%
total RF power, conducted	±1.34 dB
RF power density , conducted	±1.49 dB
All emissions, radiated	±2.72 dB
Temperature	±5.02 °C
Humidity	±0.8°C
DC and low frequency voltages	±1.5 %
All emissions, conducted	±2.30 dB

4 Instruments Used during Test

No.	Test Equipment	Manufacturer	Model	Serial No.	Cal Data	Due Date
DGITL-115	50Ω Coaxial Cable	Mini-cicuts	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	2026.01.09
DGITL-191	Filter	COM-MW	K6-5150-5850-100S5010-003	12234382	2025.01.10	2026.01.09
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	2026.03.14
DGITL-376	Wideband Radio Communication Tester	SCHWARZBECK	CMW500	LR114195	2025.03.14	2026.03.14
DGITL-349a	Vector Signal Generator	ROHDE&SCHWARZ	SMBV100A	259268	2025.03.14	2026.03.14
DGITL- 306	Spectrum Analyzer	Agilent Technologies	N9010A	MY54200334	2025.03.14	2026.03.14
DGITL- 352	Pre Amplifier	Mlnl-Clrcuits	ZFC-1000HX	SN292801110	2025.03.14	2026.03.14
DGITL-375	Spectrum Analyzer	SCHWARZBECK	FSV40-N	6625-01-588-5515	2025.03.14	2026.03.14
DGITL-309	Horn Antenna	ETS Lindgren	3117	SN00152265	2025.05.13	2027.05.14
DGITL-308	Bilog Antenna	ETS· Lindgren	3142E	156975	2025.05.13	2027.05.14
DGITL-350	Wideband Amplifier Super Ultra	Mlnl-Clrcuits	ZVA-183X-S+	SN986401426	2025.03.14	2026.03.14
DGITL-371	Pre Amplifier	teramicrowave	TALA-0040G35	18081001	2025.03.14	2026.03.14
DGITL-363	Active Loop Antenna	SCHWARZBECK	FMZB1519B	00062	2024.05.15	2026.05.11
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: AC 120V, 60Hz

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 device operates	Number of frequencies	Location in frequency range of operation
1 MHz or less	1	Middle
1 MHz to 10 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 in the device	**Upper frequency range of measurement**
9 KHz to below 10 GHz	10th harmonic of highest fundamental frequency or to 40 GHz, whichever is lower
At or above 10 GHz to below 30 GHz	5th harmonic of highest fundamental frequency or to 100 GHz, whichever is lower
At or above 30 GHz	5th harmonic of highest fundamental frequency or to 200 GHz, whichever is lower, unless otherwise specified

Test frequency: 13.56MHz

Test the EUT in continuous transmission mode, duty cycle＞98%.

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.

5.2.1 Test Result (Antenna Requirement)

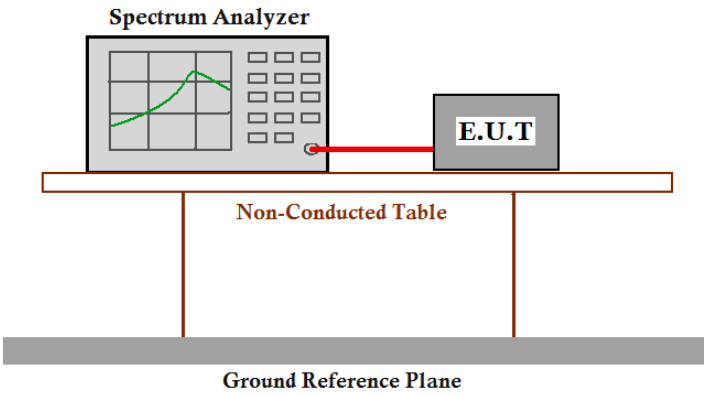
The antenna is a Coli Antenna and no consideration of replacement. The best case gain of the antenna is 0 dBi.

Test Result: The unit does meet the FCC requirements.

5.3 20 dB Bandwidth

Test Requirement:	FCC PART 15 C section 15.215
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.

5.3.1 Test Configuration

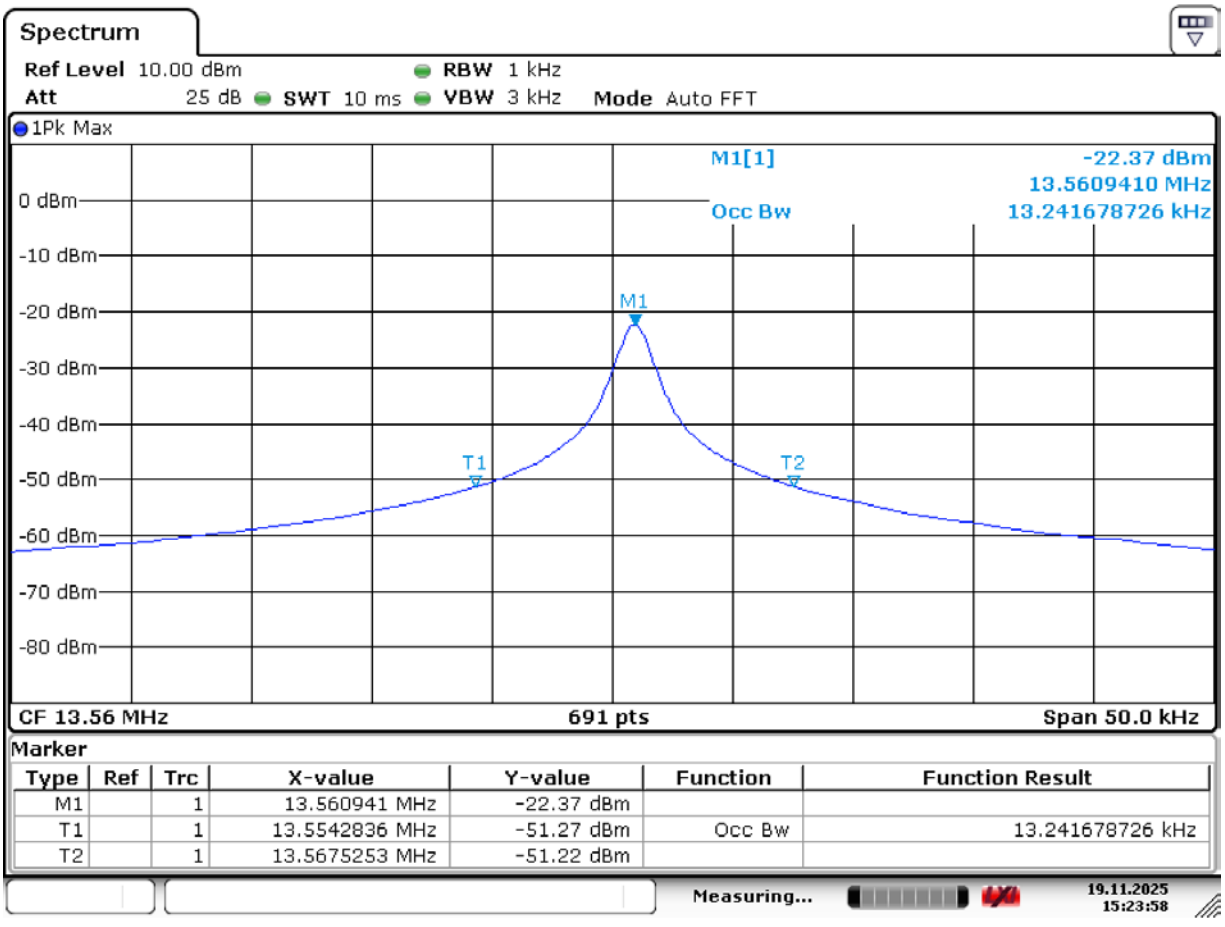


Test Procedure:

1. The EUT which is powered by the AC 120V/60Hz is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50 Ω; the path loss and Attn as the factor is calibrated to correct the reading.
2. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
3. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range: . Set a reference level on the measuring instrument equal to the highest peak value.
4. Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.

5.3.2 Test result (20 dB Bandwidth)

Frequency (MHz)	Measured 20dB Bandwidth (KHz)
13.56	13.24



Date: 19.NOV.2025 15:23:58

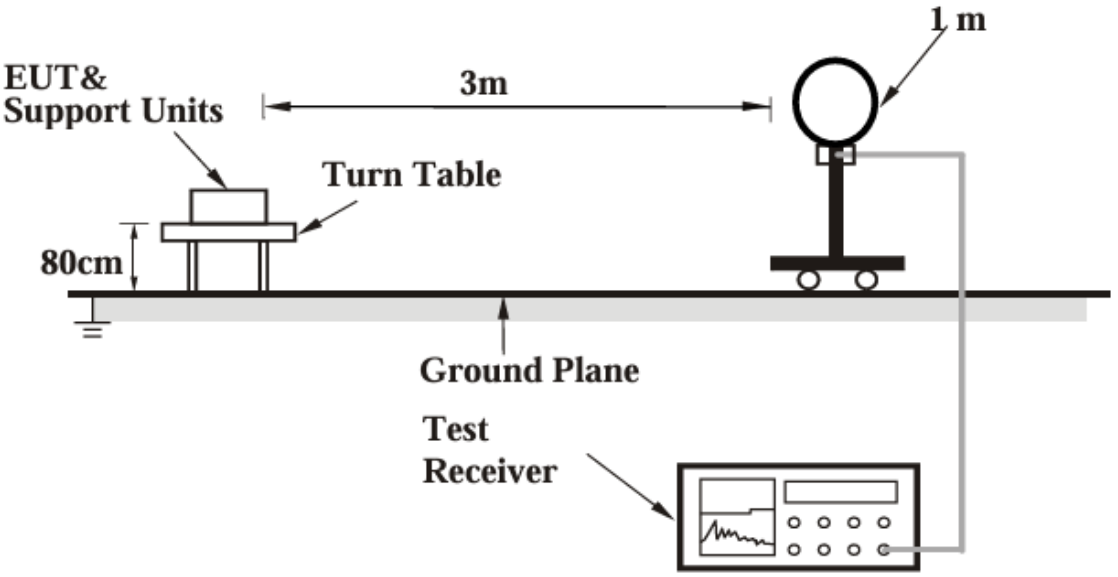
Test Result: The unit does meet the FCC requirements.

5.4 Radiated Spurious Emissions

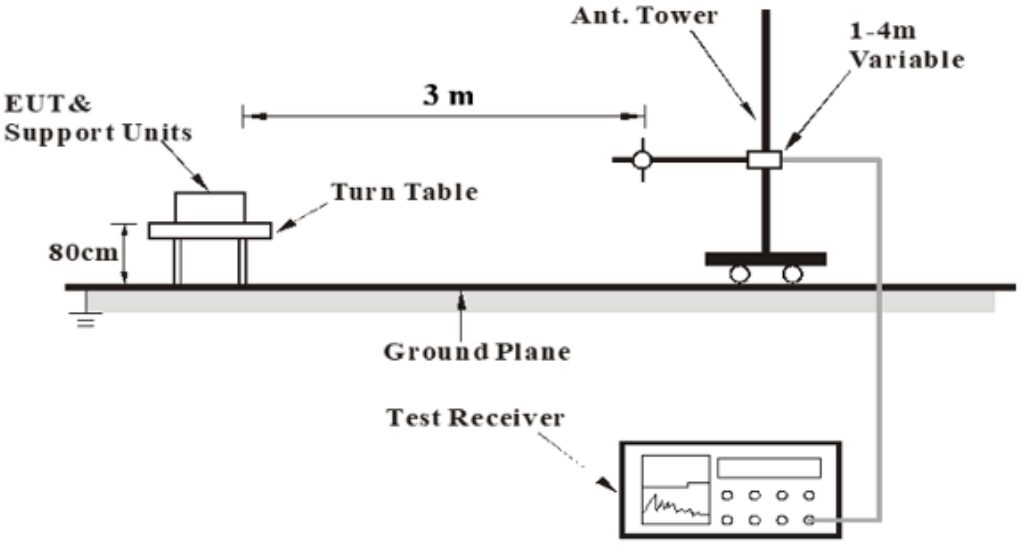
Test Requirement:	FCC Part 15 C section 15.209, 15.225(d) (d) In any 100 KHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating. The radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 KHz bandwidth within the band that Contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, and provided the transmitter demonstrates compliance with the peak conducted power limits.
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.
Detector:	For PK value: RBW = 1 MHz for f ≥ 1 GHz, 100 KHz for f < 1 GHz VBW ≥ RBW Sweep = auto Detector function = peak Trace = max hold For AV value: RBW = 1 MHz for f ≥ 1 GHz, 100 KHz for f <1 GHz, 9KHz for <30MHz VBW =10Hz Sweep = auto Detector function = peak Trace = max hold
15.209 Limit:	40.0 dBµV/m between 30MHz & 88MHz 43.5 dBµV/m between 88MHz & 216MHz 46.0 dBµV/m between 216MHz & 960MHz 54.0 dBµV/m above 960MHz

5.4.1 Test Configuration

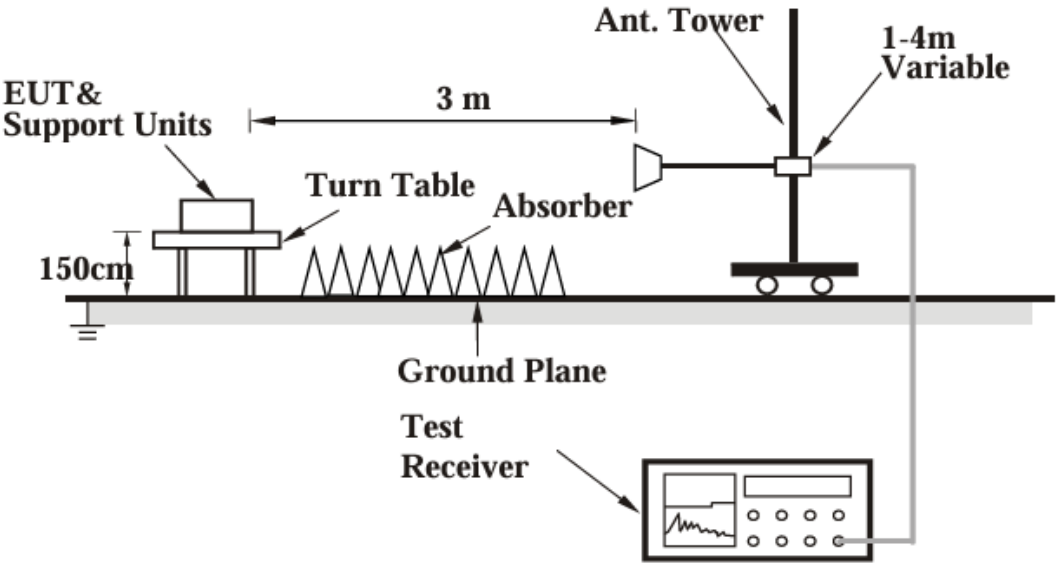
1) 9KHz to 30MHz emissions:



2) 30 MHz to 1 GHz emissions:



3) 1 GHz to 40 GHz emissions:



Test Procedure: (1) The receiver was scanned from 0.009MHz to 25GHz.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. After pre-test, It was found that the worse radiation emission was get at the X position. So the data shown was the X position only. The worst case emissions were reported.

(2) Now set the VBW to 10 Hz, while maintaining all of the other instrument settings. This peak level, once corrected, must comply with the limit specified in Section 15.209. If the dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a "duty cycle correction factor", derived from 20log(dwell time/100 ms), in an effort to demonstrate compliance with the 15.209 limit. Submit this data.

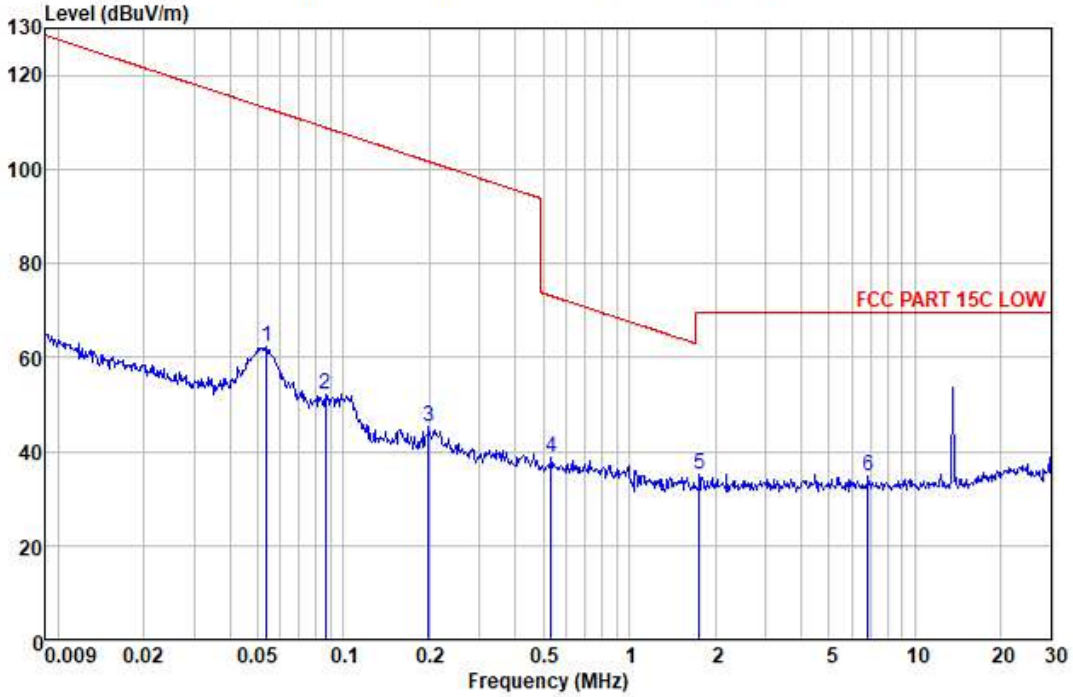
(3) Pre-test under all modes below 1GHz; choose the worst case mode record on the report.

5.4.1 Test Result (9 KHz~30 MHz Spurious Emissions)

Horizontal:

Peak scan

Level (dBμV/m)



No.	Freq MHz	Read Level dBuV	Antenna Factor dB	Cable Loss dB	Preamp Factor dB	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Pol/Phase	Remark
1	0.054	41.89	20.26	0.13	0.00	62.28	113.02	-50.74	HORIZONTAL	QP
2	0.087	31.75	20.18	0.15	0.00	52.08	108.86	-56.78	HORIZONTAL	QP
3	0.198	24.87	20.07	0.20	0.00	45.14	101.67	-56.53	HORIZONTAL	QP
4	0.532	18.56	19.89	0.20	0.00	38.65	73.08	-34.43	HORIZONTAL	QP
5	1.754	15.27	19.72	0.22	0.00	35.21	69.54	-34.33	HORIZONTAL	QP
6	6.854	14.86	19.51	0.27	0.00	34.64	69.54	-34.90	HORIZONTAL	QP

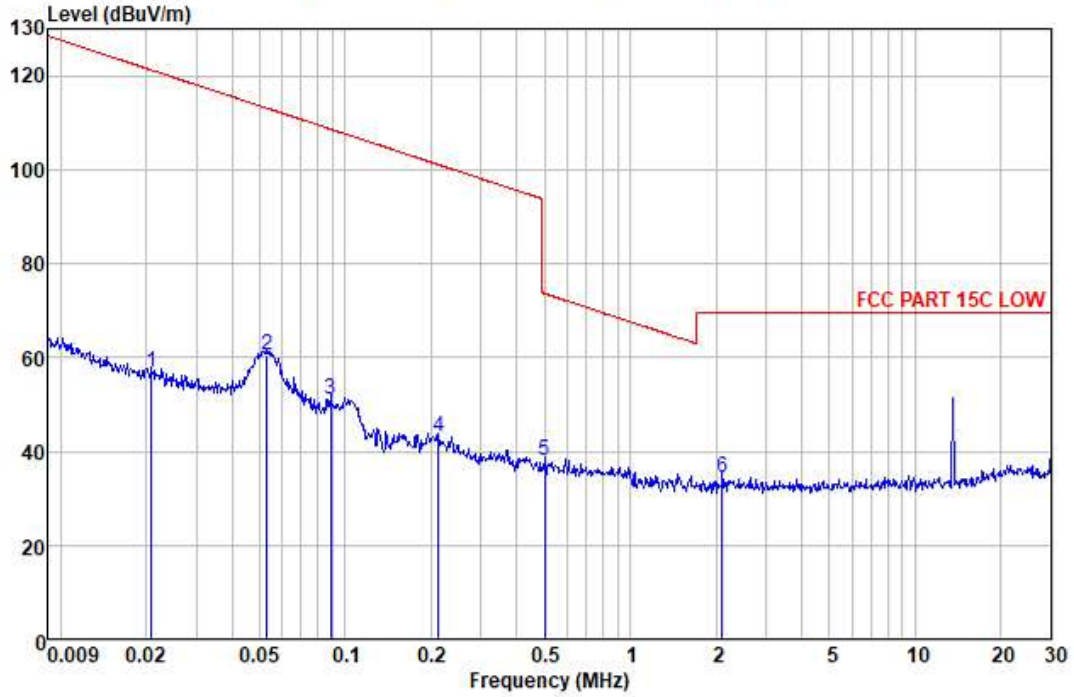
Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

Quasi-Peak Measurement

Vertical:

Peak scan

Level (dBμV/m)



No.	Freq MHz	Read Level dBuV	Antenna Factor dB	Cable Loss dB	Preamp Factor dB	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Pol/Phase	Remark
1	0.021	36.65	20.16	0.11	0.00	56.92	121.19	-64.27	VERTICAL	QP
2	0.053	39.98	20.27	0.13	0.00	60.38	113.09	-52.71	VERTICAL	QP
3	0.089	30.85	20.19	0.16	0.00	51.20	108.65	-57.45	VERTICAL	QP
4	0.213	22.72	20.06	0.20	0.00	42.98	101.04	-58.06	VERTICAL	QP
5	0.499	17.80	19.90	0.20	0.00	37.90	73.64	-35.74	VERTICAL	QP
6	2.097	14.62	19.69	0.22	0.00	34.53	69.54	-35.01	VERTICAL	QP

Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

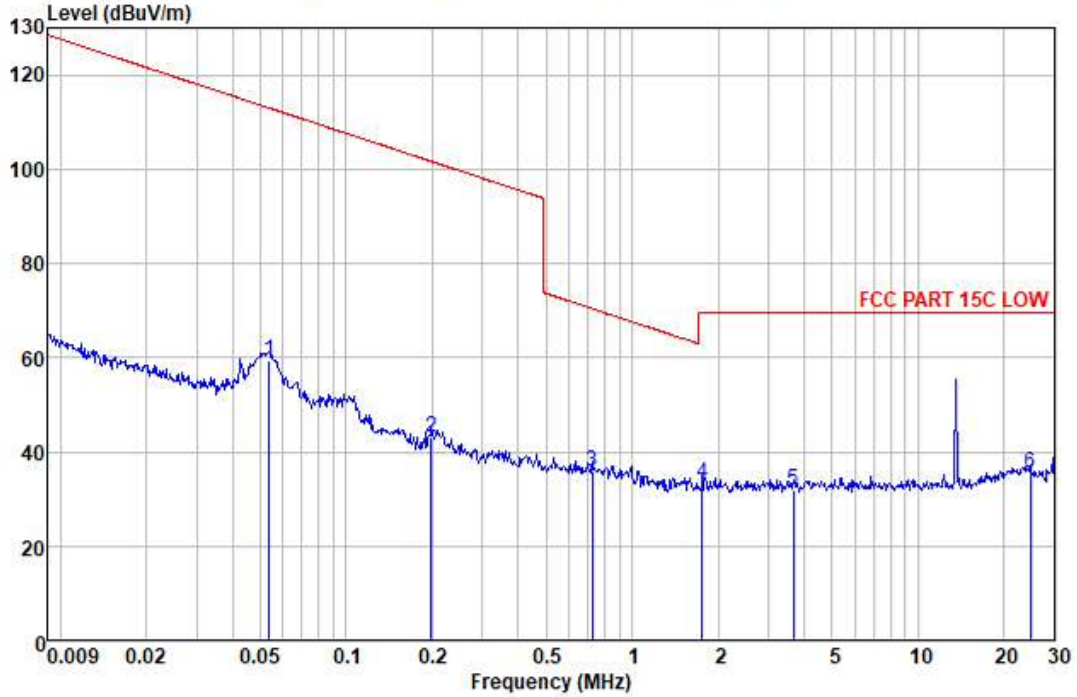
Quasi-Peak Measurement

NFC+BLE simultaneously transmit

Horizontal:

Peak scan

Level (dBμV/m)



No.	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB	dB	dB	dBuV/m	dBuV/m	dB		
1	0.054	38.89	20.26	0.13	0.00	59.28	113.02	-53.74	HORIZONTAL	QP
2	0.198	22.87	20.07	0.20	0.00	43.14	101.67	-58.53	HORIZONTAL	QP
3	0.725	15.86	19.86	0.21	0.00	35.93	70.40	-34.47	HORIZONTAL	QP
4	1.754	13.27	19.72	0.22	0.00	33.21	69.54	-36.33	HORIZONTAL	QP
5	3.670	12.15	19.63	0.24	0.00	32.02	69.54	-37.52	HORIZONTAL	QP
6	24.693	14.69	20.23	0.45	0.00	35.37	69.54	-34.17	HORIZONTAL	QP

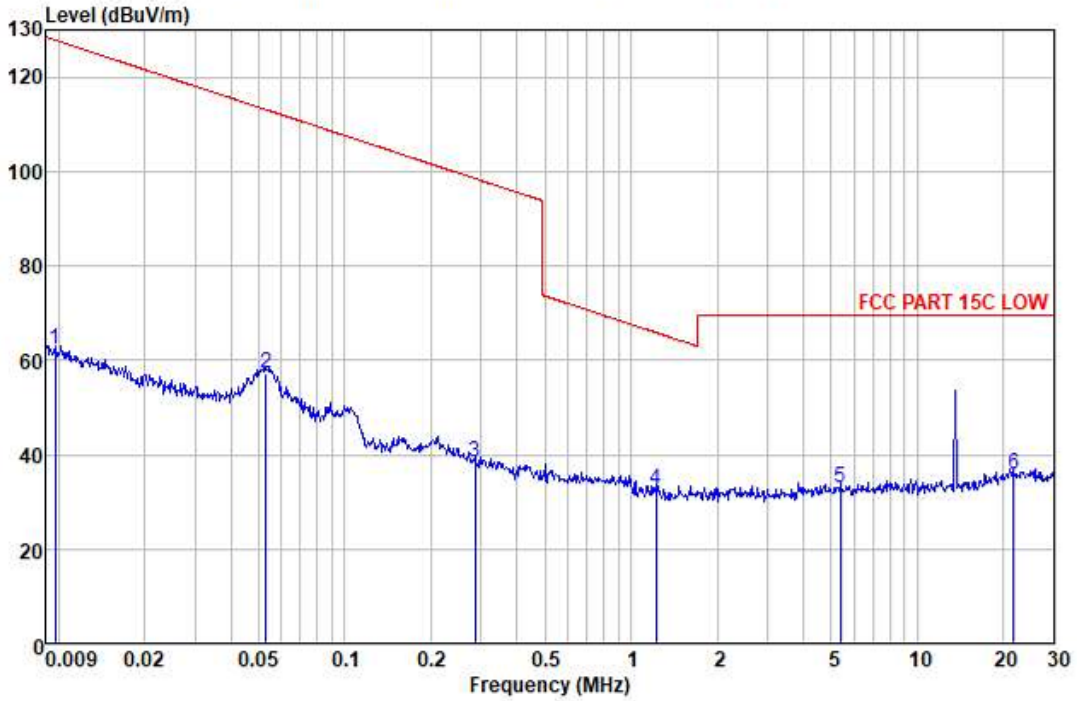
Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

Quasi-Peak Measurement

Vertical:

Peak scan

Level (dBμV/m)



No.	Freq MHz	Read Level dBuV	Antenna Factor dB	Cable Loss dB	Preamp Factor dB	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Pol/Phase	Remark
1	0.010	41.96	20.10	0.10	0.00	62.16	127.82	-65.66	VERTICAL	QP
2	0.053	36.98	20.27	0.13	0.00	57.38	113.09	-55.71	VERTICAL	QP
3	0.285	18.13	20.02	0.20	0.00	38.35	98.50	-60.15	VERTICAL	QP
4	1.218	12.65	19.78	0.21	0.00	32.64	65.89	-33.25	VERTICAL	QP
5	5.374	13.21	19.66	0.25	0.00	33.12	69.54	-36.42	VERTICAL	QP
6	21.687	15.19	20.33	0.42	0.00	35.94	69.54	-33.60	VERTICAL	QP

Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

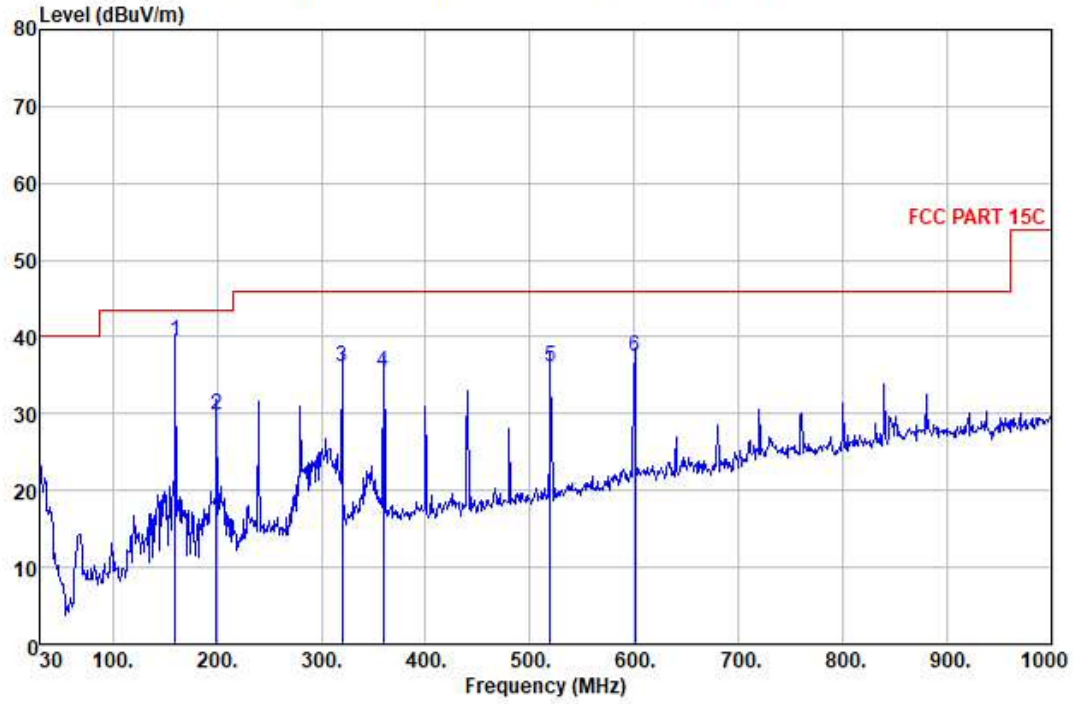
Quasi-Peak Measurement

5.4.2 Test Result (30 MHz~1 GHz Spurious Emissions)

Horizontal:

Peak scan

Level (dBμV/m)



No.	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB	dB	dB	dBuV/m	dBuV/m	dB		
1	159.980	57.54	8.40	1.51	28.10	39.35	43.50	-4.15	HORIZONTAL	QP
2	199.750	45.91	10.15	1.70	27.89	29.87	43.50	-13.63	HORIZONTAL	QP
3	320.030	47.62	13.80	2.19	27.52	36.09	46.00	-9.91	HORIZONTAL	QP
4	359.800	45.88	14.99	2.31	27.74	35.44	46.00	-10.56	HORIZONTAL	QP
5	519.850	44.39	17.49	2.83	28.64	36.07	46.00	-9.93	HORIZONTAL	QP
6	600.360	43.73	18.91	3.06	28.21	37.49	46.00	-8.51	HORIZONTAL	QP

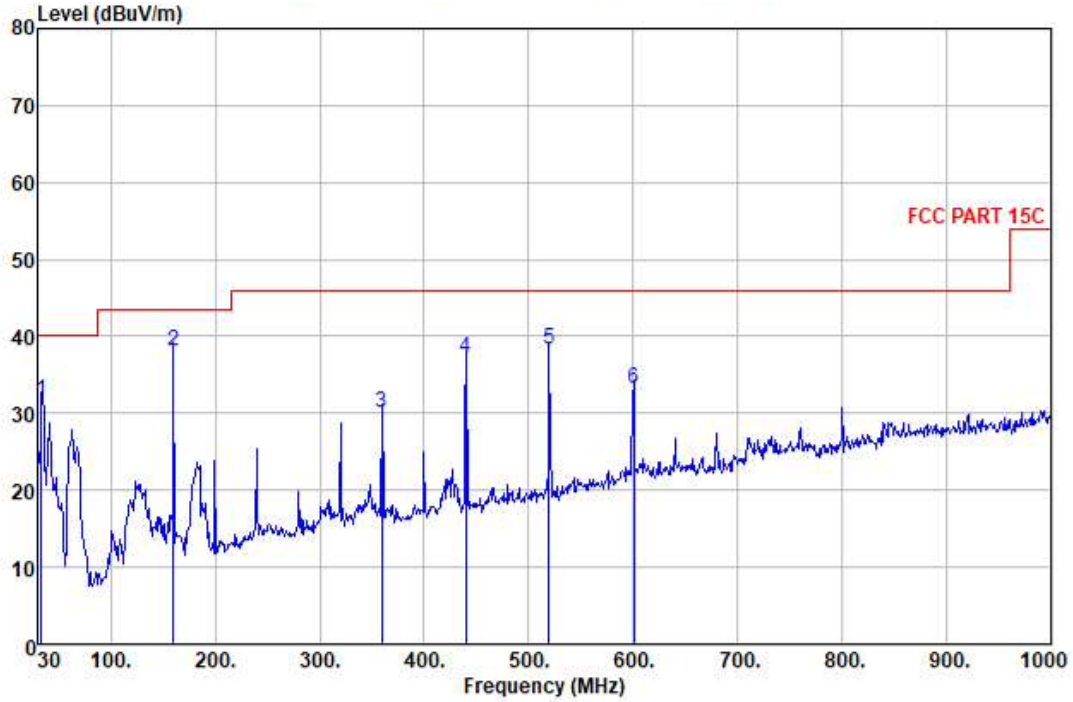
Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

Quasi-Peak Measurement

Vertical:

Peak scan

Level (dBμV/m)



No.	Freq MHz	Read Level dBuV	Antenna Factor dB	Cable Loss dB	Preamp Factor dB	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Pol/Phase	Remark
1	33.880	38.99	20.61	0.66	28.58	31.68	40.00	-8.32	VERTICAL	QP
2	159.980	56.36	8.40	1.51	28.10	38.17	43.50	-5.33	VERTICAL	QP
3	359.800	40.55	14.99	2.31	27.74	30.11	46.00	-15.89	VERTICAL	QP
4	440.310	47.12	15.91	2.59	28.41	37.21	46.00	-8.79	VERTICAL	QP
5	519.850	46.55	17.49	2.83	28.64	38.23	46.00	-7.77	VERTICAL	QP
6	600.360	39.45	18.91	3.06	28.21	33.21	46.00	-12.79	VERTICAL	QP

Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

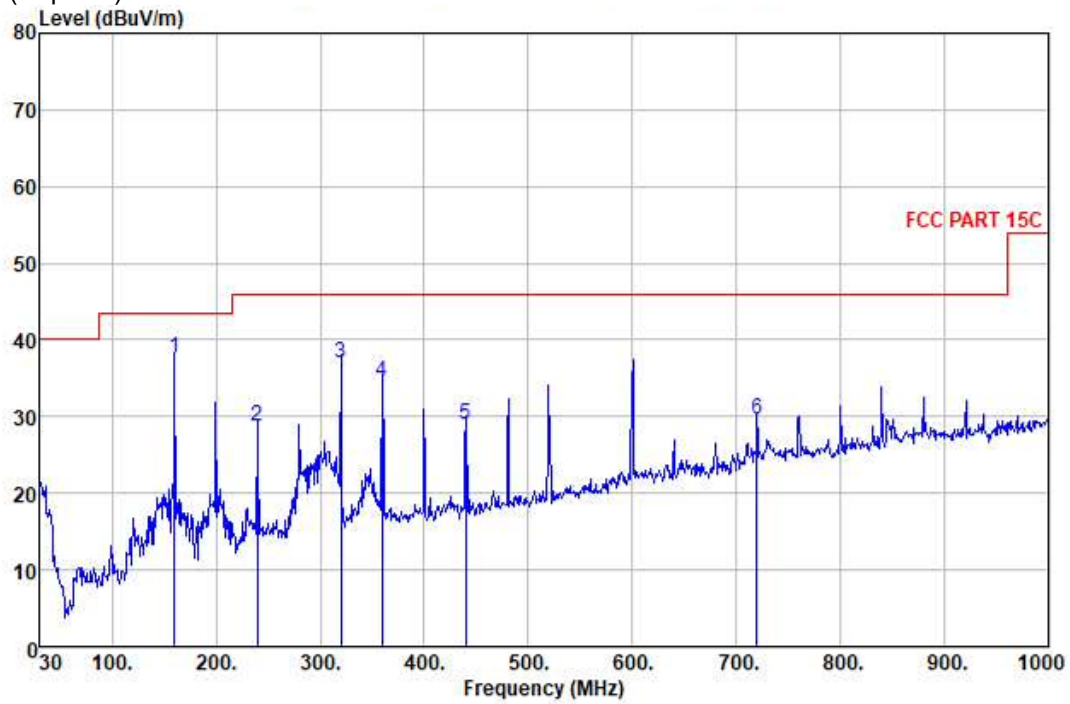
Quasi-Peak Measurement

NFC+BLE simultaneously transmit

Horizontal:

Peak scan

Level (dBμV/m)



No.	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB	dB	dB	dBuV/m	dBuV/m	dB		
1	159.980	53.97	8.40	0.98	25.73	37.62	43.50	-5.88	HORIZONTAL	QP
2	239.520	40.76	12.28	1.23	25.58	28.69	46.00	-17.31	HORIZONTAL	QP
3	320.030	47.60	13.80	1.41	25.72	37.09	46.00	-8.91	HORIZONTAL	QP
4	359.800	44.07	14.99	1.48	26.10	34.44	46.00	-11.56	HORIZONTAL	QP
5	440.310	38.34	15.91	1.60	26.78	29.07	46.00	-16.93	HORIZONTAL	QP
6	719.670	34.42	20.19	2.05	27.12	29.54	46.00	-16.46	HORIZONTAL	QP

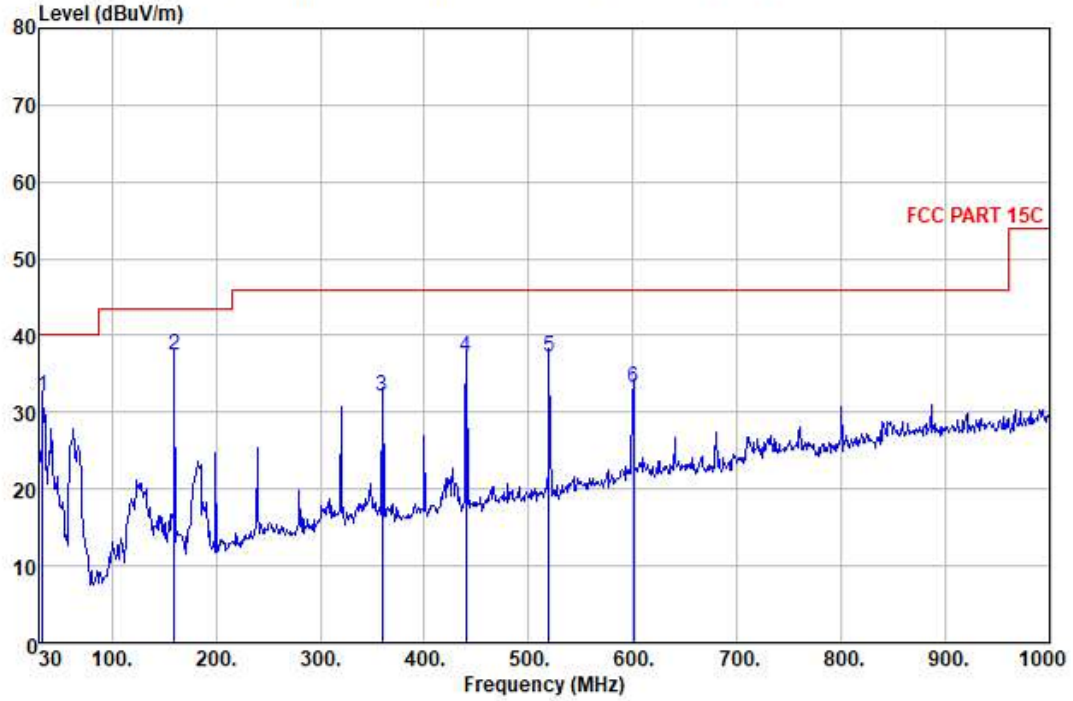
Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

Quasi-Peak Measurement

Vertical:

Peak scan

Level (dBμV/m)



No.	Freq MHz	Read Level dBuV	Antenna Factor dB	Cable Loss dB	Preamp Factor dB	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Pol/Phase	Remark
1	33.880	37.23	20.61	0.39	26.08	32.15	40.00	-7.85	VERTICAL	QP
2	159.980	53.87	8.40	0.98	25.73	37.52	43.50	-5.98	VERTICAL	QP
3	359.800	41.78	14.99	1.48	26.10	32.15	46.00	-13.85	VERTICAL	QP
4	440.310	46.48	15.91	1.60	26.78	37.21	46.00	-8.79	VERTICAL	QP
5	519.850	45.21	17.49	1.72	27.19	37.23	46.00	-8.77	VERTICAL	QP
6	600.360	39.60	18.91	1.86	27.16	33.21	46.00	-12.79	VERTICAL	QP

Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

Quasi-Peak Measurement

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), the amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

Remark:

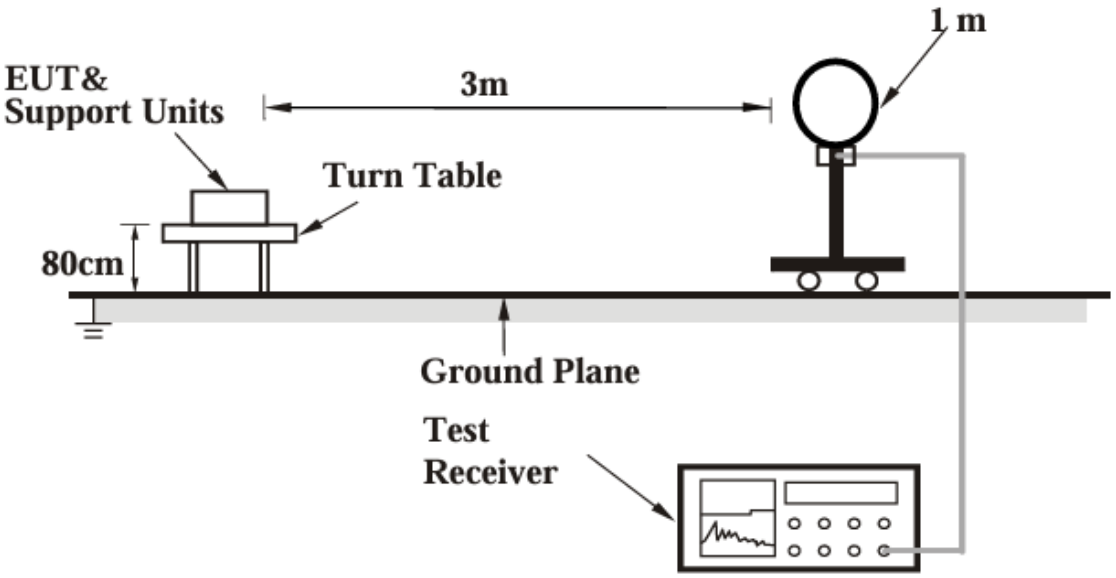
The emission levels of 18~25 GHz are lower than the limit at least 20dB and not show the plots in test report.

Test Result: The unit does meet the FCC requirements.

5.5 Band Edges Requirement

Test Requirement:	FCC Part 15 C section 15.209(a), 15.225(d)
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.

5.5.1 Test Configuration



Limit:

FCC Part15 C Section 15.209 and 15.225

LIMITS OF RADIATED EMISSION MEASUREMENT (Below 30MHz)

a. 15.848 microvolts/m (84 dB μ V/m) at 30 m, within the band 13.553 – 13.567 MHz.

b. 334 microvolts/m(50.5dB μ V/m) at 30 m, within the bands 13.410 – 13.553 MHz and 13.567 – 13.710 MHz.

c. 106 microvolts/m(40.5dB μ V/m) at 30 m, within the bands 13.110 – 13.410 MHz and 13.710 – 14.010 MHz.

d. 30 microvolts/m(29.5 dB μ V/m) at 30 m, outside the band 13.110 – 14.010 MHz.

Test Procedure:

a. The Product is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna (loop antenna). The maximum values of the field strength are recorded by adjusting the polarizations of the test antenna and rotating the turntable.

b. For each suspected emission, the Product was arrange: d to its worst case and then turn table was Turned from 0 degrees to 360 degrees to find the maximum reading.

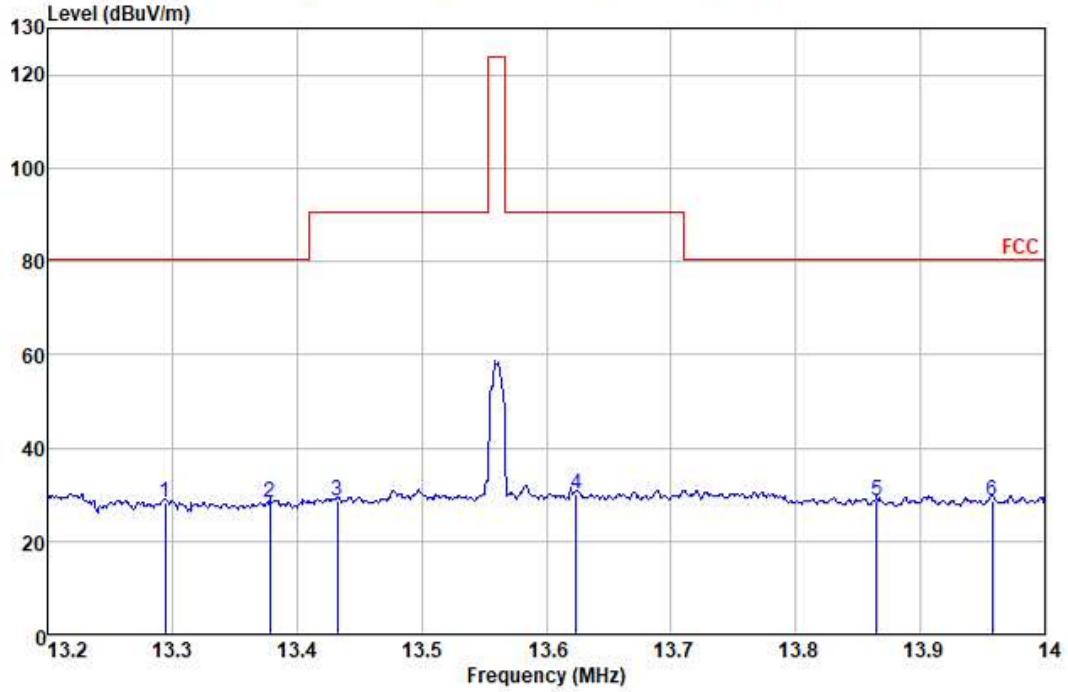
c. The test frequency analyzer system was set to Peak Detect (300Hz RBW in 9 KHz to 150 KHz and 10 KHz RBW in 150 KHz to 30MHz) Function and Specified Bandwidth with Maximum Hold Mode.

5.5.2 Test Result (Band Edges)

Horizontal:

Peak scan

Level (dBμV/m)



No.	Freq MHz	Read Level dBuV	Antenna Factor dB	Cable Loss dB	Preamp Factor dB	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Pol/Phase	Remark
1	13.294	8.01	19.74	0.35	0.00	28.10	80.50	-52.40	HORIZONTAL	QP
2	13.378	8.06	19.76	0.35	0.00	28.17	80.50	-52.33	HORIZONTAL	QP
3	13.433	8.36	19.76	0.35	0.00	28.47	90.50	-62.03	HORIZONTAL	QP
4	13.624	9.81	19.79	0.35	0.00	29.95	90.50	-60.55	HORIZONTAL	QP
5	13.865	8.37	19.83	0.36	0.00	28.56	80.50	-51.94	HORIZONTAL	QP
6	13.958	8.58	19.84	0.36	0.00	28.78	80.50	-51.72	HORIZONTAL	QP

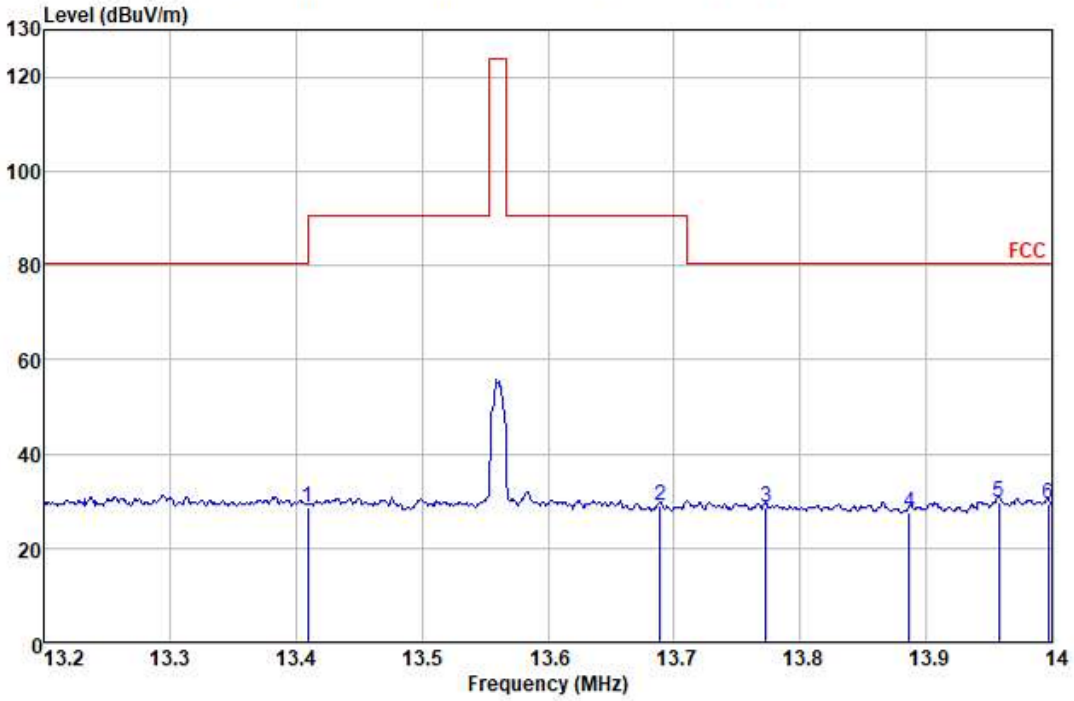
Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

Quasi-Peak Measurement

Vertical:

Peak scan

Level (dBμV/m)



No.	Freq MHz	Read Level dBuV	Antenna Factor dB	Cable Loss dB	Preamp Factor dB	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Pol/Phase	Remark
1	13.410	8.36	19.76	0.35	0.00	28.47	80.50	-52.03	VERTICAL	QP
2	13.689	8.67	19.80	0.36	0.00	28.83	90.50	-61.67	VERTICAL	QP
3	13.773	8.35	19.82	0.36	0.00	28.53	80.50	-51.97	VERTICAL	QP
4	13.886	7.47	19.83	0.36	0.00	27.66	80.50	-52.84	VERTICAL	QP
5	13.958	9.58	19.84	0.36	0.00	29.78	80.50	-50.72	VERTICAL	QP
6	13.997	9.20	19.85	0.36	0.00	29.41	80.50	-51.09	VERTICAL	QP

Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

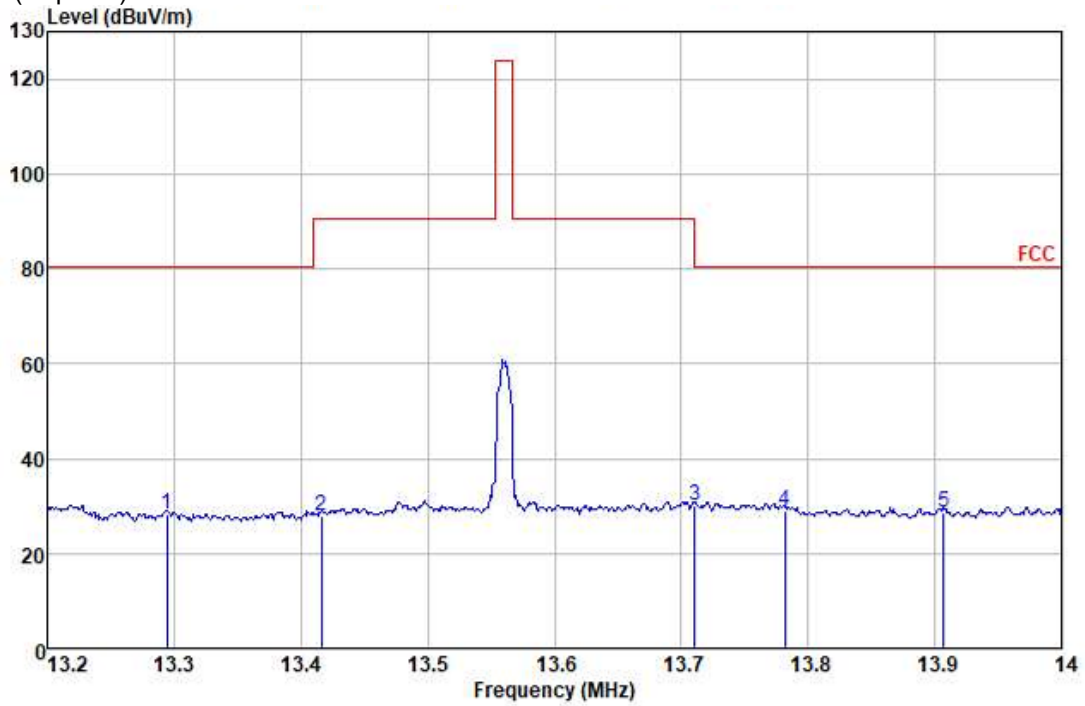
Quasi-Peak Measurement

NFC+BLE simultaneously transmit

Horizontal:

Peak scan

Level (dBμV/m)



No.	Freq MHz	Read Level dBuV	Antenna Factor dB	Cable Loss dB	Preamp Factor dB	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Pol/Phase	Remark
1	13.294	8.12	19.74	0.24	0.00	28.10	80.50	-52.40	HORIZONTAL	QP
2	13.416	7.90	19.76	0.24	0.00	27.90	90.50	-62.60	HORIZONTAL	QP
3	13.710	9.83	19.81	0.25	0.00	29.89	80.50	-50.61	HORIZONTAL	QP
4	13.782	8.89	19.82	0.25	0.00	28.96	80.50	-51.54	HORIZONTAL	QP
5	13.907	8.53	19.84	0.25	0.00	28.62	80.50	-51.88	HORIZONTAL	QP
6	14.000	9.16	19.85	0.25	0.00	29.26	80.50	-51.24	HORIZONTAL	QP

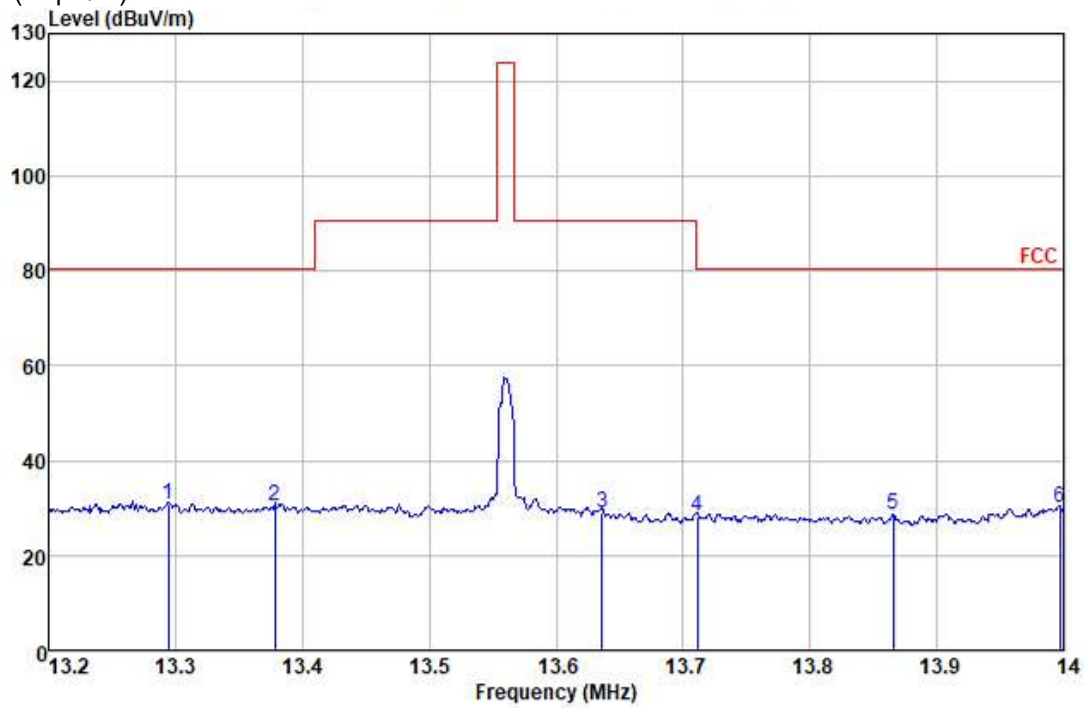
Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

Quasi-Peak Measurement

Vertical:

Peak scan

Level (dBμV/m)



No.	Freq MHz	Read Level dBuV	Antenna Factor dB	Cable Loss dB	Preamp Factor dB	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Pol/Phase	Remark
1	13.294	10.64	19.74	0.24	0.00	30.62	80.50	-49.88	VERTICAL	QP
2	13.378	10.52	19.76	0.24	0.00	30.52	80.50	-49.98	VERTICAL	QP
3	13.636	8.94	19.80	0.25	0.00	28.99	90.50	-61.51	VERTICAL	QP
4	13.711	8.35	19.81	0.25	0.00	28.41	80.50	-52.09	VERTICAL	QP
5	13.866	8.51	19.83	0.25	0.00	28.59	80.50	-51.91	VERTICAL	QP
6	13.997	9.95	19.85	0.25	0.00	30.05	80.50	-50.45	VERTICAL	QP

Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

Quasi-Peak Measurement

Test Result: The unit does meet the FCC requirements.

5.6 Conducted Emissions at Mains Terminals 150 KHz to 30MHz

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)

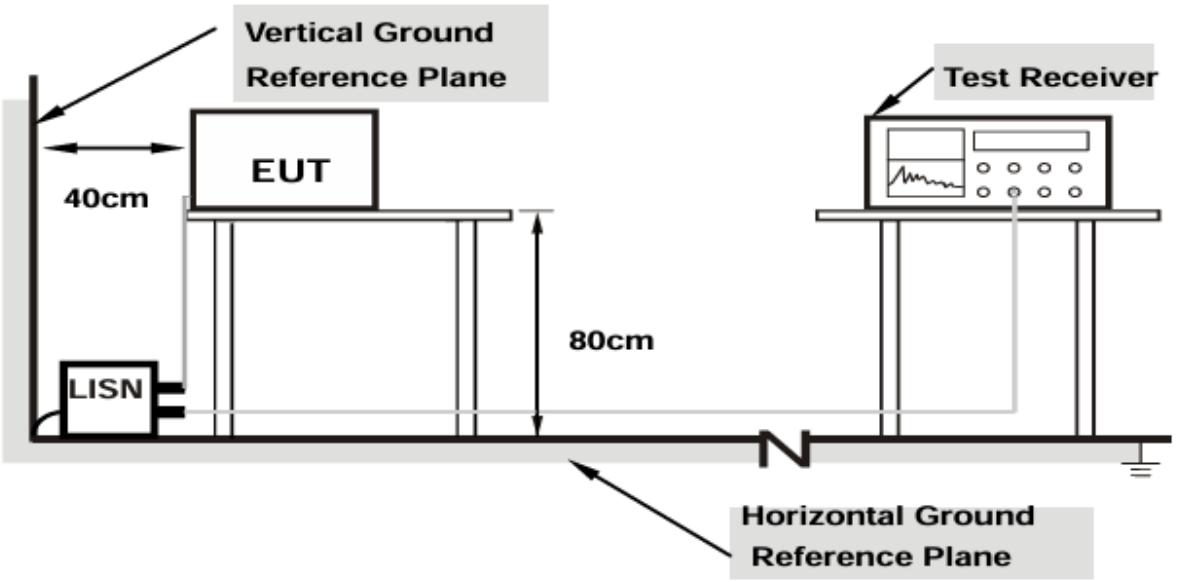
Test Limit:

Limits for conducted disturbance at the mains ports of class B

- Frequency range:	Class B Limit dB(μV)	
	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: The program used to control the EUT for staying in continuous transmitting.

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 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 arrange: ment, 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 (Conducted Emissions at Mains Terminals 150 KHz to 30 MHz)

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

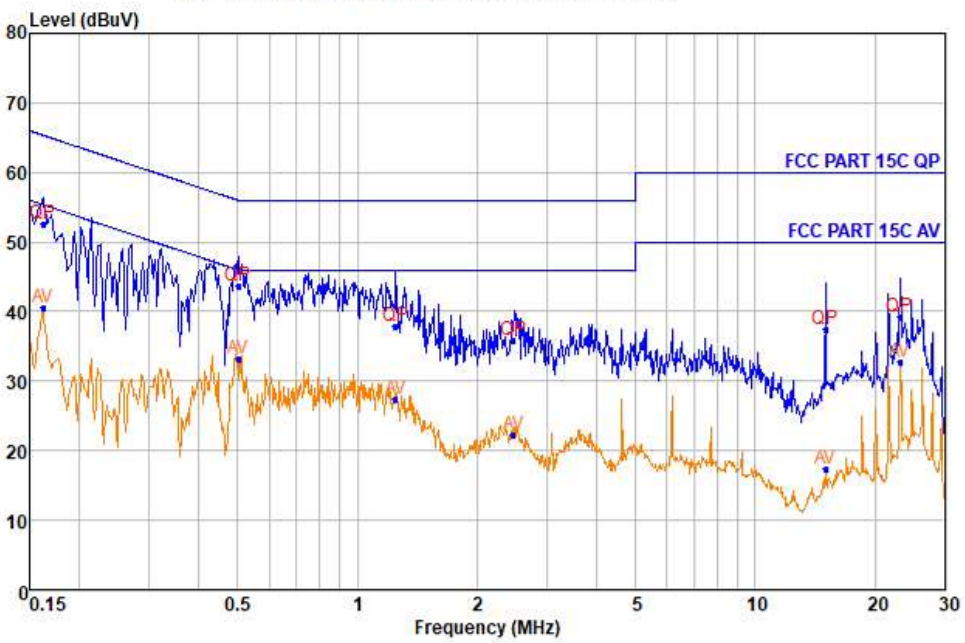
Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected. For EUT the communicating was worst case mode.

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

Live Line:

Peak scan

Level (dBμV/m)



NO.	Freq MHz	Level dBuV	Remark	LISN Factor dB	Cable Loss dB	Limit Line dBuV	Margin dB
1	0.162	52.49	QP	9.69	0.20	65.34	-12.85
2	0.162	40.55	Average	9.69	0.20	55.34	-14.79
3	0.501	43.73	QP	9.65	0.27	56.00	-12.27
4	0.501	33.23	Average	9.65	0.27	46.00	-12.77
5	1.247	37.77	QP	9.66	0.32	56.00	-18.23
6	1.247	27.52	Average	9.66	0.32	46.00	-18.48
7	2.469	35.95	QP	9.64	0.36	56.00	-20.05
8	2.469	22.19	Average	9.64	0.36	46.00	-23.81
9	15.000	37.35	QP	9.71	0.46	60.00	-22.65
10	15.000	17.41	Average	9.71	0.46	50.00	-32.59
11	23.085	39.26	QP	9.67	0.49	60.00	-20.74
12	23.085	32.70	Average	9.67	0.49	50.00	-17.30

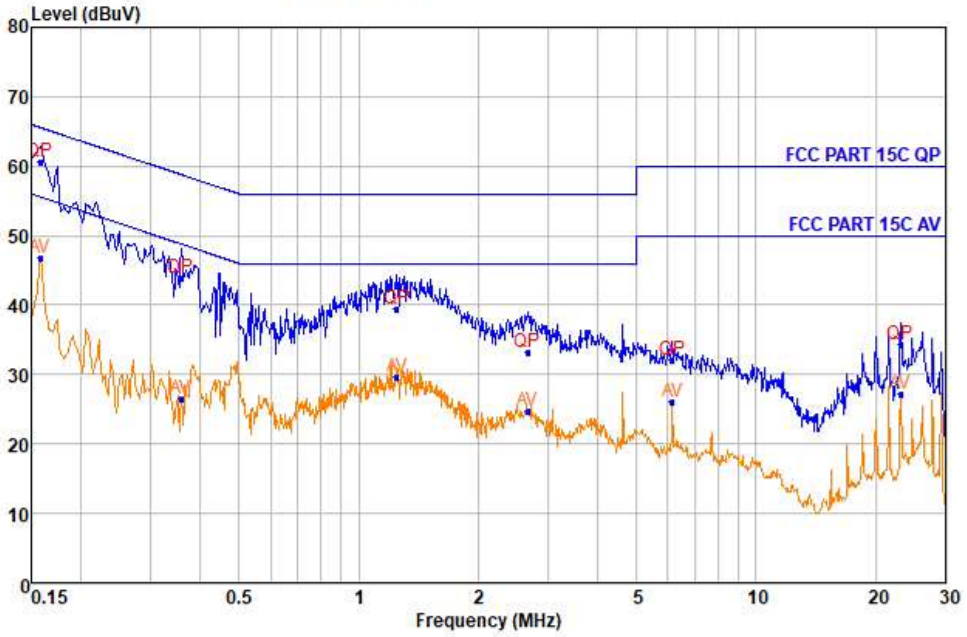
Level=Read Level + LISN Factor + Cable Loss

Quasi-Peak and Average Measurement

Neutral Line

Peak Scan:

Level (dBµV)



NO.	Freq MHz	Level dBuV	Remark	LISN Factor dB	Cable Loss dB	Limit Line dBuV	Margin dB
1	0.158	60.62	QP	9.70	0.20	65.56	-4.94
2	0.158	46.77	Average	9.70	0.20	55.56	-8.79
3	0.357	43.97	QP	9.66	0.25	58.80	-14.83
4	0.357	26.54	Average	9.66	0.25	48.80	-22.26
5	1.247	39.52	QP	9.63	0.32	56.00	-16.48
6	1.247	29.75	Average	9.63	0.32	46.00	-16.25
7	2.659	33.11	QP	9.62	0.36	56.00	-22.89
8	2.659	24.82	Average	9.62	0.36	46.00	-21.18
9	6.140	32.09	QP	9.62	0.41	60.00	-27.91
10	6.140	26.01	Average	9.62	0.41	50.00	-23.99
11	23.085	34.31	QP	9.63	0.49	60.00	-25.69
12	23.085	27.20	Average	9.63	0.49	50.00	-22.80

Level=Read Level + LISN Factor + Cable Loss

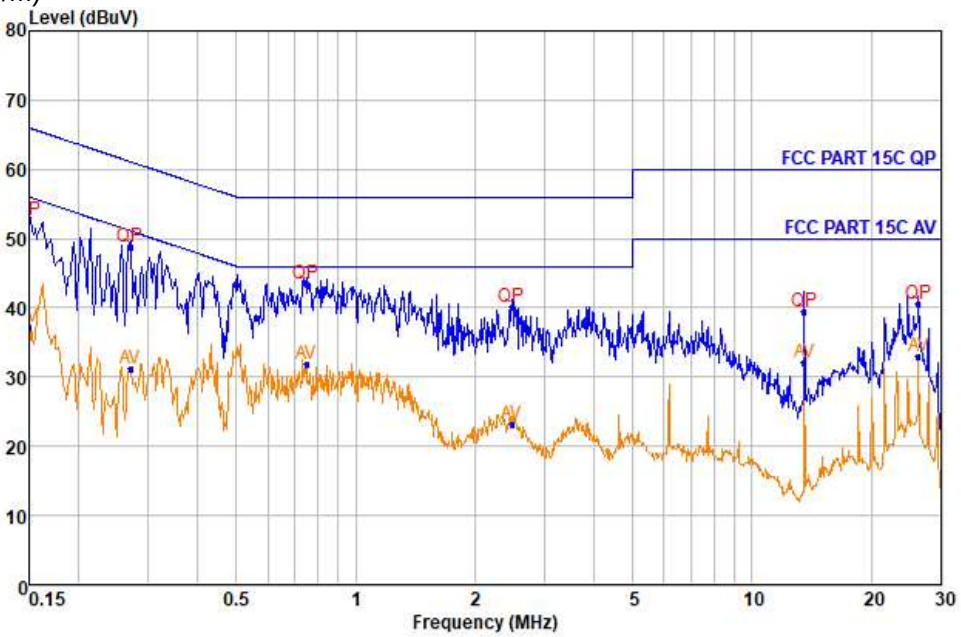
Quasi-Peak and Average Measurement

NFC+BLE simultaneously transmit

Live Line:

Peak scan

Level (dBμV/m)



NO.	Freq MHz	Level dBuV	Remark	LISN Factor dB	Cable Loss dB	Limit Line dBuV	Margin dB
1	0.150	52.57	QP	9.70	0.20	66.00	-13.43
2	0.150	37.18	Average	9.70	0.20	56.00	-18.82
3	0.270	48.77	QP	9.67	0.23	61.12	-12.35
4	0.270	31.30	Average	9.67	0.23	51.12	-19.82
5	0.751	43.42	QP	9.70	0.29	56.00	-12.58
6	0.751	31.89	Average	9.70	0.29	46.00	-14.11
7	2.474	40.19	QP	9.64	0.36	56.00	-15.81
8	2.474	23.19	Average	9.64	0.36	46.00	-22.81
9	13.551	39.44	QP	9.69	0.46	60.00	-20.56
10	13.551	32.12	Average	9.69	0.46	50.00	-17.88
11	26.278	40.63	QP	9.66	0.49	60.00	-19.37
12	26.278	32.96	Average	9.66	0.49	50.00	-17.04

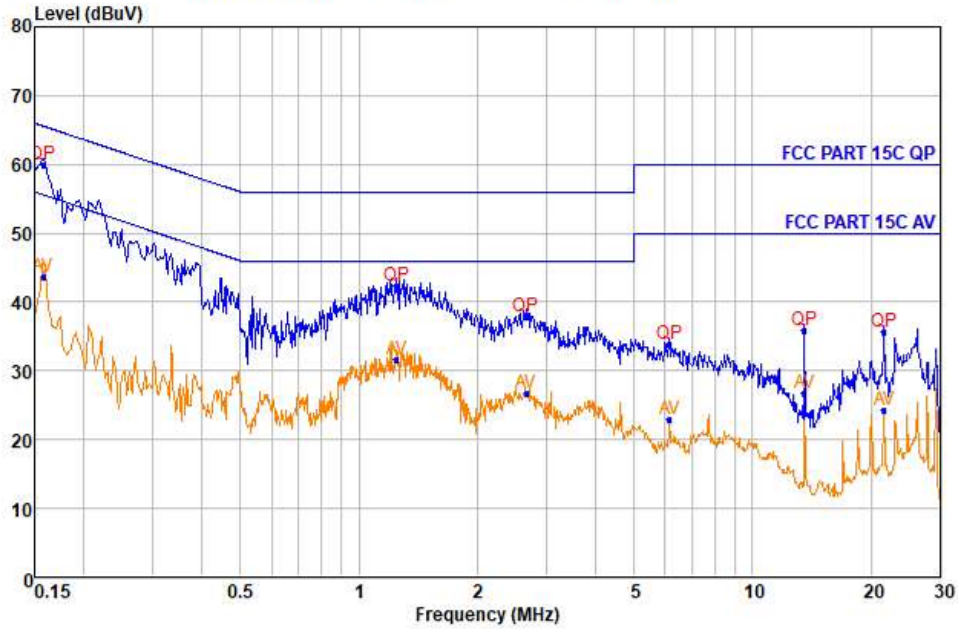
Level=Read Level + LISN Factor + Cable Loss

Quasi-Peak and Average Measurement

Neutral Line

Peak Scan:

Level (dBµV)



NO.	Freq MHz	Level dBuV	Remark	LISN Factor dB	Cable Loss dB	Limit Line dBuV	Margin dB
1	0.158	59.94	QP	9.70	0.20	65.56	-5.62
2	0.158	43.77	Average	9.70	0.20	55.56	-11.79
3	1.249	42.37	QP	9.63	0.32	56.00	-13.63
4	1.249	31.75	Average	9.63	0.32	46.00	-14.25
5	2.664	37.95	QP	9.62	0.36	56.00	-18.05
6	2.664	26.82	Average	9.62	0.36	46.00	-19.18
7	6.153	33.81	QP	9.62	0.41	60.00	-26.19
8	6.153	23.01	Average	9.62	0.41	50.00	-26.99
9	13.551	35.77	QP	9.63	0.46	60.00	-24.23
10	13.551	26.80	Average	9.63	0.46	50.00	-23.20
11	21.600	35.64	QP	9.62	0.48	60.00	-24.36
12	21.600	24.28	Average	9.62	0.48	50.00	-25.72

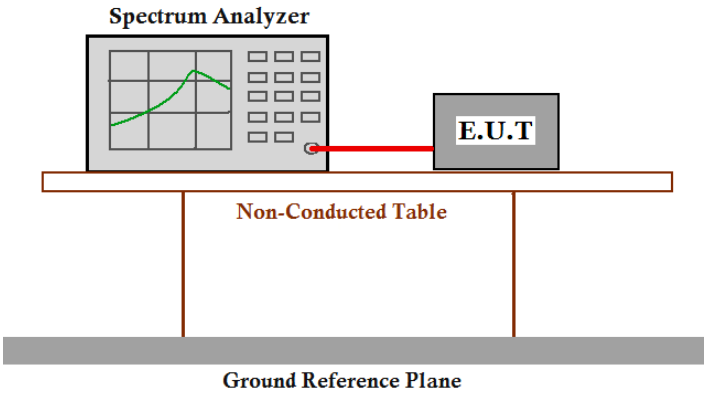
Level=Read Level + LISN Factor + Cable Loss

Quasi-Peak and Average Measurement

Test Result: The unit does meet the FCC requirements.

5.7 Frequency Stability

5.7.1 Test Configuration



Test procedure:

1. Frequency Stability vs. Temperature: The EUT is powered by Battery, than antenna was connected to a Spectrum Analyzer. The EUT was placed inside the temperature chamber.

2. After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the Spectrum Analyzer.

3. Frequency Stability vs. Voltage: An external variable DC power supply Source. The voltage was set to 115% of the nominal value and was then decreased until the transmitter light no longer illuminated; i.e., the end point. The output frequency was recorded for each voltage.

Limit:

The frequency tolerance of the carrier signal shall be maintained within ±0.01% of the operating frequency over a temperature variation of -20 degrees to +50 degrees °C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees °C.

For battery operated equipment, the equipment tests shall be performed using a new battery.

Limit: ±0.01% of 13.56 MHz

5.7.2 Test Result (Frequency Stability)

Temperature:	25℃	Relative Humidity:	51%
Pressure:	101kPa	Test Voltage :	AC 120V, 60Hz
Test Mode :	TX continue transmitting mode		

Test Conditions			Frequency Deviation		Limit (Hz)	Result
Frequency (MHz)	Power(V_{ac})	Temperature (℃)	Measured (MHz)	Frequency error(Hz)		
13.56 MHz	AC 120V, 60Hz	-20	13.56096	960	±1356	Pass
	AC 120V, 60Hz	-10	13.56015	150	±1356	
	AC 120V, 60Hz	0	13.56062	620	±1356	
	AC 120V, 60Hz	10	13.56022	220	±1356	
	AC 120V, 60Hz	20	13.56015	150	±1356	
	AC 120V, 60Hz	30	13.56044	440	±1356	
	AC 120V, 60Hz	40	13.56018	180	±1356	
	AC 120V, 60Hz	50	13.56052	520	±1356	
	AC 102V, 60 Hz	20	13.56045	450	±1356	
	AC 138V, 60 Hz	20	13.56019	190	±1356	

Test Result: The unit does meet the FCC requirements.