

VARIANT RADIO TEST REPORT

(FCC Part 15 Subpart C)

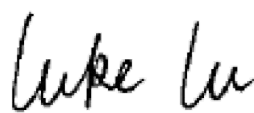
Applicant:	Honeywell International Inc
Address:	9680 Old Bailes Road, Fort Mill, SC 29707 United States

Manufacturer:	Honeywell International Inc
Address:	9680 Old Bailes Road, Fort Mill, SC 29707 United States
Product:	Mobile Computer
Brand Name:	Honeywell
Model Name:	CT45P-X0N
FCC ID:	HD5-CT45PX0N
Date of tests:	Oct, 09, 2025 ~ Dec. 17, 2025

The tests have been carried out according to the requirements of the following standard:

- ☒ **Part 15 Subpart C §15. 225**
- ☒ **RSS-Gen Issue 5, Amendment 2 (February 2021)**
- ☒ **ANSI C63.10-2020**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Hanwen Xu Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
 Date: Dec. 17, 2025	 Date: Dec. 17, 2025

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.



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REPORT REVISE RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P21080021RF10	Original release	Sep. 16, 2021
PSU-QBJ2512030414RF04	Based on the original report, the new product add alternate parts, the electrical specs of the alternate part is equivalent to the current part. In this report update the SW version, verify Field Strength of Fundamental Emissions and mask, CE and RSE worst case. So this report only update the Fundamental Emissions and mask, CE and RSE worst case data, other data please refer to original report.	Dec. 17, 2025



SUMMARY OF TEST RESULT

FCC Rule	IC Rule	Description	Limit	Result	Remark
-	RSS-Gen 6.7	99% Bandwidth	-	See note	-
15.225(a)(b)(c)	RSS-210 Annex B.6	Field Strength of Fundamental Emissions	15.225(a)(b)(c) RSS-210 Annex B.6	Pass	-
15.215	-	20dB Spectrum Bandwidth	15.215	See note	-
15.225(d) 15.209	RSS-210 Annex B.6	Radiated Emission	15.225(d) & 15.209 RSS-210 Annex B.6	Pass	-
15.207	RSS-GEN 8.8	AC Conducted Emission	15.207(a)	Pass	
15.225(e)	Annex B.6	Frequency Stability	< ±100 ppm	See note	-
15.203	RSS-Gen 6.8	Antenna Requirement	N/A	See note	-

NOTE: Please refer to report W7L-P21080021RF10 (FCC ID: HD5-CT45PX0N).

*Test Lab Information Reference

Lab A:

Huarui 7Layers High Technology (Suzhou) Co., Ltd.

Lab Address:

Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province, China

Accredited Test Lab Cert 6613.01

The FCC Site Registration No. is 434559; The Designation No. is CN1325.



1 GENERAL DESCRIPTION

1.1 GENERAL DESCRIPTION OF EUT

Items	Description
Tx/Rx Frequency Range	13.559MHZ-13.561MHZ
Channel Number	1
20dBW	2.789 kHz
99%OBW	2.820 kHz
Antenna Type	Loop Antenna
Type of Modulation	ASK
HW VERSION	V1.0
SW VERSION	OS.11.003

Remark: 1.The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

2.Antenna gain and EUT conducted cable loss are provided by the customer, and the laboratory will record the results based on these items that involve these two parameters.

3. This product includes the following two SKU which hardware is exactly same, the difference is described as following, Sample 1 was full test, sample 2 verify the worst case check worst case Radiated emission :

SAMPLE	EUT CONFIGURATION INFORMATION
1	SKU ID:CT45P-X0N-37D100G ,Assembled with Scanner Imager: S0703
2	SKU ID:CT45P-X0N-38D100G ,Assembled with Scanner Imager: N6803/S0803

4.List of Accessory:

ACCESSORIES	BRAND	MODEL	SPECIFICATION
Battery	Honeywell	CT50-BTSC	Capacity : 3.85vdc 4020mAh
AC Adapter	HONOR	ADS-12B-06 05010E	I/P:100-240Vac, 0.3A O/P: 5Vdc, 2A
USB Cable	Honeywell	CT40-SN	Shielded, 1.25meter
Earphone	Honeywell	PTE-300N 3.5L	Shielded, 1.27meter
LCD Panel	CASIL	CTM10801920T01	5.0" FHD(1928*1080)



1.2 MODIFICATION OF EUT

No modifications are made to the EUT during all test items.

1.3 APPLICABLE STANDARDS

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC Part 15 Subpart C §15.225
- ♦ ANSI C63.10-2020
- ♦ RSS-210 Issue 10
- ♦ RSS-Gen Issue 5



2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST

2.1 DESCRIPTIONS OF TEST MODE

Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

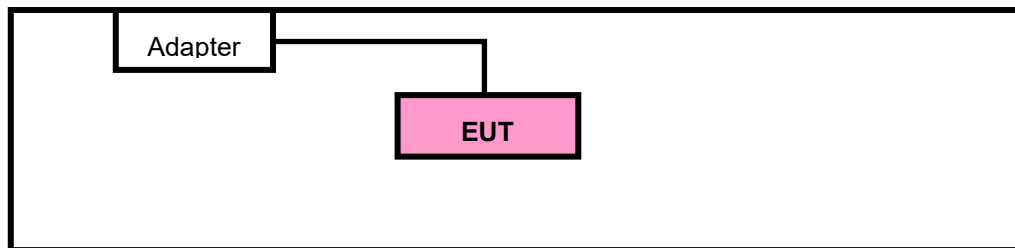
Test Items	
AC Power Line Conducted Emissions	Field Strength of Fundamental Emissions
20dB Spectrum Bandwidth	Frequency Stability
Radiated Emissions 9kHz~30MHz	Radiated Emissions 30MHz~1GHz
Note: 1. The EUT was programmed to be in continuously transmitting mode. 2. The ancillary equipment, NFC card, is used to make the EUT (NFC) continuously transmit at 13.56MHz and is placed around 3 cm gap to the EUT. 3. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, work in modes and data rates. Selected for the final test as listed below.	

Frequency	Work in Modes	Type	Data Rate (Kbps)
13.56 MHz	☐ Card Emulation	☐ A	☐ 106
	☒ Reader/Writer	☐ B	☒ 212
	☐ Peer-to-Peer	☒ F	☐ 424
		☐ V	☐ 848
Remark: The mark " ☒ " means is chosen for testing; The mark " ☐ " means is not chosen for testing.			



2.2 TEST CONFIGURATIONS

< For Fundamental Emissions and Mask and Radiated Emissions Measurement >



*Test Table



* Kept in a remote area



2.3 SUPPORT EQUIPMENT

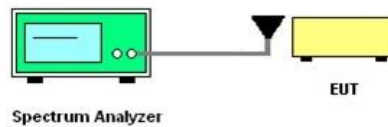
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	N/A	N/A	N/A	N/A	N/A

2.4 TEST SETUP

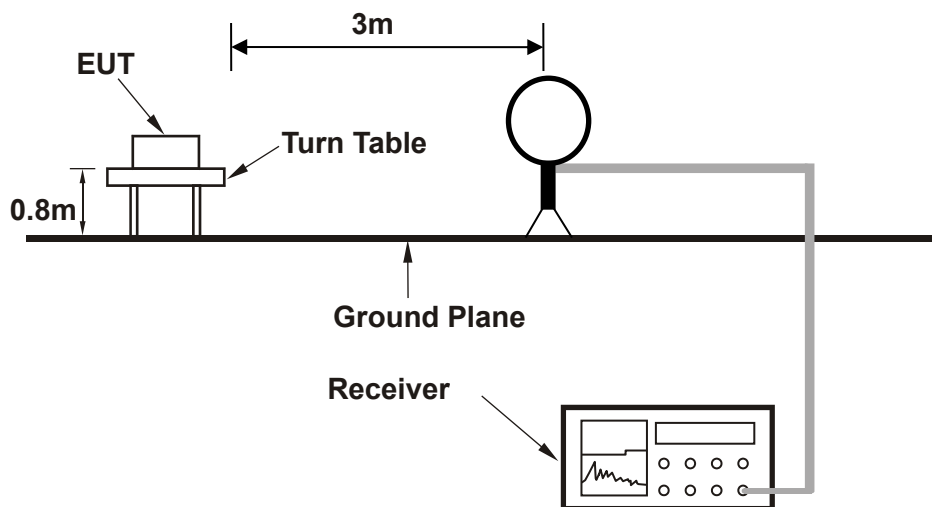
The EUT is continuously communicating during the tests.

EUT was set in the Hidden menu mode to enable NFC communications.

Setup diagram for Conducted Test

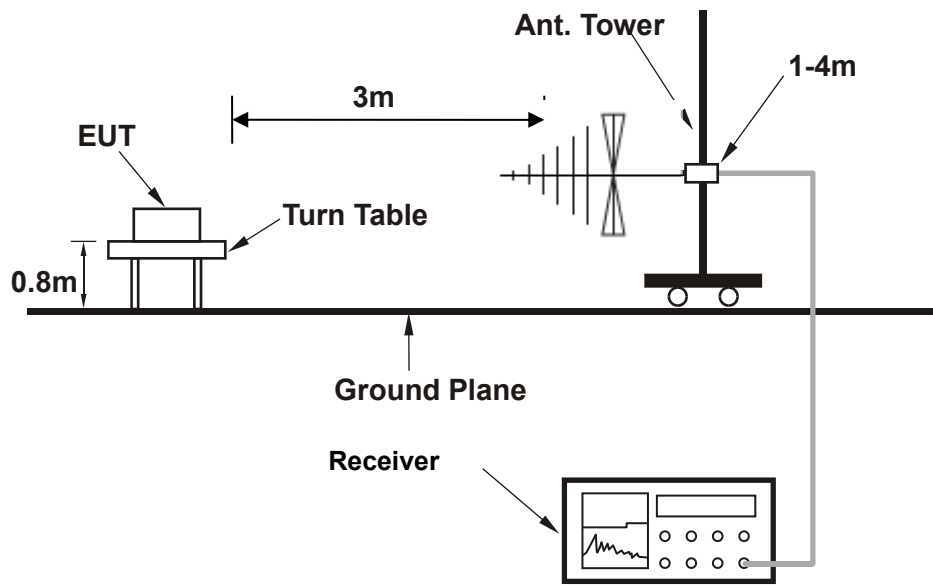


Setup diagram for Radiation(9KHz~30MHz) Test





Setup diagram for Radiation(Below 1G) Test





2.5 MEASUREMENT RESULTS EXPLANATION EXAMPLE

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 5 dB and 10dB attenuator.

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 5 + 10 = 15 \text{ (dB)}\end{aligned}$$



3 TEST RESULT

3.1 FIELD STRENGTH OF FUNDAMENTAL EMISSIONS AND MASK MEASUREMENT

3.1.1 LIMIT OF FIELD STRENGTH OF FUNDAMENTAL EMISSIONS AND MASK

Rules and specifications	FCC CFR 47 Part 15 section 15.225			
	IC RSS-210 B.6			
Description	Compliance with the spectrum mask is tested with RBW set to 9kHz.			
Freq. of Emission (MHz)	Field Strength (μV/m) at 30m	Field Strength (dBμV/m) at 30m	Field Strength (dBμV/m) at 10m	Field Strength (dBμV/m) at 3m
1.705~13.110	30	29.5	48.58	69.5
13.110~13.410	106	40.5	59.58	80.5
13.410~13.553	334	50.5	69.58	90.5
13.553~13.567	15848	84.0	103.08	124.0
13.567~13.710	334	50.5	69.58	90.5
13.710~14.010	106	40.5	59.58	80.5
14.010~30.000	30	29.5	48.58	69.5

3.1.2 TEST PROCEDURES

1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the loop receiving antenna mounted antenna tower was placed 3 meters far away from the turntable.
1. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
2. The height of the receiving antenna was fixed at one meter above ground to find the maximum emissions field strength.
3. For Fundamental emissions, use the receiver to measure QP reading.
4. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
5. Compliance with the spectrum mask is tested with RBW set to 9kHz.

Note: Emission level (dBμV/m) = 20 log Emission level (μV/m).



BUREAU VERITAS Test Report No.: PSU-QBJ2512030414RF04

3.1.3 TEST RESULTS OF FIELD STRENGTH OF FUNDAMENTAL EMISSIONS AND MASK (1.705 MHz ~ 30 MHz)

Test Mode :	NFC (13.56 MHz)	Temperature :	23°C
Test Engineer :	Hanwen Xu	Relative Humidity :	50%
Frequency Range	13.11MHz~14.01MHz	Polarization :	Horizontal

Rg	Frequency [MHz]	PK+ Level [dBμV/m]	PK+: QPK Limit [dBμV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	13.560	38.48	124.00	85.52	20.26	H	4.9	1.50





BUREAU VERITAS Test Report No.: PSU-QBJ2512030414RF04

Test Mode :	NFC (13.56 MHz)	Temperature :	23°C
Test Engineer :	Hanwen Xu	Relative Humidity :	50%
Frequency Range	13.11MHz~14.01MHz	Polarization :	Vertical

Rg	Frequency [MHz]	PK+ Level [dBμV/m]	PK+: QPK Limit [dBμV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	13.560	35.23	124.00	88.77	20.26	V	340.4	1.50





3.2 RADIATED EMISSIONS MEASUREMENT

3.2.1 LIMIT

The field strength of any emissions which appear outside of 13.110 ~14.010MHz band shall not exceed the general radiated emissions limits.

Frequencies (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

3.2.2 MEASURING INSTRUMENT SETTING

The following table is the setting of receiver.

Receiver Parameter	Setting
Attenuation	Auto
Frequency Range: 9kHz~150kHz	RBW 200Hz for QP
Frequency Range: 150kHz~30MHz	RBW 9kHz for QP
Frequency Range: 30MHz~1000MHz	RBW 120kHz for Peak

Note: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz. Radiated emission limits in these two bands are based on measurements employing an average detector.

3.2.3 TEST PROCEDURES

1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
7. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver.

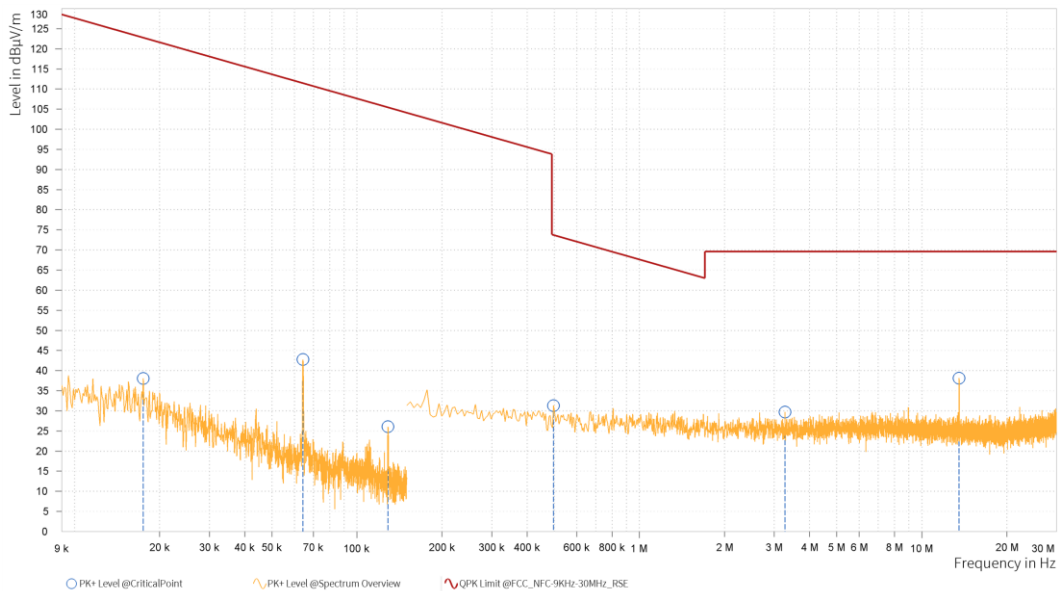


BUREAU VERITAS Test Report No.: PSU-QBJ2512030414RF04

3.2.4 TEST RESULTS OF RADIATED EMISSIONS (9 KHZ ~ 30 MHZ)

Test Mode :	NFC (13.56 MHz)	Temperature :	23°C
Test Engineer :	Hanwen Xu	Relative Humidity :	50%
Frequency Range	9 KHz ~ 30 MHz	Polarization :	Horizontal

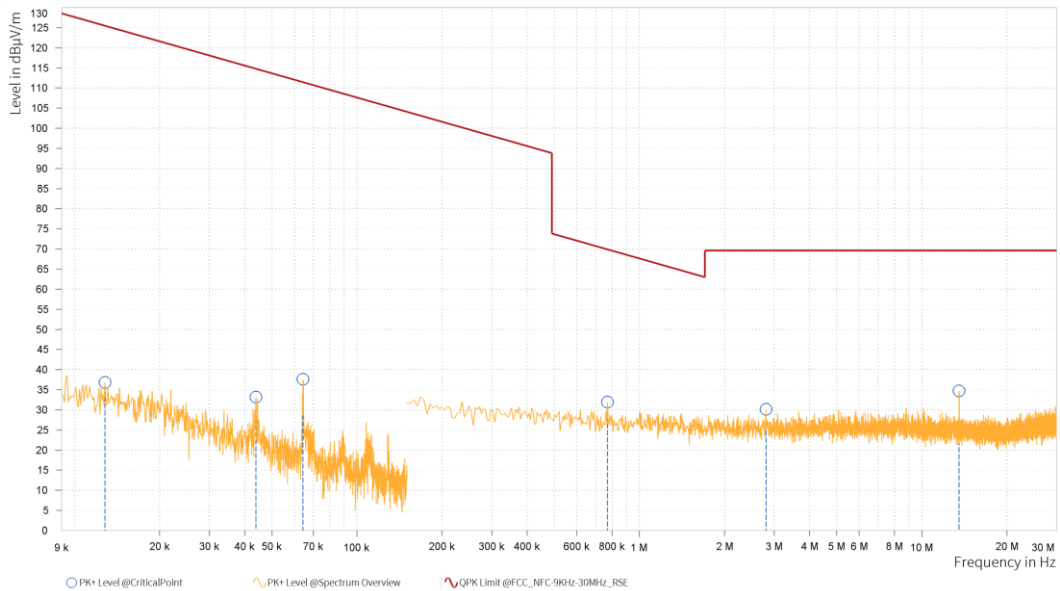
Rg	Frequency [MHz]	PK+ Level [dBμV/m]	PK+: QPK Limit [dBμV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	0.018	38.06	122.50	84.44	20.27	H	1	1.50
1	0.064	42.76	111.48	68.72	20.55	H	359	1.50
1	0.129	26.05	105.39	79.34	20.41	H	359	1.50
2	0.497	31.32	73.68	42.36	20.37	H	358.8	1.50
2	3.278	29.71	69.54	39.83	20.36	H	1	1.50
2	13.560	38.16	69.54	31.38	20.26	H	358.8	1.50



**Test Report No.: PSU-QBJ2512030414RF04**

Test Mode :	NFC (13.56 MHz)	Temperature :	23°C
Test Engineer :	Hanwen Xu	Relative Humidity :	50%
Frequency Range	9 KHz ~ 30 MHz	Polarization :	Vertical

Rg	Frequency [MHz]	PK+ Level [dBμV/m]	PK+: QPK Limit [dBμV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	0.013	36.82	125.33	88.51	20.16	V	4.3	1.50
1	0.044	33.15	114.74	81.59	20.56	V	4.3	1.50
1	0.064	37.60	111.48	73.88	20.55	V	359	1.50
2	0.771	31.93	69.86	37.93	20.28	V	1	1.50
2	2.805	30.13	69.54	39.41	20.34	V	358.8	1.50
2	13.560	34.68	69.54	34.86	20.26	V	358.8	1.50



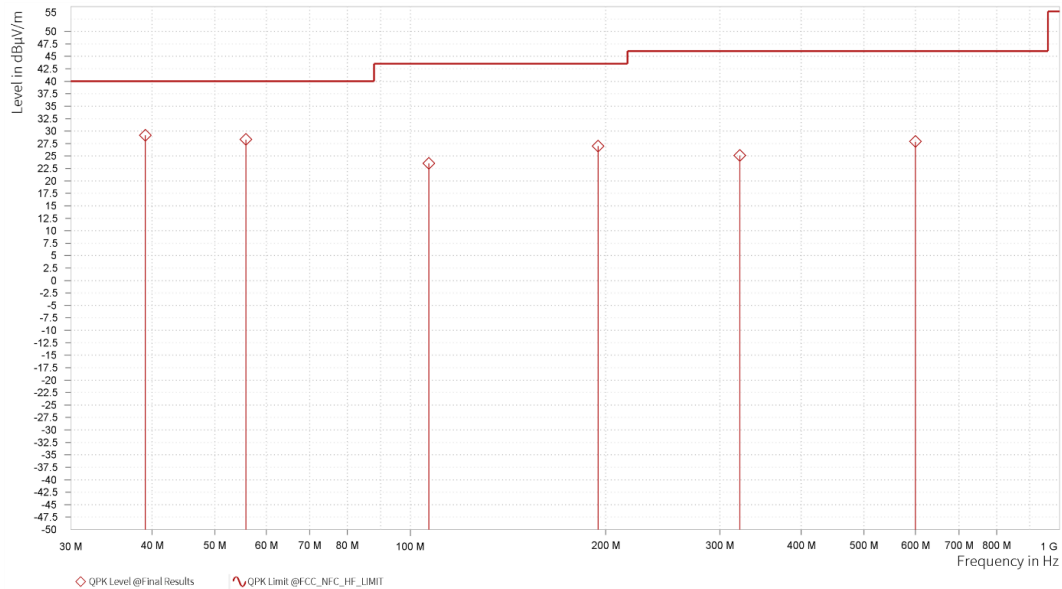


BUREAU VERITAS Test Report No.: PSU-QBJ2512030414RF04

3.2.5 TEST RESULT OF RADIATED SPURIOUS EMISSION (30MHZ ~ 1GHZ)

Test Mode :	NFC (13.56MHz)	Temperature :	23℃
Test Engineer :	Hanwen Xu	Relative Humidity :	50%
Frequency Range	30MHz~1GHz	Polarization :	Horizontal

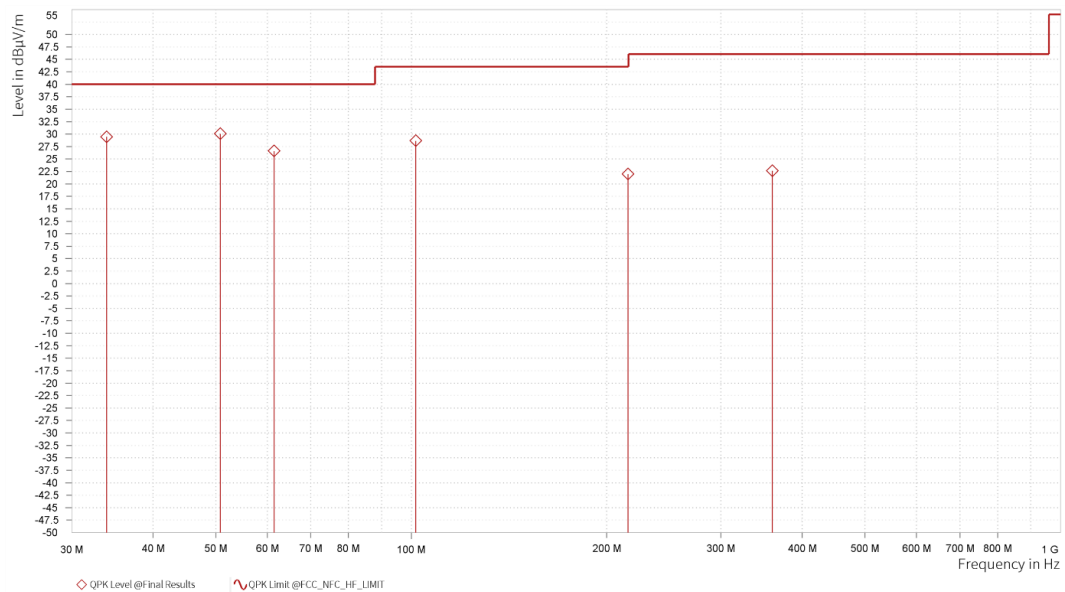
Rg	Frequency [MHz]	QPK Level [dBμV/m]	QPK Limit [dBμV/m]	QPK Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]
1	39.083	29.14	40.00	10.86	-5.00	H	359	1.00	120.000
1	55.837	28.30	40.00	11.70	-4.16	H	270.7	1.00	120.000
1	106.806	23.51	43.50	19.99	-5.87	H	359	1.00	120.000
1	194.724	26.97	43.50	16.53	-5.43	H	5	1.00	120.000
1	321.882	25.10	46.00	20.90	-1.21	H	359	1.00	120.000
1	600.184	27.87	46.00	18.13	3.31	H	359	1.00	120.000



**Test Report No.: PSU-QBJ2512030414RF04**

Test Mode :	NFC (13.56MHz)	Temperature :	23°C
Test Engineer :	Hanwen Xu	Relative Humidity :	50%
Frequency Range	30MHz~1GHz	Polarization :	Vertical

Rg	Frequency [MHz]	QPK Level [dBμV/m]	QPK Limit [dBμV/m]	QPK Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]
1	33.924	29.43	40.00	10.57	-8.42	V	140.3	1.00	120.000
1	50.767	30.06	40.00	9.94	-4.66	V	8.7	1.00	120.000
1	61.481	26.58	40.00	13.42	-7.74	V	140.3	1.00	120.000
1	101.648	28.64	43.50	14.86	-6.04	V	359	1.00	120.000
1	215.711	21.96	43.50	21.54	-5.34	V	8.7	1.00	120.000
1	359.976	22.62	46.00	23.38	1.10	V	8.7	1.00	120.000





3.3AC CONDUCTED EMISSION MEASUREMENT

3.3.1 LIMIT OF AC CONDUCTED EMISSION

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

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

3.3.2 TEST PROCEDURES

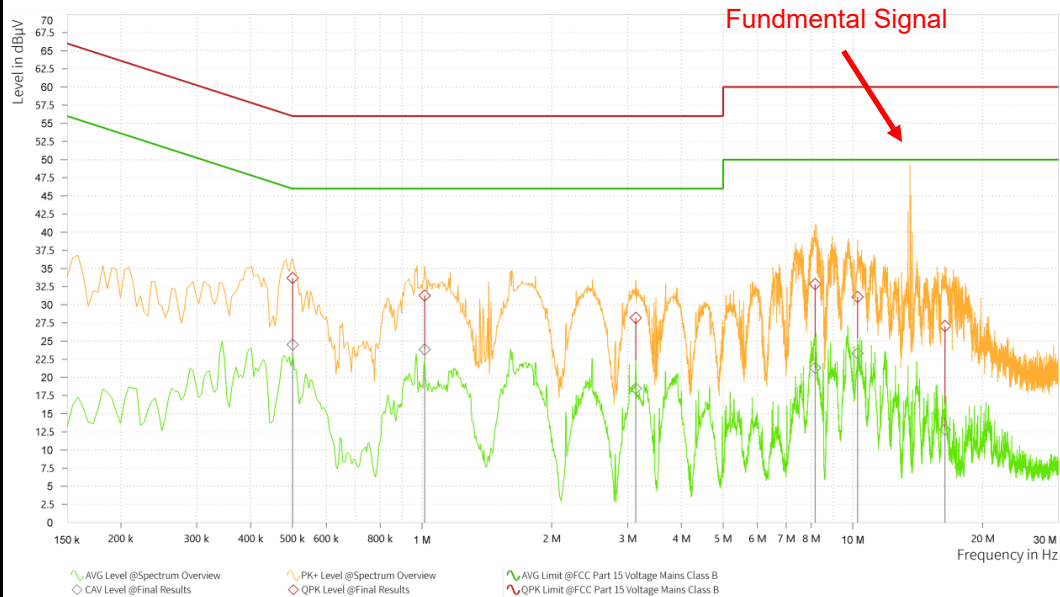
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.



3.3.3 TEST RESULT OF AC CONDUCTED EMISSION

Test Mode :	NFC	Temperature :	26°C
Test Engineer :	Hanwen Xu	Relative Humidity :	51%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	NFC		

Rg	Frequency [MHz]	QPK Level [dBμV]	QPK Limit [dBμV]	QPK Margin [dB]	CAV Level [dBμV]	CAV: AVG Limit [dBμV]	CAV Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]
1	0.501	33.69	56.00	22.31	24.52	46.00	21.48	9.75	L1	9.000
1	1.014	31.27	56.00	24.73	23.85	46.00	22.15	9.77	L1	9.000
1	3.134	28.20	56.00	27.80	18.49	46.00	27.51	9.96	L1	9.000
1	8.174	32.84	60.00	27.16	21.30	50.00	28.70	10.66	L1	9.000
1	10.253	31.08	60.00	28.92	23.31	50.00	26.69	11.04	L1	9.000
1	16.359	27.07	60.00	32.93	12.80	50.00	37.20	12.57	L1	9.000

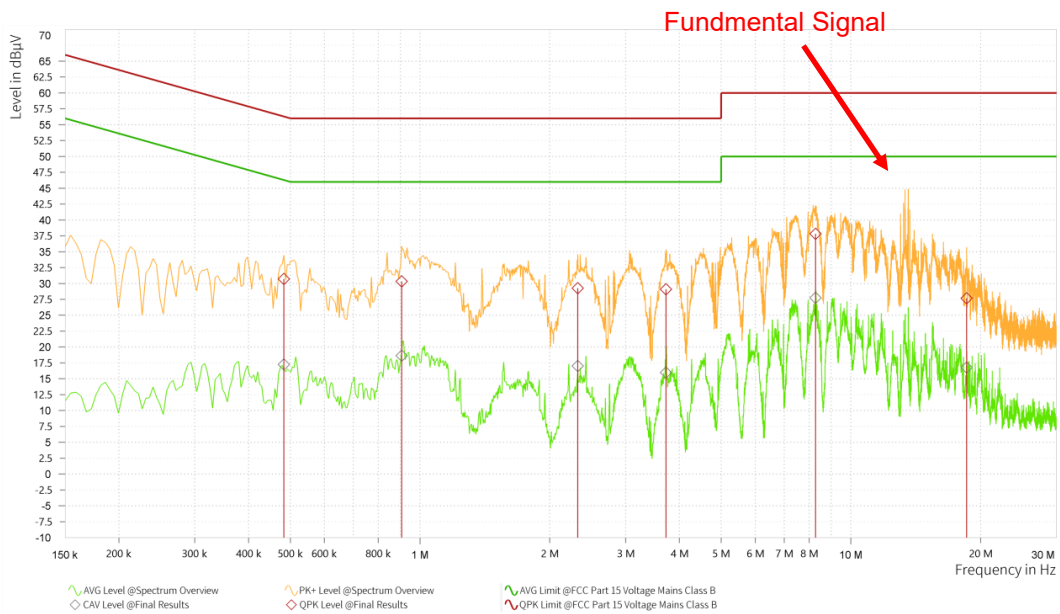




BUREAU VERITAS Test Report No.: PSU-QBJ2512030414RF04

Test Mode :	NFC	Temperature :	26°C
Test Engineer :	Hanwen Xu	Relative Humidity :	51%
Test Voltage :	AC 120V/60Hz	Phase :	Neutral
Function Type :	NFC		

Rg	Frequency [MHz]	QPK Level [dBμV]	QPK Limit [dBμV]	QPK Margin [dB]	CAV Level [dBμV]	CAV: AVG Limit [dBμV]	CAV Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]
1	0.483	30.72	56.29	25.57	17.24	46.29	29.05	9.75	N	9.000
1	0.906	30.33	56.00	25.67	18.63	46.00	27.37	9.76	N	9.000
1	2.324	29.26	56.00	26.74	17.02	46.00	28.98	9.86	N	9.000
1	3.723	29.09	56.00	26.91	15.97	46.00	30.03	10.02	N	9.000
1	8.282	37.83	60.00	22.17	27.74	50.00	22.26	10.68	N	9.000
1	18.573	27.66	60.00	32.34	16.79	50.00	33.21	13.18	N	9.000



**4 LIST OF MEASURING EQUIPMENT**

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
WIDEBAND RADIO COMMUNICATION TESTER	Rohde&Schwarz	CMW500	169399	Jun.19,24	Jun.18,26
3m Semi-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-EMC-02Chamber	Aug.20,25	Aug.19,28
Bilog Antenna	SCHWARZBECK	VULB 9163	1264	Jul.04,25	Jul.03,27
Loop Antenna	R&S	HFH2-Z2/Z2E	100976	Feb.22,25	Feb.21,27
Antenna Power Supply	RS	N/A	N/A	N/A	N/A
Receiver	R&S	ESR26	101734	Mar.28,24	Mar.27,26
Measurement Software	R&S	ELEKTRA	N/A	N/A	N/A
Pre-Amplifier	R&S	SCU08F1	101028	Jan.22,24	Jan.21,26
CABLE	R&S	W13.01	N/A	Apr.26,25	Apr.25,26
CABLE	R&S	W13.02	N/A	Apr.26,25	Apr.25,26
CABLE	R&S	W12.14	N/A	Apr.26,25	Apr.25,26

- NOTE:**
1. The calibration interval of the above test instruments is 12/ 24/ 36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
 2. The test was performed in 3m Chamber.
 3. The FCC Site Registration No. is 434559; The Designation No. is CN1325.

5 UNCERTAINTY OF EVALUATION

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	UNCERTAINTY
AC Power Conducted emissions	$\pm 2.70\text{dB}$
Radiated emissions (9KHz~30MHz)	$\pm 2.68\text{dB}$
Radiated emissions (30MHz~1GHz)	$\pm 4.98\text{dB}$
Occupied Channel Bandwidth	$\pm 43.58\text{KHz}$
Frequency Stability	$\pm 76.97\text{Hz}$

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



BUREAU VERITAS Test Report No.: PSU-QBJ2512030414RF04

6 APPENDIX: THE ORIGINAL REPORT

RADIO TEST REPORT

(FCC Part 15 Subpart C / IC RSS-210)

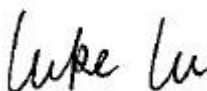
Applicant:	Honeywell International Inc Honeywell Safety and Productivity Solutions
Address:	9680 Old Bailes Road, Fort Mill, SC 29707 United States

Manufacturer or Supplier:	Honeywell International Inc Honeywell Safety and Productivity Solutions
Address:	9680 Old Bailes Road, Fort Mill, SC 29707 United States
Product:	Mobile Computer
Brand Name:	Honeywell
Model Name:	CT45P-X0N
FCC ID:	HD5-CT45PX0N
Date of tests:	Aug. 27, 2021 ~ Sep. 03 2021

The tests have been carried out according to the requirements of the following standard:

- ☒ **Part 15 Subpart C §15. 225 / IC RSS-210 issue 10(December 2019)**
- ☒ **RSS-Gen Issue 5 Amendment 1 (March 2019)**
- ☒ **ANSI C63.10-2013**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Simon Wang Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
 Date: Sep. 16, 2021	 Date: Sep. 16, 2021

This report is governed by, and incorporates by reference, CPS Conditions of Service as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute you unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.



Test Report No.: W7L-P21080021RF10

Report Revise Record

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P21080021RF10	Original release	Sep. 16, 2021

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Summary of Test RESULT

FCC Rule	IC Rule	Description	Limit	Result	Remark
-	RSS-Gen 6.7	99% Bandwidth	-	Pass	-
15.225(a)(b)(c)	RSS-210 Annex B.6	Field Strength of Fundamental Emissions	15.225(a)(b)(c) RSS-210 Annex B.6	Pass	-
15.215(c)	-	20dB Spectrum Bandwidth	15.215(c)	Pass	-
15.225(d) 15.209	RSS-210 Annex B.6	Radiated Emission	15.225(d) & 15.209 RSS-210 Annex B.6	Pass	Under limit 9.11 dB at 935.01 MHz
15.207	RSS-GEN 8.8	AC Conducted Emission	15.207(a)	Pass	Under limit 17.22 dB at 0.505 MHz
15.225(e)	Annex B.6	Frequency Stability	< ±100 ppm	Pass	
15.203	RSS-Gen 6.8	Antenna Requirement	N/A	Pass	-

1. General Description

1.1 Applicant

Honeywell International Inc
Honeywell Safety and Productivity Solutions
9680 Old Bailes Road, Fort Mill, SC 29707 United States

1.2 Manufacturer

Honeywell International Inc
Honeywell Safety and Productivity Solutions
9680 Old Bailes Road, Fort Mill, SC 29707 United States

1.3 General Description Of EUT

Items	Description
Tx/Rx Frequency Range	13.553 ~ 13.567MHz
Channel Number	1
20dBW	2.789 kHz
99%OBW	2.820 kHz
Antenna Type	Loop Antenna
Type of Modulation	ASK

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Modification of EUT

No modifications are made to the EUT during all test items.

1.5 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC Part 15 Subpart C §15.225
- ♦ ANSI C63.10-2013
- ♦ RSS-210 Issue 10
- ♦ RSS-Gen Issue 5



2. Test Configuration of Equipment Under Test

2.1 Descriptions of Test Mode

Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

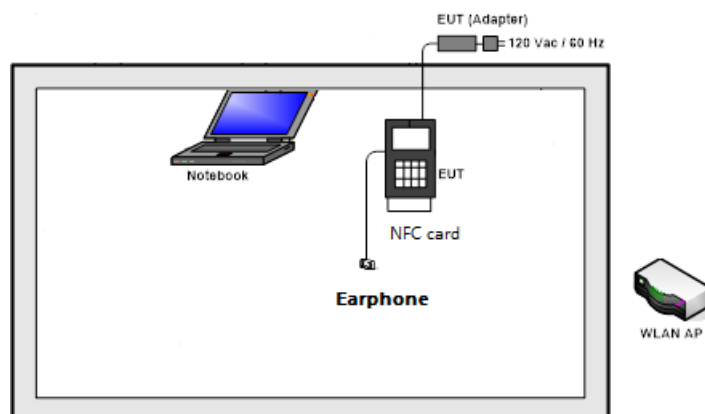
Test Items	
AC Power Line Conducted Emissions	Field Strength of Fundamental Emissions
20dB Spectrum Bandwidth	Frequency Stability
Radiated Emissions 9kHz~30MHz	Radiated Emissions 30MHz~1GHz
Note: 1. The EUT was programmed to be in continuously transmitting mode. 2. The ancillary equipment, NFC card, is used to make the EUT (NFC) continuously transmit at 13.56MHz and is placed around 3 cm gap to the EUT. 3. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, work in modes and data rates. Selected for the final test as listed below.	

Frequency	Work in Modes	Type	Data Rate (Kbps)
13.56 MHz	☐ Card Emulation	☐ A	☒ 106
	☒ Reader/Writer	☒ B	☐ 212
	☐ Peer-to-Peer	☐ F	☐ 424
		☐ V	☐ 848
Remark: The mark " ☒ " means is chosen for testing; The mark " ☐ " means is not chosen for testing.			

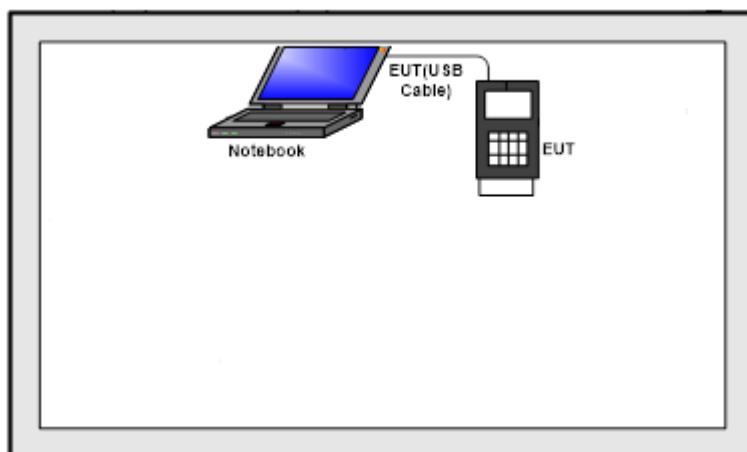


2.2 Test Configurations

<AC Conducted Emissions>



< For Fundamental Emissions and Mask and Radiated Emissions Measurement >



2.3 Support Equipment

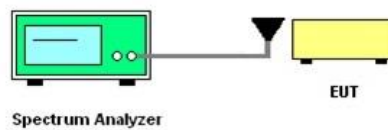
Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	WLAN AP	NETGARE	R7800	PY315100319	N/A	unshielded AC I/P cable 1.2 m
2.	Notebook	Lenovo	E407C	FCC sDOC	N/A	shielded cable DC O/P 1.8 m unshielded AC I/P cable 1.2 m
3.	Notebook	Lenovo	Xiaoxinchao5000	FCC sDOC	N/A	N/A
4.	Adapter	Honeywell	ADS-12B-06 05010E	FCC sDoC	N/A	N/A
5.	Earphone	Honeywell	PTE-300N	FCC sDoC	N/A	N/A

2.4 Test Setup

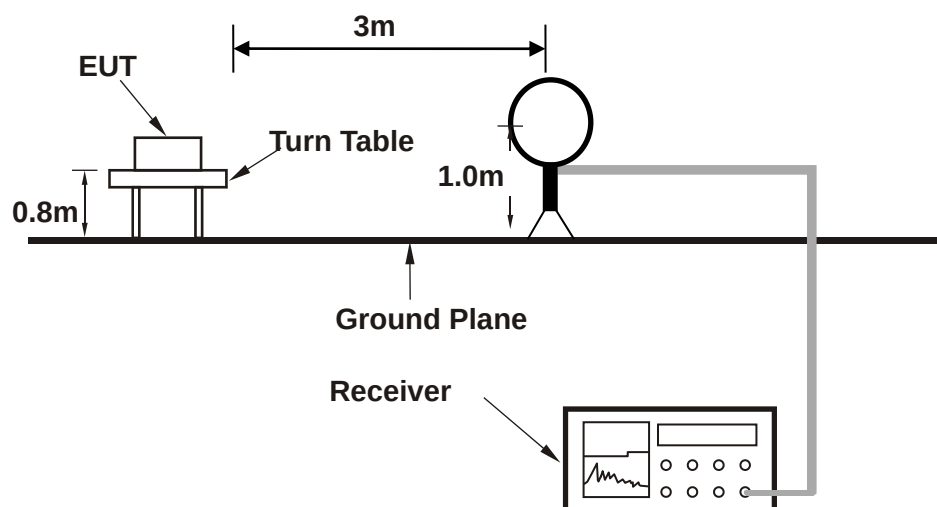
The EUT is continuously communicating during the tests.

EUT was set in the Hidden menu mode to enable NFC communications.

Setup diagram for Conducted Test

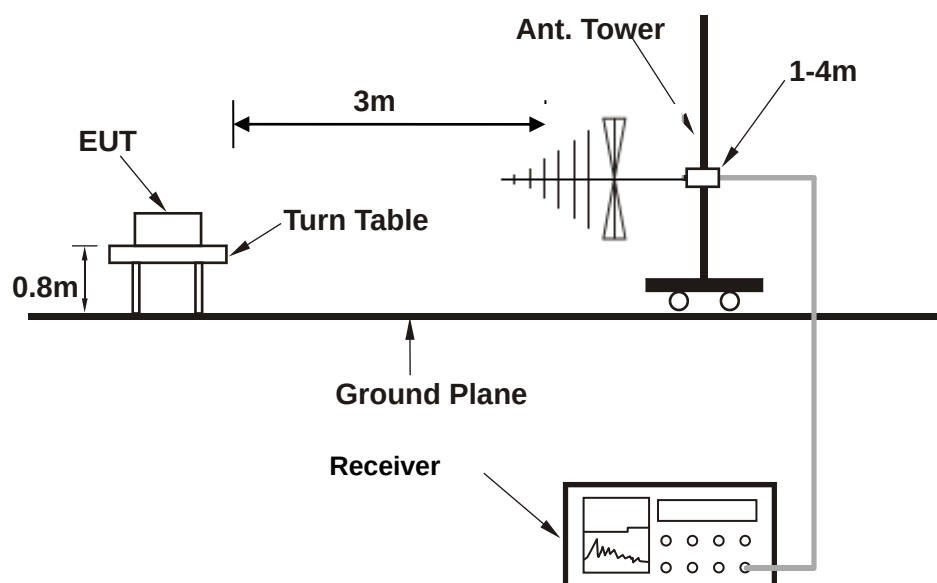


Setup diagram for Radiation(9KHz~30MHz) Test

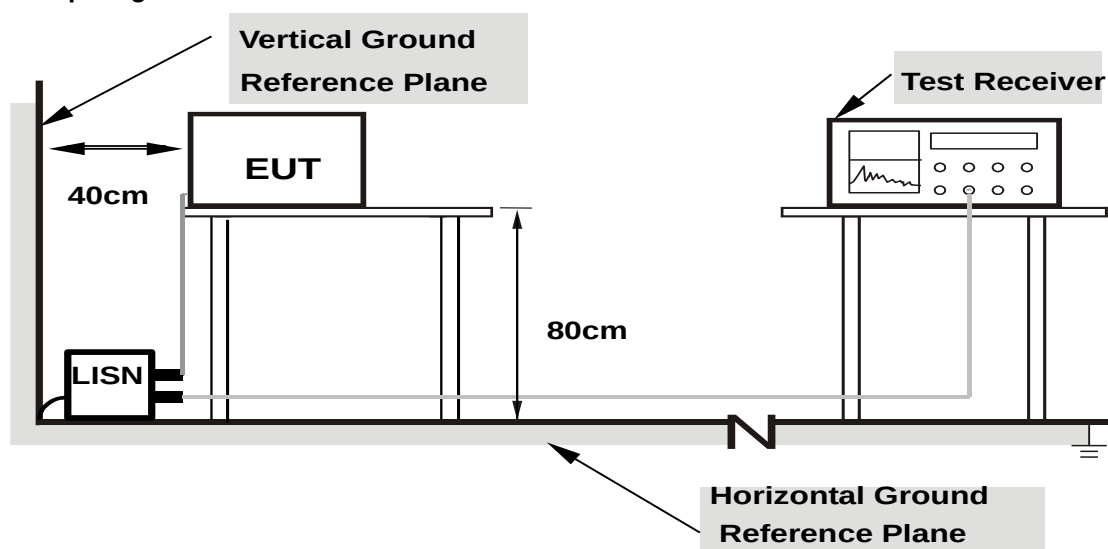




Setup diagram for Radiation(Below 1G) Test



Setup diagram for AC Conducted Emission Test



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes



2.5 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 5 dB and 10dB attenuator.

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 5 + 10 = 15 \text{ (dB)}\end{aligned}$$

For radiated 9kHz to 30MHz test items:

Corrected Reading: Antenna Factor + Cable Loss + Read Level = Level

Over Limit (dB μ V/m) = Level(dB μ V/m) - Limit Level (dB μ V/m)

For radiated 30MHz to 1GHz test items:

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

Over Limit (dB μ V/m) = Level(dB μ V/m) - Limit Level (dB μ V/m)



3. Test Result

3.1 20dB and 99% Bandwidth Measurement

3.1.1 Limit of 20dB and 99% Bandwidth

Intentional radiators must be designed to ensure that the 20dB and 99% emission bandwidth in the specific band 13.553~13.567MHz.

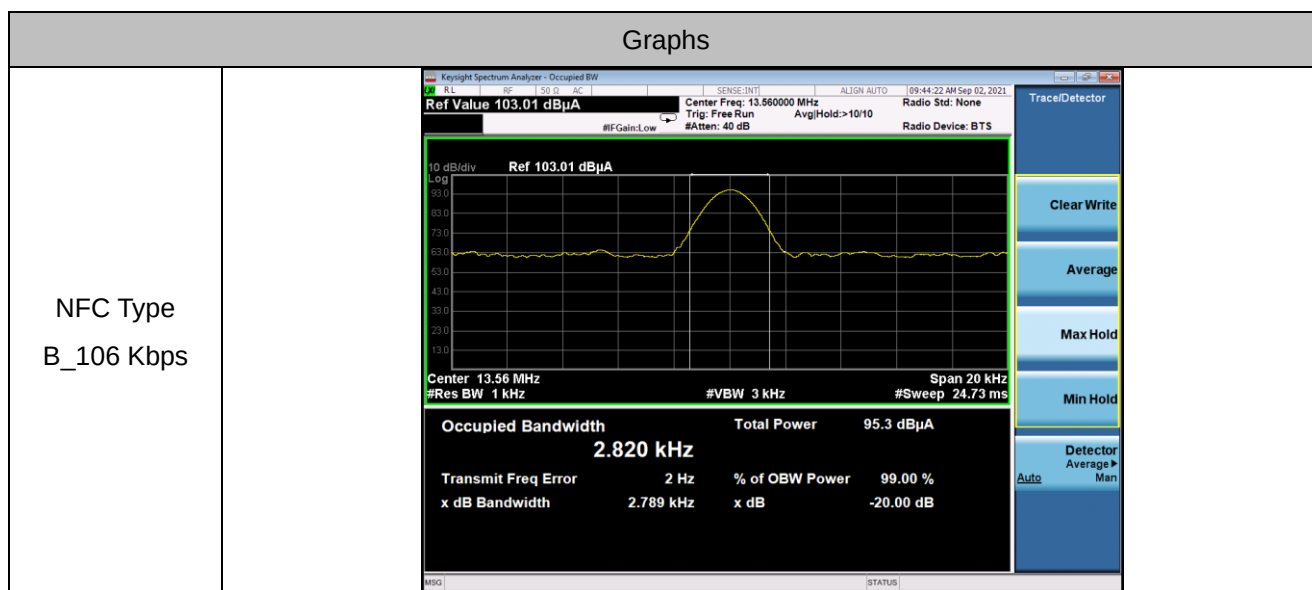
3.1.2 Test Procedures

1. The spectrum analyzer connected via a receive antenna placed near the EUT in peak Max hold mode.
2. The resolution bandwidth of 1 kHz and the video bandwidth of 3 kHz were used.
3. Measured the spectrum width with power higher than 20dB below carrier.
4. Measured the 99% OBW.

3.1.3 Test Result of 20dB and 99% Bandwidth

Test Mode :	NFC	Temperature :	23~25℃	
Test Engineer :	Jack Liu	Relative Humidity :	60~63%	
Mode	Frequency	20dB Bandwidth [kHz]	99% OBW[kHz]	Verdict
NFC Type B_106 Kbps	13.56MHz	2.789	2.820	PASS

20dB Bandwidth & 99% Bandwidth Plot



3.2 Frequency Stability Measurement

3.2.1 Limit of Frequency Stability

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% (100ppm) 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.

3.2.2 Test Procedures

1. The spectrum analyzer connected via a receive antenna placed near the EUT.
2. EUT have transmitted signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire emissions bandwidth.
4. Set RBW = 1 kHz, VBW = 3 kHz with peak detector and maxhold settings.
5. The fc is declaring of channel frequency. Then the frequency error formula is $(f_c - f) / f_c \times 10^6$ ppm and the limit is less than ± 100 ppm.
6. Extreme temperature rule is -20°C~50°C.

3.2.3 Test Result of Frequency Stability

The NFC Type B_106 Kbps is the worst case, Only report worst mode data

Voltage vs. Frequency Stability		Temperature vs. Frequency Stability	
Voltage (Vac)	Measurement Frequency (MHz)	Temperature (°C)	Measurement Frequency (MHz)
3.85	13.55988	-20	13.55987
3.3	13.55988	-10	13.55988
4.4	13.55987	0	13.55987
-	-	10	13.55986
-	-	20	13.55988
-	-	30	13.55988
-	-	40	13.55988
-	-	50	13.55988
Max.Deviation (MHz)	-0.00013	Max.Deviation (MHz)	-0.00014
Max.Deviation (ppm)	-9.59	Max.Deviation (ppm)	-10.32
Limit	FS < ± 100 ppm	Limit	FS < ± 100 ppm
Test Result	PASS	Test Result	PASS

3.3 Field Strength of Fundamental Emissions and Mask Measurement

3.3.1 Limit of Field Strength of Fundamental Emissions and Mask

Rules and specifications	FCC CFR 47 Part 15 section 15.225 IC RSS-210 B.6			
	Compliance with the spectrum mask is tested with RBW set to 9kHz.			
Description				
Freq. of Emission (MHz)	Field Strength ($\mu\text{V/m}$) at 30m	Field Strength (dB $\mu\text{V/m}$) at 30m	Field Strength (dB $\mu\text{V/m}$) at 10m	Field Strength (dB $\mu\text{V/m}$) at 3m
1.705~13.110	30	29.5	48.58	69.5
13.110~13.410	106	40.5	59.58	80.5
13.410~13.553	334	50.5	69.58	90.5
13.553~13.567	15848	84.0	103.08	124.0
13.567~13.710	334	50.5	69.58	90.5
13.710~14.010	106	40.5	59.58	80.5
14.010~30.000	30	29.5	48.58	69.5

3.3.2 Test Procedures

1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the loop receiving antenna mounted antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the receiving antenna was fixed at one meter above ground to find the maximum emissions field strength.
4. For Fundamental emissions, use the receiver to measure QP reading.
5. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
6. Compliance with the spectrum mask is tested with RBW set to 9kHz.

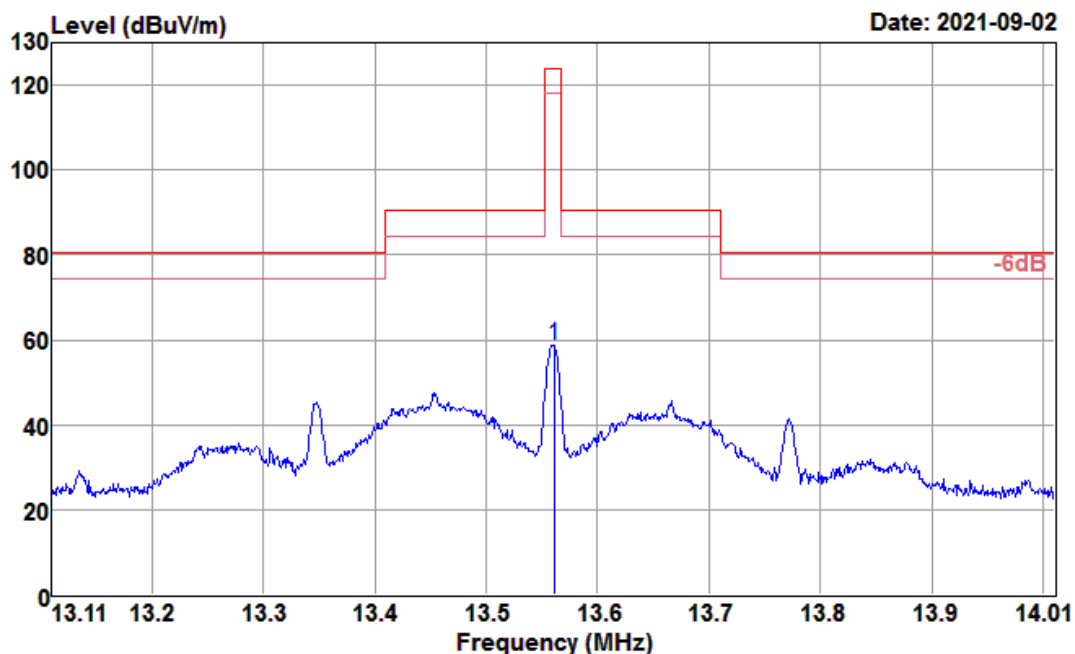
Note: Emission level (dB $\mu\text{V/m}$) = 20 log Emission level ($\mu\text{V/m}$).



3.3.3 Test Results of Field Strength of Fundamental Emissions and Mask (1.705 MHz ~ 30 MHz)

Test Mode :	NFC (13.56 MHz)	Temperature :	23~25°C
Test Engineer :	Jack Liu	Relative Humidity :	63~65%
Frequency Range	13.11Hz~14.01MHz	Polarization :	Horizontal

Data: 1

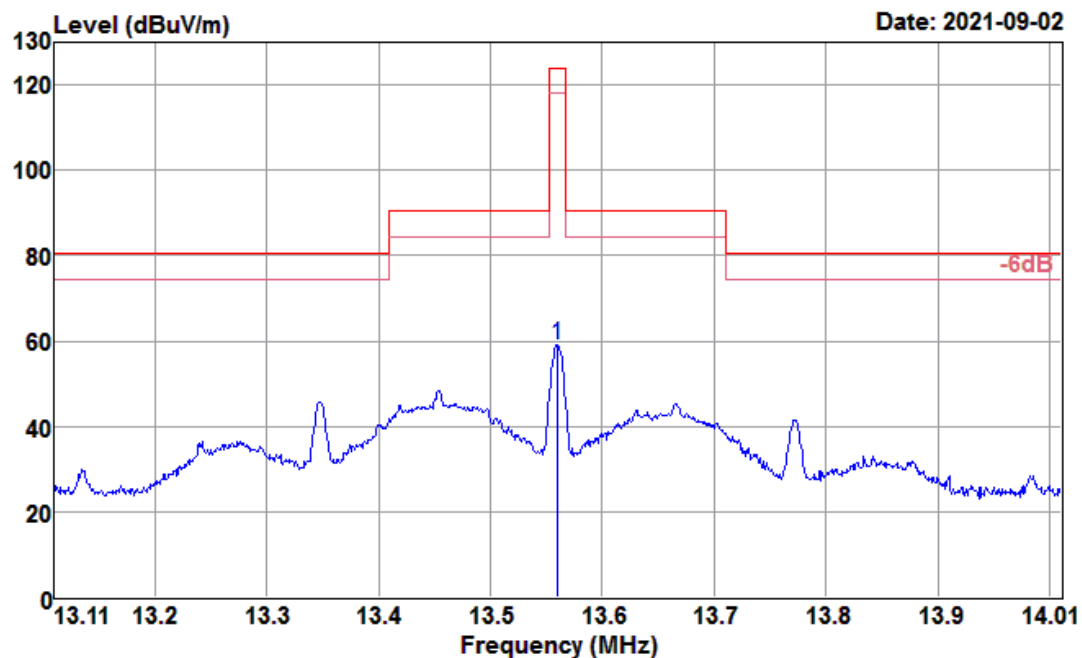


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
13.561	38.93	19.33	0.61	58.87	124.00	-65.13	Peak



Test Mode :	NFC (13.56 MHz)	Temperature :	23~25°C
Test Engineer :	Jack Liu	Relative Humidity :	63~65%
Frequency Range	13.11Hz~14.01MHz	Polarization :	Vertical

Data: 2



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
13.560	39.06	19.33	0.62	59.01	124.00	-64.99	Peak

3.4 Radiated Emissions Measurement

3.4.1 Limit

The field strength of any emissions which appear outside of 13.110 ~14.010MHz band shall not exceed the general radiated emissions limits.

Frequencies (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

3.4.2 Measuring Instrument Setting

The following table is the setting of receiver.

Receiver Parameter	Setting
Attenuation	Auto
Frequency Range: 9kHz~150kHz	RBW 200Hz for QP
Frequency Range: 150kHz~30MHz	RBW 9kHz for QP
Frequency Range: 30MHz~1000MHz	RBW 120kHz for Peak

Note: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz. Radiated emission limits in these two bands are based on measurements employing an average detector.

3.4.3 Test Procedures

1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the

Test Report No.: W7L-P21080021RF10

turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.

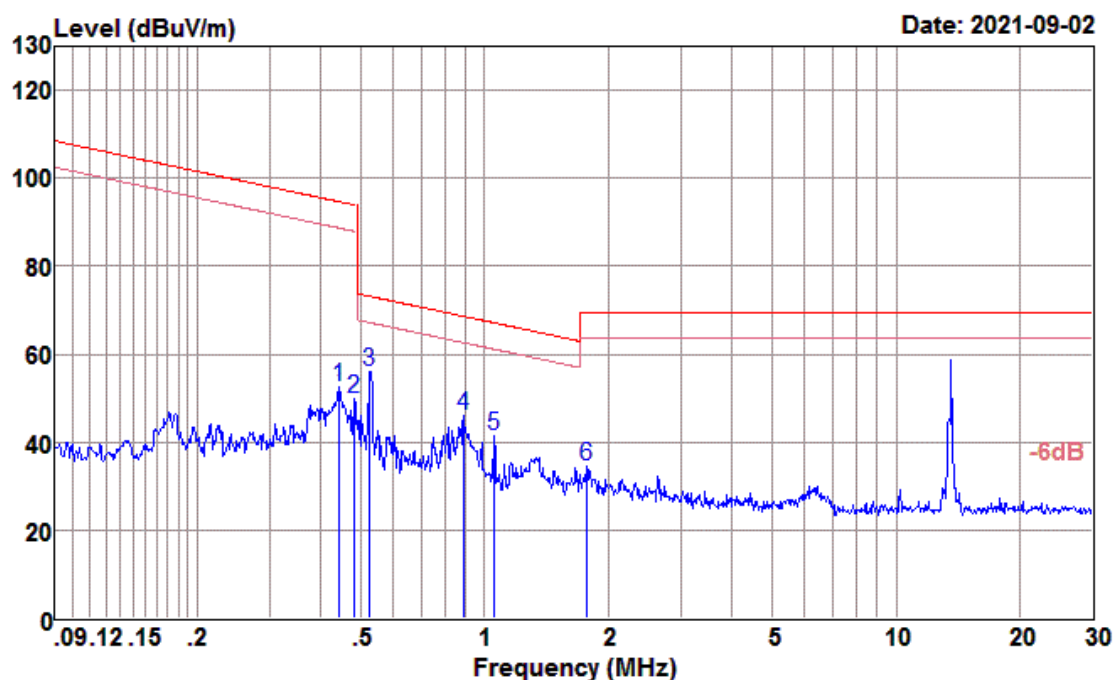
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
7. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver.



3.4.4 Test Results of Radiated Emissions (9 KHz ~ 30 MHz)

Test Mode :	NFC (13.56 MHz)	Temperature :	23~25°C
Test Engineer :	Jack Liu	Relative Humidity :	63~65%
Frequency Range	9 KHz ~ 30 MHz	Polarization :	Horizontal

Data: 3

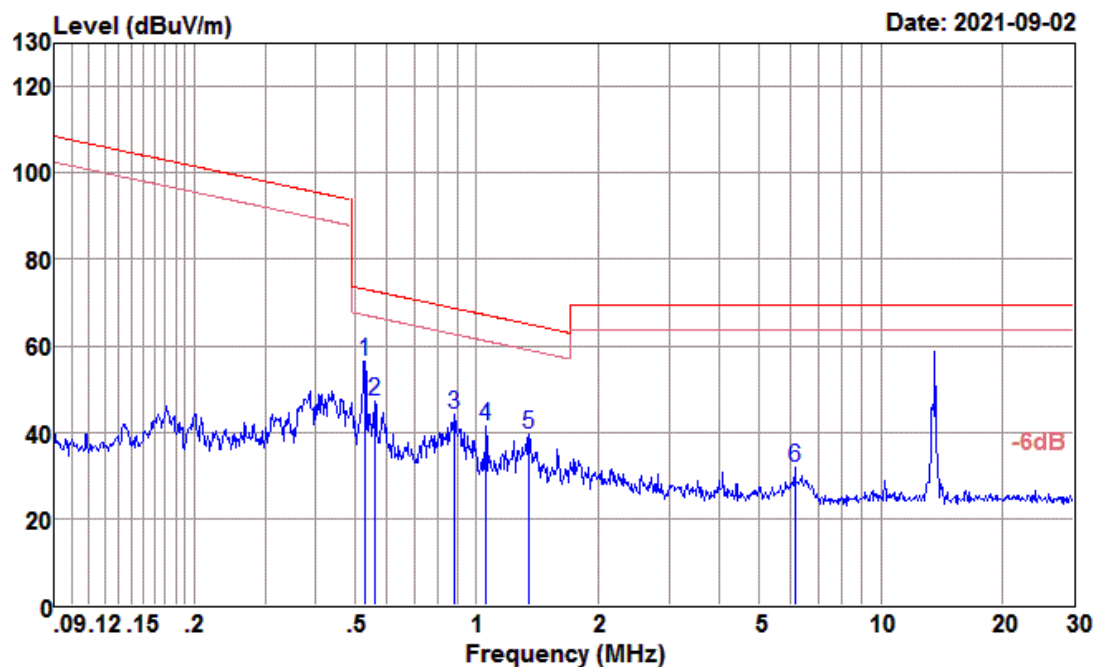


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
0.442	33.37	19.04	0.07	52.48	94.70	-42.22	QP
0.482	30.85	19.01	0.08	49.94	93.94	-44.00	QP
0.526	37.05	19.02	0.08	56.15	73.18	-17.03	QP
0.888	26.79	19.31	0.11	46.21	68.64	-22.43	QP
1.057	22.02	19.39	0.12	41.53	67.12	-25.59	QP
1.772	14.85	19.32	0.17	34.34	69.54	-35.20	QP



Test Mode :	NFC (13.56 MHz)	Temperature :	23~25°C
Test Engineer :	Jack Liu	Relative Humidity :	63~65%
Frequency Range	9 KHz ~ 30 MHz	Polarization :	Vertical

Data: 4



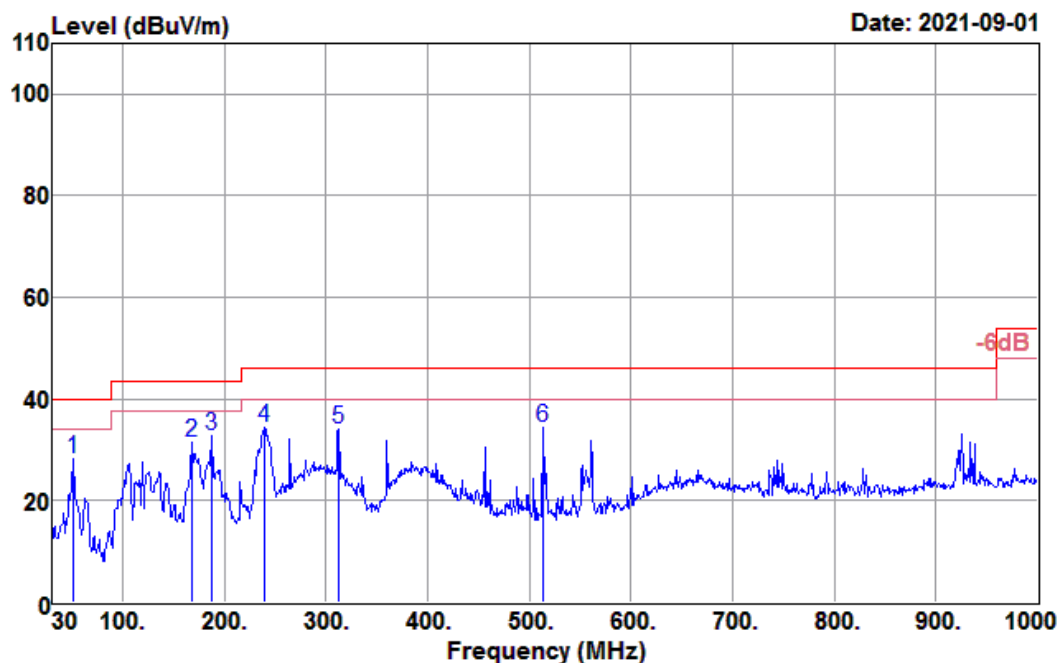
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
0.529	37.10	19.02	0.08	56.20	73.14	-16.94	QP
0.561	28.11	19.05	0.09	47.25	72.62	-25.37	QP
0.877	24.67	19.30	0.11	44.08	68.74	-24.66	QP
1.057	21.79	19.39	0.12	41.30	67.12	-25.82	QP
1.349	19.98	19.37	0.14	39.49	65.00	-25.51	QP
6.143	11.89	19.40	0.39	31.68	69.54	-37.86	QP



3.4.5 Test Result of Radiated Spurious Emission (30MHz ~ 1GHz)

Test Mode :	NFC (13.56MHz)	Temperature :	23~25°C
Test Engineer :	Jack Liu	Relative Humidity :	63~65%
Frequency Range	30MHz~1GHz	Polarization :	Horizontal

Data: 5

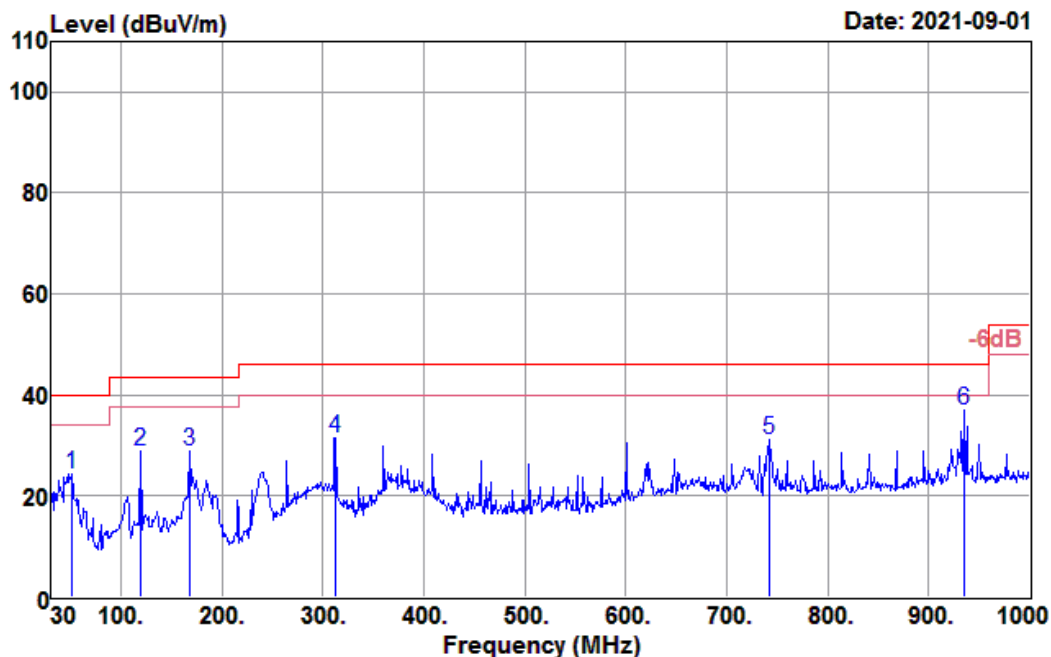


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
50.370	44.65	14.96	1.17	32.60	28.18	40.00	-11.82	Peak
167.740	48.49	13.45	2.22	32.57	31.59	43.50	-11.91	Peak
187.140	51.63	11.36	2.36	32.59	32.76	43.50	-10.74	Peak
239.520	52.60	11.77	2.73	32.60	34.50	46.00	-11.50	Peak
312.270	50.16	13.30	3.10	32.61	33.95	46.00	-12.05	Peak
514.030	46.19	17.08	4.08	32.79	34.56	46.00	-11.44	Peak



Test Mode :	NFC (13.56MHz)	Temperature :	23~25°C
Test Engineer :	Jack Liu	Relative Humidity :	63~65%
Frequency Range	30MHz~1GHz	Polarization :	Vertical

Data: 6



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
50.370	40.96	14.96	1.17	32.60	24.49	40.00	-15.51	Peak
119.240	48.44	11.23	1.86	32.52	29.01	43.50	-14.49	Peak
167.740	45.70	13.45	2.22	32.57	28.80	43.50	-14.70	Peak
312.270	47.60	13.30	3.10	32.61	31.39	46.00	-14.61	Peak
741.980	37.95	20.73	4.98	32.56	31.10	46.00	-14.90	Peak
935.010	40.23	22.40	5.75	31.49	36.89	46.00	-9.11	Peak

3.5 AC Conducted Emission Measurement

3.5.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

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

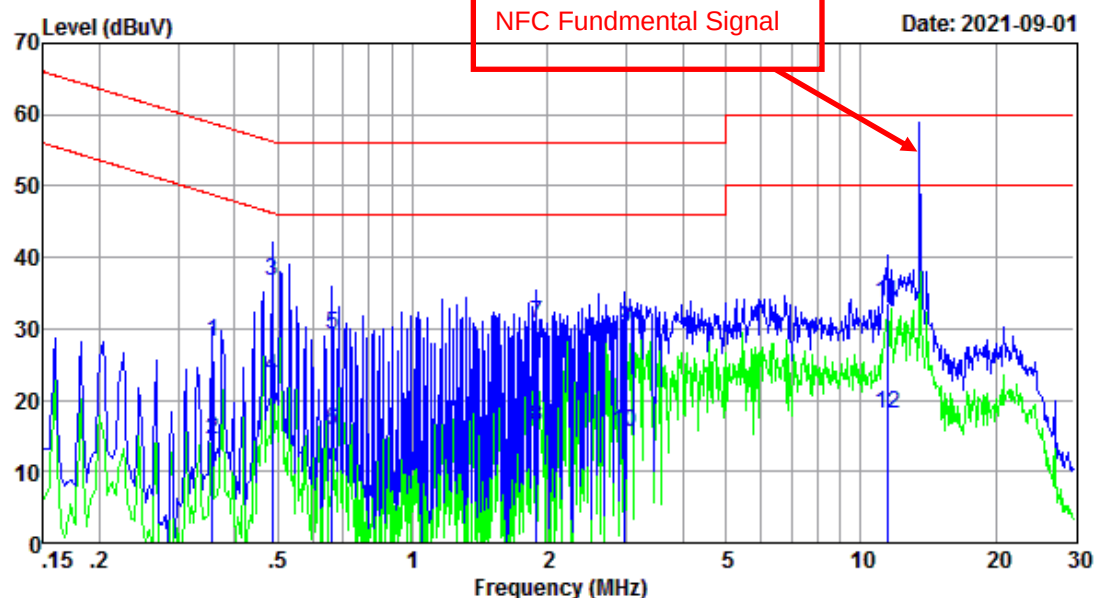
3.5.2 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.



3.5.3 Test Result of AC Conducted Emission

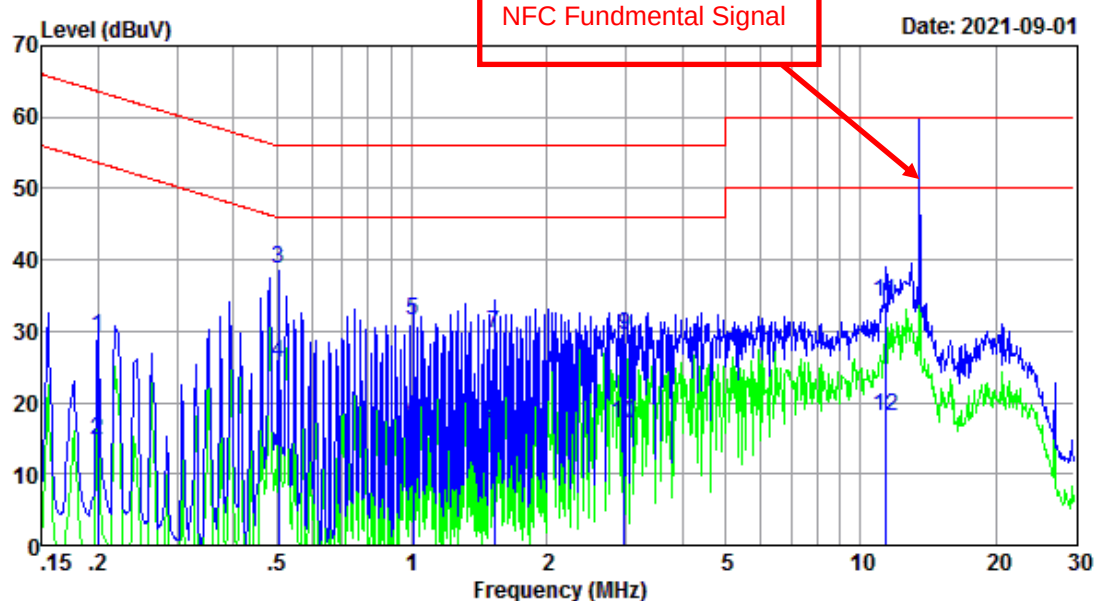
Test Mode :	Mode 1	Temperature :	26.6°C
Test Engineer :	Jack Liu	Relative Humidity :	47%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	NFC + USB Cable (Charging from Adapter)		



Freq MHz	Reading level dBuV	LISN/ISN factor dB	Cable loss dB	Result level dBuV	Limit level dBuV	Over limit dB	Remark
0.358	18.60	9.57	0.01	28.18	58.78	-30.60	QP
0.358	4.90	9.57	0.01	14.48	48.78	-34.30	Average
0.486	27.00	9.58	0.01	36.59	56.23	-19.64	QP
0.486	13.60	9.58	0.01	23.19	46.23	-23.04	Average
0.661	19.60	9.58	0.02	29.20	56.00	-26.80	QP
0.661	6.20	9.58	0.02	15.80	46.00	-30.20	Average
1.888	21.00	9.59	0.03	30.62	56.00	-25.38	QP
1.888	6.70	9.59	0.03	16.32	46.00	-29.68	Average
2.978	20.20	9.61	0.04	29.85	56.00	-26.15	QP
2.978	5.90	9.61	0.04	15.55	46.00	-30.45	Average
11.438	23.70	9.85	0.09	33.64	60.00	-26.36	QP
11.438	8.20	9.85	0.09	18.14	50.00	-31.86	Average



Test Mode :	Mode 1	Temperature :	26.6°C
Test Engineer :	Jack Liu	Relative Humidity :	47%
Test Voltage :	AC 120V/60Hz	Phase :	Neutral
Function Type :	NFC + USB Cable (Charging from Adapter)		



Freq MHz	Reading level dBuV	LISN/ISN factor dB	Cable loss dB	Result level dBuV	Limit level dBuV	Over limit dB	Remark
0.200	19.70	9.55	0.01	29.26	63.62	-34.36	QP
0.200	5.10	9.55	0.01	14.66	53.62	-38.96	Average
0.505	29.20	9.57	0.01	38.78	56.00	-17.22	QP
0.505	15.90	9.57	0.01	25.48	46.00	-20.52	Average
1.005	21.90	9.59	0.02	31.51	56.00	-24.49	QP
1.005	7.30	9.59	0.02	16.91	46.00	-29.09	Average
1.527	20.20	9.58	0.03	29.81	56.00	-26.19	QP
1.527	7.30	9.58	0.03	16.91	46.00	-29.09	Average
2.978	19.70	9.61	0.04	29.35	56.00	-26.65	QP
2.978	7.40	9.61	0.04	17.05	46.00	-28.95	Average
11.377	24.20	9.88	0.09	34.17	60.00	-25.83	QP
11.377	8.10	9.88	0.09	18.07	50.00	-31.93	Average

3.6 Antenna Requirements

3.6.1 Standard Applicable

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. 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 the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited.

3.6.2 Antenna Connected Construction

An Loop Antenna design is used.

3.6.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi.



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Due Date	Remark
Spectrum Analyzer	Keysight	N9010A	MY56070788	2021-01-05	2022-01-04	Conducted
Power Sensor	Keysight	U2021XA	MY56510025	2021-01-05	2022-01-04	Conducted
Power Sensor	Keysight	U2021XA	MY57030005	2021-01-05	2022-01-04	Conducted
Power Sensor	Keysight	U2021XA	MY56510018	2021-01-05	2022-01-04	Conducted
Power Sensor	Keysight	U2021XA	MY56480002	2021-01-05	2022-01-04	Conducted
Thermal Chamber	Howkin	UHL-34	19111801	2021-04-21	2022-04-20	Conducted
Base Station	R&S	CMW 270	101231	2021-01-05	2022-01-04	Conducted
Signal Generator (Interferer)	Keysight	N5182B	MY56200384	2021-01-05	2022-01-04	Conducted
Signal Generator (Blocker)	Keysight	N5171B	MY56200661	2021-01-05	2022-01-04	Conducted

Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV 40	101433	2021-01-05	2022-01-04	Radiation
Amplifier	Sonoma	310	363917	2021-01-06	2022-01-05	Radiation
Amplifier	Schwarzbeck	BBV 9718	327	2021-01-06	2022-01-05	Radiation
Amplifier	Narda	TTA1840-35-HG	2034380	2020-11-28	2021-11-27	Radiation
Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-051	2020-02-14	2023-02-13	Radiation
Broadband Antenna	Schwarzbeck	VULB 9168	9168-757	2020-09-27	2023-09-26	Radiation
Horn Antenna	Schwarzbeck	BBHA 9120 D	1677	2020-02-14	2023-02-13	Radiation
Horn Antenna	COM-POWER	AH-1840	101117	2021-06-18	2024-06-17	Radiation
Test Software	Audix	E3	6.111221a	N/A	N/A	Radiation
Filter	Micro-Tronics	BRM 50702	G266	N/A	N/A	Radiation



Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Due Date	Remark
LISN	R&S	ENV216	102125	2021-01-05	2022-01-04	Conducted
LISN	R&S	ENV432	101327	2021-01-06	2022-01-05	Conducted
EMI Test Receiver	R&S	ESR3	102143	2021-01-06	2022-01-05	Conducted
EMI Test Software	Audix	E3	N/A	N/A	N/A	Conducted

N/A: No Calibration Required

- NOTE:.**
1. The test was performed in 3m Semi-anechoic Chamber and RF Oven Room.
 2. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.
 3. The FCC Site Registration No. is 525120; The Designation No. is CN1171.
 4. The IC test Site Registration No. is 21771-1; The CAB Identifier No. is CN0007.

5 Uncertainty of Evaluation

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.42dB
Radiated emission	30MHz ~ 1GMHz	2.50dB
	1GHz ~ 18GHz	3.51dB
	18GHz ~ 40GHz	3.96dB

MEASUREMENT	UNCERTAINTY
Occupied Channel Bandwidth	±196.4Hz
RF output power, conducted	±2.31dB
Power density, conducted	±2.31dB

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