



FCC Test Report

APPLICANT : Honeywell International Inc
EQUIPMENT : mobile computer
BRAND NAME : Honeywell
MODEL NAME : CT37X1N
FCC ID : HD5-CT37X1N
STANDARD : 47 CFR Part 15 Subpart B
CLASSIFICATION : Certification
TEST DATE(S) : Oct. 15, 2024 ~ Oct. 20, 2024

We, Sporton International Inc. (Kunshan), would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI C63.4-2014 and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Kunshan), the test report shall not be reproduced except in full.

Jason Jia

Approved by: Jason Jia



Sporton International Inc. (Kunshan)

No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC461912	Rev. 01	Initial issue of report	Nov. 05, 2024



SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.107	AC Conducted Emission	< 15.107 limits	PASS	Under limit 10.65 dB at 0.181 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 3.48 dB at 30.970 MHz

Conformity Assessment Condition:

The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacture who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account. Please refer to each test results in the section "Measurement Uncertainty".

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.



1. General Description

1.1. Applicant

Honeywell International Inc
9680 Old Bailes Rd, Fort Mill, SC 29707

1.2. Manufacturer

Honeywell International Inc
9680 Old Bailes Rd, Fort Mill, SC 29707

1.3. Product Feature of Equipment Under Test

Product Feature	
Equipment	mobile computer
Brand Name	Honeywell
Model Name	CT37X1N
FCC ID	HD5-CT37X1N
EUT supports Radios application	WCDMA/LTE/5G NR WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 2.4GHz 802.11ax HE20/HE40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80/VHT160 WLAN 5GHz 802.11ax HE20/HE40/HE80/HE160 WLAN 6GHz 802.11a/ax HE20/HE40/HE80/HE160 Bluetooth BR/EDR/LE GNSS/NFC
IMEI Code	Conduction: 990021480035045/990021480035052 for Sample1 990021480033065/990021480033073 for Sample2 990021480028883/990021480028891 for Sample3 990021480039385/990021480039393 for Sample4 990021480027281/990021480027299 for Sample5 990021480026507/990021480026515 for Sample6 Radiation: 990021480037967 for Sample1 990021480026515 for Sample2 990021480033065 for Sample3 990021480028891 for Sample4 990021480039393 for Sample5 990021480027299 for Sample6
HW Version	V1.0
SW Version	OS.31.001-HON.31.001
EUT Stage	Identical Prototype

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. There are six types of EUT, the differences could be referred to the Product Equality Declaration which is exhibit separately. According to the difference, we choose sample 1 to full test and the sample 2/3/4/5/6 is verified the worst case of sample 1.

1.4. Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV : 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2 : 1850 MHz ~ 1910 MHz LTE Band 4 : 1710 MHz ~ 1755 MHz LTE Band 5 : 824 MHz ~ 849 MHz LTE Band 7 : 2500 MHz ~ 2570 MHz LTE Band 12 : 699 MHz ~ 716 MHz LTE Band 13 : 777 MHz ~ 787 MHz LTE Band 14 : 788 MHz ~ 798 MHz LTE Band 17 : 704 MHz ~ 716 MHz LTE Band 25 : 1850 MHz ~ 1915 MHz LTE Band 26 : 814 MHz ~ 849 MHz LTE Band 30 : 2305 MHz ~ 2315 MHz LTE Band 38 : 2570 MHz ~ 2620 MHz LTE Band 41 : 2496 MHz ~ 2690 MHz LTE Band 42 : 3450 MHz ~ 3600 MHz LTE Band 43 : 3600 MHz ~ 3700 MHz LTE Band 48 : 3550 MHz ~ 3700 MHz LTE Band 66 : 1710 MHz ~ 1780 MHz LTE Band 71: 663 MHz ~ 698 MHz 5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n7 : 2500 MHz ~ 2570 MHz 5G NR n12 : 699 MHz ~ 716 MHz 5G NR n13 : 777 MHz ~ 787 MHz 5G NR n14 : 788 MHz ~ 798 MHz 5G NR n25 : 1850 MHz ~ 1915 MHz 5G NR n26 : 814 MHz ~ 849 MHz 5G NR n30 : 2305 MHz ~ 2315 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n48 : 3550 MHz ~ 3700 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n71 : 663 MHz ~ 698 MHz 5G NR n77 : 3450 MHz ~ 3550 MHz; 3700 MHz ~ 3980 MHz; 5G NR n78 : 3450 MHz ~ 3550 MHz; 3700 MHz ~ 3800 MHz; 802.11b/g/n/ax: 2400 MHz ~ 2483.5 MHz 802.11a/n/ac/ax: 5150 MHz ~ 5250 MHz; 5250 MHz ~ 5350 MHz; 5470 MHz ~ 5725 MHz 5725 MHz ~ 5850 MHz 802.11a/ax: 5925 MHz ~ 7125 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz



	NFC : 13.56 MHz
Rx Frequency	WCDMA Band II: 1930 MHz ~ 1990 MHz WCDMA Band IV : 2110 MHz ~ 2155 MHz WCDMA Band V: 869 MHz ~ 894 MHz LTE Band 2 : 1930 MHz ~ 1990 MHz LTE Band 4 : 2110 MHz ~ 2155 MHz LTE Band 5 : 869 MHz ~ 894 MHz LTE Band 7 : 2620 MHz ~ 2690 MHz LTE Band 12 : 729 MHz ~ 746 MHz LTE Band 13 : 746 MHz ~ 756 MHz LTE Band 14 : 758 MHz ~ 768 MHz LTE Band 17 : 734 MHz ~ 746 MHz LTE Band 25 : 1930 MHz ~ 1995 MHz LTE Band 26 : 859 MHz ~ 894 MHz LTE Band 29 : 717 MHz ~ 728 MHz LTE Band 30 : 2350 MHz ~ 2360 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41 : 2496 MHz ~ 2690 MHz LTE Band 42 : 3450 MHz ~ 3600 MHz LTE Band 43 : 3600 MHz ~ 3700 MHz LTE Band 48 : 3550 MHz ~ 3700 MHz LTE Band 66 : 2110 MHz~ 2200 MHz LTE Band 71 : 617 MHz ~ 652 MHz 5G NR n2 : 1930 MHz ~ 1990 MHz 5G NR n5 : 869 MHz ~ 894 MHz 5G NR n7 : 2620 MHz ~ 2690 MHz 5G NR n12 : 729 MHz ~ 746 MHz 5G NR n13 : 746 MHz ~ 756 MHz 5G NR n14 : 758 MHz ~ 768 MHz 5G NR n25 : 1930 MHz ~ 1995 MHz 5G NR n26 : 859 MHz ~ 894 MHz 5G NR n29 : 717 MHz ~ 728 MHz 5G NR n30 : 2350 MHz ~ 2360 MHz 5G NR n38: 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n48 : 3550 MHz ~ 3700 MHz 5G NR n66 : 2110 MHz~ 2200 MHz 5G NR n71 : 617 MHz ~ 652 MHz 5G NR n77 : 3450 MHz ~ 3550 MHz; 3700 MHz ~ 3980 MHz; 5G NR n78 : 3450 MHz ~ 3550 MHz; 3700 MHz ~ 3800 MHz; 802.11b/g/n/ax: 2400 MHz ~ 2483.5 MHz 802.11a/n/ac/ax: 5150 MHz ~ 5250 MHz; 5250 MHz ~ 5350 MHz; 5470 MHz ~ 5725 MHz 5725 MHz ~ 5850 MHz 802.11a/ax: 5925 MHz ~ 7125 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz NFC : 13.56 MHz GNSS : 1559 MHz ~ 1610 MHz, 1164 MHz ~ 1215 MHz
Antenna Type	WWAN : IFA Antenna WLAN : IFA Antenna BT / BLE 1: IFA Antenna 2 nd BLE: IFA Antenna NFC: LOOP Antenna

	GNSS: IFA Antenna
Type of Modulation	WCDMA : BPSK HSPA : QPSK HSPA+ : 16QAM(16QAM not support uplink) DC-HSDPA : 64QAM LTE: QPSK / 16QAM / 64QAM / 256QAM 5G NR: DFT-s-OFDM (PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM) CP-OFDM (QPSK / 16QAM / 64QAM / 256QAM) 802.11b: DSSS (DBPSK / DQPSK / CCK) 802.11a/g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM) 802.11ax: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM / 1024QAM) Bluetooth LE : GFSK Bluetooth (1Mbps) : GFSK Bluetooth (2Mbps) : $\pi/4$ -DQPSK Bluetooth (3Mbps) : 8-DPSK GNSS : BPSK NFC: ASK

1.5. Modification of EUT

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

1.6. Test Location

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	CO01-KS 03CH02-KS	CN1257	314309

1.7. Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH02-KS	AUDIX	E3	6.2009-8-24a1
2.	CO01-KS	AUDIX	E3	6.2009-8-24

1.8. Applicable Standards

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

- ♦ 47 CFR Part 15 Subpart B
- ♦ ANSI C63.4-2014

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.



2. Test Configuration of Equipment Under Test

2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2014 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (30MHz to the 5th harmonic of the highest frequency or to 40 GHz, whichever is lower).

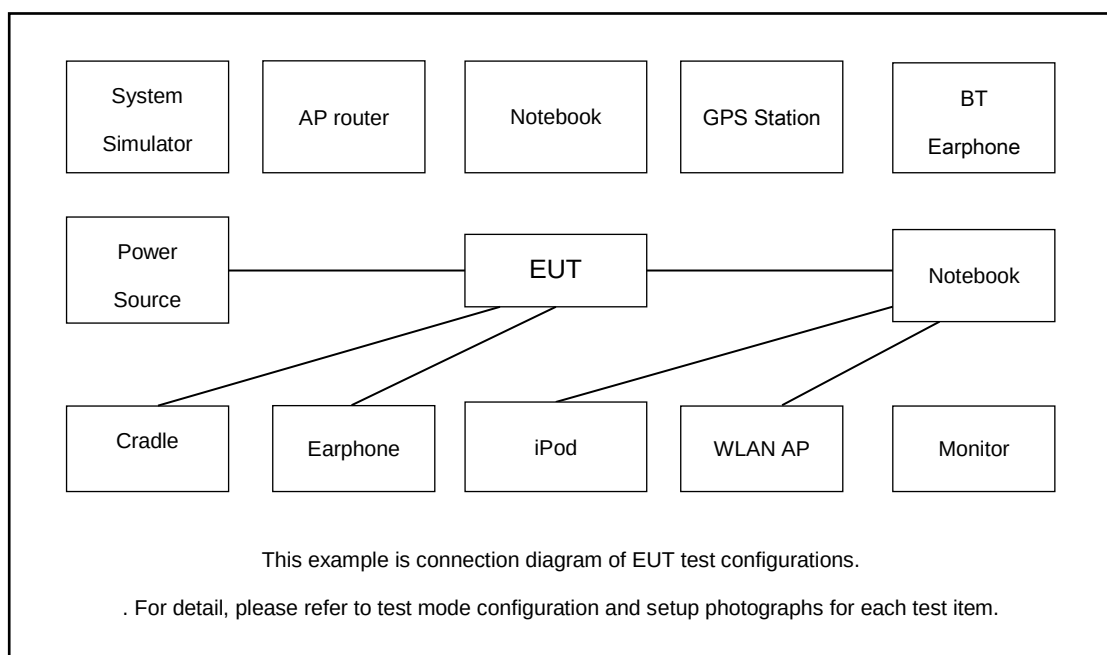
Test Items	Function Type
AC Conducted Emission	Mode 1: WCDMA Band V Rx(Middle) + Bluetooth Idle 1 + WLAN (2.4G) Idle + Camera(Rear) + Battery 1 + USB Cable (Charging from Adapter)handstrap + SIM 1 for Sample 1
	Mode 2: LTE Band 13 Rx(High) + Bluetooth Idle 1 + WLAN (5G) Idle + Camera(Front) + Earphone + Battery 1 + Holster + handstrap + SIM 2 for Sample 1
	Mode 3: LTE Band 14 Rx(High) + Bluetooth Idle 1 + WLAN 6E Idle + MPEG4(Run Color Bar) + Battery 1 + USB Cable (Data Link with Notebook)handstrap + pouch + EUT (eMMC) USB Data Link to PC/NB + SIM 1
	Mode 4: LTE Band 26 Rx(Low) + Bluetooth Idle 1 + WLAN (2.4G) Idle + NFC On + Battery 1 + pouch + USB Cable (Data Link with Notebook)handstrap + PC/NB USB Data Link to EUT (eMMC) + SIM 2 for Sample 1
	Mode 5: LTE Band 12 Rx(Middle) + Bluetooth Idle 1 + WLAN (5G) Idle + scanning + Stock With scanning + pouch + Battery 1 + USB Cable (Data Link with Notebook)handstrap + EUT (SD) USB Data Link to PC/NB + SIM 1 for Sample 1
	Mode 6: LTE Band 71 Rx(Middle) + Bluetooth Idle 1 + WLAN 6E Idle + GNSS Rx + pouch + Battery 1 + USB Cable (Data Link with Notebook)handstrap + PC/NB USB Data Link to EUT (SD) + SIM 2 for Sample 1
	Mode 7: 5G NR n5 Rx(Middle) + Bluetooth Idle 1 + WLAN (2.4G) Idle + MPEG4(Run Color Bar) + pouch + Battery 1 + USB Cable (Data Link with Notebook)handstrap + EUT ((IPSM CARD) USB Data Link to PC/NB + SIM 2 for Sample 1
	Mode 8: 5G NR n12 Rx(Low) + Bluetooth Idle 1 + WLAN 6E Idle + MPEG4(Run Color Bar) + pouch + Battery 1 + USB Cable (Data Link with Notebook)handstrap + PC/NB USB Data Link to EUT (IPSM CARD) + for Sample 1
	Mode 9: LTE Band 14 Rx(High) + Bluetooth Idle 1 + WLAN 6E Idle + MPEG4(Run Color Bar) + pouch + SIM 1 + Charging from cradle for Sample 1
	Mode 10 : LTE Band 14 Rx(High) + Bluetooth Idle 1 + WLAN 6E Idle + scanning + SIM 1 + Battery 1 + USB Cable (Data Link with Notebook)handstrap + EUT (eMMC) USB Data Link to PC/NB for Sample 2
	Mode 11 : LTE Band 14 Rx(High) + Bluetooth Idle 1 + WLAN 6E Idle + MPEG4(Run Color Bar) + SIM 1 + Battery 1 + USB Cable (Data Link with Notebook)handstrap + EUT (eMMC) USB Data Link to PC/NB for Sample 3
	Mode 12 : LTE Band 14 Rx(High) + Bluetooth Idle 1 + WLAN 6E Idle + MPEG4(Run Color Bar) + SIM 1 + Battery 1 + USB Cable (Data Link with Notebook)handstrap + EUT (eMMC) USB Data Link to PC/NB for Sample 4
	Mode 13 : LTE Band 14 Rx(High) + Bluetooth Idle 1 + WLAN 6E Idle + MPEG4(Run Color



	Bar) + SIM 1 + Battery 1 + USB Cable (Data Link with Notebook)handstrap + EUT (eMMC) USB Data Link to PC/NB for Sample5 Mode 14 : LTE Band 14 Rx(High) + Bluetooth Idle 1 + WLAN 6E Idle + scanning + SIM 1 + Battery 1 + USB Cable (Data Link with Notebook)handstrap + EUT (eMMC) USB Data Link to PC/NB for Sample 6 Mode 15 : LTE Band 14 Rx(High) + Bluetooth Idle 1 + WLAN 6E Idle + Camera(Rear) + SIM 1 + Battery 1 + USB Cable (Data Link with Notebook)handstrap + EUT (eMMC) USB Data Link to PC/NB for Sample 4
Radiated Emissions	Mode 1: WCDMA Band V Rx(Middle) + Bluetooth Idle 1 + WLAN (2.4G) Idle + Camera(Rear) + Battery 1 + USB Cable (Charging from Adapter)handstrap + SIM 1 for Sample 1 Mode 2: LTE Band 13 Rx(High) + Bluetooth Idle 1 + WLAN (5G) Idle + Camera(Front) + Earphone + Battery 1 + Holster + handstrap + SIM 2 for Sample 1 Mode 3: LTE Band 14 Rx(High) + Bluetooth Idle 1 + WLAN 6E Idle + MPEG4(Run Color Bar) + Battery 1 + USB Cable (Data Link with Notebook)handstrap + pouch + EUT (eMMC) USB Data Link to PC/NB + SIM 1 for Sample 1 Mode 4: LTE Band 26 Rx(Low) + Bluetooth Idle 1 + WLAN (2.4G) Idle + NFC On + Battery 1 + pouch + USB Cable (Data Link with Notebook)handstrap + PC/NB USB Data Link to EUT (eMMC) + SIM 2 for Sample 1 Mode 5: LTE Band 12 Rx(Middle) + Bluetooth Idle 1 + WLAN (5G) Idle + scanning + Stock With scanning + pouch + Battery 1 + USB Cable (Data Link with Notebook)handstrap + EUT (SD) USB Data Link to PC/NB + SIM 1 for Sample 1 Mode 6: LTE Band 71 Rx(Middle) + Bluetooth Idle 1 + WLAN 6E Idle + GNSS Rx + pouch + Battery 1 + USB Cable (Data Link with Notebook)handstrap + PC/NB USB Data Link to EUT (SD) + SIM 2 for Sample 1 Mode 7: 5G NR n5 Rx(Middle) + Bluetooth Idle 1 + WLAN (2.4G) Idle + MPEG4(Run Color Bar) + pouch + Battery 1 + USB Cable (Data Link with Notebook)handstrap + EUT ((IPSM CARD) USB Data Link to PC/NB + SIM 2 for Sample 1 Mode 8: 5G NR n12 Rx(Low) + Bluetooth Idle 1 + WLAN 6E Idle + MPEG4(Run Color Bar) + pouch + Battery 1 + USB Cable (Data Link with Notebook)handstrap + PC/NB USB Data Link to EUT (IPSM CARD) + for Sample 1 Mode 9: Bluetooth Idle 2 + Phone turn-off for Sample 1 Mode 10 : LTE Band 14 Rx(High) + Bluetooth Idle 1 + WLAN 6E Idle + MPEG4(Run Color Bar) + pouch + SIM 1 + Charging from cradle for Sample 1 Mode 11 : LTE Band 14 Rx(High) + Bluetooth Idle 1 + WLAN 6E Idle + scanning + SIM 1 + Battery 1 + USB Cable (Data Link with Notebook)handstrap + EUT (eMMC) USB Data Link to PC/NB for Sample 2 Mode 12 : LTE Band 14 Rx(High) + Bluetooth Idle 1 + WLAN 6E Idle + MPEG4(Run Color Bar) + SIM 1 + Battery 1 + USB Cable (Data Link with Notebook)handstrap + EUT (eMMC) USB Data Link to PC/NB for Sample 3 Mode 13 : LTE Band 14 Rx(High) + Bluetooth Idle 1 + WLAN 6E Idle + MPEG4(Run Color Bar) + SIM 1 + Battery 1 + USB Cable (Data Link with Notebook)handstrap + EUT (eMMC) USB Data Link to PC/NB for Sample 4 Mode 14 : LTE Band 14 Rx(High) + Bluetooth Idle 1 + WLAN 6E Idle + MPEG4(Run Color Bar) + SIM 1 + Battery 1 + USB Cable (Data Link with Notebook)handstrap + EUT (eMMC) USB Data Link to PC/NB for Sample5

	Mode 15 : LTE Band 14 Rx(High) + Bluetooth Idle 1 + WLAN 6E Idle + scanning + SIM 1 + Battery 1 + USB Cable (Data Link with Notebook)handstrap + EUT (eMMC) USB Data Link to PC/NB for Sample 6 Mode 16 : LTE Band 14 Rx(High) + Bluetooth Idle 1 + WLAN 6E Idle + Camera(Rear) + SIM 1 + Battery 1 + USB Cable (Data Link with Notebook)handstrap + EUT (eMMC) USB Data Link to PC/NB for Sample 6
Remark: 1. The worst case of AC is mode 3; only the test data of this mode is reported. 2. The worst case of RE is mode 14; only the test data of this mode is reported. 3. Data Link with Notebook means data application transferred mode between EUT and Notebook 4. Pre-scanned Low/Middle/High channel for WCDMA Band V/ LTE Band 12/13/14/26/71/5G NR n5/n12, the worst channel was recorded in this report.	

2.2.Connection Diagram of Test System



The EUT has been associated with peripherals pursuant to ANSI C63.4-2014 and configuration operated in a manner tended to maximize its emission characteristics in a typical application

2.3. Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	LTE Base Station	Anritus	MT8821C	N/A	N/A	Unshielded,1.8m
2.	5G NR Base Station	Anritus	MT8000A	N/A	N/A	Unshielded,1.8m
3.	WLAN AP	D-link	DIR-655	KA21R655B1	N/A	Unshielded,1.8m
4.	Bluetooth Earphone	Lenovo	LBH308	N/A	N/A	N/A
5.	Notebook	Lenovo	G480	QDS-BRCM1050I	N/A	shielded cable DC O/P 1.8m , Unshielded AC I/P cable 1.8m
6.	Vector Signal Generator	R&S	SMBV100A	258305	N/A	N/A
7.	Hard Disk	Lenovo	F310	DoC	Shielded, 1.2m	N/A
8.	SD Card	Kingston	8GB	N/A	N/A	N/A
9.	Adapter	N/A	N/A	N/A	N/A	N/A
10.	USB cable	N/A	N/A	N/A	N/A	N/A
11.	Earphone	N/A	N/A	N/A	N/A	N/A
12.	Cradle	N/A	N/A	N/A	N/A	N/A

2.4. EUT Operation Test Setup

The EUT was in WCDMA or LTE or 5G NR idle mode during the testing. The EUT was synchronized to the BCCH, and is in continuous receiving mode by setting system simulator's paging reorganization.

At the same time, the EUT was attached to the Bluetooth earphone or WLAN AP, and the following programs installed in the EUT were programmed during the test.

1. Data application is transferred between notebook and EUT via USB cable.
2. Turn on camera to capture images.
3. Turn on MPEG4 function.
4. Turn on GNSS function to make the EUT receive continuous signals from GNSS station.
5. Turn on NFC function

3. Test Result

3.1. Test of AC Conducted Emission Measurement

3.1.1 Limits 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.

<Class B Limit>

Frequency of emission (MHz)	Conducted 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.

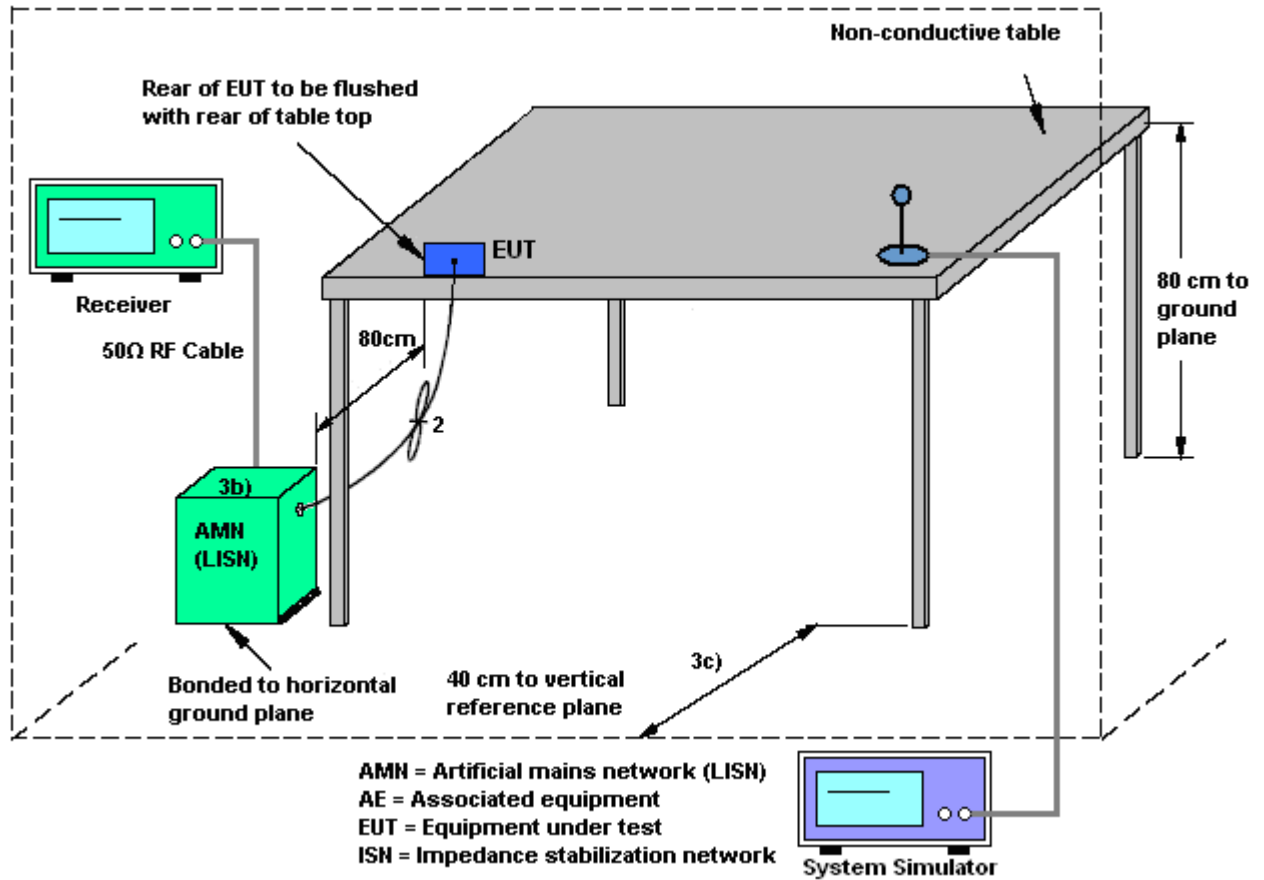
3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedure

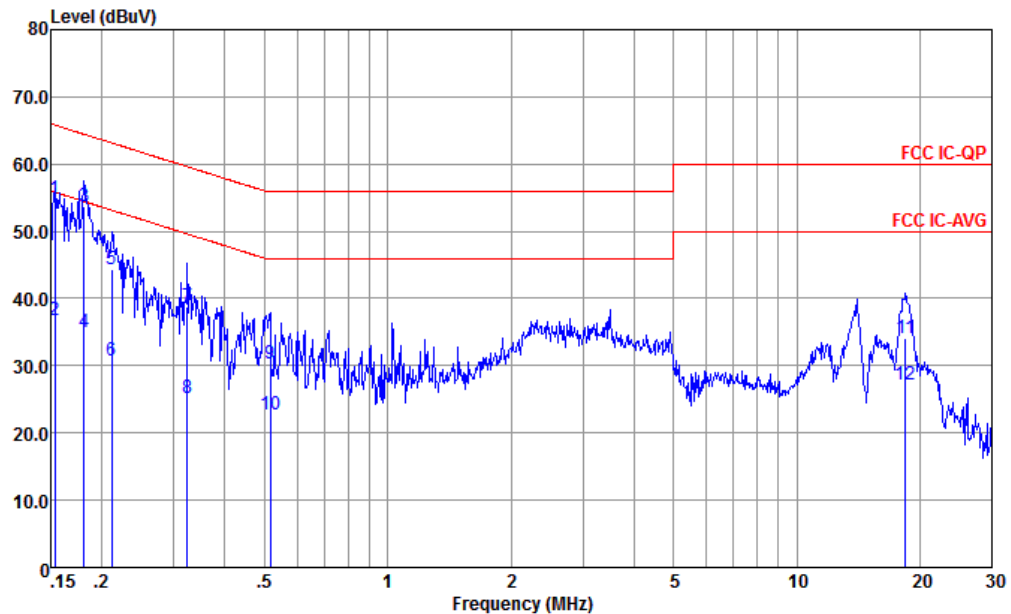
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
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.

3.1.4 Test Setup



3.1.5 Test Result of AC Conducted Emission

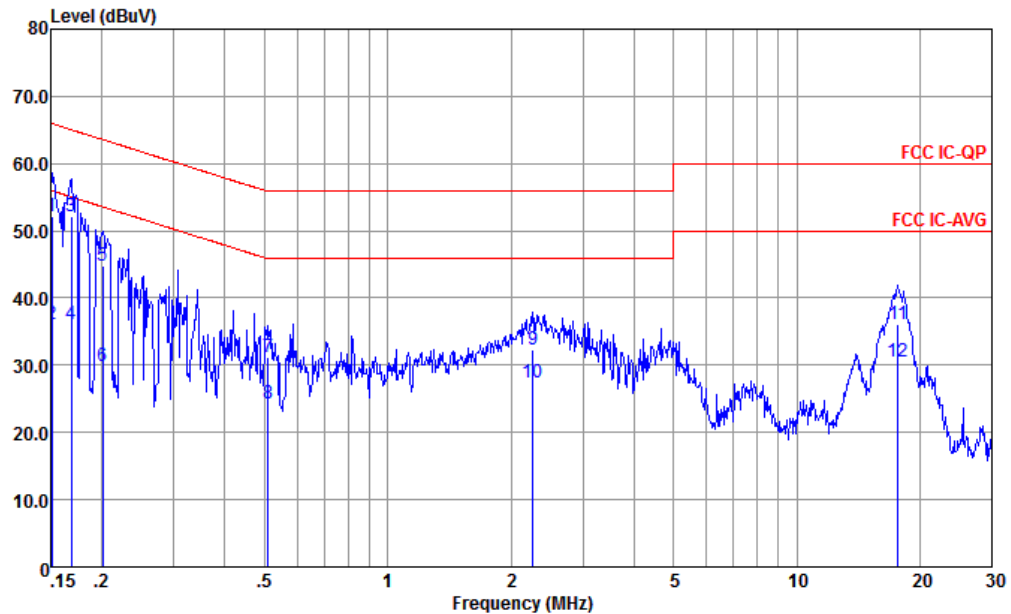
Test Engineer :	Amos Zhang	Temperature :	25.3~26.2°C
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-KS
Condition : FCC IC-QP LISN-060105-L 2024 LINE

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.153	54.74	-11.08	65.82	44.20	0.12	10.42	QP
2	0.153	36.84	-18.98	55.82	26.30	0.12	10.42	Average
3 *	0.181	53.81	-10.65	64.46	43.31	0.09	10.41	QP
4	0.181	35.01	-19.45	54.46	24.51	0.09	10.41	Average
5	0.212	44.28	-18.86	63.14	33.80	0.08	10.40	QP
6	0.212	30.78	-22.36	53.14	20.30	0.08	10.40	Average
7	0.323	38.88	-20.74	59.62	28.50	0.06	10.32	QP
8	0.323	25.28	-24.34	49.62	14.90	0.06	10.32	Average
9	0.516	30.30	-25.70	56.00	20.20	-0.11	10.21	QP
10	0.516	22.70	-23.30	46.00	12.60	-0.11	10.21	Average
11	18.426	34.13	-25.87	60.00	23.20	-0.37	11.30	QP
12	18.426	27.23	-22.77	50.00	16.30	-0.37	11.30	Average

Test Engineer :	Amos Zhang	Temperature :	25.3~26.2°C
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-KS
Condition : FCC IC-QP LISN-060105-N 2024 NEUTRAL

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.151	52.04	-13.92	65.96	41.50	0.12	10.42	QP
2	0.151	36.14	-19.82	55.96	25.60	0.12	10.42	Average
3 *	0.169	52.04	-12.99	65.03	41.50	0.12	10.42	QP
4	0.169	36.04	-18.99	55.03	25.50	0.12	10.42	Average
5	0.201	44.73	-18.85	63.58	34.20	0.12	10.41	QP
6	0.201	29.83	-23.75	53.58	19.30	0.12	10.41	Average
7	0.510	31.26	-24.74	56.00	21.19	-0.15	10.22	QP
8	0.510	24.26	-21.74	46.00	14.19	-0.15	10.22	Average
9	2.261	32.38	-23.62	56.00	22.51	-0.20	10.07	QP
10	2.261	27.38	-18.62	46.00	17.51	-0.20	10.07	Average
11	17.661	36.21	-23.79	60.00	25.21	-0.28	11.28	QP
12	17.661	30.61	-19.39	50.00	19.61	-0.28	11.28	Average

Note:

- Level(dBμV) = Read Level(dBμV) + LISN Factor(dB) + Cable Loss(dB)
- Over Limit(dB) = Level(dBμV) – Limit Line(dBμV)

3.2. Test of Radiated Emission Measurement

3.2.1. Limit of Radiated Emission

The emissions from an unintentional radiator shall not exceed the field strength levels specified in the following table:

<Class B Limit>

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.2.2. Measuring Instruments

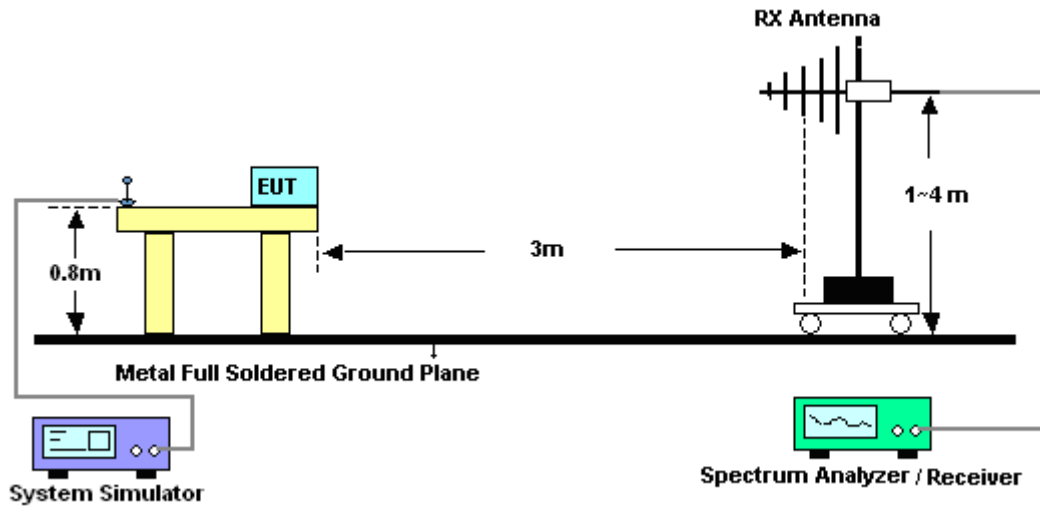
The measuring equipment is listed in the section 4 of this test report.

3.2.3. Test Procedures

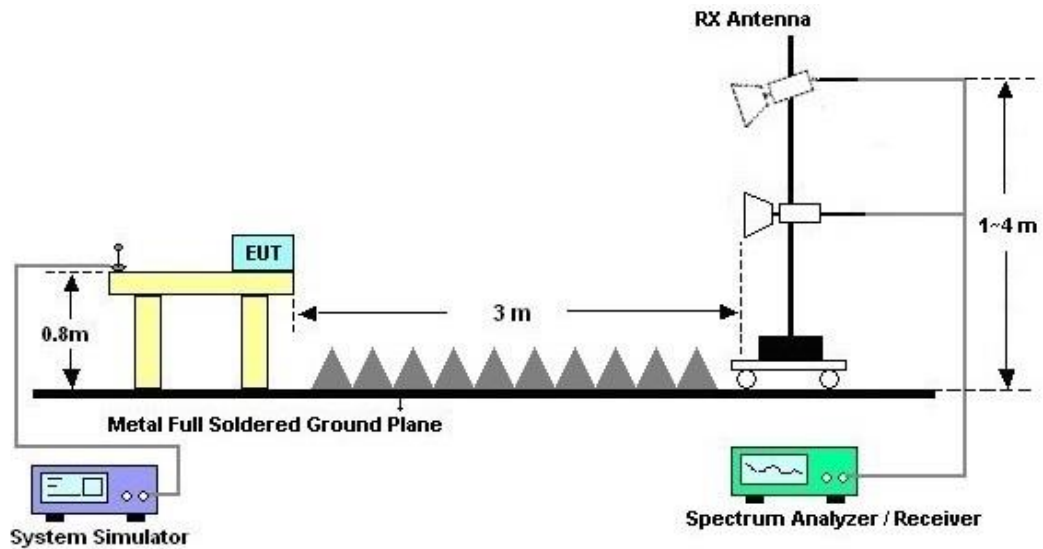
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna is a Bi-Log antenna and its height is adjusted between one to four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode (RBW=120kHz/VBW=300kHz for frequency below 1GHz; RBW=1MHz VBW=3MHz (Peak), RBW=1MHz/VBW=10Hz (Average) for frequency above 1GHz).
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported.
8. Emission level (dBμV/m) = 20 log Emission level (μV/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
10. Exploratory radiated emissions testing of handheld and/or body-worn devices shall include rotation of the EUT through three orthogonal axes (X/Y/Z Plane) to determine the orientation (attitude) that maximizes the emissions.

3.2.4. Test Setup of Radiated Emission

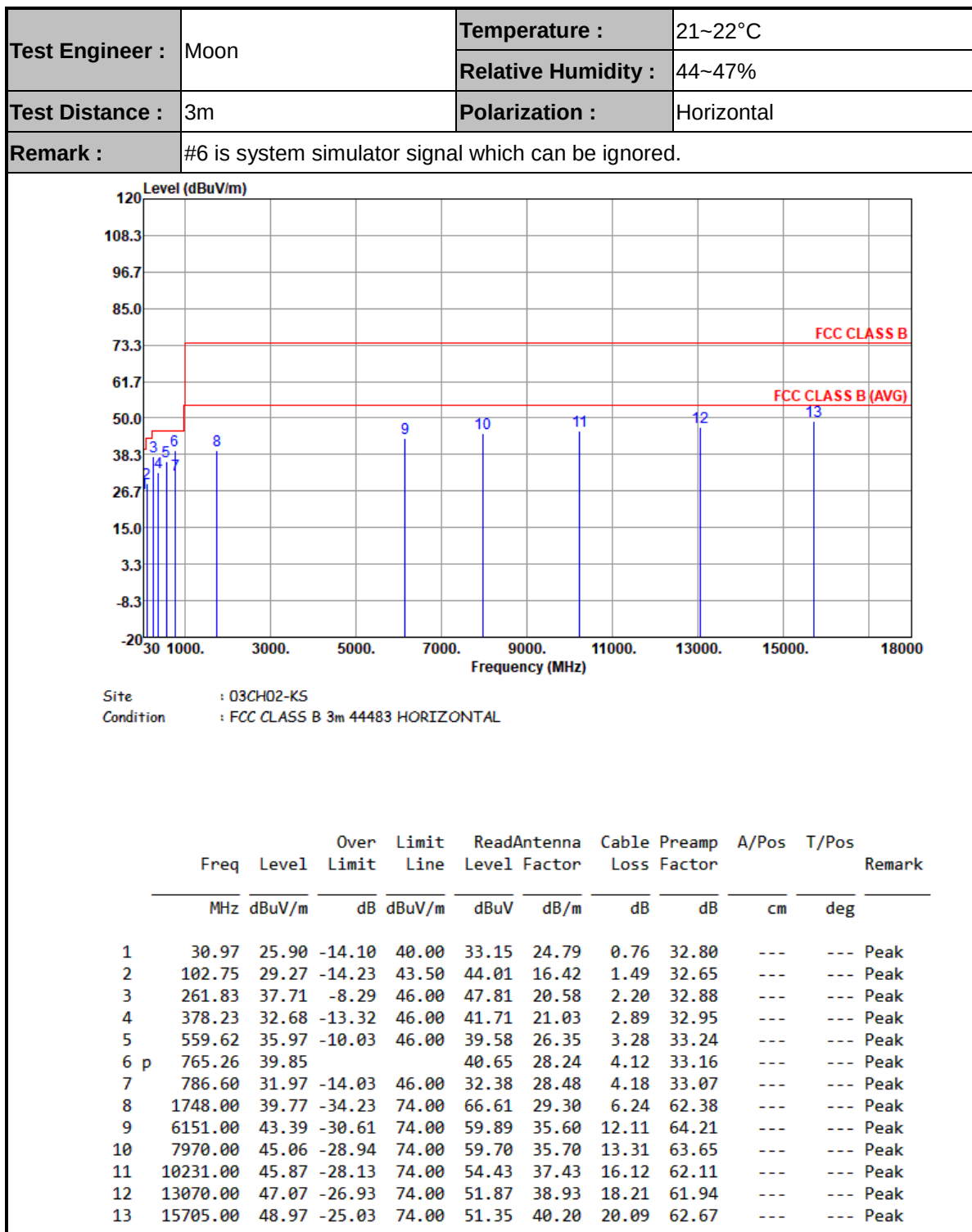
For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz

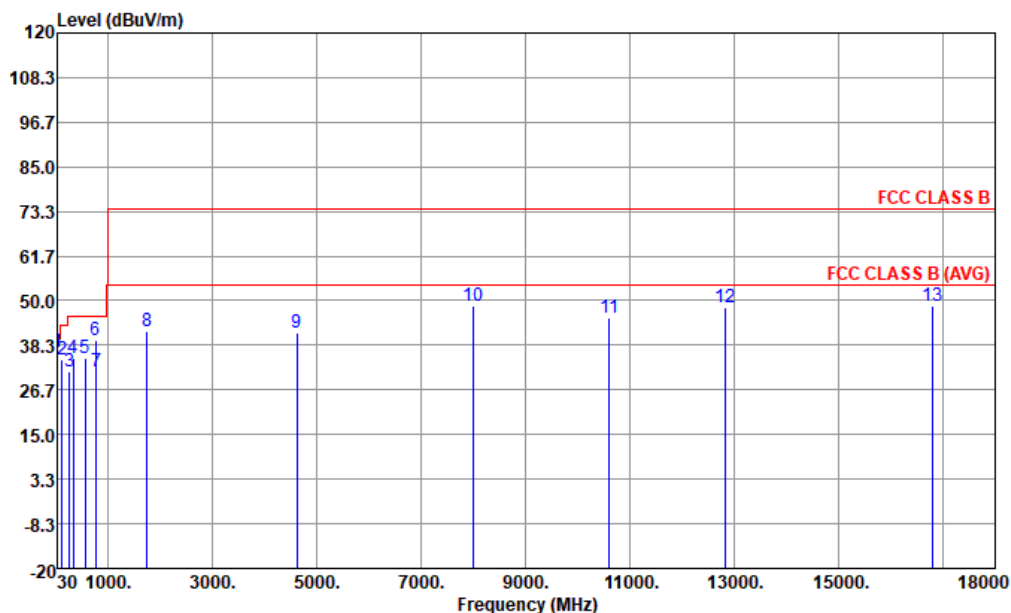


3.2.5. Test Result of Radiated Emission





Test Engineer :	Moon	Temperature :	21~22°C
		Relative Humidity :	44~47%
Test Distance :	3m	Polarization :	Vertical
Remark :	#6 is system simulator signal which can be ignored.		



Site : 03CH02-KS
Condition : FCC CLASS B 3m 44483 VERTICAL

			Over	Limit	ReadAntenna		Cable	Preamp	A/Pos	T/Pos	
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor			Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 p	30.97	36.52	-3.48	40.00	43.77	24.79	0.76	32.80	---	---	Peak
2	127.97	34.69	-8.81	43.50	47.70	17.99	1.68	32.68	---	---	Peak
3	260.86	31.32	-14.68	46.00	41.50	20.51	2.19	32.88	---	---	Peak
4	331.67	35.09	-10.91	46.00	45.31	19.94	2.68	32.84	---	---	Peak
5	559.62	34.81	-11.19	46.00	38.42	26.35	3.28	33.24	---	---	Peak
6	765.26	39.76			40.56	28.24	4.12	33.16	---	---	Peak
7	786.60	31.66	-14.34	46.00	32.07	28.48	4.18	33.07	---	---	Peak
8	1748.00	42.13	-31.87	74.00	68.97	29.30	6.24	62.38	---	---	Peak
9	4621.00	41.74	-32.26	74.00	61.31	34.17	10.35	64.09	---	---	Peak
10	7987.00	48.70	-25.30	74.00	63.39	35.70	13.25	63.64	---	---	Peak
11	10605.00	45.60	-28.40	74.00	53.59	37.60	16.35	61.94	---	---	Peak
12	12832.00	48.33	-25.67	74.00	52.84	39.10	18.06	61.67	---	---	Peak
13	16810.00	48.77	-25.23	74.00	49.15	41.48	20.90	62.76	---	---	Peak

Note:

- Level(dBμV/m) = Read Level(dBμV) + Antenna Factor(dB/m) + Cable Loss(dB) - Preamp Factor(dB)
- Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)



4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	Apr. 18, 2024	Oct. 15, 2024	Apr. 17, 2025	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060103	9kHz~30MHz	Aug. 20, 2024	Oct. 15, 2024	Aug. 19, 2025	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060105	9kHz~30MHz	Apr 18, 2024	Oct. 15, 2024	Apr 17, 2025	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 09, 2024	Oct. 15, 2024	Oct. 08, 2025	Conduction (CO01-KS)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz;Ma x 30dBm	Oct. 11, 2024	Oct. 20, 2024	Oct. 10, 2025	Radiation (03CH02-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55370528	10Hz~44G,MAX 30dB	Oct. 11, 2024	Oct. 20, 2024	Oct. 10, 2025	Radiation (03CH02-KS)
Bilog Antenna	TeseQ	CBL6111D	44483	30MHz~1GHz	Dec. 06, 2023	Oct. 20, 2024	Dec. 05, 2024	Radiation (03CH02-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Oct. 23, 2023	Oct. 20, 2024	Oct. 22, 2024	Radiation (03CH02-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 27, 2024	Oct. 20, 2024	Jan. 26, 2025	Radiation (03CH02-KS)
Amplifier	EM	EM18G40GGA	060852	18~40GHz	Jan. 02, 2024	Oct. 20, 2024	Jan. 01, 2025	Radiation (03CH02-KS)
Amplifier	SONOMA	310N	413740	9KHz~1GHz	Jan. 03, 2024	Oct. 20, 2024	Jan. 02, 2025	Radiation (03CH02-KS)
Amplifier	EM	EM01G18G	060806	1GHz~18GHz	Oct. 11, 2024	Oct. 20, 2024	Oct. 10, 2025	Radiation (03CH02-KS)
AC Power Source	Chroma	61601	616010002473	N/A	NCR	Oct. 20, 2024	NCR	Radiation (03CH02-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Oct. 20, 2024	NCR	Radiation (03CH02-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Oct. 20, 2024	NCR	Radiation (03CH02-KS)

NCR: No Calibration Required



5. Measurement Uncertainty

Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.84dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	6.04dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.12dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.30dB
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----- THE END -----