

FCC Test Report

APPLICANT : Huawei Technologies Co., Ltd.
EQUIPMENT : Smart Phone
BRAND NAME : Honor
MODEL NAME : YAL-L41
FCC ID : QISYAL-L41
STANDARD : 47 CFR Part 15 Subpart B
CLASSIFICATION : Certification

The product was received on May 10, 2019 and testing was completed on May 17, 2019. We, Sporton International (ShenZhen) Inc., 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 (ShenZhen) Inc., the test report shall not be reproduced except in full.

Derreck Chen

Reviewed by: Derreck Chen / Supervisor

Eric Shih

Approved by: Eric Shih / Manager



Sporton International (ShenZhen) Inc.

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People's Republic of China



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC951002	Rev. 01	Initial issue of report	May 27, 2019



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 6.26 dB at 0.200 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 6.72 dB at 63.950 MHz

1. General Description

1.1. Applicant

Huawei Technologies Co., Ltd.

Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C

1.2. Product Feature of Equipment Under Test

Product Feature	
Equipment	Smart Phone
Brand Name	Honor
Model Name	YAL-L41
FCC ID	QISYAL-L41
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSPA/ DC-HSDPA/HSPA+(16QAM uplink is not supported)/LTE WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80/VHT160 Bluetooth BR/EDR/LE NFC and GNSS
IMEI Code	Conduction: 869436040038560/869436040043065 for sample 1 869436040038818/869436040043313 for sample 2 Radiation: 869436040037810/869436040042315 for sample 1 869436040037885/869436040042380 for sample 2
HW Version	HL2YALEM04
SW Version	9.1.0.119(C900E119R1P2)

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 two types of EUT sample 1 and sample 2, the differences between two samples is for Battery which is different suppliers.

1.3. Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band IV : 1712.4 MHz ~ 1752.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz LTE Band 5 : 824.7 MHz ~ 848.3 MHz LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz LTE Band 26 : 814.7 MHz ~ 848.3 MHz LTE Band 38 : 2572.5 MHz ~ 2617.5 MHz LTE Band 41 : 2547.5 MHz ~ 2652.5 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz 802.11a/n/ac: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5720 MHz 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC : 13.56 MHz
Rx Frequency	GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz WCDMA Band V: 871.4 MHz ~ 891.6 MHz WCDMA Band IV : 2112.4 MHz ~ 2152.6 MHz WCDMA Band II: 1932.4 MHz ~ 1987.6 MHz LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz LTE Band 5 : 869.7 MHz ~ 893.3 MHz LTE Band 7 : 2622.5 MHz ~ 2687.5 MHz LTE Band 26 : 859.7 MHz ~ 893.3 MHz LTE Band 38: 2572.5 MHz ~ 2617.5 MHz LTE Band 41 : 2547.5 MHz ~ 2652.5 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz 802.11a/n/ac: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5720 MHz 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz GNSS Rx 1: 1559 MHz ~ 1610 MHz GNSS Rx 2: 1164 MHz ~ 1215 MHz NFC : 13.56 MHz
Antenna Type	WWAN : Internal Antenna WLAN : Internal Antenna Bluetooth : Internal Antenna GNSS: FPC Antenna NFC : Internal Antenna
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK WCDMA : BPSK HSDPA/DC-HSDPA : QPSK

	HSUPA : QPSK HSPA+ : 16QAM (16QAM uplink is not supported) DC-HSDPA : 64QAM LTE: QPSK / 16QAM / 64QAM /256QAM(downlink only) 802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11a/g/n/ac : OFDM (BPSK / QPSK / 16QAM / 64QAM /256QAM) Bluetooth LE : GFSK Bluetooth (1Mbps) : GFSK Bluetooth (2Mbps) : $\pi/4$ -DQPSK Bluetooth (3Mbps) : 8-DPSK GNSS : BPSK NFC: ASK
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1.4. Modification of EUT

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

1.5. Test Location

Sporton International (Shenzhen) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Test Firm	Sporton International (Shenzhen) Inc.		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	CO01-SZ	CN1256	421272

Test Firm	Sporton International (Shenzhen) Inc.		
Test Site Location	No. 3 Bldg the third floor of south, Shahe River west, Fengzeyuan Warehouse, Nanshan Shenzhen, 518055 People's Republic of China TEL: +86-755-33202398		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	03CH01-SZ	CN1256	421272

1.6. 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.

1.7. Specification of Accessory

AC Adapter 1	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450U00
	Power Rating	I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A		
	Manufacturer	Salcomp		
AC Adapter 2	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450U00
	Power Rating	I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A		
	Manufacturer	HUNTKEY		
AC Adapter 3	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450U00
	Power Rating	I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A		
	Manufacturer	Huawei Technologies Co., Ltd.		
AC Adapter 4	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450E01
	Power Rating	I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A		
	Manufacturer	Huawei Technologies Co., Ltd.		
AC Adapter 5	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450A01
	Power Rating	I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A		
	Manufacturer	Huawei Technologies Co., Ltd.		
AC Adapter 6	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450E00
	Power Rating	I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A		
	Manufacturer	Salcomp		
AC Adapter 7	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450E00
	Power Rating	I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A		
	Manufacturer	HUNTKEY		
AC Adapter 8	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450E00
	Power Rating	I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A		
	Manufacturer	Huawei Technologies Co., Ltd.		
AC Adapter 9	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450A00
	Power Rating	I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A		
	Manufacturer	Salcomp		
AC Adapter 10	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450A00
	Power Rating	I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A		
	Manufacturer	HUNTKEY	SN	
AC Adapter 11	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450A00
	Power Rating	I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A		



	Manufacturer	Huawei Technologies Co., Ltd.		
AC Adapter 12	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450B00
	Power Rating	I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A		
	Manufacturer	Salcomp		
AC Adapter 13	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450B00
	Power Rating	I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A		
	Manufacturer	HUNTKEY		
AC Adapter 14	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450B00
	Power Rating	I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A		
	Manufacturer	Huawei Technologies Co., Ltd.		
USB Cable 1	Brand Name	FOXCONN INTERCONNECT TECHNOLOGY LIMITED.	Model Name	CUDU01B-HC350-EH
	Signal Line	1 meter, shielded cable, with w/o ferrite core		
USB Cable 2	Brand Name	LUXSHARE Precision Industry Co., Ltd.	Model Name	L99UC117-CS-H
	Signal Line	1 meter, shielded cable, with w/o ferrite core		
USB Cable 3	Brand Name	NingBo Broad Telecommunication Co.,Ltd.	Model Name	WA0009
	Signal Line	1 meter, shielded cable, with w/o ferrite core		
USB Cable 4	Brand Name	HUIZHOU DEHONG TECHNOLOGY CO.,LTD.	Model Name	330-50465
	Signal Line	1 meter, shielded cable, with w/o ferrite core		
Earphone 1	Brand Name	Boluo County Quancheng Electronic Co., Ltd.	Model Name	1331-3301-6001-TC-296
	Signal Line	1.1 meter, non-shielded cable, with w/o ferrite core		
Earphone 2	Brand Name	Goertek Inc.	Model Name	Windy-C
	Signal Line	1.1 meter, non-shielded cable, with w/o ferrite core		
Earphone 3	Brand Name	Jiangxi Lianchuang Hongsheng Electronic Co., LTD.	Model Name	MEND1632B729000
	Signal Line	1.1 meter, non-shielded cable, with w/o ferrite core		
Earphone 4	Brand Name	Foster Electric Co.,(GuangZhou) LTD.	Model Name	618017
	Signal Line	1.1 meter, non-shielded cable, with w/o ferrite core		
Battery 1	Brand Name	Huizhou Desay Battcry Co., Ltd.	Model Name	HB436486ECW
	Power Rating	3.82 Vdc, 3900 mAh	Type	Li-ion, Yes
Battery 2	Brand Name	SUNWODA Electronic Co., Ltd.	Model Name	HB436486ECW
	Power Rating	3.82 Vdc, 3900 mAh	Type	Li-ion, Yes

2. Test Configuration of Equipment Under Test

2.1. Test Mode

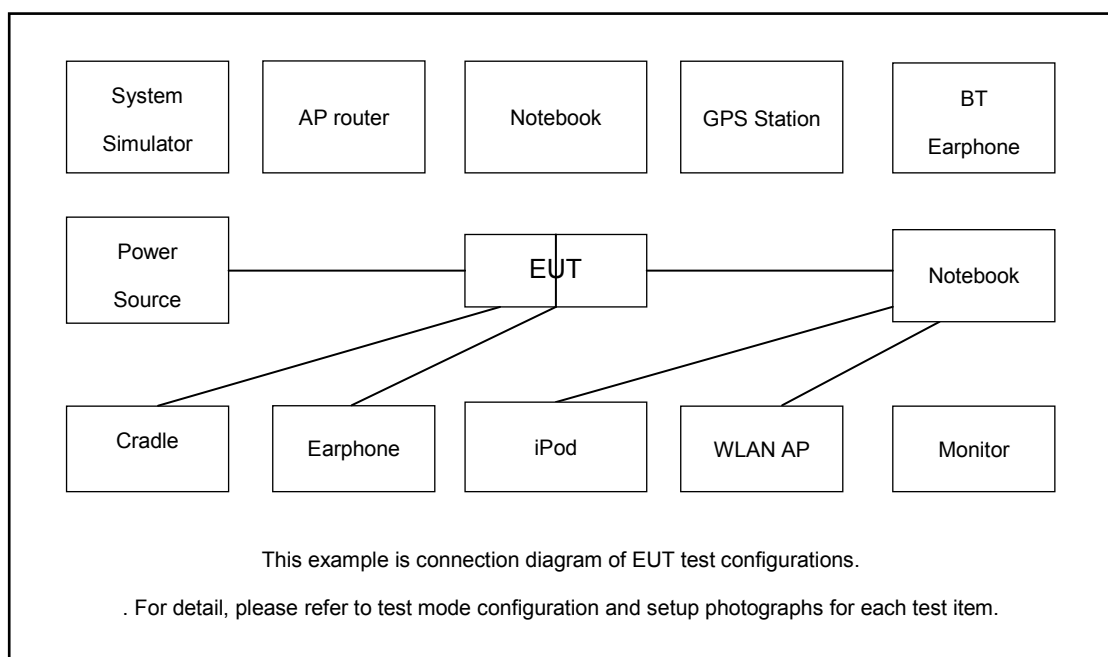
The EUT has been associated with peripherals pursuant to ANSI C63.4-2014 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

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

Test Items	Function Type
AC Conducted Emission	Mode 1: GSM 850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + USB cable 1(Charging from Adapter 1) + SIM 1 for Sample 1
	Mode 2: PCS 1900 Idle + Bluetooth Idle + WLAN (5G) Idle + Camera(Front) + USB cable 2(Charging from Adapter 2) + SIM 1 for Sample 2
	Mode 3: WCDMA850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + MPEG4 + USB cable 3(Charging from Adapter 3) + SIM 1 for Sample 1
	Mode 4: WCDMA1900 Idle + Bluetooth Idle + WLAN (5G) Idle + GNSS Rx 1 + USB cable 4(Charging from Adapter 1) + SIM 1 for Sample 1
	Mode 5: WCDMA 1700 Idle + Bluetooth Idle + WLAN (2.4G) Idle + GNSS Rx 2 + USB cable 1(Charging from Adapter 1) + SIM 1 for Sample 1
	Mode 6: LTE Band 4 Idle + Bluetooth Idle + WLAN (5G) Idle + H-Pattan + USB cable 1(Charging from Adapter 1) + SIM 1 for Sample 1
	Mode 7: LTE Band 7 Idle + Bluetooth Idle + WLAN (5G) Idle + Camera(Rear) + USB cable 1(Charging from Adapter 1) + SIM 1 for Sample 1
	Mode 8: GSM 850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + USB cable 1(Data Link with Notebook) + SIM 1 for Sample 1
	Mode 9: GSM 850 Idle + Bluetooth Idle + WLAN (5G) Idle + Camera(Rear) + USB cable 1(Data Link with Notebook) + SIM 1 for Sample 1
	Mode 10 : GSM 850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + USB cable 2(Data Link with Notebook) + SIM 1 for Sample 1
	Mode 11 : GSM 850 Idle + Bluetooth Idle + WLAN (5G) Idle + Camera(Rear) + USB cable 3(Data Link with Notebook) + SIM 1 for Sample 1
	Mode 12 : GSM 850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + USB cable 4(Data Link with Notebook) + SIM 1 for Sample 1

Radiated Emissions	Mode 1: GSM 850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + USB cable 1(Charging from Adapter 1) + SIM 1 for Sample 1
	Mode 2: PCS 1900 Idle + Bluetooth Idle + WLAN (5G) Idle + Camera(Front) + USB cable 2(Charging from Adapter 2) + SIM 1 for Sample 2
	Mode 3: WCDMA850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + MPEG4 + USB cable 3(Charging from Adapter 3) + SIM 1 for Sample 2
	Mode 4: WCDMA1900 Idle + Bluetooth Idle + WLAN (5G) Idle + GNSS Rx 1 + USB cable 4(Charging from Adapter 4) + SIM 1 for Sample 2
	Mode 5: WCDMA 1700 Idle + Bluetooth Idle + WLAN (2.4G) Idle + GNSS Rx 2 + USB cable 3(Charging from Adapter 3) + SIM 1 for Sample 2
	Mode 6: LTE Band 4 Idle + Bluetooth Idle + WLAN (5G) Idle + H-Pattan + USB cable 3(Charging from Adapter 3) + SIM 1 for Sample 2
	Mode 7: LTE Band 7 Idle + Bluetooth Idle + WLAN (5G) Idle + MPEG4 + Earphone 1 + SIM 1 for Sample 2
	Mode 8: WCDMA850 Idle + Bluetooth Idle + WLAN (5G) Idle + MPEG4 + Earphone 2 + SIM 1 for Sample 2
	Mode 9: WCDMA850 Idle + Bluetooth Idle + WLAN (5G) Idle + MPEG4 + Earphone 3 + SIM 1 for Sample 2
	Mode 10: WCDMA850 Idle + Bluetooth Idle + WLAN (5G) Idle + MPEG4 + Earphone 4 + SIM 1 for Sample 2
	Mode 11: WCDMA850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + MPEG4 + USB cable 1(Data Link with Notebook) + SIM 1 for Sample 2
	Mode 12: WCDMA850 Idle + Bluetooth Idle + WLAN (5G) Idle + MPEG4 + USB cable 1(Data Link with Notebook) + SIM 1 for Sample 2
	Mode 13: WCDMA850 Idle + Bluetooth Idle + WLAN (5G) Idle + MPEG4 + USB cable 2(Data Link with Notebook) + SIM 1 for Sample 2
	Mode 14: WCDMA850 Idle + Bluetooth Idle + WLAN (5G) Idle + MPEG4 + USB cable 3(Data Link with Notebook) + SIM 1 for Sample 2
	Mode 15: WCDMA850 Idle + Bluetooth Idle + WLAN (5G) Idle + MPEG4 + USB cable 4(Data Link with Notebook) + SIM 1 for Sample 2
Remark: 1. The worst case of AC is mode 1; only the test data of this mode is reported. 2. The worst case of RE is mode 3; only the test data of this mode is reported. 3. Data Link with Notebook means data application transferred mode between EUT and Notebook	

2.2.Connection Diagram of Test System



2.3. Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded,1.8m
2.	GNSS Station	RACELOGIC	RLLS03-2P	Fcc DoC	N/A	Unshielded,1.8m
3.	GNSS Station	RACELOGIC	18645	N/A	N/A	Unshielded,1.8m
4.	WLAN AP	D-Link	DIR-820L	KA2IR820LA1	N/A	Unshielded,1.8m
5.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded,1.8m
6.	Bluetooth Earphone	Samsung	EO-MG900	N/A	N/A	N/A
7.	Notebook	Lenovo	E540	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
8.	iPod nano 8GB	Apple	MC690ZP/A	FCC DoC	Shielded, 1.2m	N/A
9.	iPod	Apple	MC525 ZP/A	DoC	Shielded, 1.0m	N/A

2.4. EUT Operation Test Setup

The EUT was in GSM or WCDMA or LTE 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.

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.

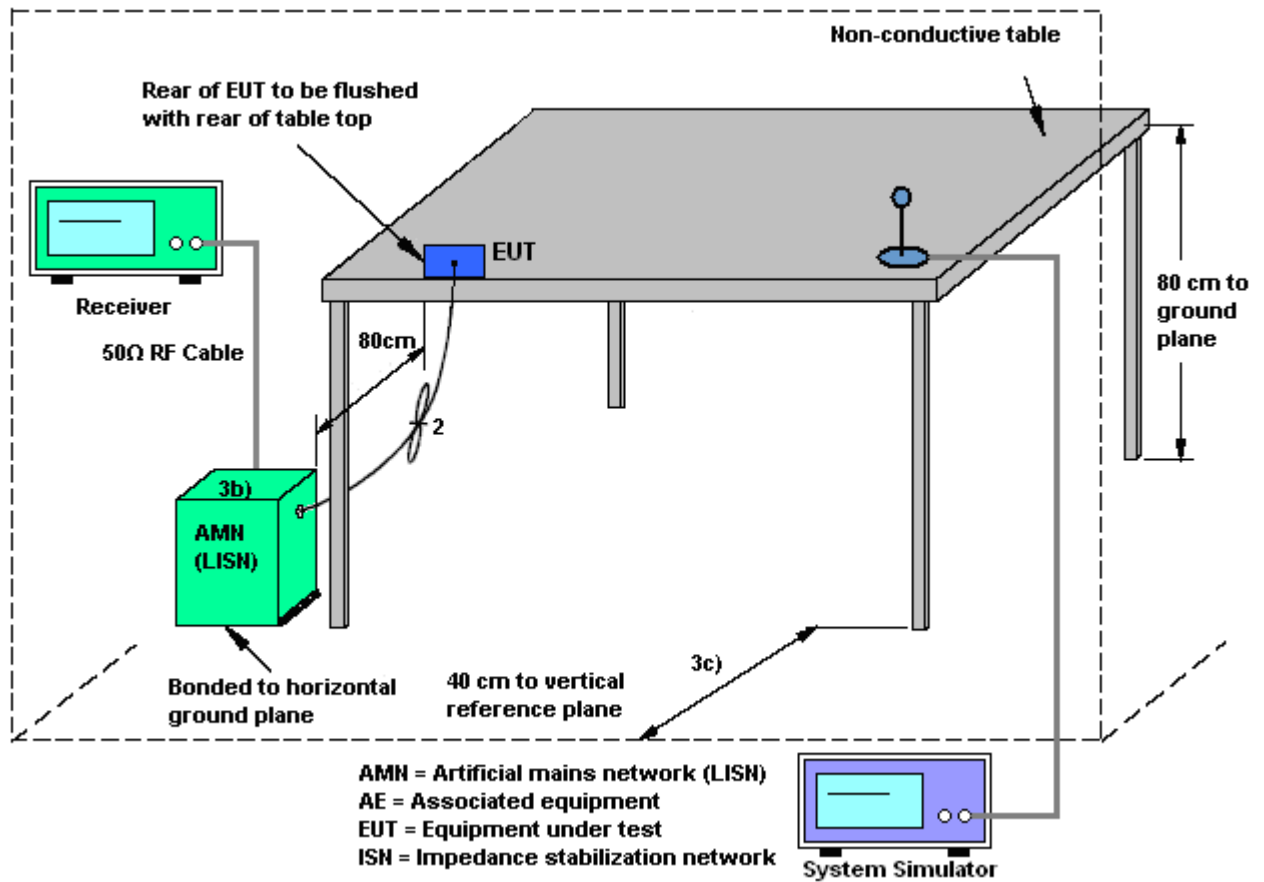
3.1.2 Measuring Instruments

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

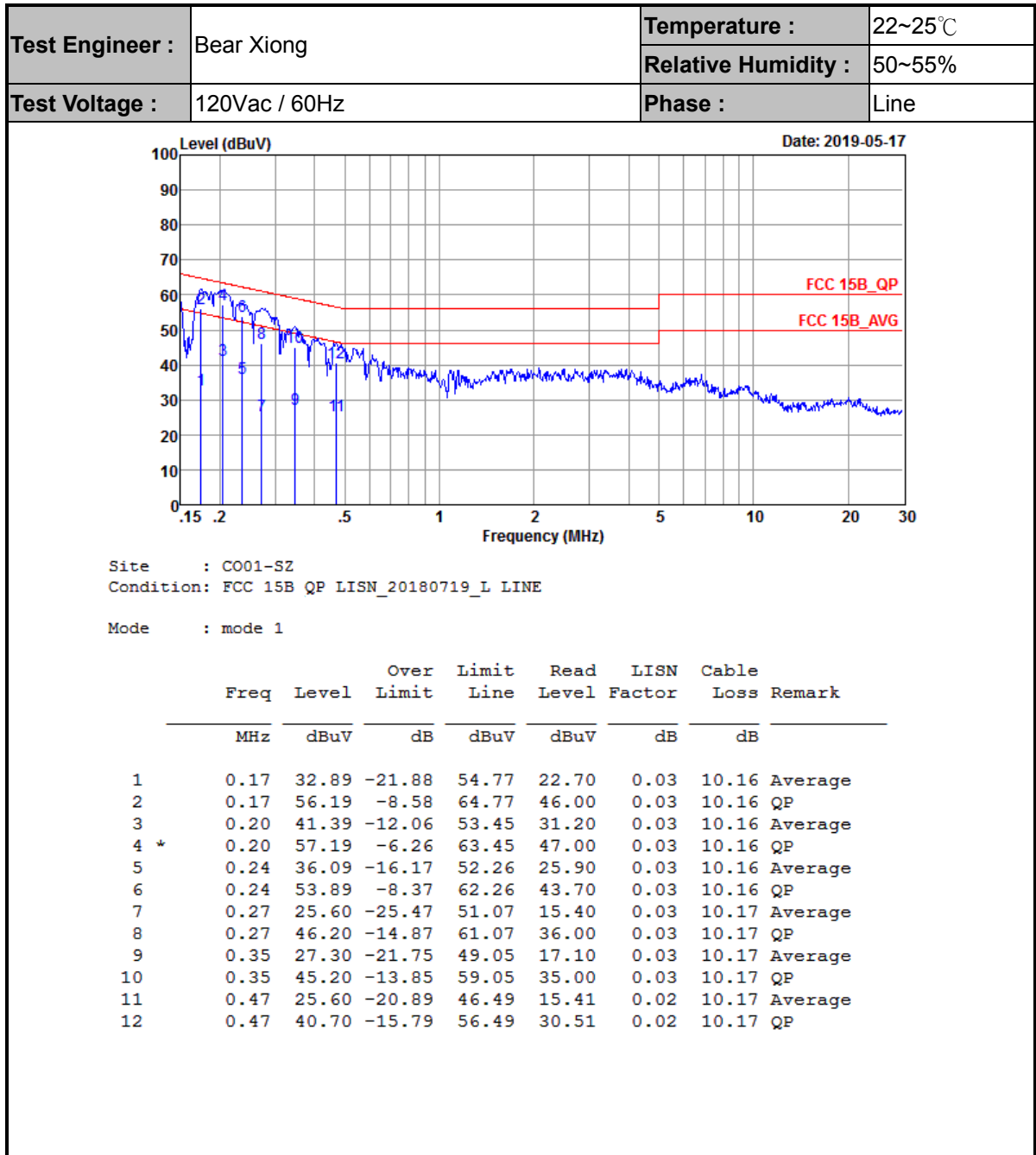
3.1.3 Test Procedure

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

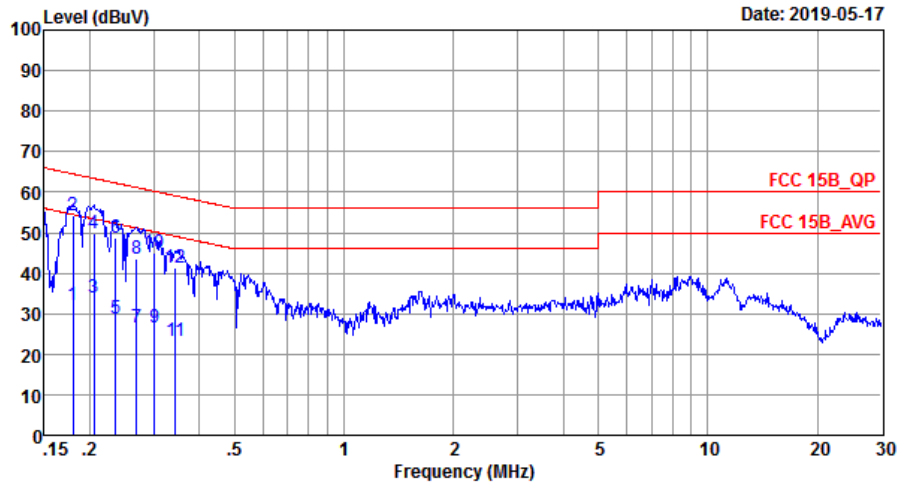


3.1.5 Test Result of AC Conducted Emission





Test Engineer :	Bear Xiong	Temperature :	22~25℃
		Relative Humidity :	50~55%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral



Site : CO01-SZ
Condition: FCC 15B QP LISN_20180719_N NEUTRAL
Mode : mode 1

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.18	32.19	-22.31	54.50	22.00	0.03	10.16	Average
2 *	0.18	54.19	-10.31	64.50	44.00	0.03	10.16	QP
3	0.21	33.79	-19.61	53.40	23.60	0.03	10.16	Average
4	0.21	49.69	-13.71	63.40	39.50	0.03	10.16	QP
5	0.24	28.89	-23.37	52.26	18.70	0.03	10.16	Average
6	0.24	48.79	-13.47	62.26	38.60	0.03	10.16	QP
7	0.27	26.50	-24.66	51.16	16.30	0.03	10.17	Average
8	0.27	43.50	-17.66	61.16	33.30	0.03	10.17	QP
9	0.30	26.60	-23.59	50.19	16.40	0.03	10.17	Average
10	0.30	44.90	-15.29	60.19	34.70	0.03	10.17	QP
11	0.34	23.40	-25.69	49.09	13.20	0.03	10.17	Average
12	0.34	41.40	-17.69	59.09	31.20	0.03	10.17	QP

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

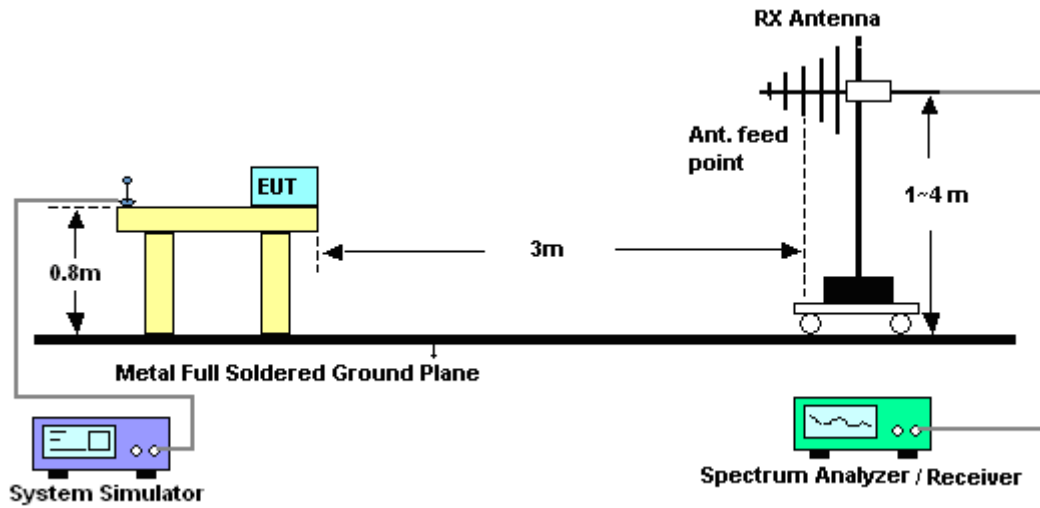
The measuring equipment is listed in the section 4 of this test report.

3.2.3. Test Procedures

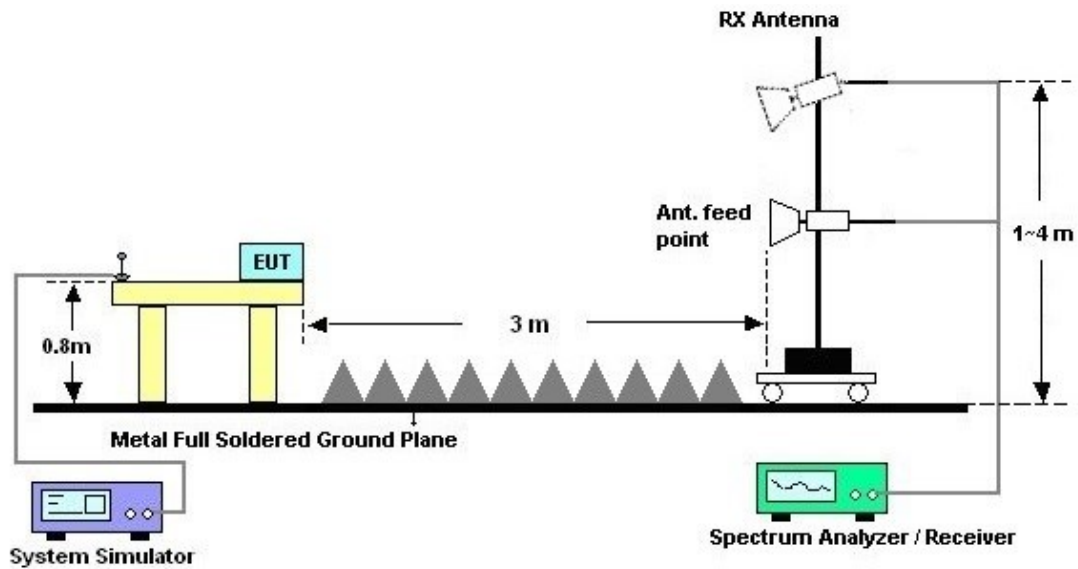
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna 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 (dB μ V/m) = 20 log Emission level (μ V/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

3.2.4. Test Setup of Radiated Emission

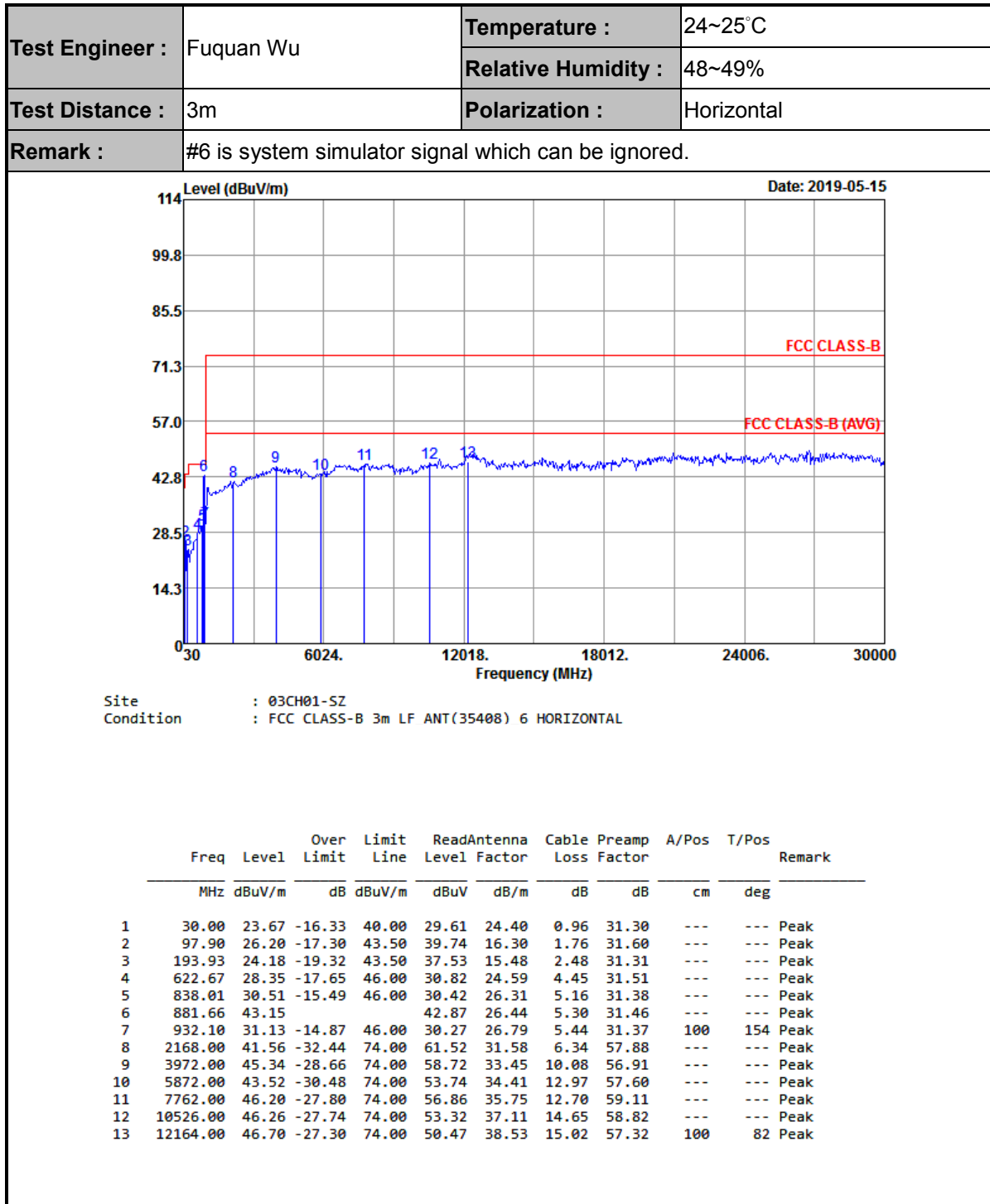
For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz

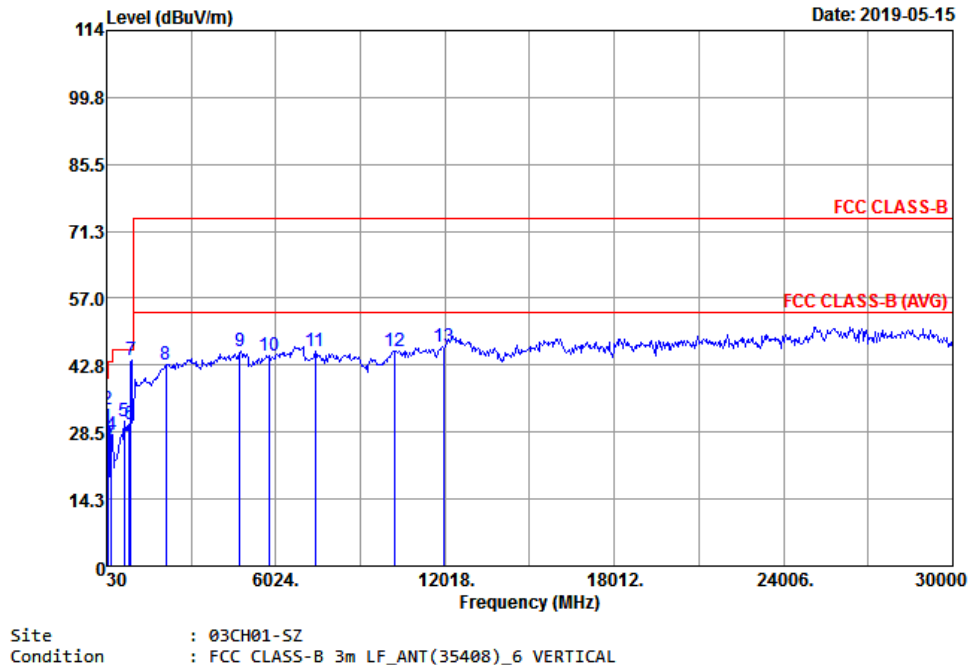


3.2.5. Test Result of Radiated Emission





Test Engineer :	Fuquan Wu	Temperature :	24~25°C
		Relative Humidity :	48~49%
Test Distance :	3m	Polarization :	Vertical
Remark :	#7 is system simulator signal which can be ignored.		



	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	42.61	29.38	-10.62	40.00	42.28	17.37	1.18	31.45	---	Peak
2	63.95	33.28	-6.72	40.00	50.73	12.66	1.39	31.50	100	81 Peak
3	92.08	25.68	-17.82	43.50	40.42	15.10	1.71	31.55	---	Peak
4	194.90	28.05	-15.45	43.50	41.37	15.50	2.49	31.31	---	Peak
5	638.19	30.71	-15.29	46.00	33.01	24.65	4.50	31.45	---	Peak
6	828.31	30.25	-15.75	46.00	30.19	26.28	5.14	31.36	---	Peak
7	881.66	43.77			43.49	26.44	5.30	31.46	---	Peak
8	2132.00	42.82	-31.18	74.00	62.97	31.47	6.29	57.91	---	Peak
9	4758.00	45.80	-28.20	74.00	58.61	33.80	10.82	57.43	---	Peak
10	5782.00	44.75	-29.25	74.00	55.12	34.44	12.79	57.60	---	Peak
11	7422.00	45.61	-28.39	74.00	55.84	35.68	13.06	58.97	---	Peak
12	10244.00	45.87	-28.13	74.00	53.45	36.95	14.59	59.12	---	Peak
13	11994.00	46.80	-27.20	74.00	50.50	38.50	15.00	57.20	100	176 Peak



4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Receiver	R&S	ESR7	101630	9kHz~7GHz;	Dec. 23, 2018	May 17, 2019	Dec. 22, 2019	Conduction (CO01-SZ)
AC LISN	EMCO	3816/2SH	00103912	9kHz~30MHz	Oct. 18, 2018	May 17, 2019	Oct. 17, 2019	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	EMCO	3816/2SH	00103892	9kHz~30MHz	Dec. 23, 2018	May 17, 2019	Dec. 22, 2019	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	616020000891	100Vac~250Vac	Jul. 18, 2018	May 17, 2019	Jul. 17, 2019	Conduction (CO01-SZ)
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Aug. 30, 2018	May 15, 2019	Aug. 29, 2019	Radiation (03CH01-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270104	0.5GHz~26.5GHz	Dec. 22, 2018	May 15, 2019	Dec. 21, 2019	Radiation (03CH01-SZ)
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz~2GHz	Jun. 05, 2018	May 15, 2019	Jun. 04, 2019	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS Lindgren	3117	119436	1GHz~18GHz	Jun. 28, 2018	May 15, 2019	Jun. 27, 2019	Radiation (03CH01-SZ)
LF Amplifier	Burgeon	BPA-530	102209	0.01~3000Mhz	Apr. 19, 2019	May 15, 2019	Apr. 18, 2020	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	AMF-7D-00101800-30-10P-R	1707137	1GHz~18GHz	Oct. 19, 2018	May 15, 2019	Oct. 18, 2019	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 17, 2018	May 15, 2019	Jul. 16, 2019	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18GHz~40GHz	Mar. 30, 2019	May 15, 2019	Mar. 29, 2020	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	NCR	May 15, 2019	NCR	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	May 15, 2019	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	May 15, 2019	NCR	Radiation (03CH01-SZ)

NCR: No Calibration Required

5. Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.6dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.8dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	5.0dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.3dB
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