



FCC Test Report

APPLICANT : Gosuncn Technology Group Co., Ltd.
EQUIPMENT : LTE Module
BRAND NAME : GOSUNCN
MODEL NAME : ME3630
MARKETING NAME : ME3630
FCC ID : 2APNR-ME3630
STANDARD : 47 CFR Part 15 Subpart B
CLASSIFICATION : Certification

The product was received on Jun. 18, 2019 and testing was completed on Jul. 16, 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
FC961802	Rev. 01	Initial issue of report	Jul. 30, 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 19.61 dB at 0.150 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 6.09 dB at 49.400 MHz



1. General Description

1.1. Applicant

Gosuncn Technology Group Co., Ltd.

6F, 2819 KaiChuang Blvd., Science Town, Huangpu District, Guangzhou City, Guangdong, China.

1.2. Manufacturer

Gosuncn Technology Group Co., Ltd.

6F, 2819 KaiChuang Blvd., Science Town, Huangpu District, Guangzhou City, Guangdong, China.

1.3. Product Feature of Equipment Under Test

Product Feature	
Equipment	LTE Module
Brand Name	GOSUNCN
Model Name	ME3630
Marketing Name	ME3630
FCC ID	2APNR-ME3630
EUT supports Radios application	GSM/WCDMA/LTE/GNSS
IMEI Code	Conduction: 869374040404732 Radiation: 869374040409947
HW Version	ME3630-MB_A
SW Version	ME3630A1CV1.0B02
EUT Stage	Production Unit

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. 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 II: 1852.4 MHz ~ 1907.6 MHz LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz LTE Band 5 : 824.7 MHz ~ 848.3 MHz LTE Band 7 : 2502.5 MHz ~ 2567.5 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 II: 1932.4 MHz ~ 1987.6 MHz LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 5 : 869.7 MHz ~ 893.3 MHz LTE Band 7 : 2622.5 MHz ~ 2687.5 MHz GNSS : 1559 MHz ~ 1610 MHz
Antenna Type	WWAN : Fixed External Antenna GNSS: FPC Antenna
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK WCDMA : BPSK (Uplink) HSDPA/DC-HSDPA : QPSK (Uplink) HSUPA : QPSK (Uplink) HSPA+ : 16QAM (Uplink) DC-HSDPA : 64QAM LTE: QPSK / 16QAM GNSS : BPSK

Note: GNSS Rx = GLONASS + GPS

1.5. Modification of EUT

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

1.6. 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.
	03CH03-SZ	CN1256	421272

1.7. 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

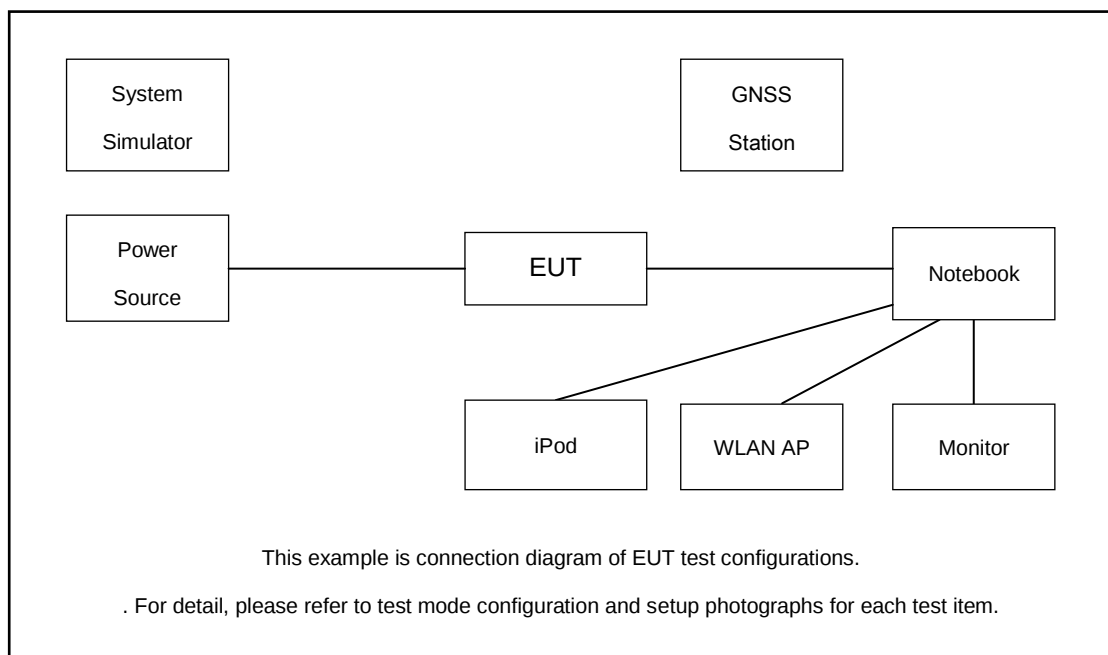
2.1. Test Mode

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 fundamental frequency or to 40 GHz, whichever is lower).

Test Items	Function Type
AC Conducted Emission	Mode 1: GSM 850 Idle (Middle) + Adapter + GNSS Rx Mode 2: PCS 1900 Idle (Middle) + Adapter + GNSS Rx Mode 3: WCDMA Band II Idle (low) + Adapter + GNSS Rx Mode 4: WCDMA Band V Idle (low) + Adapter + GNSS Rx Mode 5: LTE Band 2 Idle (High) + Adapter + GNSS Rx Mode 6: LTE Band 5 Idle (Middle) + Adapter + GNSS Rx Mode 7: LTE Band 7 Idle (Middle) + Adapter + GNSS Rx
Radiated Emissions	Mode 1: GSM 850 Idle (Middle) + Adapter + GNSS Rx Mode 2: PCS 1900 Idle (Middle) + Adapter + GNSS Rx Mode 3: WCDMA Band II Idle (low) + Adapter + GNSS Rx Mode 4: WCDMA Band V Idle (low) + Adapter + GNSS Rx Mode 5: LTE Band 2 Idle (High) + Adapter + GNSS Rx Mode 6: LTE Band 5 Idle (Middle) + Adapter + GNSS Rx Mode 7: LTE Band 7 Idle (Middle) + Adapter + GNSS Rx
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.	

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.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	LTE Base Station	Anritus	MT8820C	N/A	N/A	Unshielded,1.8m
3.	GNSS Station	RACELOGIC	RLLS03-2P	Fcc DoC	N/A	Unshielded,1.8m
4.	GNSS Station	RACELOGIC	18645	N/A	N/A	Unshielded,1.8m
5.	WLAN AP	ASUSTek	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded,2.7m with Core
6.	Notebook	Lenovo	E540	Fcc DoC	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
7.	iPod	Apple	MC525 ZP/A	Fcc DoC	N/A	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.

The following programs installed in the EUT were programmed during the test.

1. 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.

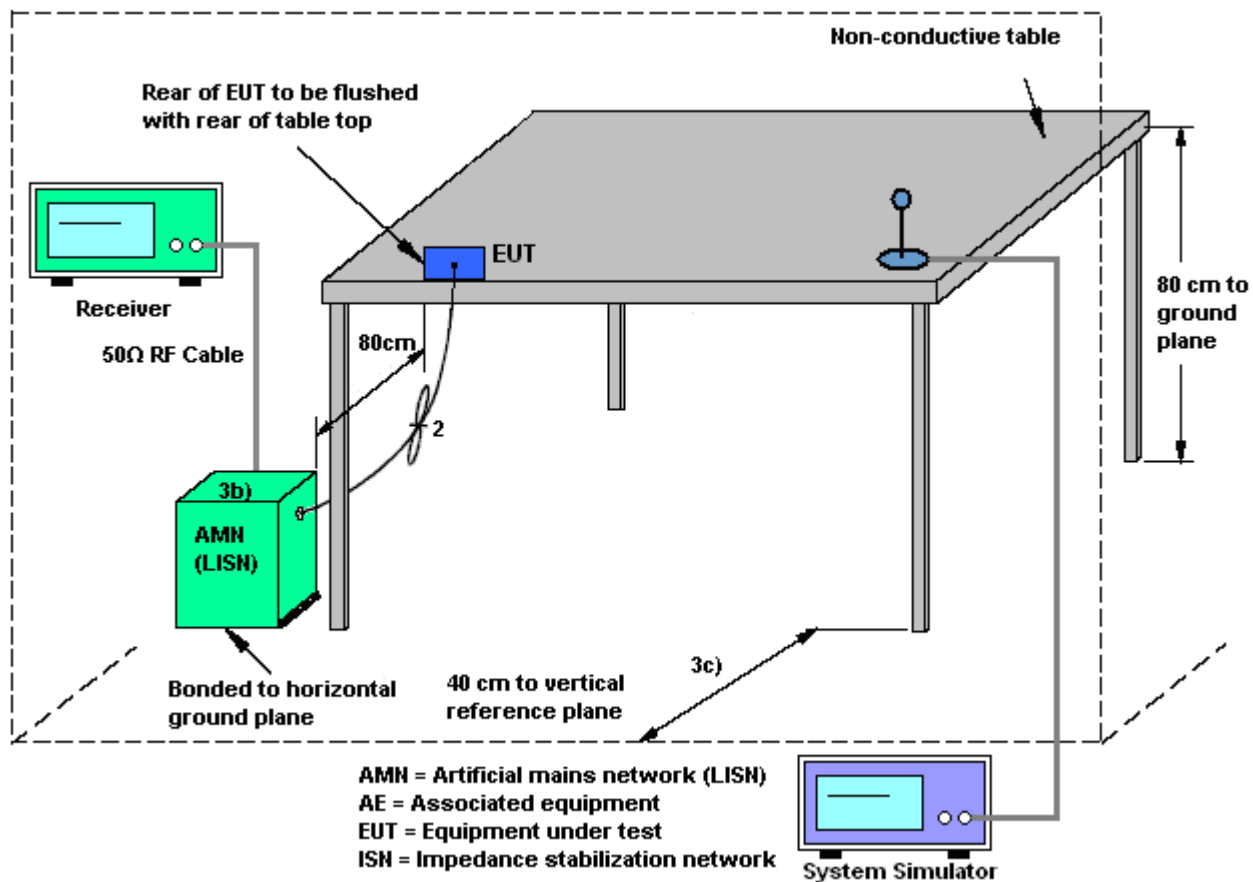
3.1.2 Measuring Instruments

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

3.1.3 Test Procedure

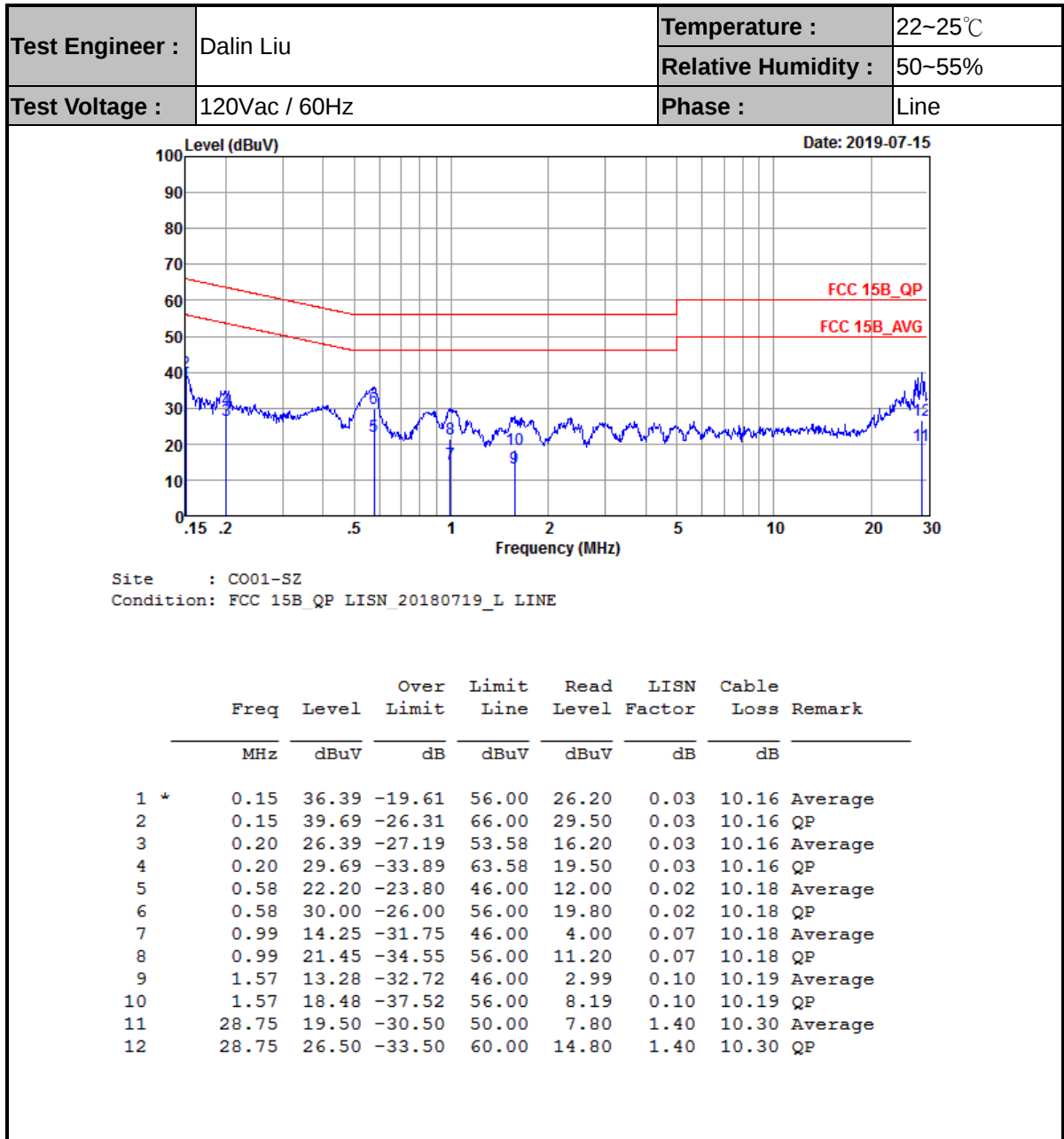
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.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



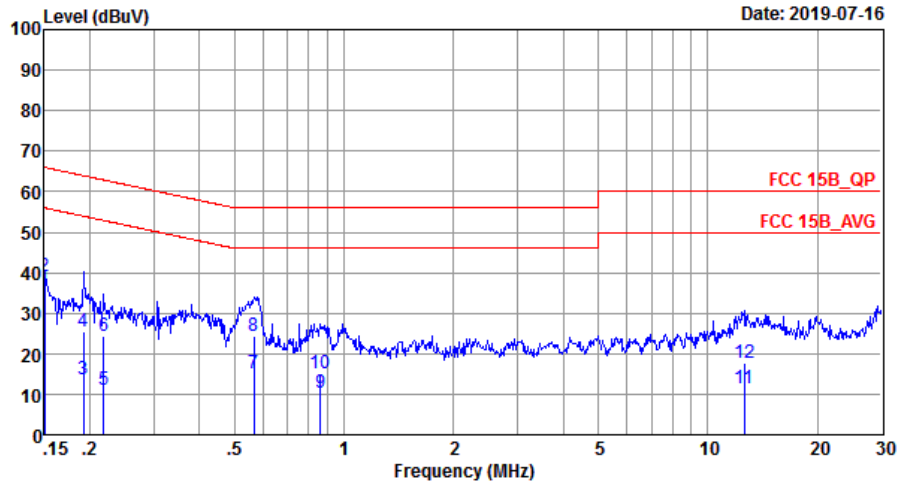


3.1.5 Test Result of AC Conducted Emission





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



Site : CO01-SZ
Condition: FCC 15B_QP LISN_20180719_N NEUTRAL

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1 *	0.15	35.69	-20.31	56.00	25.50	0.03	10.16	Average
2	0.15	39.19	-26.81	66.00	29.00	0.03	10.16	QP
3	0.19	13.49	-40.44	53.93	3.30	0.03	10.16	Average
4	0.19	25.49	-38.44	63.93	15.30	0.03	10.16	QP
5	0.22	11.19	-41.69	52.88	1.00	0.03	10.16	Average
6	0.22	24.39	-38.49	62.88	14.20	0.03	10.16	QP
7	0.56	15.20	-30.80	46.00	5.00	0.02	10.18	Average
8	0.56	24.20	-31.80	56.00	14.00	0.02	10.18	QP
9	0.86	10.42	-35.58	46.00	0.20	0.04	10.18	Average
10	0.86	15.22	-40.78	56.00	5.00	0.04	10.18	QP
11	12.58	11.62	-38.38	50.00	1.09	0.26	10.27	Average
12	12.58	17.72	-42.28	60.00	7.19	0.26	10.27	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

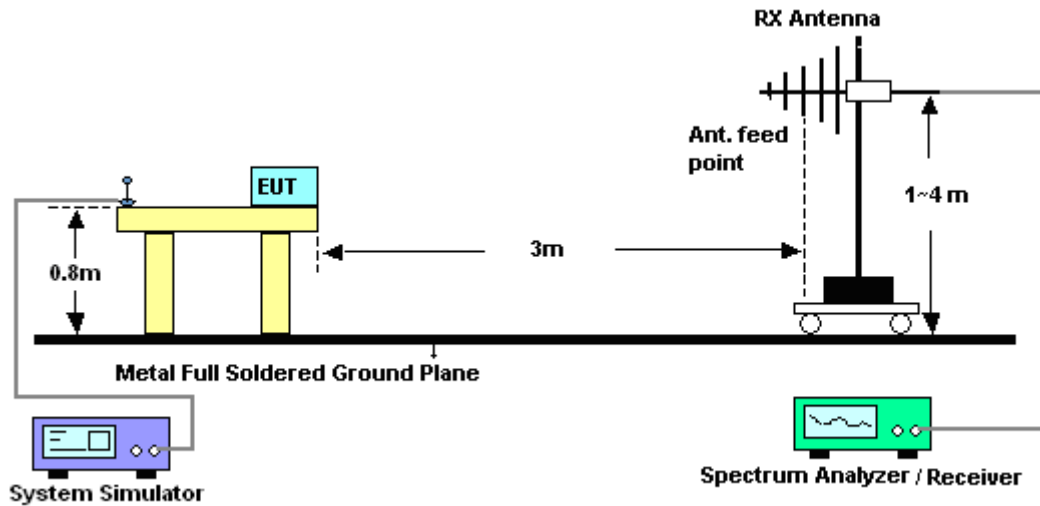
The measuring equipment is listed in the section 4 of this test report.

3.2.3. Test Procedures

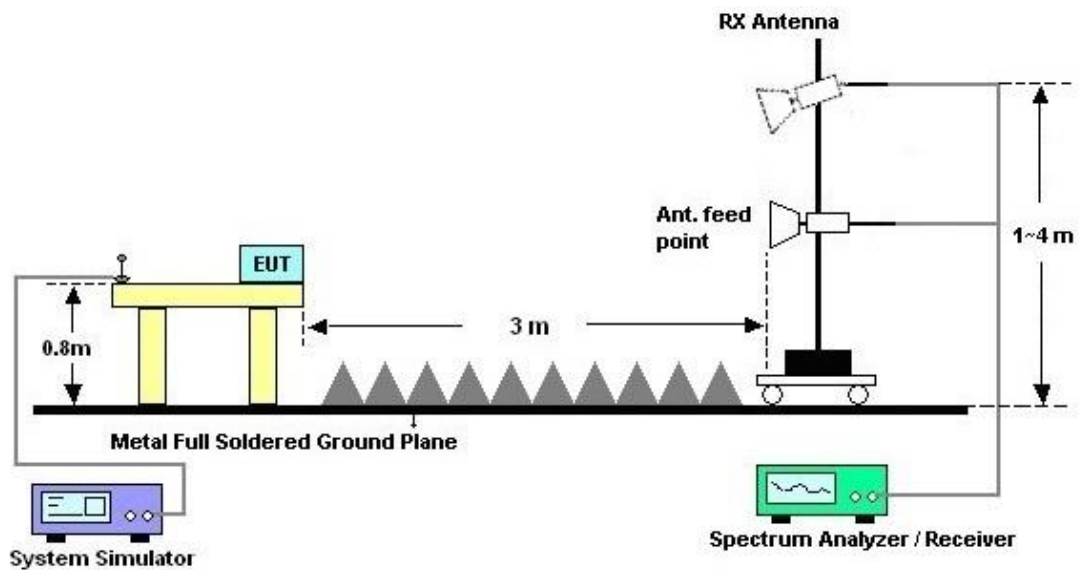
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna 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 (dBμV/m) = 20 log Emission level (μV/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

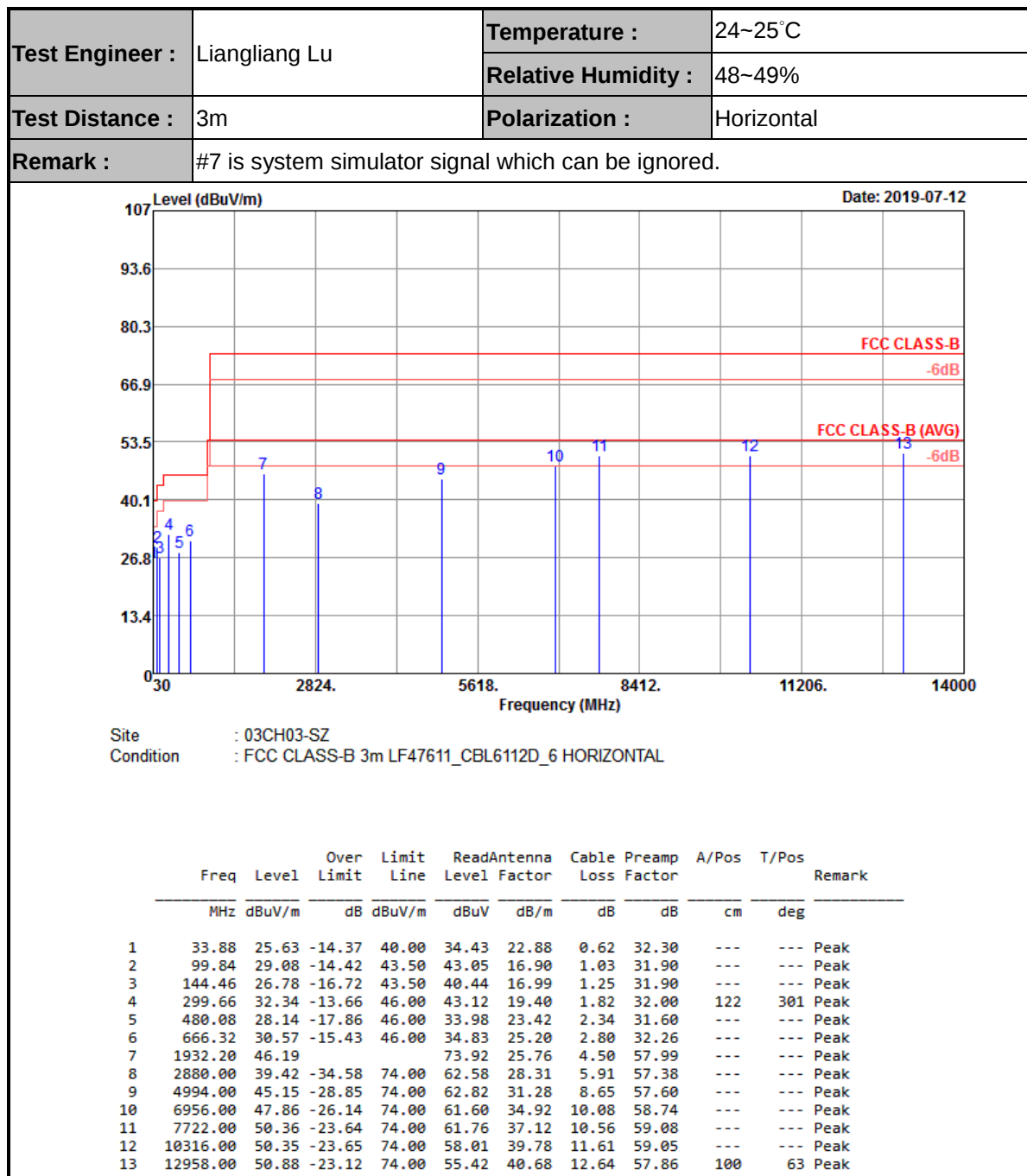


For radiated emissions above 1GHz



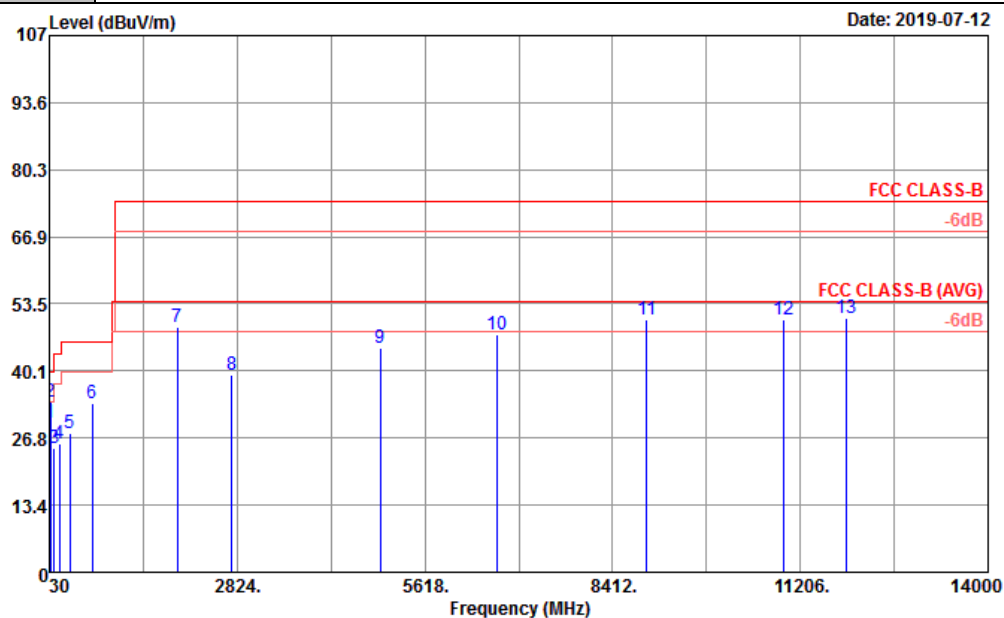


3.2.5. Test Result of Radiated Emission





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



Site : 03CH03-SZ
Condition : FCC CLASS-B 3m LF47611_CBL6112D_6 VERTICAL

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	A/Pos	T/Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	33.88	29.81	-10.19	40.00	38.61	22.88	0.62	32.30	---	---	Peak
2	49.40	33.91	-6.09	40.00	51.13	14.67	0.71	32.60	185	215	Peak
3	99.84	24.81	-18.69	43.50	38.78	16.90	1.03	31.90	---	---	Peak
4	181.32	25.71	-17.79	43.50	40.89	15.29	1.37	31.84	---	---	Peak
5	333.61	27.81	-18.19	46.00	37.61	20.14	1.93	31.87	---	---	Peak
6	666.32	33.69	-12.31	46.00	37.95	25.20	2.80	32.26	---	---	Peak
7	1932.40	48.75			76.48	25.76	4.50	57.99	---	---	Peak
8	2742.00	39.39	-34.61	74.00	63.43	27.98	5.47	57.49	---	---	Peak
9	4952.00	44.56	-29.44	74.00	62.25	31.23	8.64	57.56	---	---	Peak
10	6702.00	47.49	-26.51	74.00	61.97	34.00	9.95	58.43	---	---	Peak
11	8918.00	50.44	-23.56	74.00	60.55	38.00	10.91	59.02	---	---	Peak
12	10952.00	50.31	-23.69	74.00	56.30	40.53	11.84	58.36	---	---	Peak
13	11890.00	50.71	-23.29	74.00	55.90	39.93	12.19	57.31	169	52	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	Jul. 15, 2019~ Jul. 16, 2019	Dec. 22, 2019	Conduction (CO01-SZ)
AC LISN	EMCO	3816/2SH	00103912	9kHz~30MHz	Oct. 18, 2018	Jul. 15, 2019~ Jul. 16, 2019	Oct. 17, 2019	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	EMCO	3816/2SH	00103892	9kHz~30MHz	Dec. 23, 2018	Jul. 15, 2019~ Jul. 16, 2019	Dec. 22, 2019	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	61602000089 1	100Vac~250Vac	Jul. 18, 2018	Jul. 15, 2019~ Jul. 16, 2019	Jul. 17, 2019	Conduction (CO01-SZ)
EMI Test Receiver&SA	KEYSIGHT	N9038A	MY54450083	20Hz~8.4GHz	Apr. 18, 2019	Jul. 12, 2019	Apr. 17, 2020	Radiation (03CH03-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150246	10Hz~44GHz;	Apr. 18, 2019	Jul. 12, 2019	Apr. 17, 2020	Radiation (03CH03-SZ)
Bilog Antenna	TeseQ	CBL6112D	35408	30MHz~2GHz	Apr. 19, 2019	Jul. 12, 2019	Apr. 18, 2020	Radiation (03CH03-SZ)
Double Ridge Horn Antenna	SCHWARZBE CK	BBHA9120D	9120D-1355	1GHz~18GHz	Apr. 01, 2019	Jul. 12, 2019	Mar. 31, 2020	Radiation (03CH03-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18GHz~40GHz	Apr. 18, 2019	Jul. 12, 2019	Apr. 17, 2020	Radiation (03CH03-SZ)
LF Amplifier	Burgeon	BPA-530	102210	0.01Hz ~3000MHz	Oct. 18, 2018	Jul. 12, 2019	Oct. 17, 2019	Radiation (03CH03-SZ)
HF Amplifier	MITEQ	AMF-7D-0010 1800-30-10P- R	1943528	1GHz~18GHz	Oct. 18, 2018	Jul. 12, 2019	Oct. 17, 2019	Radiation (03CH03-SZ)
HF Amplifier	MITEQ	TTA1840-35-H G	1871923	18GHz~40GHz	Jul. 30, 2018	Jul. 12, 2019	Jul. 30, 2019	Radiation (03CH03-SZ)
AC Power Source	Chroma	61601	61601000198 5	N/A	NCR	Jul. 12, 2019	NCR	Radiation (03CH03-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Jul. 12, 2019	NCR	Radiation (03CH03-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Jul. 12, 2019	NCR	Radiation (03CH03-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% ($U = 2Uc(y)$)	2.6dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.8dB
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