



FCC Test Report

APPLICANT : MeiG Smart Technology Co., Ltd
EQUIPMENT : SLM757
BRAND NAME : MeiG Smart Technology Co., Ltd
MODEL NAME : SLM757A
FCC ID : 2APJ4-SLM757A
STANDARD : 47 CFR Part 15 Subpart B
CLASSIFICATION : Certification

The product was received on Sep. 12, 2018 and testing was completed on Nov. 19, 2018. We, Sporton International (Kunshan) 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 (Kunshan) Inc., the test report shall not be reproduced except in full.



Approved by: James Huang / Manager

Sporton International (Kunshan) Inc.
No. 1098, Pengxi North Road, Kunshan Economic Development Zone,
Jiangsu Province 215335, China



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC891203	Rev. 01	Initial issue of report	Nov. 29, 2018



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 8.17 dB at 0.573 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 7.76 dB at 259.89 MHz



1. General Description

1.1. Applicant

MeiG Smart Technology Co., Ltd
3/F, No.88, Qinjiang Road, Xuhui District, Shanghai, China.

1.2. Manufacturer

MeiG Smart Technology Co., Ltd
3/F, No.88, Qinjiang Road, Xuhui District, Shanghai, China.

1.3. Product Feature of Equipment Under Test

Product Feature	
Equipment	SLM757
Brand Name	MeiG Smart Technology Co., Ltd
Model Name	SLM757A
FCC ID	2APJ4-SLM757A
EUT supports Radios application	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 Bluetooth BR/EDR/LE
IMEI Code	Conduction: 868621028936577/868621028936585 Radiation: N/A
HW Version	SLM757PA_MB_V1.01_PCB
SW Version	SLM757PQA_EQ000_2EE0.1F7D165.5C3175F_180924_100_V01_T07
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	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 12 : 699.7 MHz ~ 715.3 MHz LTE Band 13 : 779.5 MHz ~ 784.5 MHz LTE Band 17 : 706.5 MHz ~ 713.5 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz 802.11a/n: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5700 MHz; 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Rx Frequency	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 12 : 729.7 MHz ~ 745.3 MHz LTE Band 13 : 748.5 MHz ~ 753.5 MHz LTE Band 17 : 736.5 MHz ~ 743.5 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz 802.11a/n: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5700 MHz; 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz GPS : 1575.42 MHz
Antenna Type	WWAN : Fixed External Antenna Bluetooth / WLAN : Fixed External Antenna GPS: Fixed External Antenna
Type of Modulation	WCDMA : BPSK (Uplink) HSDPA/DC-HSDPA : QPSK (Uplink) HSUPA : QPSK (Uplink) HSPA+ : 16QAM(16QAM uplink is not supported) DC-HSDPA : 64QAM LTE: QPSK / 16QAM 802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11a/g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) Bluetooth LE : GFSK Bluetooth (1Mbps) : GFSK Bluetooth (2Mbps) : $\pi/4$ -DQPSK Bluetooth (3Mbps) : 8-DPSK GPS : BPSK

1.5. Modification of EUT

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

1.6. Test Location

Sporton International (Kunshan) Inc. is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600155-0).

Test Site	Sporton International (Kunshan) Inc.		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone, Jiangsu Province 215335, China TEL : 86-512-57900158 FAX : 86-512-57900958		
Test Site No.	Sporton Site No.	FCC designation No.	FCC Test Firm Registration No.
	CO01-KS 03CH06-KS	CN5013	630927

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

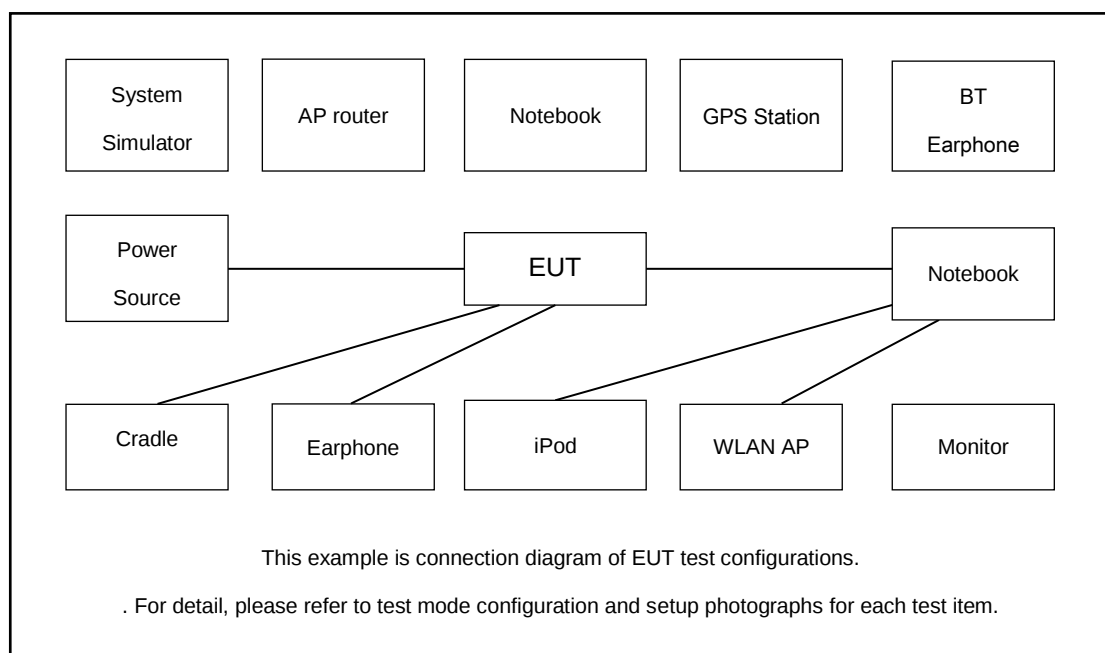
2.1. Test Mode

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: WCDMA Band V Idle + Bluetooth Idle + WLAN (2.4G) Idle + GNSS Rx + Adapter + SIM1
	Mode 2: LTE Band 12 Idle + Bluetooth Idle + WLAN (5G) Idle + GNSS Rx + Adapter + SIM2
Radiated Emissions	Mode 1: WCDMA Band V Idle + Bluetooth Idle + WLAN (2.4G) Idle + GNSS Rx + Adapter + SIM1
	Mode 2: LTE Band 12 Idle + Bluetooth Idle + WLAN (5G) Idle + GNSS Rx + Adapter + SIM2
Remark: 1. The worst case of AC is mode1; only the test data of this mode is reported. 2. The worst case of RE is mode 1; 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	Anritsu	MT8820C	N/A	N/A	Unshielded,1.8m
2.	Signal Generator	R&S	SMBV100A	NA	NA	Unshielded,1.8m
3.	WLAN AP	D-Link	DIR-855	KA2DIR855A2		Unshielded,1.8m
4.	WLAN AP	TP-LINK	TL-WDR5600	N/A	N/A	Unshielded,1.8m
5.	Bluetooth Earphone	Lenovo	LBH308	N/A	N/A	N/A
6.	Notebook	Lenovo	G480	N/A	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
7.	WLAN/Bluetooth Antenna	N/A	N/A	N/A	N/A	N/A
8.	WWAN Antenna	N/A	N/A	N/A	N/A	N/A
9.	GPS Antenna	N/A	N/A	N/A	N/A	N/A
10.	Test Jig	N/A	N/A	N/A	N/A	N/A
11.	Adapter	N/A	N/A	N/A	Unshielded,1.2m	N/A



2.4. EUT Operation Test Setup

The EUT was in 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. 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.

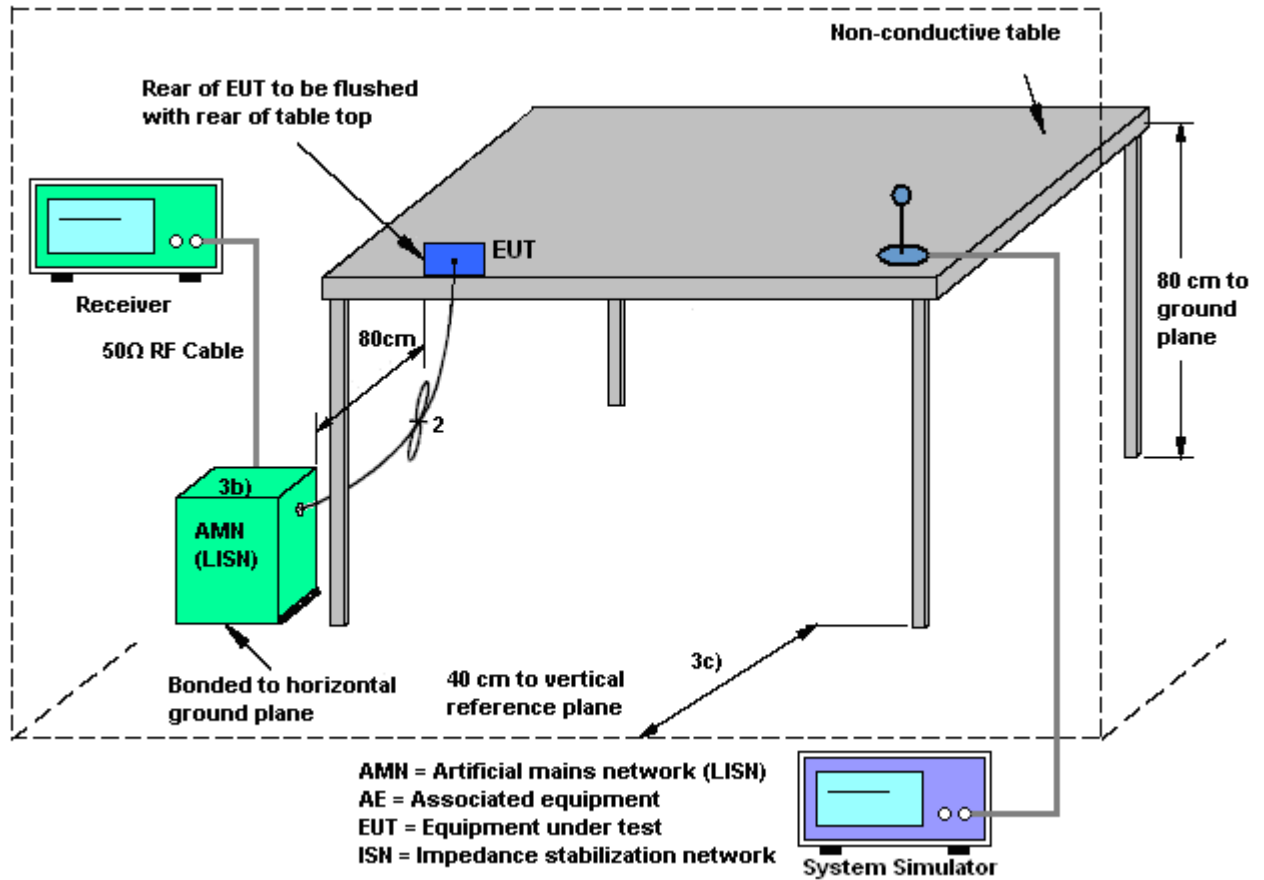
3.1.2 Measuring Instruments

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

3.1.3 Test Procedure

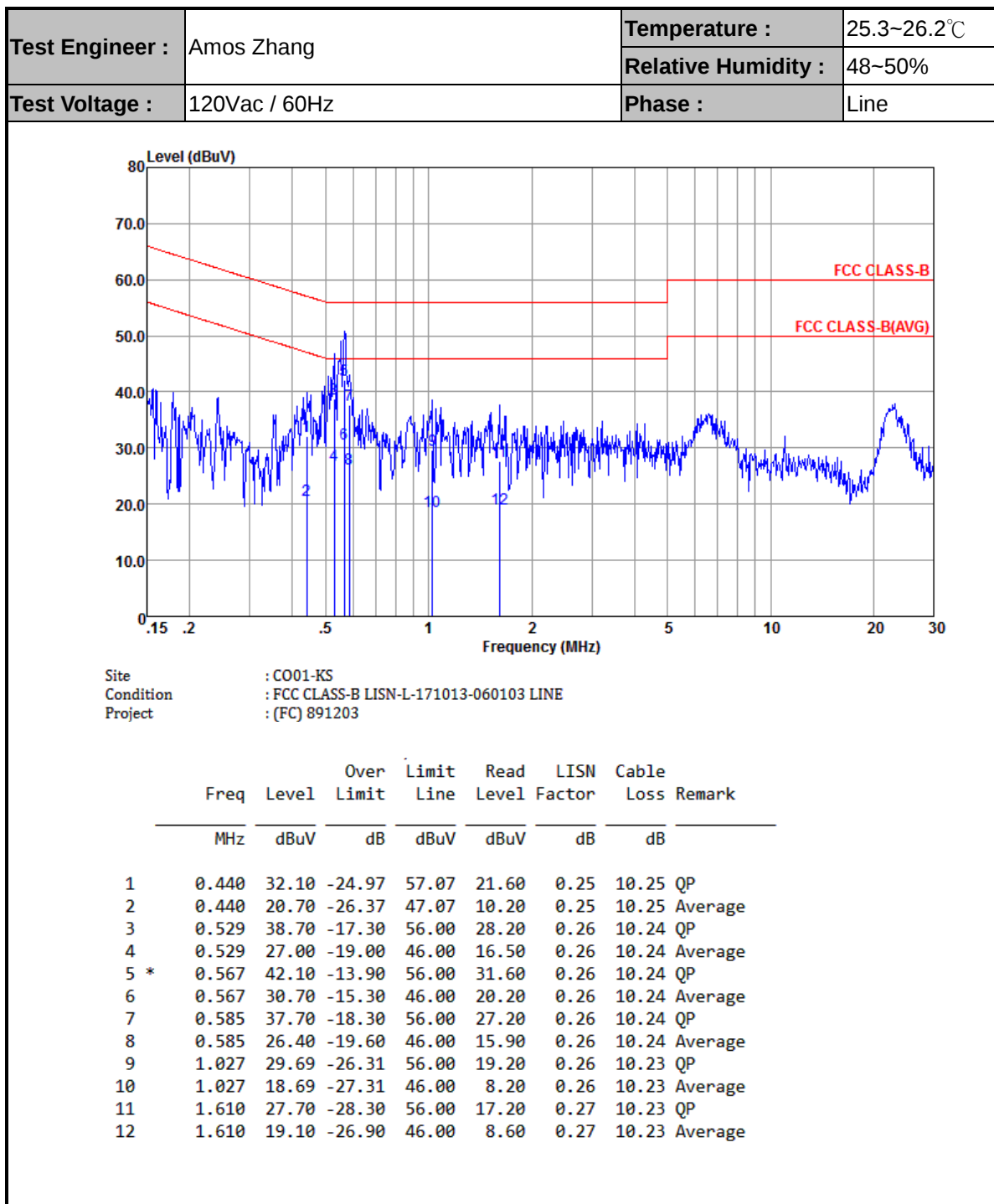
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.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



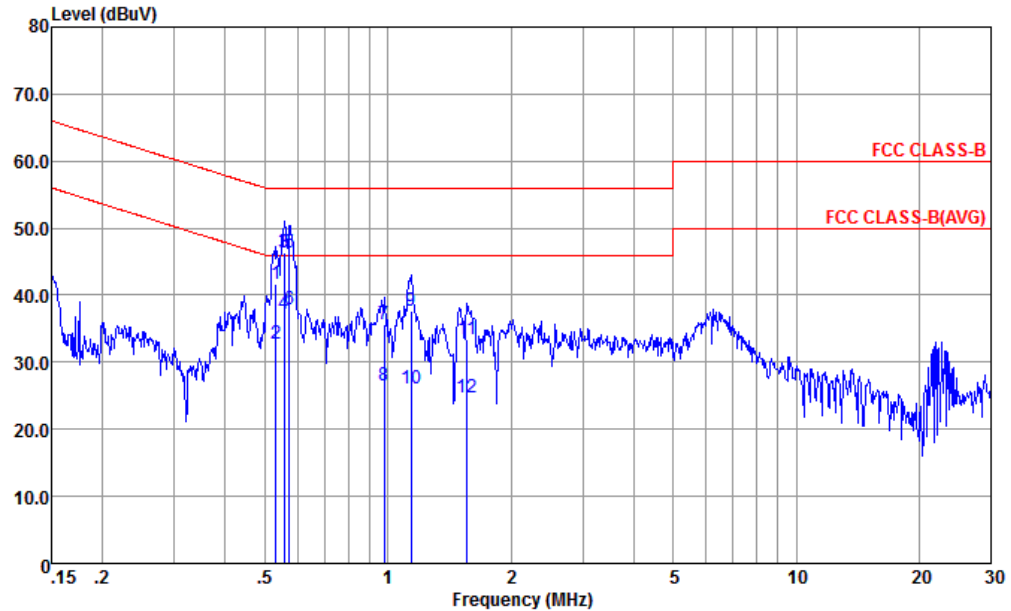


3.1.5 Test Result of AC Conducted Emission





Test Engineer :	Amos Zhang	Temperature :	25.3~26.2℃
		Relative Humidity :	48~50%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral



Site : CO01-KS
Condition : FCC CLASS-B LISN-N-171013-060103 NEUTRAL
Project : (FC) 891203

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.532	41.73	-14.27	56.00	31.20	0.29	10.24	QP
2	0.532	32.83	-13.17	46.00	22.30	0.29	10.24	Average
3	0.558	46.43	-9.57	56.00	35.90	0.29	10.24	QP
4	0.558	37.13	-8.87	46.00	26.60	0.29	10.24	Average
5	0.573	46.43	-9.57	56.00	35.90	0.29	10.24	QP
6 *	0.573	37.83	-8.17	46.00	27.30	0.29	10.24	Average
7	0.979	35.74	-20.26	56.00	25.20	0.31	10.23	QP
8	0.979	26.44	-19.56	46.00	15.90	0.31	10.23	Average
9	1.141	37.74	-18.26	56.00	27.20	0.31	10.23	QP
10	1.141	26.14	-19.86	46.00	15.60	0.31	10.23	Average
11	1.560	33.35	-22.65	56.00	22.80	0.32	10.23	QP
12	1.560	24.85	-21.15	46.00	14.30	0.32	10.23	Average

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.

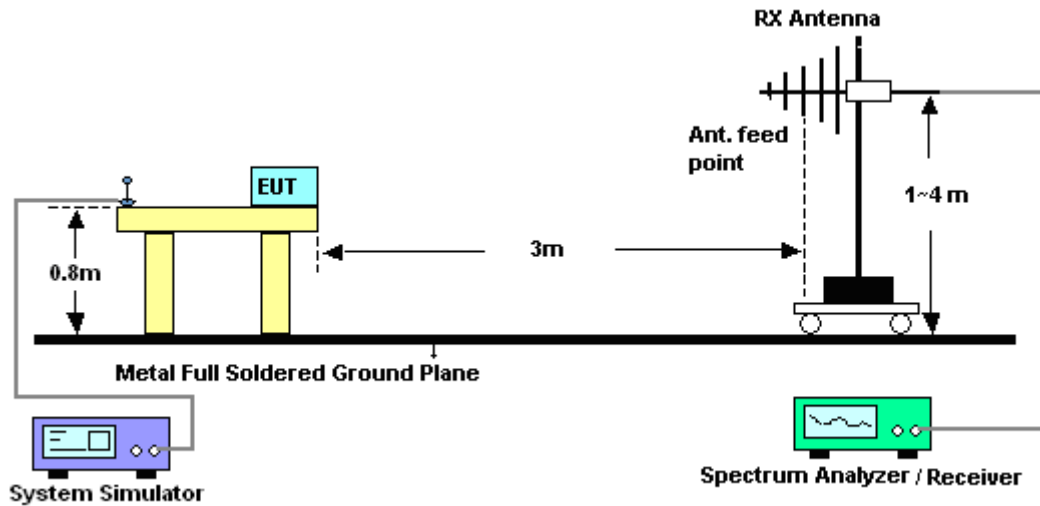


3.2.3. Test Procedures

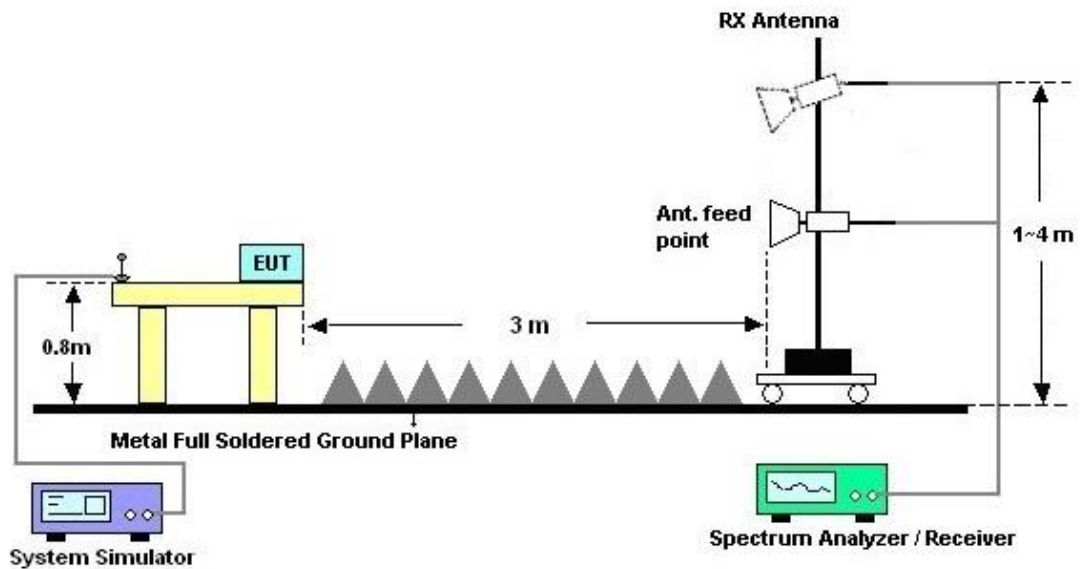
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna 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

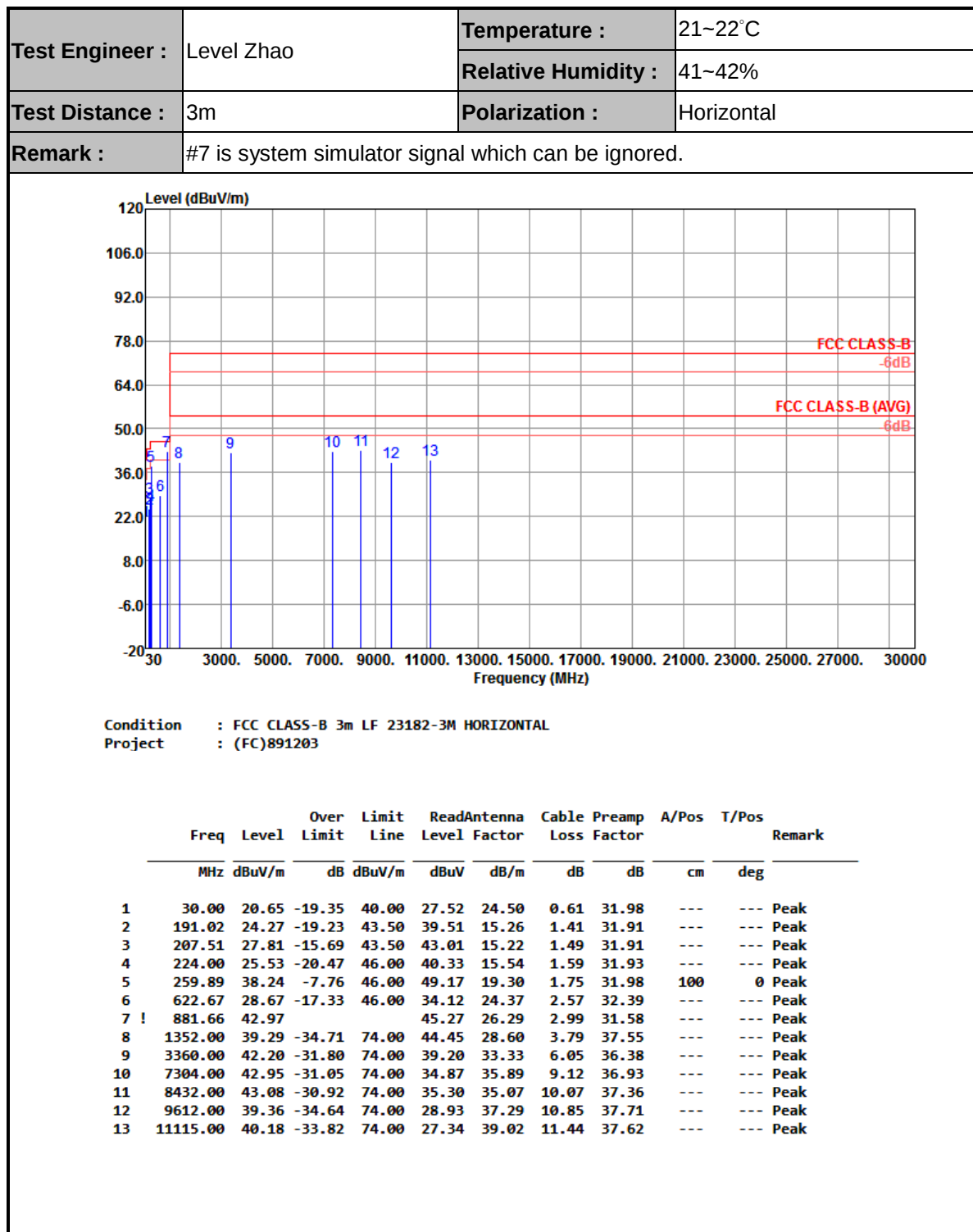


For radiated emissions above 1GHz



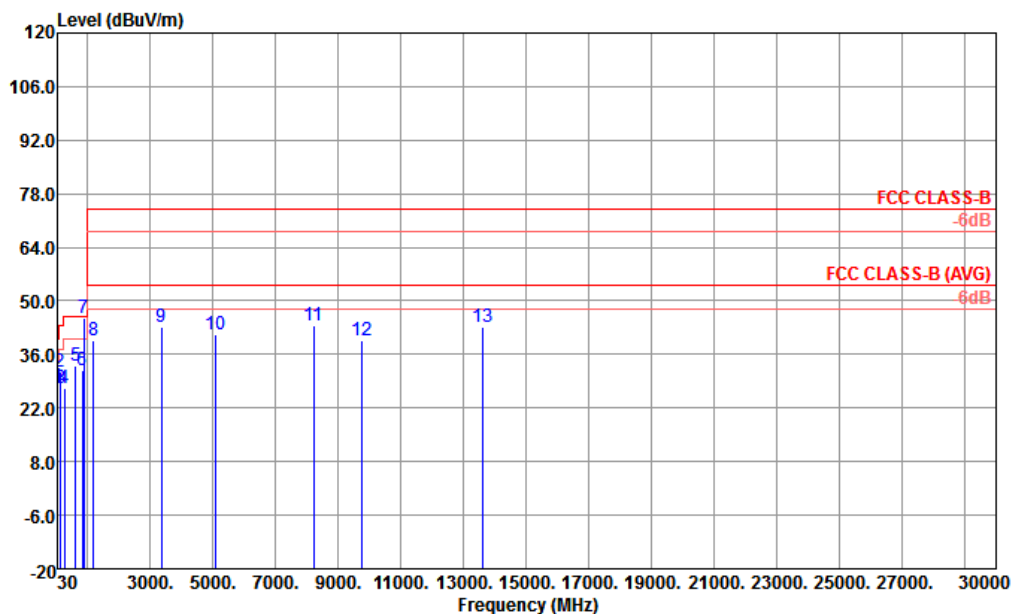


3.2.5. Test Result of Radiated Emission





Test Engineer :	Level Zhao	Temperature :	21~22°C
		Relative Humidity :	41~42%
Test Distance :	3m	Polarization :	Vertical
Remark :	#7 is system simulator signal which can be ignored.		



Condition : FCC CLASS-B 3m LF 23182-3M VERTICAL
Project : (FC)891203

	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	30.00	27.51	-12.49	40.00	34.38	24.50	0.61	31.98	---	Peak
2	121.18	31.66	-11.84	43.50	44.41	18.06	1.12	31.93	100	0 Peak
3	141.55	27.24	-16.26	43.50	40.90	17.07	1.21	31.94	---	Peak
4	260.86	27.37	-18.63	46.00	38.34	19.27	1.75	31.99	---	Peak
5	622.67	33.12	-12.88	46.00	38.57	24.37	2.57	32.39	---	Peak
6	830.25	32.05	-13.95	46.00	35.07	25.98	2.92	31.92	---	Peak
7 !	881.66	45.49			47.79	26.29	2.99	31.58	---	Peak
8	1184.00	39.47	-34.53	74.00	45.56	28.19	3.51	37.79	---	Peak
9	3360.00	43.32	-30.68	74.00	40.32	33.33	6.05	36.38	---	Peak
10	5104.00	41.28	-32.72	74.00	34.87	35.43	7.68	36.70	---	Peak
11	8224.00	43.56	-30.44	74.00	35.80	35.28	9.77	37.29	---	Peak
12	9756.00	39.58	-34.42	74.00	28.92	37.62	10.84	37.80	---	Peak
13	13599.00	43.18	-30.82	74.00	26.12	39.68	12.65	35.27	---	Peak



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. 19, 2018	Nov. 19, 2018	Apr. 18, 2019	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Oct. 12, 2018	Nov. 19, 2018	Oct. 11, 2019	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Nov. 23, 2017	Nov. 19, 2018	Nov. 22, 2018	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 12, 2018	Nov. 19, 2018	Oct. 11, 2019	Conduction (CO01-KS)
EMI Test Receiver	Keysight	N9038A	MY56400023	3Hz~8.5GHz;Max 30dBm	Oct. 12, 2018	Nov. 07, 2018	Oct. 11, 2019	Radiation (03CH06-KS)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471084	10Hz~44GHz	Jun. 25, 2018	Nov. 07, 2018	Jun. 24, 2019	Radiation (03CH06-KS)
Bilog Antenna	TeseQ	CBL6111D	44483	30MHz~1GHz	Jan. 29, 2018	Nov. 07, 2018	Jan. 28, 2019	Radiation (03CH06-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Oct. 20, 2018	Nov. 07, 2018	Oct. 19, 2019	Radiation (03CH06-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Feb. 07, 2018	Nov. 07, 2018	Feb. 06, 2019	Radiation (03CH06-KS)
Amplifier	MITEQ	TTA1840-35-HG	2014749	18~40GHz	Feb. 08, 2018	Nov. 07, 2018	Feb. 07, 2019	Radiation (03CH06-KS)
Amplifier	SONOMA	310N	187289	9KHz ~1GHZ	Aug. 06, 2018	Nov. 07, 2018	Aug. 05, 2019	Radiation (03CH06-KS)
Amplifier	Keysight	83017A	MY53270203	500MHz~26.5GHz	Dec. 16, 2017	Nov. 07, 2018	Dec. 15, 2018	Radiation (03CH06-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Nov. 07, 2018	NCR	Radiation (03CH06-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Nov. 07, 2018	NCR	Radiation (03CH06-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Nov. 07, 2018	NCR	Radiation (03CH06-KS)

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% ($U = 2Uc(y)$)	2.9 dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0 dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0 dB
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