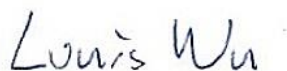


FCC Test Report

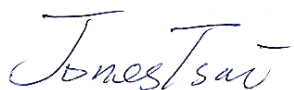
APPLICANT : ZTE CORPORATION
EQUIPMENT : CDMA/EVDO/LTE CPE
BRAND NAME : ZTE
MODEL NAME : MF275U
FCC ID : SRQ-MF275U
STANDARD : FCC 47 CFR FCC Part 15 Subpart B
CLASSIFICATION : Certification

The product was received on May 06, 2014 and testing was completed on May 30, 2014. 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 C63.4-2003 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.



Reviewed by: Louis Wu / Manager



Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL (KUNSHAN) INC.
No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. C.

TABLE OF CONTENTS

REVISION HISTORY	3
SUMMARY OF TEST RESULT	4
1. GENERAL DESCRIPTION	5
1.1. Applicant.....	5
1.2. Manufacturer	5
1.3. Feature of Equipment Under Test.....	5
1.4. Product Specification of Equipment Under Test	6
1.5. Modification of EUT	7
1.6. Test Site	7
1.7. Applied Standards	7
2. TEST CONFIGURATION OF EQUIPMENT UNDER TEST	8
2.1. Test Mode	8
2.2. Connection Diagram of Test System	9
2.3. Support Unit used in test configuration and system.....	9
2.4. EUT Operation Test Setup	10
3. TEST RESULT	11
3.1. Test of AC Conducted Emission Measurement	11
3.2. Test of Radiated Emission Measurement	15
4. LIST OF MEASURING EQUIPMENT	19
5. UNCERTAINTY OF EVALUATION	20
APPENDIX A. SETUP PHOTOGRAPHS	



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC450602	Rev. 01	Initial issue of report	Jun. 06, 2014

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 4.81 dB at 1.590 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 8.42 dB at 42.610 MHz

1. General Description

1.1. Applicant

ZTE CORPORATION

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P. R. China

1.2. Manufacturer

ZTE CORPORATION

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P. R. China

1.3. Feature of Equipment Under Test

Product Feature	
Equipment	CDMA/EVDO/LTE CPE
Brand Name	ZTE
Model Name	MF275U
FCC ID	SRQ-MF275U
EUT supports Radios application	CDMA/EV-DO/LTE/ WLAN 2.4GHz 802.11b/g/n HT20/HT40/ WLAN 5GHz 802.11a/n HT20/HT40
HW Version	dcmB
SW Version	MF275U1.0.3
EUT Stage	Identical Prototype

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

Product Specification subjective to this standard	
Tx Frequency	CDMA2000 BC0 : 824.70 MHz ~ 848.31 MHz CDMA2000 BC1 : 1851.25 MHz ~ 1908.75 MHz LTE Band 5 : 824.7 MHz ~ 848.3 MHz LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz LTE Band 12 : 699.7 MHz ~ 715.3 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 ~ 5580 MHz and 5660 MHz ~ 5700 MHz ; 5745 MHz ~ 5805 MHz
Rx Frequency	CDMA2000 BC0 : 869.70 MHz ~ 893.31 MHz CDMA2000 BC1 : 1931.25 MHz ~ 1988.75 MHz LTE Band 5 : 869.7 MHz ~ 893.3 MHz LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz LTE Band 12 : 729.7 MHz ~ 745.3 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 ~ 5580 MHz and 5660 MHz ~ 5700 MHz ; 5745 MHz ~ 5805 MHz GPS : 1.57542 GHz
Antenna Type	WWAN : Dipole Antenna WLAN Chain Port 0: Dipole Antenna WLAN Chain Port 1: Dipole Antenna
Type of Modulation	CDMA2000 1xRTT: QPSK CDMA2000 1xEV-DO : QPSK/8PSK LTE: QPSK / 16QAM 802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11a/g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) GPS : BPSK

1.5. Modification of EUT

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

1.6. Test Location

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.		
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C. TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958		
Test Site No.	Sporton Site No.		FCC Registration No.
	CO01-KS	03CH01-KS	149928

1.7. Applicable Standards

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

- FCC 47 CFR FCC Part 15 Subpart B
- ANSI C63.4-2003

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 C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

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

The following tables are showing the test modes as the worst cases and recorded in this report.

Item	EUT Configuration	Test Condition		
		EMI AC	EMI RE<1G	EMI RE≥1G
1.	Charging Mode (EUT with adapter)	☒	☒	Note 1

Abbreviations:

- EMI AC: AC conducted emissions
- EMI RE ≥ 1G: EUT radiated emissions ≥ 1GHz
- EMI RE < 1G: EUT radiated emissions < 1GHz

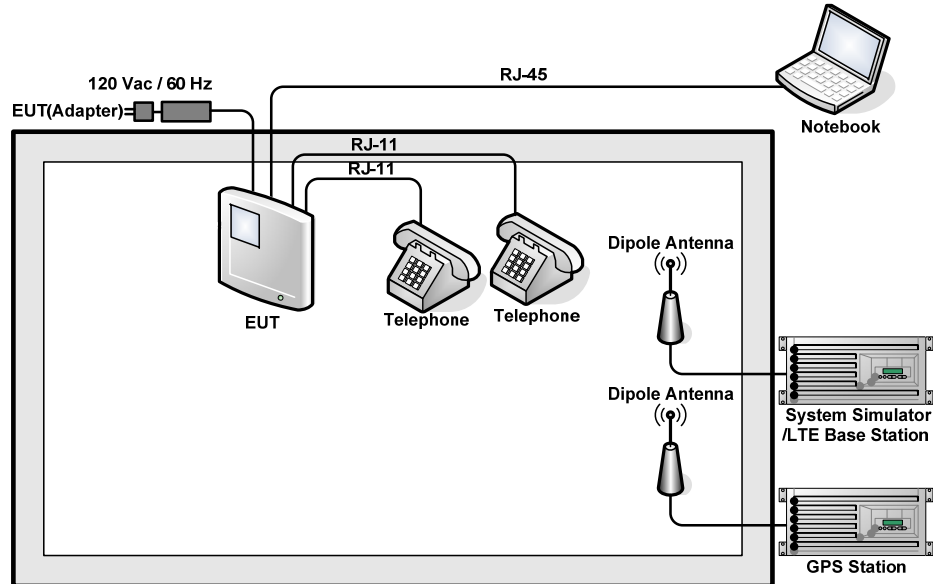
Note 1: Testing for this mode is not required or not the worst case.

Test Items	EUT Configure Mode	Function Type
AC Conducted Emission	1	Mode 1: CDMA2000 BC0 Idle + Adapter + WLAN 2.4GHz Idle + LAN Link + Phone Link + GPS Rx Mode 2: LTE Band 2 Idle + Adapter + WLAN 5GHz Idle + LAN Link + Phone Link + GPS Rx
Radiated Emissions < 1GHz	1	Mode 1: CDMA2000 BC0 Idle + Adapter + WLAN 2.4GHz Idle + LAN Link + Phone Link + GPS Rx Mode 2: LTE Band 2 Idle + Adapter + WLAN 5GHz Idle + LAN Link + Phone Link + GPS Rx
Radiated Emissions ≥ 1GHz	1	Mode 1: CDMA2000 BC0 Idle + Adapter + WLAN 2.4GHz Idle + LAN Link + Phone Link + GPS 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 < 1G 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	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	LTE Base Station	Anritus	MT8820C	N/A	N/A	Unshielded, 1.8 m
3.	Telephone	bubugao	HCD007(6082)TSD	N/A	N/A	N/A
4.	Telephone	bubugao	HCD007(6082)TSD	N/A	N/A	N/A
5.	Notebook	Lenovo	G480	PRC4	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

2.4. EUT Operation Test Setup

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

At the same time, the following programs installed in the EUT were programmed during the test.

1. EUT is connected with Notebook via RJ-45 cable.
2. Execute "PING IP" function under the "cmd" of Window system to transfer packet bi-directionally between the EUT and supported units, notebook.
3. Monitor the packet loss by seeing the window of "cmd" the notebook display.
4. EUT is connected with telephone via RJ-11 cable.
5. Execute "PING IP" function to make a phone call between the EUT and PSTN phone. After generating the phone call, the microphone status of "Ping IP" would be set to mute.
6. The phone call is monitored by checking whether there are some abnormal operations of the PSTN or dropped calls phone during test.

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.

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.

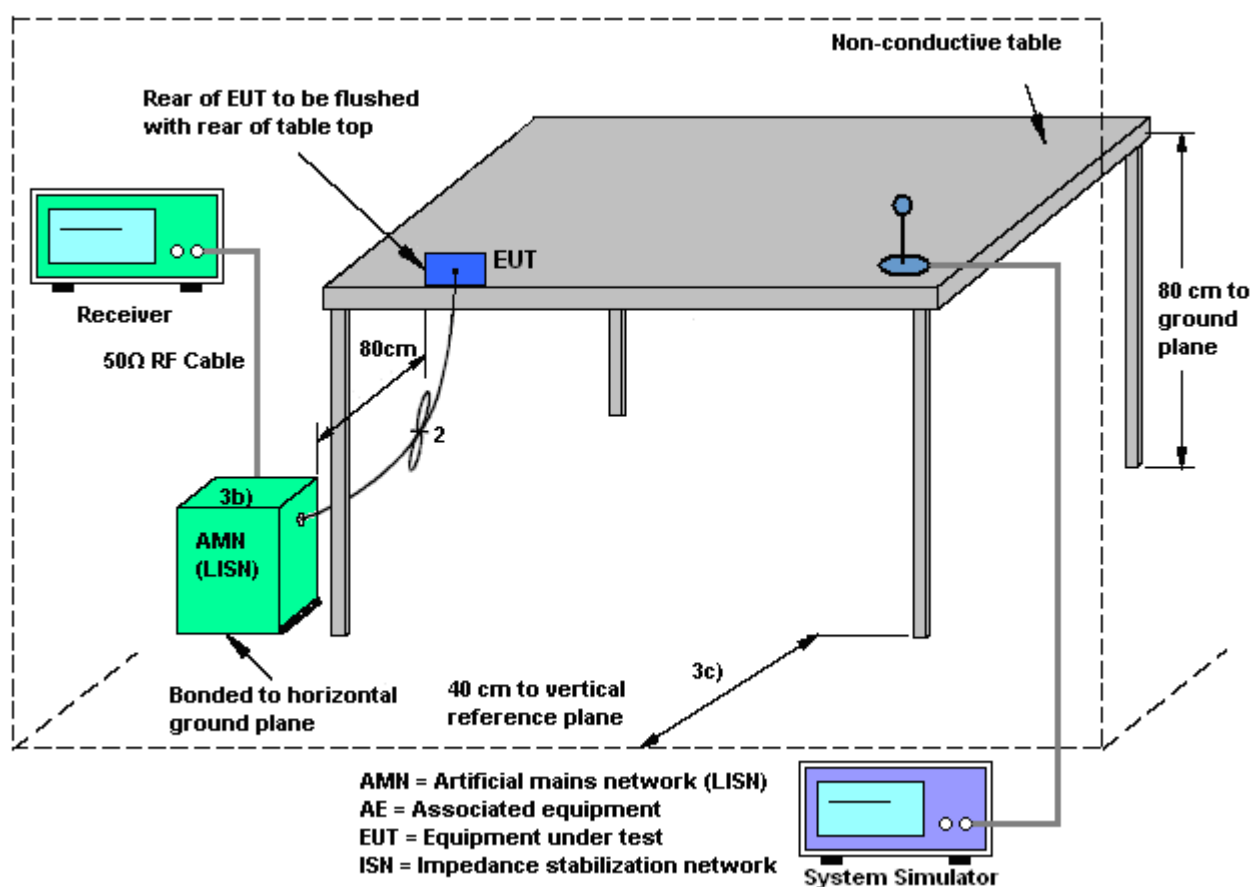
3.1.2 Measuring Instruments

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

3.1.3 Test Procedure

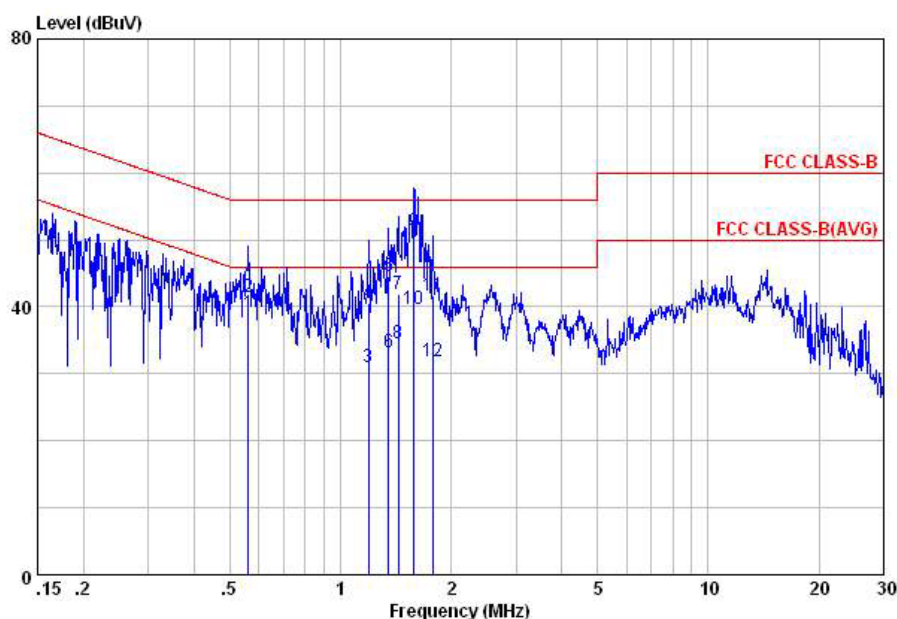
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.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

3.1.4 Test Setup



3.1.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	22~24℃
Test Engineer :	Eligah Wang	Relative Humidity :	35~40%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	CDMA2000 BC0 Idle + Adapter + WLAN 2.4GHz Idle + LAN Link + Phone Link + GPS Rx		

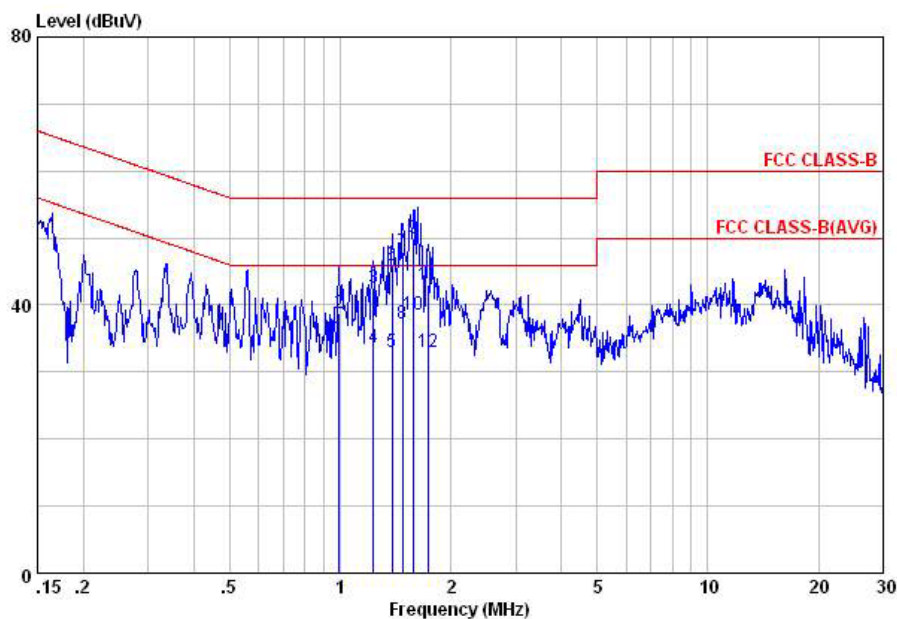


Site : C001-KS
Condition: FCC CLASS-B LISN-L20130306 LINE
Project : (FC) 450602
mode : Mode 1

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.56	39.05	-6.95	46.00	28.60	0.20	10.25	Average
2	0.56	41.35	-14.65	56.00	30.90	0.20	10.25	QP
3	1.19	30.88	-15.12	46.00	20.60	0.10	10.18	Average
4	1.19	40.58	-15.42	56.00	30.30	0.10	10.18	QP
5	1.35	44.58	-11.42	56.00	34.30	0.10	10.18	QP
6	1.35	33.18	-12.82	46.00	22.90	0.10	10.18	Average
7	1.43	41.89	-14.11	56.00	31.60	0.10	10.19	QP
8	1.43	34.59	-11.41	46.00	24.30	0.10	10.19	Average
9	1.59	51.19	-4.81	56.00	40.90	0.10	10.19	QP
10	1.59	39.59	-6.41	46.00	29.30	0.10	10.19	Average
11	1.78	41.59	-14.41	56.00	31.30	0.10	10.19	QP
12	1.78	31.89	-14.11	46.00	21.60	0.10	10.19	Average



Test Mode :	Mode 1	Temperature :	22~24℃
Test Engineer :	Eligah Wang	Relative Humidity :	35~40%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	CDMA2000 BC0 Idle + Adapter + WLAN 2.4GHz Idle + LAN Link + Phone Link + GPS Rx		



Site : C001-KS
Condition: FCC CLASS-B LISN-N20130306 NEUTRAL
Project : (FC) 450602
mode : Mode 1

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.99	35.18	-10.82	46.00	24.90	0.10	10.18	Average
2	0.99	38.88	-17.12	56.00	28.60	0.10	10.18	QP
3	1.23	42.58	-13.42	56.00	32.30	0.10	10.18	QP
4	1.23	33.58	-12.42	46.00	23.30	0.10	10.18	Average
5	1.38	33.08	-12.92	46.00	22.80	0.10	10.18	Average
6	1.38	45.88	-10.12	56.00	35.60	0.10	10.18	QP
7	1.48	47.89	-8.11	56.00	37.60	0.10	10.19	QP
8	1.48	37.19	-8.81	46.00	26.90	0.10	10.19	Average
9	1.59	49.89	-6.11	56.00	39.60	0.10	10.19	QP
10	1.59	38.59	-7.41	46.00	28.30	0.10	10.19	Average
11	1.73	43.09	-12.91	56.00	32.80	0.10	10.19	QP
12	1.73	33.09	-12.91	46.00	22.80	0.10	10.19	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:

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

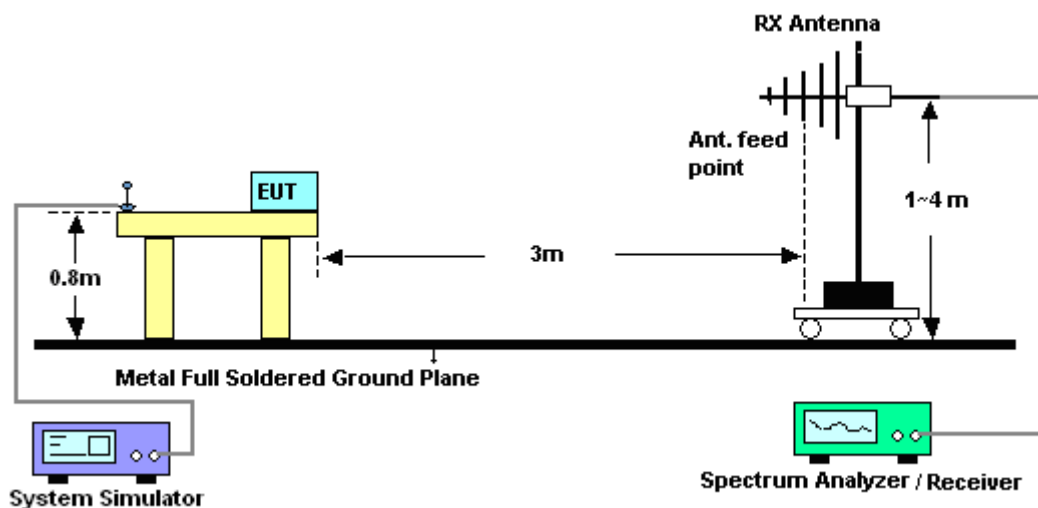
The measuring equipment is listed in the section 4 of this test report.

3.2.3. Test Procedures

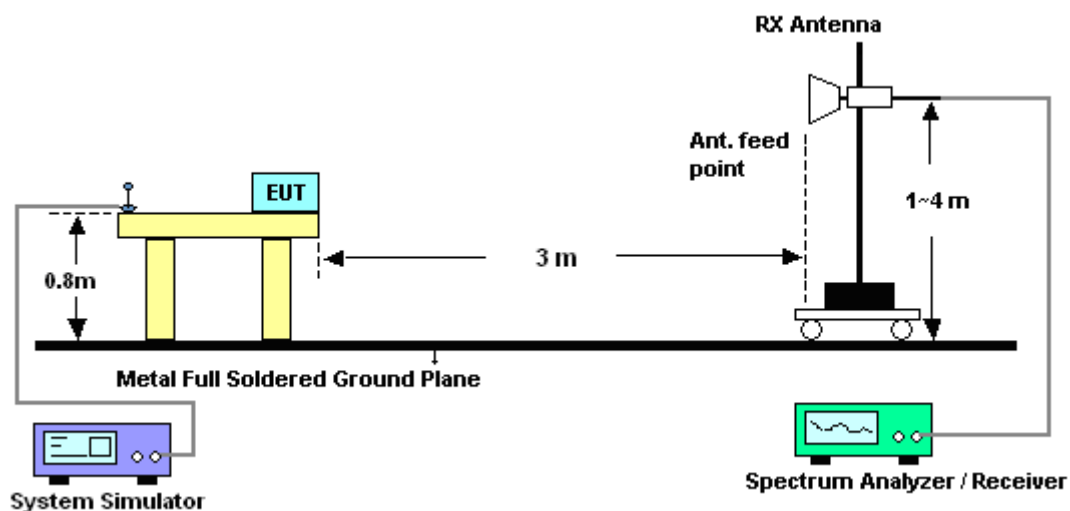
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna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

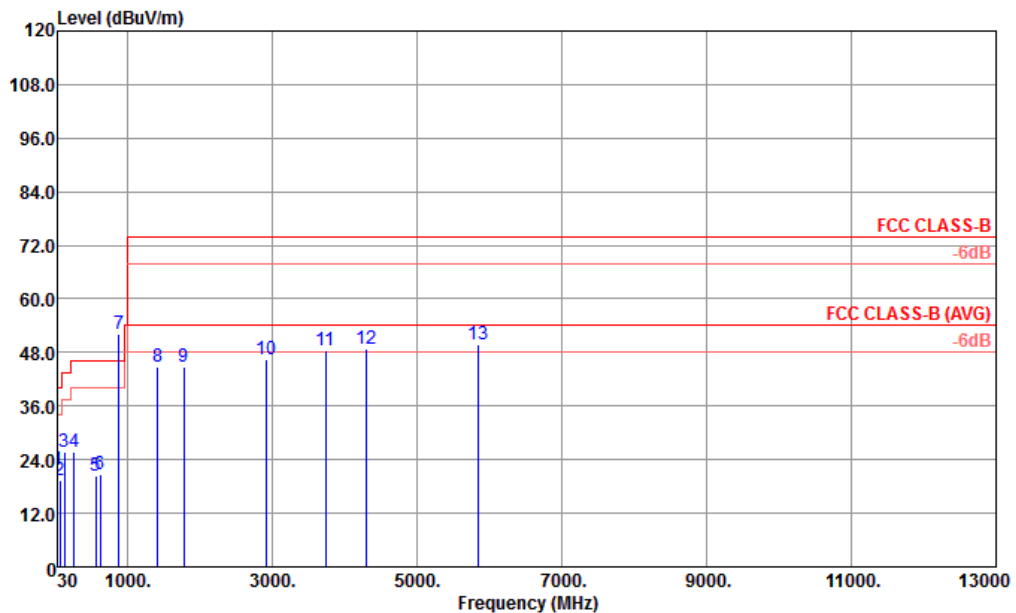


For radiated emissions above 1GHz



3.2.5. Test Result of Radiated Emission

Test Mode :	Mode 1	Temperature :	22-23°C
Test Engineer :	Jun liu	Relative Humidity :	40-41%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	CDMA2000 BC0 Idle + Adapter + WLAN 2.4GHz Idle + LAN Link + Phone Link + GPS Rx		
Remark :	#7 is system simulator signal which can be ignored.		



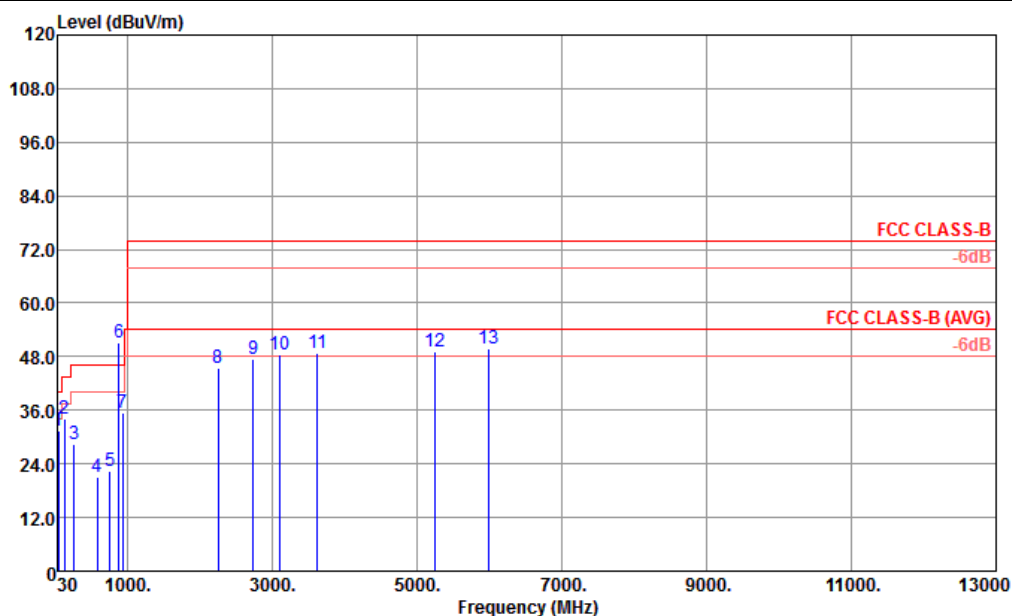
Site : 03CH01-KS

Condition : FCC CLASS-B 3m LF_ANT_100803 HORIZONTAL

Mode : mode 1

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	cm	deg
1	30.00	21.68	-18.32	40.00	36.77	18.00	0.48	33.57	---	Peak
2	63.95	19.39	-20.61	40.00	47.01	5.22	0.75	33.59	---	Peak
3	128.94	25.78	-17.72	43.50	46.62	11.71	1.04	33.59	100	201 Peak
4	258.92	25.65	-20.35	46.00	45.46	12.14	1.48	33.43	---	Peak
5	561.56	20.53	-25.47	46.00	32.85	18.52	2.16	33.00	---	Peak
6	626.55	20.78	-25.22	46.00	32.69	18.76	2.28	32.95	---	Peak
7 *	881.66	52.21			61.58	20.47	2.68	32.52	---	Peak
8	1416.00	44.89	-29.11	74.00	45.43	29.89	2.78	33.21	---	Peak
9	1780.00	44.89	-29.11	74.00	43.15	31.73	3.11	33.10	---	Peak
10	2926.00	46.35	-27.65	74.00	42.28	33.63	4.00	33.56	---	Peak
11	3740.00	48.34	-25.66	74.00	42.70	34.73	4.86	33.65	---	Peak
12	4298.00	48.91	-25.09	74.00	42.71	35.05	4.87	33.72	---	Peak
13	5846.00	49.91	-24.09	74.00	42.28	35.56	5.77	33.70	---	Peak

Test Mode :	Mode 1	Temperature :	22-23°C
Test Engineer :	Jun liu	Relative Humidity :	40-41%
Test Distance :	3m	Polarization :	Vertical
Function Type :	CDMA2000 BC0 Idle + Adapter + WLAN 2.4GHz Idle + LAN Link + Phone Link + GPS Rx		
Remark :	#6 is system simulator signal which can be ignored.		



Site : 03CH01-KS
Condition : FCC CLASS-B 3m LF_ANT_100803 VERTICAL

Mode : mode 1

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor		
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	42.61	31.58	-8.42	40.00	54.11	10.48	0.62	33.63	100	61 Peak
2	128.94	34.15	-9.35	43.50	54.99	11.71	1.04	33.59	---	---
3	256.98	28.42	-17.58	46.00	48.27	12.10	1.48	33.43	---	---
4	583.87	20.97	-25.03	46.00	33.17	18.57	2.20	32.97	---	---
5	752.65	22.27	-23.73	46.00	32.67	19.90	2.47	32.77	---	---
6 *	881.66	51.17			60.54	20.47	2.68	32.52	---	---
7	935.98	35.60	-10.40	46.00	44.57	20.67	2.80	32.44	---	---
8	2248.00	45.62	-28.38	74.00	42.71	32.64	3.46	33.19	---	---
9	2738.00	47.61	-26.39	74.00	43.78	33.43	3.84	33.44	---	---
10	3096.00	48.31	-25.69	74.00	44.03	33.78	4.11	33.61	---	---
11	3624.00	48.84	-25.16	74.00	43.44	34.57	4.51	33.68	---	---
12	5250.00	49.04	-24.96	74.00	42.10	35.28	5.41	33.75	---	---
13	5986.00	49.93	-24.07	74.00	42.15	35.60	5.88	33.70	---	---

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	May 04, 2014	May 30, 2014	May 03, 2015	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Dec. 10, 2013	May 30, 2014	Dec. 09, 2014	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Dec. 10, 2013	May 30, 2014	Dec. 09, 2014	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP0000008 11	AC 0V~300V, 45Hz~1000Hz	Nov. 12, 2013	May 30, 2014	Nov. 11, 2014	Conduction (CO01-KS)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 05, 2013	May 29, 2014	Nov. 04, 2014	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP30	101399	9kHz~30GHz	May 04, 2014	May 29, 2014	May 03, 2015	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Jan. 08, 2014	May 29, 2014	Jan. 07, 2015	Radiation (03CH01-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75959	1GHz~18GHz	Jan. 08, 2014	May 29, 2014	Jan. 07, 2015	Radiation (03CH01-KS)
Active Horn Antenna	com-power	AHA-118	701030	1GHz~18GHz	Nov. 18, 2013	May 29, 2014	Nov. 17, 2014	Radiation (03CH01-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Mar. 10, 2014	May 29, 2014	Mar. 09, 2015	Radiation (03CH01-KS)
Amplifier	com-power	PA-103A	161073	1MHz~1GHz	May 04, 2014	May 29, 2014	May 03, 2015	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02371	1GHz~26.5GHz	Dec. 10, 2013	May 29, 2014	Dec. 09, 2014	Radiation (03CH01-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	May 29, 2014	NCR	Radiation (03CH01-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	May 29, 2014	NCR	Radiation (03CH01-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	May 29, 2014	NCR	Radiation (03CH01-KS)

5. Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.26
--	------

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.54
--	------