FCC Test Report

APPLICANT	: ZTE CORPORATION
EQUIPMENT	: WCDMA/GSM (GPRS) Dual-Mode Digital Mobile Phone
BRAND NAME	: ZTE
MODEL NAME	: Z787
FCC ID	: SRQ-Z787
STANDARD	: FCC 47 CFR FCC Part 15 Subpart B
CLASSIFICATION	: Certification

The product was received on Apr. 29, 2014 and testing was completed on May 08, 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 C63.4-2009 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.

Louis Wu

Reviewed by: Louis Wu / Manager

Jones Tsai

Approved by: Jones Tsai / Manager

Testing Laboratory
2627

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

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC442907	Rev. 01	Initial issue of report	Jun. 06, 2014
FC442907	Rev. 02	Update report for revising the software version	Jun. 10, 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 10.12 dB at 0.480 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 3.15 dB at 240.060 MHz for Quasi-Peak

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	WCDMA/GSM (GPRS) Dual-Mode Digital Mobile Phone
Brand Name	ZTE
Model Name	Z787
FCC ID	SRQ-Z787
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSPA/HSPA+(Downlink Only)/ WLAN 2.4GHz 802.11b/g/n HT20/ Bluetooth v3.0 + EDR/Bluetooth v4.0 LE
HW Version	wwtA
SW Version	P821A64V1.0.0B01
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	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 802.11b/g/n: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 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 802.11b/g/n: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz GPS : 1.57542 GHz
Antenna Type	WWAN : Internal Antenna WLAN : PIFA Antenna Bluetooth : PIFA Antenna GPS : PIFA Antenna
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink) HSPA+: 16QAM (Downlink Only) 802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11/g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) Bluetooth v3.0 + EDR : GFSK, π/4-DQPSK, 8-DPSK Bluetooth v4.0 LE : GFSK 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	149928

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R. O. C. TEL: +886-3-327-3456 FAX: +886-3-328-4978	
Test Site No.	**Sporton Site No.**	**FCC Registration No.**
	03CH06-HY	TW1022

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 C63.4-2009

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 C63.4-2009 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
2.	Data application transferred mode (EUT connected with notebook)	☒	☒	☒

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.

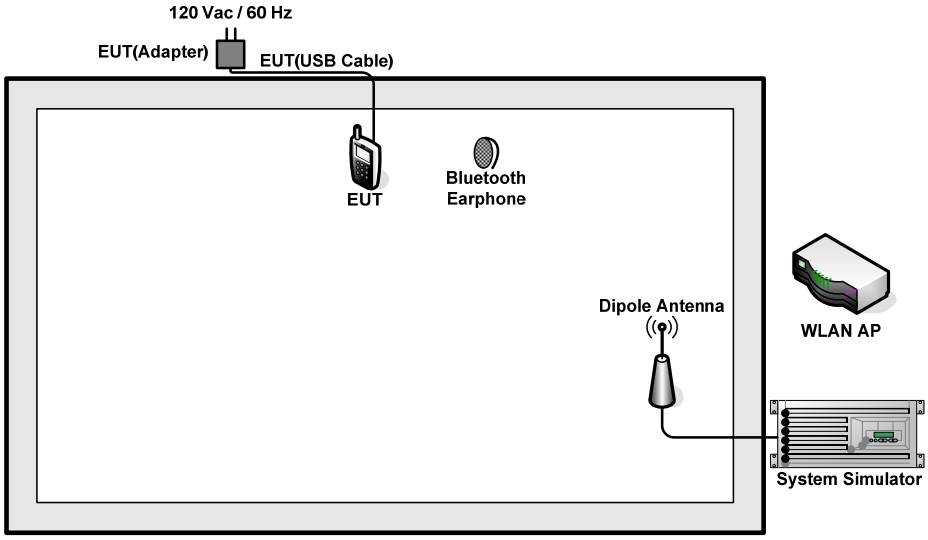
Remark: For signal above 1GHz, the worst case was test item 2.

Test Items	EUT Configure Mode	Function Type
AC Conducted Emission	1/2	Mode 1: GSM850 Idle + USB Cable (Charging from Adapter) + Bluetooth Idle + WLAN Idle + Camera <Fig.1> Mode 2: GSM1900 Idle + USB Cable (Charging from Adapter) + Bluetooth Idle + WLAN Idle + MPEG4 <Fig.1> Mode 3: WCDMA Band V Idle + USB Cable (Data Link with Notebook) + Bluetooth Idle + WLAN Idle + GPS Rx <Fig.2>
Radiated Emissions < 1GHz	1/2	Mode 1: GSM850 Idle + USB Cable (Charging from Adapter) + Bluetooth Idle + WLAN Idle + Camera <Fig.1> Mode 2: GSM1900 Idle + USB Cable (Charging from Adapter) + Bluetooth Idle + WLAN Idle + MPEG4 <Fig.1> Mode 3: WCDMA Band V Idle + USB Cable (Data Link with Notebook) + Bluetooth Idle + WLAN Idle + GPS Rx <Fig.2>
Radiated Emissions ≥ 1GHz	2	Mode 1: WCDMA Band V Idle + USB Cable (Data Link with Notebook) + Bluetooth Idle + WLAN Idle + GPS Rx<Fig.2>

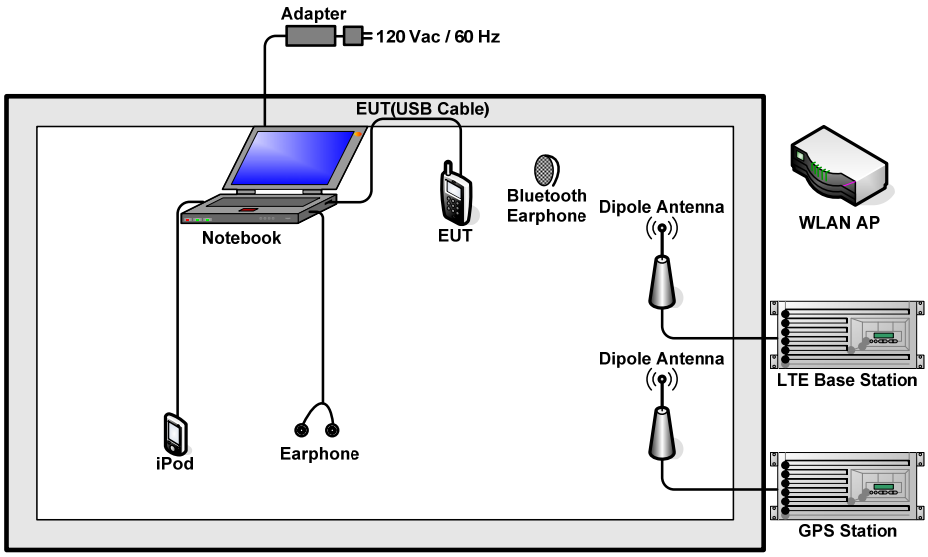
Remark:

1. The worst case of AC is mode 3; only the test data of this mode is reported.
2. The worst case of RE < 1G is mode 3; only the test data of this mode is reported.
3. Link with Notebook means data application transferred mode between EUT and Notebook

2.2. Connection Diagram of Test System



<Fig.1>



<Fig.2>

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.	GPS Station	ADIVIC	MP9000	N/A	N/A	Unshielded, 1.8 m
3.	GPS Station	ADIVIC	GSG-54	N/A	N/A	Unshielded, 1.8 m
4.	WLAN AP	D-link	DIR-855	KA2DIR855A2	N/A	Unshielded, 1.8 m
5.	WLAN AP	D-Link	DIR-628	KA2DDIR628A2	N/A	Unshielded, 1.8 m
6.	Notebook	Lenovo	G480	PPD-AR5B195	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
7.	Notebook	Dell	Latitude E6320	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8
8.	Bluetooth Earphone	Nokia	BH-106	QTLBH-106	N/A	N/A
9.	Bluetooth Earphone	Sony Ericsson	MW600	FY7DDA 2029	N/A	N/A
10.	iPod	Apple	A1199	FCC DoC	Shielded, 1.2 m	N/A
11.	iPod	Apple	A1285	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
12.	Earphone	Lenovo	SH 100	N/A	Unshielded, 1.2 m	N/A

2.4. EUT Operation Test Setup

The EUT was in GSM or WCDMA 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 EUT was attached to the Bluetooth earphone or WLAN AP, and the following programs installed in the EUT were programmed during the test.

1. Execute the program, or "Winthrax" under WIN7 installed in notebook for files transfer with EUT via USB cable.
2. Execute "GPS Test" or turn on GPS function to make the EUT receive continuous signals from GPS station.
3. Execute "Video Player" to play MPEG4 files.
4. Turn on camera to capture images.

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.

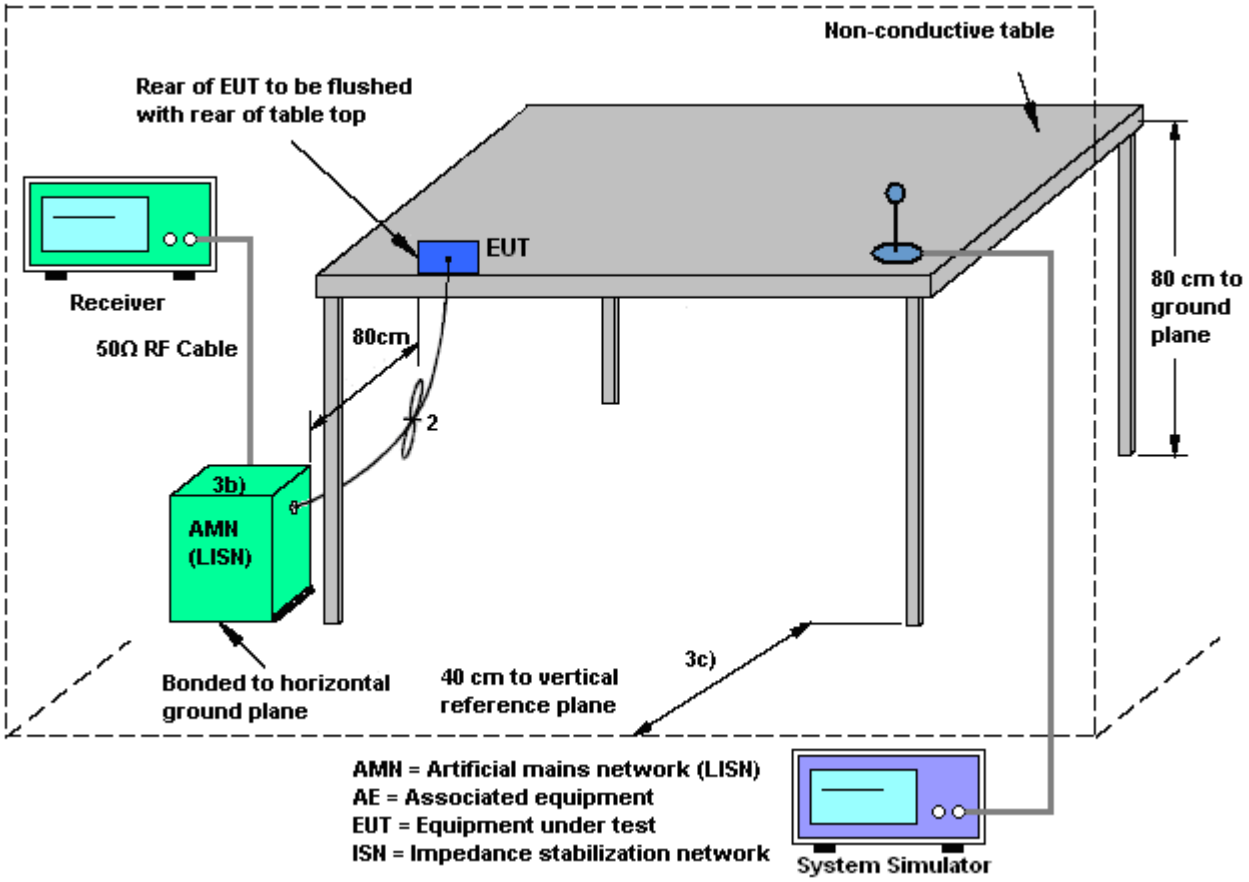
3.1.2 Measuring Instruments

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

3.1.3 Test Procedure

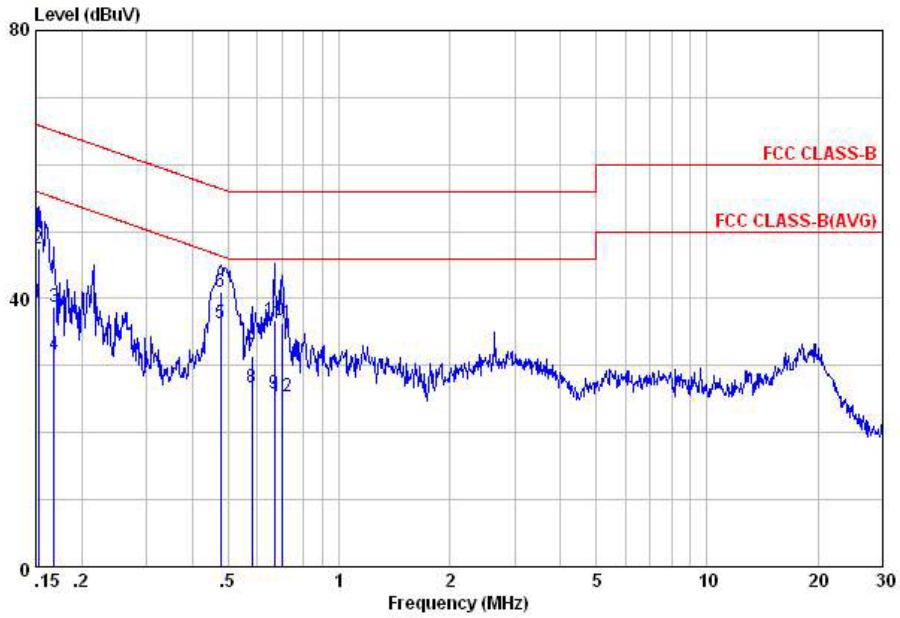
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.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

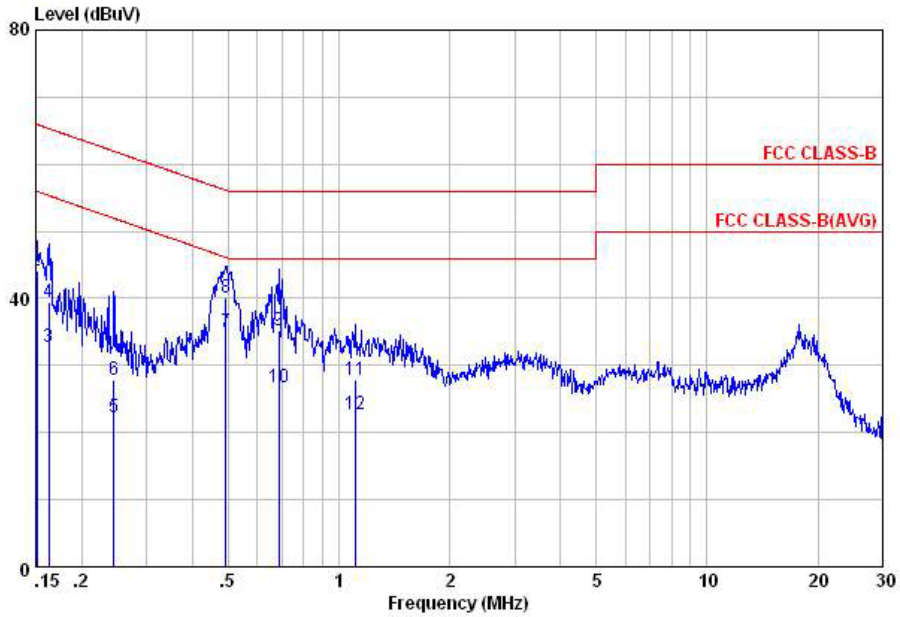
Test Mode :	Mode 3	**Temperature :**	22~24℃
Test Engineer :	Eligah Wang	**Relative Humidity :**	35~37%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	WCDMA Band V Idle + USB Cable (Data Link with Notebook) + Bluetooth Idle + WLAN Idle + GPS Rx		



Site : C001-KS
Condition: FCC CLASS-B LISN-L20130306 LINE
Project : (FC) 442907
mode : Mode 3

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15	39.52	-16.35	55.87	26.91	1.91	10.70	Average
2	0.15	47.42	-18.45	65.87	34.81	1.91	10.70	QP
3	0.17	38.85	-26.18	65.03	26.60	1.60	10.65	QP
4	0.17	31.55	-23.48	55.03	19.30	1.60	10.65	Average
5	0.48	36.29	-10.12	46.41	25.80	0.22	10.27	Average
6	0.48	41.09	-15.32	56.41	30.60	0.22	10.27	QP
7	0.58	31.35	-24.65	56.00	20.90	0.20	10.25	QP
8	0.58	26.75	-19.25	46.00	16.30	0.20	10.25	Average
9	0.67	25.82	-20.18	46.00	15.40	0.20	10.22	Average
10	0.67	36.82	-19.18	56.00	26.40	0.20	10.22	QP
11	0.70	36.31	-19.69	56.00	25.90	0.20	10.21	QP
12	0.70	25.51	-20.49	46.00	15.10	0.20	10.21	Average

Test Mode :	Mode 3	Temperature :	22~24℃
Test Engineer :	Eligah Wang	Relative Humidity :	35~37%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WCDMA Band V Idle + USB Cable (Data Link with Notebook) + Bluetooth Idle + WLAN Idle + GPS Rx		



Site : C001-KS
Condition: FCC CLASS-B LISN-N20130306 NEUTRAL
Project : (FC) 442907
mode : Mode 3

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15	38.20	-17.76	55.96	25.59	1.89	10.72	Average
2	0.15	44.20	-21.76	65.96	31.59	1.89	10.72	QP
3	0.16	32.76	-22.58	55.34	20.40	1.70	10.66	Average
4	0.16	39.46	-25.88	65.34	27.10	1.70	10.66	QP
5	0.24	22.32	-29.63	51.95	10.90	0.91	10.51	Average
6	0.24	27.92	-34.03	61.95	16.50	0.91	10.51	QP
7	0.49	35.07	-11.07	46.14	24.49	0.31	10.27	Average
8	0.49	40.17	-15.97	56.14	29.59	0.31	10.27	QP
9	0.69	35.32	-20.68	56.00	24.91	0.20	10.21	QP
10	0.69	26.82	-19.18	46.00	16.41	0.20	10.21	Average
11	1.11	27.88	-28.12	56.00	17.60	0.10	10.18	QP
12	1.11	22.78	-23.22	46.00	12.50	0.10	10.18	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

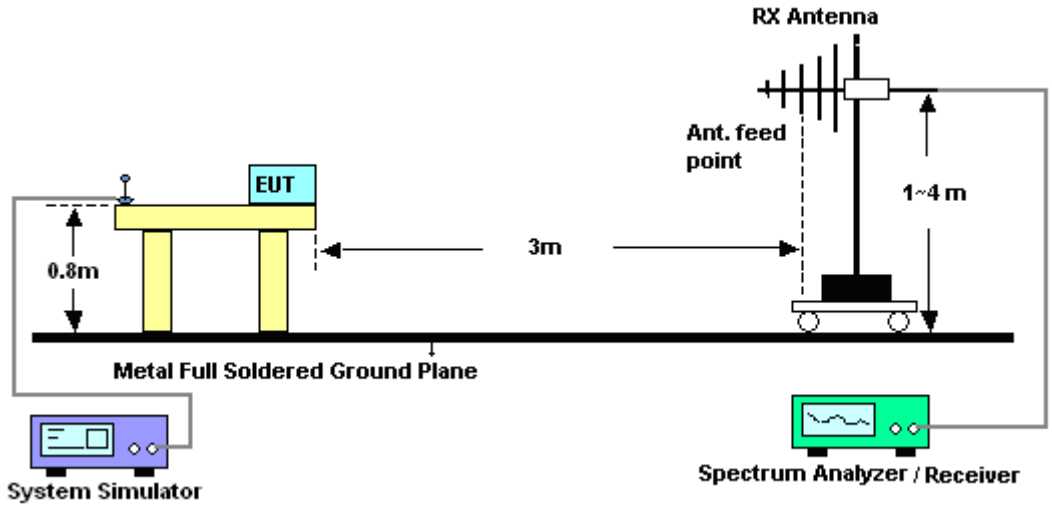
The measuring equipment is listed in the section 4 of this test report.

3.2.3. Test Procedures

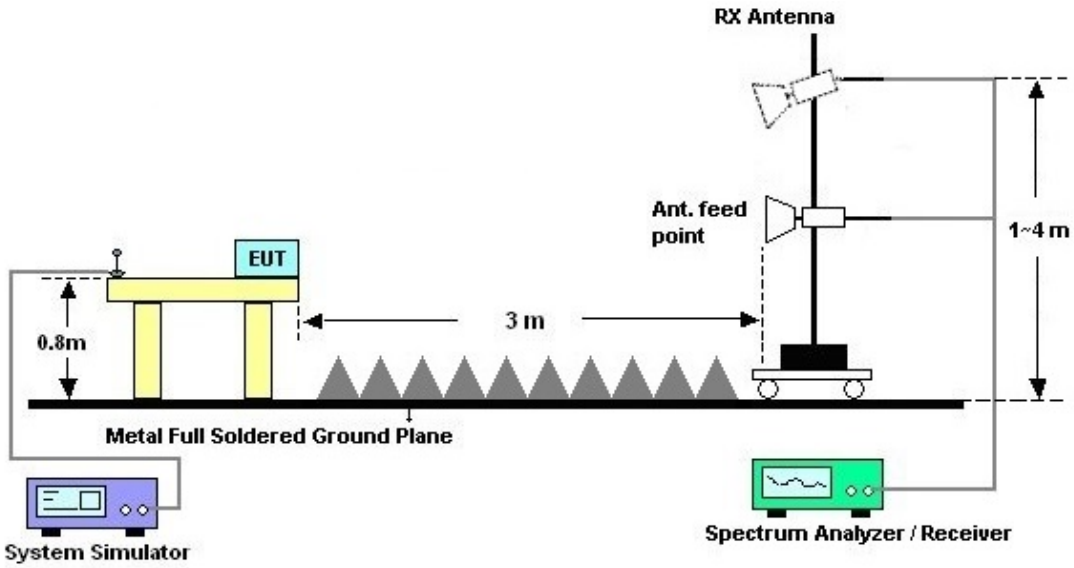
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna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

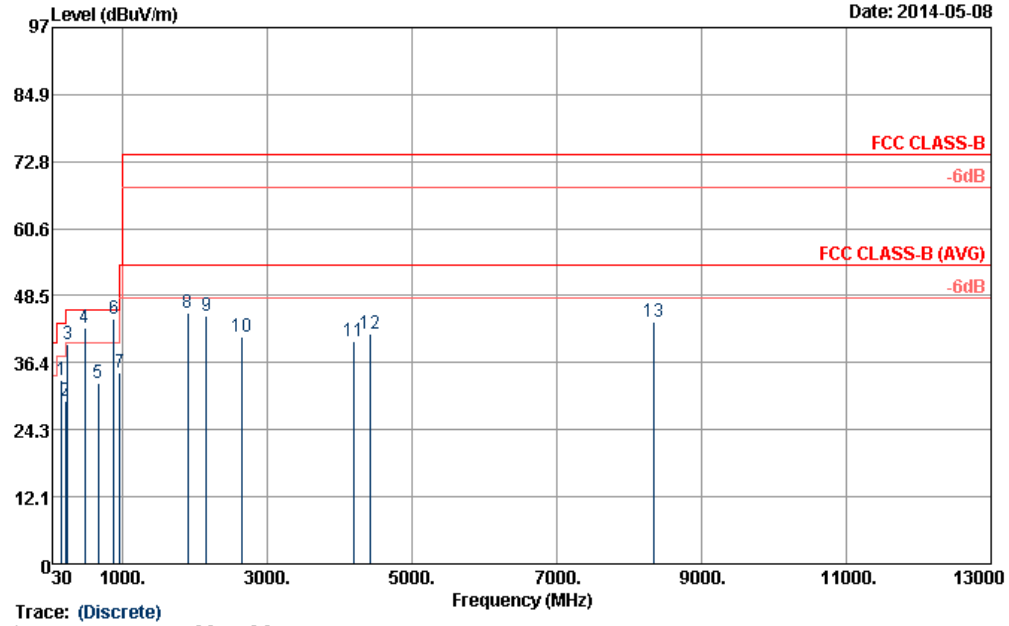


For radiated emissions above 1GHz



3.2.5. Test Result of Radiated Emission

Test Mode :	Mode 3	Temperature :	25-26°C
Test Engineer :	Gavin Zhang	Relative Humidity :	46-47%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	WCDMA Band V Idle + USB Cable (Data Link with Notebook) + Bluetooth Idle + WLAN Idle + GPS Rx		
Remark :	#6 is system simulator signal which can be ignored.		

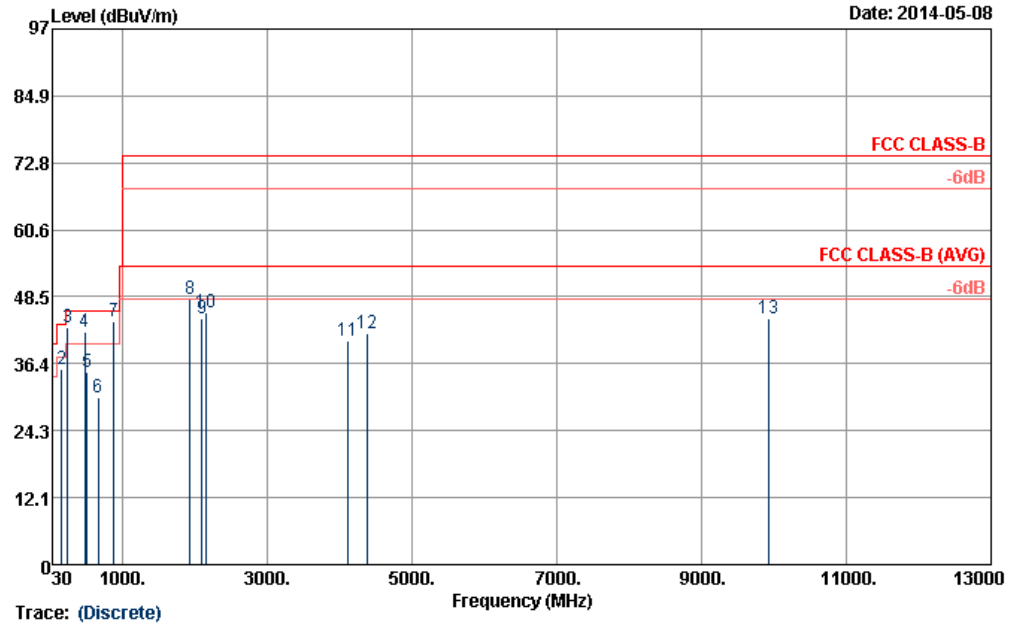


Site : 03CH06-HY
Condition : FCC CLASS-B 3m HF-ANT_583_130802 HORIZONTAL

Power : FromSystem
Mode : Mode 3

		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1		161.76	33.16	-10.34	43.50	53.39	10.02	1.50	31.75	---	---	Peak
2		211.44	29.52	-13.98	43.50	50.58	9.11	1.58	31.75	---	---	Peak
3		240.06	39.61	-6.39	46.00	58.17	11.49	1.69	31.74	---	---	Peak
4	!	478.50	42.63	-3.37	46.00	54.68	17.56	2.30	31.91	100	169	Peak
5		665.40	32.59	-13.41	46.00	42.34	19.45	2.83	32.03	---	---	Peak
6	!	881.60	44.34			51.73	20.90	3.32	31.61	---	---	Peak
7		959.40	34.70	-11.30	46.00	40.94	21.39	3.35	30.98	---	---	Peak
8		1906.00	45.30	-28.70	74.00	62.76	30.84	5.68	53.98	---	---	Peak
9		2158.00	44.79	-29.21	74.00	60.93	31.72	6.11	53.97	100	0	Peak
10		2656.00	40.96	-33.04	74.00	55.76	32.21	6.92	53.93	---	---	Peak
11		4190.00	40.34	-33.66	74.00	52.04	33.88	9.36	54.94	---	---	Peak
12		4420.00	41.56	-32.44	74.00	52.30	34.40	9.84	54.98	---	---	Peak
13		8342.00	43.71	-30.29	74.00	53.36	35.60	10.79	56.04	---	---	Peak

Test Mode :	Mode 3	Temperature :	25-26°C
Test Engineer :	Gavin Zhang	Relative Humidity :	46-47%
Test Distance :	3m	Polarization :	Vertical
Function Type :	WCDMA Band V Idle + USB Cable (Data Link with Notebook) + Bluetooth Idle + WLAN Idle + GPS Rx		
Remark :	#7 is system simulator signal which can be ignored.		



Site : 03CH06-HY
Condition : FCC CLASS-B 3m HF-ANT_583_130802 VERTICAL

Power : FromSystem
Mode : Mode 3

		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1		34.05	32.42	-7.58	40.00	47.43	16.10	0.68	31.79	---	---	Peak
2		156.90	35.43	-8.07	43.50	55.59	10.16	1.43	31.75	---	---	Peak
3	!	240.06	42.85	-3.15	46.00	61.41	11.49	1.69	31.74	100	319	QP
4	!	478.50	42.26	-3.74	46.00	54.31	17.56	2.30	31.91	---	---	Peak
5		510.00	34.79	-11.21	46.00	46.33	17.90	2.50	31.94	---	---	Peak
6		665.40	30.14	-15.86	46.00	39.89	19.45	2.83	32.03	---	---	Peak
7	!	881.60	44.14			51.53	20.90	3.32	31.61	---	---	Peak
8		1936.00	48.13	-25.87	74.00	65.30	31.09	5.73	53.99	100	0	Peak
9		2094.00	44.71	-29.29	74.00	60.98	31.67	6.04	53.98	---	---	Peak
10		2154.00	45.62	-28.38	74.00	61.76	31.72	6.11	53.97	---	---	Peak
11		4118.00	40.54	-33.46	74.00	52.58	33.68	9.20	54.92	---	---	Peak
12		4382.00	41.99	-32.01	74.00	52.86	34.32	9.79	54.98	---	---	Peak
13		9936.00	44.69	-29.31	74.00	53.21	36.74	10.57	55.83	---	---	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;	May 23, 2013	May 08, 2014	May 22, 2014	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Dec. 10, 2013	May 08, 2014	Dec. 09, 2014	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Dec. 10, 2013	May 08, 2014	Dec. 09, 2014	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Nov. 12, 2013	May 08, 2014	Nov. 11, 2014	Conduction (CO01-KS)
Spectrum Analyzer	R&S	FSP30	101067	9kHz~30GHz	Nov. 20, 2013	May 08, 2014	Nov. 19, 2014	Radiation (03CH06-HY)
Spectrum Analyzer	Agilent	E4408B	MY44211030	9kHz~26.5GHz	Dec. 02, 2013	May 08, 2014	Dec. 01, 2014	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESVS10	834468/0003	20MHz ~ 1000MHz	May 06, 2014	May 08, 2014	May 05, 2015	Radiation (03CH06-HY)
Bilog Antenna	Schaffner	CBL6112B	2885	30MHz~2GHz	Oct. 10, 2013	May 08, 2014	Oct. 09, 2014	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz~18GHz	Aug. 02, 2013	May 08, 2014	Aug. 01, 2014	Radiation (03CH06-HY)
Amplifier	SONOMA	310N	187231	9kHz~1GHz	May 15, 2013	May 08, 2014	May 14, 2014	Radiation (03CH06-HY)
Pre Amplifier	EMCI	EMC051845	SN980048	1GHz~18GHz	Jul. 18, 2013	May 08, 2014	Jul. 17, 2014	Radiation (03CH06-HY)
Turn Table	INN-CO	DS2000	420/650/00	0~360 degree	N/A	May 08, 2014	N/A	Radiation (03CH06-HY)
Antenna Mast	MF	MF-7802	MF780208212	1 m~4 m	N/A	May 08, 2014	N/A	Radiation (03CH06-HY)

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))	**2.26**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.50**