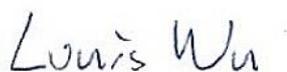


# FCC Test Report

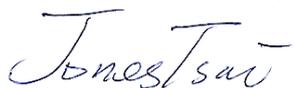
**APPLICANT** : ZTE CORPORATION  
**EQUIPMENT** : Wireless Access Terminal  
**BRAND NAME** : ZTE  
**MODEL NAME** : WF721  
**FCC ID** : SRQ-WF721  
**STANDARD** : FCC 47 CFR FCC Part 15 Subpart B  
**CLASSIFICATION** : Certification

The product was received on Nov. 21, 2013 and testing was completed on Dec. 02, 2013. We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown to be compliant 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 ..... 6

    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 ..... 9

3. TEST RESULT ..... 10

    3.1. Test of AC Conducted Emission Measurement ..... 10

    3.2. Test of Radiated Emission Measurement ..... 14

4. LIST OF MEASURING EQUIPMENT ..... 18

5. UNCERTAINTY OF EVALUATION ..... 19

APPENDIX A. SETUP PHOTOGRAPHS





### 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 3.17 dB at 0.150 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 3.61 dB at 53.280 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	Wireless Access Terminal
Brand Name	ZTE
Model Name	WF721
FCC ID	SRQ-WF721
EUT supports Radios application	GPRS/EGPRS/WCDMA/HSPA
HW Version	dekA
SW Version	WF721 1.0.1
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	
<b>Tx Frequency</b>	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
<b>Rx Frequency</b>	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 GPS : 1.57542 GHz
<b>Antenna Type</b>	WWAN : External Antenna
<b>Type of Modulation</b>	GPRS: GMSK EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink) GPS : BPSK

### 1.5. Modification of EUT

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

### 1.6. Test Site

<b>Test Site</b>	SPORTON INTERNATIONAL (KUNSHAN) INC.		
<b>Test Site Location</b>	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C. TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958		
<b>Test Site No.</b>	<b>Sporton Site No.</b>		<b>FCC Registration No.</b>
	TH01-KS	03CH01-KS	149928

### 1.7. Applied 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)	☒	☒	☒

**Abbreviations:**

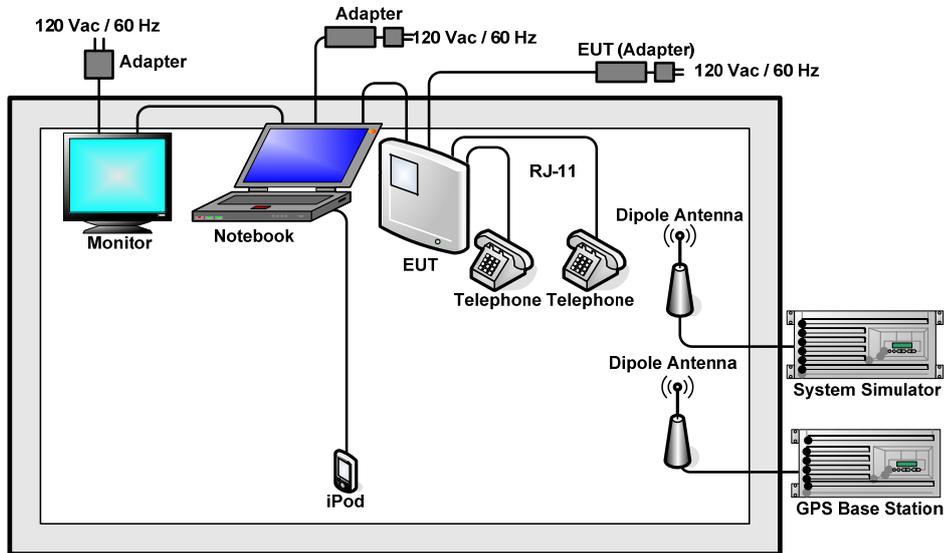
- EMI AC: AC conducted emissions
- EMI RE ≥ 1G: EUT radiated emissions ≥ 1GHz
- EMI RE < 1G: EUT radiated emissions < 1GHz

Test Items	EUT Configure Mode	Function Type
AC Conducted Emission	1	Mode 1: GPRS850 Idle + Adapter + Phone Link + GPS Rx Mode 2: WCDMA Band V Idle + Adapter + Phone Link + GPS Rx
Radiated Emissions < 1GHz	1	Mode 1: GPRS850 Idle + Adapter + Phone Link + GPS Rx Mode 2: WCDMA Band V Idle + Adapter + Phone Link + GPS Rx
Radiated Emissions ≥ 1GHz	1	Mode 1: GPRS850 Idle + Adapter + Phone Link + GPS Rx

**Remark:**

1. The worst case of AC is mode 1; only the test data of this mode was reported.
2. The worst case of RE < 1G is mode 1; only the test data of this mode was 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.	Telephone	Bubugao	HCD007(6082)TSD	N/A	N/A	N/A
2.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
3.	GPS Station	ADIVIC	MP9000	N/A	N/A	Unshielded, 1.8 m
4.	Notebook	DELL	Vostro 1450	PPD-AR5B195	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
5.	Monitor	DELL	IN1930MwC	FCC DoC	Shielded, 1.2 m	Unshielded, 1.8 m
6.	iPod	Apple	A1199	FCC DoC	shielded, 1.2 m	N/A

## 2.4. EUT Operation Test Setup

The EUT was in GPRS 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. And the EUT is connected with Telephone via RJ-11 cable.

### 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.

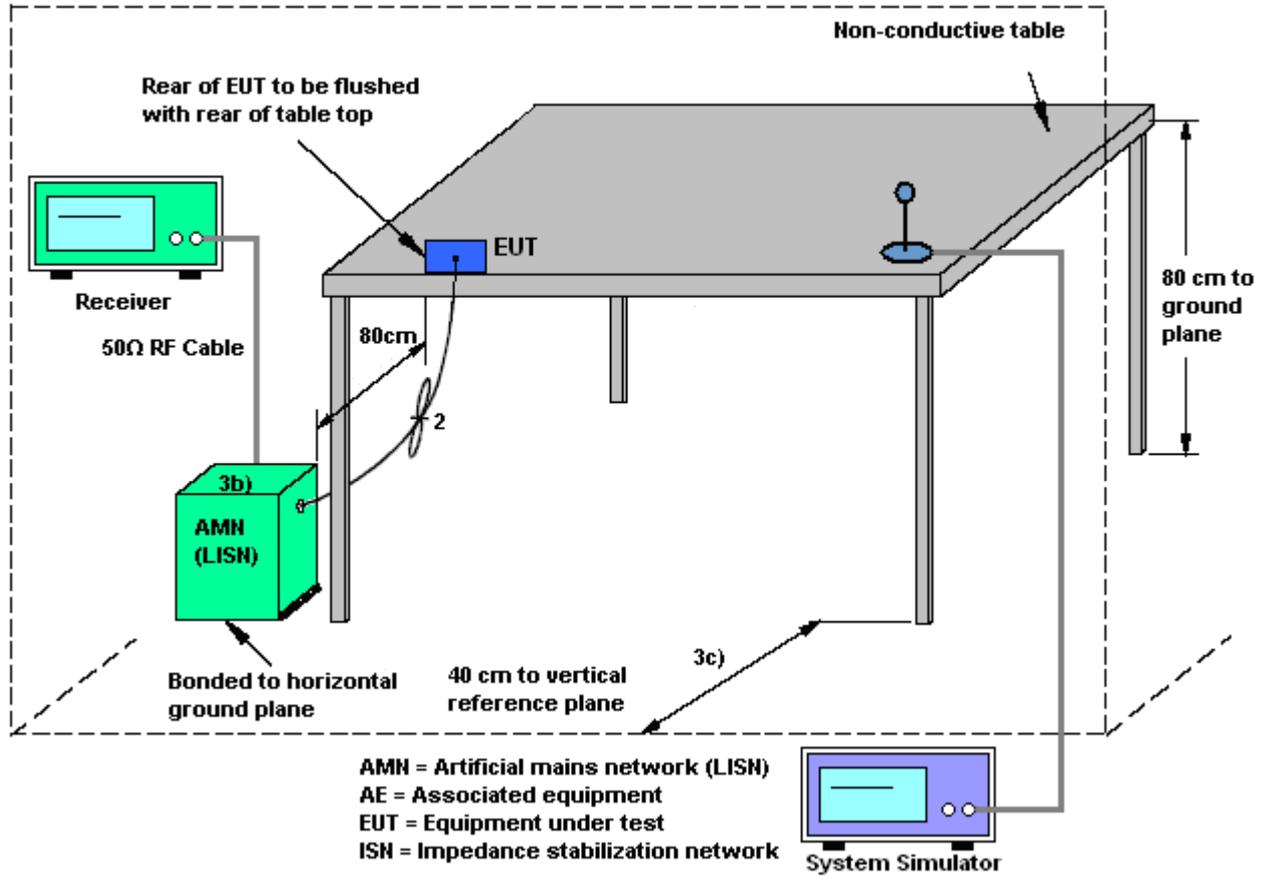
##### 3.1.2 Measuring Instruments

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.

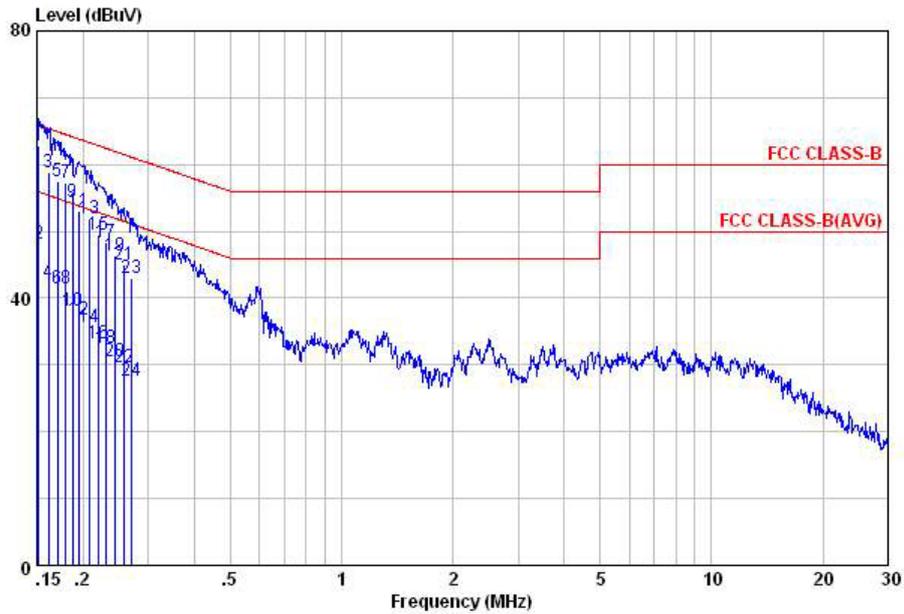
### 3.1.4 Test Setup





3.1.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	21~23°C
Test Engineer :	Harvey Tang	Relative Humidity :	51~53%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GPRS850 Idle + Adapter + Phone Link + GPS Rx		

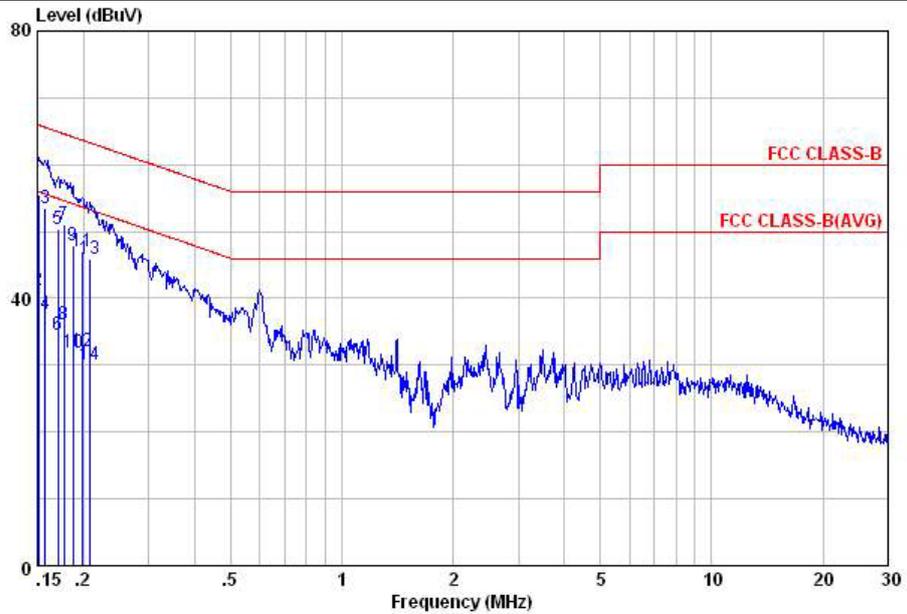


Site : C001-KS  
 Condition: FCC CLASS-B LISN-L20130306 LINE  
 Project : (FC) 3N2101  
 mode : Mode 1

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.15	62.74	-3.17	65.91	50.10	1.93	10.71	QP
2	0.15	48.14	-7.77	55.91	35.50	1.93	10.71	Average
3	0.16	58.82	-6.56	65.38	46.40	1.75	10.67	QP
4	0.16	42.42	-12.96	55.38	30.00	1.75	10.67	Average
5	0.17	57.49	-7.45	64.94	45.30	1.55	10.64	QP
6	0.17	41.39	-13.55	54.94	29.20	1.55	10.64	Average
7	0.18	57.23	-7.27	64.50	45.30	1.31	10.62	QP
8	0.18	41.53	-12.97	54.50	29.60	1.31	10.62	Average
9	0.19	54.37	-9.78	64.15	42.61	1.16	10.60	QP
10	0.19	38.17	-15.98	54.15	26.41	1.16	10.60	Average
11	0.20	52.94	-10.86	63.80	41.30	1.05	10.59	QP
12	0.20	36.74	-17.06	53.80	25.10	1.05	10.59	Average
13	0.21	51.85	-11.42	63.27	40.30	0.98	10.57	QP
14	0.21	35.65	-17.62	53.27	24.10	0.98	10.57	Average
15	0.22	49.41	-13.42	62.83	37.90	0.96	10.55	QP
16	0.22	33.11	-19.72	52.83	21.60	0.96	10.55	Average
17	0.23	48.36	-14.03	62.39	36.89	0.93	10.54	QP
18	0.23	32.46	-19.93	52.39	20.99	0.93	10.54	Average
19	0.24	46.41	-15.54	61.95	35.01	0.89	10.51	QP
20	0.24	30.61	-21.34	51.95	19.21	0.89	10.51	Average
21	0.26	44.95	-16.56	61.51	33.60	0.86	10.49	QP
22	0.26	29.55	-21.96	51.51	18.20	0.86	10.49	Average
23	0.27	43.08	-18.04	61.12	31.81	0.81	10.46	QP
24	0.27	27.68	-23.44	51.12	16.41	0.81	10.46	Average



Test Mode :	Mode 1	Temperature :	21~23°C
Test Engineer :	Harvey Tang	Relative Humidity :	51~53%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GPRS850 Idle + Adapter + Phone Link + GPS Rx		



Site : C001-KS  
 Condition: FCC CLASS-B LISN-N20130306 NEUTRAL  
 Project : (FC) 3N2101  
 mode : Mode 1

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.15	55.40	-10.56	65.96	42.79	1.89	10.72	QP
2	0.15	41.30	-14.66	55.96	28.69	1.89	10.72	Average
3	0.16	53.37	-12.23	65.60	40.90	1.79	10.68	QP
4	0.16	37.77	-17.83	55.60	25.30	1.79	10.68	Average
5	0.17	50.26	-14.68	64.94	38.10	1.52	10.64	QP
6	0.17	34.56	-20.38	54.94	22.40	1.52	10.64	Average
7	0.18	51.08	-13.56	64.64	39.10	1.35	10.63	QP
8	0.18	36.08	-18.56	54.64	24.10	1.35	10.63	Average
9	0.19	47.86	-16.29	64.15	36.10	1.16	10.60	QP
10	0.19	31.96	-22.19	54.15	20.20	1.16	10.60	Average
11	0.20	46.99	-16.68	63.67	35.40	1.01	10.58	QP
12	0.20	32.09	-21.58	53.67	20.50	1.01	10.58	Average
13	0.21	45.95	-17.32	63.27	34.40	0.98	10.57	QP
14	0.21	30.05	-23.22	53.27	18.50	0.98	10.57	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

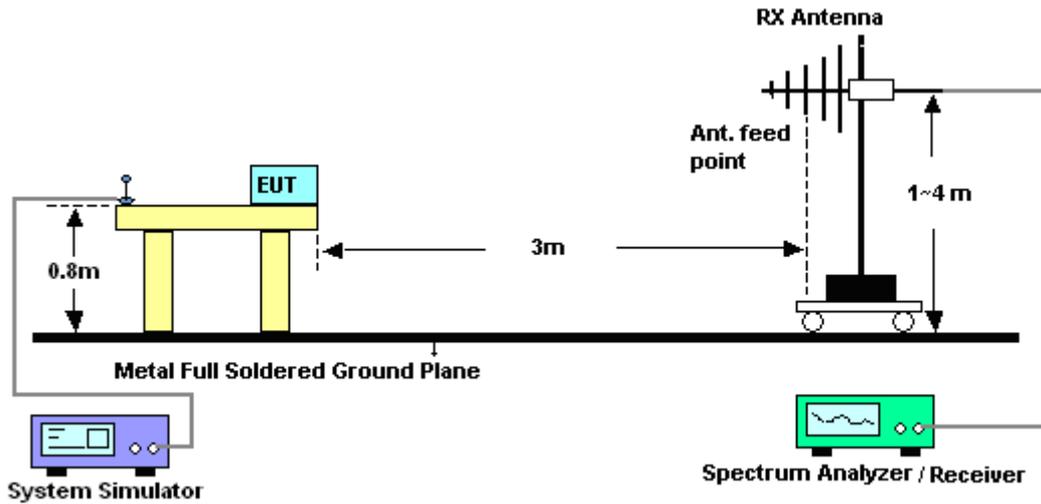
The measuring equipment is listed in the section 4 of this test report.

### 3.2.3. Test Procedures

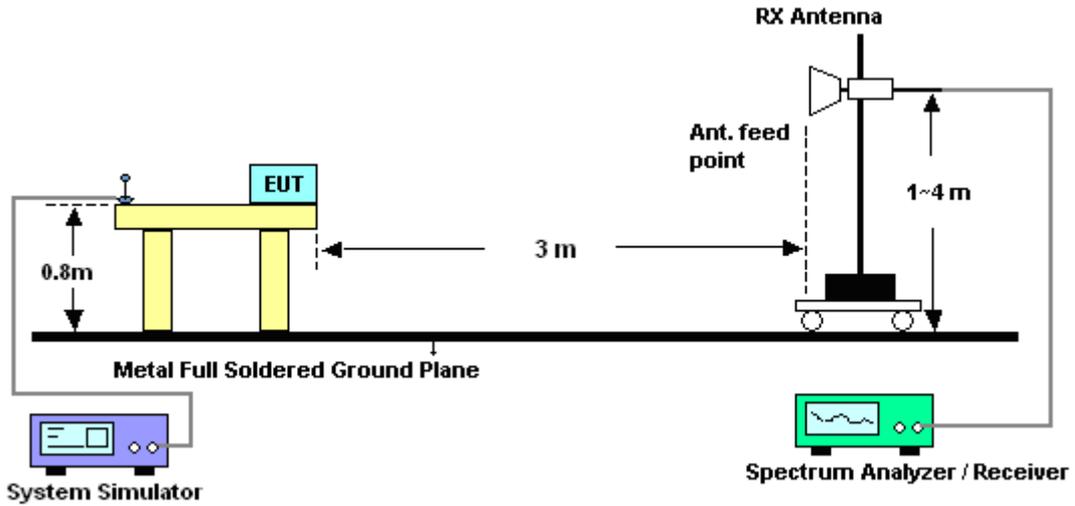
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna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

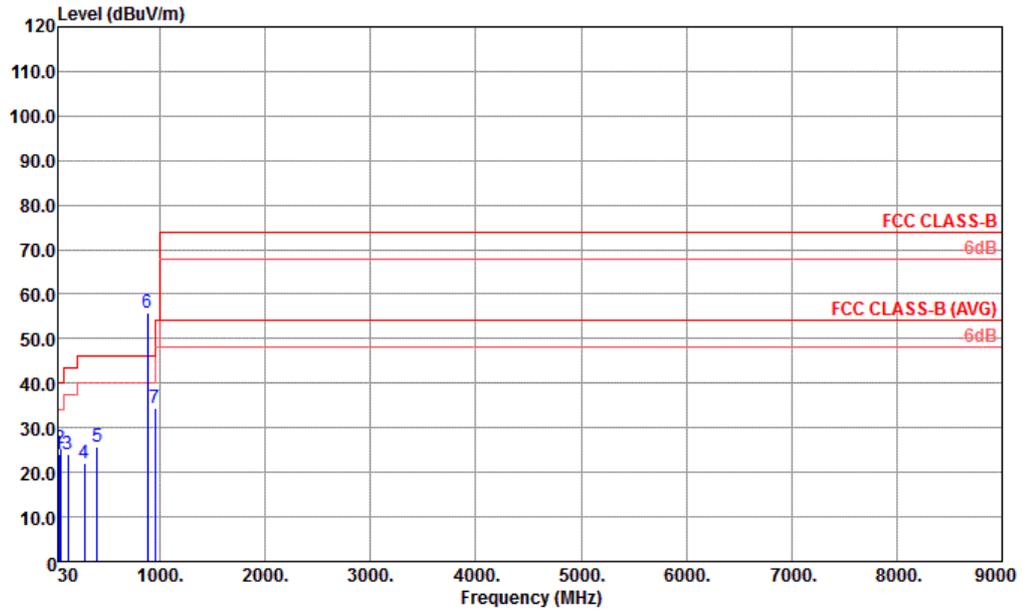


For radiated emissions above 1GHz



3.2.5. Test Result of Radiated Emission

Test Mode :	Mode 1	Temperature :	23~24°C
Test Engineer :	Stone Gu	Relative Humidity :	43~44%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	GPRS850 Idle + Adapter + Phone Link + GPS Rx		
Remark :	#6 is system simulator signal which can be ignored.		

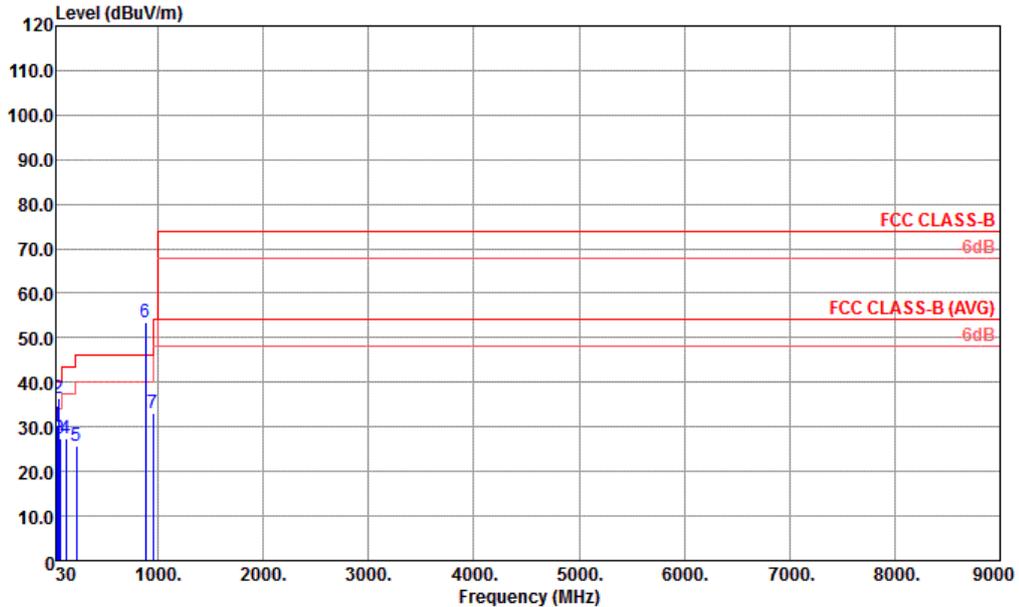


Site : 03CH01-KS  
 Condition : FCC CLASS-B 3m LF\_ANT\_100803 HORIZONTAL  
 Project : (FC) 3N2101  
 Mode : mode 1

	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	40.67	24.15	-15.85	40.00	45.54	11.64	0.61	33.64	---	---	Peak
2	54.25	25.25	-14.75	40.00	51.66	6.49	0.68	33.58	---	---	Peak
3	128.94	24.14	-19.36	43.50	44.98	11.71	1.04	33.59	---	---	Peak
4	280.26	22.03	-23.97	46.00	41.22	12.66	1.55	33.40	---	---	Peak
5	403.45	25.58	-20.42	46.00	41.01	16.02	1.85	33.30	---	---	Peak
6 *	881.66	55.76			65.13	20.47	2.68	32.52	---	---	Peak
7	951.50	34.35	-11.65	46.00	43.24	20.74	2.81	32.44	100	200	Peak



Test Mode :	Mode 1	Temperature :	23~24°C
Test Engineer :	Stone Gu	Relative Humidity :	43~44%
Test Distance :	3m	Polarization :	Vertical
Function Type :	GPRS850 Idle + Adapter + 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  
 Project : (FC) 3N2101  
 Mode : mode 1

	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	30.58	-9.42	40.00	53.11	10.48	0.62	33.63	---	---	Peak
2 !	53.28	36.39	-3.61	40.00	62.49	6.80	0.68	33.58	200	0	Peak
3	65.89	27.53	-12.47	40.00	55.14	5.22	0.76	33.59	---	---	Peak
4	127.97	27.39	-16.11	43.50	48.22	11.72	1.04	33.59	---	---	Peak
5	224.97	25.65	-20.35	46.00	47.27	10.50	1.38	33.50	---	---	Peak
6 *	881.66	53.41			62.78	20.47	2.68	32.52	---	---	Peak
7	951.50	33.06	-12.94	46.00	41.95	20.74	2.81	32.44	---	---	Peak

## 4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Dec. 29, 2012	Dec. 02, 2013	Dec. 28, 2013	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	N/A	Feb. 28, 2013	Dec. 02, 2013	Feb. 27, 2014	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	N/A	Feb. 28, 2013	Dec. 02, 2013	Feb. 27, 2014	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 07, 2013	Nov. 28, 2013	Nov. 06, 2014	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP30	101399	9kHz~30GHz	May 23, 2013	Nov. 28, 2013	May 22, 2014	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Dec. 07, 2012	Nov. 28, 2013	Dec. 06, 2013	Radiation (03CH01-KS)
Double Ridge Horn Antenna	EMCO	3117	75959	1GHz~18GHz	Dec. 07, 2012	Nov. 28, 2013	Dec. 06, 2013	Radiation (03CH01-KS)
Amplifier	com-power	PA-103A	161069	1MHz~1GHz	May 23, 2013	Nov. 28, 2013	May 22, 2014	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Dec. 29, 2012	Nov. 28, 2013	Dec. 28, 2013	Radiation (03CH01-KS)
Active Horn Antenna	com-power	AHA-118	701023	1GHz~18GHz	Nov. 06, 2013	Nov. 28, 2013	Nov. 05, 2014	Radiation (03CH01-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Nov. 22, 2013	Nov. 28, 2013	Nov. 21, 2014	Radiation (03CH01-KS)
Turn Table	MF	MF7802	N/A	0 ~ 360 degree	N/A	Nov. 28, 2013	N/A	Radiation (03CH01-KS)
Antenna Mast	MF	MF7802	N/A	1 m - 4 m	N/A	Nov. 28, 2013	N/A	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% ( $U = 2Uc(y)$ )	2.26
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### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

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