



FCC Test Report

APPLICANT : ZTE CORPORATION
EQUIPMENT : CDMA Wireless Access Terminal
BRAND NAME : ZTE
MODEL NAME : WF723S
FCC ID : SRQ-WF723S
STANDARD : FCC 47 CFR FCC Part 15 Subpart B
CLASSIFICATION : Certification

The product was received on Jan. 13, 2017 and testing was completed on Jan. 24, 2017. 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.

Prepared by: James Huang / Manager

Approved by: Jones Tsai / Manager



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



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC711301	Rev. 01	Initial issue of report	Feb. 14, 2017
FC711301	Rev. 02	Corrected the HW Version on Page 5	Feb. 21, 2017



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 6.54 dB at 0.400 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 2.06 dB at 150.150 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. Product Feature of Equipment Under Test

Product Feature	
Equipment	CDMA Wireless Access Terminal
Brand Name	ZTE
Model Name	WF723S
FCC ID	SRQ-WF723S
EUT supports Radios application	CDMA/EV-DO
HW Version	WF723SHWV1.0
SW Version	WF723SV1.0.0B01
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

Standards-related Product Specification	
Tx Frequency	CDMA2000 BC0: 824.70 MHz ~ 848.31 MHz CDMA2000 BC1: 1851.25 MHz ~ 1908.75 MHz CDMA2000 BC10: 817.9 MHz ~ 823.1 MHz
Rx Frequency	CDMA2000 BC0: 869.70 MHz ~ 893.31 MHz CDMA2000 BC1: 1931.25 MHz ~ 1988.75 MHz CDMA2000 BC10: 862.9 MHz ~ 868.1 MHz GPS : 1.57542 GHz Glonass : 1602 MHz + n × 0.5625MHz (n=-7, -6, -5, ..., 0, ..., 6)
Antenna Type	WWAN : Foldable Antenna GPS/Glonass : PIFA Antenna
Type of Modulation	CDMA2000 1xRTT : QPSK (CDMA2000 BC0/BC1/BC10) CDMA2000 1xEV-DO : QPSK/8PSK (CDMA2000 BC1) GPS/Glonass : 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. China TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958	
Test Site No.	Sporton Site No.	
	CO01-KS	

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.	
Test Site Location	No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P. R. China TEL: +86-755- 3320-2398	
Test Site No.	Sporton Site No.	FCC Registration No.
	03CH03-SZ	565805

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 C63.4-2014

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

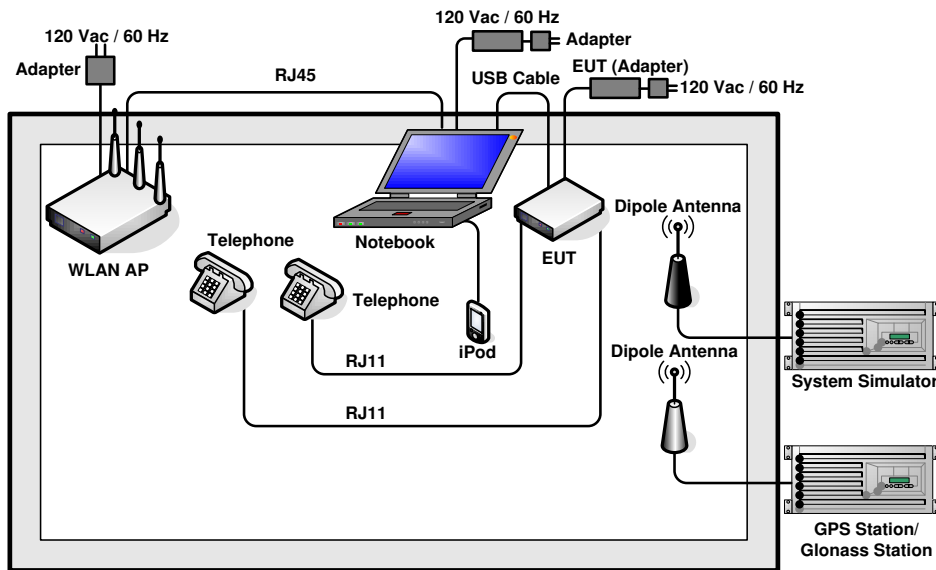
The EUT has been associated with peripherals pursuant to ANSI C63.4-2014 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

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

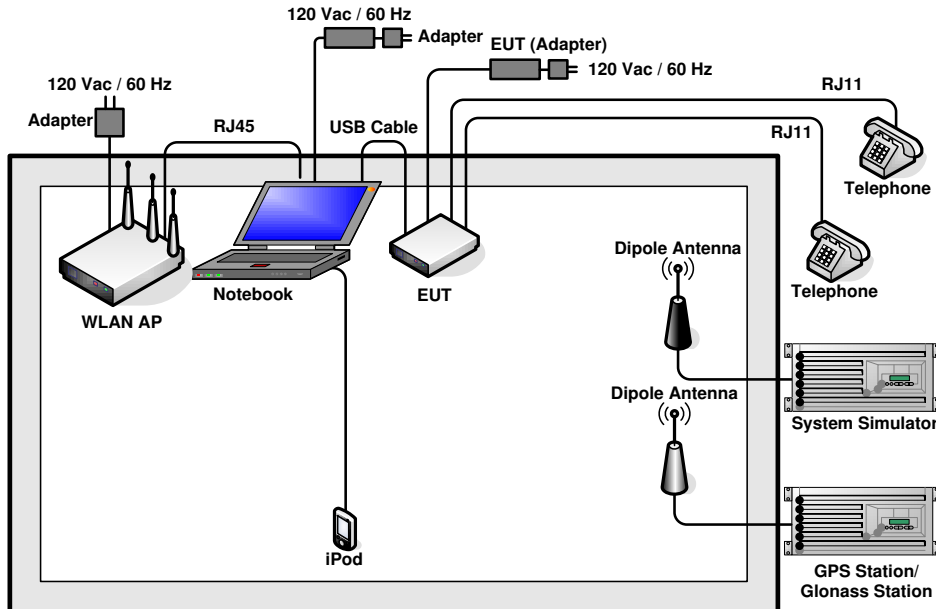


Test Items	Function Type
AC Conducted Emission	Mode 1 : CDMA2000 BC0 Idle + Adapter + Phone Link + Glonass Rx <Fig.1> Mode 2 : CDMA2000 BC1 Idle + Adapter + Phone Link + GPS Rx <Fig.1>
Radiated Emissions < 1GHz	Mode 1 : CDMA2000 BC0 Idle + Adapter + Phone Link + Glonass Rx <Fig.2> Mode 2 : CDMA2000 BC1 Idle + Adapter + Phone Link + GPS Rx <Fig.2>
Radiated Emissions \geq 1GHz	Mode 1 : CDMA2000 BC0 Idle + Adapter + Phone Link + Glonass Rx <Fig.2>
Remark: <ol style="list-style-type: none">1. The worst case of AC is mode 2; 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



<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	Anritsu	MT8820C	Fcc DoC	N/A	Shielded, 1.5m
3.	Glonass Station	RACELOGIC	RLLS03-2P	Fcc DoC	N/A	N/A
4.	WLAN AP	ASUSTek	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded,2.7m with Core
5.	Notebook	Lenovo	G480	N/A	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
6.	Notebook	Lenovo	E540	FCC DoC	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
7.	USB Cable	Motorola	SKN6378A	FCC DoC	N/A	Unshielded,1.0 m
8.	iPod	Apple	MC525 ZP/A	FCC DoC	Shielded, 1.0m	N/A
9.	Telephone	Bubugao	HCD007(6082)TSD	N/A	N/A	N/A
10.	Telephone	BOSSINI	HDC133TSDL	FCC DoC	N/A	N/A



2.4. EUT Operation Test Setup

The EUT was in CDMA2000 idle mode during the testing. And the EUT is connected with Telephone via RJ-11 cable.

The following program installed in the EUT was programmed during the test.

1. Turn on GPS/Glonass function to make the EUT receive continuous signals from GPS/Glonass 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.

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.

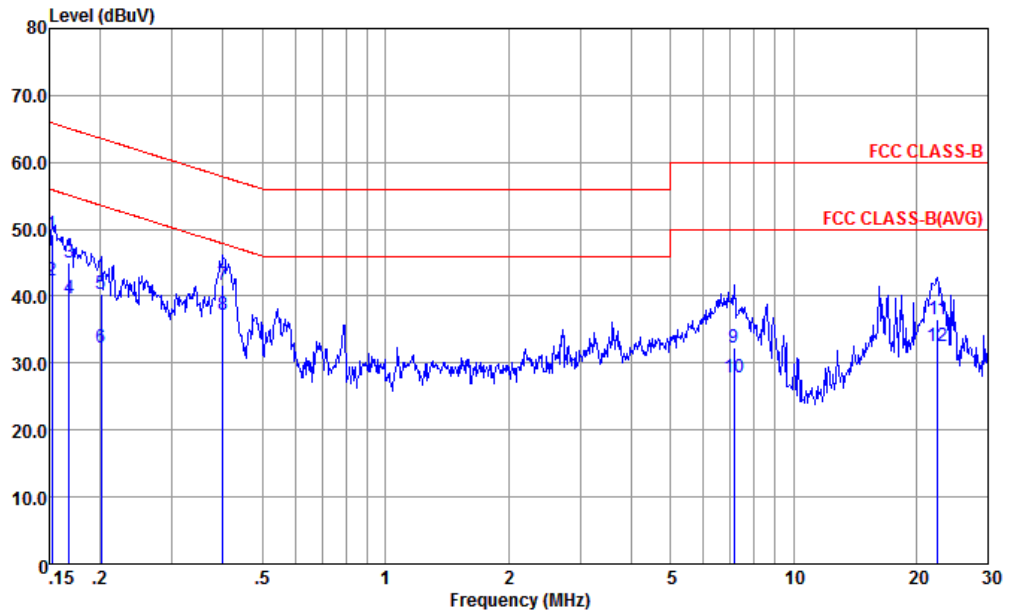
3.1.4 Test Setup





3.1.5 Test Result of AC Conducted Emission

Test Mode :	Mode 2	Temperature :	20~22°C
Test Engineer :	Peter Wei	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	CDMA2000 BC1 Idle + Adapter + Phone Link + GPS Rx		

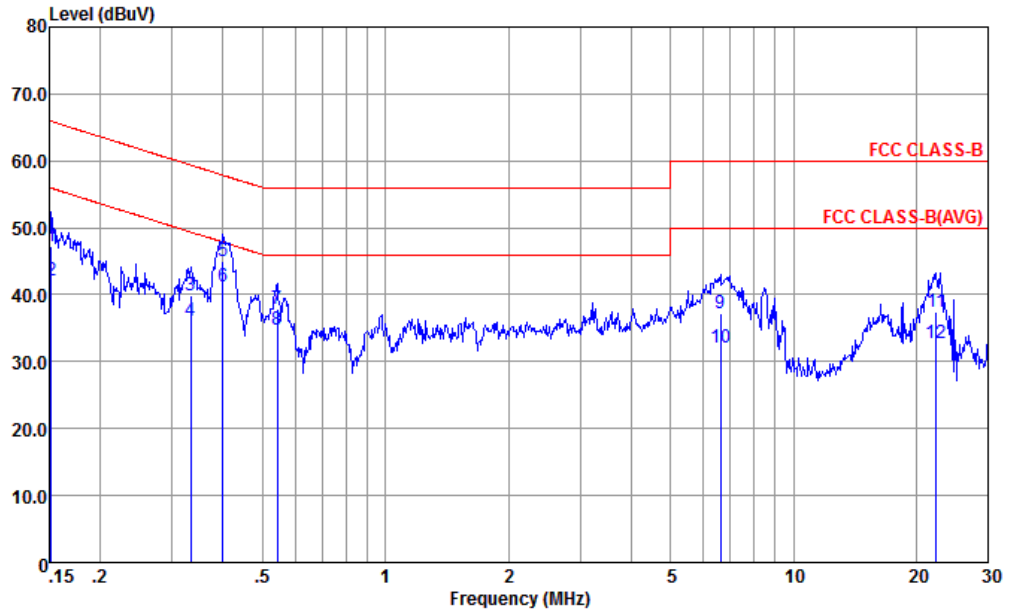


Site : C001-KS
 Condition : FCC CLASS-B LISN-L-20151024 LINE
 Project : (FC) 711301
 mode : Mode 2
 IMEI : #4

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.152	49.20	-16.67	65.87	38.30	0.51	10.39	QP
2	0.152	42.30	-13.57	55.87	31.40	0.51	10.39	Average
3	0.168	45.08	-20.00	65.08	34.30	0.41	10.37	QP
4	0.168	39.68	-15.40	55.08	28.90	0.41	10.37	Average
5	0.201	40.25	-23.33	63.58	29.70	0.22	10.33	QP
6	0.201	32.35	-21.23	53.58	21.80	0.22	10.33	Average
7	0.400	41.73	-16.13	57.86	31.30	0.23	10.20	QP
8 *	0.400	37.23	-10.63	47.86	26.80	0.23	10.20	Average
9	7.137	32.22	-27.78	60.00	21.70	0.23	10.29	QP
10	7.137	27.92	-22.08	50.00	17.40	0.23	10.29	Average
11	22.535	36.66	-23.34	60.00	25.61	0.24	10.81	QP
12	22.535	32.56	-17.44	50.00	21.51	0.24	10.81	Average



Test Mode :	Mode 2	Temperature :	20~22°C
Test Engineer :	Peter Wei	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	CDMA2000 BC1 Idle + Adapter + Phone Link + GPS Rx		



Site : CO01-KS
 Condition : FCC CLASS-B LISN-N-20151024 NEUTRAL
 Project : (FC) 711301
 mode : Mode 2
 IMEI : #4

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.152	47.19	-18.72	65.91	36.50	0.30	10.39	QP
2	0.152	42.19	-13.72	55.91	31.50	0.30	10.39	Average
3	0.334	39.85	-19.50	59.35	29.30	0.32	10.23	QP
4	0.334	36.05	-13.30	49.35	25.50	0.32	10.23	Average
5	0.400	45.02	-12.84	57.86	34.50	0.32	10.20	QP
6 *	0.400	41.32	-6.54	47.86	30.80	0.32	10.20	Average
7	0.544	37.81	-18.19	56.00	27.29	0.33	10.19	QP
8	0.544	34.71	-11.29	46.00	24.19	0.33	10.19	Average
9	6.627	37.28	-22.72	60.00	26.70	0.30	10.28	QP
10	6.627	32.08	-17.92	50.00	21.50	0.30	10.28	Average
11	22.416	37.46	-22.54	60.00	26.39	0.25	10.82	QP
12	22.416	32.86	-17.14	50.00	21.79	0.25	10.82	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

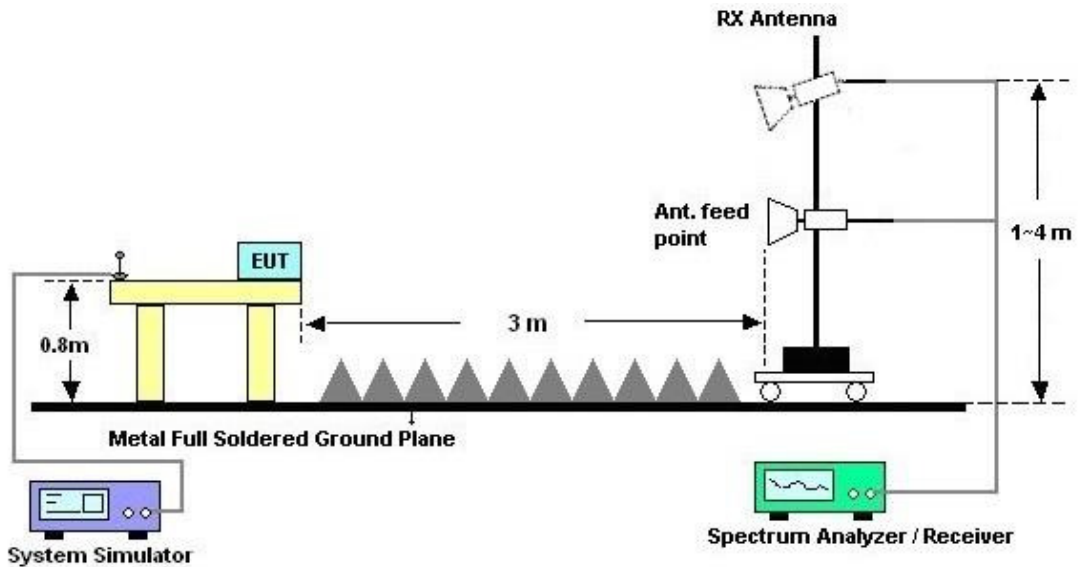
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna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



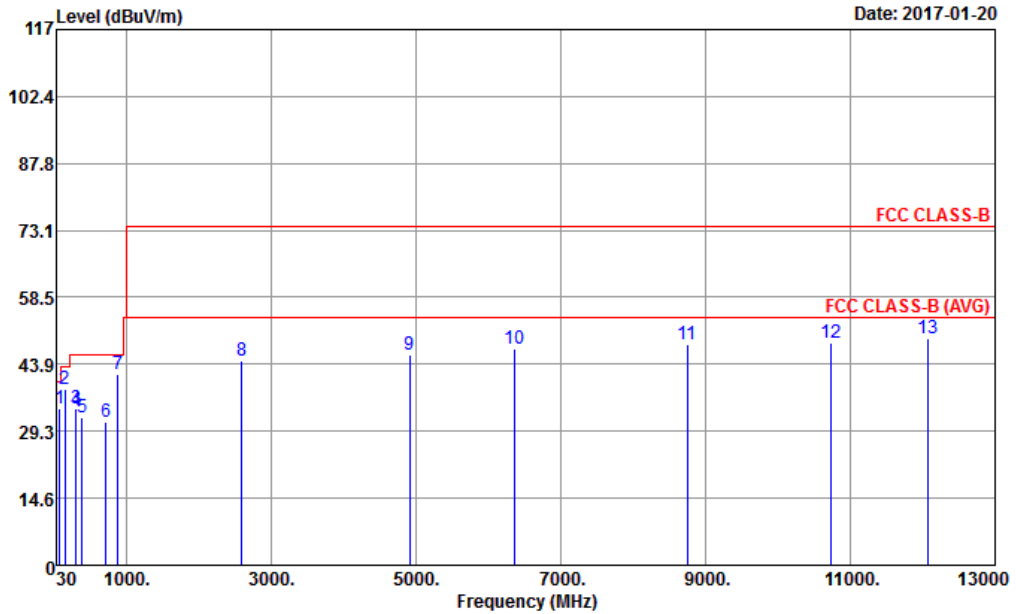
For radiated emissions above 1GHz





3.2.5. Test Result of Radiated Emission

Test Mode :	Mode 1	Temperature :	23~25°C
Test Engineer :	Leo Liao	Relative Humidity :	48~52%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	CDMA2000 BC0 Idle + Adapter + Phone Link + Glonass Rx		
Remark :	#7 is system simulator signal which can be ignored.		

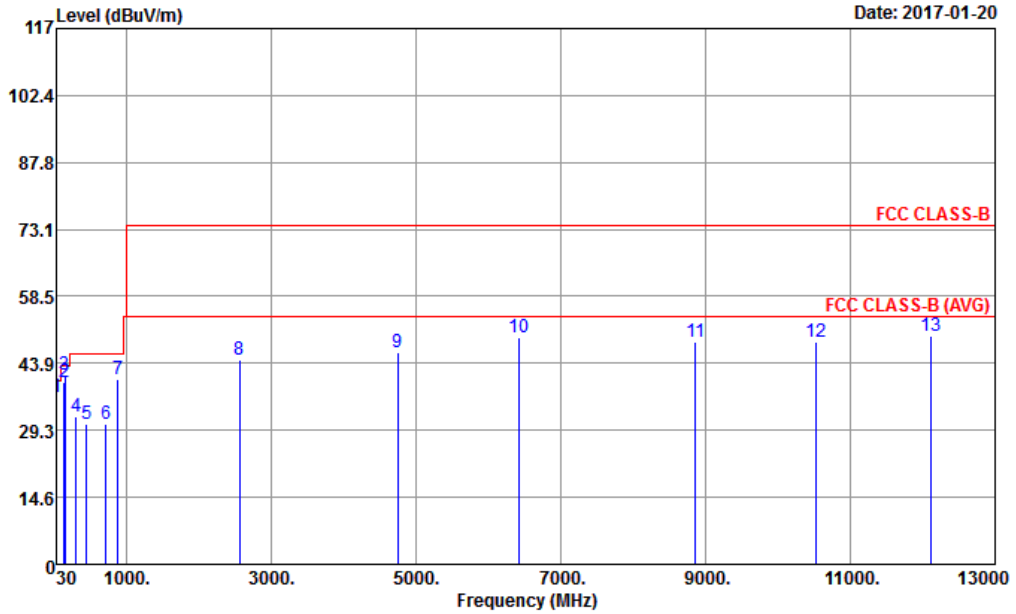


Site : 03CH03-SZ
 Condition : FCC CLASS-B 3m LF_ANT(23188)_6 HORIZONTAL
 Project : (FC) 711301
 Mode : Mode 1
 Sample : #6

	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	72.66	34.33	-5.67	40.00	50.51	13.80	1.62	31.60	100	89 QP
2	145.29	38.44	-5.06	43.50	50.16	17.70	1.99	31.41	100	128 QP
3	298.65	34.30	-11.70	46.00	44.62	18.46	2.51	31.29	---	Peak
4	300.00	33.90	-12.10	46.00	44.19	18.50	2.51	31.30	---	Peak
5	390.30	32.22	-13.78	46.00	38.23	22.55	2.74	31.30	---	Peak
6	715.10	31.35	-14.65	46.00	32.66	26.65	3.54	31.50	---	Peak
7	881.00	41.73			41.01	28.28	3.94	31.50	---	Peak
8	2594.00	44.81	-29.19	74.00	62.36	32.30	6.85	56.70	---	Peak
9	4916.00	45.91	-28.09	74.00	59.30	33.35	9.61	56.35	---	Peak
10	6360.00	47.22	-26.78	74.00	57.00	36.06	11.17	57.01	---	Peak
11	8746.00	48.22	-25.78	74.00	54.23	36.40	12.51	54.92	---	Peak
12	10728.00	48.48	-25.52	74.00	52.47	37.94	14.20	56.13	---	Peak
13	12076.00	49.67	-24.33	74.00	52.96	38.80	14.69	56.78	100	123 Peak



Test Mode :	Mode 1	Temperature :	23~25°C
Test Engineer :	Leo Liao	Relative Humidity :	48~52%
Test Distance :	3m	Polarization :	Vertical
Function Type :	CDMA2000 BC0 Idle + Adapter + Phone Link + Glonass Rx		
Remark :	#7 is system simulator signal which can be ignored.		



Site : 03CH03-SZ
 Condition : FCC CLASS-B 3m LF_ANT(23188)_6 VERTICAL
 Project : (FC) 711301
 Mode : Mode 1
 Sample : #6

	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	30.00	36.64	-3.36	40.00	40.52	26.60	1.22	31.70	100	78 QP
2	135.03	39.90	-3.60	43.50	51.56	17.91	1.89	31.46	100	52 QP
3	150.15	41.44	-2.06	43.50	53.25	17.60	1.99	31.40	100	43 QP
4	300.00	32.21	-13.79	46.00	42.50	18.50	2.51	31.30	---	--- Peak
5	449.10	30.48	-15.52	46.00	34.36	24.47	2.95	31.30	---	--- Peak
6	715.10	30.75	-15.25	46.00	32.06	26.65	3.54	31.50	---	--- Peak
7	881.00	40.47			39.75	28.28	3.94	31.50	---	--- Peak
8	2564.00	44.56	-29.44	74.00	62.25	32.23	6.77	56.69	---	--- Peak
9	4750.00	46.21	-27.79	74.00	60.31	33.26	9.41	56.77	---	--- Peak
10	6428.00	49.41	-24.59	74.00	59.30	36.03	11.20	57.12	---	--- Peak
11	8860.00	48.59	-25.41	74.00	54.48	36.44	12.64	54.97	---	--- Peak
12	10530.00	48.43	-25.57	74.00	53.11	37.91	13.90	56.49	---	--- Peak
13	12114.00	50.00	-24.00	74.00	53.30	38.80	14.76	56.86	100	258 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. 29, 2016	Jan. 24, 2017	Apr. 28, 2017	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Oct. 13, 2016	Jan. 24, 2017	Oct. 12, 2017	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Oct. 13, 2016	Jan. 24, 2017	Oct. 12, 2017	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP0000008 11	AC 0V~300V, 45Hz~1000Hz	Oct. 13, 2016	Jan. 24, 2017	Oct. 12, 2017	Conduction (CO01-KS)
EMI Test Receiver&SA	KEYSIGHT	N9038A	MY54450083	20Hz~8.4GHz	May 07, 2016	Jan. 20, 2017	May 06, 2017	Radiation (03CH03-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150246	10Hz~44GHz	May 07, 2016	Jan. 20, 2017	May 06, 2017	Radiation (03CH03-SZ)
Bilog Antenna	TeseQ	CBL6112D	35408	30MHz~2GHz	May 21, 2016	Jan. 20, 2017	May 20, 2017	Radiation (03CH03-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1355	1GHz~18GHz	May 07, 2016	Jan. 20, 2017	May 06, 2017	Radiation (03CH03-SZ)
Amplifier	Burgeon	BPA-530	102210	0.01Hz ~3000MHz	Oct. 11, 2016	Jan. 20, 2017	Oct. 10, 2017	Radiation (03CH03-SZ)
HF Amplifier	MITEQ	AMF-7D-0010 1800-30-10P-R	1943528	1GHz~18GHz	Oct. 11, 2016	Jan. 20, 2017	Oct. 10, 2017	Radiation (03CH03-SZ)
AC Power Source	Chroma	61601	61601000198 5	N/A	NCR	Jan. 20, 2017	NCR	Radiation (03CH03-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Jan. 20, 2017	NCR	Radiation (03CH03-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Jan. 20, 2017	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% ($U = 2Uc(y)$)	2.3dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.1dB
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Uncertainty of Radiated Emission Measurement (1GHz ~ 18GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0dB
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Uncertainty of Radiated Emission Measurement (18GHz ~ 40GHz)

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