Registration

No.910917

TEST REPORT

Report No.: SRTC2017-9003(F)-0002

Product Name: WCDMA/GSM（GPRS）Dual-Mode Digital Mobile Phone

Model Name: ZTE BLADE L7

Applicant: ZTE Corporation

Manufacturer: ZTE Corporation

Specification: FCC Part15B (Certification)
(October 1, 2016 edition)

FCC ID: SRQ-ZTEBLADEL7

The State Radio_monitoring_center Testing Center (SRTC)

No.80 Beilishi Road Xicheng District Beijing, China

Tel: 86-10-57996181 Fax: 86-10-57996288

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1. General information

1.1 Notes of the test report

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The test results relate only to individual items of the samples which have been tested.

1.2 Information about the testing laboratory

Company: The State Radio_monitoring_center Testing Center (SRTC)
Address: No.80 Beilishi Road, Xicheng District
City: Beijing
Country or Region: China
Contacted person: Liu Jia
Tel: +86 10 57996181
Fax: +86 10 57996288
Email: liujiaf@srtc.org.cn

1.3Applicant's details

Company:ZTE Corporation
Address:ZTE Plaza, #55 Keji Road South, Hi-Tech, Industrial Park,
Nanshan District,Guangdong
City: Shenzhen
Country or Region: P.R.China
Contacted person: Min Zhang
Tel: 021-68897867
Fax: 021-50801070
Email: zhang.min13@zte.com.cn

1.4Manufacturer's details

Company:ZTE Corporation
Address:ZTE Plaza, #55 Keji Road South, Hi-Tech, Industrial Park,
Nanshan District,Guangdong
City: Shenzhen
Country or Region: P.R.China
Contacted person: Min Zhang
Tel: 021-68897867
Fax: 021-50801070
Email: zhang.min13@zte.com.cn

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1.5 Application details

Date of reception of test sample: 22th Jan. 2017
Date of test: 22th Jan. 2017 to 8th Mar. 2017

1.6 Reference specification

FCC Part 15B, 2016 (Certification)

1.7 Information of EUT

1.7.1 General information

Name of EUT	ZTE BLADE L7
FCC ID	SRQ-ZTEBLADEL7
Frequency Range	GSM850/WCDMA Band V: Tx:824~849MHz Rx:869~894MHz PCS1900/WCDMA Band II: Tx:1850~1910MHz Rx:1930~1990MHz
Rated Output Power	GSM850:33.0dBm PCS1900:30.0dBm WCDMA:24.0dBm
Modulation Type	GSM/GPRS:GMSK EDGE:GMSK WCDMA:QPSK
Emission Designator	GSM/GPRS EDGE WCDMA
Duplex Mode	FDD
Equipment Class	Class B
Duplex Spacing	GSM850/WCDMA Band V:45MHz PCS1900/WCDMA Band II:80MHz
Antenna Type	/
Power Supply	Battery or Charger
Rated Power Supply Voltage	3.7V
Extreme Temperature	Lowest: -30°C Highest: +50°C
Extreme Voltage	Minimum: 3.5V Maximum: 4.2V
HW Version	MB1.0
SW Version	GEN_GLB_B1258D_BL7V1.0B01

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1.7.2EUT details

Product Name	Model Name	IMEI
WCDMA/GSM（GPRS）Dual-Mode Digital Mobile Phone	ZTE BLADE L7	863720030003692

1.7.3 Auxiliary equipment details

AE (Auxiliary Equipment) 1#: Charger

Equipment	TRAVELCHARGER
Manufacturer	RUIJING
Model Number	STC-A515A-Z
S/N	542714000
Input Voltage	100V-240V a.c.
Output Voltage	5.0V d.c.
Frequency	50/60Hz

AE (Auxiliary Equipment) 2#: Battery

Equipment	Battery
Manufacturer	TM
Model Number	Li3822T43P3h716043
S/N	/
Rated Voltage	3.7V

AE (Auxiliary Equipment) 3#: Battery

Equipment	Battery
Manufacturer	BAK
Model Number	Li3822T43P3h716043
S/N	/
Rated Voltage	3.7V

AE (Auxiliary Equipment) 4#: Headset

Equipment	Headset
Manufacturer	FDC
Model Number	DEM-76

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2.Test information

2.1 Summary of the test results

No.	Test case	FCC reference	Verdict
1	Conducted emissions	15.107	Pass
2	Radiated emissions	15.109	Pass

Approved by Mr. LiuWei Director of the test department 刘巍	Checked by Mr. He Jia Project manager of the test department 何佳
Tested by: Mr. Chen Huaiwei Test engineer 陈怀蔚	Issued date: 2017-03-22

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2.2 Test result

2.2.1Conducted Emissions-FCC Part15.107

Ambient condition:

Temperature	Relative humidity	Pressure
22.4	39.6%	101.7kPa

Test Setup with laptop:

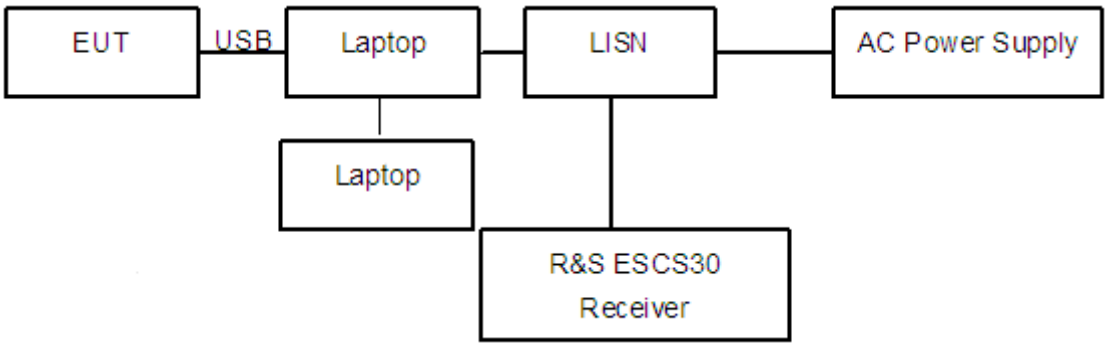

Figure 1

Test Procedure:

The EUT is placed on a non-metallic table 0.8m above the horizontal metal reference ground plane. The accessories of the EUT are connected with the EUT such as headset etc. The EUT was exercised during the testing by data read and write cycles repeated with internal storages connecting with a laptop via the USB cable. The laptop's LAN port is connected with another laptop via cable. And the data transferring between two laptops is maintained.
The AC main power supply of the laptop is connected to LISN and LISN is connected to the reference ground. The test set-up and the test methods are performed according to ANSI C63.4:2014.
Then start the test software ES-K1. Sweep the whole frequency band through the range from 150 KHz to 30 MHz. The measurement should be done for both L line and N line. During pre-test, the receiver uses both peak detector and average detector. And the final test, the receiver uses both average detector and Quasi-peak detector.
The data of cable loss has been calibrated in full testing frequency range before the testing.

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Test Setup with charger:

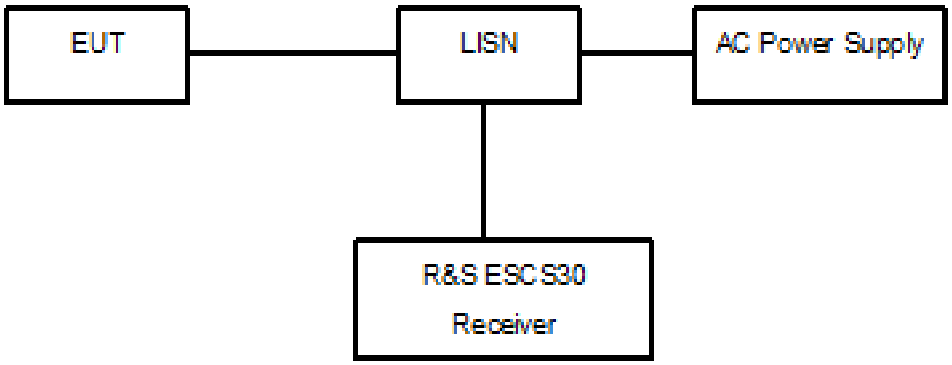

Figure 2

Test Procedure:

The EUT is placed on a non-matellic table 0.8m above the horizontal metal reference ground plane. The EUT is connected with LISN via the charger. The LISN is connected to the reference ground. The accessories of the EUT are connected with the EUT such as headset etc.
The test set-up and the test methods are performed according to ANSI C63.4:2014. Then start the test software ES-K1. Sweep the whole frequency band through the range from 150 KHz to 30 MHz. The measurement should be done for both L line and N line. During pre-test, the receiver uses both peak detector and average detector. And the final test, the receiver uses both average detector and Quasi-peak detector.
The data of cable loss has been calibrated in full testing frequency range before the testing.

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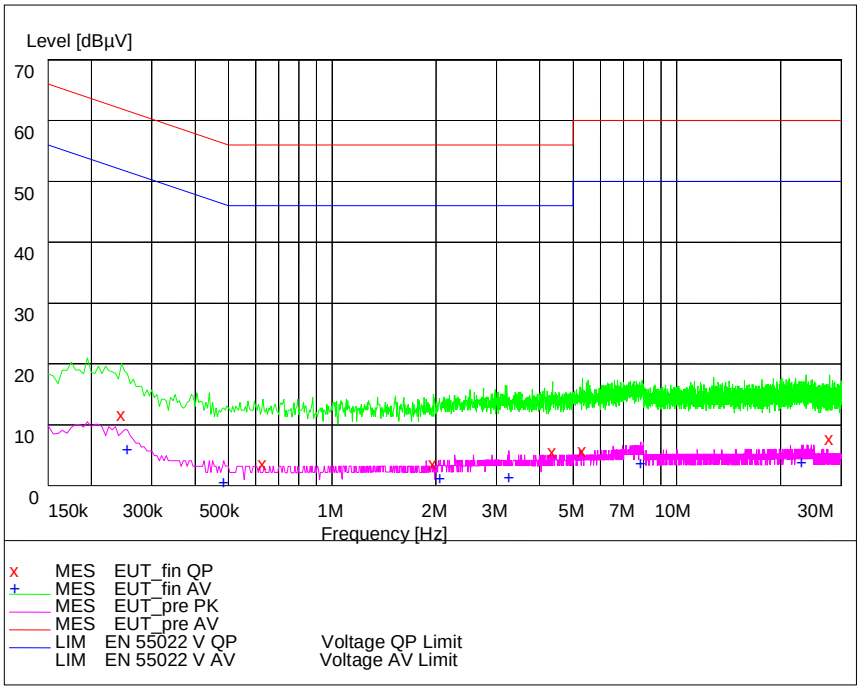
Limit:

Frequency of Emission(MHz)	Limits(dBμV)	
	Quasi-peak	Average
0.15～0.5	66 to 56*	56 to 46*
0.5～5	56	46
5～30	60	50

Note: * Decreases with the logarithm of the frequency

Test result:

Noise Level of the Measuring Instrument



Pic1.Conducted emission L and N Line

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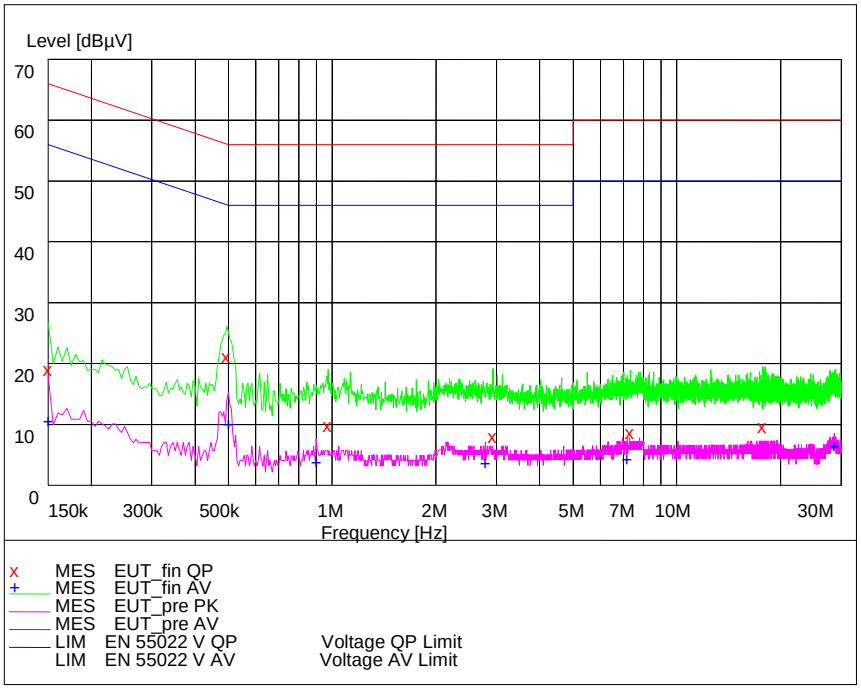
EUT+Laptop:



Pic2. Conducted emission L Line

MEASUREMENT RESULT: "MOBILE_fin QP"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.150000	21.00	9.7	66	45.0	---	---
0.495000	23.20	9.5	56	32.9	---	---
0.975000	11.80	9.4	56	44.2	---	---
2.930000	10.00	9.6	56	46.0	---	---
7.335000	10.60	9.7	60	49.4	---	---
17.755000	11.50	10.2	60	48.5	---	---

MEASUREMENT RESULT: "MOBILE_fin AV"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.150000	12.50	9.7	56	43.5	---	---
0.500000	12.10	9.5	46	33.9	---	---
0.900000	5.70	9.4	46	40.3	---	---
2.785000	5.50	9.5	46	40.5	---	---
7.180000	6.10	9.7	50	43.9	---	---
28.645000	8.40	11.5	50	41.6	---	---

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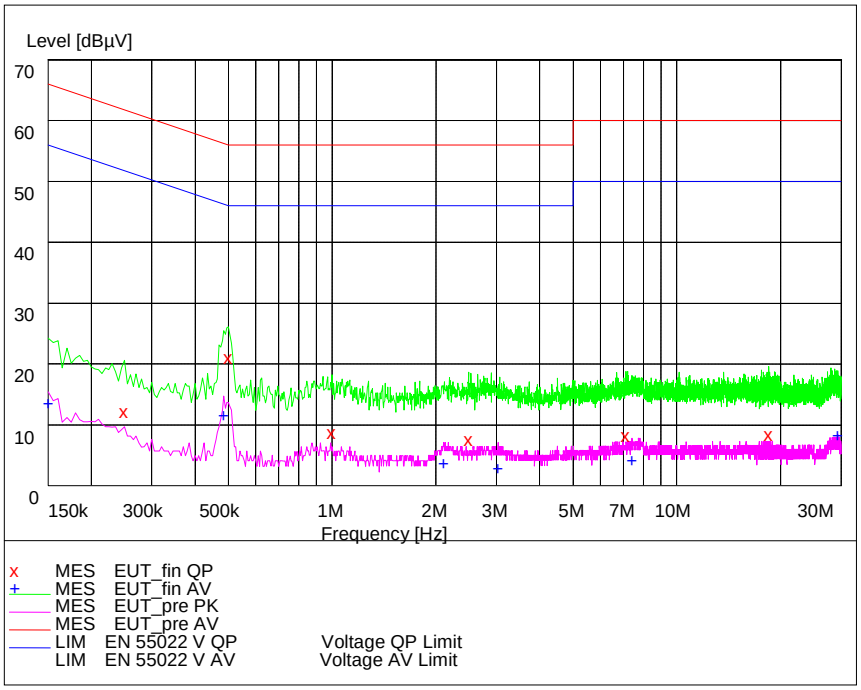

Pic3. Conducted emission N Line

MEASUREMENT RESULT: "MOBILE_fin QP"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.250000	14.10	9.6	62	47.6	---	---
0.500000	23.10	9.5	56	32.9	---	---
1.000000	10.70	9.4	56	45.3	---	---
2.490000	9.50	9.5	56	46.5	---	---
7.130000	10.10	9.7	60	49.9	---	---
18.510000	10.30	10.2	60	49.7	---	---

MEASUREMENT RESULT: "MOBILE_fin AV"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.150000	15.40	9.7	56	40.6	---	---
0.485000	13.50	9.5	46	32.7	---	---
2.105000	5.60	9.5	46	40.4	---	---
3.030000	4.80	9.6	46	41.2	---	---
7.410000	6.00	9.7	50	44.0	---	---
29.330000	10.20	11.3	50	39.8	---	---

EUT+Charger:

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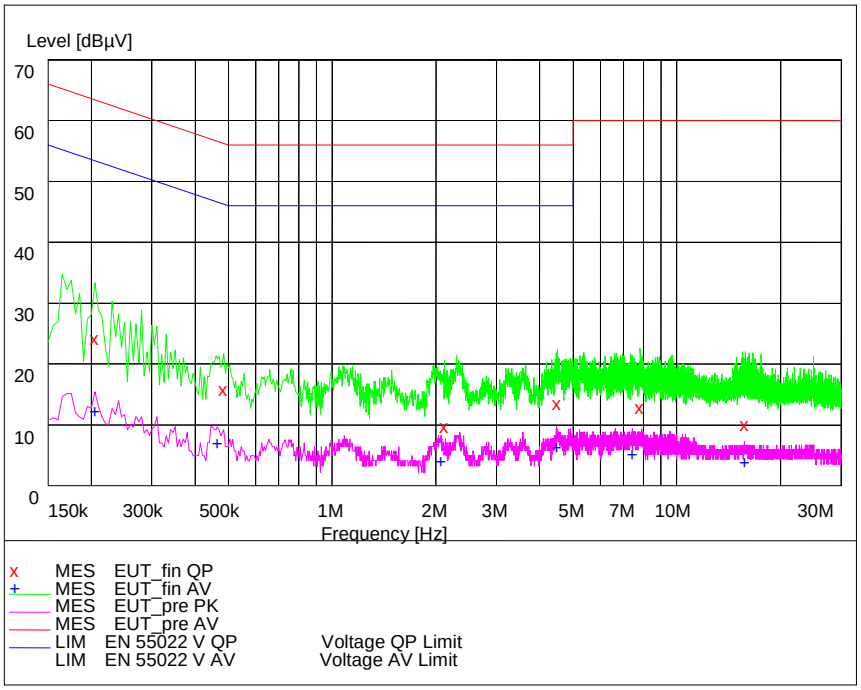

Pic4. Conducted emission L Line

MEASUREMENT RESULT: "MOBILE_fin QP"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.205000	26.20	9.6	63	37.2	---	---
0.485000	17.70	9.5	56	38.5	---	---
2.120000	11.60	9.5	56	44.4	---	---
4.505000	15.40	9.6	56	40.6	---	---
7.820000	14.70	9.7	60	45.3	---	---
15.795000	12.10	10.1	60	47.9	---	---

MEASUREMENT RESULT: "MOBILE_fin AV"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.205000	14.00	9.6	53	39.5	---	---
0.465000	8.90	9.5	47	37.7	---	---
2.070000	5.90	9.5	46	40.1	---	---
4.485000	8.20	9.6	46	37.8	---	---
7.445000	7.10	9.7	50	42.9	---	---
15.715000	5.80	10.1	50	44.2	---	---

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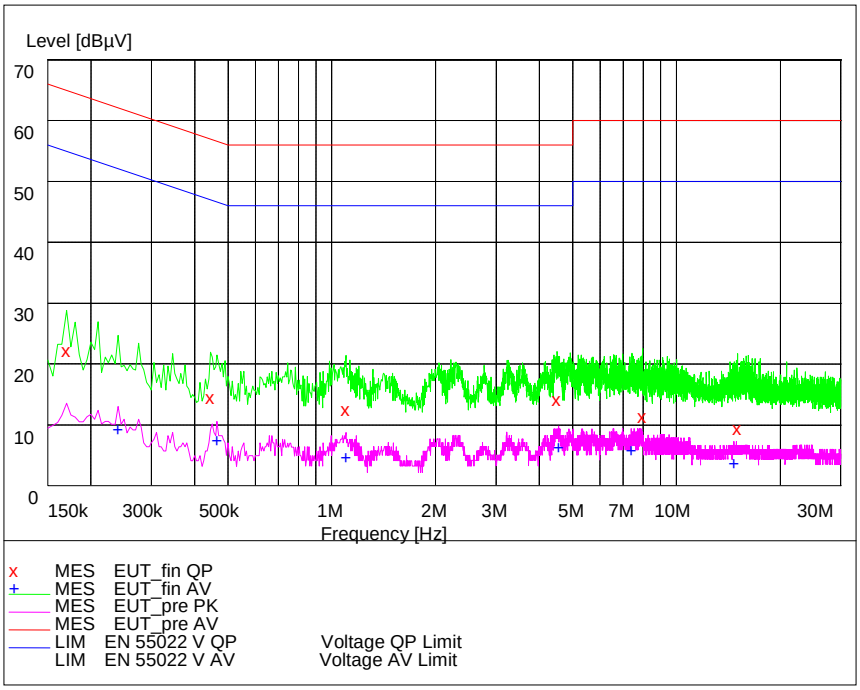

Pic5. Conducted emission N Line

MEASUREMENT RESULT: "MOBILE_fin QP"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.170000	24.20	9.7	65	40.8	---	---
0.445000	16.40	9.5	57	40.6	---	---
1.100000	14.50	9.5	56	41.5	---	---
4.505000	16.10	9.6	56	39.9	---	---
7.975000	13.40	9.7	60	46.6	---	---
15.060000	11.30	10.0	60	48.7	---	---

MEASUREMENT RESULT: "MOBILE_fin AV"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.240000	11.20	9.6	52	40.9	---	---
0.465000	9.40	9.5	47	37.2	---	---
1.100000	6.60	9.5	46	39.4	---	---
4.550000	8.20	9.6	46	37.8	---	---
7.400000	7.70	9.7	50	42.3	---	---
14.685000	5.60	10.0	50	44.4	---	---

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2.2.2RadiatedEmissions-FCC Part15.109

Ambient condition:

Temperature	Relative humidity	Pressure
22.4°C	37.2%	101.0kPa

Test Setup:

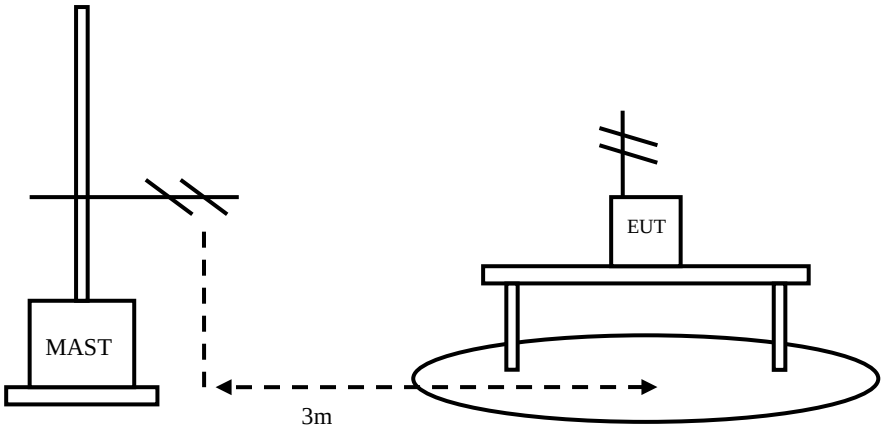

Figure 3

Test Procedure:

EUT+Laptop:
The EUT should be placed on a non-metallic table80cm above the ground plane. The receive antennas shall be moved from 1 to 4 meters. The distance between EUT and receive antenna should be 3 meters.
The accessories of the EUT are connected with the EUT such as headset etc.The EUT was exercised during the testing by data read and write cycles repeated with internal storages connecting with a laptop via the USB cable. The laptop's LAN port is connected with another laptop via cable. And the data transferring between two laptops is maintained. The test set-up and the test methods are performed according to ANSI C63.4:2014
Then start the test software ES-K1. Sweep the whole frequency band through the range from 30MHz to 1GHz, using receive log period antenna HL562.
During the test, the height of receive antenna shall be moved from 1 to4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The EUT is laid in two modes as follow:

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1. put the EUT in horizontal direction; 2. put the EUT in vertical direction.
The data of cable loss and antenna factor have been calibrated in full testing frequency range before the testing.

EUT+Charger:
The EUT should be placed on a non-metallic table80cm above the ground plane. The receive antennas shall be moved from 1 to 4 meters. The distance between EUT and receive antenna should be 3 meters.
The EUT should work inidle mode. The accessories of the EUT are connected with the EUT such as headset etc.The test set-up and the test methods are performed according to ANSI C63.4:2014.
Then start the test software ES-K1. Sweep the whole frequency band through the range from 30MHz to 1GHz, using receive log period antenna HL562.
During the test, the height of receive antenna shall be moved from 1 to4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The EUT is laid in two modes as follow:
1. put the EUT in horizontal direction; 2. put the EUT in vertical direction.
The data of cable loss and antenna factor have been calibrated in full testing frequency range before the testing.

A “reference path loss” is established and theA_{Rpl} is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss.
The measurement results are obtained as described below:
Result= $P_{mea} + A_{Rpl}$

Limit:

Frequency of Emission(MHz)	Limits	
	Detector	Unit (dBμV/m)
30～88	Quasi-peak	40
88～216	Quasi-peak	43.5
216～960	Quasi-peak	46
960～1000	Quasi-peak	54
1000～5th harmonic of the highest frequency or 40GHz, whichever is lower	Average Peak	54 74

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Test result:

EUT+Laptop

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity
175.05	29.19	10.7	18.49	Vertical
178.81	21.41	10.9	10.51	Vertical
182.58	20.32	11.0	9.32	Horizontal
187.29	21.42	11.1	10.32	Vertical
189.17	31.74	11.2	20.54	Vertical
957.91	30.06	28.6	1.46	Horizontal

EUT+Charger

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity
30.00	29.07	21.0	8.07	Vertical
31.88	26.60	20.1	6.50	Vertical
92.16	23.53	11.3	12.23	Horizontal
149.61	17.45	10.5	6.95	Vertical
554.10	28.76	22.3	6.46	Horizontal
942.88	29.35	28.3	1.05	Vertical

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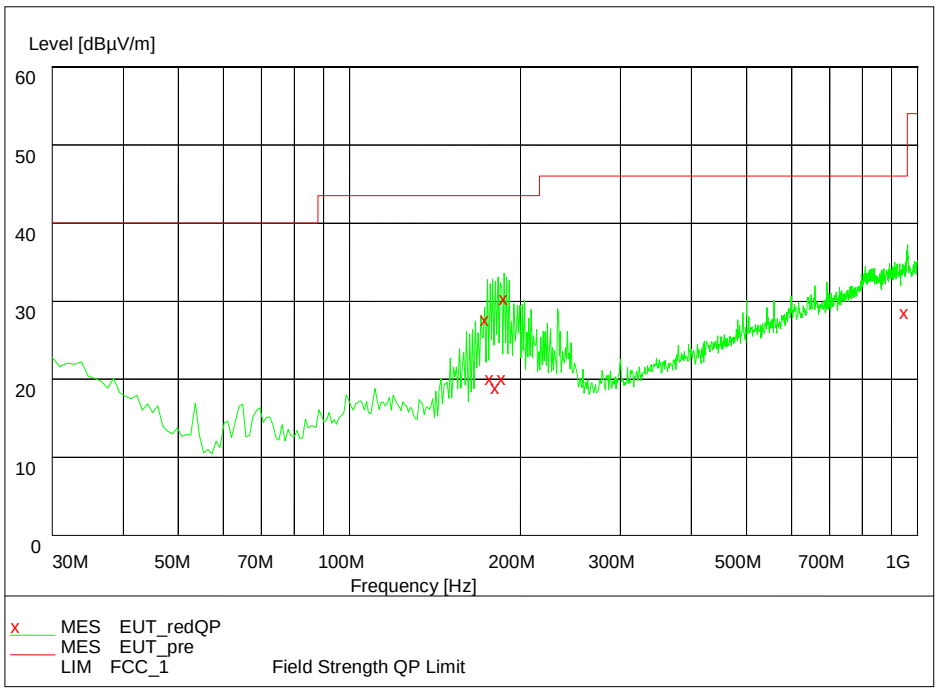
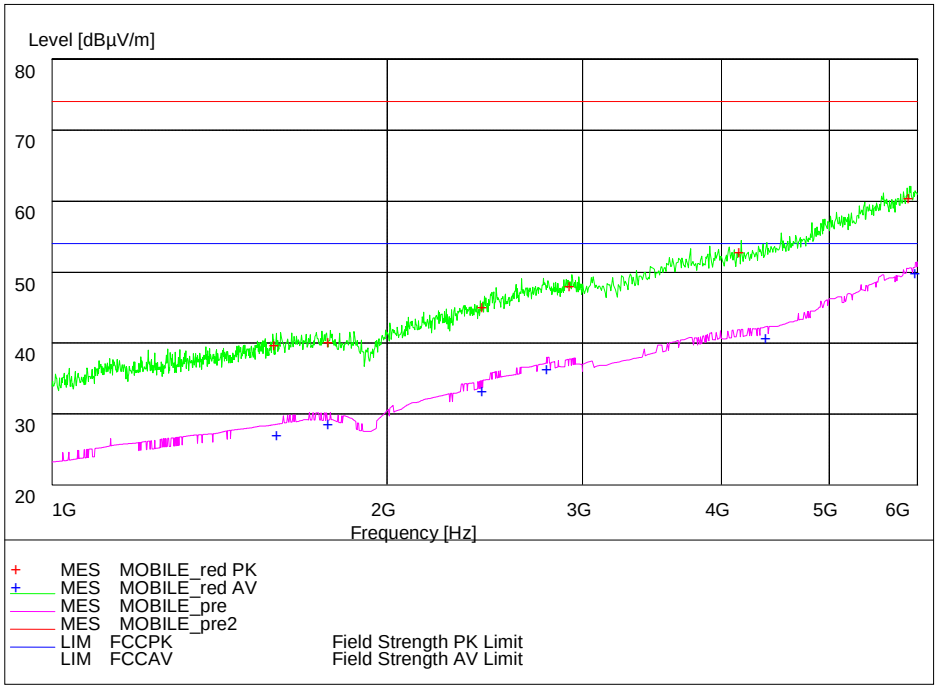
EUT+Laptop:



Pic6. Radiated emission(30MHz – 1GHz)



Pic7. Radiated emission (1GHz – 6GHz)

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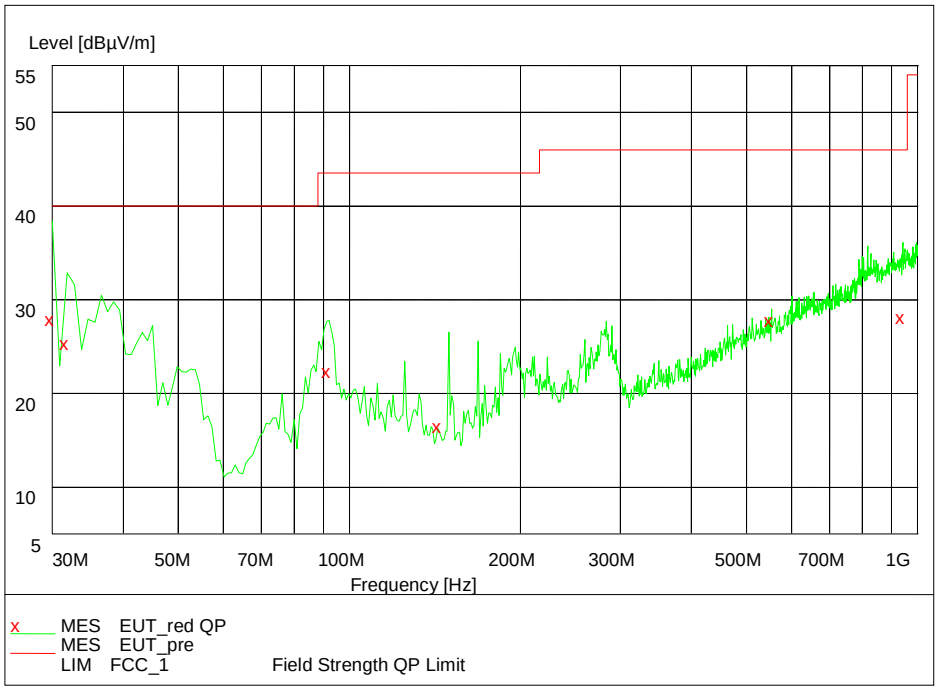
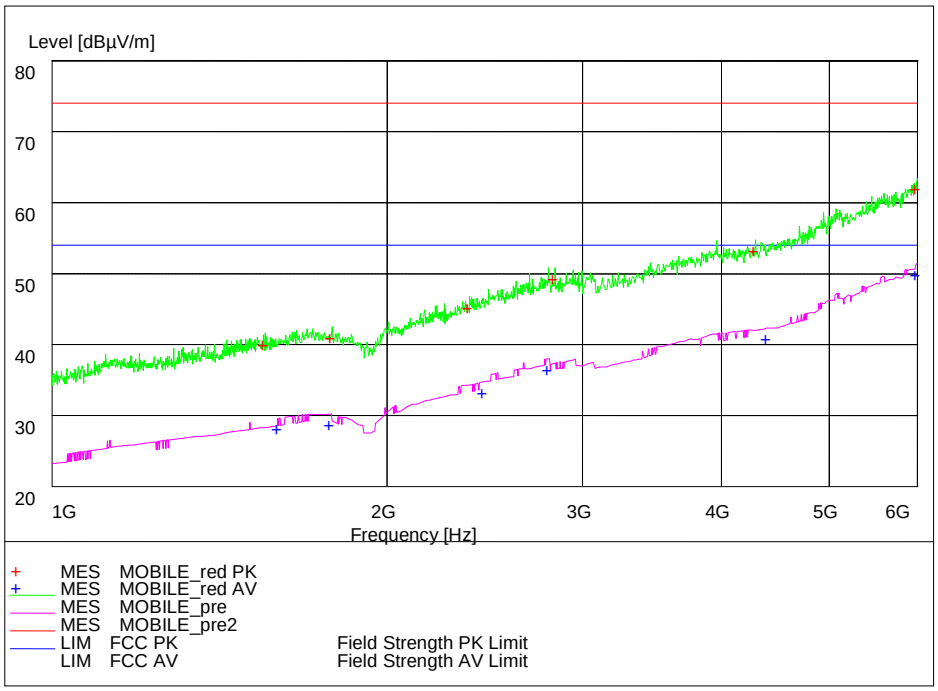
EUT+Charger:



Pic8. Radiated emission(30MHz – 1GHz)



Pic9. Radiated emission (1GHz – 6GHz)

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2.3. List of test equipments

No.	Name/Model	Manufacturer	S/N	Calibration Due Date
1	23.18m×16.88m×9.60mSemi-AnechoicChamber	FRANKONIA	-----	20th Aug. 2017
2	ESI 40EMI test receiver	R&S	100015	20th Aug. 2017
3	E5515C(8960) Mobile Station Tester	Agilent	GB44050904	20th Aug. 2017
4	9.080m×5.255m×3.525m Shielding room	FRANKONIA	-----	20th Aug. 2017
5	ESCS30EMI test receiver	R&S	100029	20th Aug. 2017
6	HL562Ultra log test antenna	R&S	100016	20th Aug. 2017
7	ESH3-Z2 Pulse limiter	R&S	10002	20th Aug. 2017
8	LS16C AMN	AFJ	16011306281	20th Aug. 2017
9	ESH2Z11 LISN	R&S	50FH-020-10	20th Aug. 2017
10	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100030	20th Aug. 2017
11	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100029	20th Aug. 2017
12	PS2000 Turn Table	FRANKONIA	-----	20th Aug. 2017
13	MA260 Antenna Master	FRANKONIA	-----	20th Aug. 2017
14	ES-K1EMI test software	R&S	-----	20th Aug. 2017
15	HL562 Receive antenna	R&S	100167	20th Aug. 2017

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Appendix

Appendix1 Test Setup

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Registration
No.910917

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Report No.:	SRTC2017-9003(F)-0002
Product Name:	WCDMA/GSM（GPRS）Dual-Mode Digital Mobile Phone
Model Name:	ZTE BLADE L7
Applicant:	ZTE Corporation
Manufacturer:	ZTE Corporation
Specification:	FCC Part15B (Certification) (October 1, 2016 edition)
FCC ID:	SRQ-ZTEBLADEL7

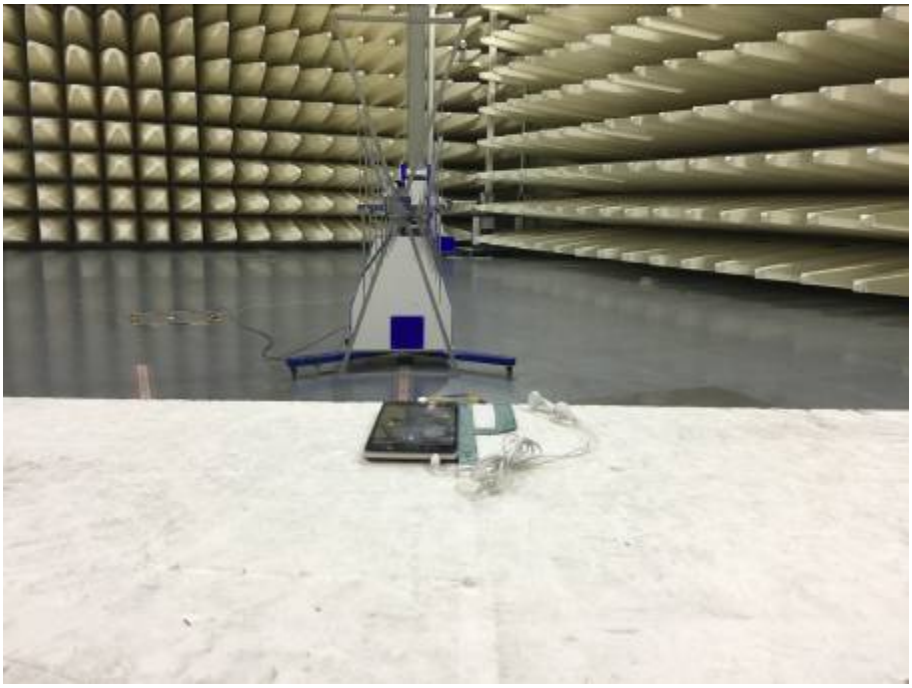
The State Radio_monitoring_center Testing Center (SRTC)

No.80 Beilishi Road Xicheng District Beijing, China

Tel: 86-10-57996181 Fax: 86-10-57996288

Appendix1 Test Setup

Radiated Emissions Test Setup（with laptop）



Radiated Emissions Test Setup (with charger)

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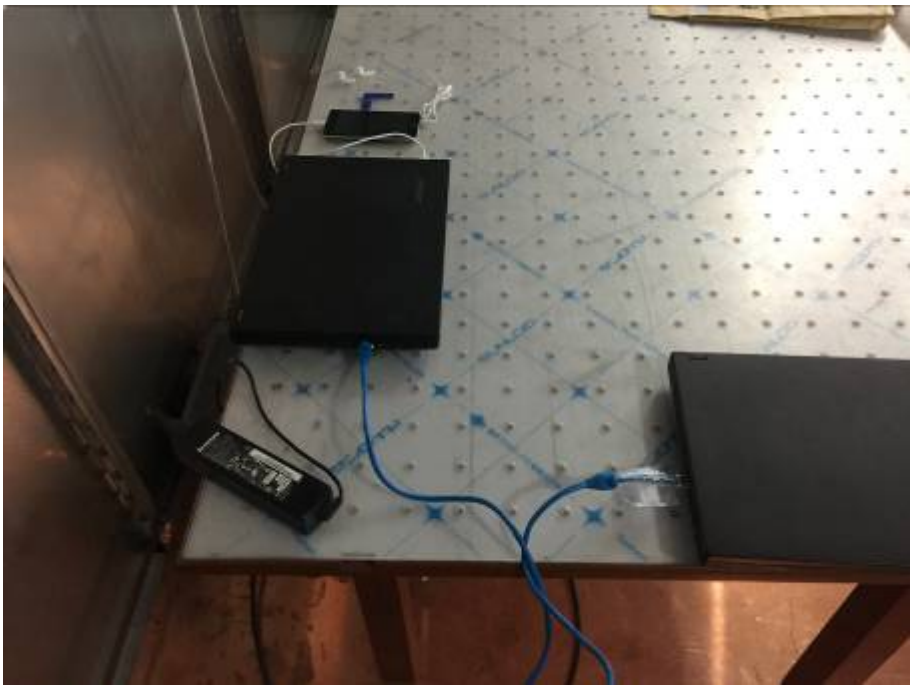

Conducted Emissions Test Setup（with laptop）

Conducted Emissions Test Setup (with charger)

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