Registration
No.910917

TEST REPORT

Report No.:	SRTC2017-9003(F)-0006
Product Name:	LTE/WCDMA/GSM（GPRS） Multi-Mode Digital Mobile Phone
Model Name:	ZTE BLADE A612
Applicant:	ZTE Corporation
Manufacturer:	ZTE Corporation
Specification:	FCC Part15B (Certification) (October 1, 2016 edition)
FCC ID:	SRQ-ZTEBLADEA612

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

1.3 Applicant'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

1.4 Manufacturer'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

1.5 Application details

Date of reception of test sample: 13thFeb. 2017
Date of test: 13th Feb. 2017 to 21th Mar. 2017

1.6 Reference specification

FCC Part 15B, 2016 (Certification)

1.7 Information of EUT

1.7.1 General information

Name of EUT	LTE/WCDMA/GSM（GPRS） Multi-Mode Digital Mobile Phone
FCC ID	SRQ-ZTEBLADEA612
Frequency Range	GSM850/WCDMA Band V: Tx:824~849MHz Rx:869~894MHz PCS1900/WCDMA Band II/LTE band II: Tx:1850~1910MHz Rx:1930~1990MHz LTE band IV:Tx: 1710 MHz – 1755 MHz Rx: 2110 MHz – 2155 MHz LTE band VII:Tx: 2500 MHz – 2570 MHz Rx: 2620 MHz – 2690 MHz
Rated Output Power	GSM850:33.0dBm PCS1900:30.0dBm WCDMA:24.0dBm LTE:21.0dBm
Modulation Type	GSM/GPRS:GMSK EDGE:GMSK WCDMA:QPSK LTE:QPSK; 16QAM
Emission Designator	GSM/GPRS;EDGE;WCDMA;LTE
Duplex Mode	FDD
Equipment Class	Class B
Antenna Type	Fixed Internal Antenna
Power Supply	Battery or Charger
Rated Power Supply Voltage	3.9V
Extreme Temperature	Lowest: -30°C Highest: +50°C
Extreme Voltage	Minimum: 3.5V Maximum: 4.35V
HW Version	WXQMA1B1-2
SW Version	TEL_MX_BLADE_V6_LITEV1.0.0

1.7.2 EUT details

Product Name	Model Name	IMEI
LTE/WCDMA/GSM（GPRS）Multi-Mode Digital Mobile Phone	ZTE BLADE A612	863256031632940

1.7.3 Auxiliary equipment details

AE (Auxiliary Equipment) 1#: Charger

Equipment	Charger
Manufacturer	dokocom Co., Ltd.
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	Zhongshan Tianmao Battery CO..LTD
Model Number	BP883
S/N	542616200
Rated Voltage	4.35V d.c.

AE (Auxiliary Equipment) 3#: Headset

Equipment	Headset
Manufacturer	ShenZhen FUDEKANG Co., Ltd.
Model Number	JD1504231

AE (Auxiliary Equipment) 4#: USB Cable

Equipment	USB Cable
Manufacturer	ChuanTuo Co., Ltd.
Model Number	LQ-0230002

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. Liu Wei Director of the test department	Checked by: Mr. He Jia Project manager of the test department
Tested by: Mr. Dong Qifeng Test engineer	Issued date: 2017.03.22

2.2 Test result

2.2.1 Conducted Emissions-FCC Part15.107

Ambient condition:

Temperature	Relative humidity	Pressure
23.4	43.3%	101.1kPa

Test Setup with laptop:

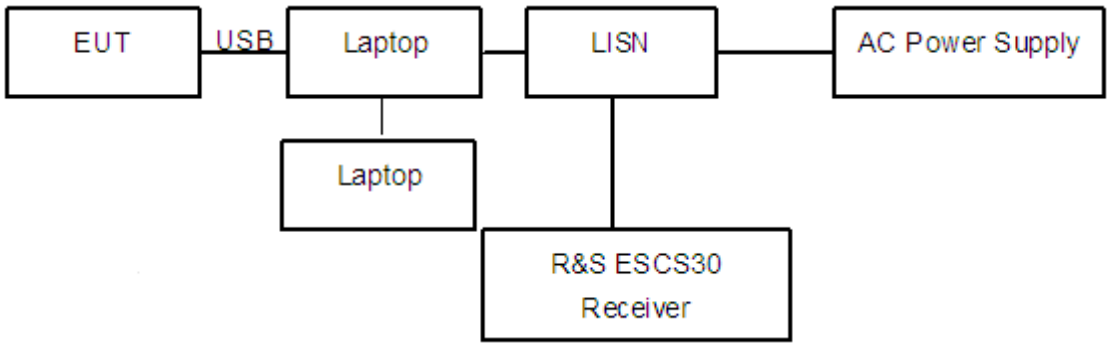


Figure 1

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.

Test Setup with charger:

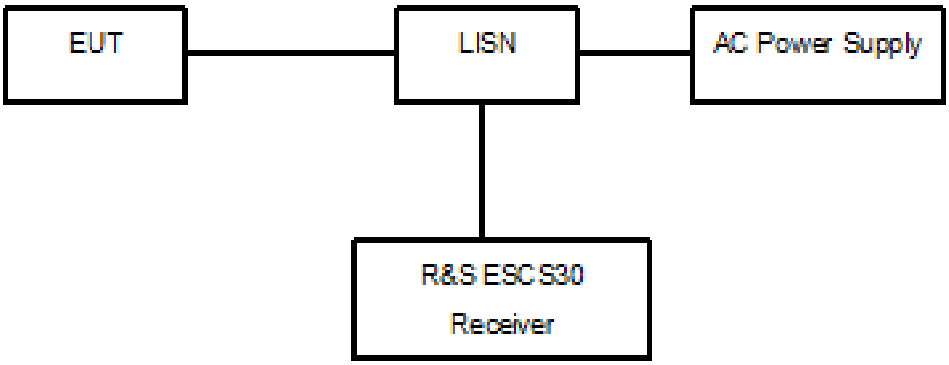


Figure 2

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.

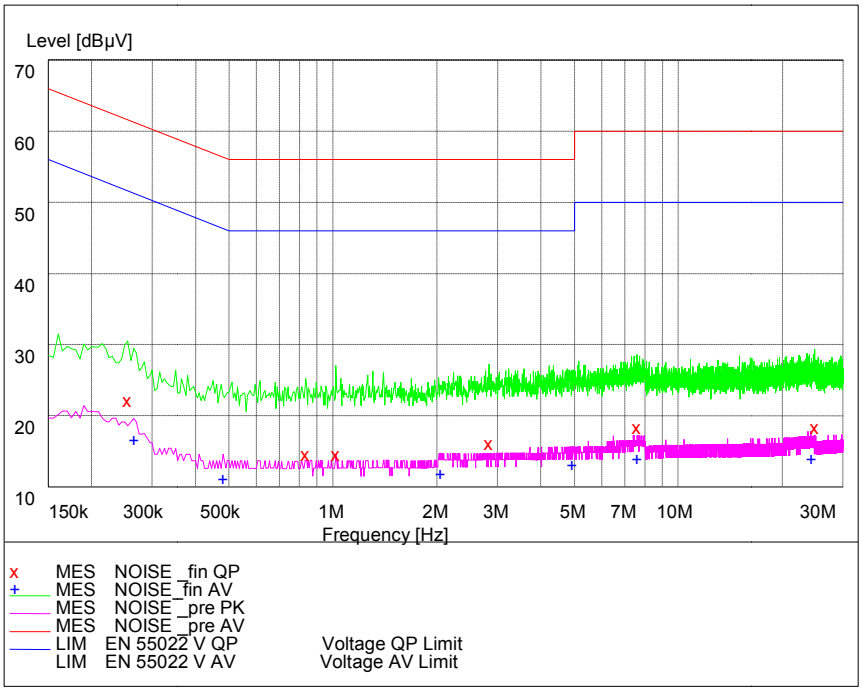
Limit:

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

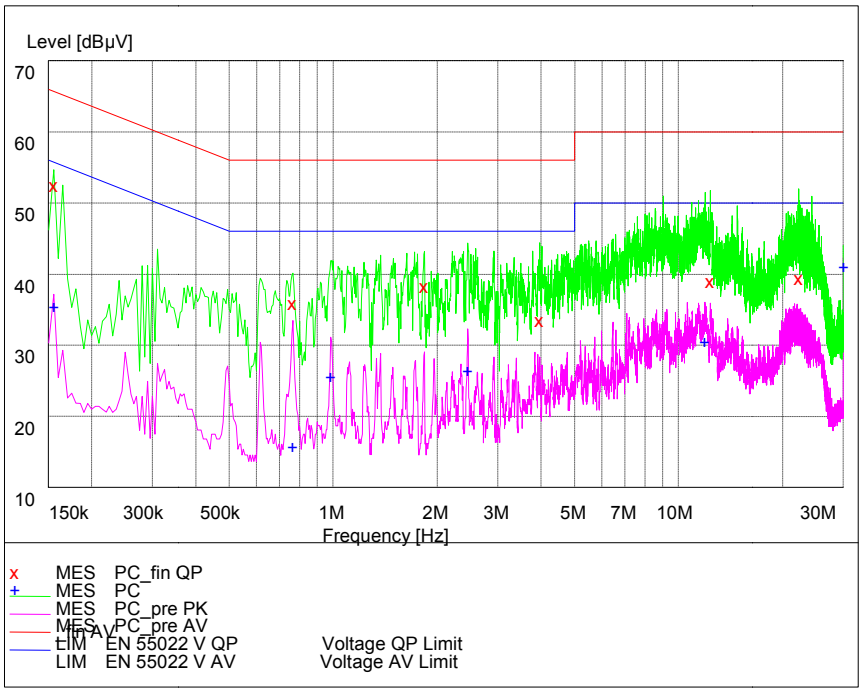
Test result:

Noise Level of the Measuring Instrument



Pic1.Conducted emission L and N Line

EUT+Laptop:



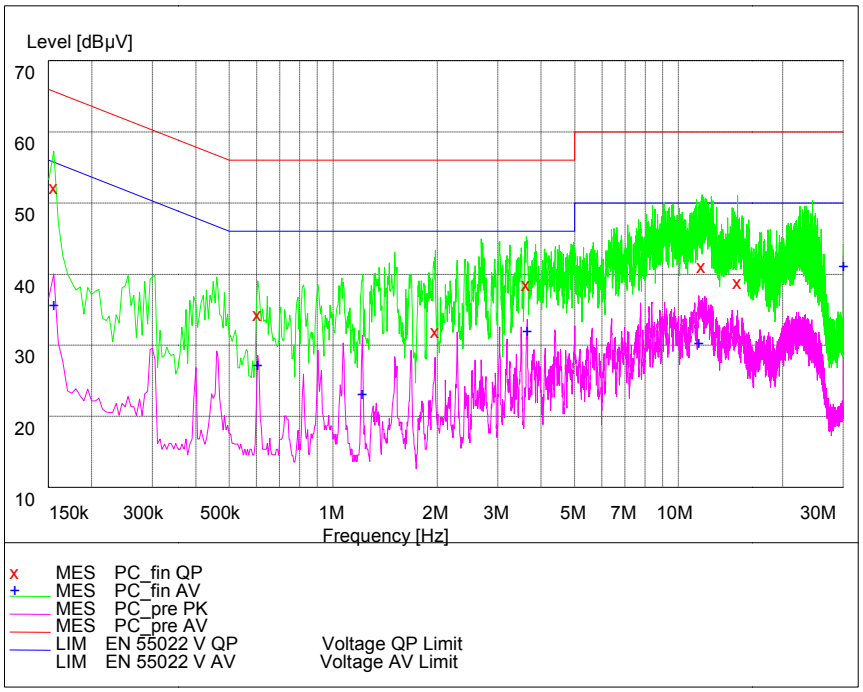
Pic2. Conducted emission L Line

MEASUREMENT RESULT: "MOBILE_fin QP"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.155000	54.20	20.1	66	11.6	---	---
0.765000	37.40	20.0	56	18.5	---	---
1.835000	39.70	20.1	56	16.1	---	---
3.965000	35.10	20.3	56	20.8	---	---
12.370000	40.60	20.7	60	19.3	---	---
22.290000	40.90	21.0	60	18.9	---	---

MEASUREMENT RESULT: "MOBILE_fin AV"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.155000	36.90	20.1	56	18.7	---	---
0.765000	17.20	20.0	46	28.7	---	---
0.985000	27.20	20.1	46	18.9	---	---
2.455000	28.10	20.2	46	18.0	---	---
11.935000	31.90	20.7	50	17.9	---	---
30.000000	42.40	21.3	50	7.4	---	---



Pic3. Conducted emission N Line

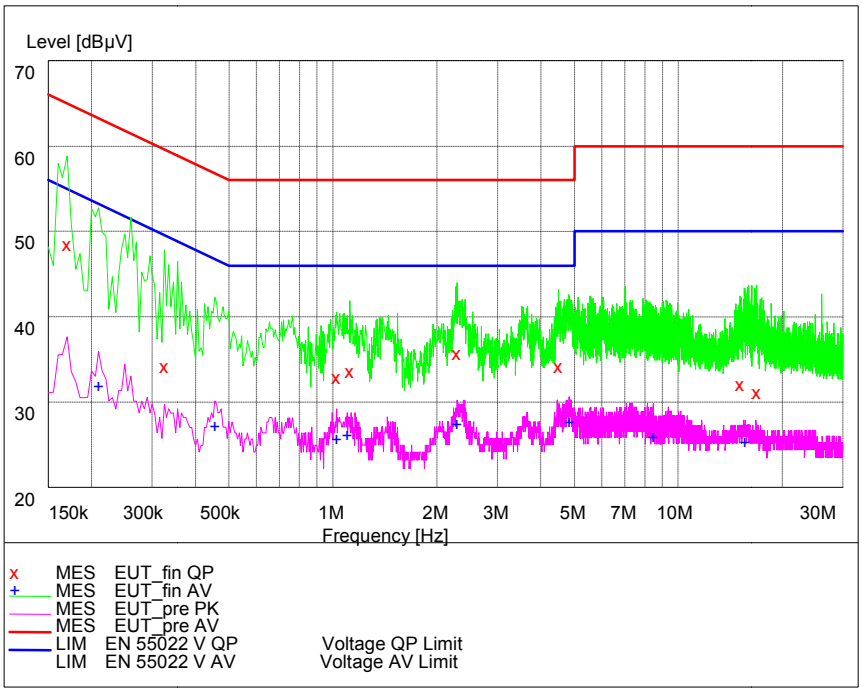
MEASUREMENT RESULT: "MOBILE_fin QP"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.155000	53.80	20.1	66	11.9	---	---
0.605000	36.10	20.1	56	19.9	---	---
1.980000	33.60	20.3	56	22.4	---	---
3.630000	40.20	20.3	56	15.8	---	---
11.705000	42.70	20.7	60	17.3	---	---
14.865000	40.40	20.7	60	19.6	---	---

MEASUREMENT RESULT: "MOBILE_fin AV"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.155000	37.20	20.1	56	18.5	---	---
0.605000	28.80	20.1	46	17.2	---	---
1.215000	24.80	20.1	46	21.2	---	---
3.650000	33.60	20.3	46	12.4	---	---
11.455000	31.90	20.6	50	18.1	---	---
30.000000	42.70	21.3	50	7.3	---	---

EUT+Charger:



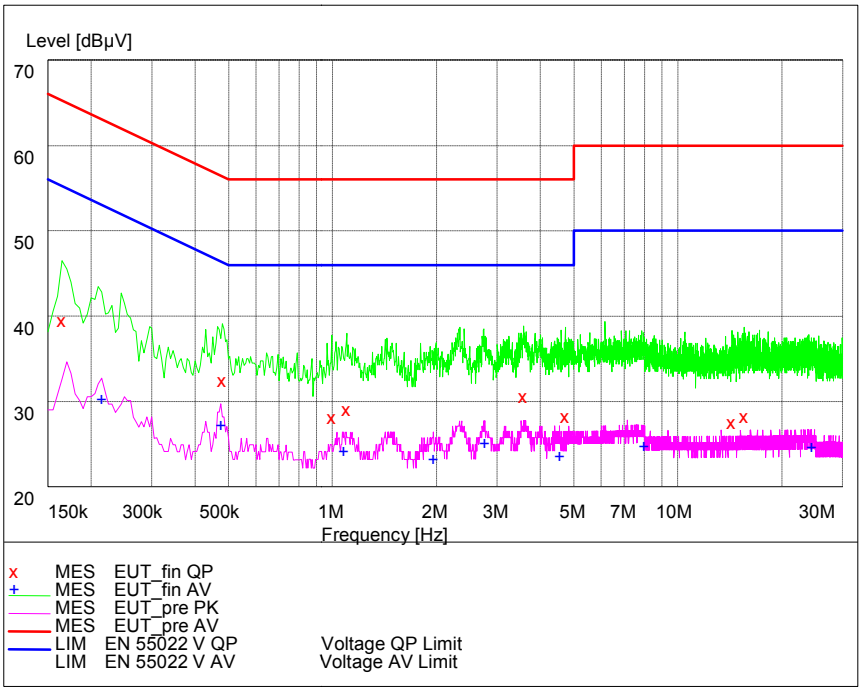
Pic4. Conducted emission L Line

MEASUREMENT RESULT: "MOBILE_fin QP"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.170000	49.80	29.7	65	15.2	---	---
0.325000	35.60	29.6	60	24.0	---	---
1.025000	34.30	29.5	56	21.7	---	---
1.120000	35.00	29.5	56	21.0	---	---
2.290000	37.10	29.6	56	18.9	---	---
4.500000	35.60	29.6	56	20.4	---	---
15.100000	33.40	30.0	60	26.6	---	---
16.890000	32.50	30.2	60	27.5	---	---

MEASUREMENT RESULT: "MOBILE_fin AV"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.210000	33.20	29.6	53	20.0	---	---
0.455000	28.60	29.5	47	18.2	---	---
1.025000	27.00	29.5	46	19.0	---	---
1.100000	27.50	29.5	46	18.5	---	---
2.290000	28.80	29.6	46	17.2	---	---
4.830000	29.00	29.6	46	17.0	---	---
8.485000	27.20	29.7	50	22.8	---	---
15.630000	26.70	30.1	50	23.3	---	---



Pic5. Conducted emission N Line

MEASUREMENT RESULT: "MOBILE_fin QP"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.165000	40.90	29.7	65	24.3	---	---
0.480000	33.80	29.5	56	22.6	---	---
0.995000	29.50	29.5	56	26.5	---	---
1.100000	30.40	29.5	56	25.6	---	---
3.580000	32.00	29.6	56	24.0	---	---
4.725000	29.60	29.6	56	26.4	---	---
14.360000	29.00	30.0	60	31.0	---	---
15.570000	29.60	30.1	60	30.4	---	---

MEASUREMENT RESULT: "MOBILE_fin AV"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.215000	31.60	29.6	53	21.4	---	---
0.475000	28.60	29.5	46	17.8	---	---
1.080000	25.50	29.5	46	20.5	---	---
1.960000	24.70	29.5	46	21.3	---	---
2.760000	26.60	29.6	46	19.4	---	---
4.545000	25.00	29.6	46	21.0	---	---
7.980000	26.20	29.7	50	23.8	---	---
24.360000	26.00	31.1	50	24.0	---	---

2.2.2 Radiated Emissions-FCC Part15.109

Ambient condition:

Temperature	Relative humidity	Pressure
23.2°C	42.1%	100.9kPa

Test Setup:

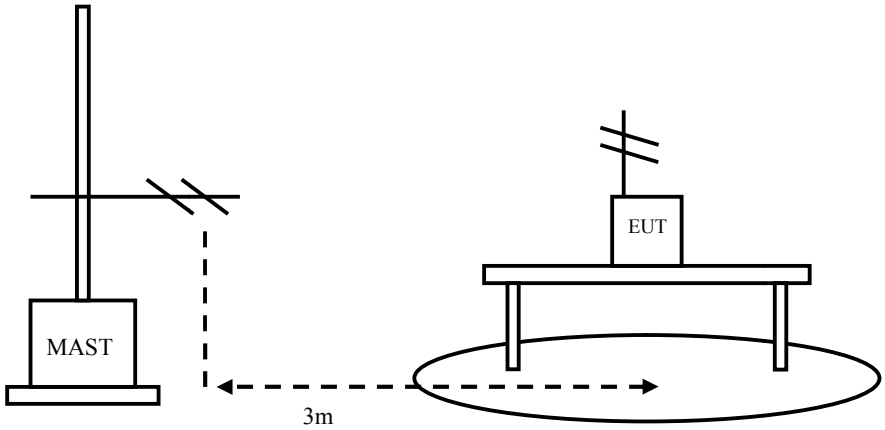


Figure 3

Test Procedure:

EUT+Laptop:
The EUT should be placed on a non-metallic table 80cm 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 to 4 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.

EUT+Charger:
The EUT should be placed on a non-metallic table 80cm 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 in idle 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 to 4 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 the A_{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

Test result:

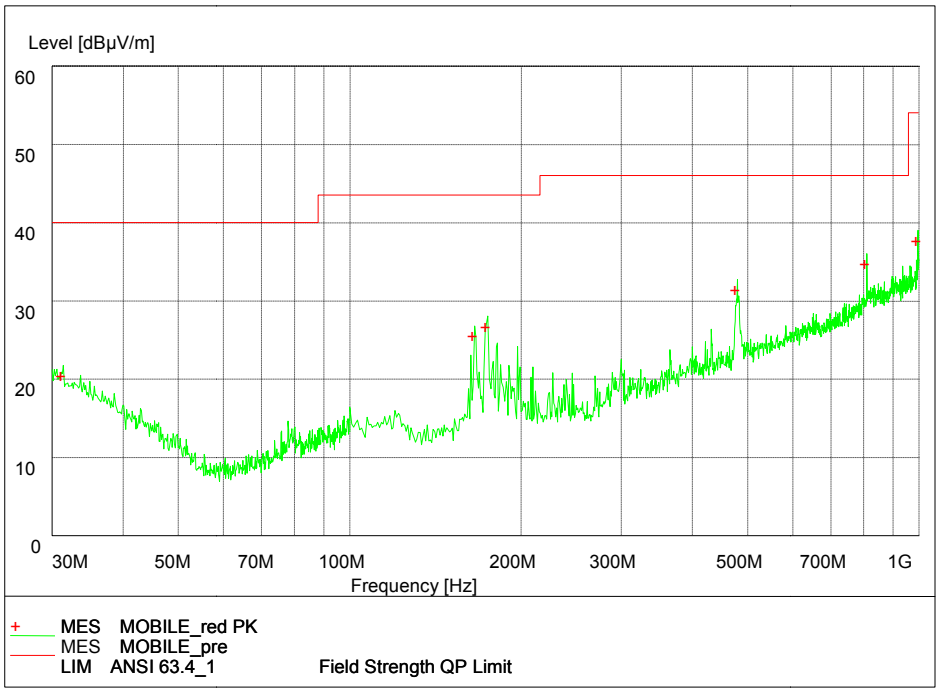
EUT+Laptop

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity
30.34	22.65	7.4	15.34	Vertical
163.98	28.01	10.8	16.71	Vertical
176.05	27.20	10.8	16.60	Vertical
480.43	32.64	12.9	19.20	Vertical
809.34	35.32	14.7	20.48	Vertical
993.46	39.53	14.8	24.60	Vertical

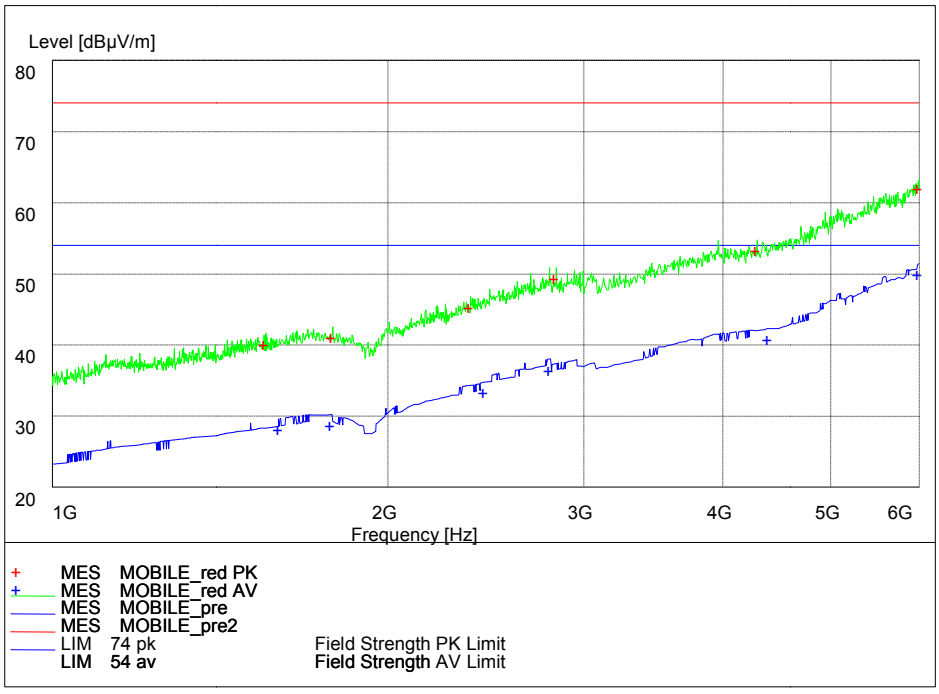
EUT+Charger

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity
71.94	29.8	8.8	21.00	Vertical
72.51	34.9	8.9	26.00	Vertical
73.77	33.9	9.0	24.90	Vertical
74.89	32.4	8.9	23.50	Vertical
75.59	33.7	8.8	24.90	Vertical
162.53	30.6	10.8	19.80	Vertical

EUT+Laptop:

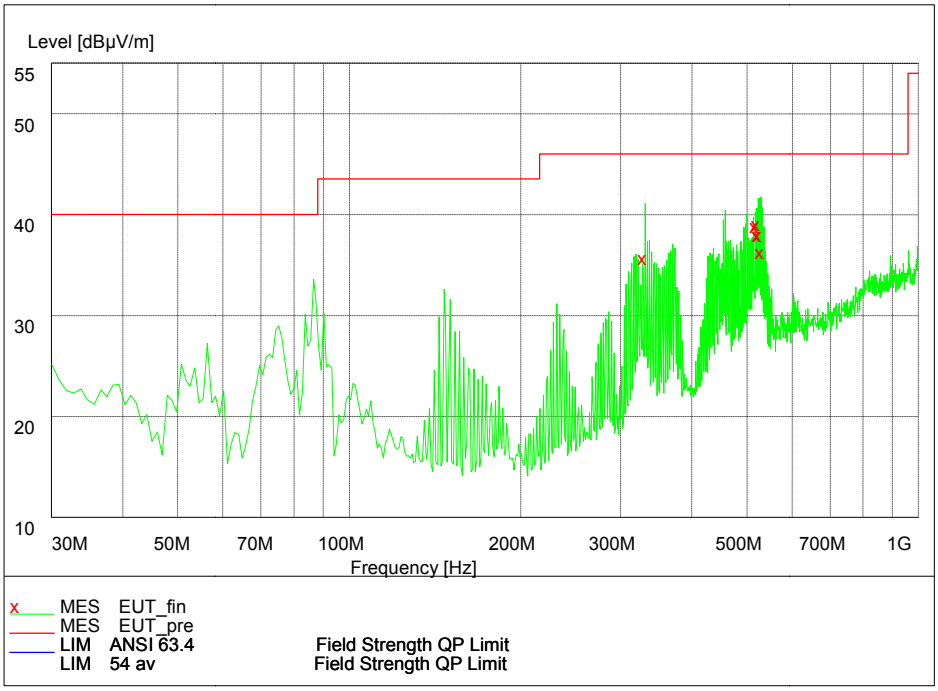


Pic6. Radiated emission (30MHz – 1GHz)

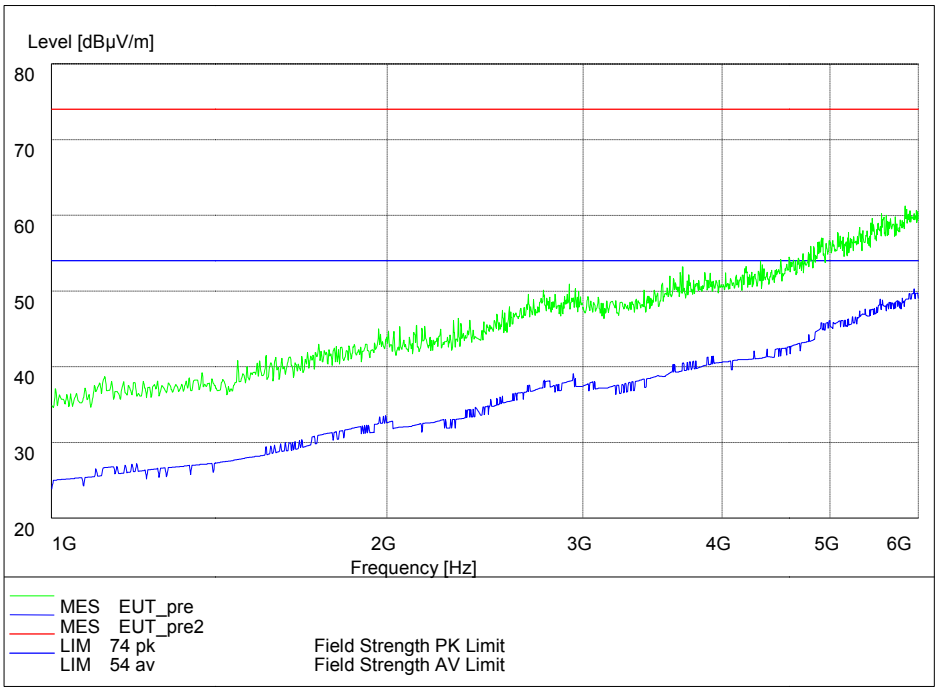


Pic7. Radiated emission (1GHz – 6GHz)

EUT+Charger::



Pic8. Radiated emission (30MHz – 1GHz)



Pic9. Radiated emission (1GHz – 6GHz)

2.3. List of test equipments

No.	Name/Model	Manufacturer	S/N	Calibration Due Date
1	23.18m×16.88m×9.60m Semi-Anechoic Chamber	FRANKONIA	-----	20th Aug. 2017
2	ESI 40 EMI 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	ESCS30 EMI test receiver	R&S	100029	20th Aug. 2017
6	HL562 Ultra 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

Appendix

Appendix1 Test Setup

Registration
No.910917

Appendix1 TEST SETUP

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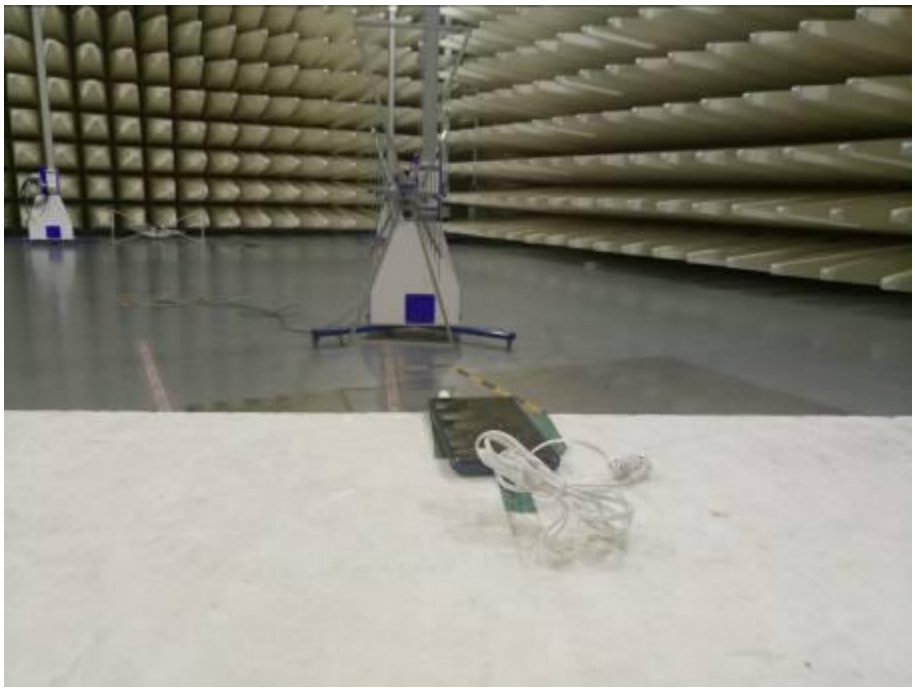
No.80 Beilishi Road Xicheng District Beijing, China

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

Appendix1 Test Setup

Radiated Emissions Test Setup（with laptop）



Radiated Emissions Test Setup (with charger)

Conducted Emissions Test Setup（with laptop）

Conducted Emissions Test Setup (with charger)