



TEST REPORT

No. 2011TAR027

for

ZTE Corporation

GSM Dual-Band GPRS Digital Mobile Phone

Model Name: ZTE-G R236m

FCC ID : Q78-GR236M

with

Hardware Version: GMABc

Software Version: ESFC-CN-ZTE8-P109A23SV1.0.0

Issued Date: 2011-02-14

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of TMC Beijing.

Test Laboratory:

DAR accreditation (DIN EN ISO/IEC 17025): No. DGA-PL-114/01-02

FCC 2.948 Listed: No.733176

IC O.A.T.S listed: No.6629A-1

TMC Beijing, Telecommunication Metrology Center of Ministry of Industry and Information Technology

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1. Test Laboratory

1.1. Testing Location

Company Name: TMC Beijing, Telecommunication Metrology Center of MIIT
Address: No 52, Huayuan beilu, Haidian District, Beijing, P. R. China
Postal Code: 100191
Telephone: 00861062304633
Fax: 00861062304633

1.2. Testing Environment

Normal Temperature: 15-35°C
Relative Humidity: 20-75%

1.3. Project data

Testing Start Date: Jan 28, 2011
Testing End Date: Jan 31, 2011

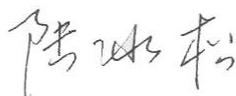
1.4. Signature



Qu Pengfei
(Prepared this test report)



Sun Xiangqian
(Reviewed this test report)



Lu Bingsong
Deputy Director of the laboratory
(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name: ZTE Corporation
Address /Post: #68 Zijin Hua Road, Nanjing, Jiangsu Province, P. R. China
City: Nan Jing
Postal Code: 210012
Country: China
Telephone: +86-25-52878232
Fax: +86-25-68897541

2.2. Manufacturer Information

Company Name: ZTE Corporation
Address /Post: #68 Zijin Hua Road, Nanjing, Jiangsu Province, P. R. China
City: Nan Jing
Postal Code: 210012
Country: China
Telephone: +86-25-52878232
Fax: +86-25-68897541

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	GSM Dual-Band GPRS Digital Mobile Phone
Model Name	ZTE-G R236m
FCC ID	Q78-GR236M
Extreme vol. Limits	3.5VDC to 4.2VDC (nominal: 3.7VDC)

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of Telecommunication Metrology Center of MIIT of People's Republic of China.

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version
N04	356720040001201	GMABc	ESFC-CN-ZTE8-P109A23SV1.0.0

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE used during the test

AE ID*	Description	SN
AE1	Battery	10051005043213948
AE2	Travel Adapter	/
AE3	Headset	/

AE1

Model	Li3709T42P3h483757-H
Manufacturer	ZTE
Capacitance	900mAh
Nominal Voltage	3.7V

AE2

Model	STC-A22O50I400M5-C
Manufacturer	RUIDE
Length of DC line	122cm

AE3

Model	ATE20101428
Manufacturer	ZTE
Length of DC line	140cm

*AE ID: is used to identify the test sample in the lab internally.

4. Reference Documents

4.1. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part 15, Subpart B	Radio frequency devices	July 10, 2008 Edition
ANSI C63.4	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	2003

5. LABORATORY ENVIRONMENT

Semi-anechoic chamber (23 meters×17meters×10meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω
Normalised site attenuation (NSA)	< ±3.2 dB, 10 m distance, from 30 to 1000 MHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 2000 MHz

Control room did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. =30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω

Conducted chamber did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω

Fully-anechoic chamber (6.8 meters×3.08 meters×3.53 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω
Uniformity of field strength	Between 0 and 6 dB, from 80 to 2000 MHz

6. SUMMARY OF TEST RESULTS

Abbreviations used in this clause:	
P	Pass
NA	Not applicable
F	Fail

Clause	List	Clause in FCC rules	Verdict
1	Radiated Emission	15.109(a)	P
2	Conducted Emission	15.107(a)	P

7. Test Equipments Utilized

NO.	Description	TYPE	SERIES NUMBER	MANUFACTURE	CAL DUE DATE
1	Test Receiver	ESCI	100344	R&S	2011-03-12
2	Test Receiver	ESCI	100766	R&S	2011-12-06
3	Test Receiver	ESI40	831564/002	R&S	2012-02-11
4	BiLog Antenna	VUL9163	9163-302	Schwarzbeck	2012-02-10
5	Signal Generator	SMB100A	102063	R&S	2011-03-05
6	LISN	ESH2-Z5	829991/012	R&S	2011-04-20
7	Universal Radio Communication Tester	CMU200	100680	R&S	2011-09-05
8	Dual-Ridge Waveguide Horn Antenna	3115	6914	EMCO	2011-3

ANNEX A: MEASUREMENT RESULTS

A.1 Radiated Emission (§15.109(a))

A.1.1 Method of measurement

The field strength of radiated emissions from the unintentional radiator (USB mode of MS and charging mode of MS) at a distance of 3 meters is tested. Tested in accordance with the procedures of ANSI C63.4 - 2003, section 8.3.

A.1.2 EUT Operating Mode:

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations. The MS is operating in the charging mode.

A.1.3 Measurement Limit

Frequency of emission (MHz)	Field strength (microvolts/meter)
30-88	100
88-216	150
216-960	200
Above 960	500

A.1.4 Test Condition

Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	100KHz/300KHz	5
1000-4000	1MHz/1MHz	15

A.1.5 Measurement Results

A "reference path loss" is established and the A_{Rpl} is the attenuation of "reference path loss", and including the gain of receive antenna and the path loss.

The measurement results are obtained as described below:

$$\text{Result} = P_{\text{Mea}} + A_{\text{Rpl}} = P_{\text{Mea}} + G_A + G_{\text{PL}}$$

Where

G_A : Receive Antenna Factor

G_{PL} : Cable Loss

P_{Mea} : The measurement result on receiver.

Charging Mode

Frequency(MHz)	Result(dBuV/m)	G_{PL} (dB)	G_A (dB)	P_{Mea} (dBuV/m)	Polarity
3462.926	51.70	-19.6	31.2	40.10	Horizontal
3480.962	51.69	-19.6	31.2	40.09	Horizontal
3563.126	51.02	-19.5	33.4	37.12	VERTICAL
3683.367	51.02	-19.5	33.4	37.12	Horizontal
3709.419	50.95	-19.4	33.4	36.95	VERTICAL
3991.984	50.95	-19.3	33.4	36.85	Horizontal

Charging Mode

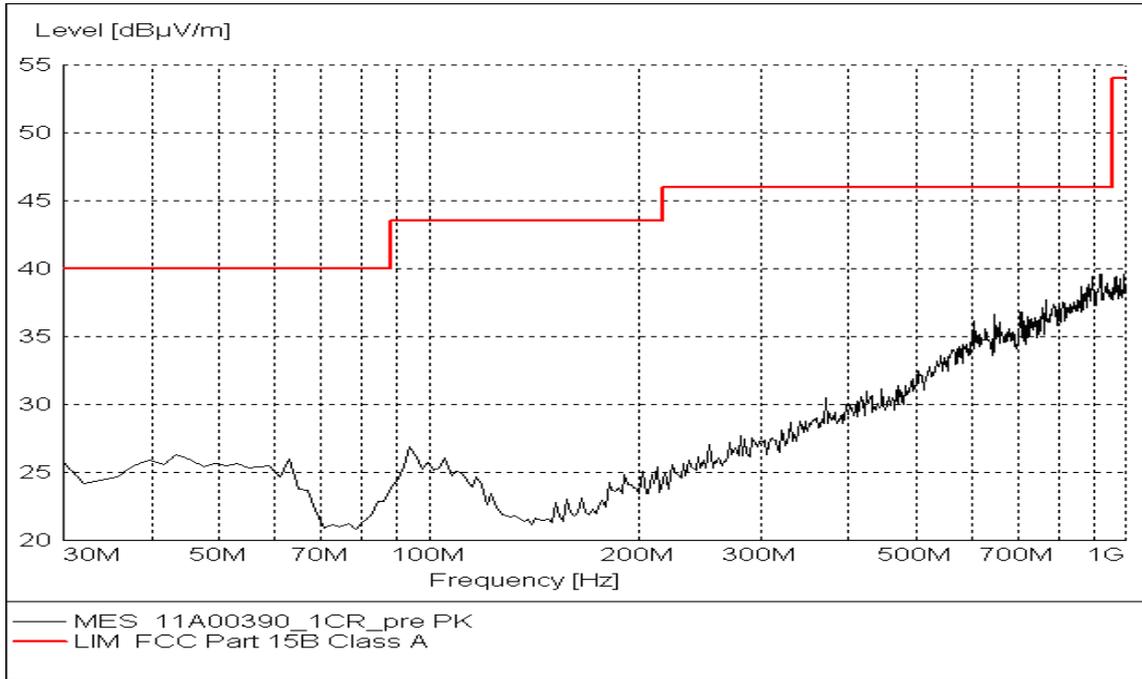


Figure A.1 Radiated Emission from 30MHz to 1GHz

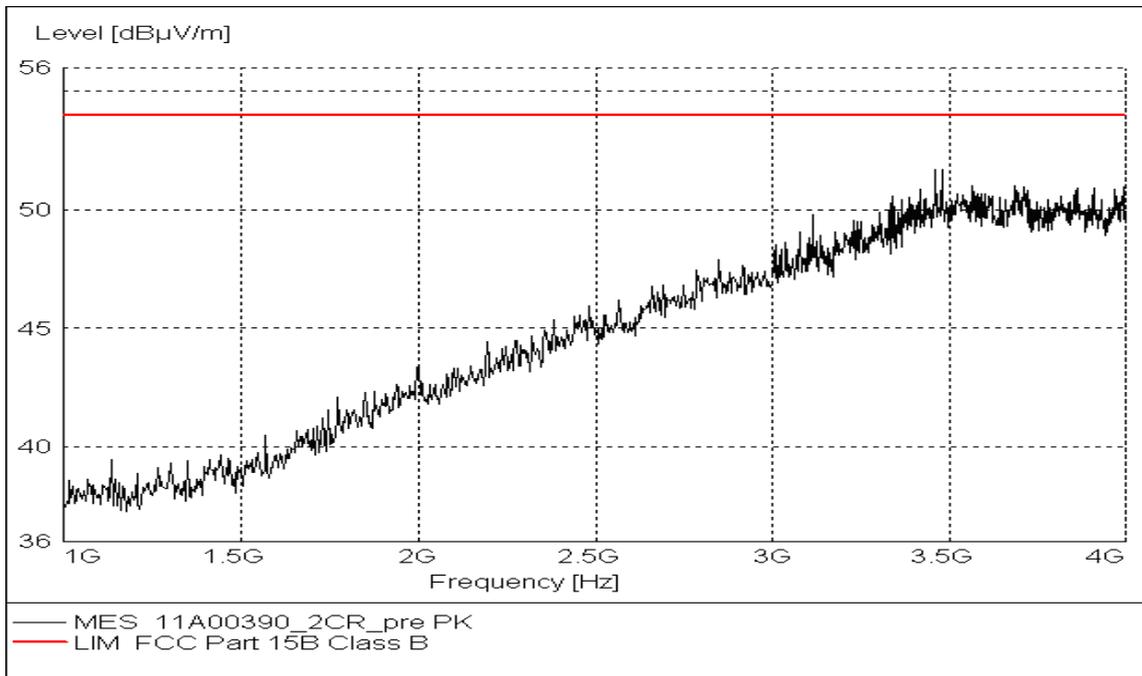


Figure A.2 Radiated Emission from 1GHz to 4GHz

A.2 Conducted Emission (§15.107(a))

A.2.1 Method of measurement

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. Tested in accordance with the procedures of ANSI C63.4 - 2003, section 7.2.

A.2.2 EUT Operating Mode:

The MS is operating in the charging mode.

A.2.3 Measurement Limit

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	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

A.2.4 Test Condition in charging mode

Voltage (V)	Frequency (Hz)
120	60

RBW	Sweep Time(s)
9kHz	1

A.2.5 Measurement Results Charging Mode

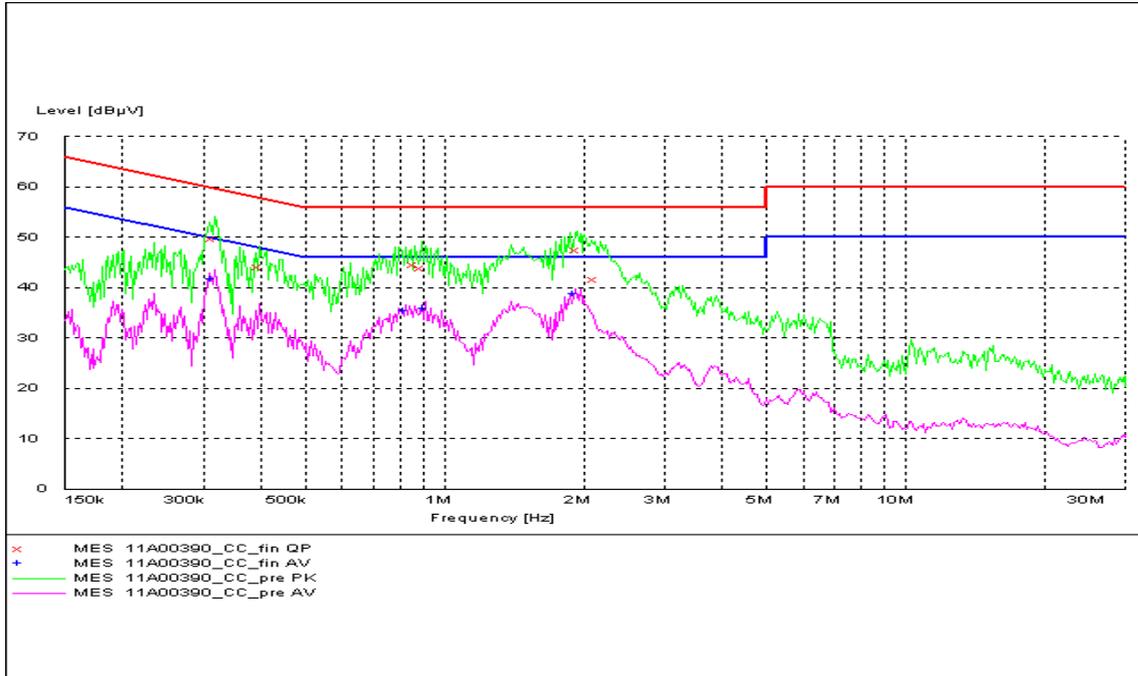


Figure A.3 Conducted Emission

MEASUREMENT RESULT: "11A00390_CC_fin QP"

Frequency MHz	Level dB µV	Transd dB	Limit dB µV	Margin dB	Line	PE
0.316369	49.80	10.1	60	10.0	L1	GND
0.397728	44.10	10.1	58	13.8	L1	GND
0.864277	44.60	10.1	56	11.4	L1	GND
0.890466	43.90	10.1	56	12.1	L1	GND
1.935015	47.40	10.1	56	8.6	L1	GND
2.123040	41.60	10.1	56	14.4	N	GND

MEASUREMENT RESULT: "11A00390_CC_fin AV"

Frequency MHz	Level dB µV	Transd dB	Limit dB µV	Margin dB	Line	PE
0.316369	41.60	10.1	50	8.2	L1	GND
0.822330	35.30	10.1	46	10.7	L1	GND
0.908364	35.70	10.1	46	10.3	L1	GND
1.915856	38.60	10.1	46	7.4	L1	GND

END OF REPORT