



MPE REPORT

No. 2013TAR877

for

ZTE CORPORATION

HSPA LGA Module

Model: MF206A

with

Hardware Version: MF206A-2.0.0

Software Version: BD_ATTMF206AV1.0.0B12

Issued Date: 2014-01-08

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:

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 bei road, Haidian District, Beijing,P.R.China
Postal Code: 100191
Telephone: 00861062304633
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1.2. Testing Environment

Normal Temperature: 15-35℃
Relative Humidity: 20-75%

1.3. Project data

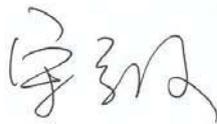
Project Leader: Xue Zhen
Testing Start Date: 2013-11-29
Testing End Date: 2014-01-08

1.4. Signature



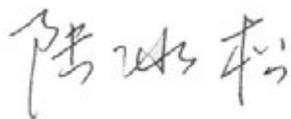
Xue Zhen

(Prepared this test report)



Song Chongwen

(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: ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan
District, Shenzhen, Guangdong, 518057, P.R.China
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Postal Code: 518057
Country: China
Telephone: 0086 21 68897541
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2.2. Manufacturer Information

Company Name: ZTE CORPORATION
Address /Post: ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan
District, Shenzhen, Guangdong, 518057, P.R.China
City: Shenzhen
Postal Code: 518057
Country: China
Telephone: 0086 21 68897541
Fax: 0086 21 61460600

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

3.1. About EUT

Description	HSPA LGA Module
Model	MF206A
UMTS Frequency Band	FDD Band I/Band II/Band V
GSM Frequency Band	EGSM900/DCS1800/GSM850/PCS1900
Power Class	EGSM900:4, DCS1800:1, GSM850:4, PCS1900:1 FDD Band I:3, FDD Band II:3, FDD Band V:3
GPRS Multislot Class	10
EGPRS Multislot Class	12
Extreme Temperature	-10/+55°C
Normal Voltage	3.8V
Extreme Low Voltage	3.4V
Extreme High Voltage	4.2V

3.2. Internal Identification of EUT

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
N08	356118040044737	MF206A-2.0.0	BD_ATTMF206AV1.0.0B12	2013-11-14
N09	356118040044711	MF206A-2.0.0	BD_ATTMF206AV1.0.0B12	2013-11-14
N11	356118040044646	MF206A-2.0.0	BD_ATTMF206AV1.0.0B12	2013-11-14

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

3.3. Internal Identification of AE

AE ID*	Description	SN
AE1	RF cable	---

*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.

ANSI C95.1–1999: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

FCC KDB publication 447498 D01 General 1 RF Exposure Guidance v05r01: Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

5. RF Exposure Limit

Limits for General Population/Uncontrolled Exposure in §1.1310

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz *Plane-wave equivalent power density

6. Friis Formula

Friis transmission formula : $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$

where

P_d = power density in **W/m²**

P_{out} = output power to antenna in **W**

G = gain of antenna in linear scale

π = **3.1416**

R = distance between observation point and center of the radiator in **m**

P_d is the limit of MPE. If we know the maximum Gain of the antenna and the total power input to the antenna, through the calculation, we will know the MPE value at distance 20cm.

7. Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as Mobile Device.

8. Test Results

8.1. the maximum antenna gain

The maximum antenna gain for external antenna is

GSM 850: 3dBi

GSM1900: 5dBi

UMTS 850: 3dBi

UMTS 1900: 5dBi

8.2. Output Power Into Antenna & RF Exposure value at distance 20cm

Conducted Output power calculation:

mode	timeslot	Duty cycle	Peak Output Power (dBm)	Average Output Power(dBm)
GSM 850	1 slot	12.5%	31.60	22.57
GPRS 850	1 slot	12.5%	31.65	22.62
GPRS 850	2 slots	25%	29.14	23.1
EGPRS 850	1 slot	12.5%	25.31	16.28
EGPRS 850	2 slots	25%	23.27	17.25
EGPRS 850	3 slots	37.5%	21.33	17.07
EGPRS 850	4 slots	50%	24.75	21.73
GSM 1900	1 slot	12.5%	29.30	20.27
GPRS 1900	1 slot	12.5%	29.31	20.28
GPRS 1900	2 slots	25%	26.92	20.90
EGPRS 1900	1 slot	12.5%	25.08	16.05
EGPRS 1900	2 slots	25%	23.07	17.05
EGPRS 1900	3 slots	37.5%	21.13	16.87
EGPRS 1900	4 slots	50%	24.55	21.54
UMTS 850	/	100%	23.14	23.14
UMTS 1900	/	100%	23.33	23.33

So the worst cases for each frequency band are:

Frequency band	Average Output Power(dBm)	Antenna gain(dBi)	Power Density (mW/cm ²)	Limit of Power Density (mW/cm ²)
GSM 850	23.10	3	0.12	0.57
GSM 1900	21.54	5	0.14	1
UMTS 850	23.14	3	0.12	0.57
UMTS 1900	23.33	5	0.21	1

So the limit is kept.

END OF REPORT