



MPE REPORT

Report No.: SRMC2010-H024-E0043

Product Name: GSM/GPRS/EDGE/

WCDMA/HSDPA/HSUPA Module

Product Model: MF210V

Applicant: ZTE Corporation

Manufacture: ZTE Corporation

Specification: FCC Part2.1093

OET Bulletin 65 Supplement C[June 2001]

FCC ID: Q78-ZTEMF210V

The State Radio Monitoring Center

State Radio Spectrum Monitoring and Testing Center

No.80 Beilishi Road Xicheng District Beijing, China

Tel: 86-10-68009202 Fax: 86-10-68009205

CONTENTS

1. General information	3
1.1 Notes of the test report	3
1.2 Information about the testing laboratory.....	3
1.3 Applicant's details	3
1.4 Manufacturer's details.....	3
1.5 Application details	4
1.6 Reference specification.....	4
1.7 Information of EUT	4
1.7.1 General information.....	4
1.7.2 EUT details	5
1.7.3 Auxiliary equipment details.....	5
2. Test information	6
2.1 Summary of the calculation results	6
2.2 Calculation result	7
2.2.1 Maximum Permissible Exposure (MPE)	7

1. General information

1.1 Notes of the test report

The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written permission of The State Radio Monitoring Center.

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
State Radio Spectrum Monitoring and Testing Center
Address: No.80 Beilishi Road, Xicheng District, Beijing China
City: Beijing
Country or Region: China
Contacted person: Wang Junfeng
Tel: +86 10 68009181 +86 10 68009202
Fax: +86 10 68009195 +86 10 68009205
Email: wangjf@srrc.org.cn

1.3 Applicant's details

Company: ZTE Corporation
Address: 10# TangYan Road South, Hi-Tech Industrial Park, 710065
City: Xi'an
Country or Region: P.R.China
Grantee Code: Q78
Contacted person: Wang Lei
Tel: +86-029-88724011
Fax: +86-029-88723249
Email: wang.lei57@zte.com.cn

1.4 Manufacturer's details

Company: ZTE Corporation
Address: Zhongxing Bldg, Hi-Tech Park, NanShan, 518057
City: Shenzhen
Country or Region: P.R.China
Grantee Code: Q78
Contacted person: Li Dezi
Tel: +86-021-68895196
Fax: +86-021-50801070
Email: li.dezi@zte.com.cn

1.5 Application details

Date of reception of test sample: 23th Apr 2010
 Date of test: 29th Apr 2010 to 8th Jun 2010

1.6 Reference specification

FCC Part2.1093, OET Bulletin 65 Supplement C [June 2001]

1.7 Information of EUT

1.7.1 General information

Name of EUT	GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Module
FCC ID	Q78-ZTEMF210V
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 Band II:24.0dBm WCDMA Band V:24.0dBm
E.R.P. & E.I.R.P.	E.R.P.: 28.2dBm E.I.R.P.: 25.5dBm
Modulation type	GSM/GPRS:GMSK EDGE:8PSK WCDMA:BPSK
Emission Designator	GSM:300KGXW GPRS/EDGE:300KG7W WCDMA:4M50F9W
Duplex mode	FDD
Duplex spacing	GSM850/WCDMA Band V:45MHz PCS1900/WCDMA Band II:80MHz
Antenna type	External
Power Supply	USB docking card
Rated Power Supply Voltage	3.3V
Extreme Temperature	Lowest: -30°C Highest: +50°C
Extreme Voltage	Minimum: 3.2V Maximum: 3.6V
HW Version	MF210V-1.0.0
SW Version	BD_MF210VV0.0.0B01

1.7.2 EUT details

Name	Model	IMEI
GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA Module	MF210V	352545040000200

1.7.3 Auxiliary equipment details

Equipment	USB docking card
Manufacturer	ZTE Corporation
Model Number	-----

Equipment	Notebook
Manufacturer	IBM
Model Number	T23

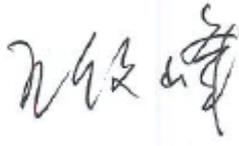
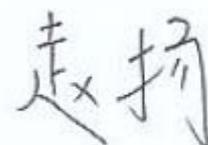
2. Test information

2.1 Summary of the calculation results

No.	Test case	FCC reference	Verdict
1	MPE Calculation	FCC Part2.1093, OET Bulletin 65 Supplement [June 2001]	Pass

*Note: The device MF210V (FCC ID: Q78-ZTEMF210V) is designed as module to be installed in other devices. This device is to be used only for fixed and mobile applications. If the final product after integration is intended for portable use, a new application and FCC is required.

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20cm from all the persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

This Test Report Is Issued by: Mr. Song Qizhu, Director of the test lab 	Checked By: 
Tested By: 	Issued date: 2010.06.11

2.2 Calculation result

2.2.1 Maximum Permissible Exposure (MPE)

Limit:

FCC LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

(A) Limits for Occupational/Controlled Exposure

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)
0.3-3.0	614	1.63	100*	6
3.0-30	1842/f	4.89/f	(900/f ²) *	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

(B) Limits for General Population/Uncontrolled Exposure

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/f ²)*	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

Calculation procedure:

In accordance with 47CFR FCC Part 2.1091, the product has been defined as a mobile device where a distance of 0.2m normally can be maintained between the user and product.

Calculation formula:

$$\text{Power Density: } P_d (\text{W/m}^2) = E^2/377$$

$$E (\text{V/m}) = (30 \cdot P \cdot G)^{0.5} / d$$

E: Electric Field Strength (V/m)

P: Peak RF Output Power (W)

G: Antenna Numeric Gain (Numeric)

d: Separation Distance Between the Radiator and Human Body (m)

So the calculation formula can be changed as:

$$P_d = (30 * P * G) / (377 * d^2)$$

Calculation result:

GSM850:

Channel No.	Effective Radiated Power (E.R.P.) (mW)	Power Density (S) (mW/cm2)	Limit of Power Density (S) (mW/cm2)	Verdict
128	645.6	0.2106	0.549	Pass
189	660.7	0.2156	0.558	Pass
251	645.6	0.2106	0.566	Pass

PCS1900:

Channel No.	Effective Isotropic Radiated Power (E.I.R.P.) (mW)	Power Density (S) (mW/cm2)	Limit of Power Density (S) (mW/cm2)	Verdict
512	354.8	0.0706	1.0	Pass
661	346.7	0.0690	1.0	Pass
810	331.1	0.0659	1.0	Pass

WCDMA Band V:

Channel No.	Effective Radiated Power (E.R.P.) (mW)	Power Density (S) (mW/cm2)	Limit of Power Density (S) (mW/cm2)	Verdict
4132	39.8	0.0130	0.551	Pass
4183	38.0	0.0124	0.558	Pass
4233	38.9	0.0127	0.564	Pass

WCDMA Band II:

Channel No.	Effective Isotropic Radiated Power (E.I.R.P.) (mW)	Power Density (S) (mW/cm2)	Limit of Power Density (S) (mW/cm2)	Verdict
9262	38.0	0.0076	1.0	Pass
9400	36.3	0.0072	1.0	Pass
9538	37.2	0.0074	1.0	Pass