

MPE REPORT

REPORT NUMBER: I 10GC7566-FCC-MPE

ON

Type of Equipment: GSM fixed wireless phone

Type of Designation: ZTE WP658

Manufacturer: ZTE Corporation

ACCORDING TO

FCC CFR 47, Part 2, FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

Section 2.1091 Radiofrequency radiation exposure evaluation: mobile devices

China Telecommunication Technology Labs.

Month date, year

Oct, 15, 2010

Signature

A handwritten signature in black ink, appearing to be 'He Guili'.

He Guili
Director

FCC Part 2.1091
Equipment: ZTE WP658

REPORT NO.: I10GC7566-FCC-MPE

FCC ID: WYPP25B005AA

Report Date: 2010-10-15

Test Firm Name: China Telecommunication Technology Labs

Registration Number: 840587

Statement

The report is a Maximum Permissible Exposure evaluation report according to FCC CFR part 2.1091.

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1 General Information

1.1 Notes

The MPE report was carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Part 2.1091.

The test results of this report relate exclusively to the item(s) tested as specified in section 2.

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CTTL TEST REPORT

1.2 Editor

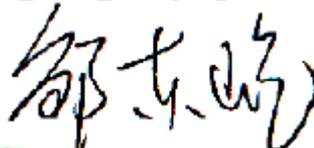
Editor of this test report:

Name: Li Guoqing
Position: Engineer
Department: Department of EMC test
Date: 2010-10-15
Signature:



Technical responsibility for area of testing:

Name: Zou Dongyi
Position: Manager
Department: Department of EMC test
Date: 2010-10-15
Signature:



1.3 Testing Laboratory information

1.3.1 Location

Name: China Telecommunication Technology Labs.
Address: No. 11, Yue Tan Nan Jie, Xi Cheng District
BEIJING
P. R. CHINA, 100045
Tel: +86 10 68094053
Fax: +86 10 68011404
Email: emc@chinattl.com

1.3.2 Details of accreditation status

Accredited by: DATech Deutsche Akkreditierungsstelle Technik in der
TGA GmbH (German Accreditation Body for Technology
in the TGA)
Lab number: DA7130
DAR Registration
number: DAT-PL-162/04-01
Standard: ISO/IEC 17025:2005

1.3.3 Test location, where different from section 1.3.1

Name: -----
Address: -----

1.4 Details of applicant or manufacturer

1.4.1 Applicant

Name: ZTE Corporation
Address: ZTE Plaza, Keji Road South, Hi-Tech Industrial Park,
Nanshan District, Shenzhen, Guangdong, 518057,
P.R.China
Country: P.R.China
Telephone: 86-21-68895196
Fax: 86-21-68895196
Contact: zhaoyang
Telephone: 86-21-68895196
Email: zhaoyang@zte.com.cn

1.4.2 Manufacturer (if different from applicant in section 1.4.1)

Name: --
Address: --

1.4.3 Manufactory (if different from applicant in section 1.4.1)

Name: --
Address: --

2 Test Item

2.1 General Information

Manufacturer: ZTE Corporation
 Name: GSM fixed wireless phone
 Model Number: ZTE WP658
 Serial Number: --
 Production Status: Product
 Receipt date of test item: 2010-09-13

2.2 Outline of EUT

EUT is a GSM850/ PCS1900 Dual-band Terminal Equipment. It supports GSM mode, with the frequency range of 824 MHz to 849 MHz for GSM band 850 and 1 850 MHz to 1 910 MHz for GSM band 1900. Its modulation type is GMSK.

2.3 Modifications Incorporated in EUT

The EUT has not been modified from what is described by the brand name and unique type identification stated above.

2.4 Equipment Configuration

Equipment configuration list:

Item	Generic Description	Manufacturer	Type	Serial No.	Remarks
A	fixed wireless phone	ZTE Corporation	ZTE WP658	--	None
B	Battery	ZTE Corporation	Ni3612t30P3S5 34416	--	None
D	Earphone	--	--	--	None
E	Antenna	ZTE Corporation	--	--	None

Cables:

Item	Cable Type	Manufacturer	Length	Shield	Quantity	Remarks
1	DC cable on Adapter	--	--	--	--	None

Note: the EUT has no earphone.

2.5 Other Information

HW Version: --

SW Version: --

FCC Part 2.1091
Equipment: ZTE WP658

REPORT NO.: I10GC7566-FCC-MPE

Antenna information (provided by applicant):
Typical Antenna Gain: 2dBi

3 Summary of Results

A brief summary of the tests carried out is shown as following.

Specification Clause	Name of Test	Result
2.1091	MPE	Pass
Note: --		

TTL Test Report

4 Results

4.1 Applicable Standards

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

(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 Times E ² , H ² or S [minutes]
0.3 – 3.0	614	1.63	(100)*	6
3.0 – 30	1824/f	4.89/f	(900/f)*	6
30 – 300	61.4	0.163	1.0	6
300 – 1500	--	--	F/300	6
1500 - 100000	--	--	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 Times 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)*	30
30 – 300	27.5	0.073	0.2	30
300 – 1500	--	--	F/1500	30
1500 - 100000	--	--	1.0	30

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

For the DUT, the limits for General Population / Uncontrolled Exposure are applicable.

4.2 Conducted RF Power Output

Test Results for GSM mode:

ARFCN	Peak output power 1 slot [dBm]
128	33.16
190	32.29
251	31.28
512	28.67
661	27.74
810	27.54

Summary:

Time slot No.	Frequency band	Maximum power (dBm)	Channel	Frequency (MHz)	Duty cycle
1	<1 GHz	33.16	128	824.2	0.125
	>1 GHz	28.67	512	1850.2	0.125

4.3 Calculation Information

From the antenna specifications provided by the applicant, the typical antenna gain is 2 dBi.

So for conservative evaluation consideration, only maximum power of each frequency band based on the tighter limits respectively are used to calculate the boundary power density.

Based on the FCC OET Bulletin 65 Supplement C and 47 CFR §2.1091, the DUT is evaluated as a mobile device.

4.4 Evaluation Result

(1) Operation in cellular band (824 – 849 MHz):

The peak conducted output power of DUT in Cellular band is 33.16 dBm for 1 slot. Take the worst case as an example, in which an antenna with 2 dBi gain is used. The resulted power density at a distance of 20 cm can be deducted as follows:

For 1 slot:

$$\text{EIRP} = 33.16 + 2 = 35.16 \text{ dBm} = 3280 \text{ mW}$$

$$\text{Power Density} = \text{EIRP} * \text{Duty Cycle} / (4 \pi R^2)$$

$$= 3280 * 0.125 / (4 * \pi * 20^2) = 0.08 \text{ mW/cm}^2$$

where DutyCycle is 0.125 and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

$$\text{MPE limit} = 824 / 1500 = 0.55 \text{ mW/cm}^2$$

As we can see the resulted power density is below the MPE limit, therefore the DUT in Cellular band is compliant with the FCC rules on RF exposure.

(2) Operation in PCS band (1850 – 1910 MHz):

The peak conducted output power of DUT in PCS band is 28.67 dBm for 1 slot. Take the worst case as an example, in which an antenna with 2 dBi gain is used. The resulted ERP can be expressed as follows:

For 1 slot:

$$\text{ERP} = 28.67 + 2 - 2.15 = 28.52 \text{ dBm (0.71W)} < 3 \text{ W}$$

The FCC OET Bulletin 65 Supplement C states that mobile devices identified in 47 CFR §2.1091 that operate at frequencies above 1.5 GHz with an ERP of 3.0 watts or more are required to perform routine environmental evaluation for RF exposure prior to equipment authorization or use; otherwise, they are categorically excluded.

As we can see this resulted ERP is below 3 W, therefore routine environmental evaluation for RF exposure prior to equipment authorization or use for the DUT in PCS band is categorically excluded.

Note: The tighter limits are used for low and high band in above tables.

The End of this Report