



# TEST REPORT

No. 2009TAR122

for

**ZTE CORPORATION**

**HSPA+ USB Stick**

**Type : K4505-Z**

**FCC ID :Q78-K4505-Z**

**with**

**Hardware Version: P680A2-3.0.0**

**Software Version: BD\_P680A2V1.0.0B04**

**Issued Date: Sep 25th, 2009**

**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. DAT-P-114/01-01**

**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

No. 52, Huayuan Bei Road, Haidian District, Beijing, P. R. China 100083.

Tel:+86(0)10-62303288-2105, Fax:+86(0)10-62304793 Email:welcome@emcite.com. www.emcite.com

©Copyright. All rights reserved by TMC Beijing.

## **CONTENTS**

1. TEST LABORATORY.....	3
1.1. TESTING LOCATION .....	3
1.2. TESTING ENVIRONMENT .....	3
1.3. PROJECT DATA.....	3
1.4. SIGNATURE .....	3
2. CLIENT INFORMATION.....	4
2.1. APPLICANT INFORMATION.....	4
2.2. MANUFACTURER INFORMATION.....	4
3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT (AE) .....	5
3.1. ABOUT EUT .....	5
3.2. INTERNAL IDENTIFICATION OF EUT USED DURING THE TEST .....	5
4. REFERENCE DOCUMENTS .....	5
4.1. REFERENCE DOCUMENTS FOR TESTING.....	5
5. LABORATORY ENVIRONMENT .....	5
6. SUMMARY OF TEST RESULTS.....	6
7. TEST EQUIPMENTS UTILIZED.....	7
ANNEX A: MEASUREMENT RESULTS .....	8

## **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: 100083  
Telephone: 00861062303288  
Fax: 00861062304793

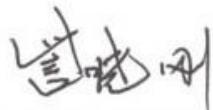
### **1.2. Testing Environment**

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

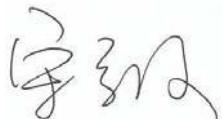
### **1.3. Project data**

Testing Start Date: Sep 3th, 2009  
Testing End Date: Sep 18th, 2009

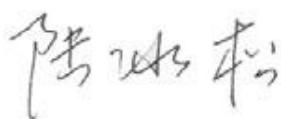
### **1.4. Signature**



Zi Xiaogang  
(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  
City: Shenzhen  
Postal Code: 518057  
Country: P.R.China  
Telephone: 0086 21 68895196  
Fax: 0086 21 61460600

### **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: P.R.China  
Telephone: 0086 21 68895196  
Fax: 0086 21 61460600

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

#### **3.1. About EUT**

Description	HSPA+ USB Stick
Model Name	K4505-Z
FCC ID	Q78-K4505-Z
Power supply	USB

Note: Photographs of EUT are shown in ANNEX A of this test report. Components list, please refer to documents of the manufacturer; it is also included in the original test record of Telecommunication Metrology Center of MII 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
N20	/	P680A2-3.0.0	BD_P680A2V1.0.0B04

### **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	V 10.1.07
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**

<b>Abbreviations used in this clause:</b>	
P	Pass
NA	Not applicable
F	Fail

Clause	List	Clause in FCC rules	Clause in IC rules	Verdict
1	Radiated Emission	15.109(a)	5.3	P
2	Conducted Emission	15.107(a)	5.5	P

## 7. Test Equipments Utilized

NO.	Description	TYPE	SERIES NUMBER	MANUFACTUR E	CAL DUE DATE
1	Test Receiver	ESS	847151/015	R&S	2009-10-30
2	Test Receiver	ESI40	831564/002	R&S	2010-2-11
3	BiLog Antenna	3142B	9908-1403	EMCO	2010-1-16
4	BiLog Antenna	VUL9163	9163 175	Schwarzbeck	2010-9-19
5	Signal Generator	SMT06	831285/005	R&S	2009-12-26
6	Signal Generator	SMP04	100070	R&S	2010-4-20
7	LISN	ESH2-Z5	829991/012	R&S	2010-9-13
8	Spectrum Analyzer	FSU26	200030	R&S	2010-6-18
9	Universal Radio Communication Tester	CMU200	100680	R&S	2010-8-23
10	Dual-Ridge Waveguide Horn Antenna	3115	9906-5827	EMCO	2010-3
11	Dual-Ridge Waveguide Horn Antenna	3116	2663	EMCO	2010-3
12	Dual-Ridge Waveguide Horn Antenna	3116	2661	EMCO	2010-3
13	Climatic chamber	SH-241	92003546	ESPEC	2010-5-15
14	PC	OPTIPLEX 755	3908243625	DELL	N/A
15	Monitor	E178FPc	CN-OWR979-641 80-7AJ-D2MS	DELL	N/A
16	Printer	DeskJet D2368	TH72E12G7Q	HP	N/A
17	Keyboard	L100	CN0RH65965890 7ATOI40	DELL	N/A
18	Mouse	VR-301	6927225500198	XINGYU	N/A

## **ANNEX A: MEASUREMENT RESULTS**

### **A.1 Radiated Emission (§15.109(a))**

#### **A.1.1 Method of measurement**

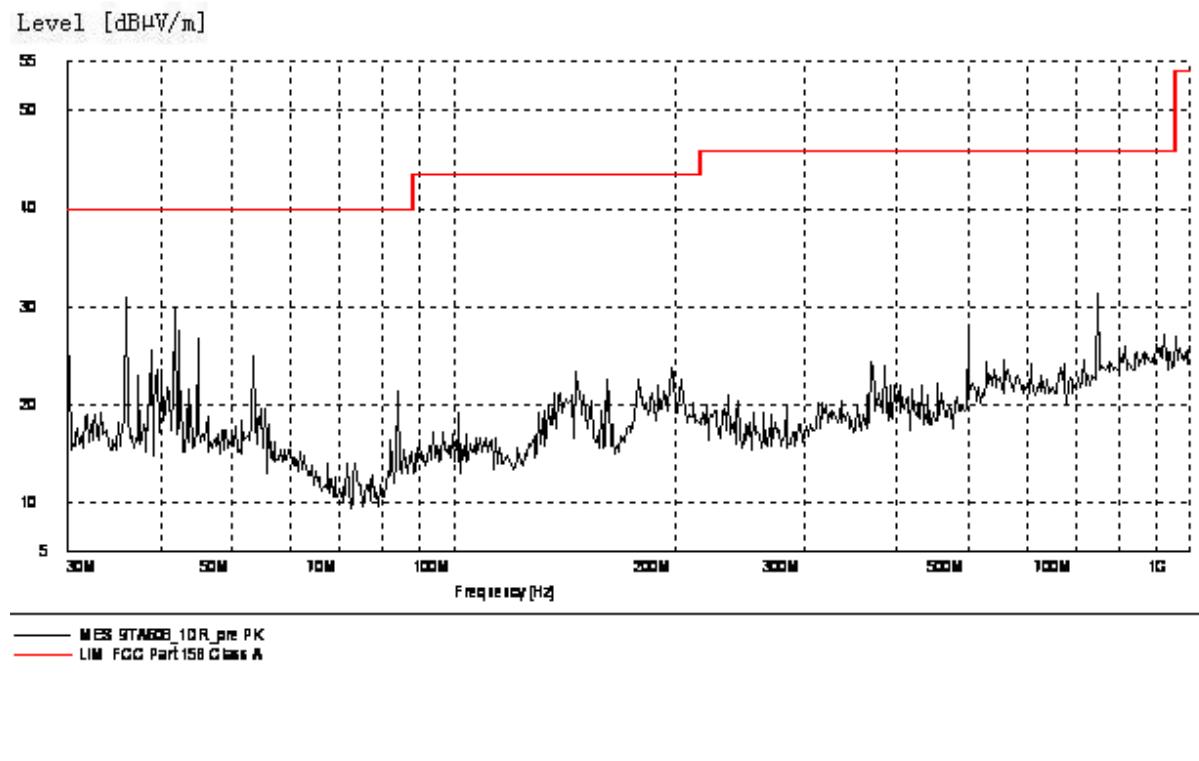
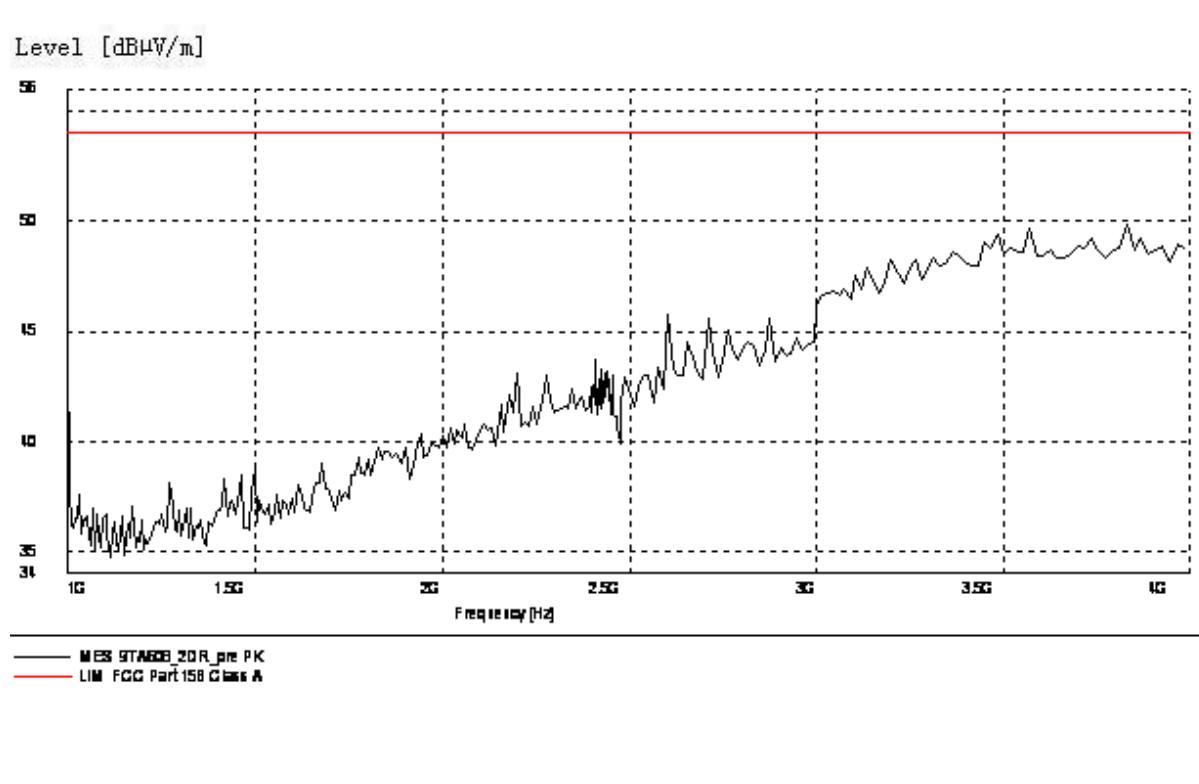
The field strength of radiated emissions from the unintentional radiator (USB mode) at a distance of 3 meters is tested. Tested in accordance with the procedures of ANSI C63.4 – 2003, section 8.3. The test set-up please refers to Annex C.1.

#### **A.1.2 EUT Operating Mode:**

The MS is operating in the USB mode. During the test MS is connected to a PC via a USB cable in the case of USB mode. The model of the PC is DELL OPTIPLEX 755, and the serial number of the PC is 3908243625. The software is used to let the PC keep on copying data to MS, reading and erasing the data after copy action was finished.

#### **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 Measurement Results****USB 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 150kHz to 30MHz shall not exceed the limits. Tested in accordance with the procedures of ANSI C63.4 – 2003, section 7.2. The test set-up please refers to Annex C.2.

**A.2.2 EUT Operating Mode:**

The MS is operating in the USB mode. During the test MS is connected to a PC via a USB port in the case of USB mode. The model of the PC is DELL OPTIPLEX 755, and the serial number of the PC is 3908243625. The software is used to let the PC keep on copying data to MS, reading and erasing the data after copy action was finished.

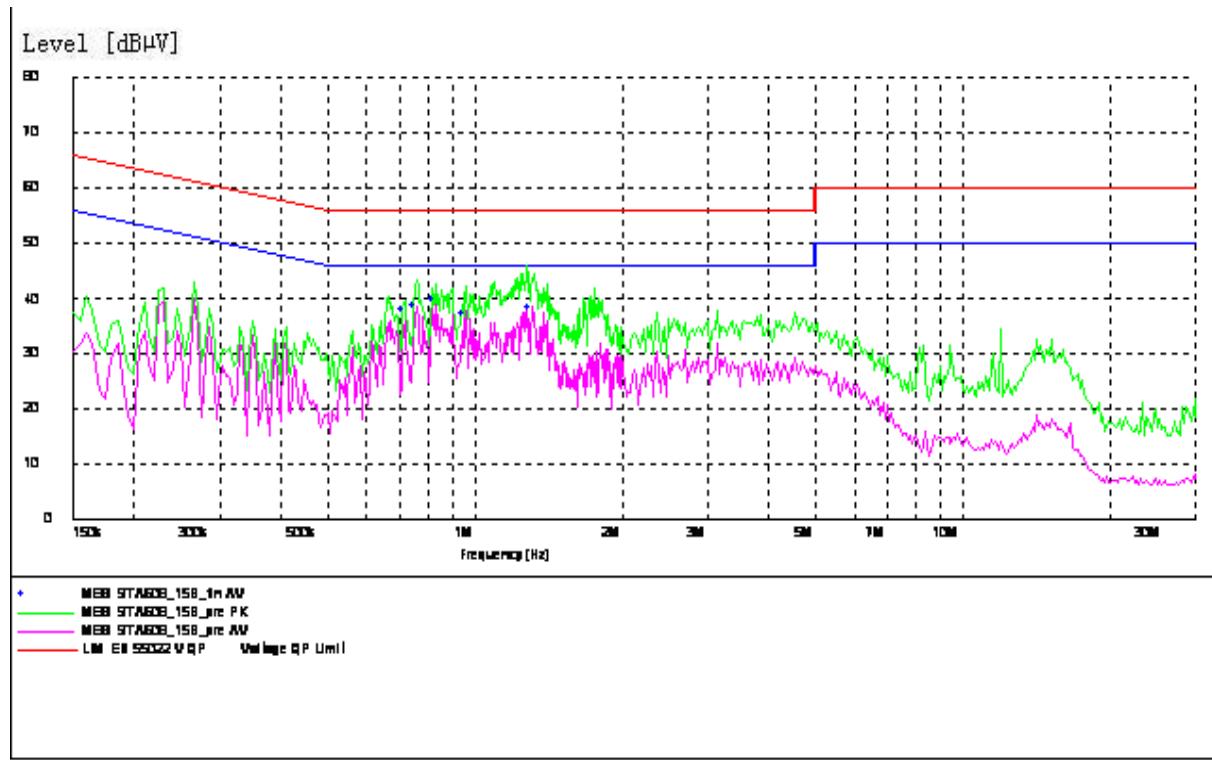
**A.2.3 Measurement Limit**

Frequency of emission (MHz)	Conducted limit (dB $\mu$ 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)
110	60

**A.2.4 Measurement Results****USB Mode****Figure A.3 Conducted Emission****MEASUREMENT RESULT: "9TA608\_15B\_fin AV"**

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dB $\mu$ V	dB	dB $\mu$ V	dB		
0.720000	38.00	10.1	46	8.0	N	FLO
0.760000	38.50	10.1	46	7.5	N	FLO
0.835000	39.90	10.1	46	6.1	N	FLO
0.960000	37.20	10.1	46	8.8	L1	FLO
1.310000	38.40	10.1	46	7.6	L1	FLO

**\*\*\*END OF REPORT\*\*\***