



# TEST REPORT

No. 2010TAR461

for

**ZTE CORPORATION**

**GSM Dual-band GPRS Digital Mobile Phone**

**Model Name: Movistar Pulse**

**FCC ID : Q78-MOVISTARPULSE**

with

**Hardware Version: g8qA**

**Software Version: SE-PE-TM8-P103D10SV1.0.1**

**Issued Date: 2010-12-06**

**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

No. 52, Huayuan Bei Road, Haidian District, Beijing, P. R. China 100191

Tel:+86(0)10-62304633 , Fax:+86(0)10-62304633 Email:welcome@emcite.com. www.emcite.com

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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℃  
Relative Humidity: 20-75%

### 1.3. Project data

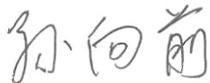
Testing Start Date: Nov 21,2010  
Testing End Date: Nov 22,2010

### 1.4. Signature



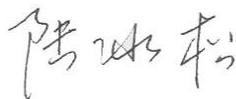
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**Zi Xiaogang**  
**(Prepared this test report)**



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**Sun Xiangqian**  
**(Reviewed this test report)**



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**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: China  
Telephone: +86-21-68897541  
Fax: +86-21-50801070

### **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: +86-21-68897541  
Fax: +86-21-50801070

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

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

Description	GSM Dual-band GPRS Digital Mobile Phone
Model Name	Movistar Pulse
FCC ID	Q78-MOVISTARPULSE
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 MII of People's Republic of China.

#### **3.2. Internal Identification of EUT used during the test**

<b>EUT ID*</b>	<b>SN or IMEI</b>	<b>HW Version</b>	<b>SW Version</b>
N02	356094040000039	g8qA	SE-PE-TM8-P103D10SV1.0.1

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

#### **3.3. Internal Identification of AE used during the test**

<b>AE ID*</b>	<b>Description</b>	<b>SN</b>
AE1	Battery	/
AE2	Travel Adapter	/
AE3	Headset	/

##### AE1

Model	Li3710T42P3h553457
Manufacturer	ZTE
Capacitance	1000mAh
Nominal Voltage	3.7V

##### AE2

Model	STC-A22O50I700M5-C
Manufacturer	RUIDE
Length of DC line	180cm

##### AE3

Model	HMZ6-mU5
Manufacturer	ZTE

\*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.

<b>Reference</b>	<b>Title</b>	<b>Version</b>
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

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

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

## 7. Test Equipments Utilized

NO.	Description	TYPE	SERIES NUMBER	MANUFACTURER	CAL DUE DATE
1	Test Receiver	ESS	847151/015	R&S	2011-10-29
2	Test Receiver	ESI40	831564/002	R&S	2011-2-10
3	BiLog Antenna	3142B	9908-1403	EMCO	2011-1-15
4	BiLog Antenna	VUL9163	9163 175	Schwarzbeck	2011-9-18
5	Signal Generator	SMT06	831285/005	R&S	2010-12-26
6	Signal Generator	SMP04	100070	R&S	2011-4-19
7	LISN	ESH2-Z5	829991/012	R&S	2011-9-12
8	Spectrum Analyzer	FSU26	200030	R&S	2011-6-16
9	Universal Radio Communication Tester	CMU200	100680	R&S	2011-8-21
10	Dual-Ridge Waveguide Horn Antenna	3115	9906-5827	EMCO	2011-3
11	Dual-Ridge Waveguide Horn Antenna	3116	2663	EMCO	2011-3
12	Dual-Ridge Waveguide Horn Antenna	3116	2661	EMCO	2011-3
13	Climatic chamber	SH-241	92003546	ESPEC	2011-5-14
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 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 USB mode and charging mode. During the test MS is connected to a PC via a USB cable in the case of USB mode and is connected to a charger in the case of charging 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 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, the gain of the preamplifier, the cable los.

The measurement results are obtained as described below:

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

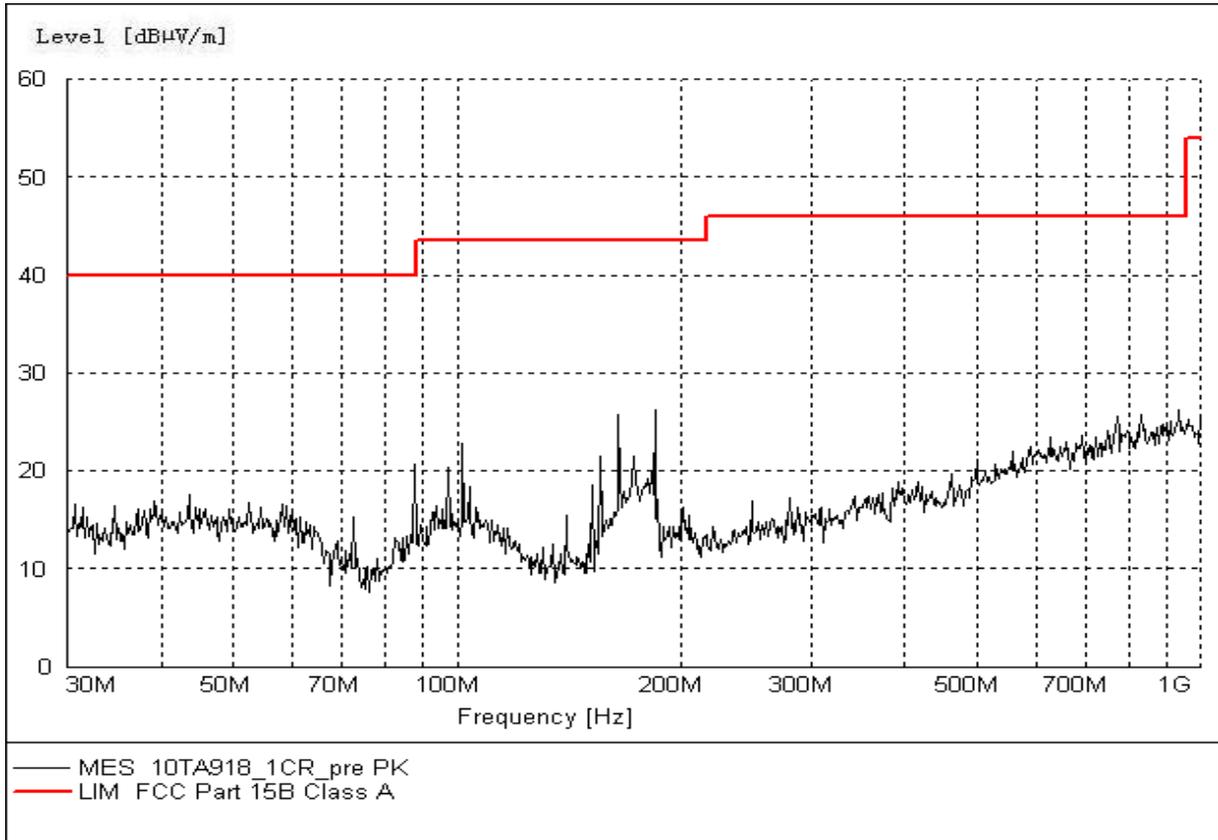
#### Charging Mode

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
3966.621	49.09	13.8	35.29	VERTICAL
3466.866	48.34	11.6	36.74	HORIZONTAL
3381.479	48.15	11.7	36.45	HORIZONTAL
3364.656	48.03	11.6	36.43	VERTICAL
3484.2	48.03	11.6	36.43	VERTICAL
3415.379	47.92	11.6	36.32	VERTICAL

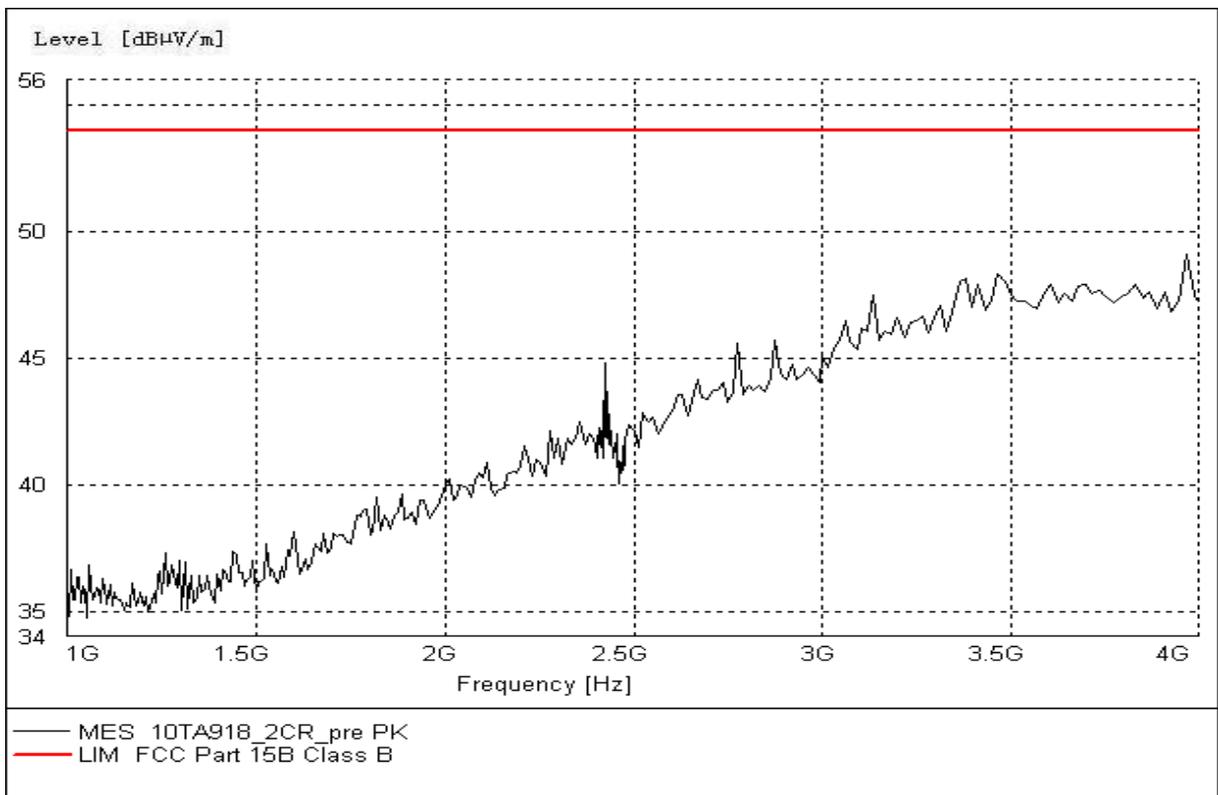
#### USB Mode

Frequency(MHz)	Result(dBuV/m)	ARpl (Db)	Pmea(dBuV/m)	Polarity
3554.409	49.9	13.9	36	VERTICAL
3773.637	48.68	13.7	34.98	VERTICAL
3501.621	48.59	13.7	34.89	VERTICAL
3590.042	48.55	13.8	34.75	VERTICAL
3811.467	48.48	13.9	34.58	VERTICAL
3868.926	48.42	13.8	34.62	VERTICAL

**Charging Mode**



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



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

USB Mode

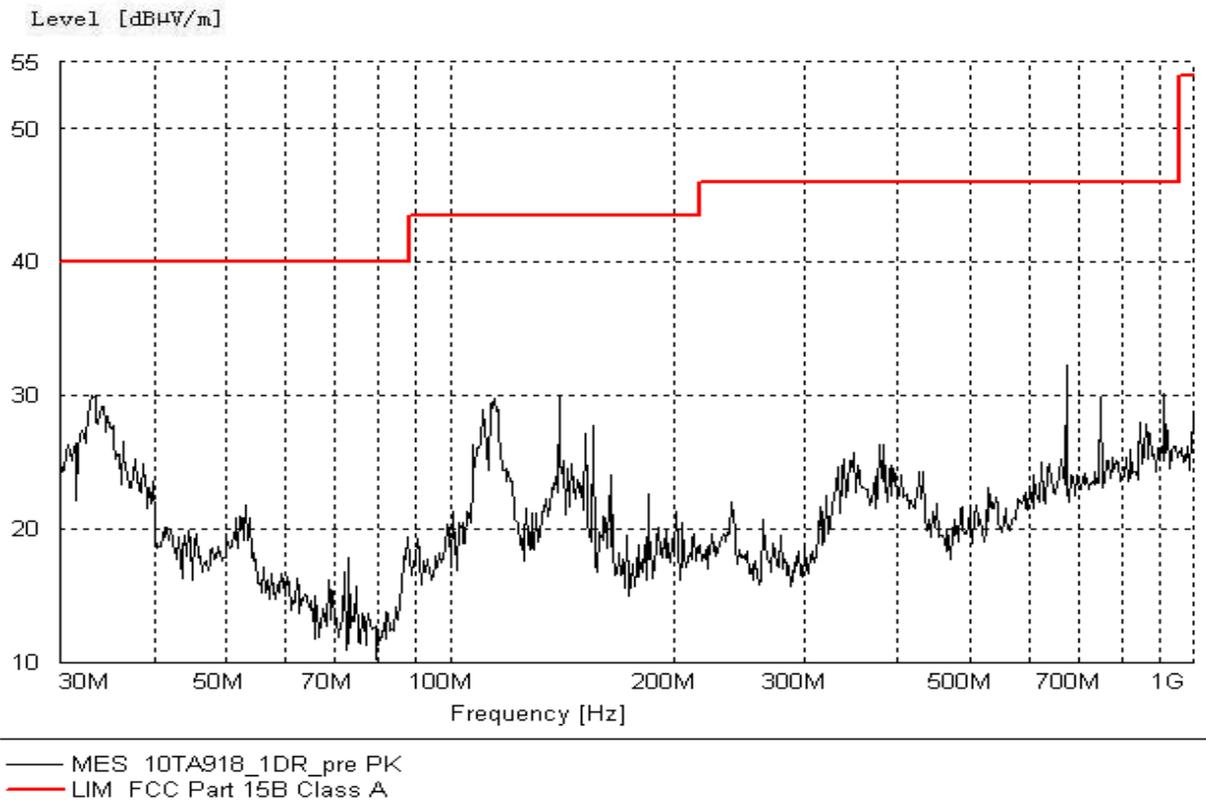


Figure A.3 Radiated Emission from 30MHz to 1GHz

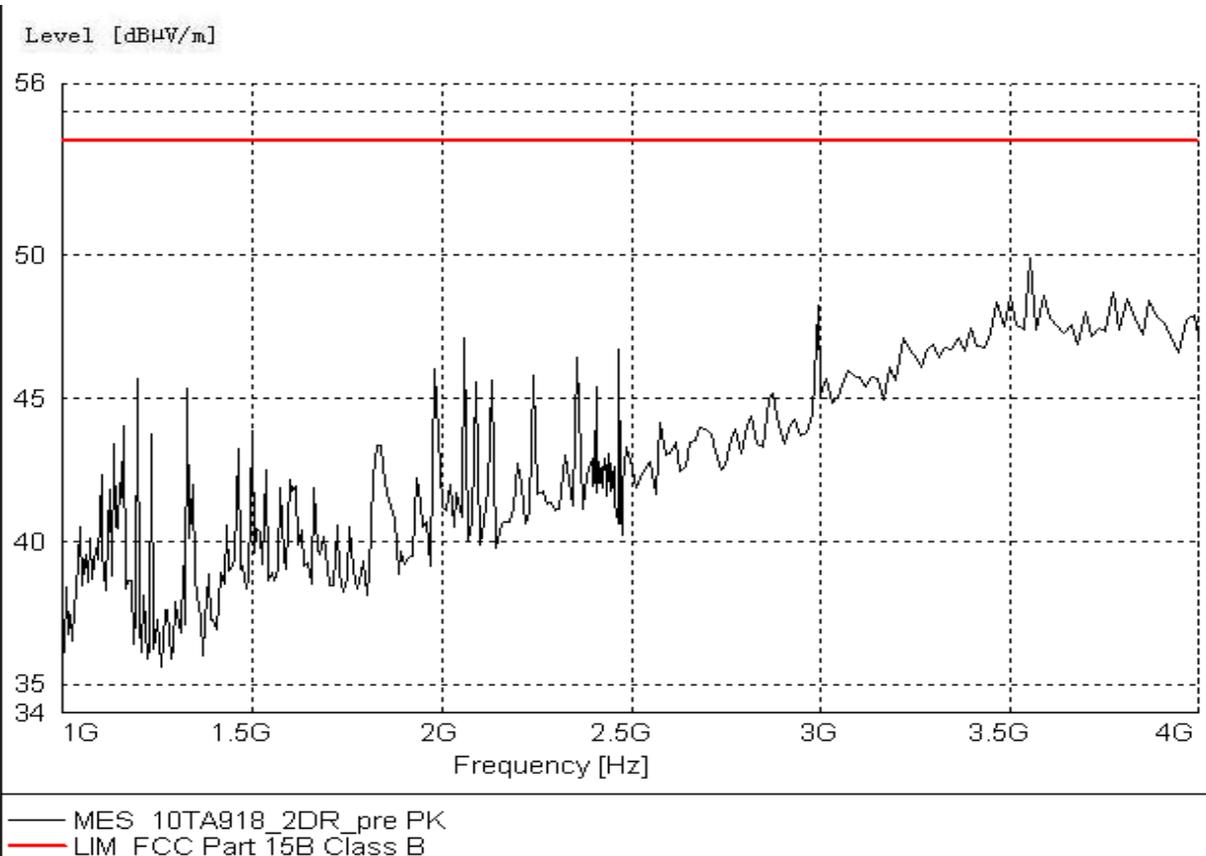


Figure A.4 Radiated Emission from 1GHz to 4GHz

## 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.

### A.2.2 EUT Operating Mode:

The MS is operating in the USB mode and charging mode. During the test MS is connected to a PC via a USB cable in the case of USB mode and is connected to a charger in the case of charging 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

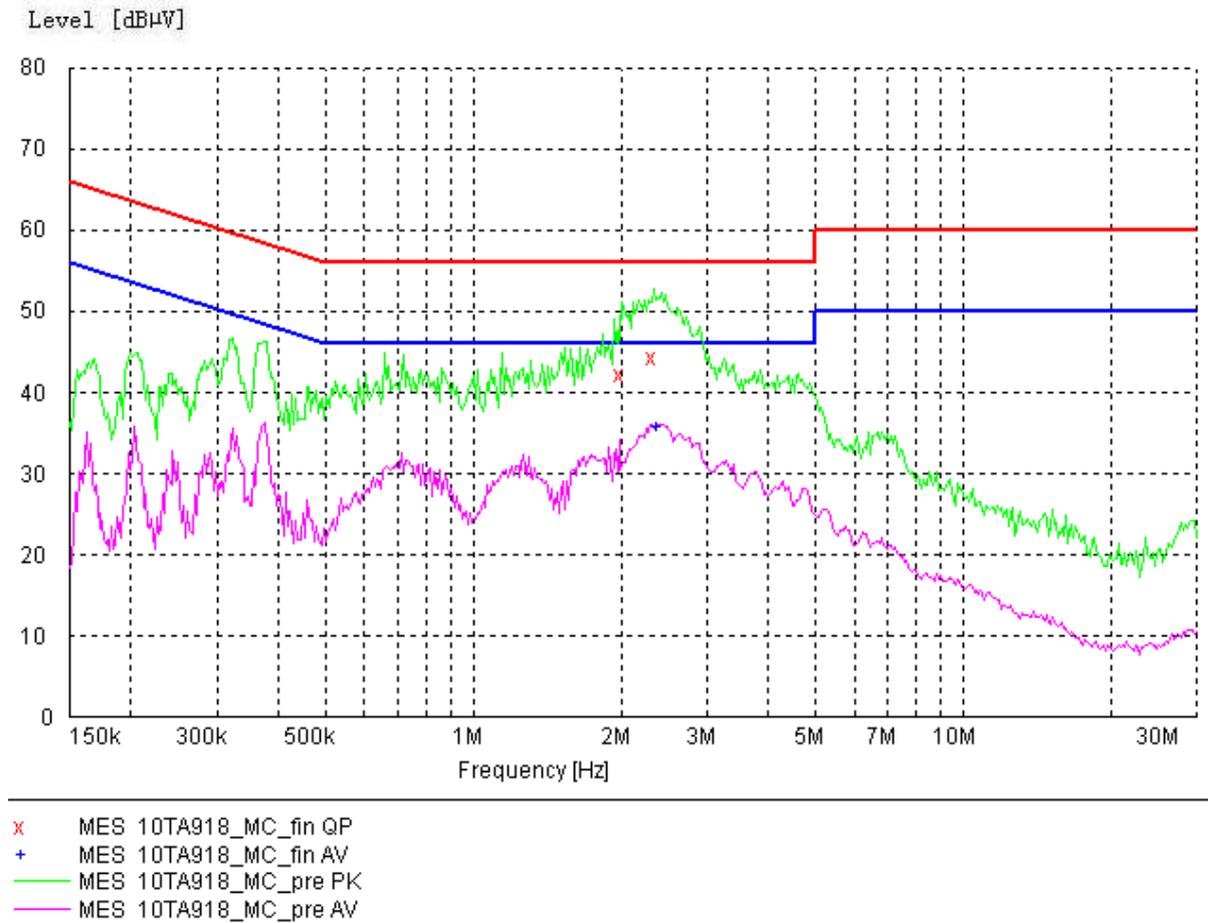
\*Decreases with the logarithm of the frequency

### A.2.4 Test Condition in charging mode

Voltage (V)	Frequency (Hz)
120	60

RBW	Sweep Time(s)
9KHz	1

**A.2.4 Measurement Results**  
**Charging Mode**



**Figure A.5 Conducted Emission**

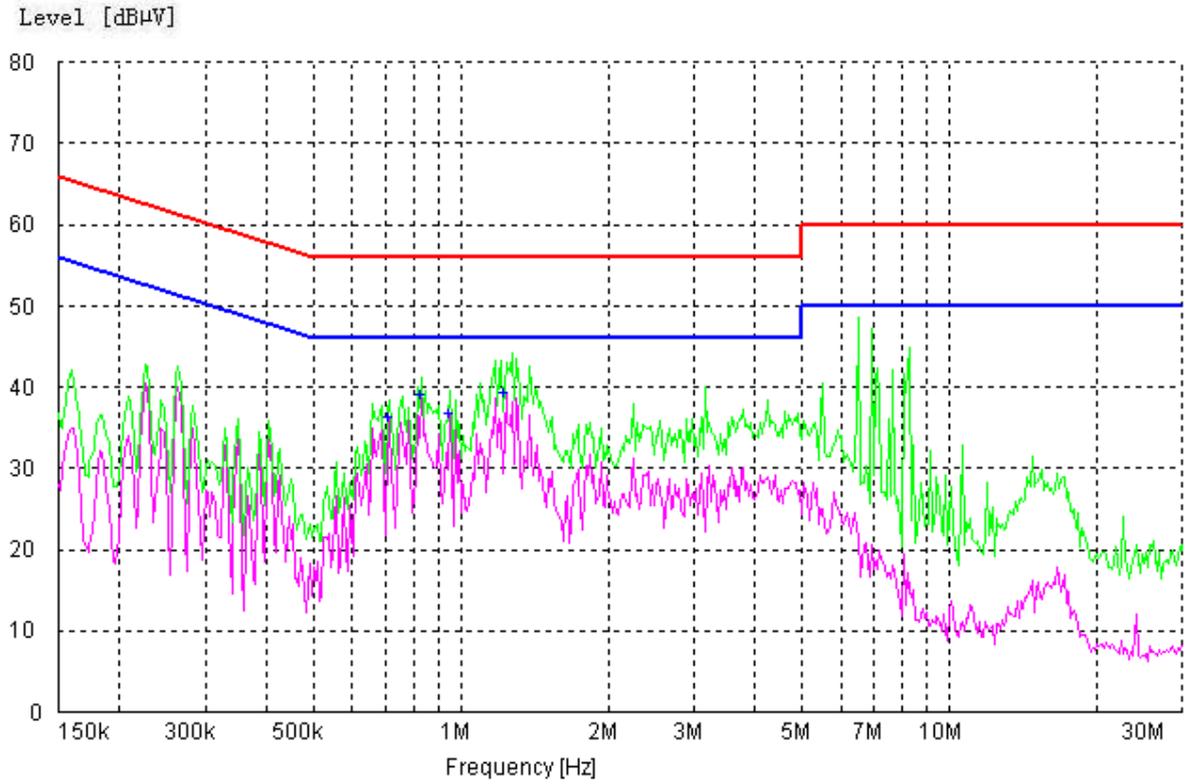
**MEASUREMENT RESULT: "10TA918\_MC\_fin QP"**

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB	dB	
2.020000	42.10	10.1	56	13.9	N	FLO
2.345157	44.40	10.1	56	11.6	N	FLO

**MEASUREMENT RESULT: "10TA918\_MC\_fin AV"**

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB	dB	
2.392295	35.60	10.1	46	10.4	L1	FLO

**USB Mode**



- + MES 10TA918\_15BC\_fin AV
- MES 10TA918\_15BC\_pre PK
- MES 10TA918\_15BC\_pre AV
- LIM EN 55022 V QP Voltage QP Limit

**Figure A.6 Conducted Emission**

**MEASUREMENT RESULT: "10TA918\_15BC\_fin AV"**

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.715397	36.20	10.1	46	9.8	N	FLO
0.830553	39.10	10.1	46	6.9	N	FLO
0.954700	36.70	10.1	46	9.3	N	FLO
1.236581	39.20	10.1	46	6.8	L1	FLO

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