



# TEST REPORT

No. 2010TAR344

for

**TCT Mobile Limited**

**GSM850/PCS1900 dualband mobile phone**

**Model Name: Mini Lite US**

**Marketing Name: OT-706A**

**FCC ID: RAD151**

with

**Hardware Version: Proto**

**Software Version: V302**

**Issued Date: August 24<sup>th</sup>, 2010**

**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***

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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

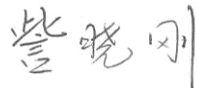
### 1.2. Testing Environment

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

### 1.3. Project data

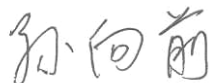
Testing Start Date: August 23,2010  
Testing End Date: August 23,2010

### 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: TCT Mobile Limited  
Address /Post: 4F, South Building, No.2966, JinKe Road, Zhangjiang High-Tech Park  
Shanghai 201203, P.R.China  
City: Shanghai  
Postal Code: 201203  
Country: P.R.China  
Telephone: 0086 21 61460883  
Fax: 0086 2161460602

### **2.2. Manufacturer Information**

Company Name: TCT Mobile Limited  
Address /Post: 4F, South Building, No.2966, JinKe Road, Zhangjiang High-Tech Park  
Shanghai 201203, P.R.China  
City: Shanghai  
Postal Code: 201203  
Country: P.R.China  
Telephone: 0086 2161460890  
Fax: 0086 2161460602

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

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

Description	GSM850/PCS1900 dualband mobile phone
Model Name	Mini Lite US
Marketing Name	OT-706A
FCC ID	RAD151
Frequency	GSM 850MHz; PCS 1900MHz
Antenna	Internal
Power supply	Battery or Charger (AC Adaptor)
Extreme vol. Limits	3.5VDC to 4.2VDC (nominal: 3.8VDC)

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>
N04	012433000000645	Proto	V302

\*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	Charger	/
AE3	Charger	/
AE4	Headset	/
AE5	Headset	/
AE6	Bluetooth Headset	/

##### AE1

Model	CAB30M0000C1
Manufacturer	BYD
Capacitance	650mAh
Nominal Voltage	3.7V

##### AE2

Model	CBA3120AG0C1
Manufacturer	BYD
Length of DC line	120cm

##### AE3

Model	CBA3120AG0C2
Manufacturer	TENPAO
Length of DC line	120cm

AE4

Model	CCB3160A10C0
Manufacturer	Shunda
Length of DC line	160cm

AE5

Model	CCB3160A10C0
Manufacturer	Ju Wei
Length of DC line	160cm

AE6

Model	OT-BM82
Manufacturer	TCT Mobile

\*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	2009

## 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	MANUFACTUR E	CAL DUE DATE
1	Test Receiver	ESS	847151/015	R&S	2010-10-30
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	2010-9-19
5	Signal Generator	SMT06	831285/005	R&S	2010-12-26
6	Signal Generator	SMP04	100070	R&S	2011-4-21
7	LISN	ESH2-Z5	829991/012	R&S	2010-9-13
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.1.4 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(AE2)

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
3621.242	50.41	13.6	36.81	VERTICAL
3683.367	50.39	13.9	36.49	HORIZONTAL
3697.395	50.28	13.9	36.38	VERTICAL
3438.878	50.23	11.6	38.63	VERTICAL
3695.391	50.18	13.9	36.28	VERTICAL
3573.146	50.17	13.8	36.37	VERTICAL

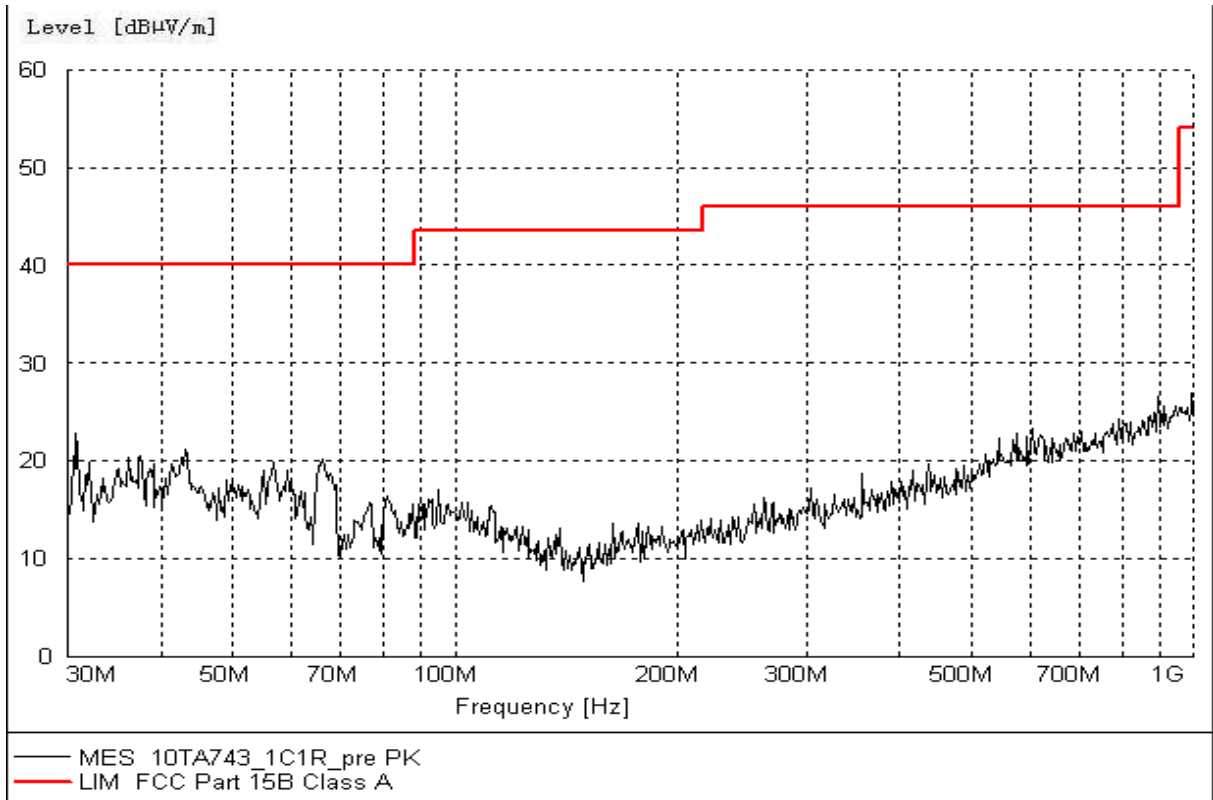
#### Charging Mode(AE3)

Frequency(MHz)	Result(dBuV/m)	$A_{Rpl}$ (dB)	$P_{\text{Mea}}$ (dBuV/m)	Polarity
3352.705	50.66	11.6	39.06	VERTICAL
3444.89	50.03	11.6	38.43	VERTICAL
3677.355	50.02	13.8	36.22	HORIZONTAL
3537.074	49.91	14	35.91	HORIZONTAL
3400.802	49.83	11.6	38.23	VERTICAL
3845.691	49.7	13.9	35.8	VERTICAL

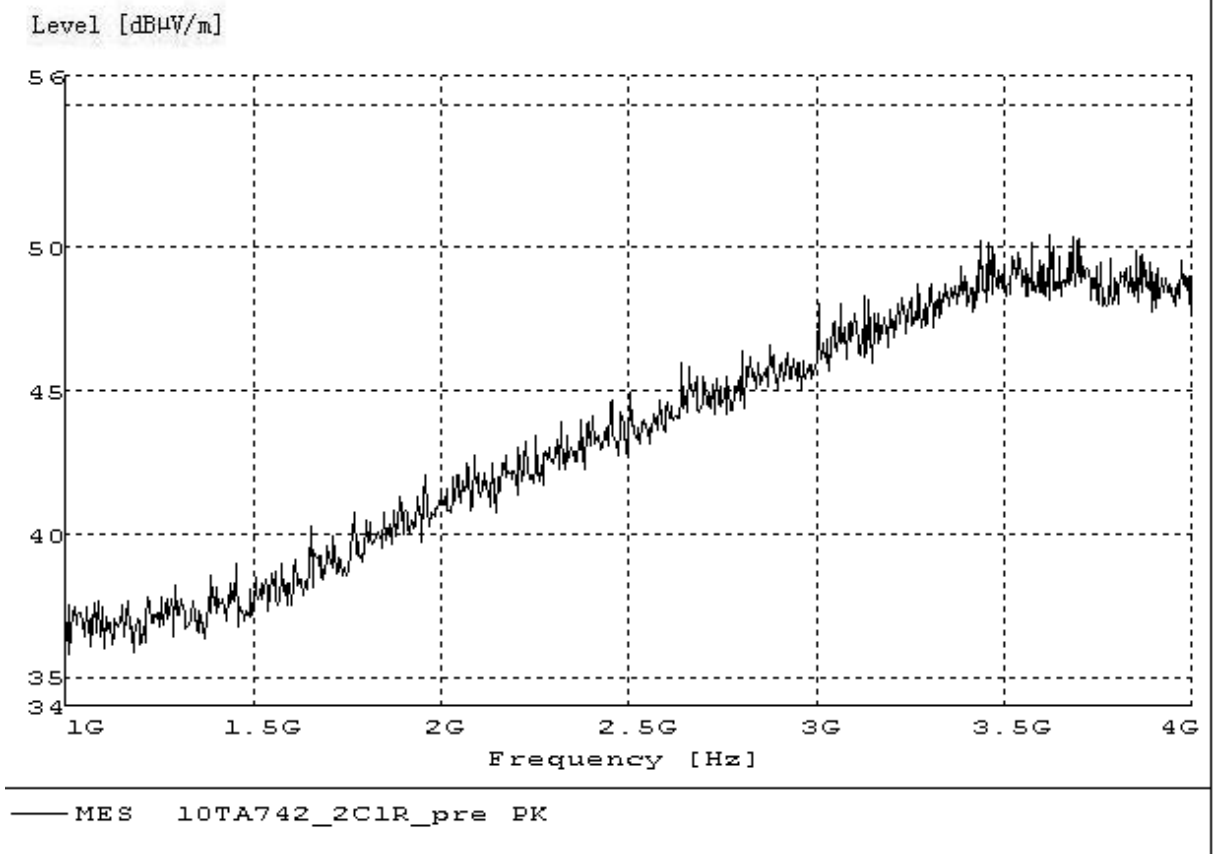
#### USB Mode

Frequency(MHz)	Result(dBuV/m)	$A_{Rpl}$ (dB)	$P_{\text{Mea}}$ (dBuV/m)	Polarity
3739.479	50.79	13.7	37.09	VERTICAL
3743.487	50.45	13.7	36.75	VERTICAL
3480.962	50.16	11.6	38.56	VERTICAL
3703.407	50.06	14	36.06	VERTICAL
3559.118	49.99	13.9	36.09	HORIZONTAL
3717.435	49.93	13.9	36.03	VERTICAL

**Charging Mode(AE2)**

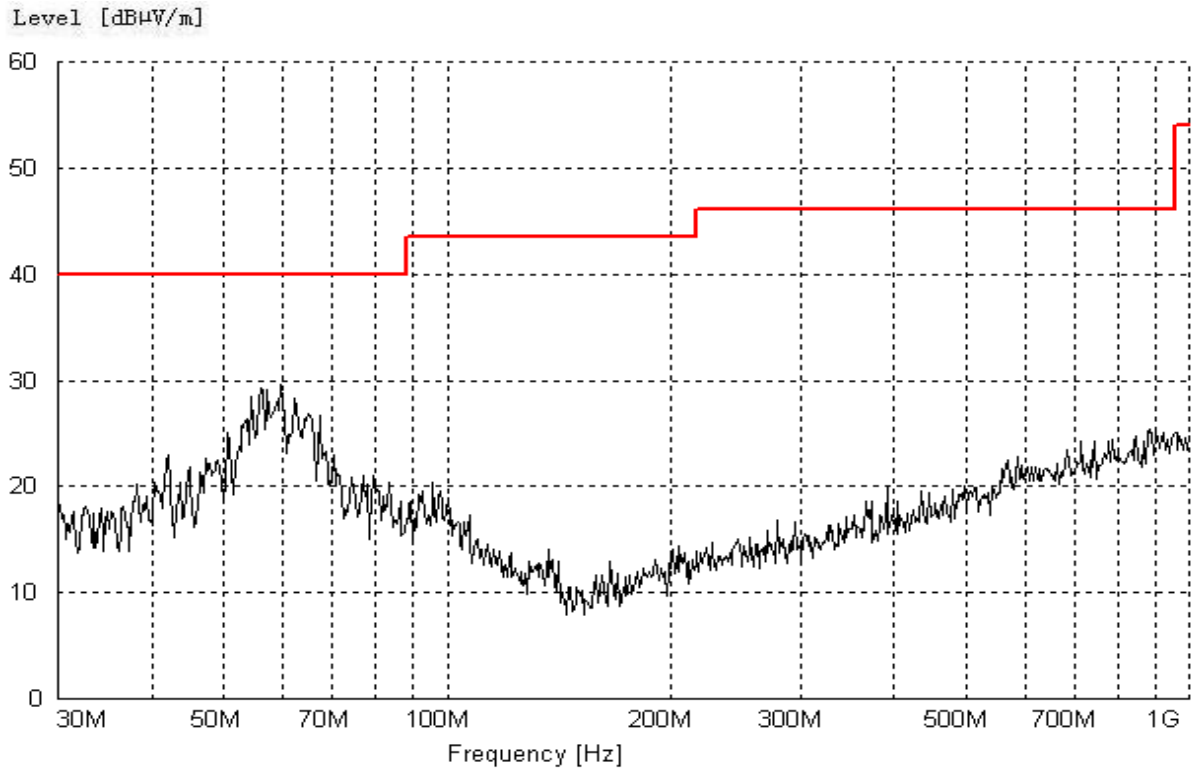


**Figure A.1 Radiated Emission from 30MHz to 1GHz**



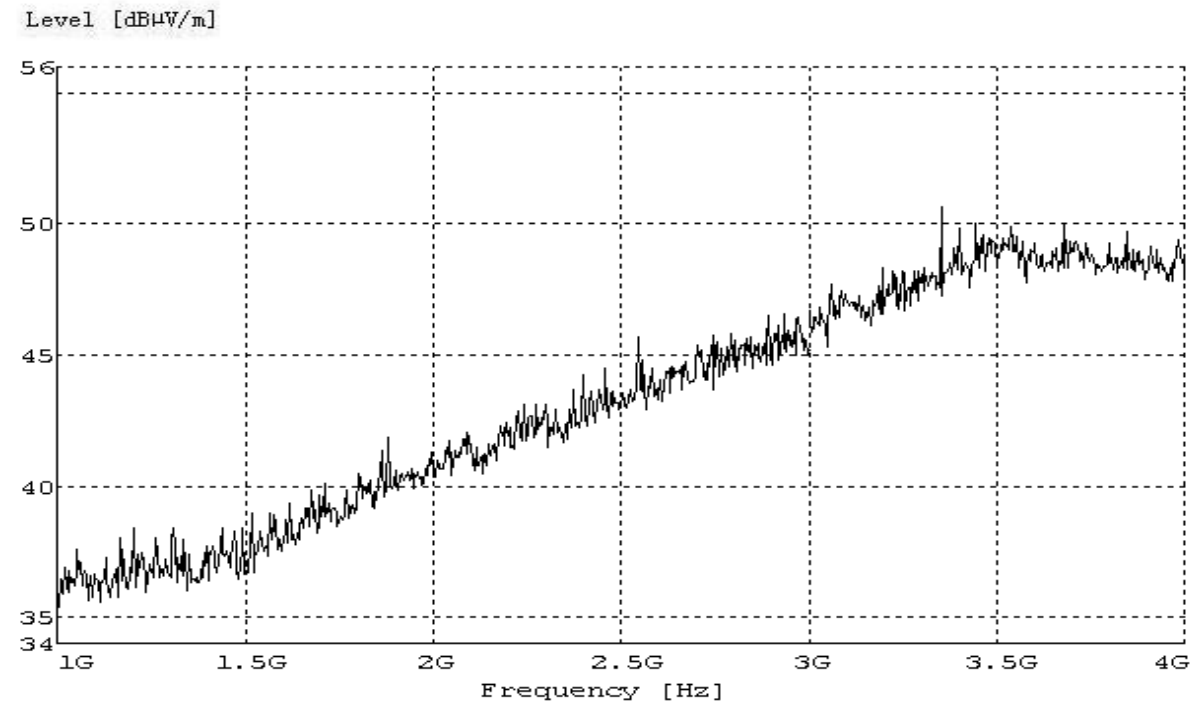
**Figure A.2 Radiated Emission from 1GHz to 4GHz**

**Charging Mode(AE3)**



— MES\_10TA743\_1C2R\_pre PK  
— LIM\_FCC Part 15B Class A

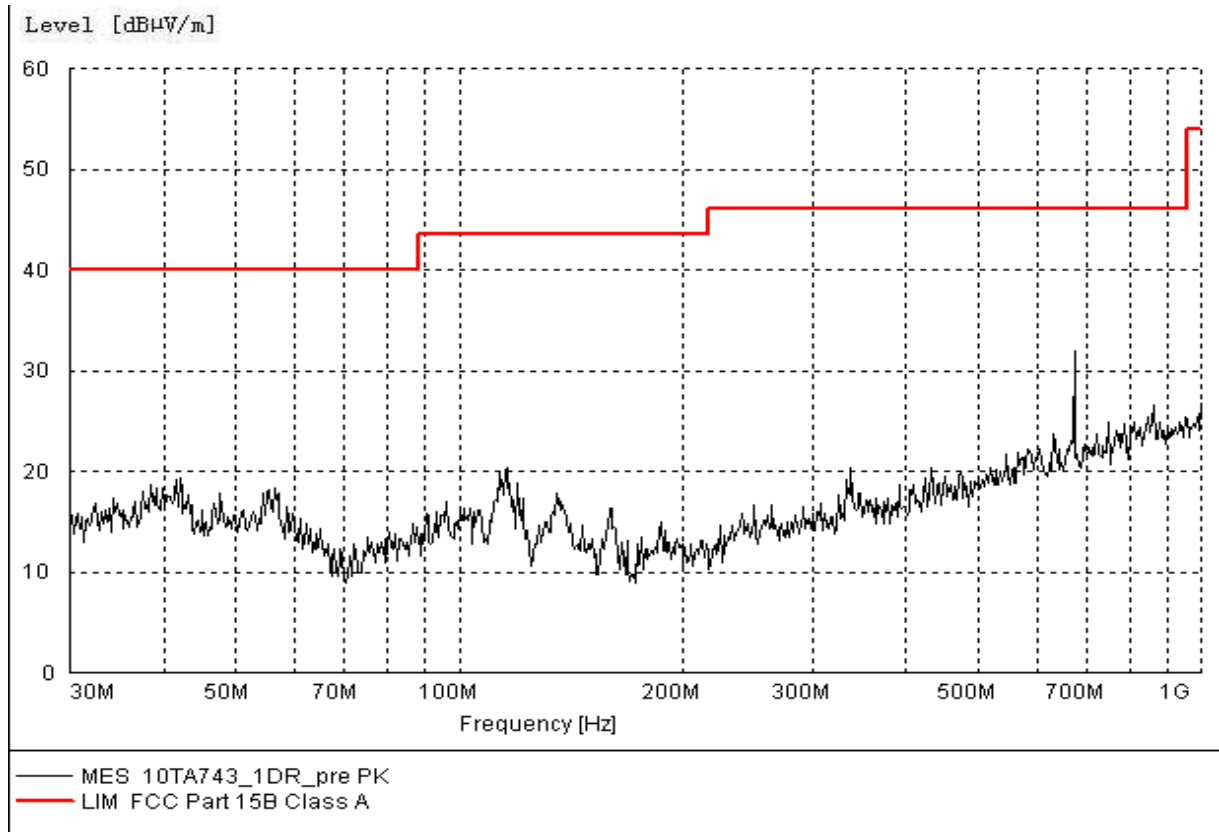
**Figure A.3 Radiated Emission from 30MHz to 1GHz**



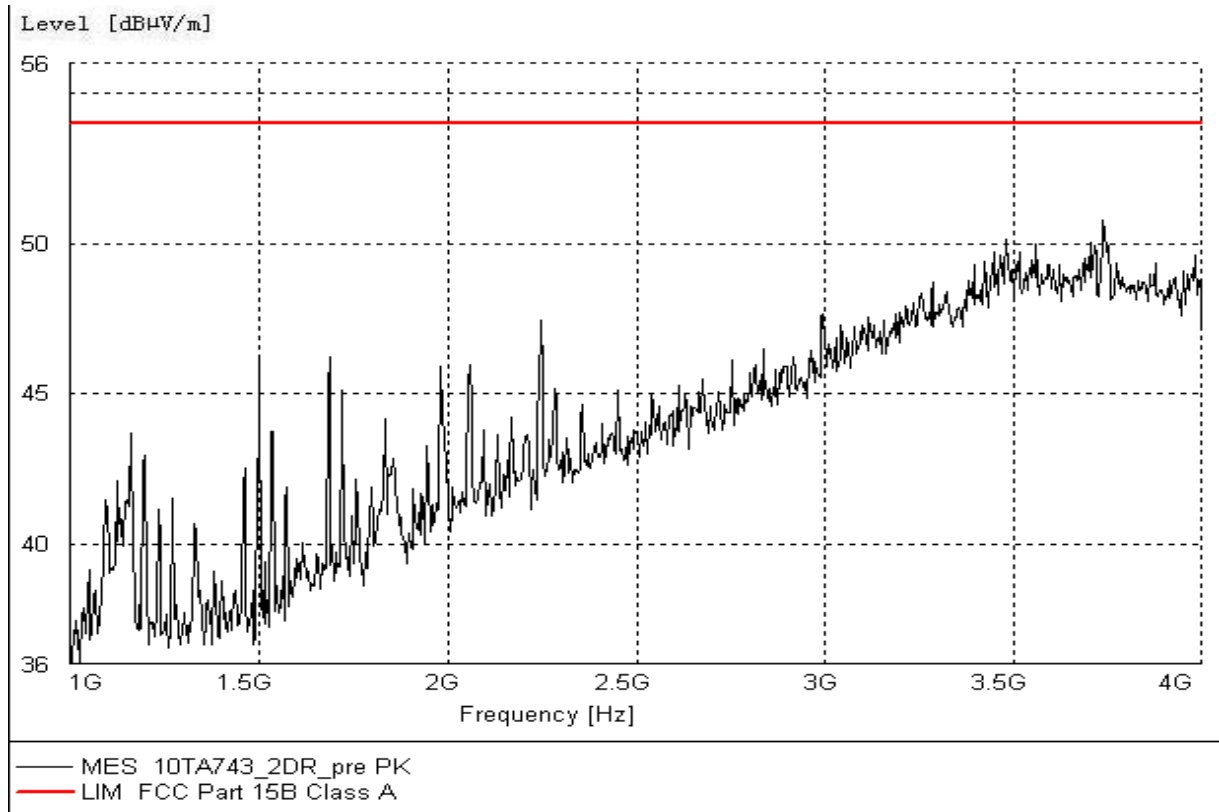
— MES\_10TA742\_2C2R\_pre PK

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

**USB Mode**



**Figure A.5 Radiated Emission from 30MHz to 1GHz**



**Figure A.6 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

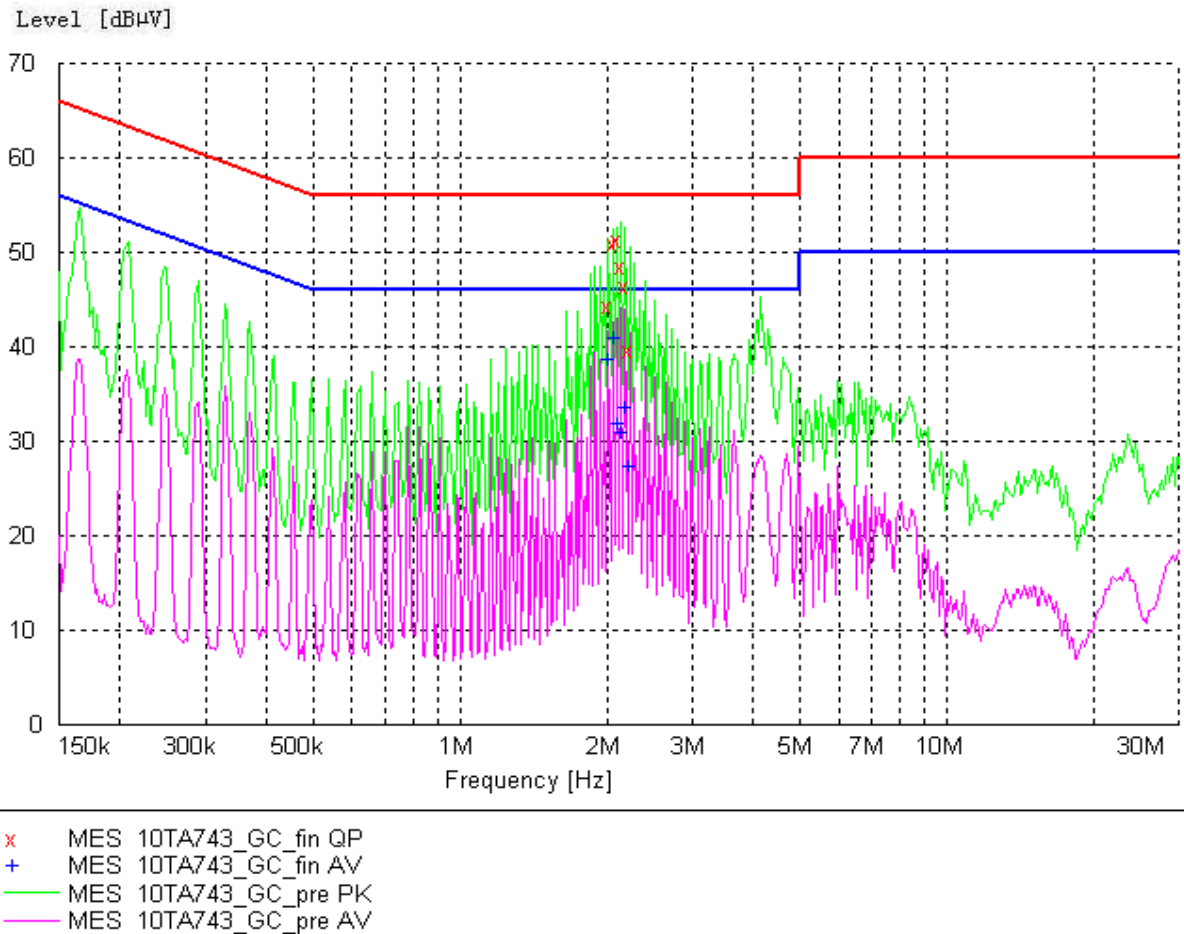
\*Decreases with the logarithm of the frequency

### A.2.4 Test Condition in charging mode

Voltage (V)	Frequency (Hz)
120	60



**A.2.4 Measurement Results**  
**Charging Mode (AE2)**



**Figure A.7 Conducted Emission**

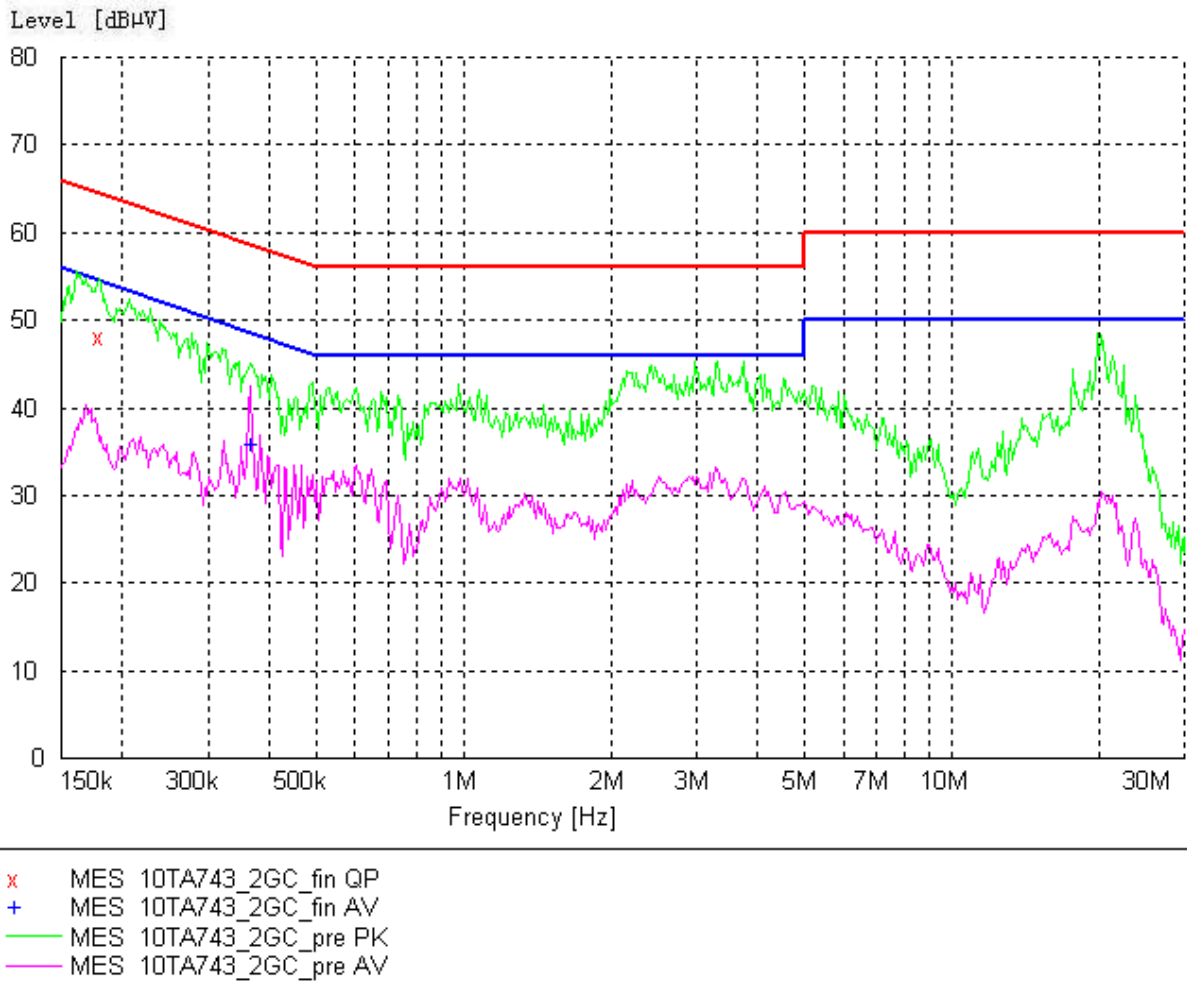
**MEASUREMENT RESULT: "10TA743\_GC\_fin QP"**

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBμV	dB	dBμV	dB		
2.020000	44.40	10.1	56	11.6	N	FLO
2.060602	51.00	10.1	56	5.0	L1	GND
2.102020	51.40	10.1	56	4.6	L1	GND
2.144271	48.60	10.1	56	7.4	L1	GND
2.187371	46.50	10.1	56	9.5	L1	GND
2.231337	39.70	10.1	56	16.3	N	FLO

**MEASUREMENT RESULT: "10TA743\_GC\_fin AV"**

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBμV	dB	dBμV	dB		
2.020000	38.70	10.1	46	7.3	L1	GND
2.060602	41.00	10.1	46	5.0	L1	GND
2.102020	31.90	10.1	46	14.1	L1	GND
2.144271	31.00	10.1	46	15.0	L1	GND
2.187371	33.70	10.1	46	12.3	L1	GND
2.231337	27.40	10.1	46	18.6	L1	GND

**Charging Mode (AE3)**



**Figure A.8 Conducted Emission**

**MEASUREMENT RESULT: "10TA743\_2GC\_fin QP"**

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBμV		dB	dBμV	dB	
0.179422	48.00	10.1	65	16.5	L1	GND

**MEASUREMENT RESULT: "10TA743\_2GC\_fin AV"**

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBμV		dB	dBμV	dB	
0.367295	35.80	10.1	49	12.8	L1	FLO

USB Mode

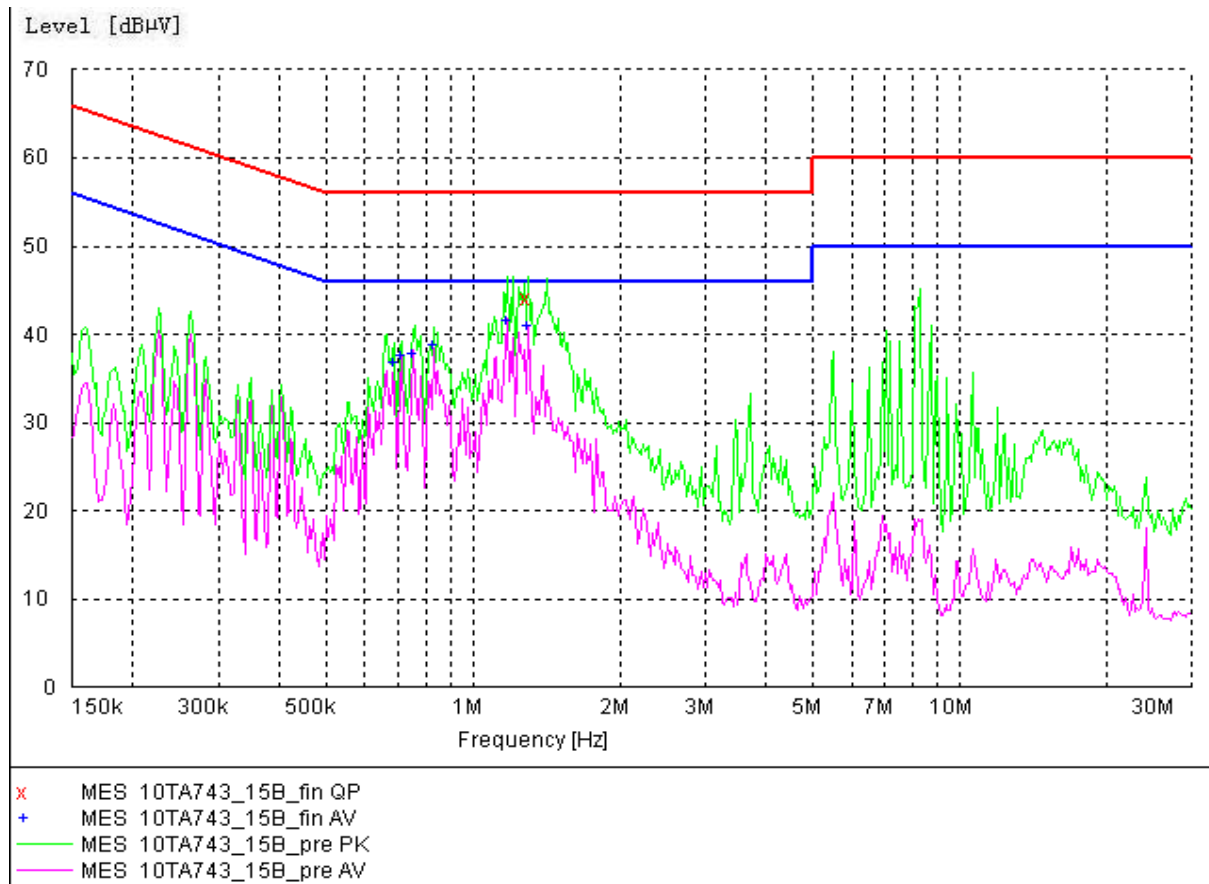


Figure A.9 Conducted Emission

**MEASUREMENT RESULT: "10TA743\_15B\_fin QP"**

Frequency MHz	Level dBµV	Transd dB	Limit dB	Margin dB	Line	PE
1.299659	44.10	10.1	56	11.9	N	GND

**MEASUREMENT RESULT: "10TA743\_15B\_fin AV"**

Frequency MHz	Level dBµV	Transd dB	Limit dB	Margin dB	Line	PE
0.687482	36.70	10.1	46	9.3	L1	GND
0.715397	37.50	10.1	46	8.5	L1	GND
0.751889	37.80	10.1	46	8.2	L1	FLO
0.830553	38.80	10.1	46	7.2	L1	FLO
1.176564	41.60	10.1	46	4.4	L1	FLO
1.299659	41.00	10.1	46	5.0	L1	FLO

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