



# TEST REPORT

No. 2011TAR182

for

**TCT Mobile Limited**

**GSM/GPRS/EDGE 850/1900 dual band mobile phone**

**Model Name: Onyx lifestyle WIFI A**

**Marketing Name: one touch 819A**

**FCC ID: RAD188**

with

**Hardware Version: PIO**

**Software Version: SW460**

**Issued Date: 2011-05-19**

**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: Apr. 22, 2011  
Testing End Date: Apr. 27, 2011

### **1.4. Signature**



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**Qu Pengfei**  
**(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: 5F, E building, No. 232, Liang Jing Road ZhangJiang High-Tech Park,  
Pudong Area Shanghai, P.R. China.  
City: Shanghai  
Postal Code: 201203  
Country: China  
Contact Person: Gong Zhizhou  
Contact Email: zhizhou.gong@jrdcom.com  
Telephone: 0086-21-61460890  
Fax: 0086 21 61460602

### **2.2. Manufacturer Information**

Company Name: TCT Mobile Limited  
Address /Post: 5F, E building, No. 232, Liang Jing Road ZhangJiang High-Tech Park,  
Pudong Area Shanghai, P.R. China.  
City: Shanghai  
Postal Code: 201203  
Country: China  
Telephone: 0086-21-61460890  
Fax: 0086 21 61460602

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

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

Description	GSM/GPRS/EDGE 850/1900 dual band mobile phone
Model Name	Onyx lifestyle WIFI A
Marketing Name	one touch 819A
FCC ID	RAD188
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 MIIT 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>
EUT1	012727000010078	PIO	SW460

\*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	Battery	/
AE3	Travel Adapter	/
AE4	Travel Adapter	/
AE5	USB Cable	/
AE6	USB Cable	/

##### AE1

Model	CAB31L0000C1
Manufacturer	BYD
Capacitance	1000 mAh
Nominal Voltage	3.7V

##### AE2

Model	CAB31L0000C2
Manufacturer	BAK
Capacitance	1000 mAh
Nominal Voltage	3.7V

##### AE3

Model	CBA3001AG0C2
Manufacturer	Tenpao
Length of DC line	120cm

##### AE4

Model	CBA3001AG0C1
Manufacturer	BYD
Length of DC line	163.5cm(including the length of USB cable)

AE5

Model CDA3122000C0  
 Manufacturer Juwei  
 Length of cable 149.5cm

AE6

Model CDA3122000C0  
 Manufacturer Shenhua  
 Length of cable 149.5cm

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

**3.4. EUT set-ups**

<b>EUT set-up No.</b>	<b>Combination of EUT and AE</b>	<b>Remarks</b>
Set.1	EUT1+ AE1/AE2+AE3	--
Set.2	EUT1+ AE1/AE2+AE4+AE5/AE6	--
Set.3	EUT1+ AE1+ AE5/AE6	USB mode

## **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	MANUFACTURE	CAL DUE DATE
1	Test Receiver	ESCI	100344	R&S	2012-03-12
2	Test Receiver	ESCI	100766	R&S	2011-12-06
3	Test Receiver	ESI40	831564/002	R&S	2012-02-11
4	BiLog Antenna	VUL9163	9163-302	Schwarzbeck	2012-02-10
5	Signal Generator	SMB100A	102063	R&S	2012-03-05
6	LISN	ESH2-Z5	R&S	829991/012	2012-04-17
7	Universal Radio Communication Tester	CMU200	100680	R&S	2011-09-05
8	Dual-Ridge Waveguide Horn Antenna	3115	6914	EMCO	2012-2-18
9	PC	OPTIPLEX 755	3908243625	DELL	N/A
10	Monitor	E178FPc	CN-OWR979-6 4180-7AJ-D2M S	DELL	N/A
11	Printer	DeskJet D2368	TH72E12G7Q	HP	N/A
12	Keyboard	L100	CN0RH659658 907ATOI40	DELL	N/A
13	Mouse	VR-301	692722550019 8	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.

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.

#### **A.1.2 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.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". It includes the antenna factor of receive antenna and the path loss.

The measurement results are obtained as described below:

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

Where

$G_A$ : Antenna factor of receive antenna

$G_{\text{PL}}$ : Path Loss

$P_{\text{Mea}}$ : Measurement result on receiver.

#### Set.1 Charging mode

Frequency(MHz)	Result(dBuV/m)	$G_{\text{PL}}$ (dB)	$G_A$ (dB/m)	$P_{\text{Mea}}$ (dBuV)	Polarity
3370.741	52.03	-19.5	31.2	40.33	HORIZONTAL
3691.383	51.86	-19.5	33.4	37.96	VERTICAL
3685.371	51.72	-19.5	33.4	37.82	HORIZONTAL
3659.319	51.41	-19.7	33.4	37.71	VERTICAL
3555.110	51.39	-19.5	33.4	37.49	VERTICAL
3521.042	51.36	-19.6	33.4	37.56	VERTICAL

#### Set.2 Charging mode

Frequency(MHz)	Result(dBuV/m)	$G_{\text{PL}}$ (dB)	$G_A$ (dB/m)	$P_{\text{mea}}$ (dBuV)	Polarity
3713.427	51.64	-19.5	33.4	37.74	HORIZONTAL
3458.918	51.53	-19.6	31.2	39.93	HORIZONTAL
3823.647	51.47	-19.4	33.4	37.47	VERTICAL
3987.976	51.46	-19.3	33.4	37.36	HORIZONTAL
3551.102	51.35	-19.5	33.4	37.45	VERTICAL
3557.114	51.25	-19.5	33.4	37.35	VERTICAL

#### USB mode

Frequency(MHz)	Result(dBuV/m)	$G_{\text{PL}}$ (dB)	$G_A$ (dB/m)	$P_{\text{mea}}$ (dBuV)	Polarity
3527.054	51.65	-19.6	33.4	37.85	VERTICAL
3817.635	51.42	-19.5	33.4	37.52	VERTICAL
3535.07	51.26	-19.4	33.4	37.26	HORIZONTAL
3689.379	51.21	-19.5	33.4	37.31	HORIZONTAL
3725.451	51.19	-19.6	33.4	37.39	HORIZONTAL
3488.978	51.13	-19.6	31.2	39.53	VERTICAL

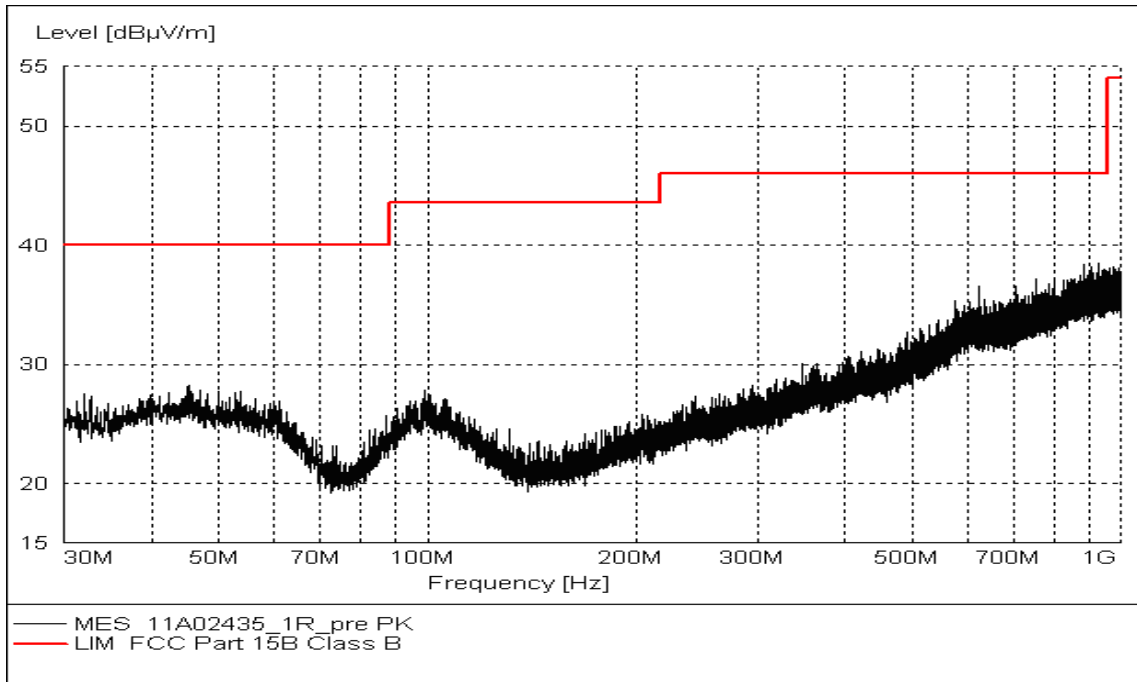


Figure A.1 Radiated Emission from 30MHz to 1GHz (Set.1, Charging mode)

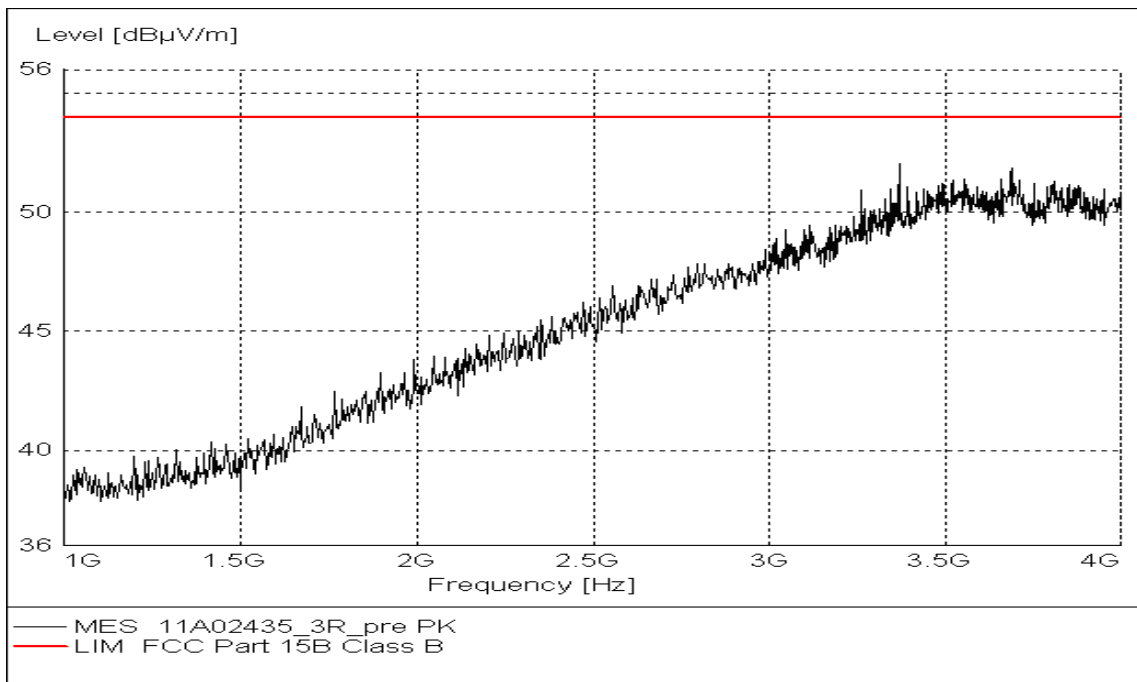


Figure A.2 Radiated Emission from 1GHz to 4GHz (Set.1, Charging mode)

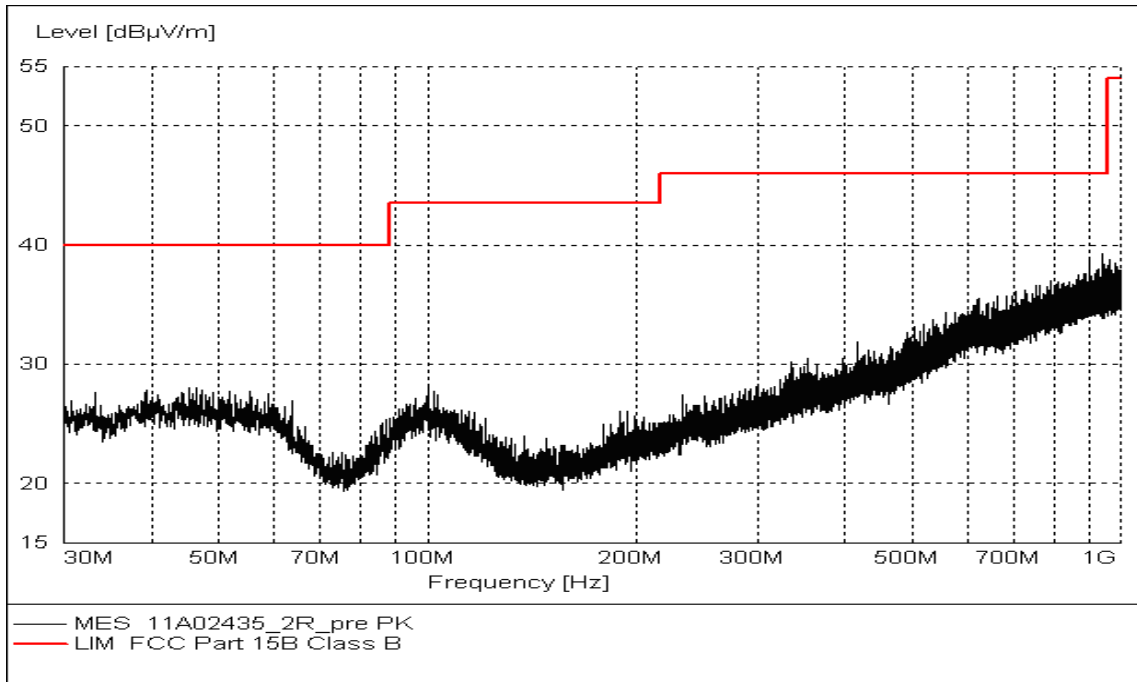


Figure A.3 Radiated Emission from 30MHz to 1GHz (Set.2, Charging mode)

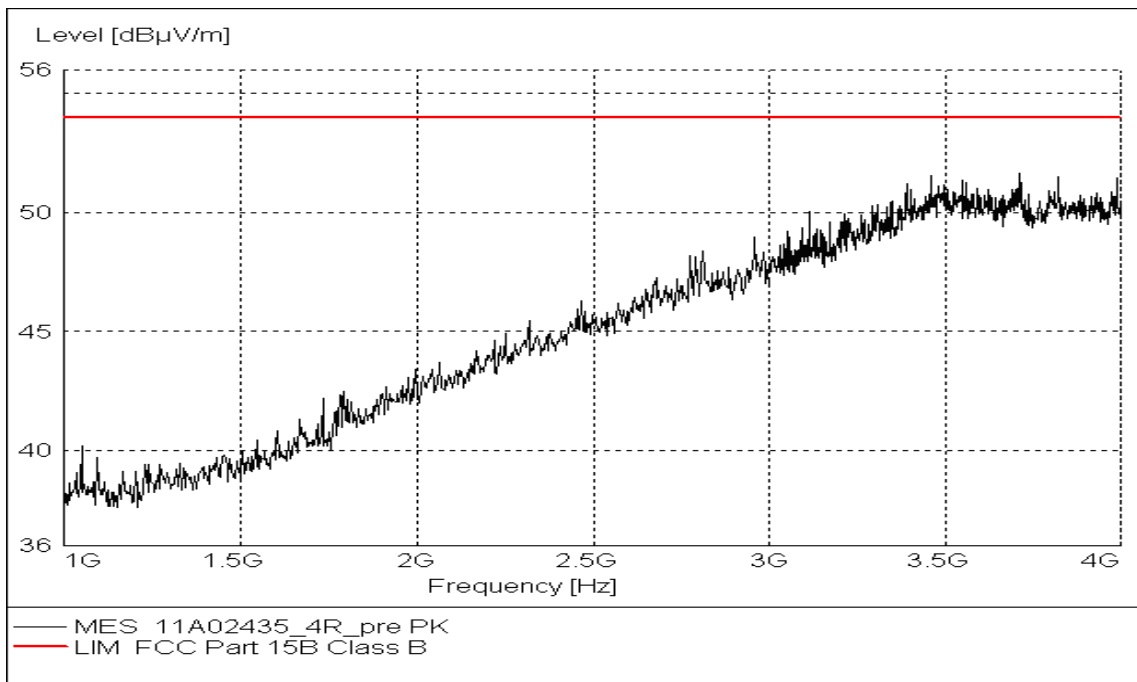


Figure A.4 Radiated Emission from 1GHz to 4GHz (Set.2, Charging mode)

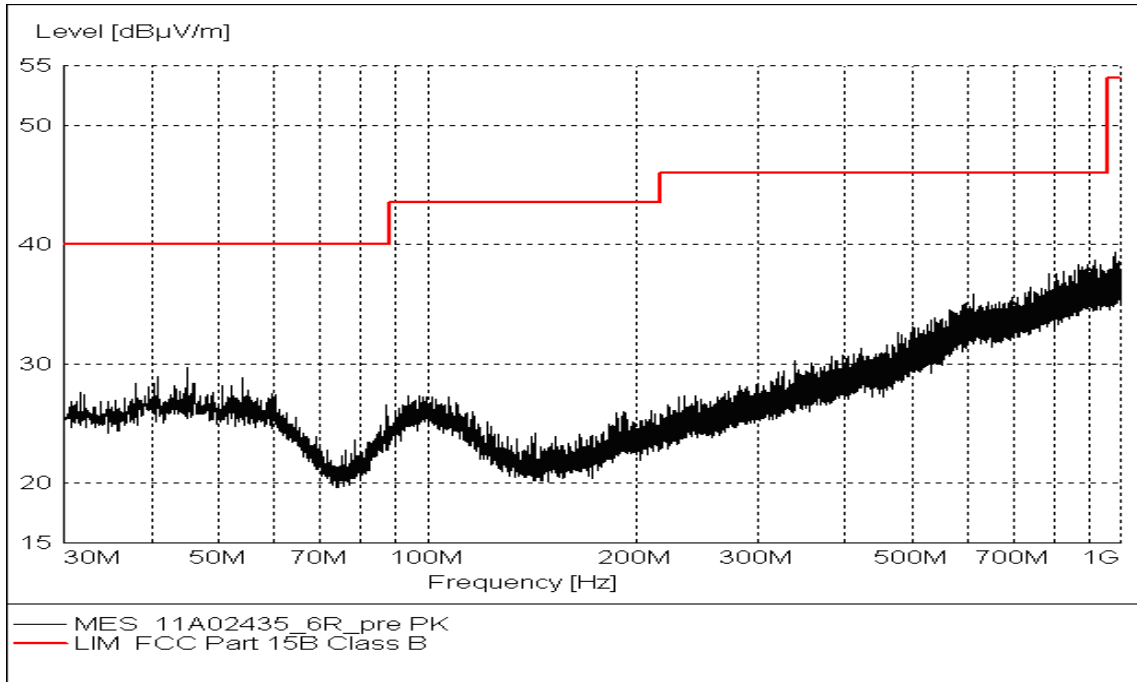


Figure A.5 Radiated Emission from 30MHz to 1GHz (Set.3, USB mode)

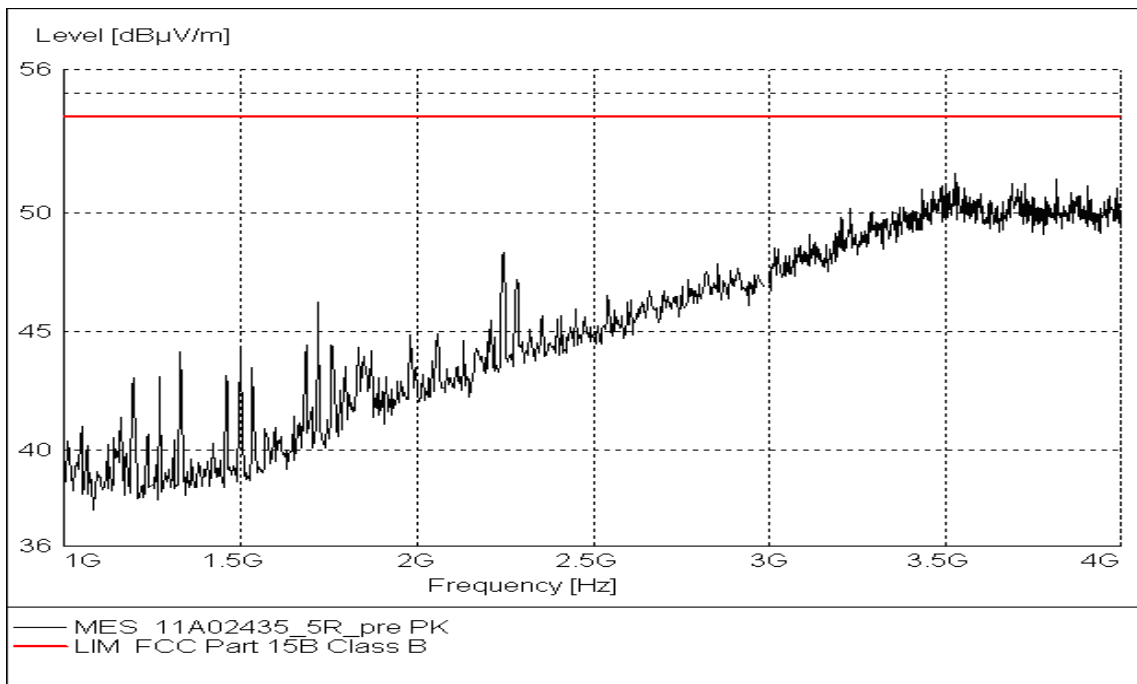


Figure A.6 Radiated Emission from 1GHz to 4GHz (Set.3, USB mode)

## 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 150 kHz to 30 MHz 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.2.5 Measurement Results

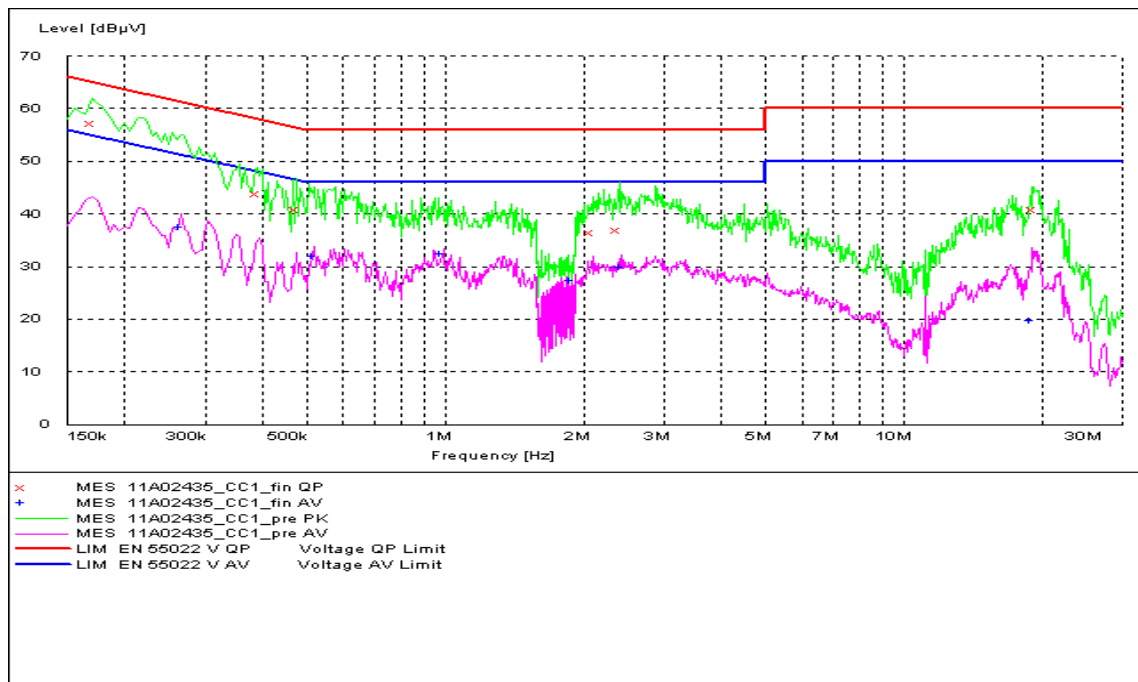


Figure A.7 Conducted Emission (Set.1, Charging mode)

#### MEASUREMENT RESULT: "11A02435\_CC1\_fin QP"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.170000	57.20	10.1	65	7.8	L1	GND
0.390000	43.80	10.1	58	14.3	N	GND
0.475000	40.80	10.1	56	15.6	N	GND
2.091821	36.50	10.1	56	19.5	N	GND
2.393361	36.90	10.1	56	19.1	L1	GND
19.153845	40.90	10.3	60	19.1	L1	GND

#### MEASUREMENT RESULT: "11A02435\_CC1\_fin AV"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.265000	37.40	10.1	51	13.9	N	GND
0.520000	31.80	10.1	46	14.2	N	GND
0.990000	32.40	10.1	46	13.6	N	GND
1.885000	27.30	10.1	46	18.7	N	GND
2.429441	29.80	10.1	46	16.2	L1	GND
19.058552	19.70	10.3	50	30.3	L1	GND

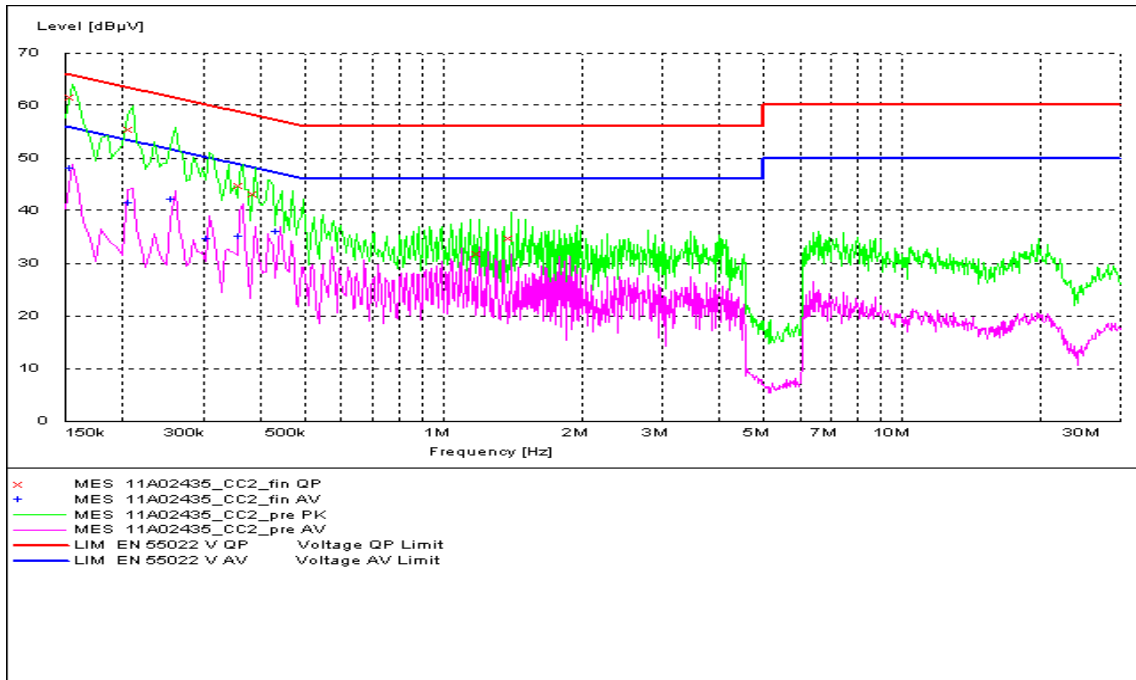


Figure A.8 Conducted Emission (Set.2, Charging mode)

**MEASUREMENT RESULT: "11A02435\_CC2\_fin QP"**

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.155000	61.60	10.1	66	4.1	L1	GND
0.210000	55.50	10.1	63	7.8	N	GND
0.365000	44.70	10.1	59	13.9	L1	GND
0.390000	43.20	10.1	58	14.8	N	GND
1.200000	31.90	10.1	56	24.1	N	GND
1.405000	34.80	10.1	56	21.2	L1	GND

**MEASUREMENT RESULT: "11A02435\_CC2\_fin AV"**

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.155000	47.90	10.1	56	7.8	N	GND
0.210000	41.50	10.1	53	11.7	N	GND
0.260000	42.00	10.1	51	9.4	N	GND
0.310000	34.70	10.1	50	15.3	N	GND
0.365000	35.10	10.1	49	13.6	N	GND
0.440000	35.90	10.1	47	11.2	N	GND

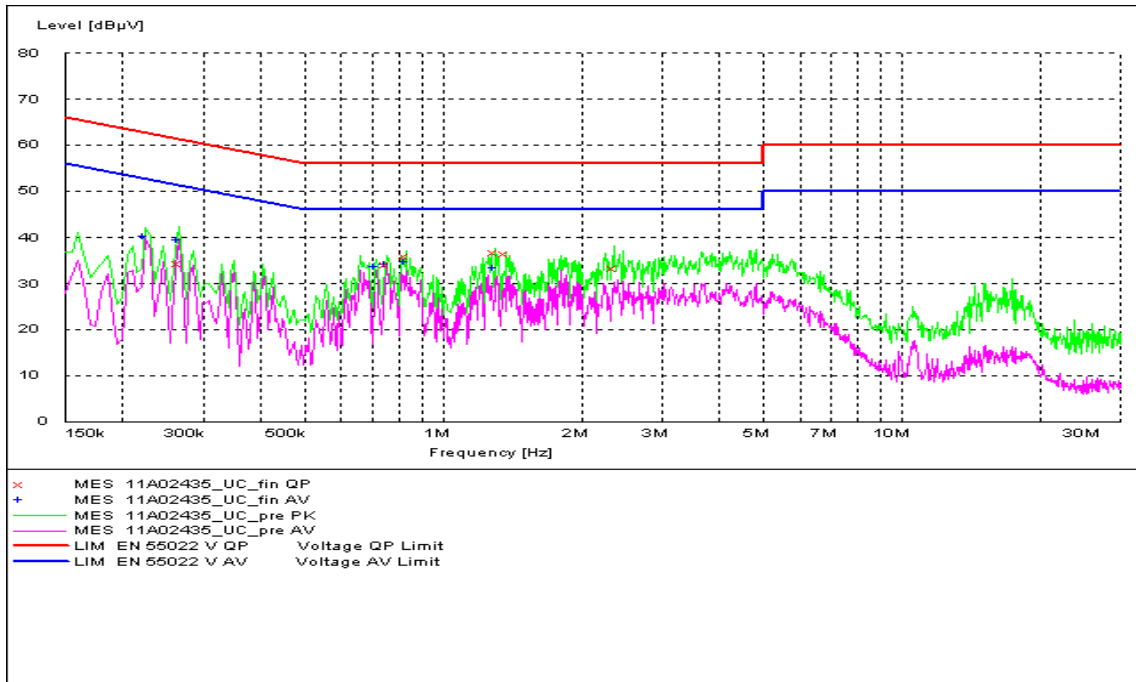


Figure A.9 Conducted Emission (Set.3, USB mode)

**MEASUREMENT RESULT: "11A02435\_UC\_fin QP"**

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.265000	34.30	10.1	61	27.0	L1	GND
0.755000	34.10	10.1	56	21.9	N	GND
0.830000	35.90	10.1	56	20.1	N	GND
1.300000	36.60	10.1	56	19.4	N	GND
1.375000	36.40	10.1	56	19.6	N	GND
2.357817	33.30	10.1	56	22.7	N	GND

**MEASUREMENT RESULT: "11A02435\_UC\_fin AV"**

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.225000	40.20	10.1	53	12.4	N	GND
0.265000	39.30	10.1	51	12.0	N	GND
0.715000	33.60	10.1	46	12.4	N	GND
0.755000	34.00	10.1	46	12.0	N	GND
0.830000	34.60	10.1	46	11.4	N	GND
1.300000	33.40	10.1	46	12.6	N	GND

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