



TEST REPORT

No. 2011TAR029

for

TCT Mobile Limited

GSM/GPRS/EDGE 900/1800 dual band mobile phone

Model Name: Onyx A

Marketing Name: one touch 803A

FCC ID: RAD154

With

Hardware Version: PIO

Software Version: V415

Issued Date: 2011-01-21

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

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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

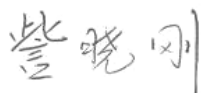
1.2. Testing Environment

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

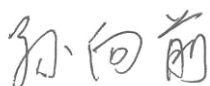
1.3. Project data

Testing Start Date: Jan 10, 2011
Testing End Date: Jan 12, 2011

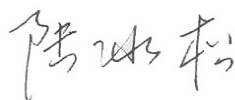
1.4. Signature



Qu Pengfei
(Prepared this test report)



Sun Xiangqian
(Reviewed this test report)



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. 201203
City: Shanghai
Country: China
Telephone: 0086 21 68897541
Fax: 0086 21 50801070

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. 201203
City: Shanghai
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 900/1800 dual band mobile phone
Model Name	Onyx A
Marketing Name	one touch 803A
FCC ID	RAD154

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

EUT ID*	SN or IMEI	HW Version	SW Version
N06	012561000000858	PIO	V415

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

3.3. Internal Identification of AE used during the test

AE ID*	Description	SN
AE1	Battery	/
AE2	Battery	/
AE3	Charger	/
AE4	Charger	/
AE5	Headset	/
AE6	Headset	/
AE7	Data cable	/
AE8	Data cable	/

AE1

Model	CAB31L0000C1
Manufacturer	BYD
Capacitance	1000mAh
Nominal Voltage	3.7V

AE2

Model	CAB31L0000C2
Manufacturer	BAK
Capacitance	1000mAh
Nominal Voltage	3.7V

AE3

Model	CBA3120AG0C2
Manufacturer	Tenpao
Length of DC line	120cm

AE4

Model	CBA3001AG0C1
Manufacturer	BYD
Length of DC line	120cm

AE5

Model	CCB3160A10C0
Manufacturer	Juwei

AE6

Model	CCB3160A10C3
Manufacturer	Lianchuang

AE7

Model	CDA3122000C0
Manufacturer	Juwei

AE8

Model	CDA3122000C0
Manufacturer	Shenhua

*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.

Reference	Title	Version
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

Abbreviations used in this clause:	
P	Pass
NA	Not applicable
F	Fail

Clause	List	Clause in FCC rules	Verdict
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	ESCI	100344	R&S	2011-03-12
2	Test Receiver	ESCI	100766	R&S	2011-12-06
3	Test Receiver	ESI40	831564/002	R&S	2011-02-12
4	BiLog Antenna	VUL9163	9163-302	Schwarzbeck	2011-02-10
5	Signal Generator	SMB100A	102063	R&S	2011-03-05
6	LISN	ESH2-Z5	829991/012	R&S	2011-04-20
7	Universal Radio Communication Tester	CMU200	100680	R&S	2011-09-05
8	Dual-Ridge Waveguide Horn Antenna	3115	6914	EMCO	2011-3
9	PC	OPTIPLEX 755	3908243625	DELL	N/A
10	Monitor	E178FPc	CN-OWR979-641 80-7AJ-D2MS	DELL	N/A
11	Printer	DeskJet D2368	TH72E12G7Q	HP	N/A
12	Keyboard	L100	CN0RH65965890 7ATOI40	DELL	N/A
13	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 and the path loss.

The measurement results are obtained as described below:

$$\text{Result} = P_{\text{Mea}} + F_A + G_{\text{PL}}$$

Where

F_A : Receive Antenna Factor

G_{PL} : Path Loss

P_{Mea} : The measurement result on receiver.

Charging Mode(AE3 CBA3120AG0C2)

Frequency(MHz)	Result(dBuV/m)	G_{PL} (dB)	F_A (dB)	P_{Mea} (dBuV/m)	Polarity
3941.884	51.16	-19.8	33.4	37.56	VERTICAL
3488.978	50.86	-19.6	31.2	39.26	HORIZONTAL
3553.106	50.67	-19.5	33.4	36.77	VERTICAL
3787.575	50.67	-19.8	33.4	37.07	VERTICAL
3745.491	50.66	-19.7	33.4	36.96	VERTICAL
3739.479	50.62	-19.7	33.4	36.92	VERTICAL

Charging Mode(AE4 CBA3001AG0C1)

Frequency(MHz)	Result(dBuV/m)	G_{PL} (dB)	F_A (dB)	P_{Mea} (dBuV/m)	Polarity
3687.375	51.17	-19.5	33.4	37.27	VERTICAL
3537.074	51.06	-19.4	33.4	37.06	VERTICAL
3456.914	51.03	-19.6	31.2	39.43	HORIZONTAL
3501.002	50.9	-19.7	33.4	37.2	HORIZONTAL
3551.102	50.78	-19.5	33.4	36.88	VERTICAL
3843.687	50.66	-19.5	33.4	36.76	VERTICAL

USB Mode

Frequency(MHz)	Result(dBuV/m)	G_{PL} (dB)	F_A (dB)	P_{mea} (dBuV/m)	Polarity
3494.99	51.55	-19.7	31.2	40.05	VERTICAL
3979.96	51.55	-19.4	33.4	37.55	VERTICAL
3817.635	51.32	-19.5	33.4	37.42	VERTICAL
3795.591	51.29	-19.7	33.4	37.59	HORIZONTAL
3476.954	51.23	-19.7	31.2	39.73	VERTICAL
3478.958	51.23	-19.7	31.2	39.73	HORIZONTAL

Charging Mode

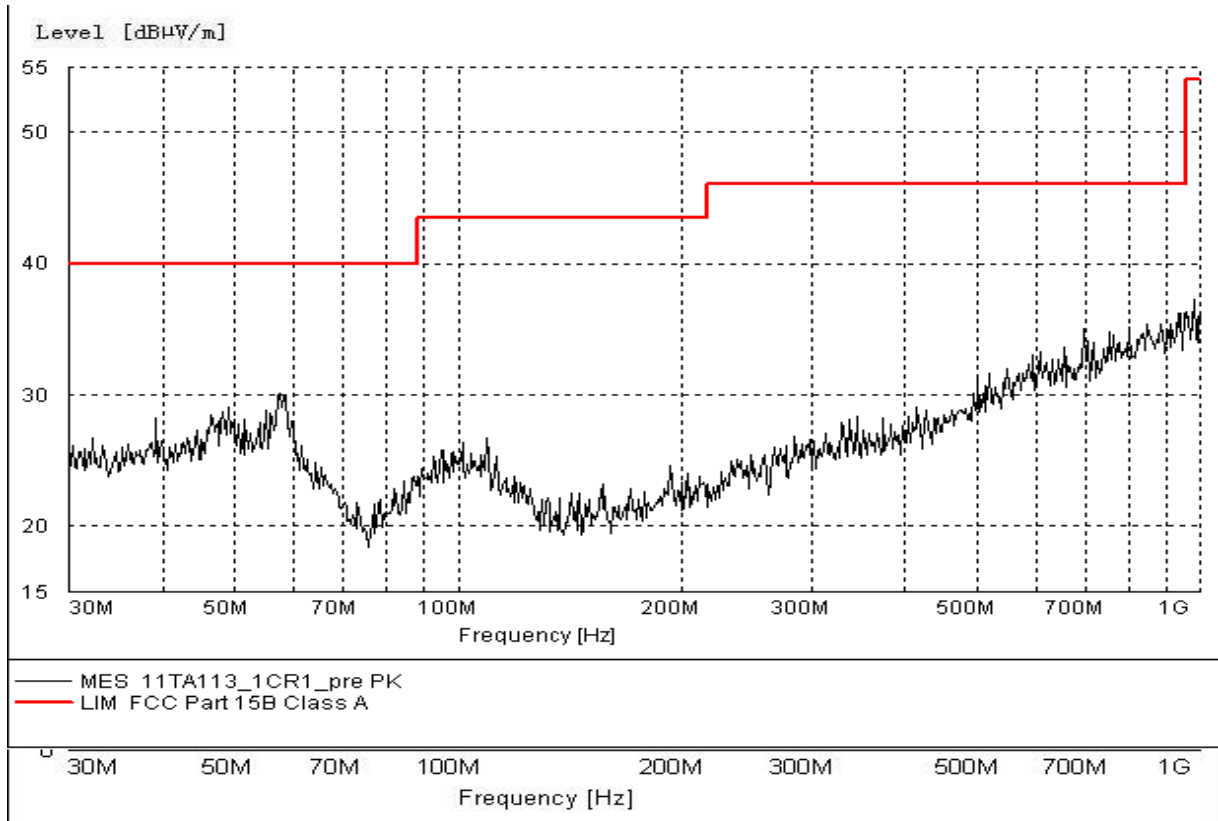


Figure A.1 Radiated Emission from 30MHz to 1GHz(AE3 CBA3120AG0C2)

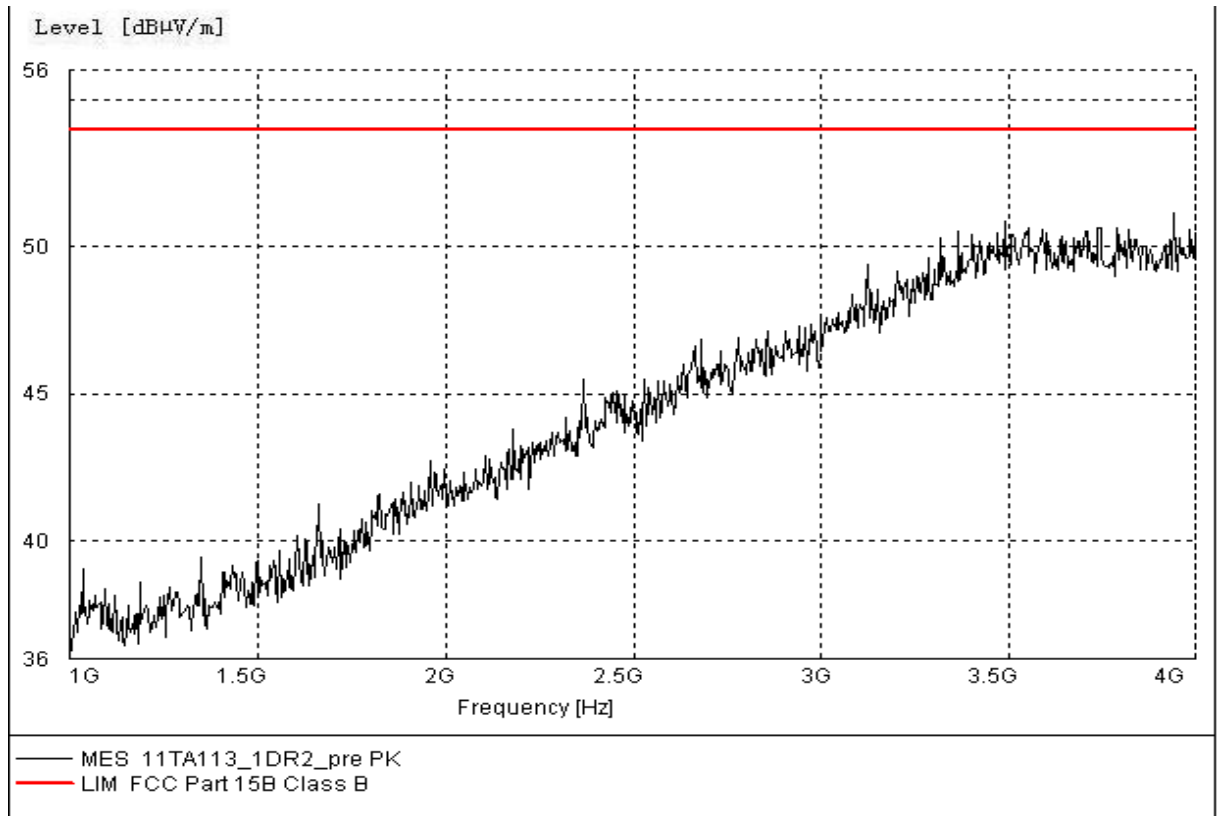


Figure A.2 Radiated Emission from 1GHz to 4GHz(AE3 CBA3120AG0C2)

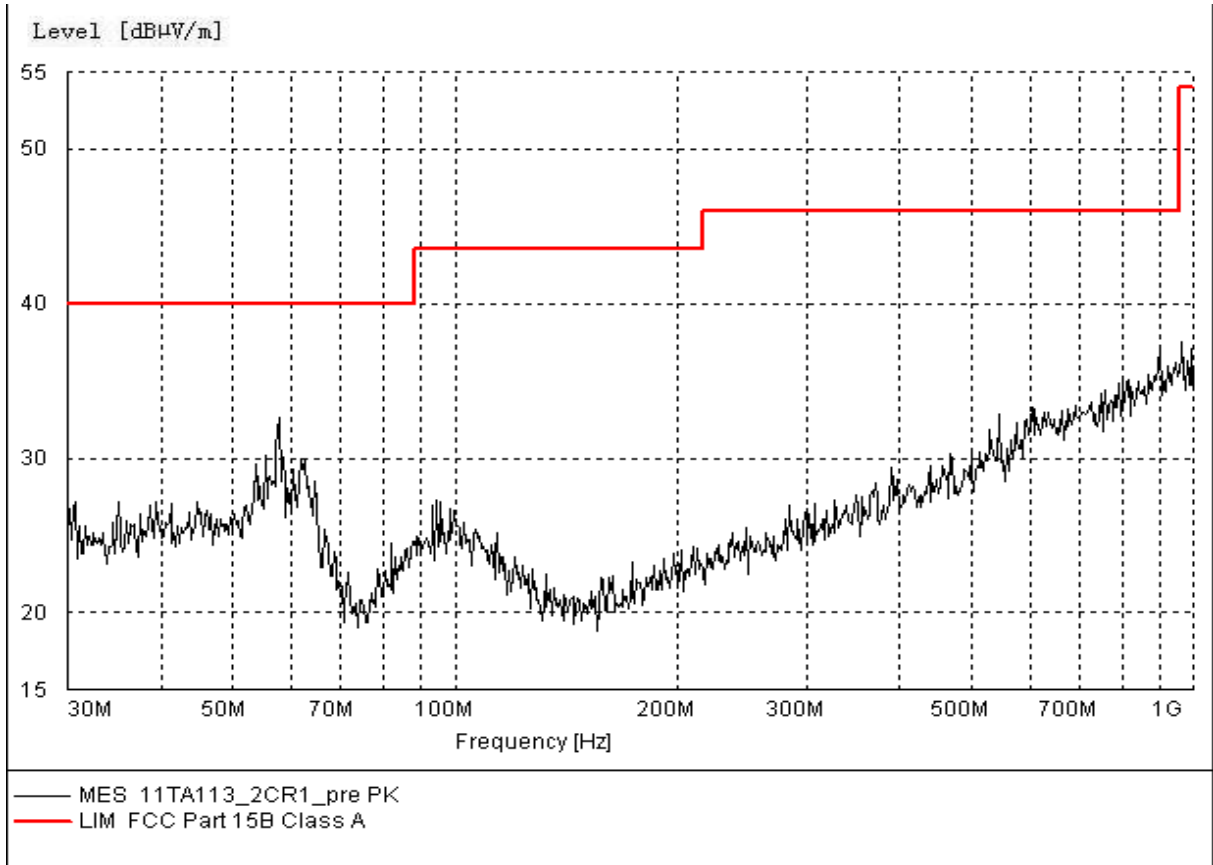


Figure A.3 Radiated Emission from 30MHz to 1GHz(AE4 CBA3001AG0C1)

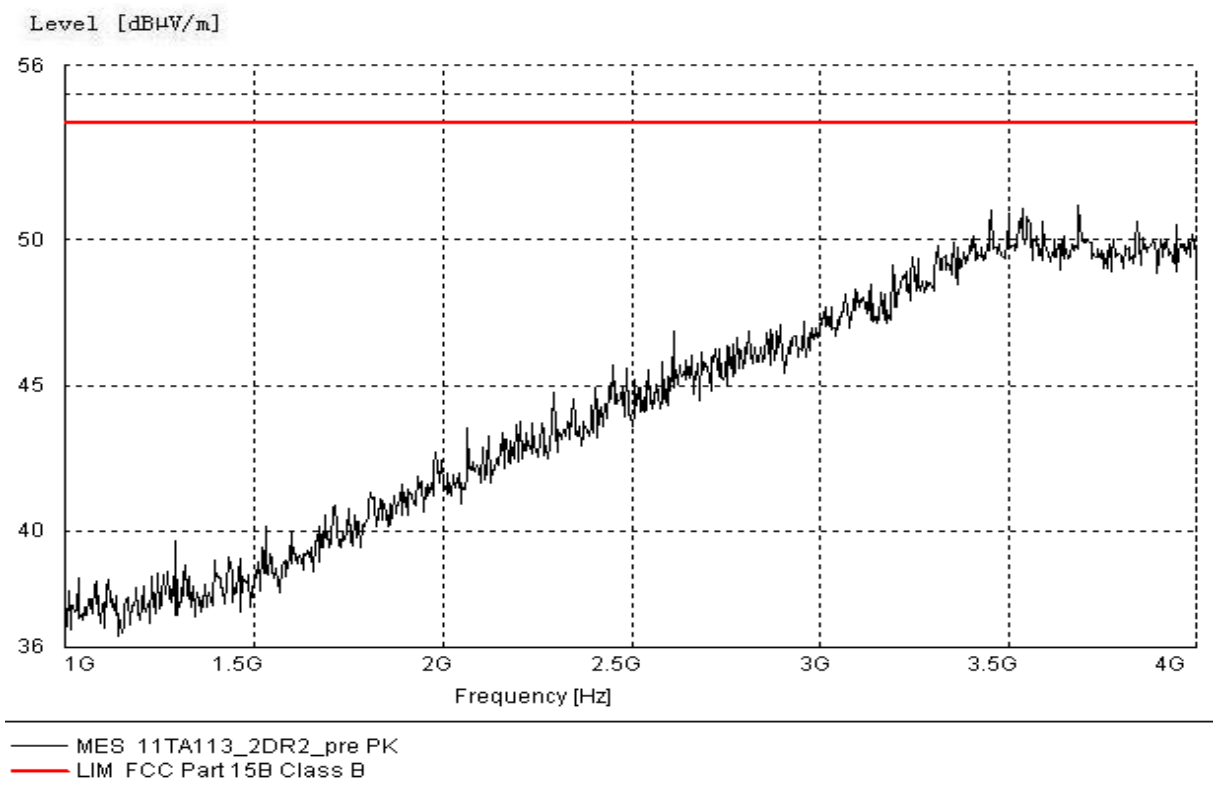
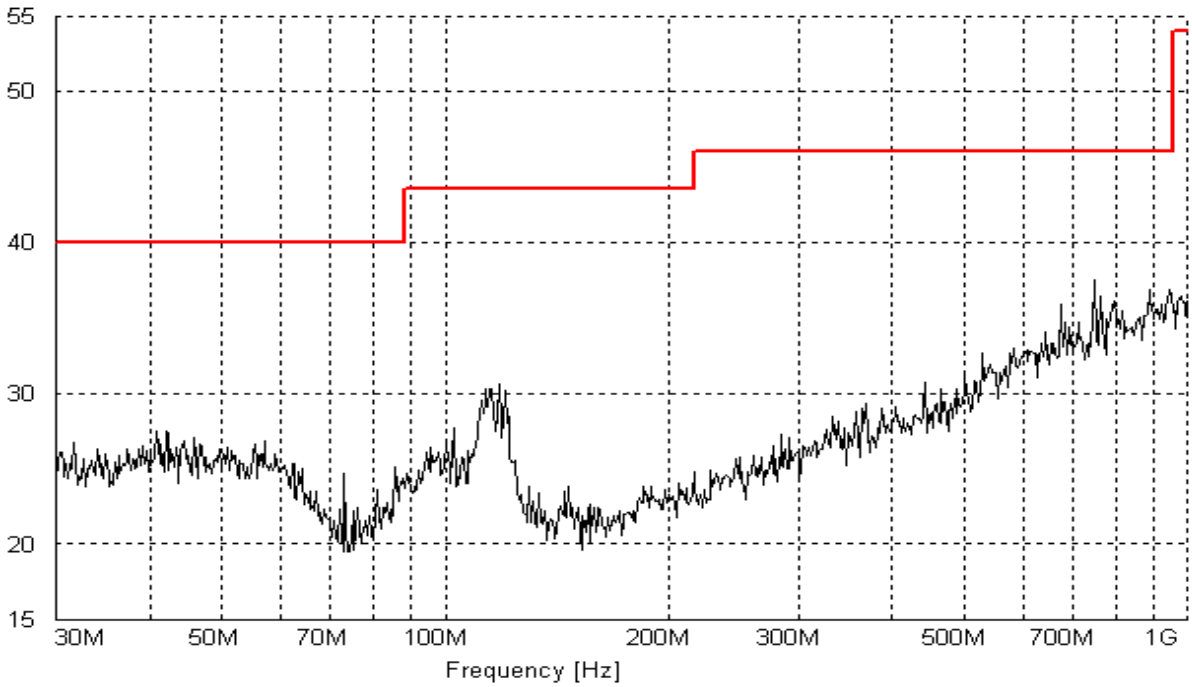


Figure A.4 Radiated Emission from 1GHz to 4GHz(AE4 CBA3001AG0C1)

USB Mode

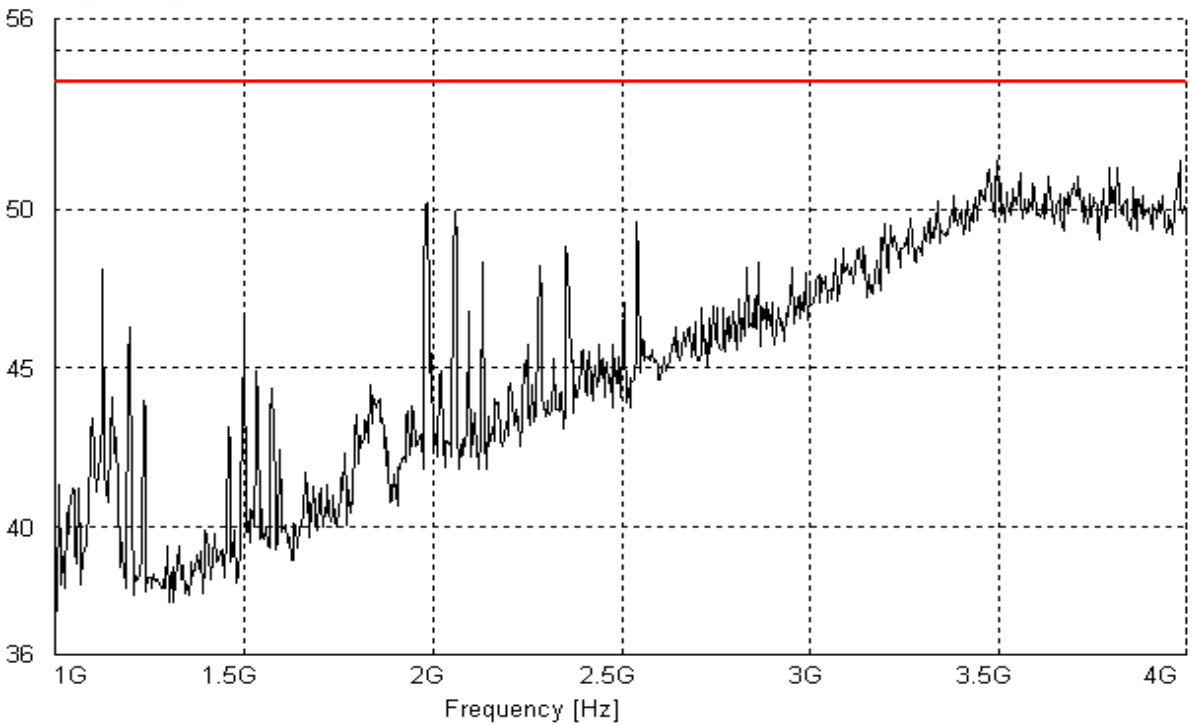
Level [dB μ V/m]



— MES_11TA113_1DR_pre PK
— LIM FCC Part 15B Class A

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

Level [dB μ V/m]



— MES_11TA113_2DR_pre PK
— LIM FCC Part 15B Class B

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 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 μ 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

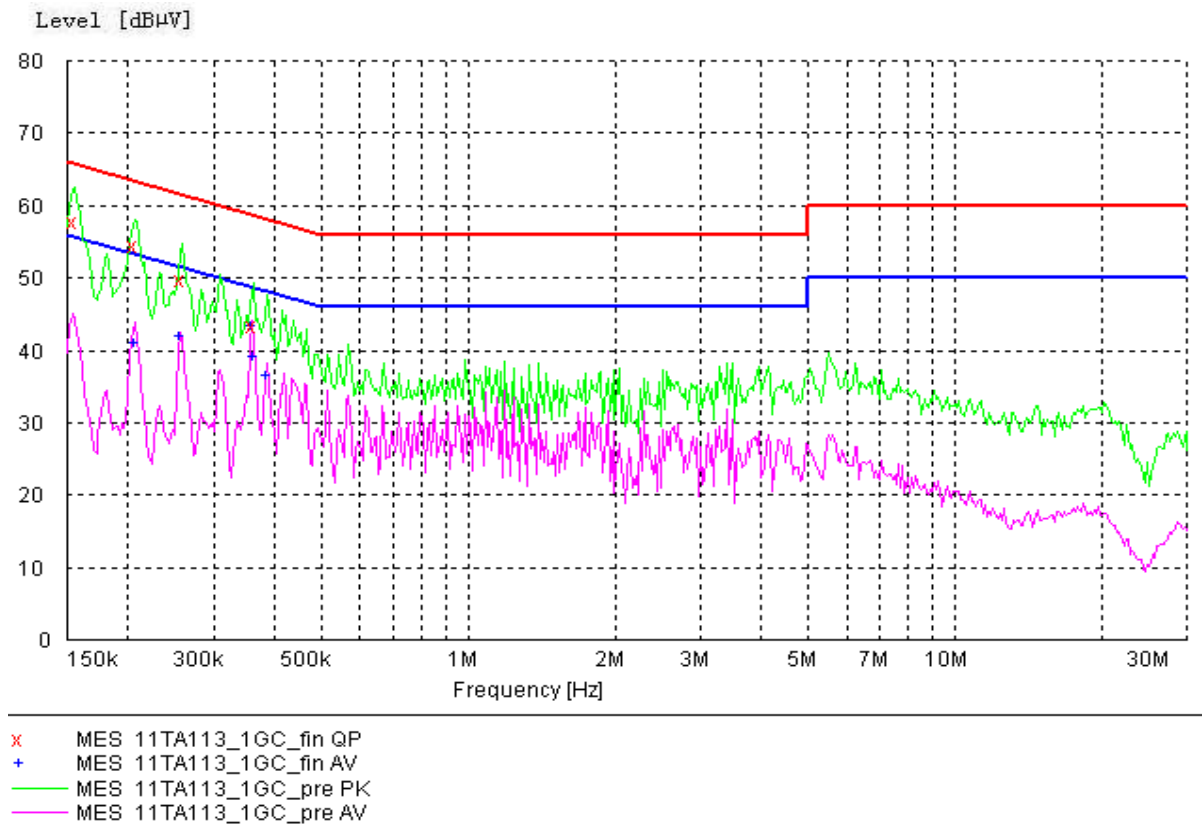


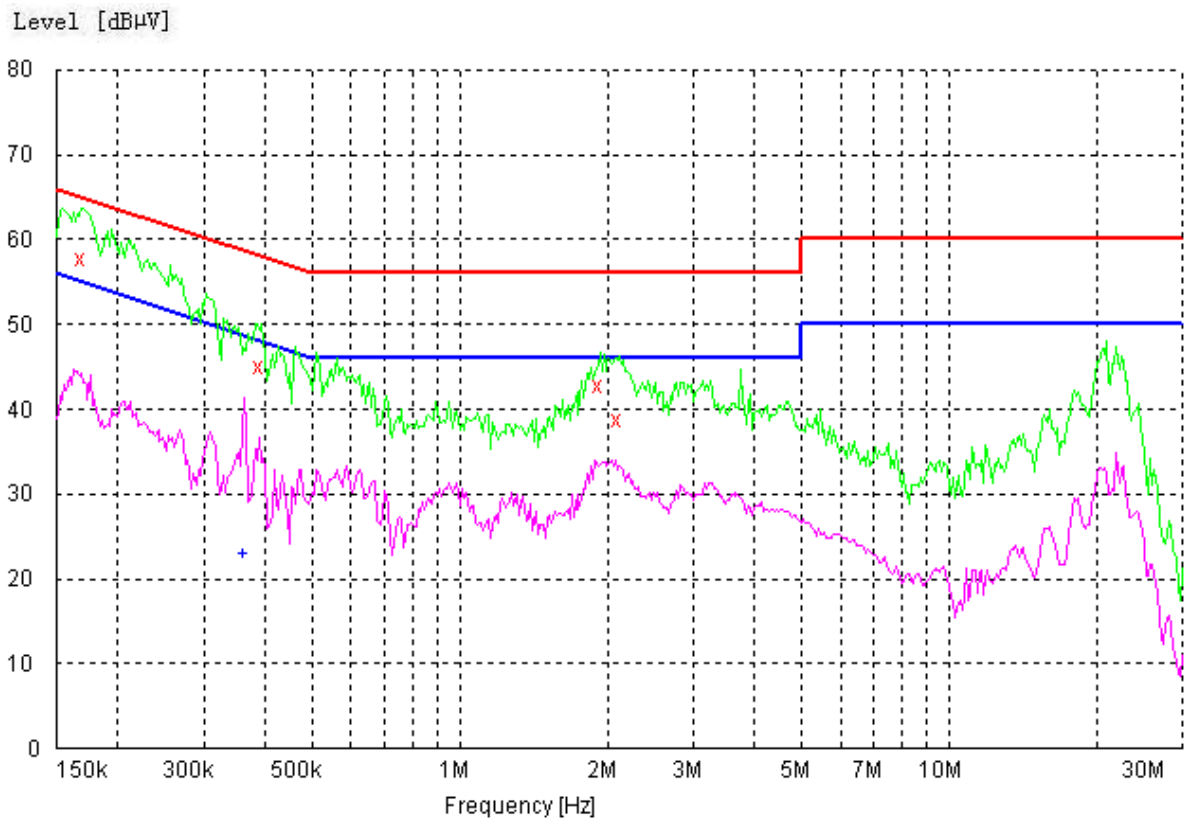
Figure A.7 Conducted Emission(AE3 CBA3120AG0C2)

MEASUREMENT RESULT: "11TA113_1GC_fin QP"

Frequency MHz	Level dBμV	Transd dB	Limit dB	Margin dBμV	Line dB	PE
0.156091	57.80	10.1	66	7.8	N	FLO
0.206241	54.50	10.1	63	8.8	L1	FLO
0.259279	49.90	10.1	62	11.6	N	GND
0.363658	43.40	10.1	59	15.3	N	GND

MEASUREMENT RESULT: "11TA113_1GC_fin AV"

Frequency MHz	Level dBμV	Transd dB	Limit dB	Margin dBμV	Line dB	PE
0.206241	41.00	10.1	53	12.4	L1	GND
0.256712	42.00	10.1	52	9.5	L1	FLO
0.360058	43.40	10.1	49	5.3	L1	GND
0.363658	39.20	10.1	49	9.5	L1	GND
0.386031	36.60	10.1	48	11.5	L1	FLO



- x MES 11TA113_2GC_fin QP
- + MES 11TA113_2GC_fin AV
- MES 11TA113_2GC_pre PK
- MES 11TA113_2GC_pre AV

Figure A.8 Conducted Emission(AE4 CBA3001AG0C1)

MEASUREMENT RESULT: "11TA113_2GC_fin QP"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.170714	57.90	10.1	65	7.1	N	FLO
0.393790	45.00	10.1	58	13.0	L1	GND
1.935015	42.70	10.1	56	13.3	L1	GND
2.123040	38.80	10.1	56	17.2	L1	GND

MEASUREMENT RESULT: "11TA113_2GC_fin AV"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.363658	23.00	10.1	49	25.6	L1	FLO

USB Mode

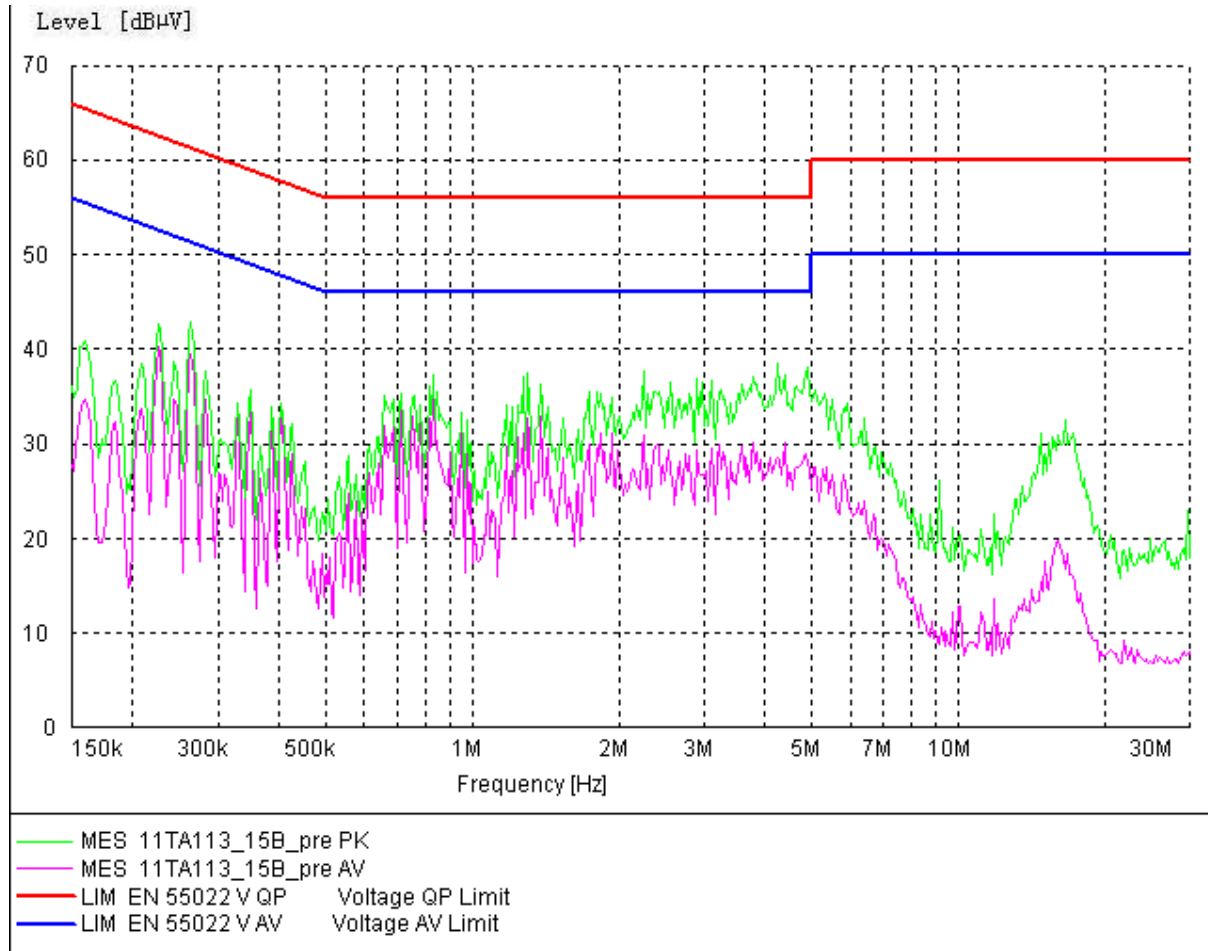


Figure A.9 Conducted Emission

END OF REPORT