



TEST REPORT

No. 2013TAR376

for

TCT Mobile Limited

GSM/GPRS dual bands mobile phone

Model Name: MINI Q A

Marketing Name: OT-606A

FCC ID: RAD367

With

Hardware Version: Lot1

Software Version: 325-2

Issued Date: 2013-04-01



DAR accreditation (DIN EN ISO/IEC 17025): No. D-PL-12123-01-01

FCC 2.948 Listed: No.733176

IC O.A.T.S listed: No.6629B

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:

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: 3/F Shou Xiang Technology Building, No.51 Xueyuan Road, Hai
Dian District, Beijing, P. R. China
Postal Code: 100191
Telephone: 00861062304633
Fax: 00861062304793

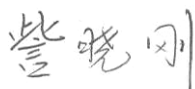
1.2. Testing Environment

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

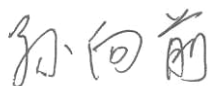
1.3. Project data

Testing Start Date: 2013-03-22
Testing End Date: 2013-03-22

1.4. Signature



Zi Xiaogang
(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, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park,
Pudong Area Shanghai, P.R. China. 201203
Contact: Gong Zhizhou
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, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park,
Pudong Area Shanghai, P.R. China. 201203
Contact: Gong Zhizhou
Email: zhizhou.gong@jrdcom.com
Telephone: 0086-21-61460890
Fax: 0086-21-61460602

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

3.1. About EUT

Description	GSM/GPRS dual bands mobile phone
Model Name	MINI Q A
Marketing Name	OT-606A
FCC ID	RAD367

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
N01	013379003750349	Lot1	325-2

*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	Travel Adapter	/
AE3	Travel Adapter	/
AE4	Travel Adapter	/
AE5	Travel Adapter	/
AE6	Data Cable	/
AE7	Headset	/
AE8	Headset	/
AE9	Bluetooth Headset	/

AE1

Model	CAB31C0000C1
Manufacturer	BYD
Capacitance	670mAh
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	CBA3170AG0C1
Manufacturer	BYD
Length of DC line	150cm

AE5

Model	CBA3170AG0C2
Manufacturer	TENPAO
Length of DC line	150cm

AE6

Model	CDA3122000C0 Micro usb cable
Manufacturer	Juwei/Shenhua

AE7

Model	CCB3160A10C0
Manufacturer	Juwei

AE8

Model	CCB3160A10C2
Manufacturer	Shunda

AE9

Model	OT-BM82
Manufacturer	TCT

*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	10-1-10 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	ESU26	100376	R&S	2013-11-07
2	EMI Antenna	VULB 9163	9163-514	Schwarzbeck	2014-11-10
3	EMI Antenna	3117	00139065	ETS-Lindgren	2014-07-31
4	LISN	ESH2-Z5	829991/012	R&S	2013-04-16
5	Test Receiver	ESCI	100344	R&S	2014-03-27
6	Universal Radio Communication Tester	CMU200	102228	R&S	2013-07-07
7	PC	OPTIPLEX 755	3908243625	DELL	N/A
8	Monitor	E178FPc	CN-OWR979-641 80-7AJ-D2MS	DELL	N/A
9	Printer	LaserJet 1160	CNM2D33740	HP	N/A
10	Keyboard	L100	CN0RH65965890 7ATOI40	DELL	N/A
11	Mouse	M-UAE119	LZ935220ZRC	Lenovo	N/A
12	Universal Radio Communication Tester	E5515C	MY48361083	Agilent	2014-03-15

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.1.4 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
3680.695	47.97	13.9	34.07	VERTICAL
3699.098	47.49	13.9	33.59	HORIZONTAL
3449.618	47.38	11.6	35.78	HORIZONTAL
3644.162	47.28	13.7	33.58	VERTICAL
3811.467	47.25	13.9	33.35	VERTICAL
3888.27	47.13	13.7	33.43	VERTICAL

Charging Mode(AE3)

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
3717.594	47.57	13.9	33.67	HORIZONTAL
3888.27	47.54	13.7	33.84	VERTICAL
3484.2	47.48	11.6	35.88	VERTICAL
3644.162	47.41	13.7	33.71	VERTICAL
3849.677	47.23	13.9	33.33	HORIZONTAL
3699.098	47.22	13.9	33.32	VERTICAL

Charging Mode(AE4)

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
3590.042	48.14	13.8	34.34	VERTICAL
3811.467	47.67	13.9	33.77	VERTICAL
3484.2	47.48	11.6	35.88	VERTICAL
3466.866	47.38	11.6	35.78	VERTICAL
3699.098	47.35	13.9	33.45	HORIZONTAL
3449.618	47.24	11.6	35.64	HORIZONTAL

Charging Mode(AE5)

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
3699.098	47.9	13.9	34	VERTICAL
3830.525	47.62	13.9	33.72	VERTICAL
3644.162	47.55	13.7	33.85	HORIZONTAL
3717.594	47.43	13.9	33.53	VERTICAL
3381.479	47.2	11.7	35.5	VERTICAL
3554.409	47.06	13.9	33.16	VERTICAL

USB Mode

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
2995.581	50.97	9.7	41.27	VERTICAL
3484.2	48.71	11.6	37.11	HORIZONTAL
1497.79	48.54	2.9	45.64	HORIZONTAL
3680.695	47.7	13.9	33.8	VERTICAL
3449.618	47.65	11.6	36.05	HORIZONTAL
3536.725	47.53	14	33.53	HORIZONTAL

Charging Mode

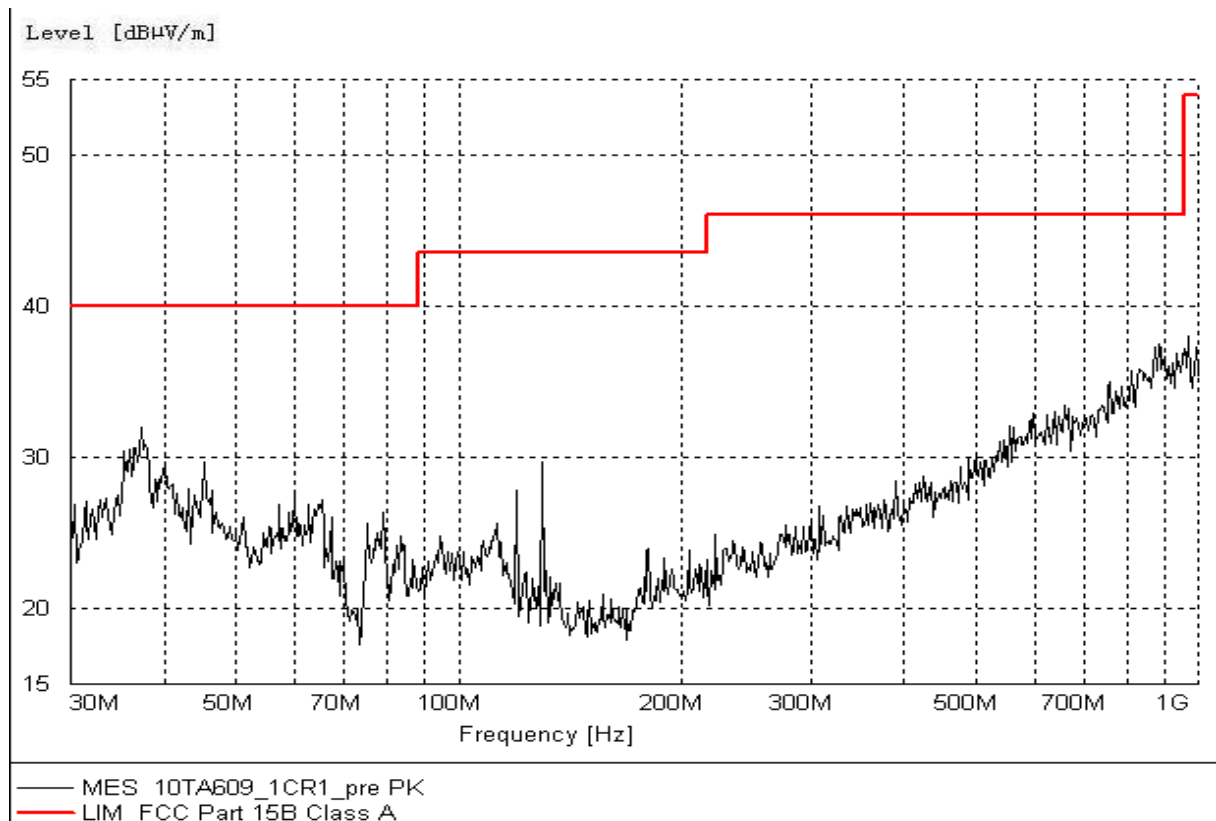


Figure A.1 Radiated Emission from 30MHz to 1GHz(AE2)

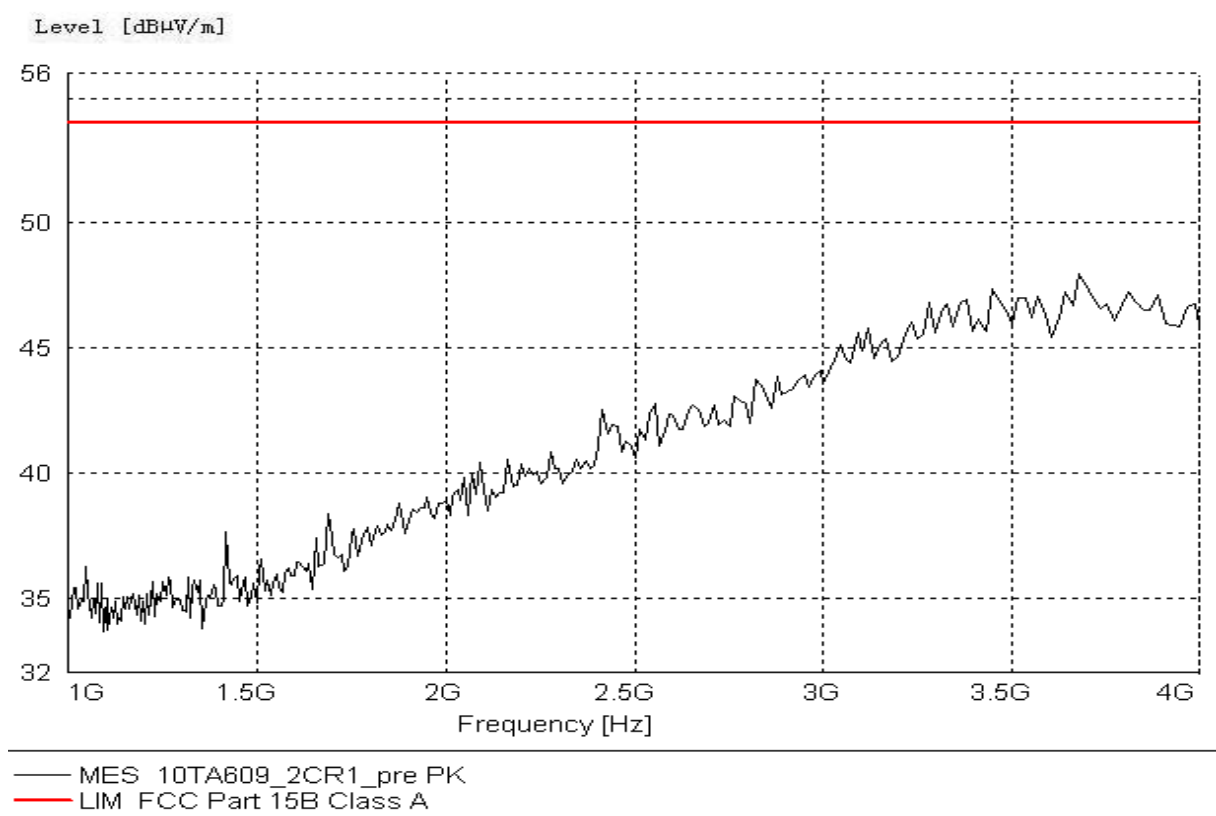


Figure A.2 Radiated Emission from 1GHz to 4GHz(AE2)

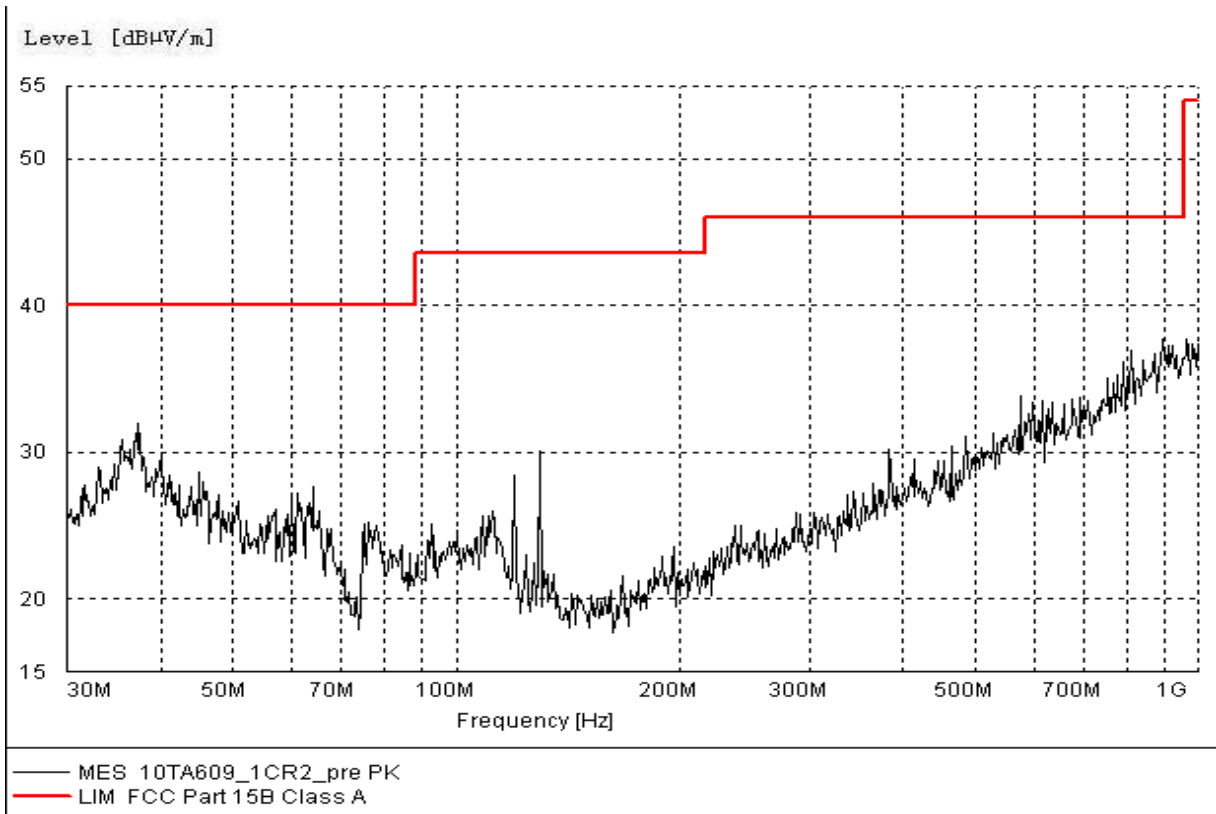


Figure A.3 Radiated Emission from 30MHz to 1GHz(AE3)

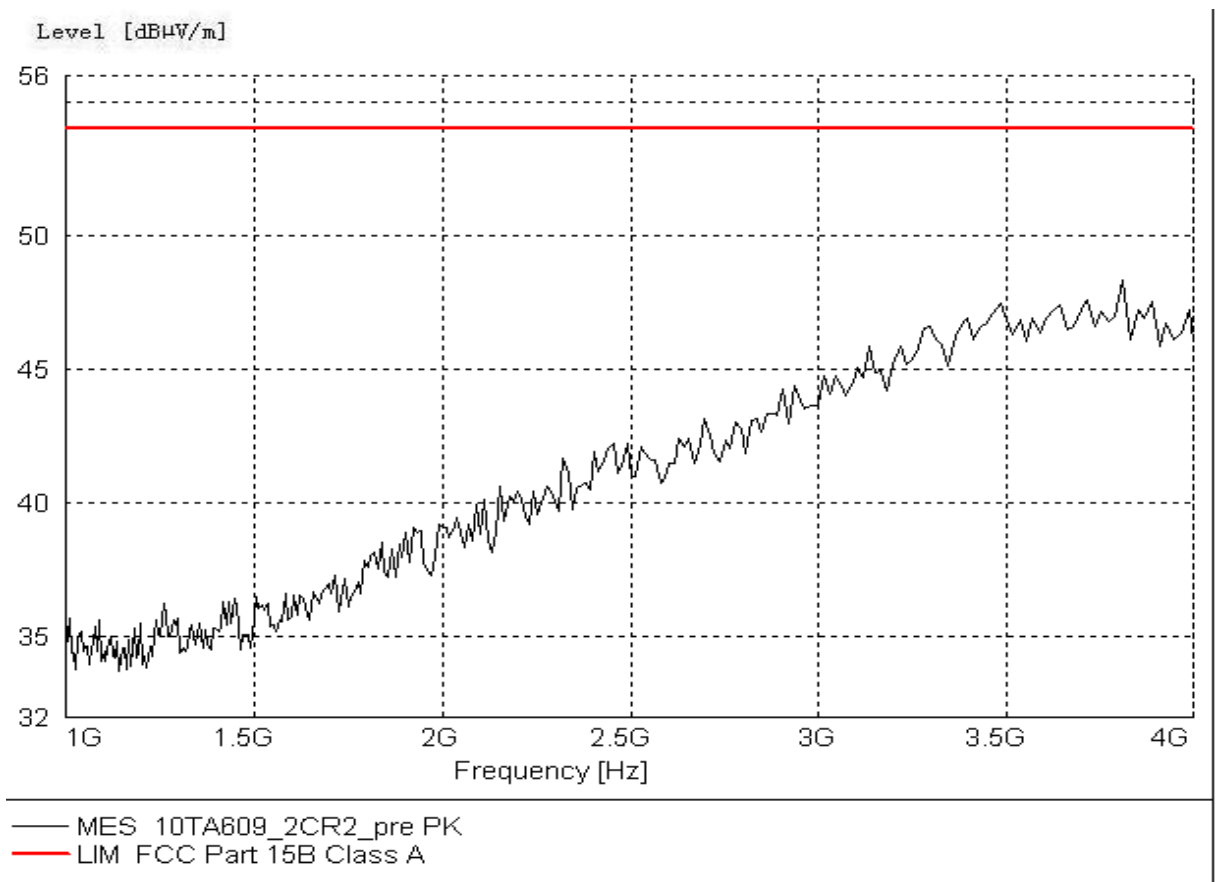


Figure A.4 Radiated Emission from 1GHz to 4GHz(AE3)

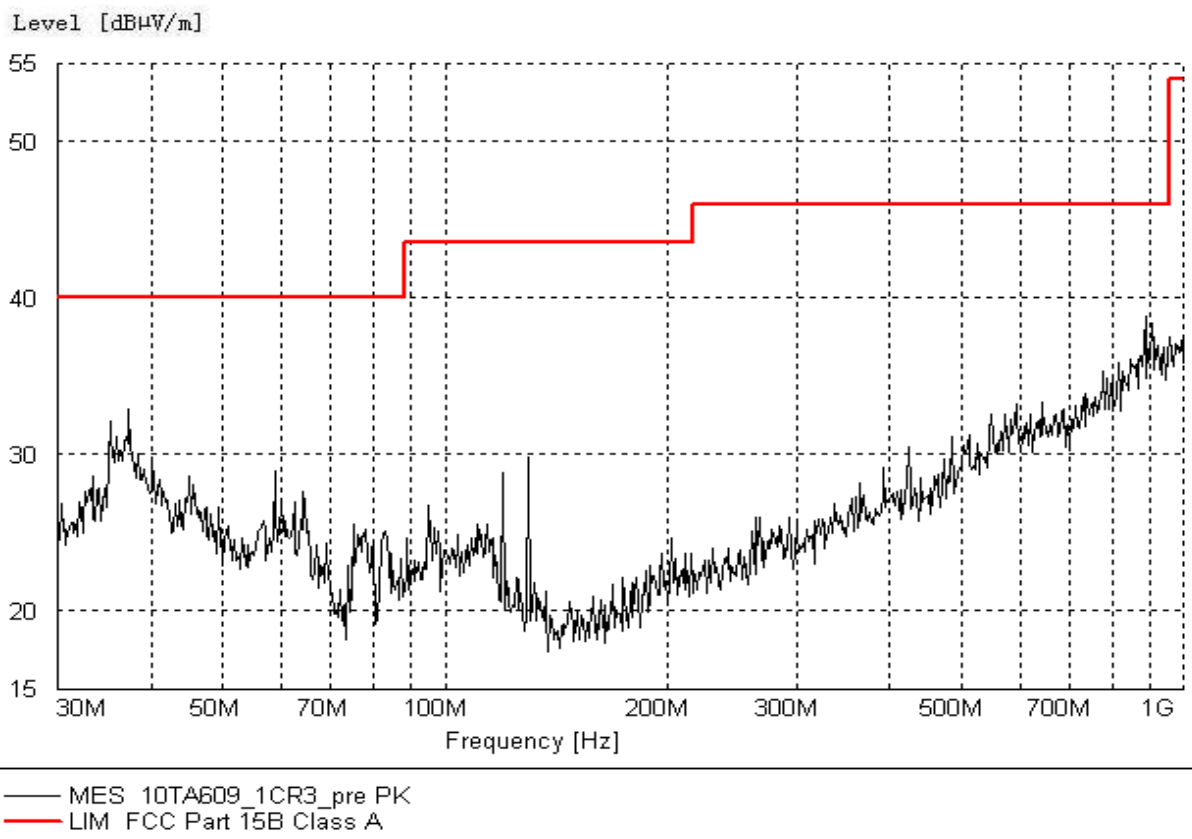


Figure A.5 Radiated Emission from 30MHz to 1GHz(AE4)

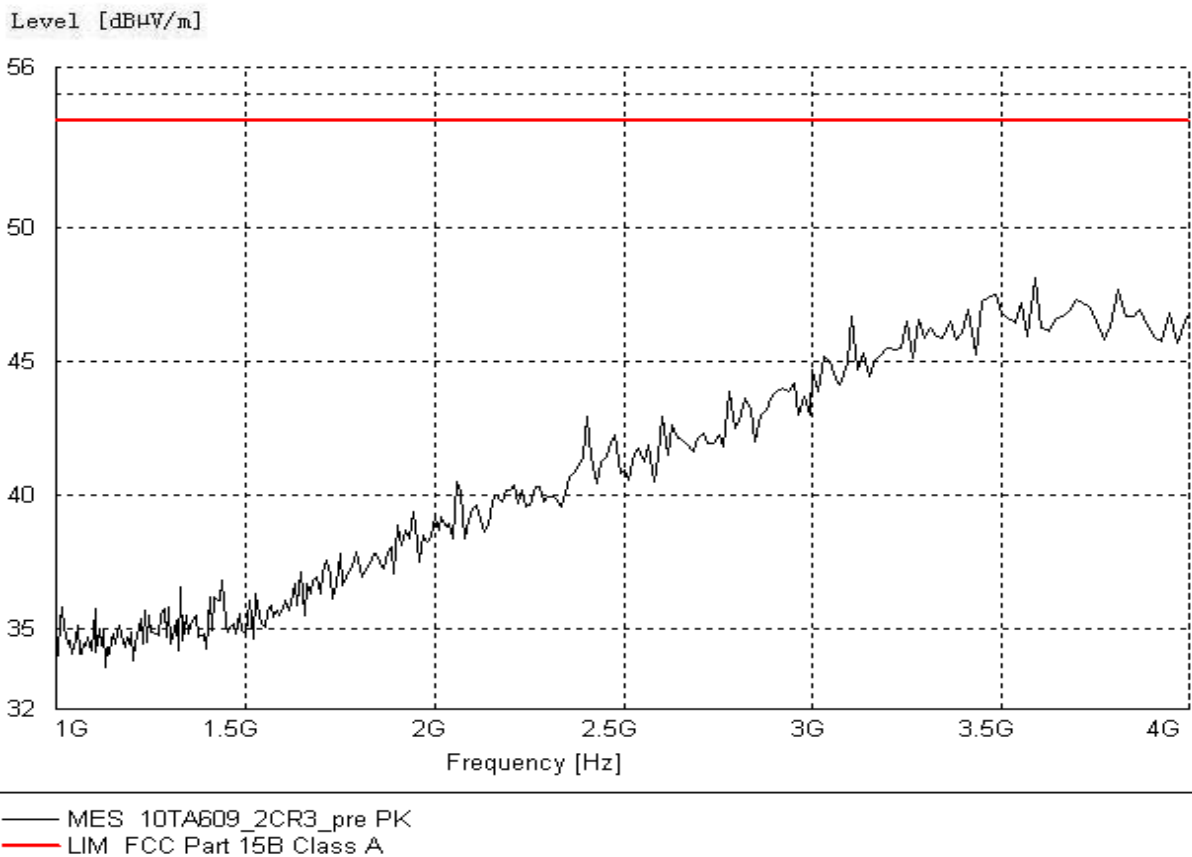


Figure A.6 Radiated Emission from 1GHz to 4GHz(AE4)

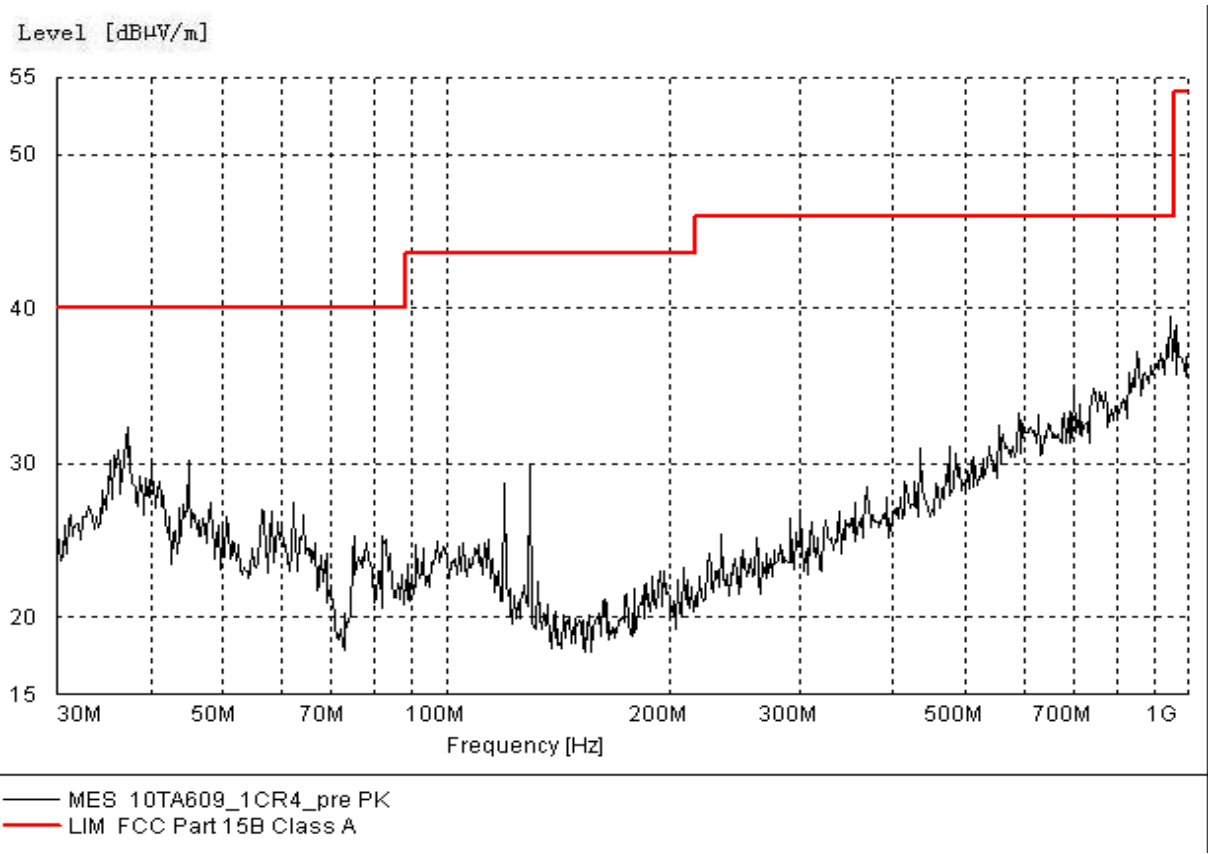


Figure A.7 Radiated Emission from 30MHz to 1GHz(AE5)

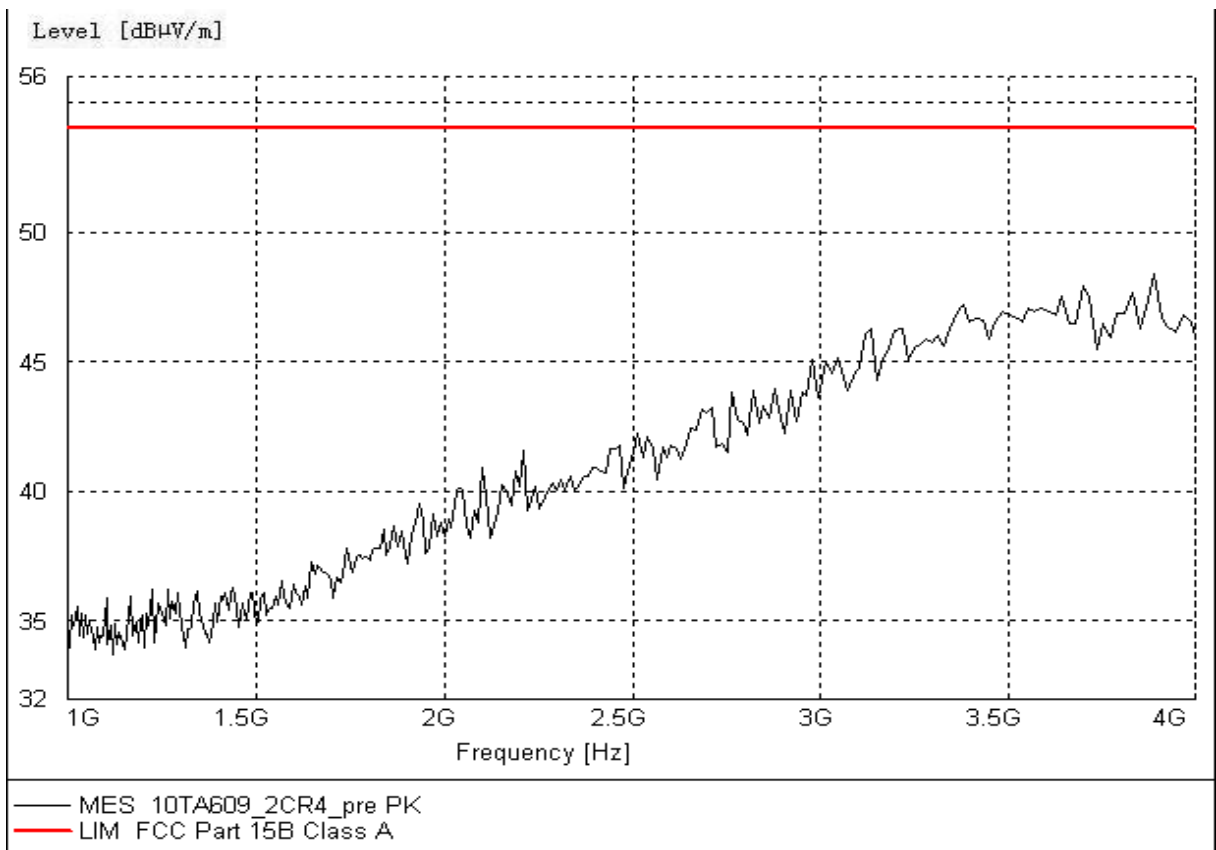


Figure A.8 Radiated Emission from 1GHz to 4GHz(AE5)

USB Mode

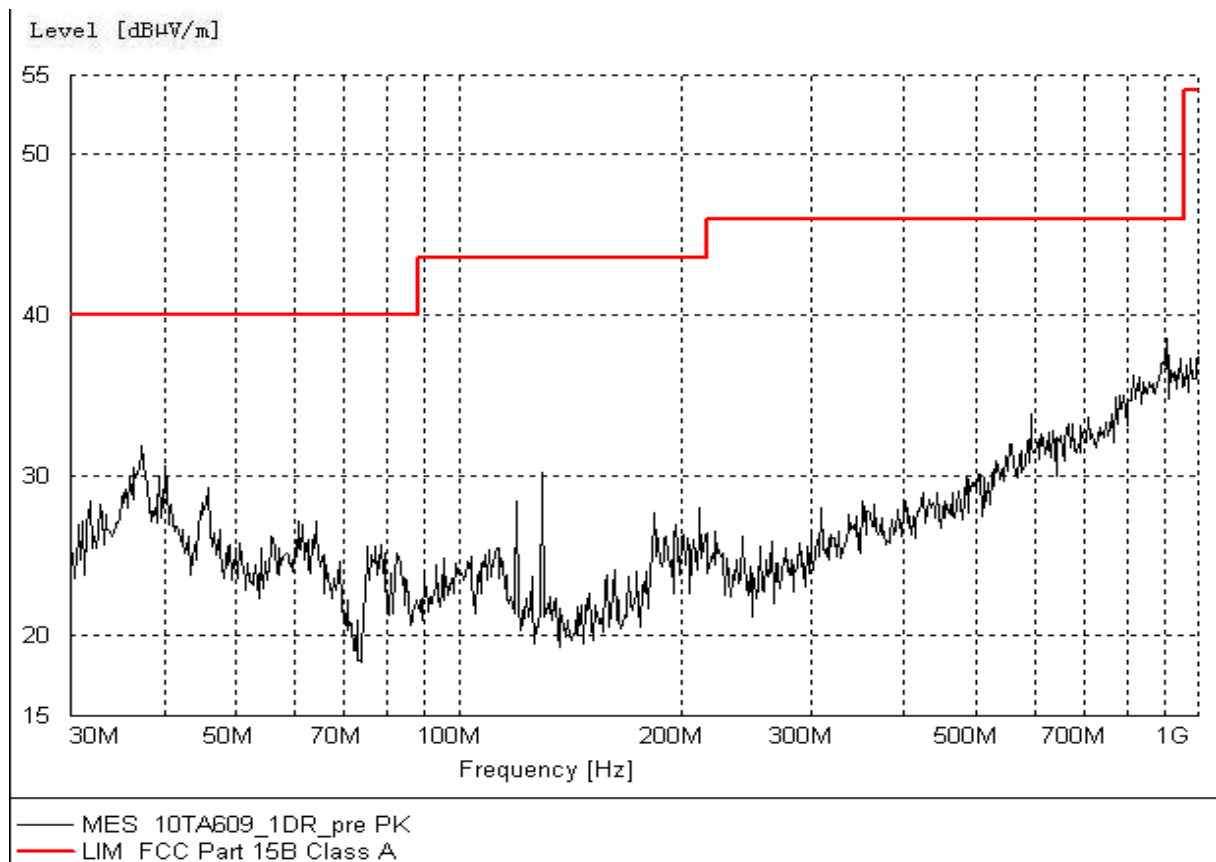


Figure A.9 Radiated Emission from 30MHz to 1GHz

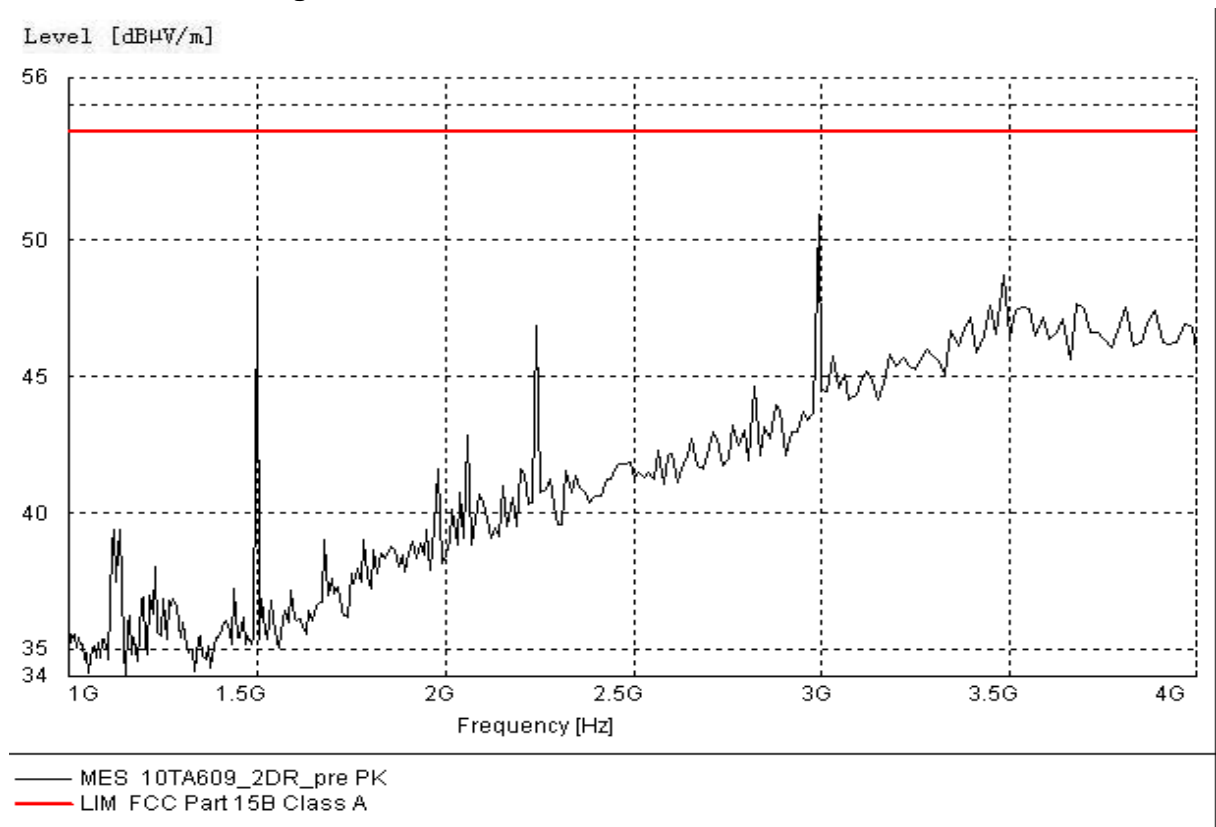


Figure A.10 Radiated Emission from 1GHz to 4GHz

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 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

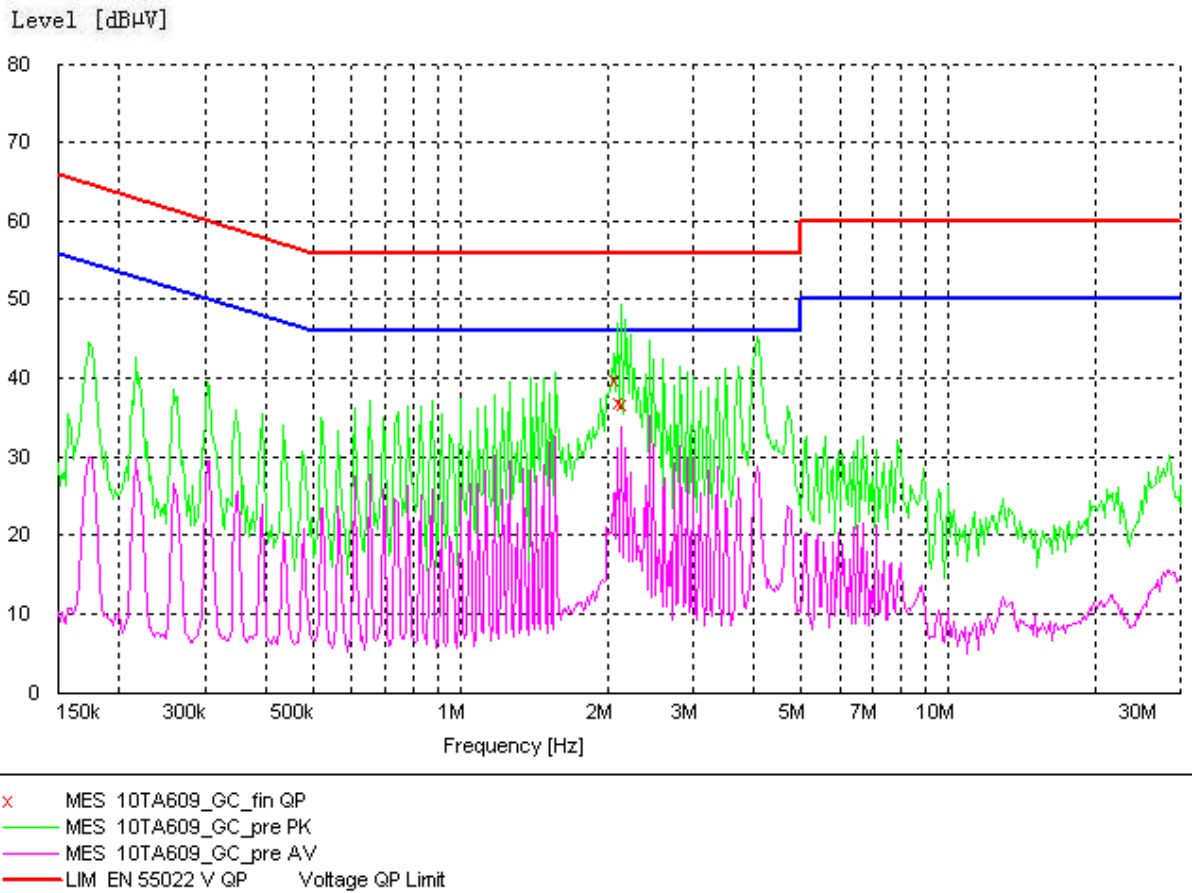


Figure A.11 Conducted Emission(AE2)

MEASUREMENT RESULT: "10TA609_GC_fin QP"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
2.102020	39.80	10.1	56	16.2	L1	GND
2.144271	36.90	10.1	56	19.1	N	GND
2.187371	36.70	10.1	56	19.3	N	FLO
2.020000	41.30	10.1	46	4.7	L1	FLO

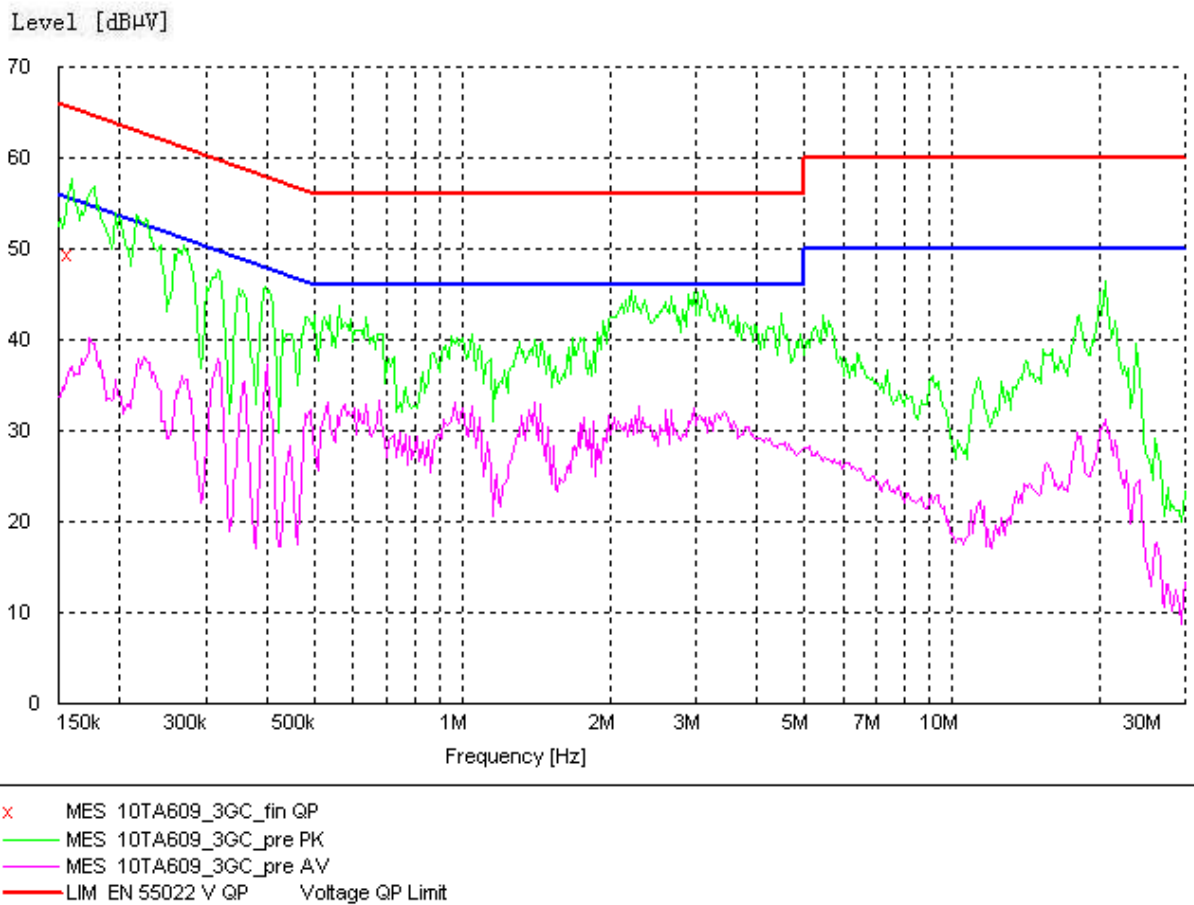


Figure A.12 Conducted Emission(AE3)

MEASUREMENT RESULT: "10TA609_3GC_fin QP"

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.159228	49.20	10.1	66	16.3	L1	GND

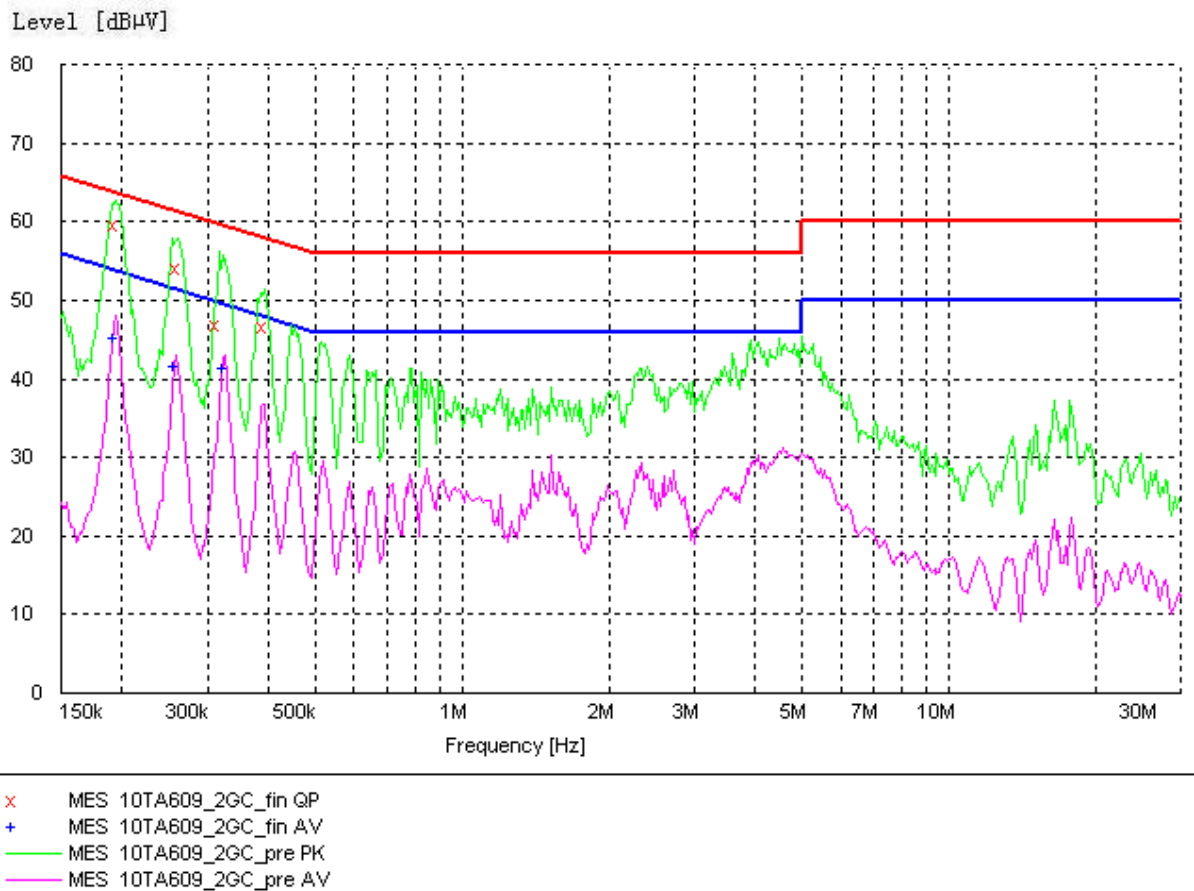


Figure A.13 Conducted Emission(AE4)

MEASUREMENT RESULT: "10TA609_2GC_fin QP"

Frequency MHz	Level dBμV	Transd dB	Limit dB	Margin dB	Line	PE
0.194288	59.60	10.1	64	4.3	L1	GND
0.261871	54.20	10.1	61	7.2	L1	GND
0.316369	47.00	10.1	60	12.8	N	FLO
0.393790	46.70	10.1	58	11.3	N	GND

MEASUREMENT RESULT: "10TA609_2GC_fin AV"

Frequency MHz	Level dBμV	Transd dB	Limit dB	Margin dB	Line	PE
0.194288	45.30	10.1	54	8.6	N	GND
0.259279	41.50	10.1	52	10.0	L1	FLO
0.325956	41.30	10.1	50	8.3	N	GND

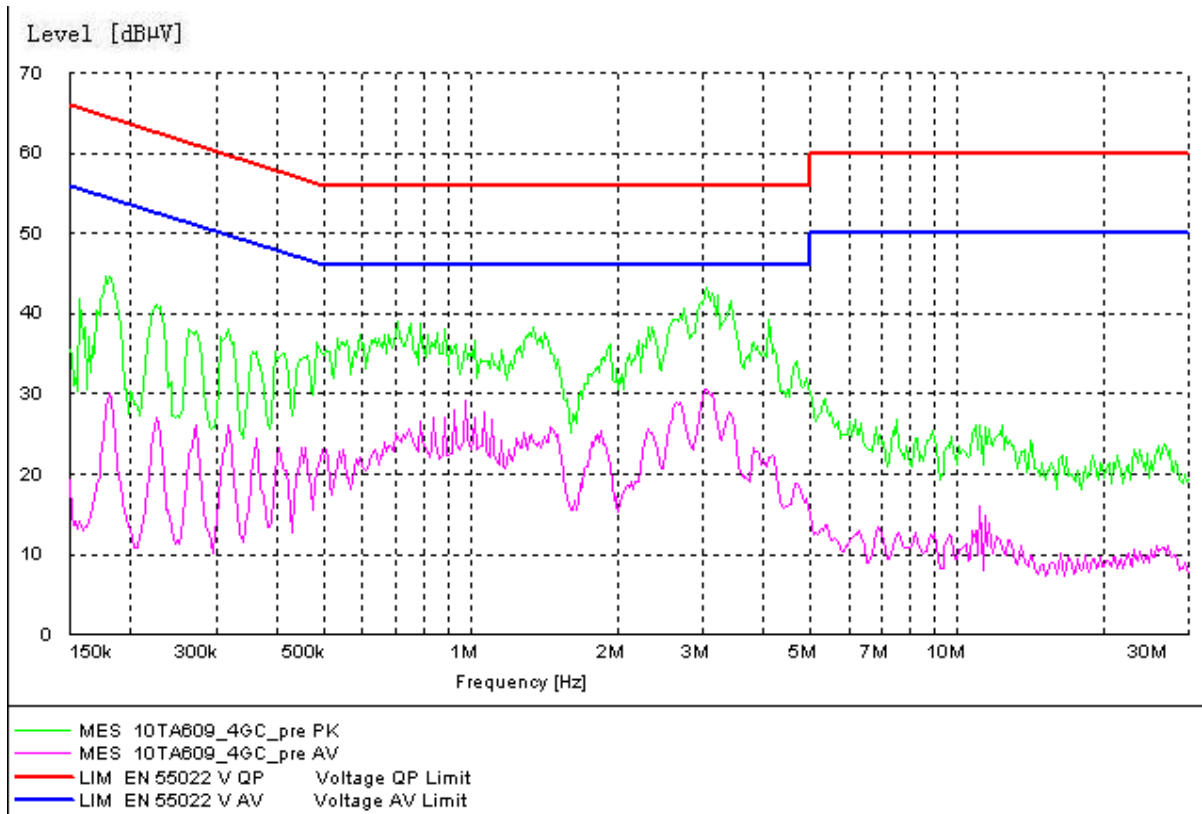
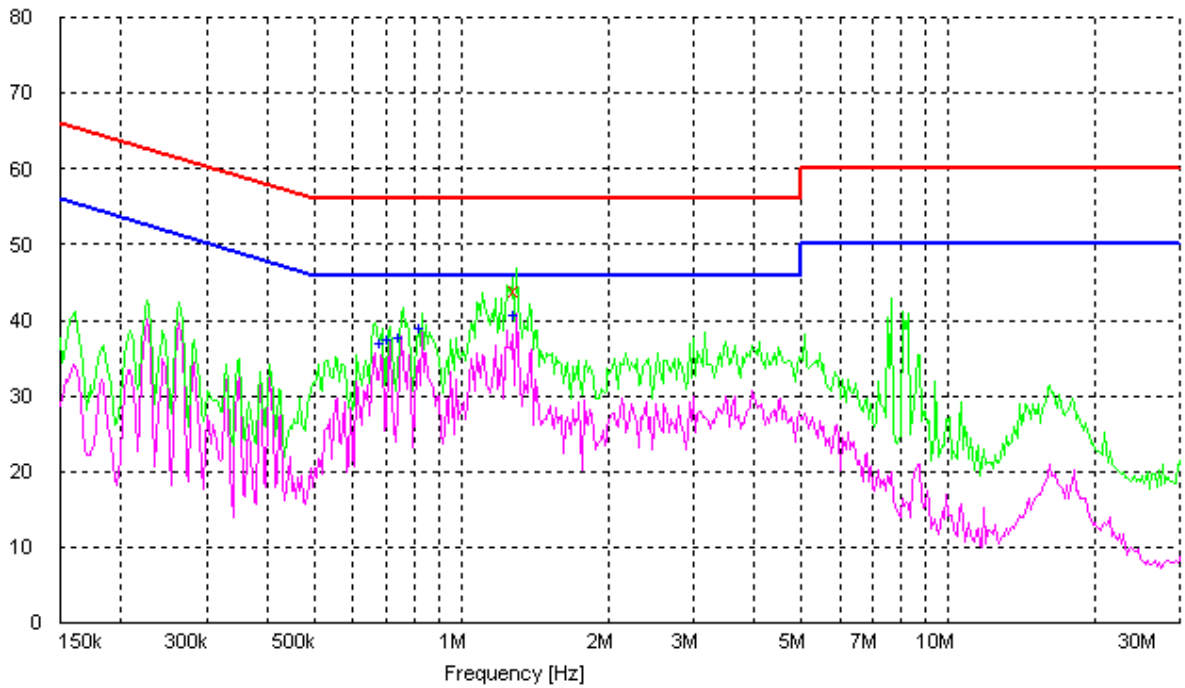


Figure A.14 Conducted Emission(AE5)

USB Mode

Level [dBμV]



- × MES 10TA609_15B_fin QP
- + MES 10TA609_15B_fin AV
- MES 10TA609_15B_pre PK
- MES 10TA609_15B_pre AV

Figure A.15 Conducted Emission

MEASUREMENT RESULT: "10TA609_15B_fin QP"

Frequency MHz	Level dBμV	Transd dB	Limit dB	Margin dB	Line	PE
1.299659	43.90	10.1	56	12.1	N	FLO

MEASUREMENT RESULT: "10TA609_15B_fin AV"

Frequency MHz	Level dBμV	Transd dB	Limit dB	Margin dB	Line	PE
0.687482	36.90	10.1	46	9.1	L1	FLO
0.715397	37.50	10.1	46	8.5	L1	FLO
0.751889	37.80	10.1	46	8.2	L1	FLO
0.830553	38.90	10.1	46	7.1	L1	FLO
1.299659	40.70	10.1	46	5.3	L1	FLO

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