TEST REPORT

No. 2012TAR012

for

TCT Mobile Limited

HSDPA/UMTS dual band / GSM quad bands mobile phone

Model Name: Alcatel V860

Marketing Name: Vodafone Smart II

FCC ID : RAD257

with

Hardware Version: PIO

Software Version: V121-1

Issued Date: 2012-01-31

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

CONTENTS

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

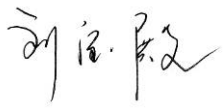
1.2. Testing Environment

Normal Temperature:	15-35℃
Relative Humidity:	20-75%

1.3. Project data

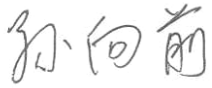
Testing Start Date:	Jan 06, 2012
Testing End Date:	Jan 09, 2011

1.4. Signature



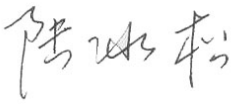
Liu Baodian

(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.
City:	Shanghai
Postal Code:	201203
Country:	China
Telephone:	+86-21-61460890
Fax:	+86-21-61460602

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:	+86-21-61460890
Fax:	+86-21-61460602

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

3.1. About EUT

Description	HSDPA/UMTS dual band / GSM quad bands mobile phone
Model Name	Alcatel V860
FCC ID	RAD257
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

EUT ID*	SN or IMEI	HW Version	SW Version
EUT1	862924010000303	PIO	V121-1

*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	USB Cable	/
AE4	USB Cable	/

AE1

Model	CAB6050000C1
Manufacturer	BYD
Capacitance	1150mAh
Nominal Voltage	3.7V

AE2

Model	CBA6050AA1C1
Manufacturer	Tenpao
Length of DC line	10cm with USB connector

AE3

Model	CDA3122005C1
Manufacturer	/
Length of headset line	100cm

AE4

Model	CDA3122005C2
Manufacturer	/
Length of headset line	100cm

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

3.4. EUT set-ups

EUT set-up No.	Combination of EUT and AE	Remarks
Set.1	EUT1+ AE1+AE2+AE3/AE4	Charging
Set.2	EUT1+ AE2+AE3/AE4	USB

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 ℃, Max. = 30 ℃
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 2MΩ
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 3000 MHz

Control room did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 35 ℃
Relative humidity	Min. =30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 2MΩ
Ground system resistance	< 0.5 Ω

Conducted chamber did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 30 ℃
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 2MΩ
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 ℃, Max. = 30 ℃
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 2MΩ
Ground system resistance	< 0.5 Ω
Uniformity of field strength	Between 0 and 6 dB, from 80 to 3000 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	MANUFACTURE	CAL DUE DATE
1	Test Receiver	ESCI	100344	R&S	2012-03-12
2	Test Receiver	ESCI	100766	R&S	2012-12-06
3	Test Receiver	ESI40	831564/002	R&S	2012-02-12
4	BiLog Antenna	VUL9163	9163-302	Schwarzbeck	2012-02-10
5	Signal Generator	SMB100A	102063	R&S	2012-03-05
6	LISN	ESH2-Z5	829991/012	R&S	2012-04-20
7	Universal Radio Communication Tester	CMU200	102228	R&S	2012-09-05
8	Dual-Ridge Waveguide Horn Antenna	3115	6914	EMCO	2013-01-18
9	PC	OPTIPLEX 755	3908243625	DELL	N/A
10	Monitor	E178FPc	CN-OWR979-64 180-7AJ-D2MS	DELL	N/A
11	Printer	DeskJet D2368	TH72E12G7Q	HP	N/A
12	Keyboard	L100	CN0RH6596589 07ATOI40	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:

Result = P_{Mea} + F_A + G_{PL}

Where

F_A: Receive Antenna Factor

G_{PL}: Cable Loss

P_{Mea}: The measurement result on receiver.

Charging Mode

Frequency(MHz)	Result(dBuV/m)	G_{PL} (dB)	F_A (dB/m)	P_{Mea}(dBuV)	Polarity
3701.403	38.95	-19.4	33.4	24.95	VERTICAL
3699.399	38.92	-19.5	33.4	25.02	VERTICAL
3703.407	38.92	-19.4	33.4	24.92	VERTICAL
3697.395	38.88	-19.5	33.4	24.98	VERTICAL
3693.387	38.87	-19.5	33.4	24.97	VERTICAL
3695.391	38.86	-19.5	33.4	24.96	VERTICAL

USB Mode

Frequency(MHz)	Result(dBuV/m)	G_{PL} (dB)	F_A (dB/m)	P_{mea}(dBuV)	Polarity
2995.992	39.94	-19.5	29.2	30.24	VERTICAL
2991.984	39.72	-19.5	29.2	30.02	VERTICAL
3701.403	39.07	-19.4	33.4	25.07	VERTICAL
3699.399	39.05	-19.5	33.4	25.15	VERTICAL
3703.407	39.05	-19.4	33.4	25.05	VERTICAL
3705.411	38.99	-19.4	33.4	24.99	VERTICAL

Charging Mode

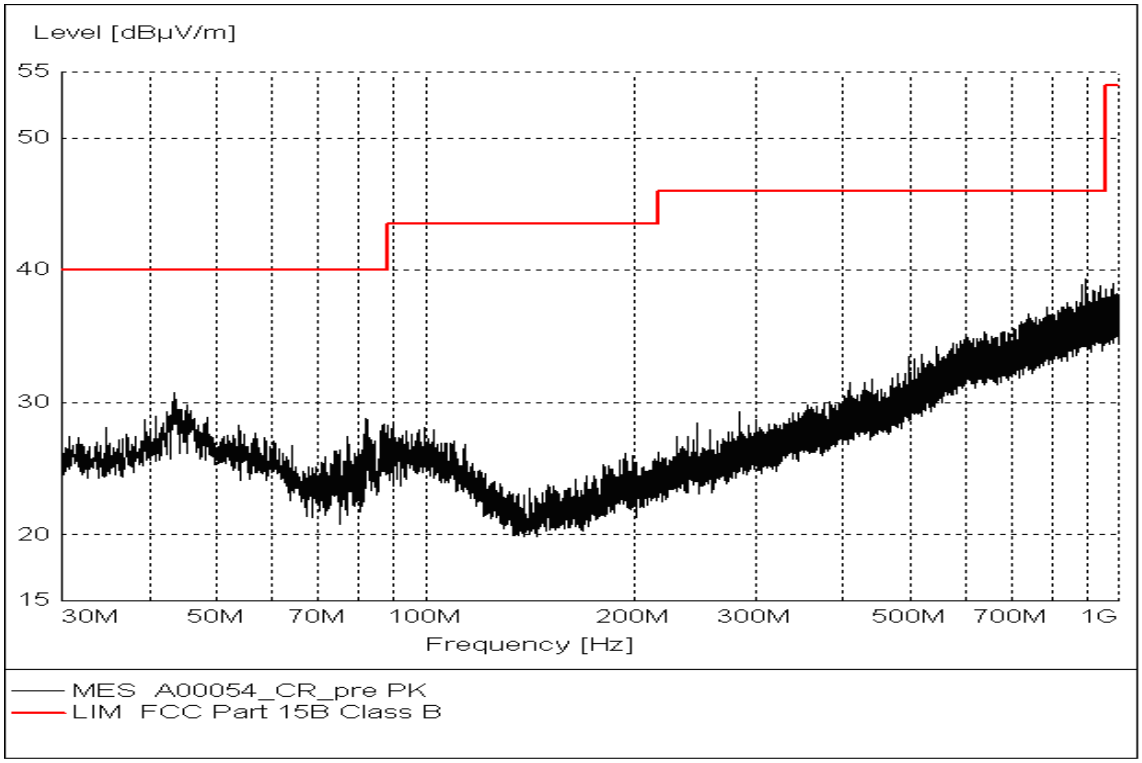


Figure A.1 Radiated Emission from 30MHz to 1GHz

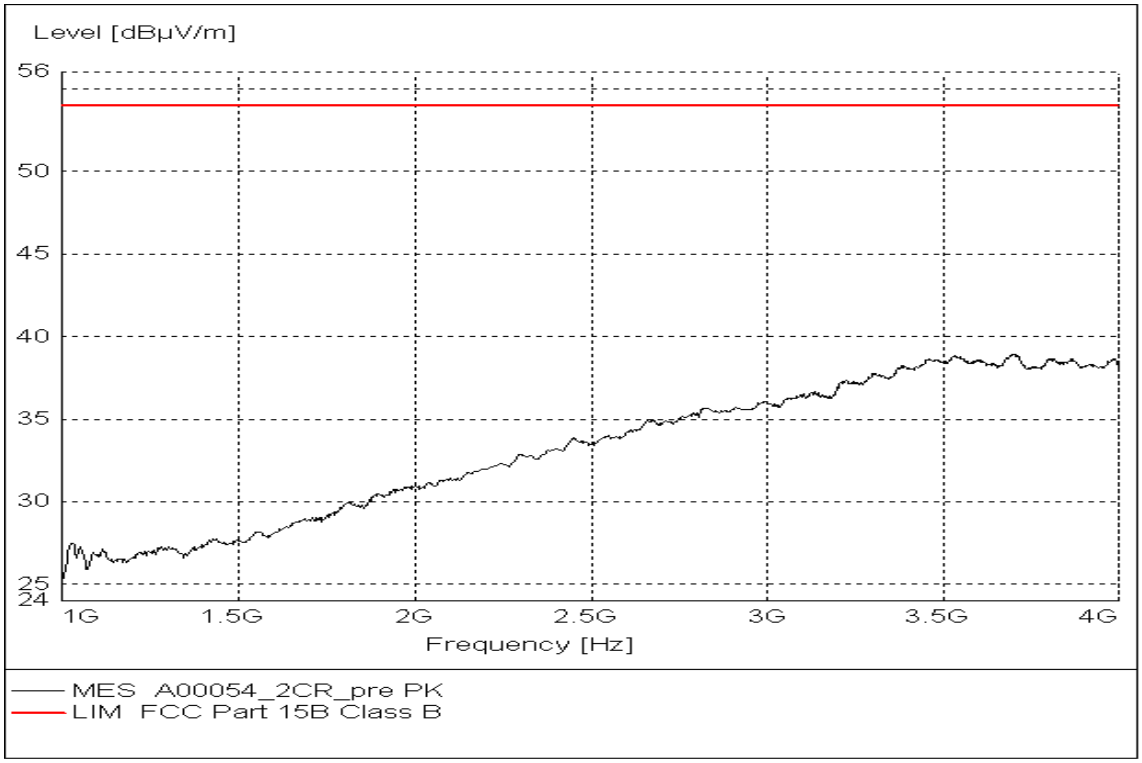


Figure A.2 Radiated Emission from 1GHz to 4GHz

USB Mode

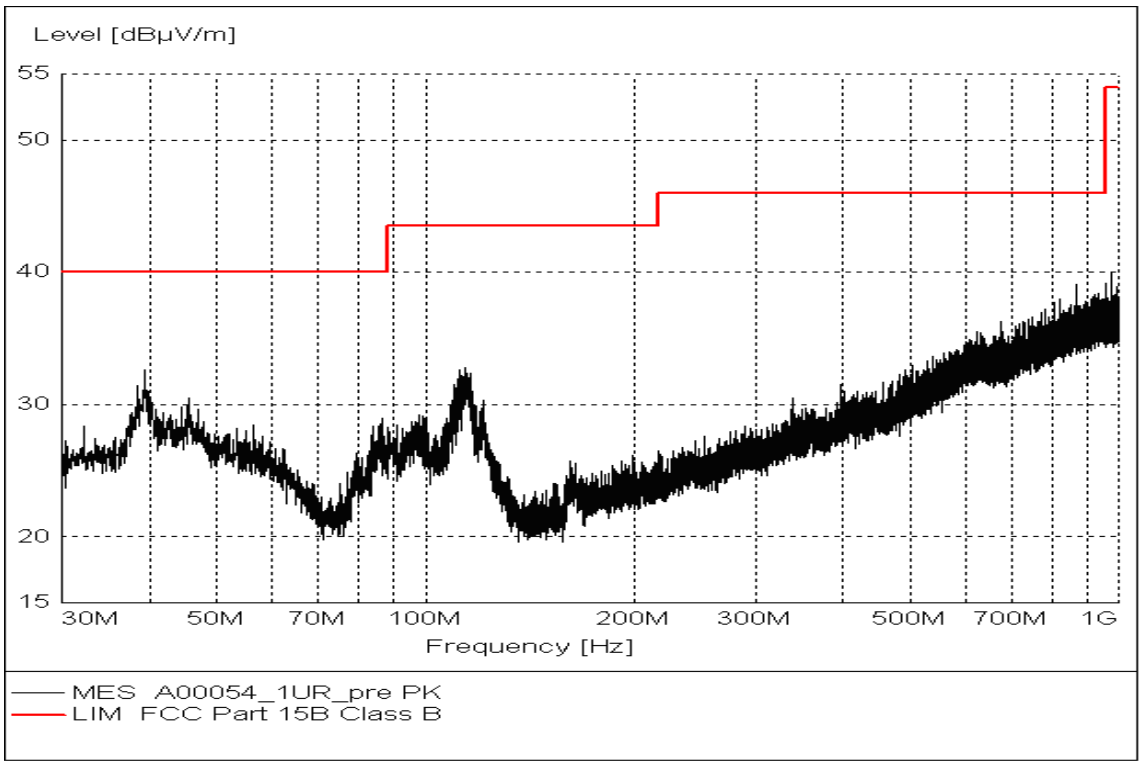


Figure A.3 Radiated Emission from 30MHz to 1GHz

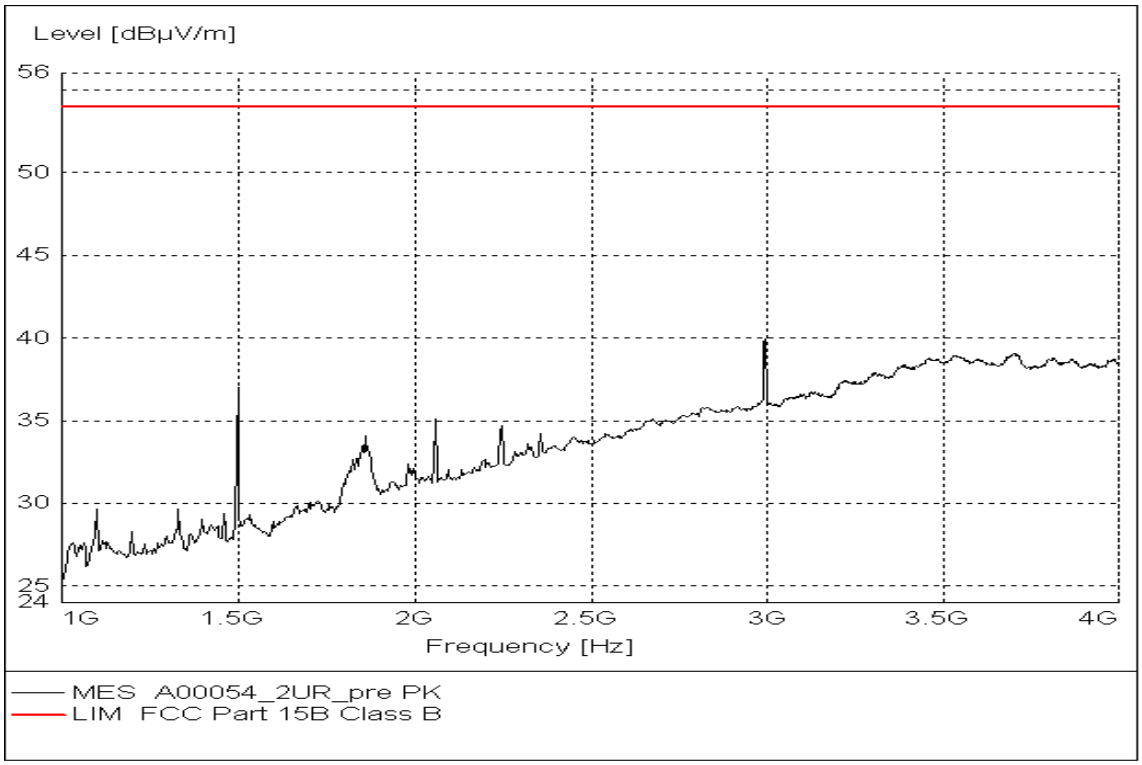


Figure A.4 Radiated Emission from 1GHz to 4GHz

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 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 (dBμV)	
	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

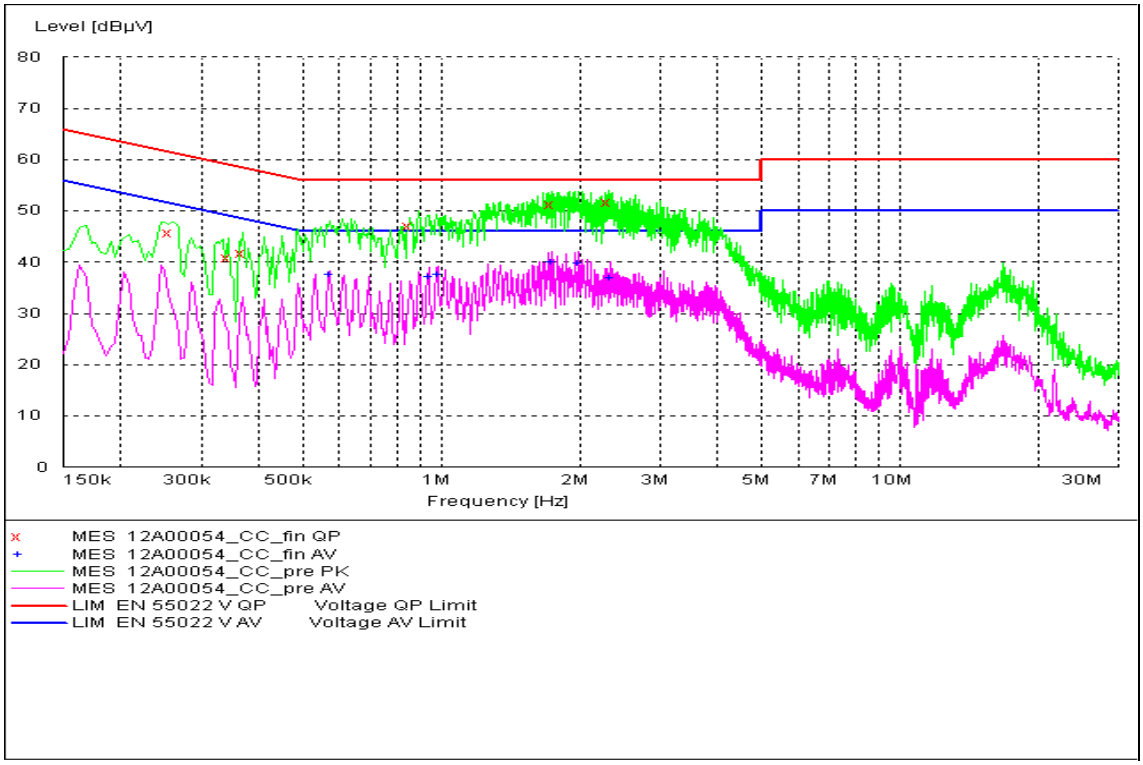


Figure A.5 Conducted Emission

MEASUREMENT RESULT: "12A00054_CC_fin QP"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB	/	/
0.258000	45.60	10.1	62	15.9	L1	GND
0.343500	40.90	10.1	59	18.3	L1	GND
0.370500	41.80	10.1	59	16.7	L1	GND
0.856500	47.00	10.1	56	9.0	L1	GND
1.752000	51.30	10.1	56	4.7	L1	GND
2.323320	51.60	10.1	56	4.4	L1	GND

MEASUREMENT RESULT: "12A00054_CC_fin AV"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB	/	/
0.573000	37.40	10.1	46	8.6	L1	GND
0.942000	37.10	10.1	46	8.9	L1	GND
0.982500	37.40	10.1	46	8.6	L1	GND
1.752000	40.00	10.1	46	6.0	L1	GND
2.000000	39.60	10.1	46	6.4	L1	GND
2.332623	36.90	10.1	46	9.1	L1	GND

USB Mode

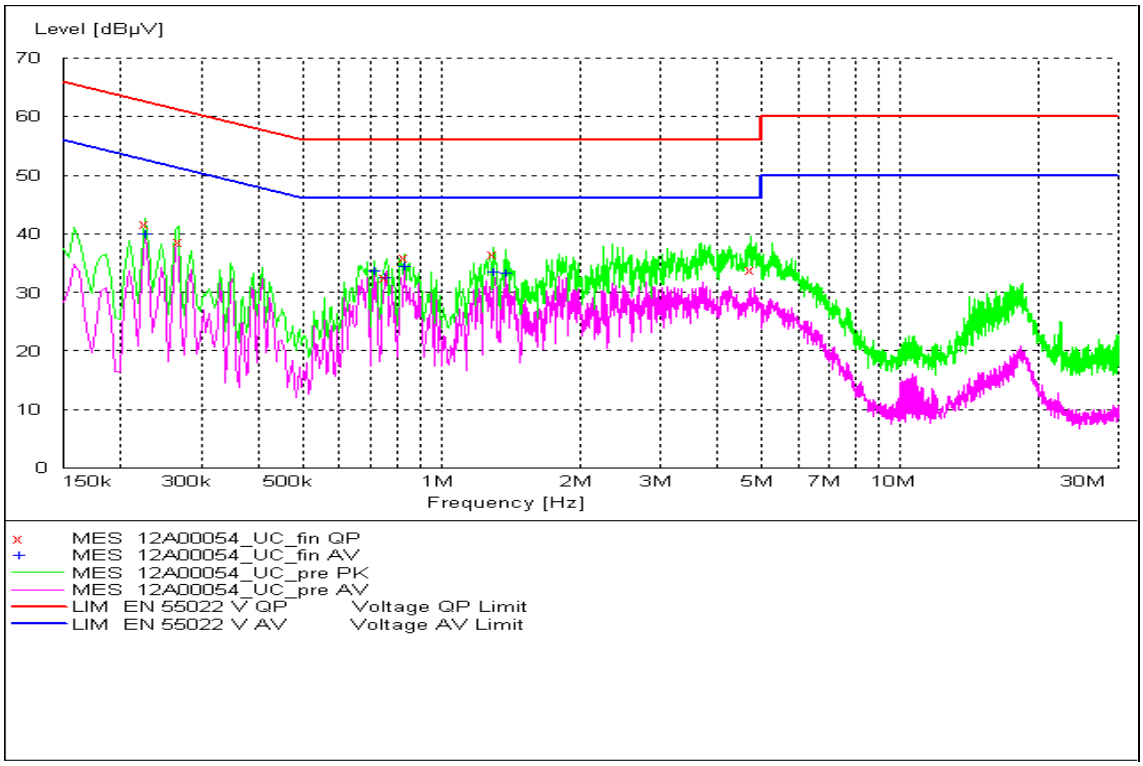


Figure A.6 Conducted Emission

MEASUREMENT RESULT: "12A00054_UC_fin QP"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB	/	/
0.226500	41.70	10.1	63	20.9	L1	GND
0.267000	38.80	10.1	61	22.4	L1	GND
0.757500	32.60	10.1	56	23.4	L1	GND
0.829500	36.00	10.1	56	20.0	L1	GND
1.302000	36.60	10.1	56	19.4	L1	GND
4.731708	33.90	10.2	56	22.1	N	GND

MEASUREMENT RESULT: "12A00054_UC_fin AV"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB	/	/
0.226500	40.00	10.1	53	12.6	L1	GND
0.717000	33.70	10.1	46	12.3	L1	GND
0.757500	32.50	10.1	46	13.5	L1	GND
0.829500	34.50	10.1	46	11.5	L1	GND
1.302000	33.60	10.1	46	12.4	L1	GND
1.378500	33.40	10.1	46	12.6	L1	GND

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