

# TEST REPORT No. I15Z41941-EMC01

for

#### **TCL Communication Ltd**

## GSM Quad-band / UMTS Quad-band / LTE Penta-band mobile phone

Model Name: 5054A

FCC ID: 2ACCJA011

with

**Hardware Version: LOT1** 

Software Version: 010 01

Issued Date: 2015-09-15

#### 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 CTTL.

**Test Laboratory:** 

FCC 2.948 Listed: No.525429 IC O.A.T.S listed: No.12389A-1

CTTL, Telecommunication Technology Labs, Academy of Telecommunication Research, MIIT

No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China 100191.

Tel:+86(0)10-62304633-2512, Fax:+86(0)10-62304633-2504

Email: <a href="mailto:cttl\_terminals@catr.cn">cttl\_terminals@catr.cn</a>, website: <a href="mailto:www.chinattl.com">www.chinattl.com</a>



# **REPORT HISTORY**

Report Number	Revision	Description	Issue Date
I15Z41941-EMC01	Rev.0	1 <sup>st</sup> edition	2015-09-15



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## 1. Test Laboratory

## 1.1. Testing Location

Location 1: CTTL(huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China

100191

1.2. <u>Testing Environment</u>

Normal Temperature:  $15-35^{\circ}$ C Relative Humidity: 20-75%

1.3. Project data

Testing Start Date: 2015-08-18
Testing End Date: 2015-09-14

1.4. Signature

Wang Junqing

正公青

(Prepared this test report)

屈鹏飞

Qu Pengfei

(Reviewed this test report)

Liu Baodian

**Deputy Director of the laboratory** 

(Approved this test report)



# 2. Client Information

## 2.1. Applicant Information

Company Name: TCL Communication Ltd

Address /Post: 5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park,

Pudong Area Shanghai, P.R. China. 201203

City: Shanghai
Postal Code: 201203
Country: P. R. China
Contact Person: Gong Zhizhou

 Contact Email
 zhizhou.gong@tcl.com

 Telephone:
 0086-21-51798260

 Fax:
 0086-21-61460602

#### 2.2. Manufacturer Information

Company Name: TCL Communication Ltd

Address /Post: 5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park,

Pudong Area Shanghai, P.R. China. 201203

City: Shanghai
Postal Code: 201203
Country: P. R. China

Telephone: 0086-21-51798260 Fax: 0086-21-61460602



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

#### 3.1. About EUT

Nominal voltage

Description GSM Quad-band / UMTS Quad-band / LTE Penta-band mobile

phone

Model Name 5054A

FCC ID 2ACCJA011

Extreme vol. Limits 3.5VDC to 4.35VDC (nominal: 3.8VDC)

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of CTTL, Telecommunication Technology Labs, Academy of Telecommunication Research, MIIT.

#### 3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	<b>HW Version</b>	SW Version
EUT1	014455000001016	LOT1	010 01

<sup>\*</sup>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	Remarks
AE1	Battery	/	Inbuilt
AE2	Travel	/	15TCT-CH-0917
AE3	Travel	/	15TCT-CH-0917
AE4	USB cable	/	15TCT-DC-0233
AE5	USB cable	/	15TCT-DC-0191
AE6	Battery	/	Inbuilt
AE7	Travel	/	/
AE1			
Model		CAC2500028C2	
Manufac	turer	SCUD(LG)	
Capacita	ance	2500 mAh	
Nominal	voltage	3.7 V	
AE6			
Model		CAC2500007C1	
Manufac	turer	BYD	
Capacita	ance	2500 mAh	

3.7 V



AE2

Model CBA0057AG0C1

Manufacturer BYD Length of cable /

AE3

Model CBA0057AG0C2

Manufacturer Tenpao

Length of cable /

AE7

Model CBA0057AA1C2

Manufacturer TEN PAO

Length of cable /

AE4

Model CDA3122002C2

Manufacturer Shenhua Length of cable 92cm

AE5

Model CDA3122002C8

Manufacturer Puan Length of cable 93cm

## 3.4. EUT set-ups

EUT set-up No.	Combination of EUT and AE	Remarks
Set.1	EUT1+ AE1/AE6+ AE2+ AE4/AE5	Charger
Set.2	EUT1+ AE1/AE6+ AE3+ AE4/AE5	Charger
Set.3	EUT1+ AE1/AE6+ AE4	USB mode
Set.4	EUT1+ AE1/AE6+ AE5	USB mode
Set.5	EUT1+ AE1/AE6+ AE7+ AE4/AE5	Charger

<sup>\*</sup>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 - Unintentional Radiators	10-1-13
		Edition
ANSI C63.4	Methods of Measurement of Radio-Noise	2014
	Emissions from Low - Voltage Electrical and	
	Electronic Equipment in the Range of 9 kHz to 40	
	GHz	
ICES-003	Information Technology Equipment (ITE) - Limits	Issue 5
	and methods of measurement	



# 5. LABORATORY ENVIRONMENT

**Semi-anechoic chamber SAC-1** (23 meters $\times$ 17meters $\times$ 10meters) did not exceed following limits along the EMC testing:

o o	
Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 15 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz, >60dB;
	1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4 Ω
Normalised site attenuation (NSA)	< ±4 dB, 10 m distance
Site voltage standing-wave ratio (S <sub>VSWR</sub> )	Between 0 and 6 dB, from 1GHz to 6GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 3000 MHz

**Shielded room** did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz, >60dB;
	1MHz-1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4 Ω



# 6. SUMMARY OF TEST RESULTS

Abbreviations used in this clause:		
Р		Pass
Verdict Column	NA	Not applicable
	F	Fail
Location Column A/B/C/D		The test is performed in test location A, B, C or D
Location Column	AIDIOID	which are described in section 1.1 of this report

Items	Test Name	Clause in FCC rules	Clause in IC rules	Section in this report	Verdict	Test Location
1	Radiated Emission	15.109(a)	Section 5	B.1	Р	А
2	Conducted Emission	15.107(a)	Section 5	B.2	Р	А



# 7. Test Equipments Utilized

NO.	Description	TYPE	SERIES NUMBER	MANUFACTUR E	CAL DUE DATE	CALIBRATI ON INTERVAL
1	Test Receiver	ESU26	100235	R&S	2016-03-02	1 year
2	Universal Radio Communication Tester	CMU200	109914	R&S	2016-03-26	1 year
3	Universal Radio Communication Tester	CMW500	143008	R&S	2015-12-09	1 year
4	LISN	ENV216	101200	R&S	2016-07-07	1 year
5	EMI Antenna	VULB 9163	9163-514	Schwarzbeck	2017-11-24	3 years
6	EMI Antenna	3115	6914	ETS-Lindgren	2016-12-15	3 years
7	PC	OPTIPLEX 380	2X1YV2X	DELL	N/A	N/A
8	Printer	P1606dn	VNC3L52122	HP	N/A	N/A
9	Keyboard	L100	CN0RH6596589 07ATOI40	DELL	N/A	N/A
10	Mouse	M-UAE119	LZ935220ZRC	Lenovo	N/A	N/A



## ANNEX A: MEASUREMENT RESULTS

#### A.1 Radiated Emission

#### Reference

FCC: CFR Part 15.109(a). IC: ICES-003 Section 5.

#### 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 distances of 10 meters(for 30MHz-1GHz) and 3 meters (for above 1GHz) is tested. Tested in accordance with the procedures of ANSI C63.4 – 2014, section 8.3.

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3/10 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 380, and the serial number of the PC is 2X1YV2X. 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 range	Field strength limit (µV/m)			
(MHz)	Quasi-peak Average		Peak	
30-88	100			
88-216	150			
216-960	200			
960-1000	500			
>1000		500	5000	

Note: the above limit is for 3 meters test distance. 10 meters' limit is got by converting.

#### A.1.4 Test Condition

Frequency range (MHz)	RBW/VBW	Sweep Time (s)	Detector
30-1000	120kHz (IF Bandwidth)	5	Peak/Quasi-peak
Above 1000	1MHz/1MHz	15	Peak, Average



#### 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:

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

Where

G<sub>A</sub>: Antenna factor of receive antenna

G<sub>PL</sub>: Path Loss

P<sub>Mea</sub>: Measurement result on receiver.

Measurement uncertainty (worst case): U = 4.3 dB, k=2.

#### Measurement results for Set.1:

#### **Charging Mode/Average detector**

Fraguanov/MUz)	Result(dB <sub>μ</sub> V/m)	$G_PL$	G <sub>A</sub>	P <sub>Mea</sub> (dBµV)	Polarity
Frequency(MHz)	Resuit(ασμ v/III)	(dB)	(dB/m)		
17992.067	43.6	-17.7	45.6	15.700	HORIZONTAL
17985.833	43.5	-17.7	45.6	15.600	HORIZONTAL
17997.167	43.3	-17.7	45.6	15.400	HORIZONTAL
17998.867	43.3	-17.7	45.6	15.400	VERTICAL
17986.400	43.3	-17.7	45.6	15.400	VERTICAL
17975.067	43.3	-17.7	45.6	15.400	HORIZONTAL

#### **Charging Mode/Peak detector**

Frequency(MHz)	Result(dBμV/m)	G <sub>PL</sub> (dB)	G <sub>A</sub> (dB/m)	P <sub>Mea</sub> (dBµV)	Polarity
17924.067	55.9	-17.7	45.6	28.000	VERTICAL
17989.800	54.9	-17.7	45.6	27.000	HORIZONTAL
17867.967	54.4	-18.5	45.6	27.300	VERTICAL
17944.467	54.3	-17.7	45.6	26.400	HORIZONTAL
17877.600	54.2	-18.5	45.6	27.100	VERTICAL
17818.667	54.2	-18.5	45.6	27.100	HORIZONTAL



#### Measurement results for Set.2:

## **Charging Mode/Average detector**

Frequency(MHz)	Result(dBμV/m)	G <sub>PL</sub> (dB)	G <sub>A</sub> (dB/m)	P <sub>Mea</sub> (dBµV)	Polarity
17992.067	43.9	-17.7	45.6	16.000	VERTICAL
17987.533	43.6	-17.7	45.6	15.700	HORIZONTAL
17983.567	43.5	-17.7	45.6	15.600	VERTICAL
17975.067	43.5	-17.7	45.6	15.600	HORIZONTAL
17980.733	43.4	-17.7	45.6	15.500	HORIZONTAL
17995.467	43.4	-17.7	45.6	15.500	VERTICAL

#### **Charging Mode/Peak detector**

Frequency(MHz)	Result(dBμV/m)	G <sub>PL</sub> (dB)	G <sub>A</sub> (dB/m)	P <sub>Mea</sub> (dBµV)	Polarity		
17997.167	55.3	-17.7	45.6	27.400	HORIZONTAL		
18000.000	55.2	-45.6	44.5	56.266	VERTICAL		
17963.167	55.0	-17.7	45.6	27.100	VERTICAL		
17997.733	54.8	-17.7	45.6	26.900	VERTICAL		
17773.333	54.4	-18.5	45.6	27.300	HORIZONTAL		
17877.033	54.4	-18.5	45.6	27.300	HORIZONTAL		

#### **Measurement results for Set.5**:

## **Charging Mode/Average detector**

Frequency(MHz)	Result(dBμV/m)	G <sub>PL</sub> (dB)	G <sub>A</sub> (dB/m)	$P_{Mea}(dB\mu V)$	Polarity
17951.833	43.4	-17.7	45.6	15.500	VERTICAL
17990.933	43.4	-17.7	45.6	15.500	VERTICAL
17996.033	43.2	-17.7	45.6	15.300	HORIZONTAL
17986.967	43.1	-17.7	45.6	15.200	VERTICAL
17971.100	17971.100 43.1		45.6	15.200	HORIZONTAL
17966.000	43.0	-17.7	45.6	15.100	VERTICAL

## **Charging Mode/Peak detector**

Frequency(MHz)	Result(dBμV/m)	G <sub>PL</sub> (dB)	G <sub>A</sub> (dB/m)	P <sub>Mea</sub> (dBµV)	Polarity
17984.133	55.5	-17.7	45.6	27.600	HORIZONTAL
17960.333	55.0	-17.7	45.6	27.100	VERTICAL
17986.967	54.9	-17.7	45.6	27.000	HORIZONTAL
17835.100	54.7	-18.5	45.6	27.600	HORIZONTAL
17976.200	54.7	-17.7	45.6	26.800	VERTICAL
17990.933	54.7	-17.7	45.6	26.800	HORIZONTAL



#### **Measurement results for Set.3**:

## **USB Mode/Average detector**

Frequency(MHz)	Result(dBµV/m)	G <sub>PL</sub> (dB)	G <sub>A</sub> (dB/m)	P <sub>mea</sub> (dBµV)	Polarity
17996.600	43.6	-17.7	45.6	15.700	HORIZONTAL
17981.867	43.4	-17.7	45.6	15.500	VERTICAL
17933.700	43.3	-17.7	45.6	15.400	HORIZONTAL
17998.300	43.3	-17.7	45.6	15.400	HORIZONTAL
17997.733	43.3	-17.7	45.6	15.400	VERTICAL
17979.600	43.3	-17.7	45.6	15.400	HORIZONTAL

#### **USB Mode/ Peak detector**

Frequency(MHz)	Result(dBµV/m)	G <sub>PL</sub> (dB)	G <sub>A</sub> (dB/m)	P <sub>mea</sub> (dBµV)	Polarity
17984.700	55.3	-17.7	45.6	27.400	HORIZONTAL
17994.900	54.4	-17.7	45.6	26.500	VERTICAL
17999.433	54.2	-17.7	45.6	26.300	HORIZONTAL
17978.467	54.2	-17.7	45.6	26.300	VERTICAL
17955.800	54.2	-17.7	45.6	26.300	HORIZONTAL
17760.867	54.2	-18.5	45.6	27.100	HORIZONTAL

#### **Measurement results for Set.4**:

## **USB Mode/Average detector**

Frequency(MHz)	Result(dBµV/m)	G <sub>PL</sub> (dB)	G <sub>A</sub> (dB/m)	P <sub>mea</sub> (dBµV)	Polarity
17994.900	43.8	-17.7	45.6	15.900	HORIZONTAL
17994.333	43.6	-17.7	45.6	15.700	VERTICAL
17988.100	43.5	-17.7	45.6	15.600	HORIZONTAL
17983.567	43.4	-17.7	45.6	15.500	HORIZONTAL
17986.400	43.4	-17.7	45.6	15.500	HORIZONTAL
17979.033	43.3	-17.7	45.6	15.400	VERTICAL

#### **USB Mode/ Peak detector**

Frequency(MHz)	Result(dBµV/m)	G <sub>PL</sub> (dB)	G <sub>A</sub> (dB/m)	P <sub>mea</sub> (dBµV)	Polarity
17981.867	55.4	-17.7	45.6	27.500	HORIZONTAL
17990.367	54.8	-17.7	45.6	26.900	VERTICAL
17952.400	54.7	-17.7	45.6	26.800	VERTICAL
17996.033	54.5	-17.7	45.6	26.600	HORIZONTAL
17977.333	54.3	-17.7	45.6	26.400	HORIZONTAL
17994.900	54.3	-17.7	45.6	26.400	VERTICAL



Normal RE\_30M-1GHz\_10m

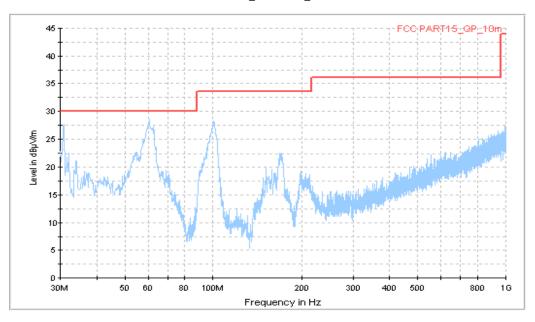


Figure A.1 Radiated Emission from 30MHz to 1GHz

Normal RE\_1G-18GHz\_directly

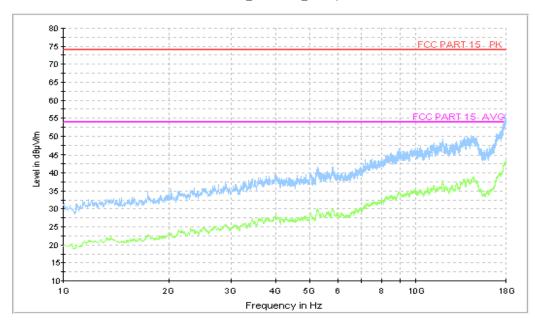


Figure A.2 Radiated Emission from 1GHz to 18GHz





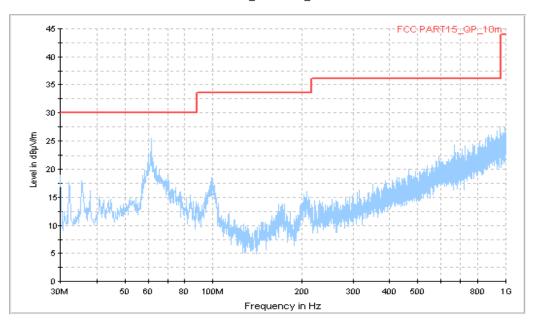
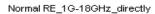


Figure A.3 Radiated Emission from 30MHz to 1GHz



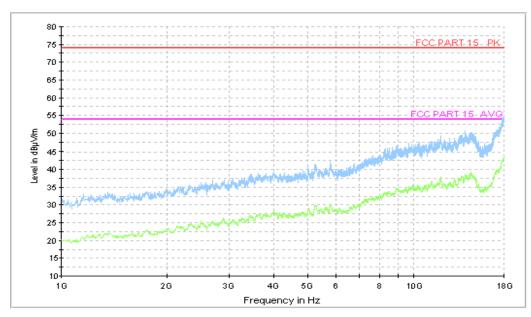


Figure A.4 Radiated Emission from 1GHz to 18GHz





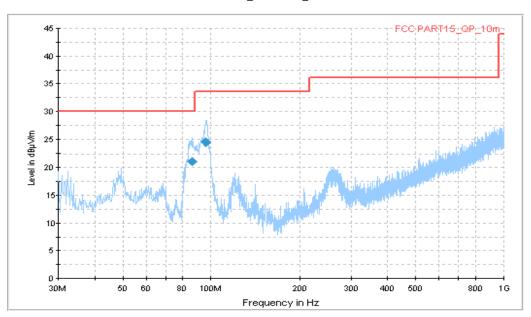


Figure A.5 Radiated Emission from 30MHz to 1GHz

Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	$\begin{array}{c} Limit \\ (dB\mu V/m) \end{array}$
85.983000	21.1	175.0	V	61.0	-16.0	8.9	30.0
96.378500	24.5	119.0	V	82.0	-13.3	9.0	33.5

Normal RE\_1G-18GHz\_directly

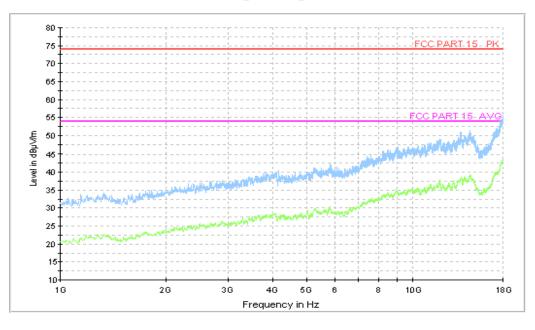


Figure A.6 Radiated Emission from 1GHz to 18GHz



#### **USB Mode, Set.3**



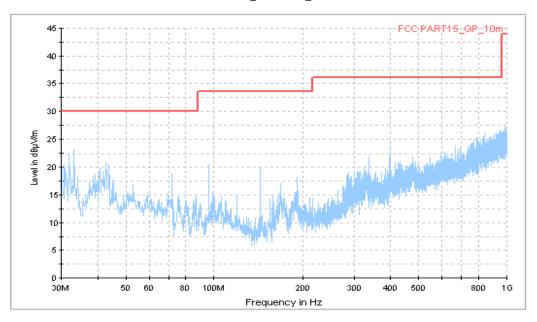
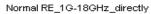


Figure A.7 Radiated Emission from 30MHz to 1GHz



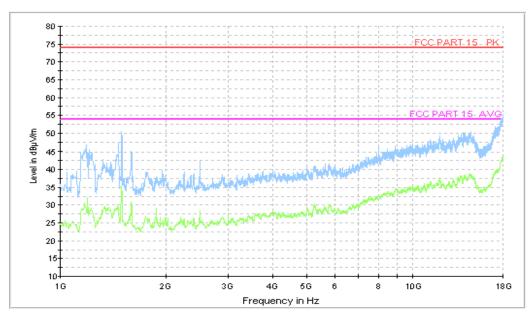


Figure A.8 Radiated Emission from 1GHz to 18GHz



#### **USB Mode, Set.4**



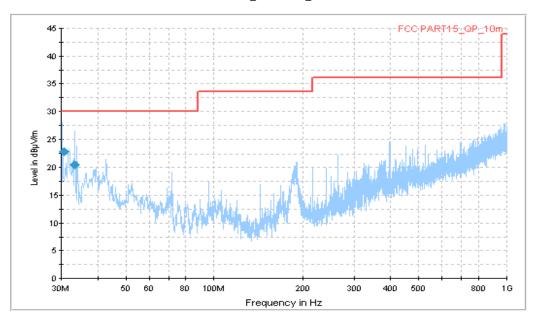


Figure A.9 Radiated Emission from 30MHz to 1GHz

Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
30.720000	22.8	299.0	V	120.0	-13.9	7.2	30.0
33.335000	20.5	100.0	V	74.0	-13.3	9.5	30.0

Normal RE\_1G-18GHz\_directly

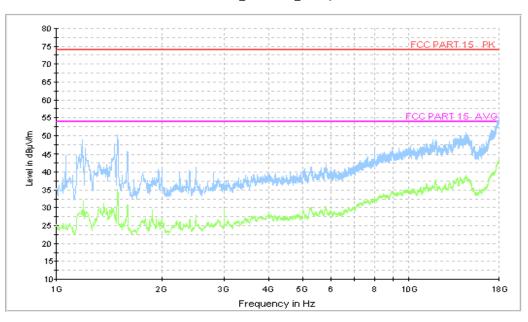


Figure A.10 Radiated Emission from 1GHz to 18GHz



# A.2 Conducted Emission Reference

FCC: CFR Part 15.107(a). IC: ICES-003 Section 5.

#### 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 – 2014, section 7.3.

## 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 380, and the serial number of the PC is 2X1YV2X. 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/IF bandwidth	Sweep Time(s)
9kHz	1



#### A.2.5 Measurement Results

Measurement uncertainty: *U*= 2.9 dB, *k*=2.

## Charging Mode, Set.1

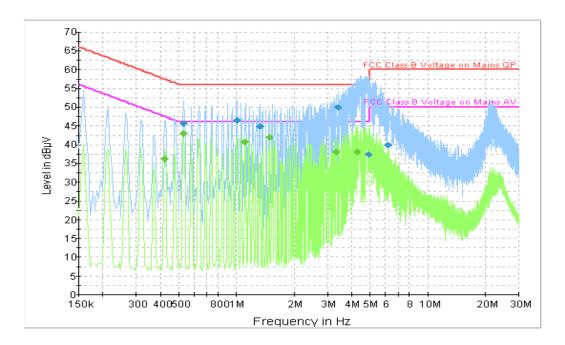


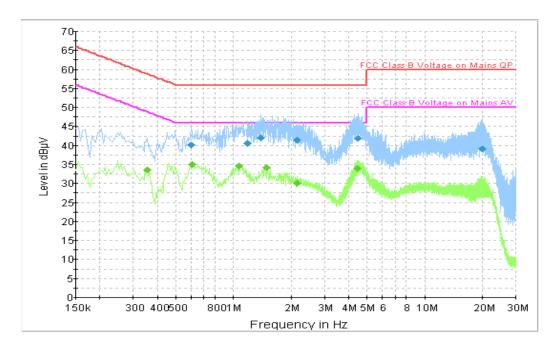
Figure A.11 Conducted Emission

## **Final Result 1**

Frequency	QuasiPeak	Meas.	Bandwidth	Filter	Line	Corr.	Margin	Limit
(MHz)	(dBµV)	Time(ms)	(kHz)			(dB)	(dB)	(dBµV)
0.528000	45.6	2000.0	9.000	On	N	19.8	10.4	56.0
1.005000	46.4	2000.0	9.000	On	N	19.7	9.6	56.0
1.324500	44.9	2000.0	9.000	On	N	19.6	11.1	56.0
3.390000	49.9	2000.0	9.000	On	N	19.7	6.1	56.0
4.893000	37.3	2000.0	9.000	On	L1	19.7	18.7	56.0
6.162000	39.8	2000.0	9.000	On	L1	19.7	20.2	60.0

Frequency	CAverage	Meas.	Bandwidth	Filter	Line	Corr.	Margin	Limit
(MHz)	(dBµV)	Time(ms)	(kHz)			(dB)	(dB)	(dBµV)
0.420000	36.2	2000.0	9.000	On	L1	19.8	11.2	47.4
0.528000	42.9	2000.0	9.000	On	L1	19.8	3.1	46.0
1.108500	40.6	2000.0	9.000	On	N	19.7	5.4	46.0
1.482000	41.9	2000.0	9.000	On	N	19.6	4.1	46.0
3.331500	37.9	2000.0	9.000	On	N	19.7	8.1	46.0
4.285500	38.0	2000.0	9.000	On	N	19.6	8.0	46.0





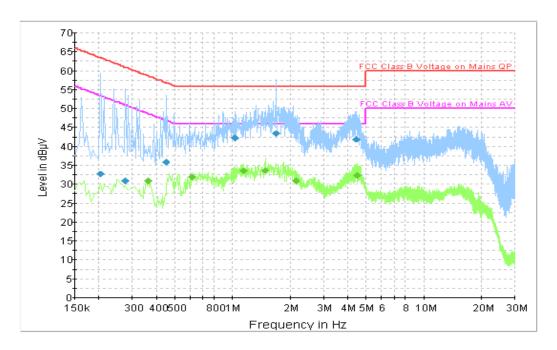
**Figure A.12 Conducted Emission** 

## **Final Result 1**

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Frequency	QuasiPeak	Meas.	Bandwidth	Filter	Line	Corr.	Margin	Limit
(MHz)	(dBµV)	Time(ms)	(kHz)			(dB)	(dB)	(dBµV)
0.600000	40.1	2000.0	9.000	On	N	19.8	15.9	56.0
1.185000	40.6	2000.0	9.000	On	L1	19.7	15.4	56.0
1.392000	42.1	2000.0	9.000	On	L1	19.7	13.9	56.0
2.134500	41.5	2000.0	9.000	On	L1	19.6	14.5	56.0
4.465500	42.0	2000.0	9.000	On	L1	19.7	14.0	56.0
20.103000	39.1	2000.0	9.000	On	L1	20.0	20.9	60.0

Frequency	CAverage	Meas.	Bandwidth	Filter	Line	Corr.	Margin	Limit
(MHz)	(dBµV)	Time(ms)	(kHz)			(dB)	(dB)	(dBµV)
0.352500	33.7	2000.0	9.000	On	N	19.8	15.2	48.9
0.609000	35.1	2000.0	9.000	On	N	19.8	10.9	46.0
1.068000	34.7	2000.0	9.000	On	N	19.7	11.3	46.0
1.495500	34.2	2000.0	9.000	On	N	19.6	11.8	46.0
2.157000	30.0	2000.0	9.000	On	L1	19.6	16.0	46.0
4.434000	34.0	2000.0	9.000	On	L1	19.7	12.0	46.0





**Figure A.12 Conducted Emission** 

## **Final Result 1**

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Frequency	QuasiPeak	Meas.	Bandwidth	Filter	Line	Corr.	Margin	Limit		
(MHz)	(dBµV)	Time(ms)	(kHz)			(dB)	(dB)	(dBµV)		
0.204000	32.8	2000.0	9.000	On	N	19.8	30.7	63.4		
0.276000	30.8	2000.0	9.000	On	N	19.8	30.1	60.9		
0.447000	35.8	2000.0	9.000	On	N	19.8	21.1	56.9		
1.036500	42.2	2000.0	9.000	On	N	19.7	13.8	56.0		
1.684500	43.4	2000.0	9.000	On	N	19.6	12.6	56.0		
4.447500	41.9	2000.0	9.000	On	L1	19.7	14.1	56.0		

Frequency	CAverage	Meas.	Bandwidth	Filter	Line	Corr.	Margin	Limit
(MHz)	(dBµV)	Time(ms)	(kHz)			(dB)	(dB)	(dBµV)
0.361500	30.9	2000.0	9.000	On	L1	19.8	17.8	48.7
0.613500	31.9	2000.0	9.000	On	L1	19.8	14.1	46.0
1.149000	33.4	2000.0	9.000	On	L1	19.6	12.6	46.0
1.482000	33.7	2000.0	9.000	On	L1	19.6	12.3	46.0
2.139000	30.9	2000.0	9.000	On	L1	19.6	15.1	46.0
4.506000	32.4	2000.0	9.000	On	L1	19.6	13.6	46.0



## **USB Mode, Set.3**

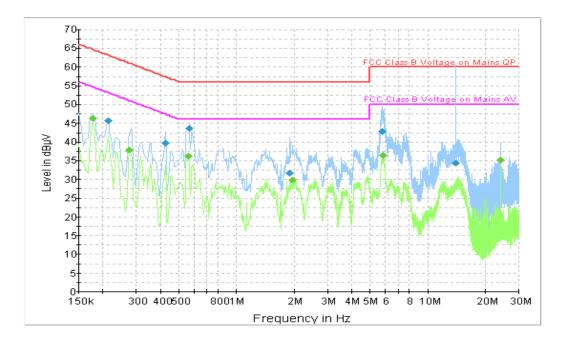


Figure A.11 Conducted Emission

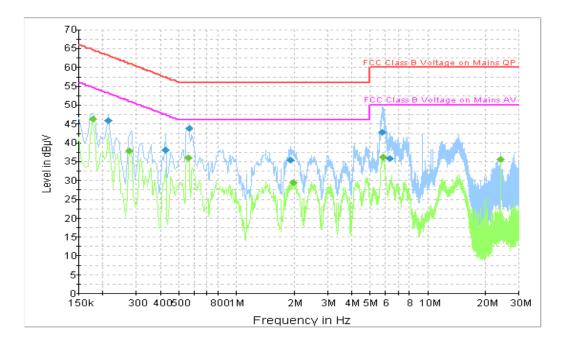
## **Final Result 1**

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Frequency	QuasiPeak	Meas.	Bandwidth	Filter	Line	Corr.	Margin	Limit
(MHz)	(dBµV)	Time(ms)	(kHz)			(dB)	(dB)	(dBµV)
0.213000	45.5	2000.0	9.000	On	N	19.8	17.6	63.1
0.424500	39.6	2000.0	9.000	On	N	19.8	17.8	57.4
0.564000	43.6	2000.0	9.000	On	L1	19.8	12.4	56.0
1.905000	31.7	2000.0	9.000	On	N	19.6	24.3	56.0
5.802000	42.8	2000.0	9.000	On	L1	19.7	17.2	60.0
13.938000	34.4	2000.0	9.000	On	L1	20.1	25.6	60.0

Frequency	CAverage	Meas.	Bandwidth	Filter	Line	Corr.	Margin	Limit
(MHz)	(dBµV)	Time(ms)	(kHz)			(dB)	(dB)	(dBµV)
0.177000	46.2	2000.0	9.000	On	N	19.7	8.4	54.6
0.276000	37.8	2000.0	9.000	On	N	19.8	13.2	50.9
0.559500	36.1	2000.0	9.000	On	L1	19.8	9.9	46.0
1.977000	29.8	2000.0	9.000	On	N	19.6	16.2	46.0
5.811000	36.4	2000.0	9.000	On	N	19.7	13.6	50.0
24.000000	35.2	2000.0	9.000	On	L1	20.0	14.8	50.0



## **USB Mode, Set.4**



**Figure A.12 Conducted Emission** 

## **Final Result 1**

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Frequency	QuasiPeak	Meas.	Bandwidth	Filter	Line	Corr.	Margin	Limit		
(MHz)	(dBµV)	Time(ms)	(kHz)			(dB)	(dB)	(dBµV)		
0.213000	45.9	2000.0	9.000	On	N	19.8	17.1	63.1		
0.424500	37.9	2000.0	9.000	On	L1	19.8	19.4	57.4		
0.564000	43.7	2000.0	9.000	On	L1	19.8	12.3	56.0		
1.914000	35.4	2000.0	9.000	On	L1	19.6	20.6	56.0		
5.806500	42.8	2000.0	9.000	On	N	19.7	17.2	60.0		
6.346500	35.8	2000.0	9.000	On	L1	19.7	24.2	60.0		

# Final Result 2

Frequency	CAverage	Meas.	Bandwidth	Filter	Line	Corr.	Margin	Limit
(MHz)	(dBµV)	Time(ms)	(kHz)			(dB)	(dB)	(dBµV)
0.177000	46.2	2000.0	9.000	On	N	19.7	8.4	54.6
0.276000	37.8	2000.0	9.000	On	N	19.8	13.2	50.9
0.559500	36.0	2000.0	9.000	On	L1	19.8	10.0	46.0
1.981500	29.4	2000.0	9.000	On	L1	19.6	16.6	46.0
5.824500	36.1	2000.0	9.000	On	N	19.7	13.9	50.0
24.000000	35.5	2000.0	9.000	On	N	20.2	14.5	50.0

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