





# **TEST REPORT**

# No. 24T04Z100998-022

for

**TCL Communication LTD.** 

Tablet PC

# **MODEL NAME: 9465G**

with

Hardware Version: 05

Software Version: 6GS2

Issued Date: 2024-06-14

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:

CTTL-Telecommunication Technology Labs, CAICT

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# **REPORT HISTORY**

Report Number	Revision	Description	Issue Date
24T04Z100998-022	Rev.0	1 <sup>st</sup> edition	2024-06-14

Note: the latest revision of the test report supersedes all previous version.





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# 1. Test Laboratory

## 1.1. Introduction & Accreditation

**Telecommunication Technology Labs, CAICT** is an ISO/IEC 17025:2017 accredited test laboratory under American Association for Laboratory Accreditation (A2LA) with lab code 7049.01, and is also an FCC accredited test laboratory (CN1349), and ISED accredited test laboratory (CAB identifier:CN0066). The detail accreditation scope can be found on A2LA website.

### 1.2. Testing Location

Location 1: CTTL(huayuan North Road)

Address:	No. 52, Huayuan North Road, Haidian District, Beijing,
	P. R. China100191

Location 2: CTTL(BDA)

Address:	No.18A, Kangding Street, Beijing Economic-Technolog	
	Development Area, Beijing, 100176, P. R. China	

### 1.3. Testing Environment

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

# 1.4. Project data

Testing Start Date:	2024-06-06
Testing End Date:	2024-06-12

# 1.5. Signature



Zhang Ying (Prepared this test report)

An Hui (Reviewed this test report)



Zhang Xia Deputy Director of the laboratory (Approved this test report)





# 2. <u>Client Information</u>

# 2.1. Applicant Information

Company Name:	TCL Communication Ltd.
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City:	Hong Kong
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# 2.2. Manufacturer Information

Company Name:	TCL Communication Ltd.
Address	5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science
Address:	Park, Shatin, NT, Hong Kong
City:	Hong Kong
Contact Person:	Annie Jiang
Contact Email	nianxiang.jiang@tcl.com
Telephone:	+86 755 36645251
Fax:	+86 755 3661 2000-81722





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

### 3.1. About EUT

Description	Tablet PC
Model Name	9465G

Note: The EUT functions are described in Annex A of this test report. Specifications of the EUT were provided to fulfil the test. Samples undergoing test were selected by the client. Components list, please refer to documents of the manufacturer; it is also included in the original test record of CTTL,Telecommunication Technology Labs,CAICT

### 3.2. Internal Identification of EUT

EUT ID*	SN or IMEI	<b>HW Version</b>	SW Version	Date of receipt
UT26a	355470610000297	05	6GS2	2024-05-17
UT31a	355470610000271	05	6GS2	2024-05-17

\*EUT ID: is used to identify the test sample in the lab internally. The HW and SW version information were provided by the applicant.

### 3.3. Internal Identification of AE

AE ID*	Description	Note	Manufacturer	
AE1-1	Battery	2853B7PL-2P	Gaoyuan	/
AE2-1	Charger	UT-681E-5200MY	Shenzhen Baijunda Electronic CO.,Ltd	/
AE2-2	Charger	UT-681A-5200MY	Shenzhen Baijunda Electronic CO.,Ltd	/
AE2-3	Charger	UT-681B-5200MY	Shenzhen Baijunda Electronic CO.,Ltd	/
AE3	USB cable	XB.003.1071.0003	Huizhou Besiter Power Technology Co., Ltd	/
AE4	Headset	/	/	/
***			· · · · ·	

\*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.4	UT26a + AE1-1 + AE2-2 + AE3	Charger
Set.5	UT26a + AE1-1 + AE3 + PC	PC
Set.6	UT31a + AE1-1 +AE4	FM





# 4. <u>Reference Documents</u>

### 4.1. Documents supplied by applicant

EUT parameters, referring to Annex A for detailed information, were supplied by the client or manufacturer, which is the basis of testing. CAICT is not responsible for the accuracy of customer supplied technical information that may affect the test results (for example, antenna gain and loss of customer supplied cable).

### 4.2. <u>Reference Documents for testing</u>

The following documents listed in this section are referred for testing.

Reference			Title	Version
FCC	Part	15,	Radio frequency devices - Unintentional Radiators	2023
Subpar	t B			
ANSI C	63.4		American National Standard for	2014
			Methods of Measurement of Radio-	
			Noise Emissions from Low-Voltage	
			Electrical and Electronic Equipment	
			in the Range of 9 kHz to 40 GHz	

Note: The test methods have no deviation with standards.





# 5. Test Results

Abbreviations us	ed in this clause:	
	Р	Pass
Verdict Column	F	Fail
	BR	Re-use test data from basic model report.
	NA	Not applicable
	NM	Not measured

Items	Test Name	Clause in FCC rules	Section in this report	Verdict	Test Location
1	Radiated Emission	15.109(a)	B.1	Ρ	CTTL(BDA) CTTL(huayuan North Road)
2	Conducted Emission	15.107(a)	B.2	Р	CTTL(huayuan North Road)





# 6. Test Facilities Utilized

# Test instruments list:

#### huayuan North Road:

No.	Equipment	Model	Model Serial Manufacturer	Calibration	Calibration	
NO.	Lquipment	Woder	Number	Manufacturer	Period	Due date
1	LISN	ENV216	101200	R&S	1 year	2025-05-16
2	Test Receiver	ESCI	100344	R&S	1 year	2025-04-01
3	Test Receiver	ESW44	103023	R&S	2 years	2025-06-08
4		VULB	01222	SCHWARZBE	0	2025 01 29
4	EMI Antenna	9163	01222	СК	2 years	2025-01-28
5	Signal	SMBV100	260612	DVC	2 1/20172	2025-02-1
5	Generator	А	260613	R&S	2 years	4
	Universal					
6	Radio	CMW500	150344	R&S	2 Year	2025-01-0
0	Communicati	CIVIV 500				3
	on Tester					
7	PC	PC OPTIPLE DELL 2X1YV2X		2818/28	/	/
1			/	/		
8	Printer	P1606dn	HP	VNC3L52122	/	/
0	Kouhoord	ard L100 DELL	DELL	CN0RH65965	,	,
9	Keyboard		8907ATOI40	/	/	
10	Mouse	M-UAE119	Lenovo	LZ935220ZRC	/	/

#### BDA:

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
3	Test Receiver	ESU26	100376	R&S	2 years	2025-05-30
4	EMI Antenna	VULB	01223	SCHWARZBE	2 years	2025-07-18
4	Eivii Antenna	9163	01223	СК		
5	EMI Antenna	3117	00119021	ETS	2 years	2025-05-24
	Universal					
6	Communicati	CMW500	143008	R&S	2 years	2025-01-03
	on Tester					
8	PC	PC E500-104 2140770010 Tsinghua   2 640901850 Tongfang	Tsinghua	N/A	N/A	
0			IN/A	IN/A		
9	Printer	1160	33740	HP	N/A	N/A
10	Keyboard	/	/	/	N/A	N/A
11	Mouse	/	/	/	N/A	N/A

#### Test software list:

Test Item Test Software Software Vendor
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Conducted emission(huayuan North Road)	EMC32 V8.53.0	R&S
Radiated emission(huayuan North Road)	EMC32 V11.50.00	R&S
Radiated emission(BDA)	EMC32 V10.60.20	R&S

#### Semi-anechoic chamber utilized did not exceed following limits along the testing:

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
Shielded room utilized did not exceed followi	ng limits along the 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

# 7. <u>Measurement Uncertainty</u>

Where relevant, the following measurement uncertainty(worse case) levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

#### Location 1: CTTL(huayuan North Road)

Test item	Frequency ranges	Measurement uncertainty
Radiated Emission	30MHz-1GHz	4.72dB(k=2)
Conducted Emission	150kHz-30MHz	AC Power Line: 3.08dB( <i>k</i> =2)

#### Location 2: CTTL(BDA)

Test item	Frequency ranges	Measurement uncertainty
Radiated Emission	1GHz-18GHz	5.58dB( <i>k</i> =2)





# **ANNEX A: EUT parameters**

Cellular Bands operate	√GSM	Band 850MHz
between		Band
30MHz-960MHz	√ WCDMA	Band 5
	√LTE	Band 5/12/13
	□5G NR SA	Band
Other FCC Part 15B	√FM √MP3 √M	MP4  √ Camera  √ USB data □NFC
related features		





# ANNEX B: Detailed Test Results

### **B.1. Radiated Emission**

Reference: FCC Part 15.109(a).

Method of measurement: The field strength of radiated emissions from the unintentional radiator at distances of 3/10 meters(for 30MHz-1GHz) and 3 meters (for above 1GHz) were tested. The test was 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 the specified distance from the EUT. During the test, 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.

EUT operating mode: The EUT was operating in the USB data and/or charging mode. During the test, the EUT was connected to a charger in the case of charging mode. The EUT was tested while operating in licensed band Rx mode. All licensed band receivers that tune in the range of 30MHz-960MHz, as listed in Annex A (GSM 850MHz, WCDMA band5, LTE band 5/12/13/26, NR SA n12/26), were investigated. Only the worst case emissions are reported. All equipment was placed on the test table top and arranged in a typical configuration in accordance with ANSI C63.4-2014 and manipulated to obtain worst case emissions. Note: Add 2/3/4G band 8 and 4G band 28 testing.

<b>Measurement lim</b>	it:
------------------------	-----

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. The limits for 10 meters distance is got by converting: Limit(10m) = Limit(3m) + 20[log(3/10)], which is according to FCC 15.109(g)(2)

#### **Test settings:**

Frequency range (MHz)	RBW/VBW	Sweep Time (s)	Detector
30-1000	120kHz (IF	5	Peak/Quasi-peak
	Bandwidth)		
Above 1000	1MHz/3MHz	15	Peak, Average

#### Measurement results:

A "reference path loss" is established and the A<sub>Rpl</sub> 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.

Note: The measurement results showed as followed are worst cases, and the combinations of different batteries, cables and headsets were considered if applicable.

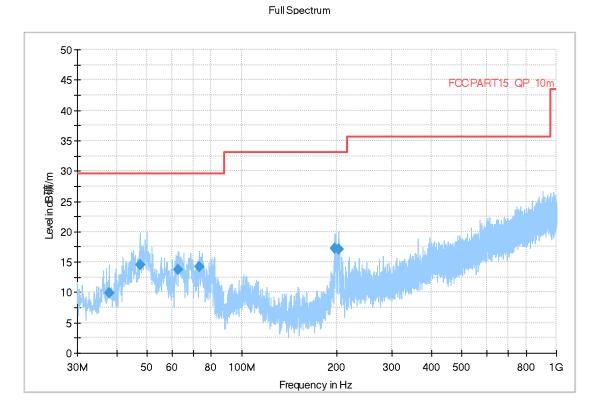
#### Function Type:

Setup	Function	Conclusion
Set.4	Charger+Real Camera+ RX GSM 850M	Pass
Set.4	Charger+Real Camera+ RX WCDMA band 5	Pass
Set.4	Charger+Front Camera + RX LTE band 5	Pass
Set.4	Charger+MP4 + RX LTE band 12	Pass
Set.4	Charger+MP4 + RX LTE band 13	Pass
Set.5	USB TO PC	Pass
Set.6	FM	Pass





Note: Only the worst case emissions are reported. Charger + MP4 + RX LTE band 13, Set.4

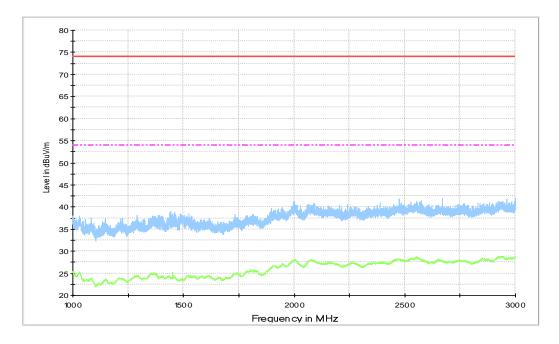


#### **QP** detector

Frequency	QuasiPeak	Limit	Margin	Height	Pol	Azimuth
(MHz)	(dBµV/m)	(dBµV/m)	(dB)	(cm)		(deg)
37.954000	9.84	29.54	19.70	275.0	V	9.0
47.460000	14.57	29.54	14.97	214.0	V	215.0
62.640500	13.81	29.54	15.73	225.0	V	294.0
73.407500	14.27	29.54	15.27	225.0	V	69.0
197.713000	17.17	33.06	15.89	176.0	V	-15.0
203.775500	17.07	33.06	15.99	109.0	V	45.0









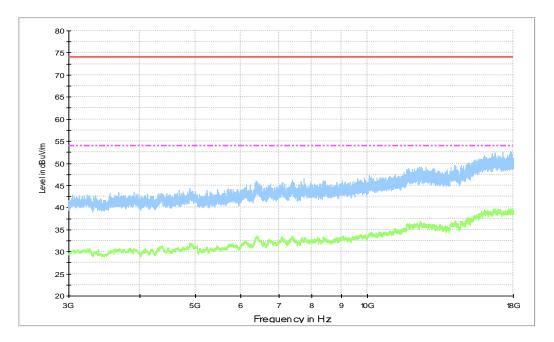


Figure A.2 Radiated Emission from 3GHz to 18GHz





# Average detector

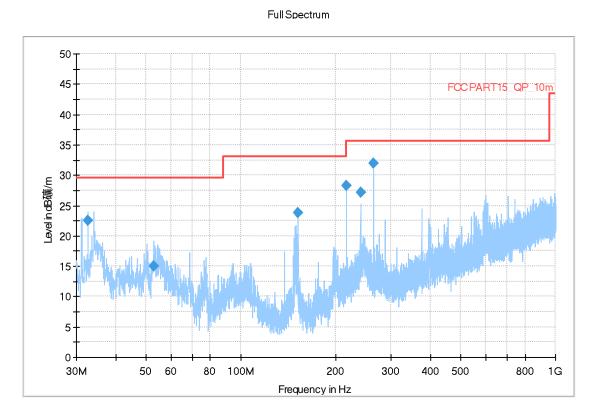
Fraguanay	Measurement	Cable	Antenna	Receiver	Limit	Morgin	Antenna
Frequency (MHz)	Result	loss	Factor	Reading	(dBµV/m)	Margin	Pol.
	(dBµV/m)	(dB)	(dB/m)	(dBµV)	(uoµv/m)	(dB)	(H/V)
17829.500	39.79	-23.0	40.5	22.31	54.0	14.2	V
17827.500	39.78	-23.2	40.5	22.43	54.0	14.2	V
17018.000	39.74	-24.2	41.1	22.88	54.0	14.3	V
17891.500	39.74	-23.4	40.5	22.68	54.0	14.3	V
17828.000	39.71	-23.1	40.5	22.33	54.0	14.3	V
17885.000	39.70	-23.4	40.5	22.62	54.0	14.3	V

### Peak detector

Fraguaday	Measurement	Cable	Antenna	Receiver	Limit	Morgin	Antenna
Frequency	Result	loss	Factor	Reading		Margin	Pol.
(MHz)	(dBµV/m)	(dB)	(dB/m)	(dBµV)	(dBµV/m)	(dB)	(H/V)
17824.000	52.7	-23.4	40.5	35.58	74.0	21.3	V
17259.000	52.6	-24.4	40.8	36.15	74.0	21.4	V
17842.000	52.5	-23.3	40.5	35.29	74.0	21.5	V
16744.500	52.3	-24.7	41.4	35.62	74.0	21.7	V
16721.500	52.3	-24.6	41.5	35.41	74.0	21.7	V
16504.500	52.2	-25.4	41.2	36.43	74.0	21.8	V







### USB connected to PC mode, Set.5

Figure A.5 Radiated	<b>Emission from</b>	30MHz to 1GHz
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#### **QP** detector

Frequency	QuasiPeak	Limit	Margin	Height	Pol	Azimuth
(MHz)	(dBµV/m)	(dBµV/m)	(dB)	(cm)		(deg)
32.667500	22.53	29.54	7.01	325.0	V	166.0
52.795000	15.02	29.54	14.52	104.0	V	151.0
151.977500	23.78	33.06	9.28	100.0	V	301.0
215.997500	28.24	33.06	4.82	276.0	н	173.0
240.005000	27.15	35.56	8.41	320.0	Н	189.0
264.012500	32.02	35.56	3.54	319.0	н	-8.0





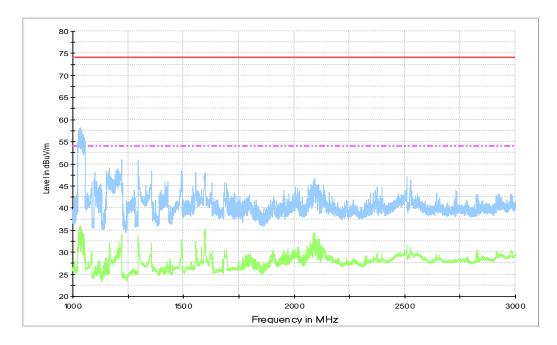


Figure A.6 Radiated Emission from 1GHz to 3GHz

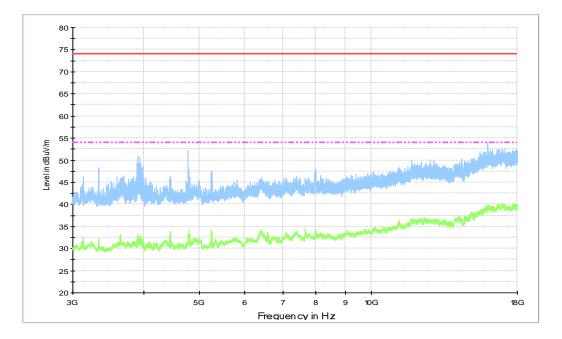


Figure A.6 Radiated Emission from 3GHz to 18GHz





### Average detector

Frequency (MHz)	Measurement Result (dBµV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBµV)	Limit (dBµV/m)	Margin (dB)	Antenna Pol. (H/V)
1033.000	35.98	-37.8	28.7	45.14	54.0	18.0	Н
1220.200	33.71	-38.2	27.9	43.99	54.0	20.3	Н
1598.800	35.05	-37.7	28.5	44.25	54.0	18.9	V
4443.500	33.97	-34.6	33.5	35.04	54.0	20.0	Н
4797.000	34.19	-34.1	34.0	34.28	54.0	19.8	Н
5243.000	34.29	-34.2	34.2	34.29	54.0	19.7	Н

### Peak detector

Fraguaday	Measurement	Cable	Antenna	Receiver	Limit	Morgin	Antenna
Frequency	Result	loss	Factor	Reading		Margin	Pol.
(MHz)	(dBµV/m)	(dB)	(dB/m)	(dBµV)	(dBµV/m)	(dB)	(H/V)
1036.400	57.9	-38.1	28.6	67.39	74.0	16.1	Н
1220.600	50.9	-38.2	27.9	61.17	74.0	23.1	Н
1295.400	50.8	-37.7	28.4	60.06	74.0	23.2	Н
3332.000	48.3	-35.2	32.9	50.58	74.0	25.7	V
3900.500	51.0	-34.6	33.4	52.21	74.0	23.0	Н
4781.000	52.2	-34.4	34.0	52.67	74.0	21.8	V





#### FM function, Set.6

Full Spectrum

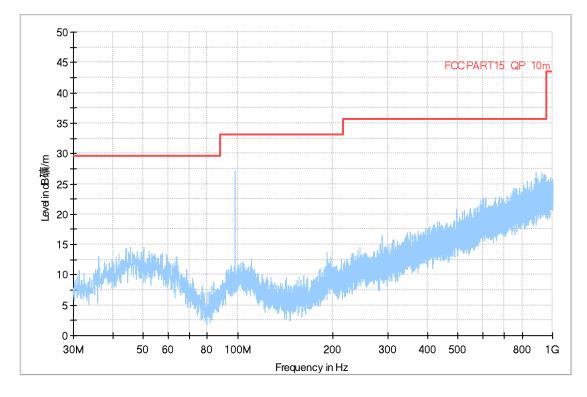


Figure A.5 Radiated Emission from 30MHz to 1GHz





# B.2. Conducted Emission

### Reference: FCC: Part 15.107(a).

**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.

**EUT operating mode:** The EUT is operating in the charging mode and USB data mode if applicable.

#### Measurement limit:

Frequency of emission (MHz)	Conducted limit (dBµV)			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					

#### Test Settings:

Voltage(V)	Frequency(Hz)			
120	60			

RBW/IF bandwidth	Sweep Time(s)			
9kHz	1			

#### Measurement results:

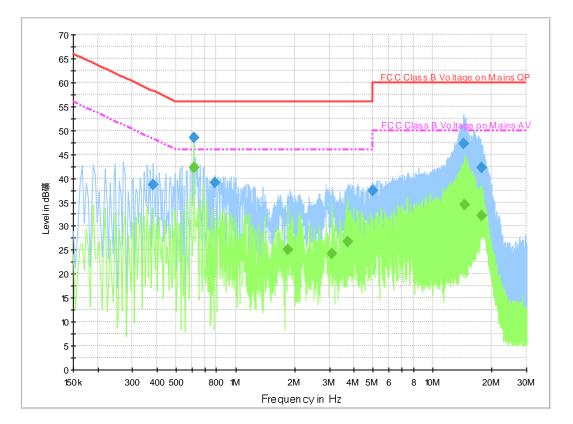
The measurement results showed as followed are worst cases, and the combinations of different batteries, cables and headsets were considered if applicable.

#### **Function Type:**

Setup	Function	Conclusion
Set.4	Charger+Real Camera+ RX GSM 850M	Pass
Set.4	Charger+Real Camera+ RX WCDMA band 5	Pass
Set.4	Charger+Front Camera + RX LTE band 5	Pass
Set.4	Charger+MP4 + RX LTE band 12	Pass
Set.5	USB TO PC	Pass







## Note: Only the worst case emissions are reported. Charger + Front Camera + RX LTE band 5, Set.4

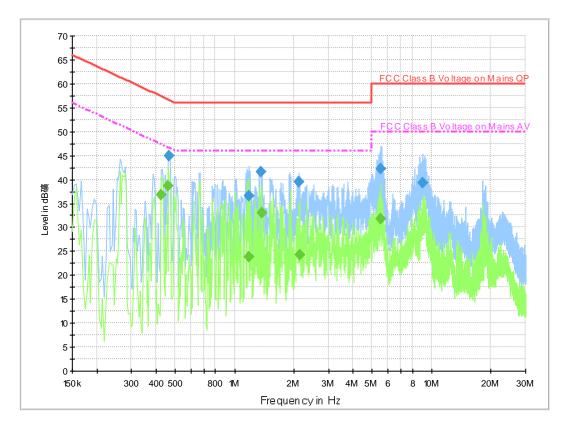
Figure A.9 Conducted Emission

Final Result 1		-						
Frequency	QuasiPeak	Meas. Time	Bandwidth	Filter	Line	Corr.	Margin	Limit
(MHz)	(dBµV)	(ms)	(kHz)			(dB)	(dB)	(dBµV)
0.382000	38.6	2000.0	9.000	On	L1	19.9	19.7	58.2
0.614000	48.5	2000.0	9.000	On	L1	20.0	7.5	56.0
0.786000	39.0	2000.0	9.000	On	Ν	19.8	17.0	56.0
4.998000	37.4	2000.0	9.000	On	L1	19.8	18.6	56.0
14.366000	47.1	2000.0	9.000	On	L1	20.0	12.9	60.0
17.666000	42.1	2000.0	9.000	On	L1	20.0	17.9	60.0
Final Result 2								
Frequency	CAverage	Meas. Time	Bandwidth	Filter	Line	Corr.	Margin	Limit
(MHz)	(dBµV)	(ms)	(kHz)			(dB)	(dB)	(dBµV)
0.614000	42.2	2000.0	9.000	On	L1	20.0	3.8	46.0
1.834000	25.1	2000.0	9.000	On	L1	19.8	20.9	46.0
3.074000	24.3	2000.0	9.000	On	L1	19.8	21.7	46.0
3.722000	26.7	2000.0	9.000	On	L1	19.8	19.3	46.0
14.498000	34.5	2000.0	9.000	On	L1	20.0	15.5	50.0
17.826000	32.2	2000.0	9.000	On	L1	20.0	17.8	50.0

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### USB connected to PC mode, Set.5

Figure A.11 Conducted Emission

Final Result 1		-						
Frequency	QuasiPeak	Meas. Time	Bandwidth	Filter	Line	Corr.	Margin	Limit
(MHz)	(dBµV)	(ms)	(kHz)			(dB)	(dB)	(dBµV)
0.466000	44.9	2000.0	9.000	On	Ν	19.9	11.7	56.6
1.190000	36.5	2000.0	9.000	On	L1	19.9	19.5	56.0
1.366000	41.5	2000.0	9.000	On	L1	19.9	14.5	56.0
2.126000	39.4	2000.0	9.000	On	N	19.6	16.6	56.0
5.522000	42.2	2000.0	9.000	On	L1	19.9	17.8	60.0
9.038000	39.2	2000.0	9.000	On	L1	19.9	20.8	60.0
Final Result 2								
Frequency	CAverage	Meas. Time	Bandwidth	Filter	Line	Corr.	Margin	Limit
(MHz)	(dBµV)	(ms)	(kHz)			(dB)	(dB)	(dBµV)
0.426000	36.8	2000.0	9.000	On	L1	20.0	10.6	47.3
0.462000	38.7	2000.0	9.000	On	L1	20.0	8.0	46.7
1.190000	23.8	2000.0	9.000	On	L1	19.9	22.2	46.0
1.370000	33.0	2000.0	9.000	On	L1	19.9	13.0	46.0
2.134000	24.2	2000.0	9.000	On	Ν	19.6	21.8	46.0
5.522000	31.7	2000.0	9.000	On	L1	19.9	18.3	50.0





# **ANNEX C: Persons involved in this testing**

Test Item	Tester
Radiated Emission	Ding Zai & Sun Tianyuan
Conducted Emission	Li Pengfei

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