



TEST REPORT

No. I19Z61642-EMC01

for

Wiko SAS

Smart Phone

Model Name: U307AS

FCC ID: 2AM86U307AS

with

Hardware Version: V1.0

Software Version: U307ASV01.08.10

Issued Date: 2019-10-22

Note:

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Test Laboratory:

CTTL-Telecommunication Technology Labs, CAICT

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
I19Z61642-EMC01	Rev.0	1 st edition	2019-10-22

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 17025:2005 accredited test laboratory under NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0, and is also an FCC accredited test laboratory (CN5017), and ISED accredited test laboratory (CN0066). The detail accreditation scope can be found on NVLAP website.

2. Test Laboratory

2.1. Testing Location

CTTL(huayuan North Road)

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

2.2. Testing Environment

Normal Temperature: 15-35 °C

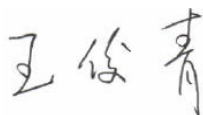
Relative Humidity: 20-75%

2.3. Project data

Testing Start Date: 2019-10-14

Testing End Date: 2019-10-21

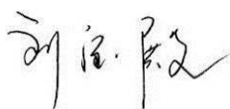
2.4. Signature



Wang Junqing
(Prepared this test report)



Zhang Ying
(Reviewed this test report)



Liu Baodian
Deputy Director of the laboratory
(Approved this test report)

3. Client Information

3.1. Applicant Information

Company Name: Wiko SAS
Address: 1, rue Capitaine Dessemond 13007 - Marseille - France.
Contact Person Filippo Cesare FERRARA
Contact Email fferrara@wikomobile.com
Telephone: 0033610144948
Fax: 33488089520

3.2. Manufacturer Information

Company Name: Shenzhen Tinno Mobile Technology Corp.
Address: 4/F, H-3 Building,OCT Eastern Industrial Park. NO.1 XiangShan East Road, Nan Shan District,Shenzhen, P.R.China
Contact Person xiaoping.li
Contact Email xiaoping.li@tinno.com
Telephone: 0755-86095550
Fax: /

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

4.1. About EUT

Description	Smart Phone
Model Name	U307AS
FCC ID	2AM86U307AS
Extreme vol. Limits	3.5VDC to 4.4VDC (nominal: 3.85VDC)

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

4.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version
EUT1	864337040011414	V1.0	U307ASV01.08.10

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

4.3. Internal Identification of AE used during the test

AE ID*	Description	SN	Remarks
AE1	Battery	/	inbuilt
AE2	Charger	/	/
AE3	USB Cable	/	/
AE4	USB Cable	/	/
AE5	HeadSet	/	/

AE1

Model	LT25H426271W
Manufacturer	Ningbo Veken Battery Co., Ltd
Capacitance	2500mAh
Nominal voltage	3.85V

AE2

Model	TN-050100U6
Manufacturer	Guangdong Beicom Electronics Co.,Ltd
Length of cable	/

AE3

Model	P103-ASH130-000
Manufacturer	SUNTOPS(SHENZHEN)ELECTRONICS CO., LTD
Length of cable	/

AE4

Model	P103-ASH130-010
Manufacturer	Saibao (jiangxi) Communication Industrial Co.,Ltd
Length of cable	/

AE5

Model	/
Manufacturer	/
Length of cable	/

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



Note: The USB cables are shielded.

4.4. EUT set-ups

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

5. Reference Documents

5.1. 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	2016
ANSI C63.4	American National Standard for Methods of Measurement of Radio- Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	2014

Note: The test methods have no deviation with standards.

6. LABORATORY ENVIRONMENT

Semi-anechoic chamber SAC-1 (23 meters×17meters×10meters) did not exceed following limits along the EMC 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_{VSWR})	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

7. SUMMARY OF TEST RESULTS

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

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

8. Test Equipments Utilized

NO.	Description	TYPE	SERIES NUMBER	MANUFACTURE	CAL DUE DATE	CALIBRATI ON INTERVAL
1	Test Receiver	ESU26	100235	R&S	2020-03-01	1 Year
2	Test Receiver	ESCI3	100344	R&S	2020-02-14	1 Year
3	Universal Radio Communication Tester	CMW500	150344	R&S	2019-12-27	1 year
5	LISN	ENV216	101200	R&S	2020-03-14	1 year
6	EMI Antenna	VULB 9163	9163-1222	Schwarzbeck	2020-03-14	1 year
7	EMI Antenna	3115	6914	ETS-Lindgren	2020-01-03	1 year
8	PC	M4000E-17	M706GWXD	LENOVO	N/A	N/A
9	Printer	P1606dn	VNC3L52122	HP	N/A	N/A

ANNEX A: MEASUREMENT RESULTS

A.1 Radiated Emission

Reference

FCC: CFR Part 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 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 M4000E-17, and the serial number of the PC is M706GWXD. The software is used to let the PC keep on copying data to MS, reading and erasing the data after copy action was finished.

Note: I/O information: Printer – USB, Mouse – PS/2, Keyboard – USB.

A.1.3 Measurement Limit

Frequency range (MHz)	Field strength limit ($\mu\text{V/m}$)		
	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:

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

Where

G_A : Antenna factor of receive antenna

G_{PL} : Path Loss

P_{Mea} : Measurement result on receiver.

Measurement uncertainty (worst case): $U = 5.44 \text{ dB}$, $k=2$.

Measurement results for Set.1:

Charging Mode/Average detector

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Antenna Pol. (H/V)
17967.700	45.8	-17.7	45.6	17.900	H
17950.133	45.7	-17.7	45.6	17.800	H
17821.500	45.7	-18.5	45.6	18.600	V
17942.767	45.6	-17.7	45.6	17.700	H
17964.300	45.6	-17.7	45.6	17.700	H
17954.100	45.5	-17.7	45.6	17.600	H

Charging Mode/Peak detector

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Antenna Pol. (H/V)
17960.333	57.5	-17.7	45.6	29.600	H
17390.833	57.1	-19.2	41.5	34.800	H
17962.600	57.0	-17.7	45.6	29.100	V
17975.633	56.9	-17.7	45.6	29.000	H
17938.800	56.9	-17.7	45.6	29.000	H
17815.267	56.9	-18.5	45.6	29.800	H

Measurement results for Set.2:
USB Mode/Average detector

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Antenna Pol. (H/V)
17943.333	46.1	-17.7	45.6	18.200	H
17954.100	45.8	-17.7	45.6	17.900	H
17960.900	45.8	-17.7	45.6	17.900	V
17952.400	45.7	-17.7	45.6	17.800	H
17962.033	45.6	-17.7	45.6	17.700	H
17942.200	45.6	-17.7	45.6	17.700	H

USB Mode/ Peak detector

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Antenna Pol. (H/V)
17935.400	57.6	-5.4	33.8	29.216	H
17412.933	57.6	-5.9	33.8	29.725	H
17954.100	57.3	-5.4	33.8	28.916	V
17277.500	57.2	-6.5	33.8	29.896	H
17841.333	57.2	-5.7	33.8	29.138	H
17984.700	57.0	-5.4	33.8	28.616	H

Charging Mode, Set.1

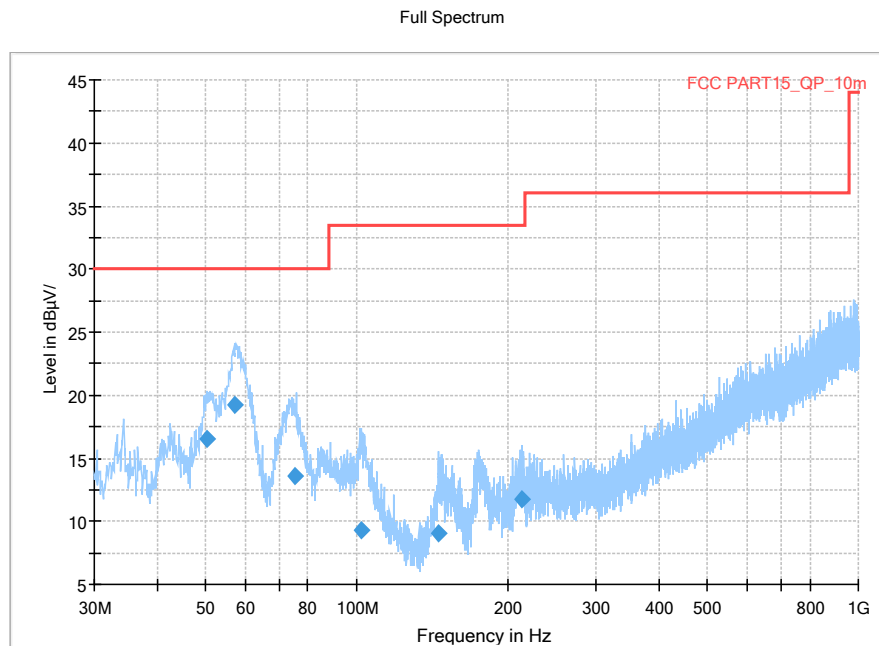


Fig A.1 Radiated Emission from 30MHz to 1GHz

Final Result

Frequency (MHz)	QuasiPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
50.467000	16.56	30.00	13.44	1000.0	120.000	102.0	V	154.0
57.077000	19.20	30.00	10.80	1000.0	120.000	292.0	V	168.0
75.401000	13.65	30.00	16.35	1000.0	120.000	191.0	V	-27.0
102.228000	9.31	33.50	24.21	1000.0	120.000	199.0	V	-26.0
145.536000	9.07	33.50	24.45	1000.0	120.000	100.0	V	18.0
212.905000	11.79	33.50	21.73	1000.0	120.000	124.0	V	5.0

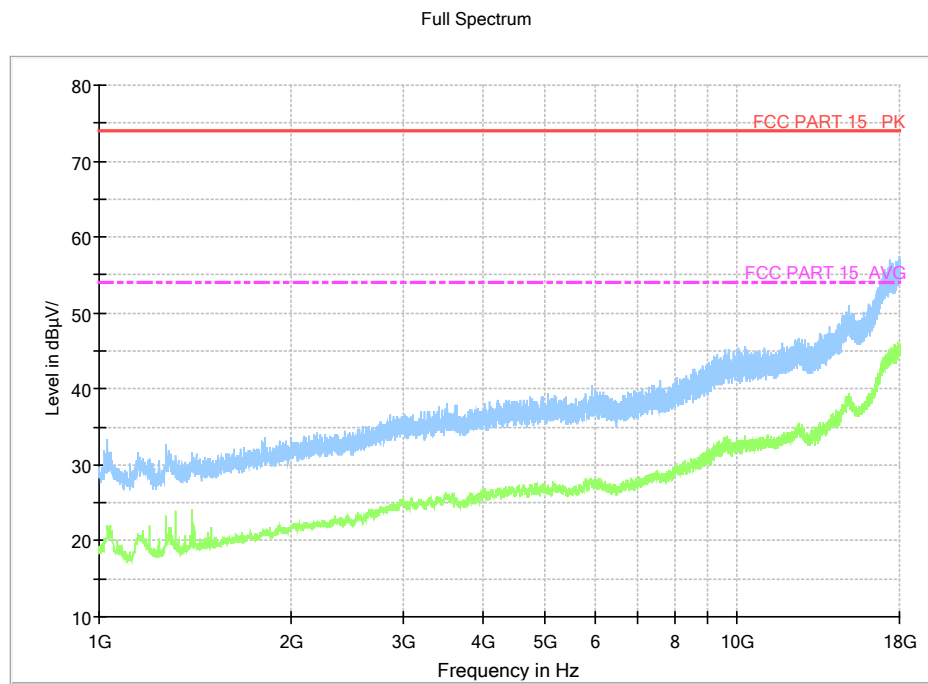


Fig A.2 Radiated Emission from 1GHz to 18GHz

USB Mode, Set.2

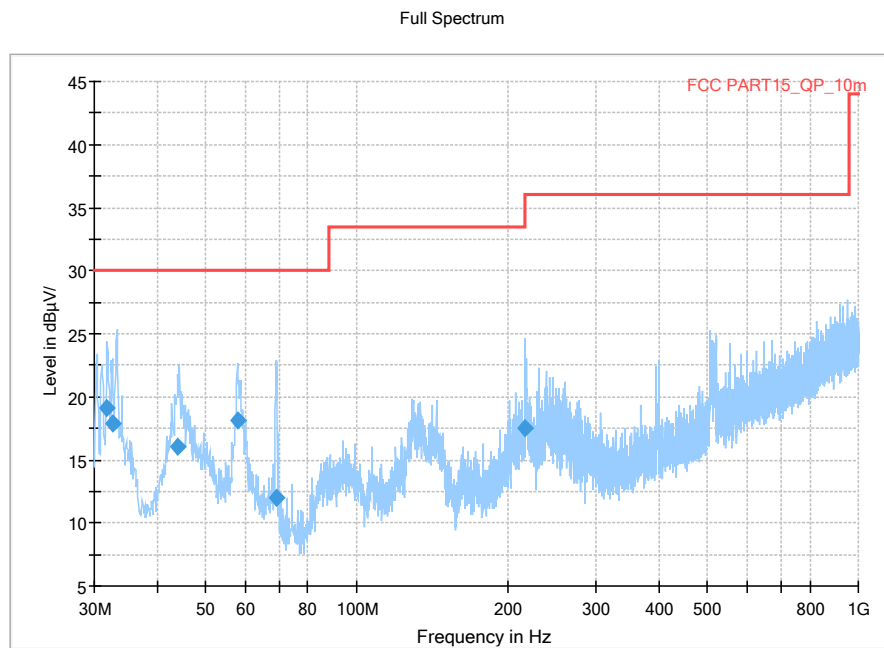


Fig A.3 Radiated Emission from 30MHz to 1GHz

Final Result

Frequency (MHz)	QuasiPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
31.783000	19.07	30.00	10.93	1000.0	120.000	107.0	V	205.0
32.698000	17.91	30.00	12.09	1000.0	120.000	206.0	V	265.0
43.876000	16.07	30.00	13.93	1000.0	120.000	325.0	V	268.0
58.079000	18.07	30.00	11.93	1000.0	120.000	225.0	V	258.0
69.142000	12.00	30.00	18.00	1000.0	120.000	103.0	V	210.0
217.168000	17.46	36.00	18.56	1000.0	120.000	115.0	V	-26.0

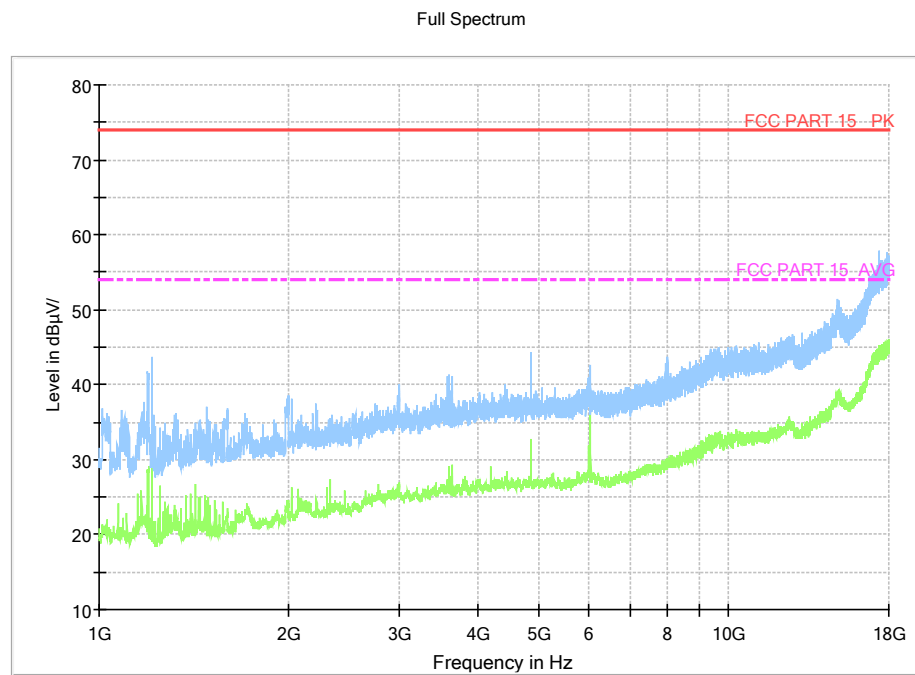


Fig A.4 Radiated Emission from 1GHz to 18GHz

A.2 Conducted Emission

Reference

FCC: CFR Part 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 – 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 M4000E-17, and the serial number of the PC is M706GWXD. The software is used to let the PC keep on copying data to MS, reading and erasing the data after copy action was finished.

Note: I/O information: Printer – USB, Mouse – PS/2, Keyboard – USB.

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: $U = 3.38 \text{ dB}$, $k=2$.

Charging Mode, Set.1

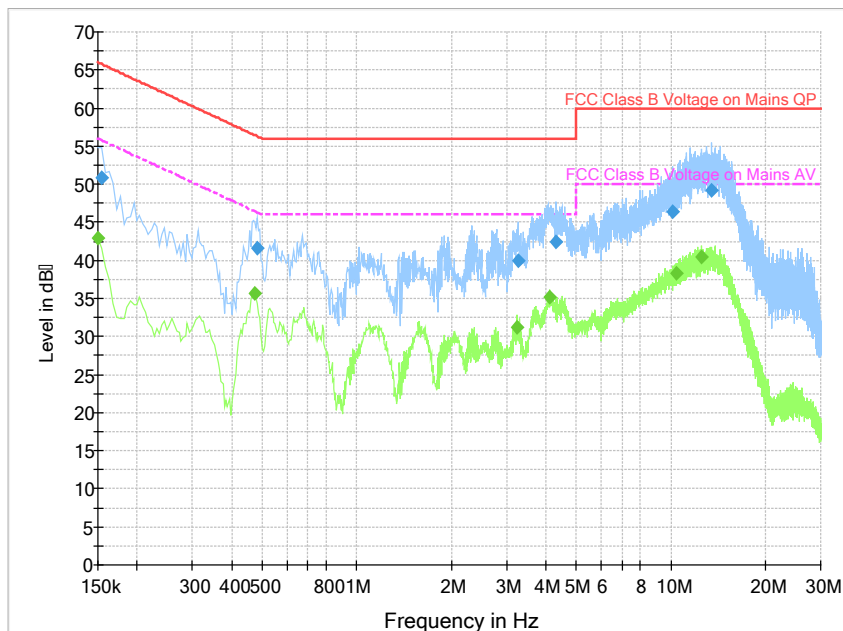


Fig A.5 Conducted Emission from 150kHz to 30MHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.154500	50.9	2000.0	9.000	On	N	29.6	14.8	65.8	
0.483000	41.6	2000.0	9.000	On	L1	19.8	14.7	56.3	
3.255000	39.9	2000.0	9.000	On	L1	19.6	16.1	56.0	
4.326000	42.4	2000.0	9.000	On	L1	19.6	13.6	56.0	
10.153500	46.4	2000.0	9.000	On	L1	19.7	13.6	60.0	
13.474500	49.1	2000.0	9.000	On	L1	19.8	10.9	60.0	

Final Result 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.150000	43.0	2000.0	9.000	On	N	30.6	13.0	56.0	
0.474000	35.7	2000.0	9.000	On	N	19.8	10.8	46.4	
3.232500	31.3	2000.0	9.000	On	L1	19.6	14.7	46.0	
4.110000	35.1	2000.0	9.000	On	L1	19.6	10.9	46.0	
10.378500	38.3	2000.0	9.000	On	L1	19.7	11.7	50.0	
12.529500	40.4	2000.0	9.000	On	L1	19.8	9.6	50.0	

USB Mode, Set.2

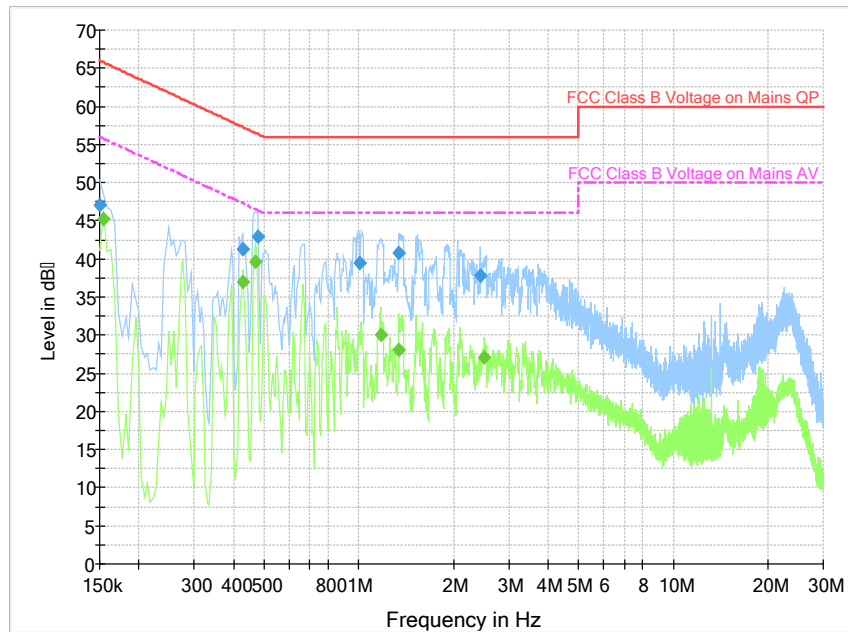


Fig A.6 Conducted Emission from 150kHz to 30MHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.150000	47.0	2000.0	9.000	On	L1	30.7	19.0	66.0	
0.429000	41.3	2000.0	9.000	On	L1	19.8	15.9	57.3	
0.478500	42.9	2000.0	9.000	On	N	19.8	13.5	56.4	
1.005000	39.5	2000.0	9.000	On	L1	19.7	16.5	56.0	
1.342500	40.8	2000.0	9.000	On	L1	19.6	15.2	56.0	
2.436000	37.9	2000.0	9.000	On	L1	19.6	18.1	56.0	

Final Result 2

Frequency (MHz)	Average (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.154500	45.3	2000.0	9.000	On	N	29.6	10.5	55.8	
0.429000	37.0	2000.0	9.000	On	L1	19.8	10.3	47.3	
0.469500	39.6	2000.0	9.000	On	N	19.8	6.9	46.5	
1.176000	30.1	2000.0	9.000	On	L1	19.7	15.9	46.0	
1.342500	28.1	2000.0	9.000	On	L1	19.6	17.9	46.0	
2.512500	27.1	2000.0	9.000	On	N	19.6	18.9	46.0	

ANNEX B: PERSONS INVOLVED IN THIS TESTING

Test Item	Test Software and Version	Software Vendor	Test operator
Conducted Emission	EMC32 V8.5.2	R&S	Shi Suolan
Radiated Emission	EMC32 V9.01.00	R&S	Li Pengfei

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