



TEST REPORT

No. I18D00210-EMC01

For

Client : Mobewire SAS

Production: 3G Smart phone

Model Name : MobiWire Kanuna, Altice S22

FCC ID: QPN-KANUNA

Hardware Version: V01D

SoftwareVersion: ALTICE_S22_DS_O_T_L_V01.1_181016

Issued date: 2018-11-21

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 ECIT Shanghai.

Test Laboratory:

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Revision Version

Report Number	Revision	Date	Memo
I18D00210-EMC01	00	2018-11-21	Initial creation of test report

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1. Test Laboratory

1.1. Testing Location

Company Name: ECIT Shanghai, East China Institute of Telecommunications
Address: 7F, G Area, No. 668, Beijing East Road, Huangpu District, Shanghai,
P. R. China
Postal Code: 200001
Telephone: 86-21-63843300
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FCC registration No: 958356

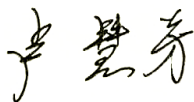
1.2. Testing Environment

Normal Temperature: 15-35°C
Relative Humidity: 30-60%RH

1.3. Project data

Project Leader: Yu Anlu
Testing Start Date: 2018-11-03
Testing End Date: 2018-11-15

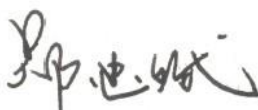
1.4. Signature



Lu Huifang
(Prepared this test report)



You Jinjun
(Reviewed this test report)



Zheng Zhongbin
(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name: Mobiwire SAS
Address : 79 AVENUE FRANCOIS ARAGO 92017 NANTERRE CEDEX
 France.
Telephone: +33668018722
Post: 920017

2.2. Manufacturer Information

Company Name: Mobiwire SAS
Address : 79 AVENUE FRANCOIS ARAGO 92017 NANTERRE CEDEX
 France.
Telephone: +33668018722
Post: 920017

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

3.1. About EUT

EUT Description	3G Smart phone
Model name	MobiWire Kanuna, Altice S22
GSM Frequency Band	GSM900/ GSM1800/ GSM850/ GSM 1900
WCDMA Frequency Band	WCDMA Band I / II / V / VIII
Additional Communication Function	BT4.0,BLE;802.11b,g,n;GPS;FM;MP3;

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
N06	354381100000062	V01D	ALTICE_S22_DS_O_T_ L_V01.1_181016	2018.11.03

*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	Model	SN
CA01	Adapter	NA	NA
UB01	USB	AM MICR05P 1M	NA
AA03	Earphone	0957M01	NA
AE1	Desktop PC	OptiPlex 790 DT	X8RP1 A01 APCC
AE2	Notebook PC	ThinkPad Edge E430	0B65911
AE3	LAN Cable	NA	NA
AE4	VGA Cable	NA	NA
AE5	RS232 Cable	NA	NA
AE6	Keyboard	KB212-B	CN-0Y88XT-65890-12I-005Q-A00
AE7	Mouse	MS111-P	CN-011D3V-71581-19J-1A64
AE8	Adapter	NA	NA
AE9	Monitor	Dell E1709Wc	NA
AE10	SanDisk Ultra32GB	Micro SDHC UHS-I	NA

*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	Method of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	2014

5. Test Results

5.1 Summary of Test Results

Items	Test List	Clause in FCC rules	Verdict
1	Radiated Emission	15.109(a)	Pass
2	AC Conducted Emission	15.107(a)	Pass

5.2 Statements

The MobiWire Kanuna, Altice S22, supporting GSM/WCDMA/BT/WLAN. etc , manufactured by Mobiwire SAS is a new product for testing. ECIT only performed test cases which identified with Pass/Fail/Inc result in section 5.1.

ECIT has verified that the compliance of the tested device specified in section 3 of this test report is successfully evaluated according to the procedure and test methods as defined in type certification requirement listed in section 4 of this test report.

6. Test Equipment Utilized

6.1 Radiated Emission Equipment list

No.	Name	Type	Series Number	Producer	Cal. Date	Cal. interval
1	Universal Radio Communication	CMU200	123126	R&S	2018-05-11	1 Year
2	Test Receiver	ESU40	100307	R&S	2018-05-11	1 Year
3	Trilog Antenna	VULB9163	VULB9163-515	Schwarzbeck	2017-02-25	3 Year
4	Double Ridged Guide	ETS-3117	00135885	ETS	2017-01-11	3 Year
5	EMI Test Software	EMC32 V9.15	NA	R&S	NA	NA

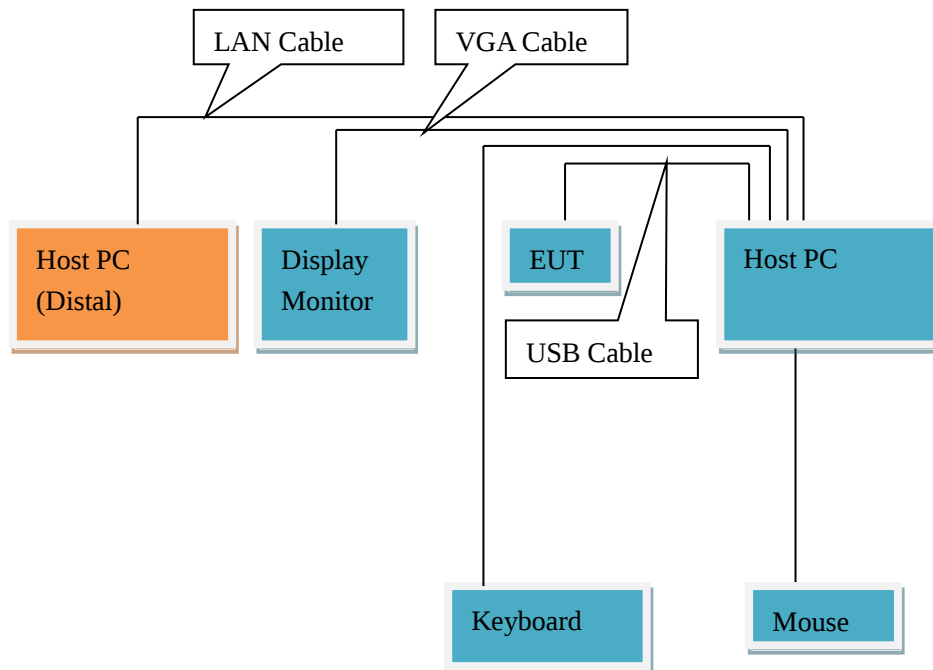
6.2 AC Conducted Emission Equipment list

No.	Name	Type	Series Number	Producer	Cal. Date	Cal. interval
1	Universal Radio	CMU200	123123	R&S	2018-05-11	1 Year
2	Test Receiver	ESCI	101235	R&S	2018-05-11	1 Year
3	2-Line V-Network	ENV216	101380	R&S	2018-05-11	1 Year
4	EMI Test Software	EMC32 V10.35.02	NA	R&S	NA	NA

7. System Configuration during Test

7.1 Test Mode

Test Item	Function Type
AC Conducted Emission	Mode 1: USB cable (Data Link with PC) <Figure 1> Mode 2: Adapter charging <Figure 2>
Radiated Emission	Mode 1: USB cable (Data Link with PC) <Figure 1> Mode 2: Adapter charging <Figure 2>
Remark: 1.All test modes are performed, only the worst cases test data are recorded in this report. 2.Data Link with PC means data application transferred mode between EUT and PC.	

7.2 Connection Diagram of Test System

<Figure 1>



<Figure 2>

8. Measurement Results

Only the worst test result was shown in this report.

8.1 Radiated Emission 30MHz-18GHz

Method of Measurement

For 30MHz -1000MHz, the EUT was placed on the top of a rotating 0.8m table above the ground at a semi-anechoic chamber. The distance between the EUT and the received antenna was 3 meters. The table was rotated 360 degree and the received antenna mounted on a variable-height antenna tower was varied from 1m to 4m to find the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna were set during the measurement. Tested in accordance with the procedures of ANSI C63.4-2014, section 8.3.

For 1000MHz -18000MHz, The maximal emission value was acquired by adjusting the antenna height, The table was rotated 360 degree to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna were set during the measurement.

Limits for Radiated Emission at a measuring distance of 3m

Frequency Range (MHz)	Quasi-Peak (dBuV/m)
30-88	40
88-216	43.5
216-960	46
Above 960	54

Frequency Range (MHz)	Peak (dBuV/m)	Average (dBuV/m)
Above 1000	74	54

Test conditions

Frequency Range (MHz)	RBW/VBW	Sweep Time (s)
30-1000	120kHz/300kHz	Auto
1000-18000	1MHz/3MHz	Auto

Uncertainty Measurement

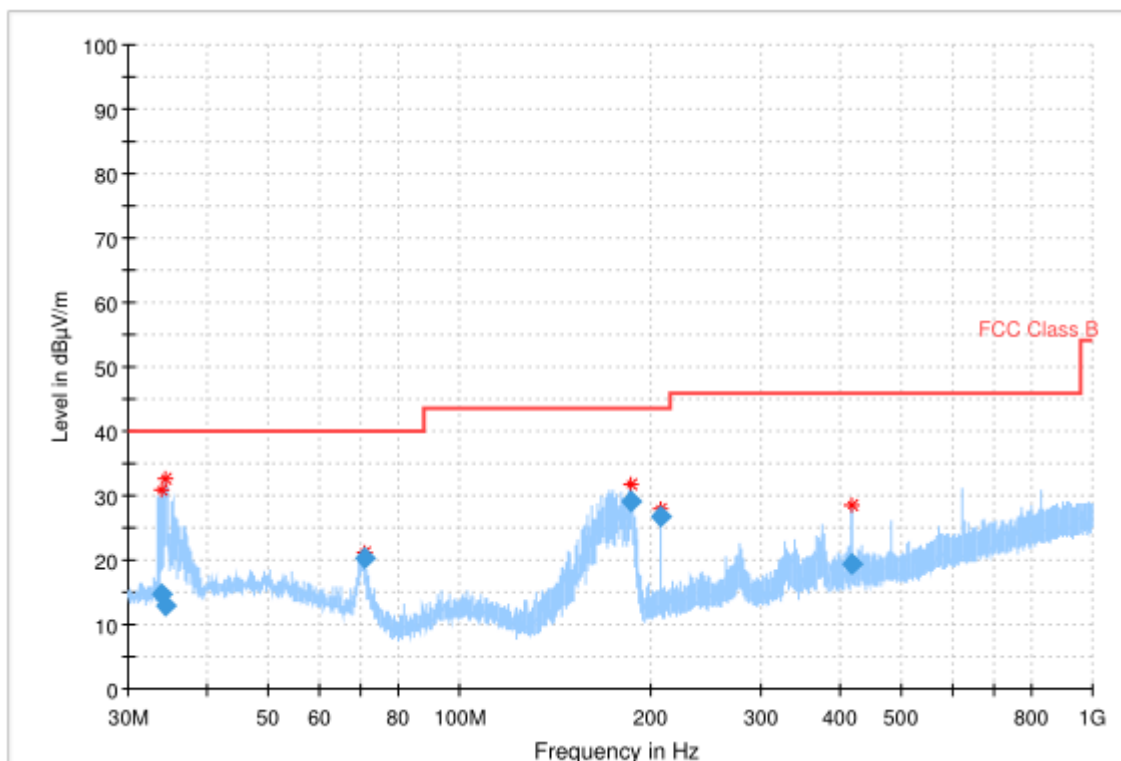
The measurement uncertainty (30MHz-1000MHz) is 4.98 dB (k=2).

The measurement uncertainty (1000MHz-18000MHz) is 5.06 dB (k=2).

Test Results

Mode 1: USB cable (Data Link with PC)

Frequency Range: 30MHz – 1GHz



Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
33.850880	14.71	40.00	25.29	1000.0	120.000	100.0	V	79.0	-22.0
34.459453	12.97	40.00	27.03	1000.0	120.000	100.0	V	73.0	-22.0
70.686523	20.16	40.00	19.84	1000.0	120.000	225.0	H	138.0	-25.2
186.438909	29.04	43.50	14.46	1000.0	120.000	175.0	H	94.0	-25.3
208.015720	26.72	43.50	16.78	1000.0	120.000	125.0	H	95.0	-24.3
415.915757	19.39	46.00	26.61	1000.0	120.000	105.0	V	122.0	-18.7

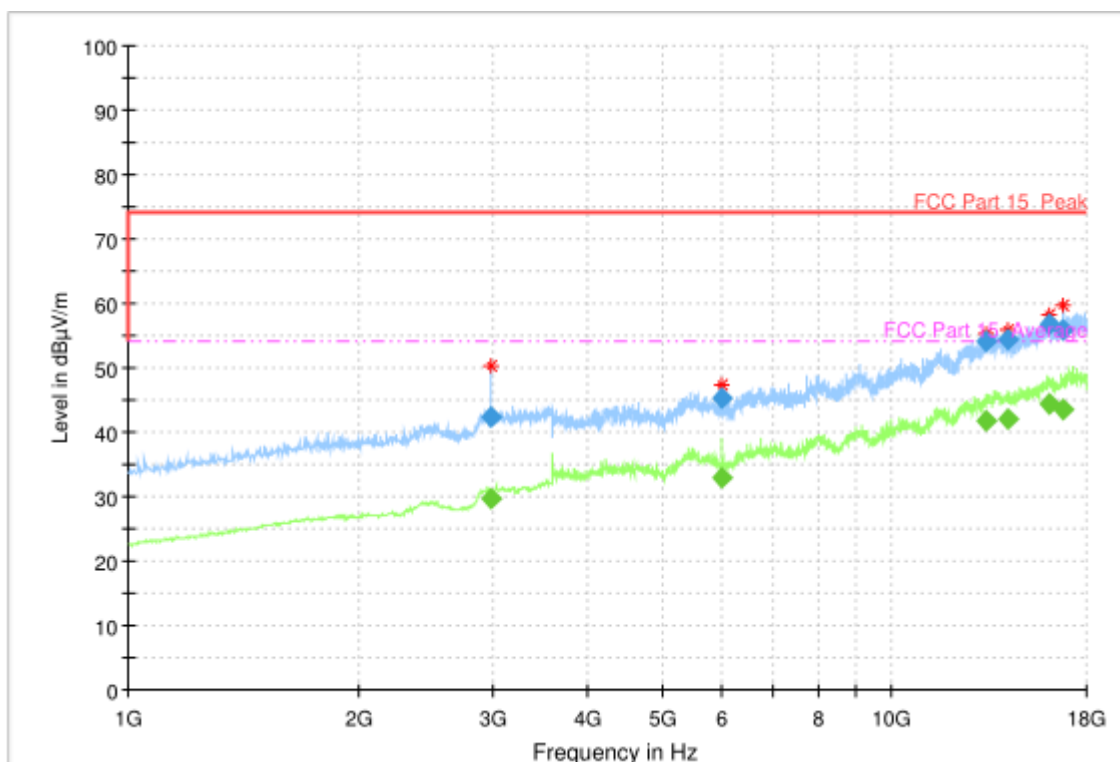
Note:

- 1.Emission level(QP)=Raw value by receiver + Corr(Antenna factor + cable loss - preamplifier gain)
- 2.The raw value is used to calculate by software which is not shown in the sheet.
- 3.Margin=limit value – emission level.

Mode 1: USB cable (Data Link with PC)

Frequency Range:

1GHz –18GHz

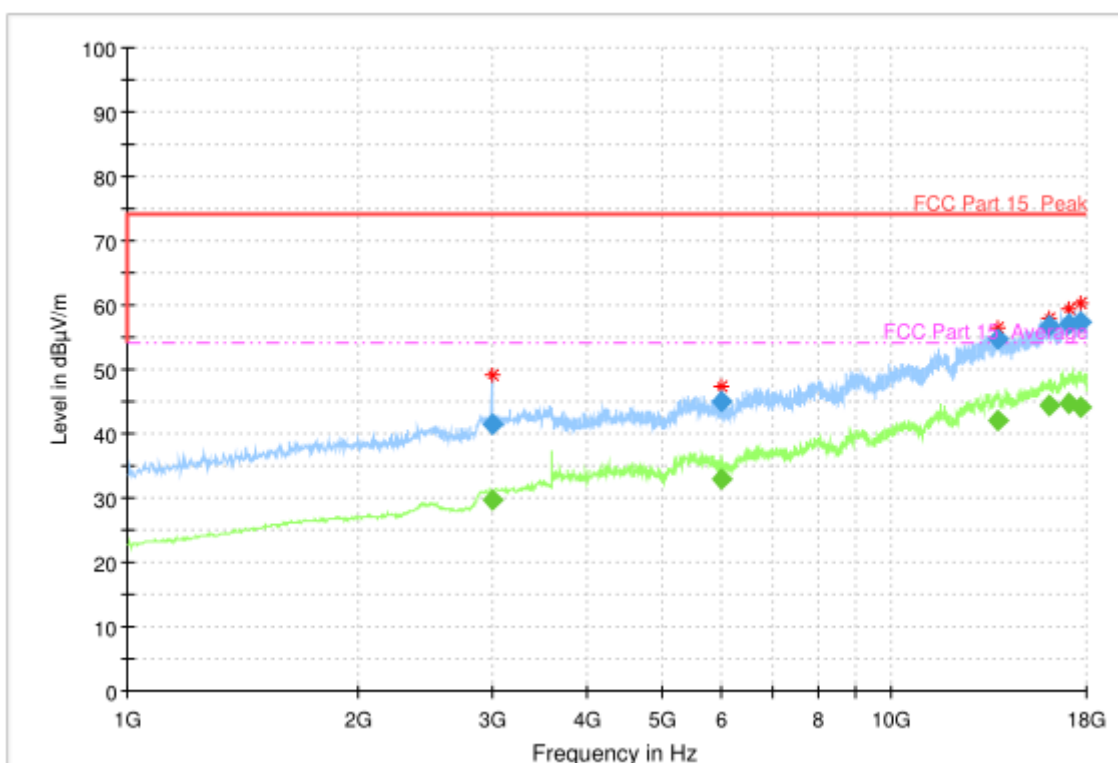


Final Result

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2992.600000	42.42	---	74.00	31.58	100.0	1000.000	100.0	V	151.0
2992.600000	---	29.74	54.00	24.26	100.0	1000.000	100.0	V	151.0
5992.200000	---	32.86	54.00	21.14	100.0	1000.000	200.0	V	241.0
5992.200000	45.34	---	74.00	28.66	100.0	1000.000	200.0	V	241.0
13280.400000	54.15	---	74.00	19.85	100.0	1000.000	100.0	V	285.0
13280.400000	---	41.85	54.00	12.15	100.0	1000.000	100.0	V	285.0
14158.000000	54.50	---	74.00	19.50	100.0	1000.000	200.0	V	294.0
14158.000000	---	42.11	54.00	11.89	100.0	1000.000	200.0	V	294.0
16065.200000	56.68	---	74.00	17.32	100.0	1000.000	200.0	V	4.0
16065.200000	---	44.33	54.00	9.67	100.0	1000.000	200.0	V	4.0
16809.200000	---	43.57	54.00	10.43	100.0	1000.000	100.0	V	358.0
16809.200000	55.76	---	74.00	18.24	100.0	1000.000	100.0	V	358.0

Note:

- 1.Emission level(peak or average)=Raw value by receiver + Corr(Antenna factor+ cable loss - preamplifier gain)
- 2.The raw value is used to calculate by software which is not shown in the sheet.
- 3.Margin=limit value – emission level.



Final Result

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2999.600000	41.56	---	74.00	32.44	100.0	1000.000	100.0	H	180.0
2999.600000	---	29.80	54.00	24.20	100.0	1000.000	100.0	H	180.0
5998.600000	45.06	---	74.00	28.94	100.0	1000.000	200.0	H	259.0
5998.600000	---	32.88	54.00	21.12	100.0	1000.000	200.0	H	259.0
13753.600000	54.85	---	74.00	19.15	100.0	1000.000	200.0	H	180.0
13753.600000	---	42.07	54.00	11.93	100.0	1000.000	200.0	H	180.0
16068.800000	---	44.53	54.00	9.47	100.0	1000.000	100.0	H	150.0
16068.800000	56.79	---	74.00	17.21	100.0	1000.000	100.0	H	150.0
17098.600000	57.19	---	74.00	16.81	100.0	1000.000	200.0	H	240.0
17098.600000	---	44.57	54.00	9.43	100.0	1000.000	200.0	H	240.0
17677.000000	---	44.21	54.00	9.79	100.0	1000.000	100.0	H	274.0
17677.000000	57.27	---	74.00	16.73	100.0	1000.000	100.0	H	274.0

Note:

- 1.Emission level(peak or average)=Raw value by receiver + Corr(Antenna factor+ cable loss - preamplifier gain)
- 2.The raw value is used to calculate by software which is not shown in the sheet.
- 3.Margin=limit value – emission level.

8.2 AC Conducted Emission

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 with the band 150 kHz to 30MHz shall not exceed the limits. Both lines of the power mains connected to the EUT were checked for maximum conducted interference. Tested in accordance with the procedures of ANSI C63.4-2014, section 7.3

Limit of Conducted Emission

Frequency Range (MHz)	Conducted Limit (dBuV)	
	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 Condition in Charging Mode

Voltage (V)	Frequency (Hz)	RBW	Sweep Time (s)
120	60	9 kHz	Auto

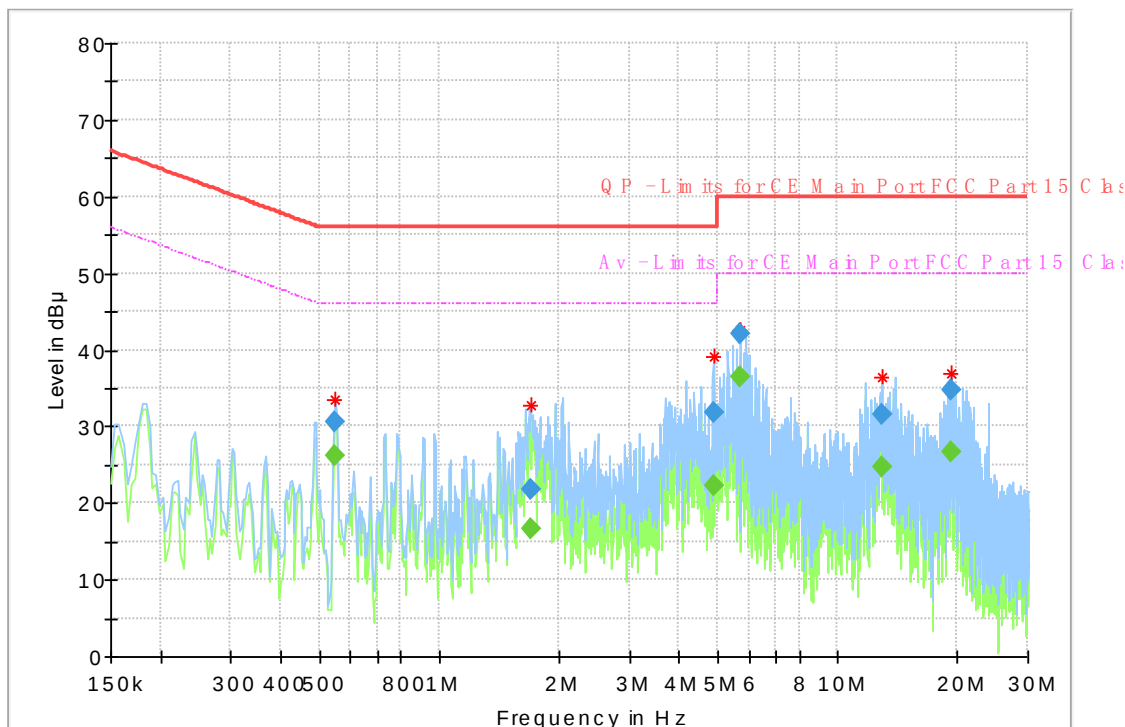
Uncertainty Measurement

The measurement uncertainty is 3.66dB (k=2).

Test Results

Mode 1:USB cable (Data Link with PC)

Frequency Range: 150kHz – 30MHz



Frequency (MHz)	QuasiPeak (dB μV)	Average (dB μV)	Limit (dB μV)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.545513	---	26.19	46.00	19.81	1000.0	9.000	L1	ON	9.7
0.545513	30.57	---	56.00	25.43	1000.0	9.000	L1	ON	9.7
1.698469	---	16.71	46.00	29.29	1000.0	9.000	N	ON	9.7
1.698469	21.75	---	56.00	34.25	1000.0	9.000	N	ON	9.7
4.870031	---	22.30	46.00	23.70	1000.0	9.000	L1	ON	9.8
4.870031	31.87	---	56.00	24.13	1000.0	9.000	L1	ON	9.8
5.672250	---	36.36	50.00	13.64	1000.0	9.000	N	ON	9.8
5.672250	41.98	---	60.00	18.02	1000.0	9.000	N	ON	9.8
12.866100	---	24.83	50.00	25.17	1000.0	9.000	L1	ON	9.9
12.866100	31.64	---	60.00	28.36	1000.0	9.000	L1	ON	9.9
19.283850	---	26.62	50.00	23.38	1000.0	9.000	L1	ON	9.9
19.283850	34.76	---	60.00	25.24	1000.0	9.000	L1	ON	9.9

Note:

- 1.Emission level(quasi-peak or Average peak)=Raw value by receiver + Corr(Insertion loss+ cable loss)
- 2.The raw value is used to calculate by software which is not shown in the sheet.
- 3.Margin=limit value – emission level.
- 4.L1 and N line is all have been tested, the result of them is synthesized in the above data diagram.

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