TEST REPORT

No. I18D00170-EMC01

For

Client : Mobiwire SAS

Production: Connected Mobile with Printer

Model Name : MP3 Plus

Brand Name: MobiloT

Hardware Version: V02

Software Version: V01

FCC ID: QPN-MP3PLUS

Issued date: 2018-11-29

Test Laboratory:

ECIT Shanghai, East China Institute of Telecommunications

Add: 7F, G Area, No.668, Beijing East Road, Huangpu District, Shanghai, P. R. China

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Revision Version

Report Number	Revision	Date	Memo
I18D00170-EMC01	00	2018-11-29	Initial creation of test report

CONTENTS

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
Fax:	86-21-63843301
FCC registration No:	489729

1.2. Testing Environment

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

1.3. Project data

Project Leader:	Liu Zeguang
Testing Start Date:	2018-08-30
Testing End Date:	2018-09-17

1.4. Signature

Qin Yabin
(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:	+86 574 57555707
Postcode:	France 92017

2.2. Manufacturer Information

Company Name:	Mobiwire SAS
Address :	79 AVENUE FRANCOIS ARAGO 92017 NANTERRE CEDEX France.
Telephone:	+86 574 57555707
Postcode:	France 92017

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

3.1. About EUT

EUT Description	Connected Mobile with Printer
Model name	MP3 Plus
GSM Frequency Band	GSM850/GSM1900/GSM900/GSM1800
WCDMA Frequency Band	WCDMA BAND Ⅰ/Ⅱ/Ⅳ/Ⅴ
Additional Communication Function	BT 4.2;WIFI 802.11b/g/n; GPS;NFC

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
N06(Main Supply)	359457090004341/ 359457090004358	V02	V01	2018-08-24
N11(Secondary Supply)	359457090004945/ 359457090004952	V02	V01	2018-08-24

*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
CA03	Adapter	S048CM0900500	/
AA11	Earphone	NLD-EM116T-046S	/
BA07	Battery	178081747	JDMP318068017688
BA09	Battery	178081747	JDMP318068017695
AE1	Desktop PC	OptiPlex 790 DT	X8RP1 A01 APCC
AE2	Notebook PC	DELL Latitude E5250	/
AE3	LAN Cable	/	/
AE4	VGA Cable	/	/
AE5	RS232 Cable	/	/
AE6	Keyboard	KB212-B	CN-0Y88XT-65890-12I -005Q-A00
AE7	Mouse	MS111-P	CN-011D3V-71581-19 J-1A64
AE8	SanDiskUltra32GB	microSDHC UHS-I	/
AE9	USB Cable	/	/
AE10	Monitor	Dell E1709Wc	/

*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 MP3 Plus, supporting GSM/WCDMA, manufactured by Mobiwire SAS a new product for testing. ECIT 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 Equipments Utilized

6.1 Radiated Emission Equipments 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	00135890	ETS	2017-01-11	3 Year
5	EMI Test Software	EMC32 V9.15	NA	R&S	NA	NA

6.2 AC Conducted Emission Equipments 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 V9.12	NA	R&S	NA	NA

7. System Configuration during Test

7.1 Test Mode

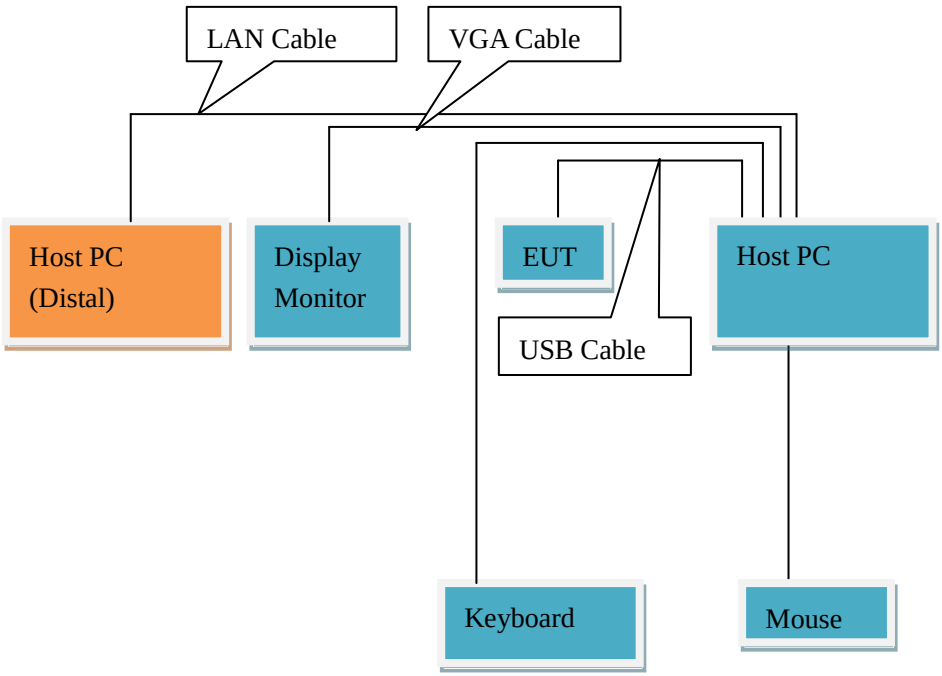
N06 Sample (Main Supply)

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.	

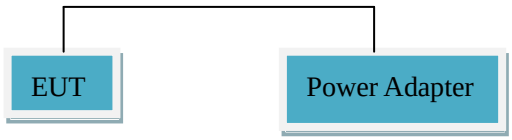
N11 Sample (Secondary Supply)

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: 3. All test modes are performed, only the worst cases test data are recorded in this report. 4. 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 30-1000MHz, the EUT was placed on the top of a rotating 0.8-m 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 1000-18000MHz,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

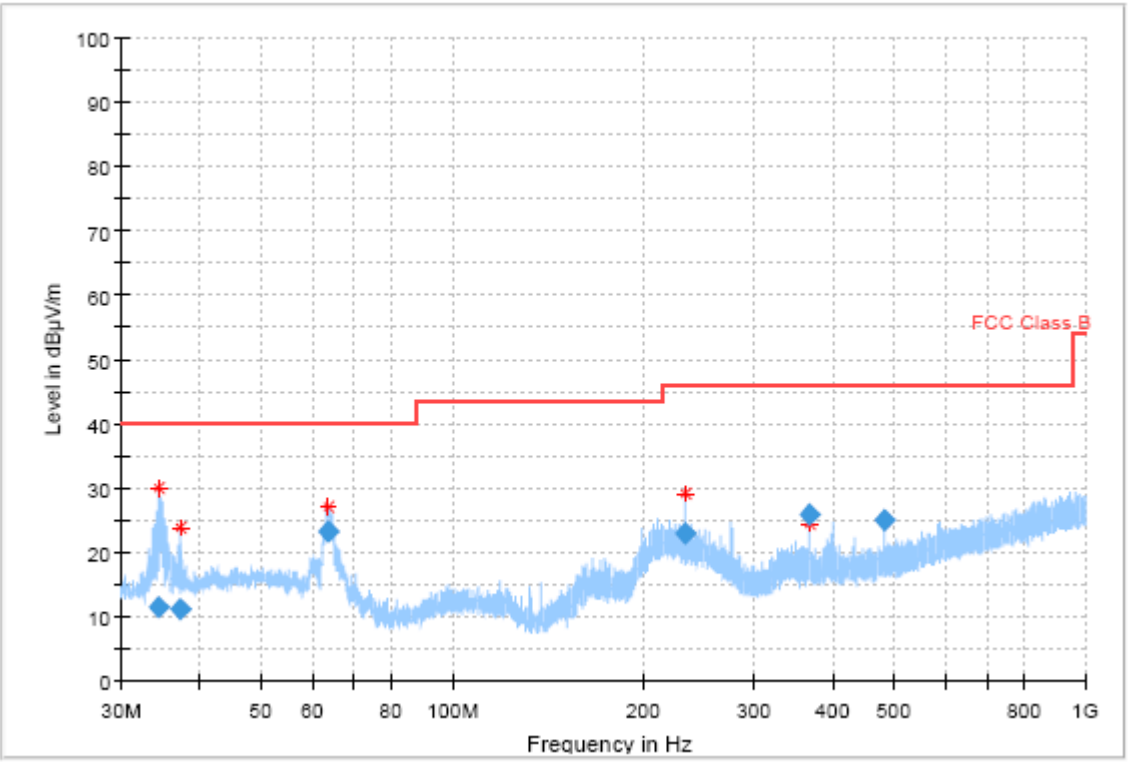
Uncertainty Measurement

The measurement uncertainty is 4.98dB (30MHz -1000MHz) and 5.06dB（1GHz -18GHz）(k=2)

Test Results

N06 Sample Mode 1: USB cable (Data Link with PC)

Frequency Range:	30MHz – 1GHz



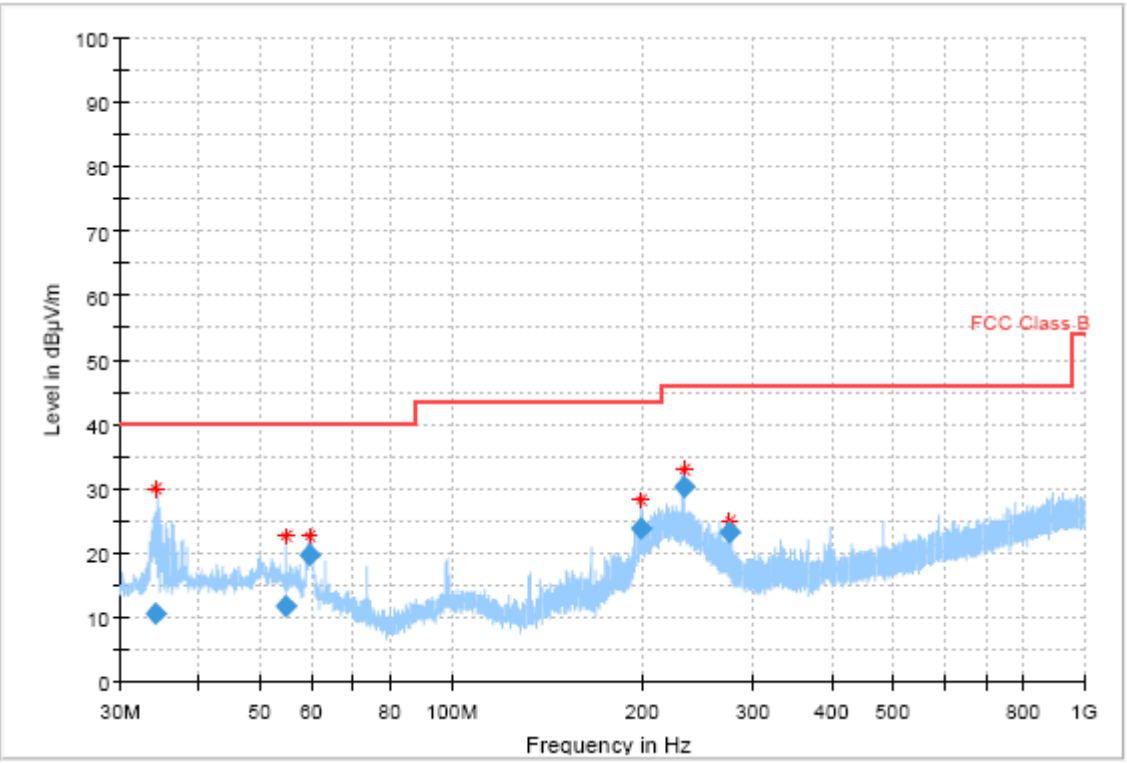
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
34.387912	11.47	40.00	28.53	1000.0	120.000	175.0	V	112.0	-22.0
37.256312	11.29	40.00	28.71	1000.0	120.000	106.0	V	102.0	-21.5
63.552936	23.15	40.00	16.85	1000.0	120.000	222.0	H	144.0	-23.3
233.210976	22.82	46.00	23.18	1000.0	120.000	125.0	H	65.0	-23.6
365.326504	25.81	46.00	20.19	1000.0	120.000	100.0	V	292.0	-20.3
480.011936	24.93	46.00	21.07	1000.0	120.000	100.0	V	-1.0	-17.6

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.

N11 Sample Mode 1: USB cable (Data Link with PC)

Frequency Range:	30MHz – 1GHz



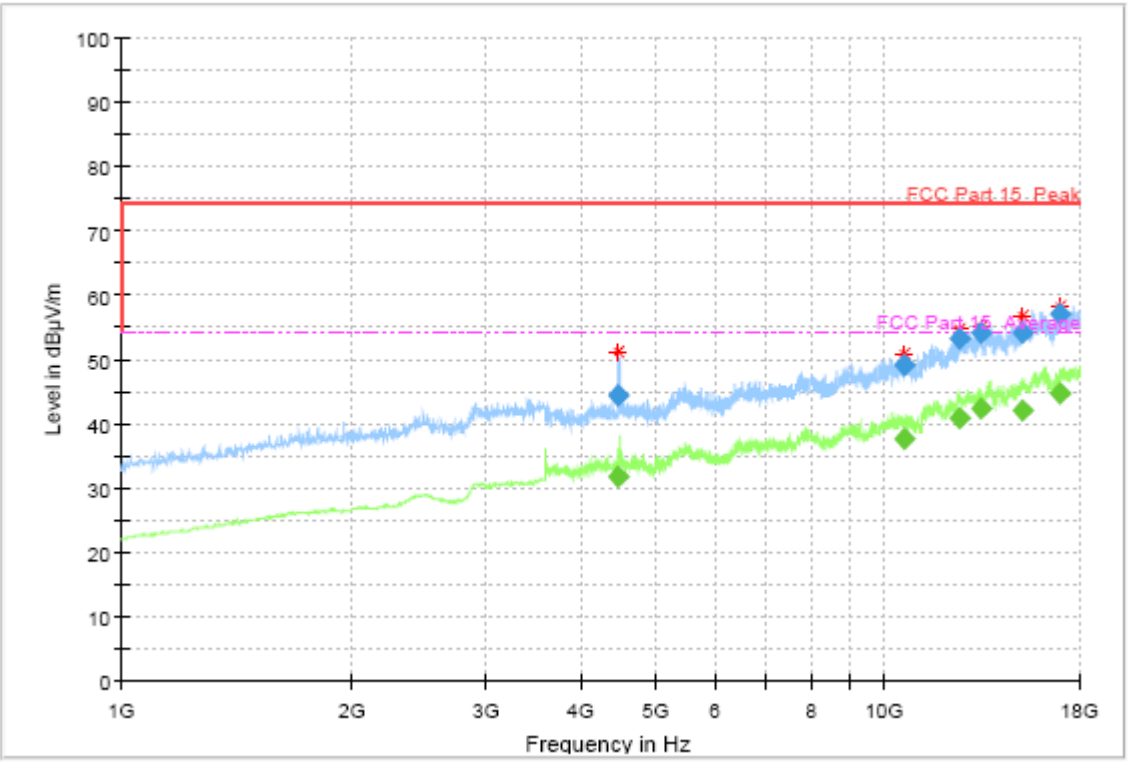
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
34.205277	10.57	40.00	29.43	1000.0	120.000	100.0	V	195.0	-22.0
54.634371	11.77	40.00	28.23	1000.0	120.000	181.0	V	56.0	-21.1
59.711155	19.83	40.00	20.17	1000.0	120.000	125.0	V	103.0	-22.2
199.873723	23.75	43.50	19.75	1000.0	120.000	125.0	H	-27.0	-24.6
233.205408	30.26	46.00	15.74	1000.0	120.000	106.0	H	-28.0	-23.6
275.894096	23.29	46.00	22.71	1000.0	120.000	102.0	H	-10.0	-22.6

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.

N06 Sample Mode 1: USB cable (Data Link with PC)

Frequency Range:	1GHz –18GHz, Horizontal



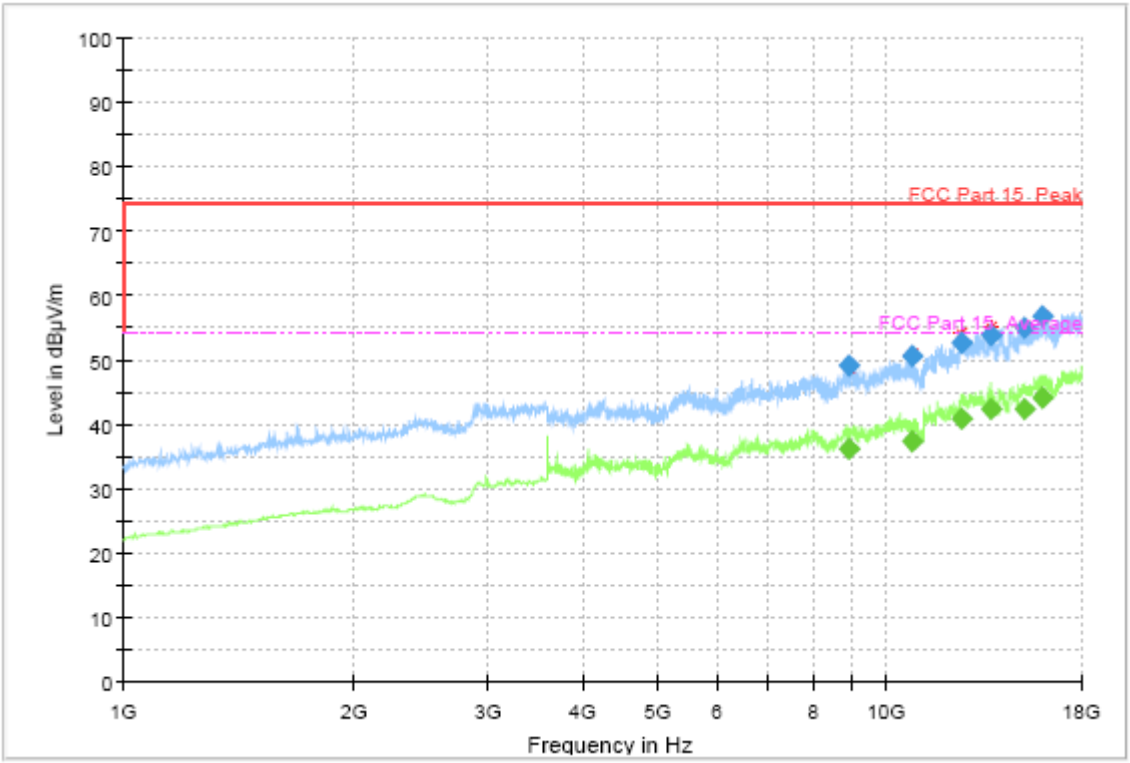
Final Result

Frequency (MHz)	MaxPeak (dBuV/m	Average (dBuV/m	Limit (dBuV/m	Margin (dB)	Meas. Time	Bandwidth	Height	Pol	Azimuth	Corr. (dB)
4481.200000	44.36	---	74.00	29.64	100.0	1000.000	200.0	H	292.0	2.2
4481.200000	---	31.91	54.00	22.09	100.0	1000.000	200.0	H	292.0	2.2
10608.800000	49.19	---	74.00	24.81	100.0	1000.000	200.0	H	144.0	13.0
10608.800000	---	37.60	54.00	16.40	100.0	1000.000	200.0	H	144.0	13.0
12533.400000	53.37	---	74.00	20.63	100.0	1000.000	100.0	H	20.0	16.6
12533.400000	---	40.95	54.00	13.05	100.0	1000.000	100.0	H	20.0	16.6
13365.000000	54.12	---	74.00	19.88	100.0	1000.000	200.0	H	316.0	17.9
13365.000000	---	42.25	54.00	11.75	100.0	1000.000	200.0	H	316.0	17.9
15187.800000	---	42.14	54.00	11.86	100.0	1000.000	200.0	H	0.0	20.7
15187.800000	54.20	---	74.00	19.80	100.0	1000.000	200.0	H	0.0	20.7
16955.200000	---	44.69	54.00	9.31	100.0	1000.000	200.0	H	350.0	23.6
16955.200000	57.04	---	74.00	16.96	100.0	1000.000	200.0	H	350.0	23.6

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.

Frequency Range:	1GHz –18GHz, Vertical



Final Result

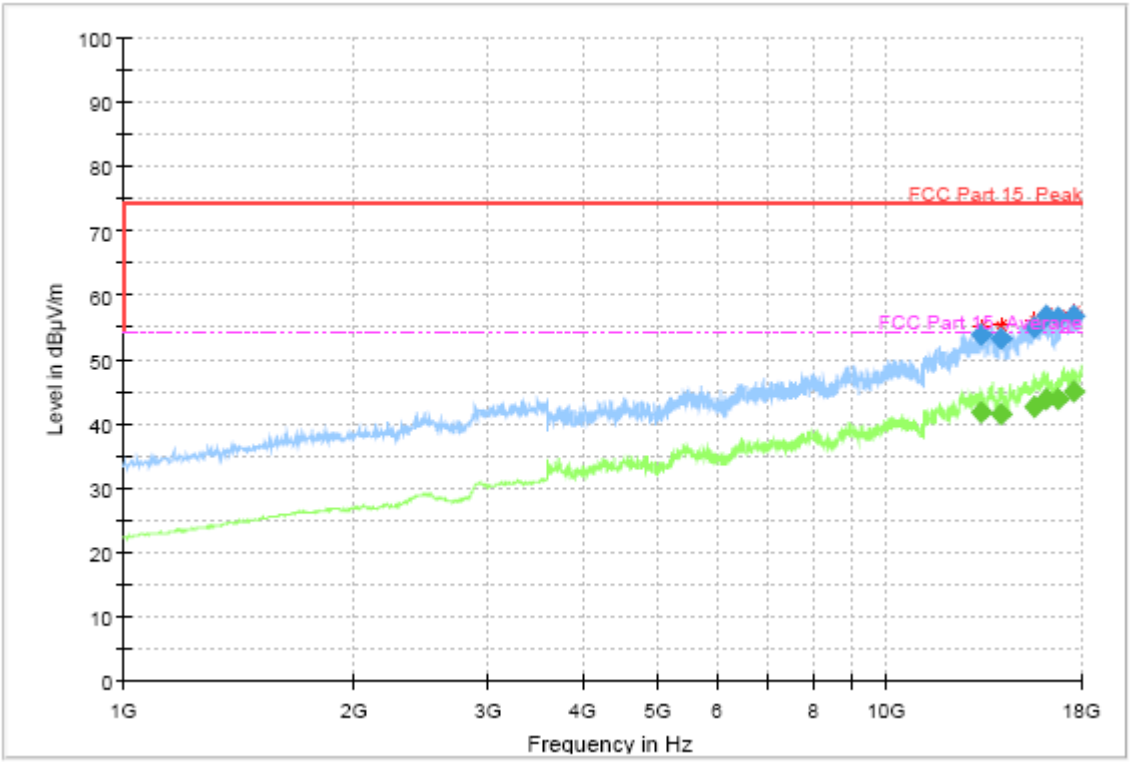
Frequency (MHz)	MaxPeak (dBuV/m	Average (dBuV/m	Limit (dBuV/m	Margin (dB)	Meas. Time	Bandwidth	Height	Pol	Azimuth	Corr. (dB)
8909.400000	---	36.27	54.00	17.73	100.0	1000.000	200.0	V	47.0	10.0
8909.400000	49.19	---	74.00	24.81	100.0	1000.000	200.0	V	47.0	10.0
10784.200000	---	37.44	54.00	16.56	100.0	1000.000	200.0	V	306.0	12.9
10784.200000	50.57	---	74.00	23.43	100.0	1000.000	200.0	V	306.0	12.9
12508.600000	---	40.89	54.00	13.11	100.0	1000.000	100.0	V	0.0	16.6
12508.600000	52.69	---	74.00	21.31	100.0	1000.000	100.0	V	0.0	16.6
13725.200000	53.97	---	74.00	20.03	100.0	1000.000	100.0	V	0.0	18.8
13725.200000	---	42.30	54.00	11.70	100.0	1000.000	100.0	V	0.0	18.8
15183.800000	---	42.35	54.00	11.65	100.0	1000.000	100.0	V	0.0	20.7
15183.800000	55.10	---	74.00	18.90	100.0	1000.000	100.0	V	0.0	20.7
16008.200000	56.81	---	74.00	17.19	100.0	1000.000	100.0	V	242.0	22.4
16008.200000	---	44.02	54.00	9.98	100.0	1000.000	100.0	V	242.0	22.4

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.

N11 Sample Mode 2: Adapter charging

Frequency Range:	1GHz –18GHz, Horizontal



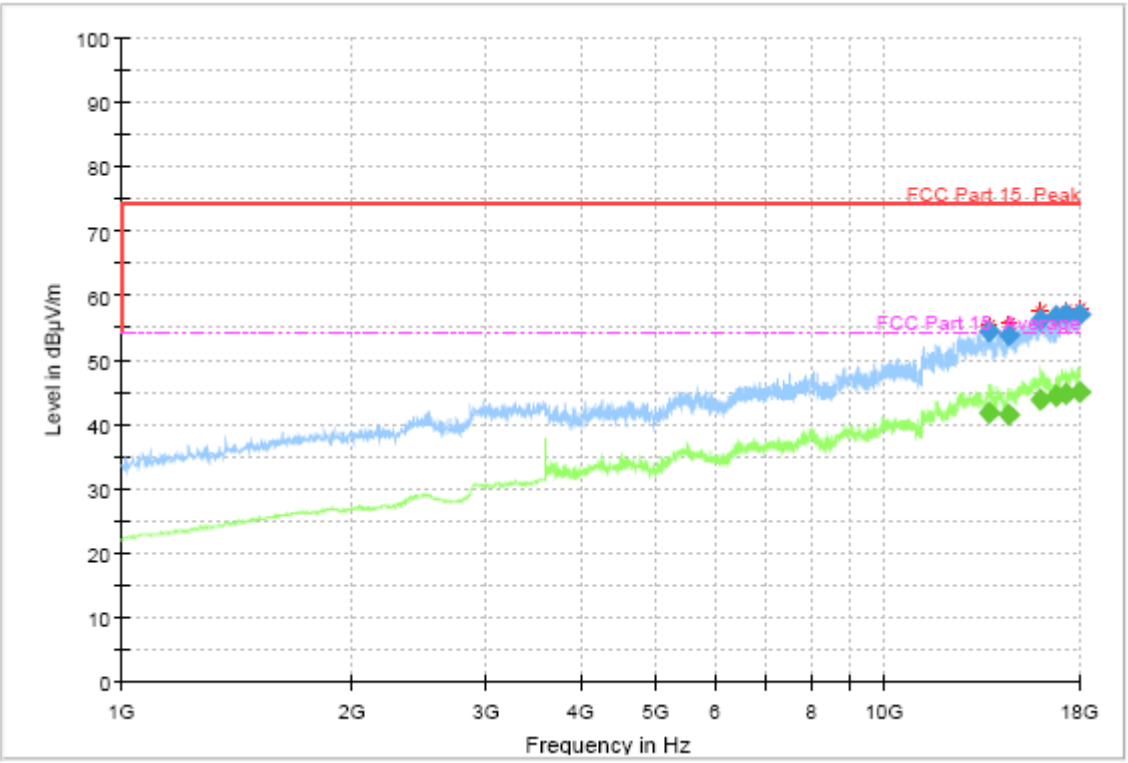
Final Result

Frequency (MHz)	MaxPeak (dBuV/m	Average (dBuV/m	Limit (dBuV/m	Margin (dB)	Meas. Time	Bandwidth	Height	Pol	Azimuth	Corr. (dB)
13287.400000	---	41.67	54.00	12.33	100.0	1000.000	200.0	H	0.0	18.2
13287.400000	53.86	---	74.00	20.14	100.0	1000.000	200.0	H	0.0	18.2
14082.600000	---	41.50	54.00	12.50	100.0	1000.000	100.0	H	115.0	19.3
14082.600000	53.28	---	74.00	20.72	100.0	1000.000	100.0	H	115.0	19.3
15566.600000	---	42.54	54.00	11.46	100.0	1000.000	100.0	H	203.0	21.2
15566.600000	54.93	---	74.00	19.07	100.0	1000.000	100.0	H	203.0	21.2
16160.200000	---	43.78	54.00	10.22	100.0	1000.000	200.0	H	280.0	22.4
16160.200000	56.82	---	74.00	17.18	100.0	1000.000	200.0	H	280.0	22.4
16755.000000	56.34	---	74.00	17.66	100.0	1000.000	200.0	H	359.0	23.5
16755.000000	---	43.93	54.00	10.07	100.0	1000.000	200.0	H	359.0	23.5
17554.200000	56.90	---	74.00	17.10	100.0	1000.000	200.0	H	314.0	24.6
17554.200000	---	45.01	54.00	8.99	100.0	1000.000	200.0	H	314.0	24.6

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.

Frequency Range:	1GHz –18GHz, Vertical



Final Result

Frequency (MHz)	MaxPeak (dBuV/m	Average (dBuV/m	Limit (dBuV/m	Margin (dB)	Meas. Time	Bandwidth	Height	Pol	Azimuth	Corr. (dB)
13726.800000	---	41.75	54.00	12.25	100.0	1000.000	200.0	V	243.0	18.8
13726.800000	54.28	---	74.00	19.72	100.0	1000.000	200.0	V	243.0	18.8
14488.200000	53.69	---	74.00	20.31	100.0	1000.000	100.0	V	323.0	19.1
14488.200000	---	41.40	54.00	12.60	100.0	1000.000	100.0	V	323.0	19.1
15981.000000	---	43.78	54.00	10.22	100.0	1000.000	200.0	V	303.0	22.2
15981.000000	56.30	---	74.00	17.70	100.0	1000.000	200.0	V	303.0	22.2
16773.000000	---	44.31	54.00	9.69	100.0	1000.000	200.0	V	243.0	23.5
16773.000000	56.82	---	74.00	17.18	100.0	1000.000	200.0	V	243.0	23.5
17303.800000	57.05	---	74.00	16.95	100.0	1000.000	100.0	V	323.0	24.1
17303.800000	---	44.67	54.00	9.33	100.0	1000.000	100.0	V	323.0	24.1
17949.200000	---	44.98	54.00	9.02	100.0	1000.000	100.0	V	311.0	24.7
17949.200000	57.12	---	74.00	16.88	100.0	1000.000	100.0	V	311.0	24.7

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 AC 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

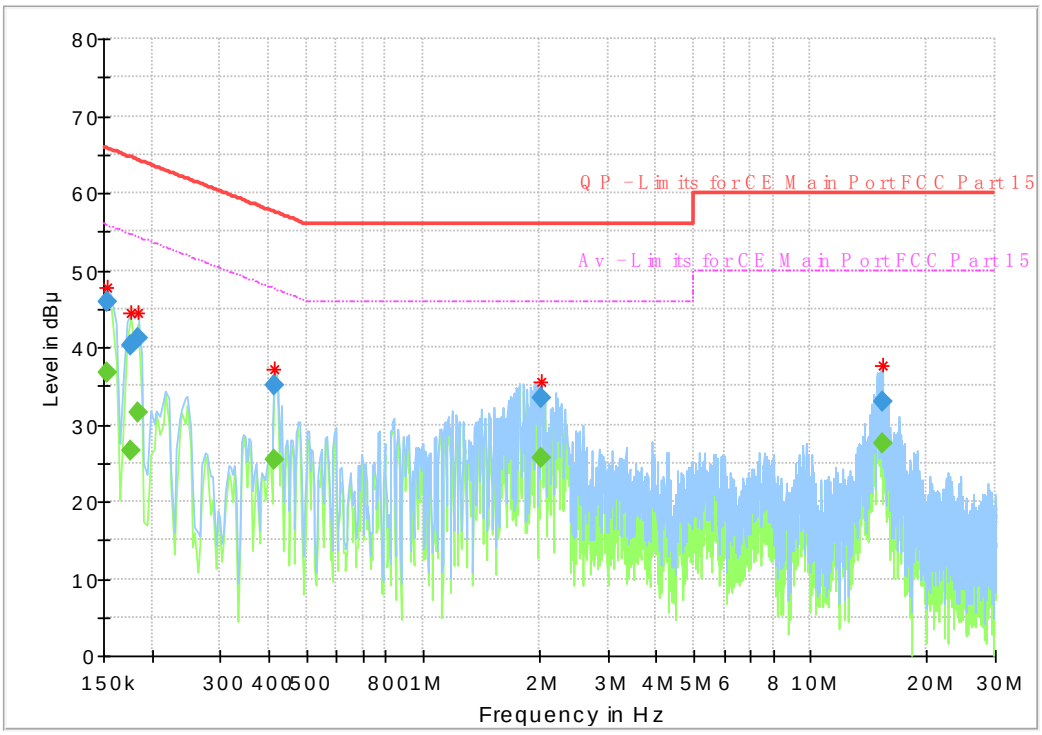
Uncertainty Measurement

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

Test Results

N06 Mode 2: Adapter charging

Frequency Range:	150kHz – 30MHz



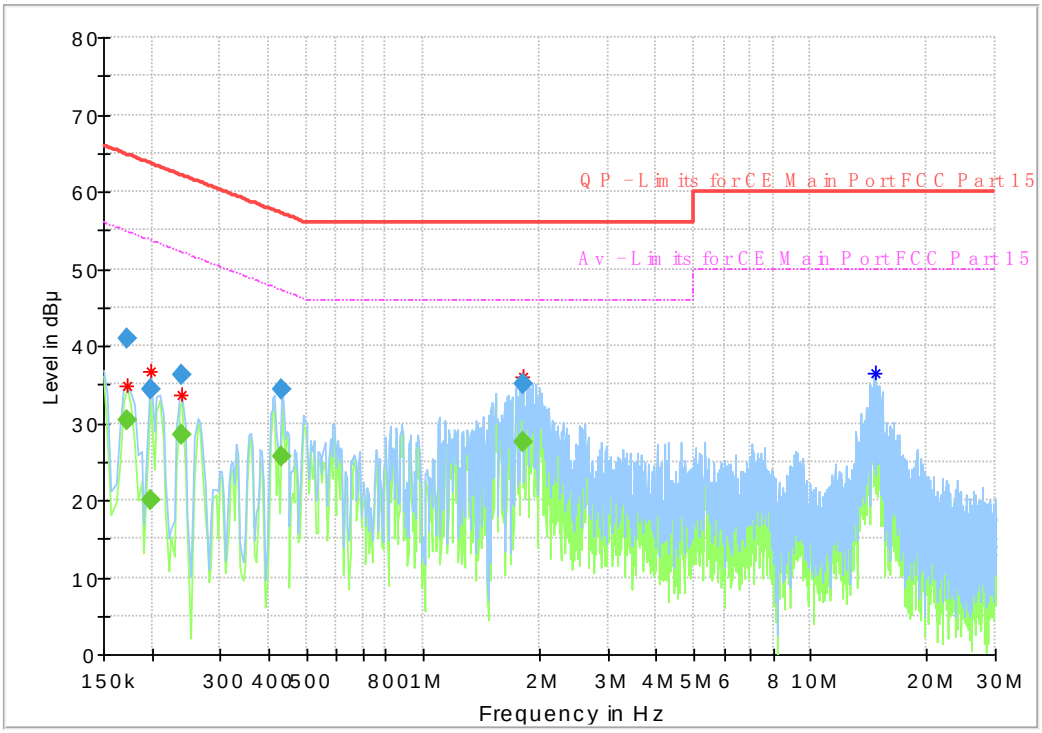
Frequency (MHz)	QuasiPeak (dBµ V)	Average (dBµ V)	Limit (dBµ V)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.153731	---	36.63	55.80	19.17	1000.0	9.000	L1	ON	9.7
0.153731	45.81	---	65.80	19.99	1000.0	9.000	L1	ON	9.7
0.176119	---	26.67	54.67	28.00	1000.0	9.000	L1	ON	9.7
0.176119	40.13	---	64.67	24.54	1000.0	9.000	L1	ON	9.7
0.183581	41.17	---	64.32	23.15	1000.0	9.000	N	ON	9.7
0.183581	---	31.55	54.32	22.77	1000.0	9.000	N	ON	9.7
0.414919	35.10	---	57.55	22.45	1000.0	9.000	L1	ON	9.7
0.414919	---	25.30	47.55	22.25	1000.0	9.000	L1	ON	9.7
2.026819	---	25.65	46.00	20.35	1000.0	9.000	N	ON	9.7
2.026819	33.31	---	56.00	22.69	1000.0	9.000	N	ON	9.7
15.287681	---	27.50	50.00	22.50	1000.0	9.000	N	ON	9.9
15.287681	32.87	---	60.00	27.13	1000.0	9.000	N	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.

N11 Mode 2: Adapter charging

Frequency Range:	150kHz – 30MHz



Frequency (MHz)	QuasiPeak (dBµ V)	Average (dBµ V)	Limit (dBµ V)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.172388	---	30.30	54.84	24.54	1000.0	9.000	L1	ON	9.7
0.172388	41.01	---	64.84	23.83	1000.0	9.000	L1	ON	9.7
0.198506	34.46	---	63.67	29.21	1000.0	9.000	N	ON	9.7
0.198506	---	20.09	53.67	33.58	1000.0	9.000	N	ON	9.7
0.239550	---	28.47	52.11	23.64	1000.0	9.000	L1	ON	9.7
0.239550	36.18	---	62.11	25.93	1000.0	9.000	L1	ON	9.7
0.433575	---	25.61	47.18	21.57	1000.0	9.000	N	ON	9.7
0.433575	34.36	---	57.18	22.82	1000.0	9.000	N	ON	9.7
1.814138	35.11	---	56.00	20.89	1000.0	9.000	L1	ON	9.7
1.814138	---	27.63	46.00	18.37	1000.0	9.000	L1	ON	9.7
0.172388	---	30.30	54.84	24.54	1000.0	9.000	L1	ON	9.7
0.172388	41.01	---	64.84	23.83	1000.0	9.000	L1	ON	9.7

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**********