



TEST REPORT

No. I19D00035-EMC01

For

Client : MobiWire SAS

Production: 4G Smart Phone

Model Name : MobiWire Sora, Altice S32

Brand Name: MobiWire, Altice

FCC ID: QPN-SORA

Hardware Version: V01A

Software Version: MOBIWIRE_GH5024_V01_20190313

Issued date: 2019-05-15

NOTE

1. The test results in this test report relate only to the devices specified in this report.
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3. The measurement uncertainty is not taken into account when deciding conformity, and the results of measurement (or the average of measurement results) are directly used as the criterion for the stating conformity.

Test Laboratory:

East China Institute of Telecommunications

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Revision Version

Report Number	Revision	Date	Memo
I19D00035-EMC01	00	2019-05-09	Initial creation of test report
I19D00035-EMC01	01	2019-05-15	Second creation of test report (Add remarks in section 8.1 test results)

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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
Fax: 86-21-63843301
FCC registration No: 958356

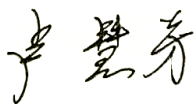
1.2. Testing Environment

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

1.3. Project data

Project Leader: Yu Anlu
Testing Start Date: 2019-03-31
Testing End Date: 2019-04-11

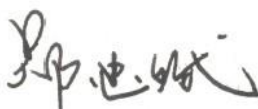
1.4. Signature



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: /

2.2. Manufacturer Information

Company Name: MobiWire SAS
Address : 79 AVENUE FRANCOIS ARAGO 92017 NANTERRE CEDEX
 France.
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Post: /

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

3.1. About EUT

EUT Description	4G Smart Phone
Model name	MobiWire Sora, Altice S32
GSM Frequency Band	GSM900/ GSM1800/ GSM850/ GSM 1900
WCDMA Frequency Band	WCDMA Band I / II / V / VIII
LTE Frequency Band	LTE Band 1/2/3/7/20
Additional Communication Function	BLE,4.2;802.11a,b,g,n;GPS;GLONASS;FM;MP3;

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
N07	354496100008863/ 354496100008871	V01A	MOBIWIRE_GH5024_V 01_20190313	2019.03.31

*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
CA02	Adapter	A31A-050100U-US1	NA
UA06	USB	AM/MICRO5P	NA
AA03	Earphone	JWEP0957-M01R	NA
AE1	Desktop PC	OptiPlex 790 DT	X8RP1 A01 APCC
AE2	Notebook PC	DELL Latitude E5250	NA
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	Monitor	Dell E1709Wc	NA
AE9	SanDisk Ultra32GB	MicroSDHC 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	April 2, 2019
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 Sora, Altice S32 supporting GSM/WCDMA/LTE/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	Signal Generator	SMF 100A	102314	R&S	2018-05-11	1 Year
7	GPS Simulator	GSS 4200	1182	SPIRENT	2018-12-17	1 Year
8	Signal Generator	SMBV100 A	257984	R&S	2019-03-06	1 Year

6.2 AC Conducted Emission Equipment list

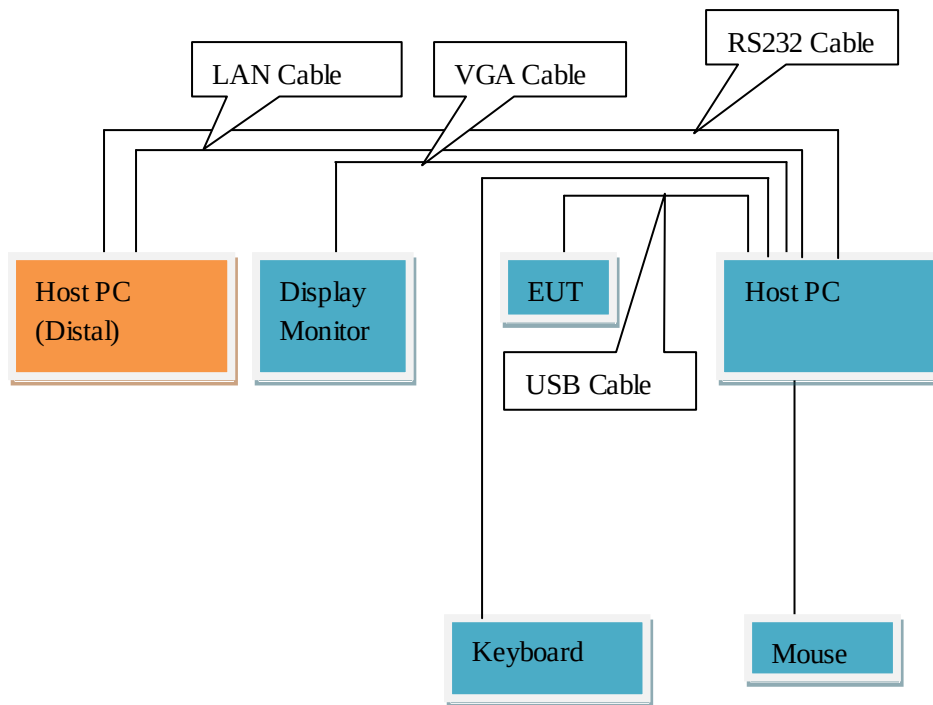
No.	Name	Type	Series Number	Producer	Cal. Date	Cal. interval
1	Universal Radio	CMU200	123123	R&S	2018-05-11	1 Year
2	Test Receiver	ESCI	101235	R&S	2018-05-11	1 Year
3	2-Line V-Network	ENV216	101380	R&S	2018-05-11	1 Year
4	EMI Test Software	EMC32 V10.35.02	NA	R&S	NA	NA
5	Signal Generator	SMF 100A	102314	R&S	2018-05-11	1 Year
6	GPS Simulator	GSS 4200	1182	SPIRENT	2018-12-17	1 Year
7	Signal Generator	SMBV100 A	257984	R&S	2019-03-06	1 Year

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> Mode 3:FM mode(98MHz) <Figure 3> Mode 4:GPS mode <Figure 2> Mode 5:GLONASS mode<Figure 2>
Radiated Emission	Mode 1: USB cable (Data Link with PC) <Figure 1> Mode 2: Adapter charging <Figure 2> Mode 3:FM mode(98MHz) <Figure 3> Mode 4:GPS mode <Figure 2> Mode 5:GLONASS mode<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. 3. The EUT is synchronized to a FM signal generator. The EUT is keeping on demodulating the FM signal and outputting the audio signal through the headset. 4. Connect the EUT with GSS 4200 Communication. 5. EUT and GLONASS simulator (SMBV100A) connection is established.	

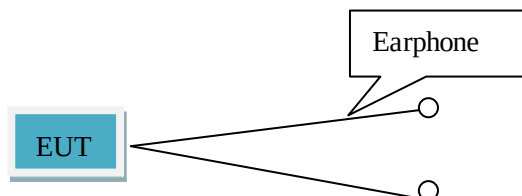
7.2 Connection Diagram of Test System



<Figure 1>



<Figure 2>



<Figure 3>

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).

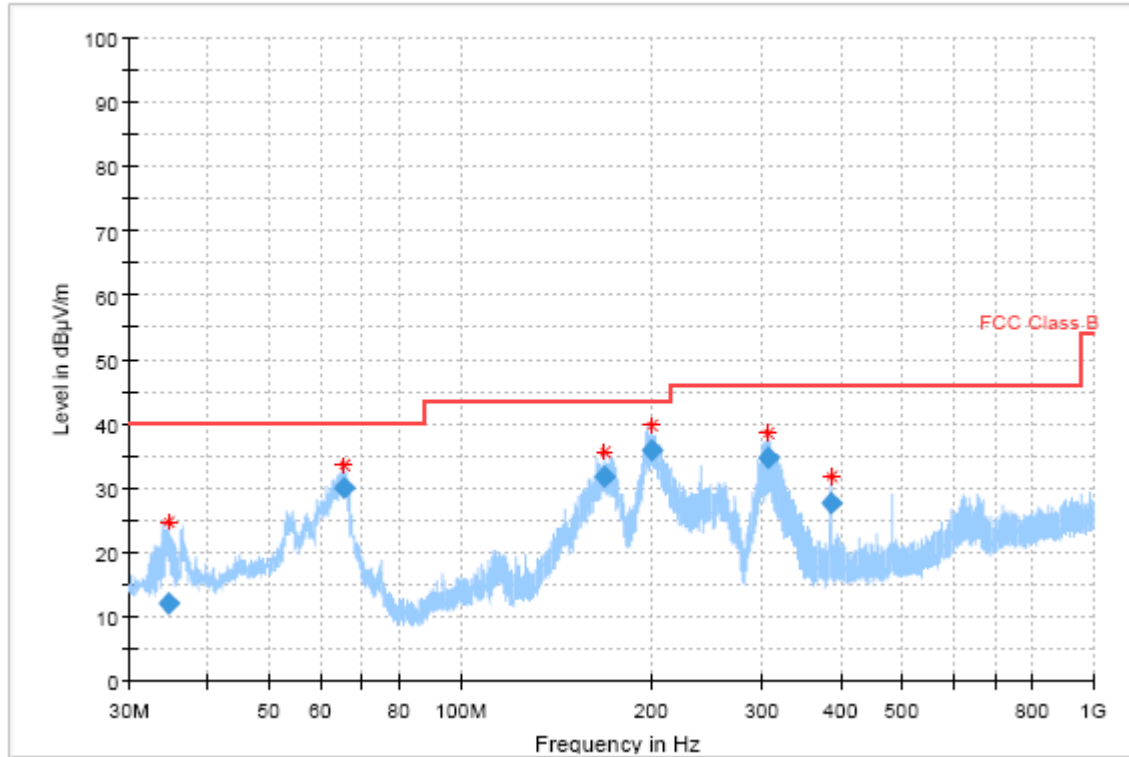
Test Results

Sweep the whole frequency band through the range from 30MHz to the 5th harmonic of the carrier, the Emissions in the frequency band 18GHz-40GHz is more than 20dB below the limit are not report.

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)
34.601952	12.00	40.00	28.00	1000.0	120.000	100.0	V	318.0	-27.7
65.592213	29.98	40.00	10.02	1000.0	120.000	100.0	V	242.0	-28.9
168.971384	31.81	43.50	11.69	1000.0	120.000	175.0	H	282.0	-30.1
200.347424	35.95	43.50	7.55	1000.0	120.000	175.0	V	-29.0	-28.4
307.053075	34.77	46.00	11.23	1000.0	120.000	100.0	H	55.0	-25.7
384.010376	27.66	46.00	18.34	1000.0	120.000	124.0	V	-28.0	-24.1

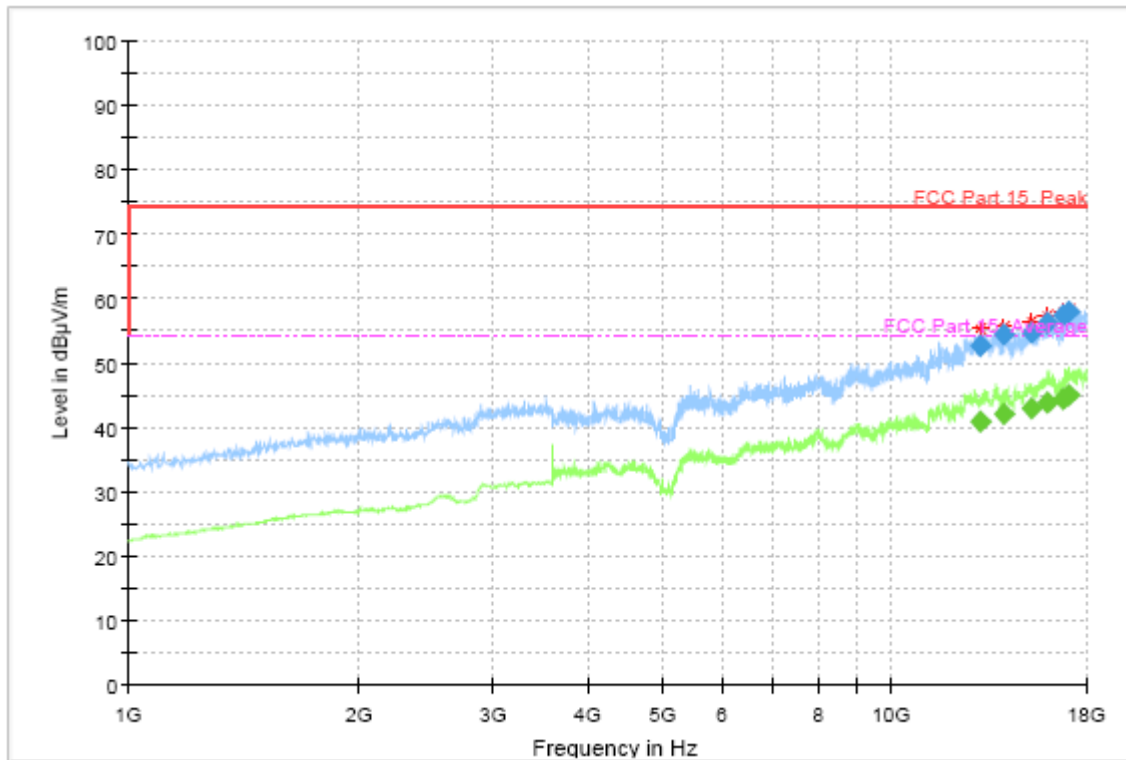
Note:

- 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 2: Adapter charging

Frequency Range:

1GHz –18GHz

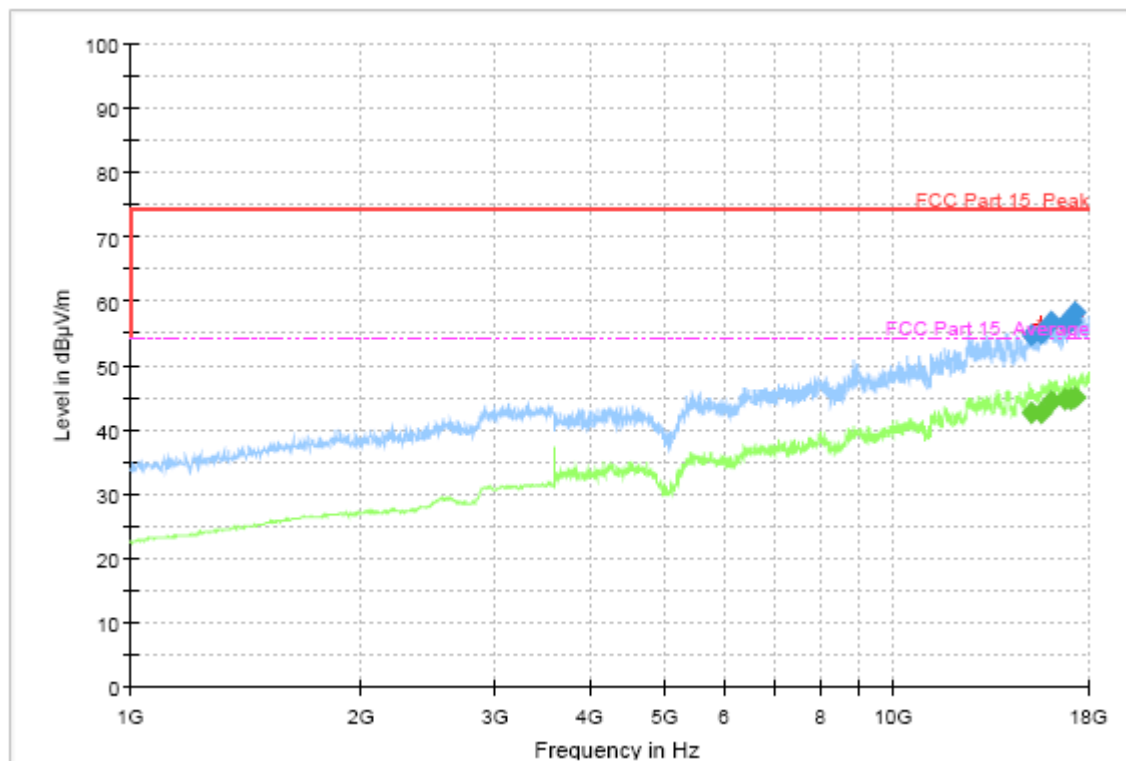


Final Result

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth h (kHz)	Height (cm)	Po l	Azimu th (deg)	Corr . (dB)
13079.6000	52.64	---	74.00	21.36	100.0	1000.000	100.0	H	71.0	17.8
13079.6000	---	40.94	54.00	13.06	100.0	1000.000	100.0	H	71.0	17.8
14035.4000	54.45	---	74.00	19.55	100.0	1000.000	100.0	H	0.0	19.2
14035.4000	---	42.02	54.00	11.98	100.0	1000.000	100.0	H	0.0	19.2
15241.8000	54.71	---	74.00	19.29	100.0	1000.000	100.0	H	266.0	20.7
15241.8000	---	42.87	54.00	11.13	100.0	1000.000	100.0	H	266.0	20.7
15960.6000	---	43.79	54.00	10.21	100.0	1000.000	100.0	H	165.0	22.2
15960.6000	56.09	---	74.00	17.91	100.0	1000.000	100.0	H	165.0	22.2
16741.2000	57.36	---	74.00	16.64	100.0	1000.000	100.0	H	175.0	23.5
16741.2000	---	44.39	54.00	9.61	100.0	1000.000	100.0	H	175.0	23.5
17096.2000	---	45.11	54.00	8.89	100.0	1000.000	200.0	H	335.0	24.0
17096.2000	58.03	---	74.00	15.97	100.0	1000.000	200.0	H	335.0	24.0

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 (ms)	Bandwidth (kHz)	Height (cm)	Po l	Azimu th (deg)	Corr (dB)
15123.8000	54.72	---	74.00	19.28	100.0	1000.000	200.0	V	335.0	20.6
15123.8000	---	42.67	54.00	11.33	100.0	1000.000	200.0	V	335.0	20.6
15571.8000	54.89	---	74.00	19.11	100.0	1000.000	100.0	V	0.0	21.2
15571.8000	---	42.71	54.00	11.29	100.0	1000.000	100.0	V	0.0	21.2
16054.8000	---	44.29	54.00	9.71	100.0	1000.000	200.0	V	0.0	22.5
16054.8000	56.72	---	74.00	17.28	100.0	1000.000	200.0	V	0.0	22.5
16734.4000	---	44.60	54.00	9.40	100.0	1000.000	200.0	V	356.0	23.5
16734.4000	56.36	---	74.00	17.64	100.0	1000.000	200.0	V	356.0	23.5
17038.4000	---	44.81	54.00	9.19	100.0	1000.000	200.0	V	159.0	23.9
17038.4000	56.63	---	74.00	17.37	100.0	1000.000	200.0	V	159.0	23.9
17251.6000	---	45.06	54.00	8.94	100.0	1000.000	100.0	V	264.0	24.2
17251.6000	58.23	---	74.00	15.77	100.0	1000.000	100.0	V	264.0	24.2

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

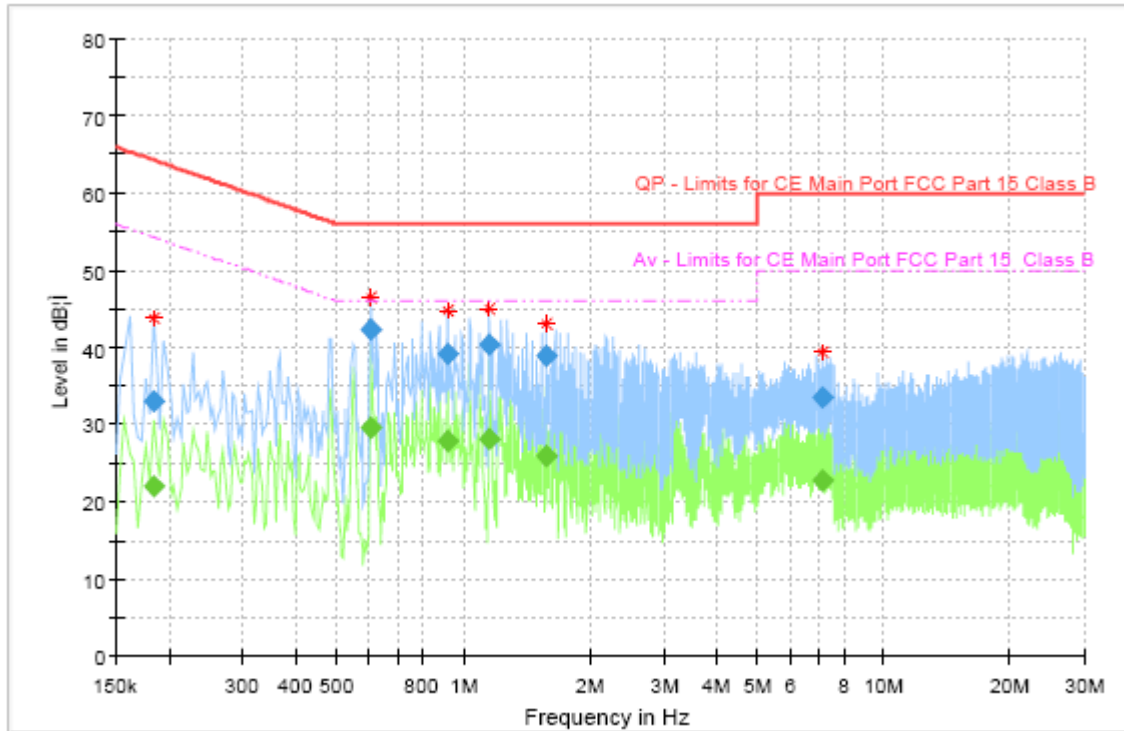
The measurement uncertainty is 3.66dB (k=2).

Test Results

Mode 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)
0.183581	33.11	---	64.32	31.22	15000.	9.000	N	ON	9.7
0.183581	---	22.08	54.32	32.24	15000.	9.000	N	ON	9.7
0.605213	42.21	---	56.00	13.79	15000.	9.000	L1	ON	9.7
0.605213	---	29.63	46.00	16.37	15000.	9.000	L1	ON	9.7
0.914906	39.06	---	56.00	16.94	15000.	9.000	L1	ON	9.7
0.914906	---	27.93	46.00	18.07	15000.	9.000	L1	ON	9.7
1.153706	40.25	---	56.00	15.75	15000.	9.000	L1	ON	9.7
1.153706	---	28.04	46.00	17.96	15000.	9.000	L1	ON	9.7
1.579069	38.94	---	56.00	17.06	15000.	9.000	L1	ON	9.7
1.579069	---	25.99	46.00	20.01	15000.	9.000	L1	ON	9.7
7.161019	33.39	---	60.00	26.61	15000.	9.000	L1	ON	9.8
7.161019	---	22.78	50.00	27.22	15000.	9.000	L1	ON	9.8

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*****