



TEST REPORT

No. C20T00046-EMC01

For

Client: MobiWire SAS

Production: 4G Smart feature phone

Model Name: MobiWire Hinto 4G

Brand Name: MobiWire

FCC ID: QPN-HINTO

Hardware Version: V01

Software Version: MOBIWIRE_GX2421_V01

Issued date: 2020-12-25

Industrial Internet Innovation Center (Shanghai) Co., Ltd.

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:

Industrial Internet Innovation Center (Shanghai) Co., Ltd.

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Revision Version

Report Number	Revision	Date	Memo
C20T00046-EMC01	00	2020-12-25	Initial creation of test report

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1. Test Laboratory

1.1. Testing Location

Company Name:	Industrial Internet Innovation Center (Shanghai) Co., Ltd.
Address:	Building 4, No.766, Jingang Road, Pudong New District, Shanghai, P. R. China
Postal Code:	201206
Telephone:	+86 21 63843300
FCC registration No:	958356
FCC designation No:	CN1177

1.2. Testing Environment

Normal Temperature:	15-35℃
Relative Humidity:	30-60% RH
Supply Voltage	120V/60Hz

1.3. Project data

Project Leader:	Lu Fang
Testing Start Date:	2020-10-28
Testing End Date:	2020-12-05

1.4. Signature



Lin Ling

(Prepared this test report)



Qin Yabin

(Reviewed this test report)



Song Kaihua

(Approved this test report)



2. Client Information

2.1. Applicant Information

Company Name	MobiWire SAS
Address	79 avenue Francois Arago, 92017 NANTERRE France
Telephone	+86 574 59555707
Postcode	/

2.2. Manufacturer Information

Company Name	MobiWire SAS
Address	79 avenue Francois Arago, 92017 NANTERRE France
Telephone	+86 574 59555707
Postcode	/

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

3.1. About EUT

Product Name	4G Smart feature phone
Model name	MobiWire Hinto 4G
GSM Frequency Band	GSM850/GSM900/DCS1800/PCS1900
UMTS Frequency Band	Band I/ II/ V/ VIII
LTE Frequency Band	LTE1/3/7/20/28
Additional Communication Function	BT5.0;FM;

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
N03	352847500002769	V01	MOBIWIRE_GX2421_V01	2020-10-27

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

*Note: The only difference between the two configurations is the number of slots. The others are the same.

3.3. Internal Identification of AE used during the test

AE ID*	Description	Model	SN
CA02	Adapter	A31A-050055U-EU1	/
CB03	Adapter	A220-050055W-AU1	/
AA02	Earphone	JWEP0957-M01	/
BA47	Battery	178136112	36112H0080710631
AE1	Notebook PC	DELL Latitude E6510	/
AE2	Desktop PC	OptiPlex 790 DT	X8RP1 A01 APCC
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-71581-19J-1A64
AE8	Monitor	Dell E1709Wc	/
AE9	Micro SD Card	Kingston SDC4/4GB 77	/
AE10	USB Cable	/	/

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

*The AE were provided by the lab.

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	2019/10/01
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 Hinto 4G supporting GSM/WCDMA/LTE.etc, manufactured by MobiWire SAS is a new product for testing. 3IN only performed test cases which identified with Pass/Fail/Inc result in section 5.1.

3IN 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

Item	Instrument Name	Type	Serial Number	Manufacturer	Cal. Date	Cal. interval
1	Universal Radio Communication Tester	CMU200	123126	R&S	2020-05-10	1 year
2	Universal Radio Communication Tester	CMW500	104178	R&S	2020-05-10	1 year
3	Test Receiver	ESU40	100307	R&S	2020-05-10	1 year
4	Trilog Antenna	VULB9163	VULB9163-515	Schwarzbeck	2020-02-28	2 years
5	Double Ridged Guide	ETS-3117	00135890	ETS	2020-02-28	2 years
6	Signal Generator	SMF 100A	102314	R&S	2020-05-10	1 year
7	EMI Test Software	EMC32 V9.15	NA	R&S	NA	NA

6.1 AC Conducted Emission Equipment list

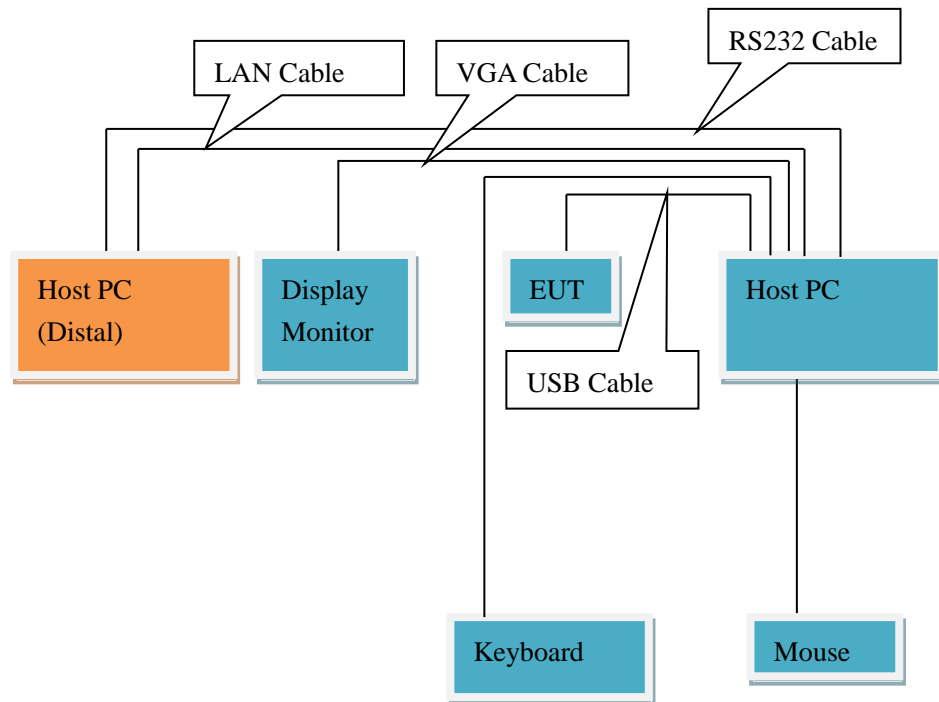
Item	Instrument Name	Type	Serial Number	Manufacturer	Cal. Date	Cal. interval
1	Universal Radio Communication Tester	CMU200	123123	R&S	2020-05-10	1 year
2	Universal Radio Communication Tester	CMW500	104178	R&S	2020-05-10	1 year
3	Test Receiver	ESCI	101235	R&S	2020-05-10	1 year
4	2-Line V-Network	ENV216	101380	R&S	2020-03-17	1 year
5	EMI Test Software	EMC32 V10.35.02	NA	R&S	NA	NA

7. System Configuration during Test

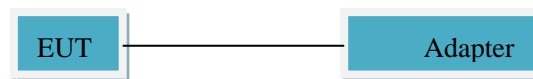
7.1 Test Mode

Test Item	Function Type
AC Conducted Emission	Mode 1: Adapter_CA02 charging+ G850 receiver mode <Figure 2> Mode 2: Adapter_CB03 charging+ G850 receiver mode <Figure 2> Mode 3: USB cable (Data Link with PC) <Figure 1>
Radiated Emission	Mode 1: Adapter_CA02 charging+ G850 receiver mode <Figure 2> Mode 2: Adapter_CB03 charging+ G850 receiver mode <Figure 2> Mode 3: USB cable (Data Link with PC) <Figure 1> Mode 4: FM mode(98MHz) <Figure 3>
<p>Remark:</p> <ol style="list-style-type: none">1. All test modes are performed, only the worst cases test data are recorded in this report.2. After laboratory verification, GSM850 is the worst mode among all receiving modes of 2G/3G/4G and is recorded in the report.3. Data Link with PC means data application transferred mode between EUT and PC.4. 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.	

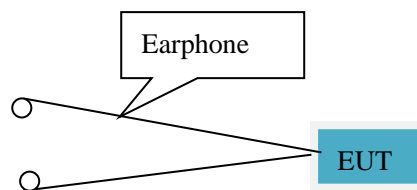
7.2 Connection Diagram of Test System



<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

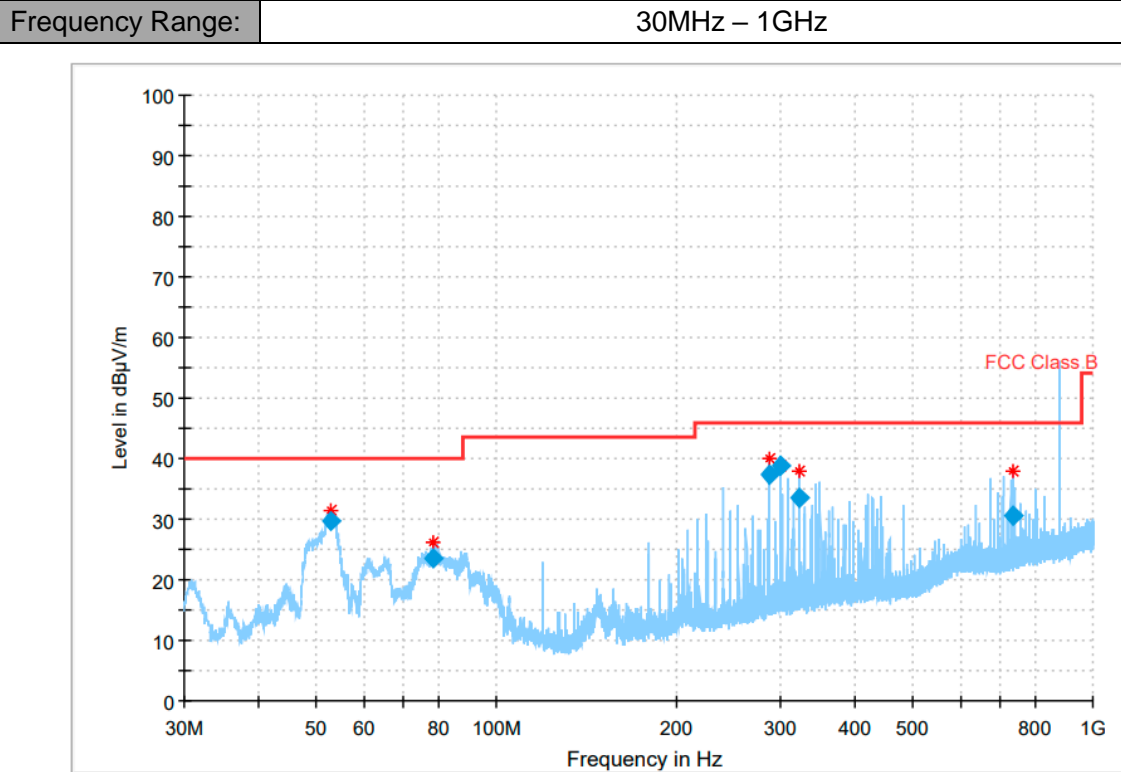
The measurement uncertainty (30MHz-1000MHz) is 4.82 dB (k=2).

The measurement uncertainty (1000MHz-18000MHz) is 5.08 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 2: Adapter_CB03 charging+ G850 receiver mode <Figure 2>



Final Result

Frequency (MHz)	QuasiPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
53.031269	29.72	40.00	10.28	1000.0	120.000	100.0	V	177.0	-15.5
78.339235	23.62	40.00	16.38	1000.0	120.000	225.0	H	117.0	-19.0
287.960707	37.24	46.00	8.76	1000.0	120.000	100.0	H	80.0	-11.9
299.991421	38.74	46.00	7.26	1000.0	120.000	100.0	H	254.0	-11.6
322.239005	33.42	46.00	12.58	1000.0	120.000	100.0	H	251.0	-10.7
733.781496	30.71	46.00	15.29	1000.0	120.000	194.9	H	210.0	-3.3

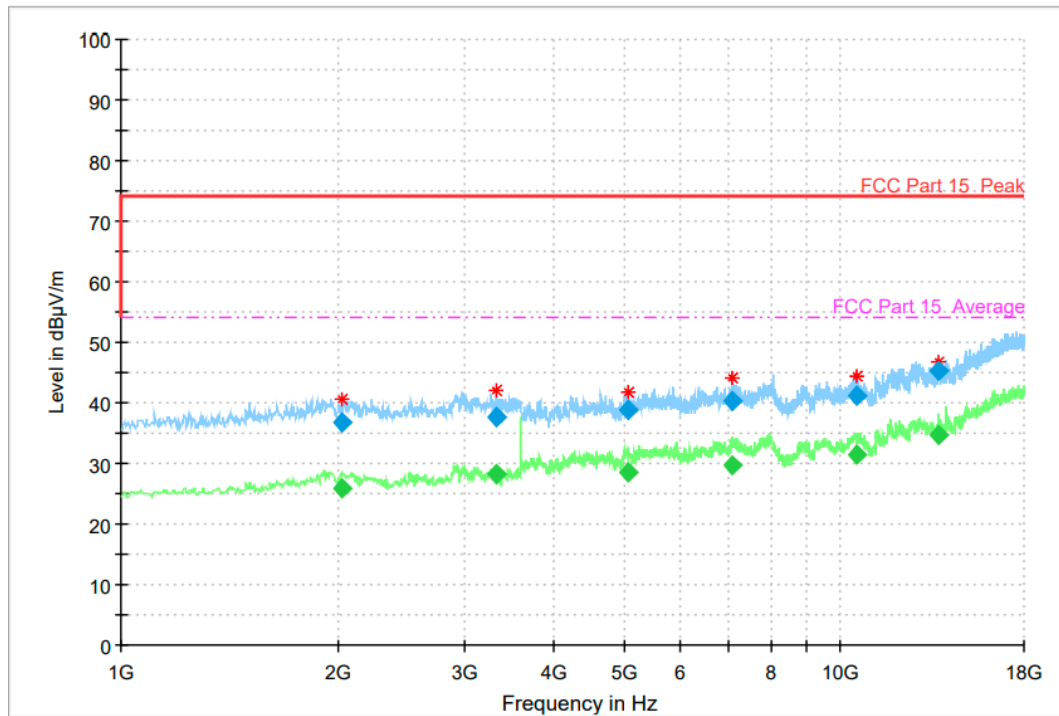
Note:

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.
4. The frequency over the limits is the main signal frequency.

Mode 2: Adapter_CB03 charging+ G850 receiver mode <Figure 2>

Frequency Range:

1GHz –18GHz

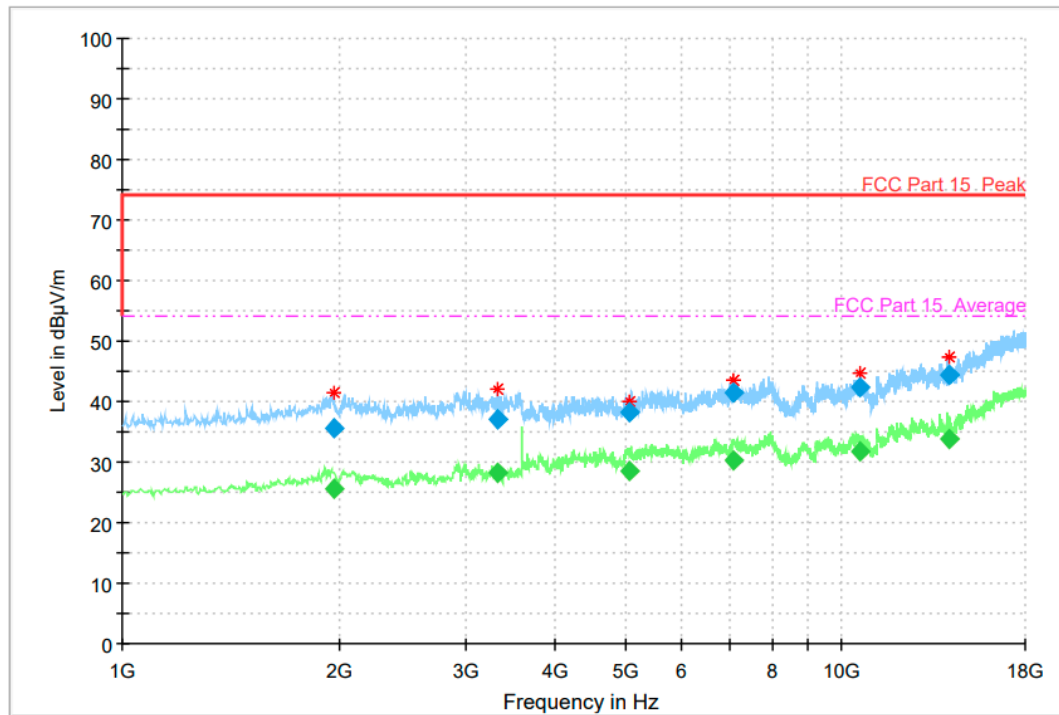


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time	Band width	Height	Po l	Azimu th	Corr. (dB)
2026.800000	36.62	---	74.00	37.38	1.0	1000.	100.0	H	218.0	5.1
2026.800000	---	25.91	54.00	28.09	1.0	1000.	100.0	H	218.0	5.1
3325.400000	---	28.11	54.00	25.89	1.0	1000.	200.0	H	229.0	2.3
3325.400000	37.63	---	74.00	36.37	1.0	1000.	200.0	H	229.0	2.3
5059.200000	38.87	---	74.00	35.13	1.0	1000.	200.0	H	358.0	6.1
5059.200000	---	28.52	54.00	25.48	1.0	1000.	200.0	H	358.0	6.1
7092.200000	40.28	---	74.00	33.72	1.0	1000.	200.0	H	332.0	4.9
7092.200000	---	29.58	54.00	24.42	1.0	1000.	200.0	H	332.0	4.9
10568.200000	41.32	---	74.00	32.68	1.0	1000.	200.0	H	296.0	7.9
10568.200000	---	31.55	54.00	22.45	1.0	1000.	200.0	H	296.0	7.9
13676.200000	---	34.73	54.00	19.27	1.0	1000.	100.0	H	1.0	12.0
13676.200000	45.31	---	74.00	28.69	1.0	1000.	100.0	H	1.0	12.0

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	Height	Po I	Azimuth	Corr. (dB)
1969.400000	35.56	---	74.00	38.44	1.0	1000.00	100.0	V	218.0	5.3
1969.400000	---	25.48	54.00	28.52	1.0	1000.00	100.0	V	218.0	5.3
3326.600000	---	28.21	54.00	25.79	1.0	1000.00	200.0	V	224.0	2.3
3326.600000	37.17	---	74.00	36.83	1.0	1000.00	200.0	V	224.0	2.3
5056.600000	---	28.64	54.00	25.36	1.0	1000.00	200.0	V	283.0	6.1
5056.600000	38.11	---	74.00	35.89	1.0	1000.00	200.0	V	283.0	6.1
7055.200000	41.42	---	74.00	32.58	1.0	1000.00	100.0	V	19.0	5.0
7055.200000	---	30.25	54.00	23.75	1.0	1000.00	100.0	V	19.0	5.0
10575.000000	42.27	---	74.00	31.73	1.0	1000.00	100.0	V	140.0	7.9
10575.000000	---	31.67	54.00	22.33	1.0	1000.00	100.0	V	140.0	7.9
14063.800000	44.54	---	74.00	29.46	1.0	1000.00	100.0	V	25.0	12.7
14063.800000	---	33.80	54.00	20.20	1.0	1000.00	100.0	V	25.0	12.7

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 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

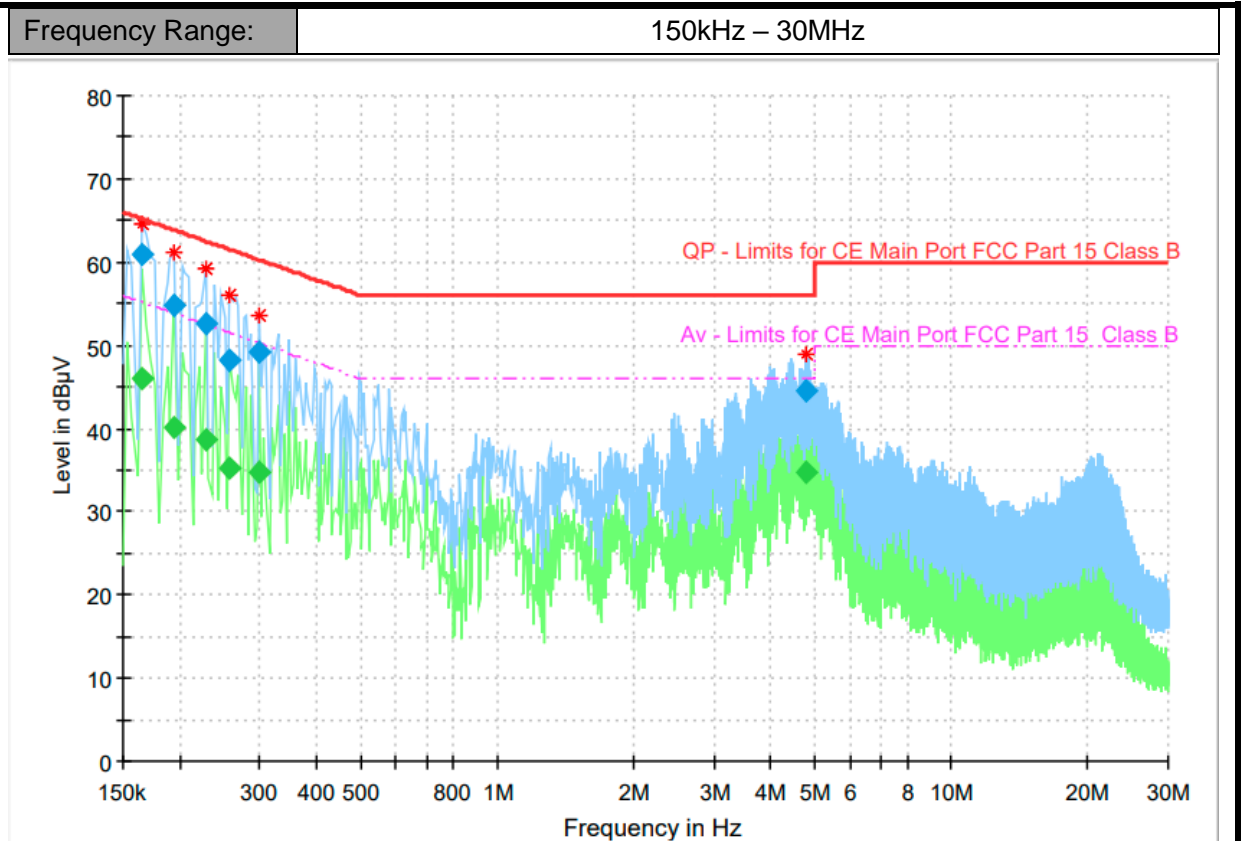
Voltage (V)	Frequency (Hz)	RBW	Sweep Time (s)
120	60	9 kHz	Auto

Uncertainty Measurement

The measurement uncertainty is 3.58dB (k=2).

Test Results

Mode 2: Adapter_CB03 charging+ G850 receiver mode <Figure 2>



Final Result

Frequency (MHz)	QuasiPeak (dB μ V)	Average (dB μ V)	Limit (dB μ V)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.164925	---	46.04	55.21	9.18	15000.	9.000	N	ON	9.7
0.164925	60.85	---	65.21	4.36	15000.	9.000	N	ON	9.7
0.194775	---	40.15	53.83	13.68	15000.	9.000	N	ON	9.7
0.194775	54.84	---	63.83	8.99	15000.	9.000	N	ON	9.7
0.228356	---	38.77	52.51	13.74	15000.	9.000	N	ON	9.7
0.228356	52.69	---	62.51	9.82	15000.	9.000	N	ON	9.7
0.258206	---	35.32	51.49	16.17	15000.	9.000	N	ON	9.7
0.258206	48.20	---	61.49	13.29	15000.	9.000	N	ON	9.7
0.299250	---	34.69	50.26	15.57	15000.	9.000	N	ON	9.7
0.299250	49.08	---	60.26	11.18	15000.	9.000	N	ON	9.7
4.802869	---	34.77	46.00	11.23	15000.	9.000	N	ON	10.0
4.802869	44.61	---	56.00	11.39	15000.	9.000	N	ON	10.0

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.

Annex A Accreditation Certificate



Accredited Laboratory

A2LA has accredited

3IN (Industrial Internet Innovation Center (Shanghai) Co., Ltd.)

Shanghai, People's Republic of China

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This laboratory also meets the requirements of any additional program requirements in the «field» field. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 6th day of May 2019.



Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3682.01
Valid to February 28, 2021

For the tests to which this accreditation applies, please refer to the laboratory's Electrical «field» Scope of Accreditation.

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