



TEST REPORT

Report Number: C20T00030-EMC01-V00

Applicant	MobiWire SAS
Product Name	4G Smart Phone
Model Name	MobiWire Ituha, MBW Vodafone Smart N12
Brand Name	MobiWire
FCC ID	QPN-ITUHA

Industrial Internet Innovation Center (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in FCC Part 15, Subpart B, ANSI C63.4-2014.

Prepared by

Reviewed by

Approved by

Issue Date

2021-03-24

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

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10. 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
C20T00030-EMC01-V00	00	2021-03-24	Initial creation of test report

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1. Test Laboratory

1.1. Testing Location

Primary Lab:

Company Name	Industrial Internet Innovation Center (Shanghai) Co., Ltd.
Address	Building 4, No. 766 Jingang Rd, Pudong, Shanghai, China
FCC Registration No.	958356
FCC Designation No.	CN1177

Subcontracting Lab #1:

Company Name	N/A
Address	N/A

1.2. Testing Environment

Normal Temperature	15°C~35°C
Relative Humidity	30%RH~60%RH
Supply Voltage	120V/60Hz

1.3. Project Information

Project Leader	Xu Yuting
Testing Start Date	2021-03-03
Testing End Date	2021-03-11

2. Client Information

2.1. Applicant Information

Company Name	MobiWire SAS
Address	79 AVENUE FRANCOIS ARAGO 92017 NANTERRE France
Telephone	+33 625 028 368-33

2.2. Manufacturer Information

Company Name	MobiWire SAS
Address	79 AVENUE FRANCOIS ARAGO 92017 NANTERRE France
Telephone	+33 625 028 368-33

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

3.1. About EUT

Product Name	4G Smart Phone
Model name	MobiWire Ituha, MBW Vodafone Smart N12
Supported Radio Technology and Bands	GSM850/GSM900/GSM1800/GSM1900 WCDMA Band I/ II/ V/ VIII LTE Band 1/3/7/8/20/28B BT5.1 WLAN 802.11b,g,n GPS GLONASS FM
Hardware Version	V00A
Software Version	VFD_NZ_SMART_N12_SS_O_T_L_V01
FCC ID	QPN-ITUHA

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of Receipt
N04	352110690004057	V00A	VFD_NZ_SMART_N12_SS_O_T_L_V01	2021-02-08

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

3.3. Internal Identification of AE used during the test

AE ID*	Description	Model	SN/Remark
CA01	Adapter	A18A-050100U-US2	N/A
CB04	Adapter	A103A-050100U-AU2	N/A
UA09	USB Cable	178055664	N/A
AA01	Earphone	JWEP0944-M01R	178107877
BA54	Battery	178200178	00178T0092901177
AE1	Notebook PC	DELL Latitude E6510	N/A
AE2	Desktop PC	OptiPlex 790 DT	X8RP1 A01 APCC
AE3	LAN Cable	N/A	N/A
AE4	VGA Cable	N/A	N/A
AE5	RS232 Cable	N/A	N/A



AE6	Keyboard	KB212-B	CN-0Y88XT-65890-12I-005Q-A00
AE7	Mouse	MS111-P	CN-011D3V-71581-19J-1A64
AE8	Monitor	Dell E1709Wc	N/A

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

*The AE is provided by the lab/client.

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 Summary

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 Ituha, MBW Vodafone Smart N12, manufactured by MobiWire SAS is a new product for testing.

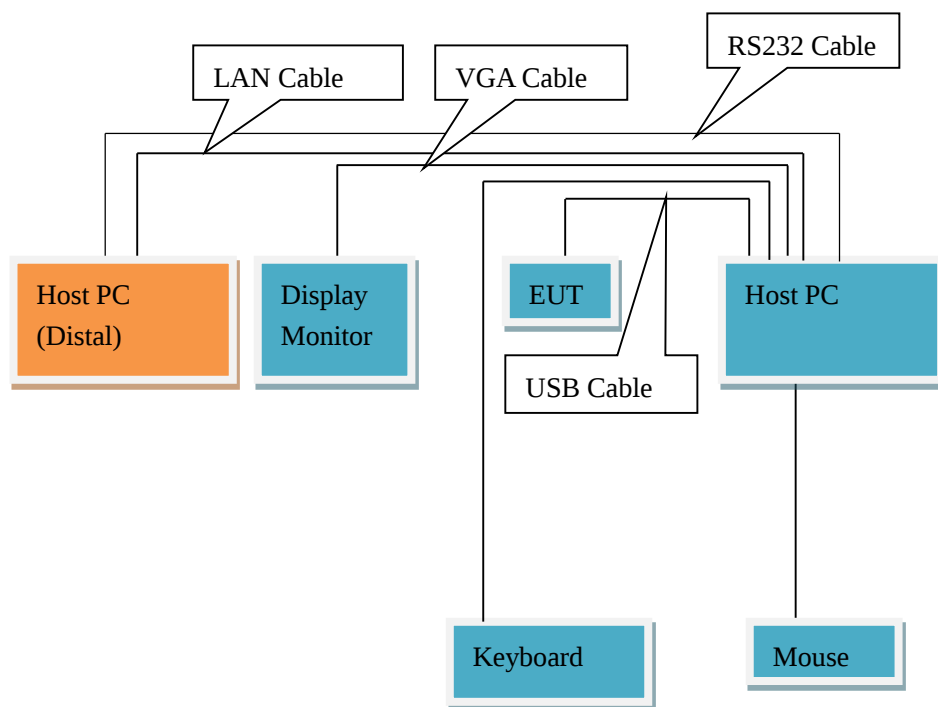
Industrial Internet Innovation Center (Shanghai) Co., Ltd. only performed test cases which identified with Pass/Fail/Inc result in section 5.1.

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

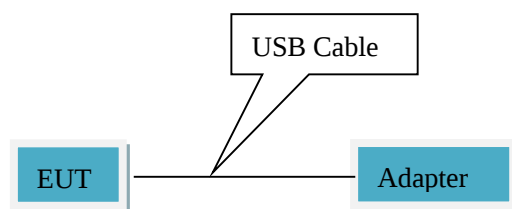
5.3. Decision of final test mode

Test Item	Function Type
AC Conducted Emission	Mode 1: Adapter charging+ G850 receiver mode+CA01 <Figure 2> Mode 2: Adapter charging+ G850 receiver mode+CB04 <Figure 2> Mode 3: USB cable (Data Link with PC)+UA09 <Figure 1> Mode 5: GPS mode <Figure 2> Mode 6: GLONASS mode <Figure 2>
Radiated Emission	Mode 1: Adapter charging+ G850 receiver mode+CA01 <Figure 2> Mode 2: Adapter charging+ G850 receiver mode+CB04 <Figure 2> Mode 3: USB cable (Data Link with PC)+UA09 <Figure 1> Mode 4: FM mode(98MHz) <Figure 3> Mode 5: GPS mode <Figure 2> Mode 6: GLONASS mode <Figure 2>
Remark: 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. 5. EUT and GLONASS&GPS simulator (SMBV100A) connection is established.	

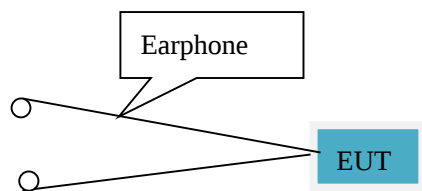
5.4. EUT Connection Diagram of Test System



<Figure 1>



<Figure 2>



<Figure 3>

6. Measurement Results

Only the worst test result was shown in this report.

6.1. 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

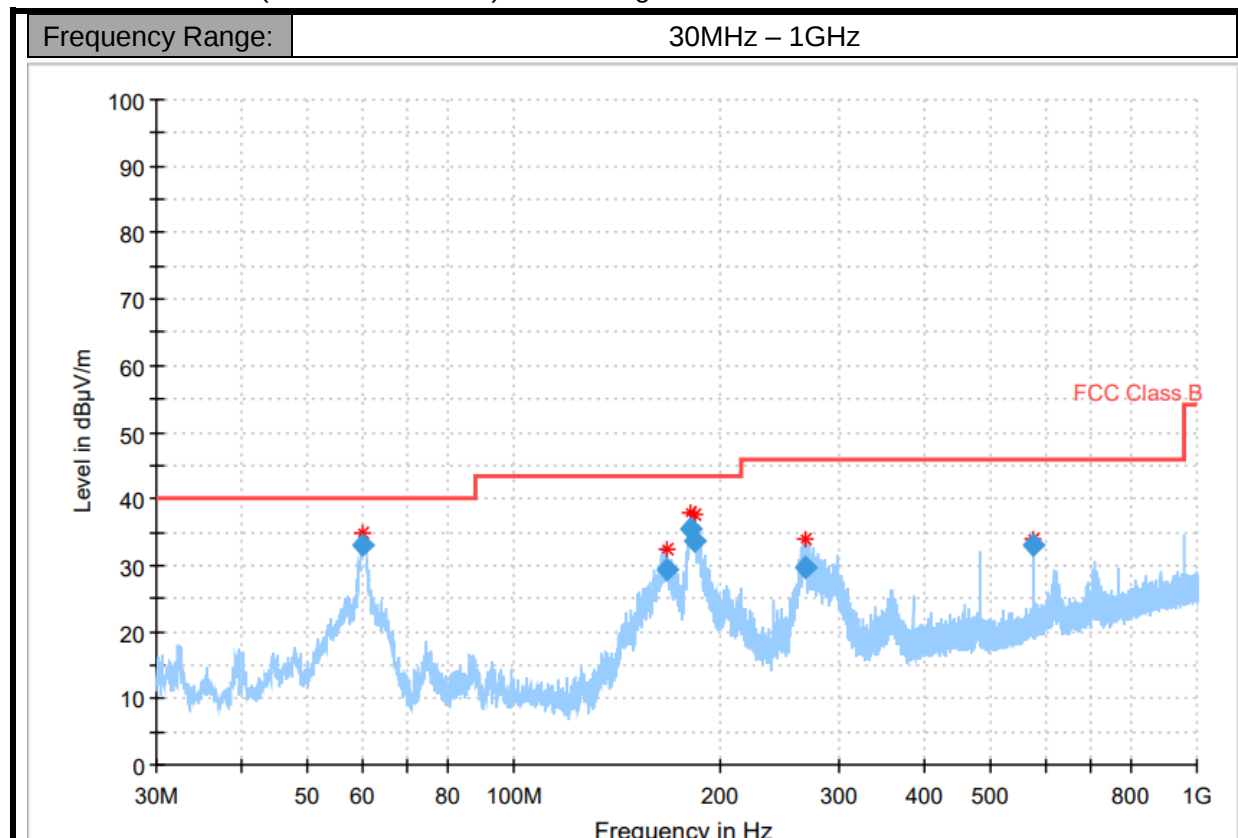
Test conditions

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

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 3: USB cable (Data Link with PC)+UA09 <Figure 1>



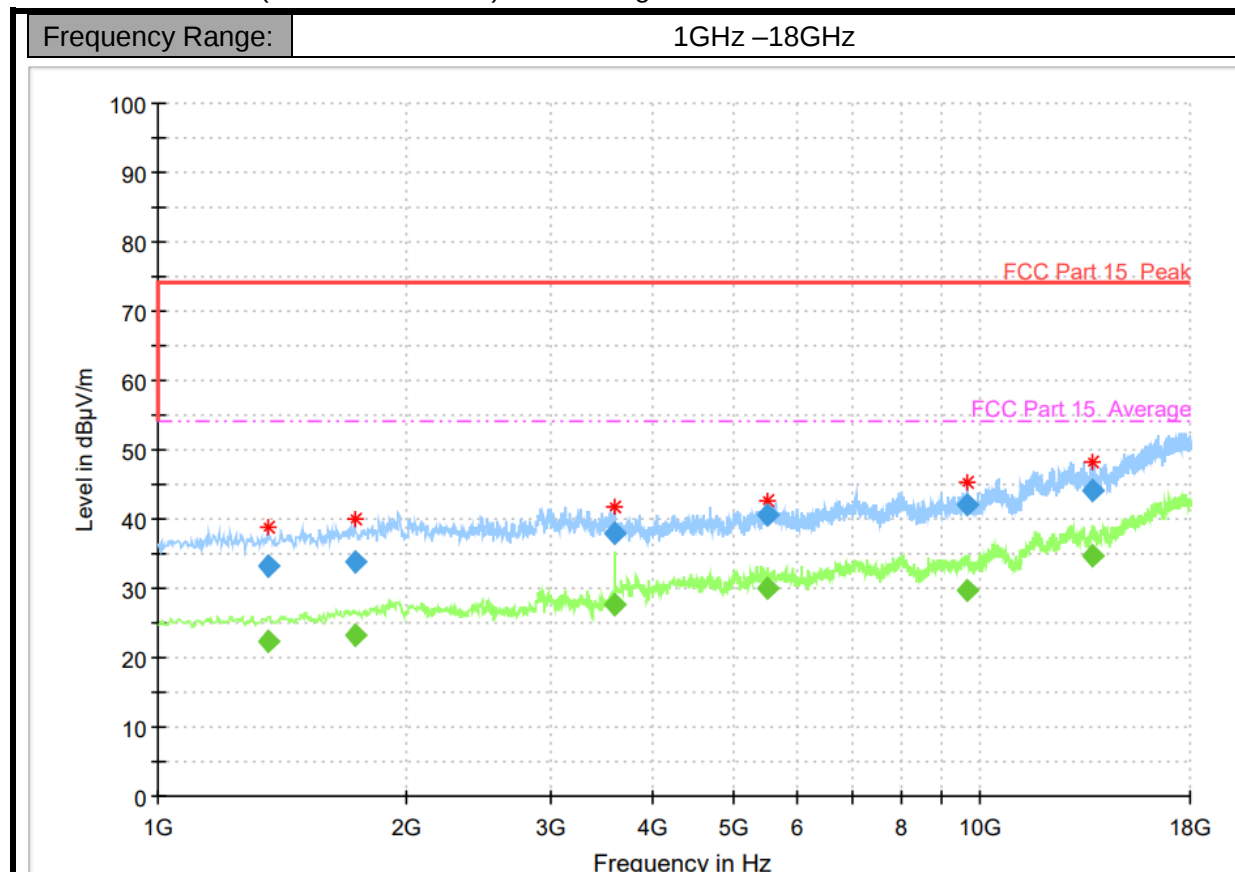
Final Result

Frequency (MHz)	QuasiPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
60.148613	32.99	40.00	7.01	1000.0	120.000	100.0	V	47.0	-16.5
168.000717	29.45	43.50	14.05	1000.0	120.000	175.0	V	342.0	-17.9
181.705416	35.34	43.50	8.16	1000.0	120.000	175.0	V	20.0	-16.8
183.821264	33.70	43.50	9.80	1000.0	120.000	215.0	H	292.0	-16.6
267.349003	29.61	46.00	16.39	1000.0	120.000	120.0	H	132.0	-13.4
576.009176	33.14	46.00	12.86	1000.0	120.000	100.0	V	12.0	-5.5

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 3: USB cable (Data Link with PC)+UA09 <Figure 1>

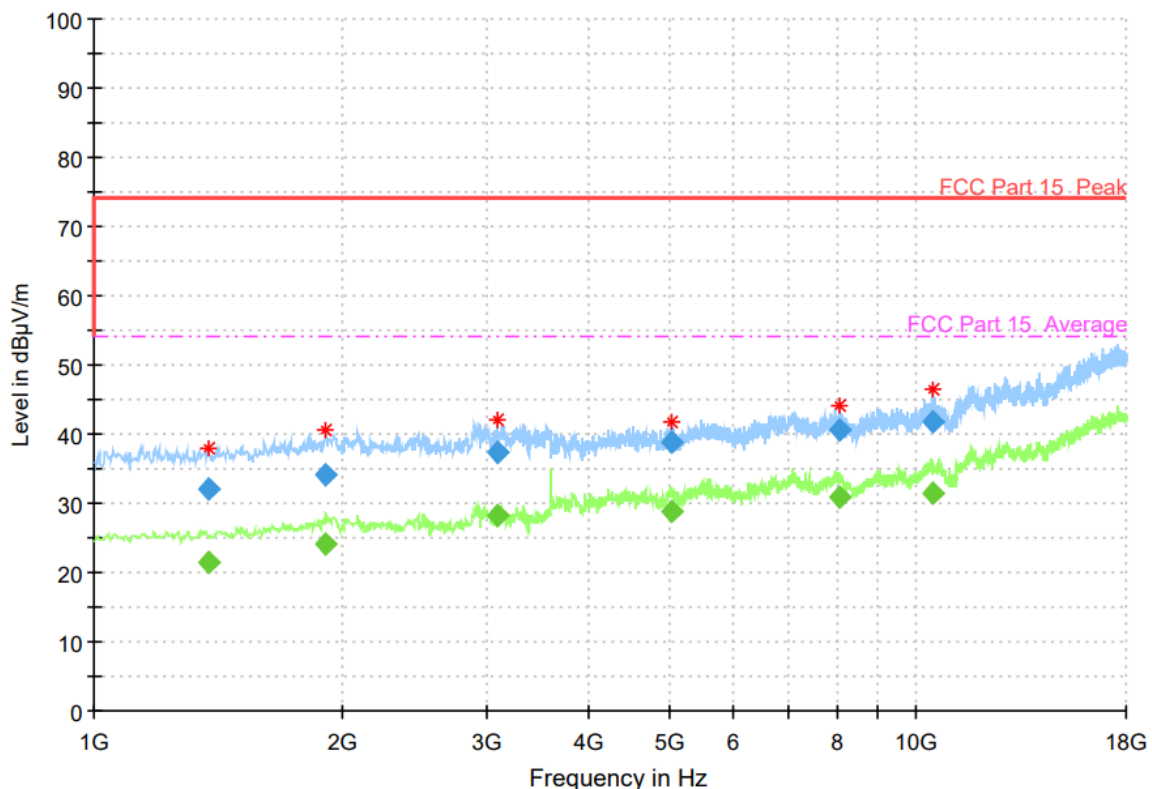


Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time	Band width	Height	Po l	Azimu th	Corr. (dB)
1360.400000	---	22.36	54.00	31.64	1.0	1000.	100.0	H	0.0	3.9
1360.400000	33.17	---	74.00	40.83	1.0	1000.	100.0	H	0.0	3.9
1735.000000	33.90	---	74.00	40.10	1.0	1000.	100.0	H	117.0	4.0
1735.000000	---	23.36	54.00	30.64	1.0	1000.	100.0	H	117.0	4.0
3594.200000	37.89	---	74.00	36.11	1.0	1000.	100.0	H	60.0	1.9
3594.200000	---	27.78	54.00	26.22	1.0	1000.	100.0	H	60.0	1.9
5526.200000	40.59	---	74.00	33.41	1.0	1000.	200.0	H	350.0	3.2
5526.200000	---	29.86	54.00	24.14	1.0	1000.	200.0	H	350.0	3.2
9633.400000	---	29.77	54.00	24.23	1.0	1000.	100.0	H	304.0	6.1
9633.400000	42.13	---	74.00	31.87	1.0	1000.	100.0	H	304.0	6.1
13693.000000	44.12	---	74.00	29.88	1.0	1000.	100.0	H	243.0	12.1
13693.000000	---	34.64	54.00	19.36	1.0	1000.	100.0	H	243.0	12.1

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	Bandwi dth	Heigh t	Po l	Azimu th	Corr. (dB)
1377.200000	---	21.46	54.00	32.54	1.0	1000.00	100.0	V	194.0	3.5
1377.200000	32.11	---	74.00	41.89	1.0	1000.00	100.0	V	194.0	3.5
1910.800000	34.03	---	74.00	39.97	1.0	1000.00	100.0	V	8.0	5.4
1910.800000	---	23.99	54.00	30.01	1.0	1000.00	100.0	V	8.0	5.4
3101.800000	---	28.30	54.00	25.70	1.0	1000.00	100.0	V	65.0	2.3
3101.800000	37.38	---	74.00	36.62	1.0	1000.00	100.0	V	65.0	2.3
5046.200000	---	28.86	54.00	25.14	1.0	1000.00	100.0	V	335.0	6.1
5046.200000	38.88	---	74.00	35.12	1.0	1000.00	100.0	V	335.0	6.1
8071.200000	---	30.99	54.00	23.01	1.0	1000.00	200.0	V	88.0	5.2
8071.200000	40.61	---	74.00	33.39	1.0	1000.00	200.0	V	88.0	5.2
10448.400000	41.64	---	74.00	32.36	1.0	1000.00	200.0	V	256.0	7.9
10448.400000	---	31.53	54.00	22.47	1.0	1000.00	200.0	V	256.0	7.9

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.

6.2. 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

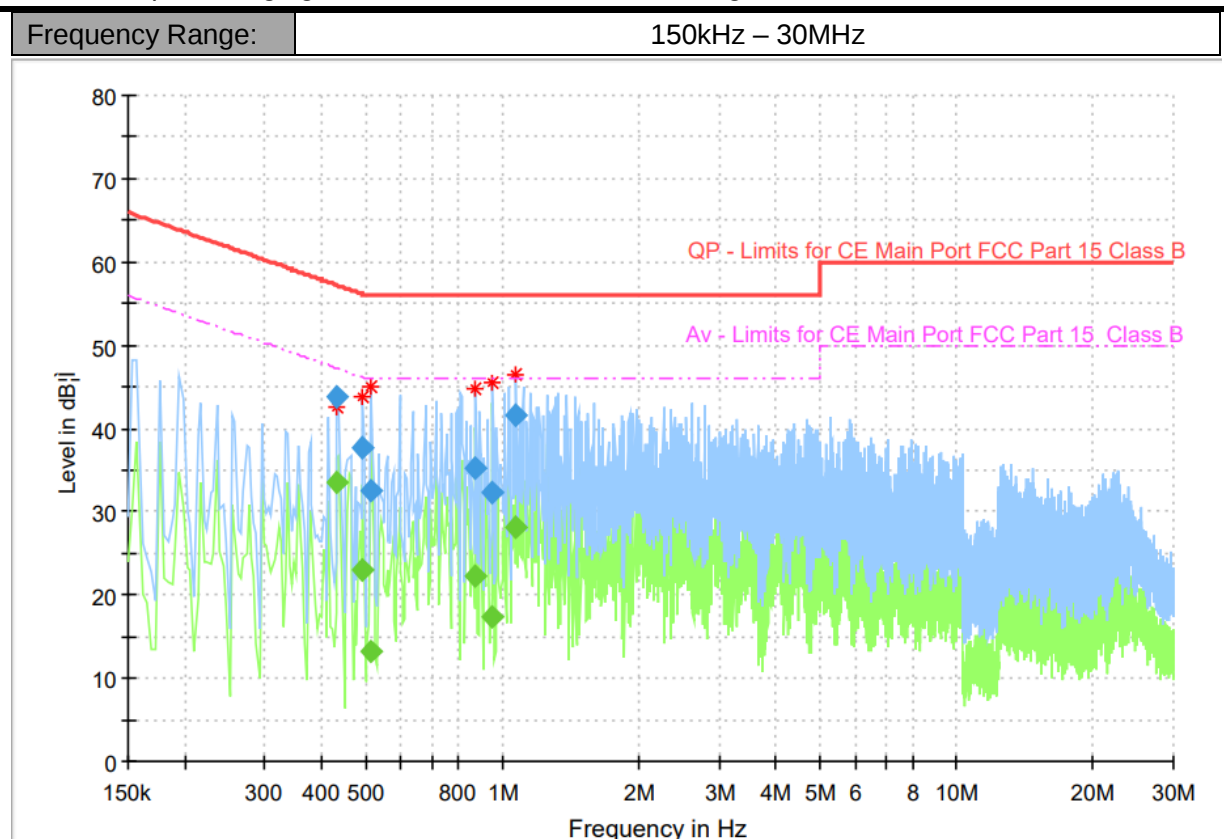
Frequency Range (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50
*Decreases with the logarithm of the frequency		

Test Condition in Charging Mode

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

Test Results

Mode 1: Adapter charging+ G850 receiver mode+CA01 <Figure 2>

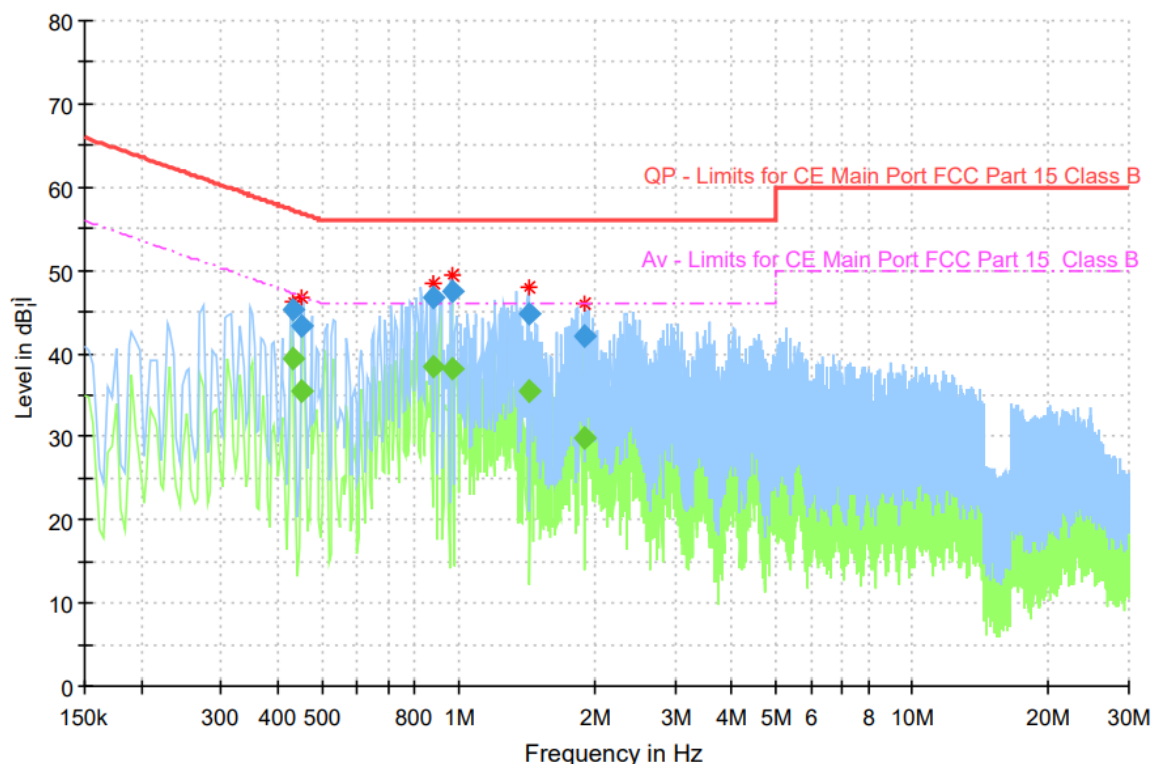


Final Result

Frequency (MHz)	QuasiPeak (dB μ V)	Average (dB μ V)	Limit (dB μ V)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.433575	---	33.55	47.18	13.63	15000.	9.000	L1	ON	9.6
0.433575	43.86	---	57.18	13.32	15000.	9.000	L1	ON	9.6
0.493275	---	23.03	46.11	23.08	15000.	9.000	L1	ON	9.6
0.493275	37.70	---	56.11	18.42	15000.	9.000	L1	ON	9.6
0.515663	---	13.32	46.00	32.68	15000.	9.000	L1	ON	9.6
0.515663	32.52	---	56.00	23.48	15000.	9.000	L1	ON	9.6
0.873863	---	22.22	46.00	23.78	15000.	9.000	L1	ON	9.6
0.873863	35.30	---	56.00	20.70	15000.	9.000	L1	ON	9.6
0.952219	---	17.29	46.00	28.71	15000.	9.000	L1	ON	9.6
0.952219	32.17	---	56.00	23.83	15000.	9.000	L1	ON	9.6
1.071619	---	28.05	46.00	17.95	15000.	9.000	L1	ON	9.6
1.071619	41.58	---	56.00	14.42	15000.	9.000	L1	ON	9.6

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.



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)
0.429844	---	39.48	47.26	7.78	15000.	9.000	N	ON	9.7
0.429844	45.32	---	57.26	11.93	15000.	9.000	N	ON	9.7
0.452231	---	35.46	46.83	11.37	15000.	9.000	N	ON	9.8
0.452231	43.22	---	56.83	13.61	15000.	9.000	N	ON	9.8
0.885056	---	38.49	46.00	7.51	15000.	9.000	N	ON	9.8
0.885056	46.72	---	56.00	9.28	15000.	9.000	N	ON	9.8
0.967144	---	38.24	46.00	7.76	15000.	9.000	N	ON	9.8
0.967144	47.35	---	56.00	8.65	15000.	9.000	N	ON	9.8
1.426088	---	35.52	46.00	10.48	15000.	9.000	N	ON	9.8
1.426088	44.65	---	56.00	11.35	15000.	9.000	N	ON	9.8
1.899956	---	29.84	46.00	16.16	15000.	9.000	N	ON	9.8
1.899956	42.16	---	56.00	13.84	15000.	9.000	N	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.

7. Test Equipment List

7.1. Radiated Emission Equipment list

Item	Equipment 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	2021-03-03	1 year
4	Trilog Antenna	VULB9163	VULB9163-515	Schwarzbeck	2021-02-03	2 years
5	Double Ridged Guide Antenna	ETS-3117	00135890	ETS	2020-02-28	2 years
6	Signal Generator	SMBV100A	257984	R&S	2021-03-03	1 year
7	Signal Generator	SMF 100A	102314	R&S	2020-05-10	1 year
8	EMI Test Software	EMC32 V9.15	N/A	R&S	N/A	N/A

7.2. AC Conducted Emission Equipment list

Item	Equipment 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	2021-03-03	1 year
4	2-Line V-Network	ENV216	101380	R&S	2020-05-10	1 year
5	Signal Generator	SMBV100A	257984	R&S	2021-03-03	1 year
6	EMI Test Software	EMC32 V10.35.02	N/A	R&S	N/A	N/A

Annex A: Measurement Uncertainty

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

Case	Uncertainty
Radiated Emission 30MHz-1000MHz	4.96dB
Radiated Emission 1000MHz-18000MHz	5.18 dB
AC Conducted Emission	3.66 dB

Annex B: Accreditation Certificate



Accredited Laboratory

A2LA has accredited

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 April 30, 2021
Revised February 17, 2021

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

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