



TEST REPORT

REPORT NUMBER: I22W00018-EMC

ON

Type of Equipment: 4G Module
Type of Designation: SIM7912A
Brand Name: SIMCom
Manufacturer: SIMCom Wireless Solutions Limited
FCC ID: 2AJYU-8XM0001

ACCORDING TO

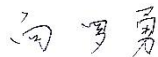
Subpart B, PART 15, RADIO FREQUENCY DEVICES

Chongqing Academy of Information and Communications Technology

Month date, year

May 18, 2022

Signature



Xiang Luoyong

Director

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 Chongqing Academy of Information and Communications Technology.



Report No.: I22W00018

Revision Version

Report Number	Revision	Date	Memo
I22W00018-EMC	00	2022-05-18	Initial creation of test report

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1. Test Laboratory

1.1. Testing Location

Name:	Chongqing Academy of Information and Communications Technology
FCC Registration Number:	CN1239
Address:	Building C, Technology Innovation Center, No.8, Yuma Road, Chayuan New Area, Nan'an District, Chongqing, People's Republic of China
Postal Code:	401336
Telephone:	0086-23-88069965
Fax:	0086-23-88608777

1.2. Testing Environment

Normal Temperature:	23.2-25.2°C
Relative Humidity:	52.0-60.0%

1.3. Project data

Testing Start Date:	2022-3-12
Testing End Date:	2022-3-13

1.4. Signature



2022-5-18

Li Quan
(Prepared this test report)

Date

2022-5-18

Xiao Yu
(Reviewed this test report)

Date

2022-5-18

Xiang Luoyong Director of the
laboratory (Approved this test report)

Date

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2. Client Information

2.1. Applicant Information

Company name:	SIMCom Wireless Solutions Limited
Address /Post:	SIMCom Headquarters Building, Building 3, No.289 Linhong Road, Changning District, Shanghai, China
City:	Shanghai
Country:	China
Telephone:	86-2131575100
Fax:	--
Email:	Yongsheng Li@simcom.com
Contact Person:	Yongsheng Li

2.2. Manufacturer Information

Company name:	SIMCom Wireless Solutions Limited
Address /Post:	SIMCom Headquarters Building, Building 3, No.289 Linhong Road, Changning District, Shanghai, China
City:	Shanghai
Country:	China
Telephone:	86-2131575100
Fax:	--
Email:	Yongsheng Li@simcom.com
Contact Person:	Yongsheng Li

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

3.1. About EUT

EUT Description	SIMCom Wireless Solutions Limited
Model name	SIM7912A
Brand name	SIMCom
LTE Frequency Band	B2/4/5/7/12/13/14/17/25/26/B40/41/42/48/66/71
WCDMA Frequency Band	2/4/5

Note: Photographs of EUT are shown in ANNEX B of this test report.

3.2. Internal Identification of EUT used during the test

EUT ID	SN or IMEI	HW Version	SW Version	Date of receipt
S1	IMEI:864542050016092	V1.02	2110B01X12M42A-LGA	2022-03-02

*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	SN
--	--	--

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

dB*: is provided customer.

4. Reference Documents

4.1. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC CFR Part 15, Subpart B,	RADIO FREQUENCY DEVICES	October 1, 2020

5. Test Equipments Utilized

No.	Equipment	Model	SN	HW Version	SW Version	Manufacture	Cal.Due Date
1	Test Receiver	ESU26	100367	01	4.43 SP3	R&S	2022-06-11
2	Test Receiver	ESCI	101214	00	4.42 SP2	R&S	2022-06-11
3	Ultra-wideband Log Periodic Antenna	VULB 9163	01392	--	--	Schwarzbeck	2024-05-04
4	Double Ridged Guide Antenna	HF907	100357	--	--	R&S	2023-02-10
5	Artificial Main Network	ENV 216	101128	--	--	R&S	2023-04-30
6	Fully anechoic chamber	FACT3-2	--	--	--	ETS	2025-04-29

Test software

No.	Name	version	SN	Manufacture
1	EMC32	V 8.51.00	--	R&S
2	EMC32	V 8.51.00	--	R&S

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6. Test Results

6.1. Summary of Test Results

FCC Rules	Name of Test	Result
15.109	Radiated Emission	Pass
15.107	Conducted Emission	Pass
Note: N/A means not applicable.		

7. Test Results

7.1. Radiated Emission

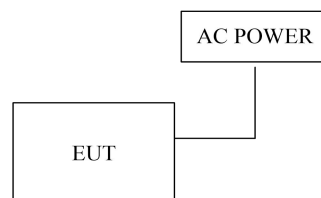
Specifications:	15.109
Date of Tests	2022-03-12—2022-03-13
Test conditions:	Ambient Temperature:23.2℃-25.2℃ Relative Humidity:52.0%RH-57.0%RH Air pressure:98.7kPa-99.2kPa
Operation Mode	Normal
Test Results:	Pass

Limit Level Construction(Except for Class A digital devices):

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

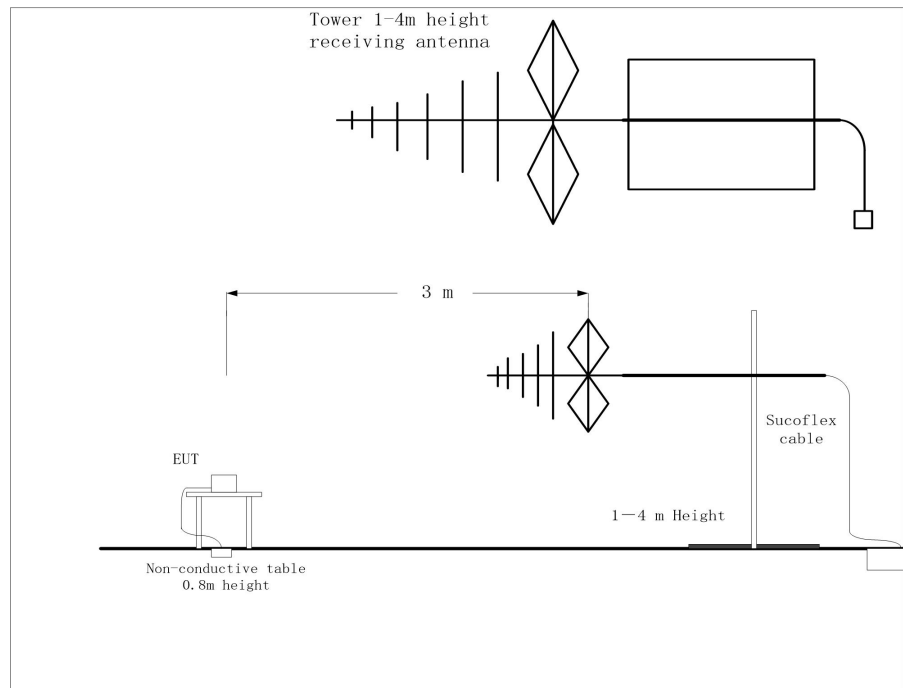
Frequency Range (MHz)	Peak (dBuV/m)	Average (dBuV/m)
Above 1000	74	54

EUT Setup:



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Test Method:

For 30-1000MHz, 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 1000-18000MHz, the maximal emission value was acquired by adjusting the antenna height, and 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.

Uncertainty Measurement:

The measurement uncertainty (30MHz-1000MHz) is 4.09 dB (k=2).

The measurement uncertainty (1000MHz-6000MHz) is 4.84 dB (k=2).

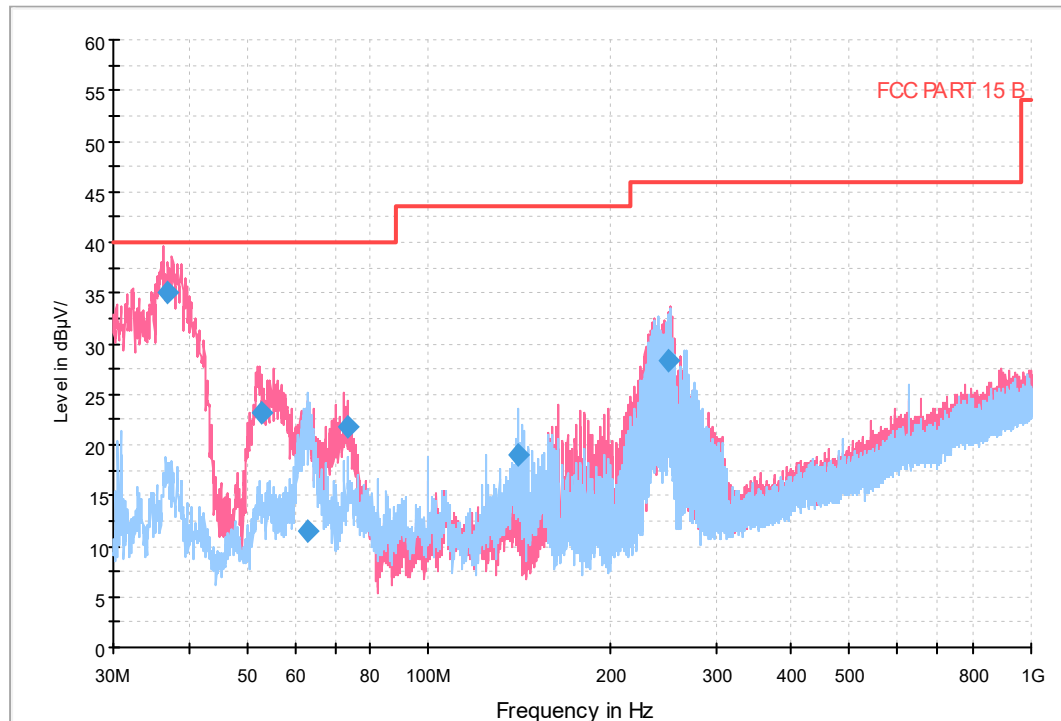
The measurement uncertainty (6000MHz-18000MHz) is 4.52 dB (k=2).

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Test Data

RE 30MHz-1GHz



Final_Result

RE 30MHz-1GHz

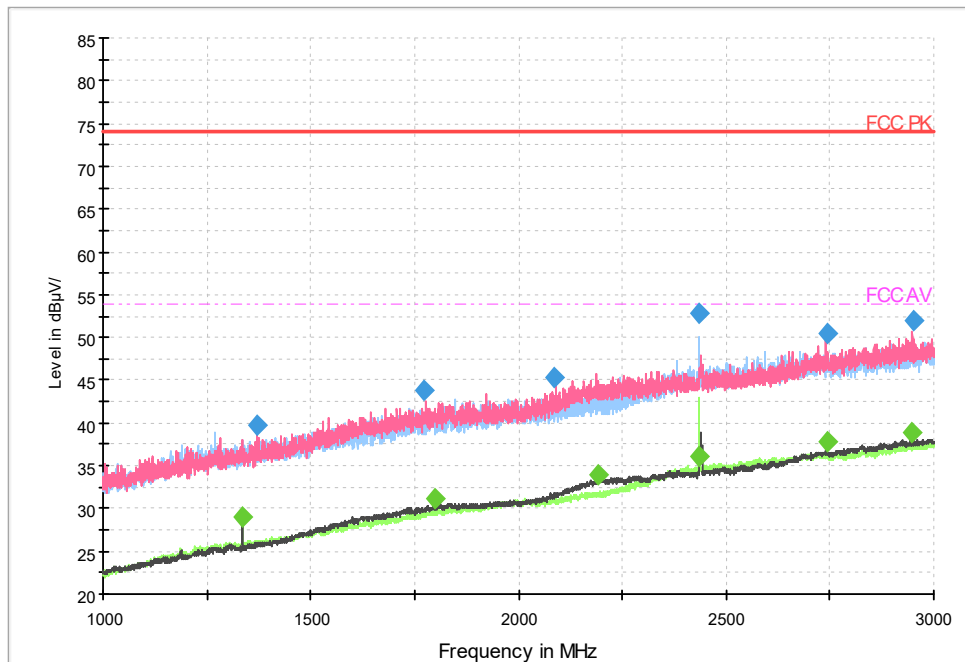
Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
36.905000	35.0	40.0	5.0	5000.0	120.000	100.0	V	96.0
52.704000	23.1	40.0	16.9	5000.0	120.000	100.0	V	170.0
63.077000	11.5	40.0	28.5	5000.0	120.000	385.0	H	260.0
73.359000	21.9	40.0	18.1	5000.0	120.000	185.0	V	280.0
140.725500	19.0	43.5	24.5	5000.0	120.000	116.0	H	100.0
249.317000	28.3	46.0	17.7	5000.0	120.000	185.0	V	260.0

Note: Both H polarization and V polarization are tested. The figure shows the blue value of H polarization and the red value of V polarization synthesis

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RE 1GHz-3GHz



Final_Result 1

RE 1GHz-3GHz

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
1370.600000	39.7	74.0	34.3	1500.0	1000.000	100.0	V	105.0
1771.800000	43.9	74.0	30.1	1500.0	1000.000	100.0	V	285.0
2088.200000	45.4	74.0	28.6	1500.0	1000.000	100.0	V	285.0
2434.400000	52.8	74.0	21.2	1500.0	1000.000	100.0	H	273.0
2742.200000	50.6	74.0	23.4	1500.0	1000.000	100.0	V	285.0
2950.200000	52.0	74.0	22.0	1500.0	1000.000	100.0	V	95.0

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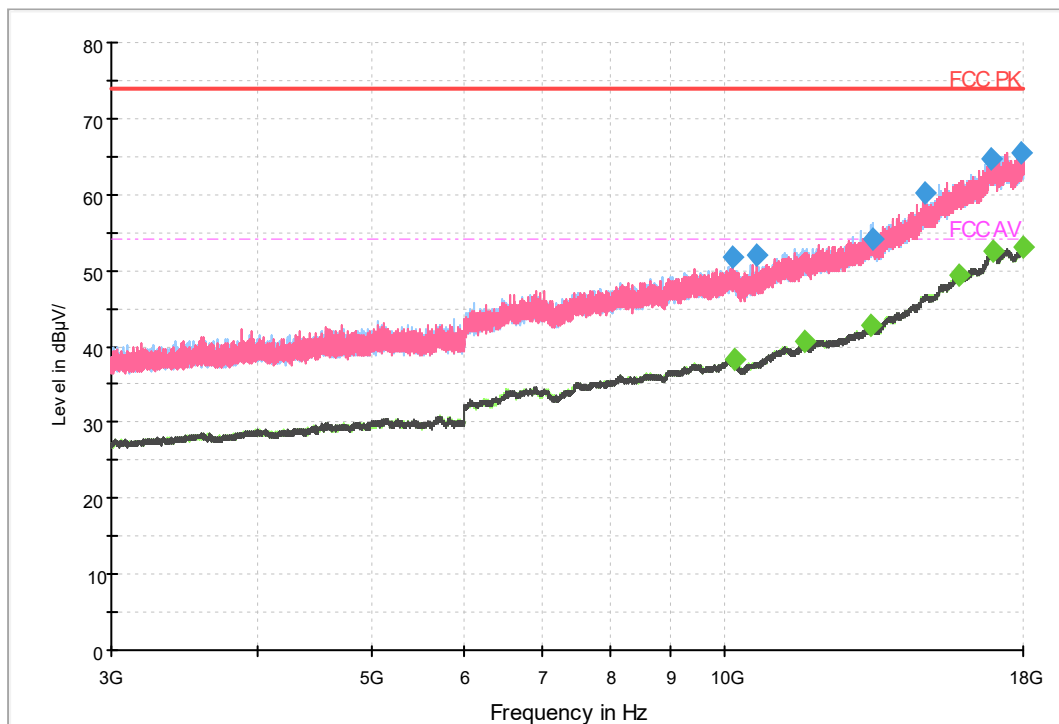
Final_Result 2

RE 1GHz-3GHz

Frequency (MHz)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
1336.400000	28.9	54.0	25.1	1500.0	1000.000	101.0	H	285.0
1800.000000	31.2	54.0	22.8	1500.0	1000.000	101.0	V	285.0
2190.600000	33.9	54.0	20.1	1500.0	1000.000	101.0	V	285.0
2434.400000	36.2	54.0	17.8	1500.0	1000.000	101.0	H	285.0
2743.800000	37.8	54.0	16.2	1500.0	1000.000	101.0	V	15.0
2945.800000	38.8	54.0	15.2	1500.0	1000.000	101.0	V	165.0

Note: Both H polarization and V polarization are tested. The figure shows the blue value of H polarization and the red value of V polarization synthesis

RE 3GHz-18GHz



RE 3GHz-18GHz

Final_Result 1

RE 3GHz-18GHz

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
10174.875000	51.7	74.0	22.3	1500.0	1000.000	100.0	V	0.0
10670.325000	51.9	74.0	23.1	1500.0	1000.000	100.0	V	90.0
13380.525000	54.2	74.0	21.8	1500.0	1000.000	100.0	H	180.0
14819.550000	60.1	74.0	16.9	1500.0	1000.000	100.0	H	0.0
16885.425000	64.7	74.0	13.3	1500.0	1000.000	100.0	H	0.0
17960.625000	65.5	74.0	13.5	1500.0	1000.000	100.0	V	270.0

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Final_Result 2

RE 3GHz-18GHz

Frequency (MHz)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
10205.925000	37.6	54.0	16.4	1500.0	1000.000	100.0	H	0.0
11717.250000	37.4	54.0	16.6	1500.0	1000.000	100.0	H	180.0
13347.450000	42.4	54.0	11.6	1500.0	1000.000	100.0	H	180.0
15879.000000	46.0	54.0	8.0	1500.0	1000.000	100.0	V	0.0
16977.825000	51.9	54.0	2.1	1500.0	1000.000	100.0	V	180.0
17971.125000	52.6	54.0	1.4	1500.0	1000.000	100.0	H	180.0

Note: Both H polarization and V polarization are tested. The figure shows the blue value of H polarization and the red value of V polarization synthesis

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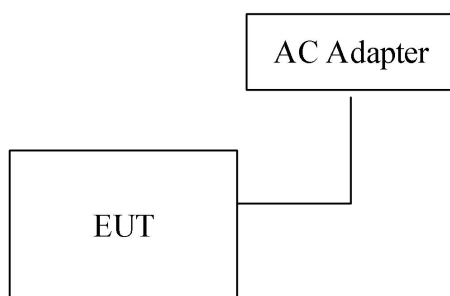
7.2. Conducted Emission

Specifications:	15.107
Date of Tests	2022-03-13
Test conditions:	Ambient Temperature:24.1℃ Relative Humidity:60.0% Air pressure: 98.1kPa
Operation Mode	Normal
Test Results:	Pass
Note: Both EUT have been tested , and the data only reflect the worst case.	

Limit Level Construction:

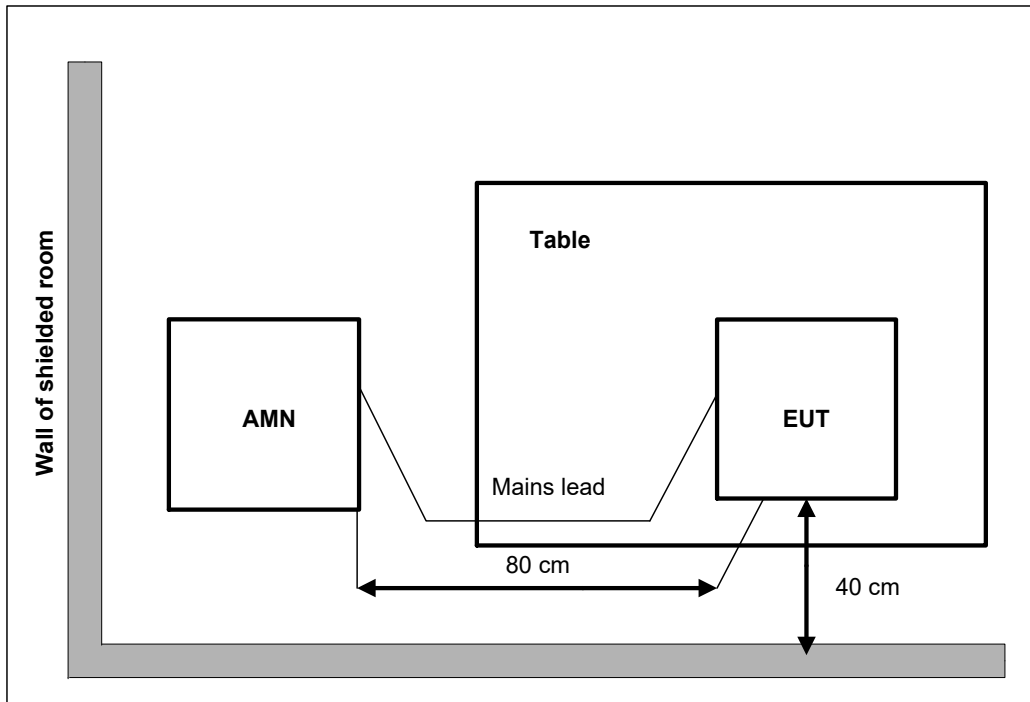
Frequency Range (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50
*Decreases with the logarithm of the frequency		

EUT Setup:



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Test Method:

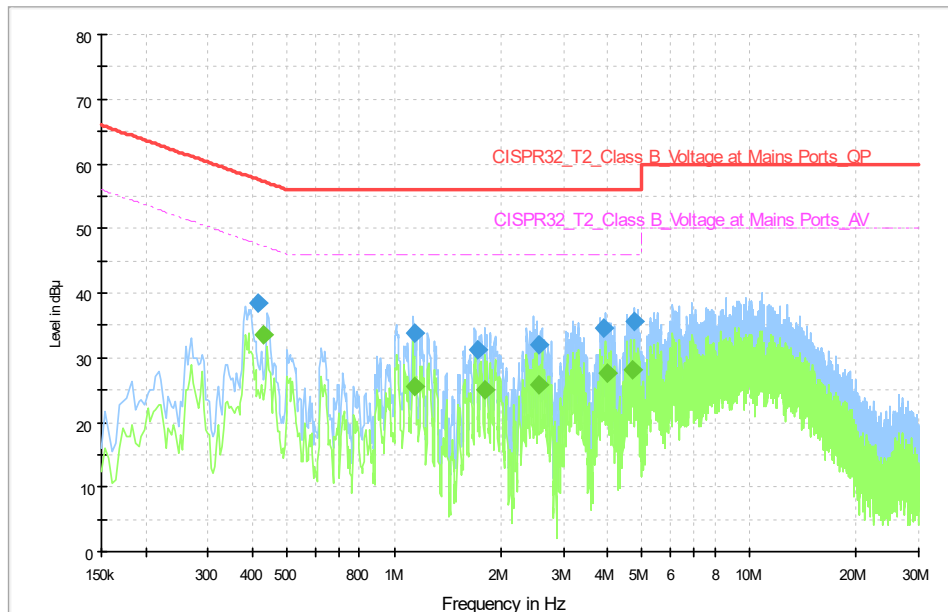
For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies with the band 150 kHz to 30MHz shall not exceed the limits. Both lines of the power mains connected to the EUT were checked for maximum conducted interference. Tested in accordance with the procedures of ANSI C63.4-2014, section 7.3

Uncertainty Measurement:

The measurement uncertainty is 1.83 dB (k=2).

Test Data

CISPR N&L1 Voltage 150k to 30MHz-Class B



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.415038	38.5	1000.0	9.000	On	L1	9.8	19.0	57.5
1.137319	33.8	1000.0	9.000	On	L1	9.8	22.2	56.0
1.728675	31.2	1000.0	9.000	On	L1	9.8	24.8	56.0
2.560569	32.1	1000.0	9.000	On	L1	9.9	23.9	56.0
3.895756	34.5	1000.0	9.000	On	L1	9.9	21.5	56.0
4.727556	35.6	1000.0	9.000	On	L1	9.9	20.4	56.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.431038	33.6	1000.0	9.000	On	L1	9.8	13.6	47.2
1.145588	25.6	1000.0	9.000	On	L1	9.8	20.4	46.0
1.804406	25.0	1000.0	9.000	On	L1	9.8	21.0	46.0
2.547762	25.8	1000.0	9.000	On	L1	9.9	20.2	46.0
3.995219	27.5	1000.0	9.000	On	L1	9.9	18.5	46.0
4.683556	28.3	1000.0	9.000	On	L1	9.9	17.7	46.0

Note: Both L line and N line are tested. The figure shows the maximum value of L line and N line synthesis.

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ANNEX A EUT Photos

See the document "I22W00018-External Photos".

See the document "I22W00018-Internal Photos".

Test photo See the document "I22W00018_EMC Test Setup Photos".

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ANNEX B Deviations from Prescribed Test Methods

No deviation from Prescribed Test Methods.

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