



# TEST REPORT

REPORT NUMBER: I22W00013-EMC-Rev1

ON

**Type of Equipment:** Wireless Module  
**Type of Designation:** SIM7500A-H  
**Brand Name:** SIMCom  
**Manufacturer:** SIMCom Wireless Solutions Limited  
**FCC ID:** 2AJYU-8PYA00B

ACCORDING TO

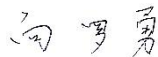
Subpart B, PART 15, RADIO FREQUENCY DEVICES

**Chongqing Academy of Information and Communications Technology**

*Month date, year*

Mar 10, 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.: I22W00013-EMC-Rev1**

**Revision Version**

| <b>Report Number</b> | <b>Revision</b> | <b>Date</b> | <b>Memo</b>                     |
|----------------------|-----------------|-------------|---------------------------------|
| I22W00013-EMC        | 00              | 2022-02-24  | Initial creation of test report |
| I22W00013-EMC-Rev1   | 1               | 2022-03-10  | --                              |

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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: | 19.4-22.3°C |
| Relative Humidity:  | 42.0-56.0%  |

### 1.3. Project data

|                     |           |
|---------------------|-----------|
| Testing Start Date: | 2022-2-14 |
| Testing End Date:   | 2022-2-16 |

### 1.4. Signature



2022-3-10

**Li Quan**  
(Prepared this test report)

**Date**

2022-3-10

**Xiao Yu**  
(Reviewed this test report)

**Date**

2022-3-10

**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:  | Building 3, No. 289, Linhong Road, Changning District, Shanghai,<br>P.R.China |
| City:           | Shanghai                                                                      |
| Country:        | China                                                                         |
| Telephone:      | 15902149520                                                                   |
| Fax:            | --                                                                            |
| Email:          | yue.hai@simcom.com                                                            |
| Contact Person: | Haiyue                                                                        |

### 2.2. Manufacturer Information

|                 |                                                                               |
|-----------------|-------------------------------------------------------------------------------|
| Company Name:   | SIMCom Wireless Solutions Limited                                             |
| Address /Post:  | Building 3, No. 289, Linhong Road, Changning District, Shanghai,<br>P.R.China |
| City:           | Shanghai                                                                      |
| Country:        | China                                                                         |
| Telephone:      | 15902149520                                                                   |
| Fax:            | --                                                                            |
| Email:          | yue.hai@simcom.com                                                            |
| Contact Person: | Haiyue                                                                        |

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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         | SIM7500A-H                        |
| Brand name         | SIMCom                            |
| LTE Frequency Band | 2/4/12                            |

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     | 867806060000009 | V2.01      | B05V01     | 2022-2-11       |

\*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 | March 05, 2018 |

## 5. Test Equipments Utilized

| No. | Equipment                                 | Model             | SN     | HW Version | SW Version | Manufacture | Cal.Due Date |
|-----|-------------------------------------------|-------------------|--------|------------|------------|-------------|--------------|
| 1   | Test Receiver                             | ESU26             | 100367 | --         | 5.1-24-3   | R&S         | 2022-06-11   |
| 2   | Test Receiver                             | ESCI<br>9KHz-3GHz | 101214 | --         | 5.1-24-3   | R&S         | 2022-06-11   |
| 3   | Ultra-wideband<br>Log Periodic<br>Antenna | VULB 9163         | 01392  | --         | --         | Schwarzbeck | 2023-03-04   |
| 4   | Double Ridged<br>Guide Antenna            | HF907             | 100357 | --         | --         | R&S         | 2023-02-10   |
| 5   | Artificial Main<br>Network                | ENV 216           | 101128 | --         | --         | R&S         | 2022-06-11   |

### Test software

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



## 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

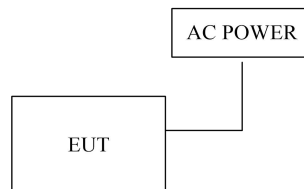
|                         |                                                                                                      |
|-------------------------|------------------------------------------------------------------------------------------------------|
| <b>Specifications:</b>  | 15.109                                                                                               |
| <b>Date of Tests</b>    | 2022-02-14—2022-02-16                                                                                |
| <b>Test conditions:</b> | Ambient Temperature:19.3℃-21.0℃<br>Relative Humidity:55.0%RH-57.0%RH<br>Air pressure:98.5kPa-99.1kPa |
| <b>Operation Mode</b>   | Normal                                                                                               |
| <b>Test Results:</b>    | 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                  |

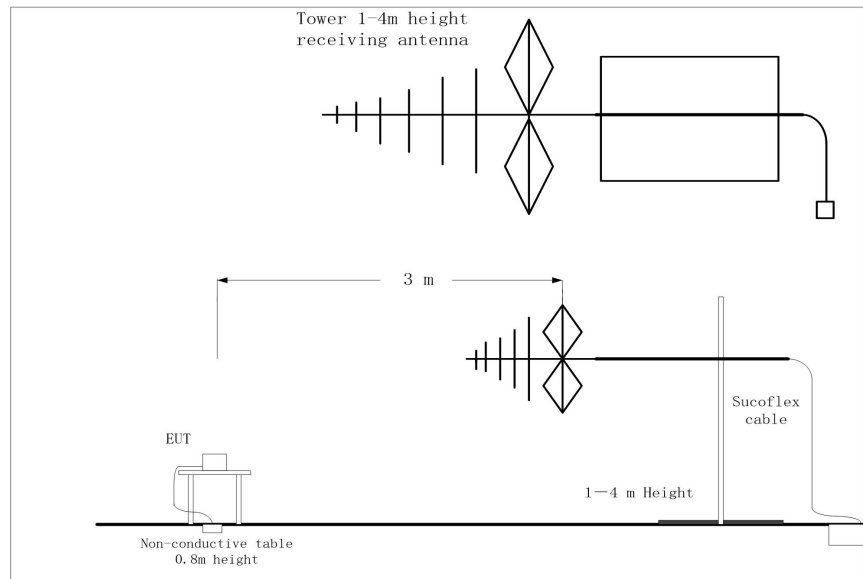
| Frequency Range (MHz) | Peak (dBuV/m) | Average (dBuV/m) |
|-----------------------|---------------|------------------|
| Above 1000            | 74            | 54               |

#### EUT Setup:

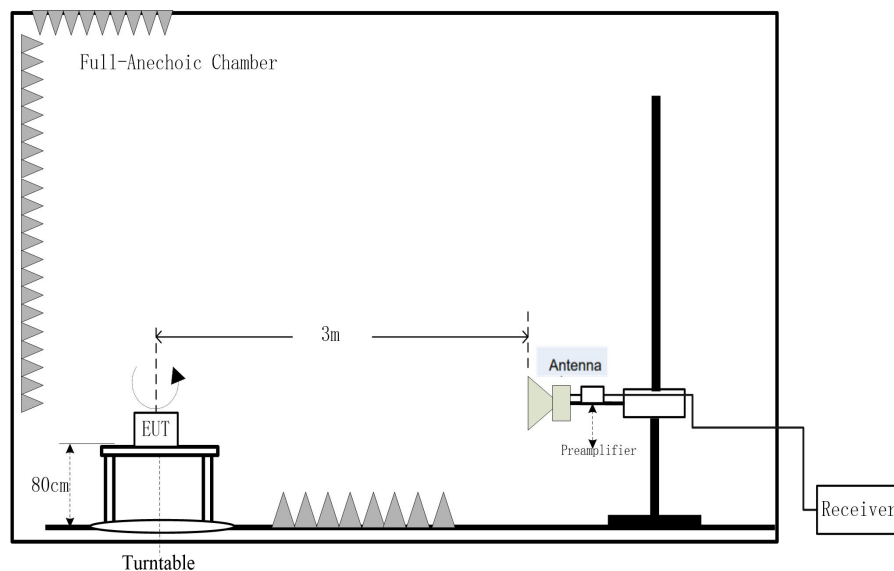


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30MHz-1GHz



1GHz-18GHz

#### 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.

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**Uncertainty Measurement:**

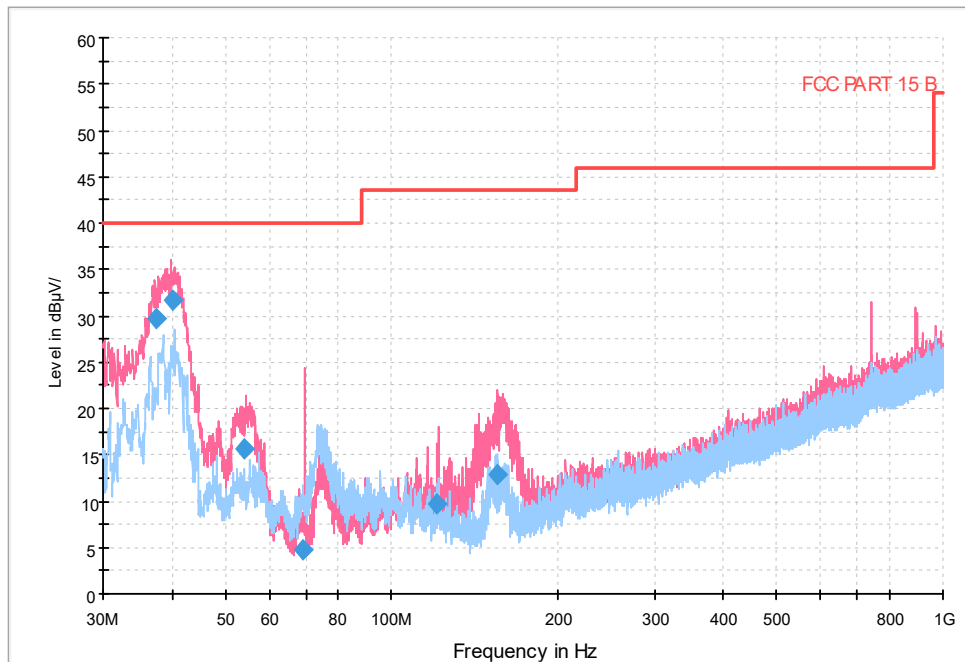
The measurement uncertainty (30MHz-1000MHz) is 5.20 dB (k=2).

The measurement uncertainty (1000MHz-6000MHz) is 4.70 dB (k=2).

The measurement uncertainty (6000MHz-18000MHz) is 4.79 dB (k=2).

**Test Data**

RE 30MHz-1GHz


**Final\_Result**

RE 30MHz-1GHz

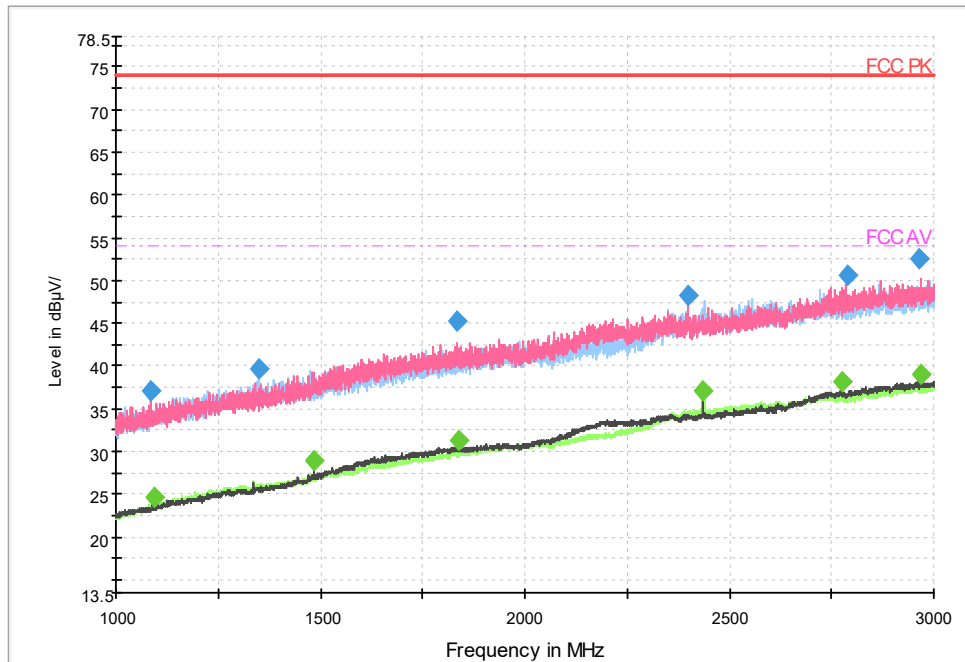
| Frequency<br>(MHz) | QuasiPeak<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Meas.<br>Time | Bandwidth<br>(kHz) | Height<br>(cm) | Pol | Azimuth<br>(deg) |
|--------------------|-----------------------|-------------------|----------------|---------------|--------------------|----------------|-----|------------------|
| 37.338500          | 29.6                  | 40.0              | 10.4           | 1000.0        | 120.000            | 100.0          | V   | 80.0             |
| 40.248500          | 31.6                  | 40.0              | 8.4            | 1000.0        | 120.000            | 100.0          | V   | 280.0            |
| 53.941000          | 15.7                  | 40.0              | 24.3           | 1000.0        | 120.000            | 100.0          | V   | 100.0            |
| 69.127500          | 4.7                   | 40.0              | 35.3           | 1000.0        | 120.000            | 10.0           | V   | 80.0             |
| 121.322500         | 9.8                   | 43.5              | 33.7           | 1000.0        | 120.000            | 200.0          | V   | 260.0            |
| 155.118000         | 13.0                  | 43.5              | 30.5           | 1000.0        | 120.000            | 100.0          | V   | 80.0             |

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

RE 1GHz-3GHz

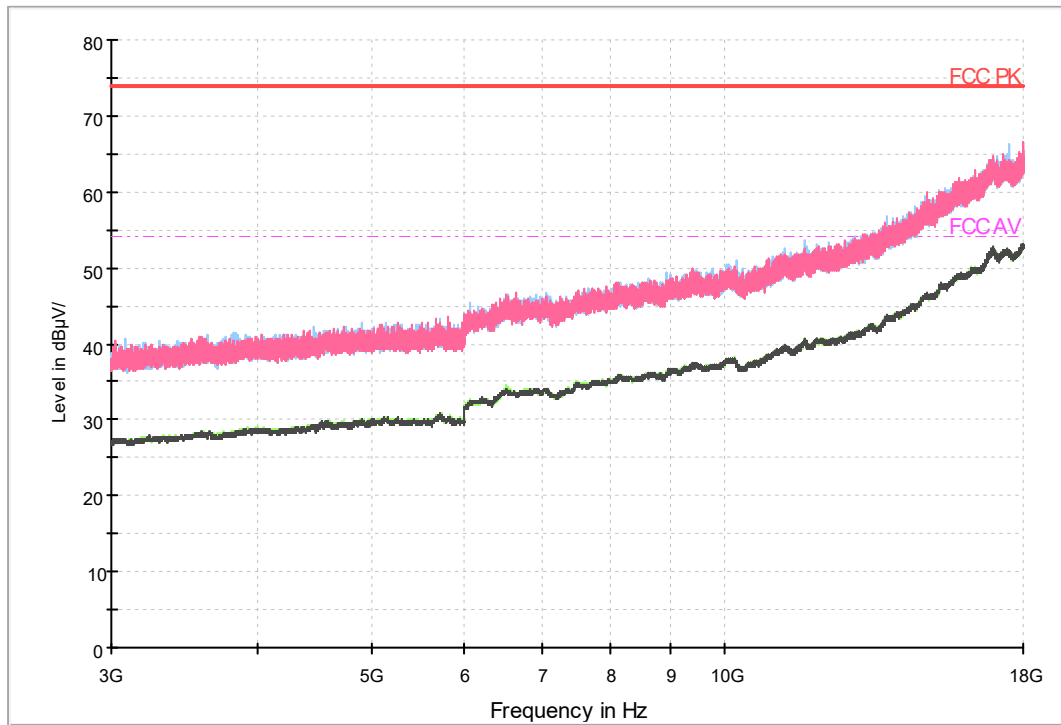
| Frequency (MHz) | QuasiPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) |
|-----------------|--------------------|----------------|-------------|------------|-----------------|-------------|-----|---------------|
| 1085.600000     | 37.2               | 74.0           | 36.8        | 1500.0     | 1000.000        | 100.0       | V   | 83.0          |
| 1349.600000     | 39.8               | 74.0           | 34.2        | 1500.0     | 1000.000        | 100.0       | H   | 105.0         |
| 1835.400000     | 45.2               | 74.0           | 28.8        | 1500.0     | 1000.000        | 100.0       | V   | 285.0         |
| 2399.600000     | 48.3               | 74.0           | 25.7        | 1500.0     | 1000.000        | 100.0       | V   | 83.0          |
| 2787.000000     | 50.7               | 74.0           | 23.3        | 1500.0     | 1000.000        | 100.0       | V   | 15.0          |
| 2962.200000     | 52.5               | 74.0           | 21.5        | 1500.0     | 1000.000        | 100.0       | V   | 263.0         |

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 3GHz-18GHz



RE 3GHz-18GHz

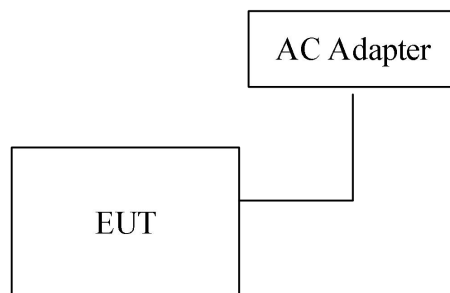
## 7.2. Conducted Emission

|                                                                             |                                                                               |
|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| <b>Specifications:</b>                                                      | 15.107                                                                        |
| <b>Date of Tests</b>                                                        | 2022-02-14                                                                    |
| <b>Test conditions:</b>                                                     | Ambient Temperature:22.9℃<br>Relative Humidity:36.0%<br>Air pressure: 99.1kPa |
| <b>Operation Mode</b>                                                       | Normal                                                                        |
| <b>Test Results:</b>                                                        | Pass                                                                          |
| Note: Both EUT have been tested , and the data only reflect the worst case. |                                                                               |

### Limit Level Construction:

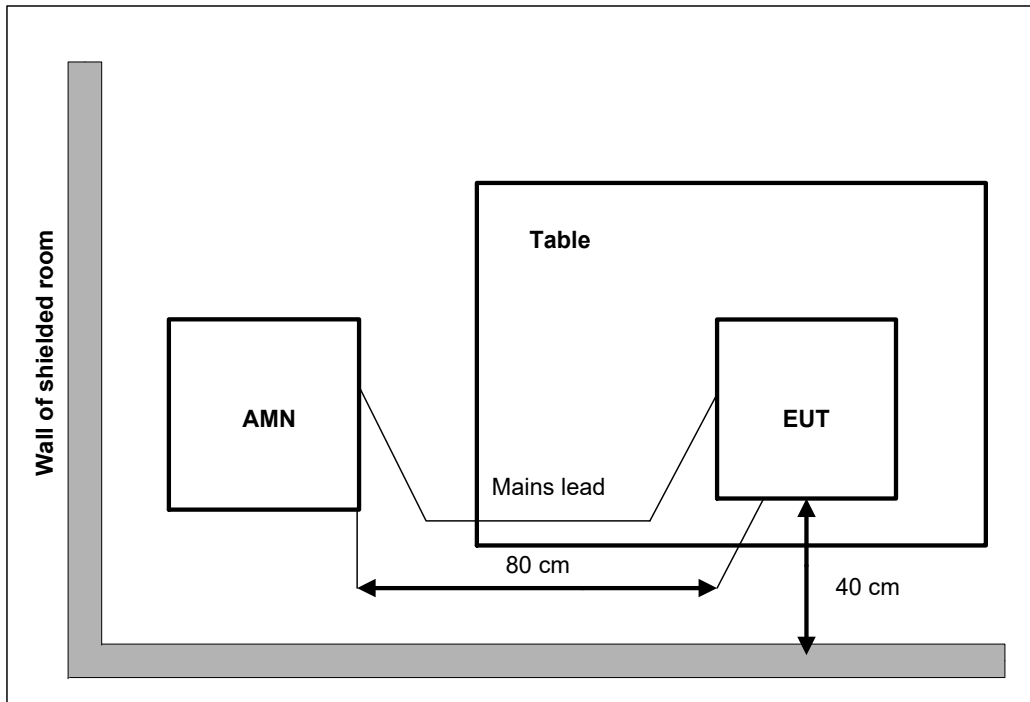
| Frequency Range (MHz)                          | Conducted Limit (dBuV) |           |
|------------------------------------------------|------------------------|-----------|
|                                                | Quasi-peak             | Average   |
| 0.15-0.5                                       | 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

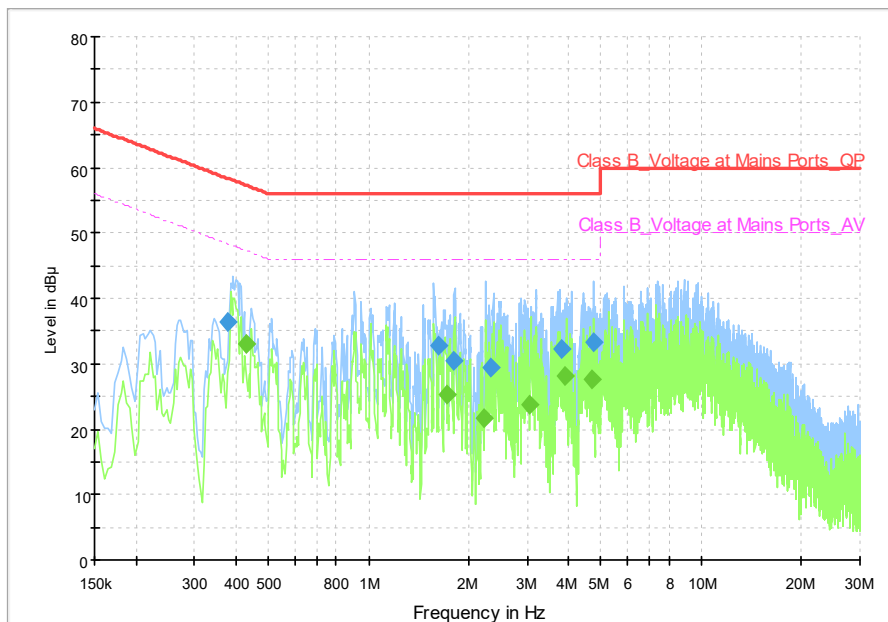
**Uncertainty Measurement:**

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) |
|-----------------|------------------|------------|-----------------|--------|------|------------|-------------|--------------|
| 0.378531        | 36.4             | 1000.0     | 9.000           | On     | L1   | 9.8        | 21.9        | 58.3         |
| 1.629606        | 32.8             | 1000.0     | 9.000           | On     | N    | 9.8        | 23.2        | 56.0         |
| 1.808138        | 30.5             | 1000.0     | 9.000           | On     | L1   | 9.8        | 25.5        | 56.0         |
| 2.328694        | 29.5             | 1000.0     | 9.000           | On     | L1   | 9.9        | 26.5        | 56.0         |
| 3.784119        | 32.3             | 1000.0     | 9.000           | On     | N    | 9.9        | 23.7        | 56.0         |
| 4.735556        | 33.3             | 1000.0     | 9.000           | On     | N    | 9.9        | 22.7        | 56.0         |

## Final Result 2

| Frequency (MHz) | Average (dBμV) | Meas. Time (ms) | Bandwidth (kHz) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) |
|-----------------|----------------|-----------------|-----------------|--------|------|------------|-------------|--------------|
| 0.431069        | 33.0           | 1000.0          | 9.000           | On     | L1   | 9.8        | 14.2        | 47.2         |
| 1.724138        | 25.2           | 1000.0          | 9.000           | On     | L1   | 9.8        | 20.8        | 46.0         |
| 2.232962        | 21.6           | 1000.0          | 9.000           | On     | L1   | 9.9        | 24.4        | 46.0         |
| 3.045300        | 23.7           | 1000.0          | 9.000           | On     | L1   | 9.9        | 22.3        | 46.0         |
| 3.890681        | 28.2           | 1000.0          | 9.000           | On     | L1   | 9.9        | 17.8        | 46.0         |
| 4.675556        | 27.6           | 1000.0          | 9.000           | On     | L1   | 9.9        | 18.4        | 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 "I22W00013-External Photos".

See the document "I22W00013-Internal Photos".

Test photo See the document "I22W00013-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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