



TEST REPORT

REPORT NUMBER: I23W00013-EMC

ON

Type of Equipment: SIMCom Module
Type of Designation: SIM8262A-M2
Brand Name: SIMCom
Manufacturer: SIMCom Wireless Solutions Limited
FCC ID: 2AJYU-8XN0003

ACCORDING TO

Subpart B, PART 15, RADIO FREQUENCY DEVICES, ANSI C63.4-2014

Chongqing Academy of Information and Communications Technology

Month date, year

June 15, 2023

Signature

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.: I23W00013-EMC

Revision Version

Report Number	Revision	Date	Memo
I23W00013-EMC	00	2023-4-13	Initial creation of test report
I23W00013-EMC	01	2023-6-2	Update section 5&6.1 test report
I23W00013-EMC	02	2023-6-15	Update section 3.1&6.1&7.1 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:	No.19 East Road, Xiantao Big-data Valley, Yubei District, Chongqing, People's Republic of China
Postal Code:	401336
Telephone:	0086-23-88069965
Fax:	0086-23-88608777

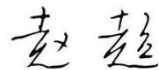
1.2. Testing Environment

Normal Temperature:	21.8-22.5°C
Relative Humidity:	43.7-44.3%

1.3. Project data

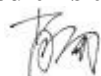
Testing Start Date:	2023-04-07
Testing End Date:	2023-04-10

1.4. Signature



2023-04-13

Zhao Chao
(Prepared this test report)

Date

2023-04-13

Xiao Yu
(Reviewed this test report)

Date

2023-04-13

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 21 3157 5100
Fax:	N/A
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 21 3157 5100
Fax:	N/A
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 Module
Model name	SIM8262A-M2
Brand name	SIMCom
Supported Radio Technology and Bands	WCDMA Band II/IV/V LTE Band 2/4/5/7/12/13/14/17/25/26/30/41/42/43/48/66/71 5G NR n2/n5/n7/n12/n13/n14/n25/n26/n30/n38/n41/n66/n71/n77/n78

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	866713060014140	V1.02	2212B03V03X62M44 A-M2	2023-04-07

*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	dB*
CA01	Adapter	P-050B-050200 EU
EA03	Auxiliary Board	S2-10B5L
EB10	Antenna	SW19073EB56
EB17	Antenna	SW19073EB56
EC18	RF Cable	N/A
EC20	RF Cable	N/A

AE ID: is used to identify the test sample in the lab internally. dB:
is provided customer.

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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 01, 2021
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 Equipments Utilized

No.	Equipment	Model	SN	HW Version	SW Version	Manufacture	Cal. Interval	Cal.Due Date
1	Universal Radio Communication Tester	CMW500	102105	--	--	R&S	1 year	2023-06-29
2	Test Receiver	ESR 3	101382	03	3.48 SP2	R&S	1 year	2024-01-28
3	Test Receiver	ESW 26	101382	00	1.50 SP1	R&S	1 year	2023-06-29
4	Ultra-wideband Log Periodic Antenna	VULB9163	9163-586	--	--	Schwarzbeck	2 years	2024-10-28
5	Double Ridged Guide Antenna	9120D	1083	--	--	Schwarzbeck	2 years	2024-12-14
6	2-Line V-Network	ENV216	102368	--	--	R&S	1 year	2023-04-29
7	Universal Radio Communication Tester	SP9500	19155	V1.0-328-1GFGF	R1.0.9.0 +SP1	StarPoint	1 year	2023-06-29
8	Test Receiver	ESU 40	100350	01	4.43 SP3	R&S	1 year	2023-06-29

Test software

No.	Name	version	SN	Manufacture
1	EMC32	V10.20.01	--	R&S
2	EMC32	V9.26.01	--	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	AC Conducted Emission	Pass

Note:
N/A means not applicable.
This project is to change the chip manufacturer which based on the report I22I30073-EMC01-V01 issued by 3in. A memory chip was replaced with the same model and specifications and the same performance. The purchasing manufacturers were different, and other hardware remained the same. The original memory model is NANYA 4+4. The new memory model is JSC 4+4. The original performance and functions of the module are not affected. We only test the worst case of Radiated Emission and AC Conducted Emission.
In the report, the test data of the worst mode of the sample S1 are recorded.

7. Test Results

7.1. Radiated Emission

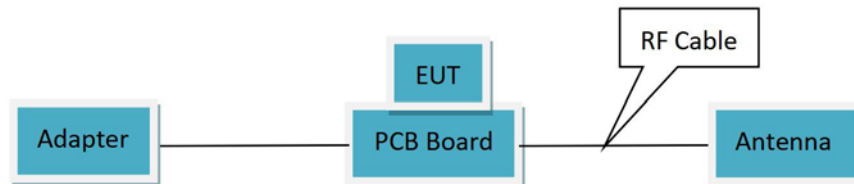
Specifications:	15.109
Date of Tests	2023-04-10
Test conditions:	Ambient Temperature:22.5°C Relative Humidity:44.3% Air pressure: 102.6kPa
Operation Mode	30MHz-18GHz frequency range: Mode 1: 5G NR NSA 2A-n66A receiver mode+ CA01 + EA03+ EB10+ EB17+ EC18+ EC20+ S1
Test Results:	Pass

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

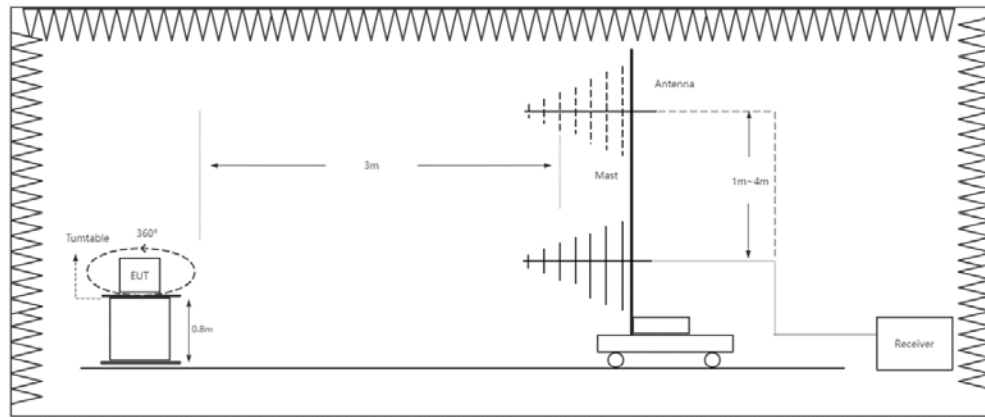
EUT Setup:



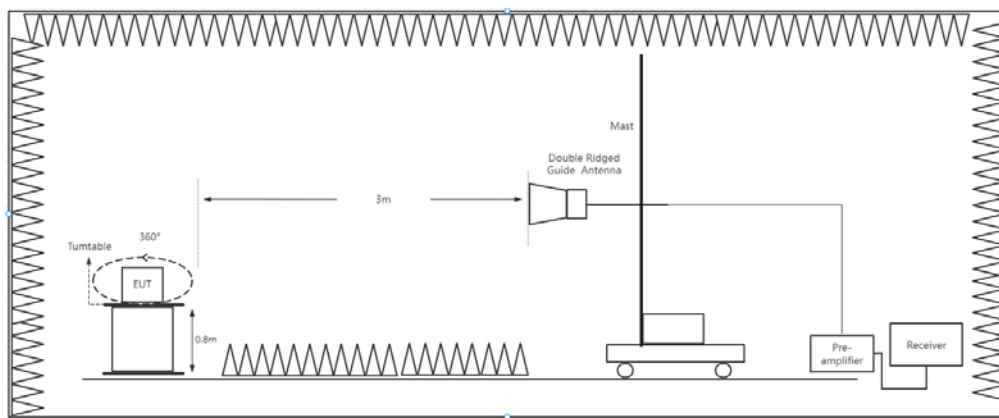
Mode 1

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RE 30MHz-1GHz Connection Diagram



RE Above 1GHz Connection Diagram

Test Method:

For 30-1000MHz, the EUT was placed on the top of a rotating 0.8-m 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 degrees to determine the maximum value of the field strength.

Test Result:

A “reference path loss” is established and Corr is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

The measurement results are obtained as described below:

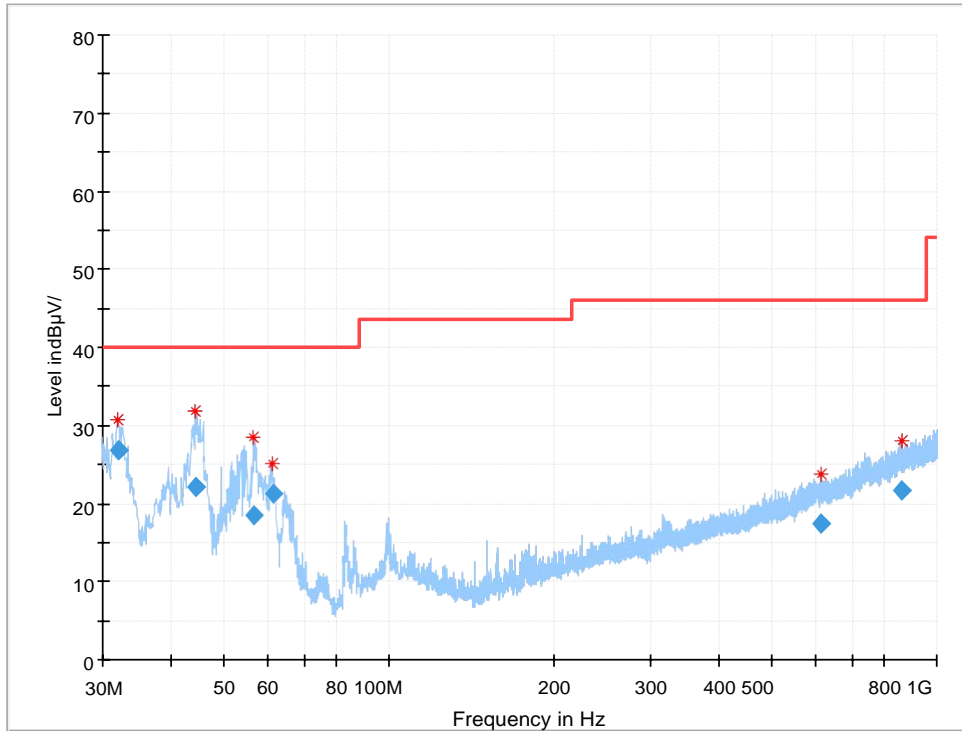
$$\text{Corr (dB/m)} = \text{Cable loss (dB)} + \text{Antenna Gain(dB/m)} - \text{Preamplifier gain (dB)}$$

$$\text{Result (dB}\mu\text{V/m)} = \text{PMea (dB}\mu\text{V)} + \text{Corr (dB/m)}$$

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Test Data



RE 30MHz-1GHz Mode 1

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
31.948120	26.85	40.00	13.15	5000	120.000	100.0	V	219.0	-15.1
44.270640	22.02	40.00	17.98	5000	120.000	100.0	V	231.0	-12.0
56.759960	18.52	40.00	21.48	5000	120.000	100.0	V	138.0	-12.4
61.392640	21.28	40.00	18.72	5000	120.000	100.0	V	128.0	-13.2
615.223080	17.51	46.00	28.49	5000	120.000	100.0	V	197.0	-3.1
860.915240	21.64	46.00	24.36	5000	120.000	100.0	V	0.0	1ws.0

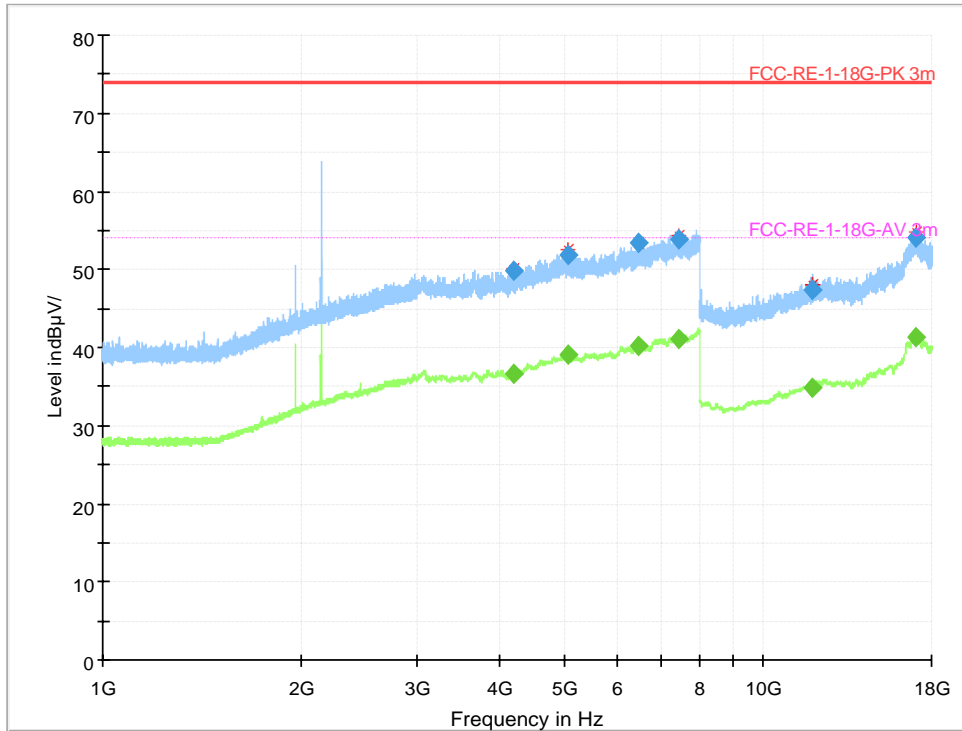
Corr.(dB)=Cable loss -Antenna Factor

Test result=Test receiver value-Corr.(dB)

Horizontal and vertical polarity is all have been tested, the result of them is synthesized in the above data diagram.

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RE 1GHz-18GHz Mode 1-H

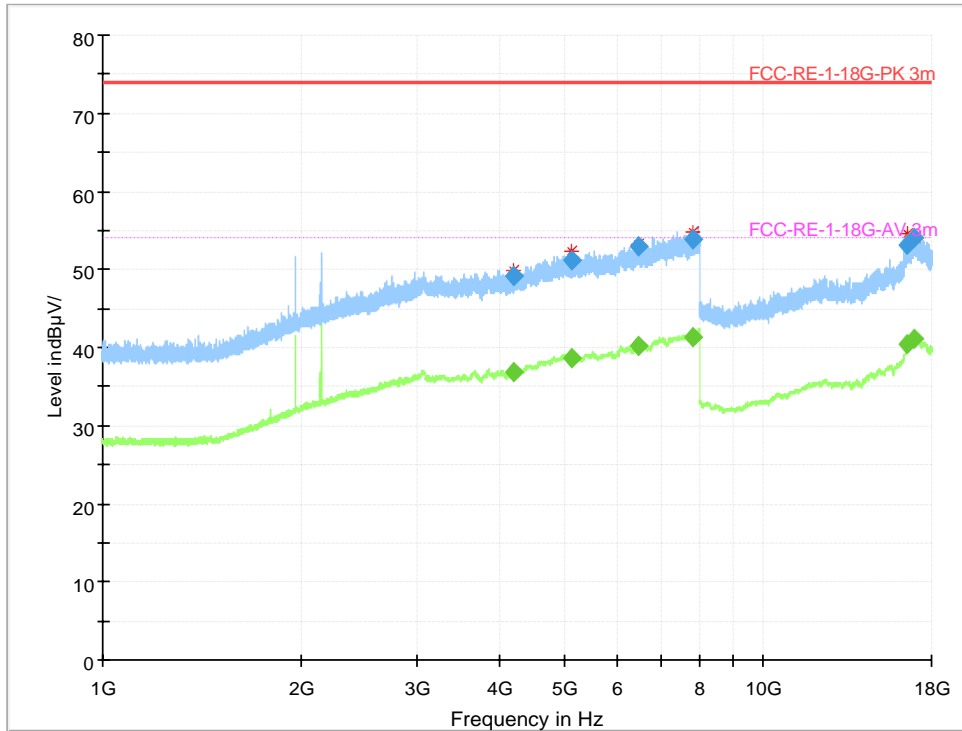
Final_Result 1

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4191.08000	---	36.70	54.00	17.30	500.0	1000.000	115.0	H	34.0	13.6
4191.08000	49.76	---	74.00	24.24	500.0	1000.000	115.0	H	34.0	13.6
5060.82500	---	39.11	54.00	14.89	500.0	1000.000	115.0	H	226.0	16.0
5060.82500	51.78	---	74.00	22.22	500.0	1000.000	115.0	H	226.0	16.0
6474.86000	53.36	---	74.00	20.64	500.0	1000.000	188.0	H	257.0	18.6
6474.86000	---	40.20	54.00	13.80	500.0	1000.000	188.0	H	257.0	18.6
7457.66000	53.78	---	74.00	20.22	500.0	1000.000	102.0	H	226.0	20.5
7457.66000	---	41.17	54.00	12.83	500.0	1000.000	102.0	H	226.0	20.5
11836.97750	47.47	---	74.00	26.53	500.0	1000.000	115.0	H	358.0	13.5
11836.97750	---	34.94	54.00	19.06	500.0	1000.000	115.0	H	358.0	13.5
17010.77625	54.08	---	74.00	19.92	500.0	1000.000	115.0	H	358.0	22.6
17010.77625	---	41.34	54.00	12.66	500.0	1000.000	115.0	H	358.0	22.6

Note: The frequency over the limits is the main signal frequency.

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RE 1GHz-18GHz Mode 1-V

Final_Result 2

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4190.14000	---	36.78	54.00	17.22	500.0	1000.000	115.0	V	257.0	13.6
4190.14000	49.24	---	74.00	24.76	500.0	1000.000	115.0	V	257.0	13.6
5126.33625	---	38.73	54.00	15.27	500.0	1000.000	115.0	V	192.0	16.1
5126.33625	51.19	---	74.00	22.81	500.0	1000.000	115.0	V	192.0	16.1
6479.48375	---	40.27	54.00	13.73	500.0	1000.000	103.0	V	322.0	18.6
6479.48375	52.91	---	74.00	21.09	500.0	1000.000	103.0	V	322.0	18.6
7837.38625	---	41.45	54.00	12.55	500.0	1000.000	188.0	V	298.0	20.9
7837.38625	53.81	---	74.00	20.19	500.0	1000.000	188.0	V	298.0	20.9
16481.10125	53.13	---	74.00	20.87	500.0	1000.000	115.0	V	118.0	21.6
16481.10125	---	40.52	54.00	13.48	500.0	1000.000	115.0	V	118.0	21.6
16947.83375	53.97	---	74.00	20.03	500.0	1000.000	100.0	V	243.0	22.5
16947.83375	---	41.21	54.00	12.79	500.0	1000.000	100.0	V	243.0	22.5

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7.2. Conducted Emission

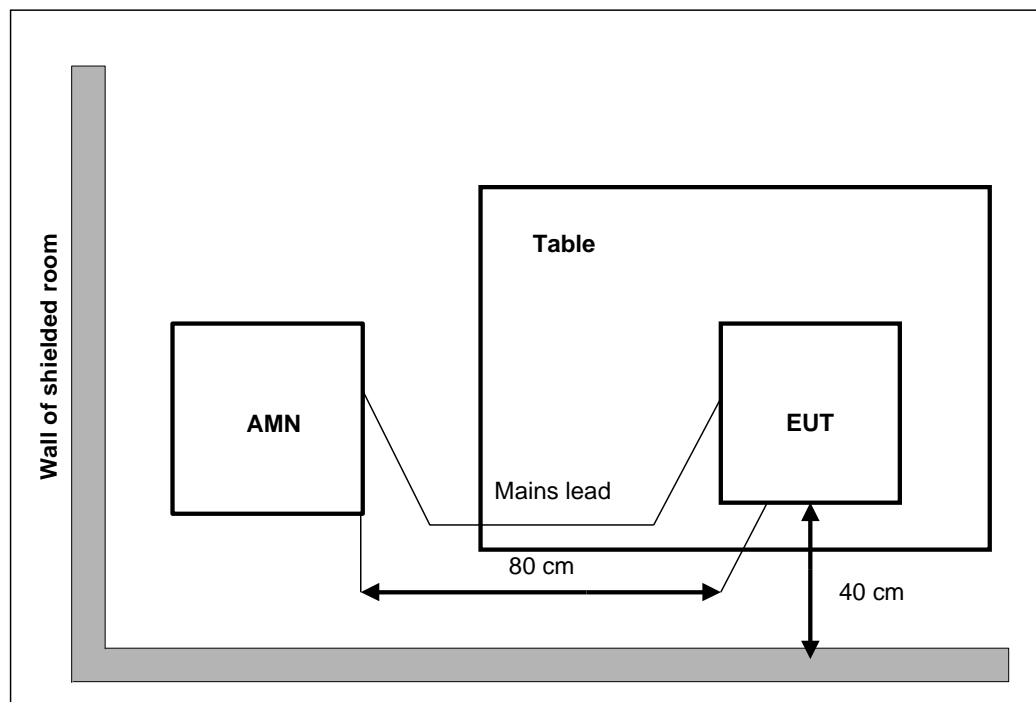
Specifications:	15.107
Date of Tests	2023-04-07
Test conditions:	Ambient Temperature:21.8°C Relative Humidity:43.7% Air pressure: 102.8kPa
Operation Mode	Mode 2: 5G NR NSA 5A-n78A receiver mode+ CA01 + EA03+ EB10+ EB17+ EC18+ EC20+ S1
Test Results:	Pass

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:



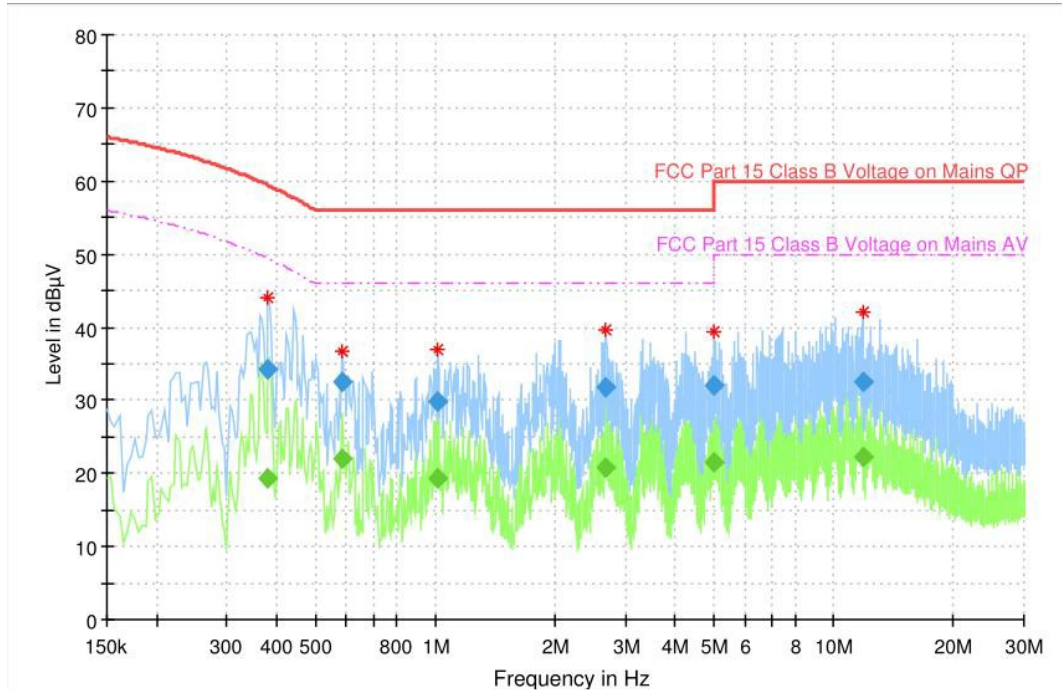
Test Method:

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.

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Test Data



CE 150kHz-30MHz Mode 2

Final Result

Frequency (MHz)	QuasiPeak (dB µ V)	Average (dB µ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.381338	---	19.25	15000	9.000	ON	N	10.5	30.14	49.39
0.381338	34.27	---	15000	9.000	ON	N	10.5	25.12	59.39
0.586556	---	21.99	15000	9.000	ON	N	10.5	24.01	46.00
0.586556	32.45	---	15000	9.000	ON	N	10.5	23.55	56.00
1.015650	---	19.31	15000	9.000	ON	N	10.5	26.69	46.00
1.015650	29.84	---	15000	9.000	ON	N	10.5	26.16	56.00
2.683519	---	20.91	15000	9.000	ON	N	10.7	25.09	46.00
2.683519	31.80	---	15000	9.000	ON	N	10.7	24.20	56.00
5.004356	---	21.63	15000	9.000	ON	N	10.9	28.37	50.00
5.004356	31.95	---	15000	9.000	ON	N	10.9	28.05	60.00
11.798963	---	22.21	15000	9.000	ON	N	12.1	27.79	50.00
11.798963	32.59	---	15000	9.000	ON	N	12.1	27.41	60.00

L1 and N is all have been tested, the result of them is synthesized in the above data diagram.

Emission level(quasi-peak or Average peak)(dB µ V)=Raw value by receiver(dB µ V) + Corr(Insertion loss+ cable loss) (dB)

The raw value is used to calculate by software which is not shown in the sheet.

Margin (dB) =limit value(dB µ V) – emission level(dB µ V).

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Annex A EUT Photos

See the document" I23W00013-External Photos".

See the document" I23W00013-Label Photos".

Test photo See the in document" I23W00013_EMCC Test Setup Photos".

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ANNEX B Deviations from Prescribed Test Methods

No deviation from Prescribed Test Methods.

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