

RF TEST REPORT

Applicant Sonitus Medical (Shanghai) Co., Ltd.

FCC ID 2AUH802

Product SoundBite Hearing System

Brand SoundBite Hearing System

Model G4

Report No. R2310A1148-R1V1

Issue Date January 17, 2024

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 15C (2023)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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| Version | Revision Description | Issue Date |
|---|--------------------------|------------------|
| Rev.0 | Initial issue of report. | January 5, 2024 |
| Rev.1 | Update information. | January 17, 2024 |
| Note: This revised report (Report No.: R2310A1148-R1V1) supersedes and replaces the previously issued report (Report No.: R2310A1148-R1). Please discard or destroy the previously issued report and dispose of it accordingly. | | |

Summary of Measurement Results

| Number | Test Case | Clause in FCC rules | Verdict |
|--------|-----------------------------------|---------------------|---------|
| 1 | 20 dB bandwidth | 15.215(c) | PASS |
| 2 | Radiated Emissions | 15.209, 15.205; | PASS |
| 3 | AC Power Line Conducted Emissions | 15.207 | NA |

Date of Testing: December 11, 2023 ~ December 19, 2023
Date of Sample Received: November 9, 2023
Note: NA = Not Applicable.
All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.

1 Test Laboratory

1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **TA Technology (Shanghai) Co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2 Test facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

A2LA (Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform measurement.

1.3 Testing Location

Company: TA Technology (Shanghai) Co., Ltd.
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E-mail: Kain.Xu@cpt.eurofinscn.com

2 General Description of Equipment under Test

2.1 Applicant and Manufacturer Information

| | |
|-----------------------------|--|
| Applicant | Sonitus Medical (Shanghai) Co., Ltd. |
| Applicant address | Floor 5, Bldg. 11, 500 Furonghua Rd, Pudong, Shanghai, 201318, China |
| Manufacturer | Sonitus Medical (Shanghai) Co., Ltd. |
| Manufacturer address | Floor 5, Bldg. 11, 500 Furonghua Rd, Pudong, Shanghai, 201318, China |

2.2 General information

| EUT Description | |
|--|--|
| Model | G4 |
| Lab Internal SN | R2310A1148/S01 |
| HW Version | V1 |
| SW Version | V1 |
| Power Supply | AC adapter |
| Antenna Type | Internal Antenna |
| Antenna Connector | A permanently attached antenna (meet with the standard FCC Part 15.203 requirement) |
| Frequency | 10.597 MHz |
| EUT Accessory | |
| Adapter | Manufacturer: Shenzhen Longxc Power Supply Co.LTD. Model:LXCP6-050100D |
| USB Cable | Manufacturer: DongGuan WIN WIN Precision Electronics Co.,Ltd. Model: USB-Type-C Connection line |
| Note: 1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant. | |

3 Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test standards:

FCC CFR47 Part 15C (2023) Radio Frequency Devices

ANSI C63.10 (2013)

4 Test Configuration

Test Mode

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in lie-down position (X axis) and the worst case was recorded.

5 Test Case Results

5.1 20 dB Bandwidth

Ambient condition

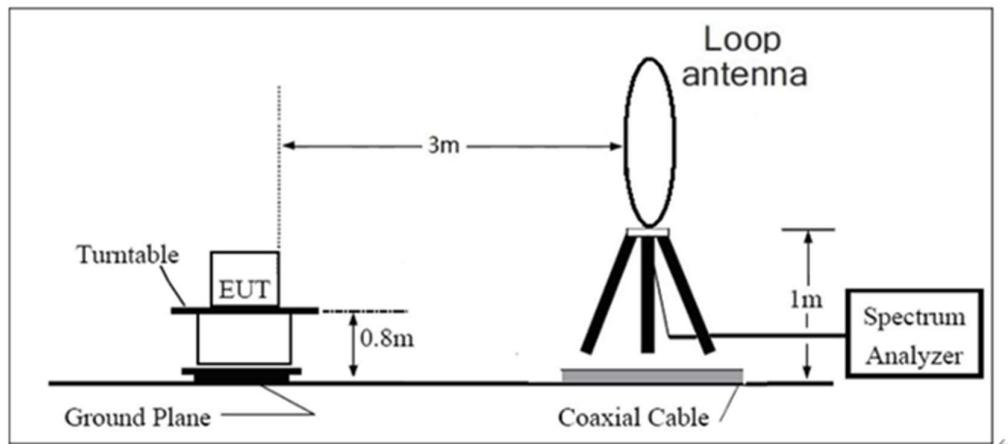
| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C | 45%~50% | 101.5kPa |

Method of Measurement

Tests are performed in accordance with ANSI C63.10-2013.

The 20 dB and 99% bandwidth of the fundamental frequency remain inside the band of operation of 10.597 MHz. The EUT was placed on a turn table which is 0.8m above ground plane. the EUT's 20dB Bandwidth power was received by the test antenna which was connected to the spectrum analyzer. The occupied bandwidth is measured using spectrum analyzer. The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the actual occupied / x dB bandwidth and the video bandwidth (VBW) shall not be smaller than three times the RBW value.

Test Setup



Limits

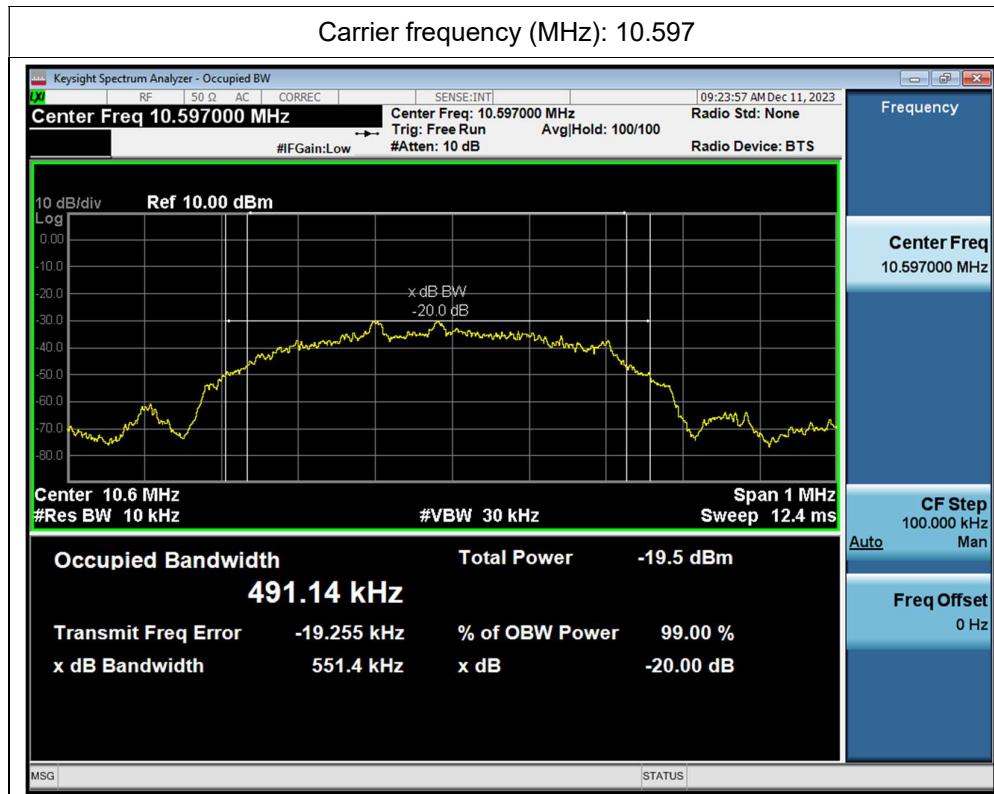
No specific occupied bandwidth requirements in part 15.215(c).

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$. $U = 1.19$ dB

Test Results

| Carrier frequency (MHz) | 99% bandwidth (kHz) | 20 dB bandwidth (kHz) | Conclusion |
|-------------------------|---------------------|-----------------------|------------|
| 10.597MHz | 491.140 | 551.400 | PASS |



5.2 Radiated Emissions

Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C | 45%~50% | 101.5kPa |

Method of Measurement

The test set-up was made in accordance to the general provisions of ANSI C63.10-2013. The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration.

Sweep the whole frequency band through the range from 9 kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

During the test, below 30MHz, the center of the loop shall be 1 meters; above 30MHz, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

Set the spectrum analyzer in the following:

Below 1GHz (detector: Peak and Quasi-Peak)

RBW=100kHz / VBW=300kHz / Sweep=AUTO

Above 1GHz(detector: Peak):

(a) PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO

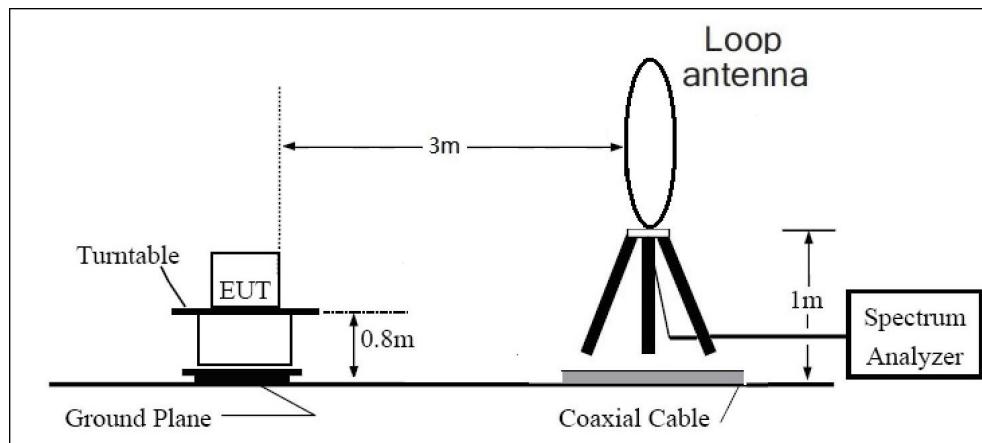
(b) AVERAGE: RBW=1MHz / VBW=3MHz / Sweep=AUTO

The radiated emission was measured in the following position: EUT lie-down position (X axis). The emission was recorded. Then this mode was measured in the following mode: EUT with cradle and EUT without cradle. The worst emission was found in EUT with cradle mode and the worst case was recorded.

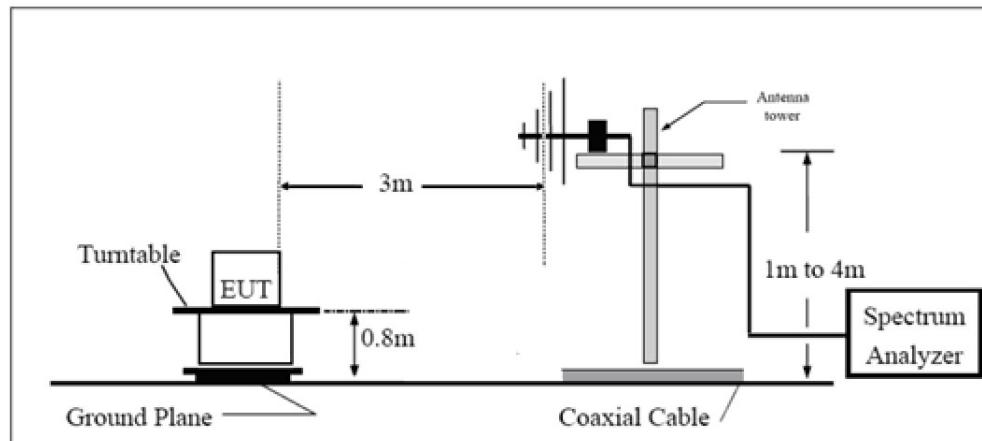
The test is in transmitting mode.

Test setup

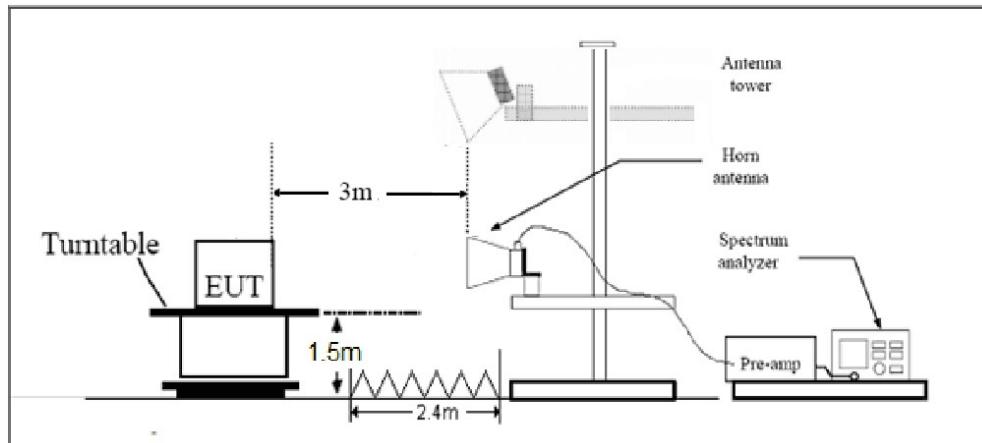
9kHz~~~ 30MHz



30MHz~~~ 1GHz



Above 1GHz



Limits

Unwanted spurious emissions fallen in restricted bands per FCC Part15.205 shall comply with the general field strength limits set forth in § 15.209 as below table.

Limit in radiated emission measurement (Part 15.209)

| Frequency of emission (MHz) | Field strength(μ V/m) | Field strength(dB μ V/m) |
|-----------------------------|----------------------------|------------------------------|
| 0.009–0.490 | 2400/F(kHz) | / |
| 0.490–1.705 | 24000/F(kHz) | / |
| 1.705–30.0 | 30 | / |
| 30-88 | 100 | 40 |
| 88-216 | 150 | 43.5 |
| 216-960 | 200 | 46 |
| Above960-1000 | 500 | 54 |

§15.35(b)

There is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

Peak Limit=74 dB μ V/m

Average Limit=54 dB μ V/m

Spurious Radiated Emissions are permitted in any of the frequency bands listed below:

| MHz | MHz | MHz | GHz |
|--------------------------|---------------------|---------------|------------------|
| 0.090-0.110 | 16.42-16.423 | 399.9-410 | 4.5-5.15 |
| ¹ 0.495-0.505 | 16.69475-16.69525 | 608-614 | 5.35-5.46 |
| 2.1735-2.1905 | 16.80425-16.80475 | 960-1240 | 7.25-7.75 |
| 4.125-4.128 | 25.5-25.67 | 1300-1427 | 8.025-8.5 |
| 4.17725-4.17775 | 37.5-38.25 | 1435-1626.5 | 9.0-9.2 |
| 4.20725-4.20775 | 73-74.6 | 1645.5-1646.5 | 9.3-9.5 |
| 6.215-6.218 | 74.8-75.2 | 1660-1710 | 10.6-12.7 |
| 6.26775-6.26825 | 108-121.94 | 1718.8-1722.2 | 13.25-13.4 |
| 6.31175-6.31225 | 123-138 | 2200-2300 | 14.47-14.5 |
| 8.291-8.294 | 149.9-150.05 | 2310-2390 | 15.35-16.2 |
| 8.362-8.366 | 156.52475-156.52525 | 2483.5-2500 | 17.7-21.4 |
| 8.37625-8.38675 | 156.7-156.9 | 2690-2900 | 22.01-23.12 |
| 8.41425-8.41475 | 162.0125-167.17 | 3260-3267 | 23.6-24.0 |
| 12.29-12.293 | 167.72-173.2 | 3332-3339 | 31.2-31.8 |
| 12.51975-12.52025 | 240-285 | 3345.8-3358 | 36.43-36.5 |
| 12.57675-12.57725 | 322-335.4 | 3600-4400 | (²) |
| 13.36-13.41 | | | |

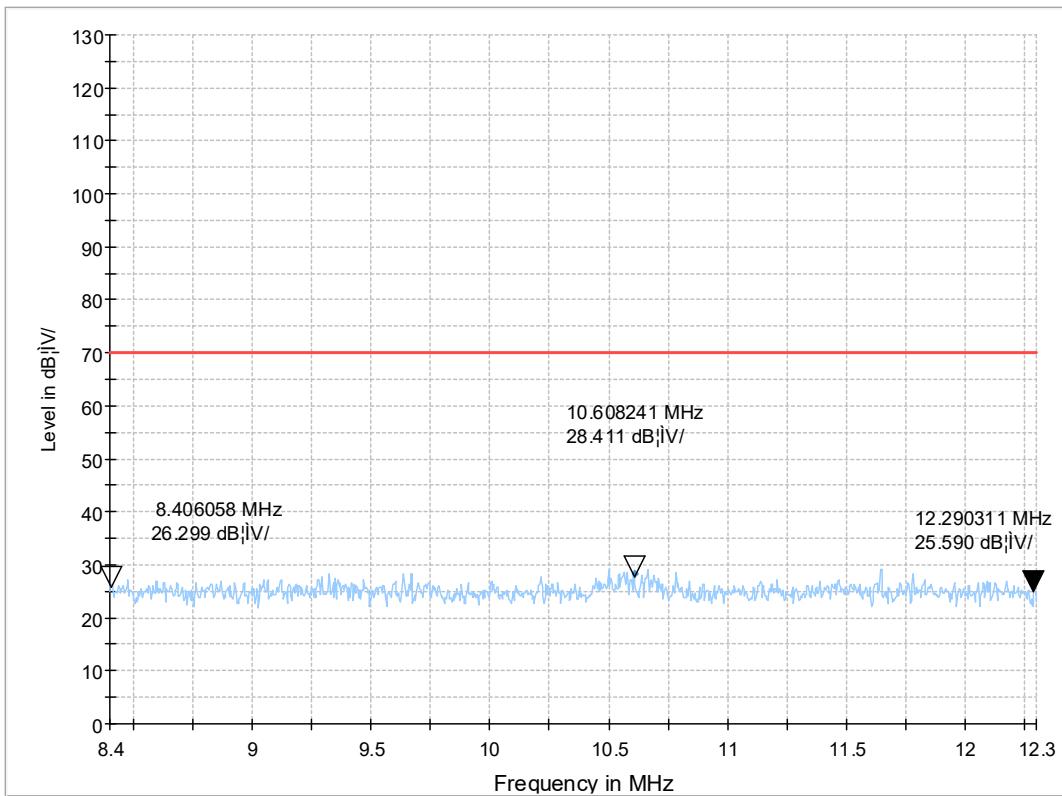
Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

| Frequency | Uncertainty |
|--------------|-------------|
| 9KHz-30MHz | 3.55 dB |
| 30MHz-200MHz | 4.02 dB |
| 200MHz-1GHz | 3.28 dB |
| Above 1GHz | 3.70 dB |

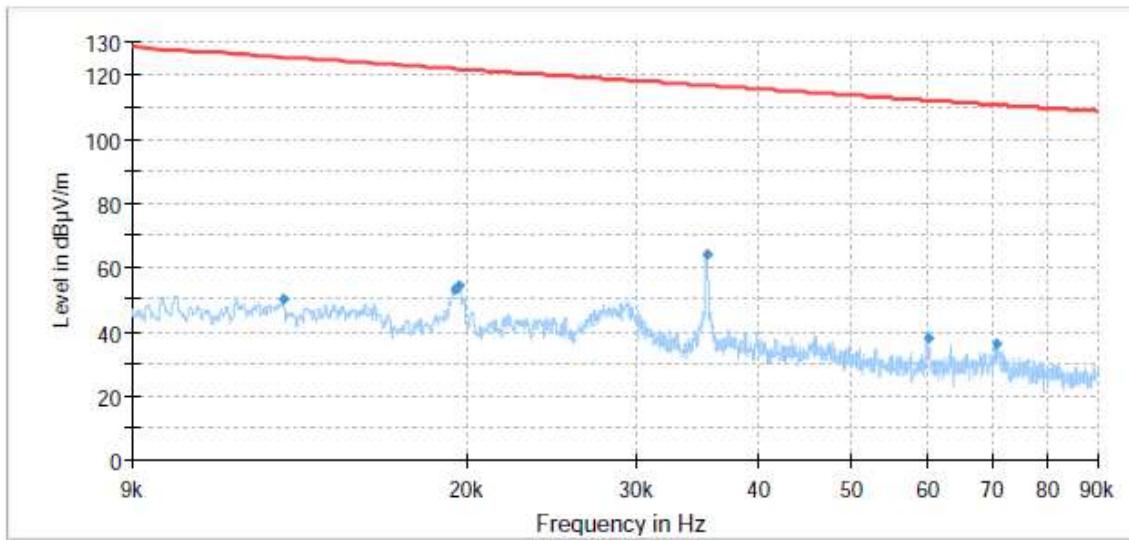
Test Results:**Band Edge Emission**

A symbol ($\text{dB}\mu\text{V}/$) in the test plot below means (dB μ V/m)



Radiates Emission from 8.4 MHz to 12.3 MHz

Radiated Emission



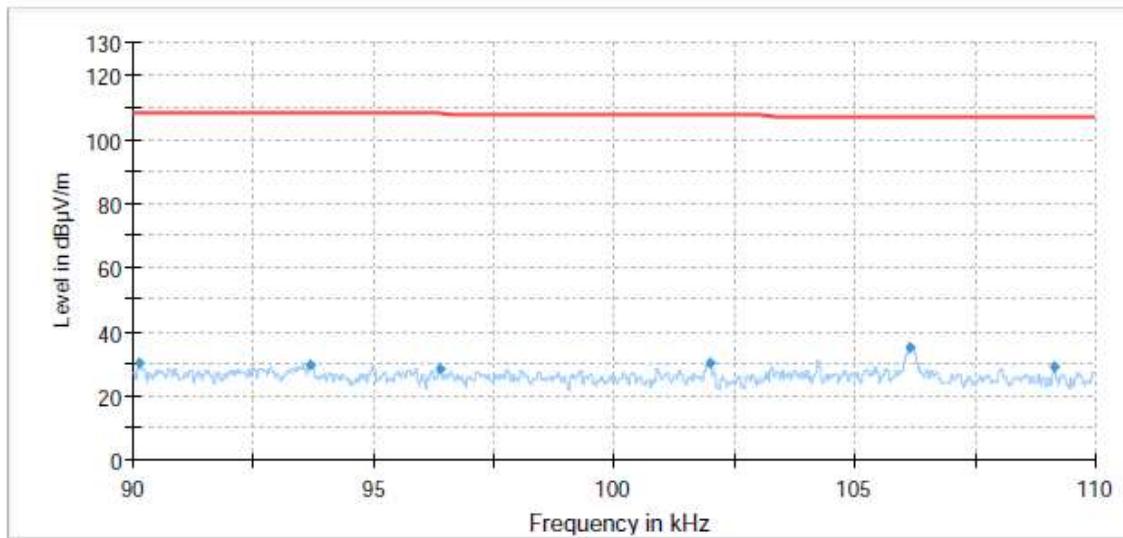
Note: The signal beyond the limit is carrier.

Radiated Emission from 9kHz to 90kHz

| Frequency (MHz) | Average (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Bandwidth (kHz) | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------------|----------------------|-------------|-----------------|---------------|--------------|
| 0.01 | 49.92 | 125.41 | 75.49 | 0.200 | 0.00 | 18 |
| 0.02 | 53.26 | 121.85 | 68.59 | 0.200 | 328.00 | 17 |
| 0.02 | 54.42 | 121.77 | 67.34 | 0.200 | 86.00 | 17 |
| 0.04 | 64.38 | 116.63 | 52.25 | 0.200 | 0.00 | 17 |
| 0.06 | 37.87 | 112.05 | 74.18 | 0.200 | 0.00 | 17 |
| 0.07 | 36.07 | 110.61 | 74.53 | 0.200 | 86.00 | 17 |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

2. Margin = Limit –Average



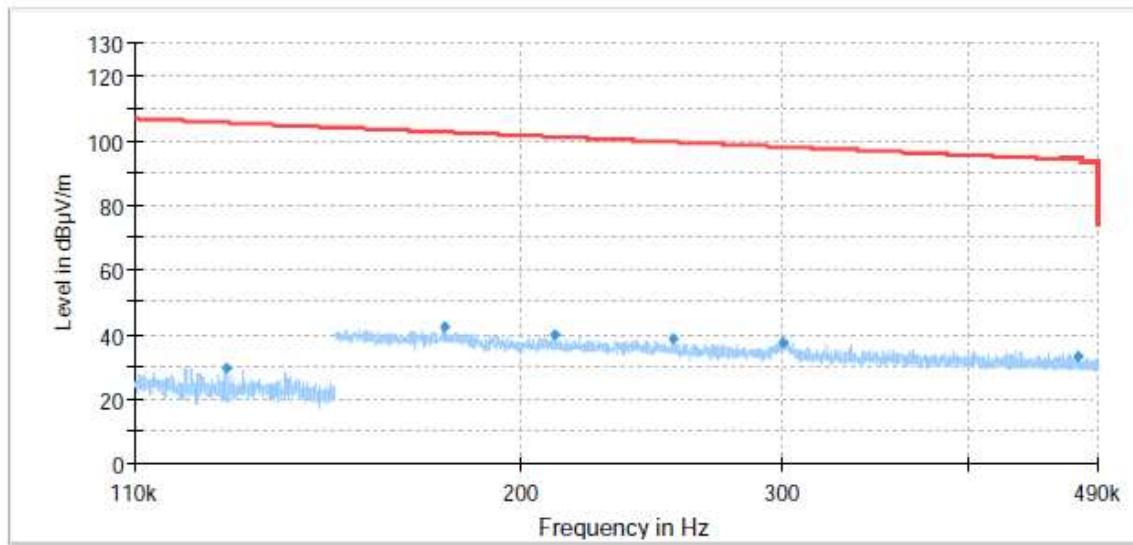
Note: The signal beyond the limit is carrier.

Radiated Emission from 90kHz to 110kHz

| Frequency (MHz) | Quasi-Peak (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Bandwidth (kHz) | Azimuth (deg) | Corr. (dB/m) |
|-----------------|---------------------------|----------------------|-------------|-----------------|---------------|--------------|
| 0.09 | 30.04 | 108.51 | 78.46 | 0.200 | 0.00 | 17 |
| 0.09 | 29.50 | 108.17 | 78.68 | 0.200 | 4.00 | 17 |
| 0.10 | 28.32 | 107.93 | 79.61 | 0.200 | 241.00 | 17 |
| 0.10 | 30.45 | 107.43 | 76.98 | 0.200 | 49.00 | 17 |
| 0.11 | 35.15 | 107.09 | 71.94 | 0.200 | 10.00 | 17 |
| 0.11 | 28.85 | 106.84 | 77.99 | 0.200 | 352.00 | 17 |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

2. Margin = Limit – Quasi-Peak



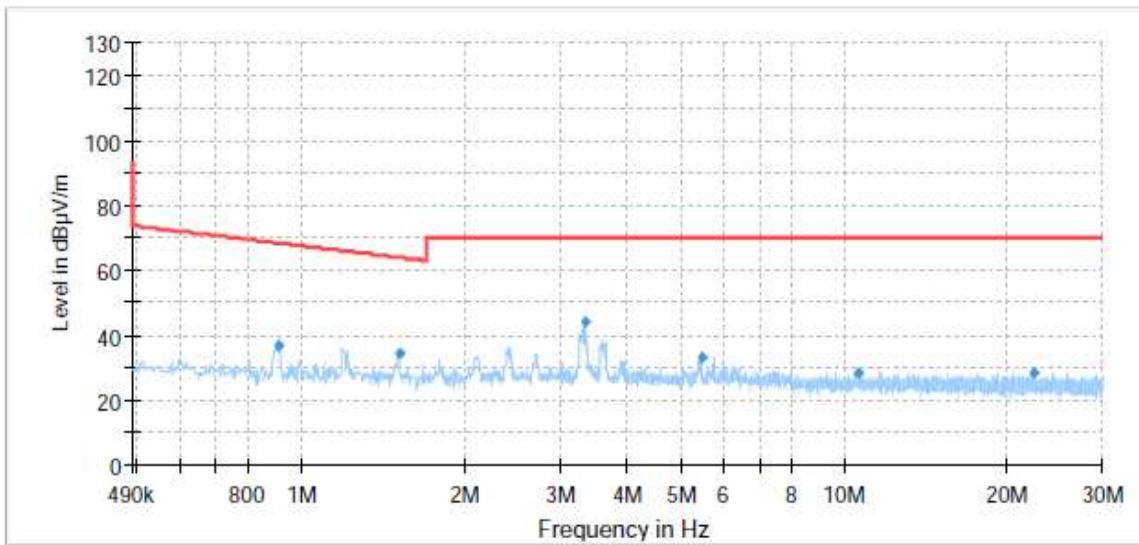
Note: The signal beyond the limit is carrier.

Radiated Emission from 110kHz to 490kHz

| Frequency (MHz) | Average (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Bandwidth (kHz) | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------------|----------------------|-------------|-----------------|---------------|--------------|
| 0.13 | 29.83 | 105.55 | 75.73 | 0.200 | 166.00 | 17 |
| 0.18 | 42.02 | 102.62 | 60.60 | 9.000 | 339.00 | 17 |
| 0.21 | 39.89 | 101.13 | 61.25 | 9.000 | 202.00 | 17 |
| 0.25 | 38.68 | 99.54 | 60.87 | 9.000 | 329.00 | 17 |
| 0.30 | 37.59 | 98.06 | 60.47 | 9.000 | 214.00 | 17 |
| 0.48 | 32.99 | 94.07 | 61.08 | 9.000 | 335.00 | 17 |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

2. Margin = Limit –Average



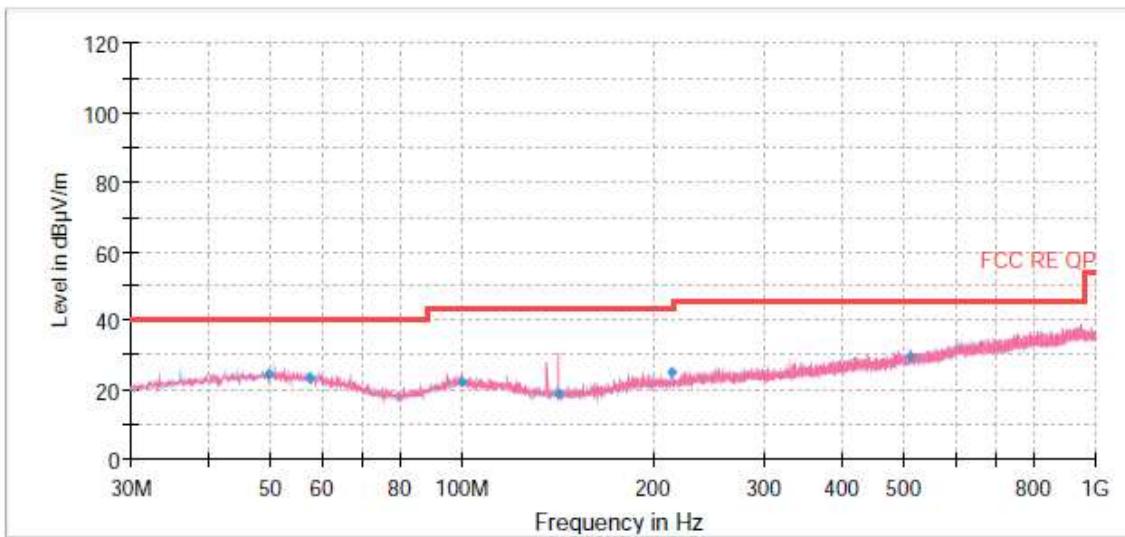
Note: The signal beyond the limit is carrier.

Radiated Emission from 490kHz to 30MHz

| Frequency (MHz) | Quasi-Peak (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Bandwidth (kHz) | Azimuth (deg) | Corr. (dB/m) |
|-----------------|---------------------------|----------------------|-------------|-----------------|---------------|--------------|
| 0.91 | 37.11 | 68.38 | 31.27 | 9.000 | 72.00 | 17 |
| 1.52 | 34.26 | 63.98 | 29.72 | 9.000 | 318.00 | 17 |
| 3.34 | 43.84 | 70.00 | 26.16 | 9.000 | 357.00 | 17 |
| 5.50 | 33.19 | 70.00 | 36.81 | 9.000 | 318.00 | 17 |
| 10.61 | 28.41 | 70.00 | 41.59 | 9.000 | 10.00 | 17 |
| 22.48 | 28.35 | 70.00 | 41.65 | 9.000 | 48.00 | 17 |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

2. Margin = Limit – Quasi-Peak



Note: The signal beyond the limit is carrier.

Radiated Emission from 30MHz to 1GHz

| Frequency (MHz) | Quasi-Peak (dB μ V/m) | Height (cm) | Polarization | Azimuth (deg) | Correct Factor (dB) | Margin (dB) | Limit (dB μ V/m) |
|-----------------|---------------------------|-------------|--------------|---------------|---------------------|-------------|----------------------|
| 49.37 | 24.66 | 100.0 | H | 4.00 | 20 | 15.34 | 40.00 |
| 57.45 | 23.61 | 114.0 | H | 153.00 | 20 | 16.39 | 40.00 |
| 100.12 | 22.39 | 123.0 | V | 118.00 | 19 | 21.11 | 43.50 |
| 141.88 | 18.98 | 116.0 | V | 275.00 | 15 | 24.52 | 43.50 |
| 214.50 | 25.34 | 120.0 | V | 269.00 | 18 | 18.16 | 43.50 |
| 509.91 | 29.73 | 114.0 | V | 98.00 | 26 | 16.27 | 46.00 |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

2. Margin = Limit – Quasi-Peak

5.3 AC Power Line Conducted Emissions

Ambient condition

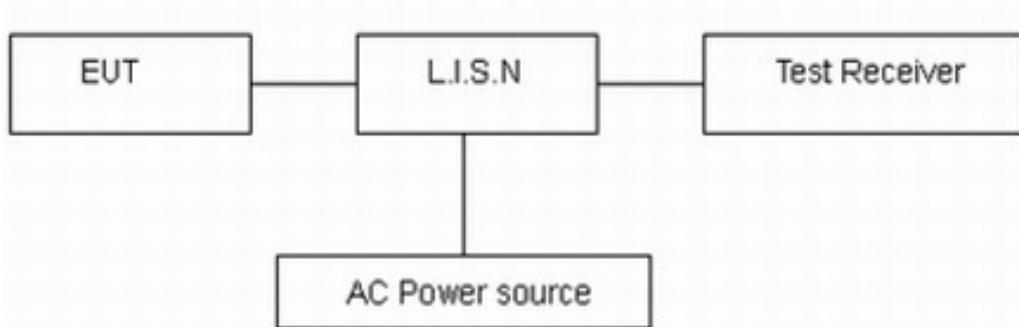
| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C | 45%~50% | 101.5kPa |

Method of Measurement

The EUT is placed on a non-metallic table of 80cm height above the horizontal metal reference ground plane. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.10-2013. Connect the AC power line of the EUT to the L.I.S.N. Use EMI receiver to detect the average and Quasi-peak value. RBW is set to 9 kHz, VBW is set to 30kHz. The measurement result should include both L line and N line.

The test is in transmitting mode.

Test Setup



Note: AC Power source is used to change the voltage from 220V/50Hz to 110V/60Hz.

Limits

| Frequency (MHz) | Conducted Limits(dB μ V) | |
|--------------------|------------------------------|-----------|
| | 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.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$. $U = 1.19$ dB

Test Results:

The equipment doesn't connect to public network, therefore this requirement does not apply.

6 Main Test Instruments

| Name of Equipment | Manufacturer | Type/Model | Serial Number | Calibration Date | Expiration Time |
|--------------------------|--------------|------------|---------------|------------------|-----------------|
| Spectrum Analyzer | KEYSIGHT | N9020A | MY51330870 | 2023-05-12 | 2024-05-11 |
| EMI Test Receiver | R&S | ESCI3 | 100948 | 2023-05-12 | 2024-05-11 |
| Loop Antenna | SCHWARZBECK | FMZB1519 | 1519-047 | 2023-04-16 | 2026-04-15 |
| TRILOG Broadband Antenna | SCHWARZBECK | VULB 9163 | 01111 | 2022-10-25 | 2025-10-24 |
| Software | R&S | EMC32 | 9.26.01 | / | / |

ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.

ANNEX B: Test Setup Photos

The Test Setup Photos are submitted separately.

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