



TEST REPORT

Applicant Name : WIZZILAB SAS
Address : 29 boulevard Romain Rolland, Montrouge, France
Report Number : RA221108-52423E-EM
FCC ID: 2ARZVWTU-1-XL

Test Standard (s)
FCC PART 15B

Sample Description

Product Type: WOLT-UWB-XL
Model No.: WOLT-UWB-XL
Trade Mark: N/A
Date Received: 2022-11-08
Date of Test: 2022-11-14
Report Date: 2022-11-17

| | |
|--------------|-------|
| Test Result: | Pass* |
|--------------|-------|

* In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

Audy.Yu

Audy.Yu
EMC Engineer

Approved By:

Candy.Li

Candy Li
EMC Engineer

Note: This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "★".

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DOCUMENT REVISION HISTORY

| Revision Number | Report Number | Description of Revision | Date of Revision |
|------------------------|----------------------|--------------------------------|-------------------------|
| 0 | RA221108-52423E-EM | Original Report | 2022-11-17 |

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

| | |
|-----------------------------|--|
| Product | WOLT-UWB-XL |
| Tested Model | WOLT-UWB-XL |
| Highest Operation Frequency | 6490MHz (It is provided by the applicant.) |
| Voltage Range | DC 3.6V from battery |
| Sample number | RA221108-52423E-EM-S1 (Assigned by ATC) |
| Sample/EUT Status | Good condition |

Objective

This report is in accordance with Part 2-Subpart J, and Part 15-Subparts A and B of the Federal Communication Commission's rules.

The objective of the manufacturer is to determine the compliance of EUT with FCC Part 15, Class B device.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All radiated and conducted emissions measurement was performed at Shenzhen Accurate Technology Co., Ltd. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

| Parameter | | Uncertainty |
|------------------------|--------------|-------------|
| Emissions, Radiated | 9kHz - 30MHz | 2.66dB |
| | 30MHz - 1GHz | 4.28dB |
| | 1GHz - 18GHz | 4.98dB |
| Temperature | | 1°C |
| Humidity | | 6% |
| Supply voltages | | 0.4% |

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 708358, the FCC Designation No.: CN1189. Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 4297.01.

Listed by Innovation, Science and Economic Development Canada (ISED), the Registration Number is 5077A.

SYSTEM TEST CONFIGURATION

Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

Test mode: On

EUT Exercise Software

No exercise software.

Special Accessories

No special accessory was used.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

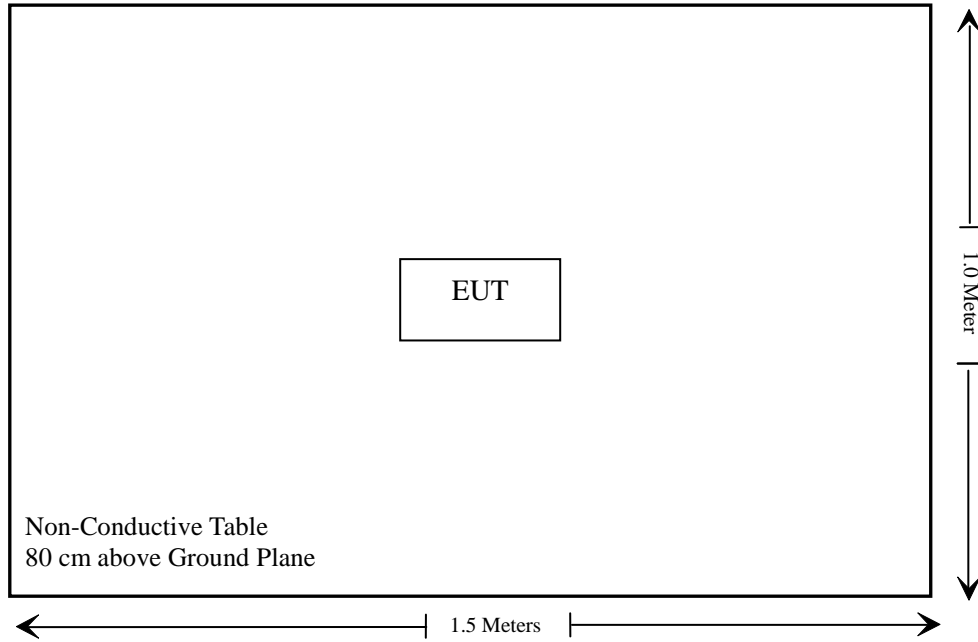
| Manufacturer | Description | Model | Serial Number |
|--------------|-------------|-------|---------------|
| / | / | / | / |

External I/O Cable

| Cable Description | Length (m) | From Port | To Port |
|-------------------|------------|-----------|---------|
| / | / | / | / |

Block Diagram of Radiated Test Setup

For Radiated emission:



SUMMARY OF TEST RESULTS

| FCC Rules | Description of Test | Results |
|------------------|----------------------------|----------------|
| §15.107 | Conducted Emissions | Not Applicable |
| §15.109 | Radiated Emissions | Compliant |

Not Applicable--The device is powered by battery only.

TEST EQUIPMENT LIST

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|--|-------------------|---------------------|---------------|------------------|----------------------|
| Radiated Emissions Test | | | | | |
| Rohde & Schwarz | Test Receiver | ESR | 102725 | 2021/12/13 | 2022/12/12 |
| Rohde & Schwarz | Spectrum Analyzer | FSV40 | 101949 | 2021/12/13 | 2022/12/12 |
| A.H. Systems, inc. | Preamplifier | PAM-0118P | 135 | 2022/11/08 | 2023/11/07 |
| SONOMA INSTRUMENT | Amplifier | 310 N | 186131 | 2022/11/08 | 2023/11/07 |
| Quinstar | Amplifier | QLW-1840553 6-J0 | 15964001002 | 2022/11/08 | 2023/11/07 |
| Schwarzbeck | Bilog Antenna | VULB9163 | 9163-323 | 2021/07/06 | 2024/07/05 |
| Schwarzbeck | Horn Antenna | BBHA9120D | 9120D-1067 | 2020/01/05 | 2023/01/04 |
| Schwarzbeck | HORN ANTENNA | BBHA9170 | 9170-359 | 2020/01/05 | 2023/01/04 |
| Unknown | RF Coaxial Cable | No.10 | N050 | 2021/12/14 | 2022/12/13 |
| Unknown | RF Coaxial Cable | No.11 | N1000 | 2021/12/14 | 2022/12/13 |
| Unknown | RF Coaxial Cable | No.12 | N040 | 2021/12/14 | 2022/12/13 |
| Unknown | RF Coaxial Cable | No.13 | N300 | 2021/12/14 | 2022/12/13 |
| Unknown | RF Coaxial Cable | No.14 | N800 | 2021/12/14 | 2022/12/13 |
| Unknown | RF Coaxial Cable | No.15 | N600 | 2021/12/14 | 2022/12/13 |
| Unknown | RF Coaxial Cable | No.16 | N650 | 2021/12/14 | 2022/12/13 |
| Radiated Emission Test Software: e3 19821b(V9) | | | | | |

* **Statement of Traceability:** Shenzhen Accurate Technology Co., Ltd. attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

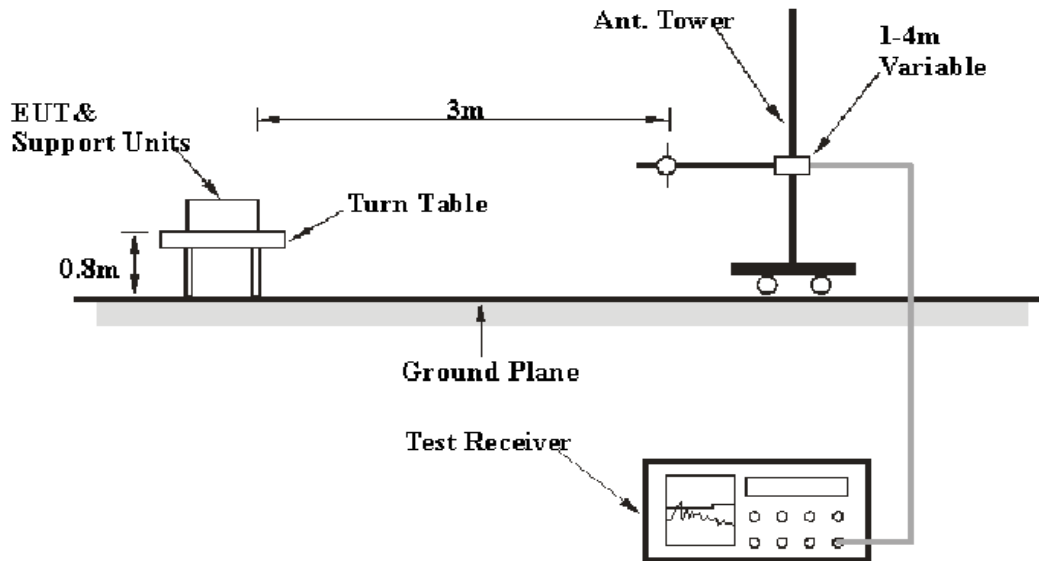
FCC §15.109 - RADIATED EMISSIONS

Applicable Standard

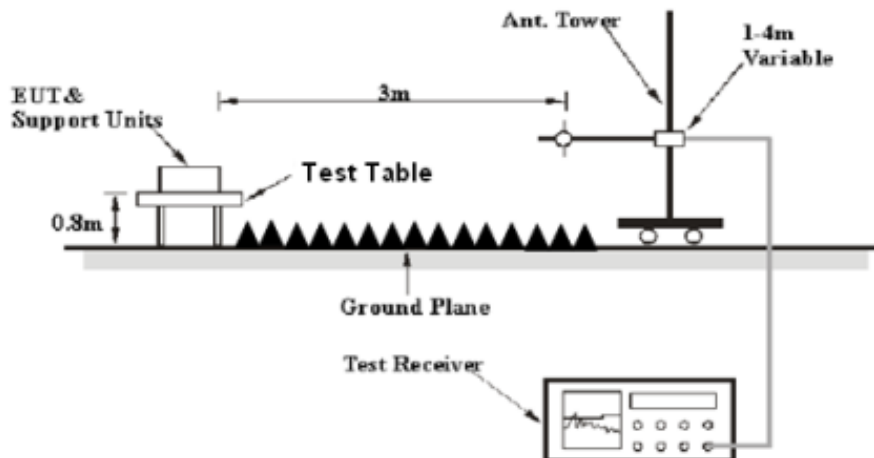
FCC §15.109

EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2014. The specification used was the FCC Part 15.109 Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 33GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

| Frequency Range | RBW | Video B/W | IF B/W | Detector |
|------------------|---------|-----------|--------|----------|
| 30MHz – 1000 MHz | 120 kHz | 300 kHz | 120kHz | QP |
| Above 1 GHz | 1MHz | 3 MHz | / | Peak |
| | 1MHz | 10Hz | / | AV |

All data was recorded in the Quasi-peak detector mode from 30 MHz to 1 GHz, Peak and average detection mode above 1 GHz.

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Factor & Over Limit Calculation

The Factor is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Factor} = \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Over Limit**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\begin{aligned} \text{Over Limit} &= \text{Level} - \text{Limit} \\ \text{Level} &= \text{Reading} + \text{Factor} \end{aligned}$$

Test Data**Environmental Conditions**

| | |
|---------------------------|-----------|
| Temperature: | 25°C |
| Relative Humidity: | 60 % |
| ATM Pressure: | 101.0 kPa |

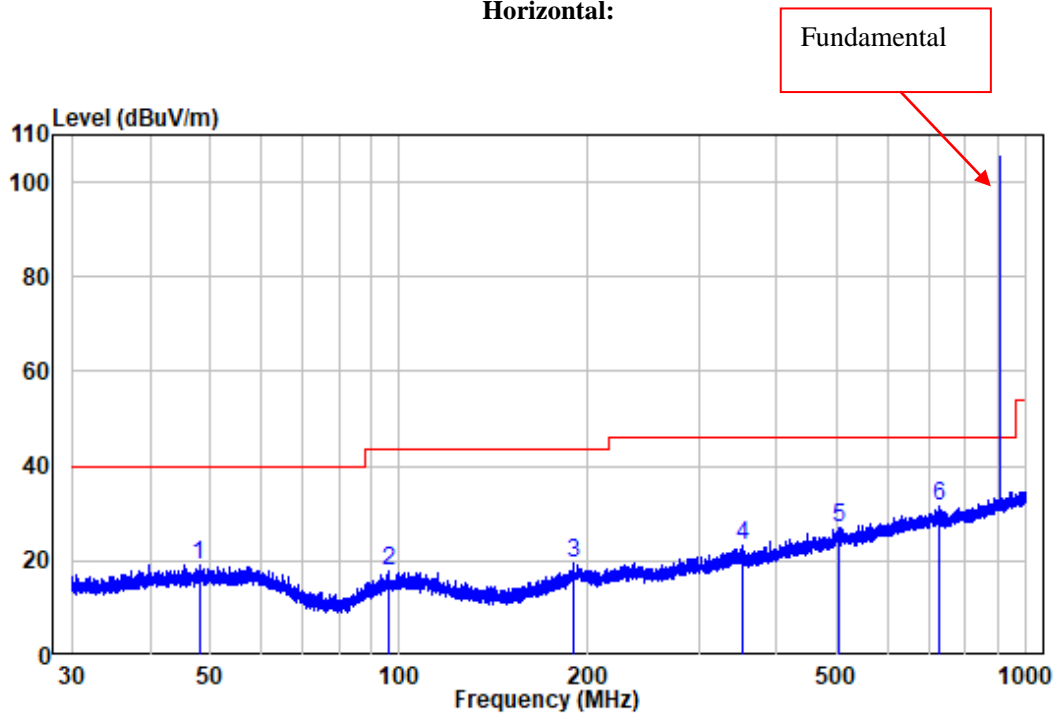
The testing was performed by Level Lion 2022-11-14.

Note:

Pre-scan in the X, Y and Z axes of orientation, the worst case Y-axis of orientation was recorded.
The test result of peak was less than the limit of QP/Average, so just peak value was recorded.
The other spurious emission which is in the noise floor level was not recorded.

30MHz-1GHz:

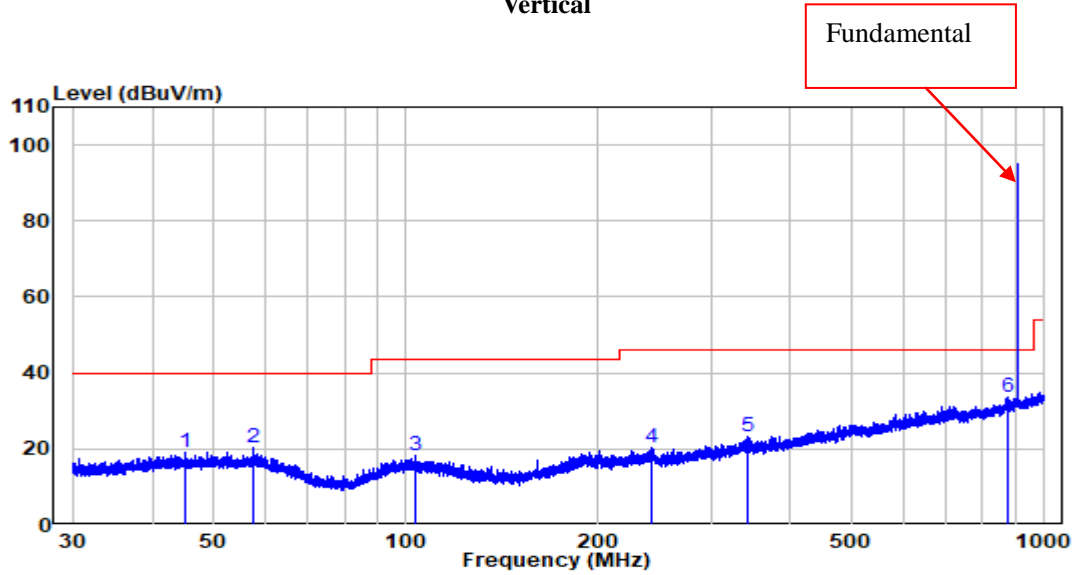
Horizontal:



Site : chamber
 Condition: 3m HORIZONTAL
 Job No. : RA221108-52423E-EM
 Test Mode: On

| | Freq | Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---------|--------|------------|--------|------------|------------|--------|
| | MHz | dB/m | dBuV | dBuV/m | dBuV/m | dB | |
| 1 | 47.910 | -10.00 | 29.09 | 19.09 | 40.00 | -20.91 | Peak |
| 2 | 96.225 | -12.29 | 30.32 | 18.03 | 43.50 | -25.47 | Peak |
| 3 | 189.074 | -11.69 | 31.08 | 19.39 | 43.50 | -24.11 | Peak |
| 4 | 351.708 | -7.37 | 30.45 | 23.08 | 46.00 | -22.92 | Peak |
| 5 | 501.179 | -4.25 | 31.37 | 27.12 | 46.00 | -18.88 | Peak |
| 6 | 725.214 | -1.26 | 32.65 | 31.39 | 46.00 | -14.61 | Peak |

Vertical

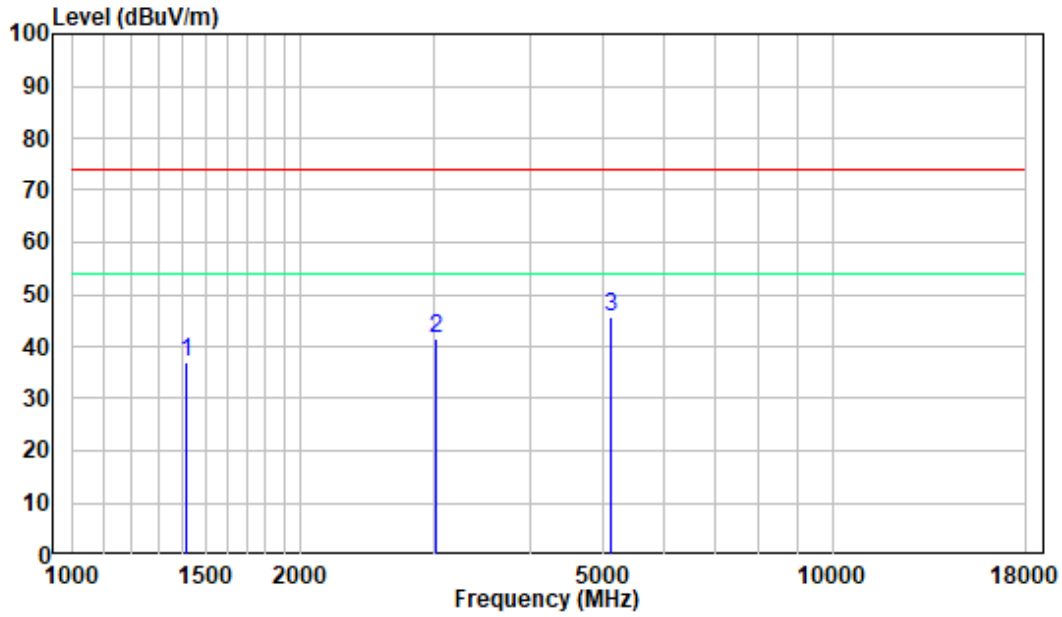


Site : chamber
 Condition: 3m VERTICAL
 Job No. : RA221108-52423E-EM
 Test Mode: On

| | Freq | Factor | Read Level | Level | Limit | Over | Remark |
|---|---------|--------|------------|--------|--------|--------|--------|
| | MHz | dB/m | dBuV | dBuV/m | dBuV/m | dB | |
| 1 | 44.979 | -9.94 | 29.06 | 19.12 | 40.00 | -20.88 | Peak |
| 2 | 57.695 | -9.94 | 30.21 | 20.27 | 40.00 | -19.73 | Peak |
| 3 | 103.035 | -11.66 | 29.82 | 18.16 | 43.50 | -25.34 | Peak |
| 4 | 242.738 | -10.74 | 30.91 | 20.17 | 46.00 | -25.83 | Peak |
| 5 | 343.030 | -7.30 | 30.39 | 23.09 | 46.00 | -22.91 | Peak |
| 6 | 874.097 | 1.14 | 32.40 | 33.54 | 46.00 | -12.46 | Peak |

1 GHz-18 GHz:

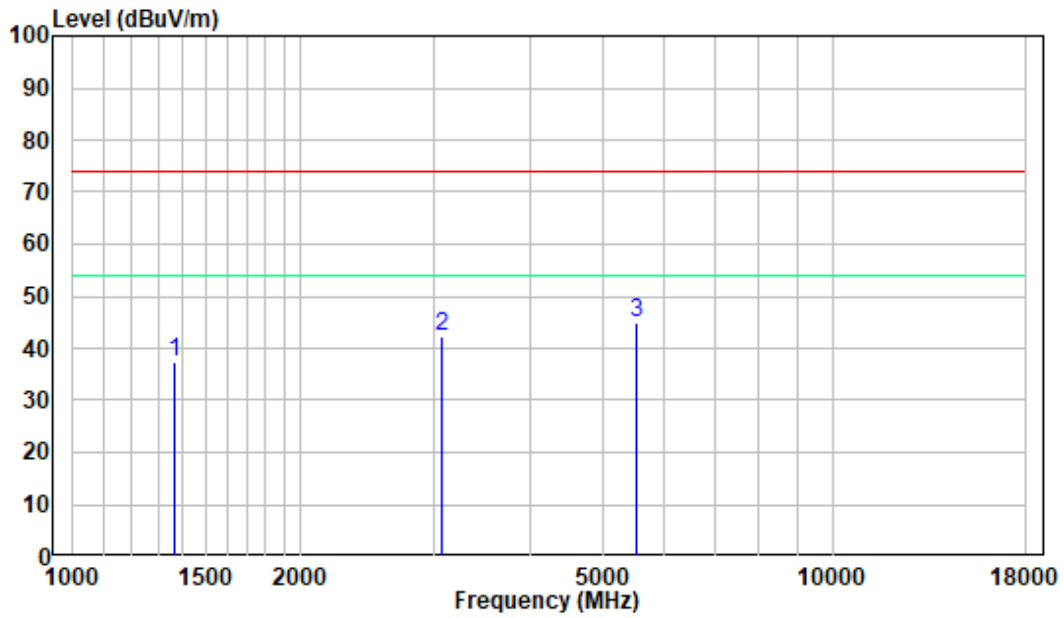
Horizontal:



Site : chamber
 Condition: 3m HORIZONTAL
 Job No. : RA221108-52423E-EM
 Test Mode: On

| | Freq | Factor | Read Level | Limit Level | Limit Line | Over Limit | Remark |
|---|----------|--------|------------|-------------|------------|------------|--------|
| | MHz | dB/m | dBuV | dBuV/m | dBuV/m | dB | |
| 1 | 1416.500 | -9.89 | 46.70 | 36.81 | 74.00 | -37.19 | Peak |
| 2 | 3014.500 | -5.82 | 47.45 | 41.63 | 74.00 | -32.37 | Peak |
| 3 | 5114.000 | -2.79 | 48.51 | 45.72 | 74.00 | -28.28 | Peak |

Vertical

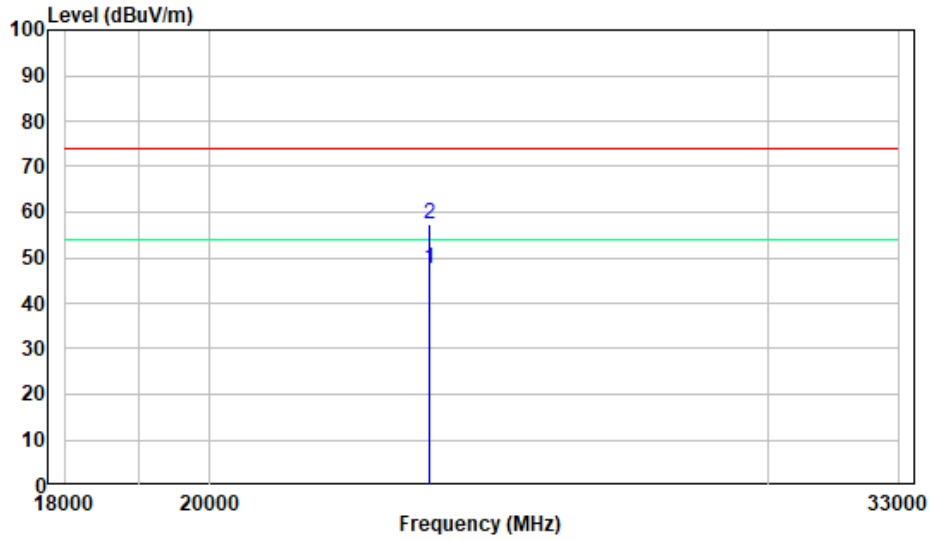


Site : chamber
 Condition: 3m VERTICAL
 Job No. : RA221108-52423E-EM
 Test Mode: On

| | Freq | Factor | Read Level | Limit Level | Limit Line | Over Limit | Remark |
|---|----------|--------|------------|-------------|------------|------------|--------|
| | MHz | dB/m | dBuV | dBuV/m | dBuV/m | dB | |
| 1 | 1367.625 | -10.00 | 47.40 | 37.40 | 74.00 | -36.60 | Peak |
| 2 | 3071.875 | -5.85 | 48.07 | 42.22 | 74.00 | -31.78 | Peak |
| 3 | 5526.250 | -2.12 | 47.14 | 45.02 | 74.00 | -28.98 | Peak |

18 GHz-33 GHz:

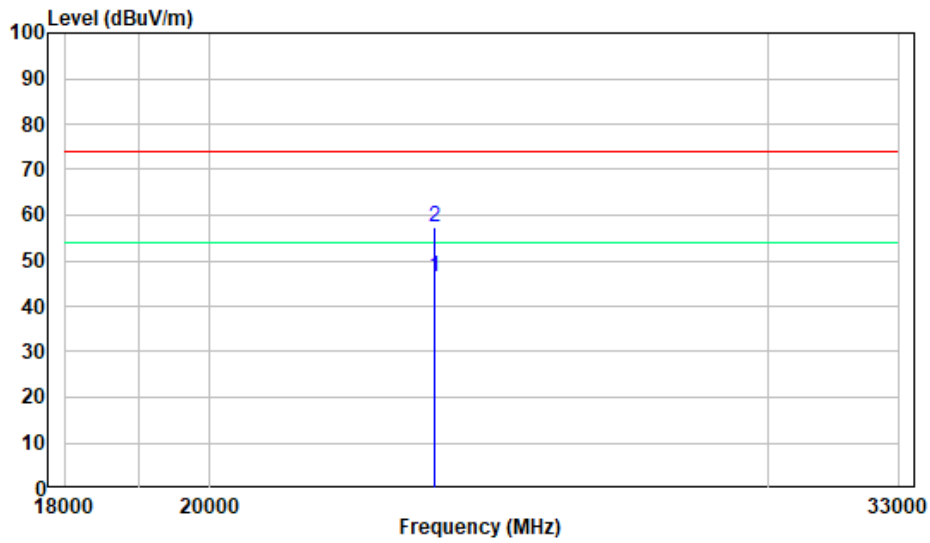
Horizontal:



Site : chamber
 Condition: 3m HORIZONTAL
 Job No. : RA221108-52423E-EM
 Test Mode: On

| | Freq | Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|-----------|--------|------------|--------|------------|------------|---------|
| | MHz | dB/m | dBuV | dBuV/m | dBuV/m | dB | |
| 1 | 23451.000 | 10.43 | 37.18 | 47.61 | 54.00 | -6.39 | Average |
| 2 | 23451.000 | 10.43 | 46.92 | 57.35 | 74.00 | -16.65 | Peak |

Vertical



Site : chamber
 Condition: 3m VERTICAL
 Job No. : RA221108-52423E-EM
 Test Mode: On

| | Freq | Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|-----------|--------|------------|--------|------------|------------|---------|
| | MHz | dB/m | dBuV | dBuV/m | dBuV/m | dB | |
| 1 | 23541.000 | 10.58 | 35.74 | 46.32 | 54.00 | -7.68 | Average |
| 2 | 23541.000 | 10.58 | 46.73 | 57.31 | 74.00 | -16.69 | Peak |

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