



TEST REPORT

Applicant Name : WIZZILAB SAS
Address : 29 boulevard Romain Rolland, Montrouge, France
Report Number : RA221108-52422E-EM
FCC ID: 2ARZVWTU-1-M

Test Standard (s)
FCC PART 15B

Sample Description

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

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

Audy.Yu
EMC Engineer

Approved By:

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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GENERAL INFORMATION**Product Description for Equipment under Test (EUT)**

Product	WOLT-UWB-M
Tested Model	WOLT-UWB-M
Highest Operation Frequency	6490MHz (It is provided by the applicant.)
Voltage Range	DC 3.6V from battery
Sample number	RA221108-52422E-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

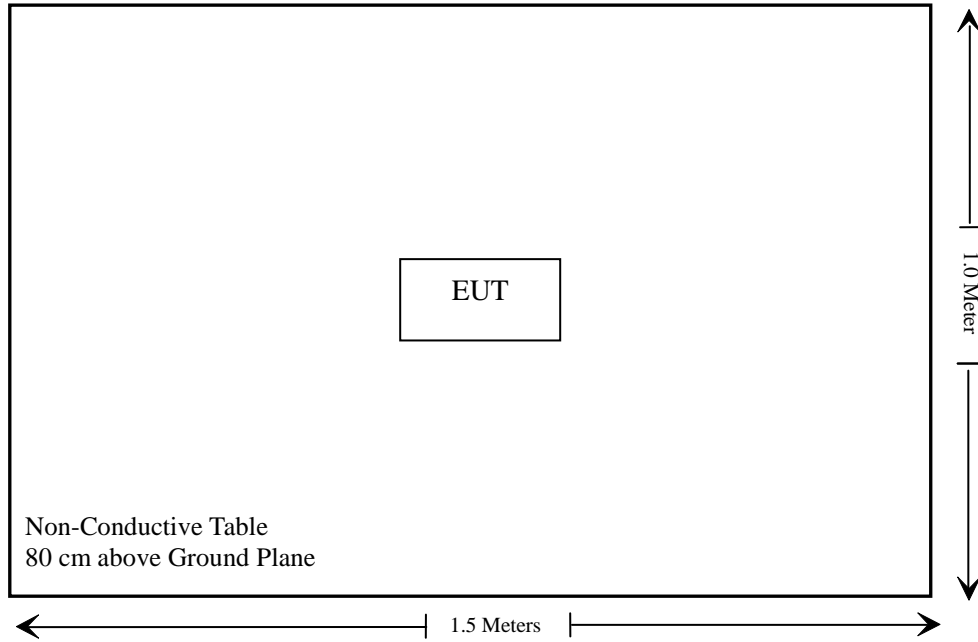
Manufacturer	Description	Model	Serial Number
/	/	/	/

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).

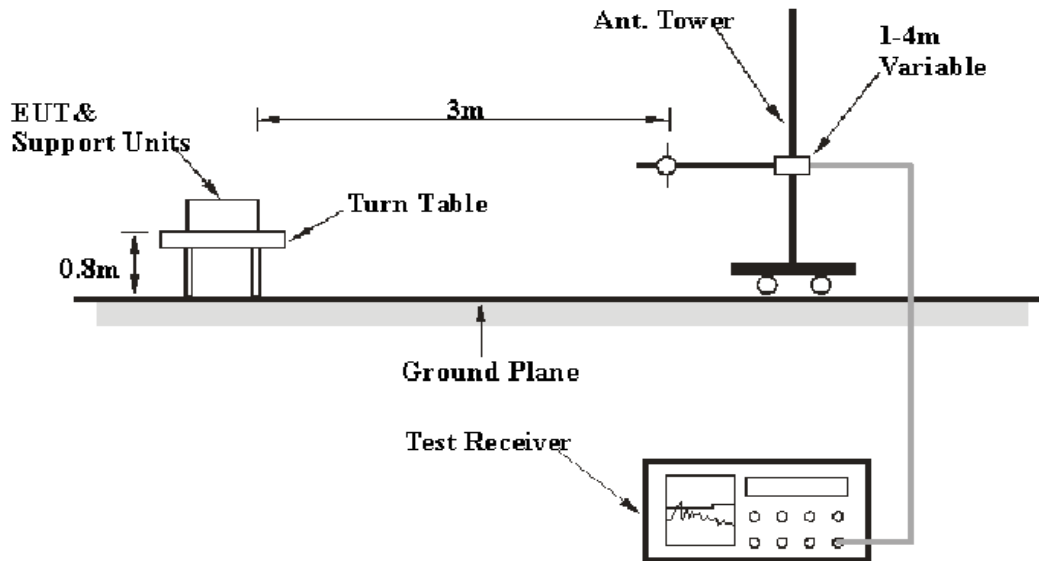
FCC §15.109 - RADIATED EMISSIONS

Applicable Standard

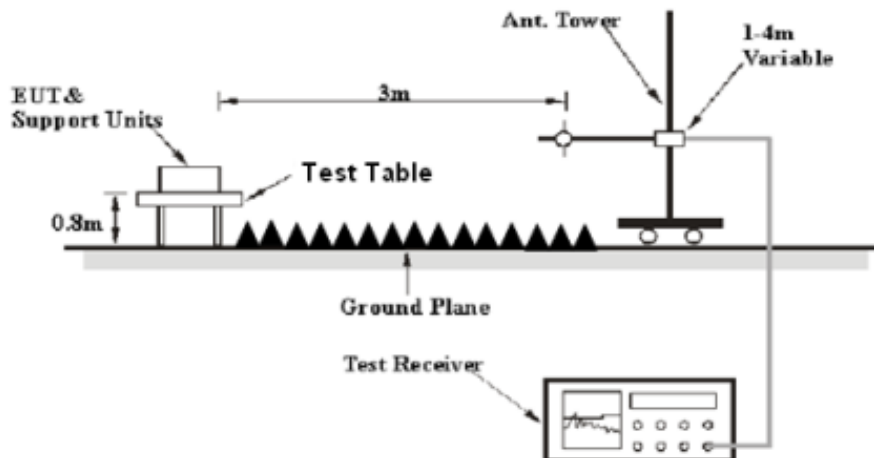
FCC §15.109

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 33 GHz.

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:

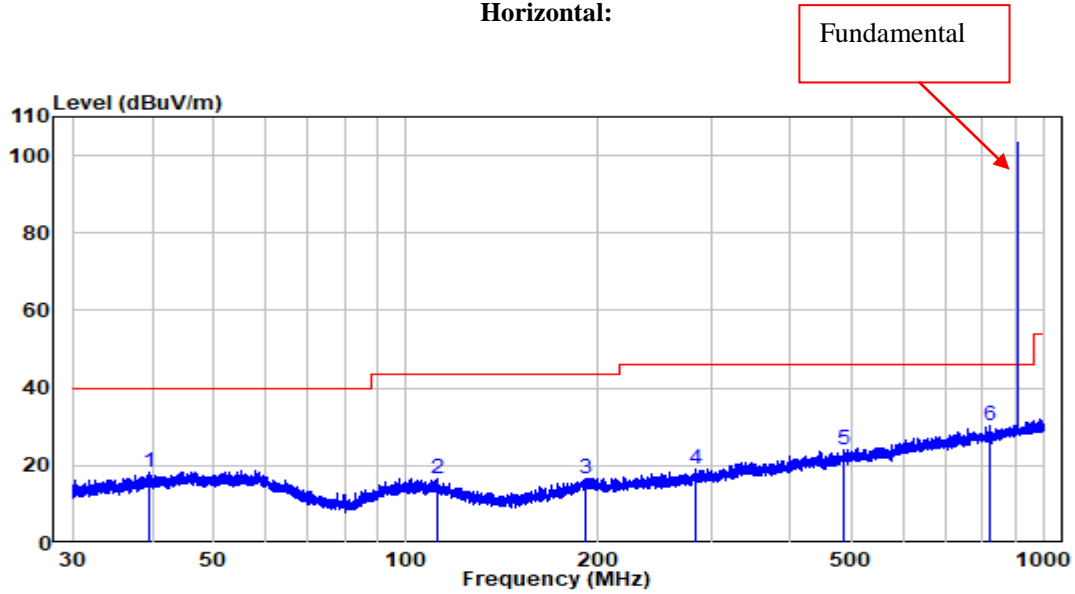
Pre-scan in the X, Y and Z axes of orientation, the worst case Y-axis of orientation was recorded.

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:

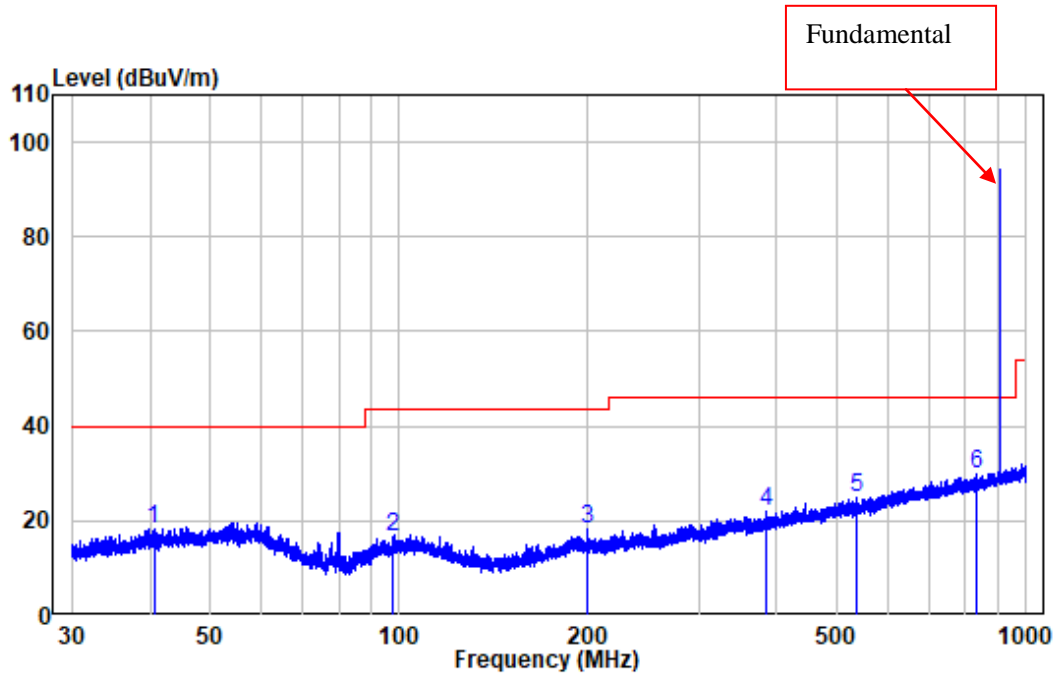
Horizontal:



Site : chamber
 Condition: 3m HORIZONTAL
 Job No. : RA221108-52422E-EM
 Test Mode: On

	Freq	Factor	Read Level	Level	Limit	Over	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	39.663	-10.42	28.67	18.25	40.00	-21.75	Peak
2	111.787	-12.21	28.77	16.56	43.50	-26.94	Peak
3	191.241	-11.37	28.18	16.81	43.50	-26.69	Peak
4	284.478	-9.45	28.63	19.18	46.00	-26.82	Peak
5	484.122	-4.91	28.98	24.07	46.00	-21.93	Peak
6	822.071	0.03	30.25	30.28	46.00	-15.72	Peak

Vertical

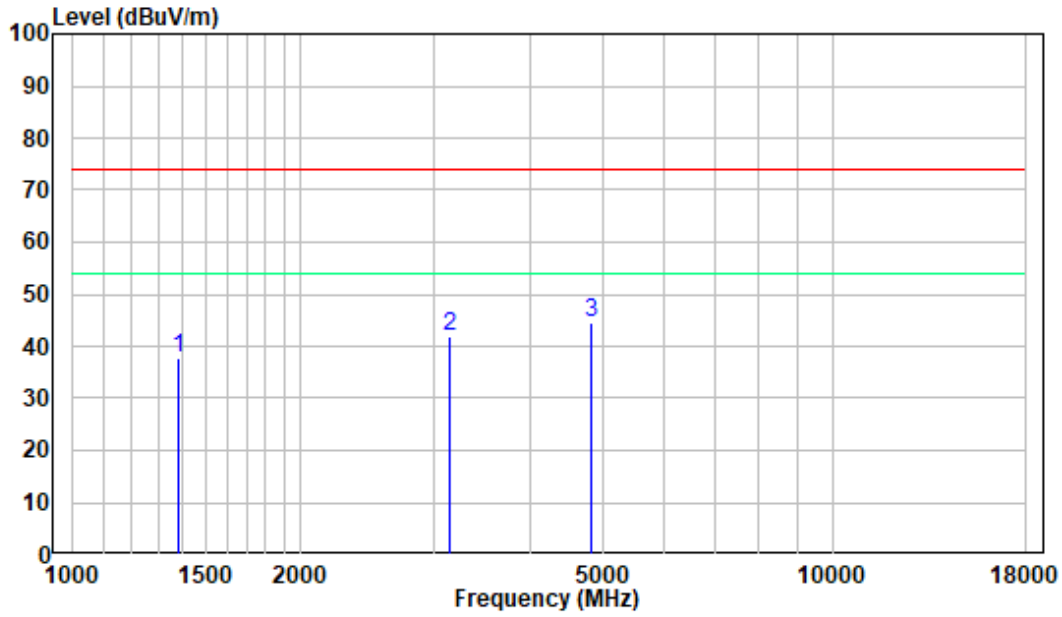


Site : chamber
 Condition: 3m VERTICAL
 Job No. : RA221108-52422E-EM
 Test Mode: On

	Freq	Factor	Read Level	Limit Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	40.577	-10.25	28.67	18.42	40.00	-21.58	Peak
2	97.884	-12.26	28.95	16.69	43.50	-26.81	Peak
3	199.111	-11.45	29.56	18.11	43.50	-25.39	Peak
4	384.774	-7.06	28.90	21.84	46.00	-24.16	Peak
5	535.707	-4.36	29.20	24.84	46.00	-21.16	Peak
6	835.512	0.21	29.88	30.09	46.00	-15.91	Peak

1 GHz-18 GHz:

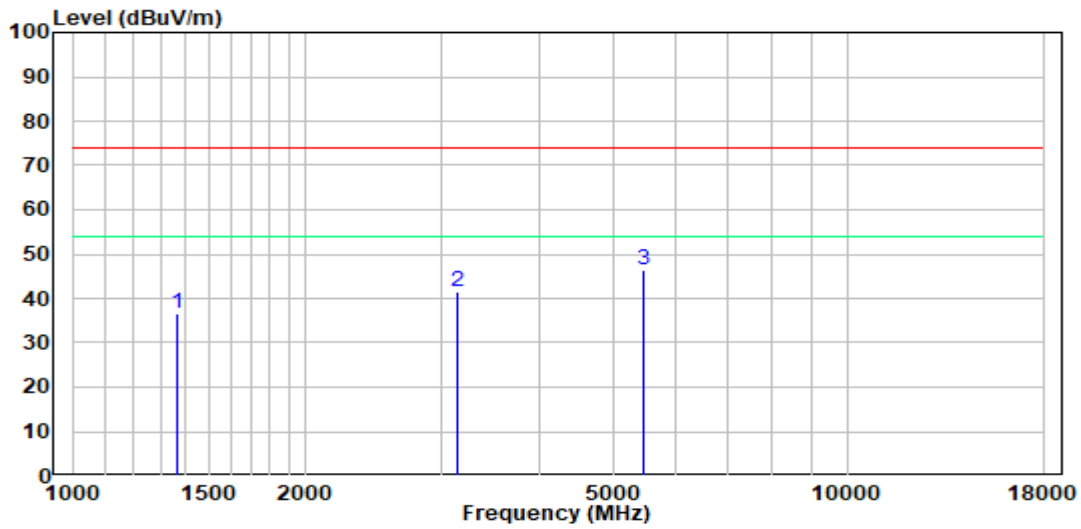
Horizontal:



Site : chamber
 Condition: 3m HORIZONTAL
 Job No. : RA221108-52422E-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	1378.250	-9.98	47.89	37.91	74.00	-36.09	Peak
2	3133.500	-5.87	47.83	41.96	74.00	-32.04	Peak
3	4829.250	-3.53	48.02	44.49	74.00	-29.51	Peak

Vertical

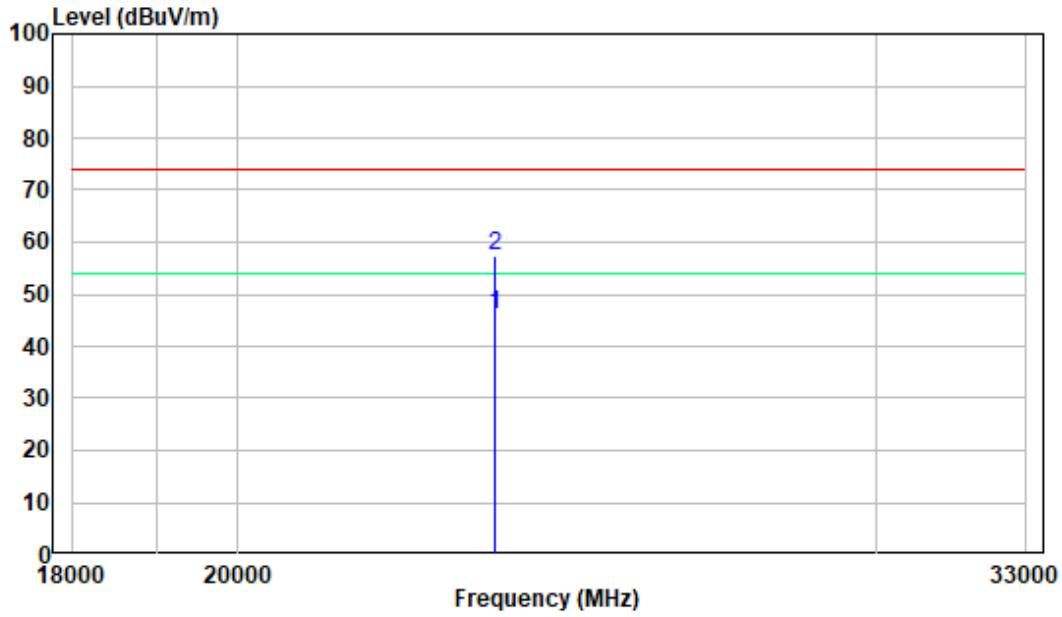


Site : chamber
 Condition: 3m VERTICAL
 Job No. : RA221108-52422E-EM
 Test Mode: On

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	1367.625	-10.00	46.76	36.76	74.00	-37.24	Peak
2	3146.250	-5.86	47.52	41.66	74.00	-32.34	Peak
3	5451.875	-2.29	48.65	46.36	74.00	-27.64	Peak

18 GHz-33 GHz:

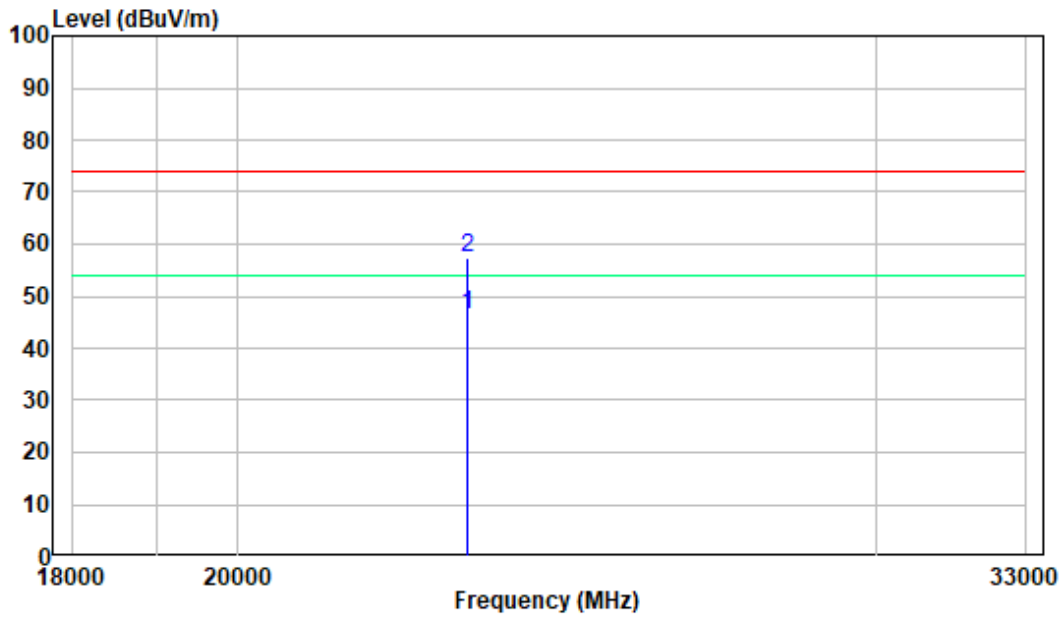
Horizontal:



Site : chamber
 Condition: 3m HORIZONTAL
 Job No. : RA221108-52422E-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	23541.000	10.58	35.64	46.22	54.00	-7.78	Average
2	23541.000	10.58	46.74	57.32	74.00	-16.68	Peak

Vertical



Site : chamber
 Condition: 3m VERTICAL
 Job No. : RA221108-52422E-EM
 Test Mode: On

	Freq	Factor	Read Level	Level	Limit	Over	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	23141.000	10.40	35.92	46.32	54.00	-7.68	Average
2	23141.000	10.40	46.83	57.23	74.00	-16.77	Peak

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