TEST REPORT

Applicant Name :	Xiamen ZiFiSense InfoTech Co., Ltd
Address :	Room 803, Building A-05, Software Park Phase III, Jimei District, Xiamen, China
Report Number :	XMTN1220217-04783E-RF
FCC ID:	2AY22-VTC01

Test Standard (s)

FCC PART 15.249

Sample Description

Product Type:	ZETA Edge-AI Vibration Sensor
Model No.:	ZAIoT-VTC01
Multiple Model(s) No.:	ZAIoT-VTD10
Trade Mark:	ZiFiSense
Date Received:	2022-02-17
Date of Test:	2022-03-23 to 2022-05-20
Report Date:	2022-05-20

Test Result:	Pass*

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

Prepared and Checked By:

Ting Lü
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 "★".

Shenzhen Accurate Technology Co., Ltd. is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk '*'. Customer model name, addresses, names, trademarks etc. are not considered data.

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	ZETA Edge-AI Vibration Sensor
Tested Model	ZAIoT-VTC01
Multiple Model	ZAIoT-VTD10
Model difference	Please refer to the Doc letter
Trademark	ZiFiSense
Frequency Range	920~925MHz
Maximum E-Field Strengt (Peak)	100.16dBuV/m@3m
Modulation Technique	FSK
Antenna Specification	Internal PCB antenna: 0dBi (It is provided by the applicant)
Voltage Range	DC 3.6V from battery
Sample serial number	XMTN1220217-04783-RF-S1(Assigned by ATC)
Sample/EUT Status	Good condition

Objective

This test report is in accordance with Part 2-Subpart J, and Part 15-Subparts A and C of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.209 and 15.249 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

All 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
Occupied Channel Bandwidth		5%
RF Frequency		$0.082*10^{-7}$
RF output power, conducted		0.73dB
Unwanted Emission, conducted		1.6dB
AC Power Lines Conducted Emissions		2.72dB
Emissions, Radiated	9kHz - 30MHz	2.66dB
	30MHz - 1GHz	4.28dB
	1GHz - 18GHz	4.98dB
	18GHz - 26.5GHz	5.06dB
	26.5GHz - 40GHz	4.72dB
Temperature		1℃
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

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0016. The Registration Number is 5077A.

SYSTEM TEST CONFIGURATION

Justification

The system was configured for testing by manufacturer.

Frequency range: 920-925MHz， 2kHz channel spacing, first frequency is 920MHz.

Formula: 920.000MHz+2*N(kHz), N≤2500

Test frequencies: 920MHz, 922.4MHz, 925MHz.

EUT Exercise Software

Software XCOM V2.0.exe was used during testing and power level is default*.

Equipment Modifications

No modifications were made to the unit tested.

Support Equipment List and Details

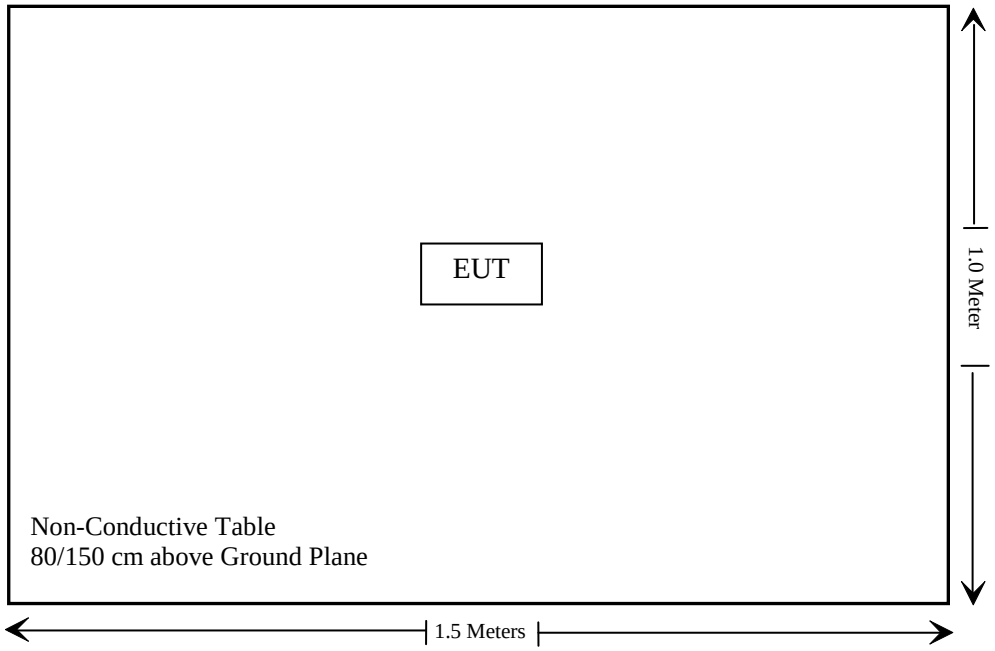
Manufacturer	Description	Model	Serial Number
/	/	/	/

Support Cable Descriptions

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

Block Diagram of Test Setup

For radiated emission:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.203	Antenna Requirement	Compliant
§15.207(a)	Conduction Emissions	Not Applicable
15.205, §15.209, §15.249	Radiated Emissions & Outside of Band Emission	Compliant
§15.215 (c)	20 dB Bandwidth	Compliant

Not Applicable: EUT is operated 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
SONOMA INSTRUMENT	Amplifier	310 N	186131	2021/11/09	2022/11/08
A.H. Systems, inc.	Preamplifier	PAM-0118P	135	2021/11/09	2022/11/08
Quinstar	Amplifier	QLW-18405536-J0	15964001002	2021/11/11	2022/11/10
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2021/07/06	2024/07/05
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-1067	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
Radiated Emission Test Software: e3 19821b (V9)					
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSV-40	101495	2021/12/13	2022/12/12
WEINSCHEL	10dB Attenuator	5324	AU 3842	Each time	
Unknown	RF Coaxial Cable	No.32	RF-02	Each time	

*** 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§15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to FCC § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Antenna Connector Construction

The EUT has one internal PCB antenna which was permanently attached and the antenna gain is 0dBi, fulfill the requirement of this section. Please refer to the EUT photos.

Result: Compliant.

FCC§15.205, §15.209 & §15.249 - RADIATED EMISSIONS

Applicable Standard

As per FCC§15.249 (a), except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902–928 MHz	50	500
2400–2483.5 MHz	50	500
5725–5875 MHz	50	500
24.0–24.25 GHz	250	2500

As per FCC§15.249 (c), Field strength limits are specified at a distance of 3 meters.
As per FCC§15.249 (d), Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

Test Equipment Setup

The spectrum analyzer or receiver is set as:

Below 1000MHz:

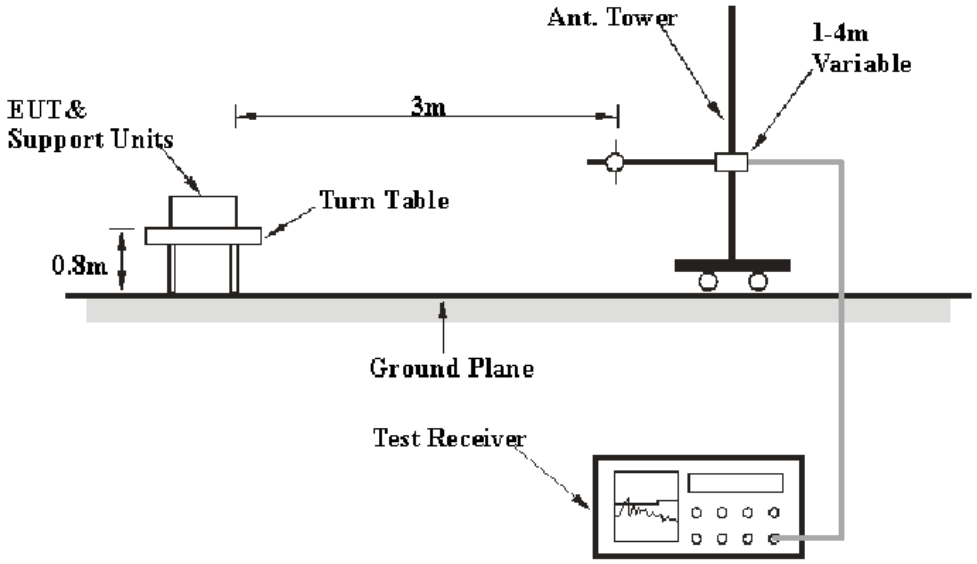
RBW = 100 kHz / VBW = 300 kHz / Sweep = Auto

Above 1000MHz:

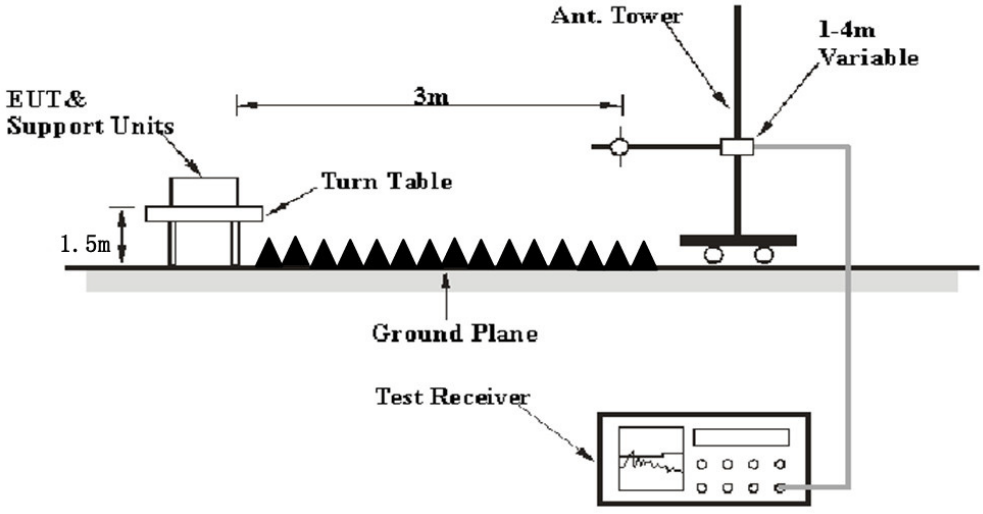
Peak: RBW = 1MHz / VBW = 1MHz / Sweep = Auto
Average: RBW = 1MHz / VBW = 10Hz / Sweep = Auto

EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission and out of band emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209/15.205 and FCC 15.245 limits.

Test Procedure

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

The EUT is set 3 meter away from the testing antenna, which is varied from 1-4 meter, and the EUT is placed on a turntable, which is 0.8 meter above ground plane for below 1GHz or 1.5 meter for above 1GHz, the table shall be rotated for 360 degrees to find out the highest emission. The receiving antenna should be changed the polarization both of horizontal and vertical.

Corrected Amplitude & Margin Calculation

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

Factor = Antenna Factor + Cable Loss - Amplifier Gain

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

Over Limit/Margin = Level / Corrected Amplitude – Limit
Level / Corrected Amplitude = Read Level + Factor

Test Results Summary

According to the EUT complied with the FCC Part 15.205, 15.209 & §15.245

Test Data

Environmental Conditions

Environmental Conditions

Temperature:	23 ℃
Relative Humidity:	53 %
ATM Pressure:	101.2 kPa

The testing was performed by Nick Fang on 2022-03-23.

Test Mode: Transmitting

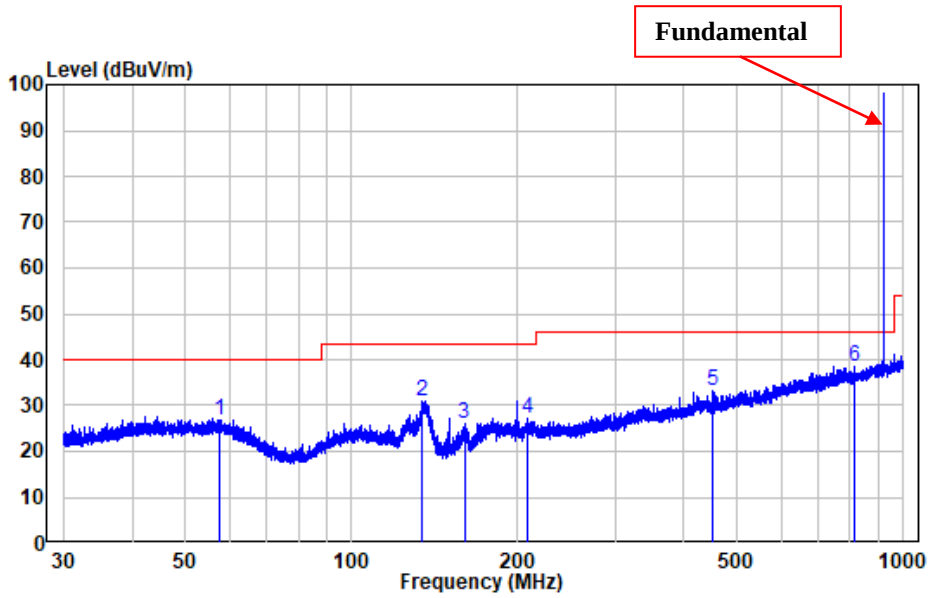
(Pre-scan in the X, Y and Z axes of orientation, the worst case X-axis of orientation was recorded)

30MHz - 1GHz:

ZAIoT-VTC01

Low Channel

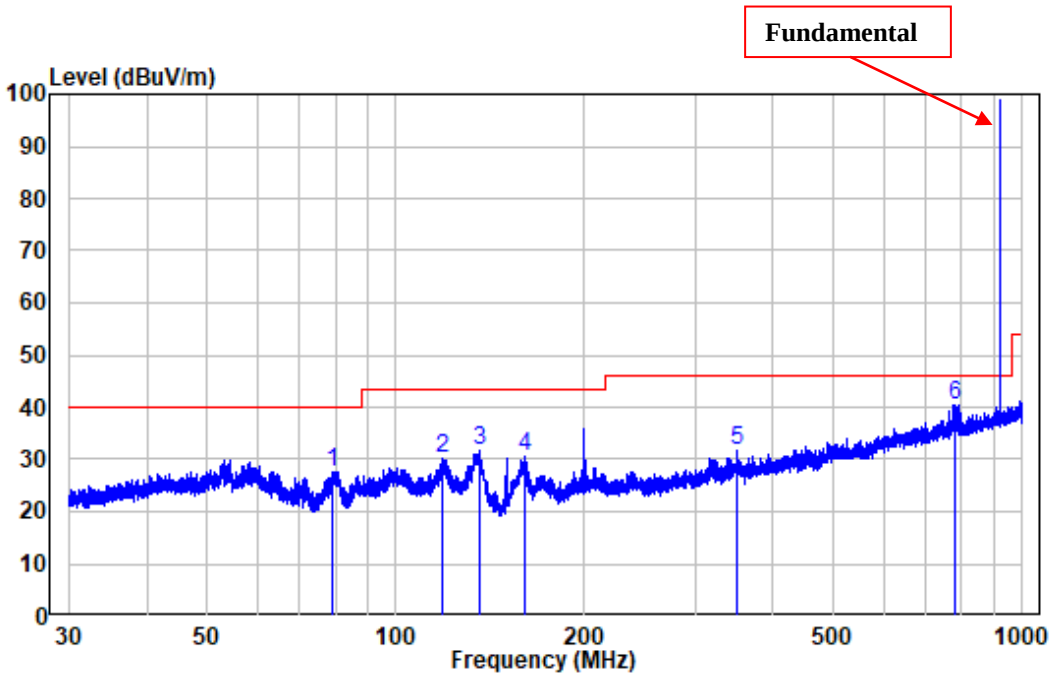
Horizontal



Site : chamber
Condition: 3m HORIZONTAL
Job No. : XMTN1220217-04783E-RF
Test Mode: 920MHz TX

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	57.619	-9.96	36.87	26.91	40.00	-13.09	Peak
2	134.147	-14.98	45.95	30.97	43.50	-12.53	Peak
3	159.995	-14.19	40.10	25.91	43.50	-17.59	Peak
4	208.672	-11.85	38.91	27.06	43.50	-16.44	Peak
5	450.147	-5.62	38.82	33.20	46.00	-12.80	Peak
6	815.253	-0.20	38.64	38.44	46.00	-7.56	Peak

Vertical

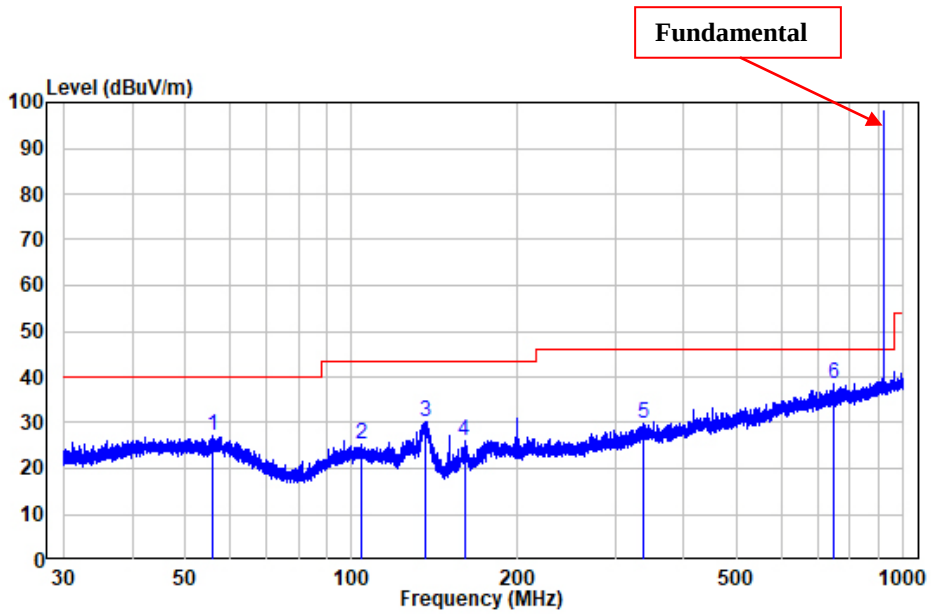


Site : chamber
Condition: 3m VERTICAL
Job No. : XMTN1220217-04783E-RF
Test Mode: 920MHz TX

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	79.069	-16.71	44.37	27.66	40.00	-12.34	Peak
2	118.446	-13.24	43.31	30.07	43.50	-13.43	Peak
3	135.923	-15.07	46.78	31.71	43.50	-11.79	Peak
4	161.050	-14.24	44.72	30.48	43.50	-13.02	Peak
5	350.784	-7.34	38.95	31.61	46.00	-14.39	Peak
6	780.291	0.07	40.42	40.49	46.00	-5.51	Peak

Middle Channel

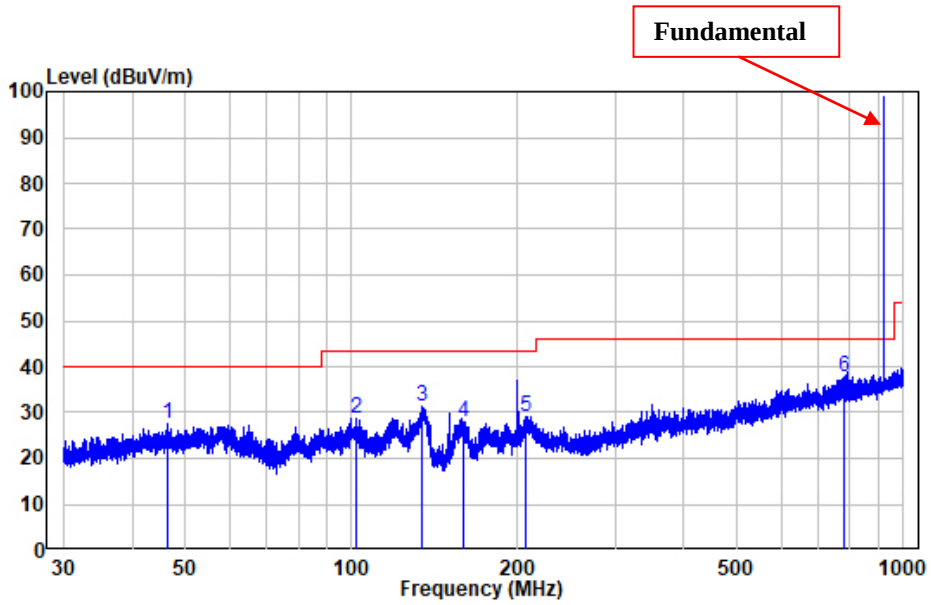
Horizontal



Site : chamber
Condition: 3m HORIZONTAL
Job No. : XMTN1220217-04783E-RF
Test Mode: 922.4MHz TX

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	55.854	-10.20	37.51	27.31	40.00	-12.69	Peak
2	103.942	-11.73	36.89	25.16	43.50	-18.34	Peak
3	135.863	-15.06	45.33	30.27	43.50	-13.23	Peak
4	159.995	-14.19	40.10	25.91	43.50	-17.59	Peak
5	336.920	-7.54	37.26	29.72	46.00	-16.28	Peak
6	750.108	-0.87	39.38	38.51	46.00	-7.49	Peak

Vertical

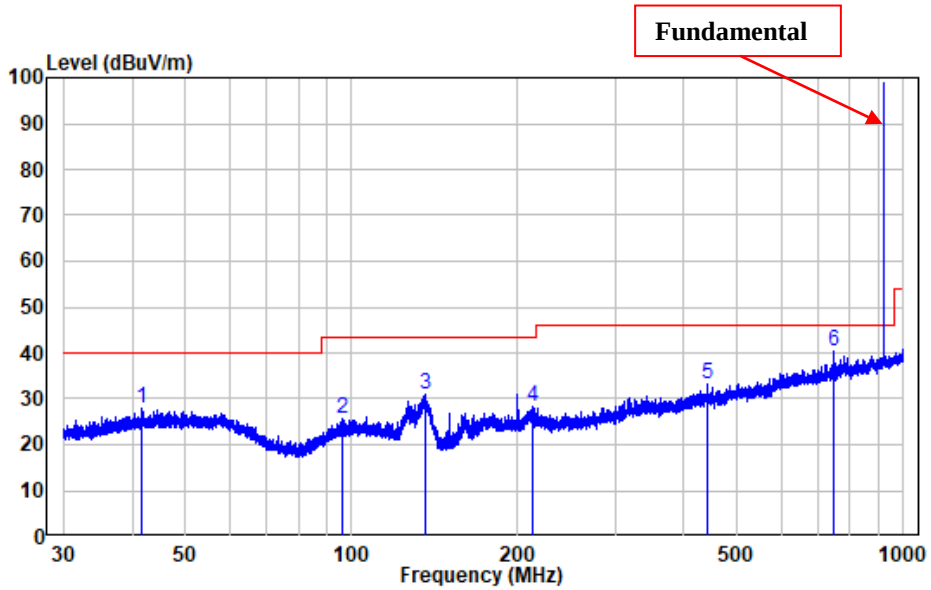


Site : chamber
Condition: 3m VERTICAL
Job No. : XMTN1220217-04783E-RF
Test Mode: 922.4MHz TX

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	46.523	-10.00	37.62	27.62	40.00	-12.38	Peak
2	101.778	-11.59	40.33	28.74	43.50	-14.76	Peak
3	134.324	-14.99	46.28	31.29	43.50	-12.21	Peak
4	159.295	-14.30	42.32	28.02	43.50	-15.48	Peak
5	207.032	-11.84	40.87	29.03	43.50	-14.47	Peak
6	780.291	0.07	37.58	37.65	46.00	-8.35	Peak

High Channel

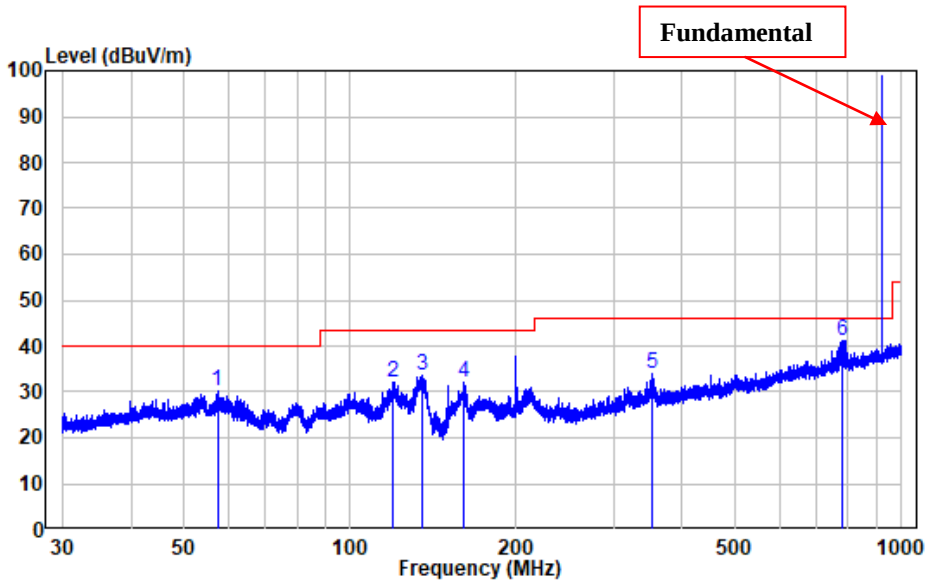
Horizontal



Site : chamber
Condition: 3m HORIZONTAL
Job No. : XMTN1220217-04783E-RF
Test Mode: 925MHz TX

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	41.640	-10.08	37.95	27.87	40.00	-12.13	Peak
2	96.478	-12.30	37.83	25.53	43.50	-17.97	Peak
3	136.161	-15.09	46.06	30.97	43.50	-12.53	Peak
4	212.922	-11.75	39.96	28.21	43.50	-15.29	Peak
5	440.969	-5.64	38.69	33.05	46.00	-12.95	Peak
6	750.108	-0.87	41.14	40.27	46.00	-5.73	Peak

Vertical

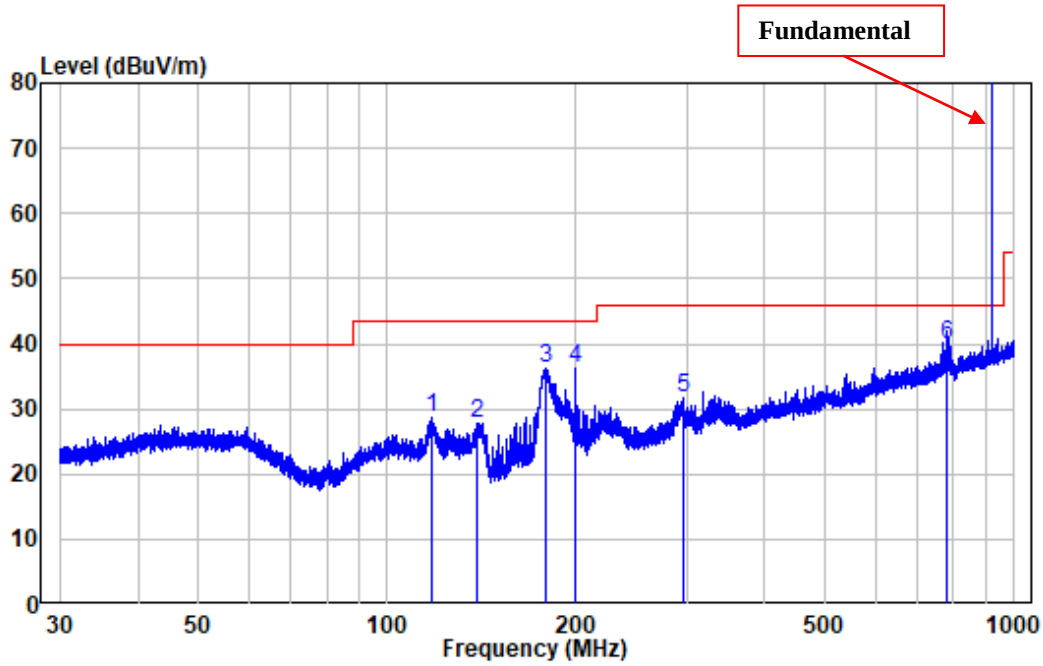


Site : chamber
Condition: 3m VERTICAL
Job No. : XMTN1220217-04783E-RF
Test Mode: 925MHz TX

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	57.392	-9.99	40.00	30.01	40.00	-9.99	Peak
2	119.384	-13.42	45.43	32.01	43.50	-11.49	Peak
3	134.618	-15.00	48.64	33.64	43.50	-9.86	Peak
4	160.205	-14.20	46.41	32.21	43.50	-11.29	Peak
5	351.862	-7.37	41.43	34.06	46.00	-11.94	Peak
6	780.291	0.07	41.06	41.13	46.00	-4.87	Peak

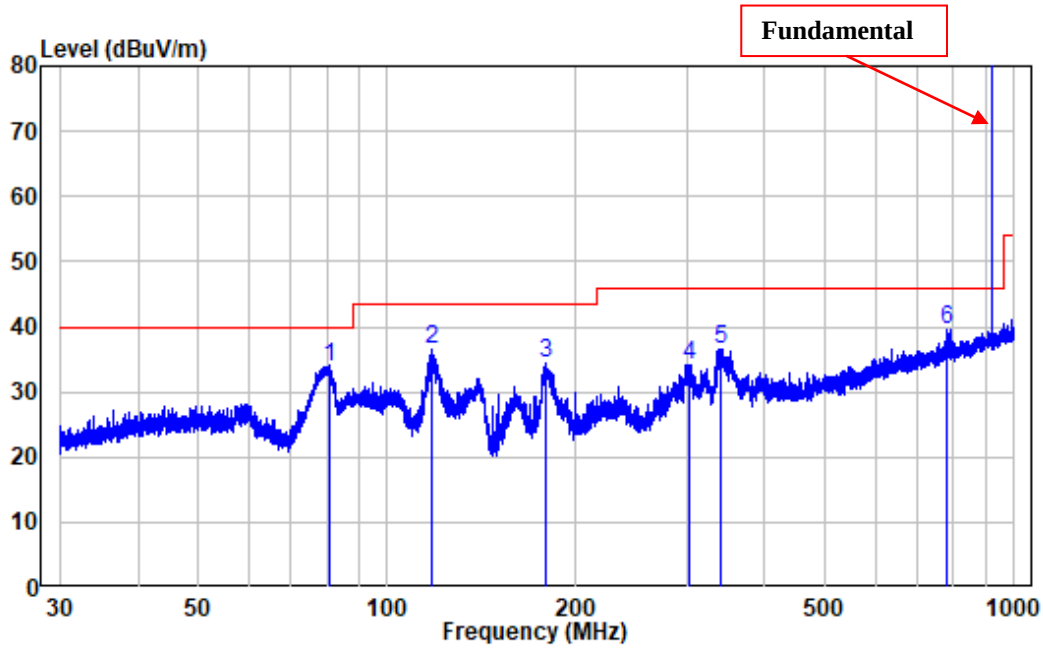
ZAIoT-VTD10

Low Channel



Site : chamber
Condition: 3m HORIZONTAL
Job No. : XMTN1220217-04783E-RF
Test Mode: 920MHz TX

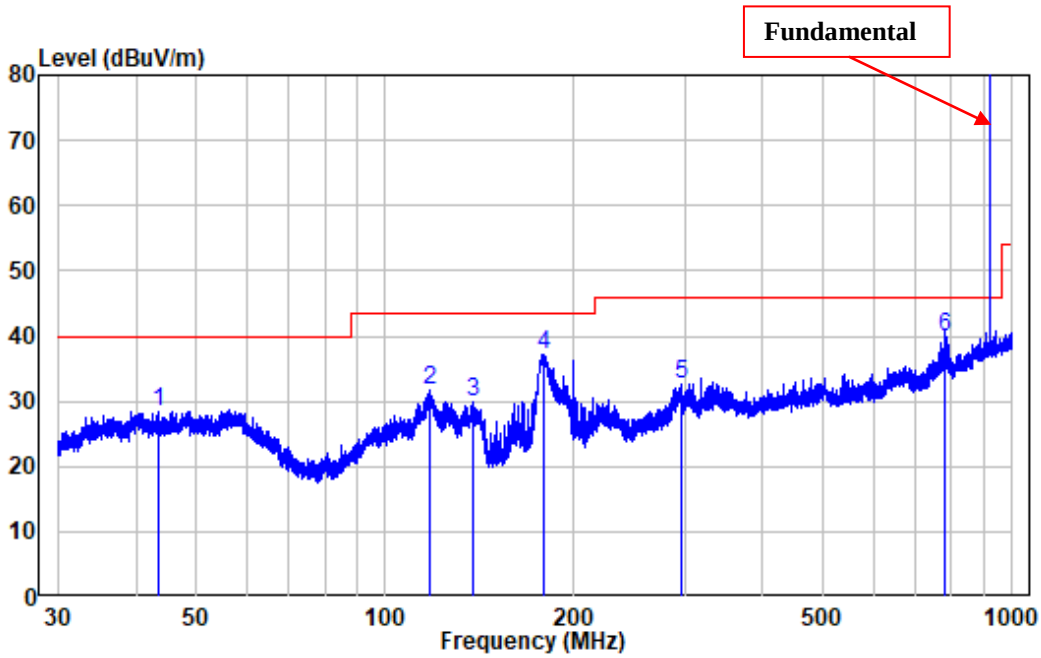
	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	117.876	-13.14	41.71	28.57	43.50	-14.93	Peak
2	138.874	-15.39	43.29	27.90	43.50	-15.60	Peak
3	178.915	-12.88	48.97	36.09	43.50	-7.41	Peak
4	199.986	-11.40	47.66	36.26	43.50	-7.24	Peak
5	295.924	-9.26	40.95	31.69	46.00	-14.31	Peak
6	780.291	0.07	39.87	39.94	46.00	-6.06	QP



Site : chamber
Condition: 3m VERTICAL
Job No. : XMTN1220217-04783E-RF
Test Mode: 920MHz TX

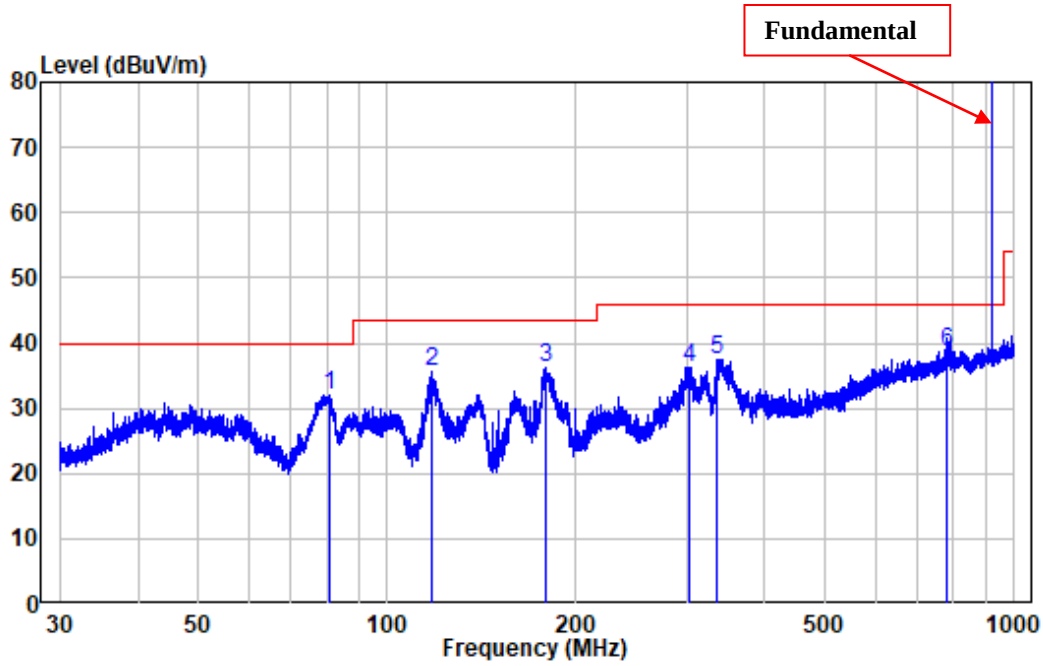
	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	80.680	-16.75	50.50	33.75	40.00	-6.25	Peak
2	117.928	-13.15	49.69	36.54	43.50	-6.96	Peak
3	178.602	-12.92	47.22	34.30	43.50	-9.20	Peak
4	302.747	-9.14	43.40	34.26	46.00	-11.74	Peak
5	339.291	-7.46	43.91	36.45	46.00	-9.55	Peak
6	780.291	0.07	39.58	39.65	46.00	-6.35	Peak

Middle Channel



Site : chamber
Condition: 3m HORIZONTAL
Job No. : XMTN1220217-04783E-RF
Test Mode: 922.4MHz TX

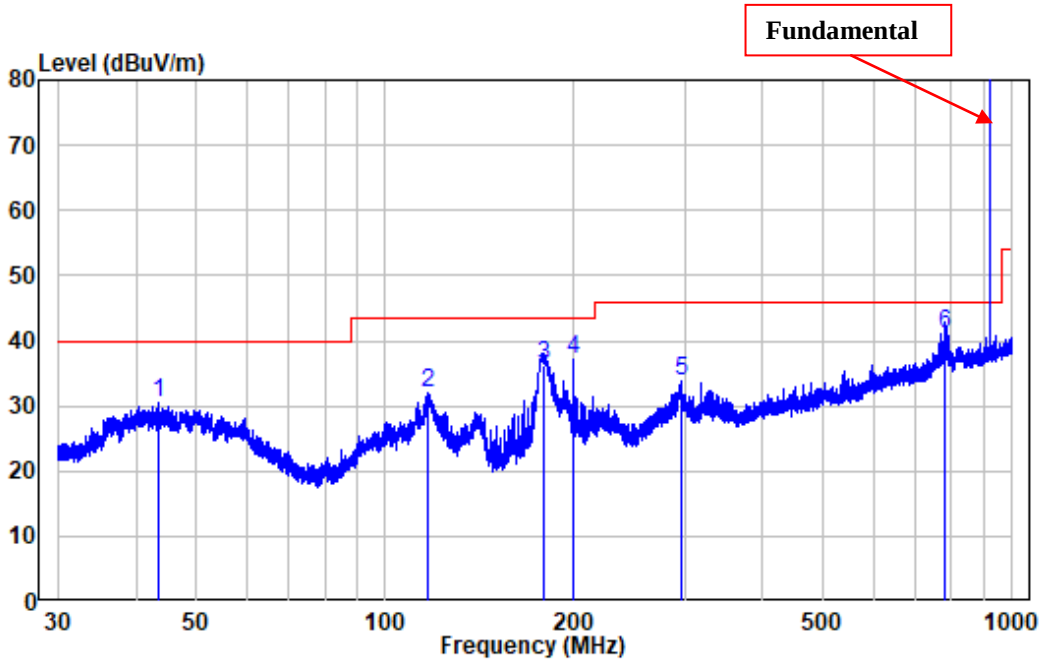
	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	43.334	-9.93	38.37	28.44	40.00	-11.56	Peak
2	117.876	-13.14	44.71	31.57	43.50	-11.93	Peak
3	137.601	-15.30	45.15	29.85	43.50	-13.65	Peak
4	178.915	-12.88	49.97	37.09	43.50	-6.41	Peak
5	295.924	-9.26	41.95	32.69	46.00	-13.31	Peak
6	780.291	0.07	39.87	39.94	46.00	-6.06	QP



Site : chamber
Condition: 3m VERTICAL
Job No. : XMTN1220217-04783E-RF
Test Mode: 922.4MHz TX

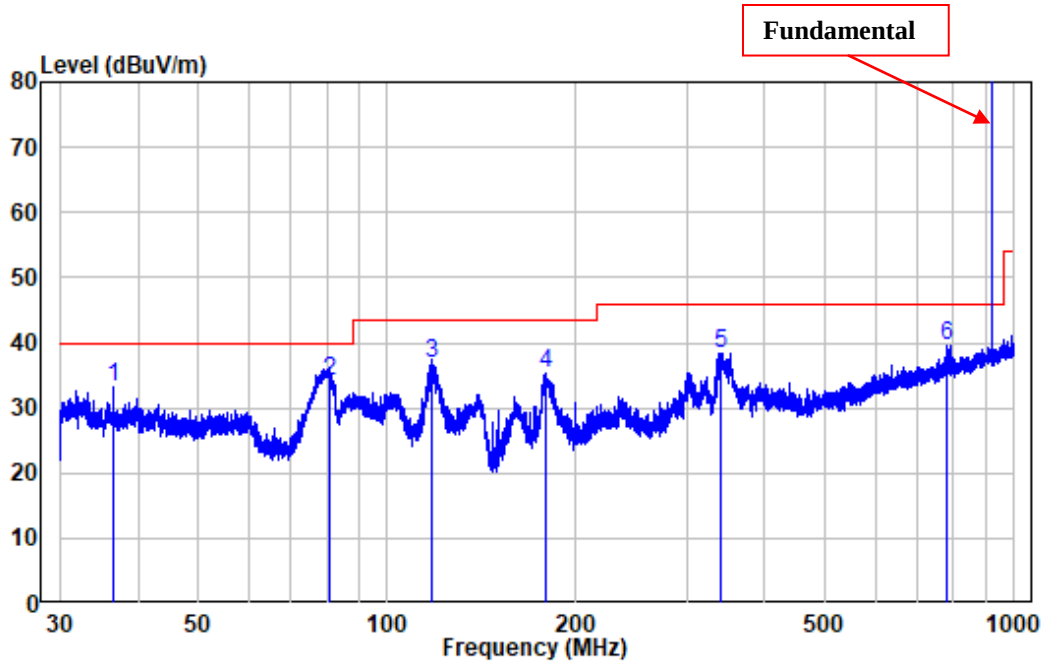
	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	80.680	-16.75	48.89	32.14	40.00	-7.86	Peak
2	117.928	-13.15	48.69	35.54	43.50	-7.96	Peak
3	178.602	-12.92	49.22	36.30	43.50	-7.20	Peak
4	302.747	-9.14	45.40	36.26	46.00	-9.74	Peak
5	335.447	-7.59	44.95	37.36	46.00	-8.64	Peak
6	780.291	0.07	38.58	38.65	46.00	-7.35	QP

High Channel



Site : chamber
Condition: 3m HORIZONTAL
Job No. : XMTN1220217-04783E-RF
Test Mode: 925MHz TX

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	43.334	-9.93	40.37	30.44	40.00	-9.56	Peak
2	117.155	-13.00	44.95	31.95	43.50	-11.55	Peak
3	178.915	-12.88	48.97	36.09	43.50	-7.41	QP
4	199.986	-11.40	48.66	37.26	43.50	-6.24	Peak
5	295.924	-9.26	42.95	33.69	46.00	-12.31	Peak
6	780.291	0.07	40.87	40.94	46.00	-5.06	QP



Site : chamber
Condition: 3m VERTICAL
Job No. : XMTN1220217-04783E-RF
Test Mode: 925MHz TX

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	36.541	-11.10	44.23	33.13	40.00	-6.87	Peak
2	80.680	-16.75	50.89	34.14	40.00	-5.86	QP
3	117.928	-13.15	49.86	36.71	43.50	-6.79	QP
4	178.602	-12.92	48.22	35.30	43.50	-8.20	Peak
5	339.291	-7.46	45.91	38.45	46.00	-7.55	Peak
6	780.291	0.07	39.58	39.65	46.00	-6.35	Peak

ZAIoT-VTC01:

902MHz - 9.5GHz:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/QP/AV		Height (m)	Polar (H/V)				
Low Channel (920 MHz)									
902	37.09	PK	126	1.4	H	1.49	38.58	46	-7.42
902	36.89	PK	111	2.0	V	1.49	38.38	46	-7.62
920	98.61	PK	143	2.1	H	1.55	100.16	114	13.84
920	91.16	AV	143	2.1	H	1.55	92.71	94	-1.29
920	91.71	PK	233	1.5	V	1.55	93.26	114	20.74
920	85.33	AV	233	1.5	V	1.55	86.88	94	7.12
1840	67.19	PK	230	1.3	H	-8.45	58.74	74	-15.26
1840	60.99	AV	230	1.3	H	-8.45	52.54	54	-1.46
1840	66.33	PK	294	1.9	H	-8.45	57.88	74	-16.12
1840	60.35	AV	294	1.9	H	-8.45	51.9	54	-2.1
3680	61.47	PK	144	1.2	H	-5.77	55.7	74	-18.3
3680	57.32	AV	144	1.2	H	-5.77	51.55	54	-2.45
3680	62.21	PK	60	1.3	V	-5.77	56.44	74	-17.56
3680	57.08	AV	60	1.3	V	-5.77	51.31	54	-2.69
Middle Channel (922.4MHz)									
922.4	96.54	PK	222	1.7	H	1.67	98.21	114	-15.79
922.4	90.23	AV	222	1.7	H	1.67	91.9	94	-2.1
922.4	92.59	PK	281	2.0	V	1.67	94.26	114	-19.74
922.4	85.48	AV	281	2.0	V	1.67	87.15	94	-6.85
1846	63.1	PK	163	1.7	H	-8.41	54.69	74	-19.31
1846	59.67	AV	163	1.7	H	-8.41	51.26	54	-2.74
1846	61.8	PK	270	1.8	V	-8.41	53.39	74	-20.61
3692	59.37	PK	258	1.6	H	-5.73	53.64	74	-20.36
3692	58.21	PK	49	1.2	V	-5.73	52.48	74	-21.52
High Channel (925 MHz)									
925	94.69	PK	218	1.8	H	1.8	96.49	114	-17.51
925	86.57	AV	218	1.8	H	1.8	88.37	94	-5.63
925	89.73	PK	318	1.5	V	1.8	91.53	114	-22.47
925	83.79	AV	318	1.5	V	1.8	85.59	94	-8.41
928	36.87	PK	348	1.2	H	1.77	38.64	46	-7.36
928	37.68	PK	72	1.5	V	1.77	39.45	46	-6.55
1850	60.96	PK	119	1.2	H	-8.37	52.59	74	-21.41
1850	60.07	PK	150	1.4	V	-8.37	51.7	74	-22.3
3700	57.67	PK	255	1.8	H	-5.7	51.97	74	-22.03
3700	56.5	PK	336	1.1	V	-5.7	50.8	74	-23.2

ZAIoT-VTD10:

902MHz - 9.5GHz:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/QP/AV		Height (m)	Polar (H/V)				
Low Channel (920 MHz)									
902	36.82	PK	169	1.7	H	1.49	38.31	46	-7.69
902	37.09	PK	342	1.5	V	1.49	38.58	46	-7.42
920	93.58	PK	78	1.3	H	1.55	95.13	114	-18.87
920	86.76	AV	78	1.3	H	1.55	88.31	94	-5.69
920	92.81	PK	136	2.0	V	1.55	94.36	114	-19.64
920	86.3	AV	136	2.0	V	1.55	87.85	94	-6.15
1840	65.96	PK	123	1.4	H	-8.45	57.51	74	-16.49
1840	60.32	AV	123	1.4	H	-8.45	51.87	54	-2.13
1840	64.51	PK	207	1.1	V	-8.45	56.06	74	-17.94
1840	58.97	AV	207	1.1	V	-8.45	50.52	54	-3.48
3680	51.08	PK	98	1.9	H	-5.77	45.31	74	-28.69
3680	53.02	PK	194	2.2	V	-5.77	47.25	74	-26.75
Middle Channel (922.4MHz)									
922.4	92.57	PK	262	1.6	H	1.67	94.24	114	-19.76
922.4	86.27	AV	262	1.6	H	1.67	87.94	94	-6.06
922.4	91.46	PK	91	1.4	V	1.67	93.13	114	-20.87
922.4	84.39	AV	91	1.4	V	1.67	86.06	94	-7.94
1846	64.89	PK	331	1.7	H	-8.41	56.48	74	-17.52
1846	59.21	AV	331	1.7	H	-8.41	50.8	54	-3.2
1846	63.44	PK	109	1.2	V	-8.41	55.03	74	-18.97
1846	57.54	AV	109	1.2	V	-8.41	49.13	54	-4.87
3692	61.43	PK	299	1.5	H	-5.73	55.7	74	-18.3
3692	55.71	AV	299	1.5	H	-5.73	49.98	54	-4.02
3692	60.27	PK	291	1.7	V	-5.73	54.54	74	-19.46
3692	54.59	AV	291	1.7	V	-5.73	48.86	54	-5.14
High Channel (925 MHz)									
925	92.02	PK	154	2.0	H	1.8	93.82	114	-20.18
925	85.02	AV	154	2.0	H	1.8	86.82	94	-7.18
925	90.72	PK	88	1.9	V	1.8	92.52	114	-21.48
925	83.5	AV	88	1.9	V	1.8	85.3	94	-8.7
928	37.10	PK	319	1.5	H	1.77	38.87	46	-7.13
928	37.32	PK	78	1.1	V	1.77	39.09	46	-6.91
1850	64.14	PK	117	2.0	H	-8.37	55.77	74	-18.23
1850	57.94	AV	117	2.0	H	-8.37	49.57	54	-4.43
1850	62.59	PK	320	1.2	V	-8.37	54.22	74	-19.78
1850	57.3	AV	320	1.2	V	-8.37	48.93	54	-5.07

3700	60.5	PK	301	1.3	H	-5.7	54.8	74	-19.2
3700	54.53	AV	301	1.3	H	-5.7	48.83	54	-5.17
3700	59.52	PK	183	1.6	V	-5.7	53.82	74	-20.18

Note:
Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
Absolute Level (Corrected Amplitude) = Factor + Reading
Margin = Absolute Level (Corrected Amplitude) – Limit
The other spurious emission which is in the noise floor level was not recorded.
For above 1GHz, the test result of peak was 20dB below to the limit of peak, which can be compliant to the average limit, so just peak value was recorded.

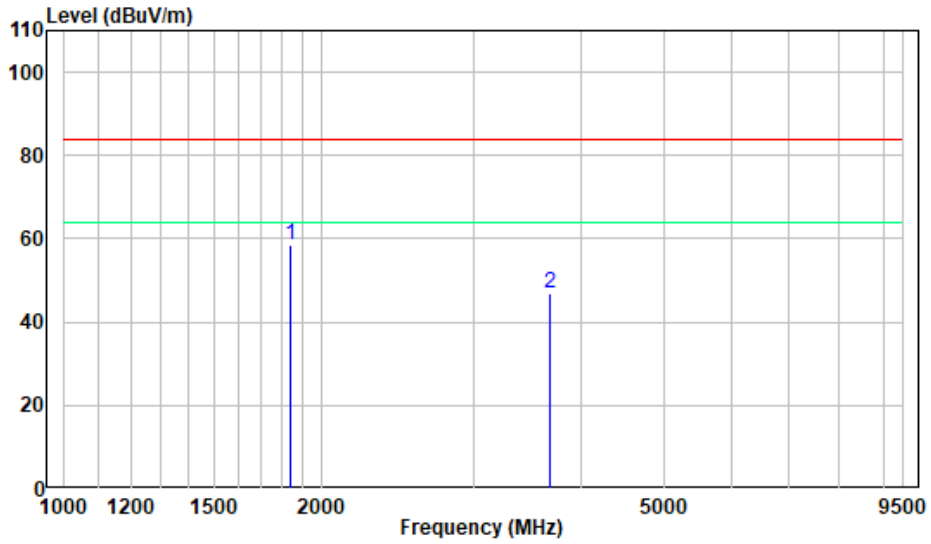
ZAIoT-VTC01:

Pre-scan plots:

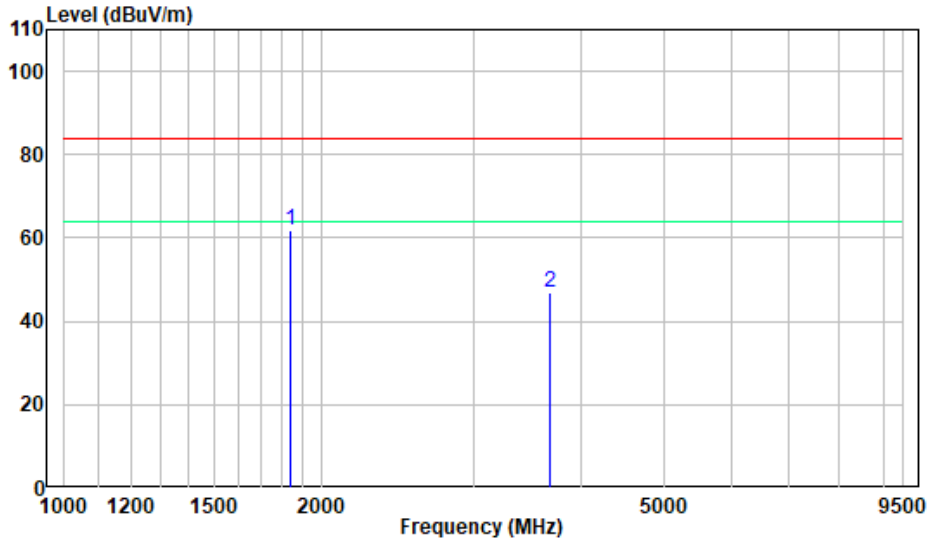
1 - 9.5GHz

Low Channel (Worst case)

Horizontal



Vertical



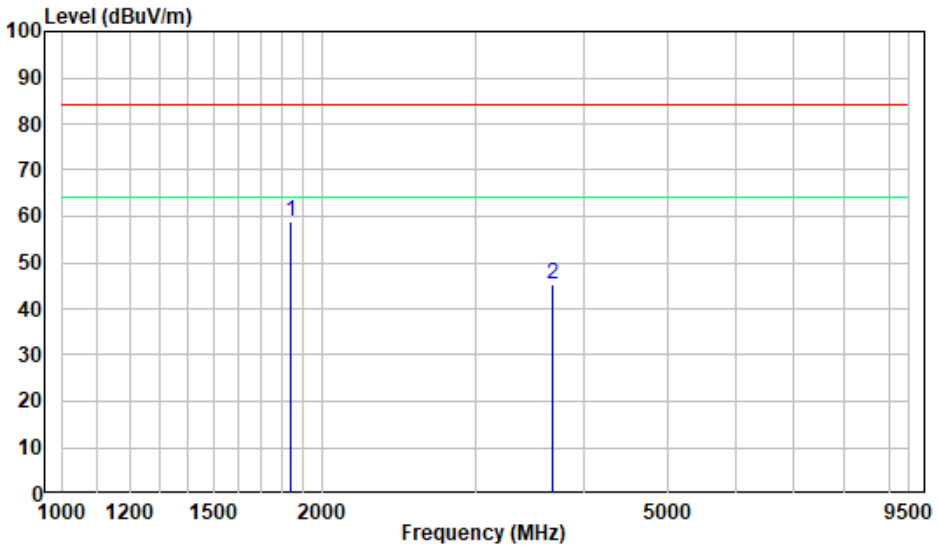
ZAIoT-VTD10:

Pre-scan plots:

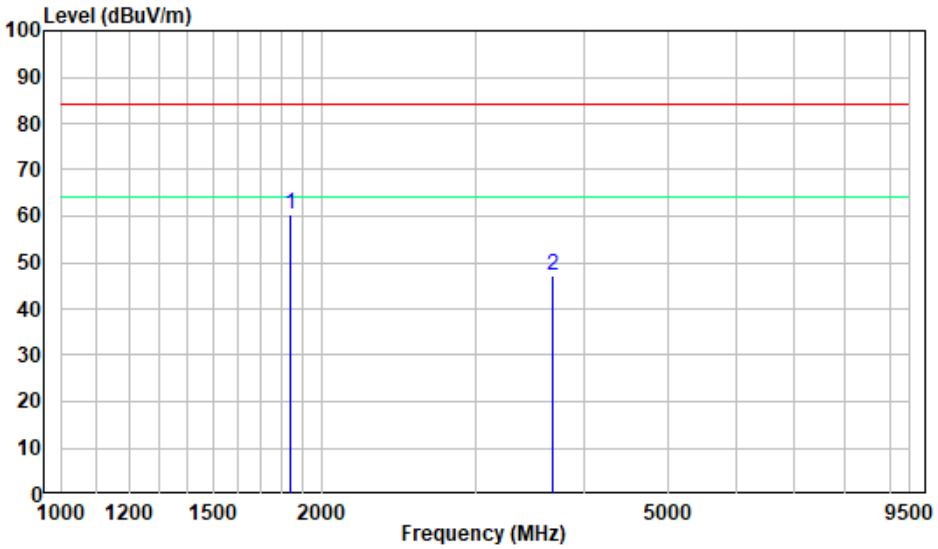
1 - 9.5GHz

Low Channel (Worst case)

Horizontal



Vertical



FCC§15.215(c) - 20dB EMISSION BANDWIDTH

Applicable Standard

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in § 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that indicated 20dB bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

Test Data

Environmental Conditions

Temperature:	23 ℃
Relative Humidity:	53 %
ATM Pressure:	101.2 kPa

The testing was performed by Ting Lv on 2022-05-07 to 2022-05-20.

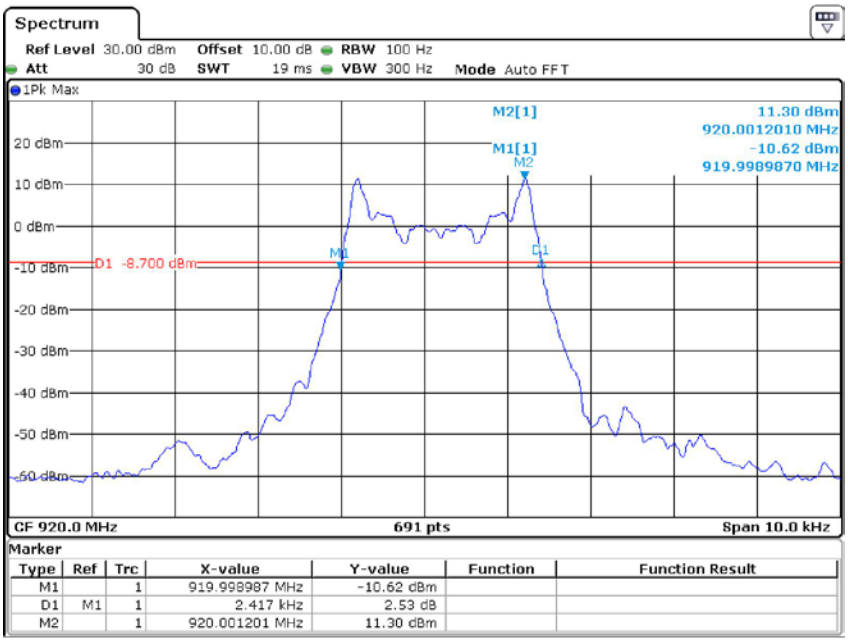
Test Mode: Transmitting

Please refer to the following table and plots.

Model	Channel	Frequency (MHz)	20dB Bandwidth (kHz)
ZAIoT-VTC01	Low	920	2.417
	Middle	922.4	2.417
	High	925	2.402
ZAIoT-VTD10	Low	920	2.417
	Middle	922.4	2.417
	High	925	2.417

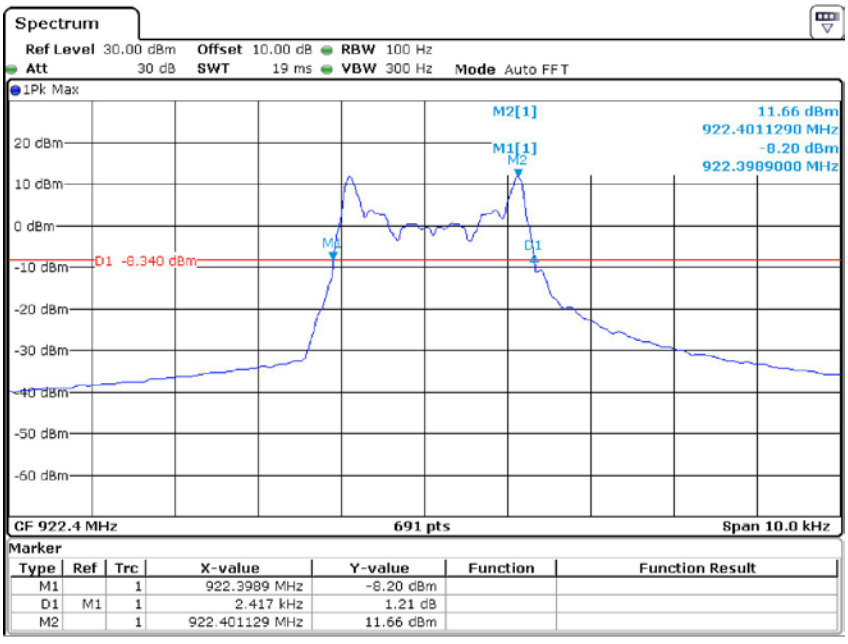
ZAIoT-VTC01

Low Channel



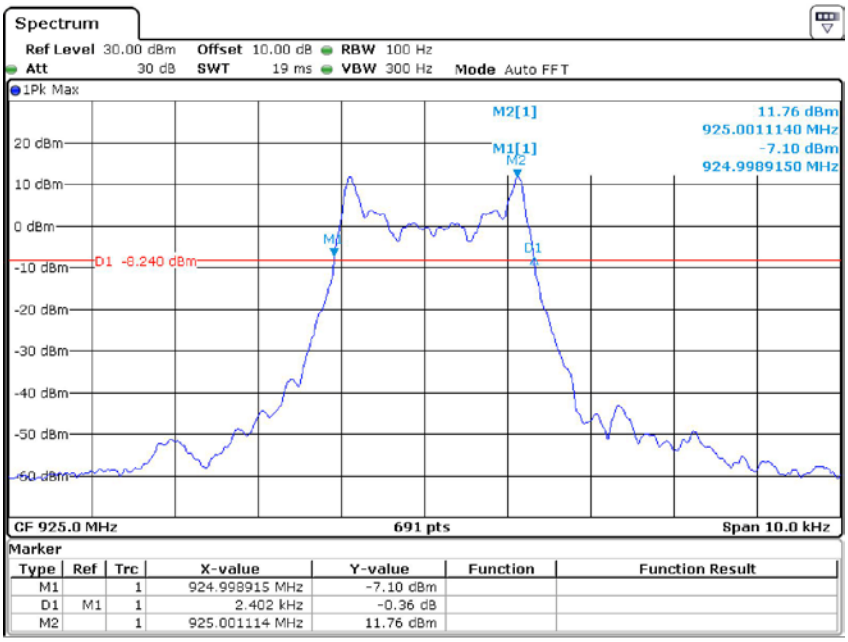
Date: 9.MAY.2022 05:52:46

Middle Channel



Date: 7.MAY.2022 08:02:29

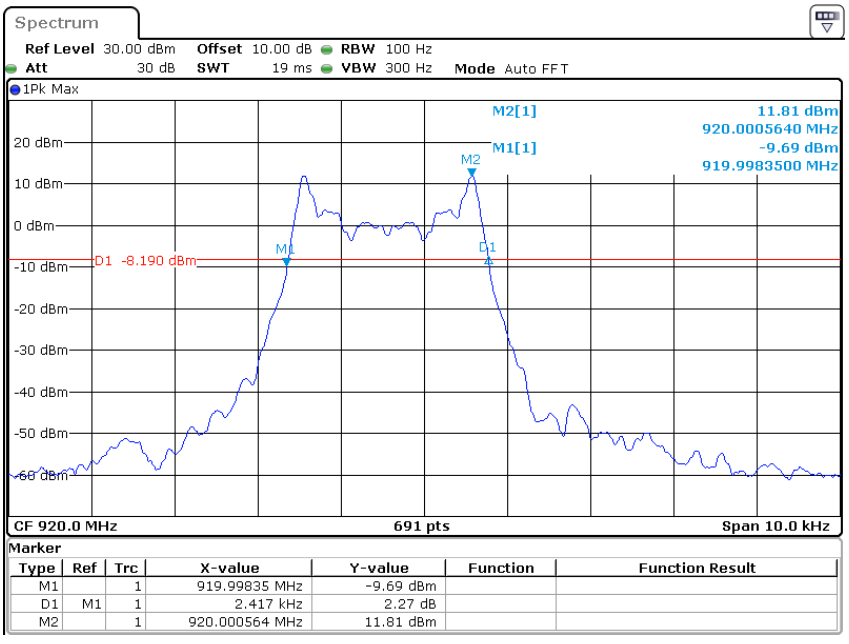
High Channel



Date: 7.MAY.2022 08:05:27

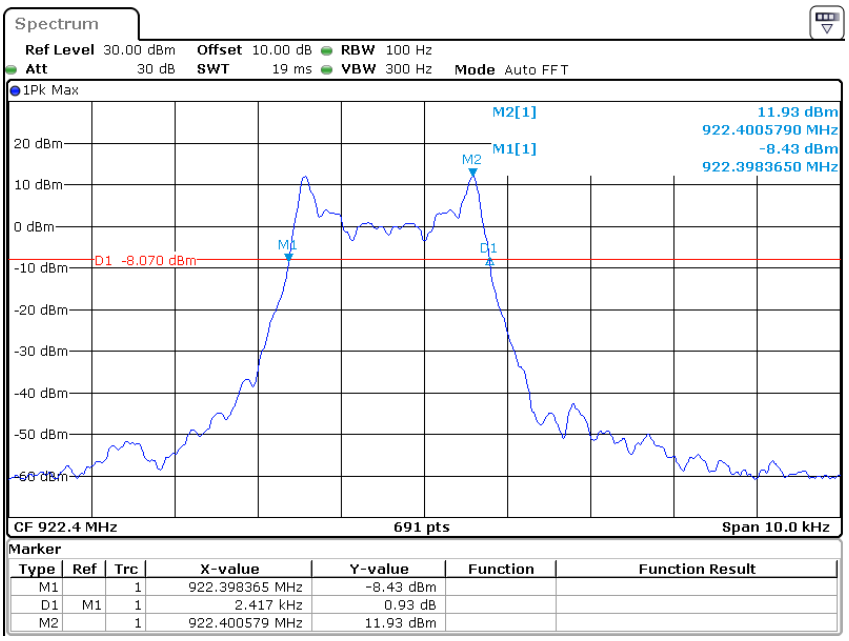
ZAIoT-VTD10

Low Channel



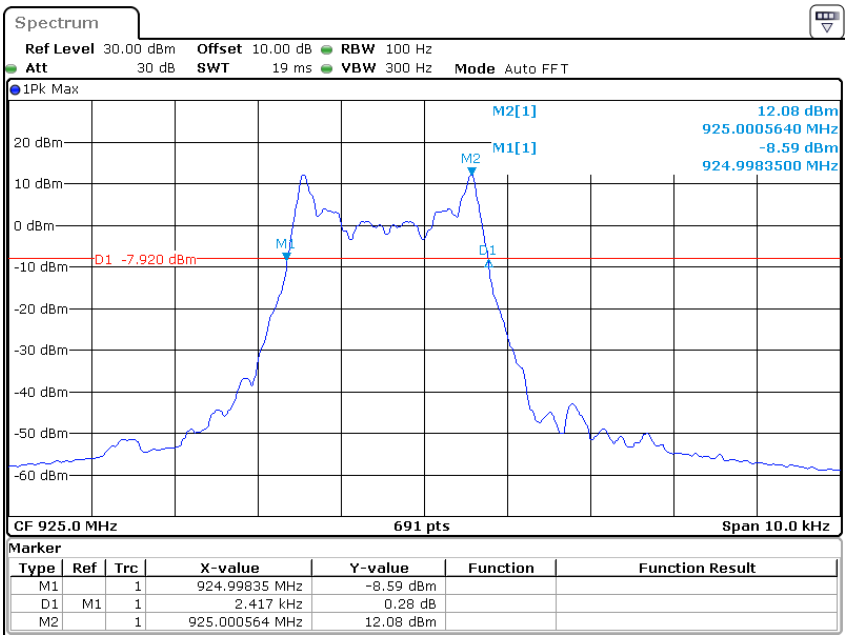
Date: 20.MAY.2022 15:29:10

Middle Channel



Date: 20.MAY.2022 15:24:01

High Channel



Date: 20.MAY.2022 15:32:23

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