TEST REPORT

Applicant Name :	Shenzhen Jiayz photo industrial., Ltd
Address :	A16 Building, Intelligent Terminal Industrial Park of Silicon Valley Power, Guanlan, Longhua District, Shenzhen, China
Report Number :	SZNS211227-67134E-RF-00
FCC ID:	2ARN3-BLK900TX

Test Standard (s)

FCC PART 15.247

Sample Description

Product Type:	Microphone
Model No.:	Blink900 TX
Multiple Model(s) No.:	Blink900 TX Mini, Blink900 HM, Blink900 TXS, Blink900 X-TX (Model Difference please refer to the DOS)
Trade Mark:	N/A
Date Received:	2021/12/27
Date of Test:	2022/02/09~2022/03/03
Report Date:	2022/03/19

Test Result:	Pass*

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

Prepared and Checked By:

Ting Lü
EMC Engineer

Approved By:

Robert 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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TABLE OF CONTENTS

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Frequency Range	2402~2480MHz
Maximum conducted Peak output power	3.62dBm
Modulation Technique	GFSK
Antenna Specification*	FPC Antenna:2.0dBi (provided by the applicant)
Voltage Range	DC 3.8V from battery or DC 5.0V from USB port
Sample serial number	SZNS211227-67134E-RF-S1 (CE&RE Test) SZNS211227-67134E-RF-S2(RF Conducted Test) (Assigned by ATC)
Sample/EUT Status	Good condition

Objective

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

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, section 15.203, 15.205, 15.207, 15.209 and 15.247 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.

Each test item follows test standards and with no deviation.

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 429 7.01.

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

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in an engineering mode, which provided by manufacturer.

Channel list:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2402	40	2441
2	2403	41	2442
3	2404	…	…
…	…	77	2478
38	2439	78	2479
39	2440	79	2480

EUT was test on channel 1, 39, 79.

EUT have two antennas, but only supports SISO operate.

EUT Exercise Software

EUT was configured to test mode by applicant and the power level is default*.

Special Accessories

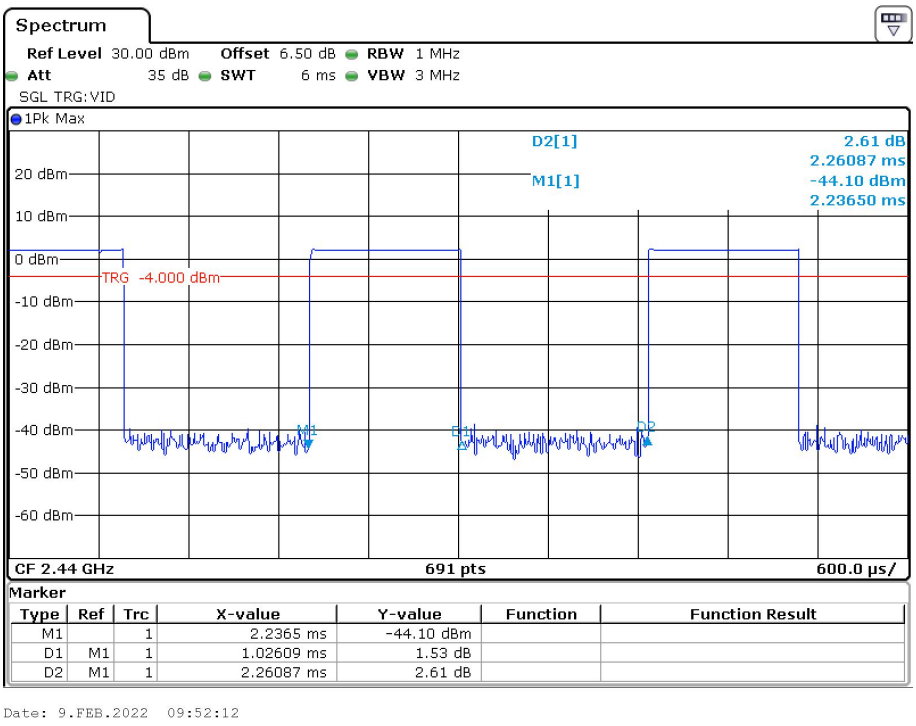
No special accessory.

Equipment Modifications

No modification was made to the EUT tested.

Duty Cycle

T_{on} (ms)	T_{on+off} (ms)	Duty Cycle (%)	1/T (kHz)
1.03	2.26	45.58	0.97



Support Equipment List and Details

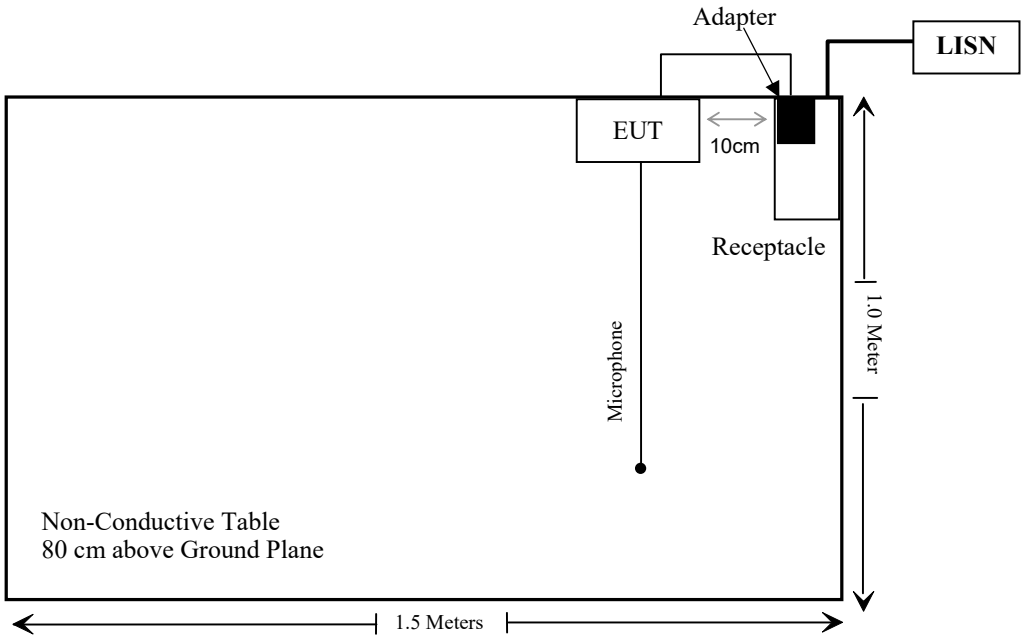
Manufacturer	Description	Model	Serial Number
TECNO	adapter	U100TSA	BJD202010261

External I/O Cable

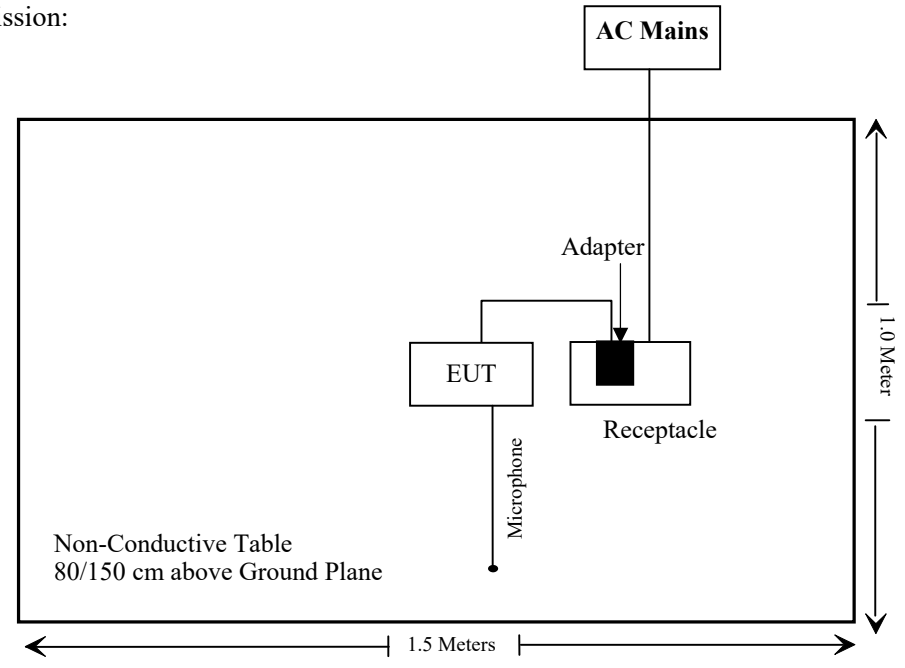
Cable Description	Length (m)	From Port	To
Un-shielded detachable USB Cable	0.2	Adapter	EUT

Block Diagram of Test Setup

For conducted emission:



For radiated emission:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307(b) & §2.1093	RF EXPOSURE	Compliant
§15.203	Antenna Requirement	Compliant
§15.207 (a)	AC Line Conducted Emissions	Compliant
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliant
§15.247 (a)(2)	6 dB Emission Bandwidth	Compliant
§15.247(b)(3)	Maximum Conducted Output Power	Compliant
§15.247(d)	100 kHz Bandwidth of Frequency Band Edge	Compliant
§15.247(e)	Power Spectral Density	Compliant

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emissions Test					
Rohde& Schwarz	EMI Test Receiver	ESCI	100784	2021/12/13	2022/12/12
Rohde & Schwarz	L.I.S.N.	ENV216	101314	2021/12/13	2022/12/12
Anritsu Corp	50 Coaxial Switch	MP59B	6100237248	2021/12/13	2022/12/12
Unknown	RF Coaxial Cable	No.17	N0350	2021/12/14	2022/12/13
Conducted Emission Test Software: e3 19821b (V9)					
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
Schwarzbeck	HORN ANTENNA	BBHA9170	9170-359	2020/01/05	2023/01/04
Radiated Emission Test Software: e3 19821b (V9)					
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
Wainwright	High Pass Filter	WHKX3.6/18 G-10SS	5	2021/12/14	2022/12/13
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSV-40	101495	2021/12/13	2022/12/12
HP	6dB Attenuator	8493B	2708A 04769	2021/12/14	2022/12/13
Unknown	RF Cable	Unknown	Unknown	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§15.247 (i), §1.1307 (b) (1) &§2.1093 – RF EXPOSURE

Applicable Standard

According to FCC §2.1093 and §1.1307(b) (1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

1. According to KDB 447498 D01 General RF Exposure Guidance

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where
1. f(GHz) is the RF channel transmit frequency in GHz.
2. Power and distance are rounded to the nearest mW and mm before calculation.
3. The result is rounded to one decimal place for comparison.
4. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test Exclusion.

For worst case:

Frequency (MHz)	Maximum Tune-up power		Calculated Distance (mm)	Calculated Value	Threshold (1-g SAR)	SAR Test Exclusion
	(dBm)	(mW)				
2402-2480	4.0	2.51	5	0.8	3.0	**Yes**

Result: No Standalone SAR test is required

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 have two internal antenna, which was permanently attached, and the maximum antenna gain is 2.0dBi, fulfill the requirement of this section. Please refer to the EUT photos.

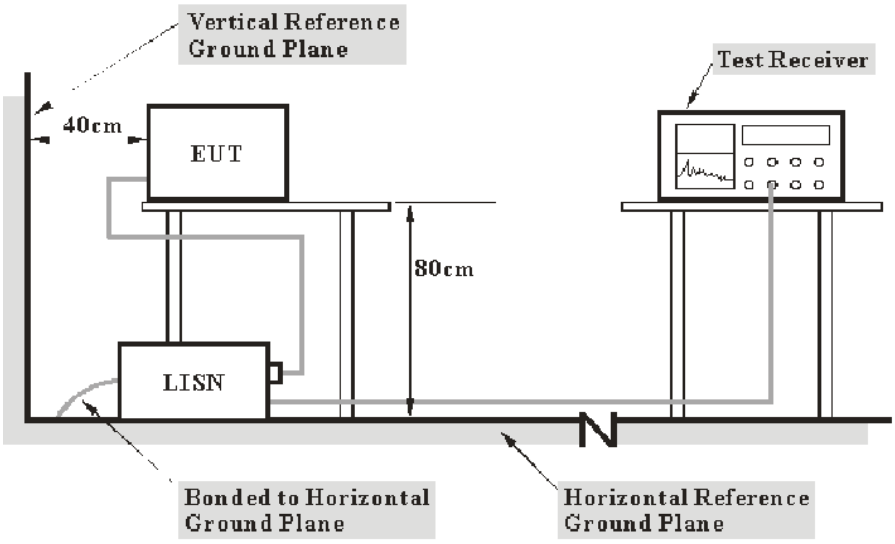
Result: Compliance.

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207(a)

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The measurement procedure of EUT setup is according with ANSI C63.10-2013. The related limit was specified in FCC Part 15.207.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All final data was recorded in the Quasi-peak and average detection mode.

Transd Factor & Margin Calculation

The factor is calculated by adding LISN VDF (Voltage Division Factor), Cable Loss. The basic equation is as follows:

Factor = LISN VDF + Cable Loss

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

Over limit = Level – Limit
Level= reading level+ Factor

Test Data

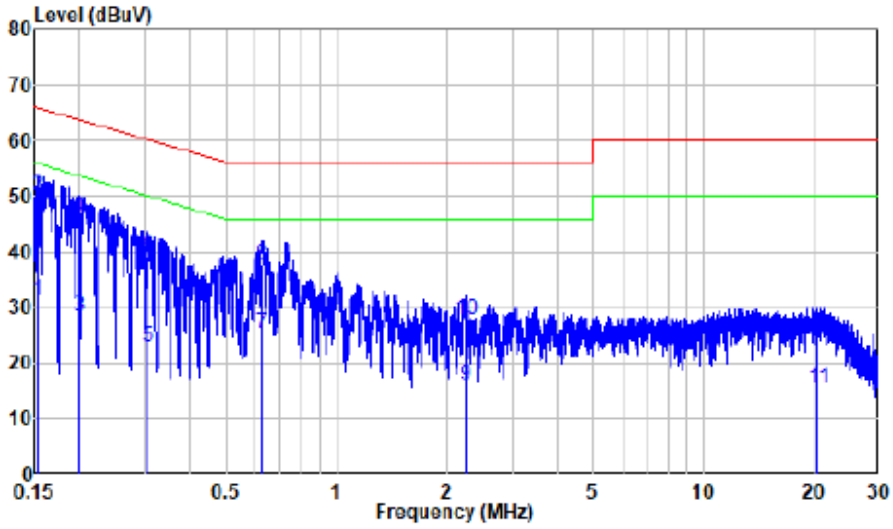
Environmental Conditions

Temperature:	23 ℃
Relative Humidity:	53 %
ATM Pressure:	101.5 kPa

The testing was performed by Bin Duan on 2022-02-25.

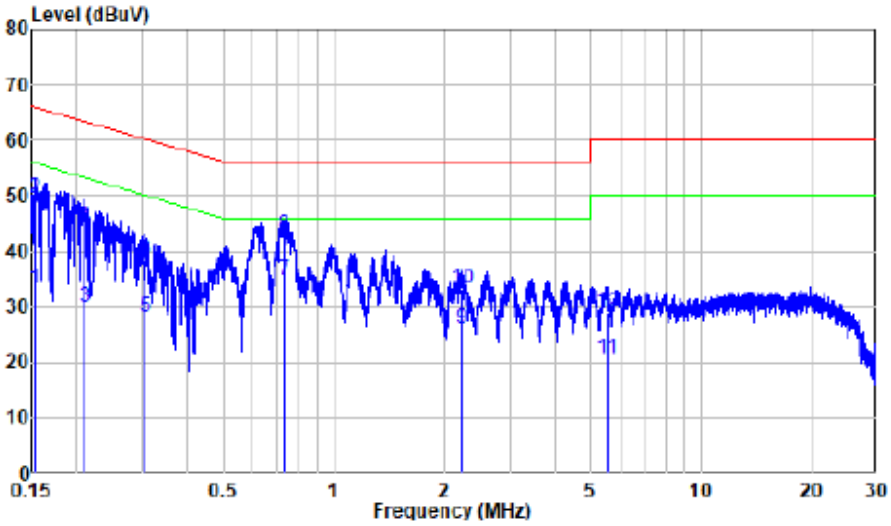
EUT operation mode: Transmitting (the worst case for low channel, ANT 2)

AC 120V/60 Hz, Line



	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.154	9.89	21.48	31.37	55.79	-24.42	Average
2	0.154	9.89	40.30	50.19	65.79	-15.60	QP
3	0.200	9.80	18.69	28.49	53.62	-25.13	Average
4	0.200	9.80	36.41	46.21	63.62	-17.41	QP
5	0.305	9.80	13.15	22.95	50.10	-27.15	Average
6	0.305	9.80	29.36	39.16	60.10	-20.94	QP
7	0.628	9.81	15.46	25.27	46.00	-20.73	Average
8	0.628	9.81	28.04	37.85	56.00	-18.15	QP
9	2.246	9.92	6.12	16.04	46.00	-29.96	Average
10	2.246	9.92	17.71	27.63	56.00	-28.37	QP
11	20.391	10.21	5.19	15.40	50.00	-34.60	Average
12	20.391	10.21	14.67	24.88	60.00	-35.12	QP

AC 120V/60 Hz, Neutral



	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.153	9.80	23.33	33.13	55.82	-22.69	Average
2	0.153	9.80	39.76	49.56	65.82	-16.26	QP
3	0.209	9.80	19.94	29.74	53.23	-23.49	Average
4	0.209	9.80	34.68	44.48	63.23	-18.75	QP
5	0.306	9.80	18.29	28.09	50.08	-21.99	Average
6	0.306	9.80	28.42	38.22	60.08	-21.86	QP
7	0.728	9.81	24.87	34.68	46.00	-11.32	Average
8	0.728	9.81	33.00	42.81	56.00	-13.19	QP
9	2.222	9.82	16.23	26.05	46.00	-19.95	Average
10	2.222	9.82	23.40	33.22	56.00	-22.78	QP
11	5.535	9.92	10.74	20.66	50.00	-29.34	Average
12	5.535	9.92	19.11	29.03	60.00	-30.97	QP

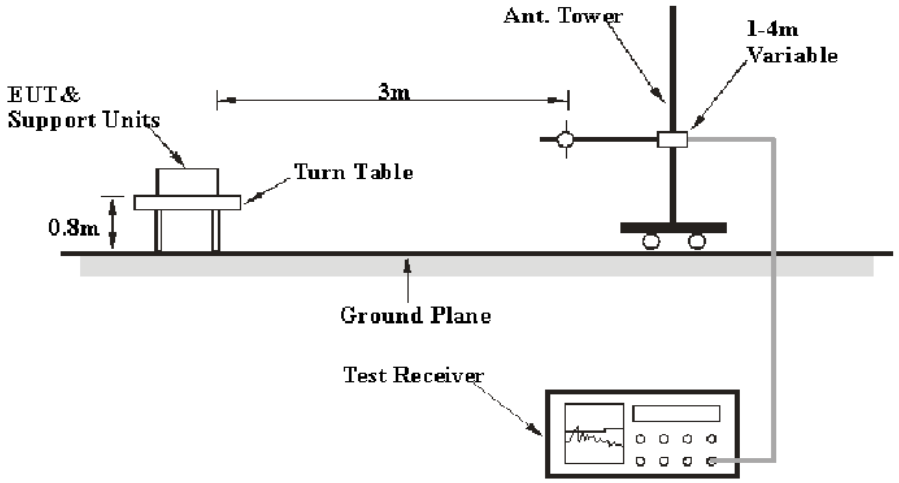
FCC §15.205, §15.209 & §15.247(d) – RADIATED EMISSIONS

Applicable Standard

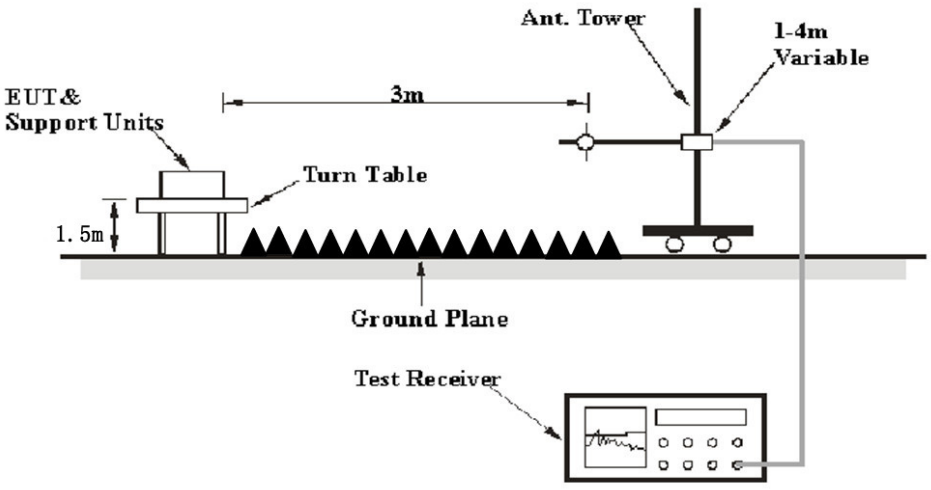
FCC §15.205; §15.209; §15.247(d)

EUT Setup

Below 1 GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209 and FCC 15.247 limits.

EMI Test Receiver & Spectrum Analyzer Setup

The EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz Note 1	/	Average
	1MHz	＞1/T Note 2	/	Average

Note 1: when duty cycle is no less than 98%
Note 2: when duty cycle is less than 98%

Test Procedure

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

All final data was recorded in Quasi-peak detection mode for frequency range of 30 MHz -1 GHz and peak and Average detection modes for frequencies above 1 GHz.

Factor & 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 margin calculation is as follows:

Over limit/Margin = Level/Corrected Amplitude-Limit
Level/Corrected Amplitude = Reading + Factor

Test Data

Environmental Conditions

Temperature:	23 ℃
Relative Humidity:	55 %
ATM Pressure:	101.5 kPa

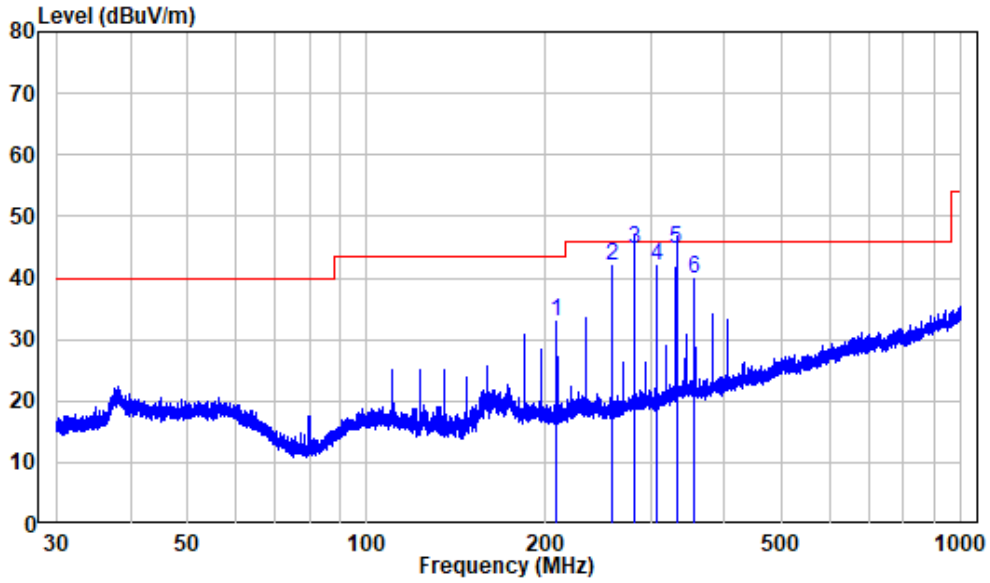
The testing was performed by Chao Mo on 2022-03-03.

EUT operation mode: Transmitting (Pre-scan in the X, Y and Z axes of orientation, the worst case X-axes of orientation was recorded)

30MHz-1GHz: *(worst case for Low channel, ANT 2)*

Note: When the test result of peak was less than the limit of QP more than 6dB, just peak value were recorded.

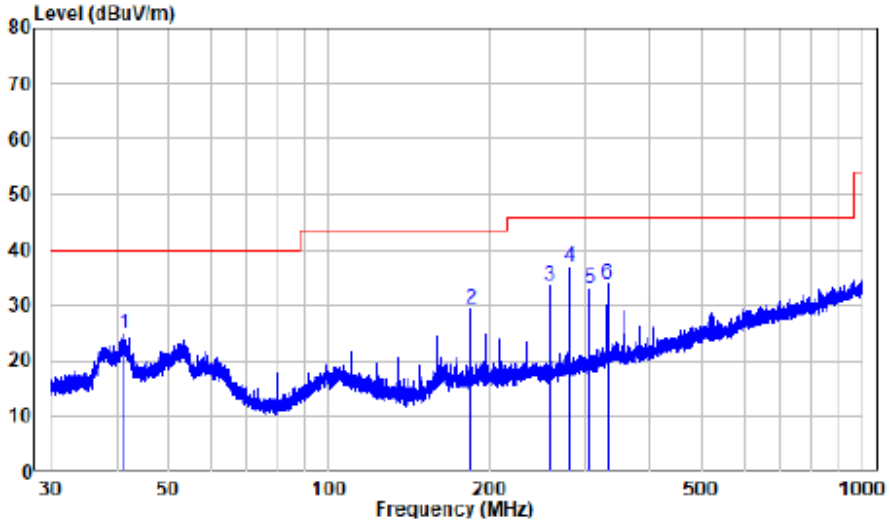
Horizontal:



Site : chamber
Condition: 3m Horizontal
Job No. : SZNS211227-67134E-RF
Test Mode: Transmission

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	208.855	-11.86	44.81	32.95	43.50	-10.55	Peak
2	258.100	-10.60	52.60	42.00	46.00	-4.00	QP
3	282.613	-9.51	54.20	44.69	46.00	-1.31	QP
4	307.292	-8.98	50.84	41.86	46.00	-4.14	QP
5	331.791	-7.86	52.41	44.55	46.00	-1.45	QP
6	356.363	-7.54	47.48	39.94	46.00	-6.06	Peak

Vertical



Site : chamber
Condition: 3m VERTICAL
Job No. : SZNS211227-67134E-RF
Test Mode: Transmission

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	41.295	-10.14	34.77	24.63	40.00	-15.37	Peak
2	184.328	-12.26	41.43	29.17	43.50	-14.33	Peak
3	258.100	-10.60	44.20	33.60	46.00	-12.40	Peak
4	282.613	-9.51	46.32	36.81	46.00	-9.19	Peak
5	307.157	-8.99	41.98	32.99	46.00	-13.01	Peak
6	331.791	-7.86	41.56	33.70	46.00	-12.30	Peak

Above 1GHz:
Antenna 1:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/QP/Ave.		Height (m)	Polar (H/V)				
Low Channel(2402MHz)									
2310	67.89	PK	168	2.1	H	-7.24	60.65	74	-13.35
2310	55.45	Ave.	168	2.1	H	-7.24	48.21	54	-5.79
2310	68.73	PK	119	2.2	V	-7.24	61.49	74	-12.51
2310	55.56	Ave.	119	2.2	V	-7.24	48.32	54	-5.68
2390	69.37	PK	11	1.2	H	-7.22	62.15	74	-11.85
2390	54.56	Ave.	11	1.2	H	-7.22	47.34	54	-6.66
2390	68.71	PK	20	1.1	V	-7.22	61.49	74	-12.51
2390	54.46	Ave.	20	1.1	V	-7.22	47.24	54	-6.76
4804	61.33	PK	67	1.4	H	-3.51	57.82	74	-16.18
4804	55.89	Ave.	67	1.4	H	-3.51	52.38	54	-1.62
4804	56.37	PK	68	1.5	V	-3.51	52.86	74	-21.14
Middle Channel(2440MHz)									
4880	61.03	PK	349	2.2	H	-3.38	57.65	74	-16.35
4880	55.47	Ave.	349	2.2	H	-3.38	52.09	54	-1.91
4880	56.98	PK	83	2.5	V	-3.38	53.6	74	-20.40
High Channel(2480 MHz)									
2483.5	78.79	PK	116	2.1	H	-7.2	71.59	74	-2.41
2483.5	56.57	Ave.	116	2.1	H	-7.2	49.37	54	-4.63
2483.5	69.87	PK	244	1.2	V	-7.2	62.67	74	-11.33
2483.5	55.21	Ave.	244	1.2	V	-7.2	48.01	54	-5.99
2500	76.38	PK	56	2	H	-7.18	69.2	74	-4.80
2500	56.55	Ave.	56	2	H	-7.18	49.37	54	-4.63
2500	69.23	PK	136	1.1	V	-7.18	62.05	74	-11.95
2500	55.75	Ave.	136	1.1	V	-7.18	48.57	54	-5.43
4960	59.96	PK	60	1.4	H	-3.01	56.95	74	-17.05
4960	54.29	Ave.	60	1.4	H	-3.01	51.28	54	-2.72
4960	56.32	PK	266	1.8	V	-3.01	53.31	74	-20.69

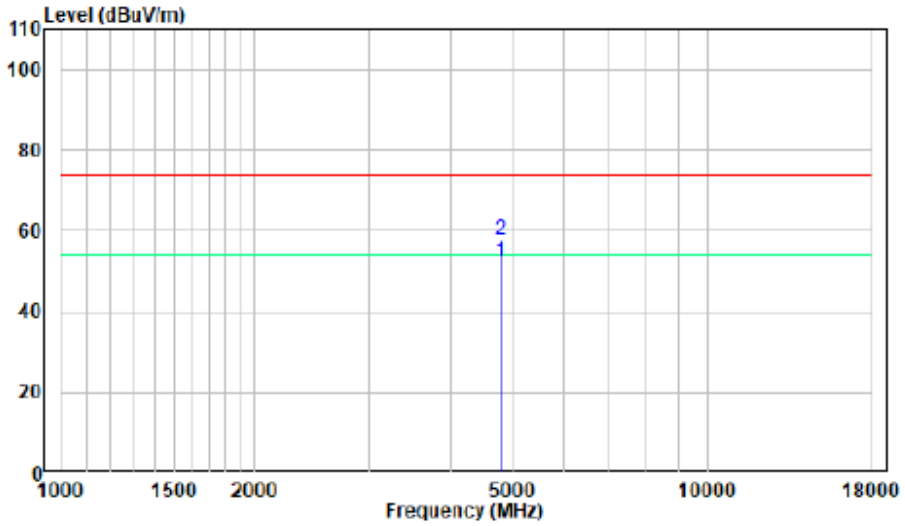
Note:
Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
Corrected Amplitude = Corrected Factor + Reading
Margin = Corrected. Amplitude - Limit
The other spurious emission which is in the noise floor level was not recorded.
The test result of peak was less than the limit of average, so just peak value were recorded.

1-18GHz

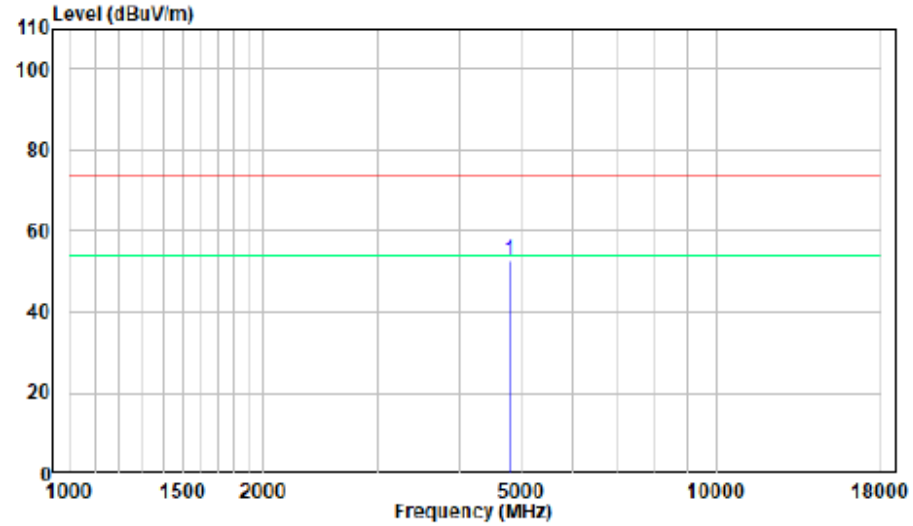
Pre-scan for Peak

Low Channel

Horizontal:



Vertical:

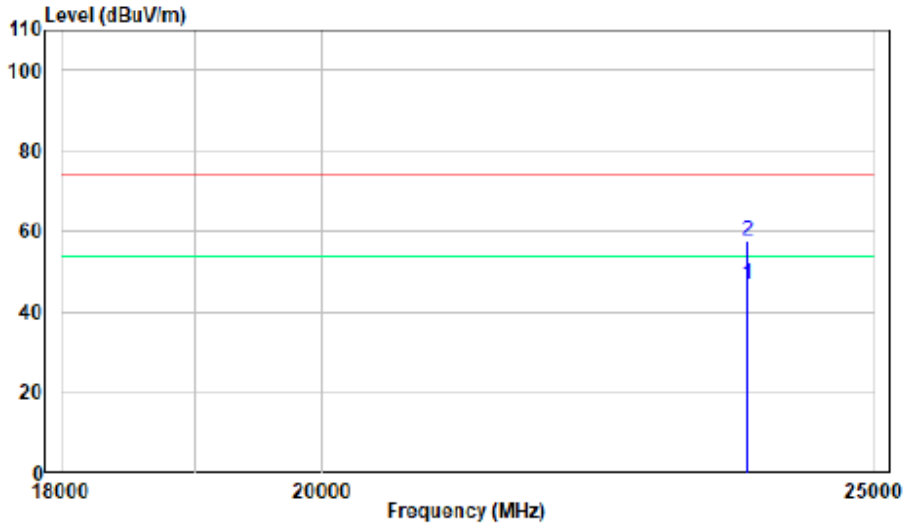


18-25GHz

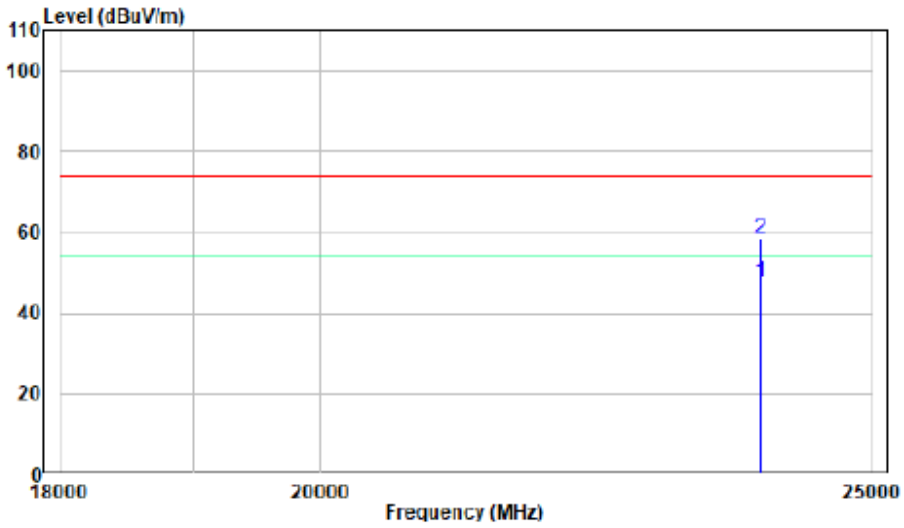
Pre-scan for Peak

Low Channel

Horizontal:



Vertical:



Antenna 2:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/QP/Ave.		Height (m)	Polar (H/V)				
Low Channel(2402MHz)									
2310	68.13	PK	192	1.7	H	-7.24	60.89	74	-13.11
2310	54.66	Ave.	192	1.7	H	-7.24	47.42	54	-6.58
2310	67.67	PK	329	1.7	V	-7.24	60.43	74	-13.57
2310	53.93	Ave.	329	1.7	V	-7.24	46.69	54	-7.31
2390	68.64	PK	216	2	H	-7.22	61.42	74	-12.58
2390	53.56	Ave.	216	2	H	-7.22	46.34	54	-7.66
2390	68.54	PK	335	1.3	V	-7.22	61.32	74	-12.68
2390	53.53	Ave.	335	1.3	V	-7.22	46.31	54	-7.69
4804	54.24	PK	330	2.3	H	-3.51	50.73	74	-23.27
4804	54.27	PK	114	2.3	V	-3.51	50.76	74	-23.24
Middle Channel(2440MHz)									
4880	55.29	PK	350	1.2	H	-3.38	51.91	74	-22.09
4880	54.38	PK	80	1.2	V	-3.38	51	74	-23.00
High Channel(2480 MHz)									
2483.5	77.82	PK	176	1	H	-7.2	70.62	74	-3.38
2483.5	54.61	Ave.	176	1	H	-7.2	47.41	54	-6.59
2483.5	70.75	PK	131	2.1	V	-7.2	63.55	74	-10.45
2483.5	54.26	Ave.	131	2.1	V	-7.2	47.06	54	-6.94
2500	74.10	PK	298	2.4	H	-7.18	66.92	74	-7.08
2500	55.04	Ave.	298	2.4	H	-7.18	47.86	54	-6.14
2500	69.18	PK	130	1.2	V	-7.18	62	74	-12.00
2500	54.83	Ave.	130	1.2	V	-7.18	47.65	54	-6.35
4960	53.56	PK	51	1.7	H	-3.01	50.55	74	-23.45
4960	53.85	PK	140	1.7	V	-3.01	50.84	74	-23.16

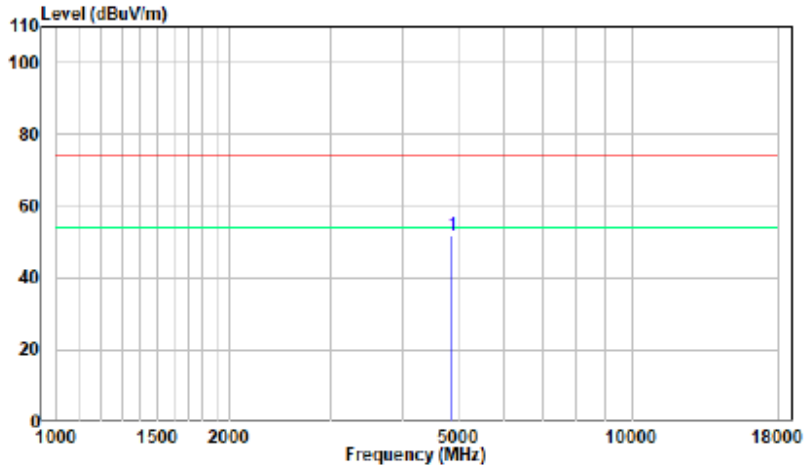
Note:
Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
Corrected Amplitude = Corrected Factor + Reading
Margin = Corrected. Amplitude - Limit
The other spurious emission which is in the noise floor level was not recorded.
The test result of peak was less than the limit of average, so just peak value were recorded.

1-18GHz

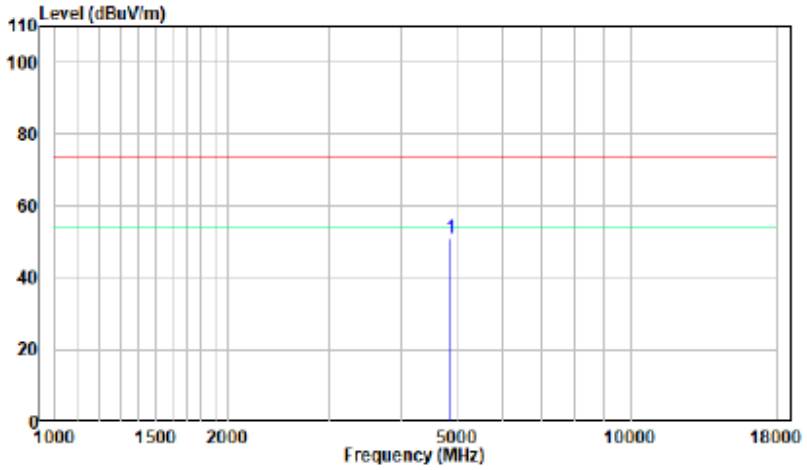
Pre-scan for Peak

Middle Channel

Horizontal:



Vertical:

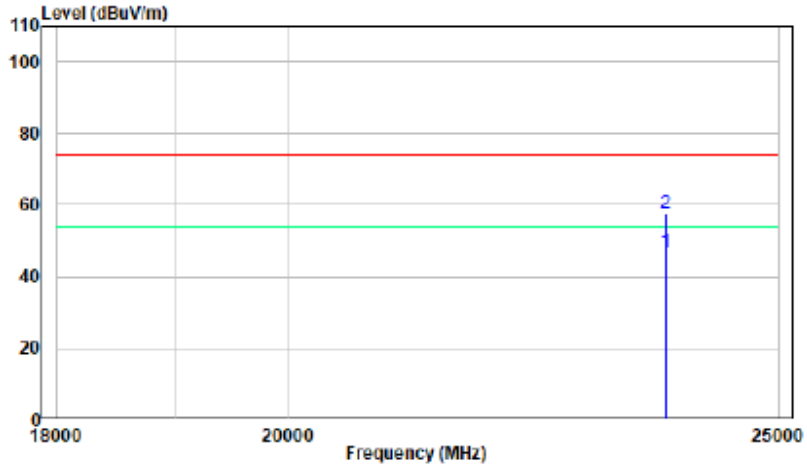


18-25GHz

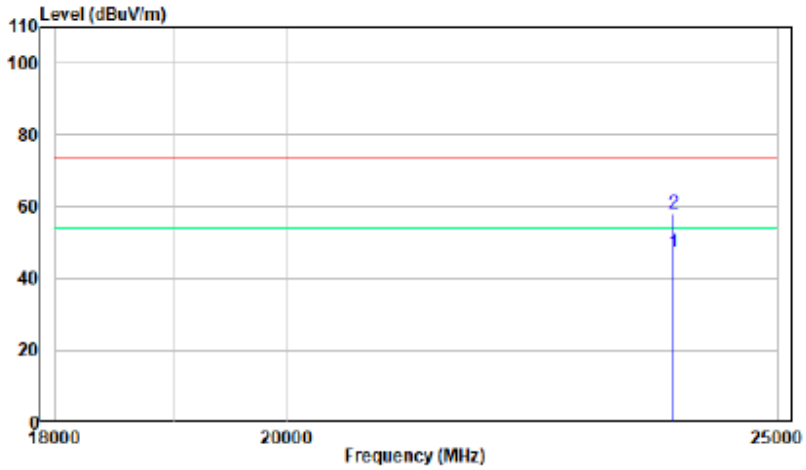
Pre-scan for Peak

Middle Channel

Horizontal:



Vertical:



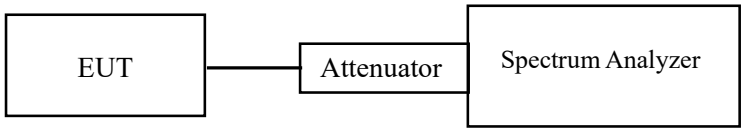
FCC §15.247(a) (2) – 6 dB EMISSION BANDWIDTH

Applicable Standard

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Test Procedure

2. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
3. 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.
4. Measure the frequency difference of two frequencies that were attenuated 6 dB from the reference level. Record the frequency difference as the emission bandwidth.
5. Repeat above procedures until all frequencies measured were complete.



Test Data

Environmental Conditions

Temperature:	21.8 ℃
Relative Humidity:	48 %
ATM Pressure:	101.5 kPa

The testing was performed by Ting Lv on 2022-02-09.

EUT operation mode: Transmitting

Test Result: Compliant.

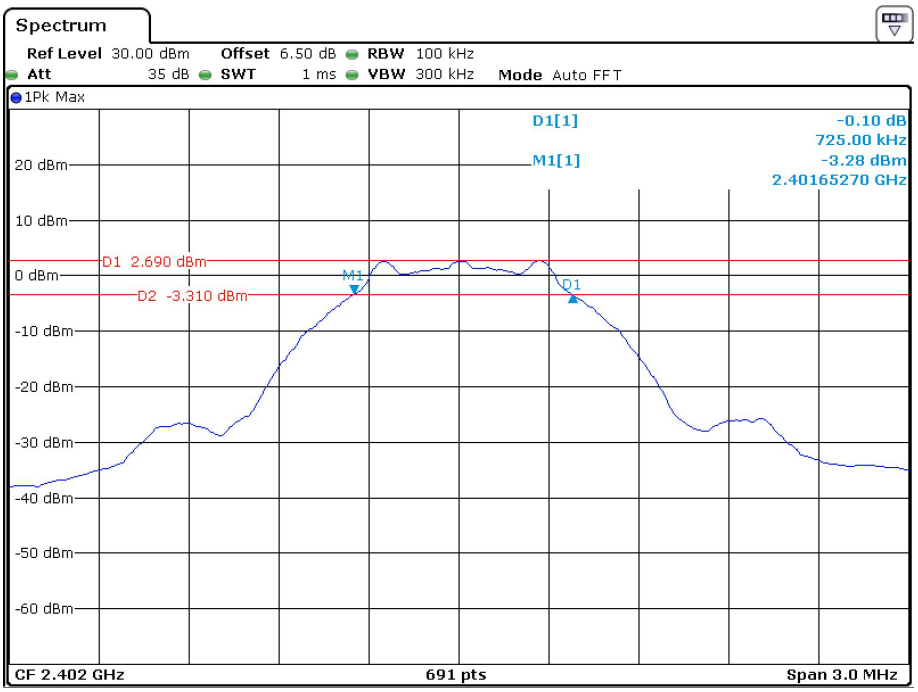
ANT 1

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	Limit (kHz)
Low	2402	0.725	≥500
Middle	2440	0.716	≥500
High	2480	0.725	≥500

Please refer to the below plots:

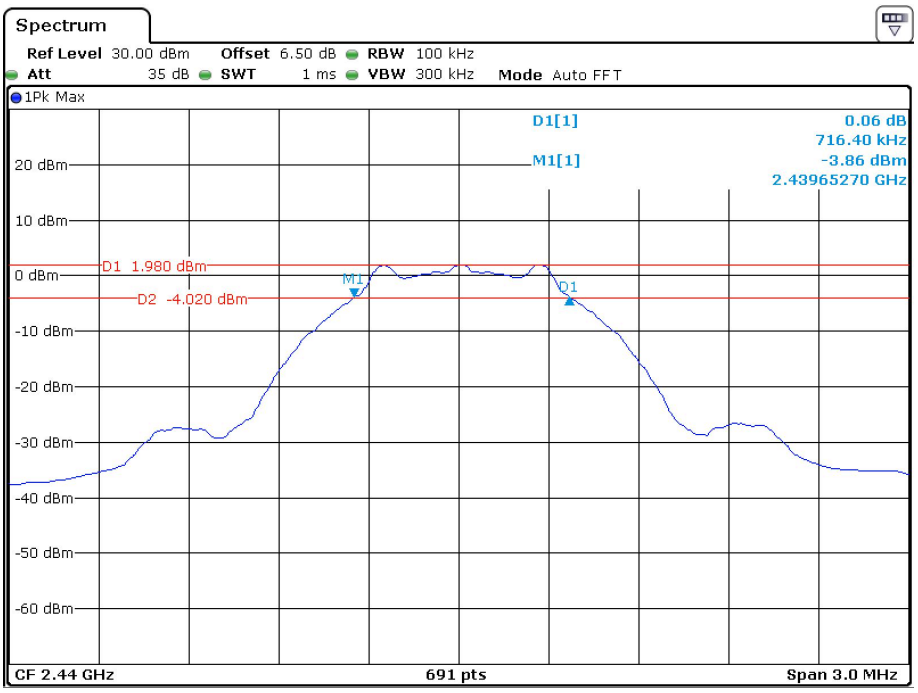
6dB EMISSION BANDWIDTH

Low Channel



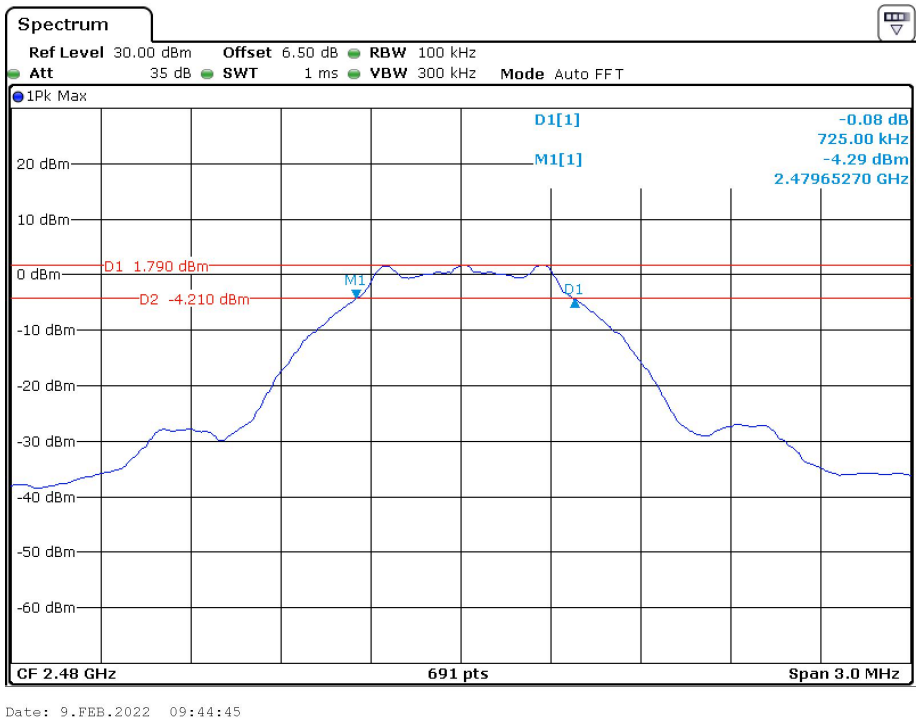
Date: 9.FEB.2022 09:42:41

Middle Channel



Date: 9.FEB.2022 09:43:43

High Channel



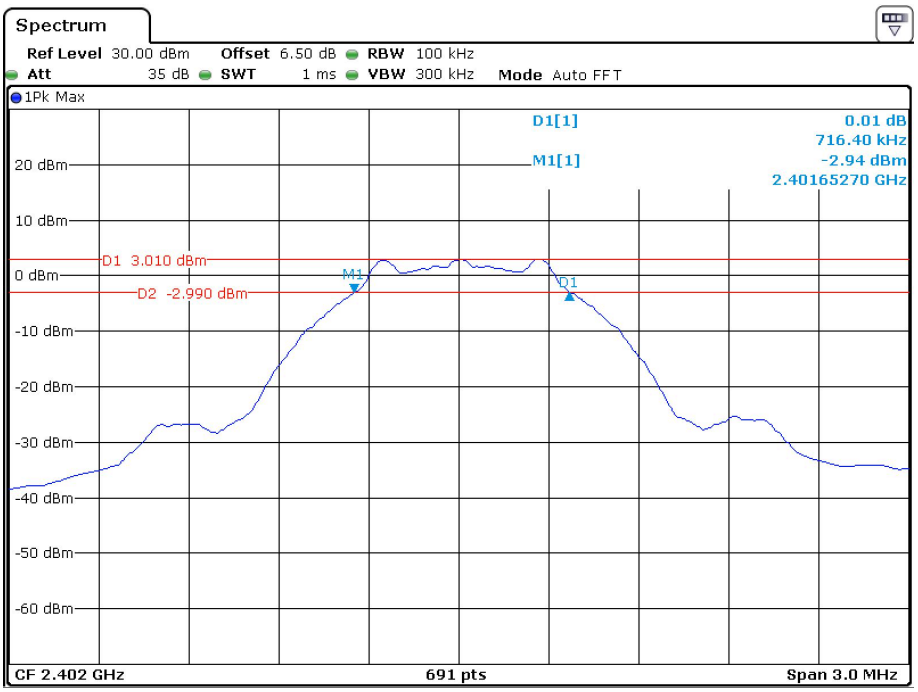
ANT 2

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	Limit (kHz)
Low	2402	0.716	≥500
Middle	2440	0.721	≥500
High	2480	0.716	≥500

Please refer to the below plots:

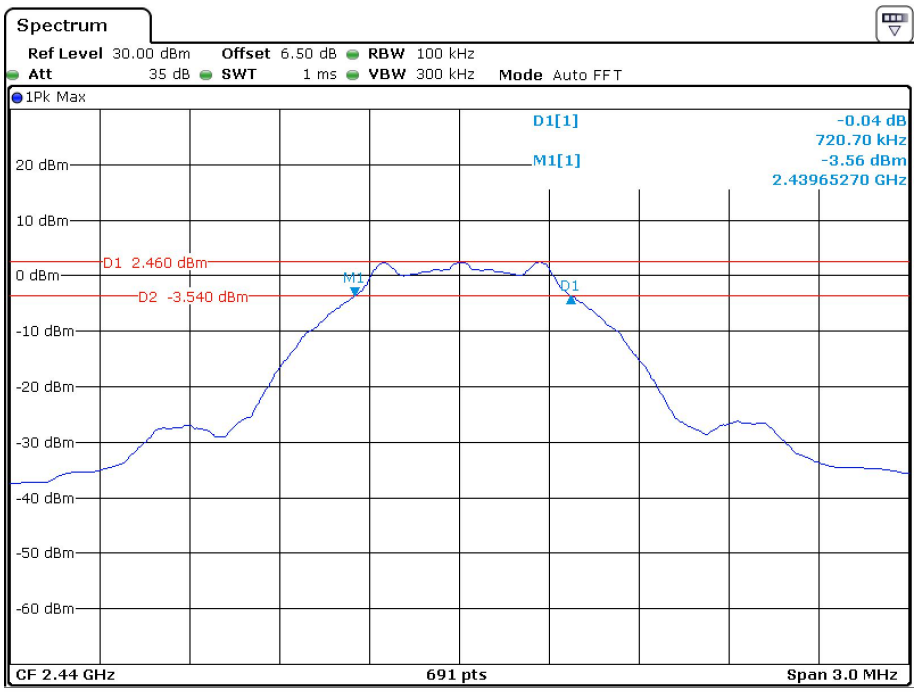
6dB EMISSION BANDWIDTH

Low Channel



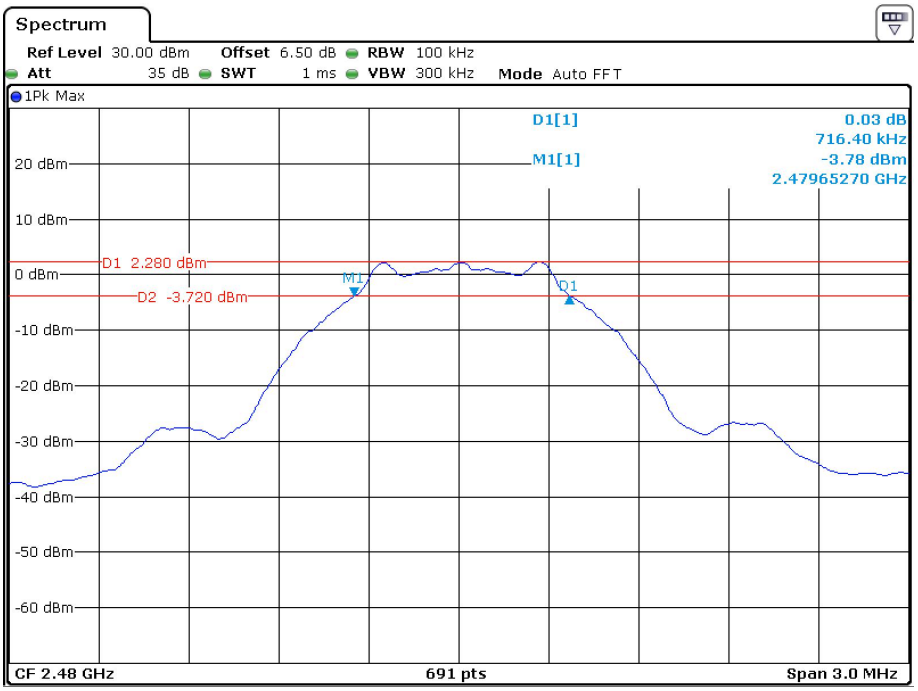
Date: 9.FEB.2022 09:58:24

Middle Channel



Date: 9.FEB.2022 09:59:05

High Channel



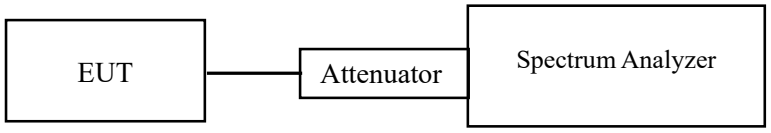
FCC §15.247(b) (3) - MAXIMUM CONDUCTED OUTPUT POWER

Applicable Standard

According to FCC §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

Test Procedure

6. Place the EUT on a bench and set it in transmitting mode.
7. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to one test equipment.
8. Add a correction factor to the display.



Test Data

Environmental Conditions

Temperature:	21.8 ℃
Relative Humidity:	48 %
ATM Pressure:	101.5 kPa

The testing was performed by Ting Lv on 2022-02-09.

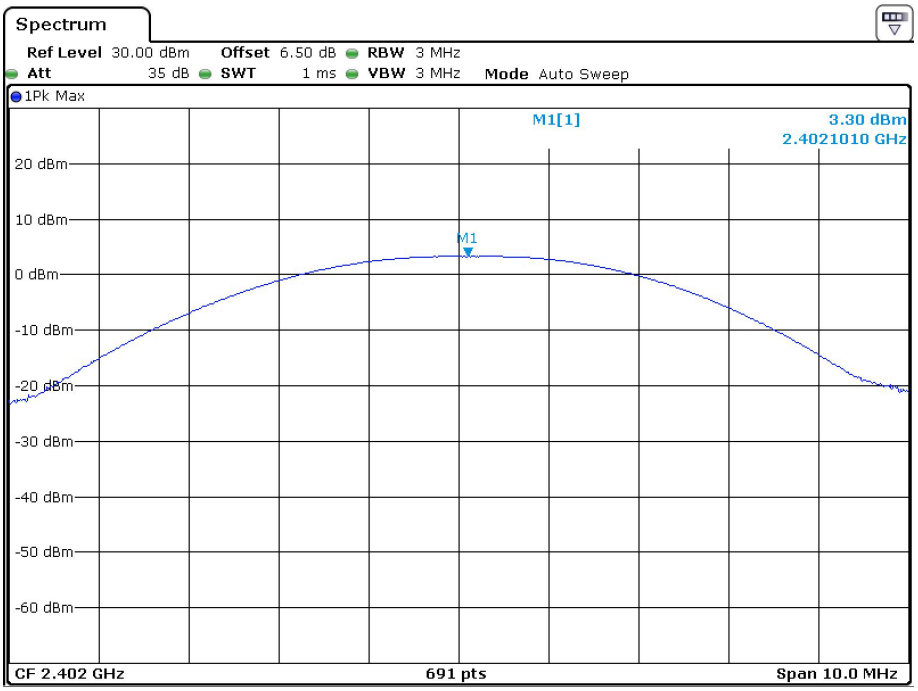
EUT operation mode: Transmitting

Test Result: Compliant.
Please refer to the below test data and plots:

ANT 1

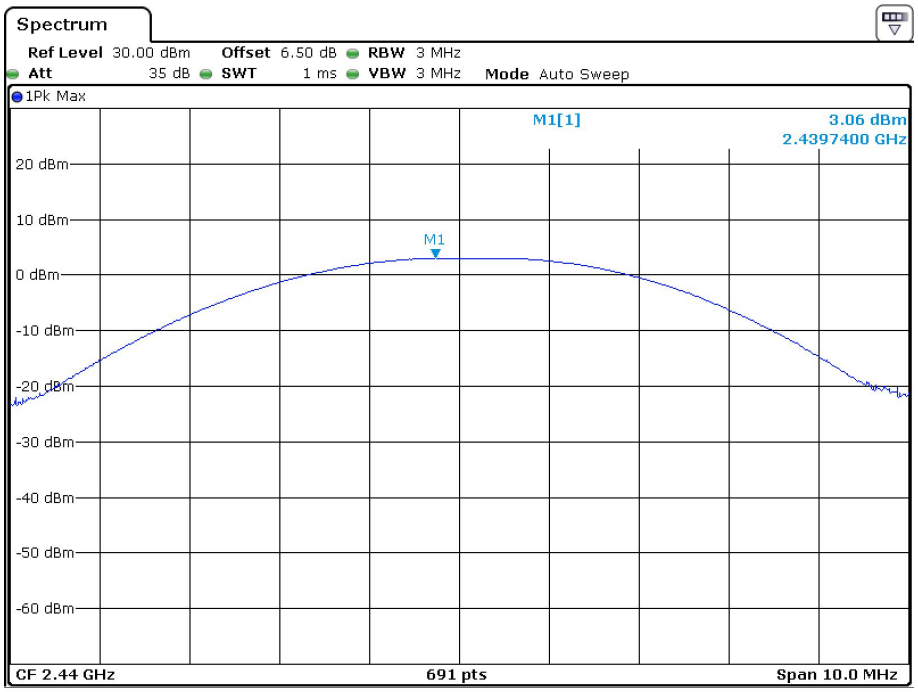
Channel	Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Limit (dBm)
Low	2402	3.30	30
Middle	2440	3.06	30
High	2480	2.72	30

Low Channel



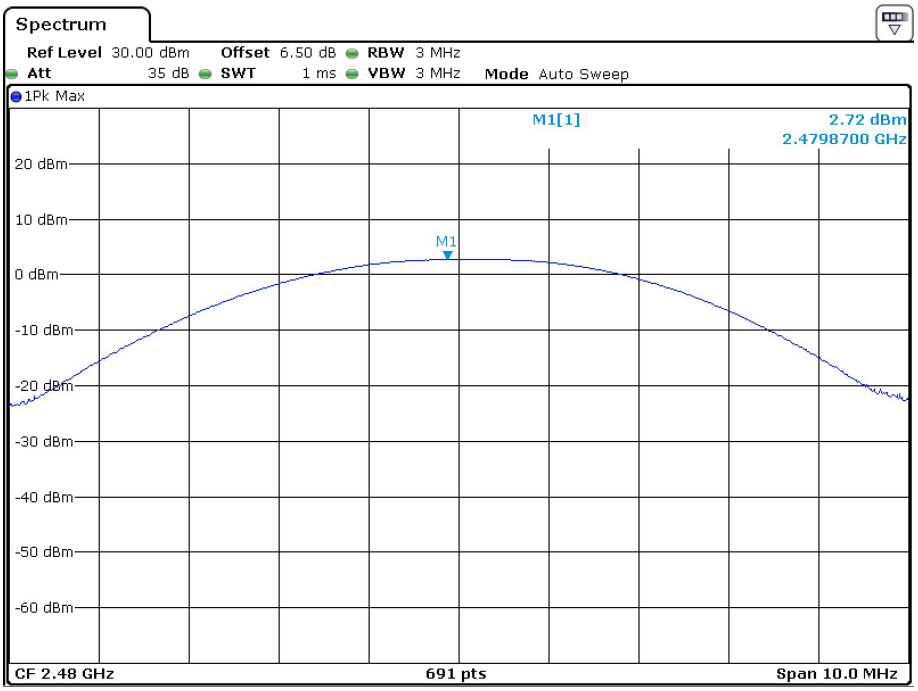
Date: 9.FEB.2022 09:47:00

Middle Channel



Date: 9.FEB.2022 09:47:18

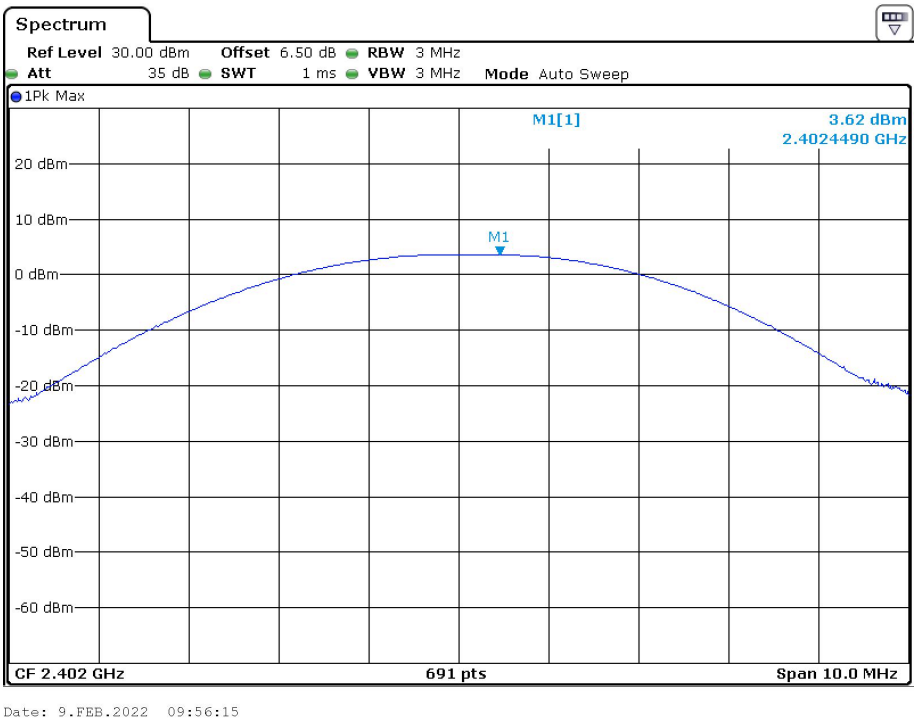
High Channel



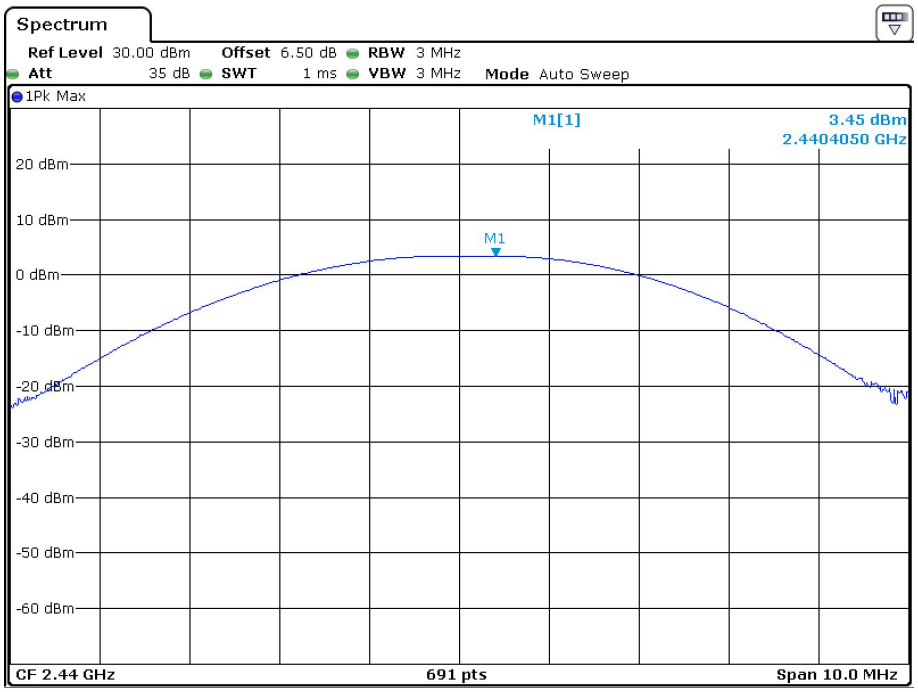
ANT 2

Channel	Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Limit (dBm)
Low	2402	3.62	30
Middle	2440	3.45	30
High	2480	3.46	30

Low Channel

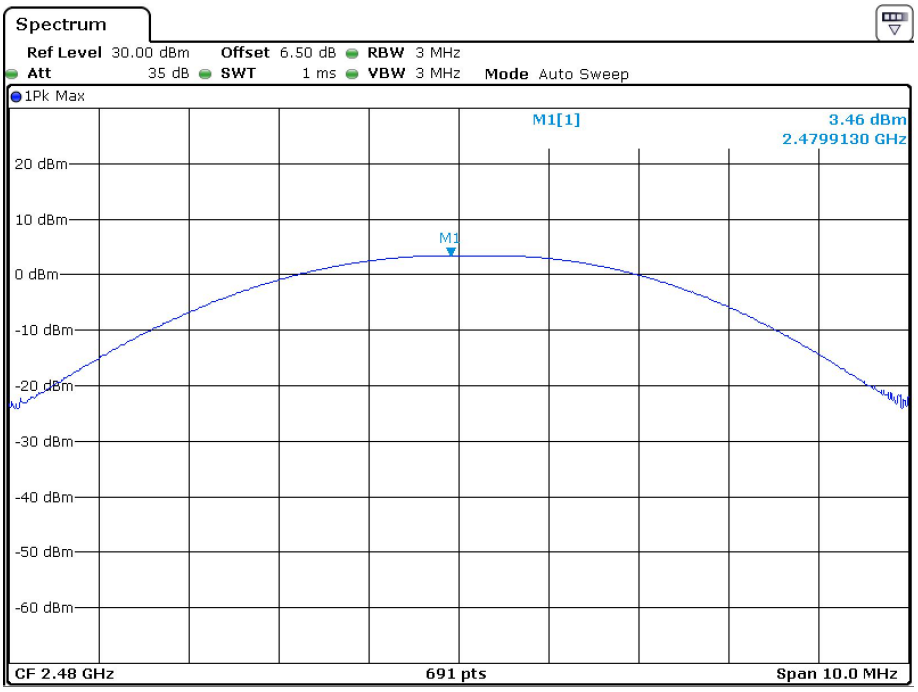


Middle Channel



Date: 9.FEB.2022 09:56:30

High Channel



Date: 9.FEB.2022 09:56:46

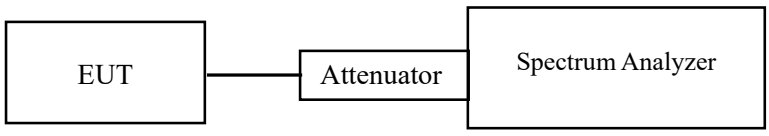
FCC §15.247(d) – 100 kHz BANDWIDTH OF FREQUENCY BAND EDGE

Applicable Standard

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Test Procedure

9. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
10. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
11. Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
12. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
13. Repeat above procedures until all measured frequencies were complete.



Test Data

Environmental Conditions

Temperature:	21.8 ℃
Relative Humidity:	48 %
ATM Pressure:	101.5 kPa

The testing was performed by Ting Lv on 2022-02-09.

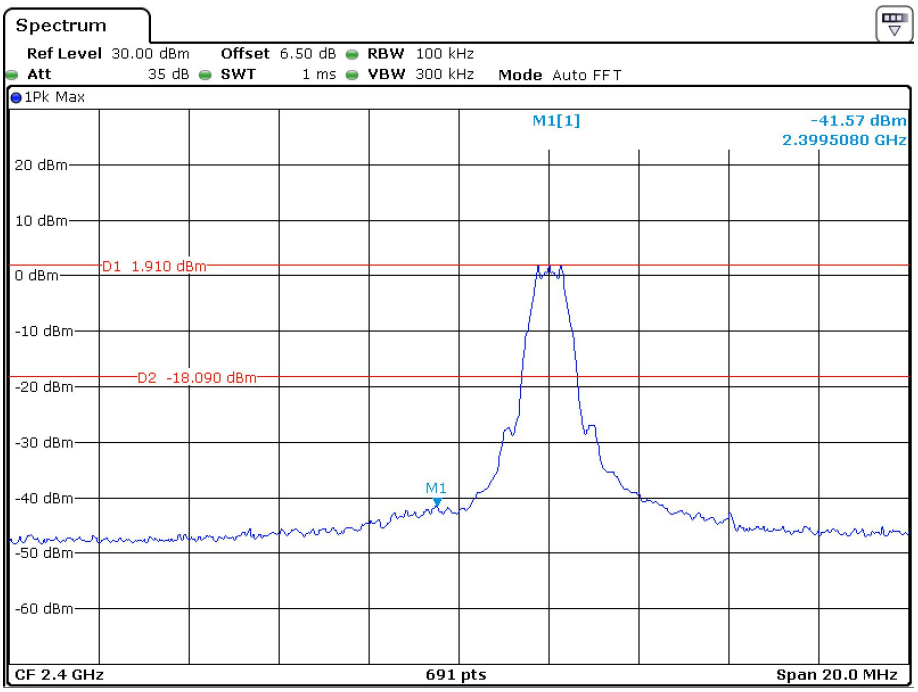
EUT operation mode: Transmitting

Test Result: Compliant.

Please refer to the below plots:

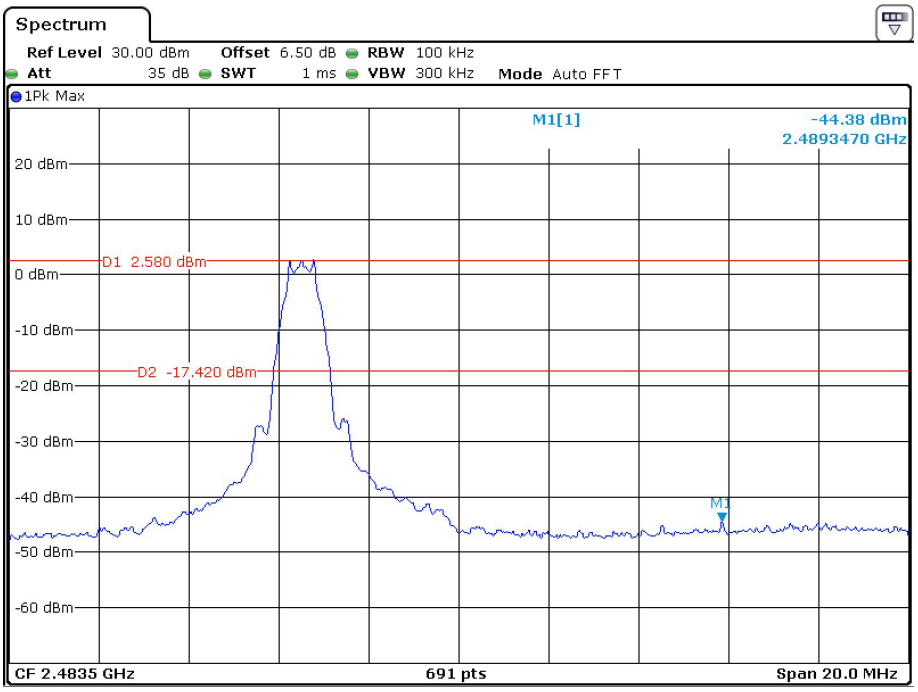
Ant1 :

GFSK_Low Channel



Date: 9.FEB.2022 09:49:54

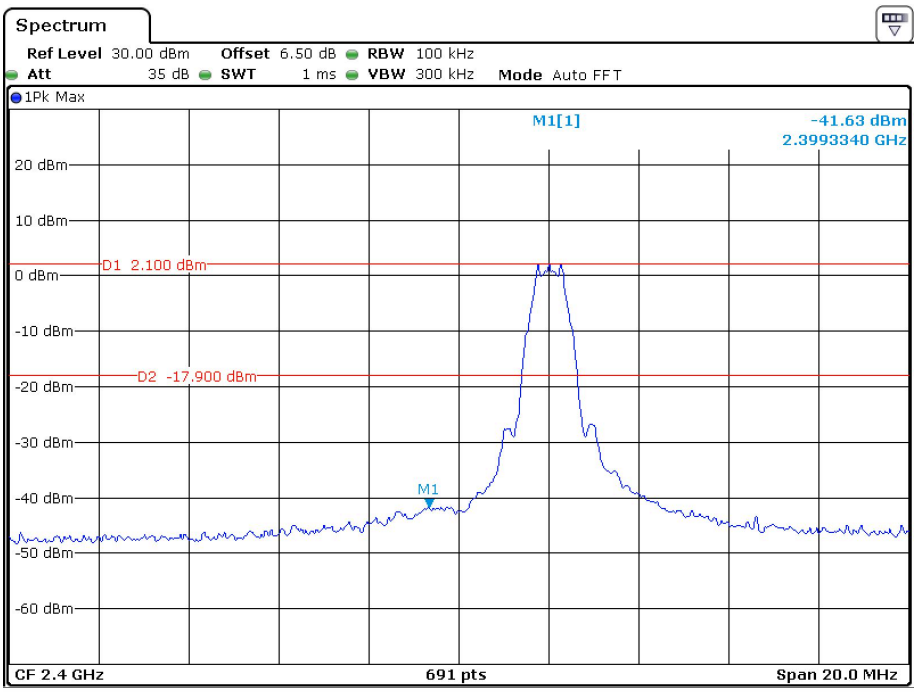
GFSK_High Channel



Date: 9.FEB.2022 09:51:02

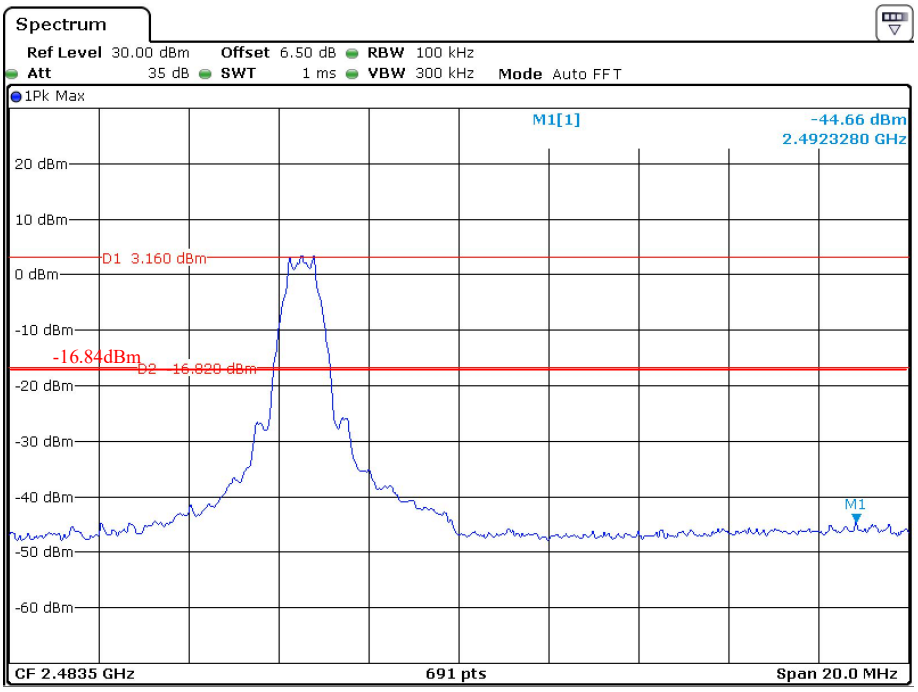
Ant 2:

GFSK_Low Channel



Date: 9.FEB.2022 10:01:10

GFSK_High Channel



Date: 9.FEB.2022 10:00:31

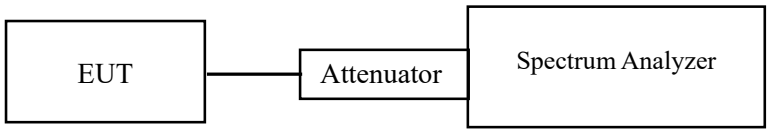
FCC §15.247(e) - POWER SPECTRAL DENSITY

Applicable Standard

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

Test Procedure

14. Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.
15. Set the RBW to: 3kHz≤ RBW≤100 kHz.
16. Set the VBW ≥ 3×RBW.
17. Set the span to 1.5 times the DTS bandwidth.
18. Detector = power averaging (rms) or sample detector (when rms not available).
19. Ensure that the number of measurement points in the sweep ≥ [2 × span / RBW].
20. Sweep time = auto couple.
21. Employ trace averaging (rms) mode over a minimum of 100 traces.
22. Use the peak marker function to determine the maximum amplitude level within the RBW.
23. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.



Test Data

Environmental Conditions

Temperature:	21.8 ℃
Relative Humidity:	48 %
ATM Pressure:	101.5 kPa

The testing was performed by Ting Lv on 2022-02-09.

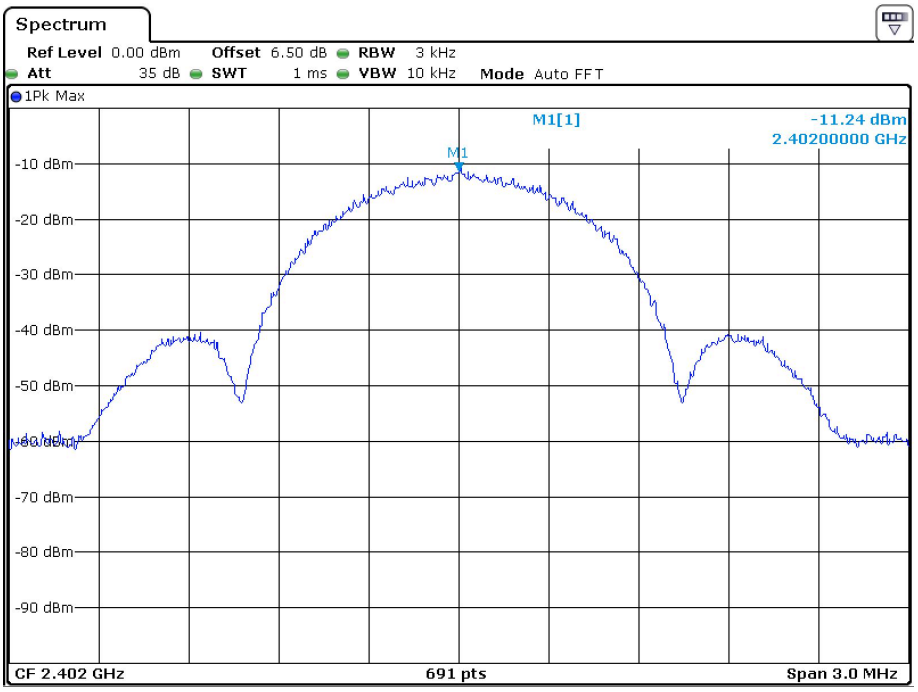
EUT operation mode: Transmitting

Test Result: Compliant. Please refer to the below test data and plots:

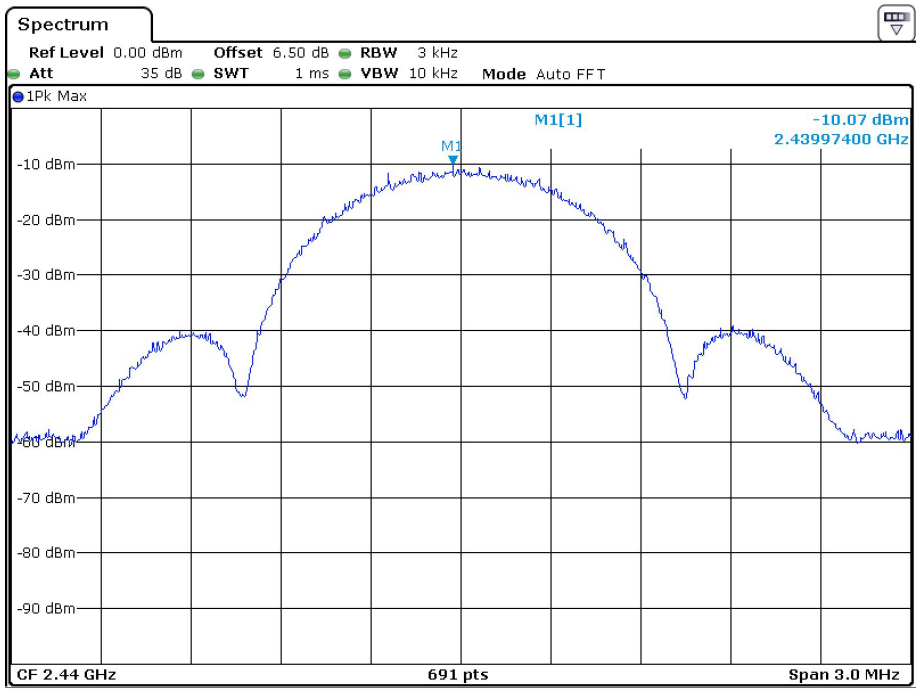
ANT 1:

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)
Low	2402	-11.24	≤8
Middle	2440	-10.07	≤8
High	2480	-11.75	≤8

Low Channel

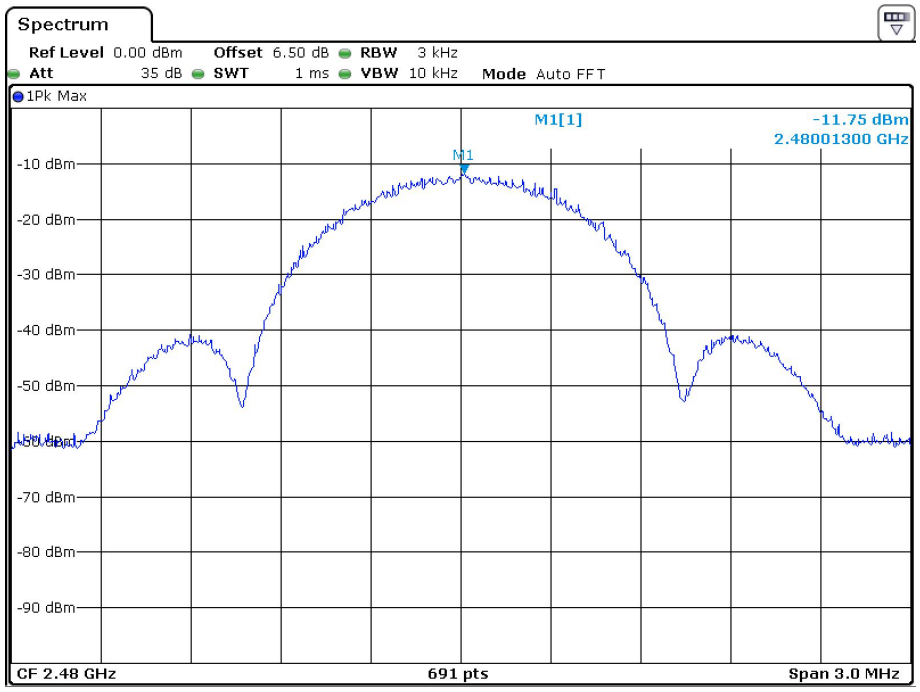


Middle Channel



Date: 9.FEB.2022 09:54:40

High Channel

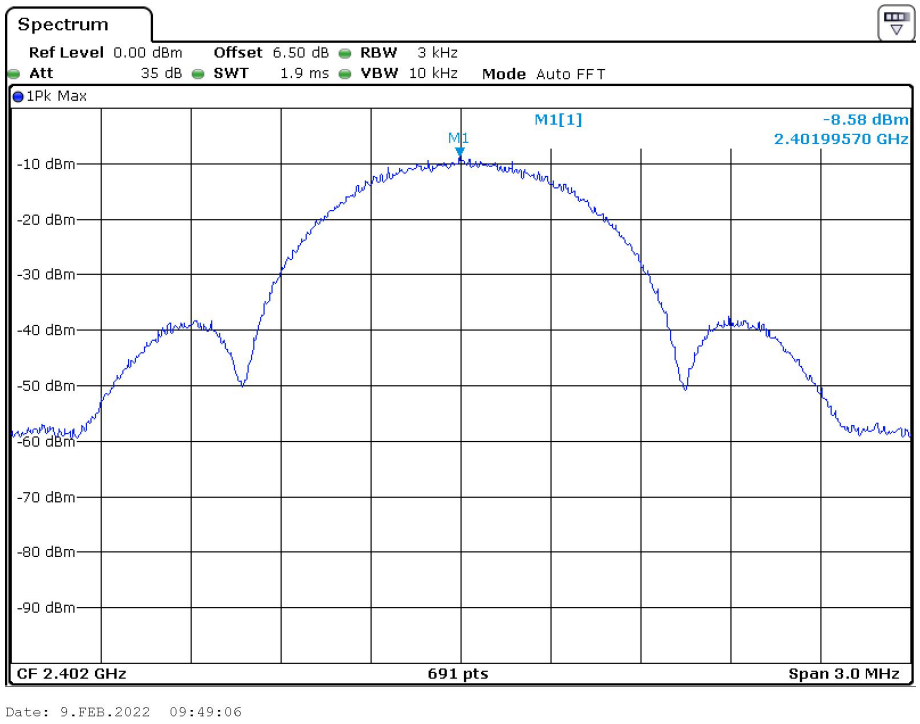


Date: 9.FEB.2022 09:55:06

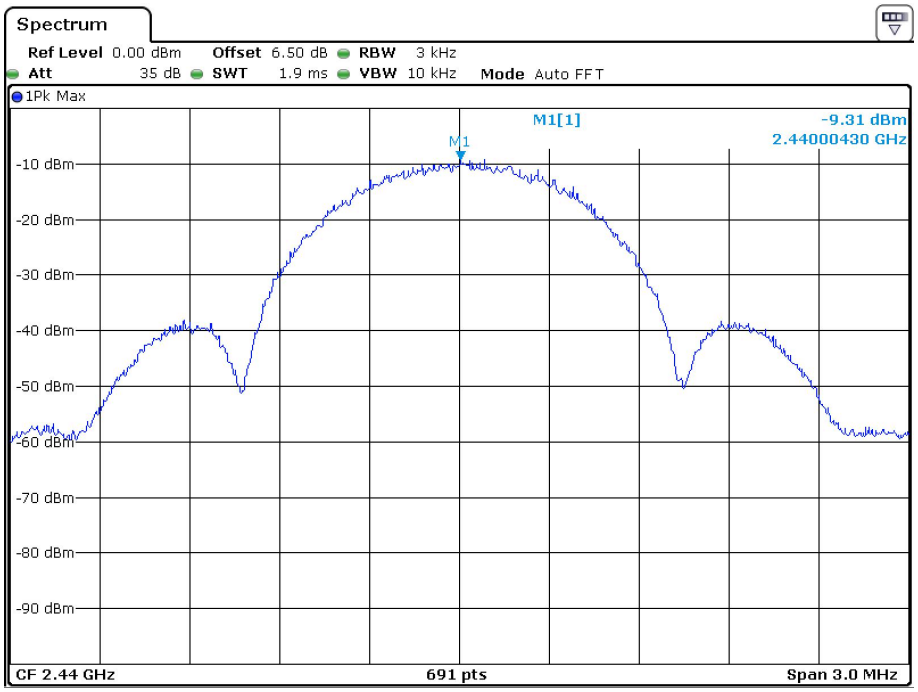
ANT 2:

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)
Low	2402	-8.58	≤8
Middle	2440	-9.31	≤8
High	2480	-9.63	≤8

Low Channel

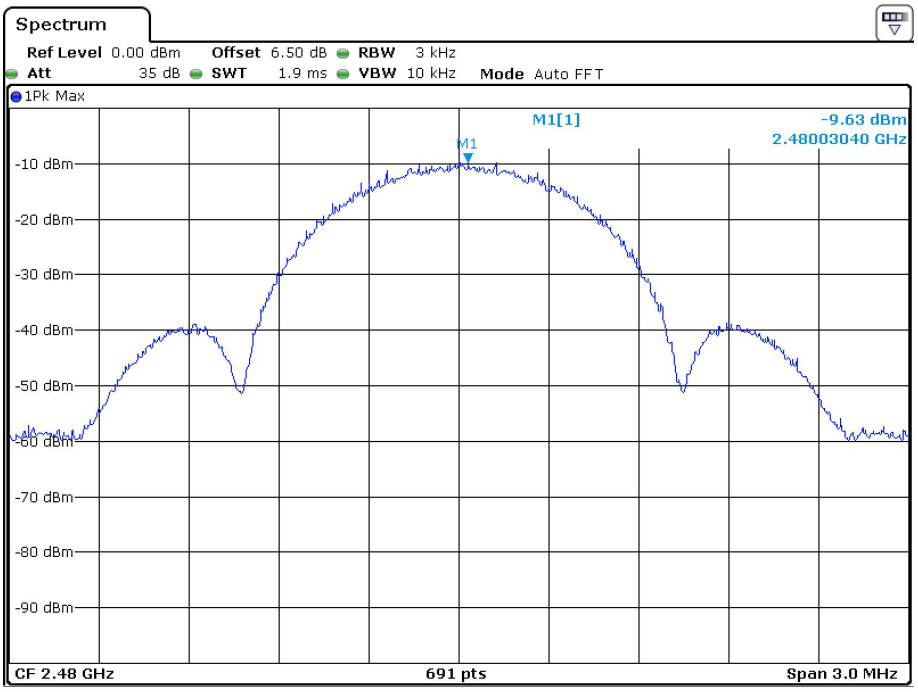


Middle Channel



Date: 9.FEB.2022 09:48:45

High Channel



Date: 9.FEB.2022 09:48:30

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