



## Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR230600110101

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# TEST REPORT

**Application No.:** KSCR2306001101AT  
**FCC ID:** 2AC8UA2321  
**Applicant:** Anhui Huami Information Technology Co., Ltd.  
**Address of Applicant:** 7/F, Building B2, Huami Global Innovation Center, No. 900, Wangjiang West Road, High-tech Zone, Hefei City, China (Anhui) Pilot Free Trade Zone (230088)  
**Manufacturer:** Anhui Huami Information Technology Co., Ltd.  
**Address of Manufacturer:** 7/F, Building B2, Huami Global Innovation Center, No. 900, Wangjiang West Road, High-tech Zone, Hefei City, China (Anhui) Pilot Free Trade Zone (230088)  
**Equipment Under Test (EUT):**  
**EUT Name:** Smart Ring  
**Model No.:** A2321  
**Standard(s) :** 47 CFR Part 15, Subpart C 15.247  
**Date of Receipt:** 2023-12-22  
**Date of Test:** 2024-03-11 to 2024-03-11  
**Date of Issue:** 2024-04-16

<b>Test Result:</b>	<b>Pass*</b>
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\* In the configuration tested, the EUT complied with the standards specified above.

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<i>Revision Record</i>			
<i>Version</i>	<i>Description</i>	<i>Date</i>	<i>Remark</i>
00	Original	2024-04-16	/

<b>Authorized for issue by:</b>			
<b>Tested By</b>		<i>Damon Zhou</i>	
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		Damon_Zhou/Project Engineer	
<b>Approved By</b>		<i>Terry Hou</i>	
		_____	
		Terry Hou /Reviewer	



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## 2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.247	N/A	47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)	Customer Declaration

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
Conducted Peak Output Power	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.9.1	47 CFR Part 15, Subpart C 15.247(b)(3)	Pass
Minimum 6dB Bandwidth		ANSI C63.10 (2013) Section 11.8.1	47 CFR Part 15, Subpart C 15.247a(2)	Pass
Power Spectrum Density		ANSI C63.10 (2013) Section 11.10.2	47 CFR Part 15, Subpart C 15.247(e)	Pass
Conducted Band Edges Measurement		ANSI C63.10 (2013) Section 11.13.3.2	47 CFR Part 15, Subpart C 15.247(d)	Pass
Conducted Spurious Emissions		ANSI C63.10 (2013) Section 11.11	47 CFR Part 15, Subpart C 15.247(d)	Pass
Radiated Emissions which fall in the restricted bands		ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions Below 1GHz		ANSI C63.10 (2013) Section 6.4,6.5	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions Above 1GHz		ANSI C63.10 (2013) Section 6.6	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass

Remark: The product is divided into two sizes: 10 inch and 12 inch, except that the size, battery pack and antenna gain deviation, they are electrically identical in schematics, board layouts, component layouts, chip sets, resistors and all other electrical aspects.

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## 4 General Information

### 4.1 Details of E.U.T.

Power supply:	DC 3.7V by Rechargeable Li-ion battery
Operation Frequency:	2402MHz to 2480MHz
Modulation Type:	GFSK
Number of Channels:	40
Channel Spacing:	2MHz
Antenna Type:	PCB Antenna
Antenna Gain:	12 inch: -14.98dBi (Provided by the manufacturer) 10 inch: -18.11dBi (Provided by the manufacturer)

### 4.2 Power level setting using in test:

Channel	BLE 1M	BLE 2M
	Ant 1	Ant 1
0	default	default
19	default	default
39	default	default

### 4.3 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Notebook	Lenovo	/	/

**4.4 Measurement Uncertainty**

No.	Item	Measurement Uncertainty
1	Radio Frequency	8.4 x 10 <sup>-8</sup>
2	Timeout	2s
3	Duty Cycle	0.37%
4	Occupied Bandwidth	3%
5	RF Conducted Power	0.6dB
6	RF Power Density	2.9dB
7	Conducted Spurious Emissions	0.75dB
8	RF Radiated Power	5.2dB (Below 1GHz)
		5.9dB (Above 1GHz)
9	Radiated Spurious Emission Test	4.2dB (Below 30MHz)
		4.5dB (30MHz-1GHz)
		5.1dB (1GHz-18GHz)
		5.4dB (Above 18GHz)
10	Temperature Test	1°C
11	Humidity Test	3%
12	Supply Voltages	1.5%
13	Time	3%

Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

#### **4.5 Test Location**

All tests were performed at:

Compliance Certification Services (Kunshan) Inc.

No.10 Weiye Rd, Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.

Tel: +86 512 5735 5888 Fax: +86 512 5737 0818

No tests were sub-contracted.

Note:

1. SGS is not responsible for wrong test results due to incorrect information (e.g., max. internal working frequency, antenna gain, cable loss, etc) is provided by the applicant. (If applicable).
2. SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (If applicable).
3. Sample source: sent by customer.

#### **4.6 Test Facility**

The test facility is recognized, certified, or accredited by the following organizations:

• **A2LA**

Compliance Certification Services (Kunshan) Inc. is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 2541.01.

• **FCC**

Compliance Certification Services (Kunshan) Inc. has been recognized as an accredited testing laboratory. Designation Number: CN1172.

• **ISED**

Compliance Certification Services (Kunshan) Inc. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory. Company Number: 2324E

• **VCCI**

The 3m and 10m Semi-anechoic chamber and Shielded Room of Compliance Certification Services (Kunshan) Inc. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-20134, R-11600, C-11707, T-11499, G-10216 respectively.

#### **4.7 Deviation from Standards**

None

#### **4.8 Abnormalities from Standard Conditions**

None



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### 5 Equipment List

Item	Equipment	Manufacturer	Model	Inventory No	Cal Date	Cal. Due Date
<b>RF Conducted Test</b>						
1	Spectrum Analyzer	Keysight	N9020A	KUS1911E004-2	08/24/2023	08/23/2024
2	Spectrum Analyzer	Keysight	N9020A	KUS2001M001-2	08/24/2023	08/23/2024
3	Spectrum Analyzer	Keysight	N9030B	KSEM021-1	01/15/2024	01/14/2025
4	Signal Generator	R&S	SMBV100B	KSEM032	03/16/2023	03/15/2024
5	Signal Generator	R&S	SMW200A	KSEM020-1	08/24/2023	08/23/2024
6	Signal Generator	Agilent	N5182A	KUS2001M001-1	08/24/2023	08/23/2024
7	Radio Communication Test Station	Anritsu	MT8000A	KSEM001-1	08/24/2023	08/23/2024
8	Radio Communication Analyzer	Anritsu	MT8821C	KSEM002-1	03/16/2023	03/15/2024
9	Universal Radio Communication Tester	R&S	CMW500	KUS1911E004-1	08/24/2023	08/23/2024
10	Switcher	TST	FY562	KUS2001M001-4	01/15/2024	01/14/2025
11	AC Power Source	EXTECH	6605	KS301178	N.C.R	N.C.R
12	DC Power Supply	Aglient	E3632A	KS301180	N.C.R	N.C.R
13	Conducted Test Cable	Thermax	RF01-RF04	CZ301111-CZ301120	01/15/2024	01/14/2025
14	Temp. / Humidity Chamber	TERCHY	MHK-120AK	KS301190	08/24/2023	08/23/2024
15	Temperature & Humidity Recorder	Renke Control	RS-WS-N01-6J	KSEM024-5	03/22/2023	03/21/2024
16	Software	BST	TST-PASS	/	N/A	N/A
<b>RF Radiated Test</b>						
1	Spectrum Analyzer	R&S	FSV40	KUS1806E003	08/24/2023	08/23/2024
2	Universal Radio Communication Tester	R&S	CMW500	KSEM009-1	03/16/2023	03/15/2024
3	Signal Generator	Agilent	E8257C	KS301066	08/24/2023	08/23/2024
4	Loop Antenna	COM-POWER	AL-130R	KUS1806E001	03/18/2023	03/17/2025
5	Bilog Antenna	TESEQ	CBL 6112D	KUS1806E005	06/29/2023	06/28/2025
6	Bilog Antenna	SCHWARZBECK	VULB9160	CZ301016	04/13/2021	04/12/2024
7	Horn-antenna(1-18GHz)	Schwarzbeck	BBHA9120D	KS301079	08/24/2023	08/23/2024
8	Horn-antenna(1-18GHz)	ETS-LINDGREN	3117	KS301186	04/07/2023	04/06/2025
9	Horn Antenna(18-40GHz)	Schwarzbeck	BBHA9170	CZ301058	01/07/2024	01/06/2026
10	Amplifier(30MHz~18GHz)	PANSHAN TECHNOLOGY	LNA:1~18G	KSEM010-1	01/15/2024	01/14/2025
11	Amplifier(18~40GHz)	PANSHAN TECHNOLOGY	LNA180400G40	KSEM038	08/24/2023	08/23/2024
12	RE Test Cable	REBES MICROWAVE	/	CZ301097	08/24/2023	08/23/2024
13	Temperature & Humidity Recorder	Renke Control	RS-WS-N01-6J	KSEM024-4	03/22/2023	03/21/2024
14	Software	Faratronic	EZ_EMCC-v 3A1	/	N/A	N/A
15	Software	ESE	E3_V 6.111221a	/	N/A	N/A



## **6 Radio Spectrum Technical Requirement**

### **6.1 Antenna Requirement**

#### **6.1.1 Test Requirement:**

47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)

#### **6.1.2 Conclusion**

Standard Requirement:

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, 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.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:

The antenna is PCB Antenna and no consideration of replacement. The best case gain is -14.98dBi for 12 inch; -18.11dBi for 10 inch.

Antenna location: Refer to internal photo.

## 7 Radio Spectrum Matter Test Results

### 7.1 Conducted Peak Output Power

Test Requirement 47 CFR Part 15, Subpart C 15.247(b)(3)

Test Method: ANSI C63.10 (2013) Section 11.9.1

Limit:

Frequency range(MHz)	Output power of the intentional radiator(watt)
902-928	1 for $\geq 50$ hopping channels
	0.25 for $25 \leq$ hopping channels $< 50$
	1 for digital modulation
2400-2483.5	1 for $\geq 75$ non-overlapping hopping channels
	0.125 for all other frequency hopping systems
	1 for digital modulation
5725-5850	1 for frequency hopping systems and digital modulation

#### 7.1.1 E.U.T. Operation

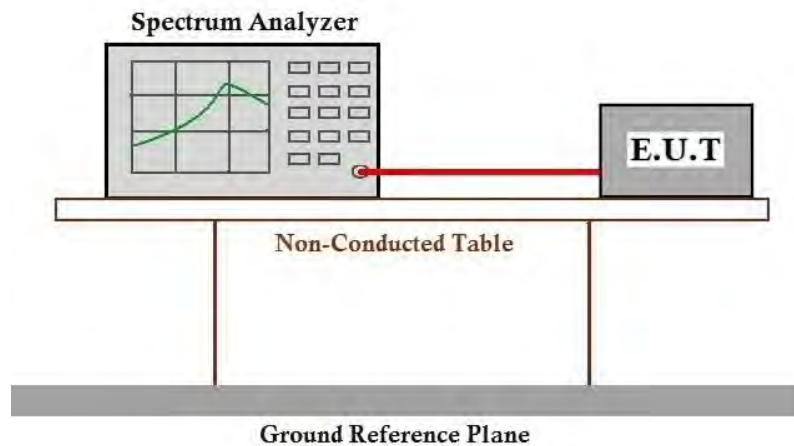
Operating Environment:

Temperature: 25.2 °C

Humidity: 51.2 % RH

Atmospheric Pressure: 1010 mbar

#### 7.1.2 Test Setup Diagram



#### 7.1.3 Measurement Procedure and Data

Note: Since the verify power the same operating range bandwidth and smaller power can be covered by the higher power.

Please Refer to Appendix for Details

**7.2 Minimum 6dB Bandwidth**

Test Requirement 47 CFR Part 15, Subpart C 15.247a(2)

Test Method: ANSI C63.10 (2013) Section 11.8.1

Limit:

≥500 kHz

**7.2.1 E.U.T. Operation**

Operating Environment:

Temperature: 25.3 °C

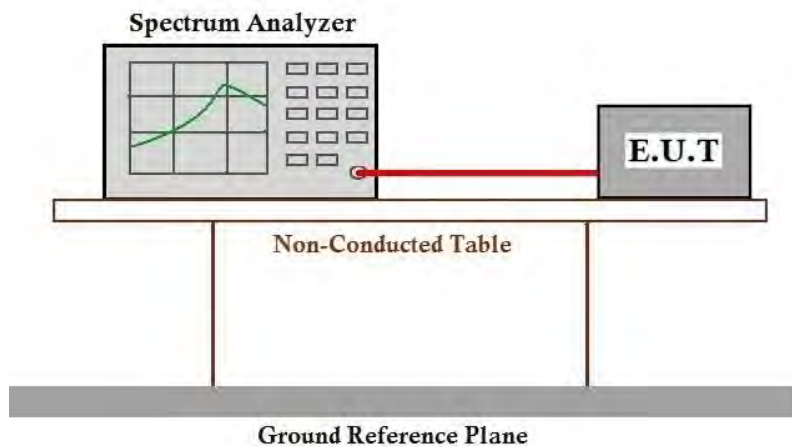
Humidity: 51.4 % RH

Atmospheric Pressure: 1010 mbar

**7.2.2 Test Mode Description**

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode(1Mbps)_Keep the EUT(Small No,10) in continuously transmitting mode with GFSK modulation.
Final test	01	TX mode(2Mbps)_Keep the EUT(Small No,10) in continuously transmitting mode with GFSK modulation.
Final test	02	TX mode(1Mbps)_Keep the EUT(Big No,12) in continuously transmitting mode with GFSK modulation.
Final test	03	TX mode(2Mbps)_Keep the EUT in (Big No,12) continuously transmitting mode with GFSK modulation.

**7.2.3 Test Setup Diagram**



**7.2.4 Measurement Procedure and Data**

Please Refer to Appendix for Details

**7.3 Power Spectrum Density**

Test Requirement 47 CFR Part 15, Subpart C 15.247(e)

Test Method: ANSI C63.10 (2013) Section 11.10.2

Limit:

≤8dBm in any 3 kHz band during any time interval of continuous transmission

**7.3.1 E.U.T. Operation**

Operating Environment:

Temperature: 25.3 °C

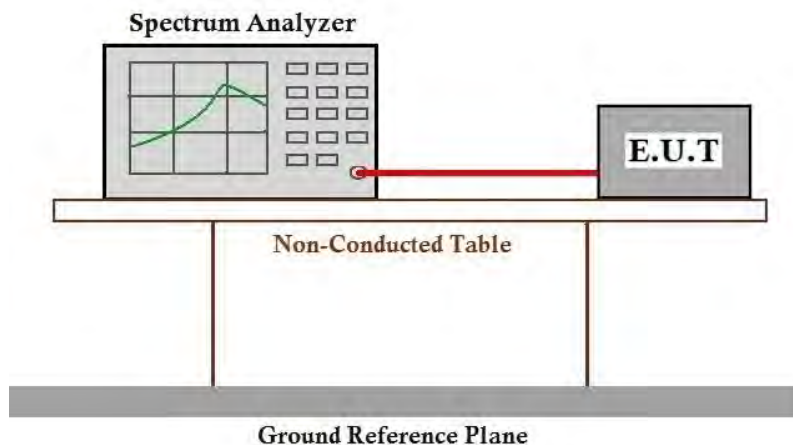
Humidity: 51.3 % RH

Atmospheric Pressure: 1010 mbar

**7.3.2 Test Mode Description**

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode(1Mbps)_Keep the EUT(Small No,10) in continuously transmitting mode with GFSK modulation.
Final test	01	TX mode(2Mbps)_Keep the EUT(Small No,10) in continuously transmitting mode with GFSK modulation.
Final test	02	TX mode(1Mbps)_Keep the EUT(Big No,12) in continuously transmitting mode with GFSK modulation.
Final test	03	TX mode(2Mbps)_Keep the EUT in (Big No,12) continuously transmitting mode with GFSK modulation.

**7.3.3 Test Setup Diagram**



**7.3.4 Measurement Procedure and Data**

Please Refer to Appendix for Details

**7.4 Conducted Band Edges Measurement**

Test Requirement 47 CFR Part 15, Subpart C 15.247(d)  
 Test Method: ANSI C63.10 (2013) Section 11.13.3.2

Limit:

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)).

**7.4.1 E.U.T. Operation**

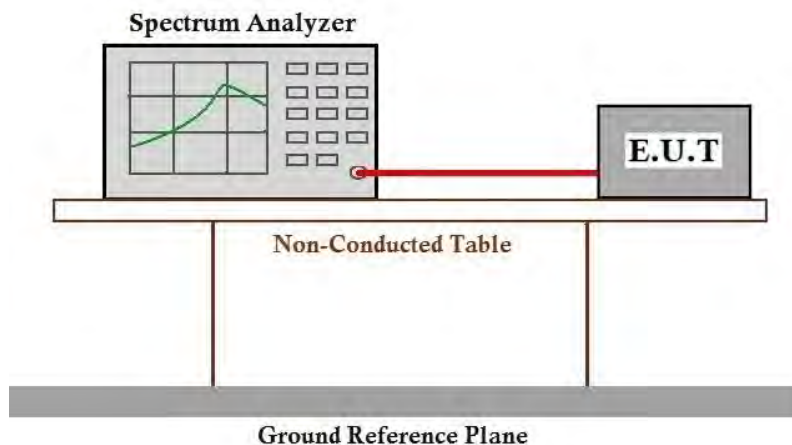
Operating Environment:

Temperature: 25.1 °C Humidity: 51.5 % RH Atmospheric Pressure: 1010 mbar

**7.4.2 Test Mode Description**

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode(1Mbps)_Keep the EUT(Small No,10) in continuously transmitting mode with GFSK modulation.
Final test	01	TX mode(2Mbps)_Keep the EUT(Small No,10) in continuously transmitting mode with GFSK modulation.
Final test	02	TX mode(1Mbps)_Keep the EUT(Big No,12) in continuously transmitting mode with GFSK modulation.
Final test	03	TX mode(2Mbps)_Keep the EUT in (Big No,12) continuously transmitting mode with GFSK modulation.

**7.4.3 Test Setup Diagram**





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### **7.4.4 Measurement Procedure and Data**

Please Refer to Appendix for Details

**7.5 Conducted Spurious Emissions**

Test Requirement 47 CFR Part 15, Subpart C 15.247(d)

Test Method: ANSI C63.10 (2013) Section 11.11

Limit:

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)).

**7.5.1 E.U.T. Operation**

Operating Environment:

Temperature: 25.2 °C

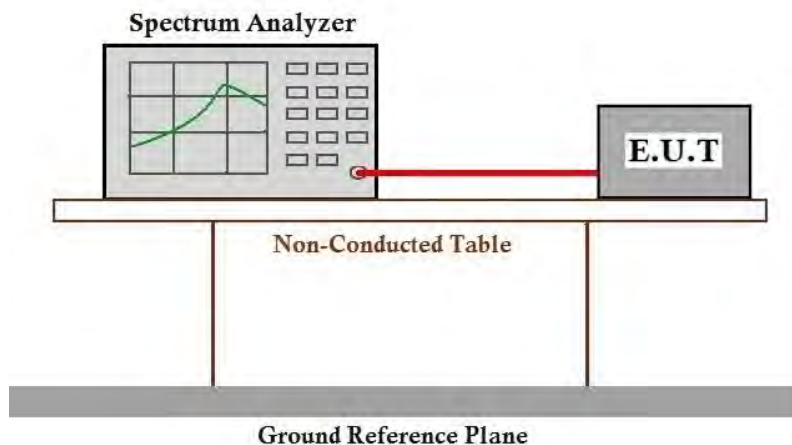
Humidity: 51.3 % RH

Atmospheric Pressure: 1010 mbar

**7.5.2 Test Mode Description**

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode(1Mbps)_Keep the EUT(Small No,10) in continuously transmitting mode with GFSK modulation.
Final test	01	TX mode(2Mbps)_Keep the EUT(Small No,10) in continuously transmitting mode with GFSK modulation.
Final test	02	TX mode(1Mbps)_Keep the EUT(Big No,12) in continuously transmitting mode with GFSK modulation.
Final test	03	TX mode(2Mbps)_Keep the EUT in (Big No,12) continuously transmitting mode with GFSK modulation.

**7.5.3 Test Setup Diagram**





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### **7.5.4 Measurement Procedure and Data**

Please Refer to Appendix for Details



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### 7.6 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.10.5

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

#### 7.6.1 E.U.T. Operation

Operating Environment:

Temperature: 23.3 °C

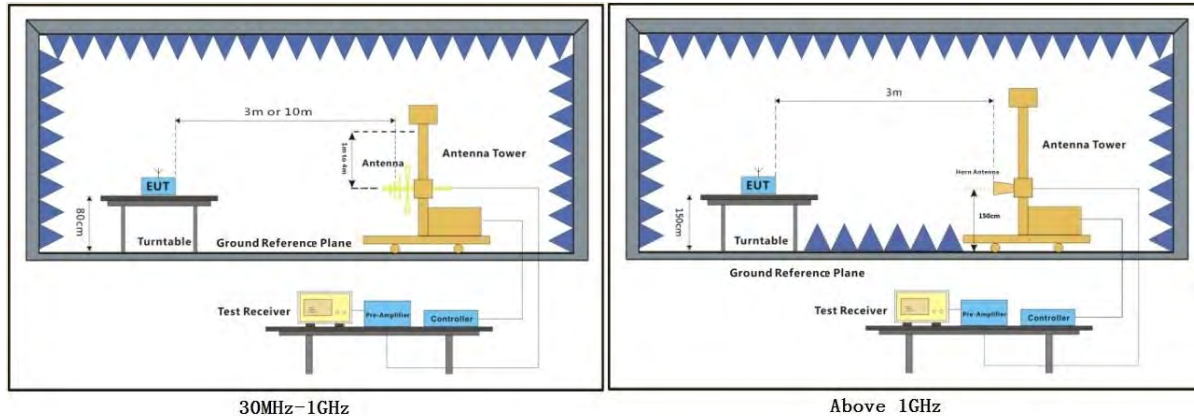
Humidity: 47.5 % RH

Atmospheric Pressure: 1010 mbar

#### 7.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode(1Mbps)_Keep the EUT(Small No,10) in continuously transmitting mode with GFSK modulation.
Final test	01	TX mode(2Mbps)_Keep the EUT(Small No,10) in continuously transmitting mode with GFSK modulation.
Final test	02	TX mode(1Mbps)_Keep the EUT(Big No,12) in continuously transmitting mode with GFSK modulation.
Final test	03	TX mode(2Mbps)_Keep the EUT in (Big No,12) continuously transmitting mode with GFSK modulation.

**7.6.3 Test Setup Diagram**



**7.6.4 Measurement Procedure and Data**

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.



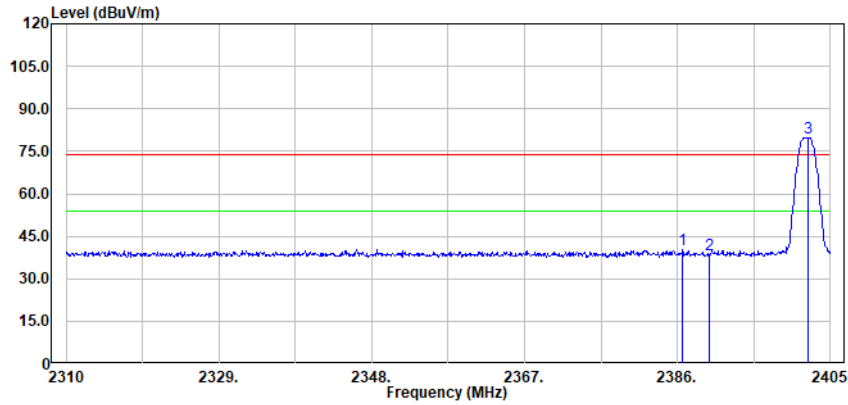
# Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Antenna Polarity :Horizontal

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	2386.67	60.32	27.55	2.65	50.18	40.34	74.00	-33.66	Peak
	2390.00	58.45	27.55	2.66	50.18	38.48	74.00	-35.52	Peak
	2402.34	99.84	27.56	2.67	50.18	79.89	74.00	5.89	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



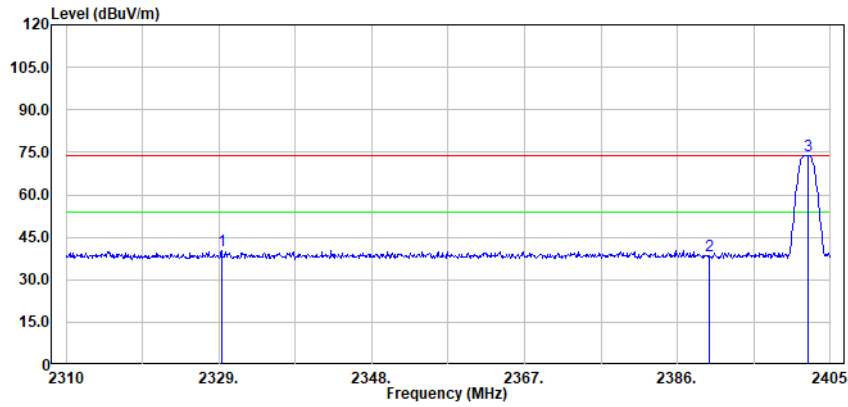
# Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:Low



Antenna Polarity :Vertical

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	2329.29	60.42	27.51	2.64	50.19	40.38	74.00	-33.62	Peak
	2390.00	58.60	27.55	2.66	50.18	38.63	74.00	-35.37	Peak
	2402.34	93.98	27.56	2.67	50.18	74.03	74.00	0.03	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



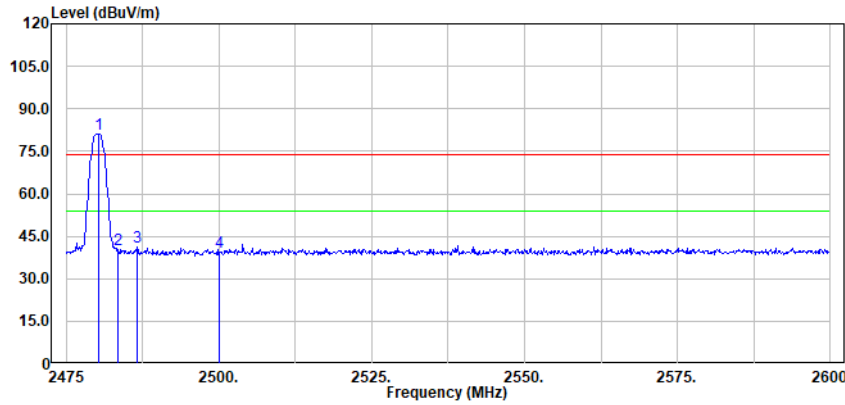
# Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:High



Antenna Polarity :Horizontal

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	2480.38	100.77	27.58	2.73	50.10	80.98	74.00	6.98	Peak
	2483.50	60.07	27.58	2.73	50.10	40.28	74.00	-33.72	Peak
	2486.50	60.83	27.58	2.73	50.10	41.04	74.00	-32.96	Peak
	2500.00	59.29	27.59	2.74	50.08	39.54	74.00	-34.46	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



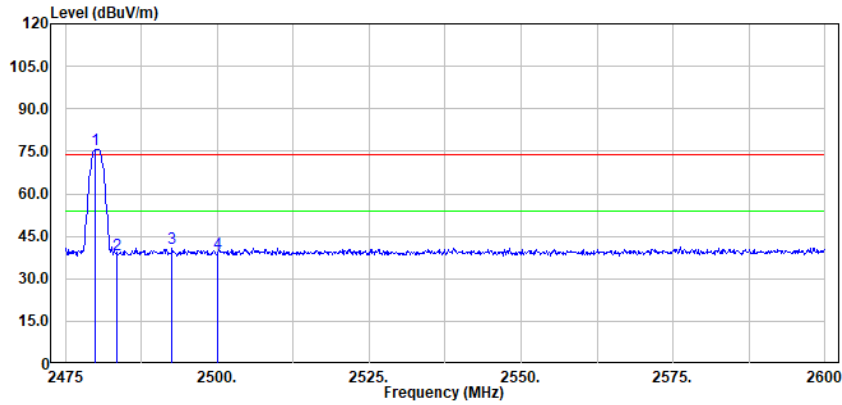
# Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:High



Antenna Polarity :Vertical

No.	Freq MHz	Read level dBUv	Antenna Factor dB/m	Cable Loss dB	Preamp Factor dB	Emission Level dBUv/m	Limit Line dBUv/m	Over Limit dB	Remark
	2479.88	95.32	27.58	2.73	50.10	75.53	74.00	1.53	Peak
	2483.50	58.13	27.58	2.73	50.10	38.34	74.00	-35.66	Peak
	2492.50	60.43	27.59	2.74	50.09	40.67	74.00	-33.33	Peak
	2500.00	58.90	27.59	2.74	50.08	39.15	74.00	-34.85	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



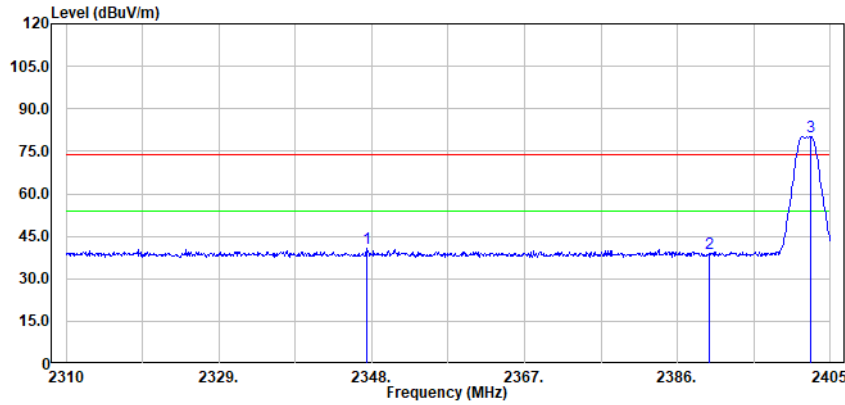
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Test Mode: 01; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Antenna Polarity :Horizontal

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
	2347.43	60.82	27.53	2.63	50.19	40.79	74.00	-33.21	Peak
	2390.00	58.69	27.55	2.66	50.18	38.72	74.00	-35.28	Peak
	2402.63	100.07	27.56	2.67	50.18	80.12	74.00	6.12	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



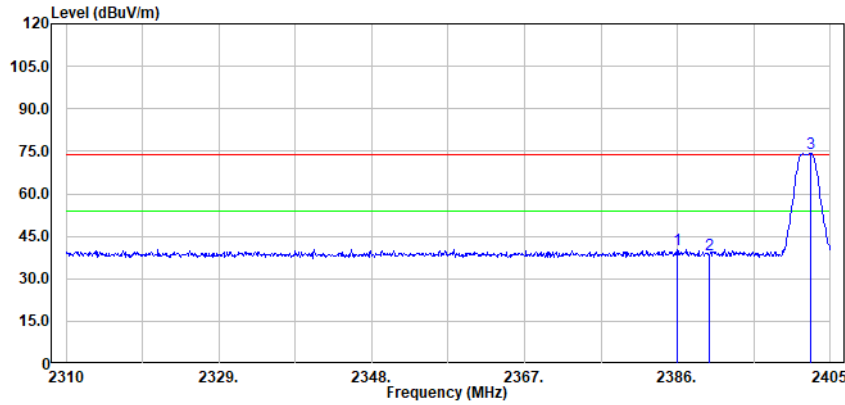
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Test Mode: 01; Polarity: Vertical; Modulation:GFSK; Channel:Low



Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	2386.00	60.35	27.55	2.65	50.18	40.37	74.00	-33.63	Peak
	2390.00	58.51	27.55	2.66	50.18	38.54	74.00	-35.46	Peak
	2402.53	94.24	27.56	2.67	50.18	74.29	74.00	0.29	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor





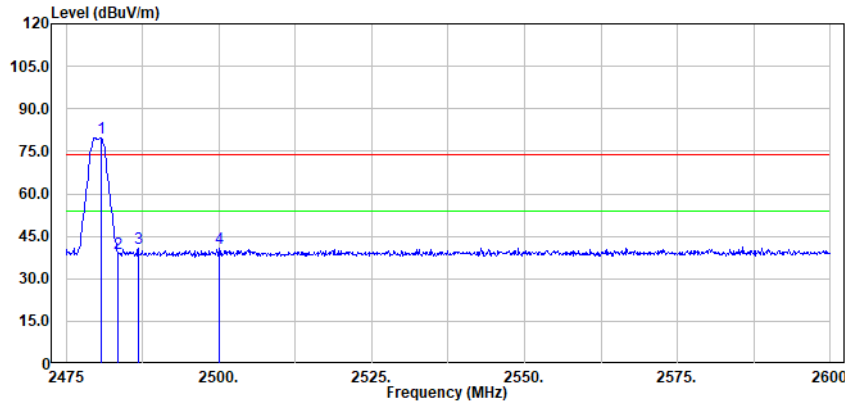
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Test Mode: 01; Polarity: Horizontal; Modulation:GFSK; Channel:High



Antenna Polarity :Horizontal

No.	Freq MHz	Read level dBuv	Antenna Factor dB/m	Cable Loss dB	Preamp Factor dB	Emission Level dBuv/m	Limit Line dBuv/m	Over Limit dB	Remark
	2480.63	99.35	27.58	2.73	50.10	79.56	74.00	5.56	Peak
	2483.50	58.84	27.58	2.73	50.10	39.05	74.00	-34.95	Peak
	2486.75	60.45	27.58	2.73	50.10	40.66	74.00	-33.34	Peak
	2500.00	60.38	27.59	2.74	50.08	40.63	74.00	-33.37	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



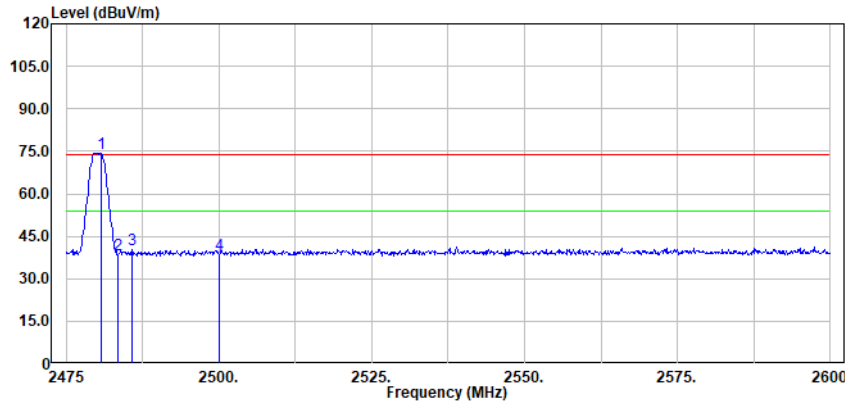
# Compliance Certification Services (Kunshan) Inc.

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Test Mode: 01; Polarity: Vertical; Modulation:GFSK; Channel:High



Antenna Polarity :Vertical

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	2480.63	94.07	27.58	2.73	50.10	74.28	74.00	0.28	Peak
	2483.50	58.48	27.58	2.73	50.10	38.69	74.00	-35.31	Peak
	2485.75	59.92	27.58	2.73	50.10	40.13	74.00	-33.87	Peak
	2500.00	58.29	27.59	2.74	50.08	38.54	74.00	-35.46	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



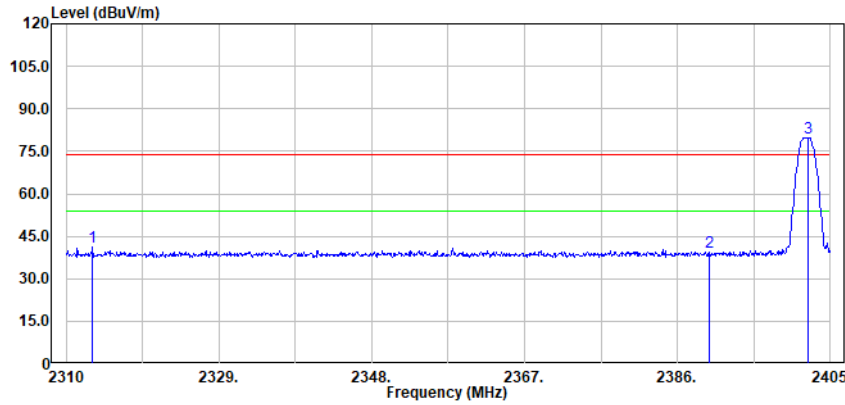
# Compliance Certification Services (Kunshan) Inc.

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Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Antenna Polarity :Horizontal

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
	2313.23	61.22	27.49	2.65	50.19	41.17	74.00	-32.83	Peak
	2390.00	59.35	27.55	2.66	50.18	39.38	74.00	-34.62	Peak
	2402.34	99.81	27.56	2.67	50.18	79.86	74.00	5.86	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



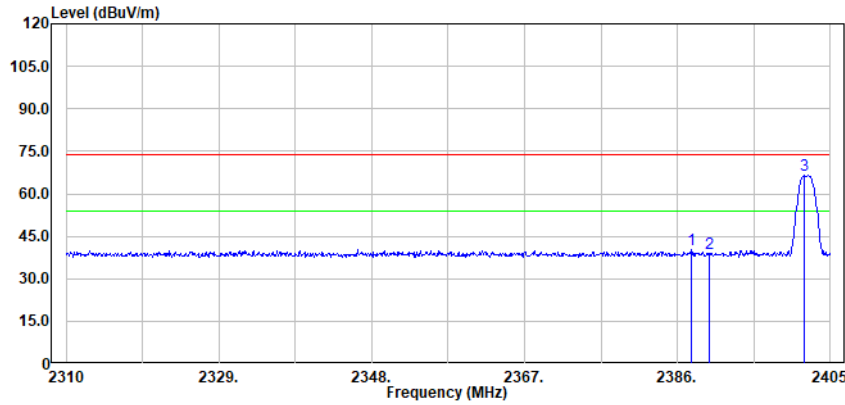
# Compliance Certification Services (Kunshan) Inc.

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Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:Low



Antenna Polarity :Vertical

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
	2387.81	60.41	27.55	2.65	50.18	40.43	74.00	-33.57	Peak
	2390.00	58.76	27.55	2.66	50.18	38.79	74.00	-35.21	Peak
	2401.87	86.42	27.55	2.67	50.18	66.46	74.00	-7.54	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



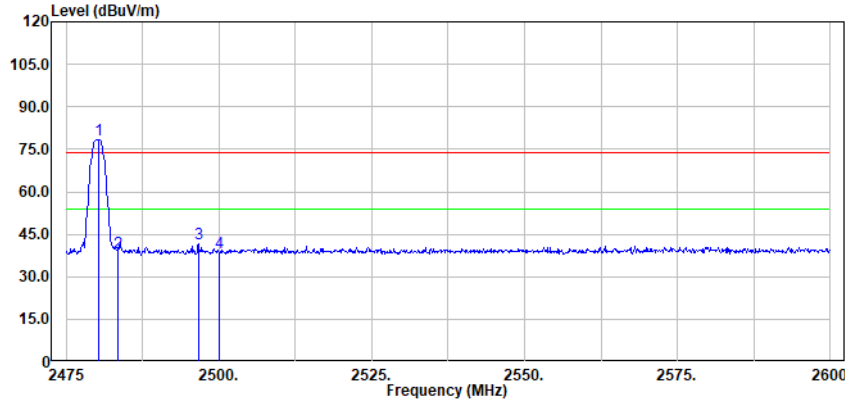
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Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:High



Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	2480.38	98.08	27.58	2.73	50.10	78.29	74.00	4.29	Peak
	2483.50	58.49	27.58	2.73	50.10	38.70	74.00	-35.30	Peak
	2496.63	61.54	27.59	2.74	50.08	41.79	74.00	-32.21	Peak
	2500.00	58.20	27.59	2.74	50.08	38.45	74.00	-35.55	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



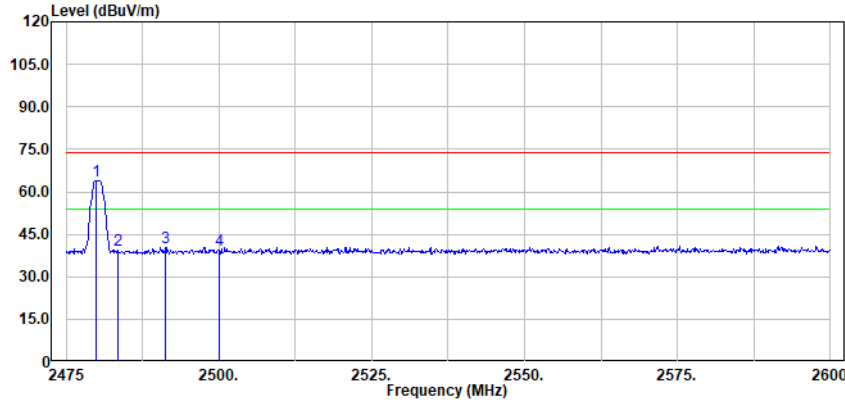
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Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:High



Antenna Polarity :Vertical

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	2479.88	83.84	27.58	2.73	50.10	64.05	74.00	-9.95	Peak
	2483.50	59.07	27.58	2.73	50.10	39.28	74.00	-34.72	Peak
	2491.25	59.98	27.59	2.74	50.09	40.22	74.00	-33.78	Peak
	2500.00	59.21	27.59	2.74	50.08	39.46	74.00	-34.54	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



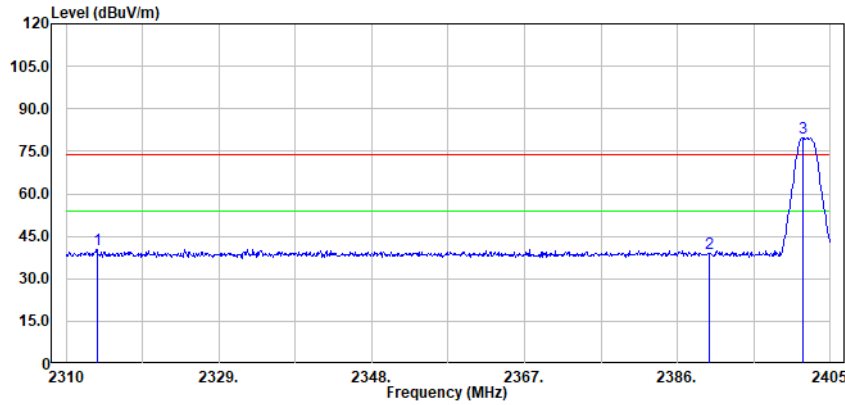
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Test Mode: 03; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Antenna Polarity :Horizontal

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
	2313.80	60.41	27.49	2.65	50.19	40.36	74.00	-33.64	Peak
	2390.00	58.89	27.55	2.66	50.18	38.92	74.00	-35.08	Peak
	2401.58	99.71	27.55	2.67	50.18	79.75	74.00	5.75	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

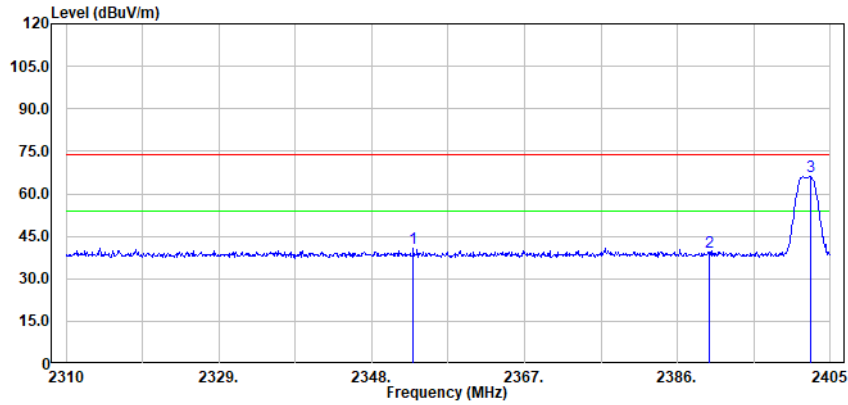
# Compliance Certification Services (Kunshan) Inc.

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Test Mode: 03; Polarity: Vertical; Modulation:GFSK; Channel:Low



Antenna Polarity :Vertical

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
	2353.13	60.70	27.53	2.63	50.19	40.67	74.00	-33.33	Peak
	2390.00	59.17	27.55	2.66	50.18	39.20	74.00	-34.80	Peak
	2402.53	86.04	27.56	2.67	50.18	66.09	74.00	-7.91	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor





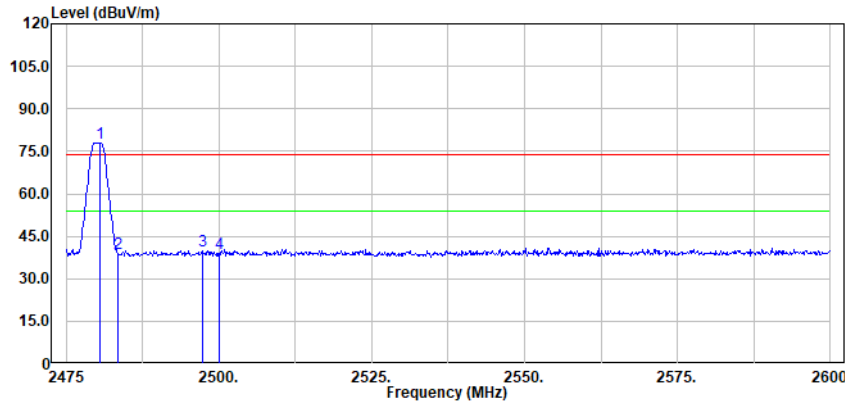
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Test Mode: 03; Polarity: Horizontal; Modulation:GFSK; Channel:High



Antenna Polarity :Horizontal

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	2480.50	97.87	27.58	2.73	50.10	78.08	74.00	4.08	Peak
	2483.50	58.62	27.58	2.73	50.10	38.83	74.00	-35.17	Peak
	2497.25	59.78	27.59	2.74	50.08	40.03	74.00	-33.97	Peak
	2500.00	58.64	27.59	2.74	50.08	38.89	74.00	-35.11	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



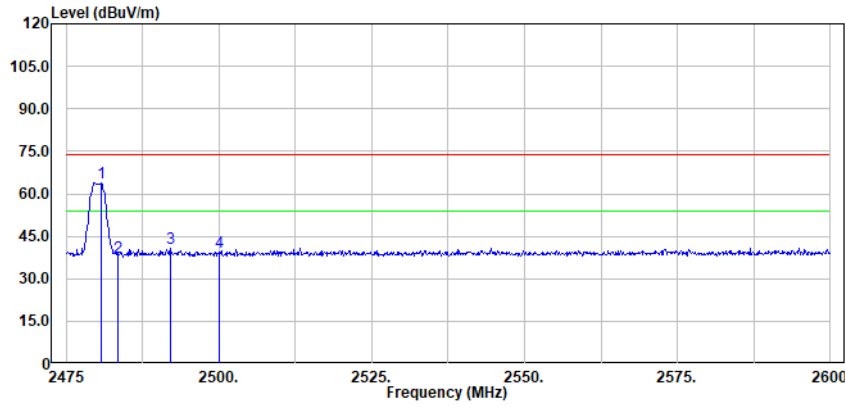
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Test Mode: 03; Polarity: Vertical; Modulation:GFSK; Channel:High



Antenna Polarity :Vertical

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	2480.75	83.51	27.58	2.73	50.10	63.72	74.00	-10.28	Peak
	2483.50	57.52	27.58	2.73	50.10	37.73	74.00	-36.27	Peak
	2492.00	60.34	27.59	2.74	50.09	40.58	74.00	-33.42	Peak
	2500.00	58.93	27.59	2.74	50.08	39.18	74.00	-34.82	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

**7.7 Radiated Spurious Emissions Below 1GHz**

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.4,6.5

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
960-1000	500	3

**7.7.1 E.U.T. Operation**

Operating Environment:

Temperature: 23.4 °C

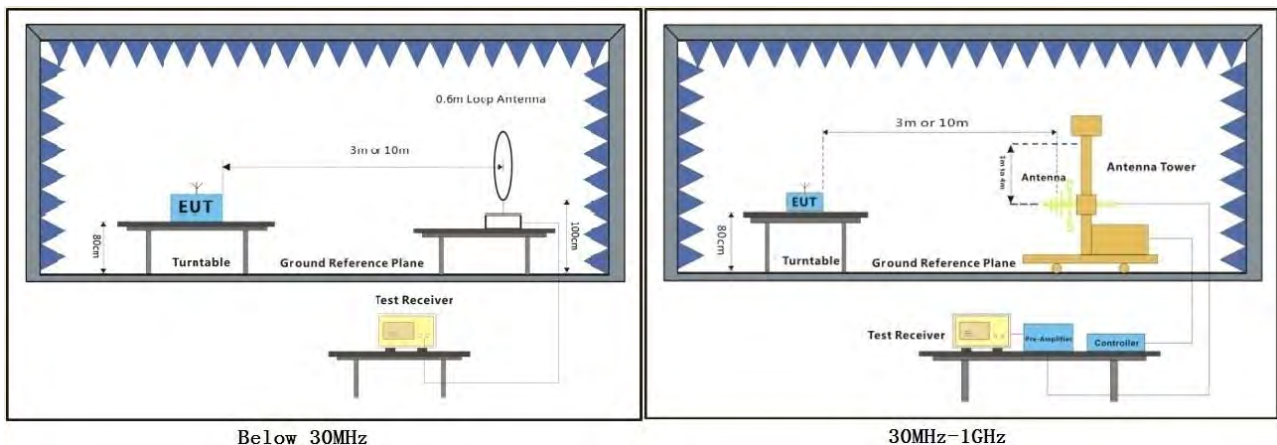
Humidity: 47.6 % RH

Atmospheric Pressure: 1010 mbar

**7.7.2 Test Mode Description**

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode(1Mbps)_Keep the EUT(Small No,10) in continuously transmitting mode with GFSK modulation.
Final test	02	TX mode(1Mbps)_Keep the EUT(Big No,12) in continuously transmitting mode with GFSK modulation.

**7.7.3 Test Setup Diagram**



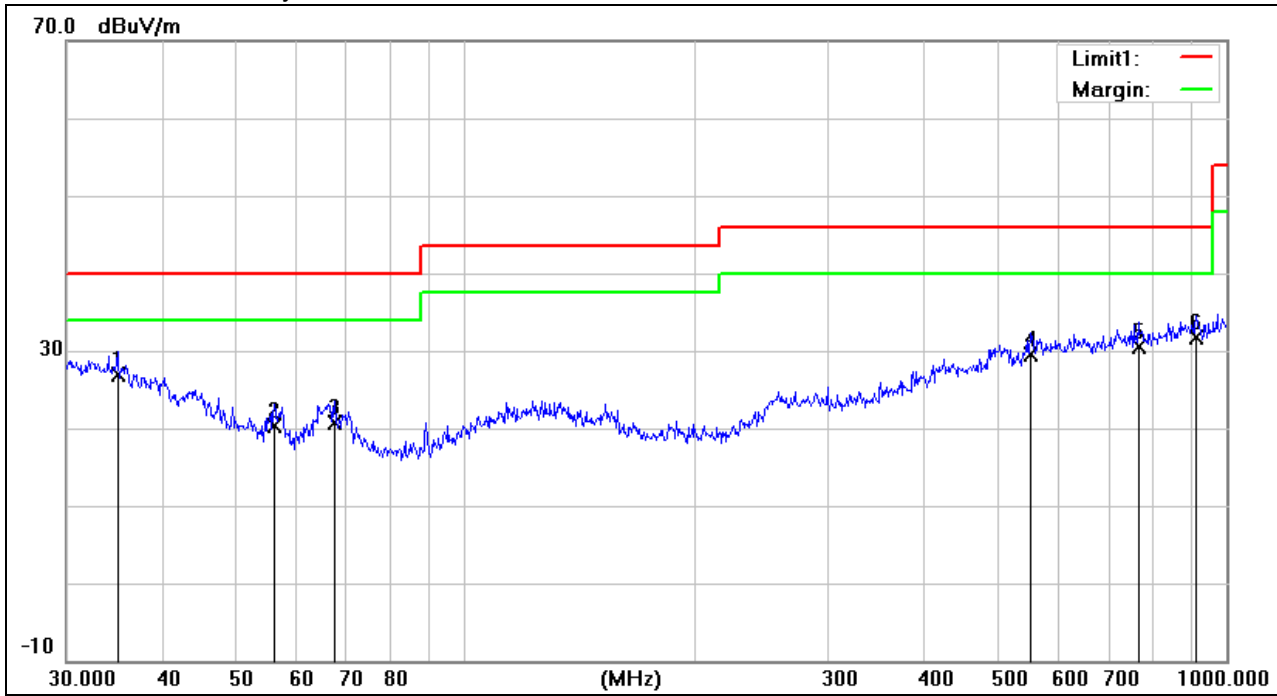
**7.7.4 Measurement Procedure and Data**

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using quasi-peak method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- i. Repeat above procedures until all frequencies measured was complete.

Remark:

- 1.  $Level = Read\ Level + Cable\ Loss + Antenna\ Factor - Preamp\ Factor$
- 2. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

Test Mode: 00; Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	35.0048	2.25	24.67	26.92	40.00	-13.08	200	152	QP
2	56.1974	4.46	15.76	20.22	40.00	-19.78	100	244	QP
3	67.4381	5.22	15.45	20.67	40.00	-19.33	100	241	QP
4	552.8831	2.12	27.32	29.44	46.00	-16.56	100	181	QP
5	766.0570	28.24	2.34	30.58	46.00	-15.42	100	358	QP
6	912.8620	29.22	2.52	31.74	46.00	-14.26	100	344	QP

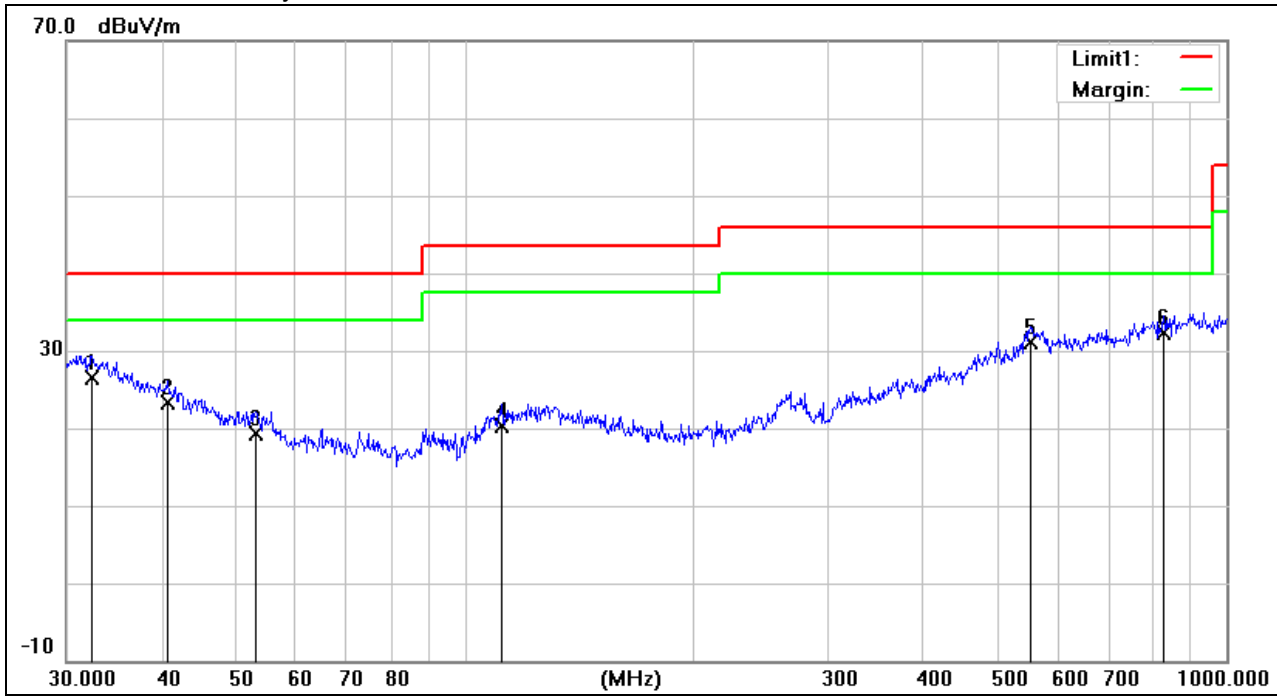
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Test Mode: 00; Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	32.4060	1.28	25.16	26.44	40.00	-13.56	100	241	QP
2	40.7015	1.35	21.90	23.25	40.00	-16.75	100	225	QP
3	53.1313	2.54	16.71	19.25	40.00	-20.75	100	324	QP
4	111.7380	1.49	18.74	20.23	43.50	-23.27	100	18	QP
5	552.8831	3.70	27.32	31.02	46.00	-14.98	100	162	QP
6	827.4932	30.09	2.16	32.25	46.00	-13.75	100	157	QP

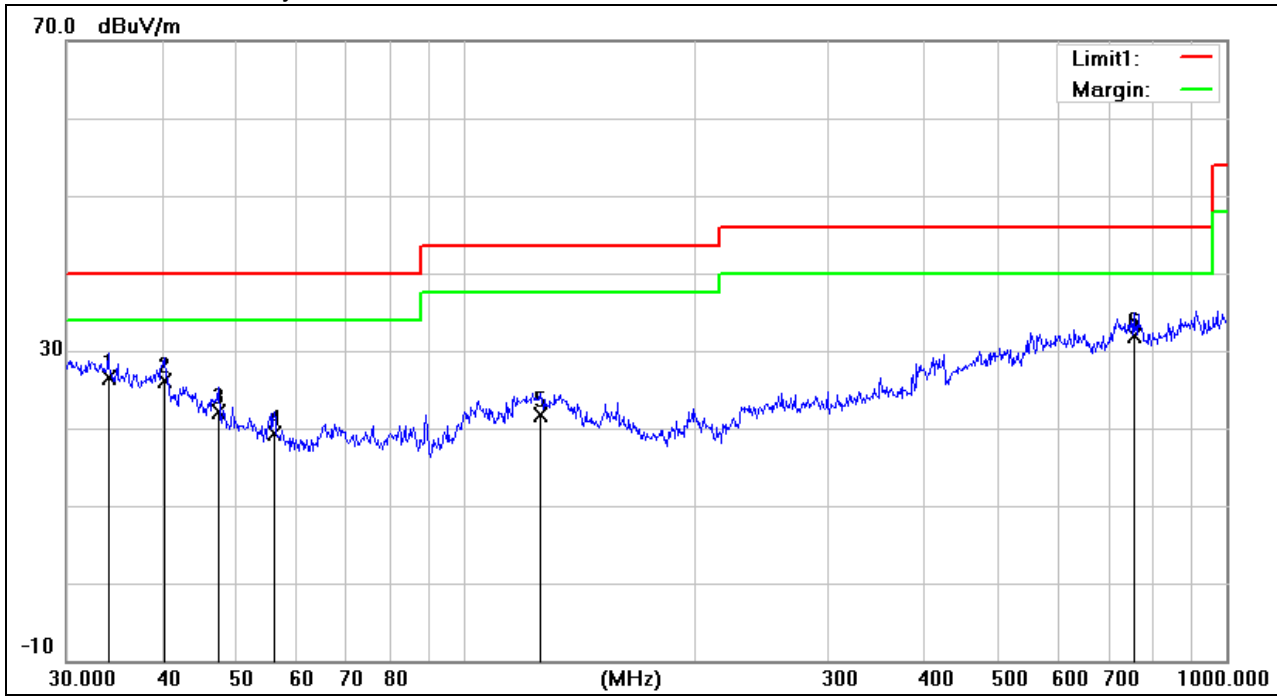
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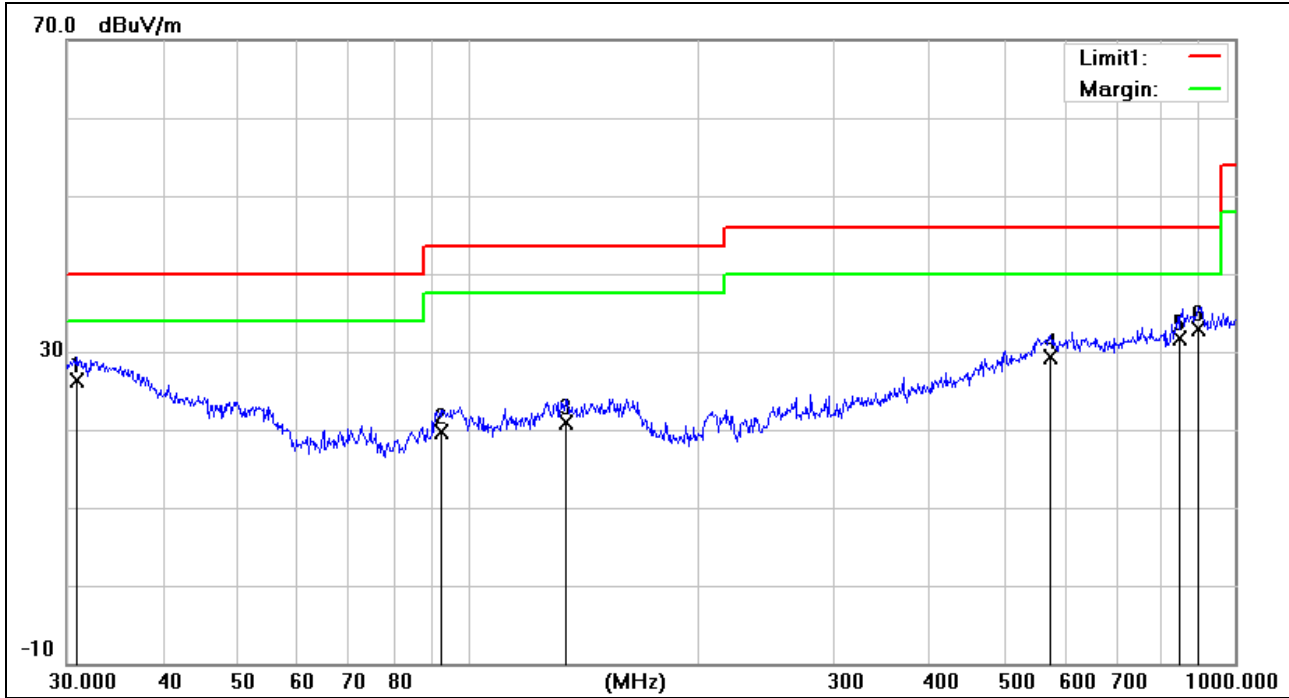
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Test Mode: 02; Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	34.0364	1.50	24.94	26.44	40.00	-13.56	100	141	QP
2	40.2757	3.99	22.13	26.12	40.00	-13.88	100	119	QP
3	47.4917	3.29	18.76	22.05	40.00	-17.95	200	127	QP
4	56.1974	3.60	15.76	19.36	40.00	-20.64	100	263	QP
5	125.4457	2.18	19.50	21.68	43.50	-21.82	100	305	QP
6	755.3872	29.53	2.39	31.92	46.00	-14.08	100	337	QP

Test Mode: 02; Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	30.9618	1.13	25.20	26.33	40.00	-13.67	200	215	QP
2	92.1388	4.33	15.34	19.67	43.50	-23.83	100	185	QP
3	134.0882	1.74	19.21	20.95	43.50	-22.55	100	193	QP
4	574.6258	2.23	27.04	29.27	46.00	-16.73	100	305	QP
5	848.0561	29.52	2.13	31.65	46.00	-14.35	100	311	QP
6	896.9963	30.34	2.48	32.82	46.00	-13.18	100	334	QP



**7.8 Radiated Spurious Emissions Above 1GHz**

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.6

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
Above 1000	500	3

**7.8.1 E.U.T. Operation**

Operating Environment:

Temperature: 23.4 °C

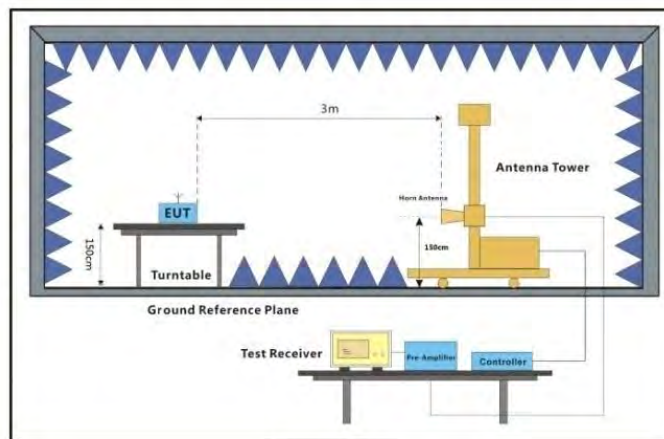
Humidity: 47.6 % RH

Atmospheric Pressure: 1010 mbar

**7.8.2 Test Mode Description**

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode(1Mbps)_Keep the EUT(Small No,10) in continuously transmitting mode with GFSK modulation.
Final test	01	TX mode(2Mbps)_Keep the EUT(Small No,10) in continuously transmitting mode with GFSK modulation.
Final test	02	TX mode(1Mbps)_Keep the EUT(Big No,12) in continuously transmitting mode with GFSK modulation.
Final test	03	TX mode(2Mbps)_Keep the EUT in (Big No,12) continuously transmitting mode with GFSK modulation.

**7.8.3 Test Setup Diagram**



Above 1GHz

**7.8.4 Measurement Procedure and Data**

- a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- i. Repeat above procedures until all frequencies measured was complete.

Remark:

- 1.  $Level = Read\ Level + Cable\ Loss + Antenna\ Factor - Preamp\ Factor$
- 2. Scan from 1GHz to 25GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
- 3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.



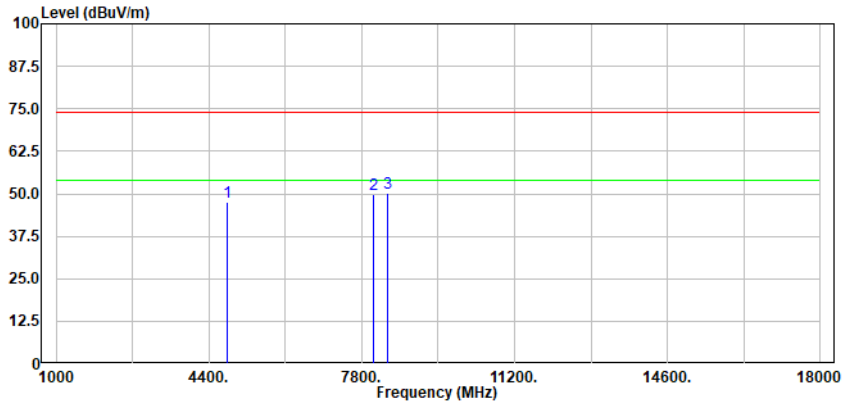
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Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Antenna Polarity :Horizontal

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
	4803.92	59.74	31.26	4.14	47.72	47.42	74.00	-26.58	Peak
	8061.80	53.65	36.88	5.17	45.81	49.89	74.00	-24.11	Peak
	8379.36	53.65	37.12	5.25	45.71	50.31	74.00	-23.69	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



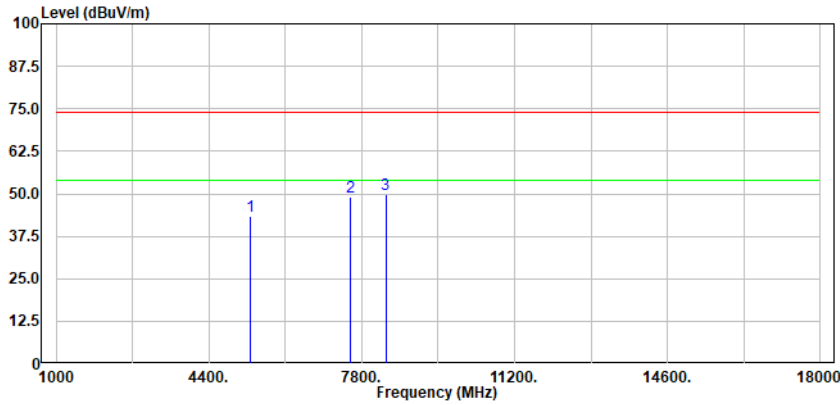
# Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:Low



Antenna Polarity :Vertical

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5304.40	54.76	31.89	4.40	47.53	43.52	74.00	-30.48	Peak
	7539.56	53.83	36.44	5.43	46.51	49.19	74.00	-24.81	Peak
	8329.72	53.13	37.09	5.22	45.72	49.72	74.00	-24.28	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



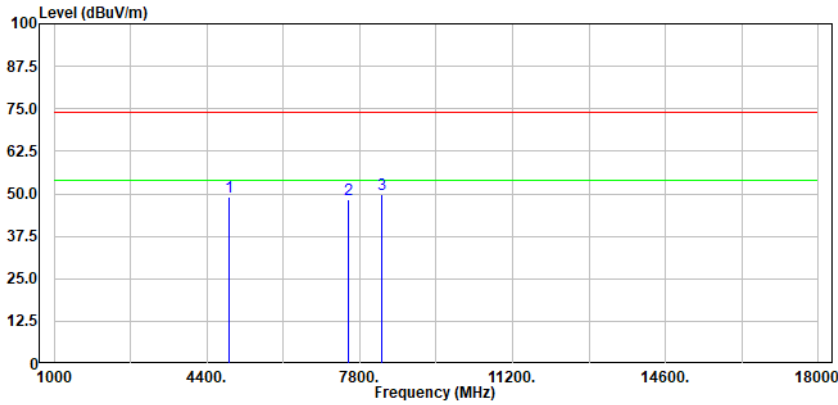
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Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:middle



Antenna Polarity :Horizontal

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	4880.76	61.18	31.42	4.17	47.73	49.04	74.00	-24.96	Peak
	7530.72	52.97	36.43	5.43	46.52	48.31	74.00	-25.69	Peak
	8282.12	53.34	37.05	5.20	45.74	49.85	74.00	-24.15	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



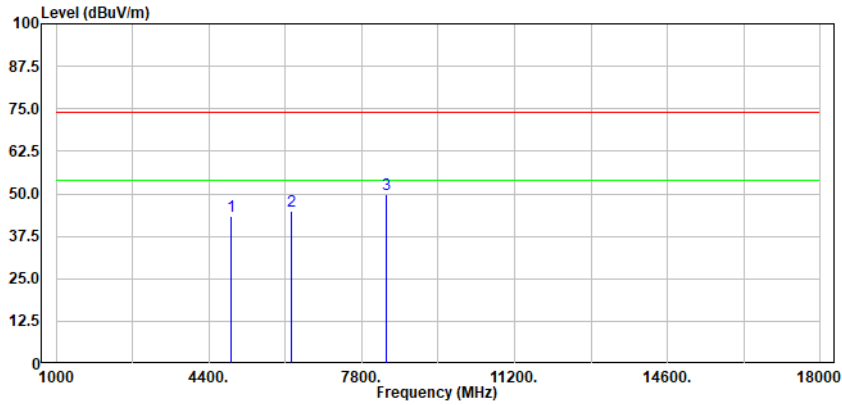
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Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:middle



Antenna Polarity :Vertical

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	4880.76	55.63	31.42	4.17	47.73	43.49	74.00	-30.51	Peak
	6243.48	54.25	33.08	4.62	47.10	44.85	74.00	-29.15	Peak
	8337.20	53.07	37.09	5.23	45.72	49.67	74.00	-24.33	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



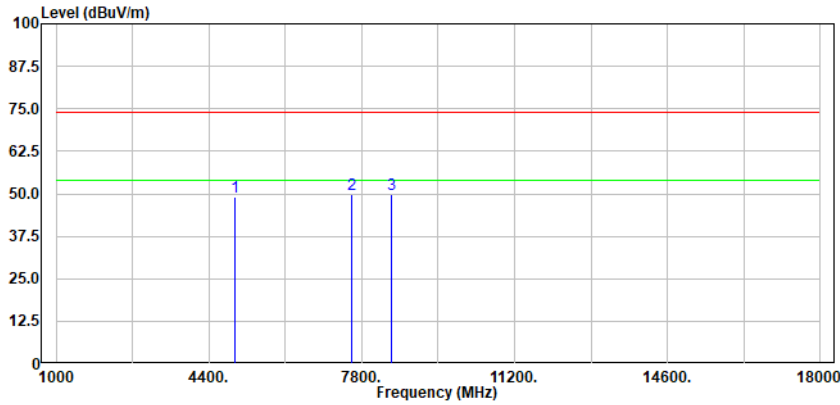
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Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:High



Antenna Polarity :Horizontal

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
	4960.32	60.85	31.59	4.21	47.74	48.91	74.00	-25.09	Peak
	7571.52	54.33	36.47	5.41	46.46	49.75	74.00	-24.25	Peak
	8450.76	53.21	37.18	5.28	45.69	49.98	74.00	-24.02	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



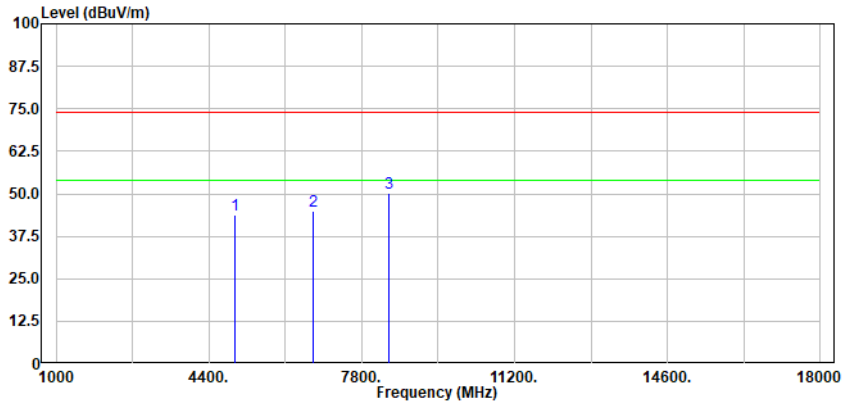
# Compliance Certification Services (Kunshan) Inc.

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Antenna Polarity :Vertical

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
	4960.32	55.71	31.59	4.21	47.74	43.77	74.00	-30.23	Peak
	6724.24	52.77	34.29	4.92	46.99	44.99	74.00	-29.01	Peak
	8394.32	53.34	37.13	5.25	45.70	50.02	74.00	-23.98	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor





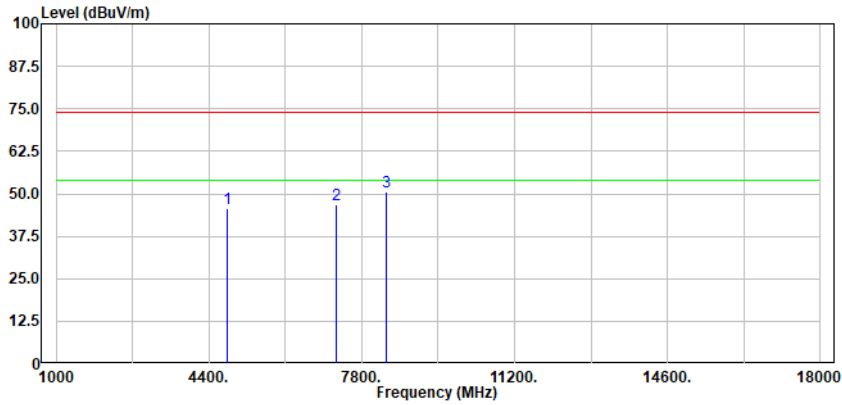
# Compliance Certification Services (Kunshan) Inc.

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Test Mode: 01; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Antenna Polarity :Horizontal

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
	4804.60	57.84	31.26	4.14	47.72	45.52	74.00	-28.48	Peak
	7234.92	52.31	35.82	5.36	46.75	46.74	74.00	-27.26	Peak
	8341.96	53.81	37.10	5.23	45.72	50.42	74.00	-23.58	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



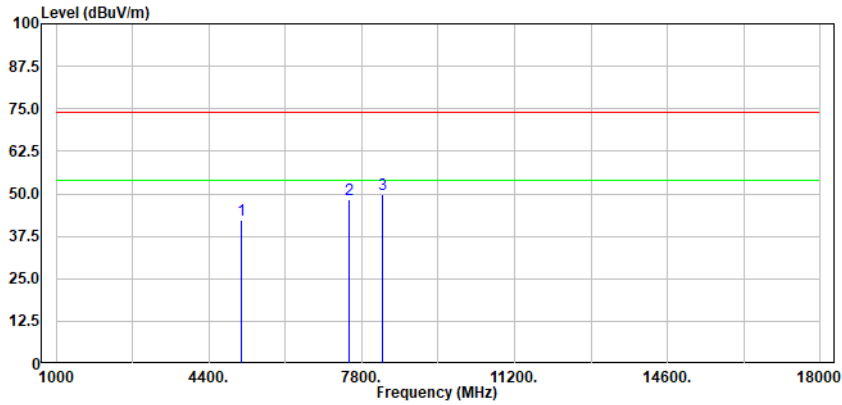
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Antenna Polarity :Vertical

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	5111.96	53.78	31.81	4.28	47.67	42.20	74.00	-31.80	Peak
	7528.68	52.78	36.43	5.44	46.53	48.12	74.00	-25.88	Peak
	8258.32	53.41	37.04	5.19	45.75	49.89	74.00	-24.11	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



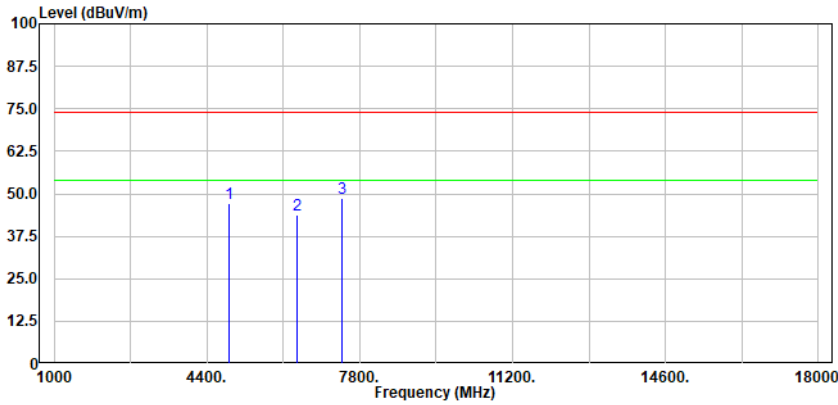
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Test Mode: 01; Polarity: Horizontal; Modulation:GFSK; Channel:middle



Antenna Polarity :Horizontal

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	4881.44	59.41	31.42	4.17	47.73	47.27	74.00	-26.73	Peak
	6389.68	52.69	33.45	4.71	47.07	43.78	74.00	-30.22	Peak
	7387.92	53.47	36.28	5.49	46.65	48.59	74.00	-25.41	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



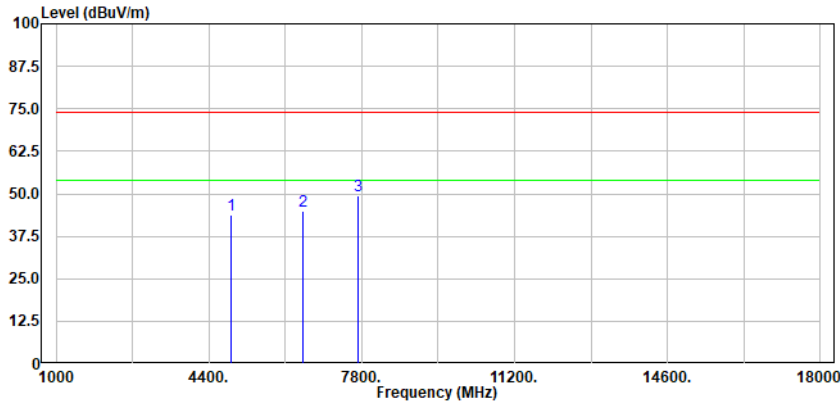
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Antenna Polarity :Vertical

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	4880.76	55.81	31.42	4.17	47.73	43.67	74.00	-30.33	Peak
	6491.68	53.55	33.71	4.77	47.05	44.98	74.00	-29.02	Peak
	7722.48	53.79	36.59	5.34	46.24	49.48	74.00	-24.52	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



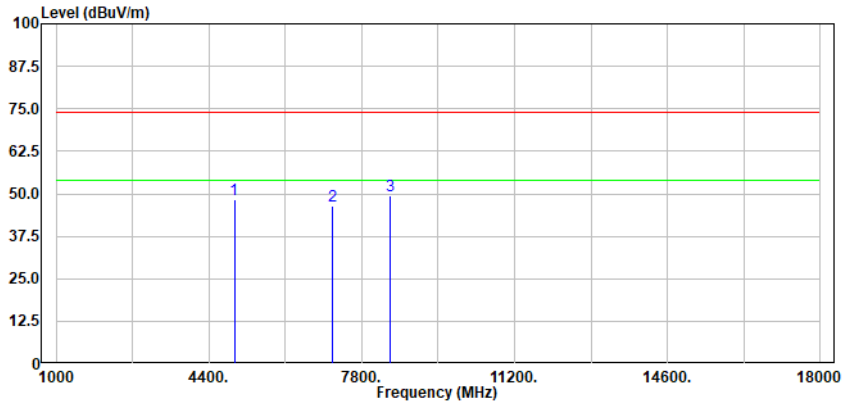
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Test Mode: 01; Polarity: Horizontal; Modulation:GFSK; Channel:High



Antenna Polarity :Horizontal

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
	4959.64	60.32	31.58	4.21	47.74	48.37	74.00	-25.63	Peak
	7132.92	52.62	35.52	5.27	46.82	46.59	74.00	-27.41	Peak
	8441.24	52.54	37.17	5.28	45.69	49.30	74.00	-24.70	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



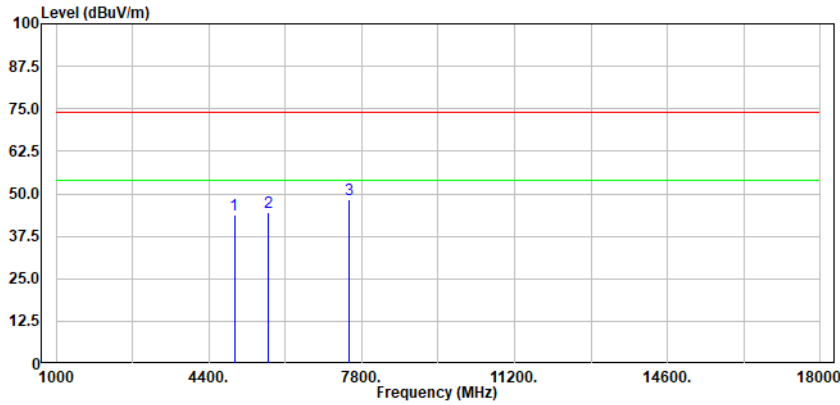
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Antenna Polarity :Vertical

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	4959.64	55.75	31.58	4.21	47.74	43.80	74.00	-30.20	Peak
	5717.16	55.11	32.21	4.55	47.28	44.59	74.00	-29.41	Peak
	7512.36	52.83	36.42	5.44	46.55	48.14	74.00	-25.86	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



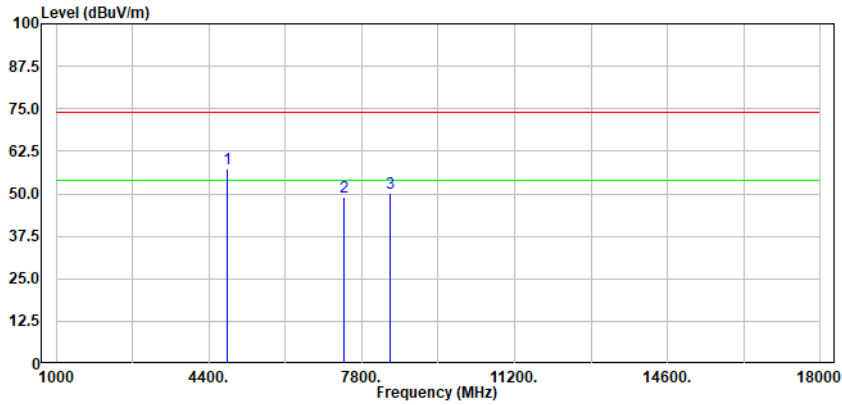
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Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Antenna Polarity :Horizontal

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
	4804.60	69.61	31.26	4.14	47.72	57.29	74.00	-16.71	Peak
	7394.04	53.73	36.30	5.49	46.64	48.88	74.00	-25.12	Peak
	8439.88	53.43	37.17	5.28	45.69	50.19	74.00	-23.81	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



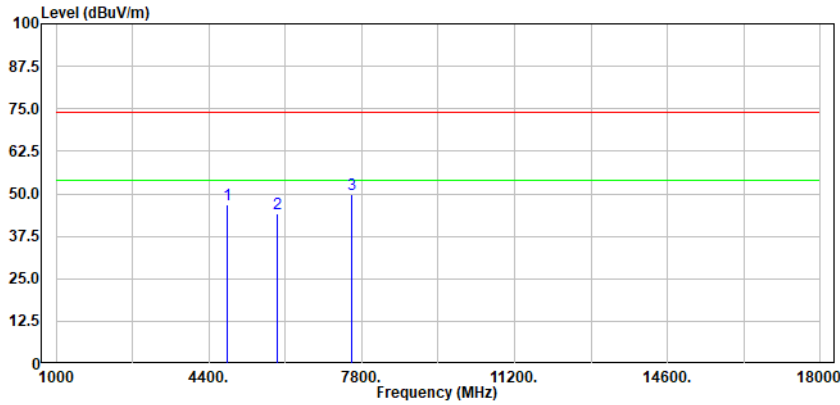
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Antenna Polarity :Vertical

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	4803.92	59.16	31.26	4.14	47.72	46.84	74.00	-27.16	Peak
	5917.08	54.46	32.49	4.54	47.17	44.32	74.00	-29.68	Peak
	7572.88	54.35	36.47	5.41	46.46	49.77	74.00	-24.23	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor





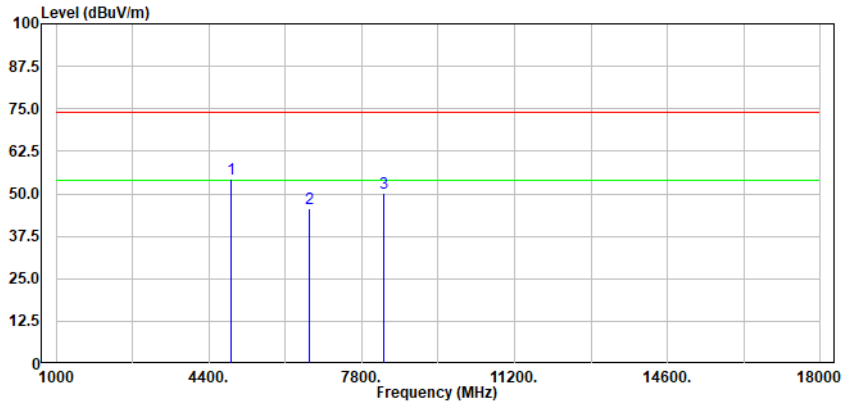
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Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:middle



Antenna Polarity :Horizontal

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	4880.08	66.36	31.42	4.17	47.73	54.22	74.00	-19.78	Peak
	6637.88	53.86	34.07	4.86	47.01	45.78	74.00	-28.22	Peak
	8297.76	53.75	37.06	5.21	45.73	50.29	74.00	-23.71	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



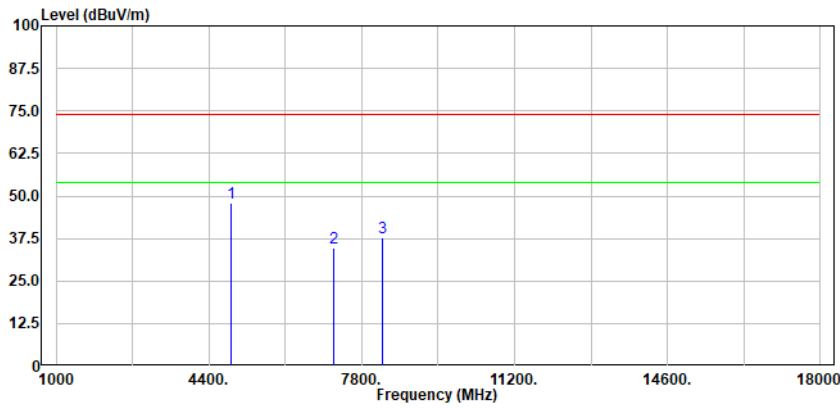
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Antenna Polarity :Horizontal

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	4880.08	60.03	31.42	4.17	47.73	47.89	54.00	-6.11	Average
	7178.48	40.66	35.65	5.31	46.79	34.83	54.00	-19.17	Average
	8256.96	41.36	37.03	5.19	45.75	37.83	54.00	-16.17	Average

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



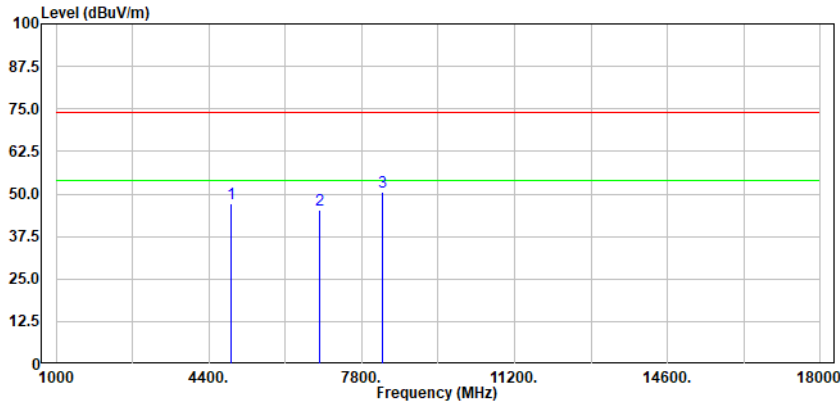
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Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:middle



Antenna Polarity :Vertical

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	4880.08	59.18	31.42	4.17	47.73	47.04	74.00	-26.96	Peak
	6850.04	52.64	34.67	5.03	46.95	45.39	74.00	-28.61	Peak
	8257.64	53.96	37.04	5.19	45.75	50.44	74.00	-23.56	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



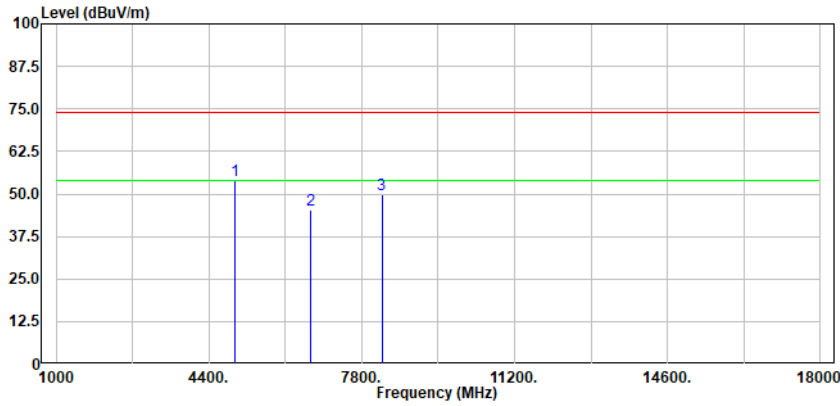
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Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:High



Antenna Polarity :Horizontal

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	4960.32	65.82	31.59	4.21	47.74	53.88	74.00	-20.12	Peak
	6656.24	53.25	34.12	4.88	47.01	45.24	74.00	-28.76	Peak
	8244.04	53.25	37.03	5.18	45.75	49.71	74.00	-24.29	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



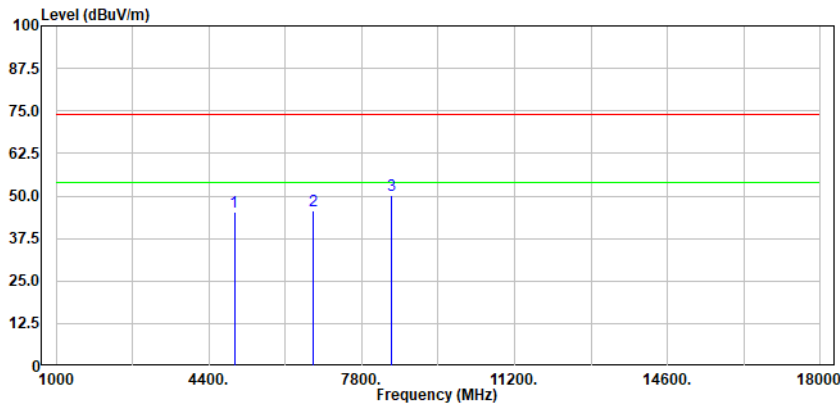
# Compliance Certification Services (Kunshan) Inc.

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Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:High



Antenna Polarity :Vertical

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	4959.64	57.32	31.58	4.21	47.74	45.37	74.00	-28.63	Peak
	6719.48	53.29	34.28	4.92	46.99	45.50	74.00	-28.50	Peak
	8448.04	53.34	37.17	5.28	45.69	50.10	74.00	-23.90	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



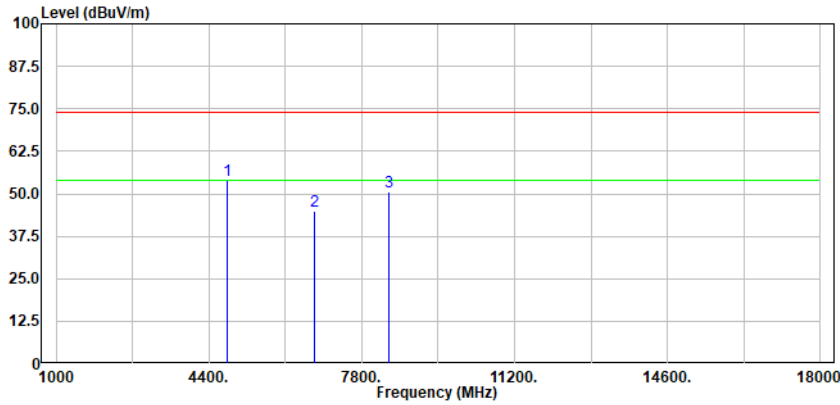
# Compliance Certification Services (Kunshan) Inc.

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Test Mode: 03; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Antenna Polarity :Horizontal

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
	4803.24	66.46	31.26	4.14	47.72	54.14	74.00	-19.86	Peak
	6741.92	52.69	34.34	4.93	46.98	44.98	74.00	-29.02	Peak
	8388.88	53.85	37.13	5.25	45.71	50.52	74.00	-23.48	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



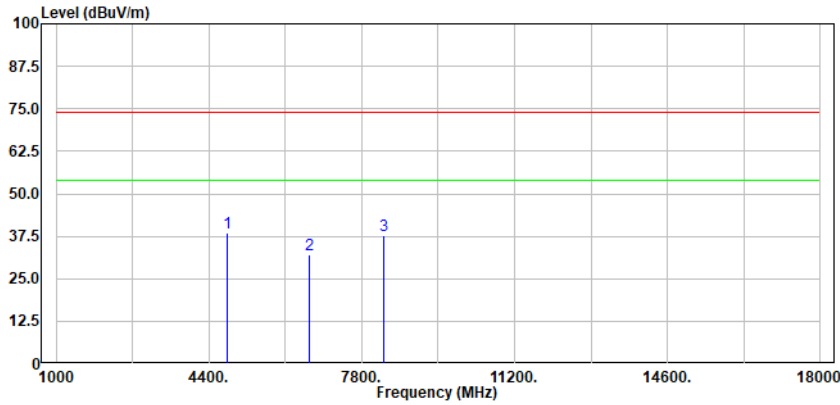
# Compliance Certification Services (Kunshan) Inc.

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Test Mode: 03; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Antenna Polarity :Horizontal

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	4803.92	50.83	31.26	4.14	47.72	38.51	54.00	-15.49	Average
	6629.04	40.11	34.05	4.86	47.01	32.01	54.00	-21.99	Average
	8286.88	41.33	37.06	5.20	45.74	37.85	54.00	-16.15	Average

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



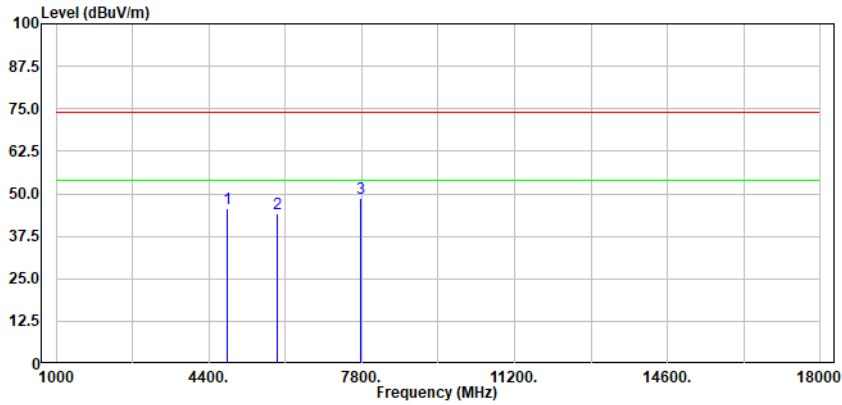
# Compliance Certification Services (Kunshan) Inc.

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Test Mode: 03; Polarity: Vertical; Modulation:GFSK; Channel:Low



Antenna Polarity :Vertical

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	4805.28	57.83	31.26	4.14	47.72	45.51	74.00	-28.49	Peak
	5917.08	54.38	32.49	4.54	47.17	44.24	74.00	-29.76	Peak
	7767.36	53.08	36.63	5.32	46.17	48.86	74.00	-25.14	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor





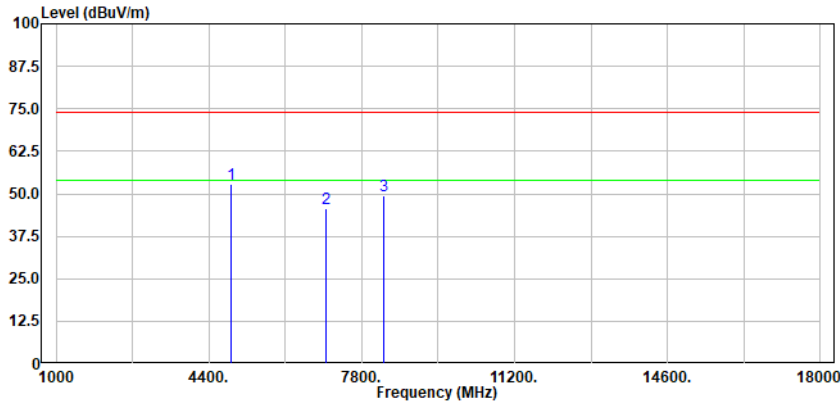
# Compliance Certification Services (Kunshan) Inc.

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Test Mode: 03; Polarity: Horizontal; Modulation:GFSK; Channel:middle



Antenna Polarity :Horizontal

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	4880.08	65.11	31.42	4.17	47.73	52.97	74.00	-21.03	Peak
	7008.48	52.43	35.14	5.16	46.90	45.83	74.00	-28.17	Peak
	8292.32	53.05	37.06	5.20	45.74	49.57	74.00	-24.43	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



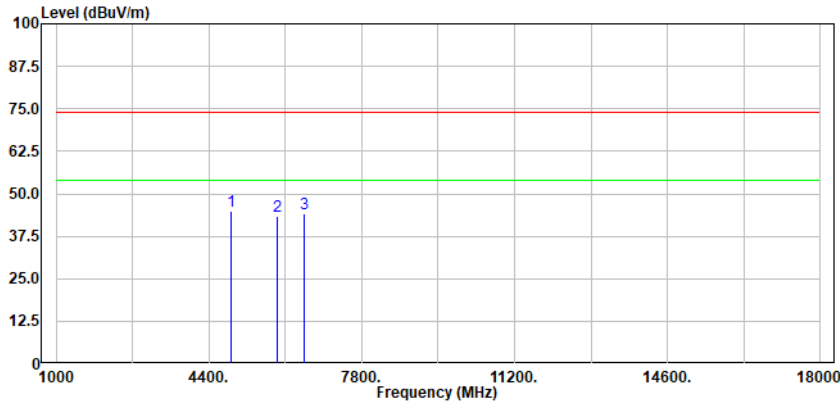
# Compliance Certification Services (Kunshan) Inc.

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Test Mode: 03; Polarity: Vertical; Modulation:GFSK; Channel:middle



Antenna Polarity :Vertical

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	4879.40	57.04	31.42	4.17	47.73	44.90	74.00	-29.10	Peak
	5921.84	53.62	32.49	4.54	47.17	43.48	74.00	-30.52	Peak
	6510.72	52.60	33.75	4.79	47.05	44.09	74.00	-29.91	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



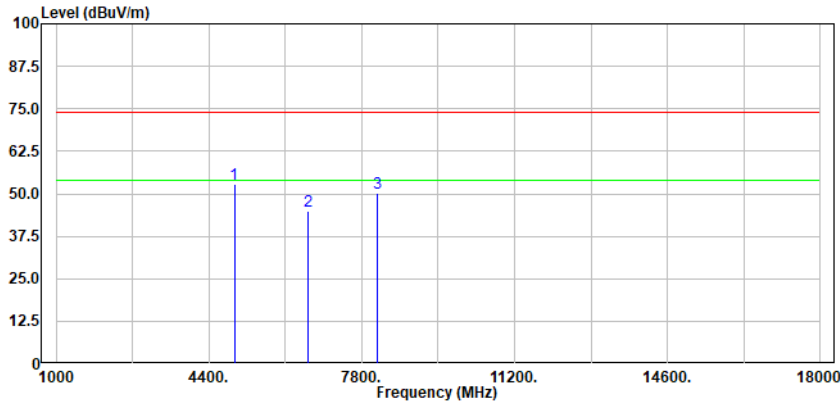
# Compliance Certification Services (Kunshan) Inc.

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Test Mode: 03; Polarity: Horizontal; Modulation:GFSK; Channel:High



Antenna Polarity :Horizontal

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
	4959.64	64.65	31.58	4.21	47.74	52.70	74.00	-21.30	Peak
	6614.76	53.03	34.02	4.85	47.02	44.88	74.00	-29.12	Peak
	8137.96	53.77	36.95	5.13	45.79	50.06	74.00	-23.94	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



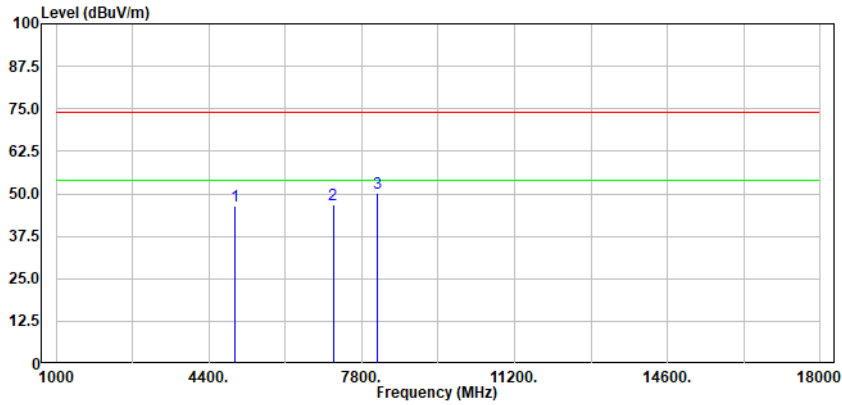
# Compliance Certification Services (Kunshan) Inc.

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Test Mode: 03; Polarity: Vertical; Modulation:GFSK; Channel:High



Antenna Polarity :Vertical

No.	Read Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
	4961.00	58.42	31.59	4.21	47.74	46.48	74.00	-27.52	Peak
	7158.08	52.63	35.59	5.29	46.80	46.71	74.00	-27.29	Peak
	8133.88	54.07	36.94	5.13	45.79	50.35	74.00	-23.65	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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### **8 Test Setup Photo**

Refer to Appendix - Test Setup Photo for KSCR2306001101AT

### **9 EUT Constructional Details (EUT Photos)**

Refer to Appendix - Photographs of EUT Constructional Details for KSCR2306001101AT



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## 10 Appendix

### For 10 inch:

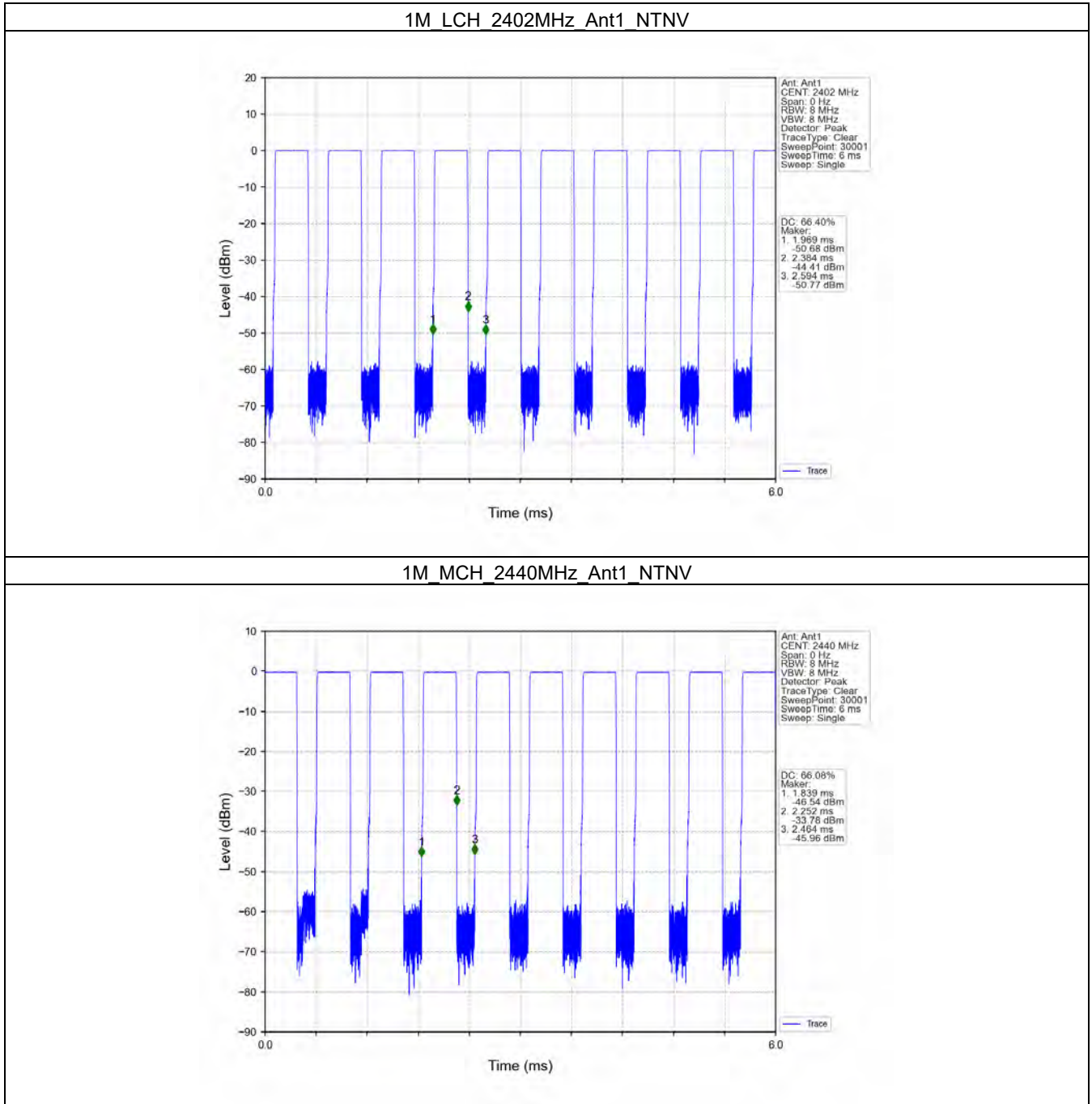
#### 1. Duty Cycle

##### 1.1 Ant1

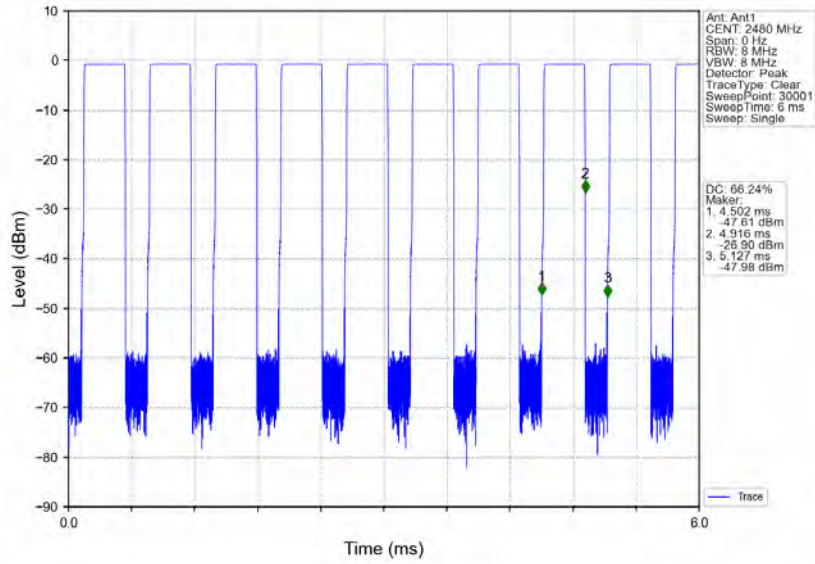
##### 1.1.1 Test Result

Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
1M	SISO	2402	0.415	0.625	66.40	1.78	0.03
		2440	0.413	0.625	66.08	1.80	0.05
		2480	0.414	0.625	66.24	1.79	0.02
2M	SISO	2402	0.230	0.625	36.80	4.34	0.03
		2440	0.230	0.625	36.80	4.34	0.04
		2480	0.230	0.624	36.86	4.33	0.04

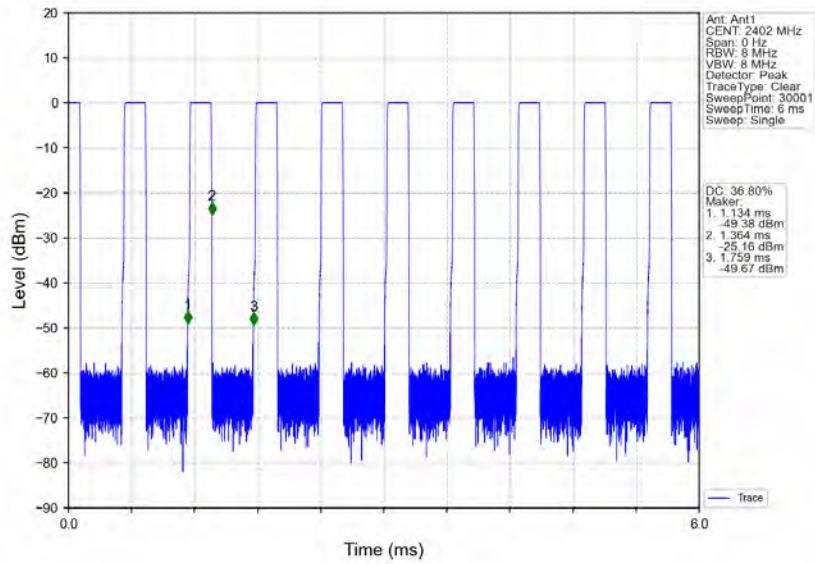
### 1.1.2 Test Graph



1M\_HCH\_2480MHz\_Ant1\_NTNV

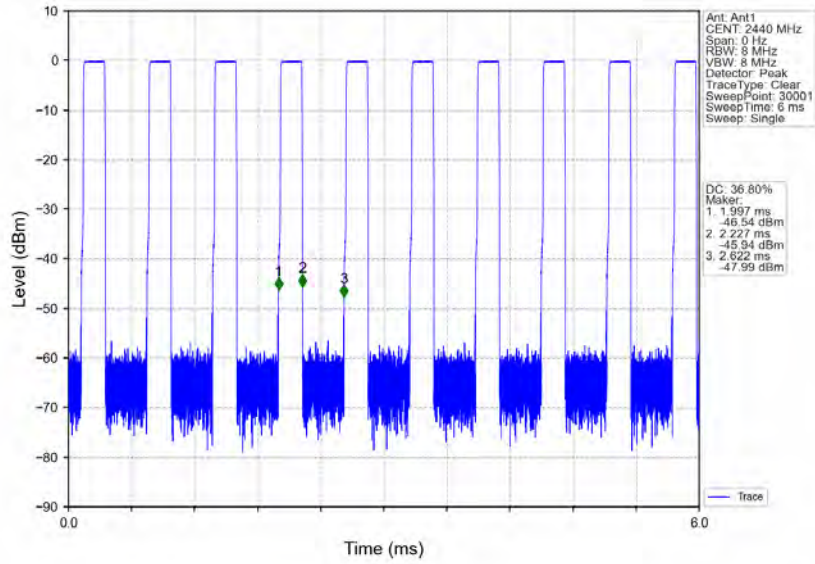


2M\_LCH\_2402MHz\_Ant1\_NTNV

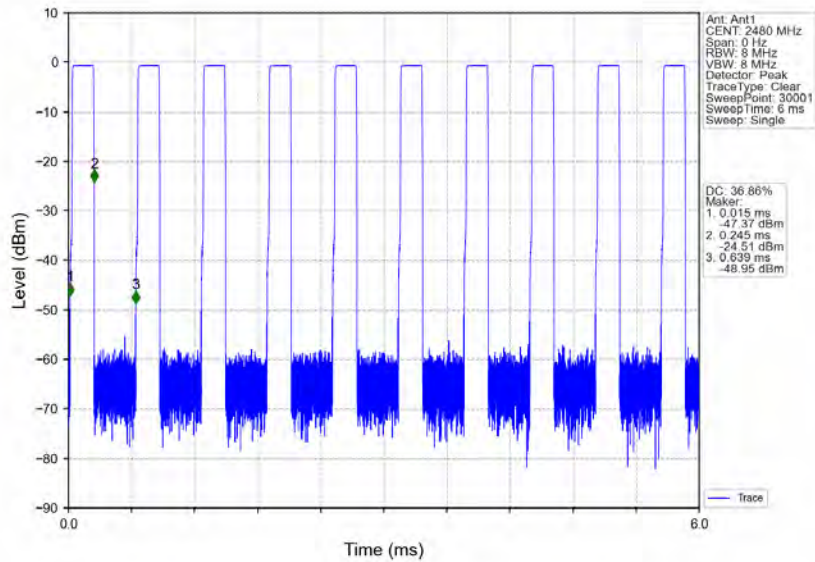




2M\_MCH\_2440MHz\_Ant1\_NTNV



2M\_HCH\_2480MHz\_Ant1\_NTNV





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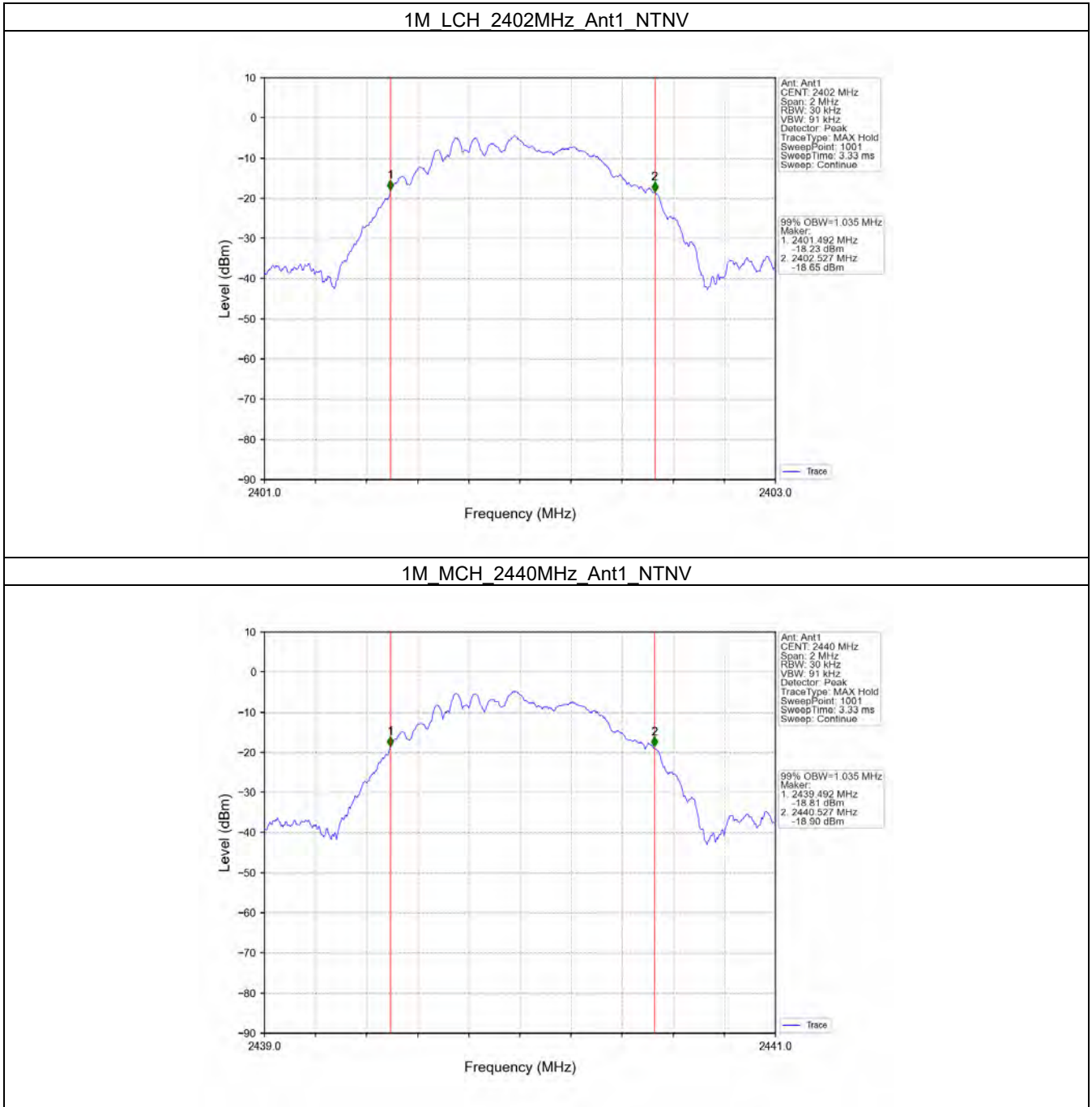
### 2. Bandwidth

#### 2.1 OBW

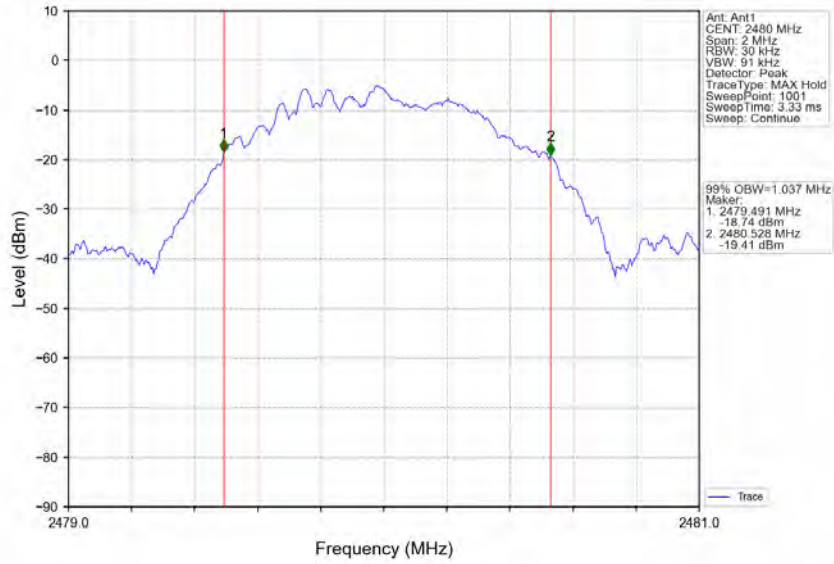
##### 2.1.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	1.035	/	Pass
		2440	1	1.035	/	Pass
		2480	1	1.037	/	Pass
2M	SISO	2402	1	2.040	/	Pass
		2440	1	2.039	/	Pass
		2480	1	2.037	/	Pass

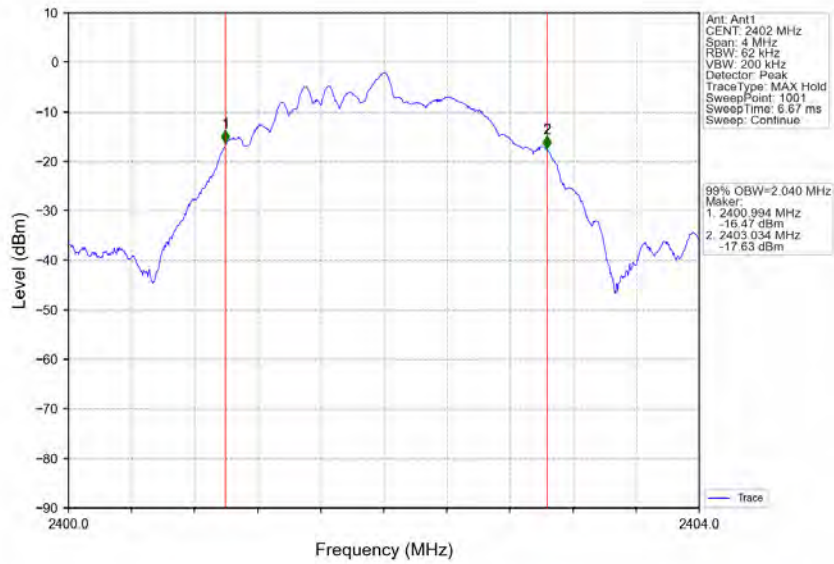
### 2.1.2 Test Graph



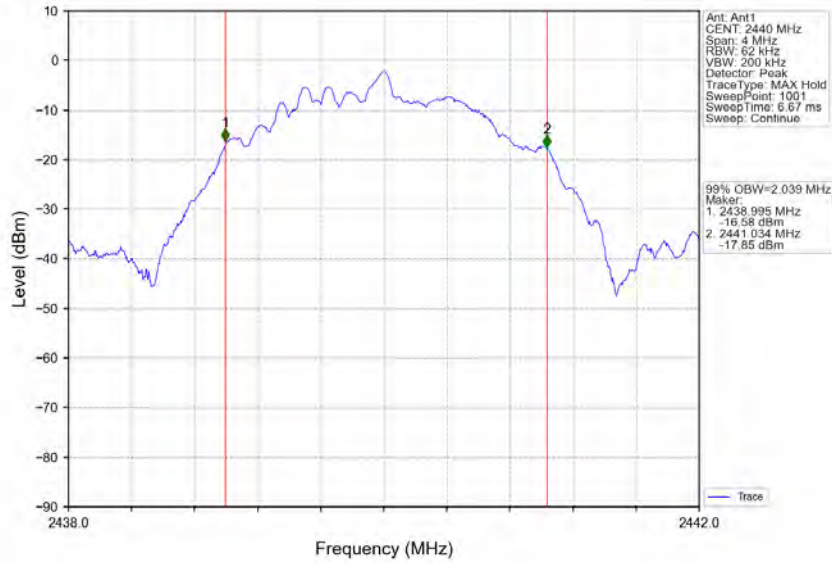
1M\_HCH\_2480MHz\_Ant1\_NTNV



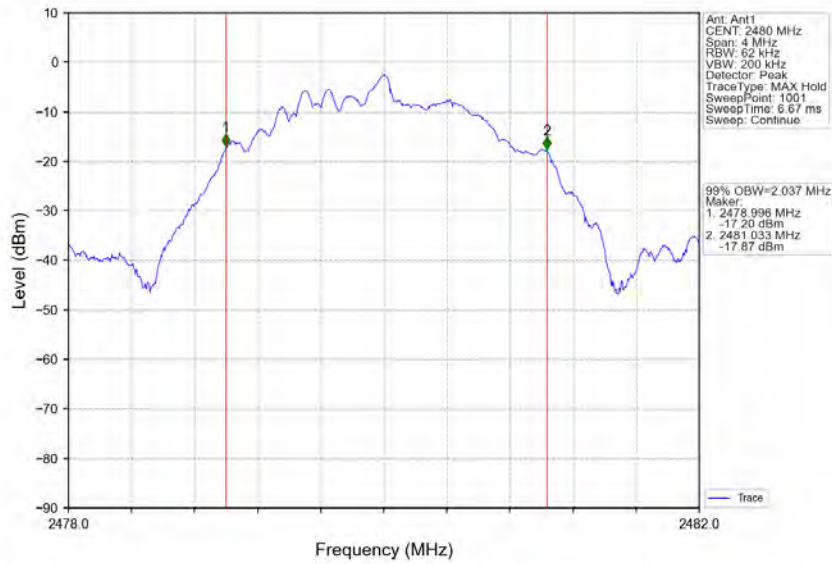
2M\_LCH\_2402MHz\_Ant1\_NTNV



2M\_MCH\_2440MHz\_Ant1\_NTNV



2M\_HCH\_2480MHz\_Ant1\_NTNV





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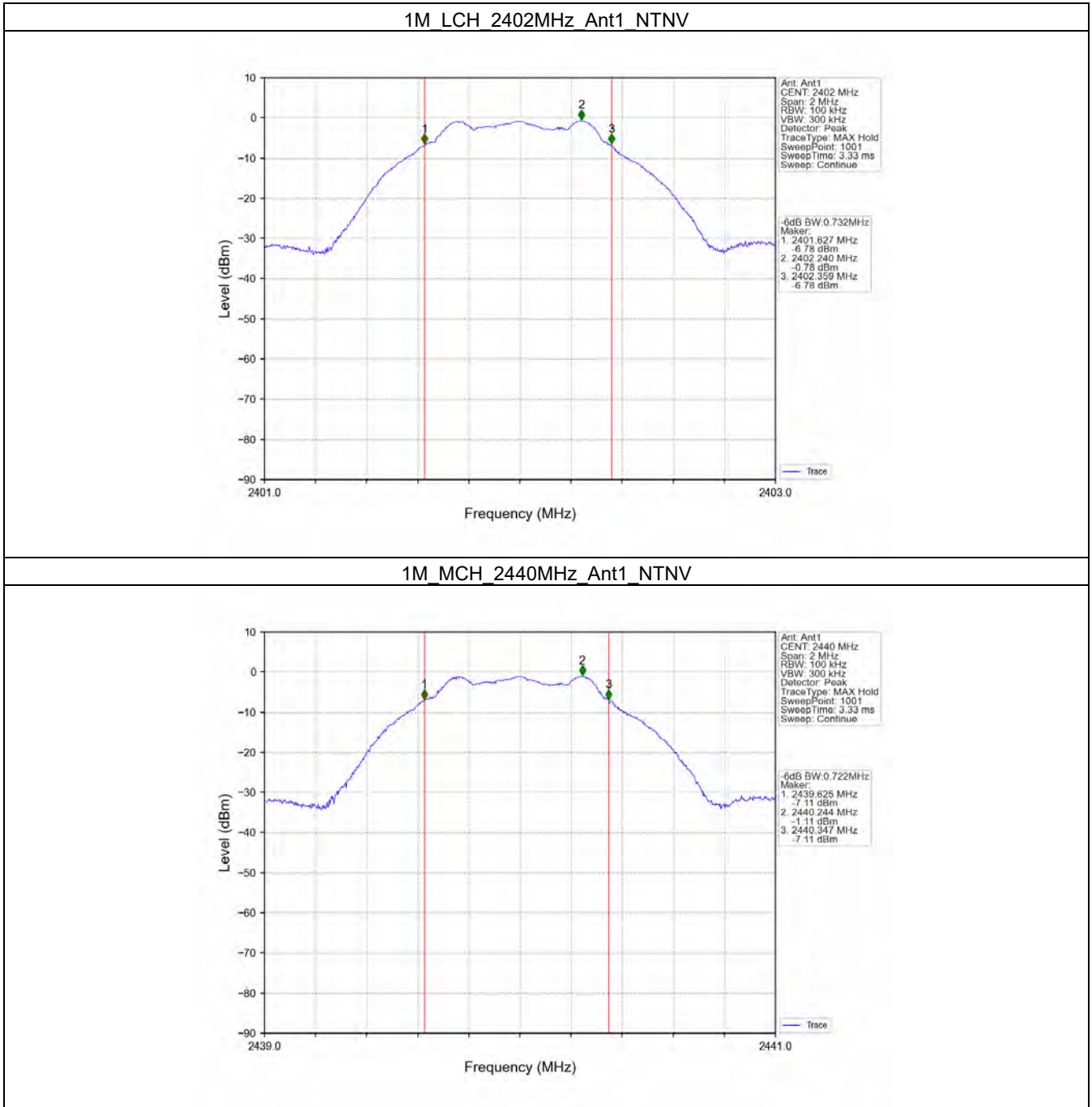
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### 2.2 6dB BW

#### 2.2.1 Test Result

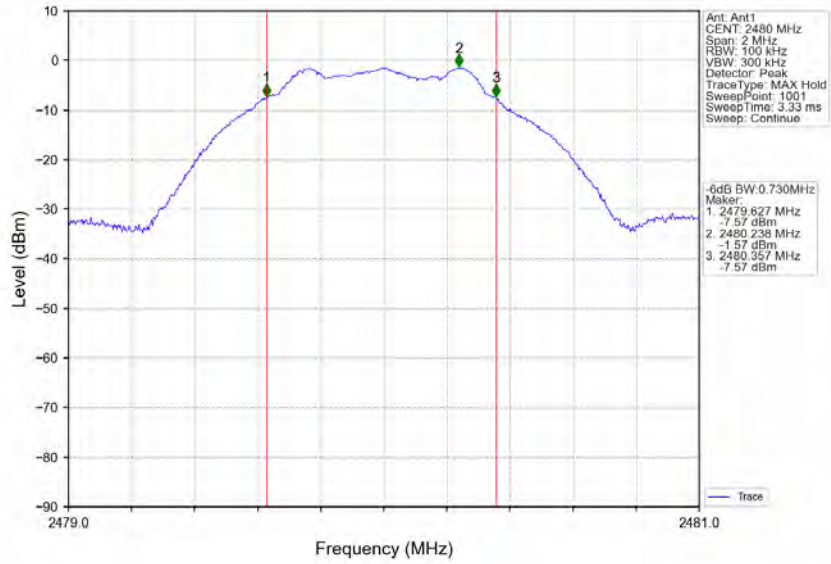
Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	0.732	$\geq 0.5$	Pass
		2440	1	0.722	$\geq 0.5$	Pass
		2480	1	0.730	$\geq 0.5$	Pass
2M	SISO	2402	1	1.237	$\geq 0.5$	Pass
		2440	1	1.232	$\geq 0.5$	Pass
		2480	1	1.153	$\geq 0.5$	Pass

2.2.2 Test Graph

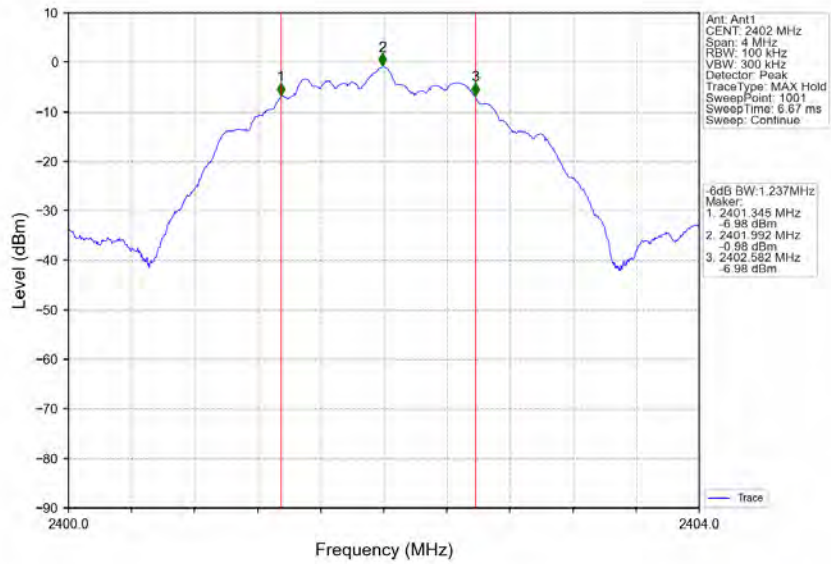




1M HCH 2480MHz Ant1 NTV

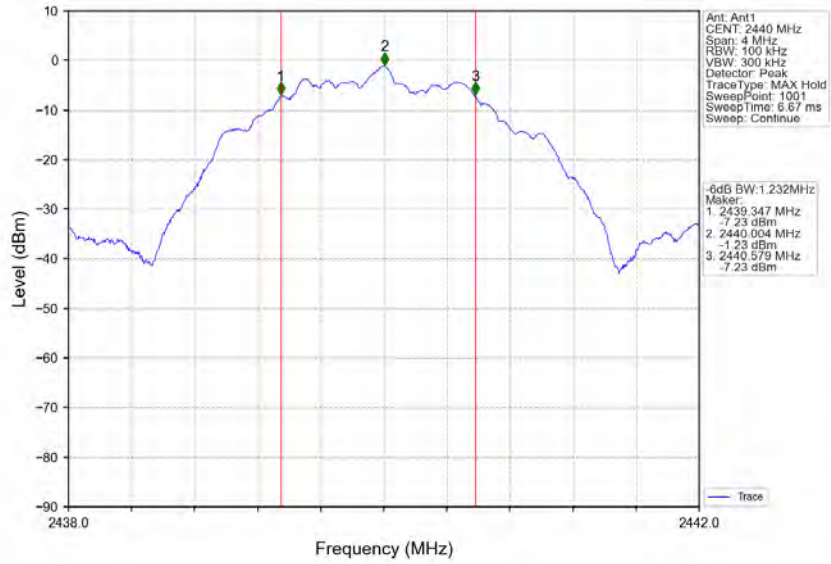


2M LCH 2402MHz Ant1 NTV

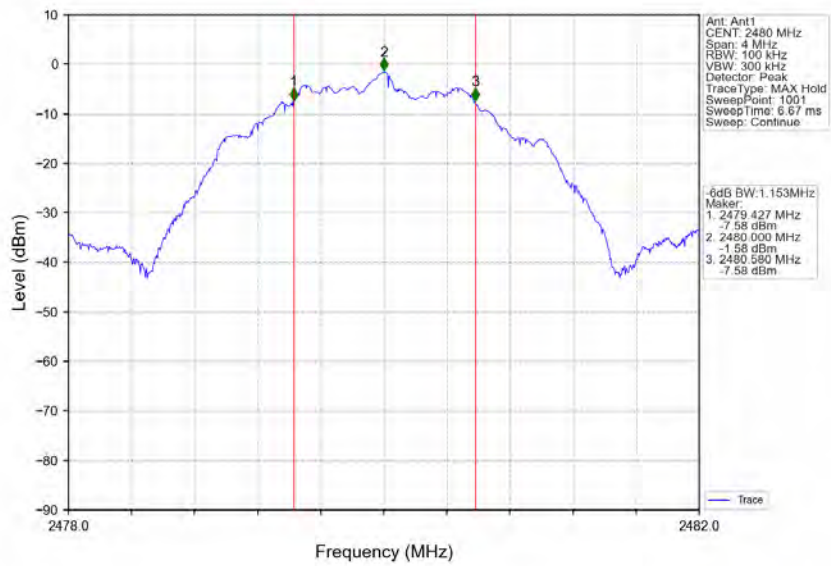




2M\_MCH\_2440MHz\_Ant1\_NTNV



2M\_HCH\_2480MHz\_Ant1\_NTNV





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### 3. Maximum Conducted Output Power

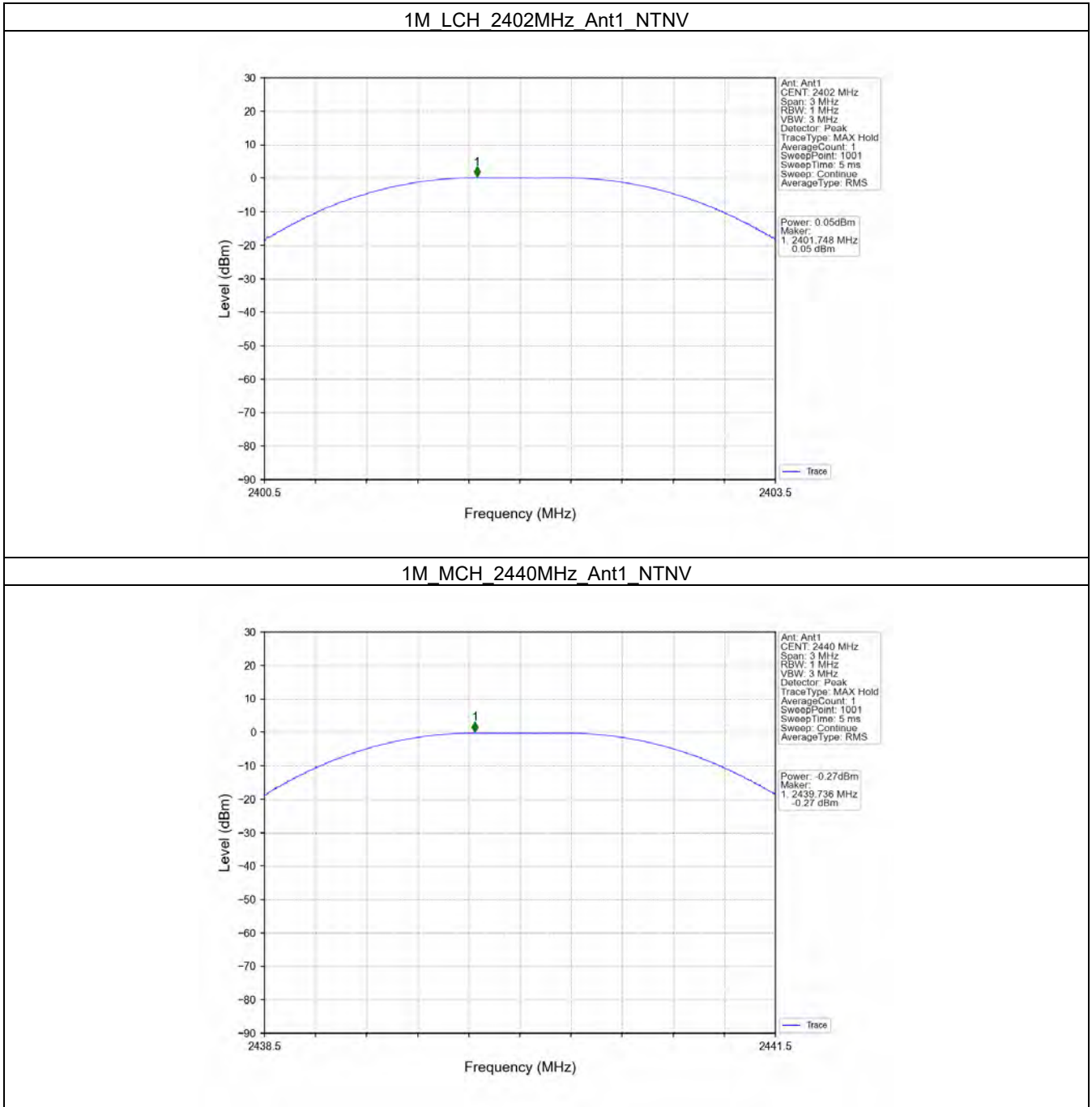
#### 3.1 Power

##### 3.1.1 Test Result

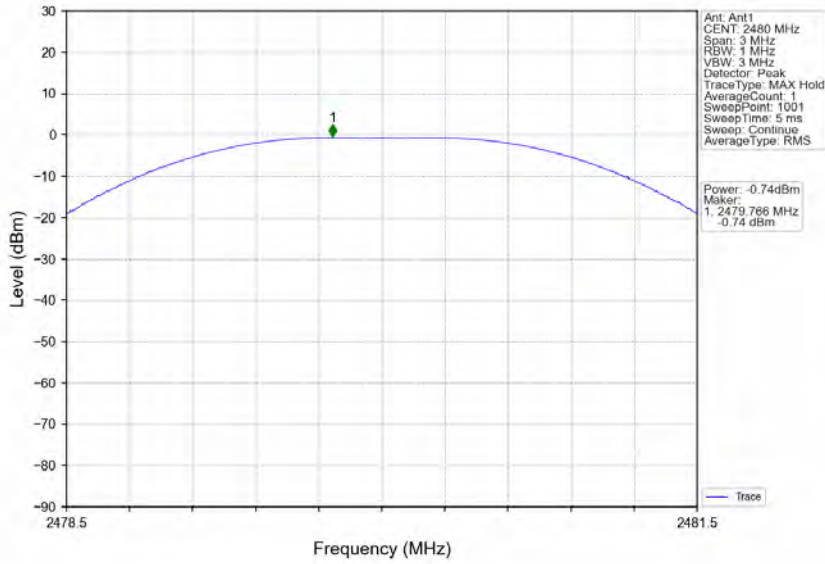
Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
1M	SISO	2402	0.05	<=30	Pass
		2440	-0.27	<=30	Pass
		2480	-0.74	<=30	Pass
2M	SISO	2402	0.05	<=30	Pass
		2440	-0.26	<=30	Pass
		2480	-0.68	<=30	Pass

Note1: Antenna Gain: Ant1: -18.11dBi;

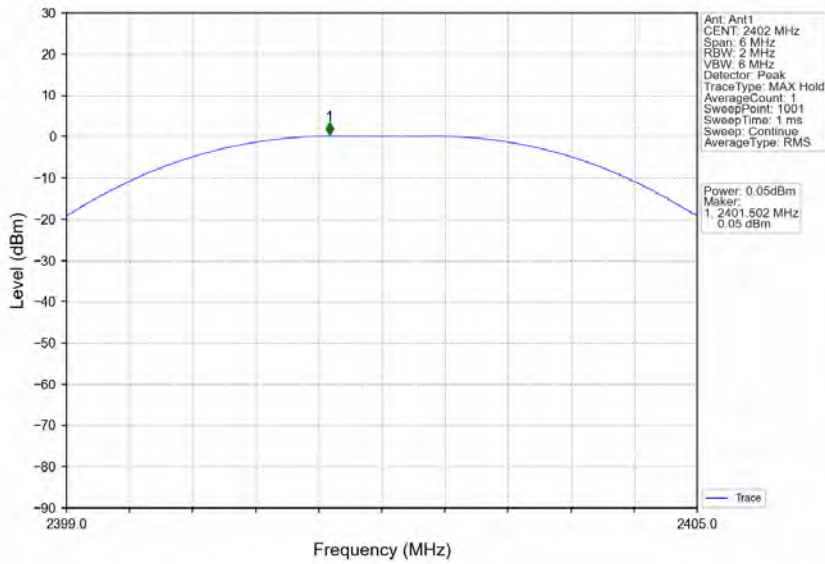
3.1.2 Test Graph



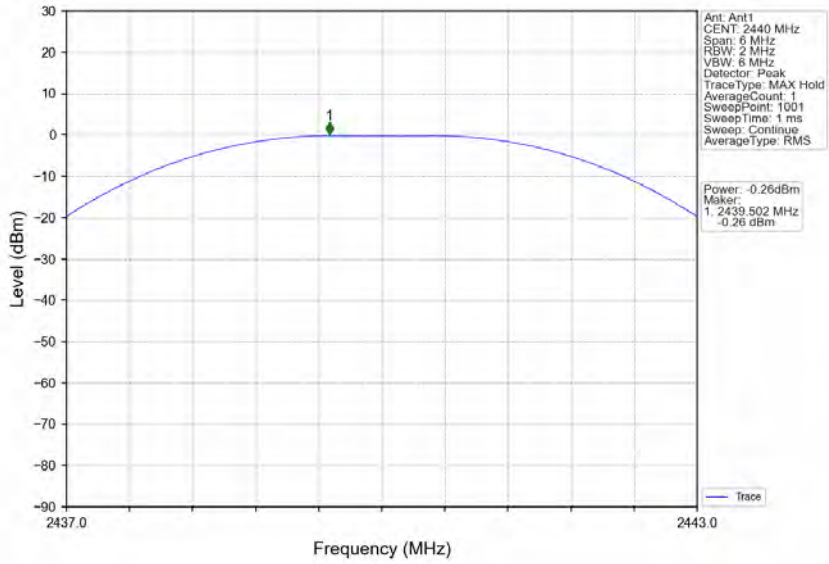
1M\_HCH\_2480MHz\_Ant1\_NTNV



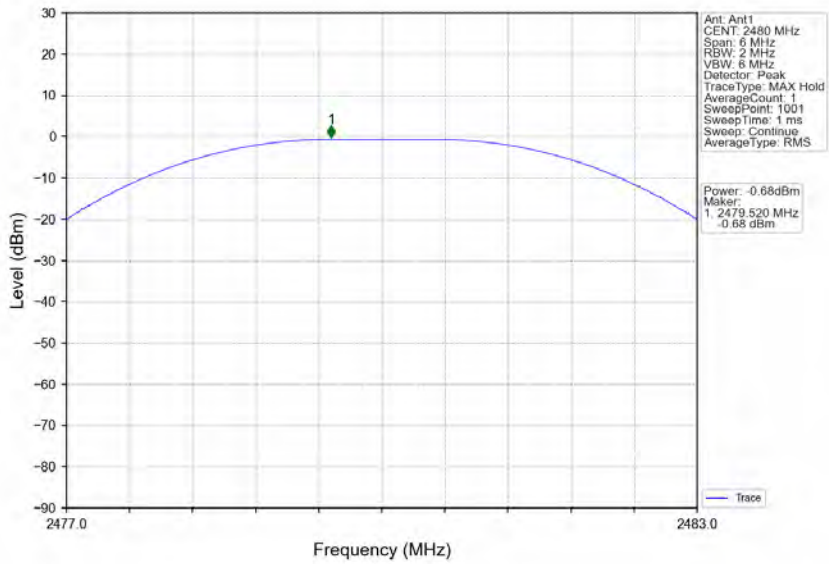
2M\_LCH\_2402MHz\_Ant1\_NTNV



2M\_MCH\_2440MHz\_Ant1\_NTNV



2M\_HCH\_2480MHz\_Ant1\_NTNV





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### 4. Maximum Power Spectral Density

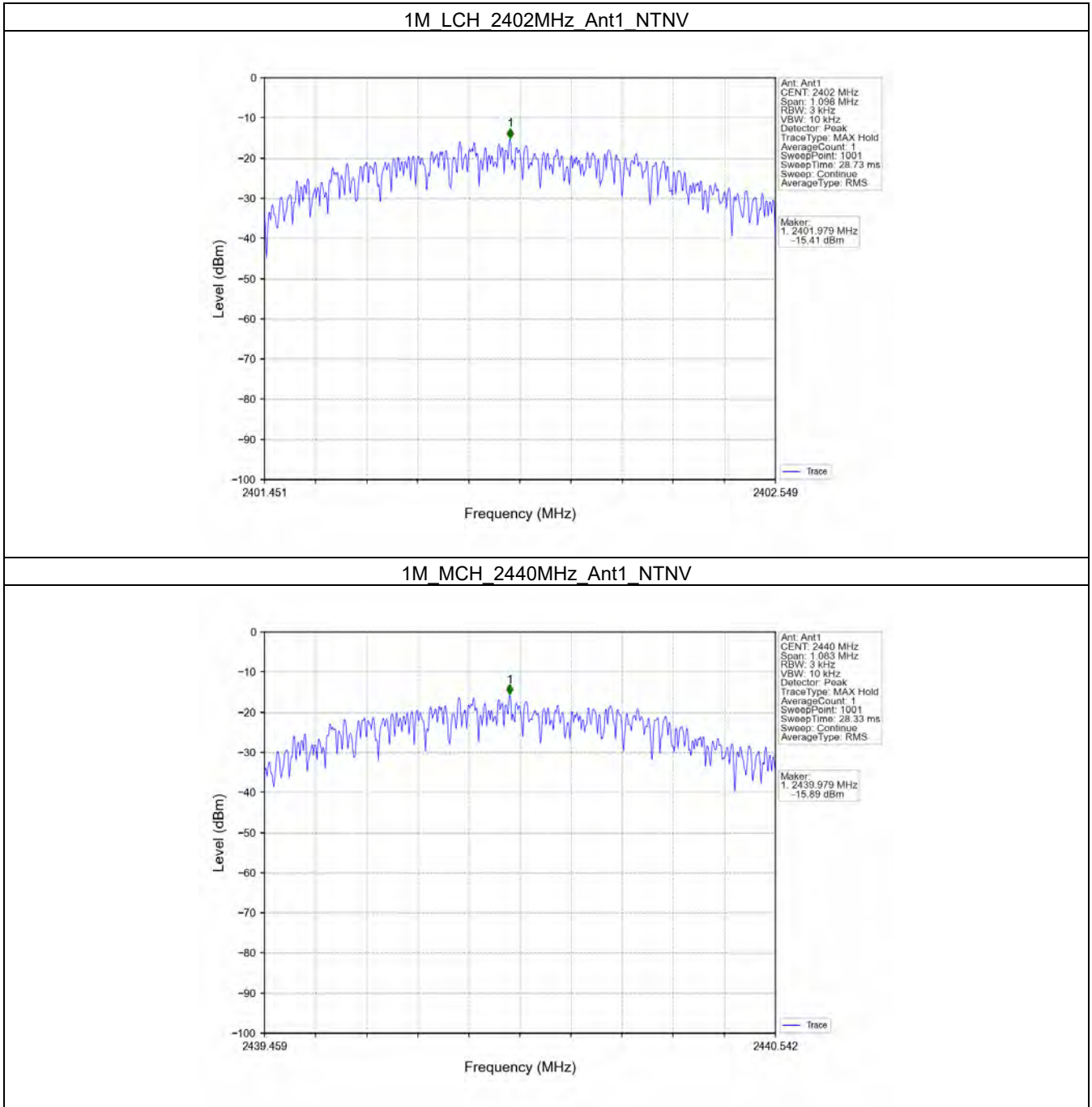
#### 4.1 PSD

##### 4.1.1 Test Result

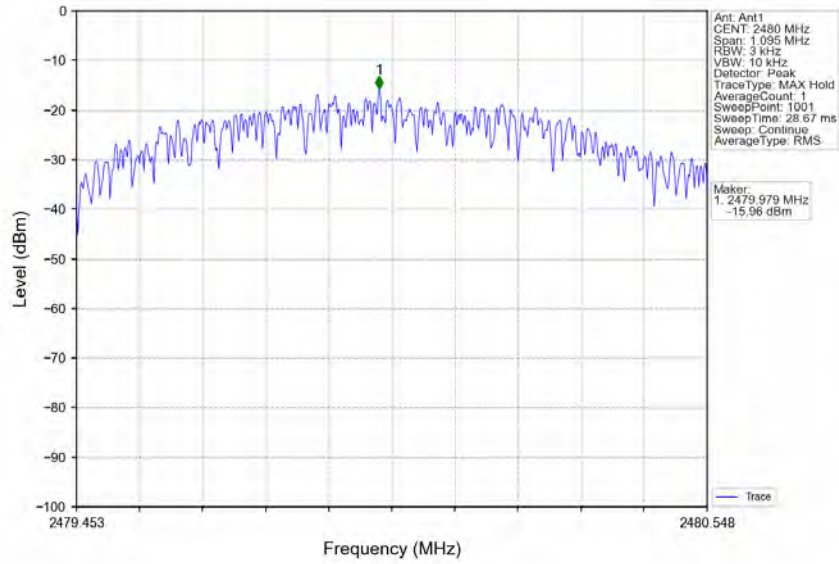
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
1M	SISO	2402	-15.41	<=8	Pass
		2440	-15.89	<=8	Pass
		2480	-15.96	<=8	Pass
2M	SISO	2402	-17.70	<=8	Pass
		2440	-17.76	<=8	Pass
		2480	-18.31	<=8	Pass

Note1: Antenna Gain: Ant1: -18.11dBi;

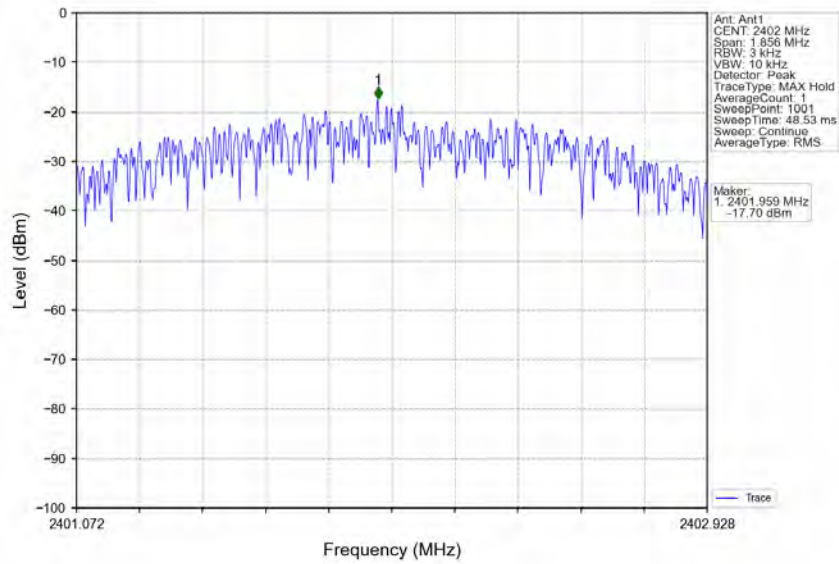
4.1.2 Test Graph



1M\_HCH\_2480MHz\_Ant1\_NTNV

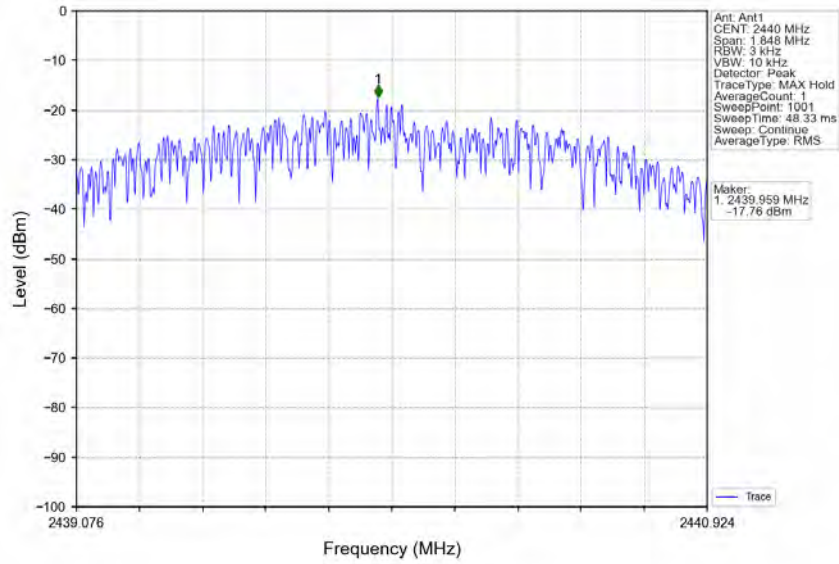


2M\_LCH\_2402MHz\_Ant1\_NTNV

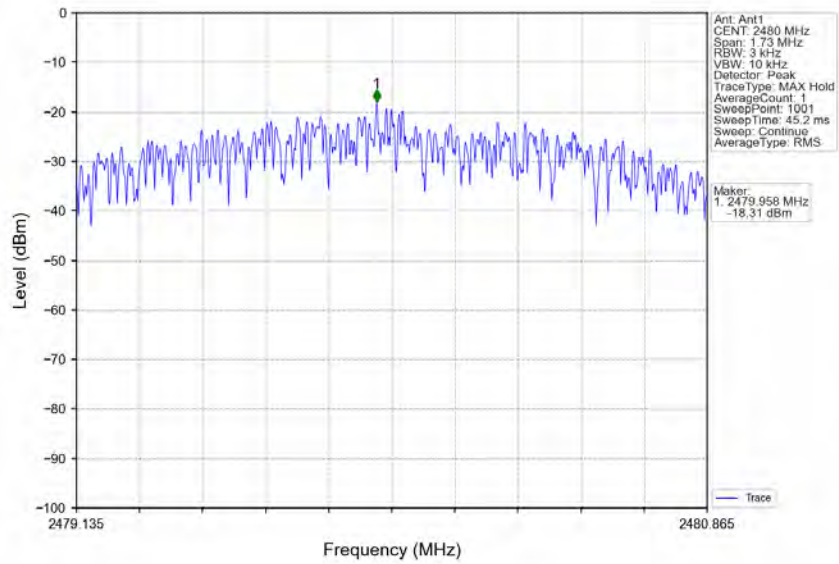




2M\_MCH\_2440MHz\_Ant1\_NTNV



2M\_HCH\_2480MHz\_Ant1\_NTNV





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### 5. Unwanted Emissions In Non-restricted Frequency Bands

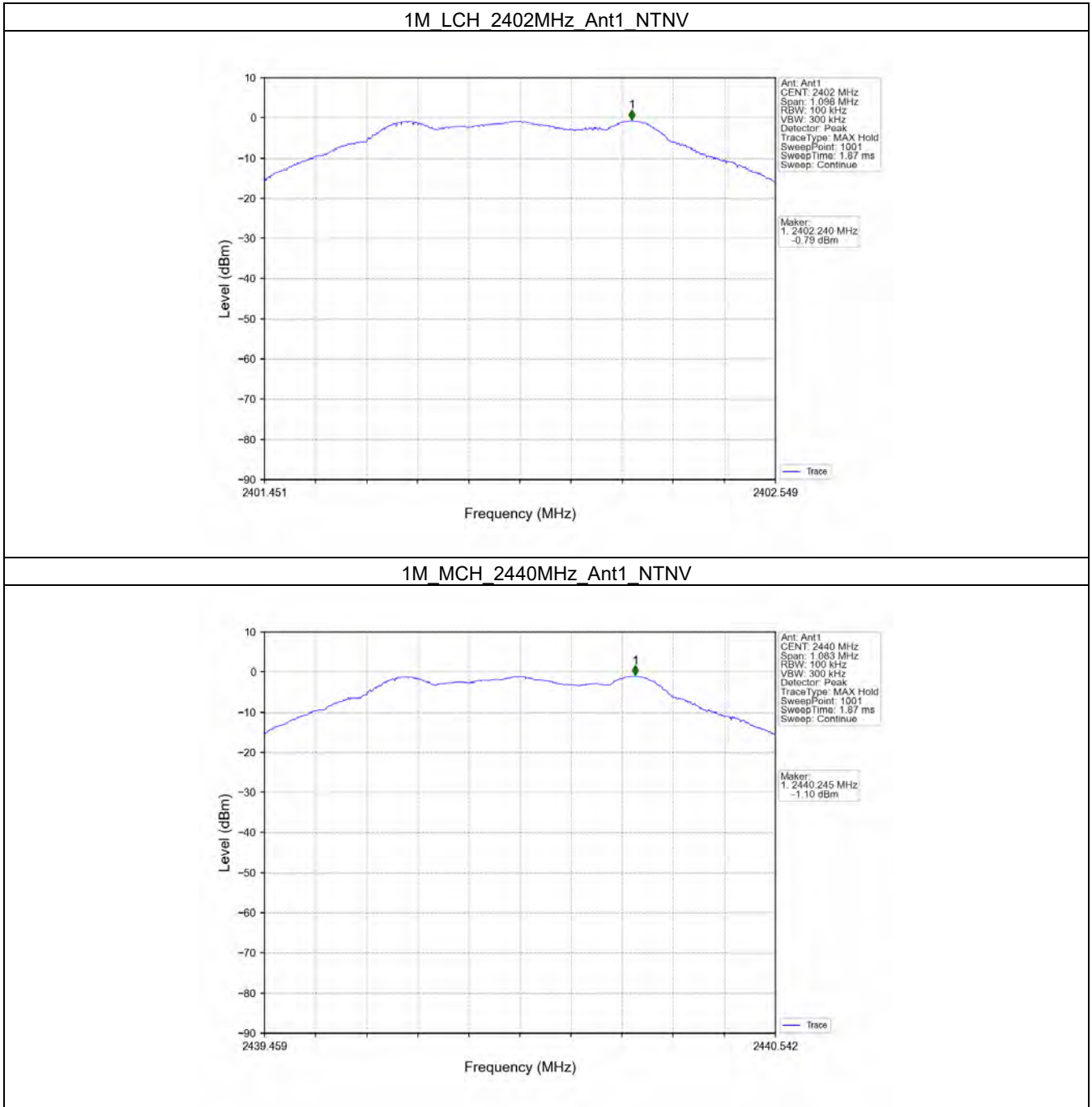
#### 5.1 Ref

##### 5.1.1 Test Result

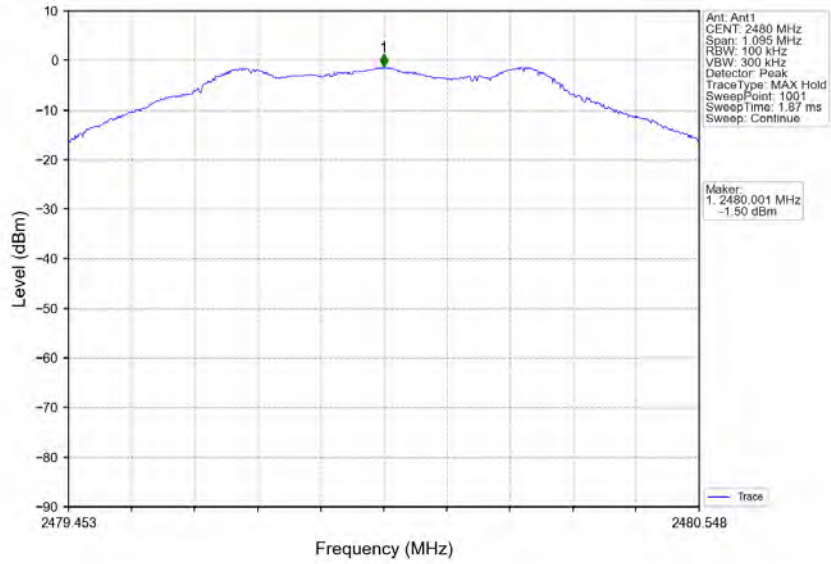
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
1M	SISO	2402	1	-0.79
		2440	1	-1.10
		2480	1	-1.50
2M	SISO	2402	1	-1.00
		2440	1	-1.20
		2480	1	-1.50

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

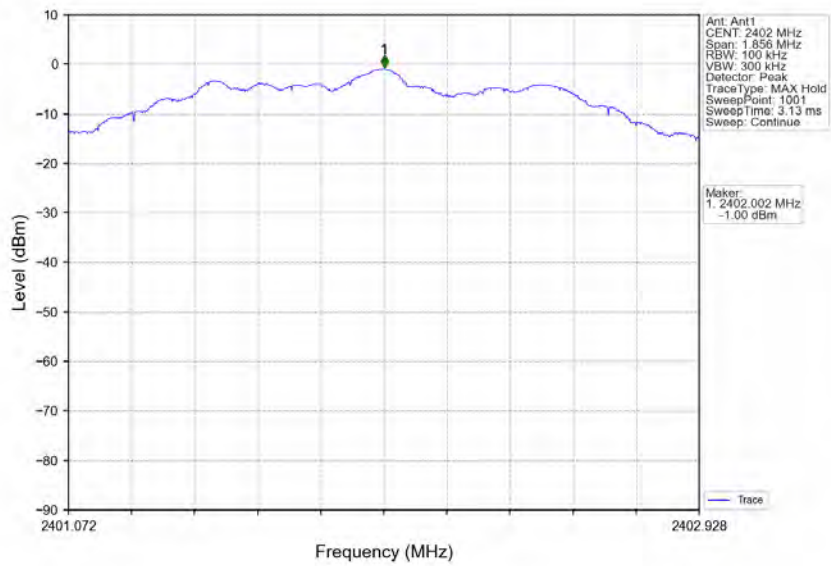
5.1.2 Test Graph



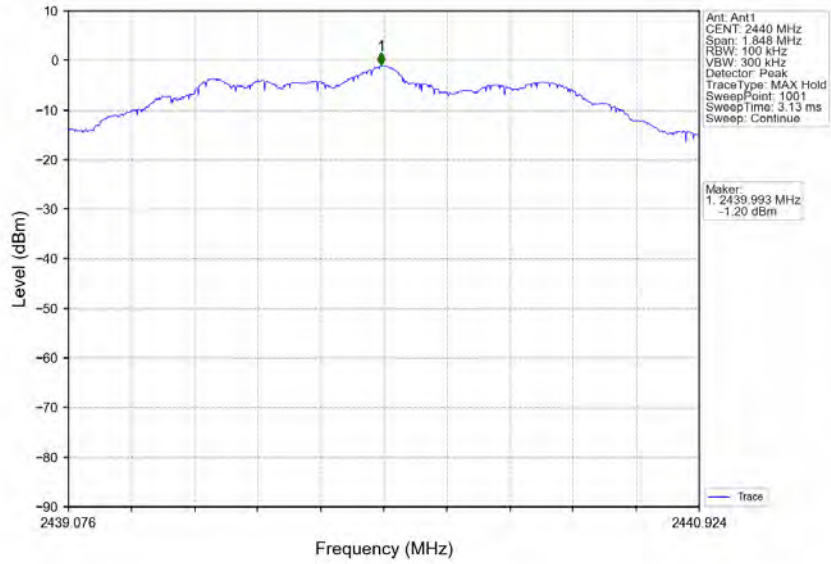
1M\_HCH\_2480MHz\_Ant1\_NTNV



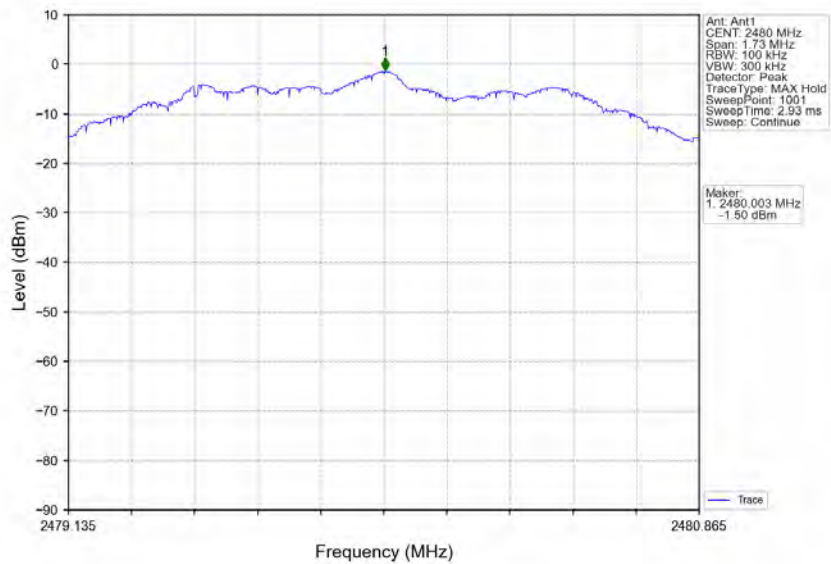
2M\_LCH\_2402MHz\_Ant1\_NTNV



2M\_MCH\_2440MHz\_Ant1\_NTNV



2M\_HCH\_2480MHz\_Ant1\_NTNV





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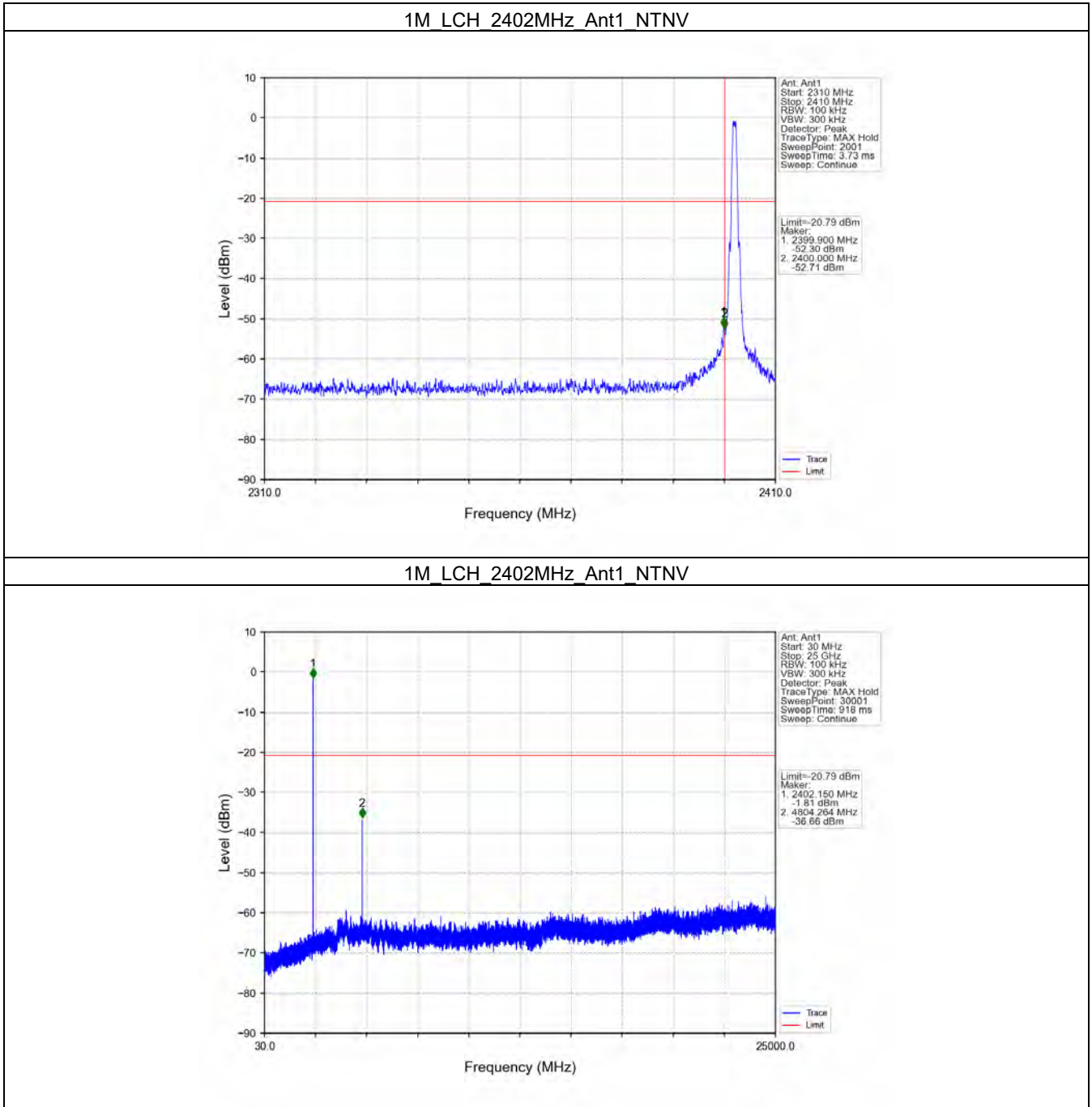
### 5.2 CSE

#### 5.2.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
1M	SISO	2402	1	-0.79	-20.79	Pass
		2440	1	-0.79	-20.79	Pass
		2480	1	-0.79	-20.79	Pass
2M	SISO	2402	1	-1.00	-21.00	Pass
		2440	1	-1.00	-21.00	Pass
		2480	1	-1.00	-21.00	Pass

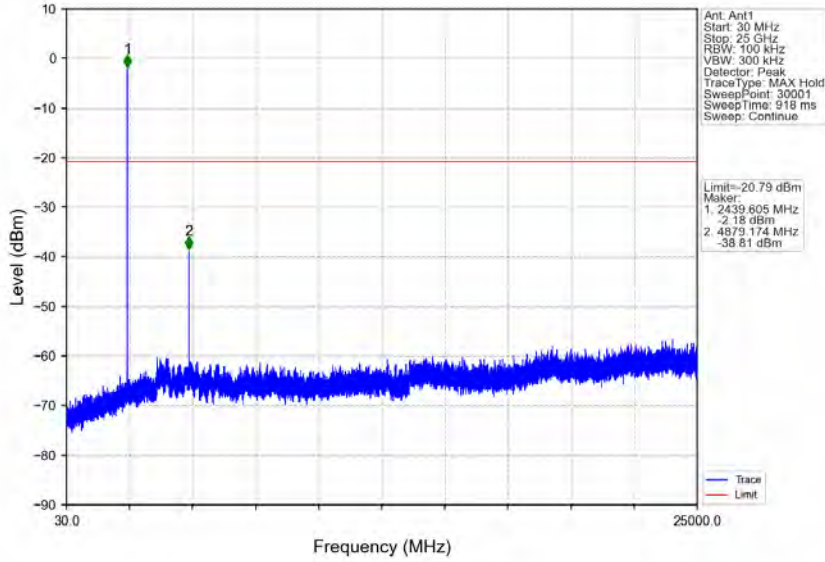
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

5.2.2 Test Graph

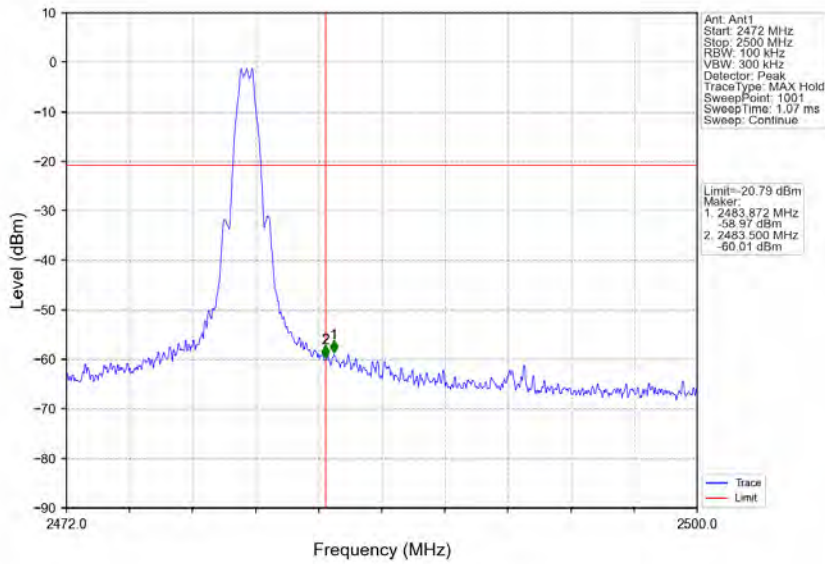




1M\_MCH\_2440MHz\_Ant1\_NTNV

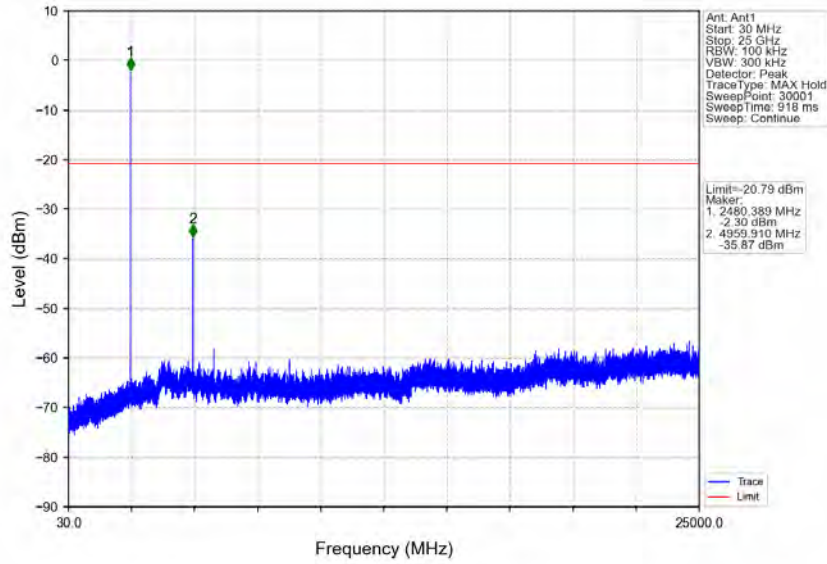


1M\_HCH\_2480MHz\_Ant1\_NTNV

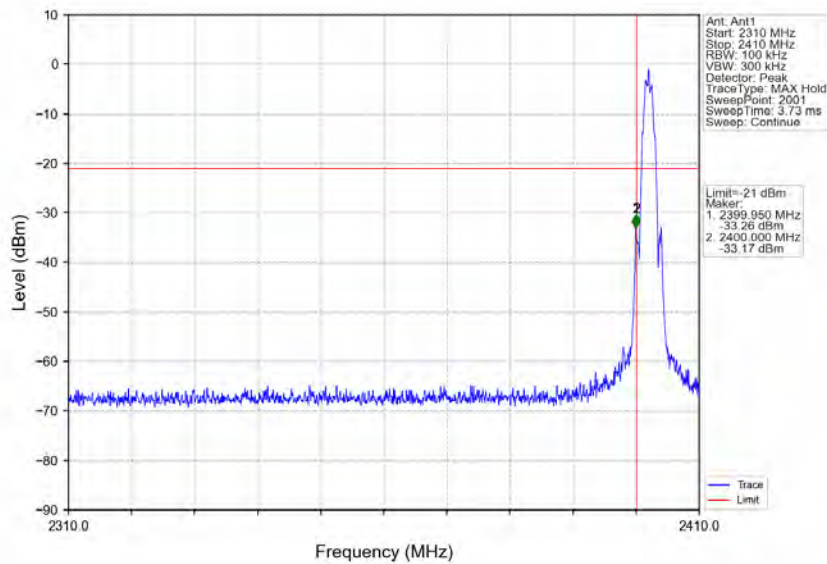




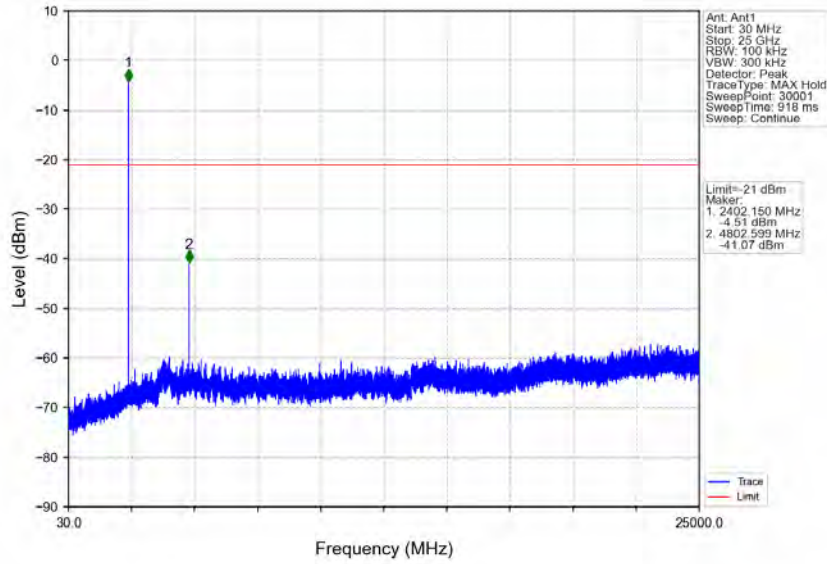
### 1M\_HCH\_2480MHz\_Ant1\_NTNV



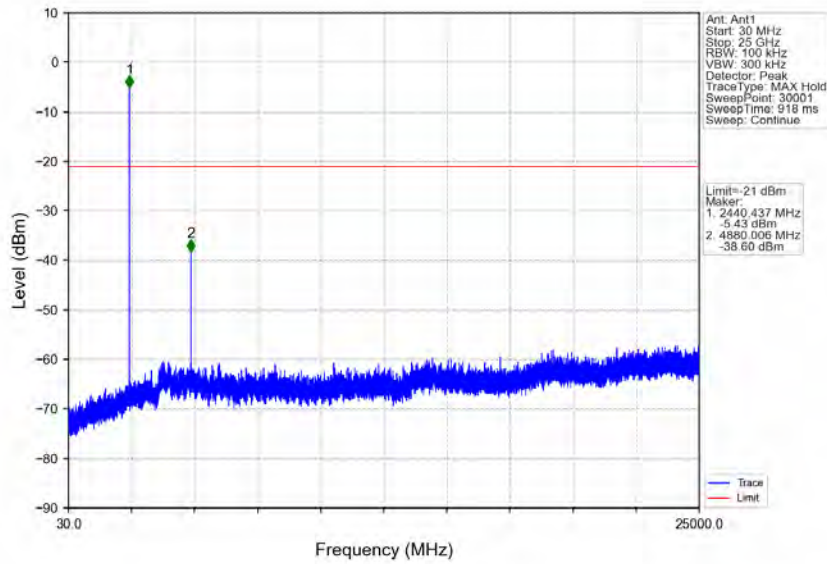
### 2M\_LCH\_2402MHz\_Ant1\_NTNV



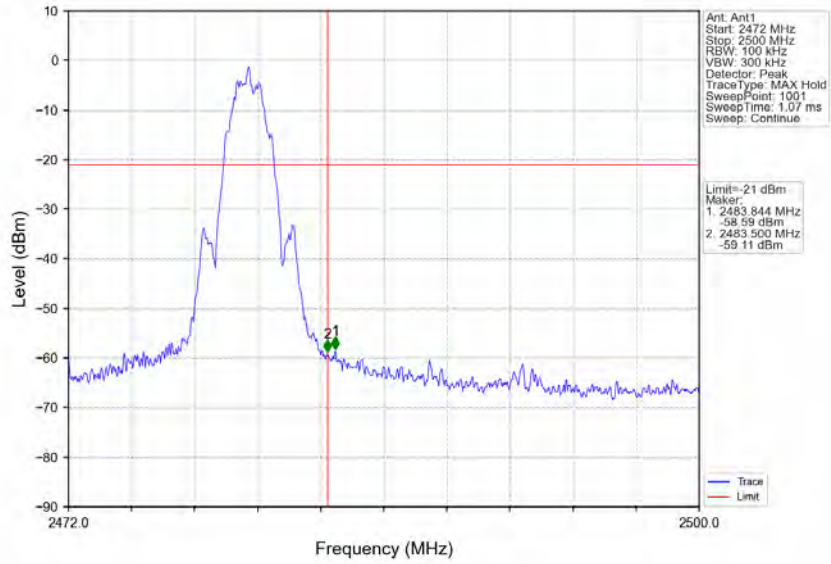
2M\_LCH\_2402MHz\_Ant1\_NTNV



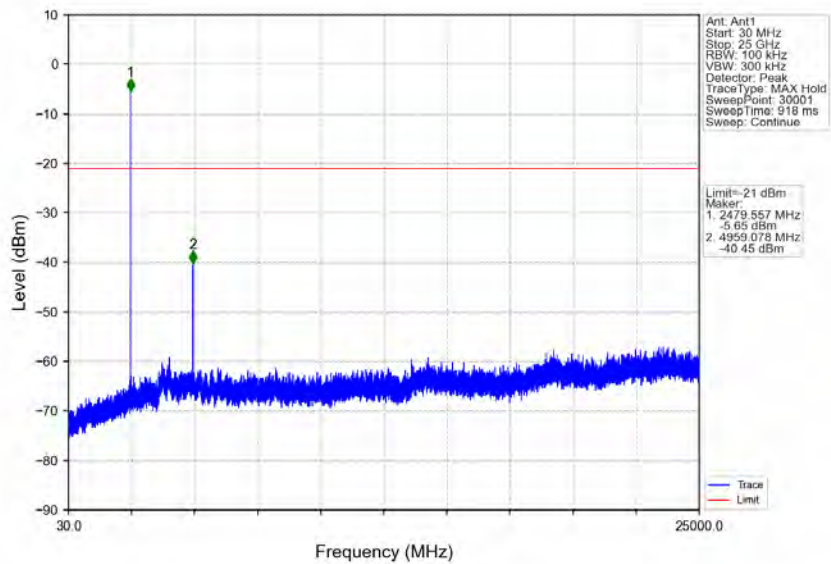
2M\_MCH\_2440MHz\_Ant1\_NTNV



2M\_HCH\_2480MHz\_Ant1\_NTNV



2M\_HCH\_2480MHz\_Ant1\_NTNV





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### For 12 inch:

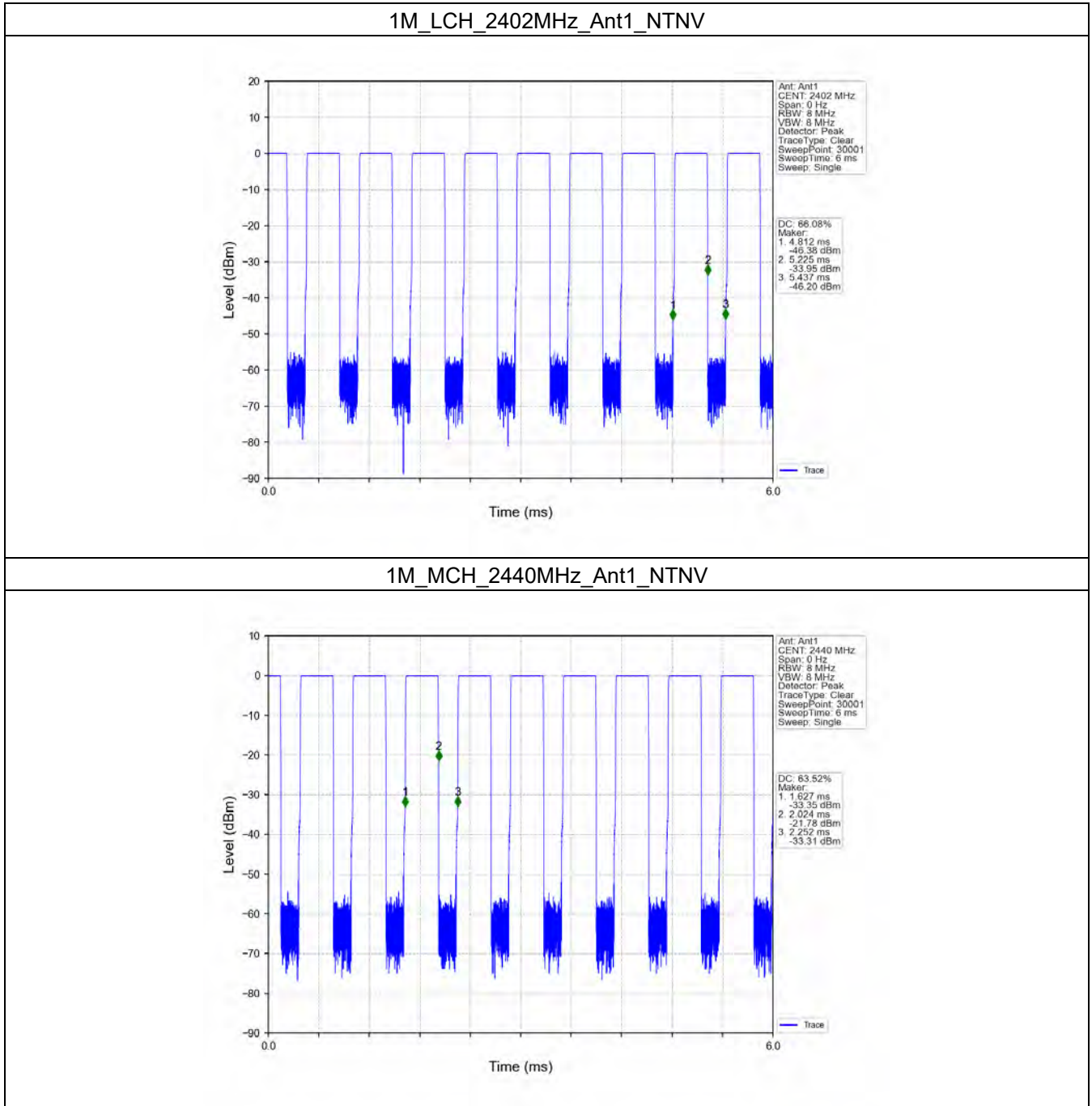
#### 1. Duty Cycle

##### 1.1 Ant1

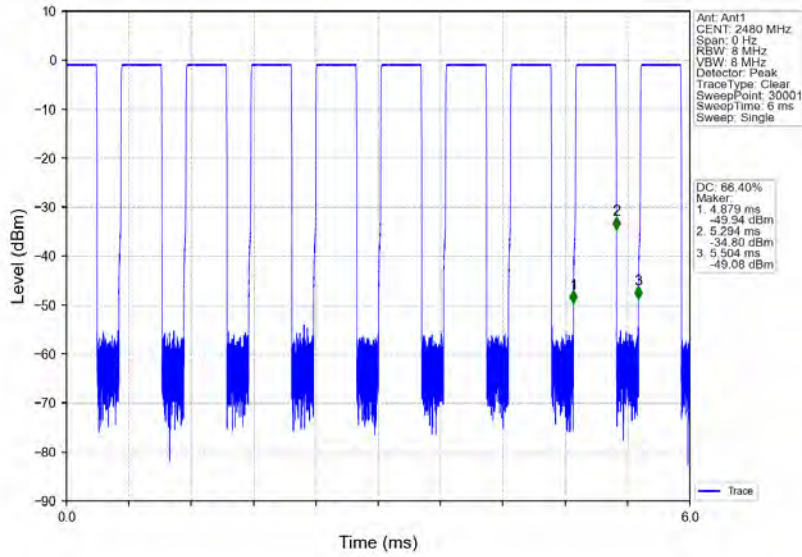
##### 1.1.1 Test Result

Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
1M	SISO	2402	0.413	0.625	66.08	1.80	0.05
		2440	0.397	0.625	63.52	1.97	0.02
		2480	0.415	0.625	66.40	1.78	0.02
2M	SISO	2402	0.229	0.625	36.64	4.36	0.05
		2440	0.229	0.624	36.70	4.35	0.02
		2480	0.231	0.625	36.96	4.32	0.02

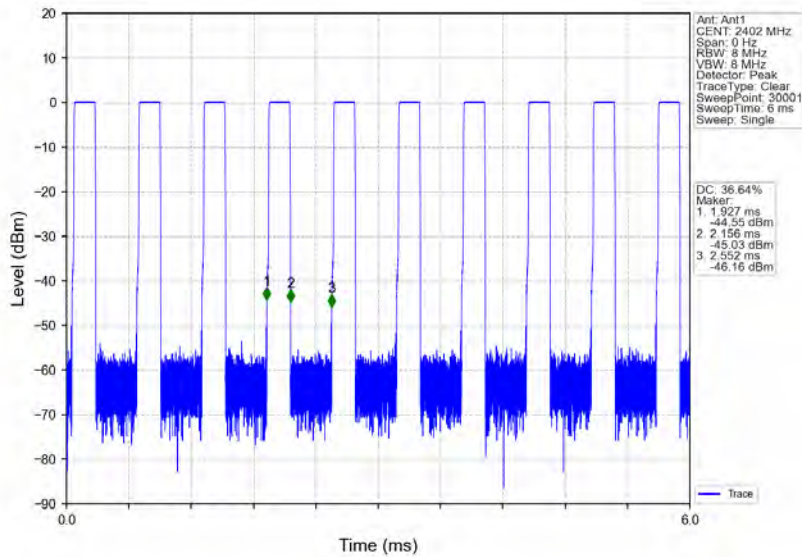
### 1.1.2 Test Graph



1M\_HCH\_2480MHz\_Ant1\_NTNV

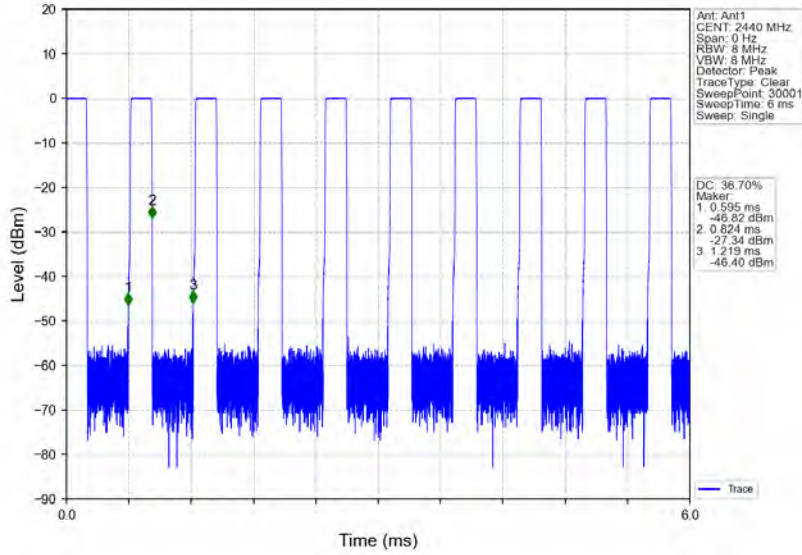


2M\_LCH\_2402MHz\_Ant1\_NTNV

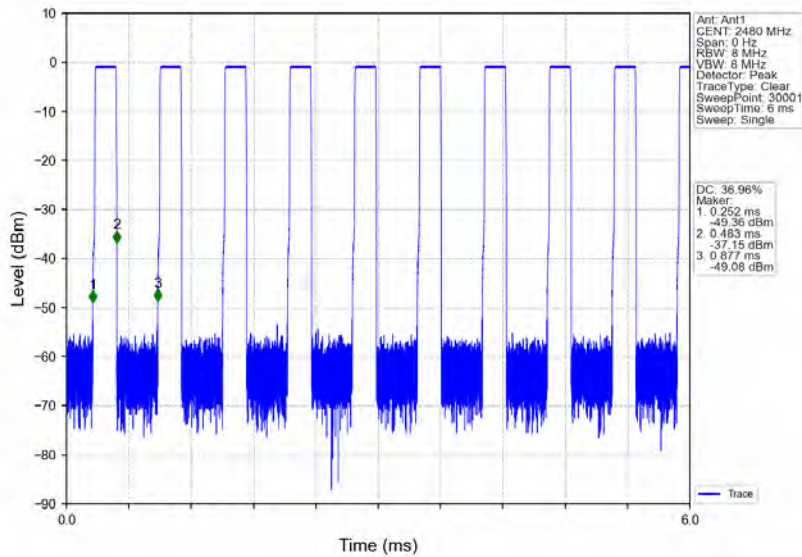




2M\_MCH\_2440MHz\_Ant1\_NTNV



2M\_HCH\_2480MHz\_Ant1\_NTNV





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### 2. Bandwidth

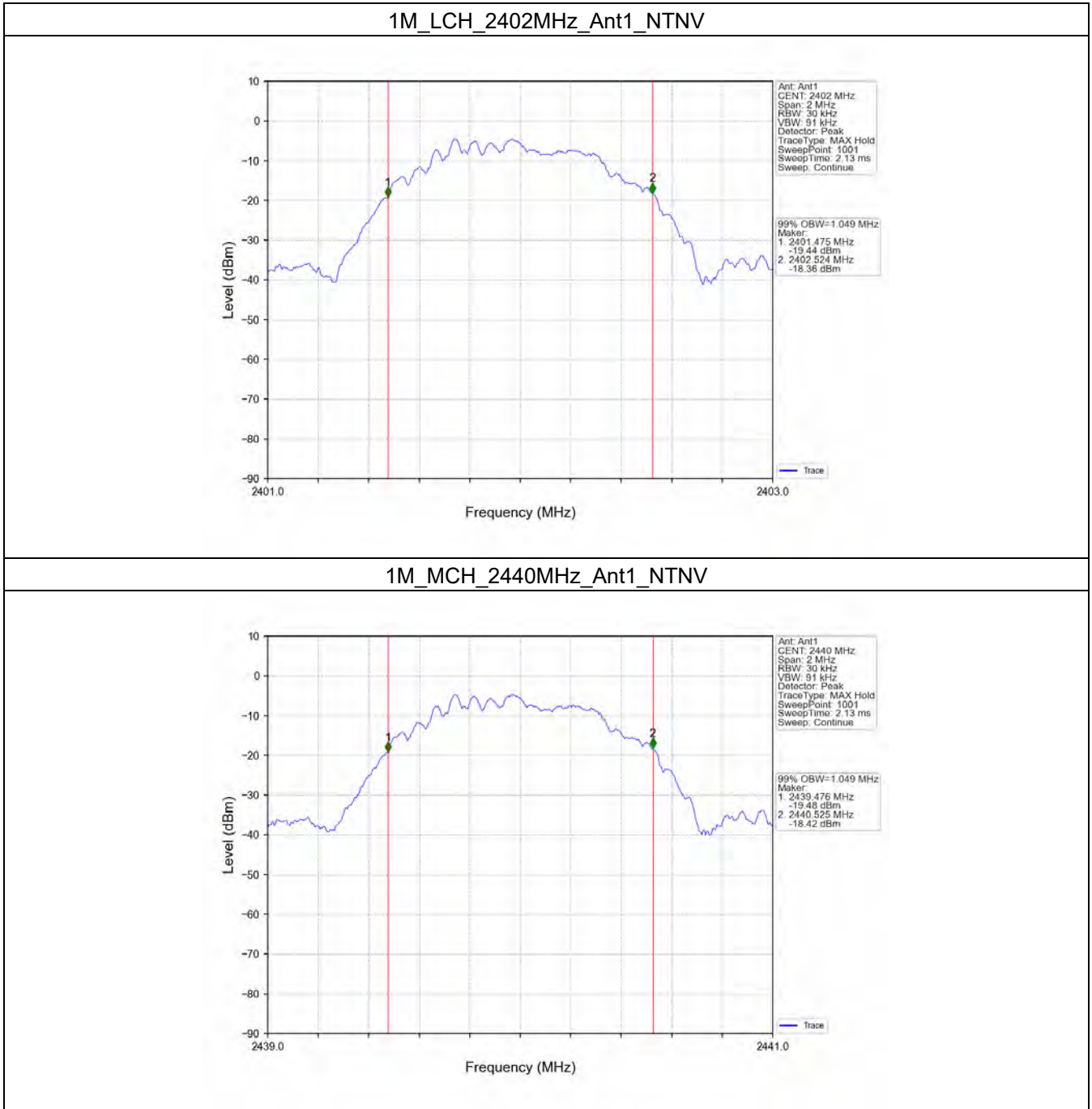
#### 2.1 OBW

##### 2.1.1 Test Result

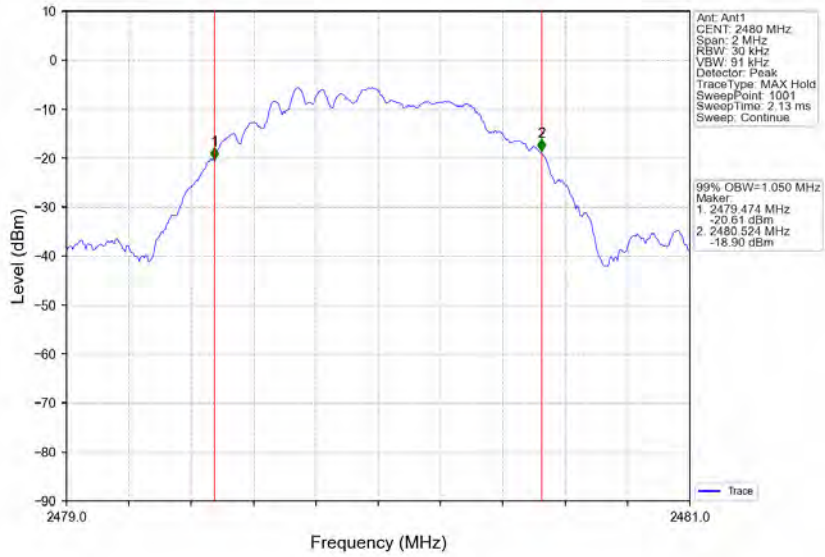
Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	1.049	/	Pass
		2440	1	1.049	/	Pass
		2480	1	1.050	/	Pass
2M	SISO	2402	1	2.060	/	Pass
		2440	1	2.065	/	Pass
		2480	1	2.058	/	Pass



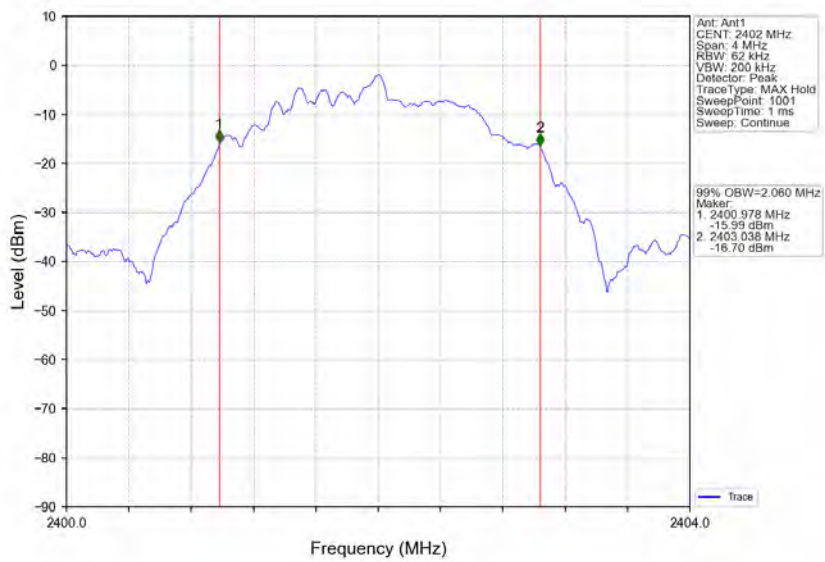
### 2.1.2 Test Graph



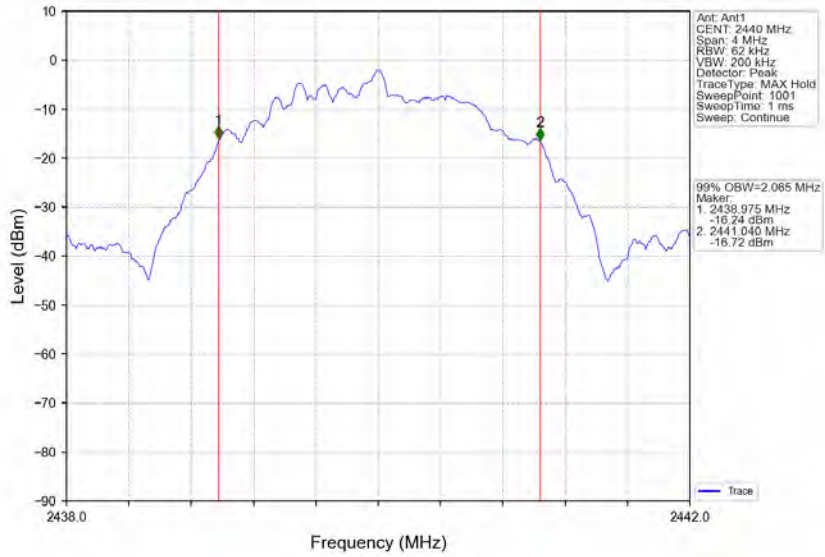
1M\_HCH\_2480MHz\_Ant1\_NTNV



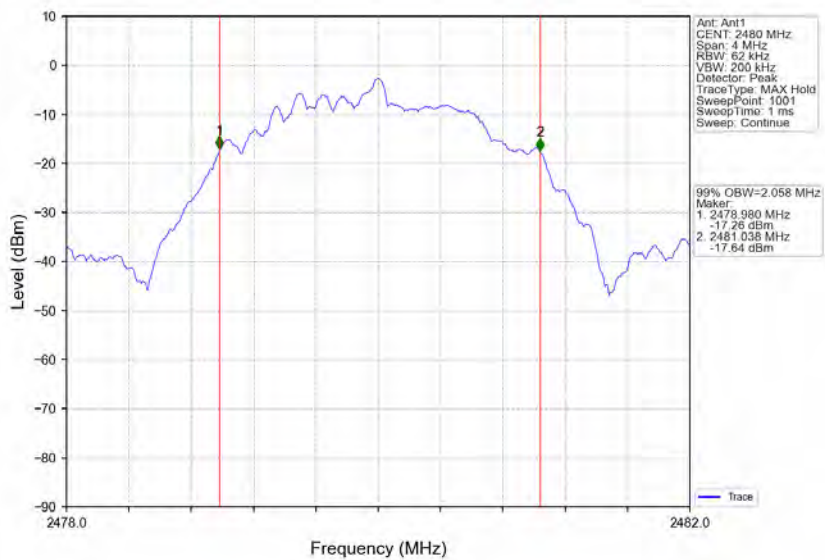
2M\_LCH\_2402MHz\_Ant1\_NTNV



2M\_MCH\_2440MHz\_Ant1\_NTNV



2M\_HCH\_2480MHz\_Ant1\_NTNV





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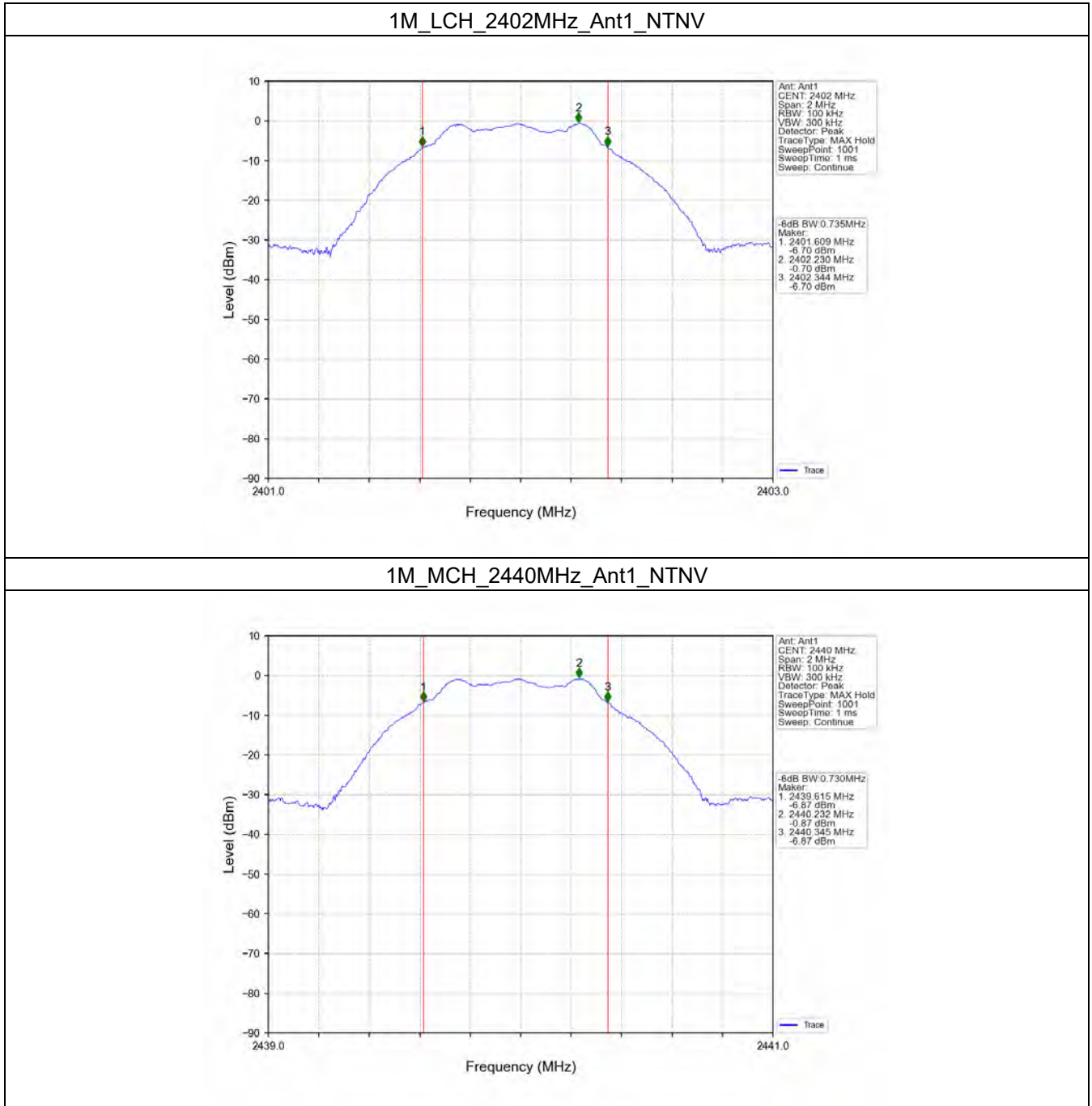
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### 2.2 6dB BW

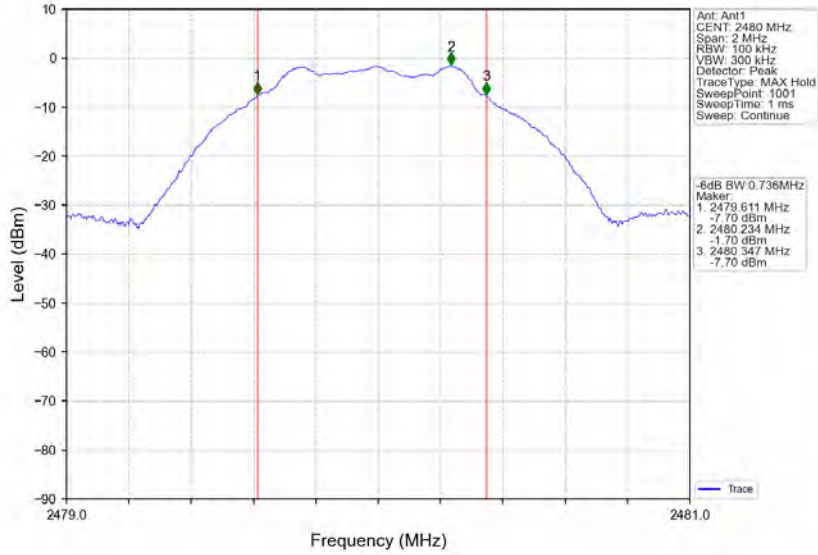
#### 2.2.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	0.735	$\geq 0.5$	Pass
		2440	1	0.730	$\geq 0.5$	Pass
		2480	1	0.736	$\geq 0.5$	Pass
2M	SISO	2402	1	1.234	$\geq 0.5$	Pass
		2440	1	1.228	$\geq 0.5$	Pass
		2480	1	1.174	$\geq 0.5$	Pass

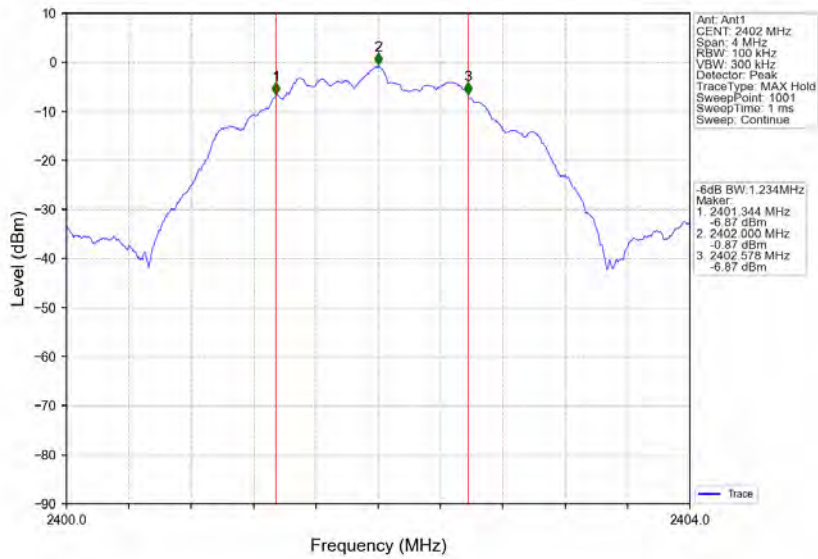
### 2.2.2 Test Graph



1M\_HCH\_2480MHz\_Ant1\_NTNV

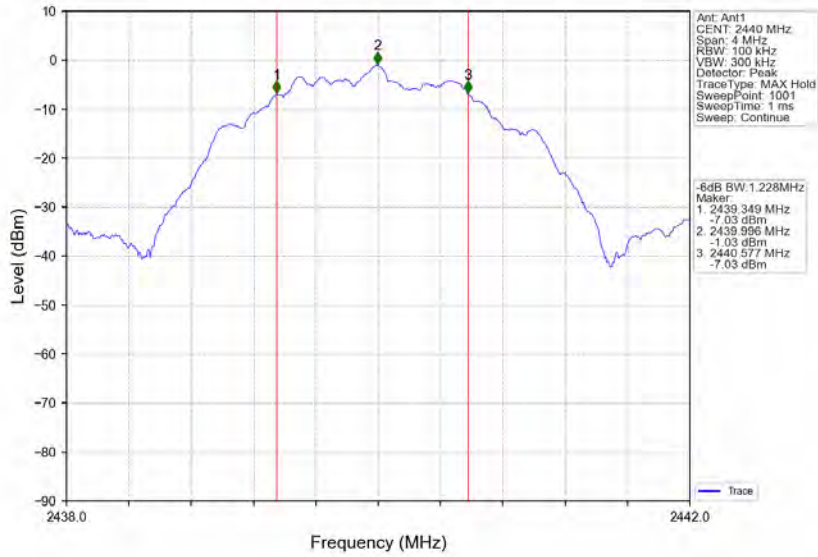


2M\_LCH\_2402MHz\_Ant1\_NTNV

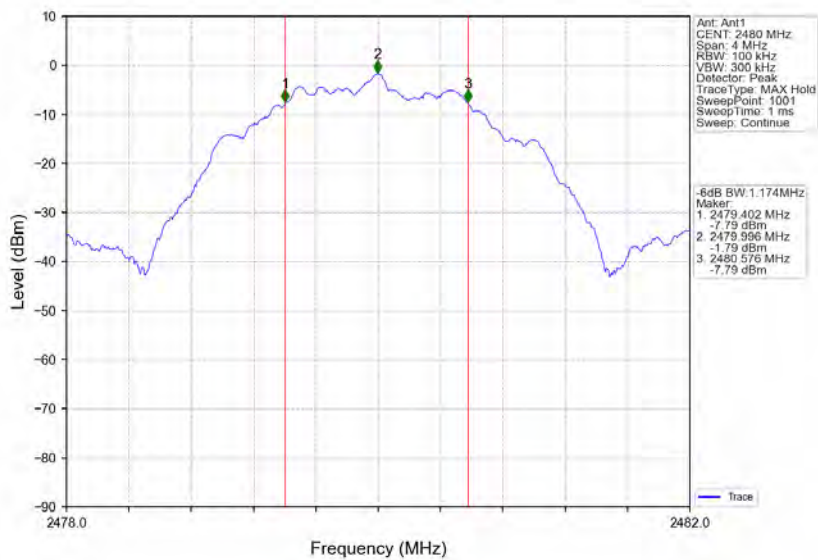




2M\_MCH\_2440MHz\_Ant1\_NTNV



2M\_HCH\_2480MHz\_Ant1\_NTNV





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### 3. Maximum Conducted Output Power

#### 3.1 Power

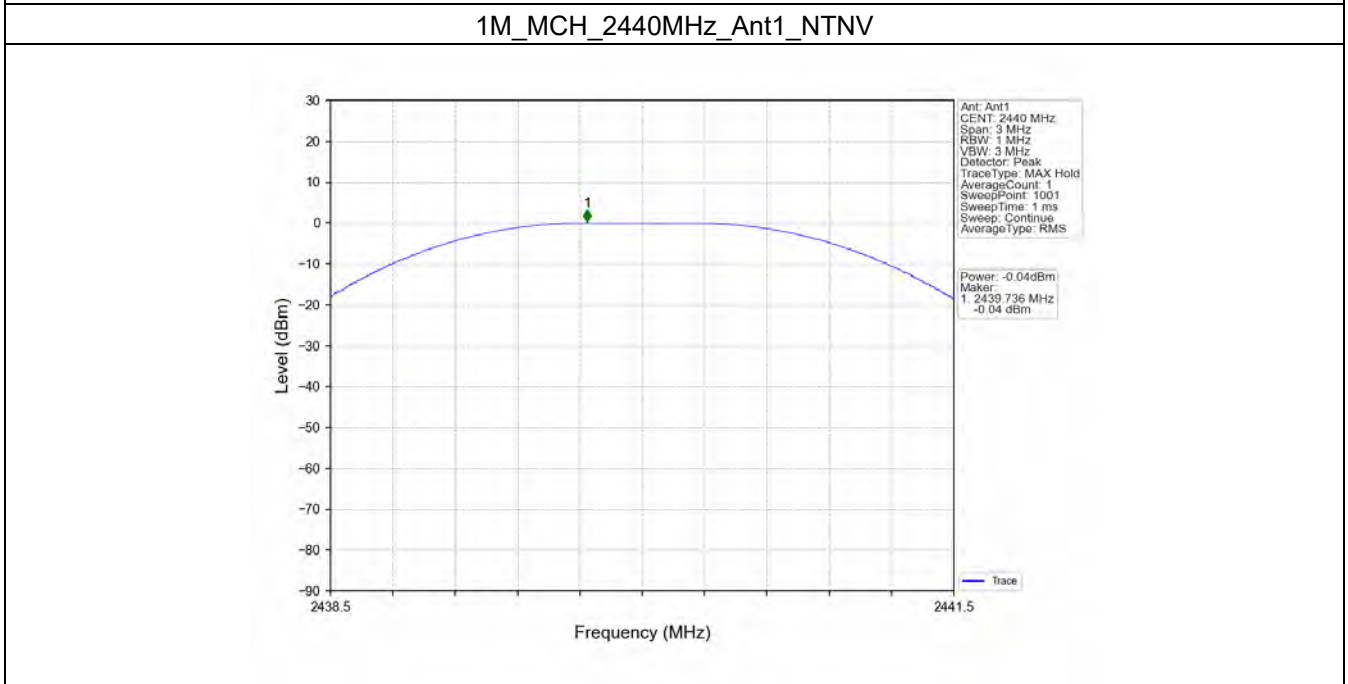
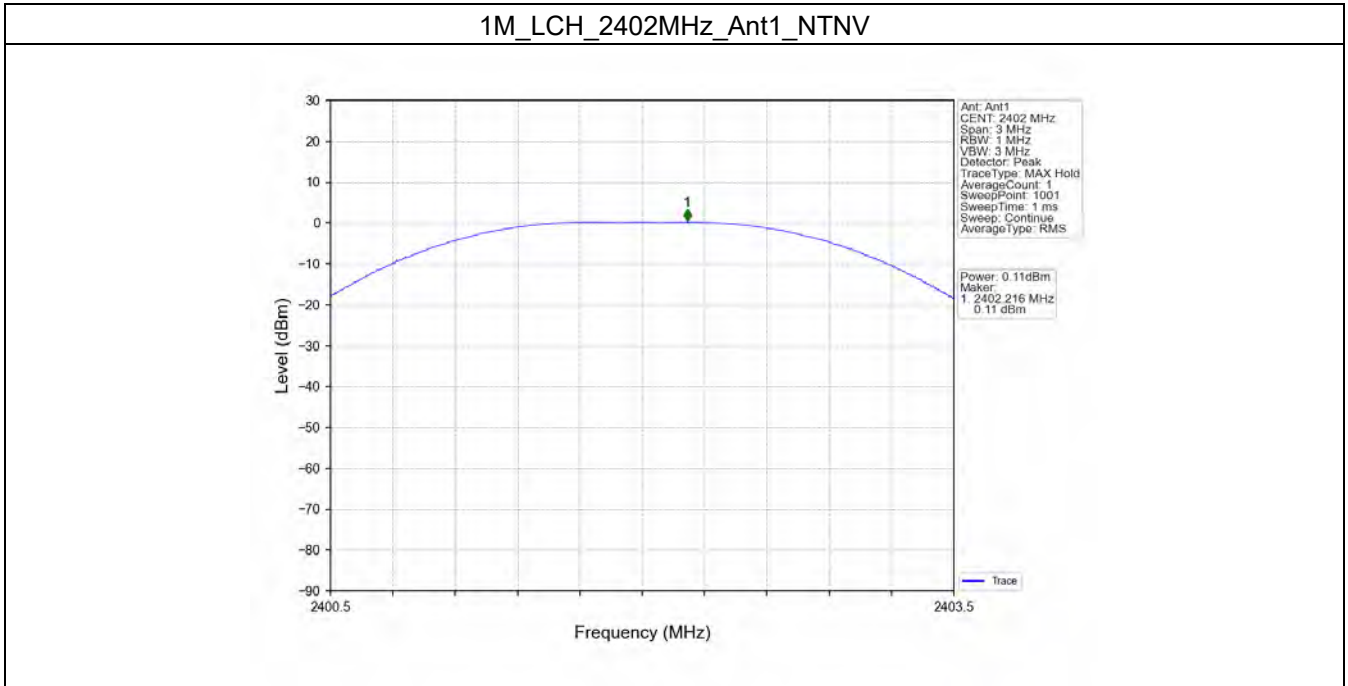
##### 3.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
1M	SISO	2402	0.11	<=30	Pass
		2440	-0.04	<=30	Pass
		2480	-0.90	<=30	Pass
2M	SISO	2402	0.15	<=30	Pass
		2440	0.00	<=30	Pass
		2480	-0.89	<=30	Pass

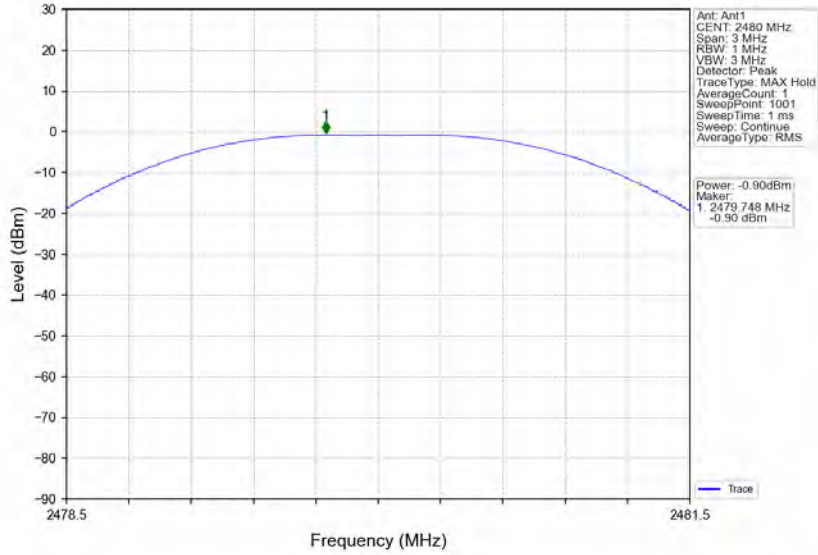
Note1: Antenna Gain: Ant1: -14.98dBi;



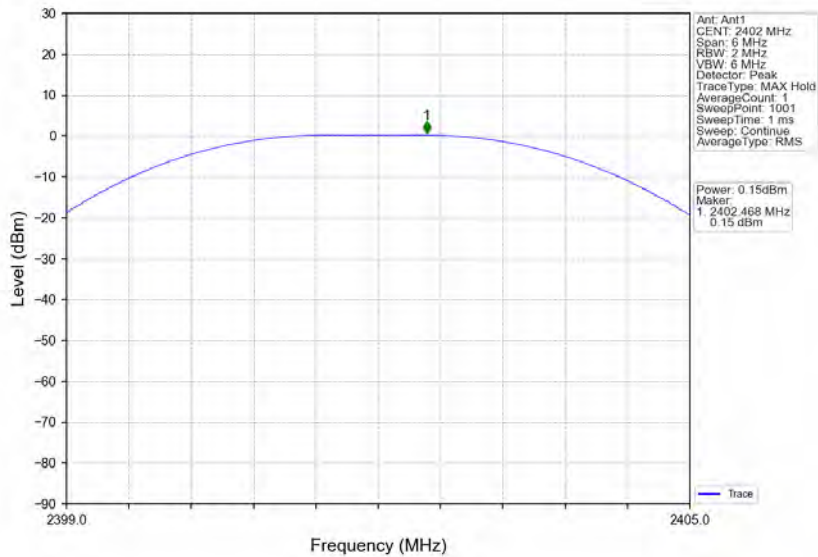
3.1.2 Test Graph



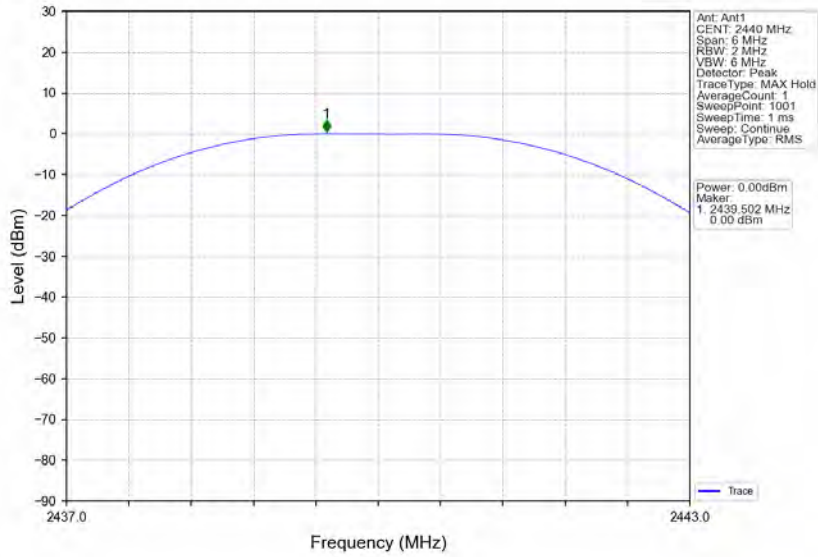
1M\_HCH\_2480MHz\_Ant1\_NTNV



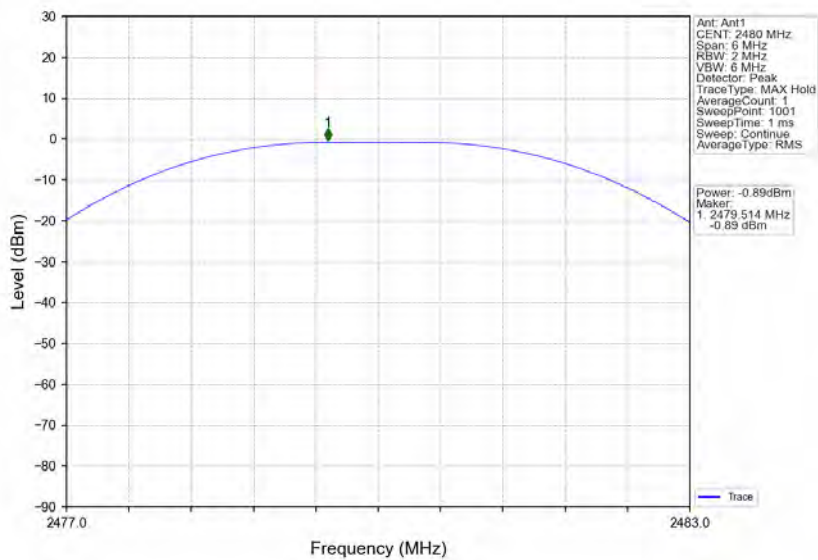
2M\_LCH\_2402MHz\_Ant1\_NTNV



2M\_MCH\_2440MHz\_Ant1\_NTNV



2M\_HCH\_2480MHz\_Ant1\_NTNV





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### 4. Maximum Power Spectral Density

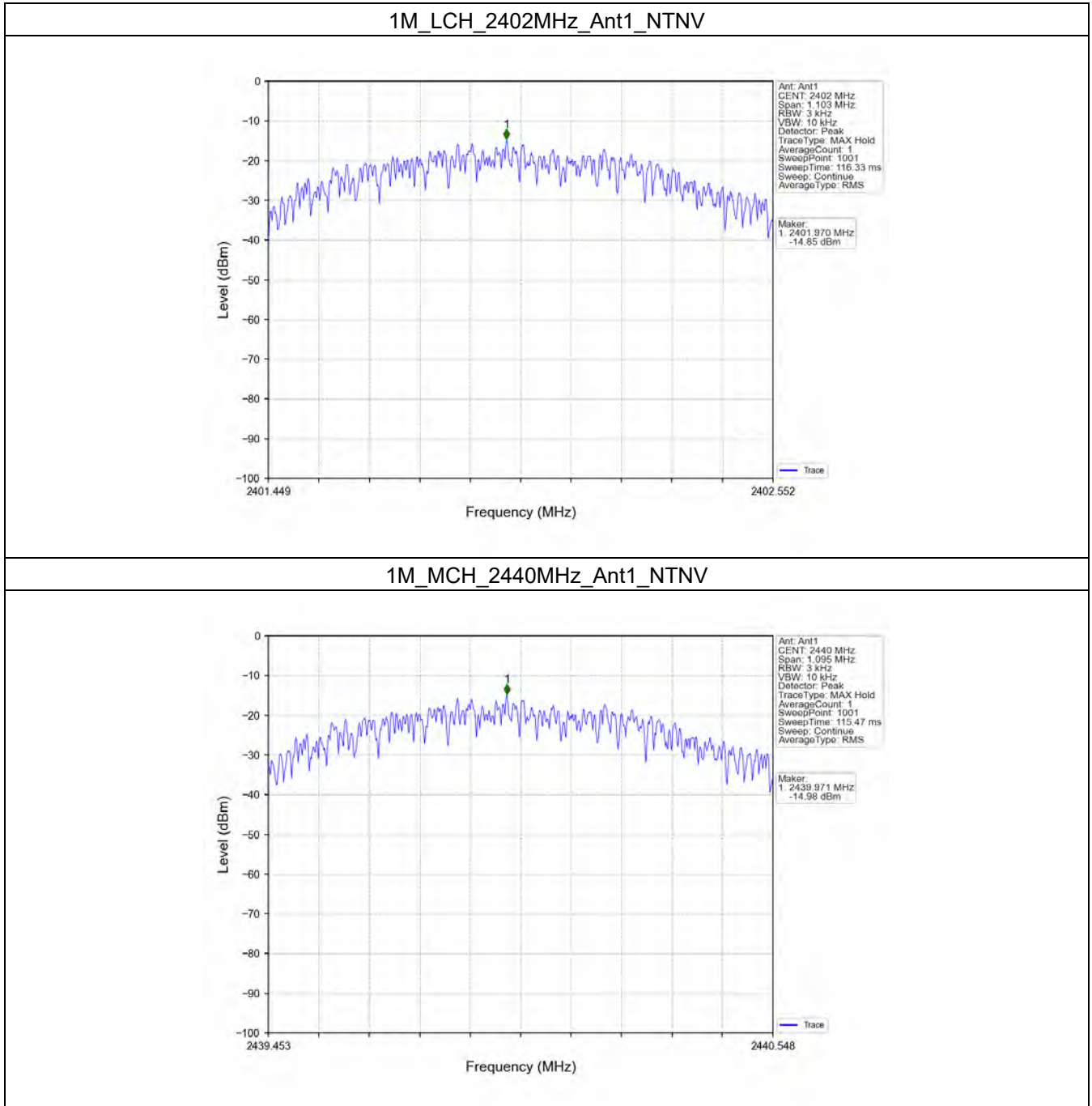
#### 4.1 PSD

##### 4.1.1 Test Result

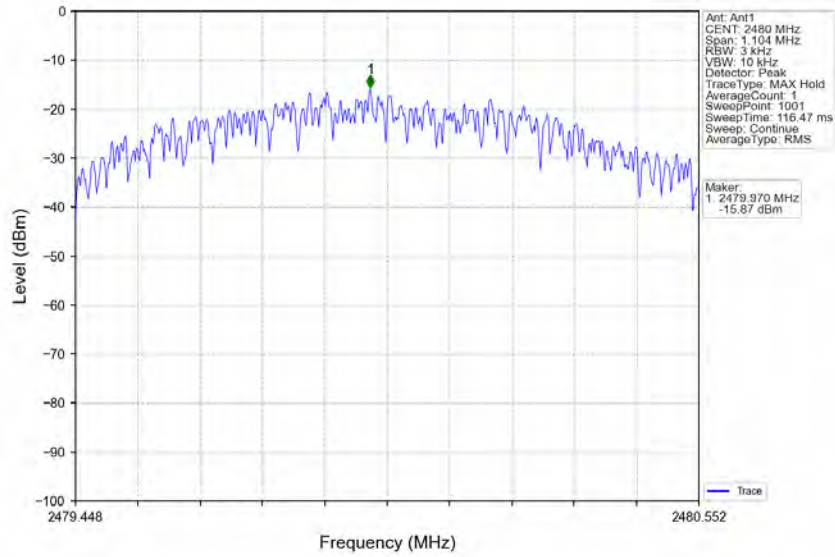
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
1M	SISO	2402	-14.85	<=8	Pass
		2440	-14.98	<=8	Pass
		2480	-15.87	<=8	Pass
2M	SISO	2402	-17.09	<=8	Pass
		2440	-17.58	<=8	Pass
		2480	-17.92	<=8	Pass

Note1: Antenna Gain: Ant1: -14.98dBi;

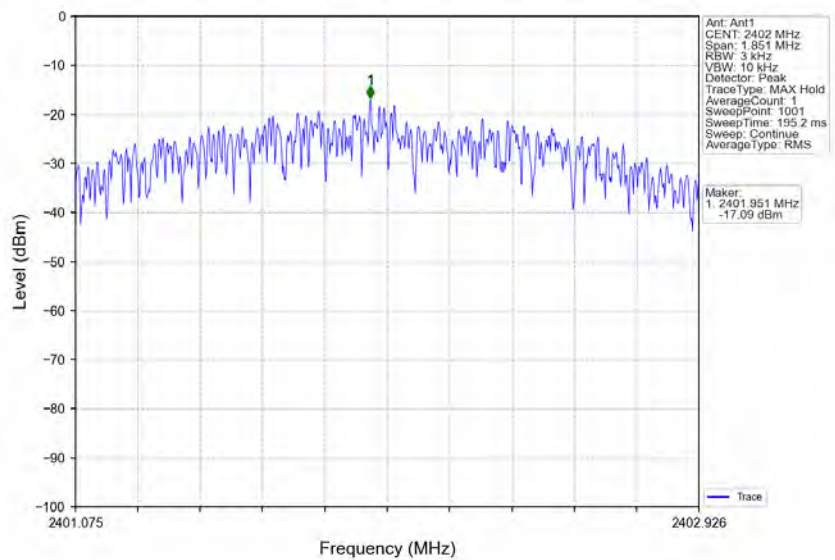
### 4.1.2 Test Graph



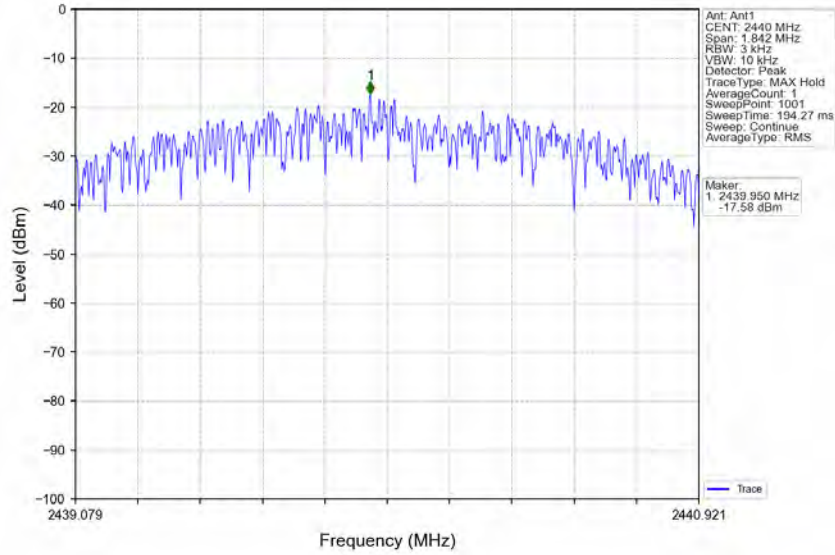
1M\_HCH\_2480MHz\_Ant1\_NTNV



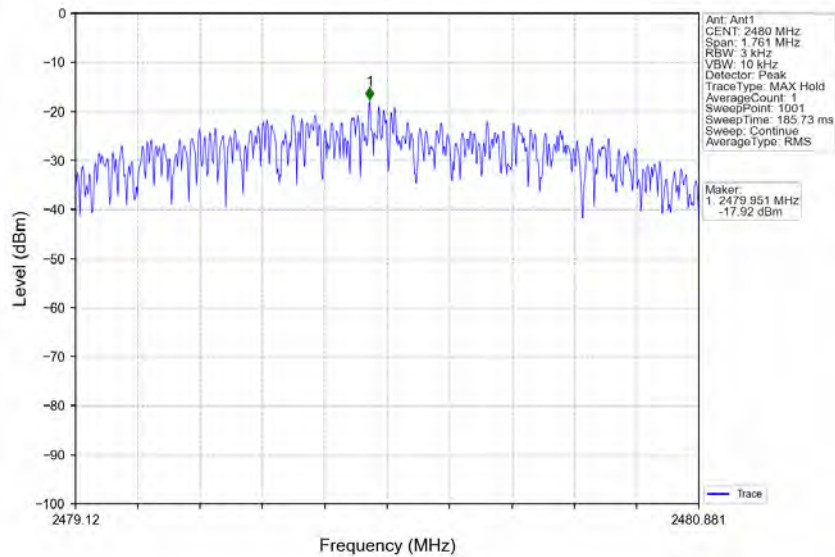
2M\_LCH\_2402MHz\_Ant1\_NTNV



2M\_MCH\_2440MHz\_Ant1\_NTNV



2M\_HCH\_2480MHz\_Ant1\_NTNV







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### 5. Unwanted Emissions In Non-restricted Frequency Bands

#### 5.1 Ref

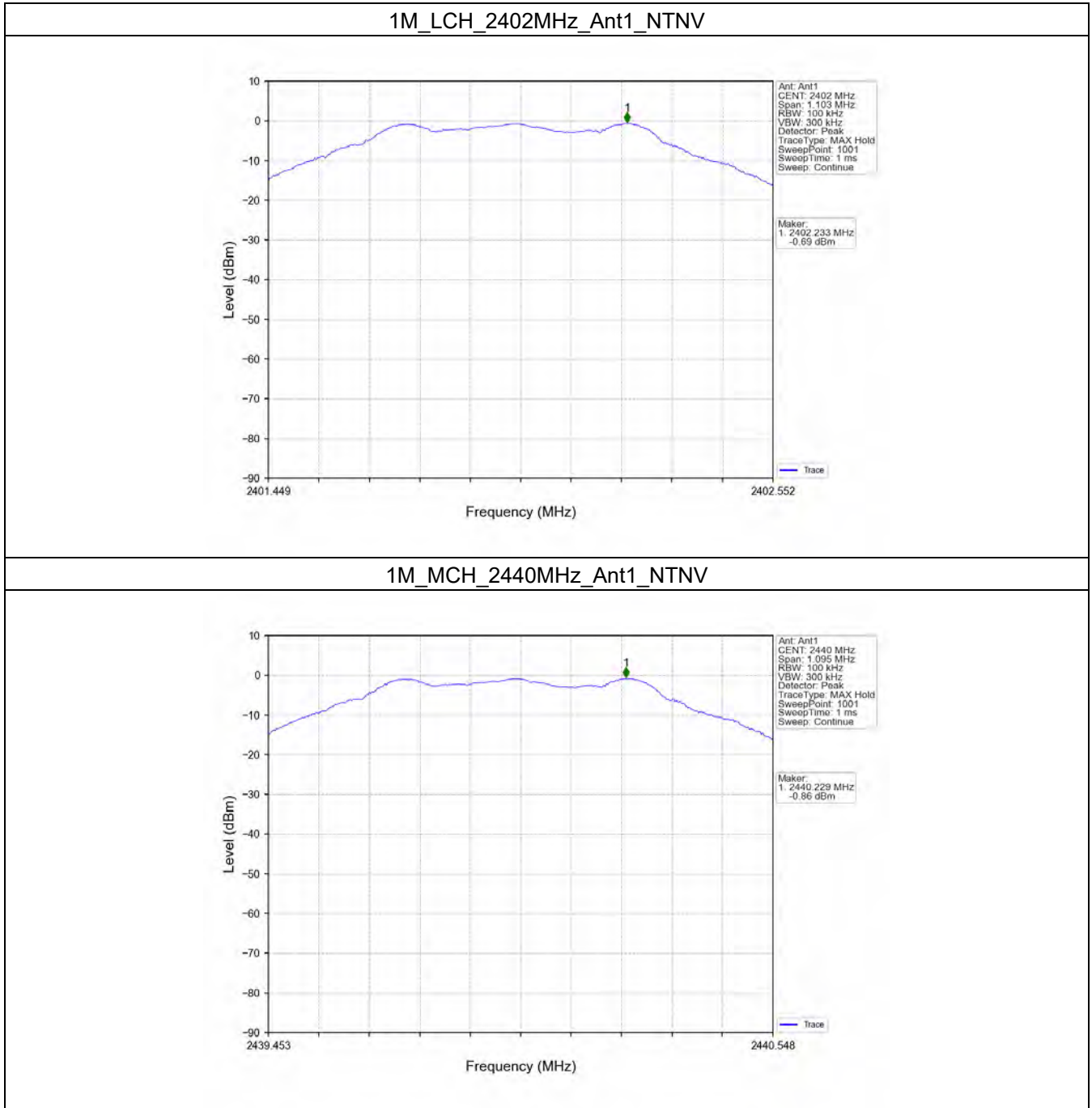
##### 5.1.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
1M	SISO	2402	1	-0.69
		2440	1	-0.86
		2480	1	-1.64
2M	SISO	2402	1	-0.80
		2440	1	-0.97
		2480	1	-1.70

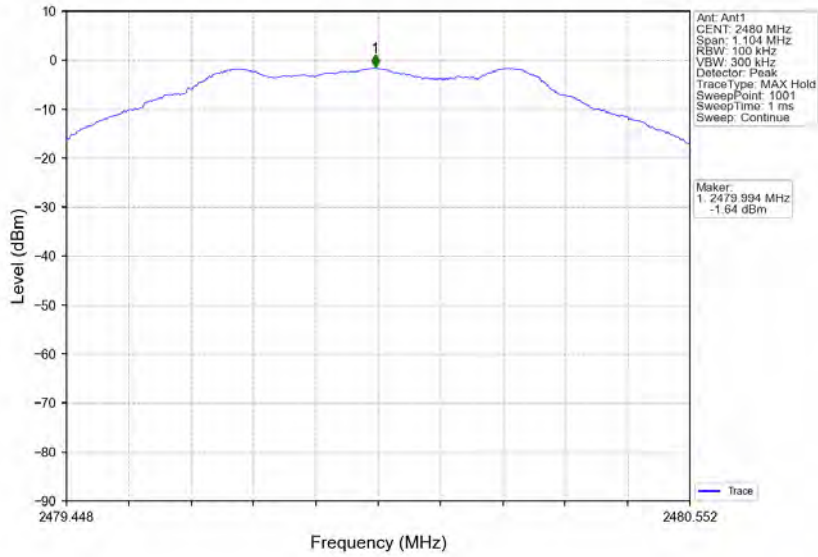
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.



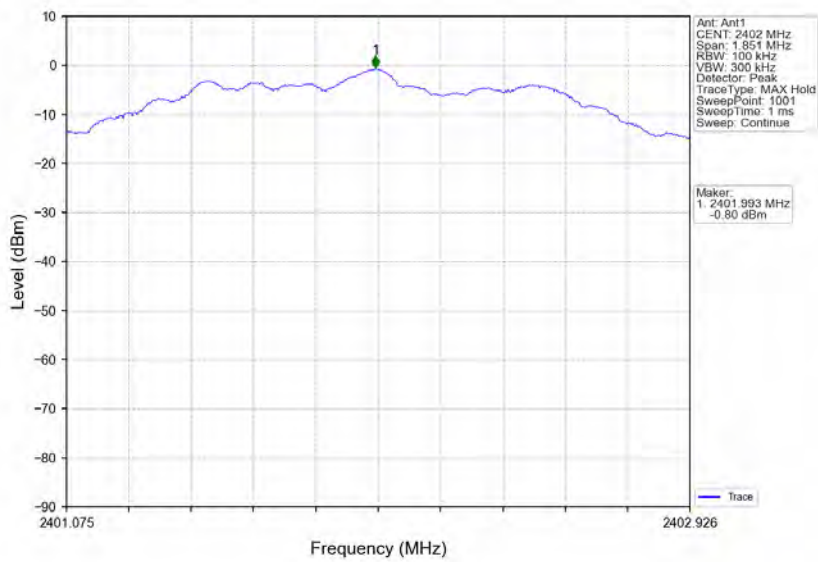
### 5.1.2 Test Graph



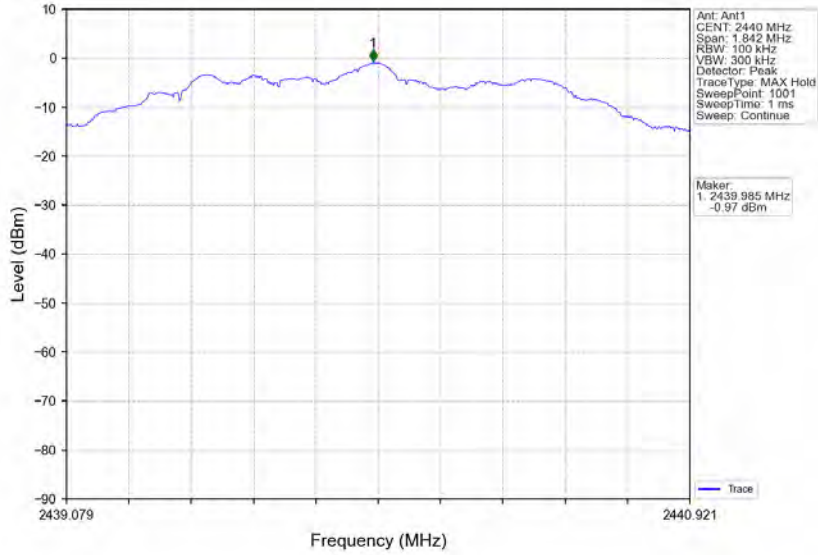
### 1M\_HCH\_2480MHz\_Ant1\_NTNV



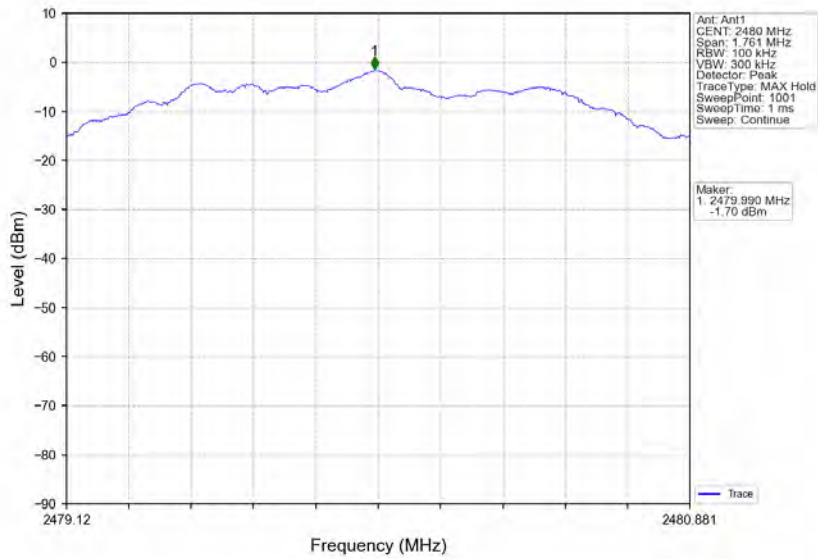
### 2M\_LCH\_2402MHz\_Ant1\_NTNV



2M\_MCH\_2440MHz\_Ant1\_NTNV



2M\_HCH\_2480MHz\_Ant1\_NTNV





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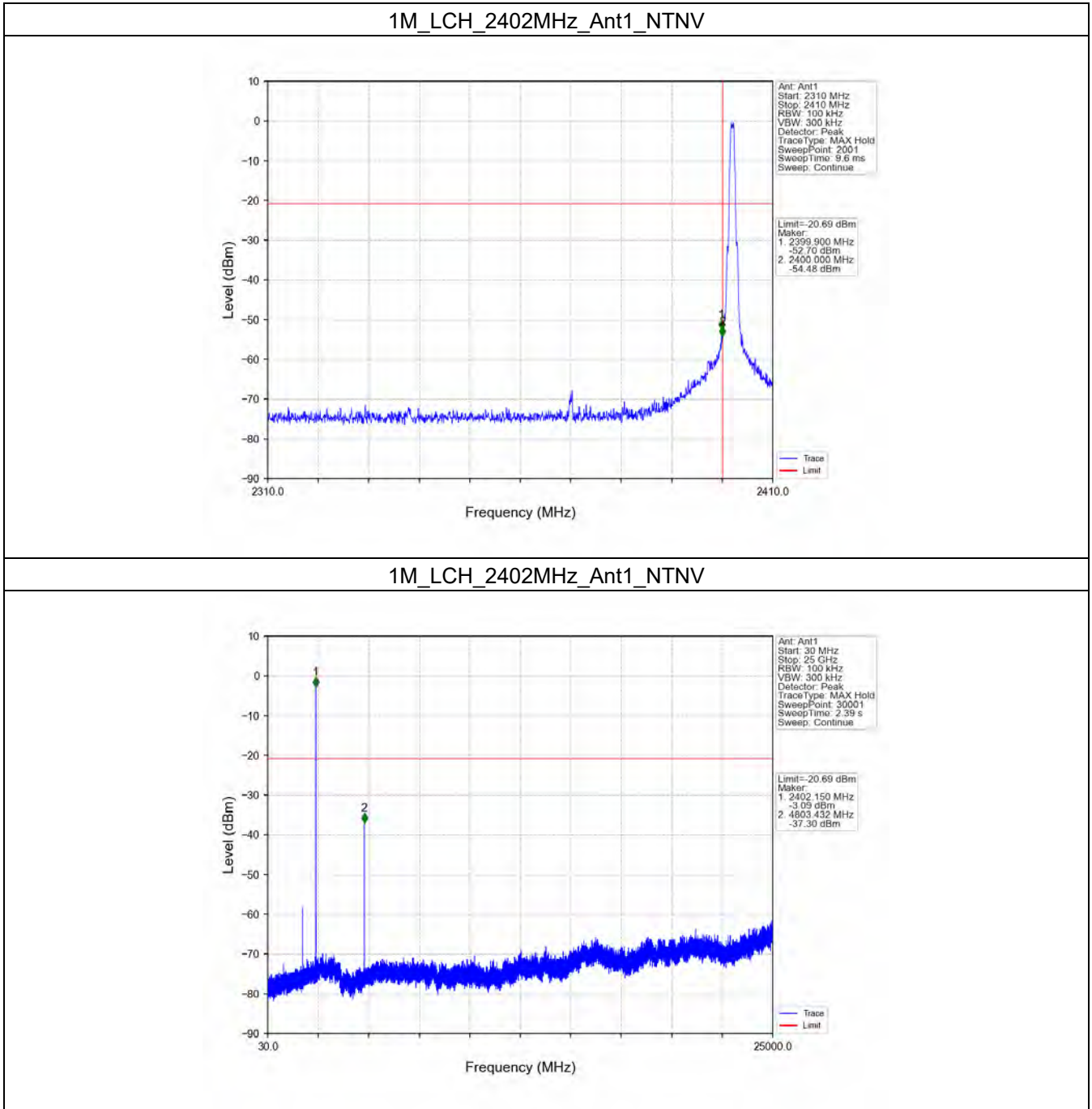
### 5.2 CSE

#### 5.2.1 Test Result

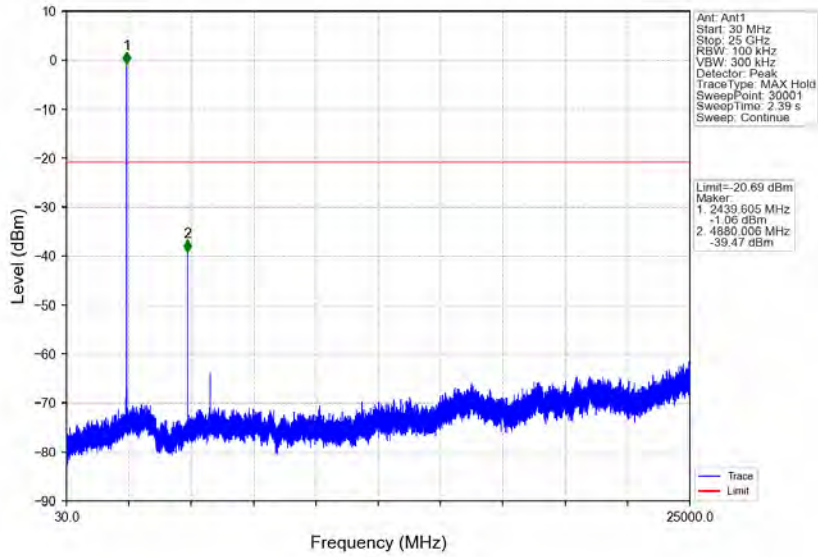
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
1M	SISO	2402	1	-0.69	-20.69	Pass
		2440	1	-0.69	-20.69	Pass
		2480	1	-0.69	-20.69	Pass
2M	SISO	2402	1	-0.80	-20.80	Pass
		2440	1	-0.80	-20.80	Pass
		2480	1	-0.80	-20.80	Pass

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

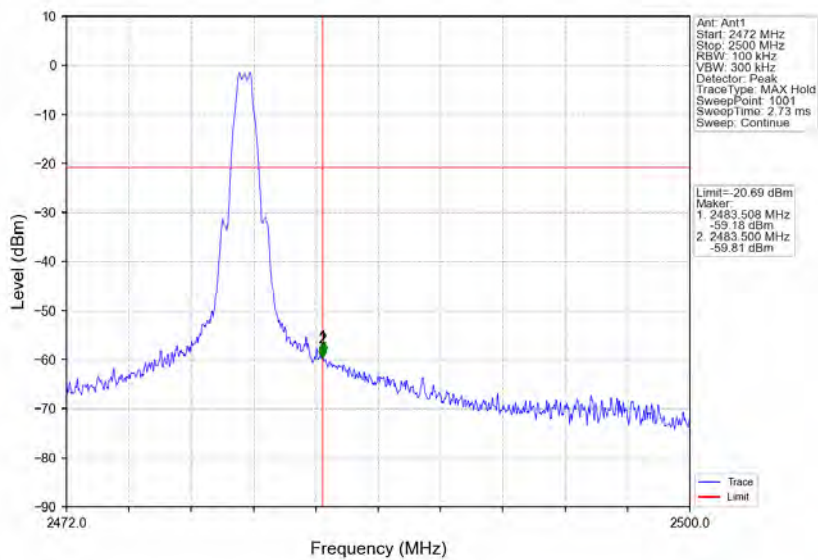
### 5.2.2 Test Graph



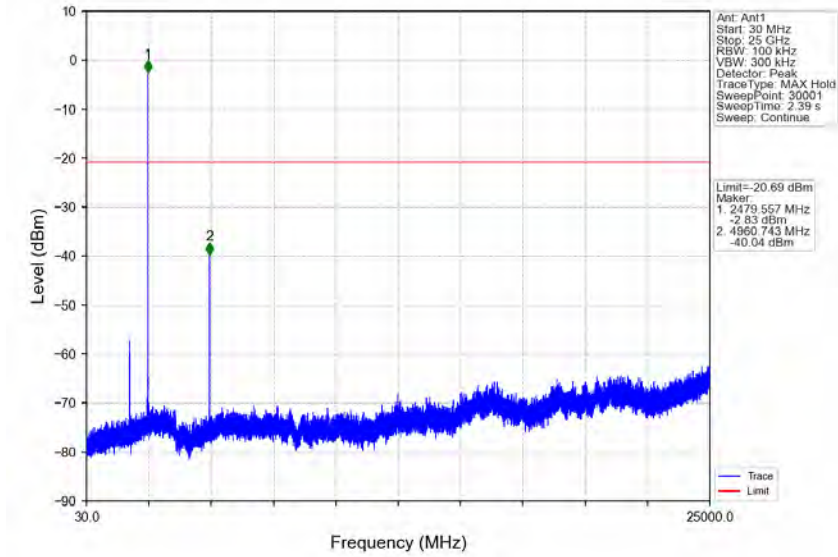
1M\_MCH\_2440MHz\_Ant1\_NTNV



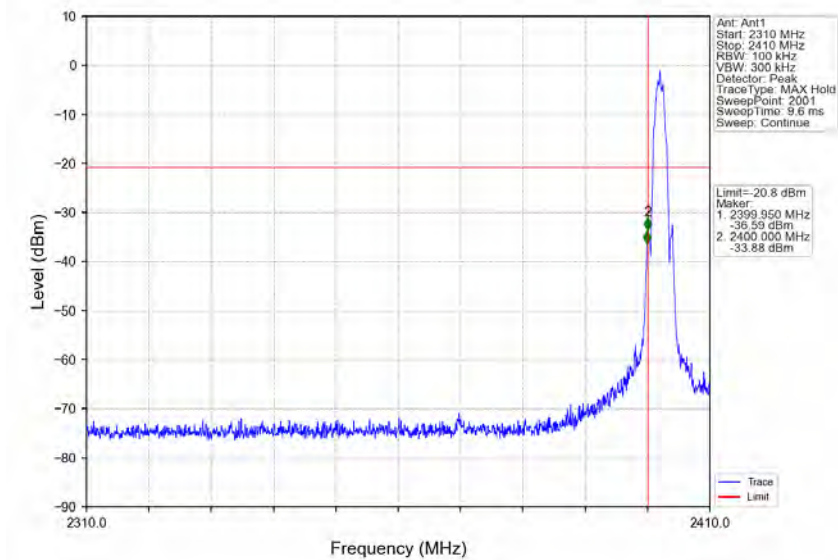
1M\_HCH\_2480MHz\_Ant1\_NTNV



1M\_HCH\_2480MHz\_Ant1\_NTNV

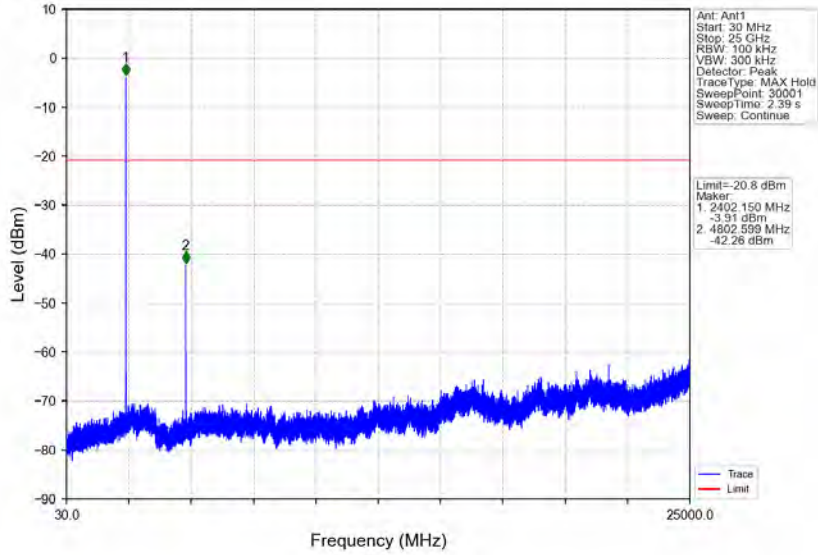


2M\_LCH\_2402MHz\_Ant1\_NTNV

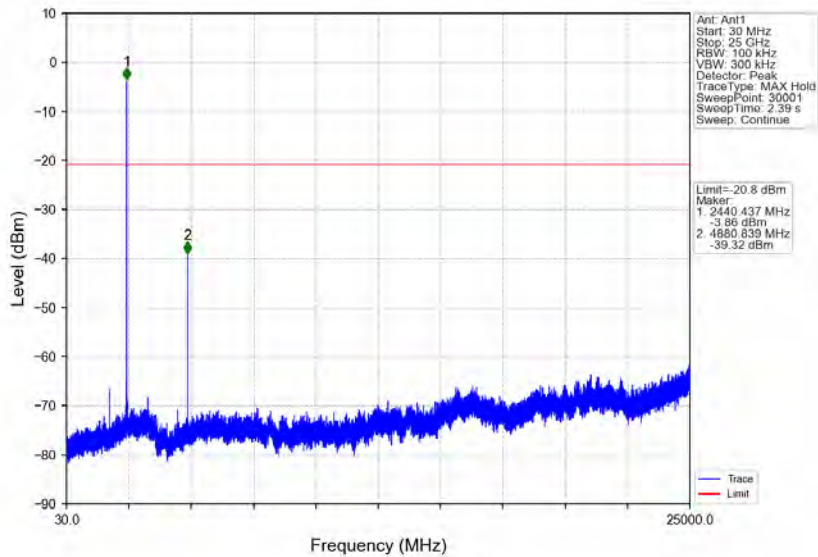




2M\_LCH\_2402MHz\_Ant1\_NTNV

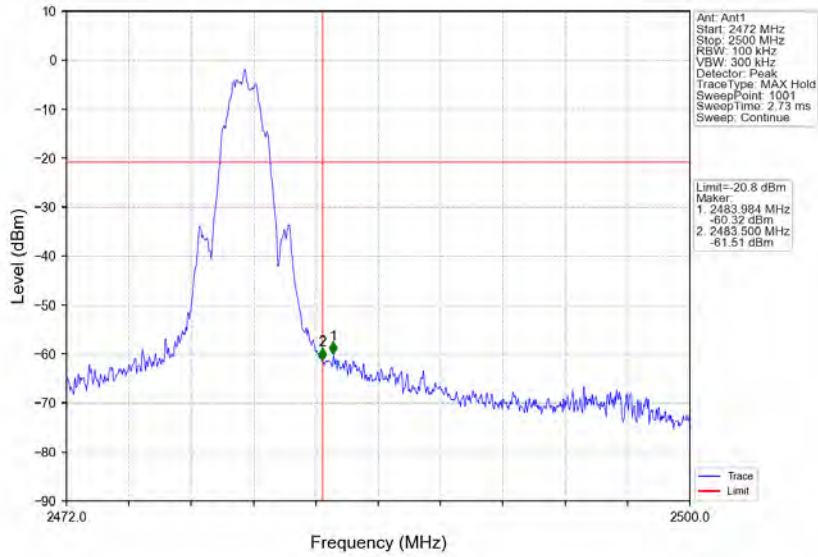


2M\_MCH\_2440MHz\_Ant1\_NTNV

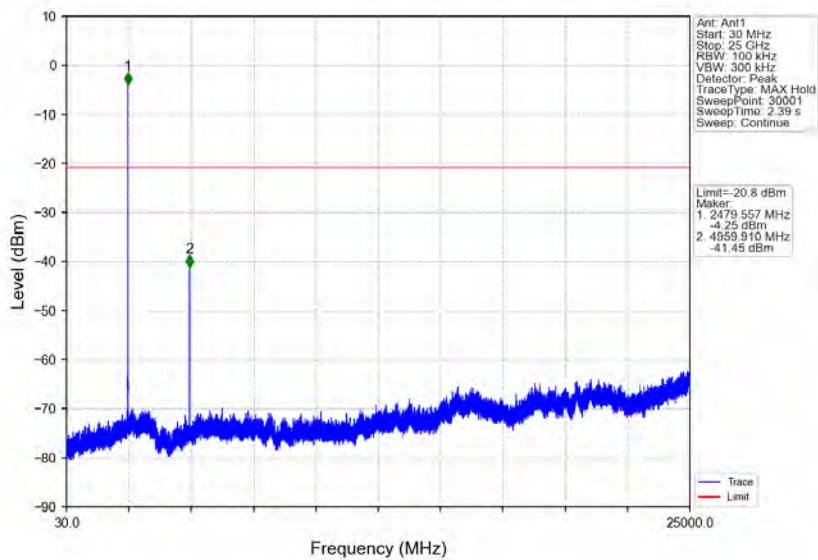




2M\_HCH\_2480MHz\_Ant1\_NTNV



2M\_HCH\_2480MHz\_Ant1\_NTNV



- End of the Report -