



TEST REPORT

Report No.	CISRR26082541802
Project No.	CISR260825418
FCC ID	2BTLR-Z05
Applicant	Shenzhen Cantianshu Information Technology Co., Ltd.
Address	Room 2803B, West Tower, Xinghe WORLD Twin Towers, No. 8 Yaxing Road, Nankeng Community, Bantian Subdistrict, Longgang District, Shenzhen, China
Manufacturer	Shenzhen Cantianshu Information Technology Co., Ltd.
Address	Room 2803B, West Tower, Xinghe WORLD Twin Towers, No. 8 Yaxing Road, Nankeng Community, Bantian Subdistrict, Longgang District, Shenzhen, China
Product Name	ZNP AI Smart Translator
Trade mark	ZNP
Model/Type reference	ZNP Z05
Listed Model(s)	-
Standard	47 CFR Part 15.247
Date of sample receipt	August 25, 2026
Test date	August 27, 2026 to September 1, 2026
Issue date	September 1, 2026
Test result	Complied

Morgan Tan

Reviewed by: Morgan Tan



The test results relate only to the tested samples.

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1. STANDARD AND APPLICABLE TEST METHODS

The tests were performed according to following standards:

47 CFR Part 15.247: Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz

ANSI C63.10-2020: American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

2. REPORT VERSION

Version No.	Issue date	Description
00	September 1, 2026	Original

3. TEST DESCRIPTION

No.	Test Item	Standard Requirement	Result
1	Antenna Requirement	47 CFR 15.203	Pass
2	Conducted Emission at AC power line	47 CFR 15.207(a)	Pass
3	6dB Bandwidth	47 CFR 15.247(a)(2)	Pass
4	Maximum Conducted Output Power	47 CFR 15.247(b)(3)	Pass
5	Power Spectral Density	47 CFR 15.247(e)	Pass
6	Conducted band edge and spurious emission	47 CFR 15.247(d)	Pass
7	Radiated band edge emission	47 CFR 15.247(d), 15.209, 15.205	Pass
8	Radiated Spurious Emission (below 1GHz)	47 CFR 15.247(d), 15.209, 15.205	Pass
9	Radiated Spurious Emission (Above 1GHz)	47 CFR 15.247(d), 15.209, 15.205	Pass

Note:

- The measurement uncertainty is not included in the test result.

4. SUMMARY

4.1. Product Description *

Main unit information:	
Product Name:	ZNP AI Smart Translator
Trade mark:	ZNP
Model No.:	ZNP Z05
Listed Model(s):	-
Model difference:	-
Power supply:	DC 5V by USB port DC 3.7V by internal battery
Hardware version:	-
Software version:	-
Accessory unit (AU) information:	
Battery information:	DC 3.7V 400mAh

4.2. Radio Specification Description *

Modulation type:	GFSK
Operation frequency:	2402MHz to 2480MHz
Channel number:	40
Channel separation:	2MHz
Antenna type:	PCB Antenna
Antenna gain:	-4.56dBi

Note:

- 1) *: As the above information is provided by the applicant, all relevant results and conclusions of this report are based solely on such information. Bangce lab shall not be liable for the authenticity, integrity, and resulting outcomes of the information, and/or the validity of the conclusions herein.

4.3. Modification of EUT

No modifications are made to the EUT during all test items.

4.4. Deviation from standards

None

4.5. Testing Site

Laboratory Name	Shenzhen Bangce Testing Technology Co., Ltd.
Laboratory Location	101, building 10, Yunli Intelligent Park, Shutianpu community, Matian Street, Guangming District, Shenzhen, Guangdong, China
Contact information	Tel: 86-755-2319 6848, email: service@cis-cn.net Website: http://www.cis-cn.net/
FCC registration number	736346
FCC designation number	CN1372

5. TEST CONFIGURATION

5.1. Test frequency list

Lowest Channel (LCH) (MHz)	Middle Channel (MCH) (MHz)	Highest Channel (HCH) (MHz)
2402	2440	2480

5.2. Descriptions of test mode

No	Test mode	Description
Mode1	TX mode	Keep the EUT in continuously transmitting mode with GFSK modulation at lowest, middle and highest channel.
Mode2	Link + Charing mode	Keep the EUT in Bluetooth linking + Charging mode with AE.

5.3. Support unit used in test configuration

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

The following peripheral devices and interface cables were connected during the measurement:

Item	Equipment name	Trade Name	Model No.
1	Adapter	Guangdong Sangu Technology Co. Ltd	SG-0501000AU

5.4. Test sample information

Type	Sample No.
Engineer sample	CISR260825418-S01
Normal sample	CISR260825418-S02

5.5. Environmental conditions

Type	Requirement
Temperature:	15~35°C
Relative Humidity:	25~75%
Air Pressure:	860~1060mbar

5.6. Statement of the measurement uncertainty

No.	Test Items	Measurement Uncertainty
1	Conducted Emission at AC power line (150kHz ~ 30MHz)	3.52dB
2	Bandwidth	0.19%
3	Conducted output power	1.38dB
4	Power spectral density	1.39dB
5	Conducted spurious emission	1.40dB
6	Radiated Spurious Emission (Above 1GHz)	4.60dB
7	Radiated Spurious Emission (9kHz ~ 30MHz)	3.28dB
8	Radiated Spurious Emission (30MHz ~ 1000MHz)	4.46dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=1.96$.

5.7. Equipment Used during the Test

Conducted Emission at AC power line

Item	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	8*4*3 Shielding room	SKET	8m*4m*3 m	CIS-EE012	2024-09-02	2027-09-01
2	EMI Test Receiver	ROHDE&SCHWARZ	ESPI7	CIS-EE043	2026-01-06	2027-01-05
3	LISN	SCHWARZBECK	NSLK 8127	CIS-EE044	2026-01-06	2027-01-05
4	LISN-AE	ETS	3810/2N M	CIS-EE075	2026-01-06	2027-01-05
5	RF Cable	SKET	-	CIS-EE071	2026-01-06	2027-01-05
6	Power Strip	BULL	GNIN-413	CIS-EE087	2026-01-06	2027-01-05
7	Test software	FARAD	EZ-CON	CIS-EE095	/	/
8	Thermohygrometer	DeLi	8866	CIS-EE069	2026-01-06	2027-01-05

6dB Bandwidth
Maximum Conducted Output Power
Power Spectral Density
Emissions in non-restricted frequency bands

Item	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	Spectrum analyzer	ROHDE&SCHWARZ	FSV-40N	CIS-EE076	2026-01-06	2027-01-05
2	Notch Filter Assembly	WCS	SMU-1003	CIS-EE093	2026-01-06	2027-01-05
3	Vector Signal Generator	Agilent	N5182A	CIS-RE012	2026-01-06	2027-01-05
4	Analog Signal Generator	Agilent	N5181A	CIS-RE013	2026-01-06	2027-01-05
5	Test software	WCS	WCN-Regulator y	CIS-EE103	/	/

Band edge emissions (Radiated)
Emissions in frequency bands (below 1GHz)
Emissions in frequency bands (above 1GHz)

Item	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	9*6*6 Chamber	SKET	9m*6m*6 m	CIS-EE011	2024-09-02	2027-09-01
2	EMI Test Receiver	ROHDE&SCHWARZ	ESCI	CIS-EE016	2026-01-06	2027-01-05
3	Broadband Antenna	SCHWARZBECK	VULB 9163	CIS-EE018	2026-01-06	2029-01-05
4	Double Ridged Broadband Horn	SCHWARZBECK	BBHA 9120D	CIS-EE019	2026-01-06	2029-01-05

	Antennas					
5	Preamplifier	Tonscend	TAP9K3G 40	CIS-EE021	2026-01-06	2027-01-05
6	Preamplifier	Tonscend	TAP0101 8050	CIS-EE022	2026-01-06	2027-01-05
7	Preamplifier	WCS	DLNA-1- 18G-40	CIS-EE081	2026-01-06	2027-01-05
8	RF Cable	Tonscend	-	CIS-EE024	2026-01-06	2027-01-05
9	RF Cable	Tonscend	-	CIS-EE025	2026-01-06	2027-01-05
10	Test software	FARAD	EZ-EMC RE	CIS-EE097	/	/
11	Thermohygrometer	DeLi	8866	CIS-EE067	2026-01-06	2027-01-05
12	Loop Antenna	SCHWARZBECK	FMZB 1513-60 B	CIS-EE060	2026-01-06	2029-01-05
13	Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	CIS-EE020	2025-01-09	2028-01-08
14	Preamplifier	Tonscend	TAP1804 0048	CIS-EE023	2026-01-06	2027-01-05
15	1GHz Highpass	COM-MW	ZHPF6- M1000- 18000- 3910	CIS-EEA043	2026-01-06	2027-01-05
16	3GHz Highpass	COM-MW	ZHPF6- M3000- 18000- 5254	CIS-EEA044	2026-01-06	2027-01-05
17	6GHz Highpass	COM-MW	ZHPF6- M6500- 18000- 547	CIS-EEA045	2026-01-06	2027-01-05
18	Notch Filter Assembly	Tonscend	TS@JS08 06-F	CIS-EE026	2026-01-06	2027-01-05
19	Spectrum analyzer	Agilent	N9020A	CIS-RE001	2026-01-06	2027-01-05

6. TEST RESULTS

6.1. Evaluation Results (Evaluation)

6.1.1. Antenna Requirement

Test Requirement:	Refer to 47 CFR Part 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.
Test Method:	---

6.1.1.1. Test Result

Pass

6.1.1.2. Conclusion:

The EUT antenna is PCB Antenna. It comply with the standard requirement. In case of replacement of broken antenna the same antenna type must be used. Antenna structure please refer to the EUT internal photographs antenna photo.

6.2. Radio Spectrum Matter Test Results (RF)

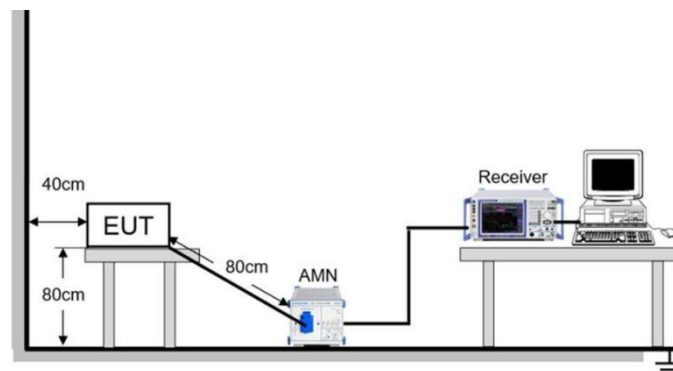
6.2.1. Conducted Emission at AC power line

Test Requirement:	Refer to 47 CFR 15.207(a), Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN).		
Test Limit:	Frequency of emission (MHz)	Conducted limit (dB μ V)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
	*Decreases with the logarithm of the frequency.		
Test Method:	ANSI C63.10-2020 section 6.2		
Procedure:	<p>1>. The EUT was setup according to ANSI C63.10 requirements.</p> <p>2>. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.</p> <p>3>. The EUT and simulators are connected to the main power through a line impedances stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment.</p> <p>4>. The peripheral devices are also connected to the main power through a LISN. (Refer to the block diagram of the test setup and photographs)</p> <p>5>. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.</p> <p>6>. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.</p> <p>7>. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.</p> <p>8>. During the above scans, the emissions were maximized by cable manipulation.</p>		

6.2.1.1. E.U.T. Operation

Operating Environment:					
Temperature:	23 °C	Humidity:	55.3 %	Atmospheric Pressure:	102.9 kPa
Pre test mode:	Mode2				
Final test mode:	Mode2				

6.2.1.2. Test Setup Diagram

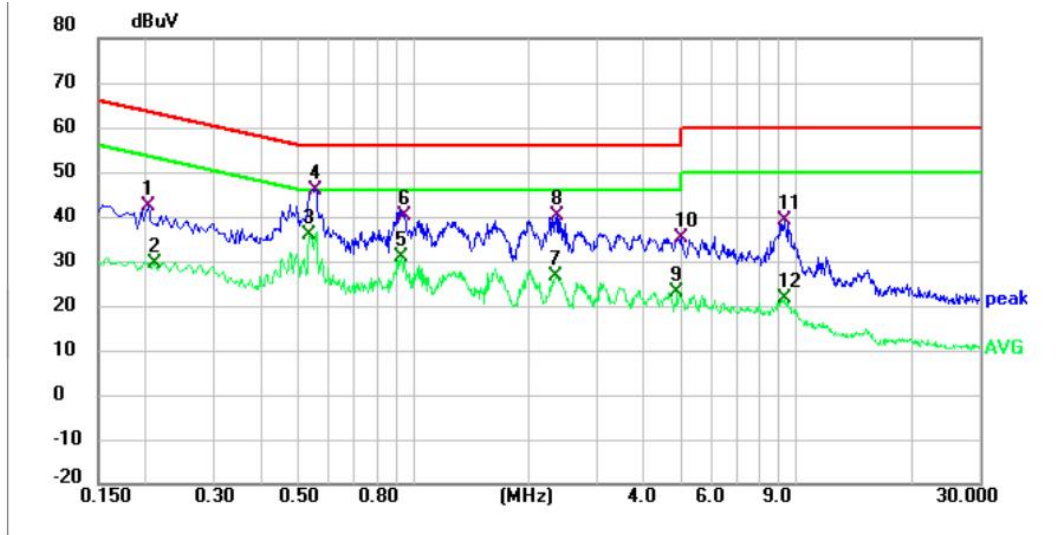


6.2.1.3. Test Result

Pass

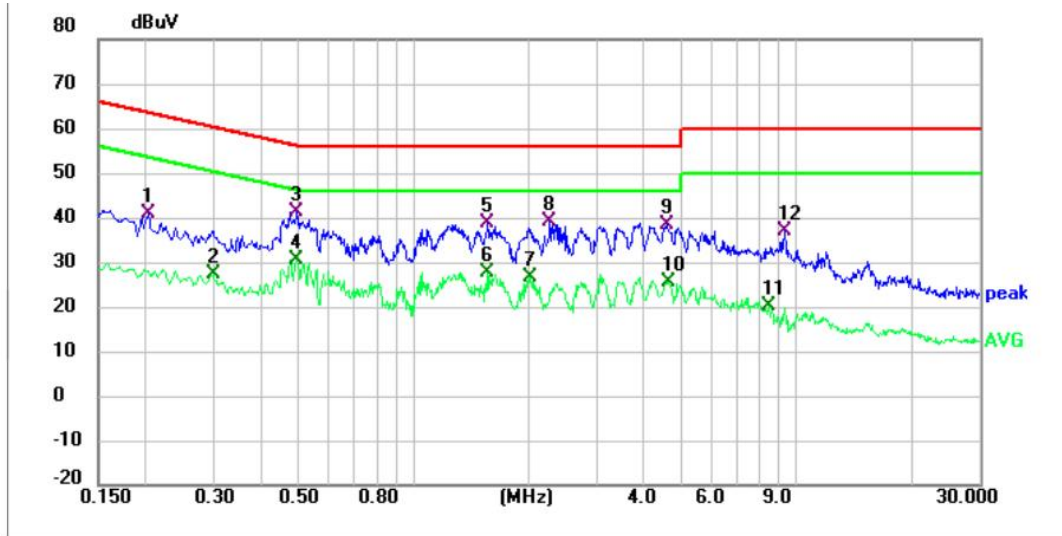
6.2.1.4. Test Data

Mode2 / Line: Line



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.2020	32.06	10.18	42.24	63.53	21.29	QP
2	0.2100	19.28	10.18	29.46	53.21	23.75	AVG
3 *	0.5340	25.90	10.16	36.06	46.00	9.94	AVG
4	0.5540	35.85	10.17	46.02	56.00	9.98	QP
5	0.9260	20.64	10.19	30.83	46.00	15.17	AVG
6	0.9500	30.14	10.19	40.33	56.00	15.67	QP
7	2.3500	16.37	10.27	26.64	46.00	19.36	AVG
8	2.3740	29.78	10.27	40.05	56.00	15.95	QP
9	4.8859	12.79	10.38	23.17	46.00	22.83	AVG
10	4.9820	24.81	10.38	35.19	56.00	20.81	QP
11	9.2860	28.65	10.37	39.02	60.00	20.98	QP
12	9.2860	11.29	10.37	21.66	50.00	28.34	AVG

Mode2 / Line: Neutral



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.2020	30.56	10.18	40.74	63.53	22.79	QP
2	0.2980	17.09	10.14	27.23	50.30	23.07	AVG
3 *	0.4940	30.99	10.16	41.15	56.10	14.95	QP
4	0.4940	20.28	10.16	30.44	46.10	15.66	AVG
5	1.5620	28.69	10.23	38.92	56.00	17.08	QP
6	1.5620	17.55	10.23	27.78	46.00	18.22	AVG
7	2.0180	16.32	10.26	26.58	46.00	19.42	AVG
8	2.2700	28.69	10.27	38.96	56.00	17.04	QP
9	4.5860	28.15	10.36	38.51	56.00	17.49	QP
10	4.6500	15.15	10.36	25.51	46.00	20.49	AVG
11	8.4220	9.86	10.36	20.22	50.00	29.78	AVG
12	9.2860	26.65	10.37	37.02	60.00	22.98	QP

Note:

1>. Level = Reading +Factor (Voltage Division Coefficient + Cable Loss + Attenuator Factor)

2>. Margin = Limit - Level

6.2.2. 6dB Bandwidth

Test Requirement:	47 CFR 15.247(a)(2)
Test Limit:	Refer to 47 CFR 15.247(a)(2), Systems using digital modulation techniques may operate in the 902-928 MHz, and 2400-2483.5 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.
Test Method:	ANSI C63.10-2020, section 11.8
Procedure:	<p>11.8.1 Option 1 The steps for the first option are as follows: a) Set RBW = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz. b) Set the VBW $\geq [3 \times \text{RBW}]$. c) Detector = peak. d) Trace mode = max-hold. e) Sweep = No faster than coupled (auto) time. f) Allow the trace to stabilize. g) Measure the maximum width of the emission by placing two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the “-6 dB down amplitude”. If a marker is below this “-6 dB down amplitude” value, then it shall be as close as possible to this value.</p> <p>11.8.2 Option 2 The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described in 11.8.1 (i.e., RBW = 100 kHz, VBW $\geq 3 \times \text{RBW}$, and peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be ≥ 6 dB.</p>

6.2.2.1. E.U.T. Operation

Operating Environment:					
Temperature:	23.2 °C	Humidity:	56.8 %	Atmospheric Pressure:	102.1 kPa
Pre test mode:	Mode1				
Final test mode:	Mode1				

6.2.2.2. Test Setup Diagram



6.2.2.3. Test Result

Pass

6.2.2.4. Test Data

Please Refer to Appendix for Details.

6.2.3. Maximum Conducted Output Power

Test Requirement:	47 CFR 15.247(b)(3)
Test Limit:	Refer to 47 CFR 15.247(b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.
Test Method:	ANSI C63.10-2020 section 11.9.1
Procedure:	ANSI C63.10-2020, section 11.9.1 Maximum peak conducted output power

6.2.3.1. E.U.T. Operation

Operating Environment:					
Temperature:	23.5 °C	Humidity:	55.1 %	Atmospheric Pressure:	102.1 kPa
Pre test mode:	Mode1				
Final test mode:	Mode1				

6.2.3.2. Test Setup Diagram



6.2.3.3. Test Result

Pass

6.2.3.4. Test Data

Please Refer to Appendix for Details.

6.2.4. Power Spectral Density

Test Requirement:	47 CFR 15.247(e)
Test Limit:	Refer to 47 CFR 15.247(e), For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.
Test Method:	ANSI C63.10-2020, section 11.10
Procedure:	ANSI C63.10-2020+Cor 1-2023, section 11.10, Maximum power spectral density level in the fundamental emission

6.2.4.1. E.U.T. Operation

Operating Environment:					
Temperature:	22.5 °C	Humidity:	56.1 %	Atmospheric Pressure:	102.1 kPa
Pre test mode:	Mode1				
Final test mode:	Mode1				

6.2.4.2. Test Setup Diagram



6.2.4.3. Test Result

Pass

6.2.4.4. Test Data

Please Refer to Appendix for Details.

6.2.5. Conducted band edge and spurious emission

Test Requirement:	47 CFR 15.247(d)
Test Limit:	Refer to 47 CFR 15.247(d), 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.
Test Method:	ANSI C63.10-2020 section 11.11
Procedure:	ANSI C63.10-2020 Section 11.11.1, Section 11.11.2, Section 11.11.3

6.2.5.1. E.U.T. Operation

Operating Environment:					
Temperature:	22 °C	Humidity:	56.7 %	Atmospheric Pressure:	102.1 kPa
Pre test mode:	Mode1				
Final test mode:	Mode1				

6.2.5.2. Test Setup Diagram



6.2.5.3. Test Result

Pass

6.2.5.4. Test Data

Please Refer to Appendix for Details.

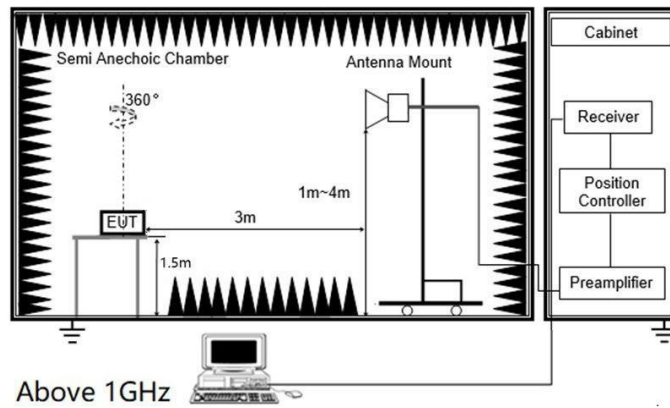
6.2.6. Radiated band edge emission

Test Requirement:	Refer to 47 CFR 15.247(d), In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).		
Test 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
<p>** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.</p> <p>In the emission table above, the tighter limit applies at the band edges. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.</p>			
Test Method:	ANSI C63.10-2020 section 6.10		
Procedure:	<p>1>. EUT was setup and tested according to ANSI C63.10 .</p> <p>2>. The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.</p> <p>3>. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.</p> <p>4>. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10 on radiated measurement.</p> <p>5>. Use the following spectrum analyzer settings:</p> <p>a) Span shall wide enough to fully capture the emission being measured</p> <p>b) Set RBW=1MHz, VBW=3MHz for >1GHz, Sweep time=auto, Detector=peak, Trace=max hold for Peak measurement</p> <p>For average measurement: use duty cycle correction factor method (DCCF), Average level = Peak level + DCCF</p>		

6.2.6.1. E.U.T. Operation

Operating Environment:					
Temperature:	22.7 °C	Humidity:	56.7 %	Atmospheric Pressure:	102.1 kPa
Pre test mode:	Mode1				
Final test mode:	Mode1				

6.2.6.2. Test Setup Diagram

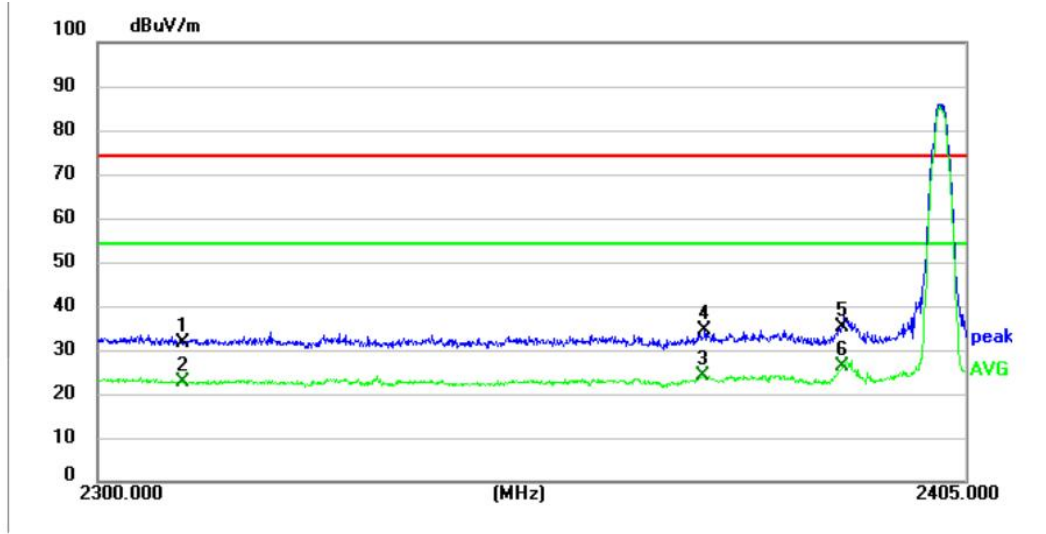


6.2.6.3. Test Result

Pass

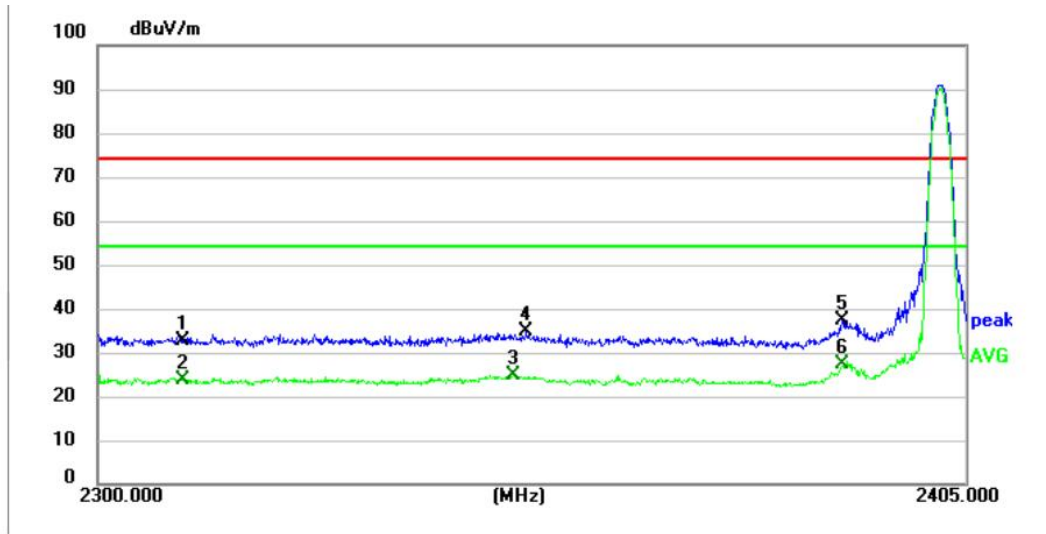
6.2.6.4. Test Data

Mode1 / Polarization: Horizontal / CH: L



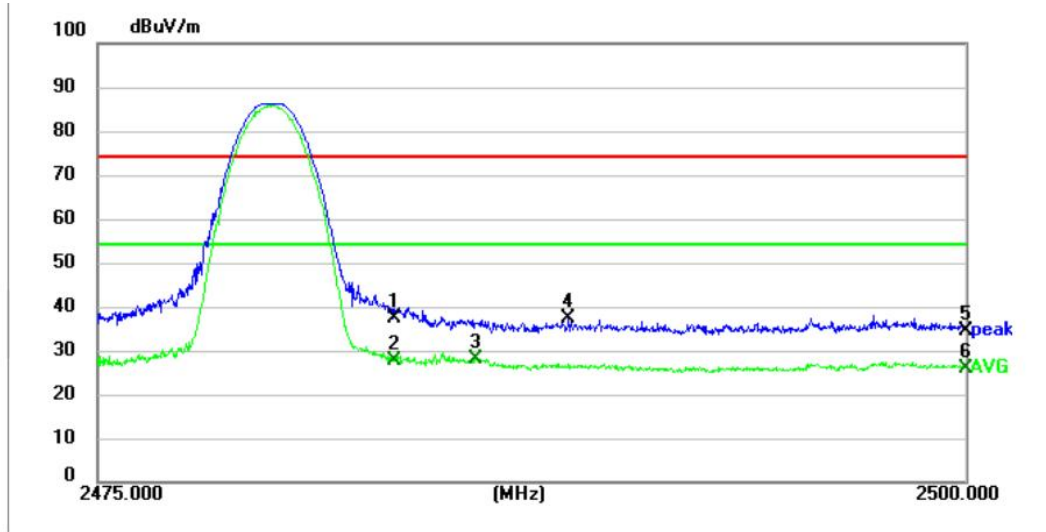
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2310.0000	49.00	-17.52	31.48	74.00	42.52	peak
2	2310.0000	40.25	-17.52	22.73	54.00	31.27	AVG
3	2372.8070	41.66	-17.38	24.28	54.00	29.72	AVG
4	2373.0169	51.72	-17.38	34.34	74.00	39.66	peak
5	2390.0000	52.34	-17.32	35.02	74.00	38.98	peak
6 *	2390.0000	43.55	-17.32	26.23	54.00	27.77	AVG

Mode1 / Polarization: Vertical / CH: L



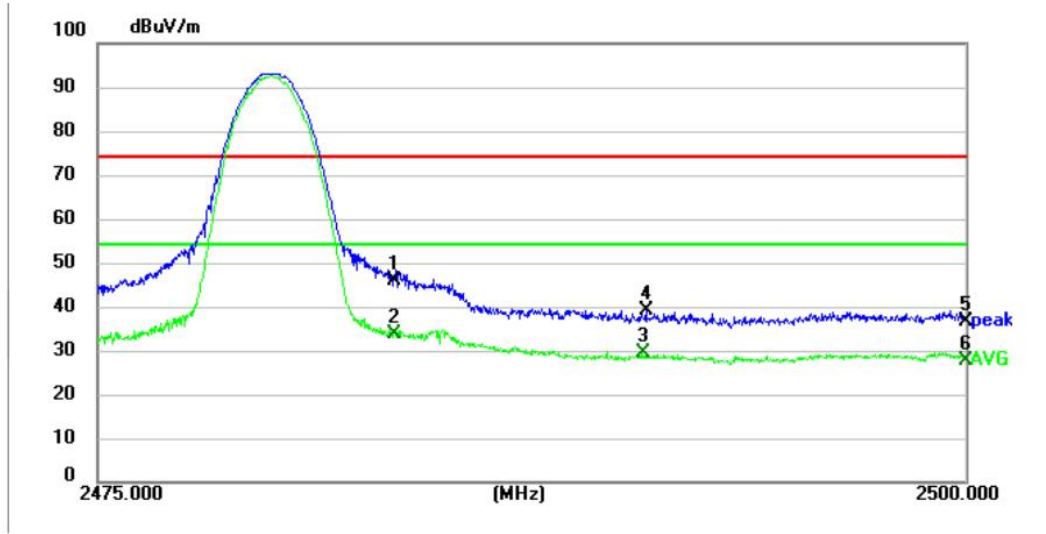
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2310.0000	50.06	-17.52	32.54	74.00	41.46	peak
2	2310.0000	41.18	-17.52	23.66	54.00	30.34	AVG
3	2349.7804	42.19	-17.46	24.73	54.00	29.27	AVG
4	2351.3030	52.25	-17.45	34.80	74.00	39.20	peak
5	2390.0000	54.62	-17.32	37.30	74.00	36.70	peak
6 *	2390.0000	44.68	-17.32	27.36	54.00	26.64	AVG

Mode1 / Polarization: Horizontal / CH: H



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.5000	54.25	-17.03	37.22	74.00	36.78	peak
2	2483.5000	44.58	-17.03	27.55	54.00	26.45	AVG
3 *	2485.8750	45.22	-17.02	28.20	54.00	25.80	AVG
4	2488.5650	54.25	-17.00	37.25	74.00	36.75	peak
5	2500.0000	51.31	-16.94	34.37	74.00	39.63	peak
6	2500.0000	42.86	-16.94	25.92	54.00	28.08	AVG

Mode1 / Polarization: Vertical / CH: H



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.5000	63.01	-17.03	45.98	74.00	28.02	peak
2 *	2483.5000	50.69	-17.03	33.66	54.00	20.34	AVG
3	2490.6924	46.47	-16.99	29.48	54.00	24.52	AVG
4	2490.7900	56.14	-16.99	39.15	74.00	34.85	peak
5	2500.0000	53.56	-16.94	36.62	74.00	37.38	peak
6	2500.0000	44.77	-16.94	27.83	54.00	26.17	AVG

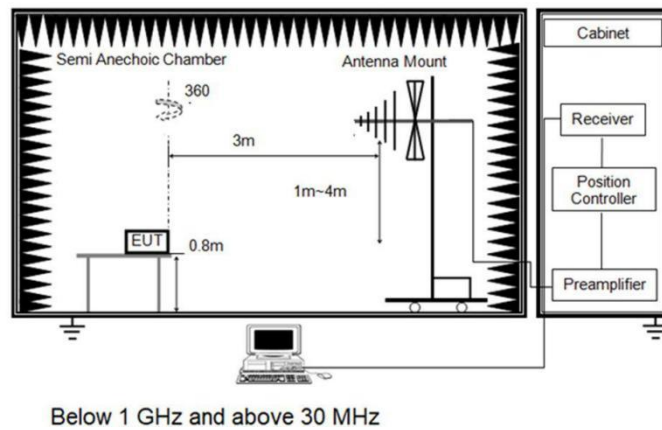
6.2.7. Radiated Spurious Emission (below 1GHz)

Test Requirement:	Refer to 47 CFR 15.247(d), In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).		
Test 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
<p>** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.</p> <p>In the emission table above, the tighter limit applies at the band edges. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.</p>			
Test Method:	ANSI C63.10-2020 section 6.5.4		
Procedure:	<p>1>. The EUT was setup and tested according to ANSI C63.10.</p> <p>2>. The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.</p> <p>3>. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.</p> <p>4>. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.</p> <p>5>. Set to the maximum power setting and enable the EUT transmit continuously.</p> <p>6>. Use the following spectrum analyzer settings</p> <p>a) Span shall wide enough to fully capture the emission being measured;</p> <p>b) RBW=120 kHz, VBW=300 kHz, Sweep=auto, Detector function=peak, Trace=max hold;</p> <p>If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.</p>		

6.2.7.1. E.U.T. Operation

Operating Environment:					
Temperature:	23.3 °C	Humidity:	56.4 %	Atmospheric Pressure:	102.1 kPa
Pre test mode:	Mode1, Mode2				
Final test mode:	All of the listed pre-test mode were tested, only the data of the worst mode (Mode2) is recorded in the report				

6.2.7.2. Test Setup Diagram

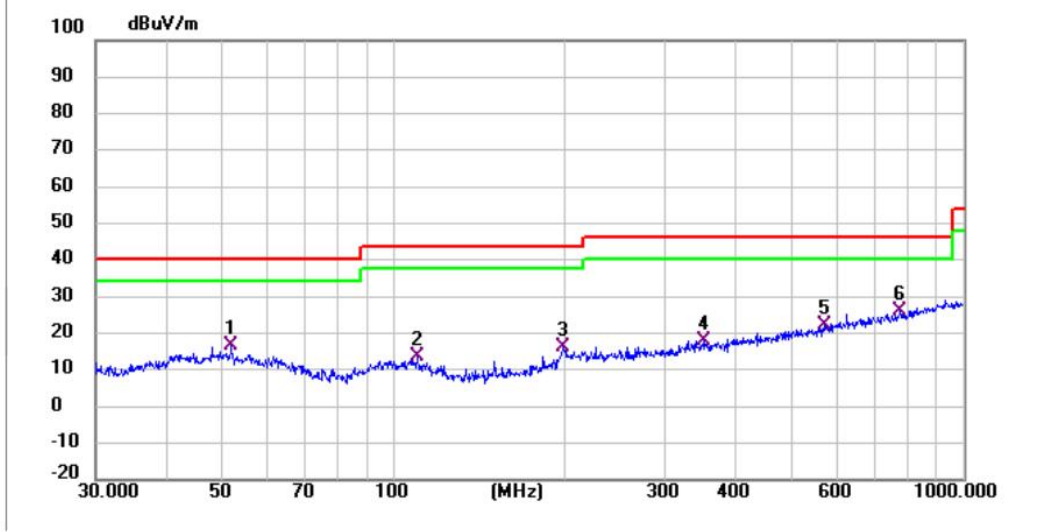


6.2.7.3. Test Result

Pass

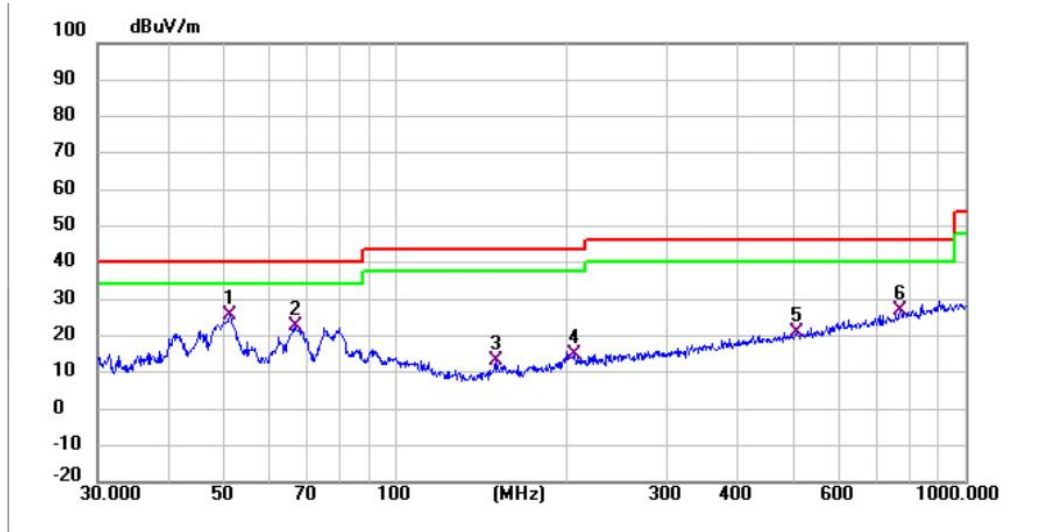
6.2.7.4. Test Data

Mode2 / Polarization: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	52.0251	45.13	-28.65	16.48	40.00	23.52	QP
2	110.1816	44.51	-30.66	13.85	43.50	29.65	QP
3	197.8928	46.61	-30.40	16.21	43.50	27.29	QP
4	351.7080	43.99	-25.87	18.12	46.00	27.88	QP
5	570.6100	43.93	-21.51	22.42	46.00	23.58	QP
6 *	774.1584	44.31	-18.09	26.22	46.00	19.78	QP

Mode2 / Polarization: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	51.1210	54.21	-28.74	25.47	40.00	14.53	QP
2	66.7325	54.04	-31.52	22.52	40.00	17.48	QP
3	150.0108	47.24	-33.93	13.31	43.50	30.19	QP
4	206.3975	45.07	-30.32	14.75	43.50	28.75	QP
5	506.4790	43.83	-22.84	20.99	46.00	25.01	QP
6	768.7481	44.99	-18.22	26.77	46.00	19.23	QP

Note:

1>. For 9 kHz ~ 30 MHz Measurement

The EUT was pre-scanned this frequency band, found the radiated level 20dB lower than the limit, so don't show data on this report.

2>. Level= Reading + Factor (Antenna Factor+ Cable Loss- Preamplifier Factor)

3>. Margin = Limit – Level

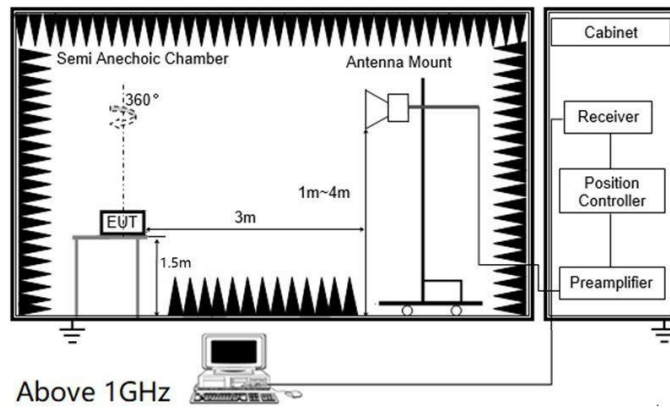
6.2.8. Radiated Spurious Emission (Above 1GHz)

Test Requirement:	Refer to 47 CFR 15.247(d), in addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).		
Test 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
<p>** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.</p> <p>In the emission table above, the tighter limit applies at the band edges.</p> <p>The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.</p>			
Test Method:	ANSI C63.10-2020 section 6.5.4		
Procedure:	<p>1>. The EUT was setup and tested according to ANSI C63.10.</p> <p>2>. The EUT is placed on a turn table which is 0.8 meter above ground for 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.</p> <p>3>. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.</p> <p>4>. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.</p> <p>5>. Set to the maximum power setting and enable the EUT transmit continuously.</p> <p>6>. Use the following spectrum analyzer settings</p> <p>a) Span shall wide enough to fully capture the emission being measured;</p> <p>b) Set RBW=1MHz, VBW=3MHz, Sweep time=auto, Detector=peak, Trace=max hold for Peak measurement</p> <p>For average measurement: use duty cycle correction factor method (DCCF) Average level = Peak level + DCCF</p>		

6.2.8.1. E.U.T. Operation

Operating Environment:					
Temperature:	22.9 °C	Humidity:	56.7 %	Atmospheric Pressure:	102.1 kPa
Pre test mode:	Mode1, Mode2				
Final test mode:	All of the listed pre-test mode were tested, only the data of the worst mode (Mode1) is recorded in the report				

6.2.8.2. Test Setup Diagram

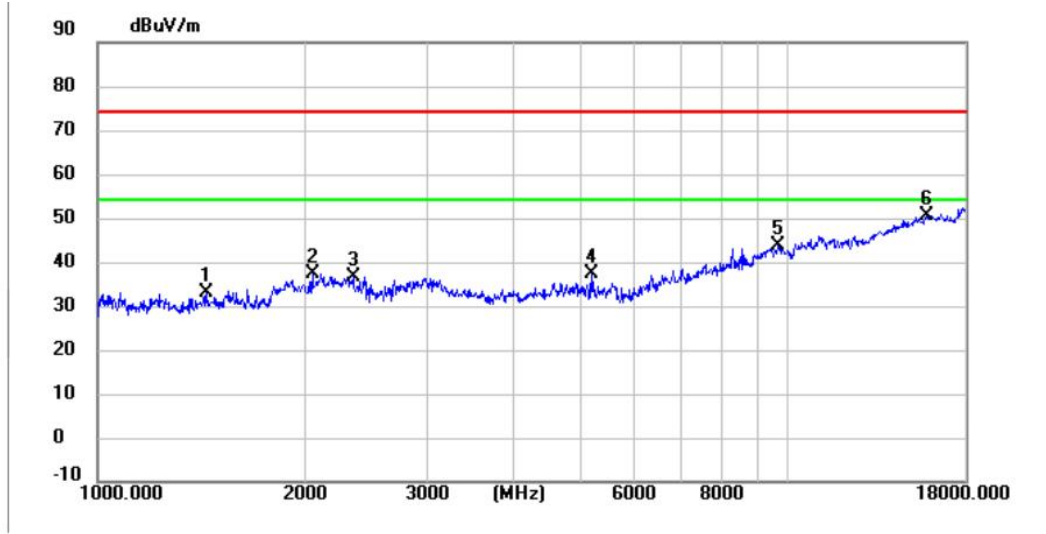


6.2.8.3. Test Result

Pass

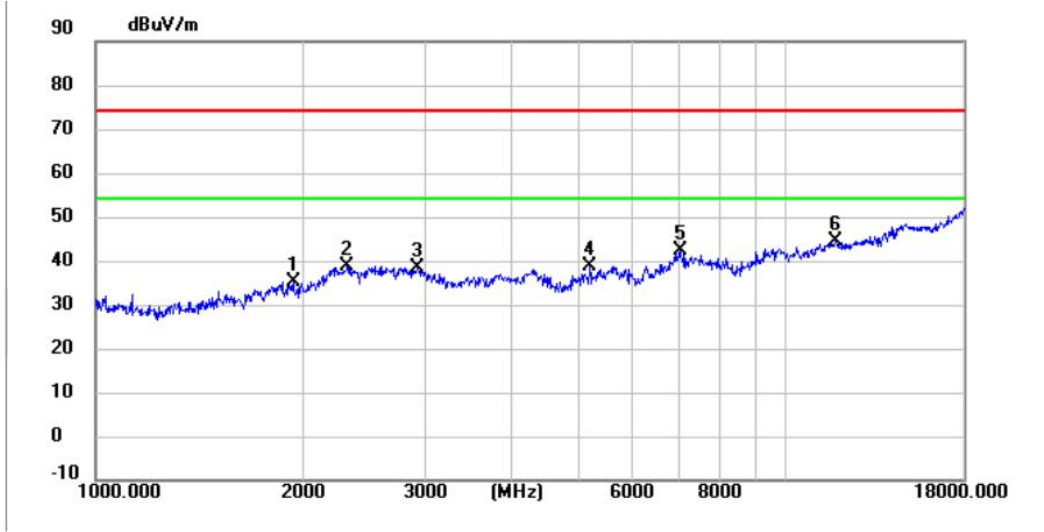
6.2.8.4. Test Data

Mode1 / Polarization: Horizontal / CH: L



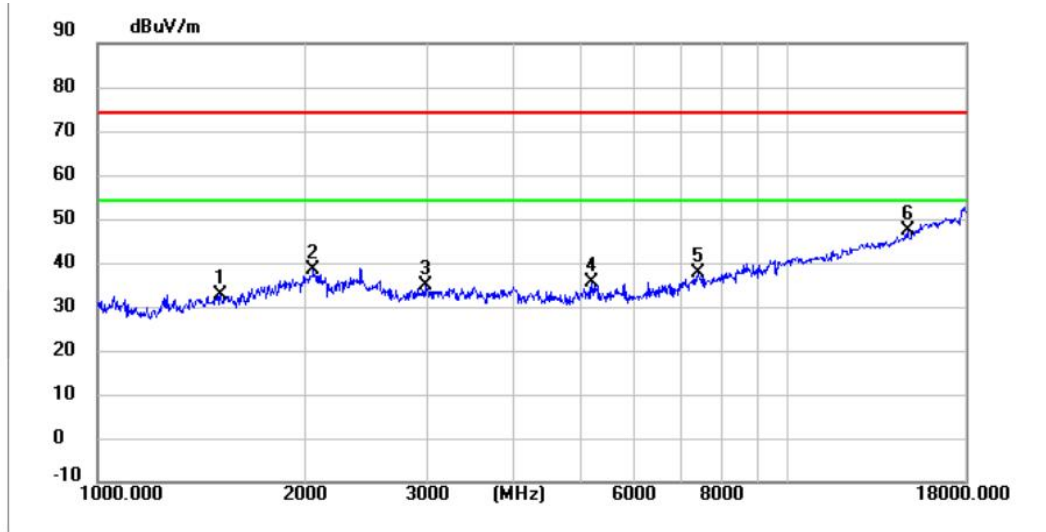
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1440.3000	53.74	-20.88	32.86	74.00	41.14	peak
2	2052.3000	55.78	-18.29	37.49	74.00	36.51	peak
3	2349.8000	54.14	-17.46	36.68	74.00	37.32	peak
4	5207.5000	45.16	-7.97	37.19	74.00	36.81	peak
5	9680.2000	33.56	10.23	43.79	74.00	30.21	peak
6 *	15878.4000	34.12	16.46	50.58	74.00	23.42	peak

Mode1 / Polarization: Vertical / CH: L



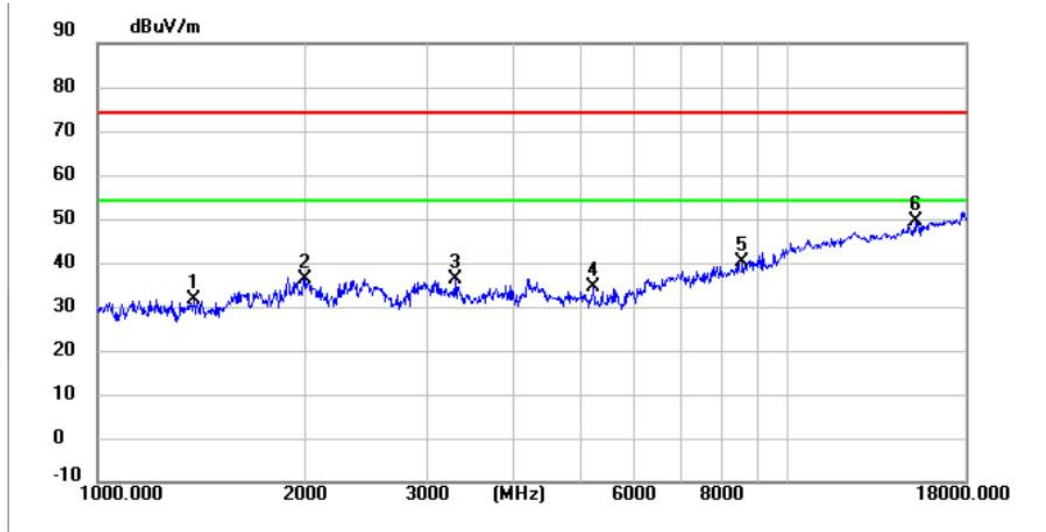
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1938.4000	54.40	-19.17	35.23	74.00	38.77	peak
2	2314.1000	56.31	-17.51	38.80	74.00	35.20	peak
3	2922.7000	53.12	-14.84	38.28	74.00	35.72	peak
4	5200.7000	46.56	-7.98	38.58	74.00	35.42	peak
5	7023.1000	38.70	3.75	42.45	74.00	31.55	peak
6 *	11793.3000	30.19	14.19	44.38	74.00	29.62	peak

Mode1 / Polarization: Horizontal / CH: M



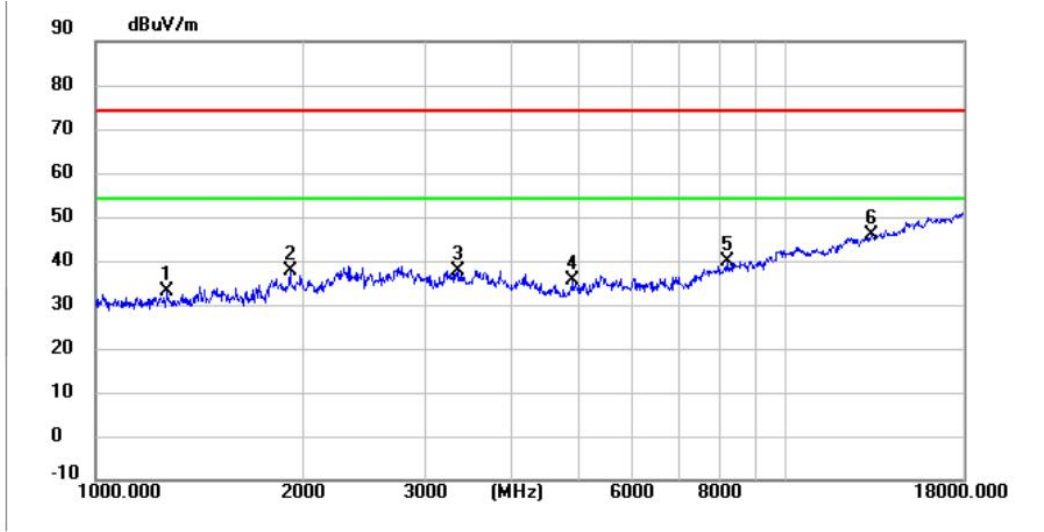
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1504.9000	53.50	-20.72	32.78	74.00	41.22	peak
2	2054.0000	56.73	-18.27	38.46	74.00	35.54	peak
3	2987.3000	49.51	-14.67	34.84	74.00	39.16	peak
4	5182.0000	43.58	-8.05	35.53	74.00	38.47	peak
5	7429.4000	32.74	5.02	37.76	74.00	36.24	peak
6 *	14909.4000	29.44	17.84	47.28	74.00	26.72	peak

Mode1 / Polarization: Vertical / CH: M



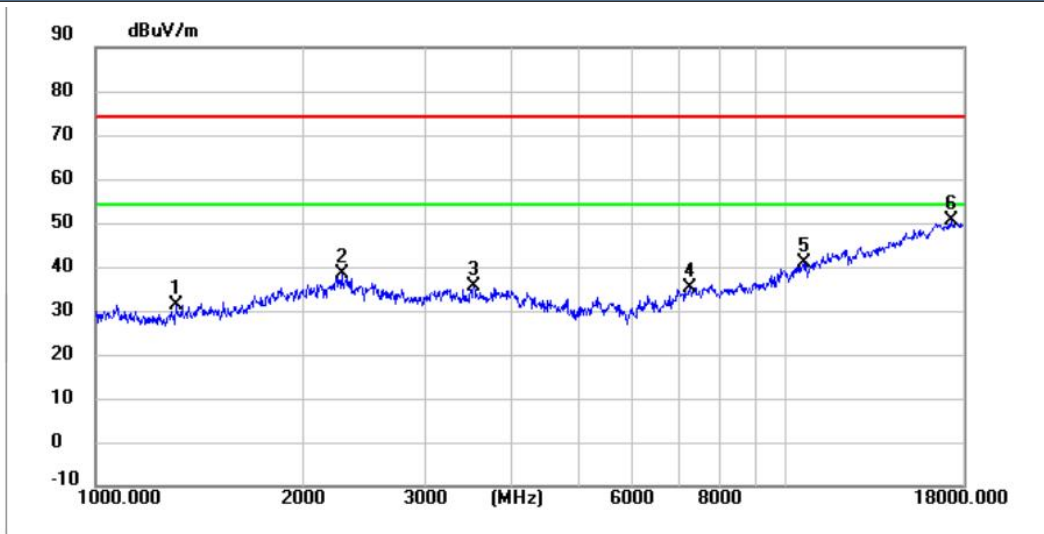
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1380.8000	52.83	-21.15	31.68	74.00	42.32	peak
2	2004.7000	54.75	-18.44	36.31	74.00	37.69	peak
3	3291.6000	50.24	-13.94	36.30	74.00	37.70	peak
4	5226.2000	42.49	-7.93	34.56	74.00	39.44	peak
5	8576.9000	32.70	7.47	40.17	74.00	33.83	peak
6 *	15325.9000	31.83	17.58	49.41	74.00	24.59	peak

Mode1 / Polarization: Horizontal / CH: H



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1272.0000	54.51	-21.33	33.18	74.00	40.82	peak
2	1914.6000	56.72	-19.21	37.51	74.00	36.49	peak
3	3346.0000	51.53	-13.86	37.67	74.00	36.33	peak
4	4908.3000	44.75	-9.31	35.44	74.00	38.56	peak
5	8216.5000	32.91	6.78	39.69	74.00	34.31	peak
6 *	13326.7000	29.10	16.70	45.80	74.00	28.20	peak

Mode1 / Polarization: Vertical / CH: H



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1309.4000	52.48	-21.27	31.21	74.00	42.79	peak
2	2278.4000	55.95	-17.59	38.36	74.00	35.64	peak
3	3534.7000	49.10	-13.63	35.47	74.00	38.53	peak
4	7259.4000	30.67	4.54	35.21	74.00	38.79	peak
5	10593.1000	28.73	12.12	40.85	74.00	33.15	peak
6 *	17314.9000	30.99	19.40	50.39	74.00	23.61	peak

Note:

1>. Level= Reading + Factor (Antenna Factor+ Cable Loss- Preamp Factor)

2>. Margin = Limit – Level

3>. Average measurement was not performed if peak level is lower than average limit (54dBuV/m) above 1GHz.

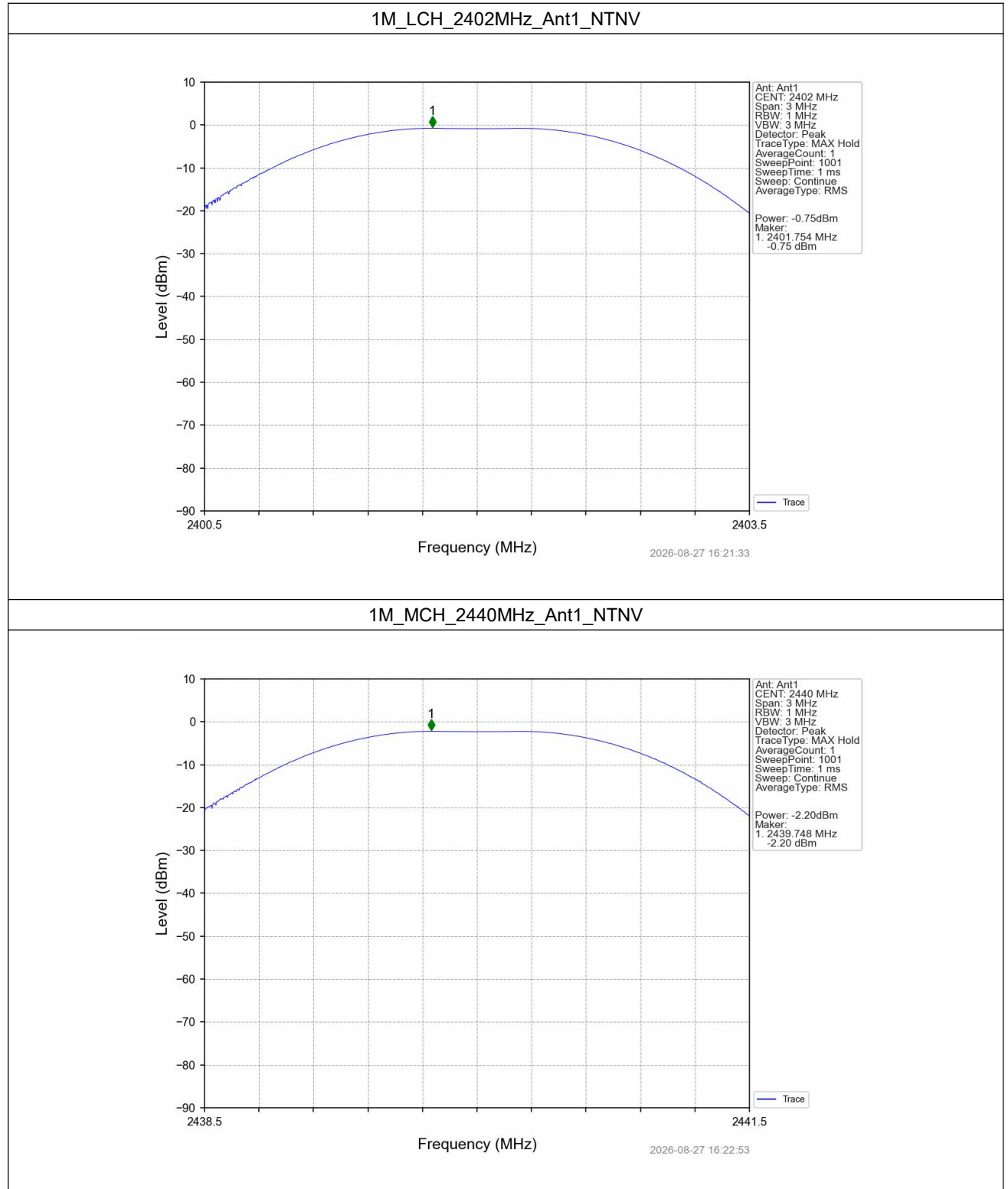
7. APPENDIX REPORT

7.1. Maximum Conducted Output Power

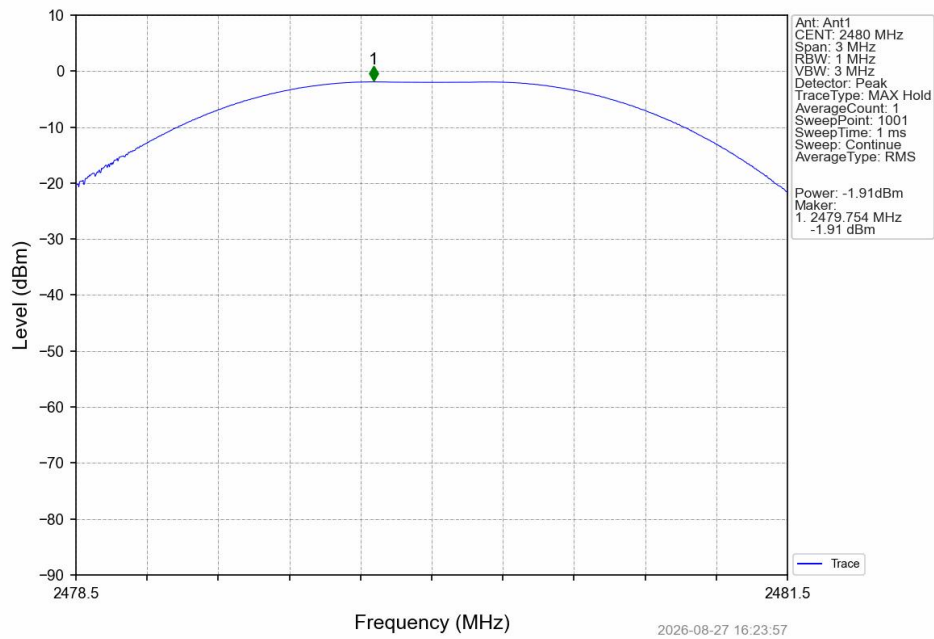
Test Result

Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
1M	SISO	2402	-0.75	<=30	Pass
		2440	-2.20	<=30	Pass
		2480	-1.91	<=30	Pass
2M	SISO	2402	-0.41	<=30	Pass
		2440	-1.87	<=30	Pass
		2480	-1.59	<=30	Pass

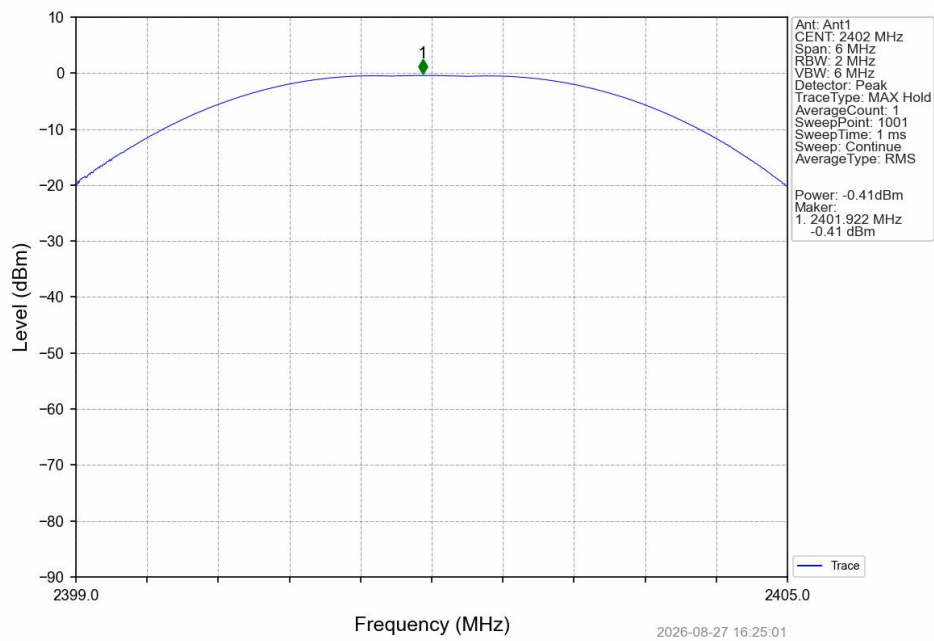
Test Graph



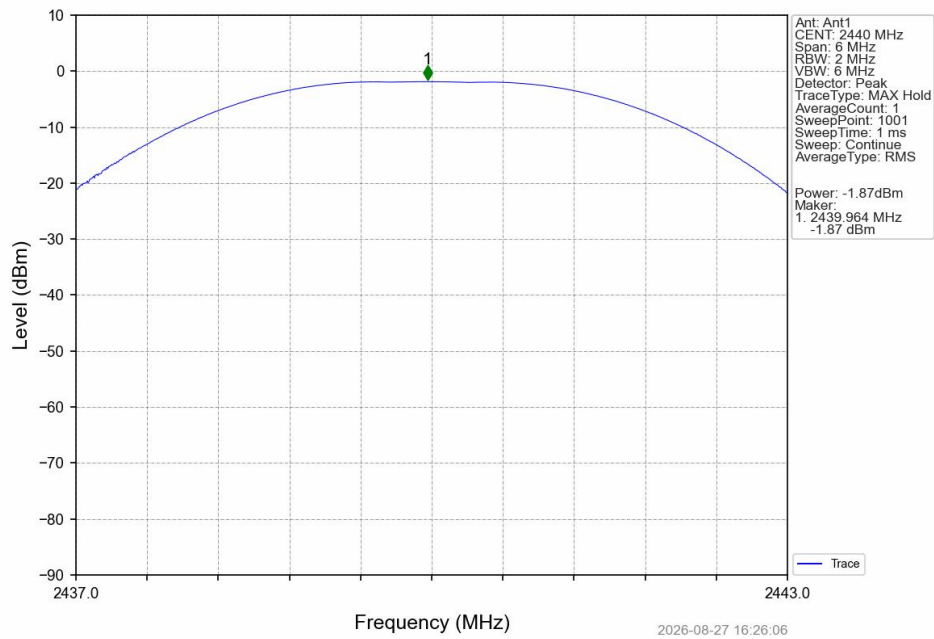
1M_HCH_2480MHz_Ant1_NTNV



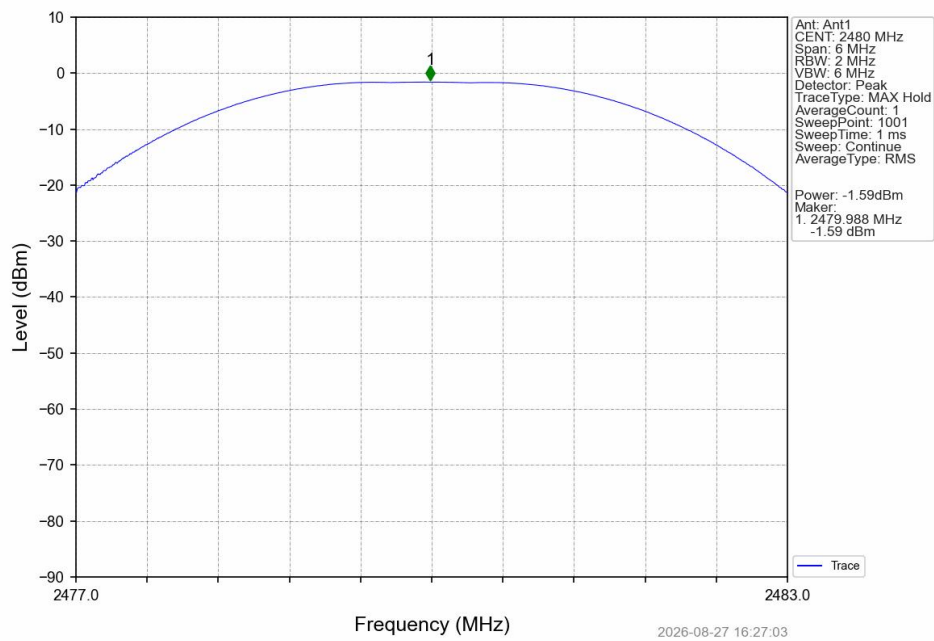
2M_LCH_2402MHz_Ant1_NTNV



2M_MCH_2440MHz_Ant1_NTNV



2M_HCH_2480MHz_Ant1_NTNV

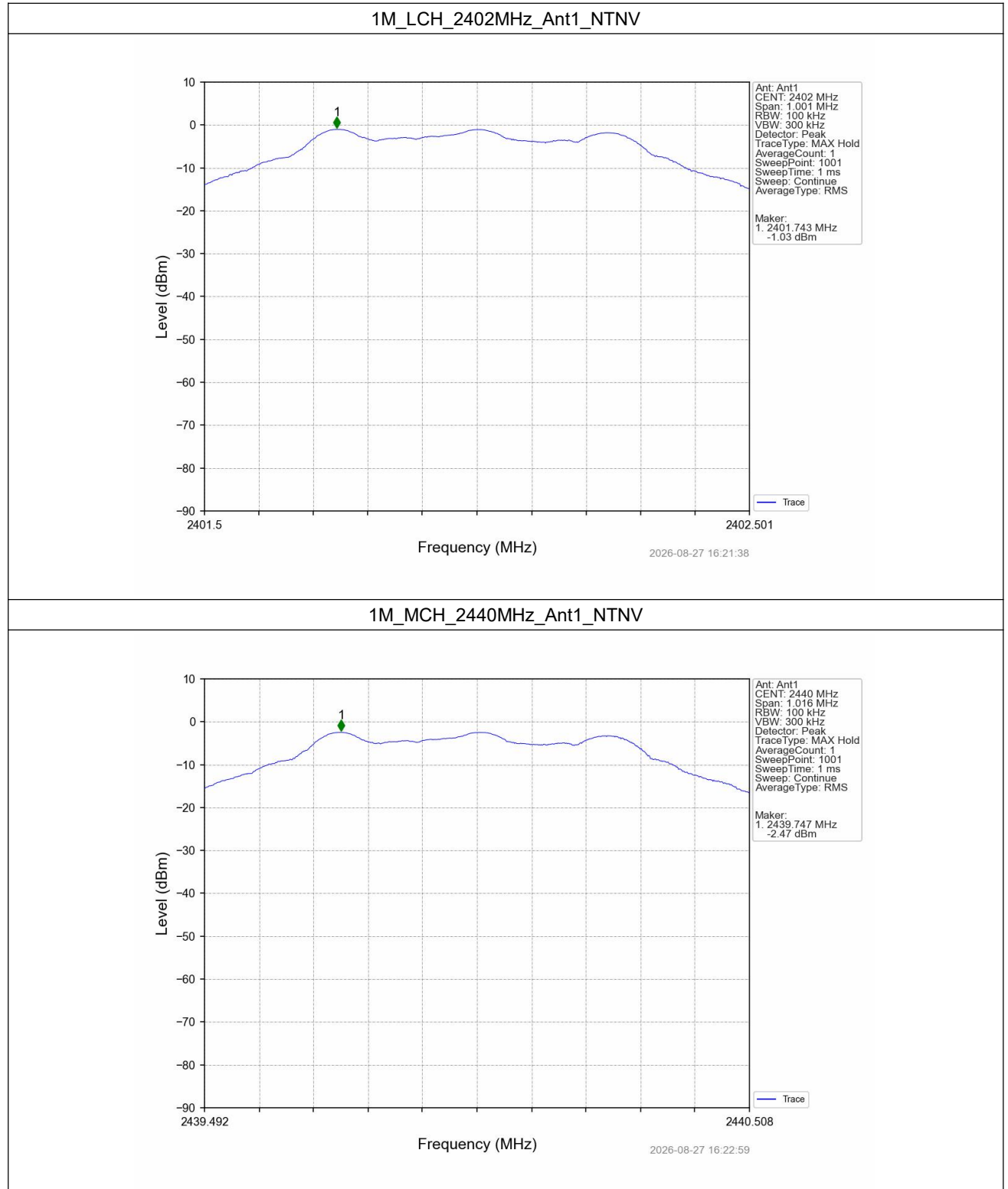


7.2. Maximum Power Spectral Density

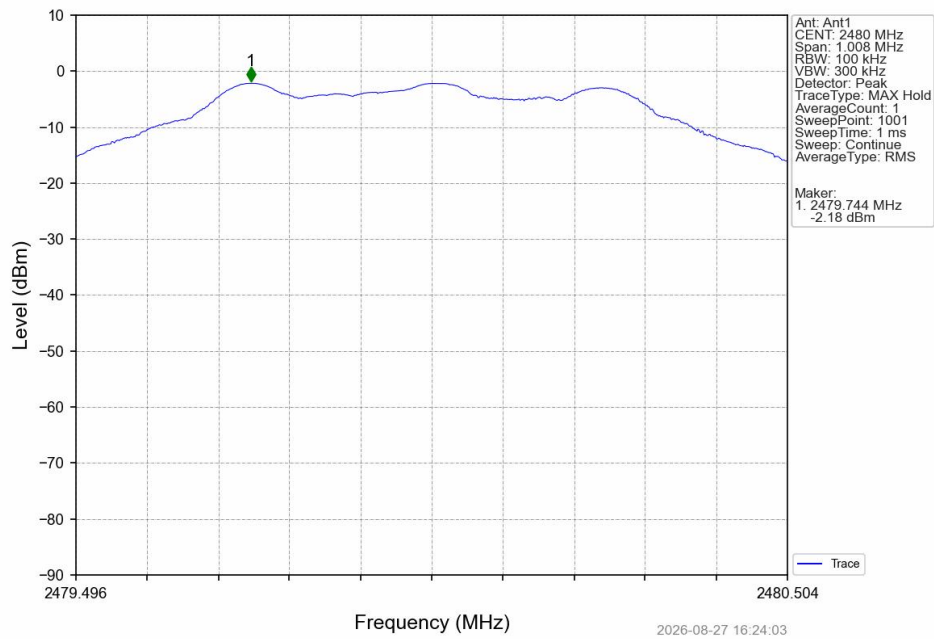
Test Result

Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm)		Verdict
			ANT1	Limit(dBm/3kHz)	
1M	SISO	2402	-1.03dBm/100kHz	<=8	Pass
		2440	-2.47dBm/100kHz	<=8	Pass
		2480	-2.18dBm/100kHz	<=8	Pass
2M	SISO	2402	-0.73dBm/100kHz	<=8	Pass
		2440	-2.16dBm/100kHz	<=8	Pass
		2480	-1.88dBm/100kHz	<=8	Pass

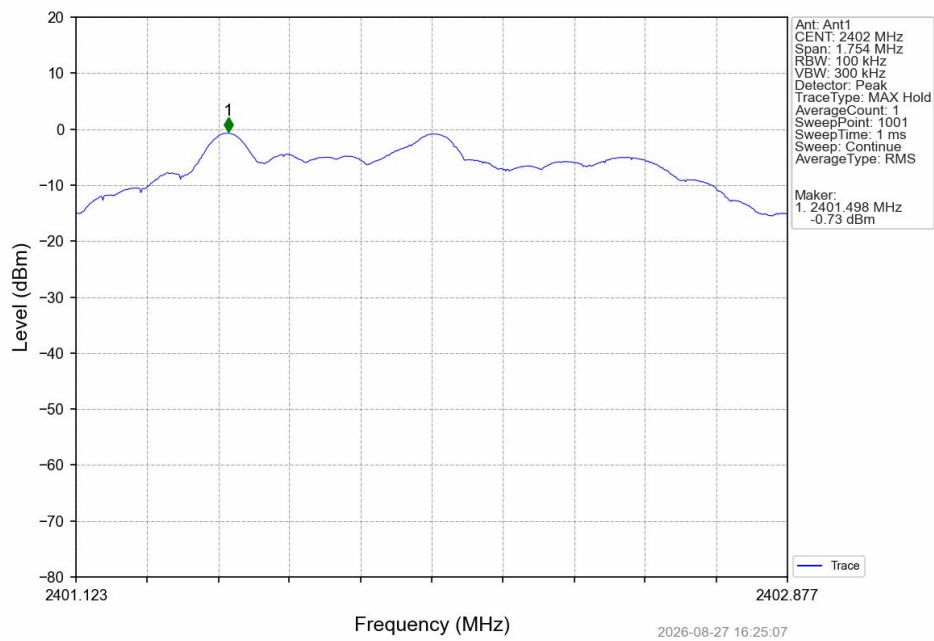
Test Graph



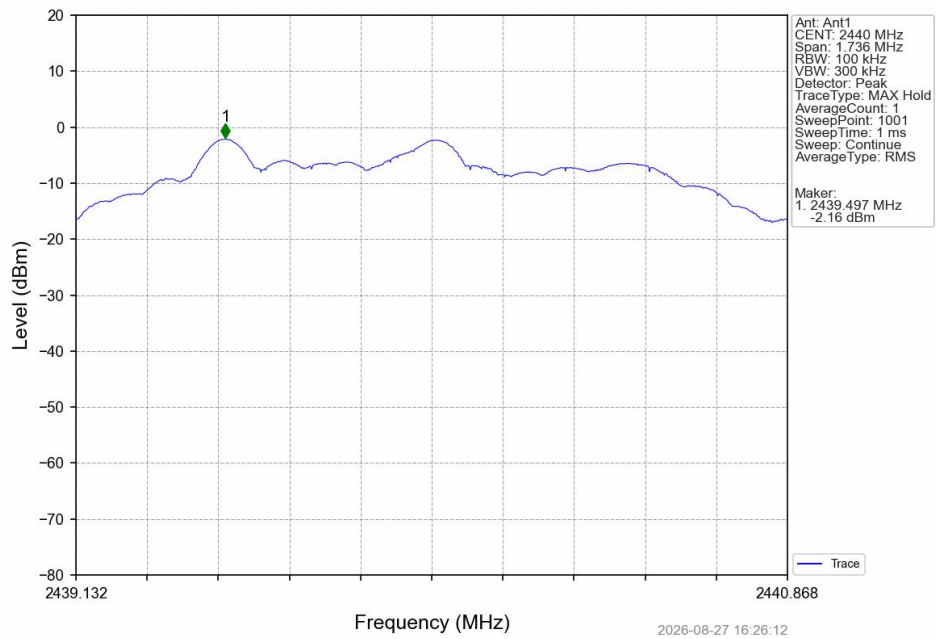
1M_HCH_2480MHz_Ant1_NTNV



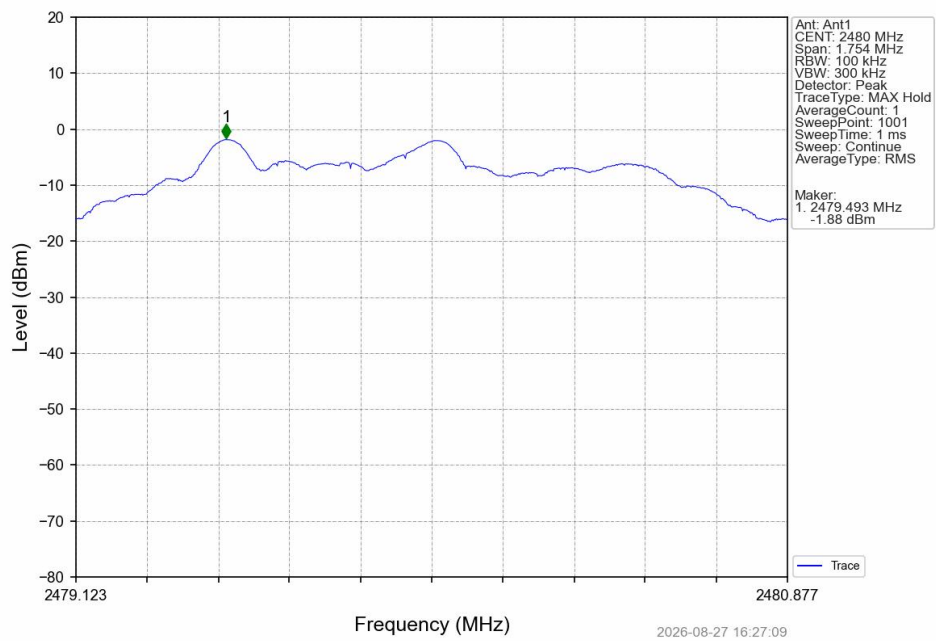
2M_LCH_2402MHz_Ant1_NTNV



2M_MCH_2440MHz_Ant1_NTNV



2M_HCH_2480MHz_Ant1_NTNV

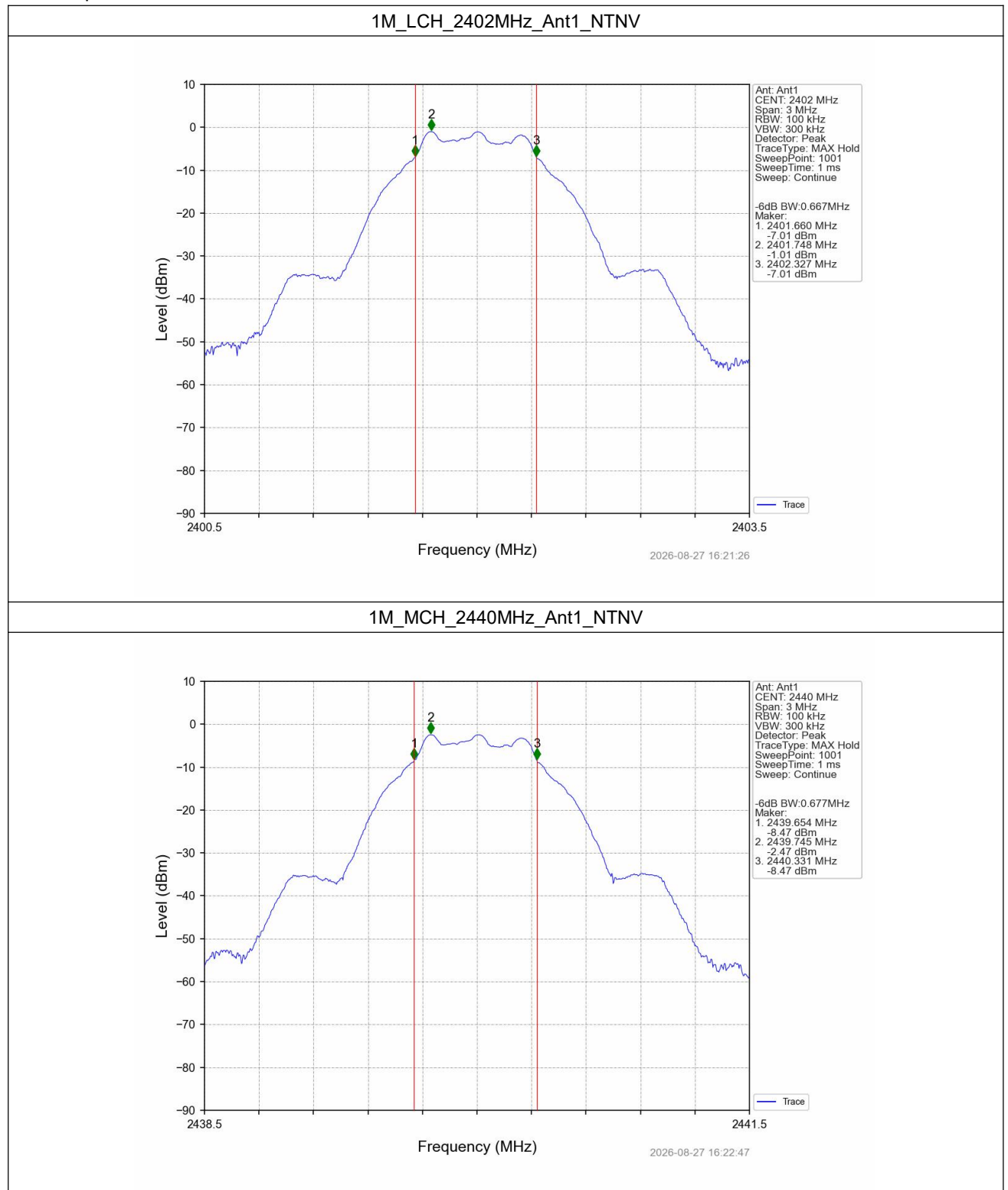


7.3. Bandwidth

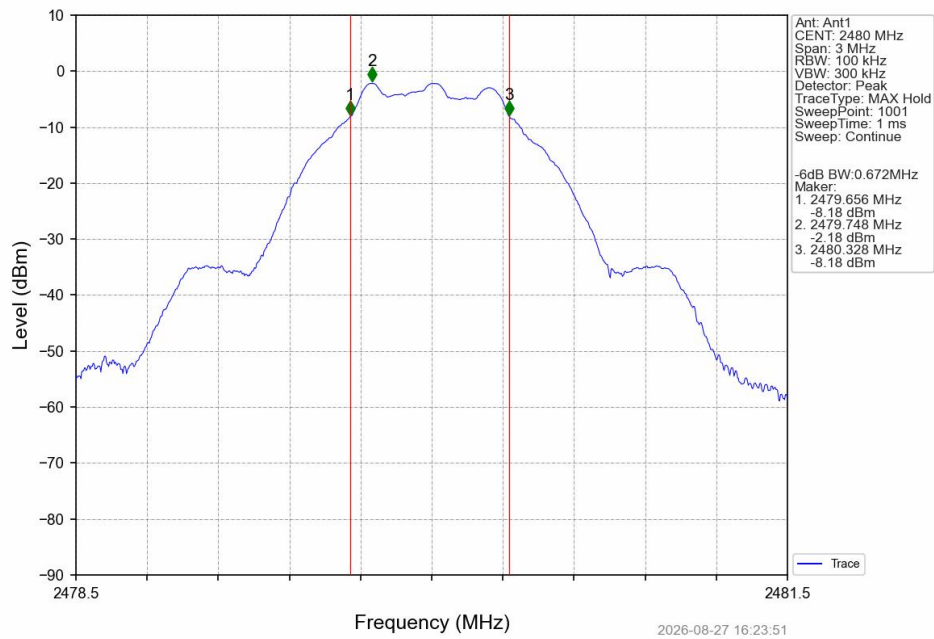
Test Result

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	0.667	≥ 0.5	Pass
		2440	1	0.677	≥ 0.5	Pass
		2480	1	0.672	≥ 0.5	Pass
2M	SISO	2402	1	1.169	≥ 0.5	Pass
		2440	1	1.157	≥ 0.5	Pass
		2480	1	1.169	≥ 0.5	Pass

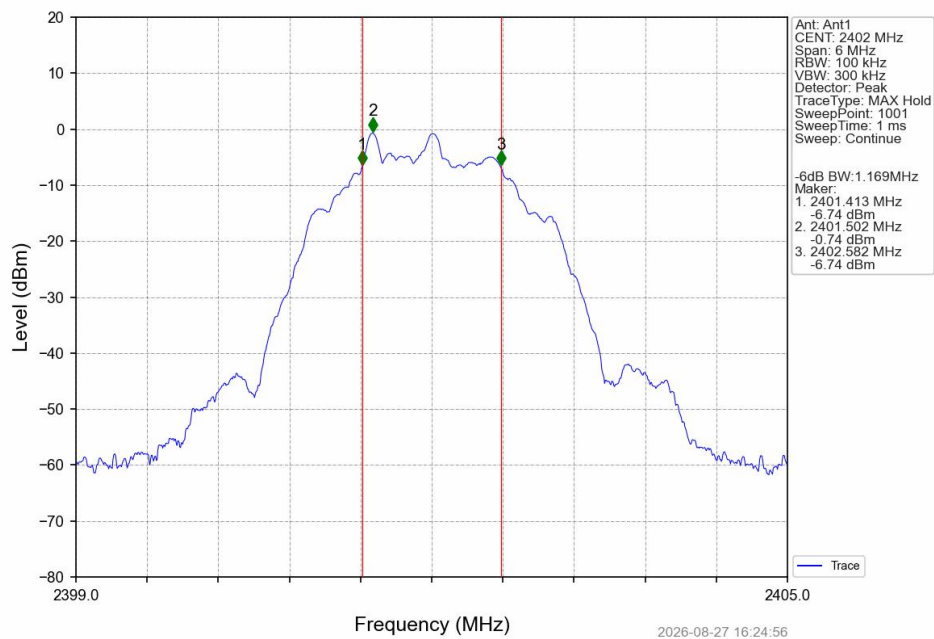
Test Graph



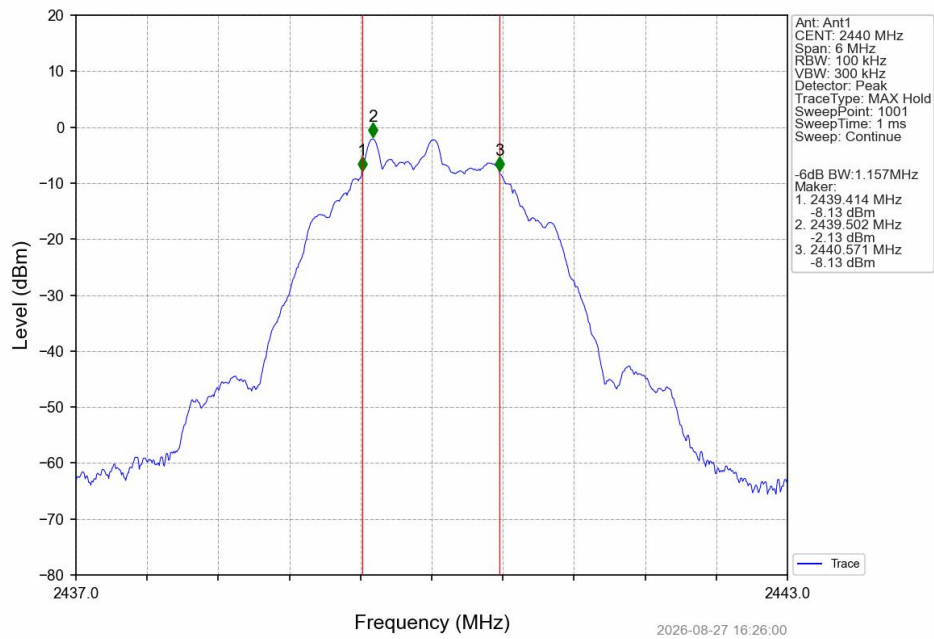
1M_HCH_2480MHz_Ant1_NTNV



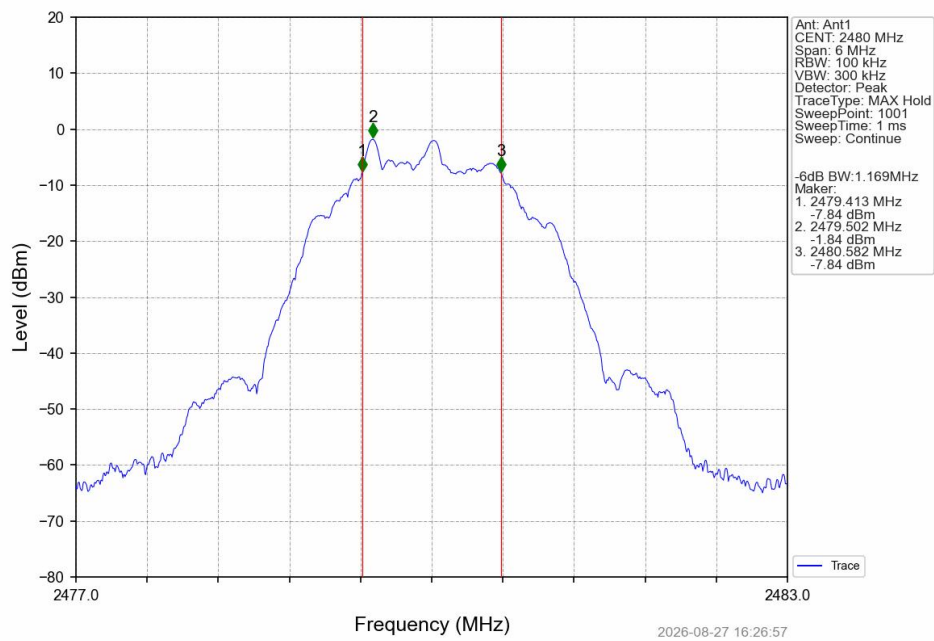
2M_LCH_2402MHz_Ant1_NTNV



2M_MCH_2440MHz_Ant1_NTNV



2M_HCH_2480MHz_Ant1_NTNV

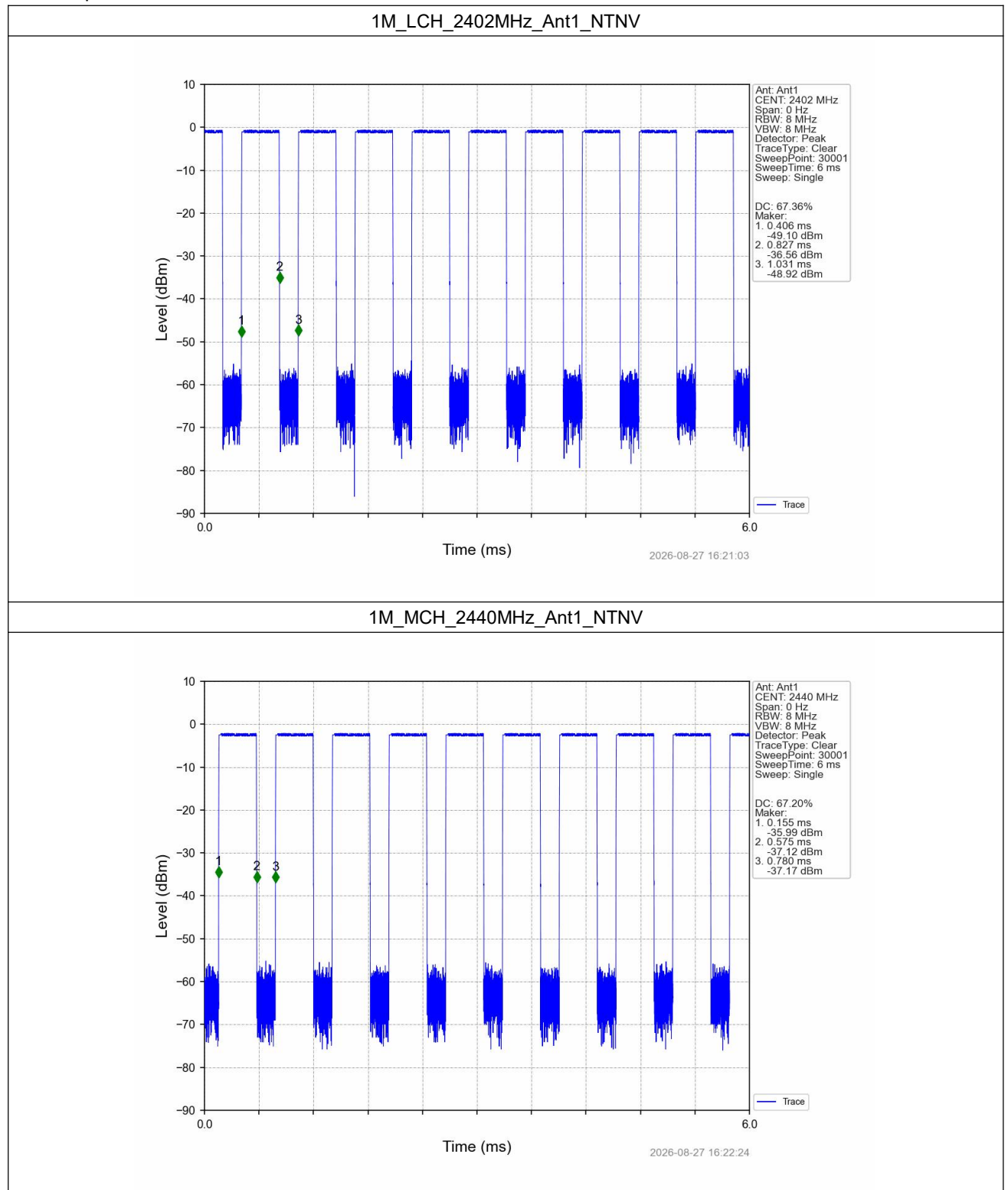


7.4. Duty Cycle

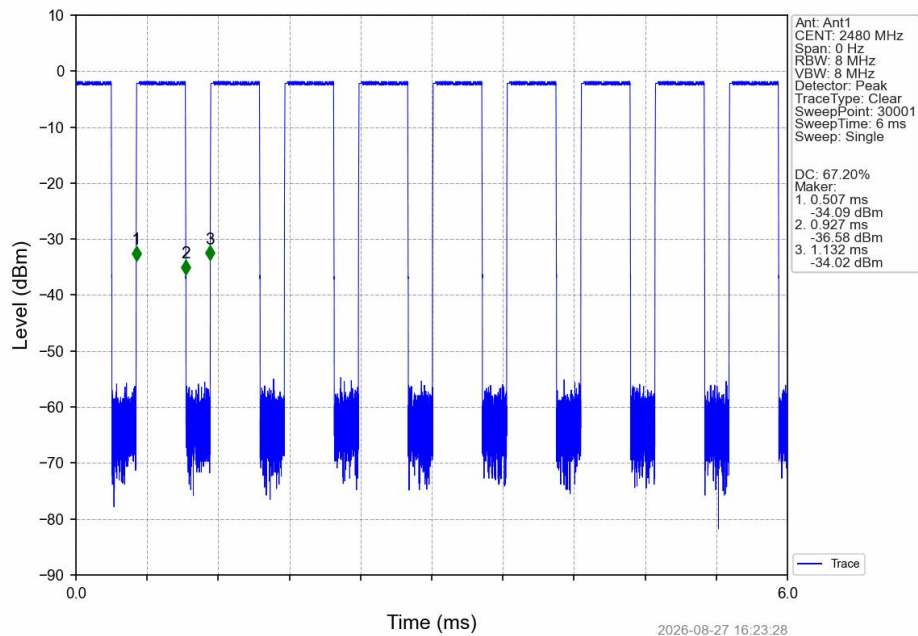
Test Result

Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
1M	SISO	2402	0.421	0.625	67.36	1.72	0.00
		2440	0.420	0.625	67.20	1.73	0.03
		2480	0.420	0.625	67.20	1.73	0.02
2M	SISO	2402	0.232	0.625	37.12	4.30	0.00
		2440	0.232	0.625	37.12	4.30	0.00
		2480	0.232	0.625	37.12	4.30	0.00

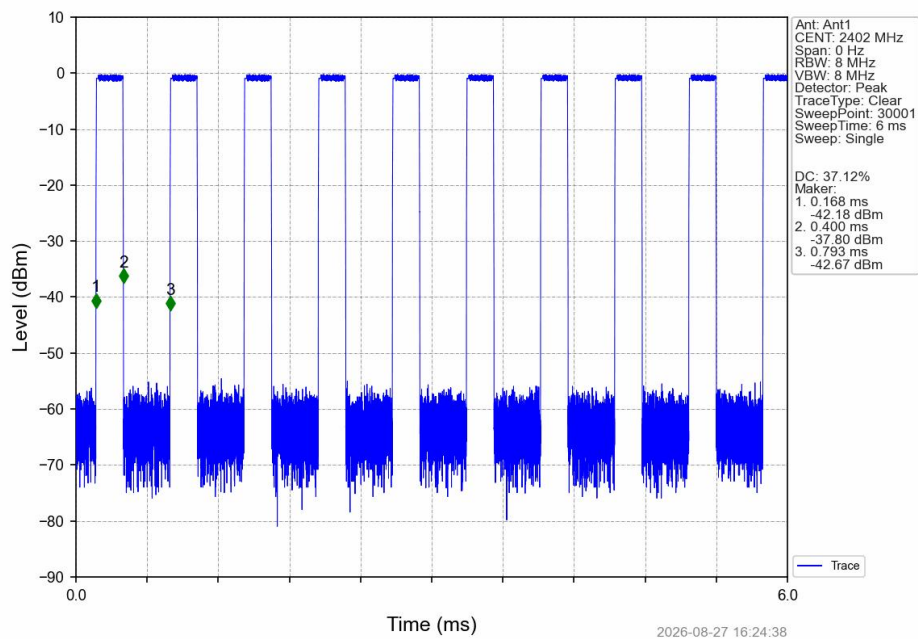
Test Graph



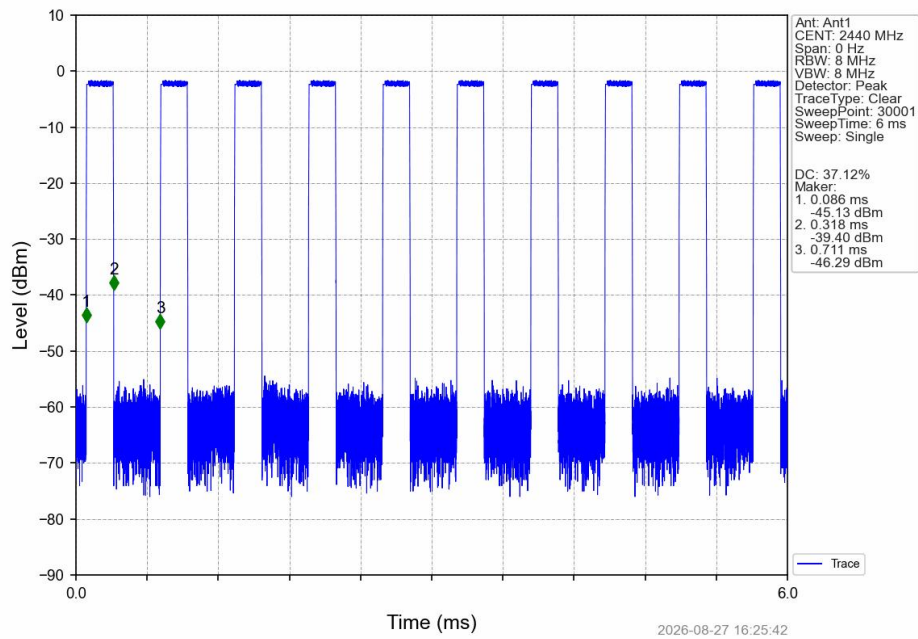
1M_HCH_2480MHz_Ant1_NTNV



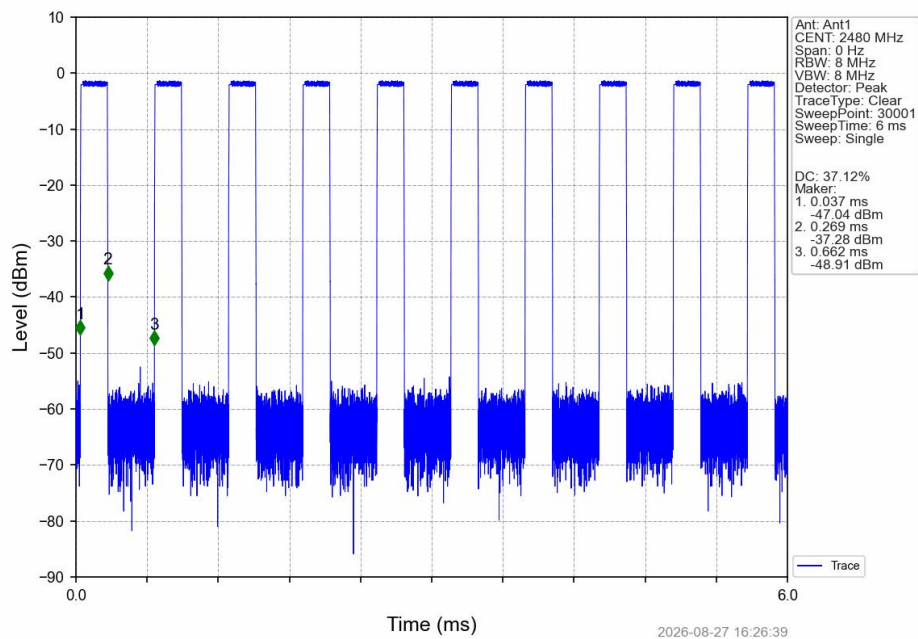
2M_LCH_2402MHz_Ant1_NTNV



2M_MCH_2440MHz_Ant1_NTNV



2M_HCH_2480MHz_Ant1_NTNV



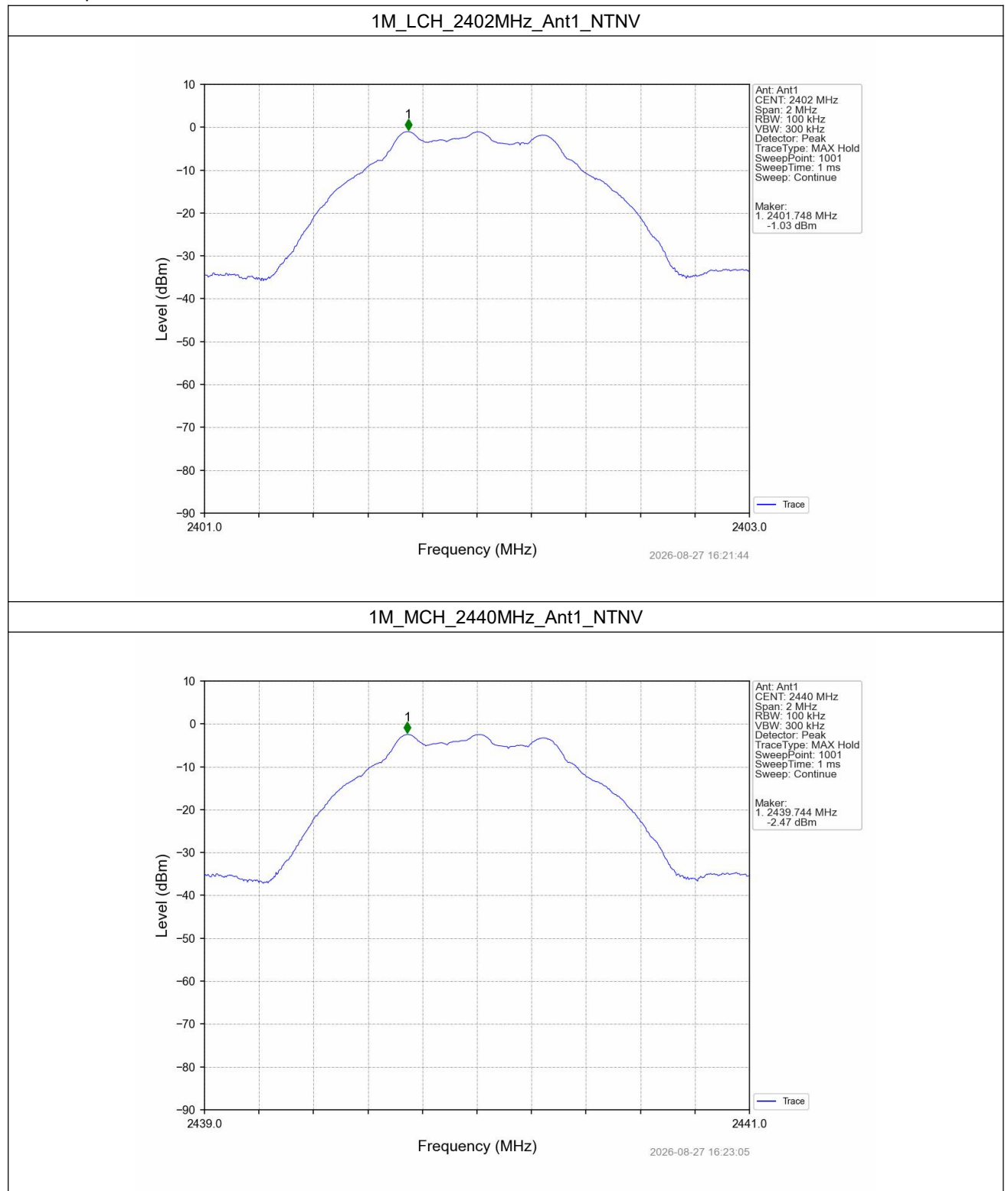
7.5. Conducted Spurious & Band Edge Emission

Test Result

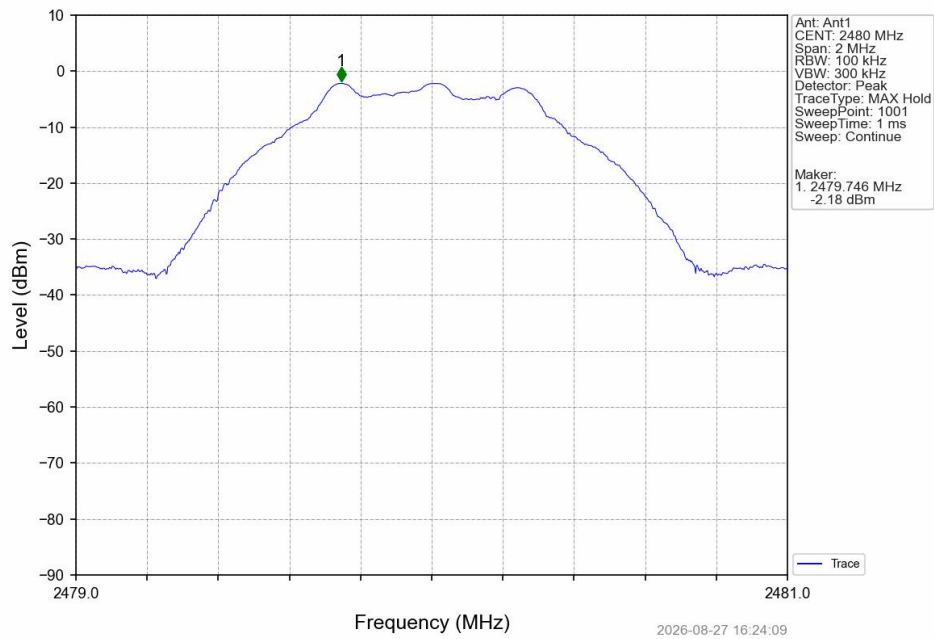
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
1M	SISO	2402	1	-1.03
		2440	1	-2.47
		2480	1	-2.18
2M	SISO	2402	1	-0.73
		2440	1	-2.14
		2480	1	-1.87

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
1M	SISO	2402	1	-1.03	-21.03	Pass
		2440	1	-1.03	-21.03	Pass
		2480	1	-1.03	-21.03	Pass
2M	SISO	2402	1	-0.73	-20.73	Pass
		2440	1	-0.73	-20.73	Pass
		2480	1	-0.73	-20.73	Pass

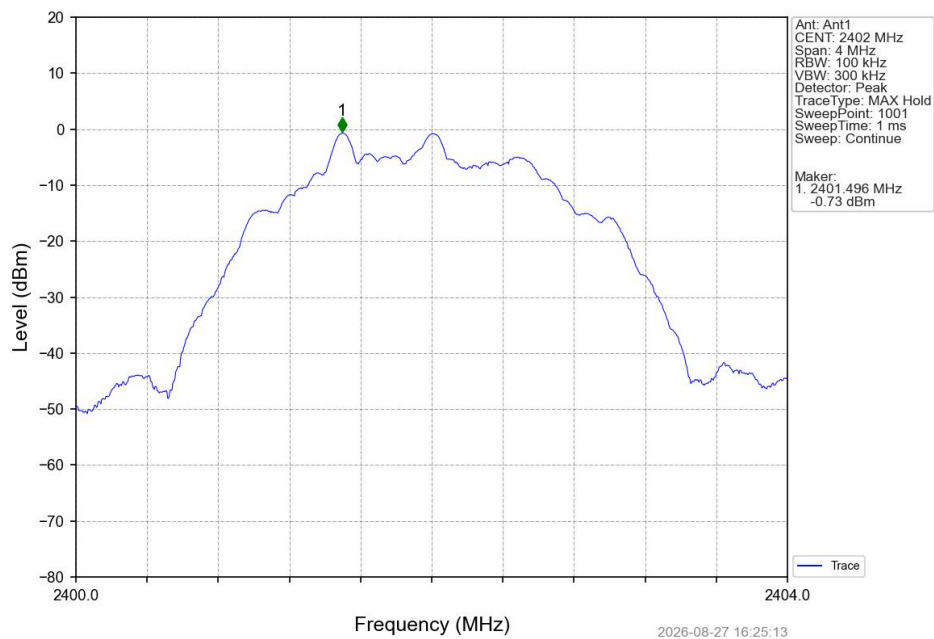
Test Graph



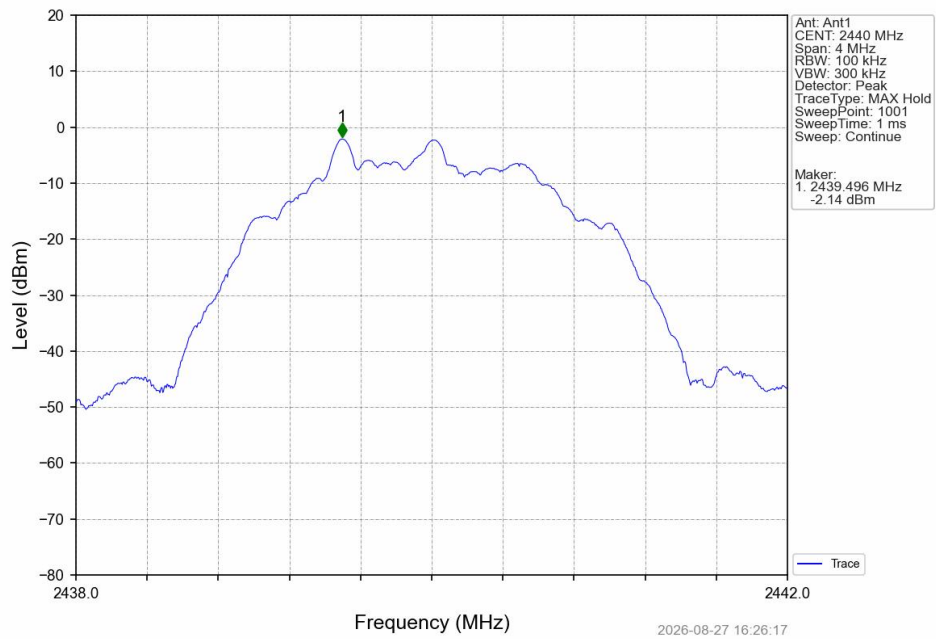
1M_HCH_2480MHz_Ant1_NTNV



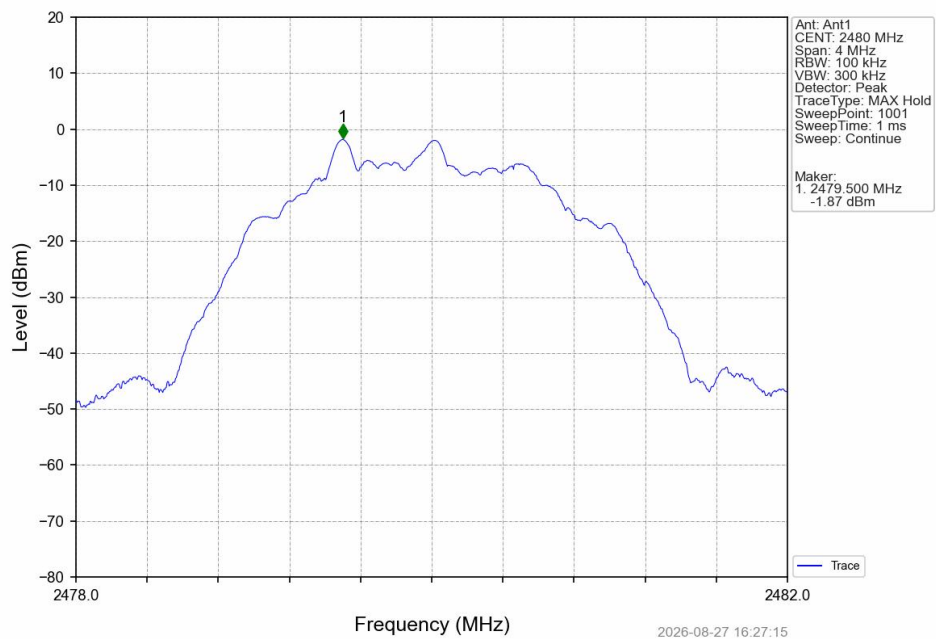
2M_LCH_2402MHz_Ant1_NTNV



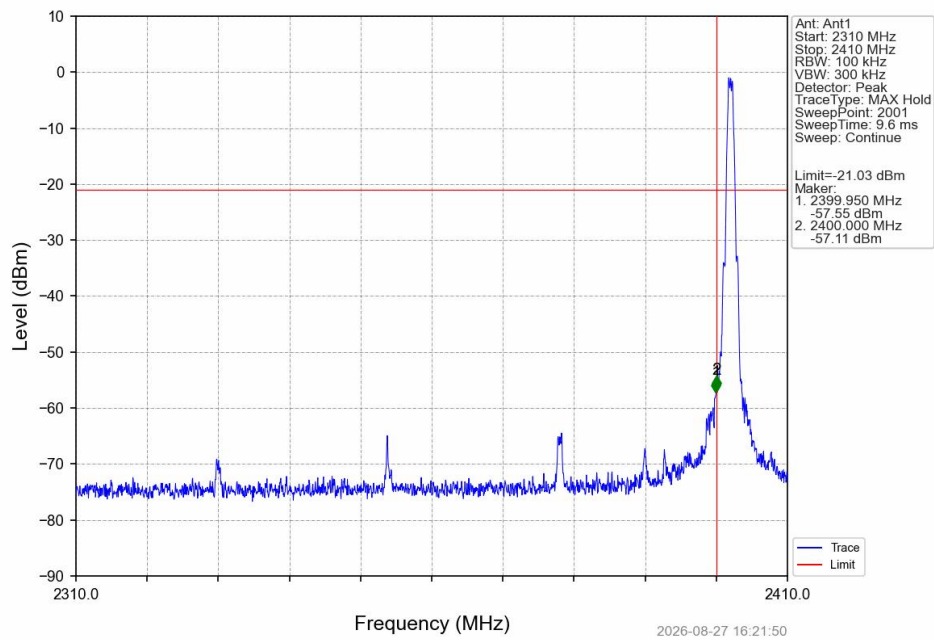
2M_MCH_2440MHz_Ant1_NTNV



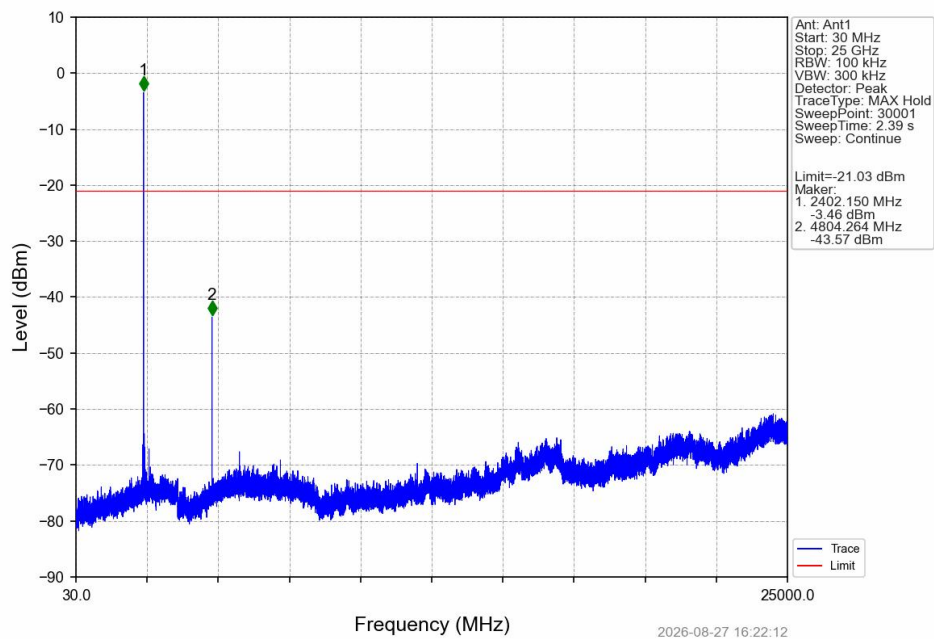
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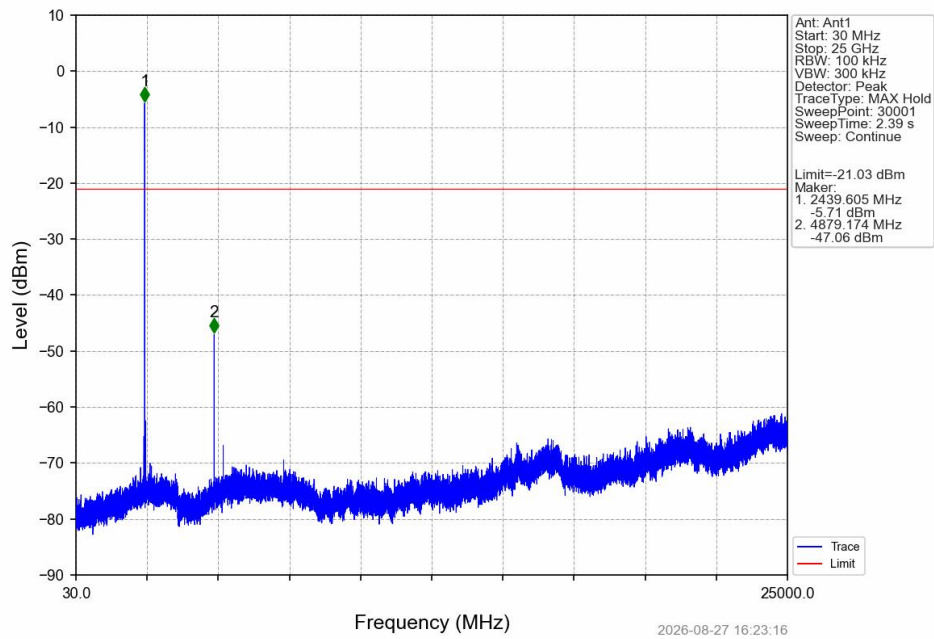
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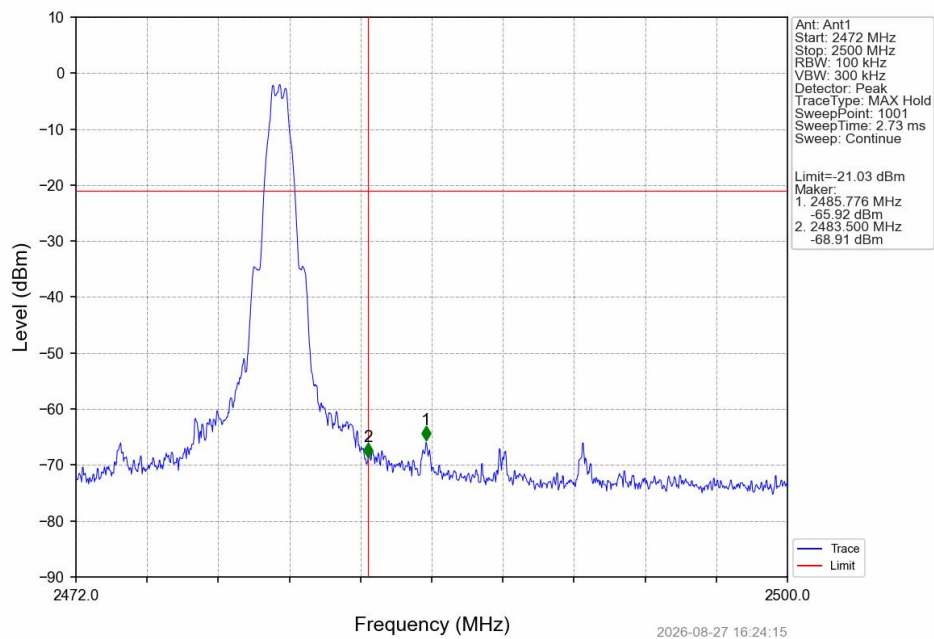
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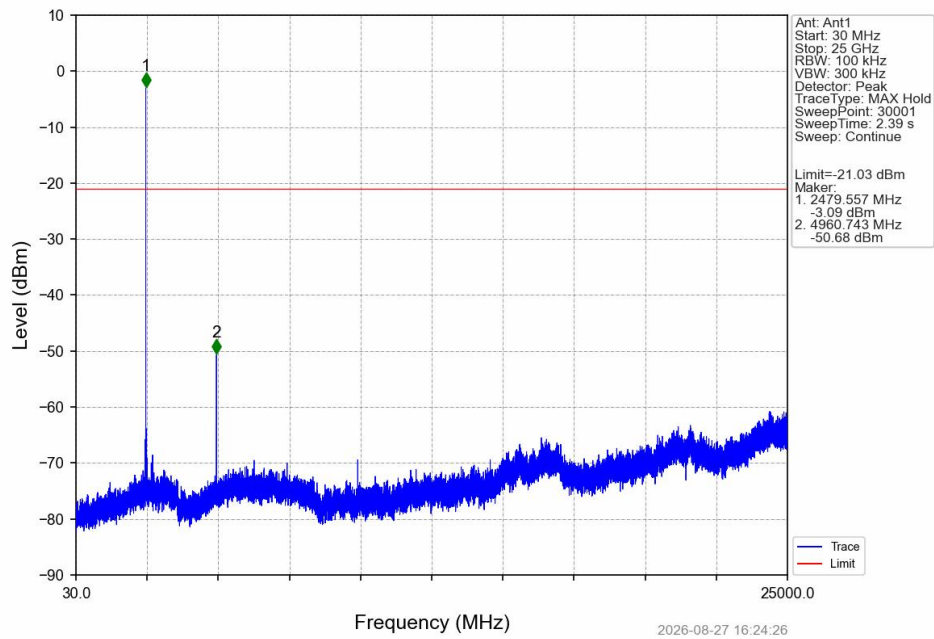
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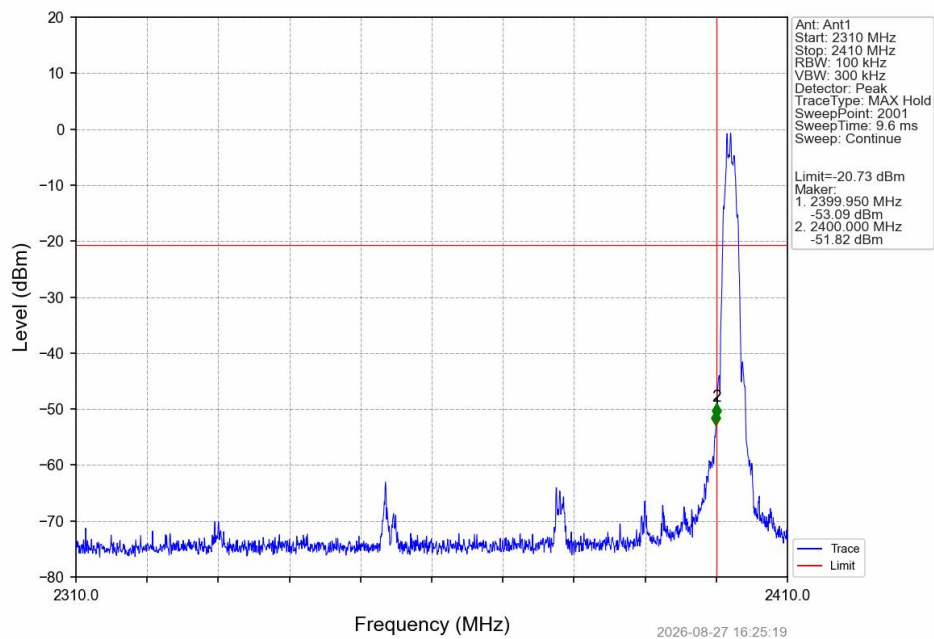
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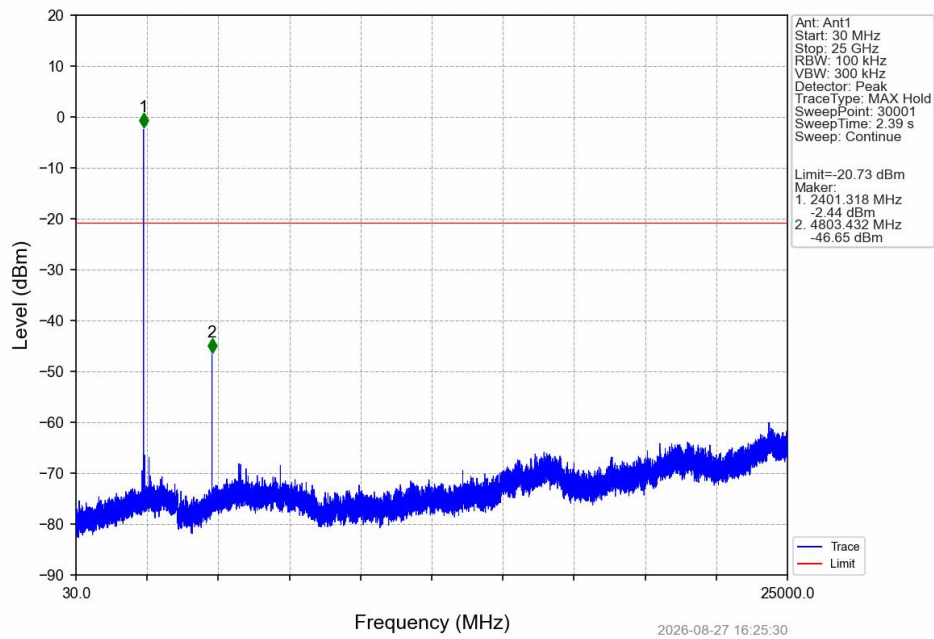
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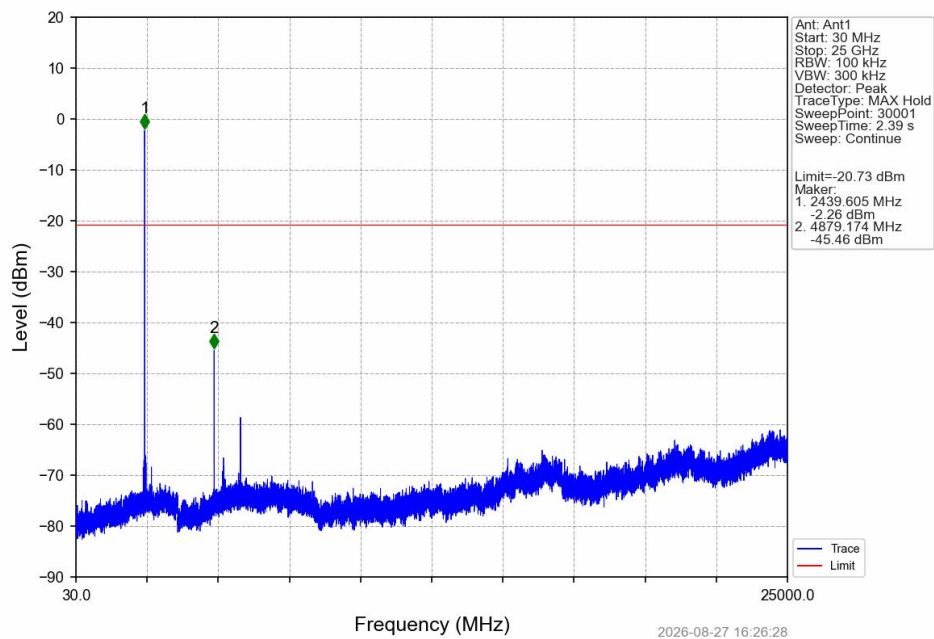
2M_LCH_2402MHz_Ant1_NTNV



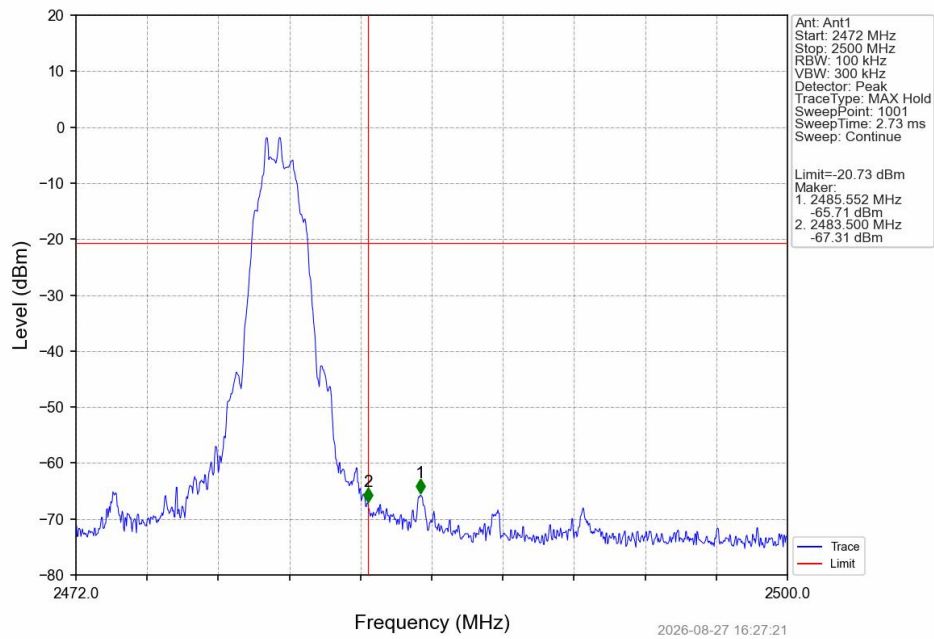
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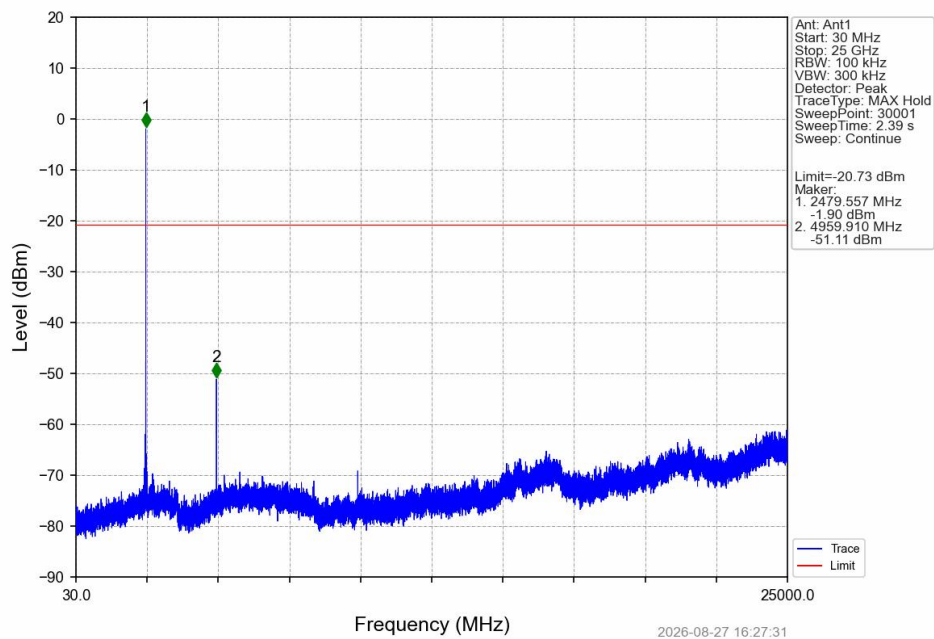
2M_MCH_2440MHz_Ant1_NTNV



2M_HCH_2480MHz_Ant1_NTNV



2M_HCH_2480MHz_Ant1_NTNV



-----End of the report-----