

Radio Test Report

Applicant's name : Hongbaoda Science and Education Culture Co., Ltd., Chenghai Dist., Shantou City

Address : No.9, West Yiheng, Longtian Road, Guangyi Street, Chenghai District, Shantou City, Guangdong Province

Manufacture's Name : Hongbaoda Science and Education Culture Co., Ltd., Chenghai Dist., Shantou City

Address : No.9, West Yiheng, Longtian Road, Guangyi Street, Chenghai District, Shantou City, Guangdong Province

Product description

Trader mark : N/A

Product Name: : Remote control car toy

Model and/or type reference : 88-42

Serial Model : 88-43

Rating(s) : N/A

Standards : 47 CFR Part 15.247

FCC ID : 2BQZP-8842

The EUT described above has been tested by us with the listed standards and found in compliance with the FCC requirements. It is possible to use FCC marking to demonstrate the compliance with this FCC requirements.

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Date of Test

Date (s) of performance of tests : 2026-09-07 ~ 2026-09-21

Date of Issue : 2026-09-21

Test Result : **Pass**

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Approved by:

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Technical Director



REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	2026-09-21	Valid	Initial Release



Contents

Contents	3
1. TEST SUMMARY	5
2. MEASUREMENT UNCERTAINTY	5
3. TEST FACILITY	6
3.1. Deviation from Standard	6
3.2. Abnormalities from Standard Conditions	6
4. GENERAL INFORMATION	7
4.1. General Description of EUT	7
4.2. EUT Test Mode	8
4.3. Auxiliary Equipment Used During Test	8
5. EQUIPMENTS LIST FOR ALL TEST ITEMS	10
6. TEST RESULTS	12
6.1. Antenna requirement	12
6.1.1. Conclusion:	12
6.2. 6dB Bandwidth	13
6.2.1. EUT Operation	13
6.2.2. Test Setup Diagram:	14
6.2.3. Test Data	14
6.3. Maximum Conducted Output Power	15
6.3.1. EUT Operation	15
6.3.2. Test Setup Diagram:	16
6.3.3. Test Data	16
6.4. Power Spectral Density	17
6.4.1. EUT Operation	17
6.4.2. Test Setup Diagram:	17
6.4.3. Test Data	17
6.5. Emissions in non-restricted frequency bands	18
6.5.1. EUT Operation	18
6.5.2. Test Setup Diagram:	19
6.5.3. Test Data	19
6.6. Band edge emissions (Radiated)	20
6.6.1. EUT Operation	20
6.6.2. Test Setup Diagram:	21
6.6.3. Test Data	22
6.7. Emissions in frequency bands (below 1GHz)	26
6.7.1. EUT Operation	26
6.7.2. Test Setup Diagram:	26
6.7.3. Test Data	28
6.8. Emissions in frequency bands (above 1GHz)	30
6.8.1. EUT Operation	30
6.8.2. Test Setup Diagram:	31
6.8.3. Test Data	32
7. TEST SETUP PHOTOS	44

8. Appendix Report	46
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1. TEST SUMMARY

No.	Test Item	Basic Standard	Requirement	Result
1	Antenna requirement	47 CFR Part 15.247	47 CFR 15.203	PASS
2	6dB Bandwidth	47 CFR Part 15.247	47 CFR 15.247(a)(2)	PASS
3	Maximum Conducted Output Power	47 CFR Part 15.247	47 CFR 15.247(b)(3)	PASS
4	Power Spectral Density	47 CFR Part 15.247	47 CFR 15.247(e)	PASS
5	Emissions in non-restricted frequency bands	47 CFR Part 15.247	47 CFR 15.247(d)	PASS
6	Band edge emissions (Radiated)	47 CFR Part 15.247	47 CFR 15.247(d), 15.209, 15.205	PASS
7	Emissions in frequency bands (below 1GHz)	47 CFR Part 15.247	47 CFR 15.247(d), 15.209, 15.205	PASS
8	Emissions in frequency bands (above 1GHz)	47 CFR Part 15.247	47 CFR 15.247(d), 15.209, 15.205	PASS

2. MEASUREMENT UNCERTAINTY

The report uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty Multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

No.	Item	Uncertainty
1	Occupied Channel Bandwidth	$\pm 3.5\%$
2	RF output power, conducted	$\pm 1.19\text{dB}$
3	Power Spectral Density, Conducted	$\pm 0.72\text{dB}$
4	Unwanted Emissions, conducted	$\pm 2.988\text{dB}$
5	All emissions, radiated (1GHz - 18GHz)	$\pm 4.66\text{dB}$
6	All emissions, radiated (30MHz - 1GHz)	$\pm 3.94\text{dB}$
7	All emissions, radiated (18GHz - 40GHz)	$\pm 4.31\text{dB}$
8	All emissions, radiated below 1GHz	$\pm 2.54\text{dB}$

3. TEST FACILITY

Shenzhen VOP Testing Technology Co., Ltd.

Add:103, Building 5, Wanyan Industrial Park Qiaotou Community, Fuhai Street, Baoan District Shenzhen,
Guangdong People's Republic of China

FCC :Designation Number:CN1438

Certificate Number: 7579.01

3.1. Deviation from Standard

None

3.2. Abnormalities from Standard Conditions

None



4. GENERAL INFORMATION

4.1. General Description of EUT

Manufacturer:	Hongbaoda Science and Education Culture Co., Ltd.,Chenghai Dist.,Shantou City
Manufacturer Address:	No.9, West Yiheng, Longtian Road, Guangyi Street,ChenghaiDistrict, Shantou City, Guangdong Province
EUT Name:	Remote control car toy
Model No:	88-42
Serial Model:	88-43
Brand Name:	N/A
Difference Description:	The internal principle and structure are the same, and the only difference in appearance is the color
Operation Frequency:	2410MHz-2475MHz
Data rate:	1Mbps
Number of channels:	66
Modulation Type:	GFSK
Antenna type:	Unipolar antenna
Antenna Gain:	0.52dBi
Bluetooth Version:	N/A
Hardware Version:	N/A
Software Version:	N/A
Power Supply:	N/A
Maximum Output Power:	-5.20dBm

Note:

- 1.For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- 2.The antenna information refer the manufacturer provide report, applicable only to the tested sample identified in the report. Due to the incorrect antenna information, a series of problems such as the accuracy of the test results will be borne by the customer.

3.Channel List

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2410	34	2445
2	2411	35	2446
3	2412	36	2447
4	2413	37	2448
5	2414	38	2449

6	2415	39	2450
7	2416	40	2451
8	2417	41	2452
9	2418	42	2453
10	2419	43	2454
11	2420	44	2455
12	2421	45	2456
13	2422	46	2457
14	2423	47	2458
15	2424	48	2459
16	2425	49	2460
17	2426	50	2461
18	2427	51	2462
19	2428	52	2463
20	2429	53	2464
21	2430	54	2465
22	2431	55	2466
23	2432	56	2467
24	2433	57	2468
25	2434	58	2445
26	2435	59	2446
27	2436	60	2469
28	2437	61	2470
29	2438	62	2471
30	2439	63	2472
31	2440	64	2473
32	2441	65	2474
33	2442	66	2475

4.2. EUT Test Mode

TM1	TX mode
Test software Version	Test program: N/A
Frequency	2410MHz,2441MHz,2475MHz
Power Setting of Software	0
Note:All above mode have been measurement, only worst data was reported.	

4.3. Auxiliary Equipment Used During Test

No.	Equipment	Manufacturer	Model No.	Serial No.	Remark
1	HP laptop	HP	DESKTOP-G3NDKR3	5CD5180Z FV	N/A
2	USB docking station	UGREEN	04071528	N/A	N/A

3	USB Debug Cable	UGREEN	CM473	N/A	N/A
4	Debugging board	CP2102	CP2102	N/A	N/A
5	RF cable	VOP-11	VOP-11	N/A	N/A

Note:Note: Auxiliary equipment listed above is only used for EUT powering, setup and debugging. They are not measurement- critical equipment and have no impact on test data. Serial number is N/A as calibration is not applicable.



5. EQUIPMENTS LIST FOR ALL TEST ITEMS

Power Spectral Density Emissions in non-restricted frequency bands 6dB Bandwidth Maximum Conducted Output Power						
No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date
1	spectrum analyzer	Agilent	N9020A	MY51287427	2026-06-25	2028-06-24
2	RF automatic control unit	TST	CBOX-Full	2752539	2026-06-25	2028-06-24
3	signal line	/	26.5GHz	479271	2026-06-24	2027-06-23
4	signal line	/	26.5GHz	479272	2026-06-24	2027-06-23
5	signal line	/	26.5GHz	479273	2026-06-24	2027-06-23
6	signal line	/	26.5GHz	479274	2026-06-24	2027-06-23

Band edge emissions (Radiated) Emissions in frequency bands (above 1GHz)						
No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date
1	preamplifier	QUANJUDA	LNA18	2503130032	2026-07-07	2027-07-06
2	High frequency antenna	Schwarzbeck	9120D-1141	03260	2025-10-19	2026-10-18
3	High-frequency horn antenna	Schwarzbeck	HA-018040L	25098408	2025-10-31	2026-10-30
4	preamplifier	HCT	HC180400-50G25	25098401	2026-09-19	2027-09-18
5	spectrum analyzer	R&S	FSV40	101373	2025-12-24	2026-12-23
6	High-frequency signal line	SIYI	10MHz-40GHz	/	2026-06-24	2027-06-23
7	High-frequency signal line	/	U6-NMNM-900D	04/05	2026-06-24	2027-06-23
8	High-frequency signal line	/	ST18	/	2026-06-24	2027-06-23

Emissions in frequency bands (below 1GHz)						
No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date
1	EMI test receiver ESCI	R&S	ESPI-7	100754	2026-03-17	2028-03-16
2	Log periodic antenna	SCHWARZBECK	VULB9163	01790	2025-10-24	2026-10-23
3	preamplifier	SCHWARZBECK	8447D	2944A08081	2026-03-17	2028-03-16
4	Loop antenna	COM-POWER	FMZB 1519-60 C	00170	2026-03-17	2028-03-16
5	signal line	/	RG142-7m	#5	2026-06-24	2027-06-23
6	signal line	/	104PEA	MY7237APE AA	2026-03-17	2028-03-16



6. TEST RESULTS

6.1. 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.
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6.1.1. Conclusion:

The EUT antenna is Unipolar antenna. It conforms to the standard requirements.
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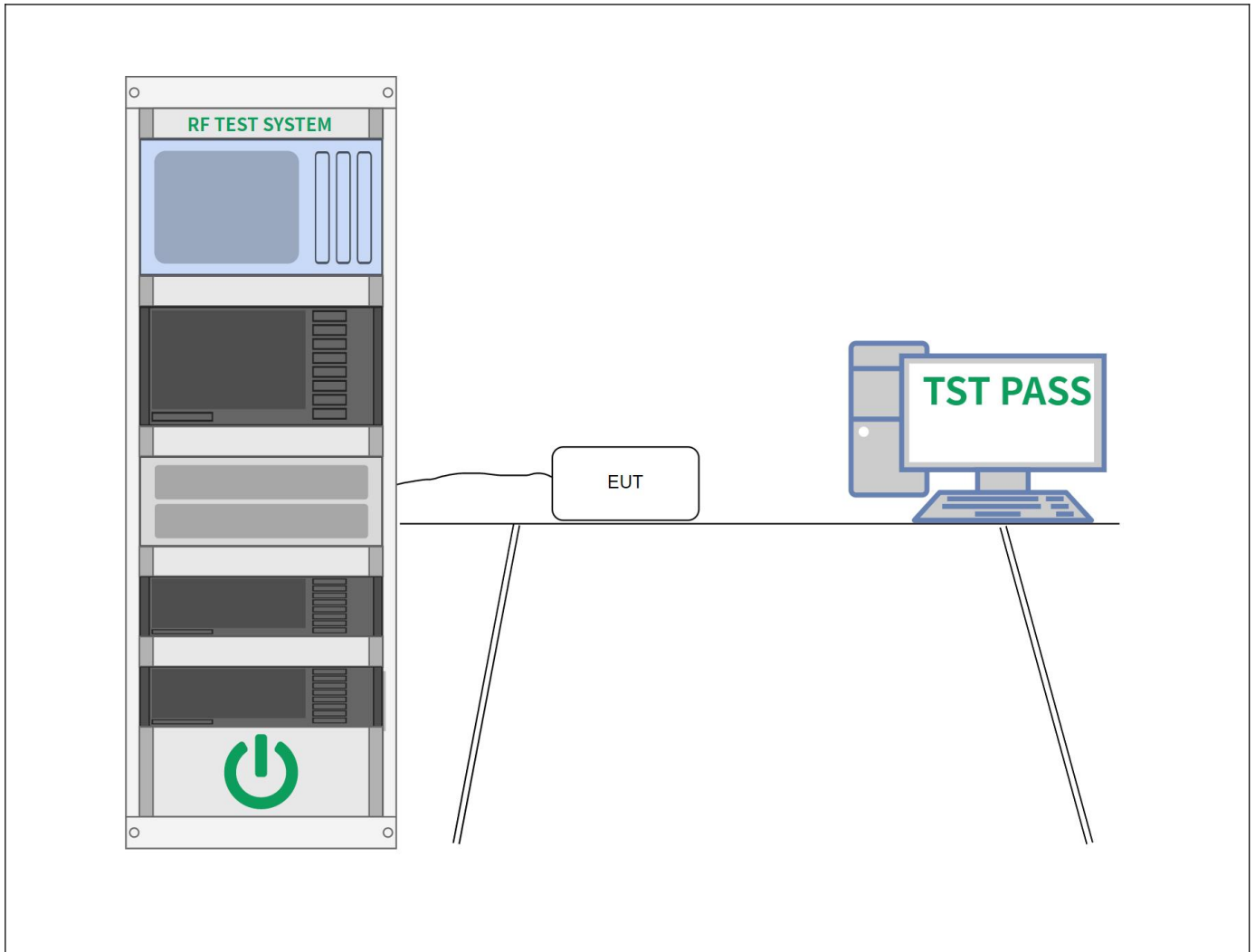
6.2. 6dB Bandwidth

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 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024, section 11.8
Procedure:	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. 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.

6.2.1. EUT Operation

Operating Environment:					
Temperature:	26 °C	Humidity:	54 %	Atmospheric Pressure:	101.1 kPa
Pre test mode:	TM1				
Final test mode:	TM1				

6.2.2. Test Setup Diagram:



6.2.3. Test Data

Please Refer to Appendix for Details.

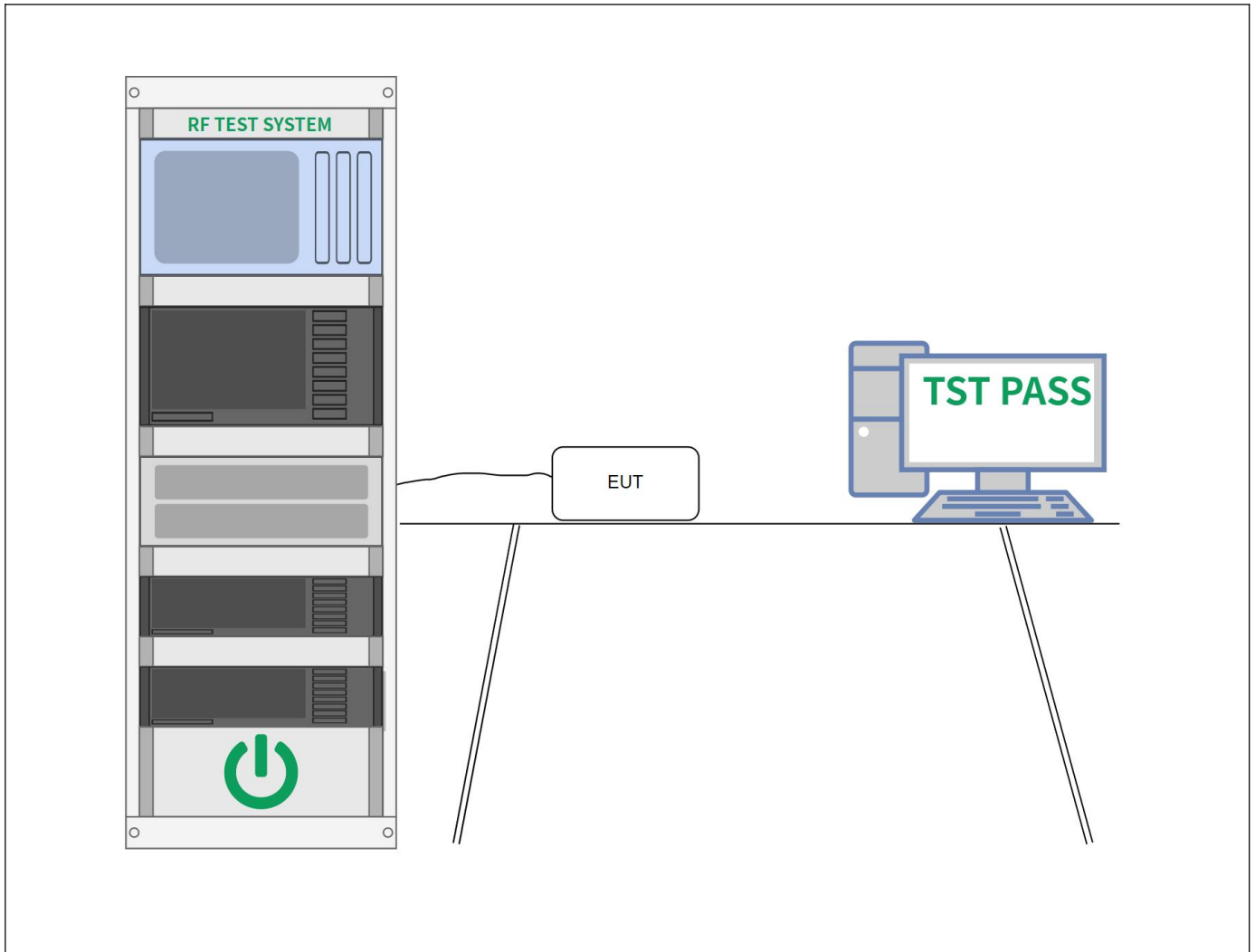
6.3. Maximum Conducted Output Power

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 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 11.9.1
Procedure:	ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024, section 11.9.1 Maximum peak conducted output power

6.3.1. EUT Operation

Operating Environment:					
Temperature:	26 °C	Humidity:	54 %	Atmospheric Pressure:	101.1 kPa
Pre test mode:	TM1				
Final test mode:	TM1				

6.3.2. Test Setup Diagram:



6.3.3. Test Data

Please Refer to Appendix for Details.

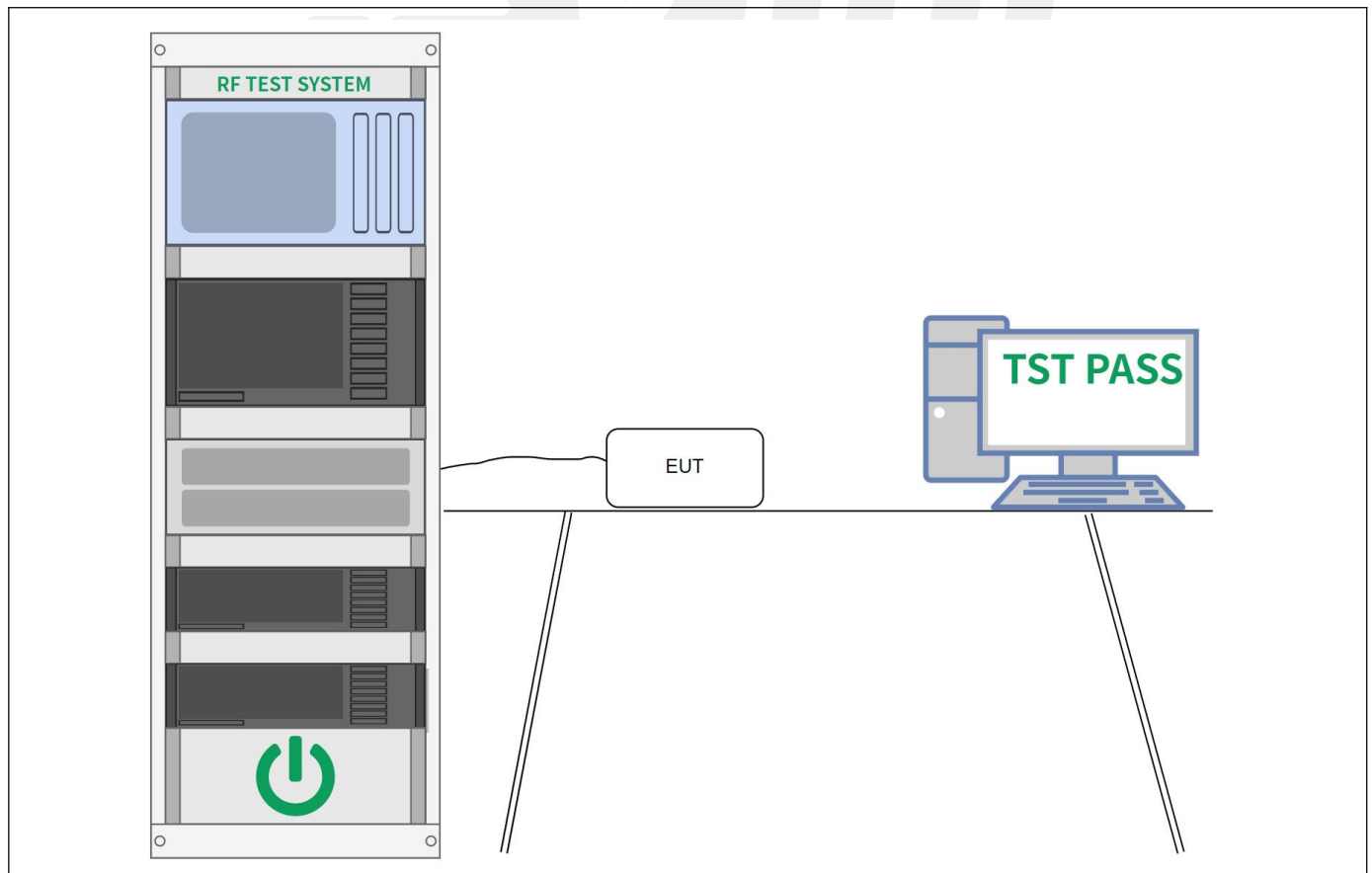
6.4. Power Spectral Density

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 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024, section 11.10
Procedure:	ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024, section 11.10, Maximum power spectral density level in the fundamental emission

6.4.1. EUT Operation

Operating Environment:					
Temperature:	26 °C	Humidity:	54 %	Atmospheric Pressure:	101.1 kPa
Pre test mode:	TM1				
Final test mode:	TM1				

6.4.2. Test Setup Diagram:



6.4.3. Test Data

Please Refer to Appendix for Details.

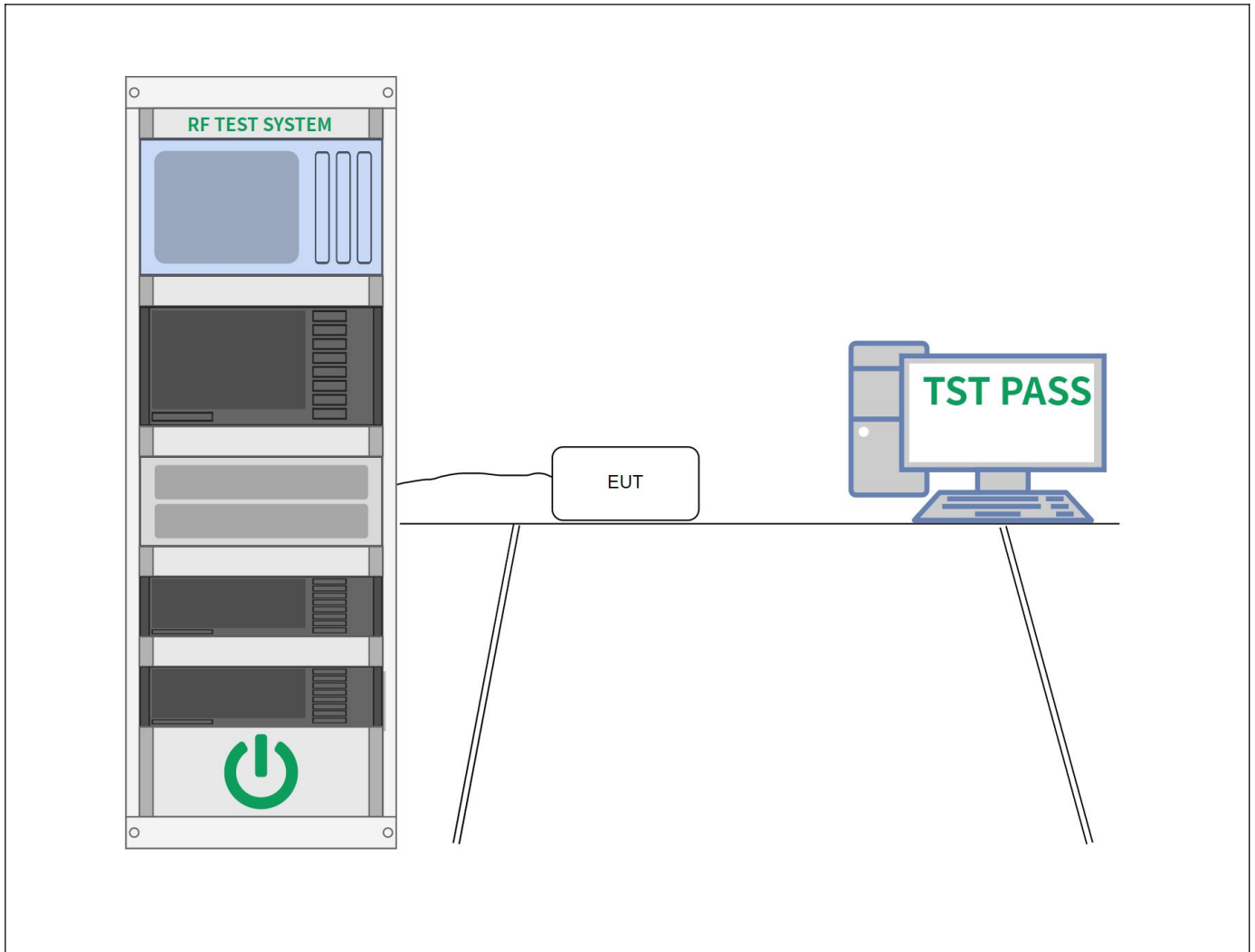
6.5. Emissions in non-restricted frequency bands

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 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 11.11
Procedure:	ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 Section 11.11.1, Section 11.11.2, Section 11.11.3

6.5.1. EUT Operation

Operating Environment:					
Temperature:	26 °C	Humidity:	54 %	Atmospheric Pressure:	101.1 kPa
Pre test mode:	TM1				
Final test mode:	TM1				

6.5.2. Test Setup Diagram:



6.5.3. Test Data

Please Refer to Appendix for Details.

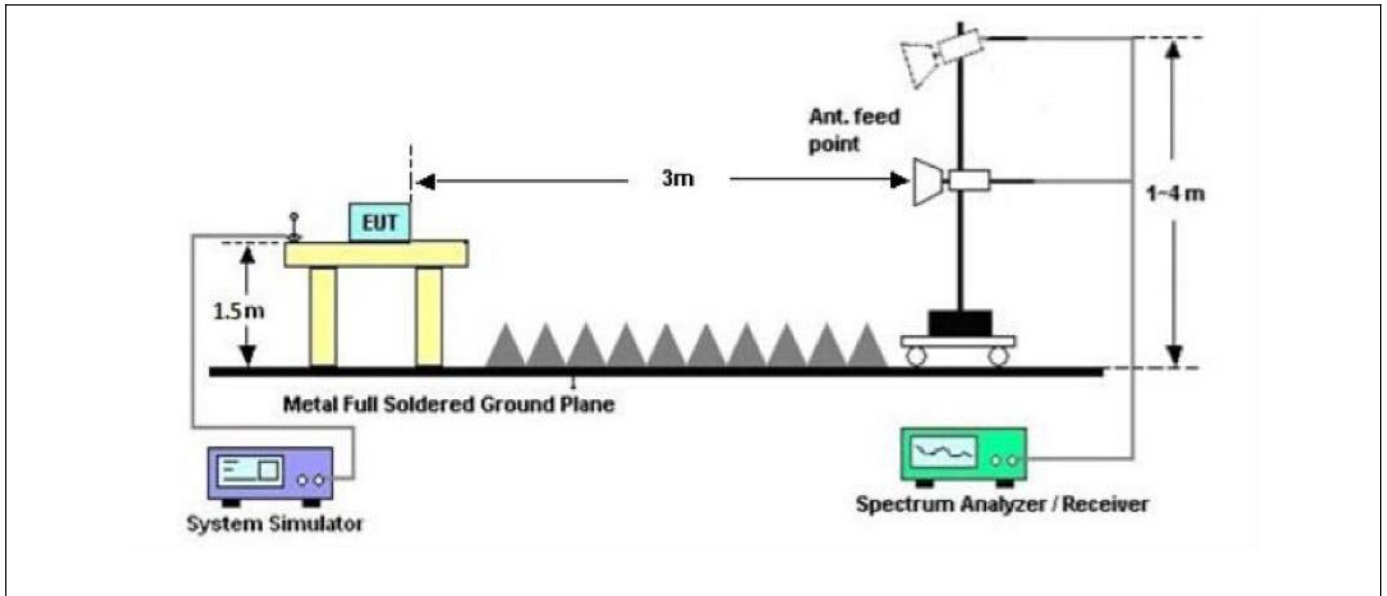
6.6. Band edge emissions (Radiated)

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
** 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. 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.			
Test Method:	ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.10		
Procedure:	ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.10.5.2		

6.6.1. EUT Operation

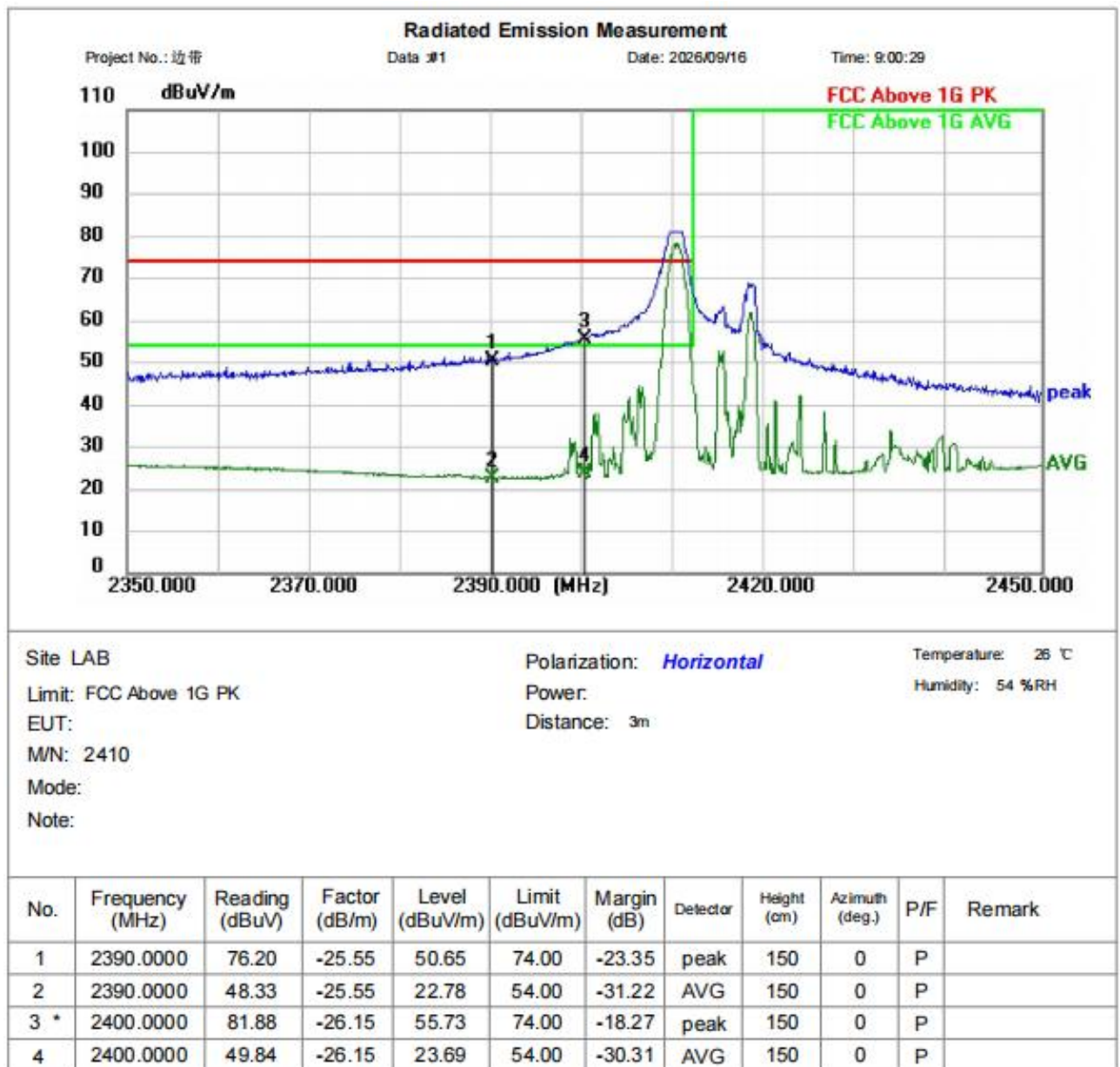
Operating Environment:			
Temperature:	26 °C	Humidity:	54 %
Pre test mode:		TM1	
Final test mode:		TM1	

6.6.2. Test Setup Diagram:

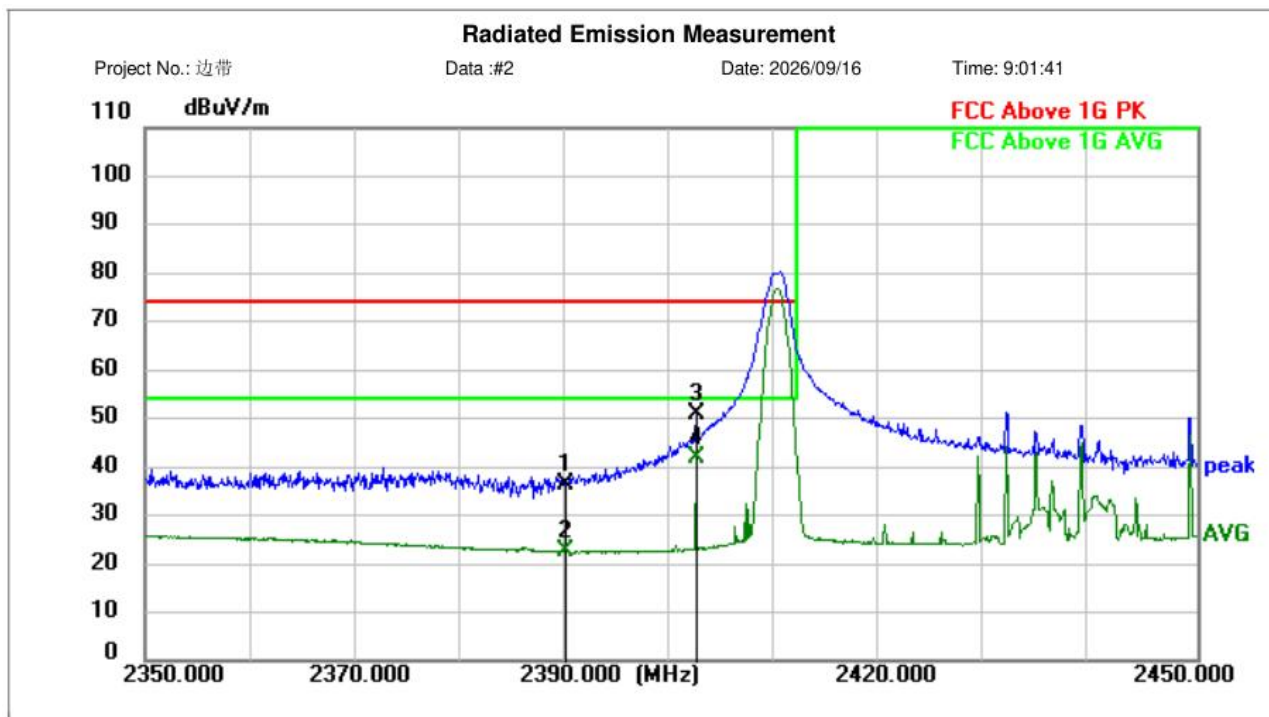


6.6.3. Test Data

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 20 / CH: L



TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 20 / CH: L



Site LAB

Polarization: **Vertical**

Temperature: 26 °C

Limit: FCC Above 1G PK

Power:

Humidity: 54 %RH

EUT:

Distance: 3m

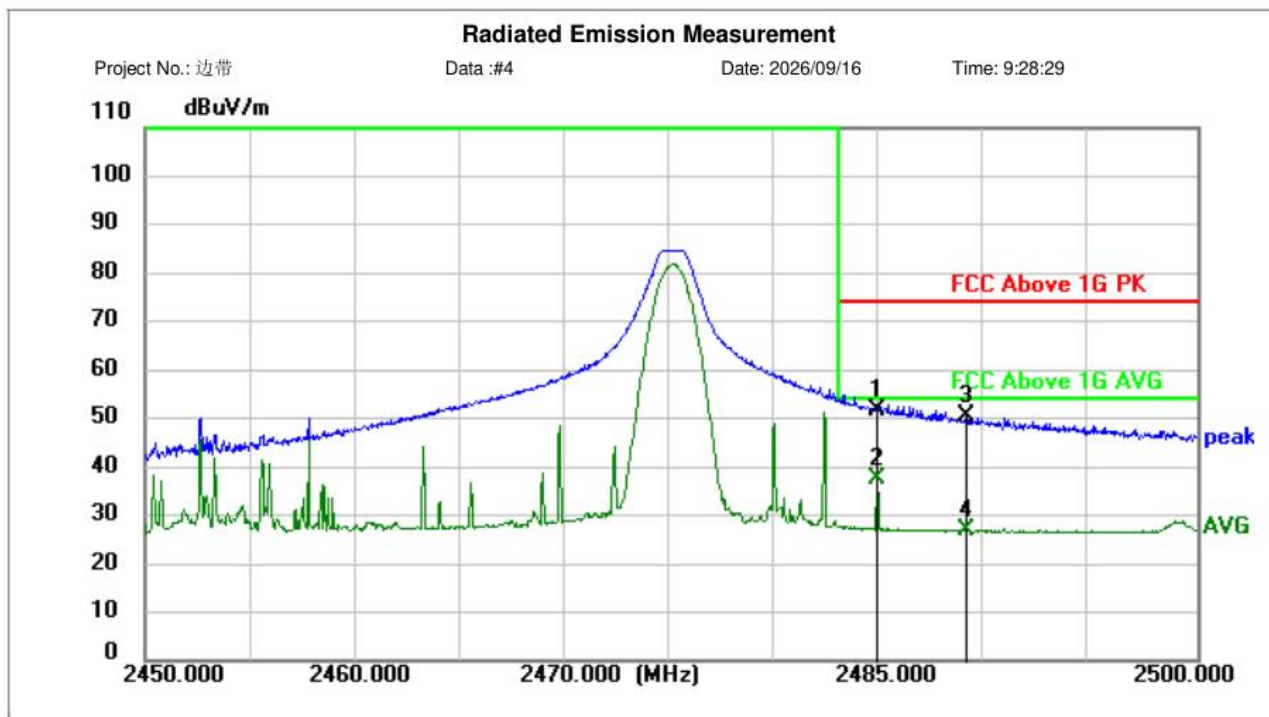
M/N: 2410

Mode:

Note:

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	2390.0000	59.44	-22.99	36.45	74.00	-37.55	peak	150	0	P	
2	2390.0000	45.59	-22.99	22.60	54.00	-31.40	AVG	150	0	P	
3	2402.4000	73.92	-22.93	50.99	74.00	-23.01	peak	150	0	P	
4 *	2402.4000	64.65	-22.93	41.72	54.00	-12.28	AVG	150	0	P	

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 20 / CH: H



Site LAB

Polarization: **Horizontal**

Temperature: 26 °C

Limit: FCC Above 1G PK

Power:

Humidity: 54 %RH

EUT:

Distance: 3m

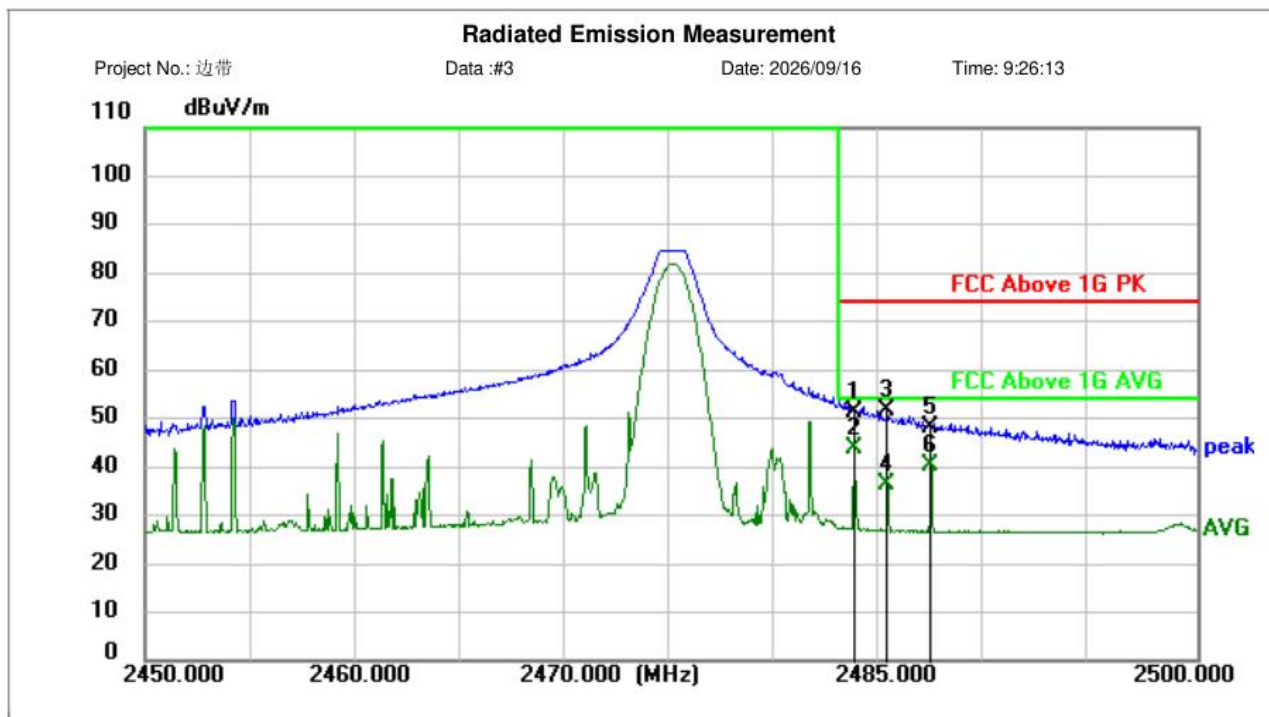
M/N: 2475

Mode:

Note:

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	2484.8000	74.85	-23.05	51.80	74.00	-22.20	peak	150	0	P	
2 *	2484.8000	60.49	-23.05	37.44	54.00	-16.56	AVG	150	0	P	
3	2489.0000	73.51	-23.02	50.49	74.00	-23.51	peak	150	0	P	
4	2489.0000	49.84	-23.02	26.82	54.00	-27.18	AVG	150	0	P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 20 / CH: H



Site LAB

Polarization: **Vertical**

Temperature: 26 °C

Limit: FCC Above 1G PK

Power:

Humidity: 54 %RH

EUT:

Distance: 3m

M/N: 2475

Mode:

Note:

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	2483.7000	73.78	-22.52	51.26	74.00	-22.74	peak	150	0	P	
2 *	2483.7000	66.22	-22.52	43.70	54.00	-10.30	AVG	150	0	P	
3	2485.2500	74.21	-22.51	51.70	74.00	-22.30	peak	150	0	P	
4	2485.2500	58.81	-22.51	36.30	54.00	-17.70	AVG	150	0	P	
5	2487.3500	70.50	-22.51	47.99	74.00	-26.01	peak	150	0	P	
6	2487.3500	62.62	-22.51	40.11	54.00	-13.89	AVG	150	0	P	

6.7. Emissions in frequency bands (below 1GHz)

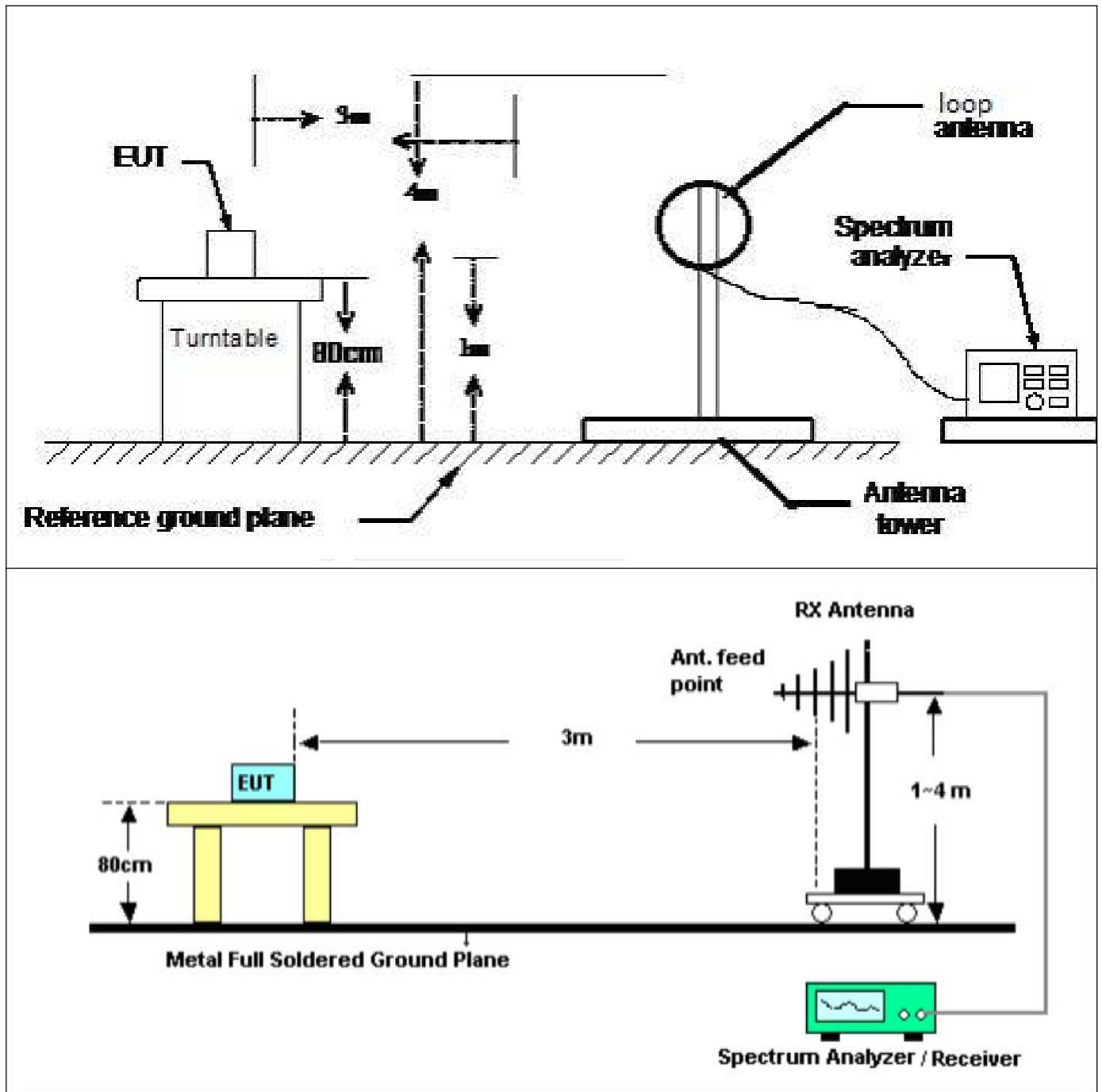
Test Requirement:	Refer to 47 CFR 15.247(d), In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).		
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	Measurement 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
** 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. 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.			
Test Method:	ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.5.4		
Procedure:	ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.5.4		

6.7.1. EUT Operation

Operating Environment:					
Temperature:	26 °C	Humidity:	54 %	Atmospheric Pressure:	101.1 kPa
Pre test mode:		TM1			
Final test mode:		TM1			
Note: Pre-scan was performed for 9 kHz-30 MHz. The measured emissions are well below the required limits. Only test data from 30 MHz upwards are presented in this section. All operating modes have been pre-tested; only the worst-case mode test data are presented in this report.					

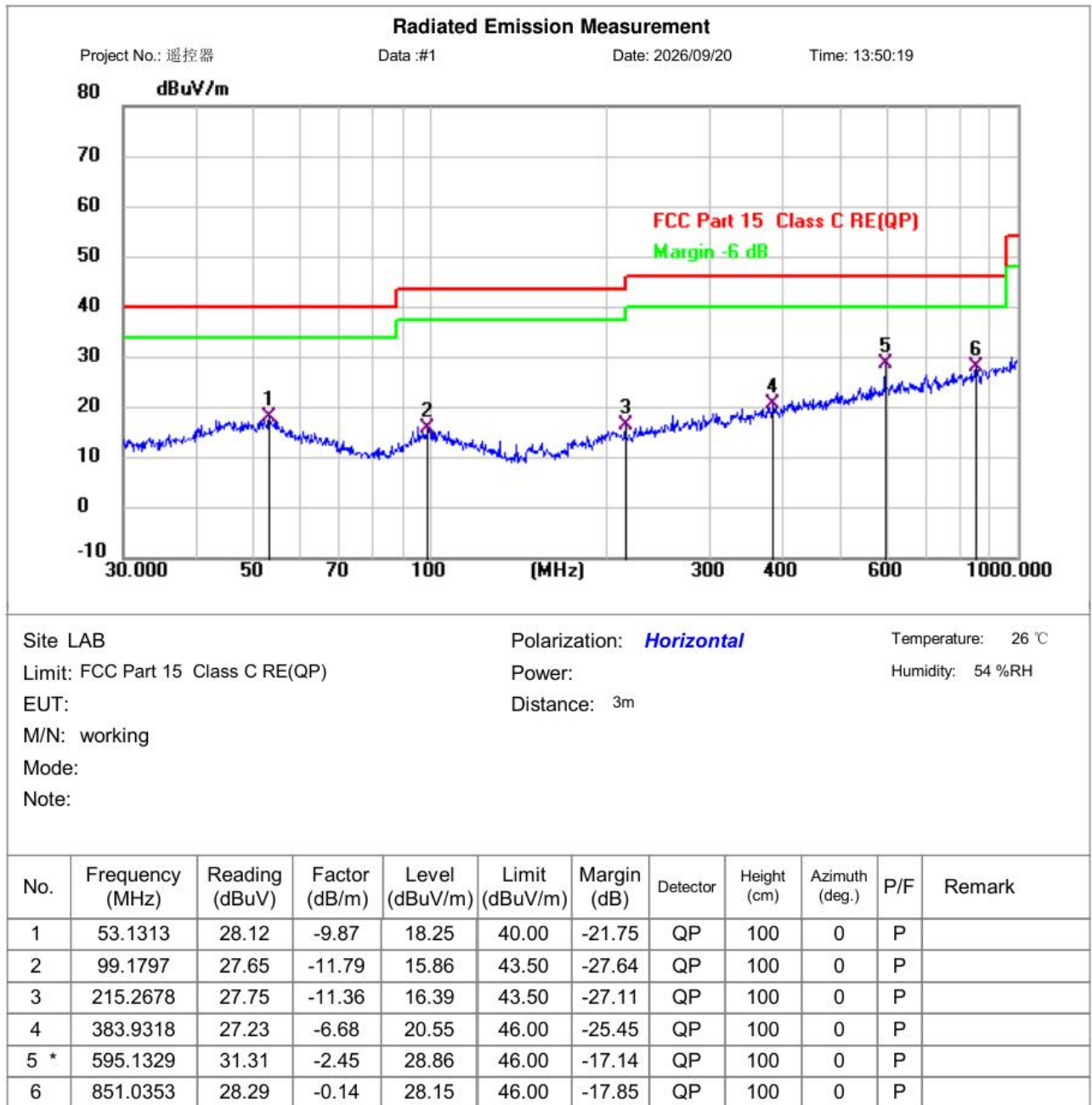
6.7.2. Test Setup Diagram:

--

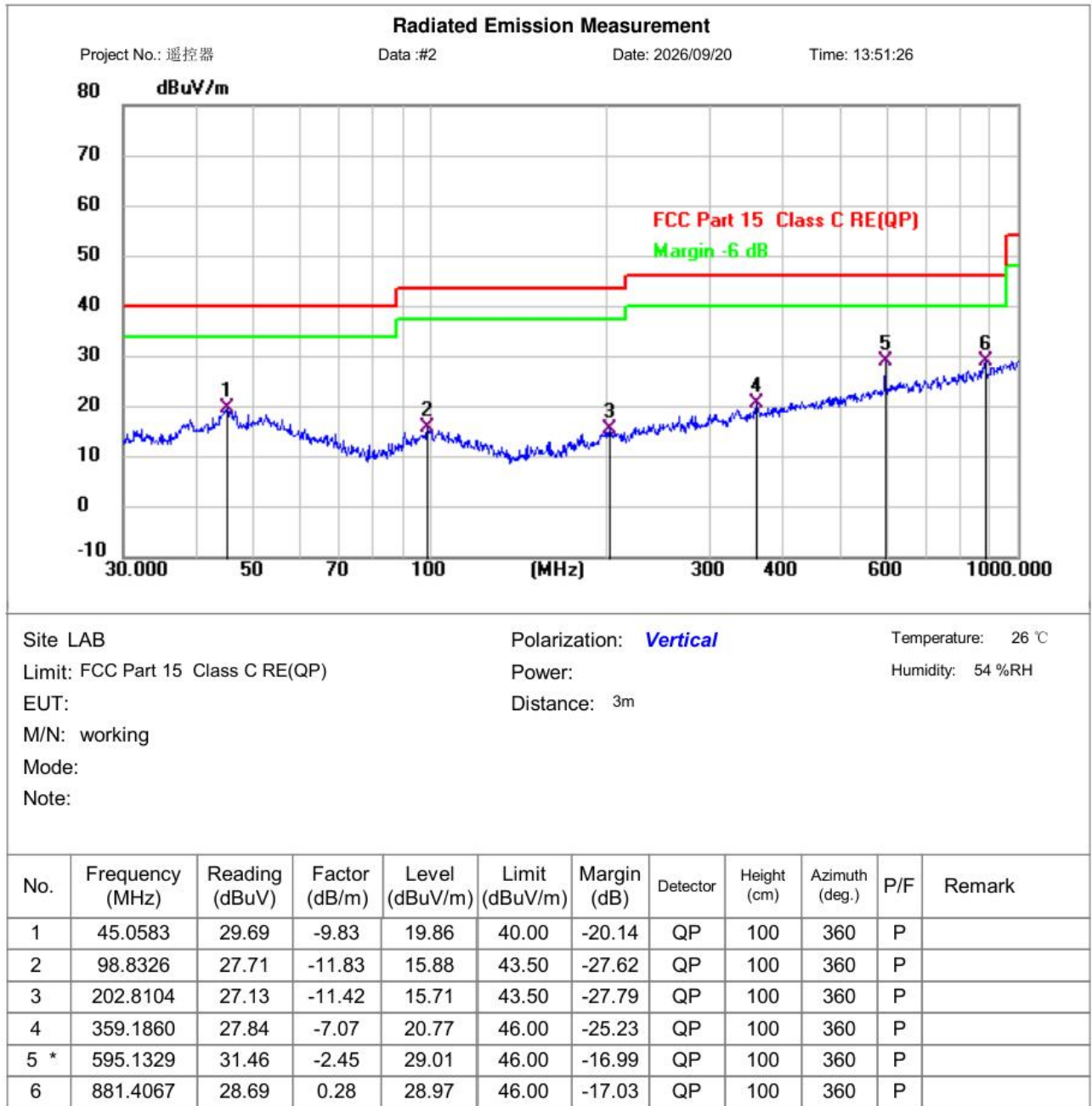


6.7.3. Test Data

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 20 / CH: L



TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 20 / CH: L



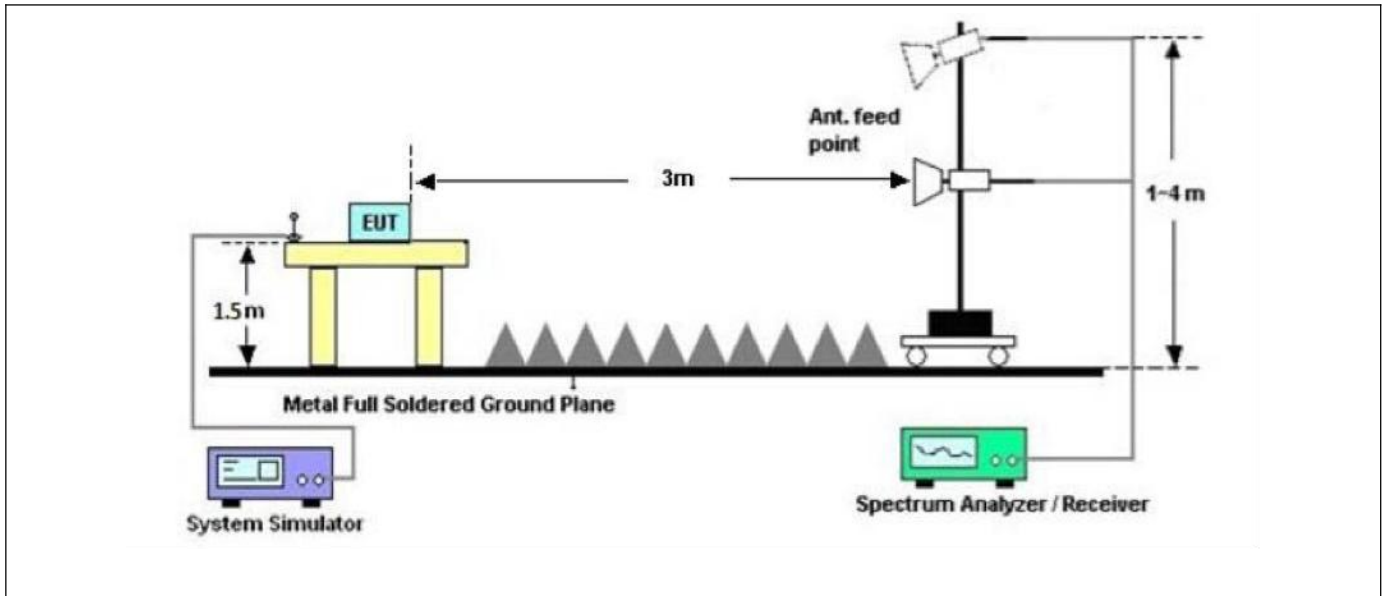
6.8. Emissions in frequency bands (above 1GHz)

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
** 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. 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.			
Test Method:	ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.5.4		
Procedure:	ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.5.4		

6.8.1. EUT Operation

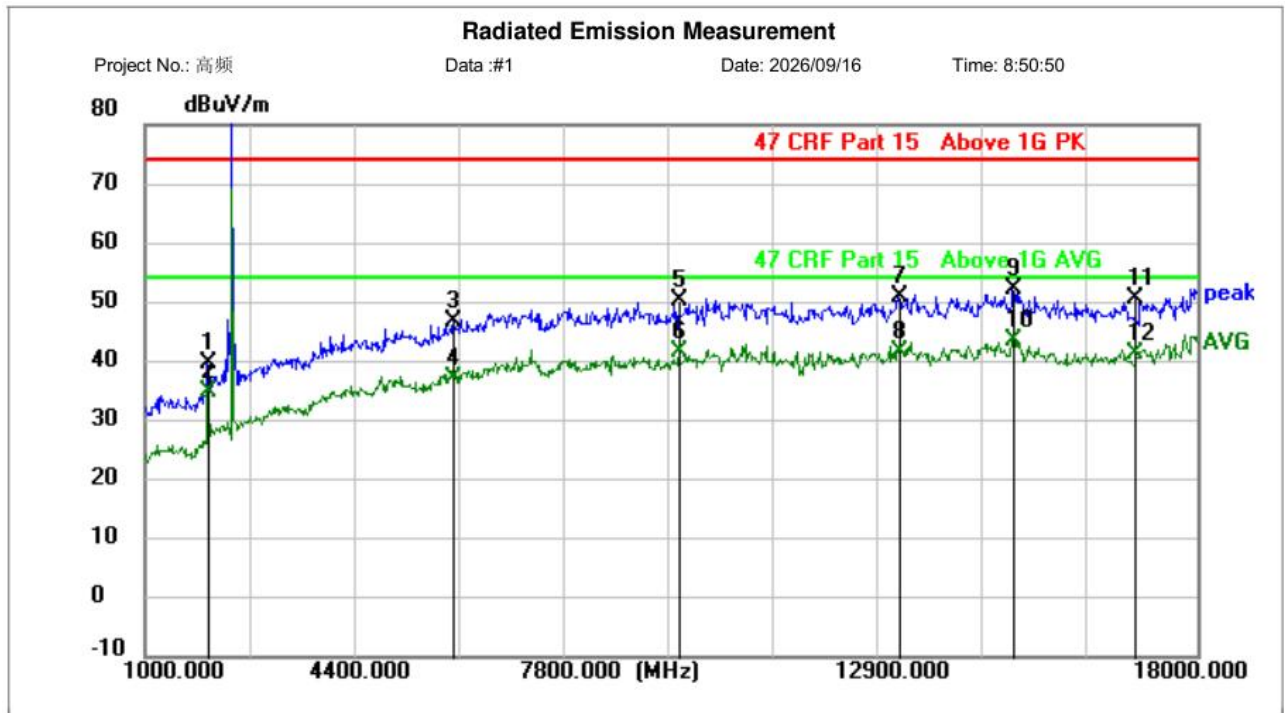
Operating Environment:			
Temperature:	26 °C	Humidity:	54 %
Pre test mode:		TM1	
Final test mode:		TM1	

6.8.2. Test Setup Diagram:



6.8.3. Test Data

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 20 / CH: L



Site LAB

Limit: 47 CRF Part 15 Above 1G PK

EUT:

M/N: 2410

Mode:

Note:

Polarization: **Horizontal**

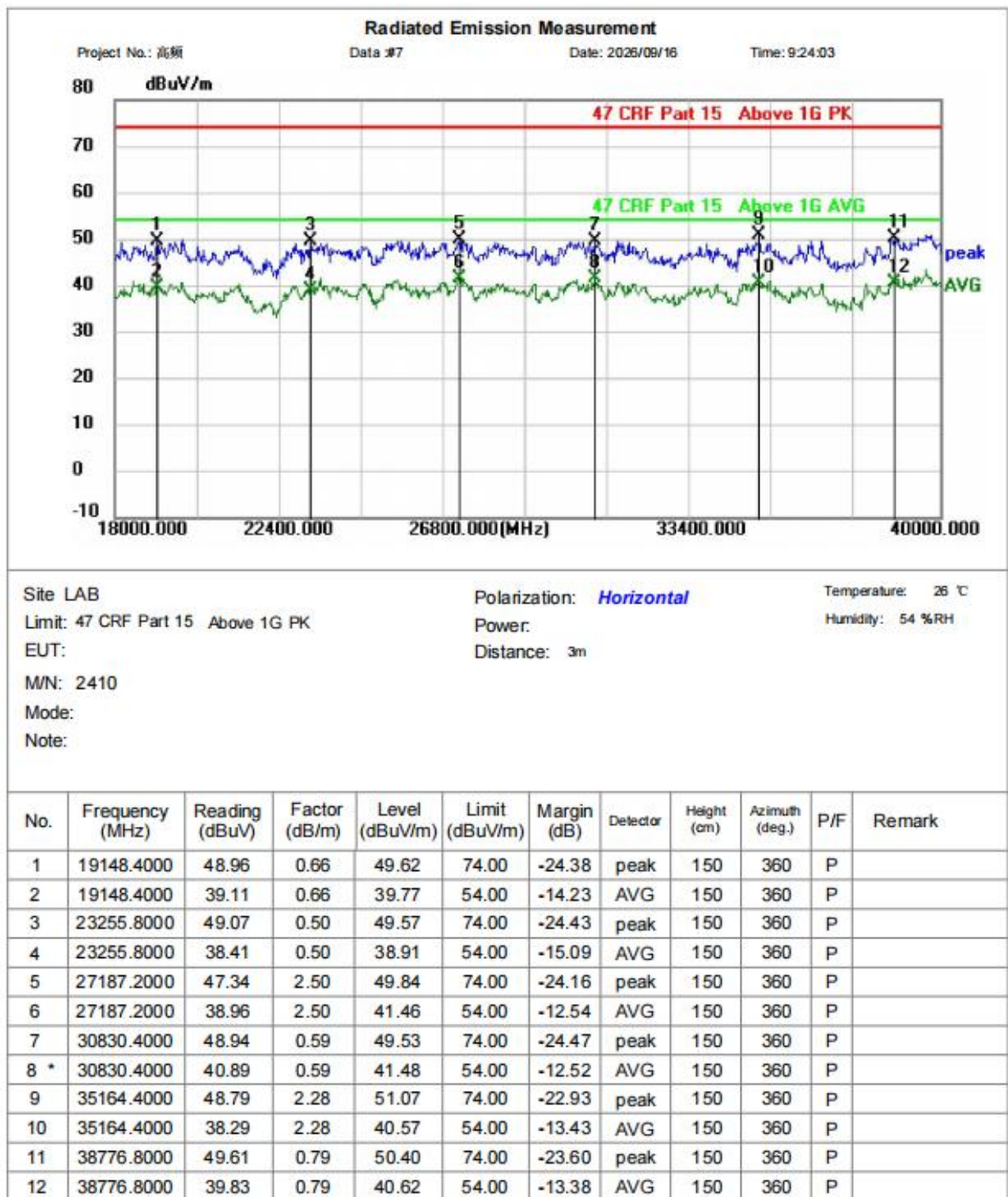
Power:

Distance: 3m

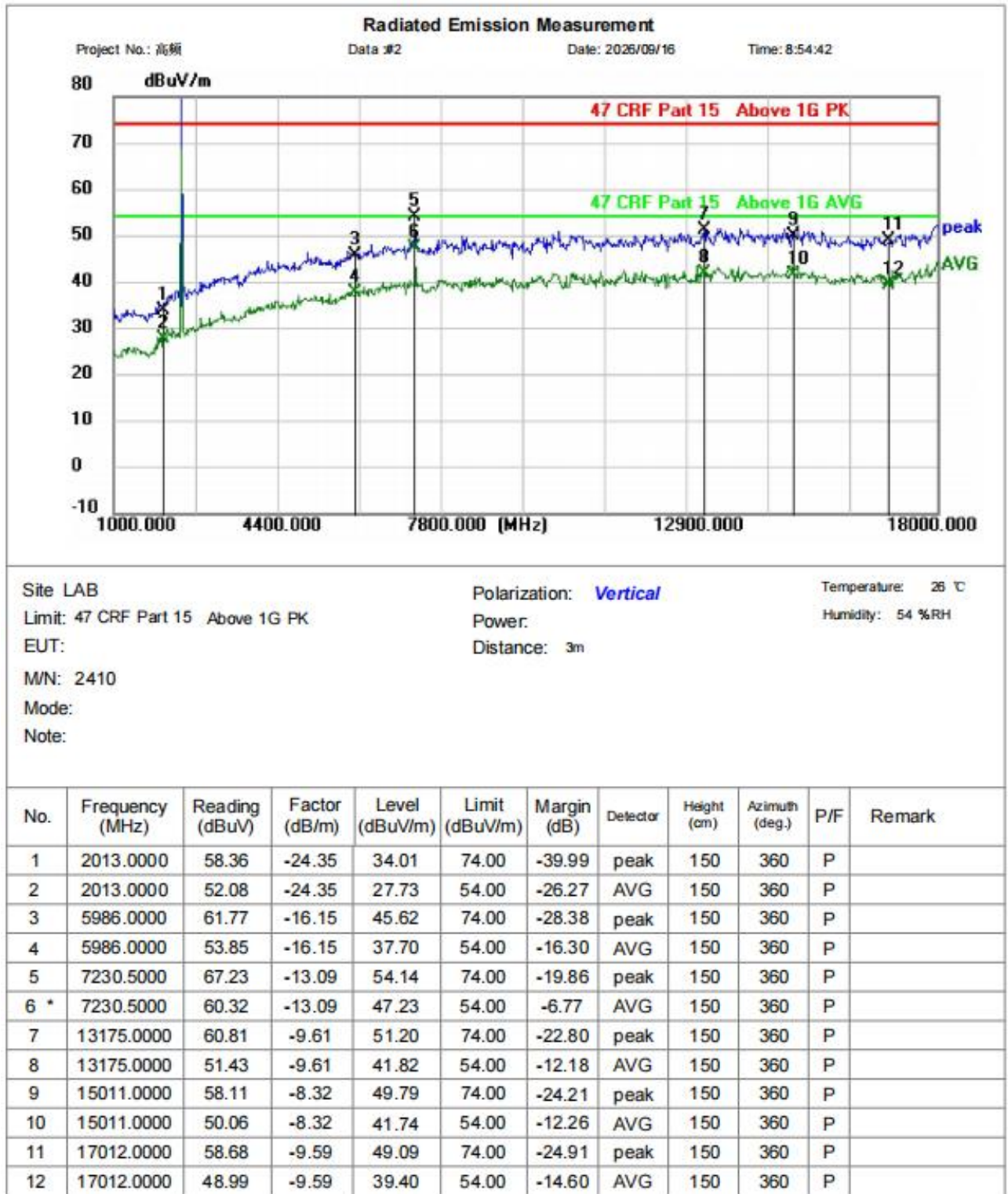
Temperature: 26 °C

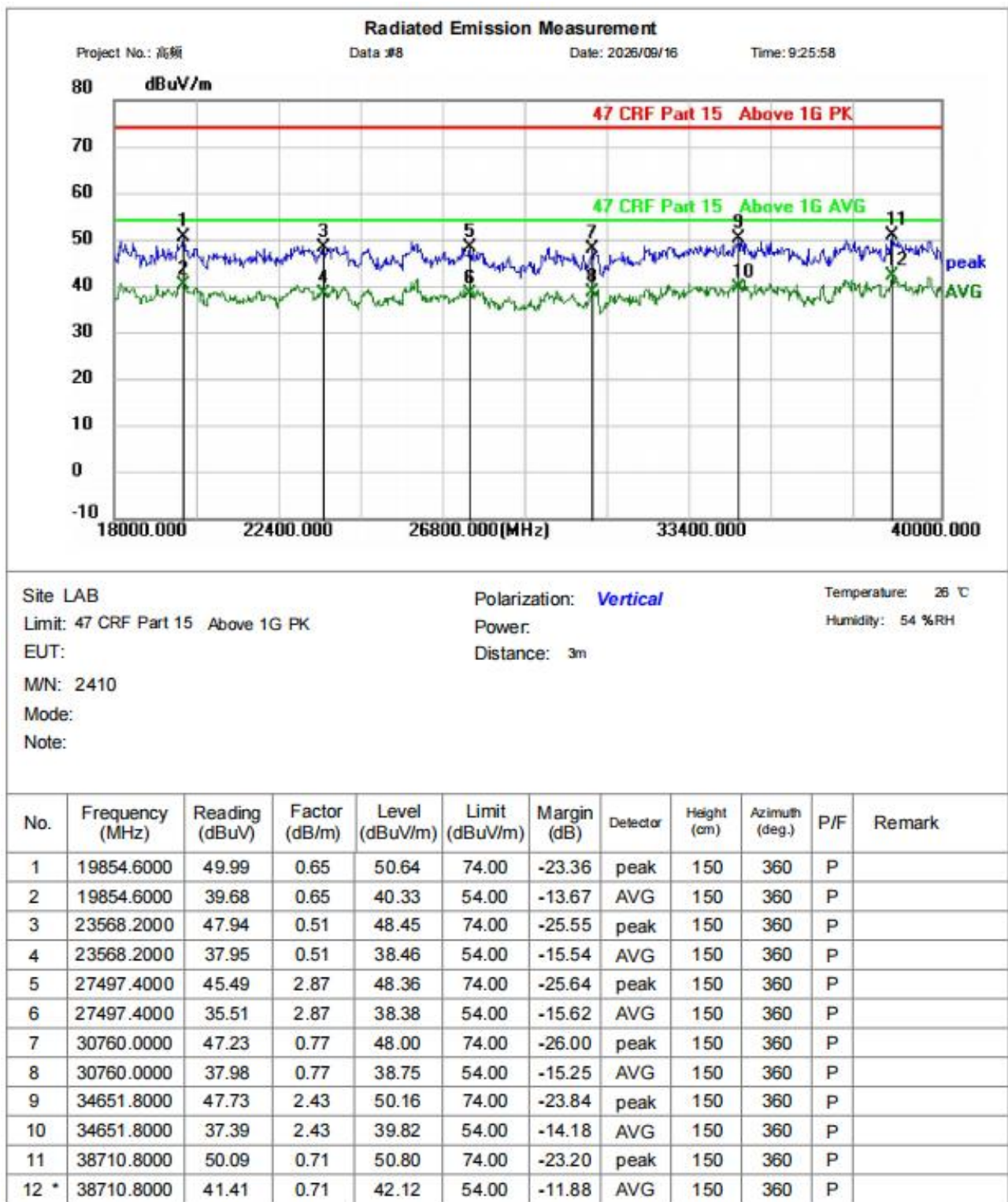
Humidity: 54 %RH

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	2013.0000	64.27	-24.50	39.77	74.00	-34.23	peak	150	360	P	
2	2013.0000	59.33	-24.50	34.83	54.00	-19.17	AVG	150	360	P	
3	5986.0000	62.73	-16.02	46.71	74.00	-27.29	peak	150	360	P	
4	5986.0000	53.22	-16.02	37.20	54.00	-16.80	AVG	150	360	P	
5	9641.0000	59.73	-9.34	50.39	74.00	-23.61	peak	150	360	P	
6	9641.0000	50.93	-9.34	41.59	54.00	-12.41	AVG	150	360	P	

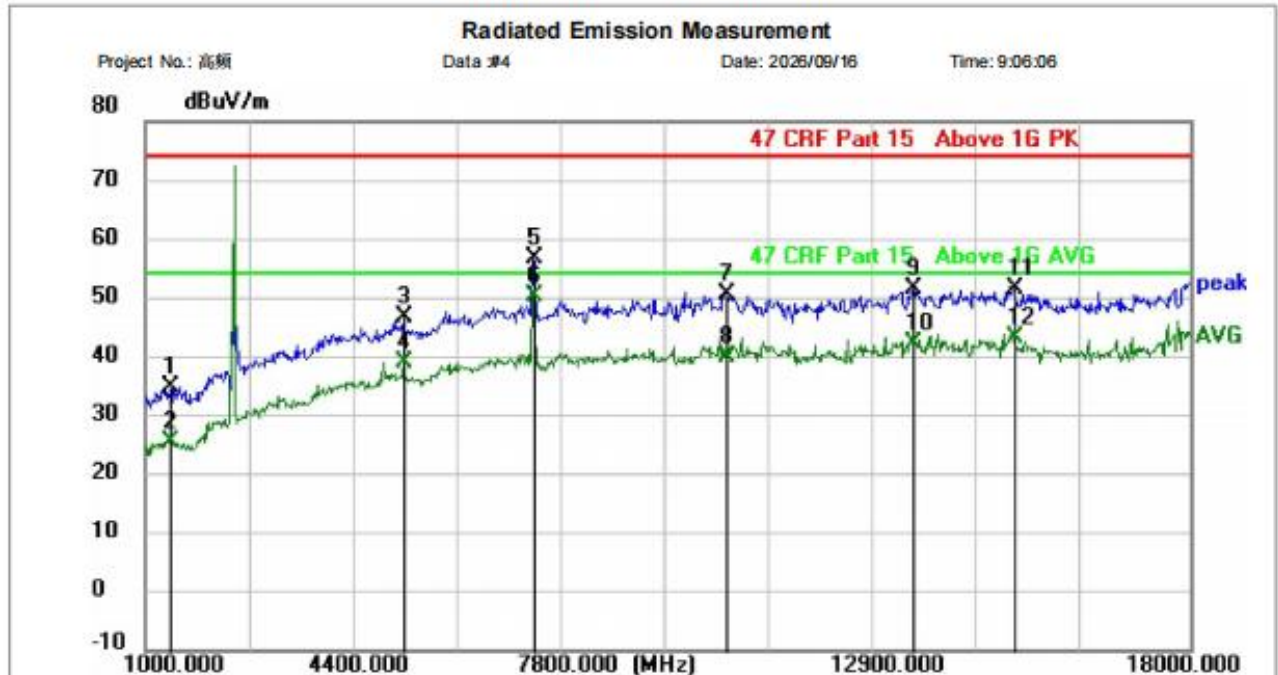


TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 20 / CH: L





TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 20 / CH: M



Site LAB

Limit: 47 CRF Part 15 Above 1G PK

EUT:

M/N: 2440

Mode:

Note:

Polarization: **Horizontal**

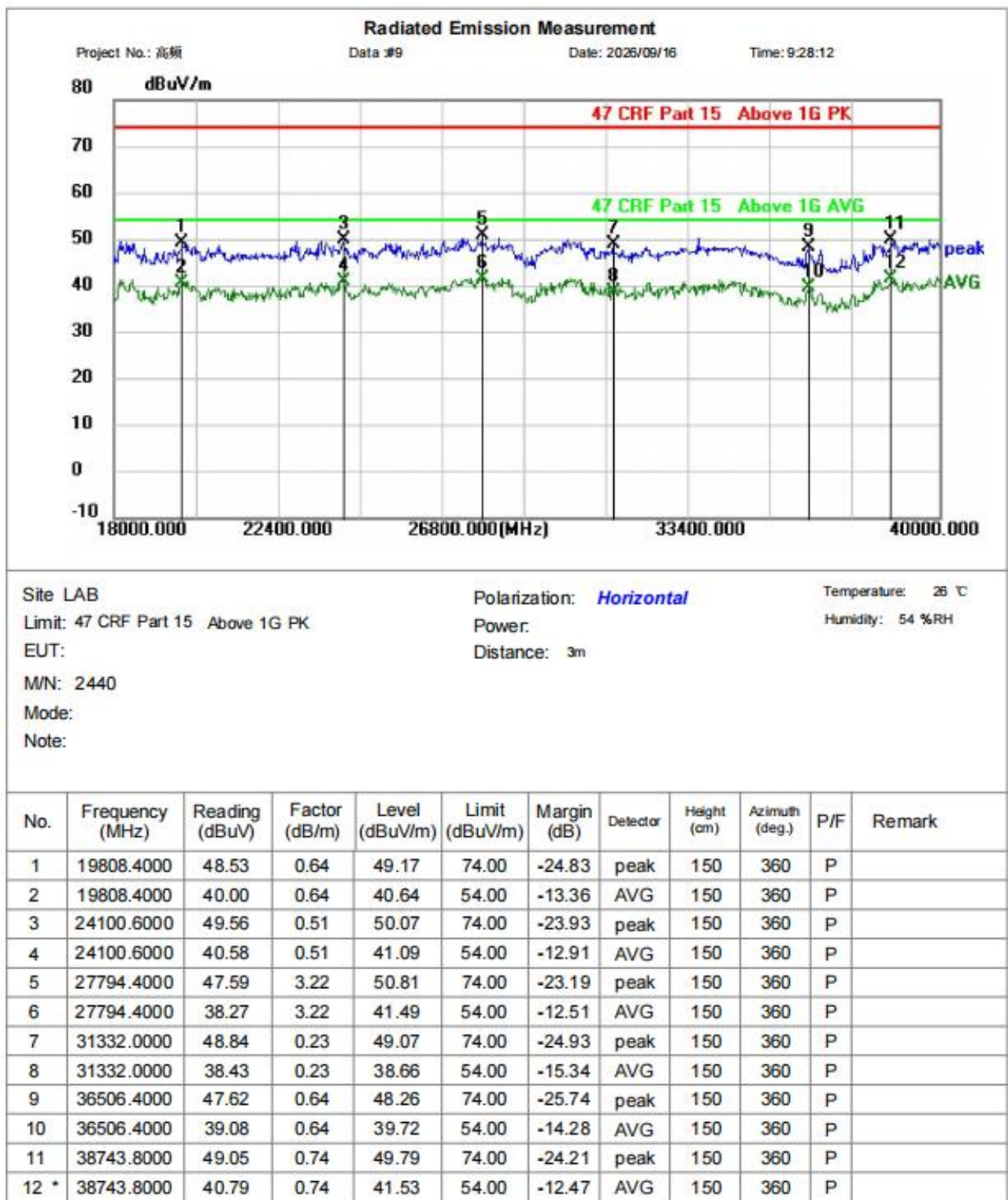
Power:

Distance: 3m

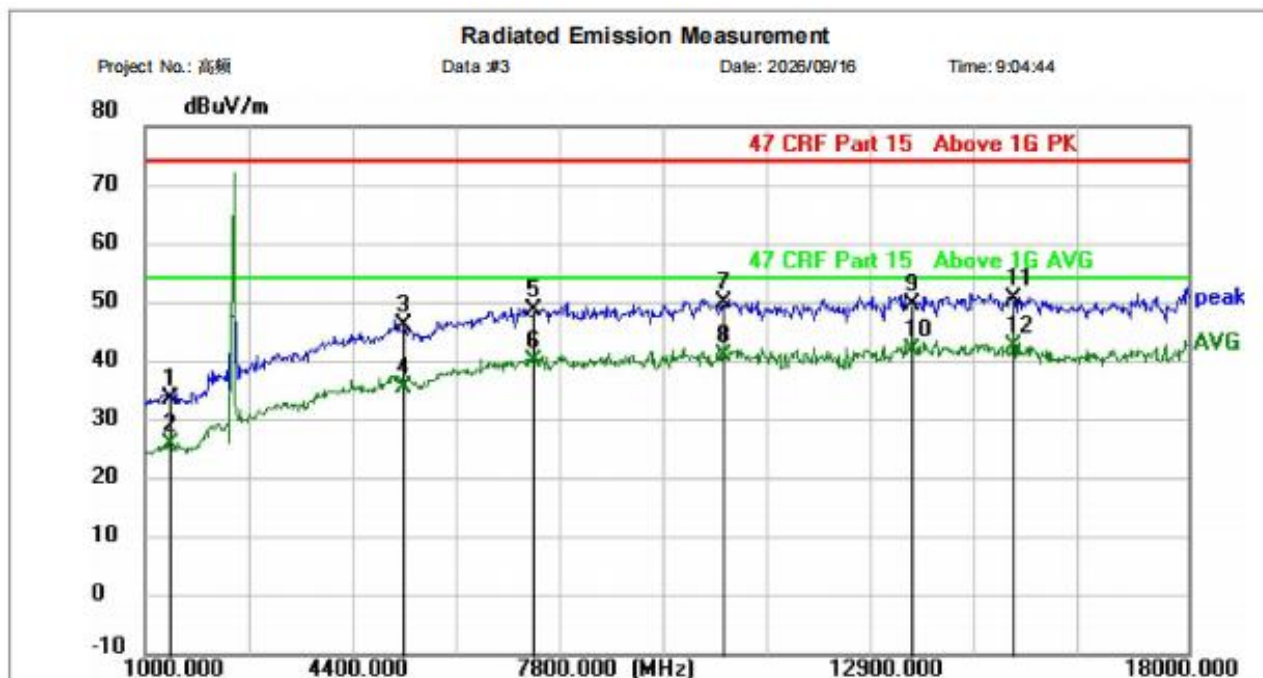
Temperature: 26 °C

Humidity: 54 %RH

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	1413.0000	60.76	-25.79	34.97	74.00	-39.03	peak	150	360	P	
2	1413.0000	51.27	-25.79	25.48	54.00	-28.52	AVG	150	360	P	
3	5222.0000	64.10	-17.22	46.88	74.00	-27.12	peak	150	360	P	
4	5222.0000	56.13	-17.22	38.91	54.00	-15.09	AVG	150	360	P	
5	7320.0000	69.78	-13.22	56.56	74.00	-17.44	peak	150	360	P	
6 *	7320.0000	63.45	-13.22	50.23	54.00	-3.77	AVG	150	360	P	
7	10450.0000	58.32	-7.85	50.47	74.00	-23.53	peak	150	360	P	
8	10450.0000	47.78	-7.85	39.93	54.00	-14.07	AVG	150	360	P	
9	13500.0000	60.81	-9.25	51.56	74.00	-22.44	peak	150	360	P	
10	13500.0000	51.63	-9.25	42.38	54.00	-11.62	AVG	150	360	P	
11	15147.0000	60.40	-8.69	51.71	74.00	-22.29	peak	150	360	P	
12	15147.0000	51.89	-8.69	43.20	54.00	-10.80	AVG	150	360	P	



TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 20 / CH: M



Site LAB

Limit: 47 CRF Part 15 Above 1G PK

EUT:

M/N: 2440

Mode:

Note:

Polarization: **Vertical**

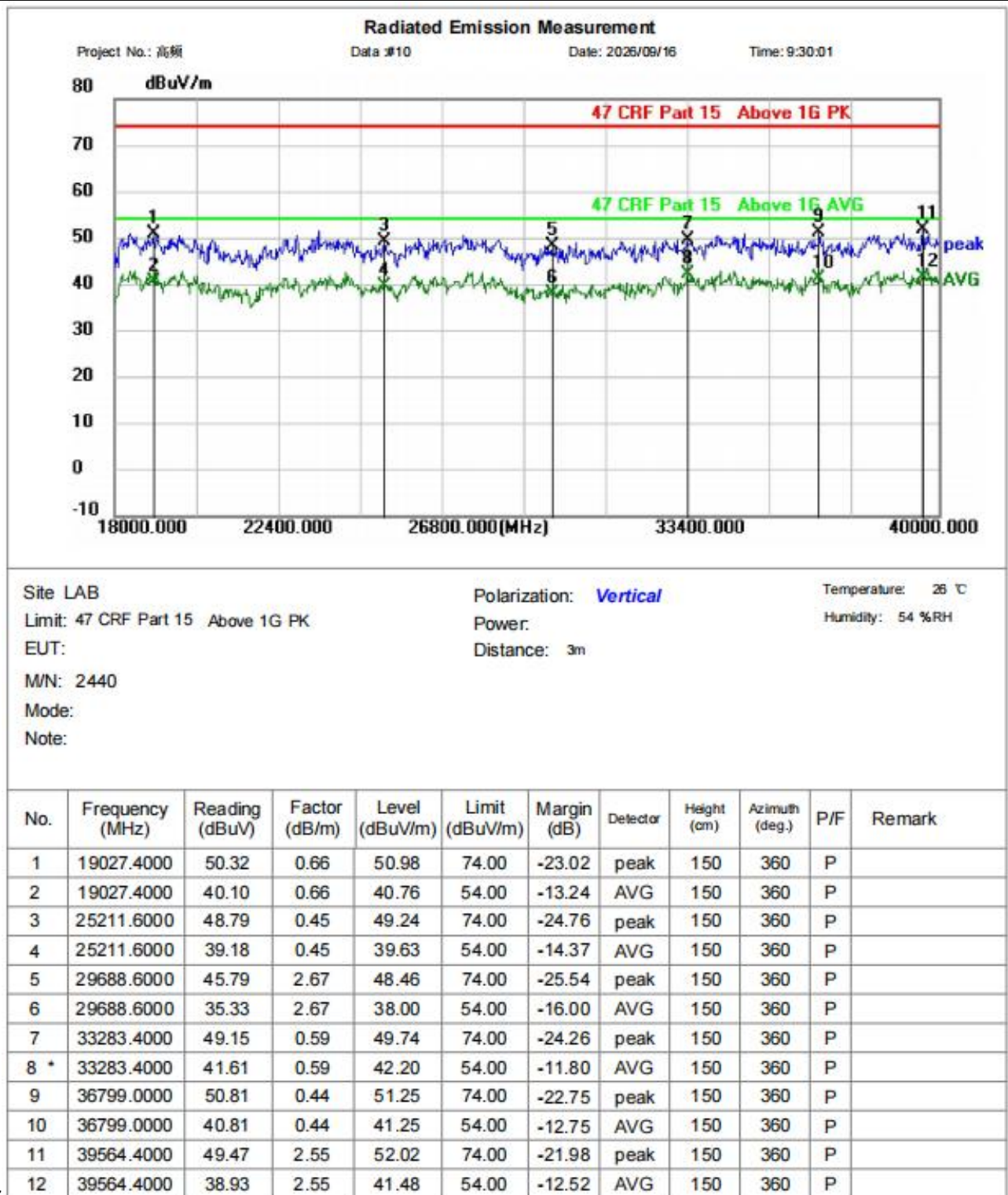
Power:

Distance: 3m

Temperature: 26 °C

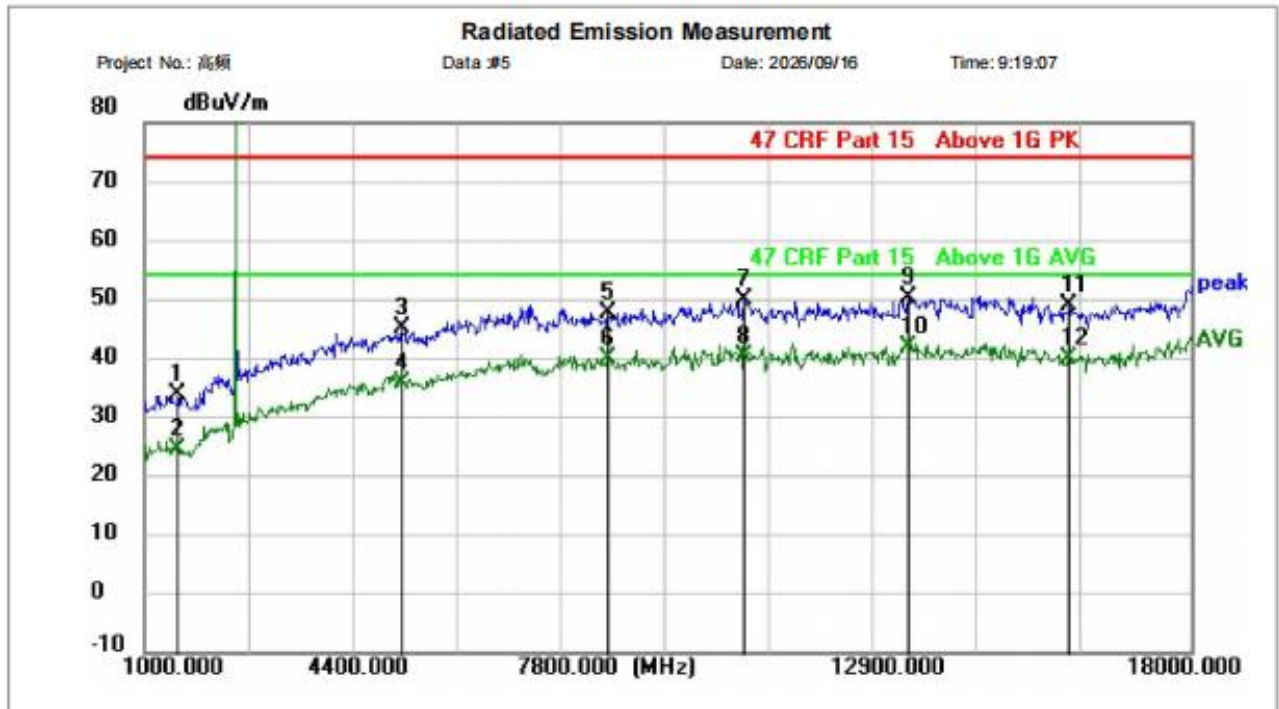
Humidity: 54 %RH

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	1413.0000	59.14	-25.66	33.48	74.00	-40.52	peak	150	360	P	
2	1413.0000	51.52	-25.66	25.86	54.00	-28.14	AVG	150	360	P	
3	5222.0000	63.32	-17.32	46.00	74.00	-28.00	peak	150	360	P	
4	5222.0000	52.79	-17.32	35.47	54.00	-18.53	AVG	150	360	P	
5	7320.0000	61.81	-13.16	48.65	74.00	-25.35	peak	150	360	P	
6	7320.0000	53.03	-13.16	39.87	54.00	-14.13	AVG	150	360	P	
7	10450.0000	57.88	-7.80	50.08	74.00	-23.92	peak	150	360	P	
8	10450.0000	48.78	-7.80	40.98	54.00	-13.02	AVG	150	360	P	
9	13500.0000	59.00	-9.35	49.65	74.00	-24.35	peak	150	360	P	
10	13500.0000	51.35	-9.35	42.00	54.00	-12.00	AVG	150	360	P	
11	15147.0000	59.14	-8.50	50.64	74.00	-23.36	peak	150	360	P	
12 *	15147.0000	51.04	-8.50	42.54	54.00	-11.46	AVG	150	360	P	



17

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 20 / CH: H



Site LAB

Limit: 47 CRF Part 15 Above 1G PK

EUT:

M/N: 2475

Mode:

Note:

Polarization: **Horizontal**

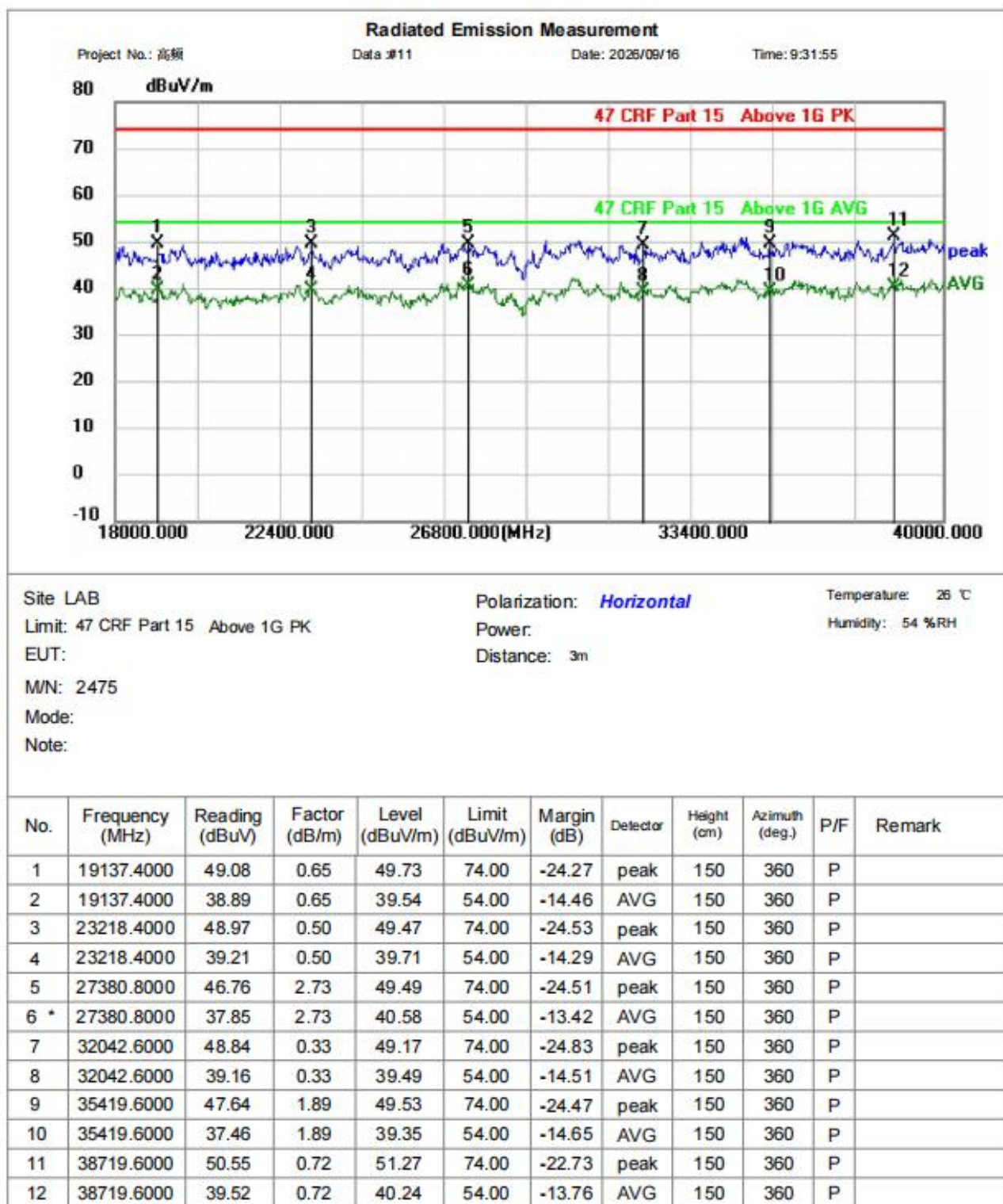
Power:

Distance: 3m

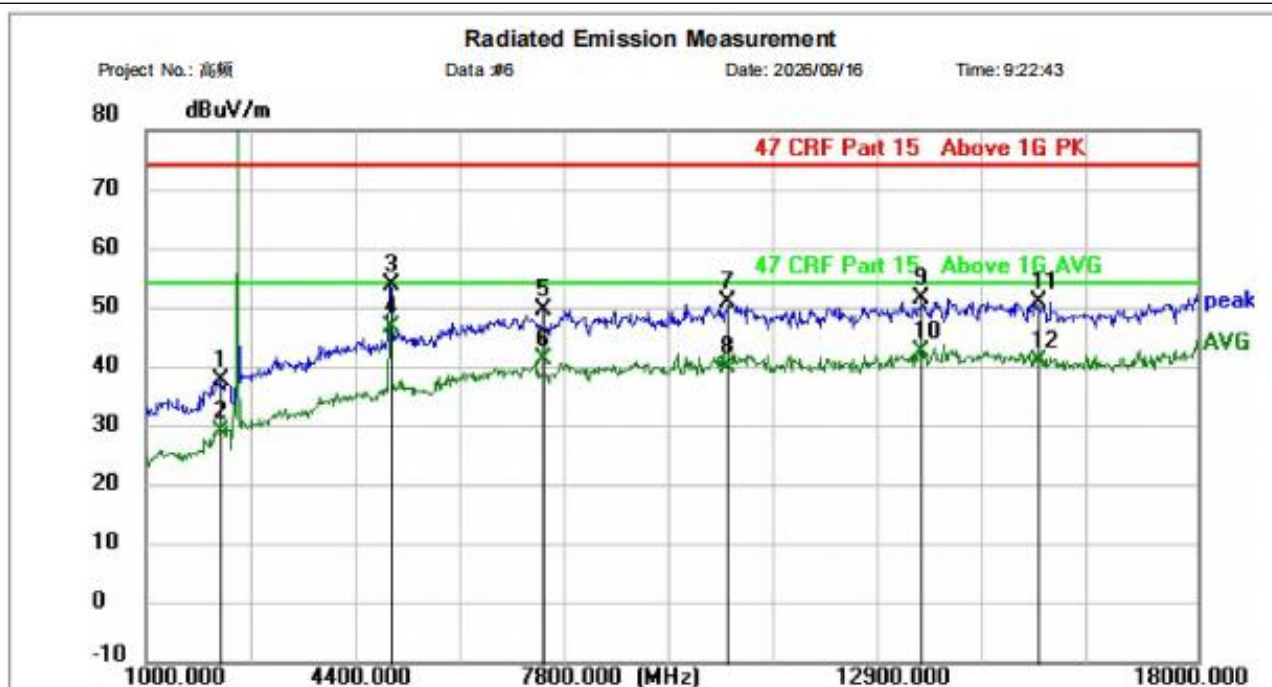
Temperature: 26 °C

Humidity: 54 %RH

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	1559.3000	59.87	-26.03	33.84	74.00	-40.16	peak	150	360	P	
2	1559.3000	50.63	-26.03	24.60	54.00	-29.40	AVG	150	360	P	
3	5175.2000	62.20	-17.12	45.08	74.00	-28.92	peak	150	360	P	
4	5175.2000	53.07	-17.12	35.95	54.00	-18.05	AVG	150	360	P	
5	8548.0000	58.88	-11.07	47.81	74.00	-26.19	peak	150	360	P	
6	8548.0000	51.09	-11.07	40.02	54.00	-13.98	AVG	150	360	P	
7	10752.9000	57.03	-7.18	49.85	74.00	-24.15	peak	150	360	P	
8	10752.9000	47.45	-7.18	40.27	54.00	-13.73	AVG	150	360	P	
9	13413.4000	59.53	-9.21	50.32	74.00	-23.68	peak	150	360	P	
10 *	13413.4000	51.00	-9.21	41.79	54.00	-12.21	AVG	150	360	P	
11	16038.2000	59.37	-10.37	49.00	74.00	-25.00	peak	150	360	P	
12	16038.2000	50.21	-10.37	39.84	54.00	-14.16	AVG	150	360	P	



TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 20 / CH: H



Site LAB

Limit: 47 CRF Part 15 Above 1G PK

EUT:

M/N: 2475

Mode:

Note:

Polarization: **Vertical**

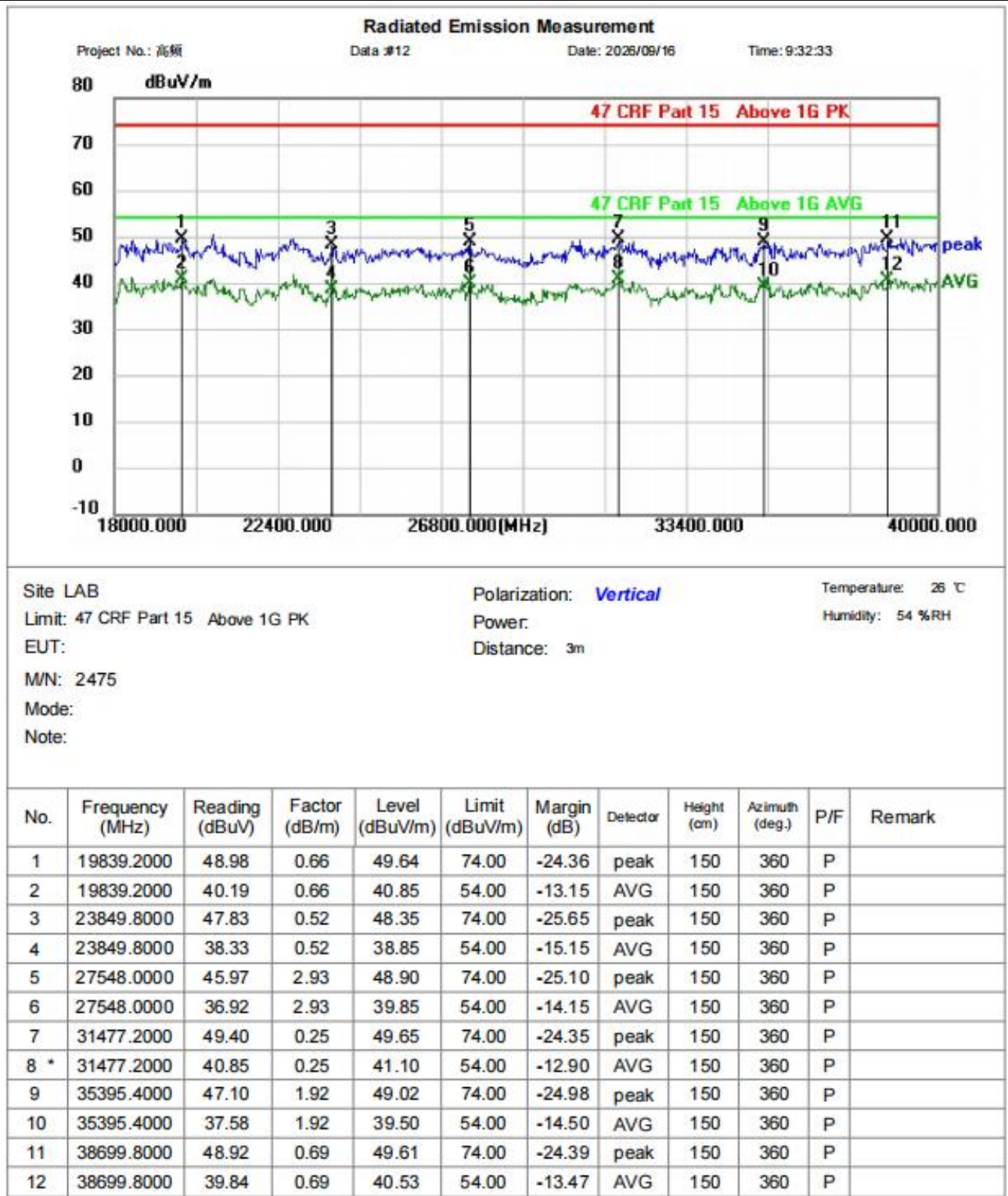
Power:

Distance: 3m

Temperature: 26 °C

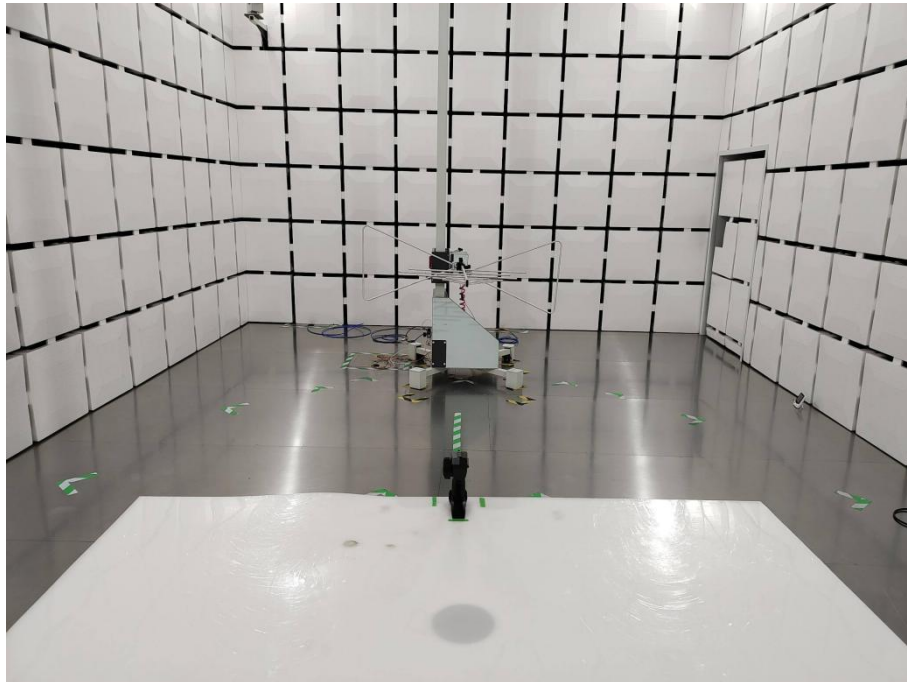
Humidity: 54 %RH

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	2210.0000	61.18	-23.41	37.77	74.00	-36.23	peak	150	360	P	
2	2210.0000	52.41	-23.41	29.00	54.00	-25.00	AVG	150	360	P	
3	4949.0000	71.00	-17.34	53.66	74.00	-20.34	peak	150	360	P	
4 *	4949.0000	64.16	-17.34	46.82	54.00	-7.18	AVG	150	360	P	
5	7426.0000	63.14	-13.48	49.66	74.00	-24.34	peak	150	360	P	
6	7426.0000	54.90	-13.48	41.42	54.00	-12.58	AVG	150	360	P	
7	10414.0000	58.65	-7.82	50.83	74.00	-23.17	peak	150	360	P	
8	10414.0000	47.67	-7.82	39.85	54.00	-14.15	AVG	150	360	P	
9	13534.0000	61.11	-9.40	51.71	74.00	-22.29	peak	150	360	P	
10	13534.0000	52.05	-9.40	42.65	54.00	-11.35	AVG	150	360	P	
11	15448.0000	59.93	-9.06	50.87	74.00	-23.13	peak	150	360	P	
12	15448.0000	50.10	-9.06	41.04	54.00	-12.96	AVG	150	360	P	



7. TEST SETUP PHOTOS

Emissions in frequency bands (below 1GHz)



Emissions in frequency bands (above 1GHz)



Conducted RF test



8. Appendix Report

1. Duty Cycle

1.1 Test Result

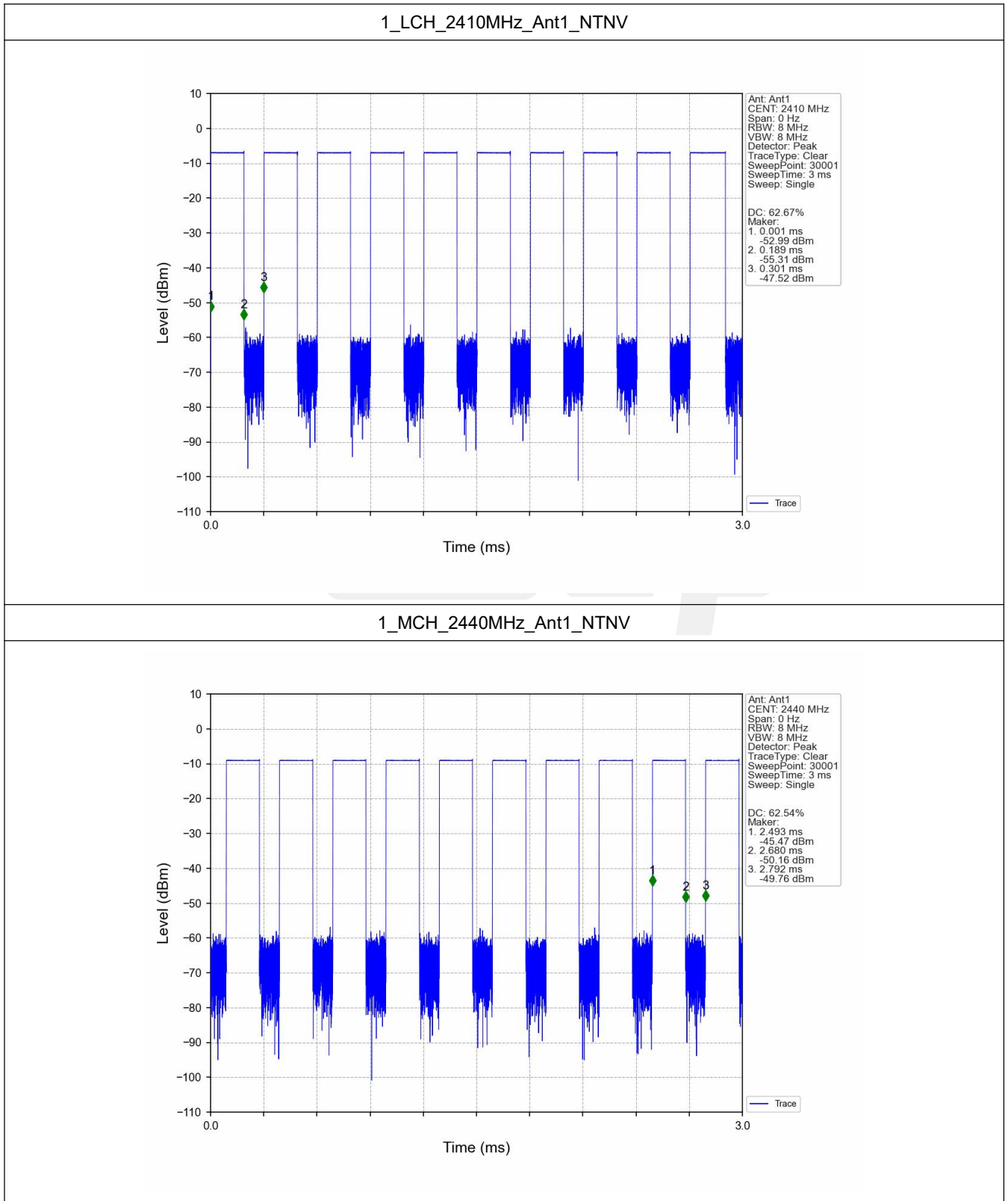
1.1.1 Ant1

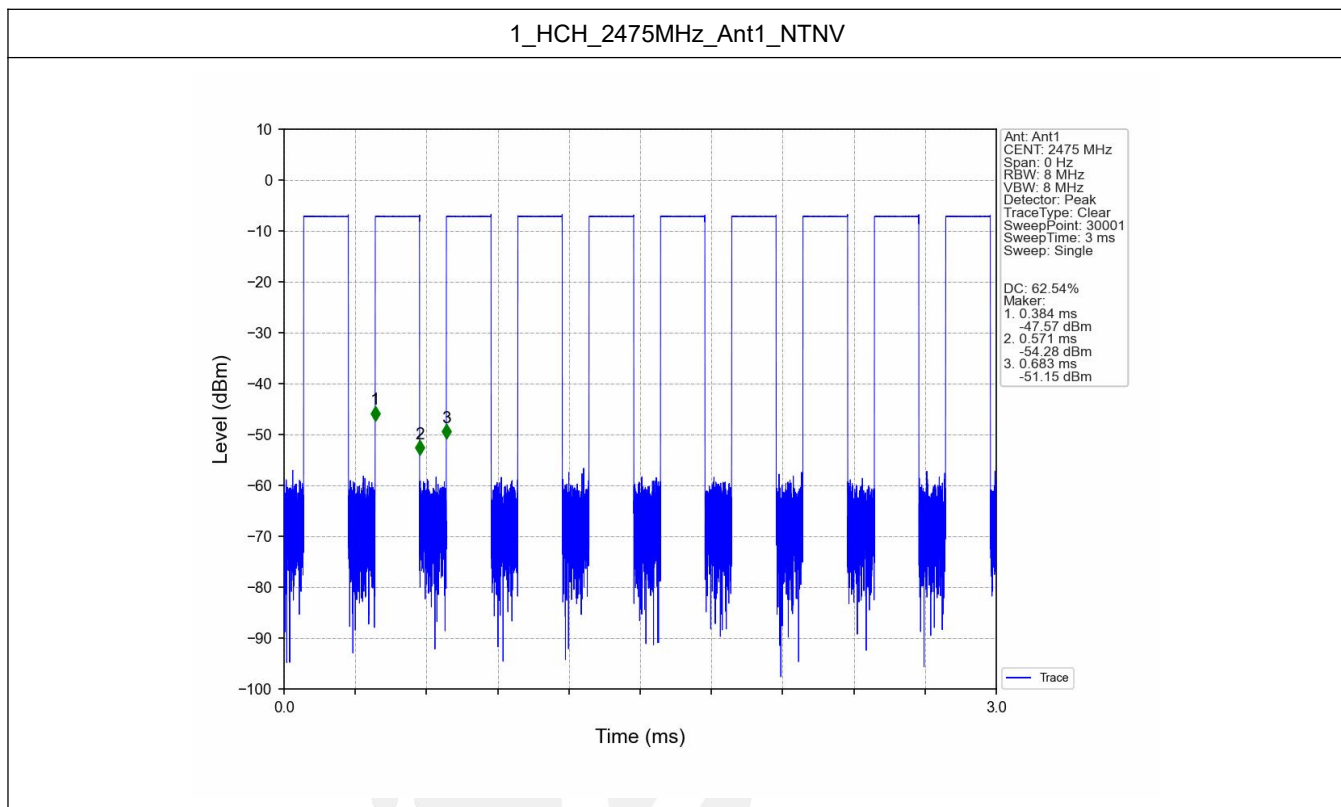
Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
1	SISO	2410	0.188	0.300	62.67	2.03	0.19
		2440	0.187	0.299	62.54	2.04	0.22
		2475	0.187	0.299	62.54	2.04	0.22



1.2 Test Graph

1.2.1 Ant1





2. Bandwidth

2.1 Test Result

2.1.1 OBW

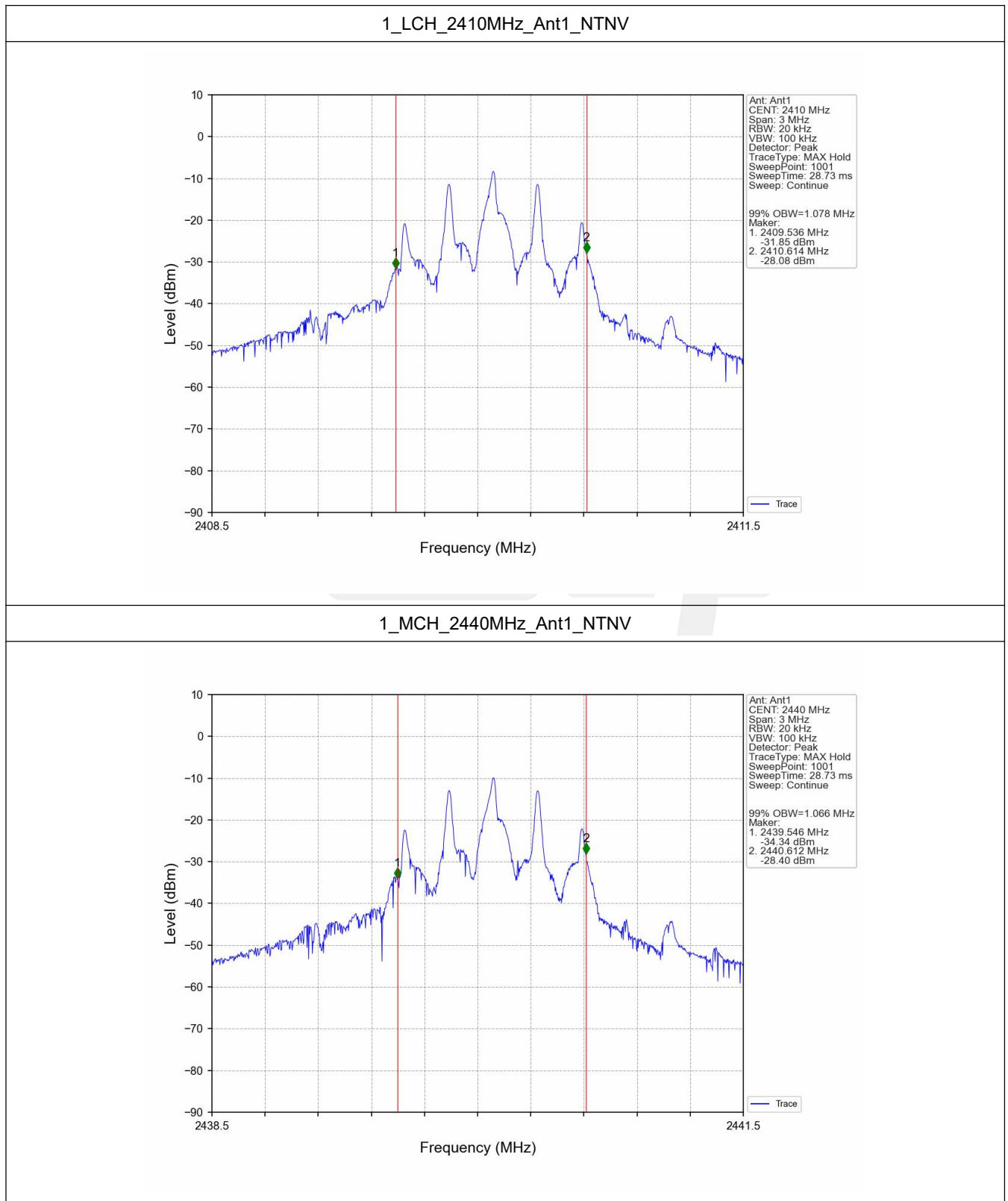
Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
1	SISO	2410	1	1.078	/	Pass
		2440	1	1.066	/	Pass
		2475	1	1.061	/	Pass

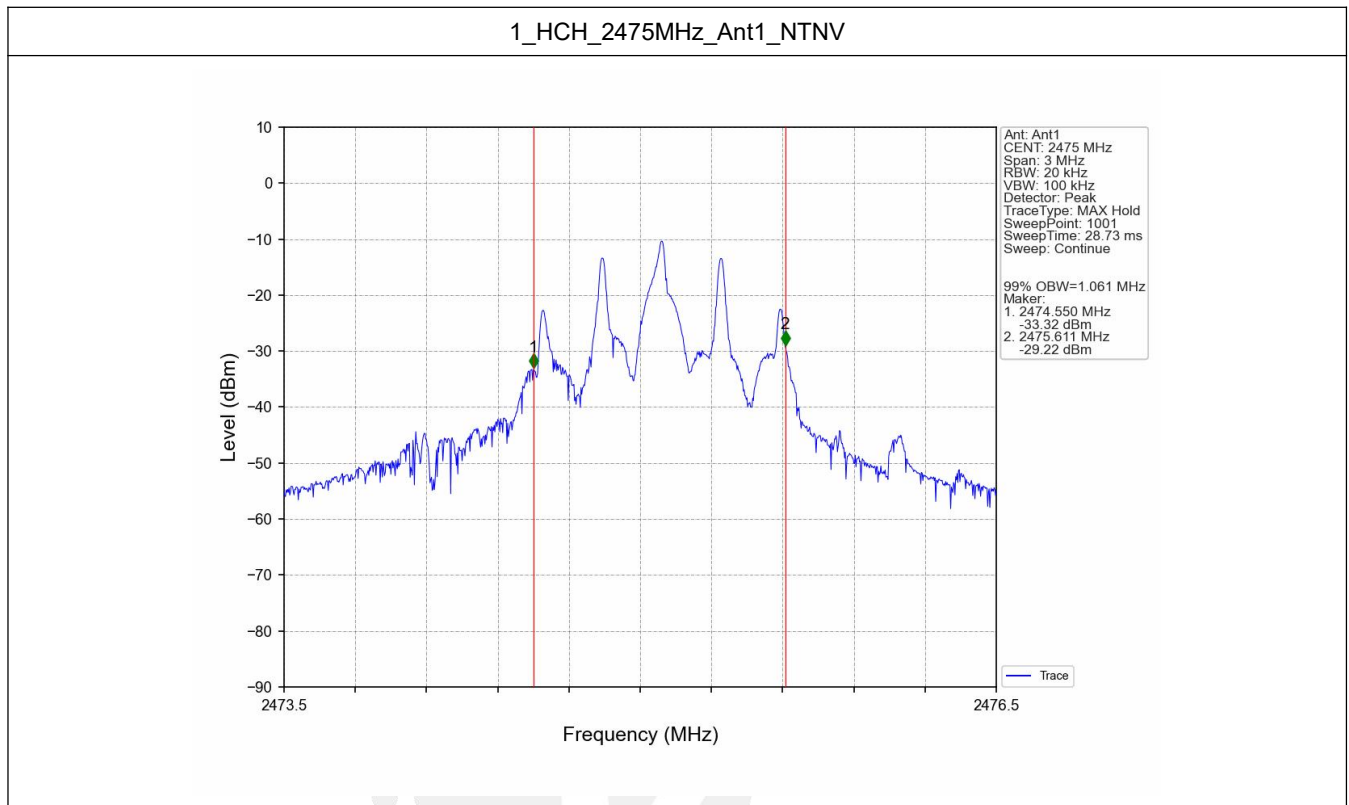
2.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
1	SISO	2410	1	0.583	≥ 0.5	Pass
		2440	1	0.579	≥ 0.5	Pass
		2475	1	0.579	≥ 0.5	Pass

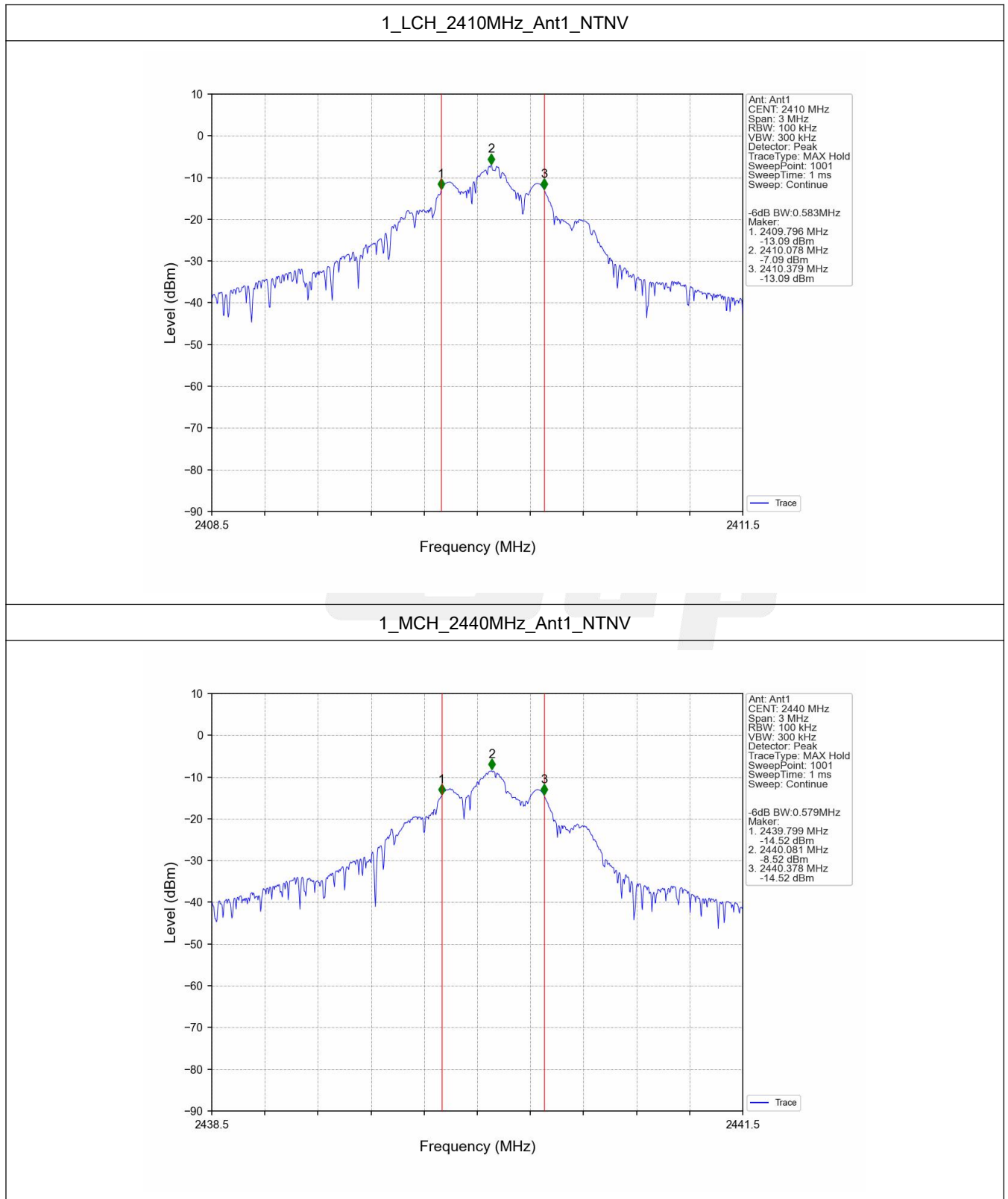
2.2 Test Graph

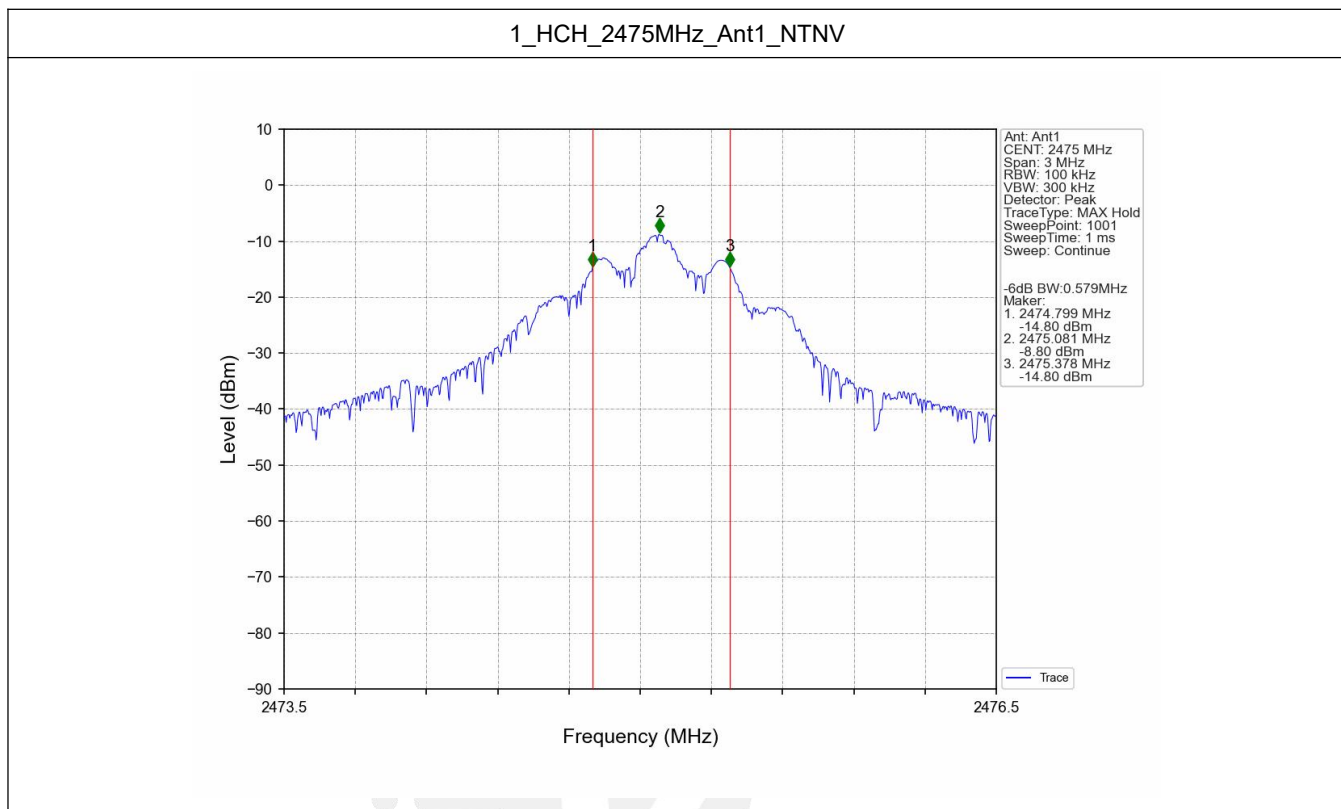
2.2.1 OBW





2.2.2 6dB BW






3. Maximum Conducted Output Power

3.1 Test Result

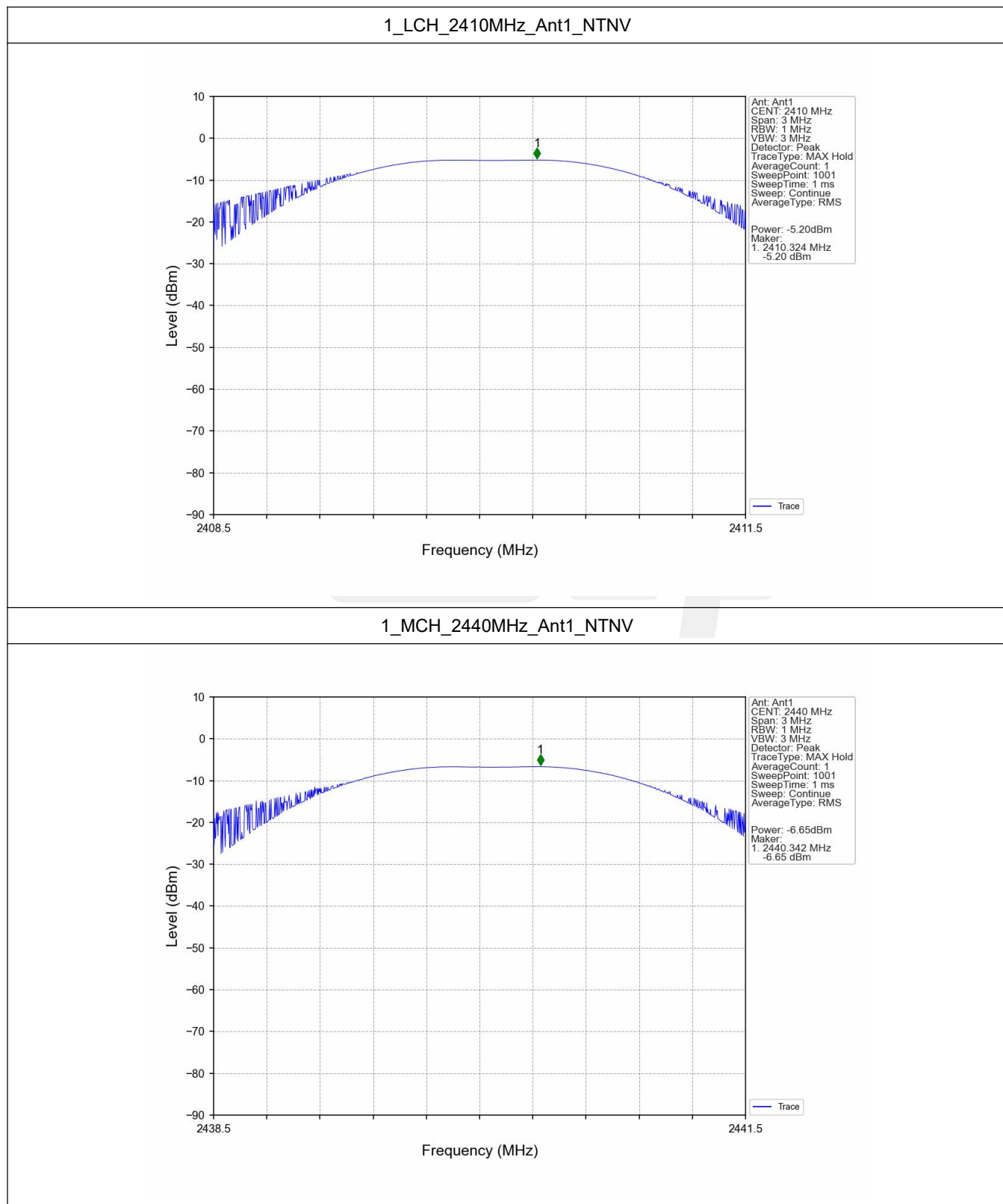
3.1.1 Power

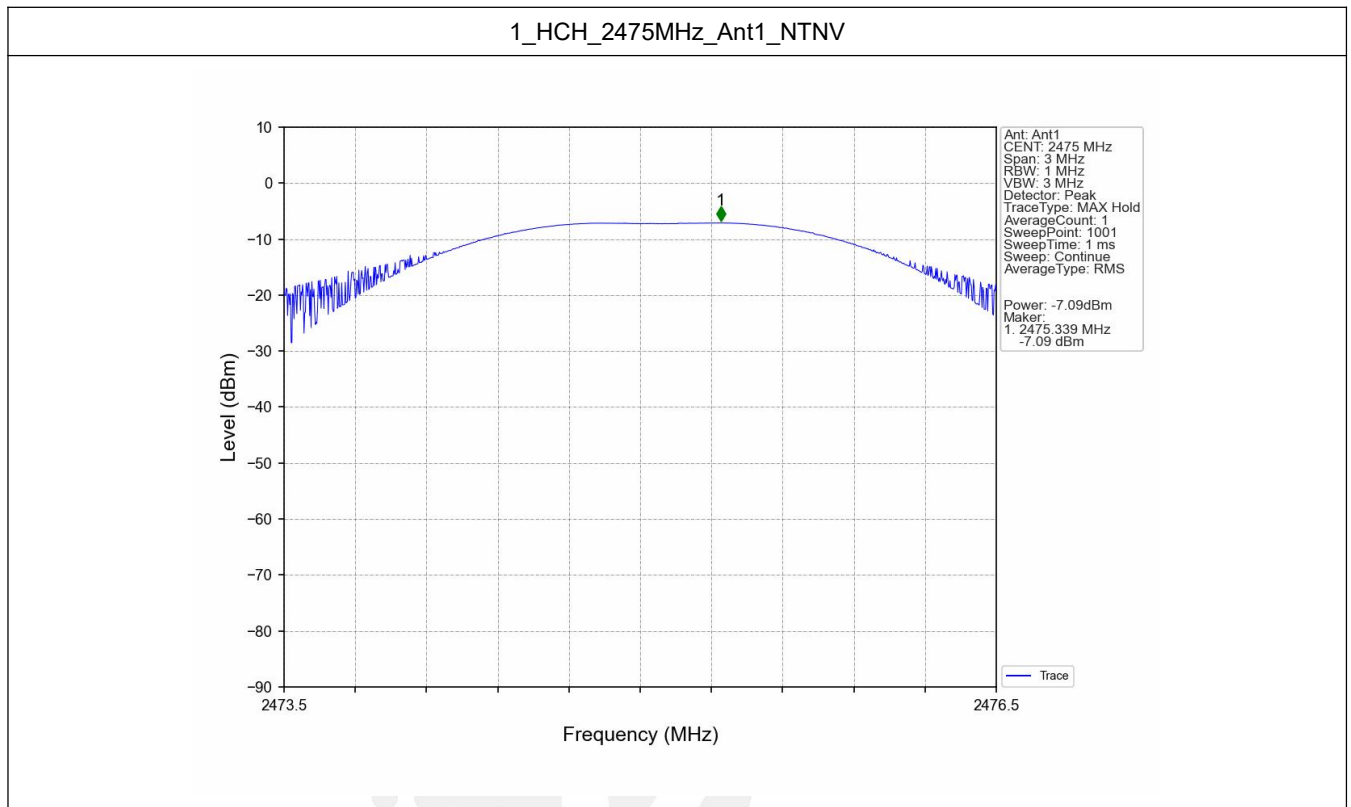
Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
1	SISO	2410	-5.20	<=30	Pass
		2440	-6.65	<=30	Pass
		2475	-7.09	<=30	Pass
Note1: Antenna Gain: Ant1: 0.52dBi;					



3.2 Test Graph

3.2.1 Power





4. Maximum Power Spectral Density

4.1 Test Result

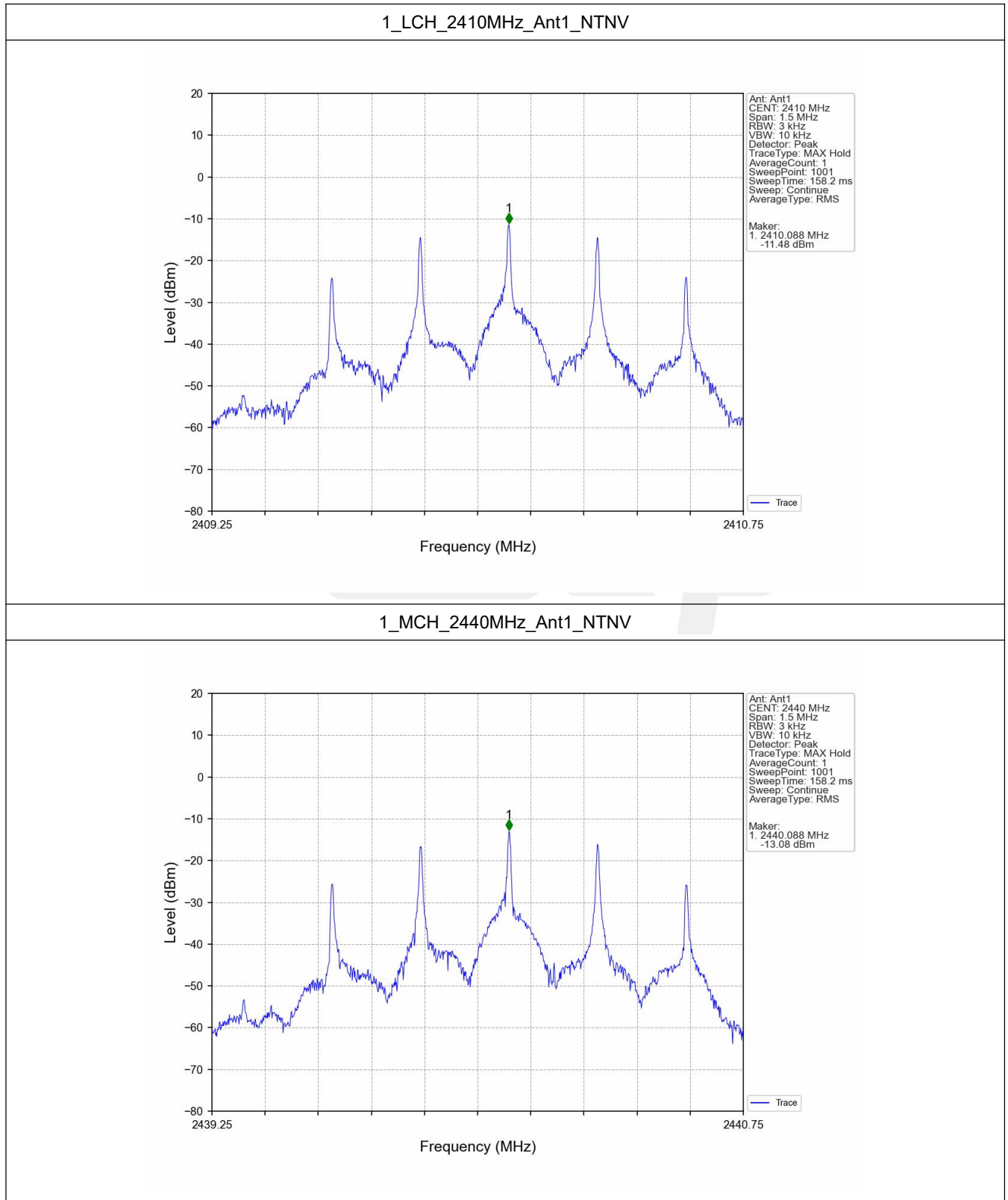
4.1.1 PSD

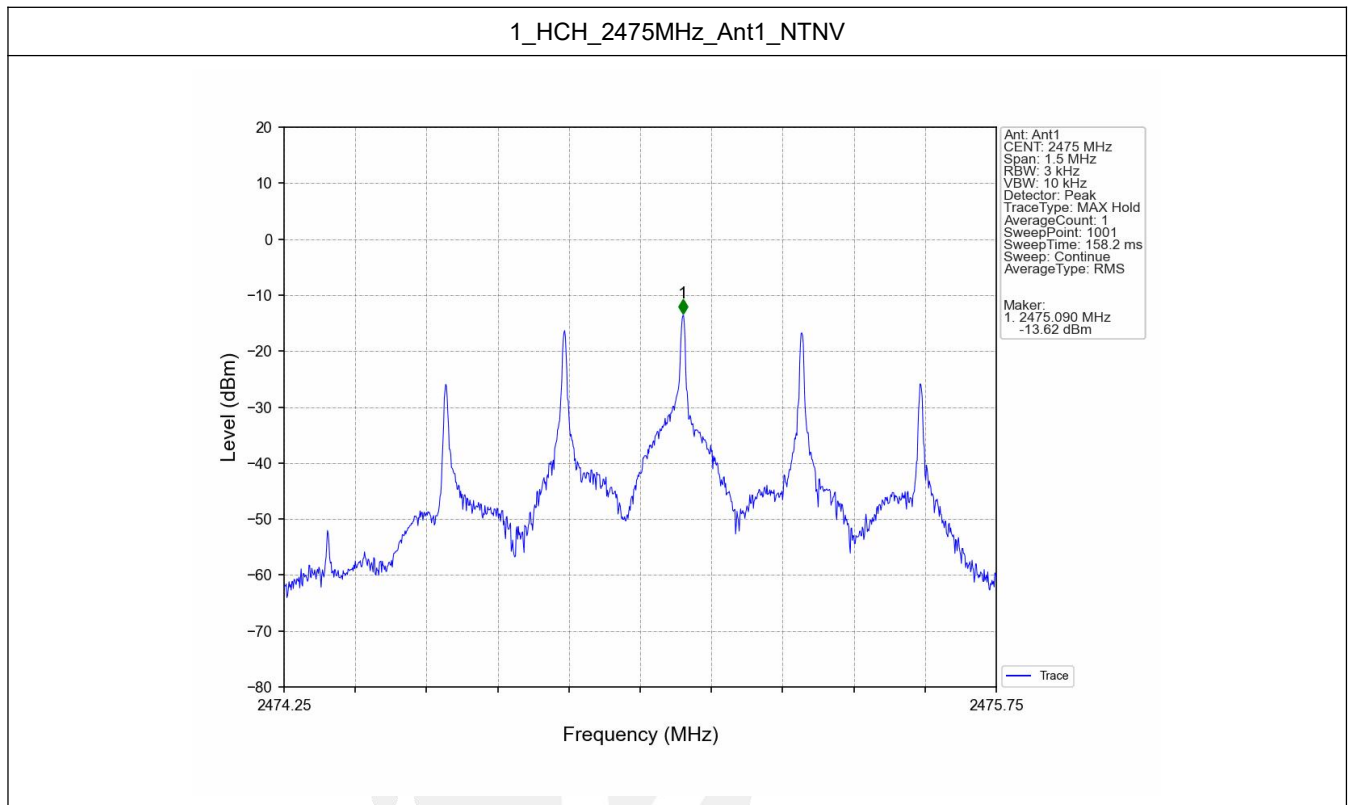
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm)		Verdict
			ANT1	Limit(dBm/3kHz)	
1	SISO	2410	-11.48dBm/3kHz	<=8	Pass
		2440	-13.08dBm/3kHz	<=8	Pass
		2475	-13.62dBm/3kHz	<=8	Pass
Note1: Antenna Gain: Ant1: 0.52dBi;					



4.2 Test Graph

4.2.1 PSD





5. Unwanted Emissions In Non-restricted Frequency Bands

5.1 Test Result

5.1.1 Ref

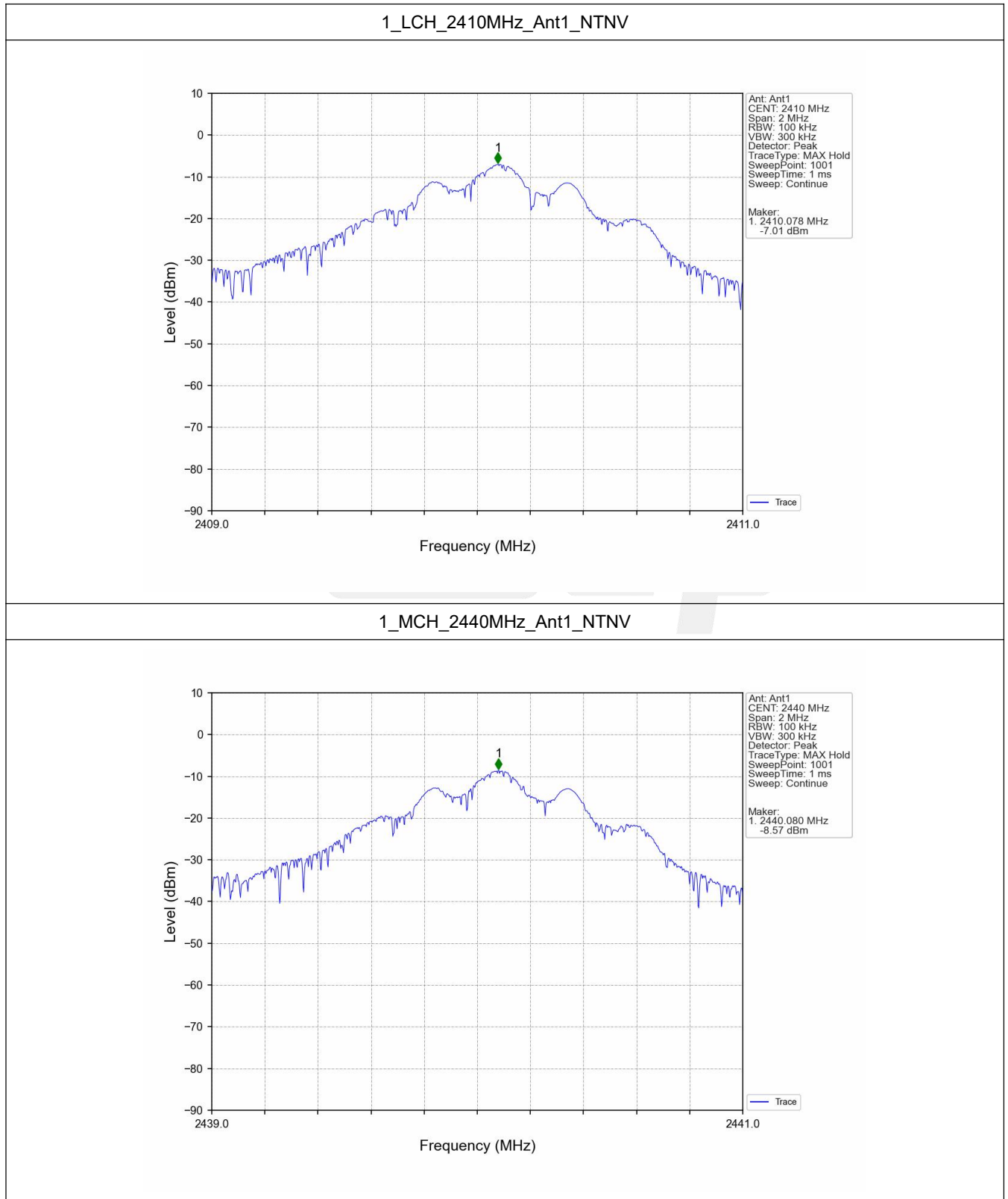
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
1	SISO	2410	1	-7.01
		2440	1	-8.57
		2475	1	-8.86

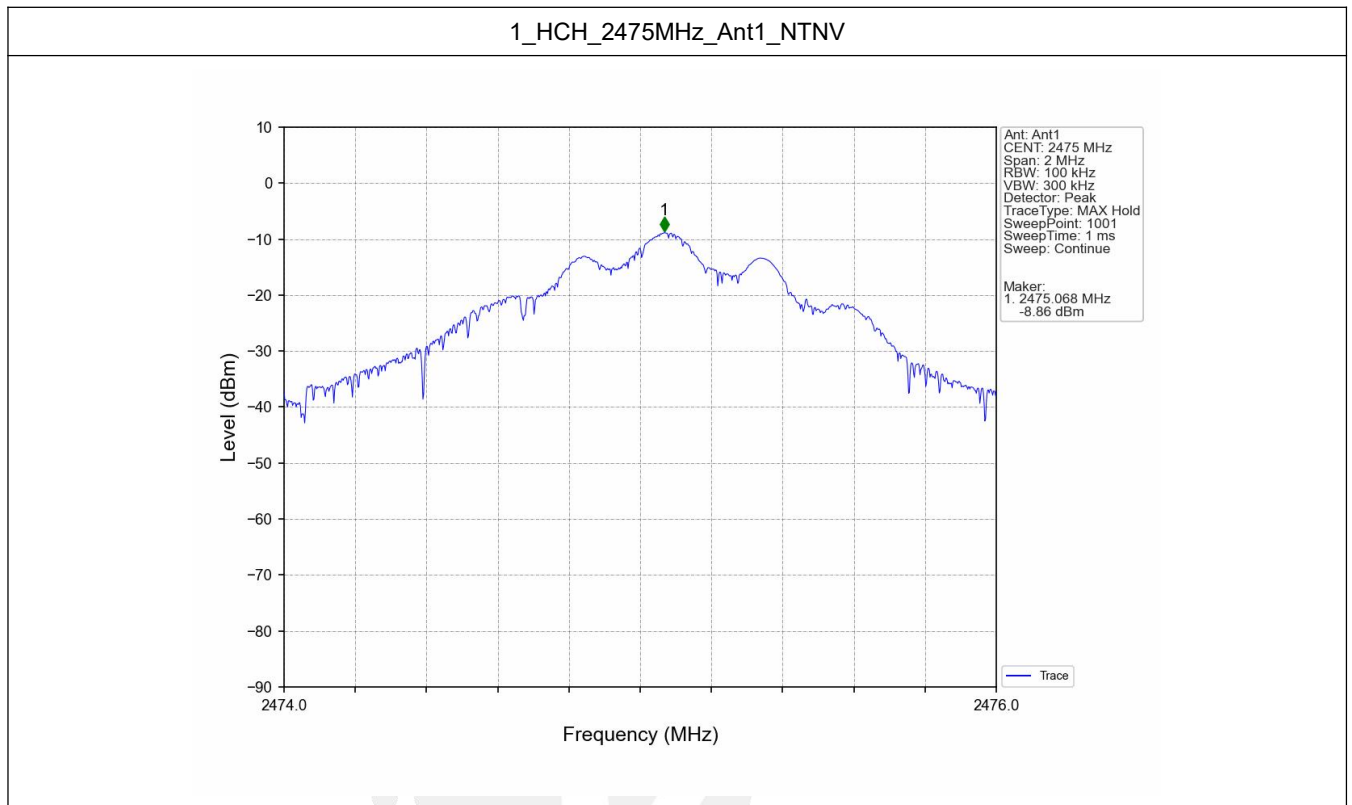
5.1.2 CSE

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
1	SISO	2410	1	-7.01	-27.01	Pass
		2440	1	-8.57	-28.57	Pass
		2475	1	-8.86	-28.86	Pass

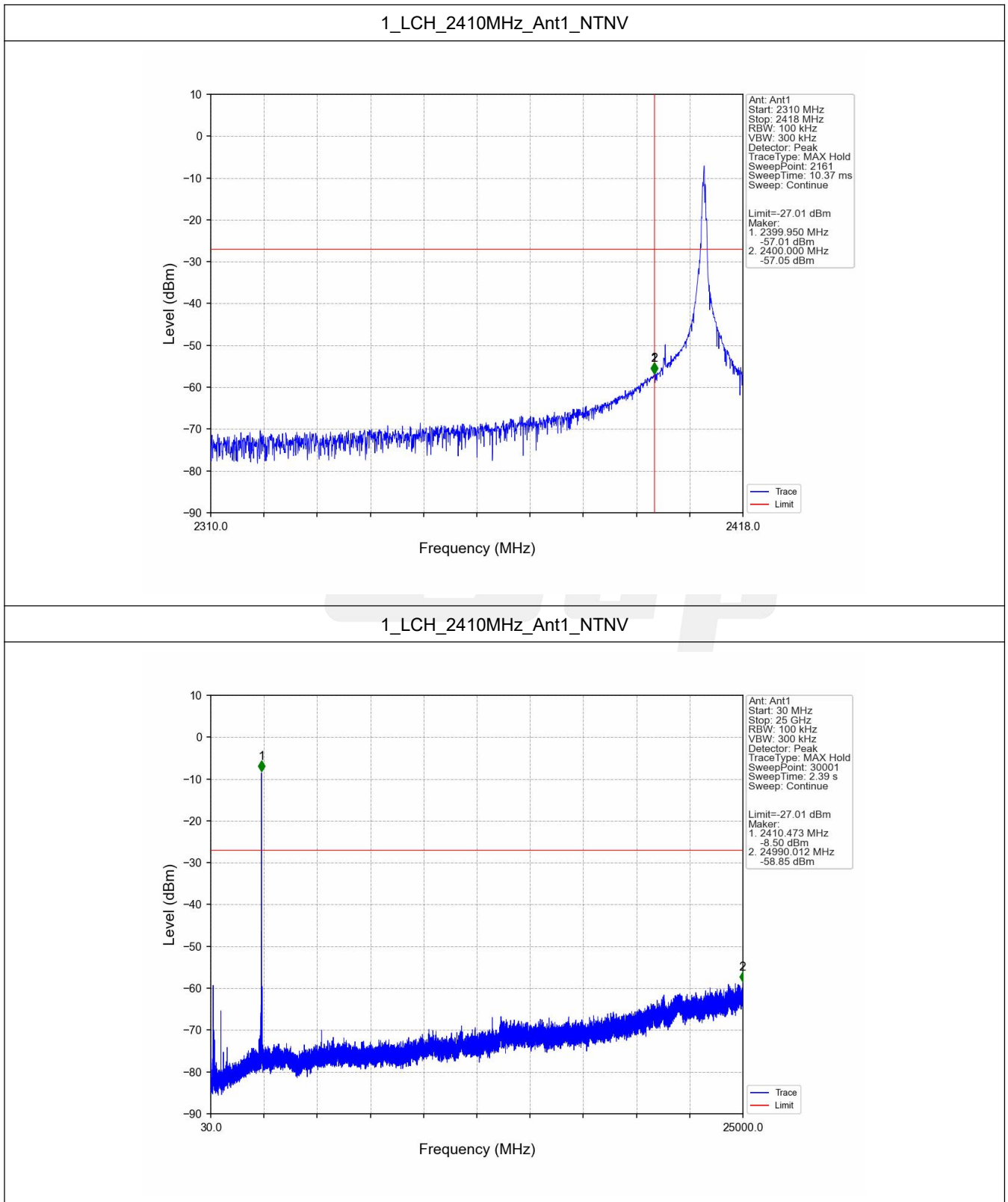
5.2 Test Graph

5.2.1 Ref

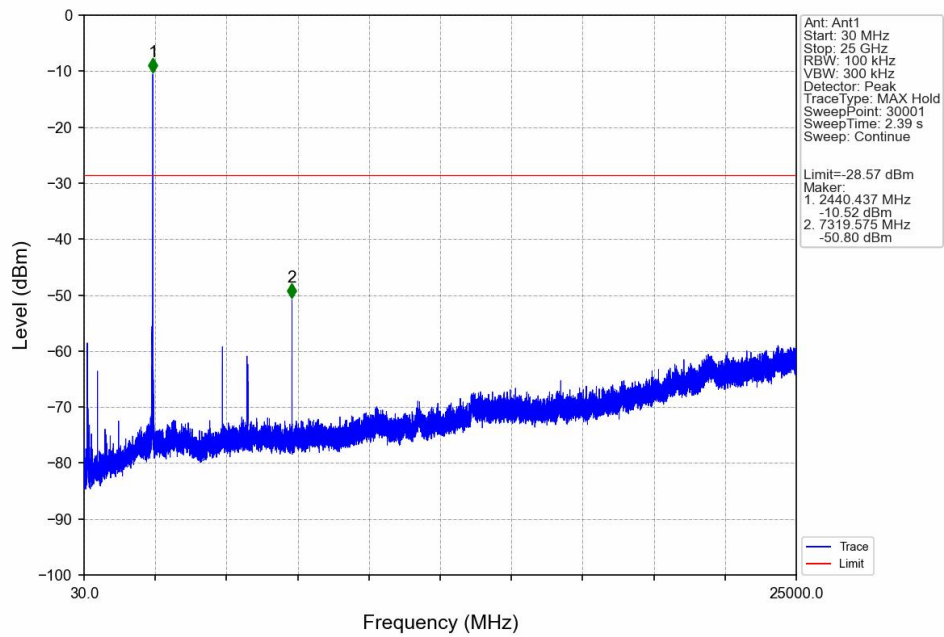




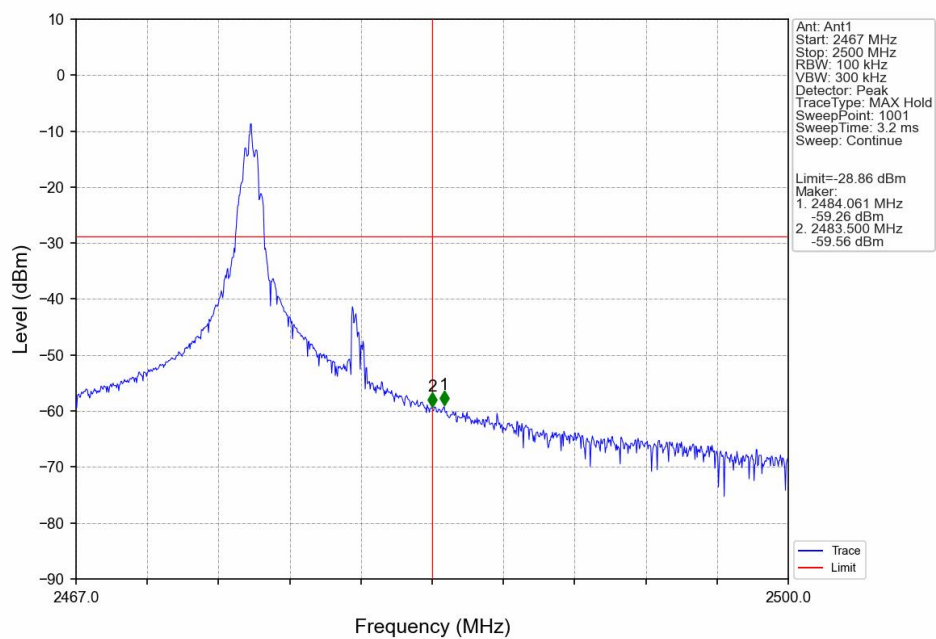
5.2.2 CSE

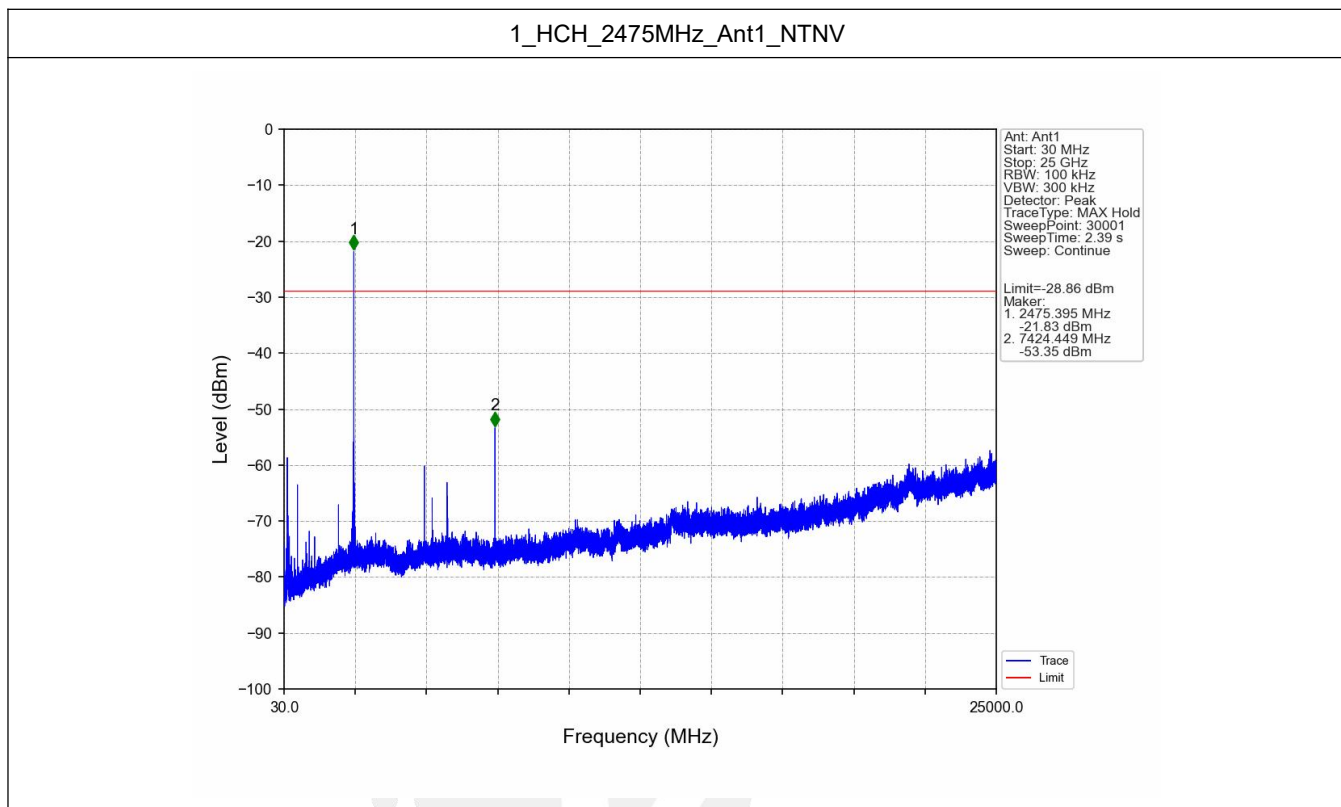


1_MCH_2440MHz_Ant1_NTNV



1_HCH_2475MHz_Ant1_NTNV






6. Form731

6.1 Test Result

6.1.1 Form731

Lower Freq (MHz)	High Freq (MHz)	MAX Power (W)	MAX Power (dBm)
2410	2475	0.0003	-5.20

****End of the report****

