

Radio Test Report

47 CFR Part 15.247

Applicant's name : HotBell LLC

Address : 845 W Center Street, Pocatello, ID 83204, USA

Manufacture's Name : Shenzhen Hongfeng Electronic Technology Co., Ltd.

Address : Room 405, Yin Feng Commercial Building, No. 570 Fenshan Road, District 47, Fenshan Community, Xin'an Subdistrict, Bao'an District, Shenzhen

Product description

Trader mark : HotBell

Product Name: : USE WIRE MOUSE

Model and/or type reference : HBGMPro1

Serial Model : N/A

Rating(s) : DC 5V, 280mA

Standards : 47 CFR Part 15.247

FCC ID : 2BV43-HBGMPRO1

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 : 2026-06-04 ~ 2026-06-29

Date of Issue : 2026-06-29

Test Result : **Pass**

Prepared by:

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Project Engineer

Reviewed by:

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Approved by:

Eason Yu

Technical Director





REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	2026-06-29	Valid	Initial Release



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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	Conducted Emission at AC power line	47 CFR Part 15.247	47 CFR 15.207(a)	PASS
3	6dB Bandwidth	47 CFR Part 15.247	47 CFR 15.247(a)(2)	PASS
4	Maximum Conducted Output Power	47 CFR Part 15.247	47 CFR 15.247(b)(3)	PASS
5	Power Spectral Density	47 CFR Part 15.247	47 CFR 15.247(e)	PASS
6	Emissions in non-restricted frequency bands	47 CFR Part 15.247	47 CFR 15.247(d)	PASS
7	Band edge emissions (Radiated)	47 CFR Part 15.247	47 CFR 15.247(d), 15.209, 15.205	PASS
8	Emissions in frequency bands (below 1GHz)	47 CFR Part 15.247	47 CFR 15.247(d), 15.209, 15.205	PASS
9	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	Conducted Emission (150KHz - 30MHz)	$\pm 2.54\text{dB}$
2	Occupied Channel Bandwidth	$\pm 3.5\%$
3	RF output power, conducted	$\pm 1.19\text{dB}$
4	Power Spectral Density, Conducted	$\pm 0.72\text{dB}$
5	Unwanted Emissions, conducted	$\pm 2.988\text{dB}$
6	All emissions, radiated (1GHz - 18GHz)	$\pm 4.66\text{dB}$
7	All emissions, radiated (30MHz - 1GHz)	$\pm 3.94\text{dB}$
8	All emissions, radiated (18GHz - 40GHz)	$\pm 4.31\text{dB}$

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

Applicant's name	HotBell LLC
Address	845 W Center Street, Pocatello, ID 83204, USA
EUT Name:	USE WIRE MOUSE
Model No:	HBGMPPro1
Serial Model:	N/A
Brand Name:	HotBell
Difference Description:	N/A
Operation Frequency:	2407MHz-2473.5MHz
Number of channels:	20
Modulation Type:	GFSK
Antenna type:	PCB antenna
Antenna Gain:	2.34dBi
Bluetooth Version:	N/A
Hardware Version:	N/A
Software Version:	N/A
Power Supply:	DC 5V, 280mA
Maximum Output Power:	-12.14dBm

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)
00	2407	10	2442
01	2410.5	11	2445.5
02	2414	12	2449
03	2417.5	13	2452.5
04	2421	14	2456
05	2424.5	15	2459.5
06	2428	16	2463

07	2431.5	17	2466.5
08	2435	18	2470
09	2438.5	19	2473.5

4.2. EUT Test Mode

TM1	TX mode
Test software Version	Test program: SSCOM V5.13.1
Frequency	2407MHz,2438.5MHz,2473.5MHz
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-G3N DKR3	N/A	N/A
2	Huawei Super Fast Charger	Huawei	HW-100225C00	N/A	N/A

5. EQUIPMENTS LIST FOR ALL TEST ITEMS

Conducted Emission at AC power line						
No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date
1	EMI test receiver ESCI	R&S	ESCI-3	100503	2026-03-17	2028-03-16
2	LISN	R&S	ENV216	103017	2025-09-10	2026-09-09
3	10dB limiter	Schwarzbeck	VTSD 9561	102834	2026-03-17	2028-03-16

6dB Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in non-restricted frequency bands						
No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date
1	spectrum analyzer	Agilent	N9020A	MY51287427	2025-07-07	2026-07-06
2	RF automatic control unit	TST	CBOX-Full	2752539	2025-07-14	2026-07-13

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	2025-07-07	2026-07-06
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	HC180400-50 G25	25098401	2025-09-19	2026-09-18
5	spectrum analyzer	R&S	FSV40	101373	2025-12-24	2026-12-23

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

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 PCB antenna. It conforms to the standard requirements.



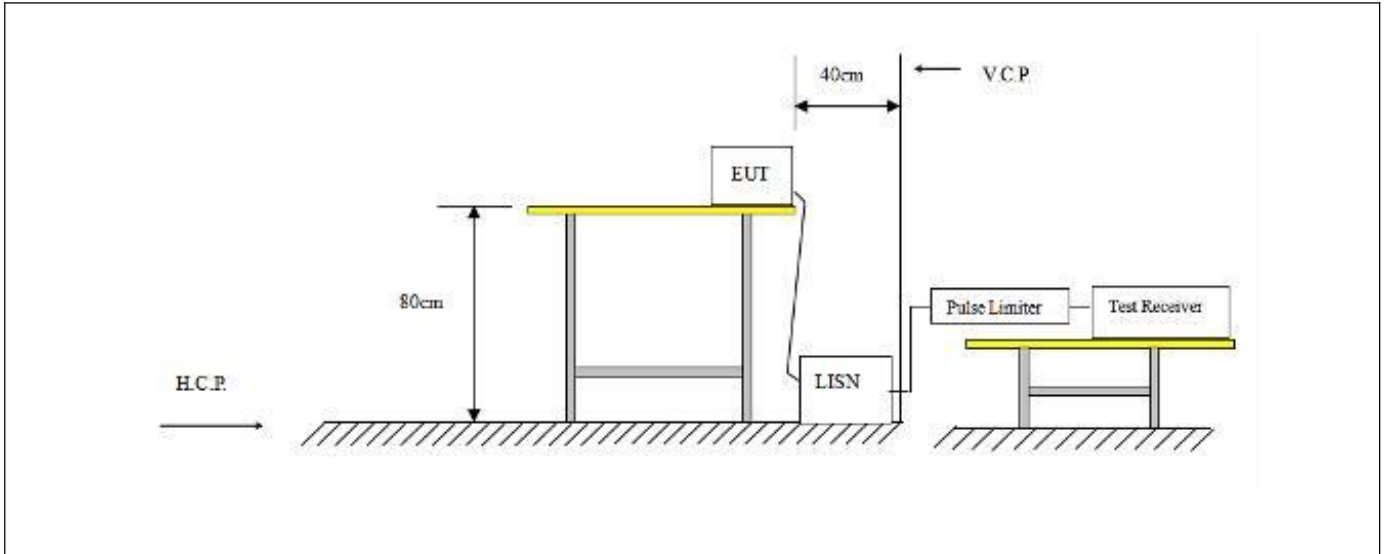
6.2. Conducted Emission at AC power line

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+C63.10a-2024 section 6.2		
Procedure:	Refer to ANSI C63.10-2020+C63.10a-2024 section 6.2, standard test method for ac power-line conducted emissions from unlicensed wireless devices		
Spectrum Analyzer Setting:	Spectrum Analyzer Setting	Setting	
	RBW	9KHz	
	VBW	9KHz	
	Start frequency	150KHz	
	Stop frequency	30MHz	
	Sweep Time	Auto	
	Detector	Peak/AVG	
	Trace Mode	Max Hold	

6.2.1. EUT Operation

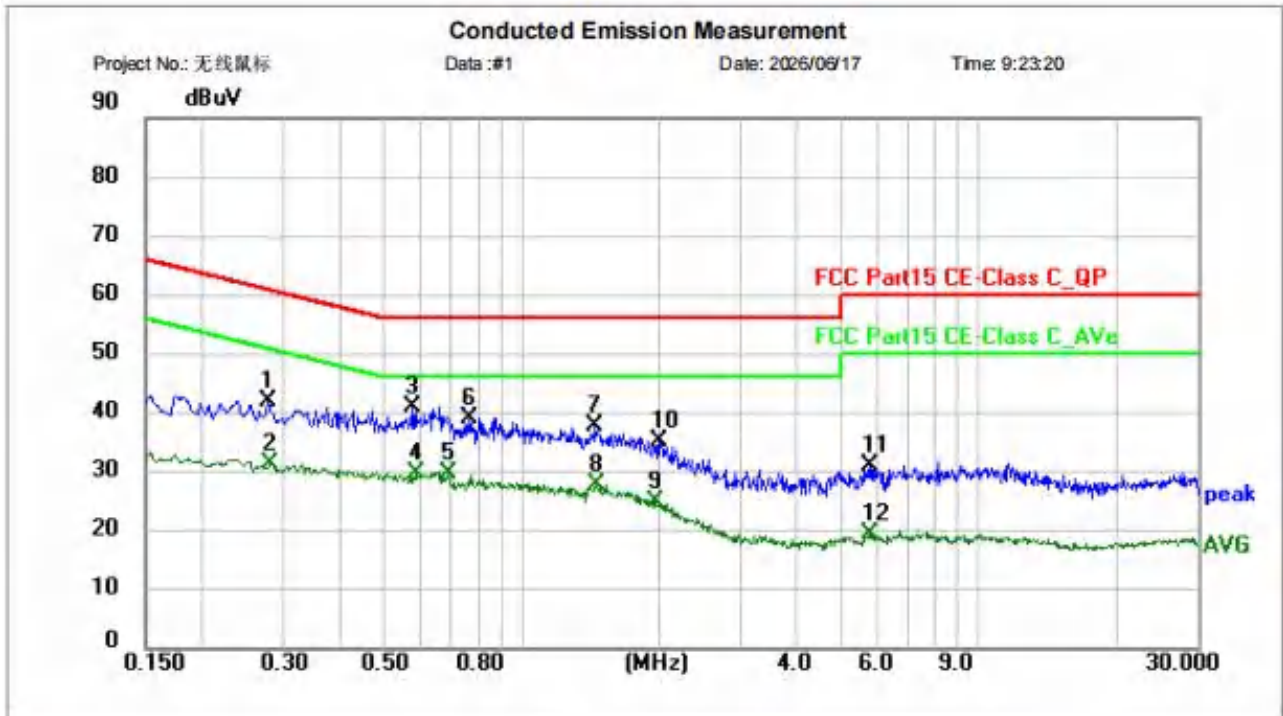
Operating Environment:					
Temperature:	26.3 °C	Humidity:	54 %	Atmospheric Pressure:	101.1 kPa
Pre test mode:	TM1				
Final test mode:	TM1				

6.2.2. Test Setup Diagram:



6.2.3. Test Data

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



Site LAB

Limit: FCC Part15 CE-Class C_QP

EUT:

M/N:

Mode:

Note:

Phase: L1

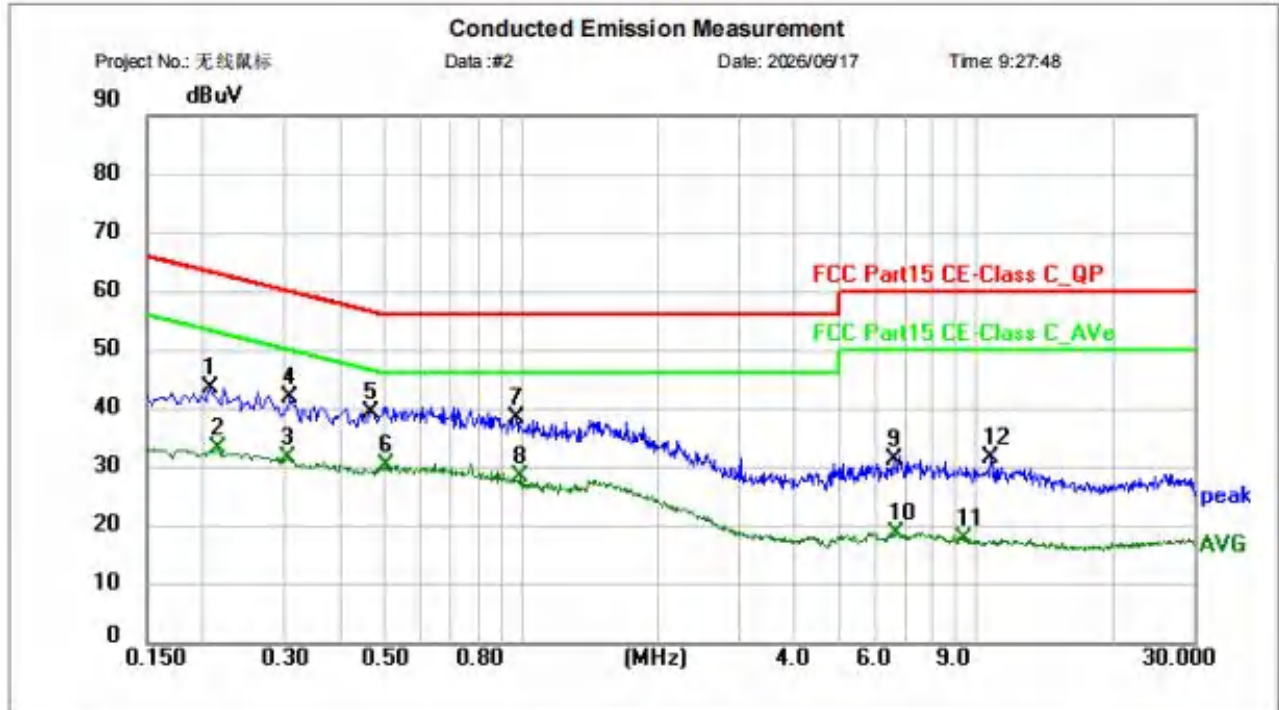
Power: AC120/60Hz

Temperature: 26 °C

Humidity: 54 %RH

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.2779	22.49	19.45	41.94	60.88	-18.94	peak	P	
2	0.2819	11.84	19.45	31.29	50.76	-19.47	AVG	P	
3 *	0.5780	21.41	19.47	40.88	56.00	-15.12	peak	P	
4	0.5860	10.21	19.47	29.68	46.00	-16.32	AVG	P	
5	0.6900	10.17	19.48	29.65	46.00	-16.35	AVG	P	
6	0.7660	19.69	19.49	39.18	56.00	-16.82	peak	P	
7	1.4420	18.31	19.51	37.82	56.00	-18.18	peak	P	
8	1.4620	8.25	19.51	27.76	46.00	-18.24	AVG	P	
9	1.9620	5.40	19.53	24.93	46.00	-21.07	AVG	P	
10	2.0100	15.57	19.53	35.10	56.00	-20.90	peak	P	
11	5.7700	11.26	19.79	31.05	60.00	-28.95	peak	P	
12	5.7700	-0.45	19.79	19.34	50.00	-30.66	AVG	P	

TM1 / Line: Neutral / Band: 2400-2483.5 MHz / BW: 20 / CH: L



Site LAB

Limit: FCC Part15 CE-Class C_QP

EUT:

M/N:

Mode:

Note:

Phase: N

Power: AC120/60Hz

Temperature: 26 °C

Humidity: 54 %RH

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.2060	24.07	19.42	43.49	63.37	-19.88	peak	P	
2	0.2140	13.89	19.42	33.31	53.05	-19.74	AVG	P	
3	0.3060	12.36	19.44	31.80	50.08	-18.28	AVG	P	
4	0.3100	22.63	19.44	42.07	59.97	-17.90	peak	P	
5	0.4636	20.05	19.46	39.51	56.63	-17.12	peak	P	
6 *	0.5060	11.05	19.46	30.51	46.00	-15.49	AVG	P	
7	0.9780	18.79	19.49	38.28	56.00	-17.72	peak	P	
8	0.9900	8.98	19.49	28.47	46.00	-17.53	AVG	P	
9	6.5580	11.57	19.88	31.45	60.00	-28.55	peak	P	
10	6.6460	-0.94	19.89	18.95	50.00	-31.05	AVG	P	
11	9.4220	-2.36	20.14	17.78	50.00	-32.22	AVG	P	
12	10.7540	11.40	20.24	31.64	60.00	-28.36	peak	P	

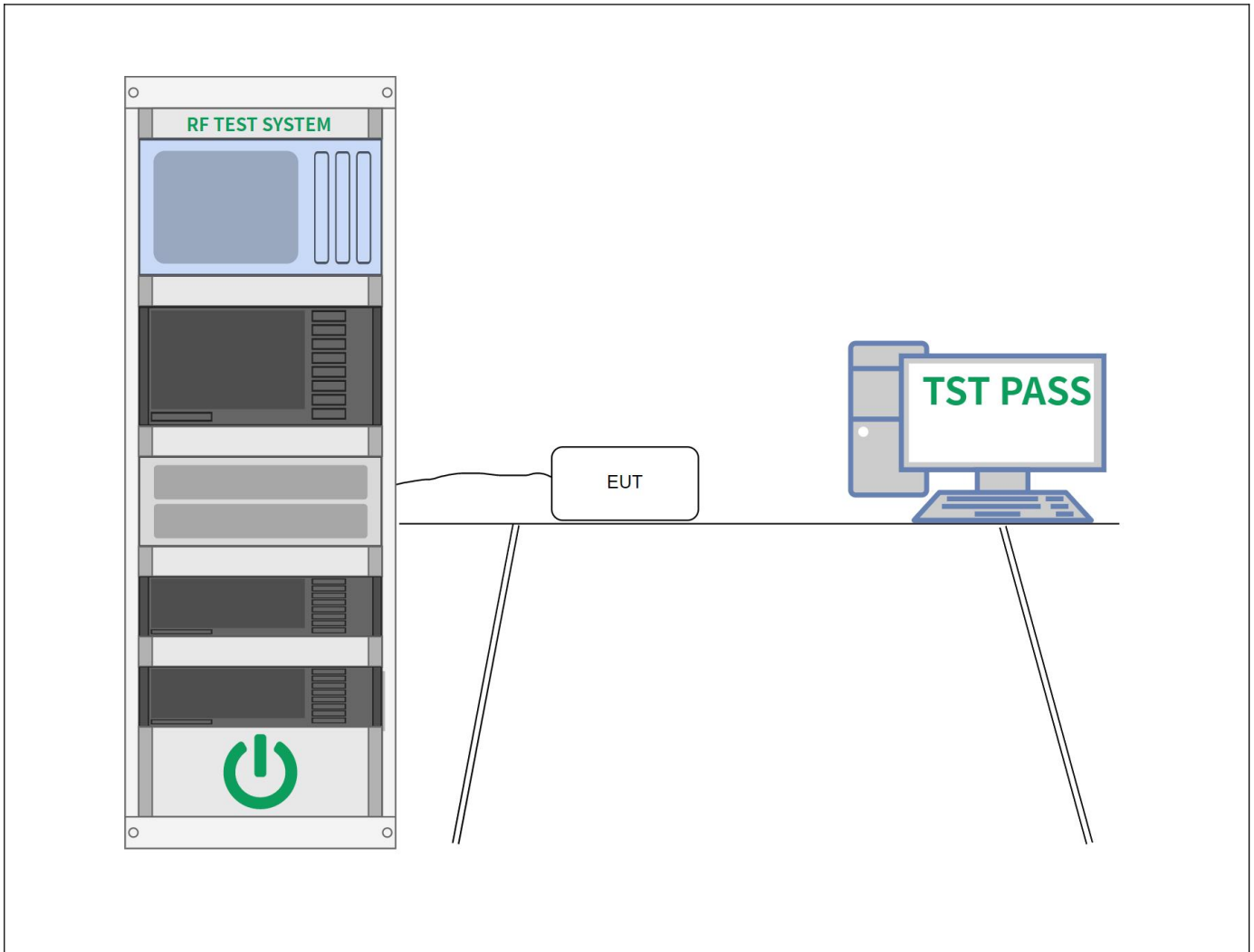
6.3. 6dB Bandwidth

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+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.	
Spectrum Analyzer Setting:	Spectrum Analyzer Setting	Setting
	RBW	100KHz
	VBW	300KHz
	Span	3MHz
	Sweep Time	Auto
	Detector	Peak
	Trace Mode	Max Hold

6.3.1. EUT Operation

Operating Environment:					
Temperature:	26.3 °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.

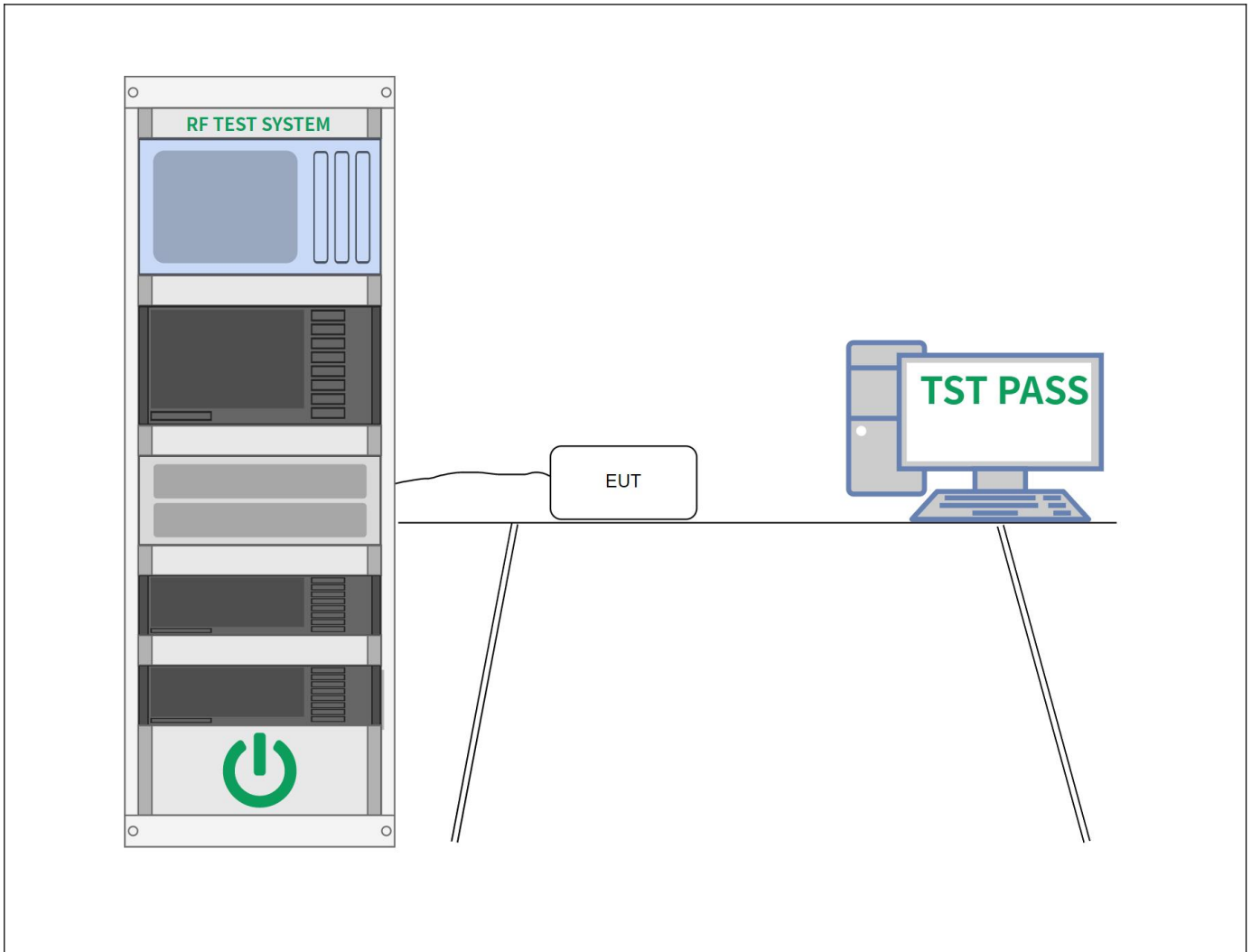
6.4. Maximum Conducted Output Power

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+C63.10a-2024 section 11.9.1	
Procedure:	ANSI C63.10-2020+C63.10a-2024, section 11.9.1 Maximum peak conducted output power	
Spectrum Analyzer Setting:	Spectrum Analyzer Setting	Setting
	RBW	>DTS Bandwidth
	VBW	3*RBW
	Span	>3*DTS Bandwidth
	Sweep Time	Auto
	Detector	Peak
	Trace Mode	Max Hold

6.4.1. EUT Operation

Operating Environment:					
Temperature:	26.3 °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.

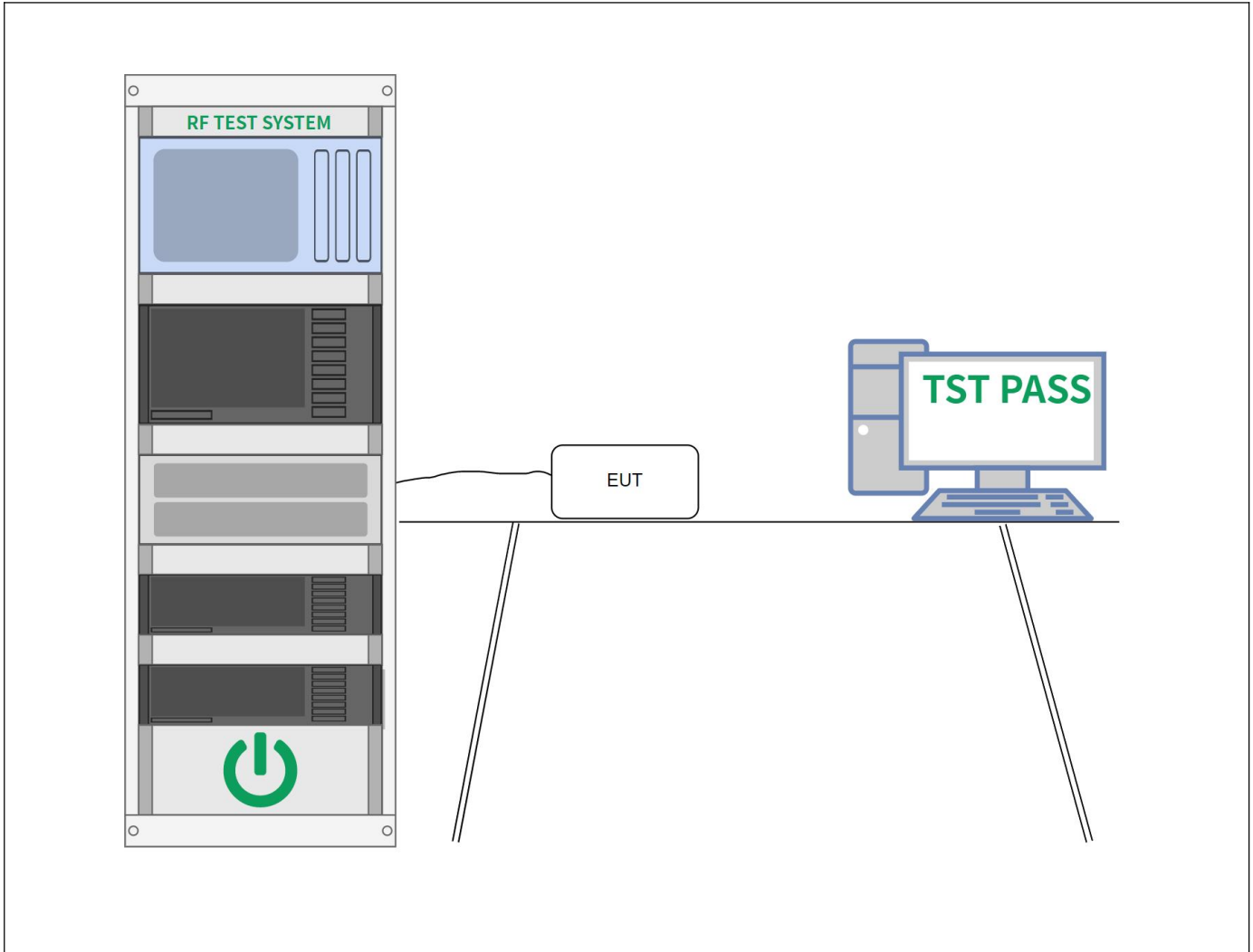
6.5. Power Spectral Density

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+C63.10a-2024, section 11.10	
Procedure:	ANSI C63.10-2020+C63.10a-2024, section 11.10, Maximum power spectral density level in the fundamental emission	
Spectrum Analyzer Setting:	Spectrum Analyzer Setting	Setting
	RBW	3KHz
	VBW	10KHz
	Span	1.5 times the DTS bandwidth
	Sweep Time	Auto
	Detector	Peak
	Trace Mode	Max Hold

6.5.1. EUT Operation

Operating Environment:			
Temperature:	26.3 °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.

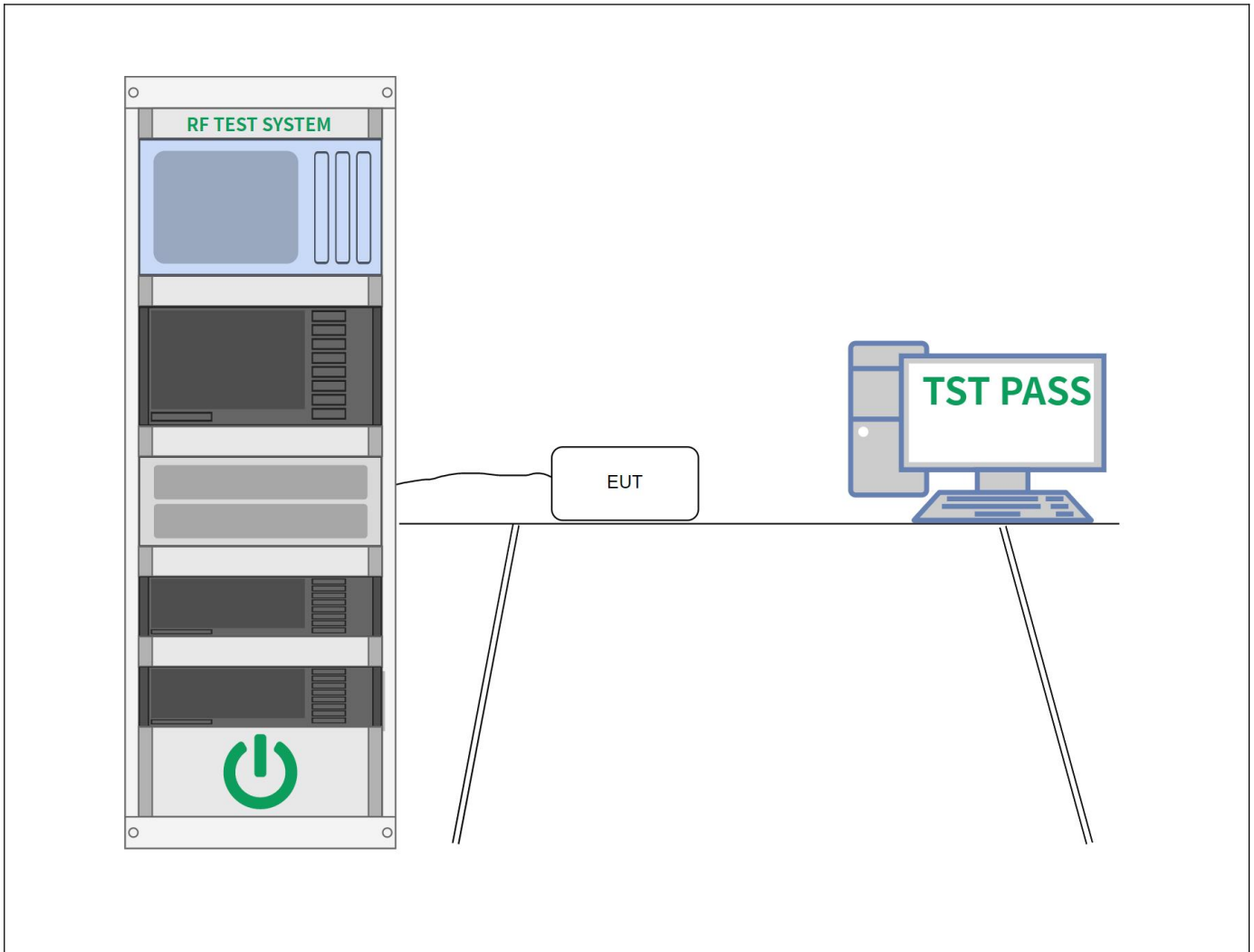
6.6. Emissions in non-restricted frequency bands

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+C63.10a-2024 section 11.11	
Procedure:	ANSI C63.10-2020+C63.10a-2024 Section 11.11.1, Section 11.11.2, Section 11.11.3	
Spectrum Analyzer Setting:	Spectrum Analyzer Setting	Setting
	RBW	100KHz
	VBW	300KHz
	Start frequency	30MHz
	Stop frequency	26.5GHz
	Sweep Time	Auto
	Detector	Peak
	Trace Mode	Max Hold

6.6.1. EUT Operation

Operating Environment:					
Temperature:	26.3 °C	Humidity:	54 %	Atmospheric Pressure:	101.1 kPa
Pre test mode:	TM1				
Final test mode:	TM1				

6.6.2. Test Setup Diagram:



6.6.3. Test Data

Please Refer to Appendix for Details.

6.7. 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+C63.10a-2024 section 6.10		
Procedure:	ANSI C63.10-2020+C63.10a-2024 section 6.10.5.2		
Spectrum Analyzer Setting:	Spectrum Analyzer Setting	Setting	
	RBW	1MHz	
	VBW	PEAK Measurement	AVG Measurement
		3MHz	Duty cycle ≥ 98%, VBW=10Hz
			Duty cycle < 98%, VBW ≤ 1/T
	Start frequency	2.35GHz	
	Stop frequency	2.50GHz	
	Sweep Time	Auto	
	Detector	Peak	
	Trace Mode	Max Hold	

6.7.1. EUT Operation

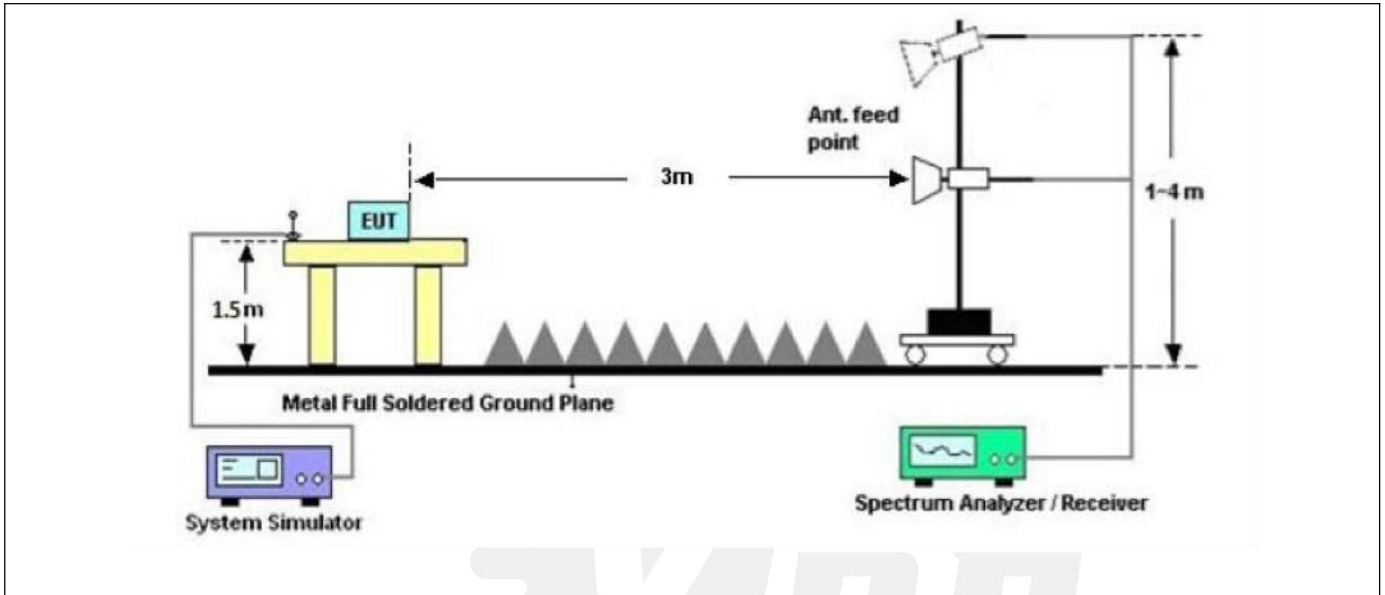
Operating Environment:

Temperature:	26.3 °C	Humidity:	54 %	Atmospheric Pressure:	101.1 kPa
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Pre test mode:	TM1
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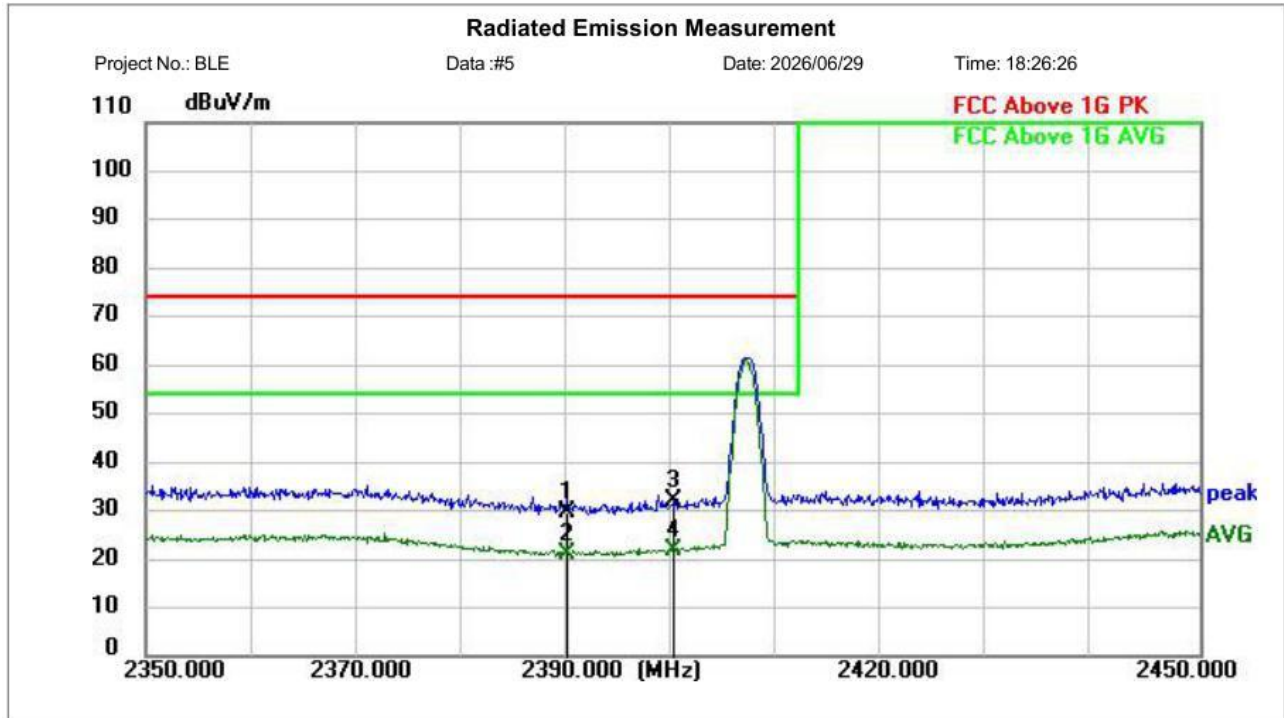
Final test mode:	TM1
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6.7.2. Test Setup Diagram:



6.7.3. Test Data

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



Site LAB

Limit: FCC Above 1G PK

EUT:

M/N: 2407

Mode:

Note:

Polarization: **Horizontal**

Power:

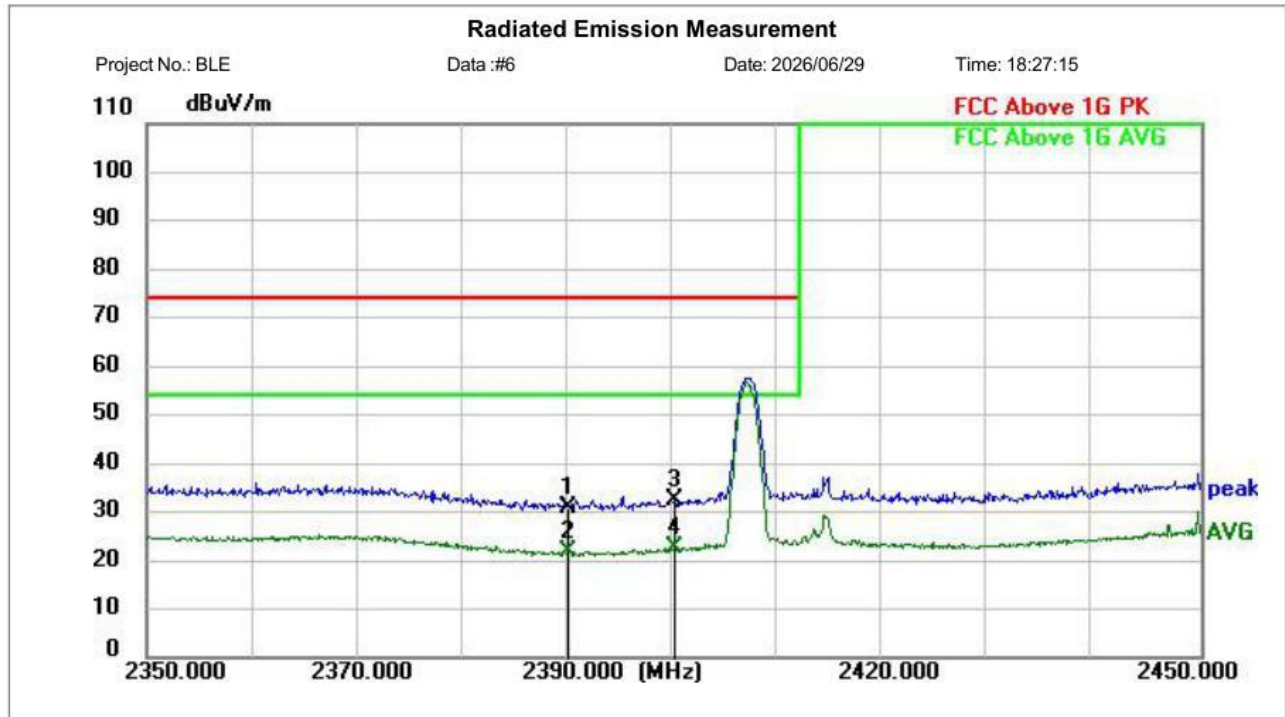
Distance: 3m

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	2390.0000	54.95	-25.27	29.68	74.00	-44.32	peak	150	360	P	
2	2390.0000	46.25	-25.27	20.98	54.00	-33.02	AVG	150	360	P	
3	2400.0000	57.86	-25.87	31.99	74.00	-42.01	peak	150	360	P	
4 *	2400.0000	47.61	-25.87	21.74	54.00	-32.26	AVG	150	360	P	

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



Site LAB

Limit: FCC Above 1G PK

EUT:

M/N: 2407

Mode:

Note:

Polarization: **Vertical**

Power:

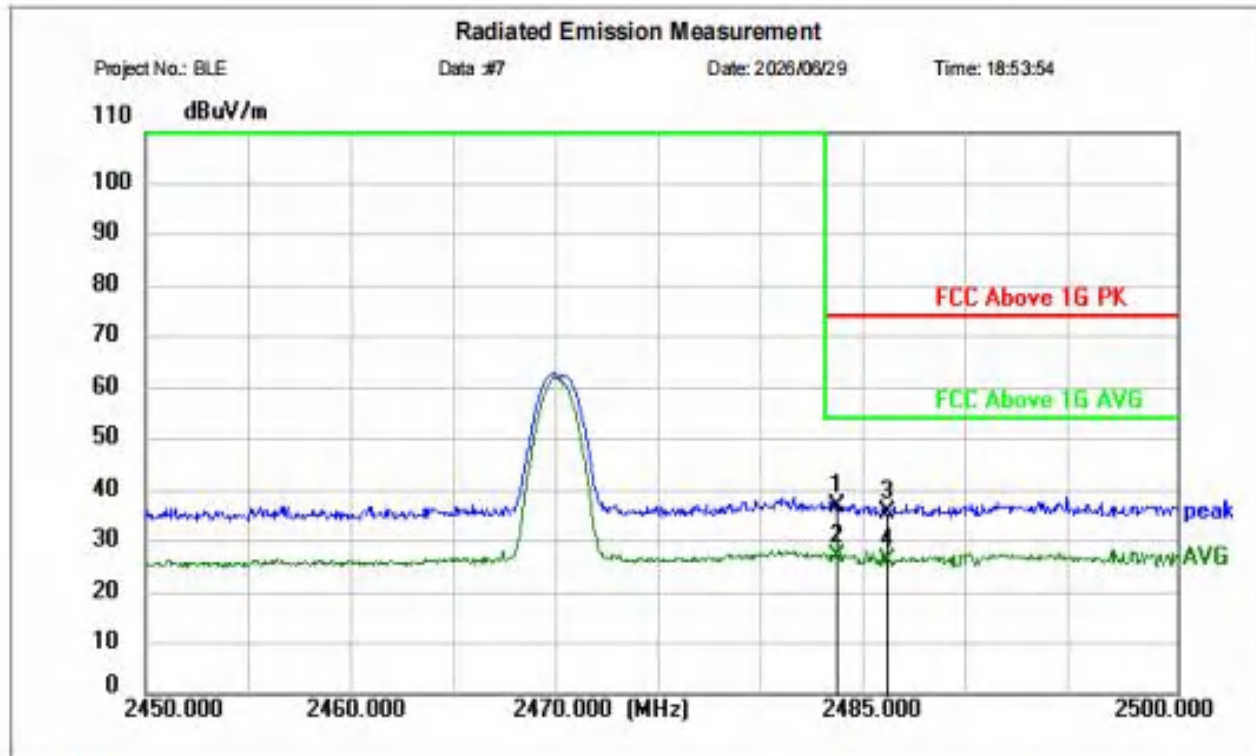
Distance: 3m

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	2390.0000	53.70	-22.71	30.99	74.00	-43.01	peak	150	360	P	
2	2390.0000	44.48	-22.71	21.77	54.00	-32.23	AVG	150	360	P	
3	2400.0000	55.20	-22.67	32.53	74.00	-41.47	peak	150	360	P	
4 *	2400.0000	45.31	-22.67	22.64	54.00	-31.36	AVG	150	360	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

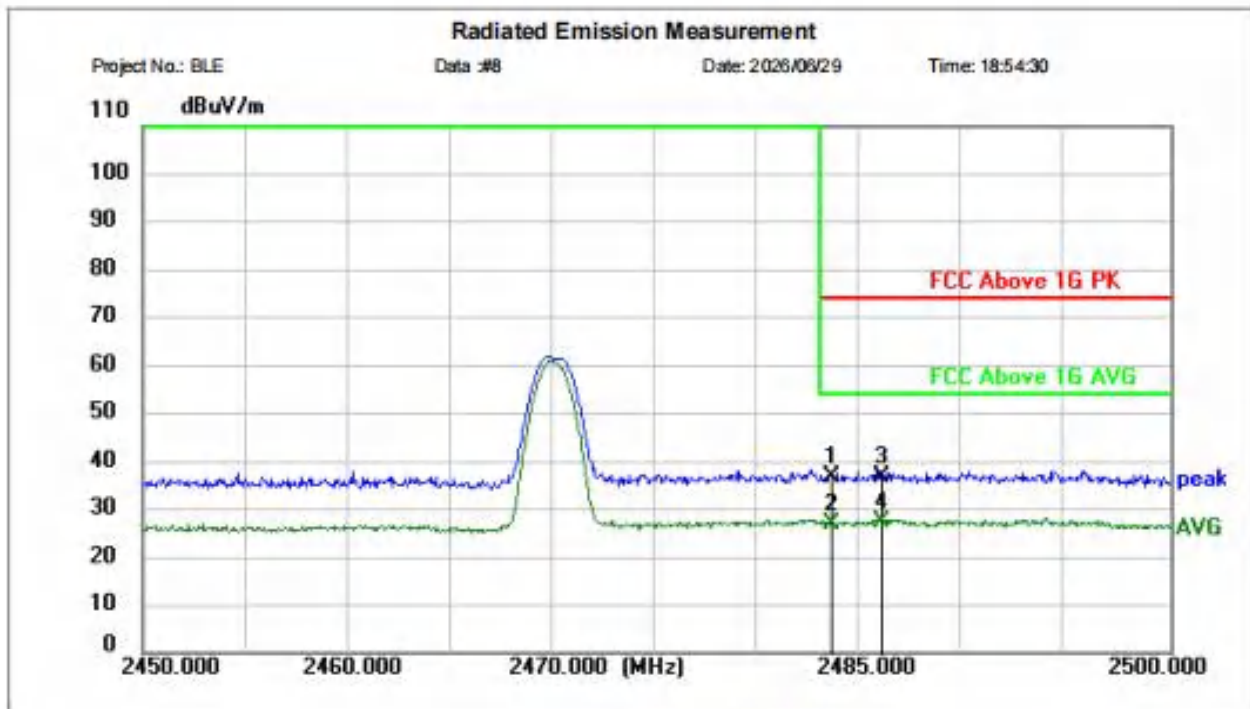
M/N: 2473.5

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	2483.5000	59.52	-22.81	36.71	74.00	-37.29	peak			P	
2 *	2483.5000	49.84	-22.81	27.03	54.00	-26.97	AVG			P	
3	2486.0000	58.45	-22.79	35.66	74.00	-38.34	peak			P	
4	2486.0000	49.08	-22.79	26.29	54.00	-27.71	AVG			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: 2473.5
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	2483.5000	59.11	-22.27	36.84	74.00	-37.16	peak			P	
2	2483.5000	49.34	-22.27	27.07	54.00	-26.93	AVG			P	
3	2486.0000	58.89	-22.26	36.63	74.00	-37.37	peak			P	
4 *	2486.0000	49.56	-22.26	27.30	54.00	-26.70	AVG			P	

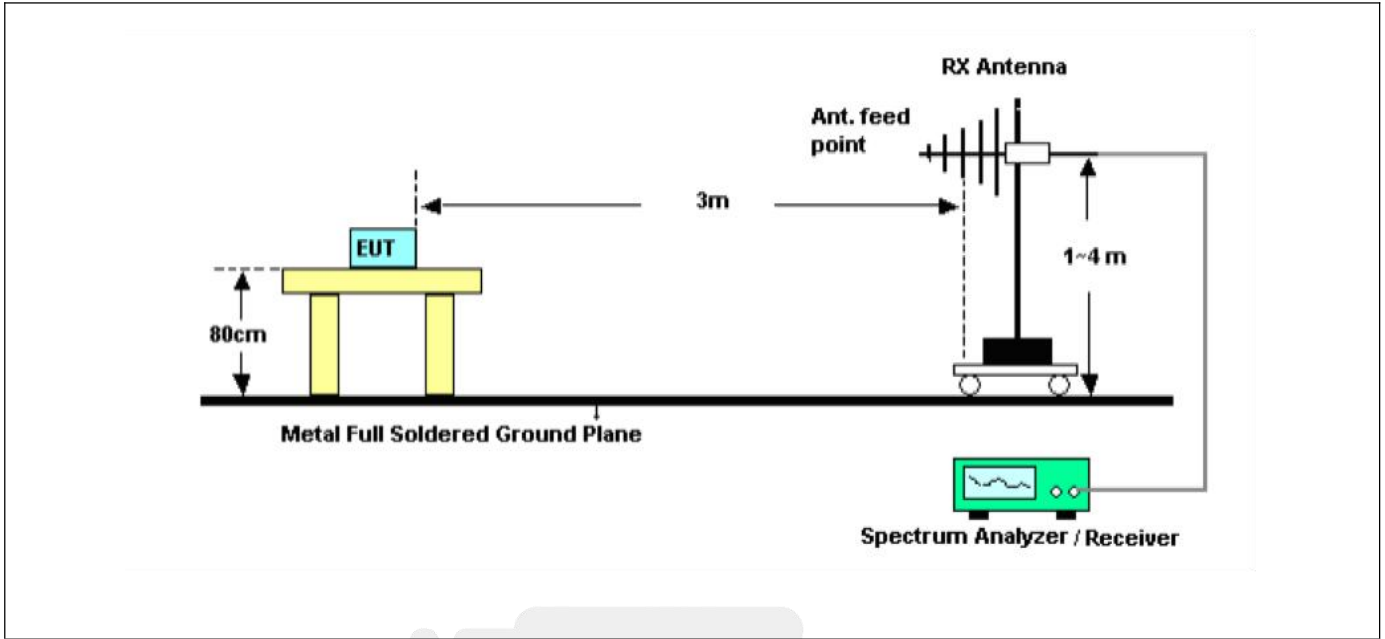
6.8. Emissions in frequency bands (below 1GHz)

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+C63.10a-2024 section 6.5.4		
Procedure:	ANSI C63.10-2020+C63.10a-2024 section 6.5.4		
Spectrum Analyzer Setting:	Spectrum Analyzer Setting	Setting	
	RBW	120KHz	
	VBW	300KHz	
	Start frequency	30MHz	
	Stop frequency	1GHz	
	Sweep Time	Auto	
	Detector	QP	
	Trace Mode	Max Hold	

6.8.1. EUT Operation

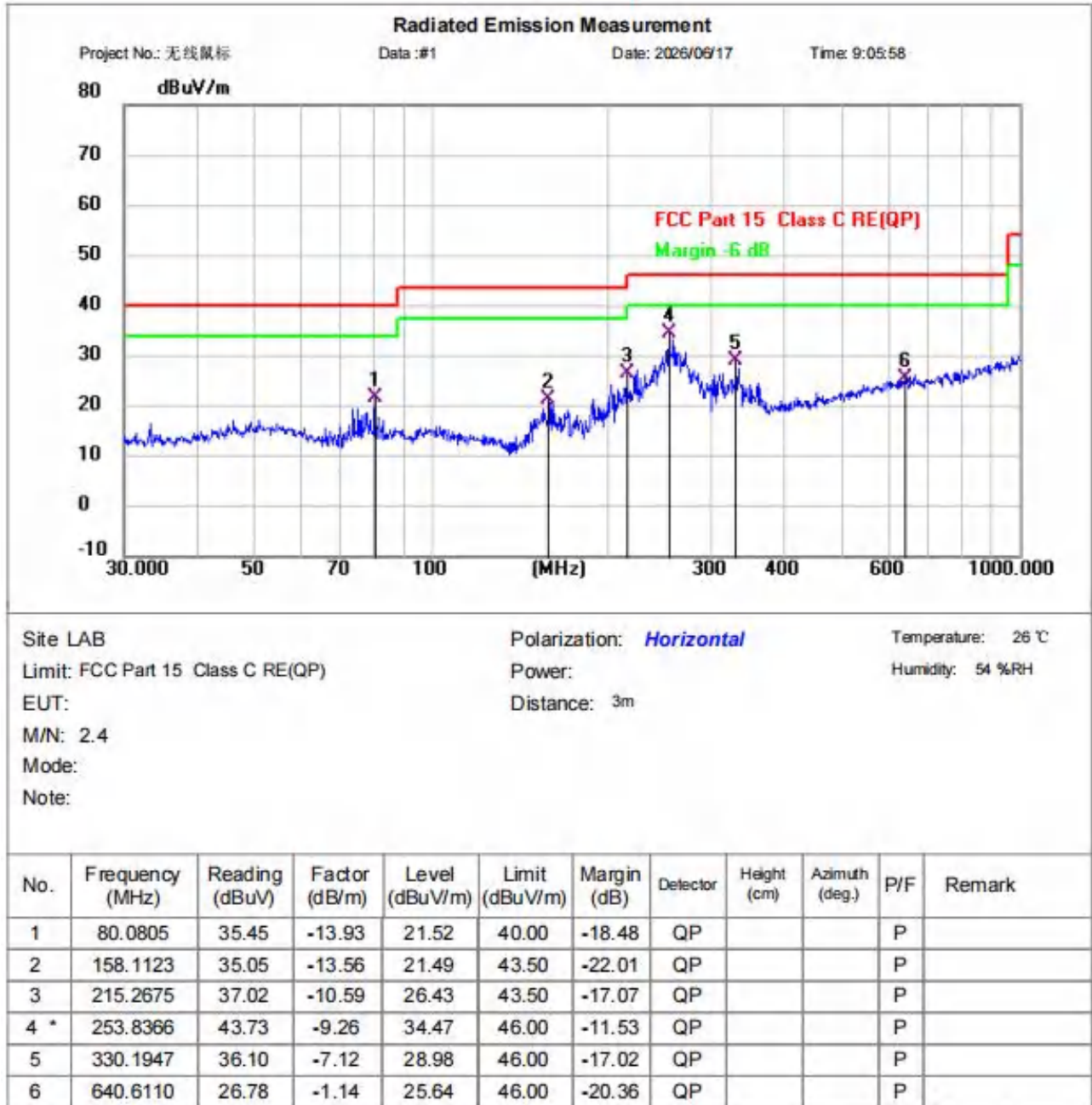
Operating Environment:					
Temperature:	26.3 °C	Humidity:	54 %	Atmospheric Pressure:	101.1 kPa
Pre test mode:		TM1			
Final test mode:		TM1			

6.8.2. Test Setup Diagram:

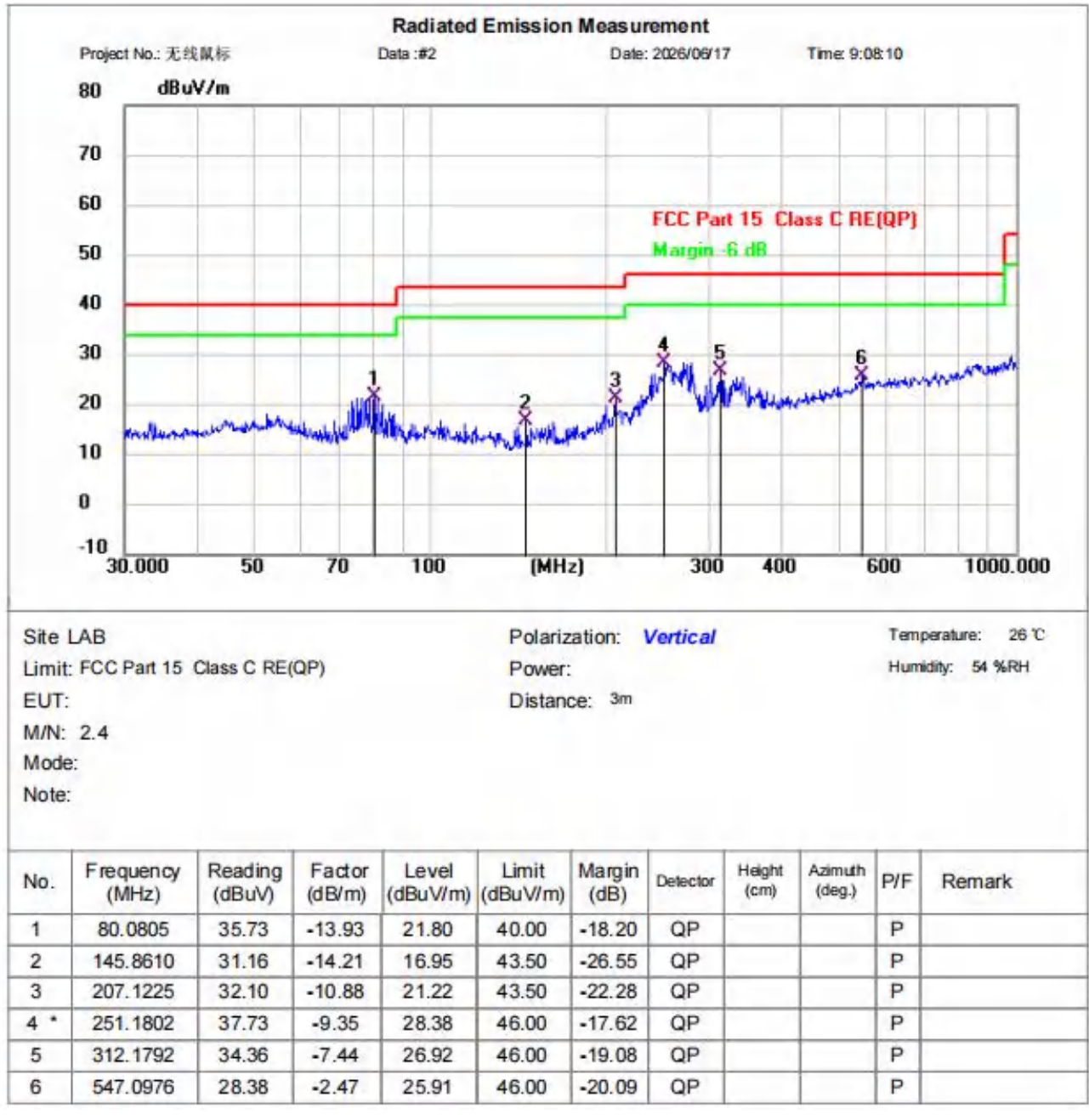


6.8.3. Test Data

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L



TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L



6.9. 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+C63.10a-2024 section 6.5.4		
Procedure:	ANSI C63.10-2020+C63.10a-2024 section 6.5.4		
Spectrum Analyzer Setting:	Spectrum Analyzer Setting	Setting	
	RBW	1MHz	
	VBW	PEAK Measurement	AVG Measurement
		3MHz	Duty cycle ≥ 98%, VBW=10Hz
			Duty cycle < 98%, VBW ≥ 1/T
	Start frequency	1GHz	
	Stop frequency	40GHz	
	Sweep Time	Auto	
	Detector	Peak	
	Trace Mode	Max Hold	

6.9.1. EUT Operation

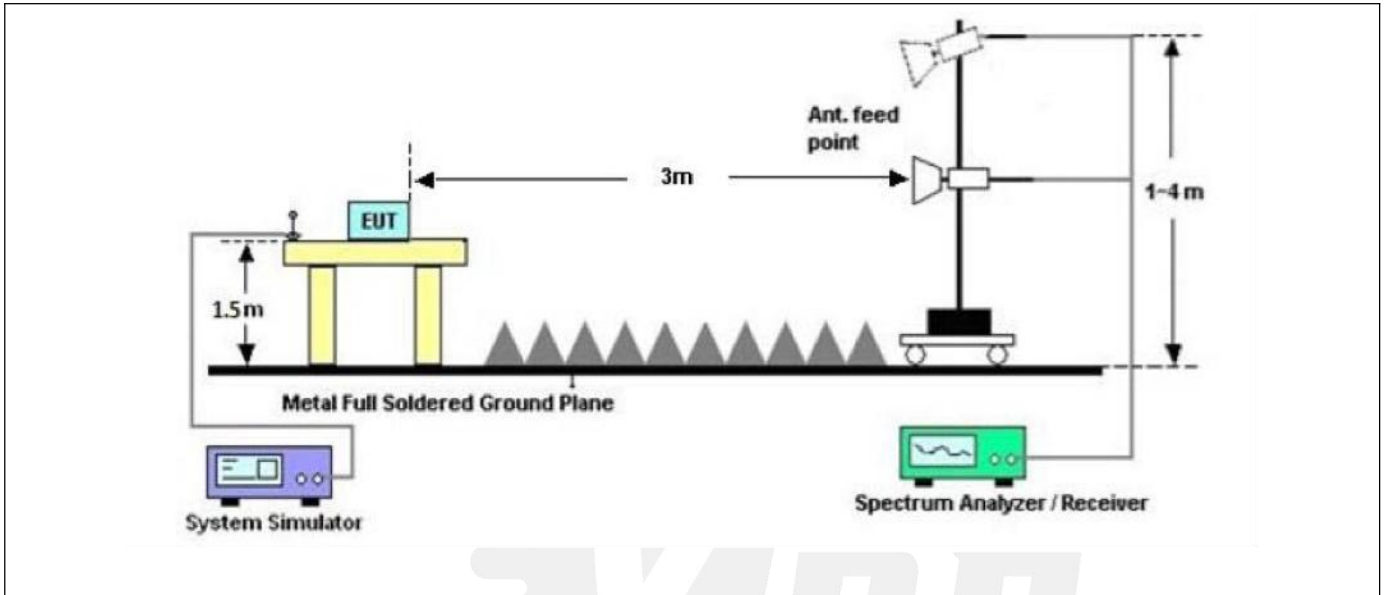
Operating Environment:

Temperature:	26.3 °C	Humidity:	54 %	Atmospheric Pressure:	101.1 kPa
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Pre test mode:	TM1
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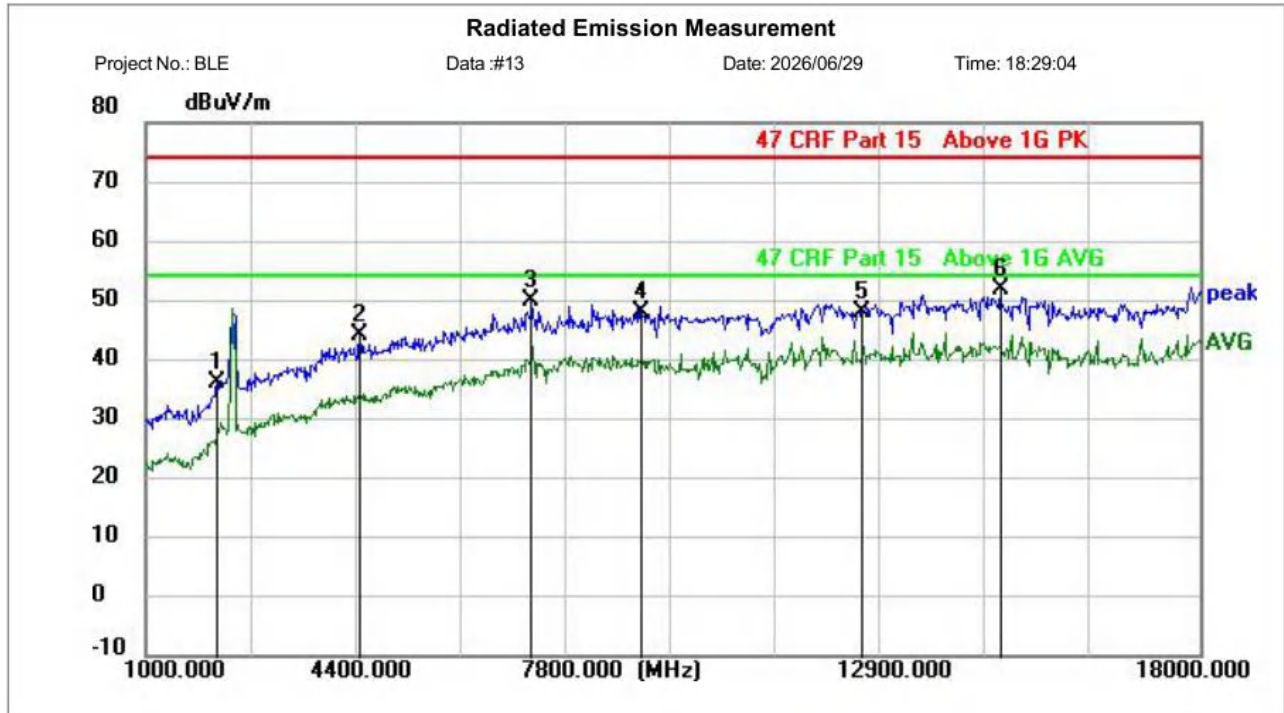
Final test mode:	TM1
------------------	-----

6.9.2. Test Setup Diagram:



6.9.3. 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: 2407

Mode:

Note:

Polarization: **Horizontal**

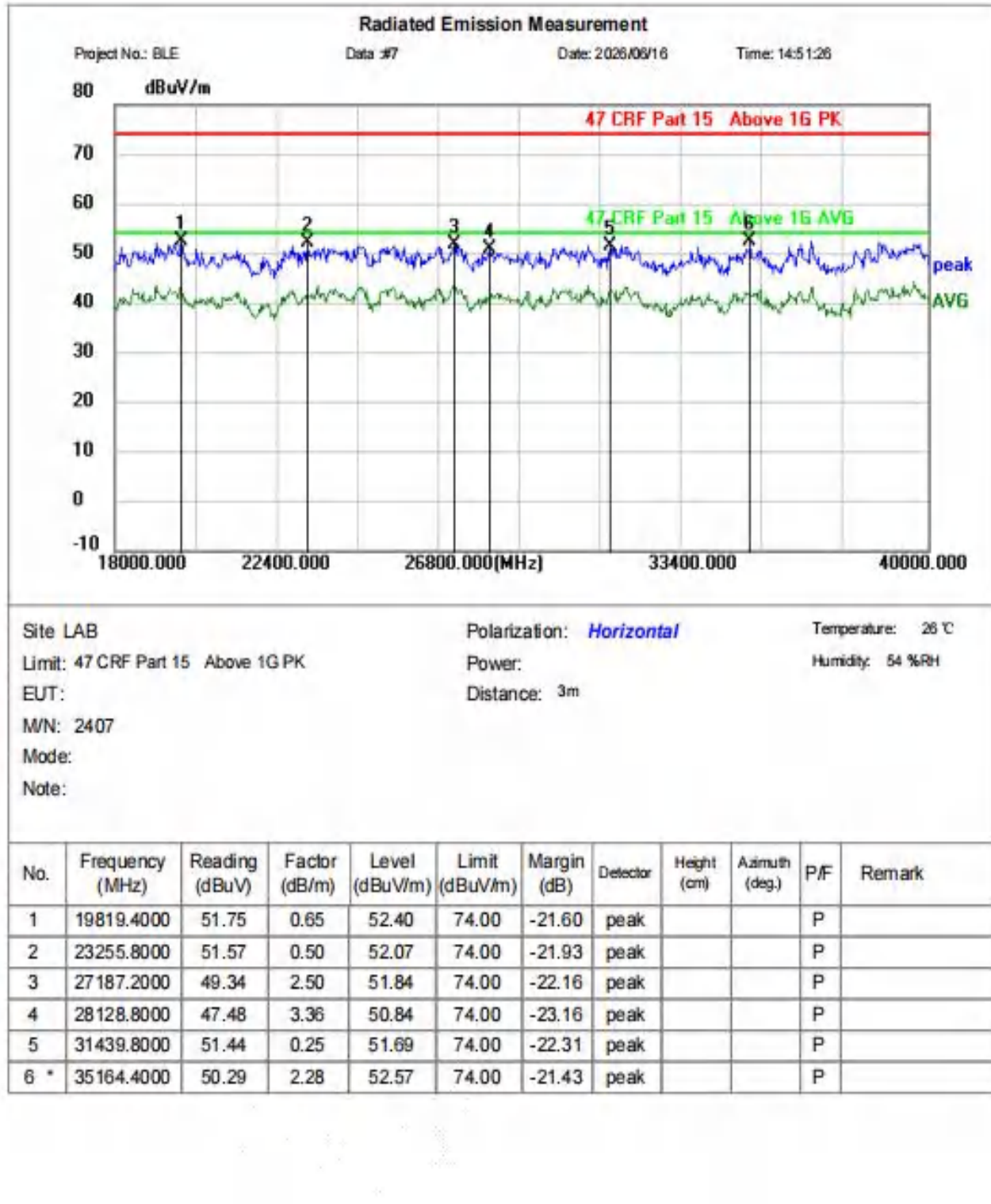
Power:

Distance: 3m

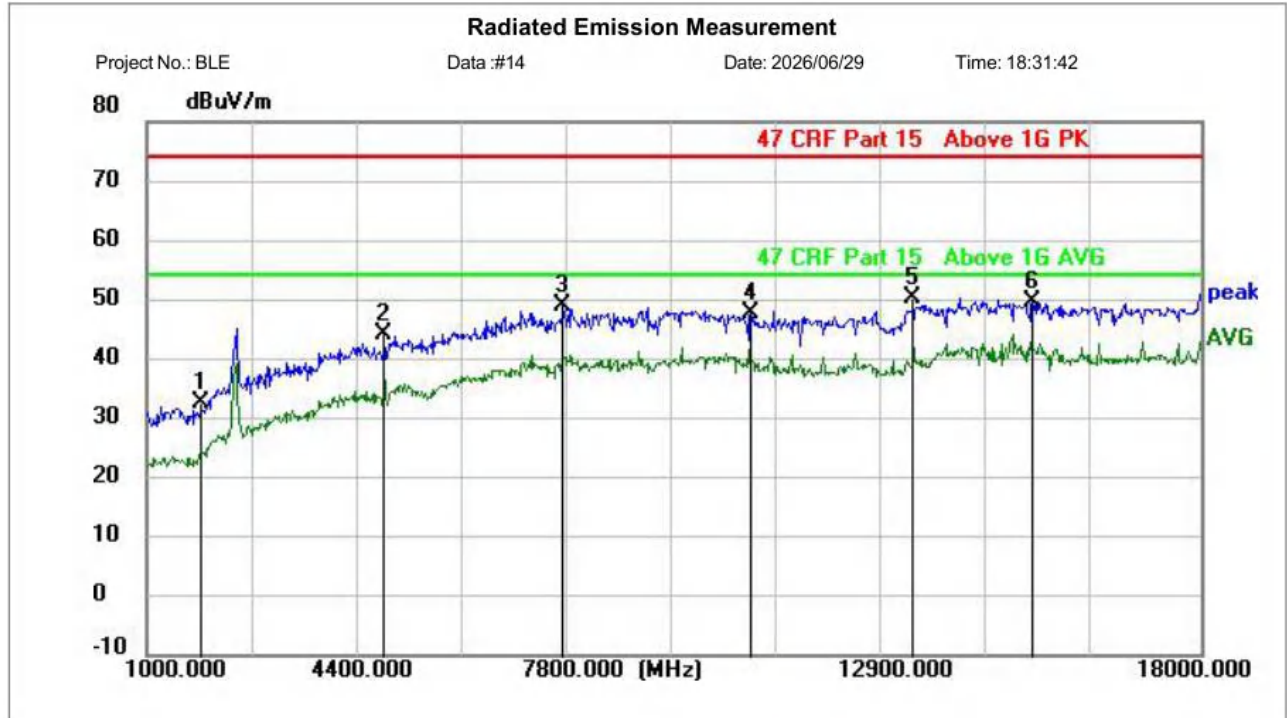
Temperature: 26 °C

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	2125.4000	59.12	-23.08	36.04	74.00	-37.96	peak	150	360	P	
2	4468.0000	62.45	-18.24	44.21	74.00	-29.79	peak	150	360	P	
3	7220.3000	62.73	-12.74	49.99	74.00	-24.01	peak	150	360	P	
4	9003.6000	57.33	-9.26	48.07	74.00	-25.93	peak	150	360	P	
5	12548.1000	56.84	-8.79	48.05	74.00	-25.95	peak	150	360	P	
6 *	14800.6000	59.63	-7.60	52.03	74.00	-21.97	peak	150	360	P	



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



Site LAB

Limit: 47 CRF Part 15 Above 1G PK

EUT:

M/N: 2407

Mode:

Note:

Polarization: **Vertical**

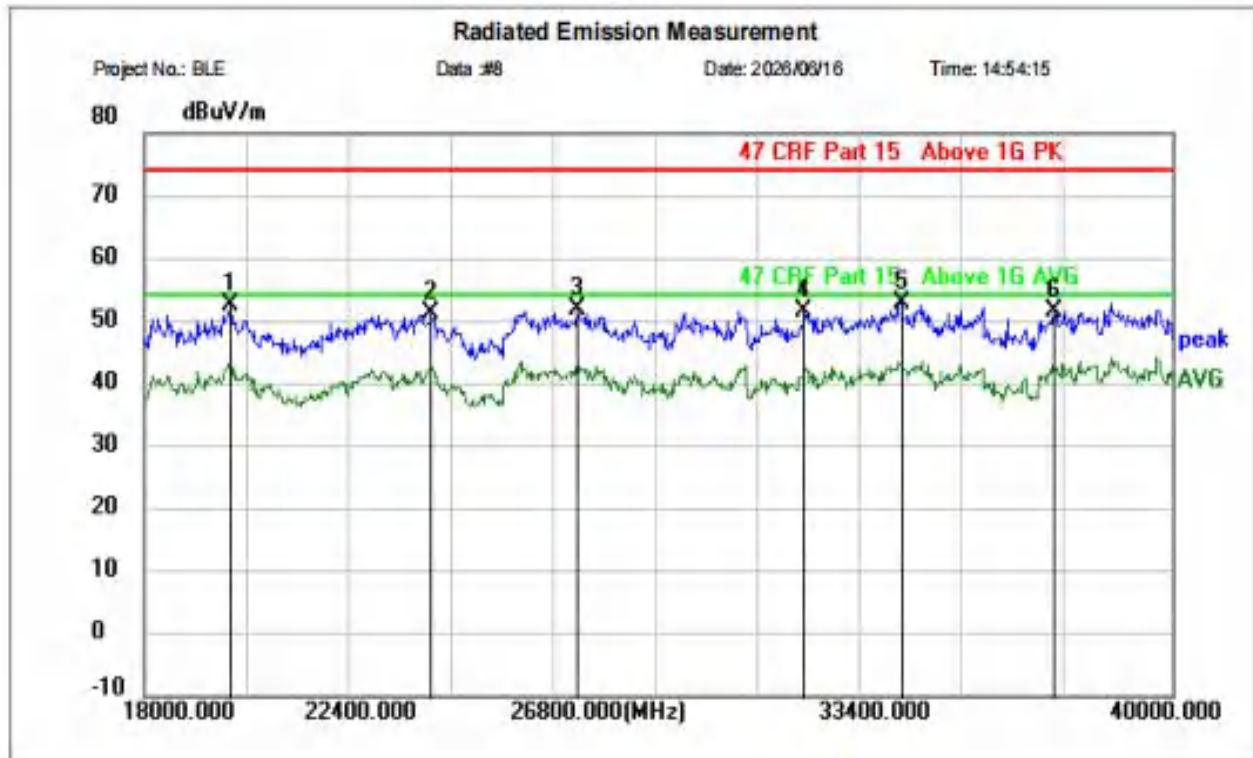
Power:

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	1877.2000	57.55	-24.96	32.59	74.00	-41.41	peak	150	360	P	
2	4813.1000	61.68	-17.58	44.10	74.00	-29.90	peak	150	360	P	
3	7720.1000	62.14	-13.00	49.14	74.00	-24.86	peak	150	360	P	
4	10756.3000	54.42	-6.79	47.63	74.00	-26.37	peak	150	360	P	
5 *	13369.2000	59.26	-9.10	50.16	74.00	-23.84	peak	150	360	P	
6	15293.6000	58.24	-8.51	49.73	74.00	-24.27	peak	150	360	P	



Site LAB

Polarization: **Vertical**

Temperature: 26 °C

Limit: 47 CRF Part 15 Above 1G PK

Power:

Humidity: 54 %RH

EUT:

Distance: 3m

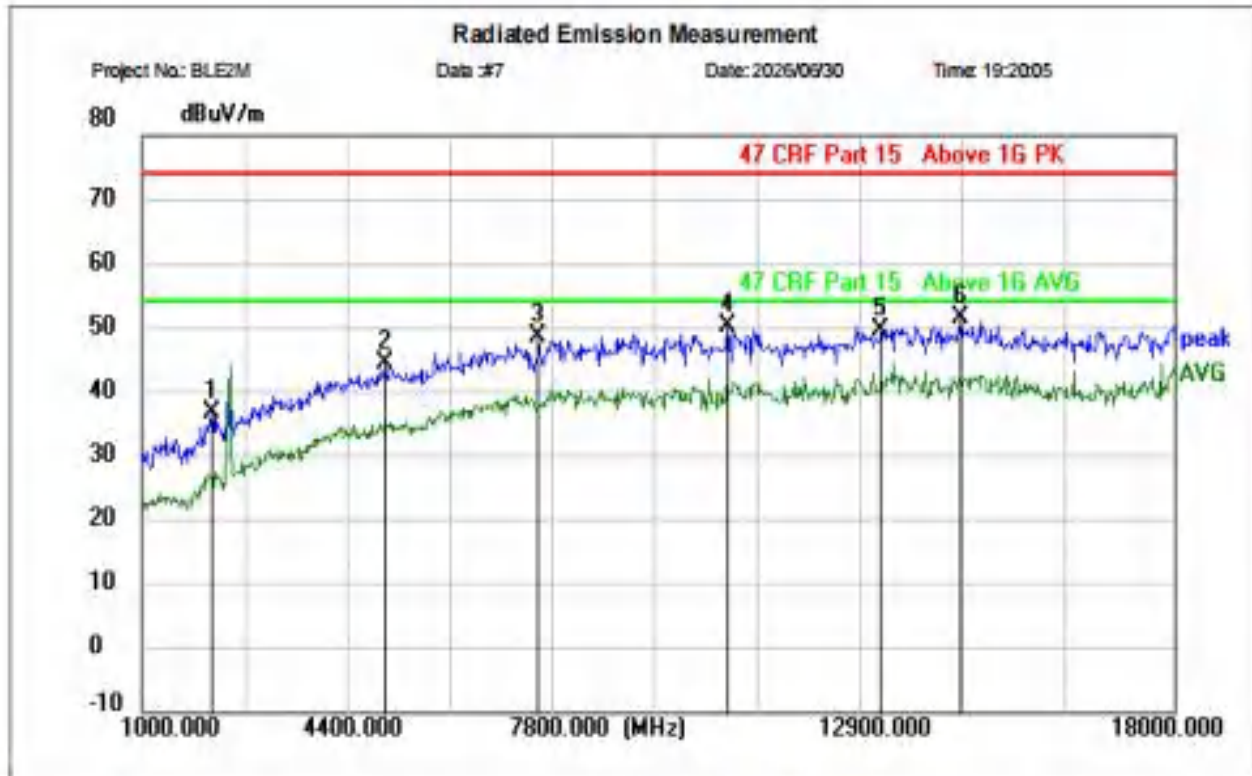
M/N: 2407

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	19854.6000	51.99	0.65	52.64	74.00	-21.36	peak			P	
2	24135.8000	50.82	0.50	51.32	74.00	-22.68	peak			P	
3	27303.8000	49.10	2.64	51.74	74.00	-22.26	peak			P	
4	32141.6000	51.41	0.29	51.70	74.00	-22.30	peak			P	
5 *	34196.4000	50.64	2.28	52.92	74.00	-21.08	peak			P	
6	37487.6000	51.48	0.07	51.55	74.00	-22.45	peak			P	

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



Site LAB

Polarization: *Horizontal*

Temperature: 26 °C

Limit: 47 CRF Part 15 Above 1G PK

Power:

Humidity: 54 %RH

EUT:

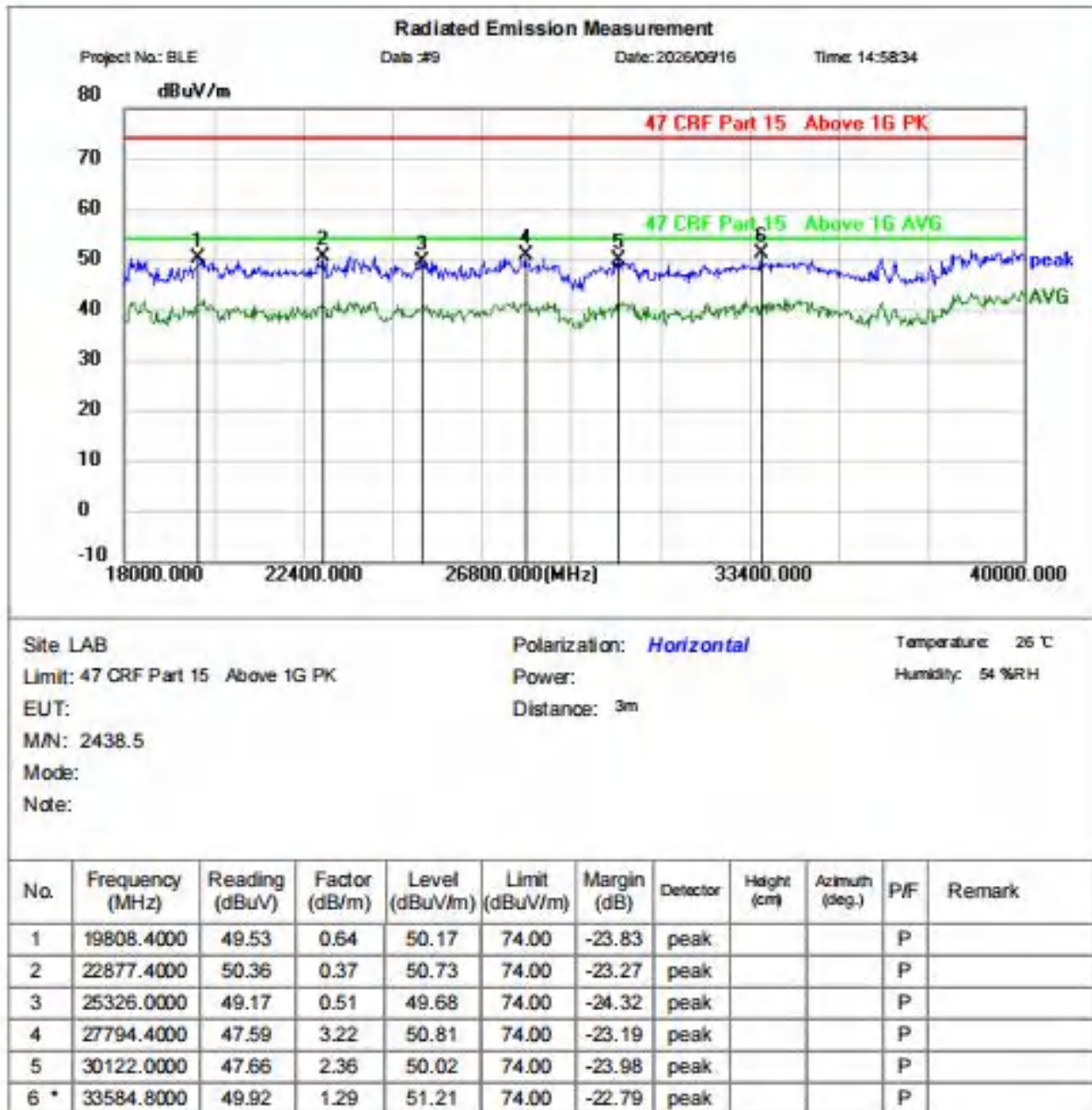
Distance: 3m

MN: 2438.5

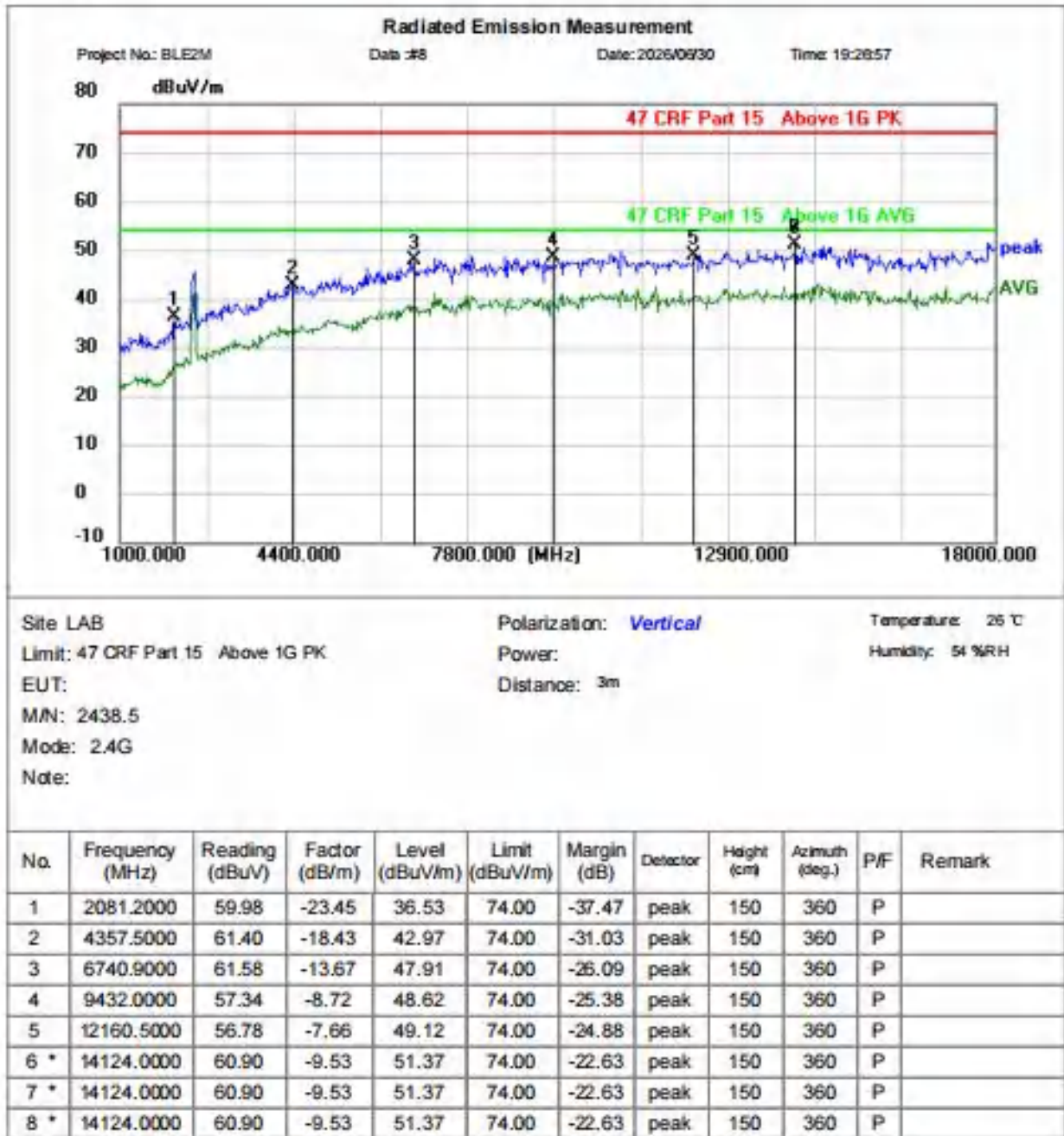
Mode: 2.4G

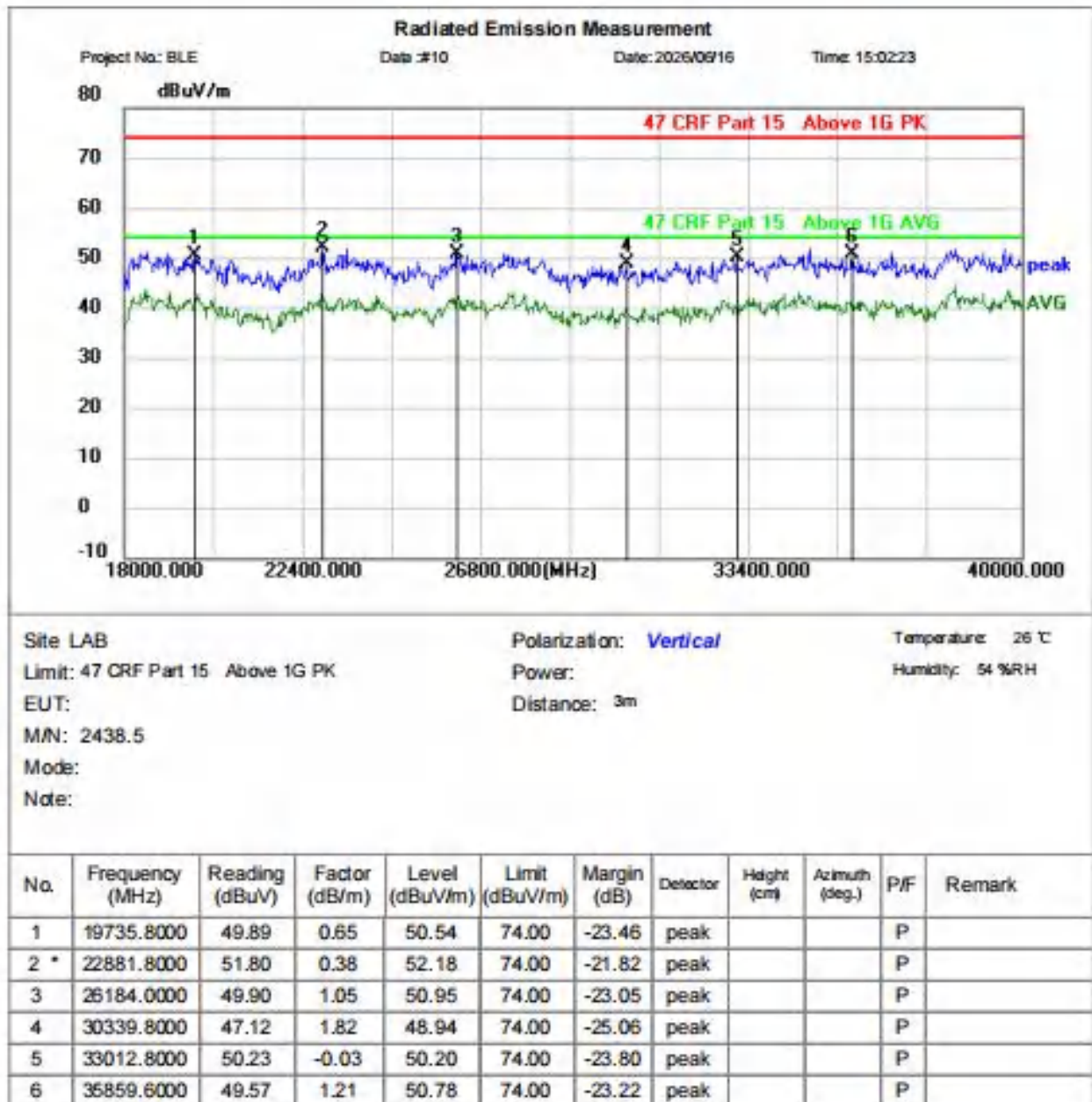
Note:

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	2123.7000	59.98	-23.09	36.89	74.00	-37.11	peak	100	360	P	
2	4996.7000	61.19	-16.78	44.41	74.00	-29.59	peak	100	360	P	
3	7538.2000	62.07	-13.36	48.71	74.00	-25.29	peak	100	360	P	
4	10664.5000	57.34	-7.19	50.15	74.00	-23.85	peak	100	360	P	
5	13187.3000	58.88	-9.10	49.78	74.00	-24.22	peak	100	360	P	
6 *	14501.4000	59.88	-8.35	51.53	74.00	-22.47	peak	100	360	P	

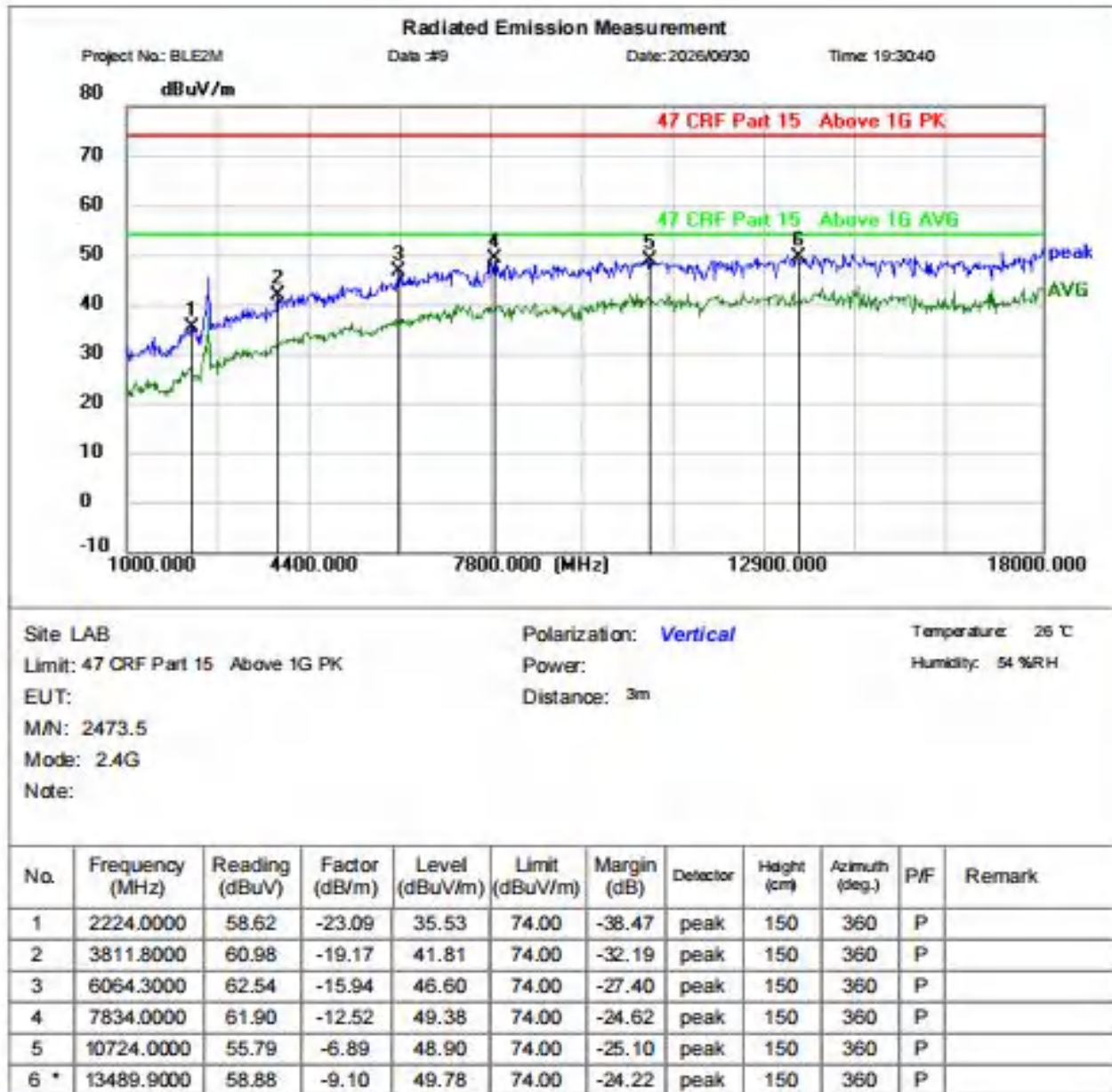


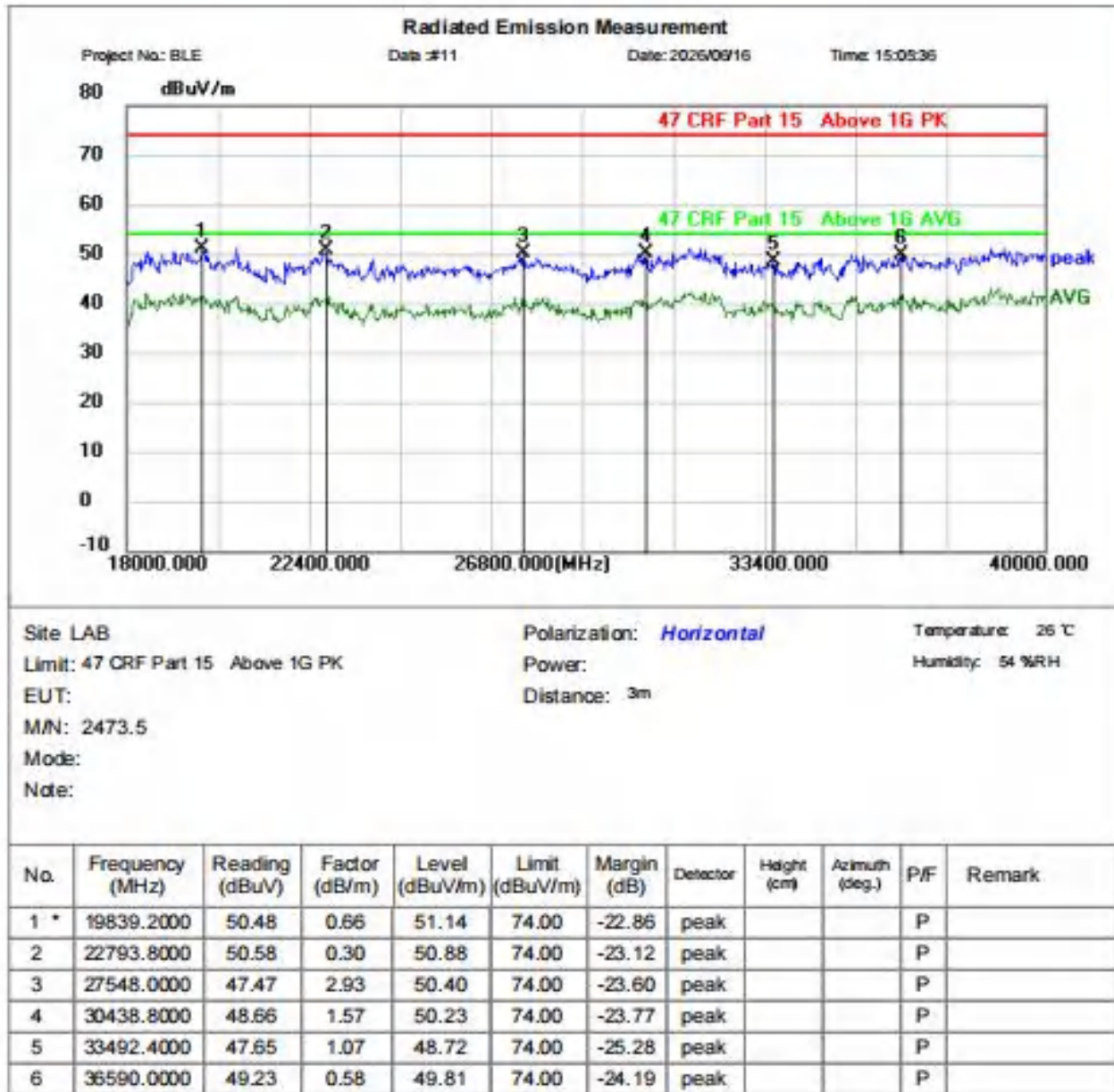
TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 20 / CH: M



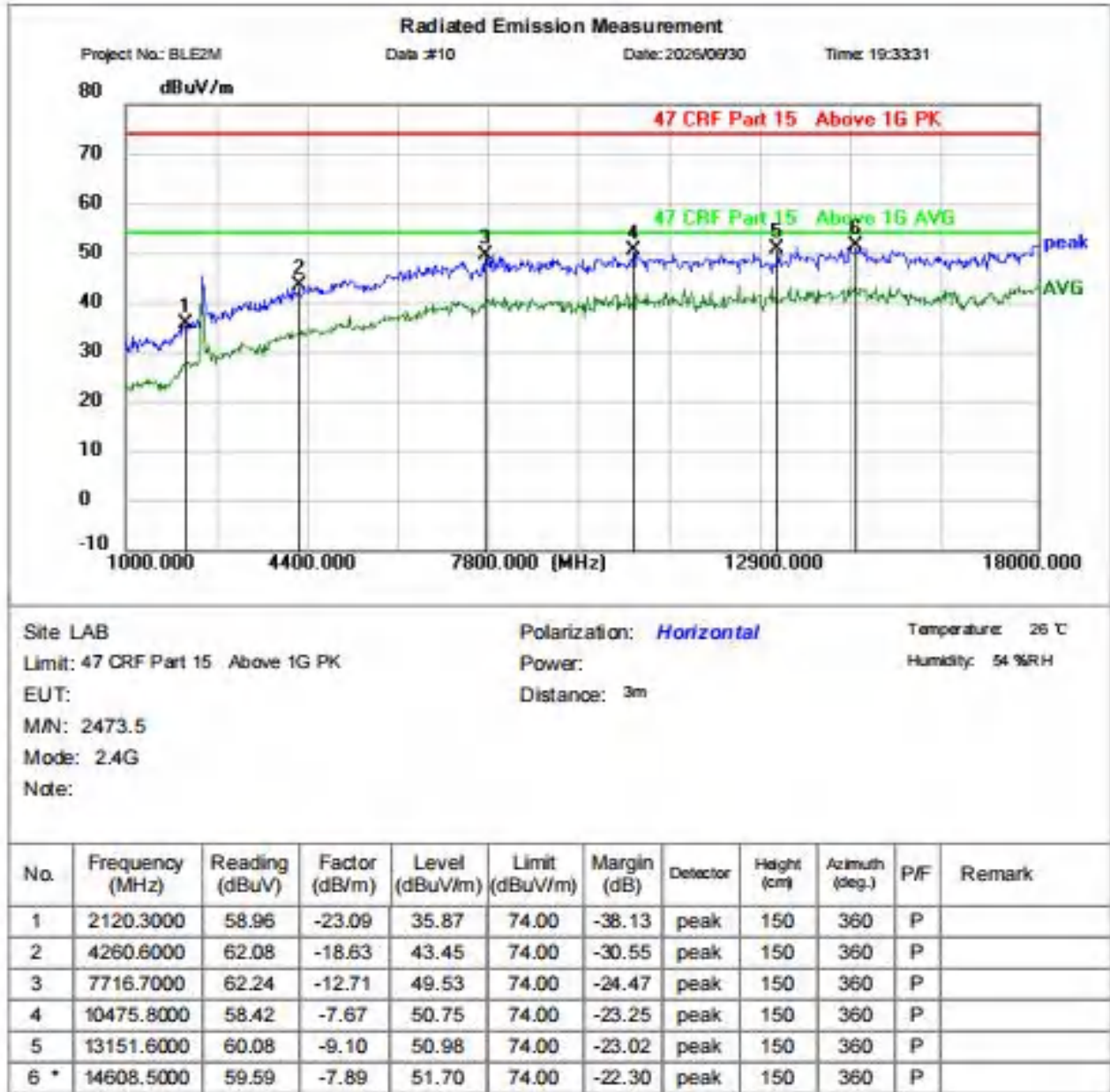


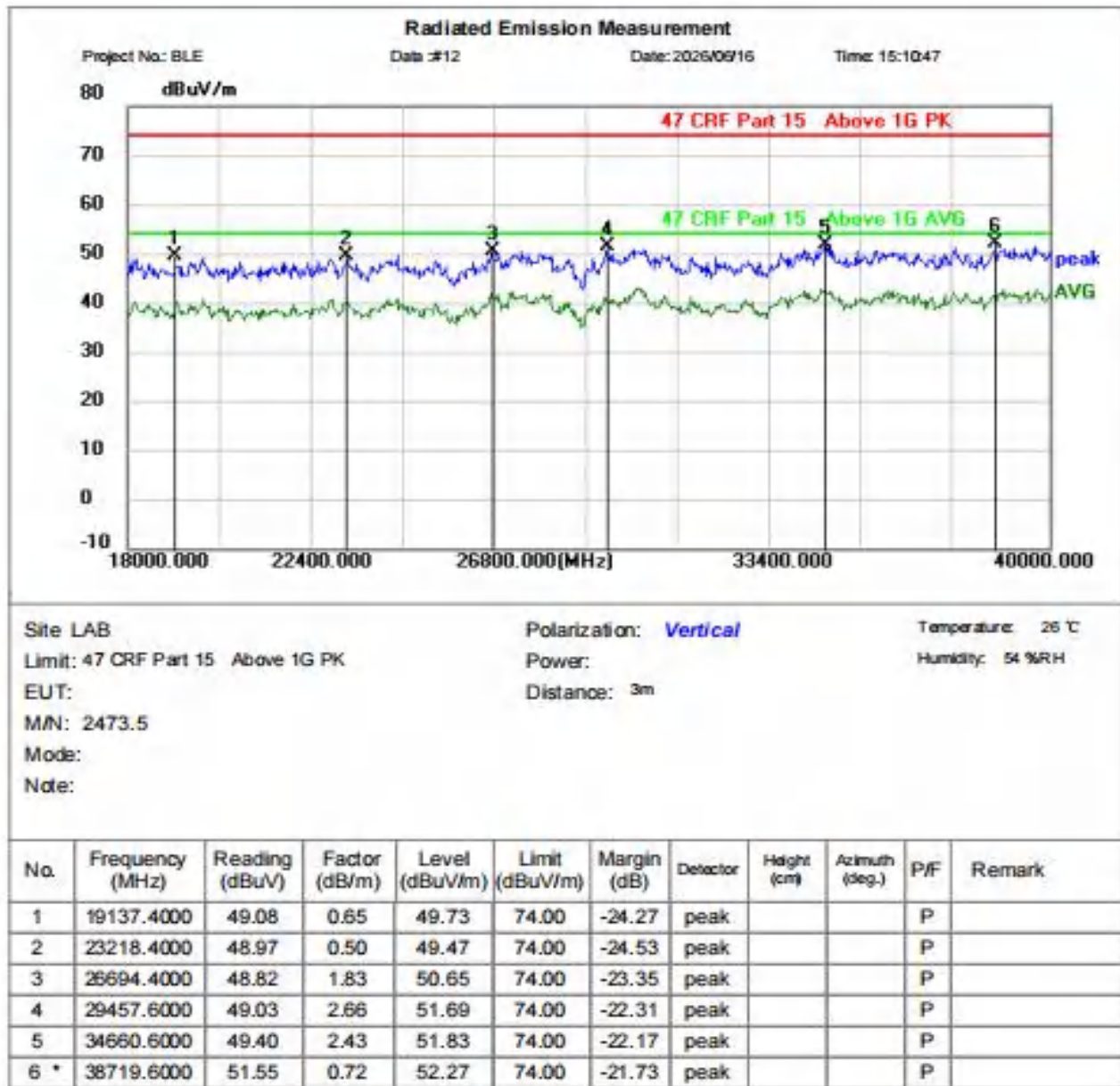
TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 20 / CH: H





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



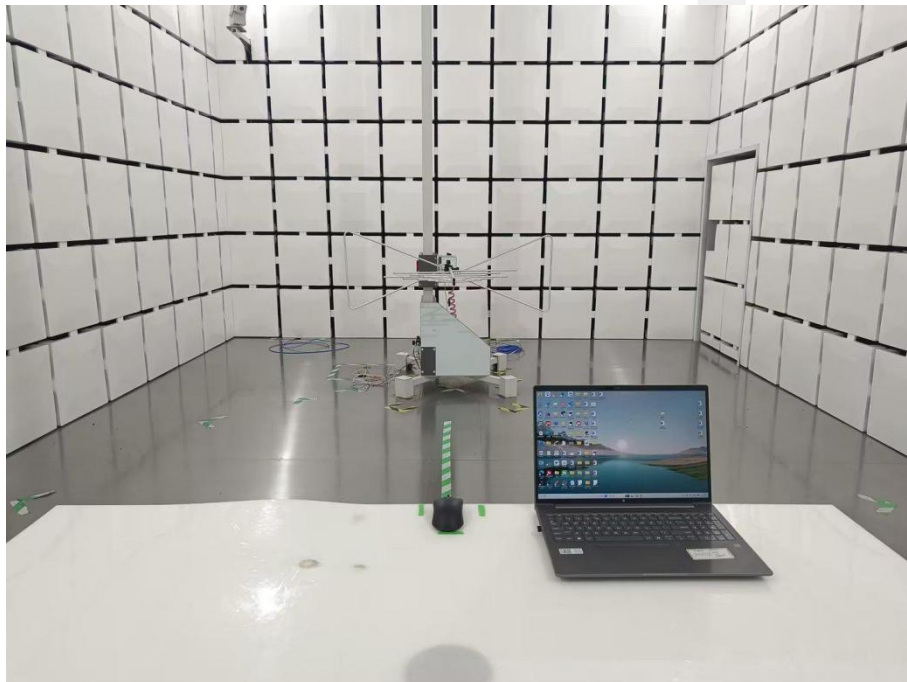


7. TEST SETUP PHOTOS

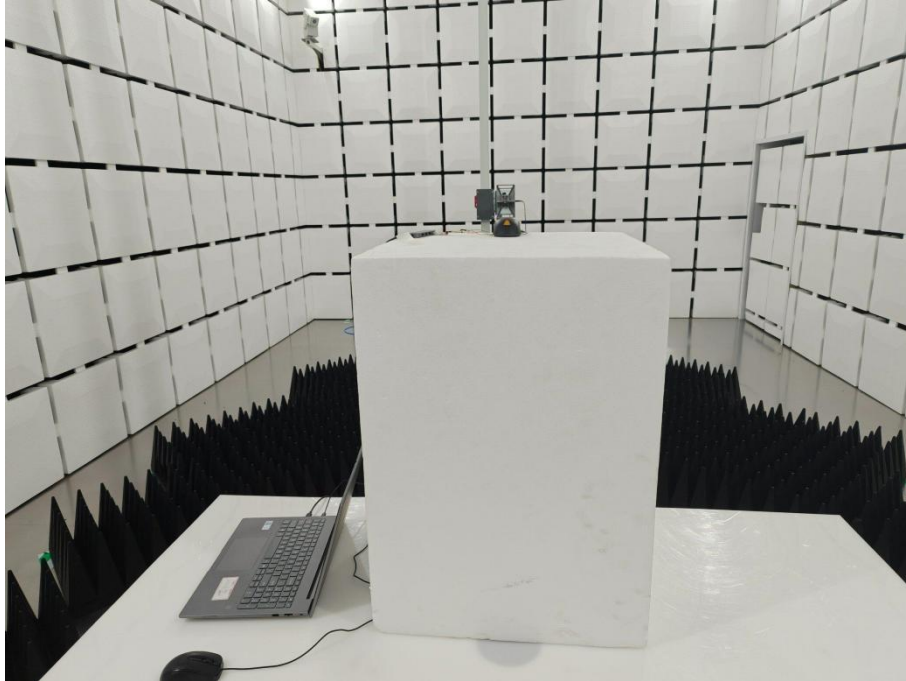
Conducted Emission at AC power line



Emissions in frequency bands (below 1GHz)



Emissions in frequency bands (above 1GHz)



Conducted Power Bandwidth PSD



8. Appendix Report

1. Duty Cycle

1.1 Test Result

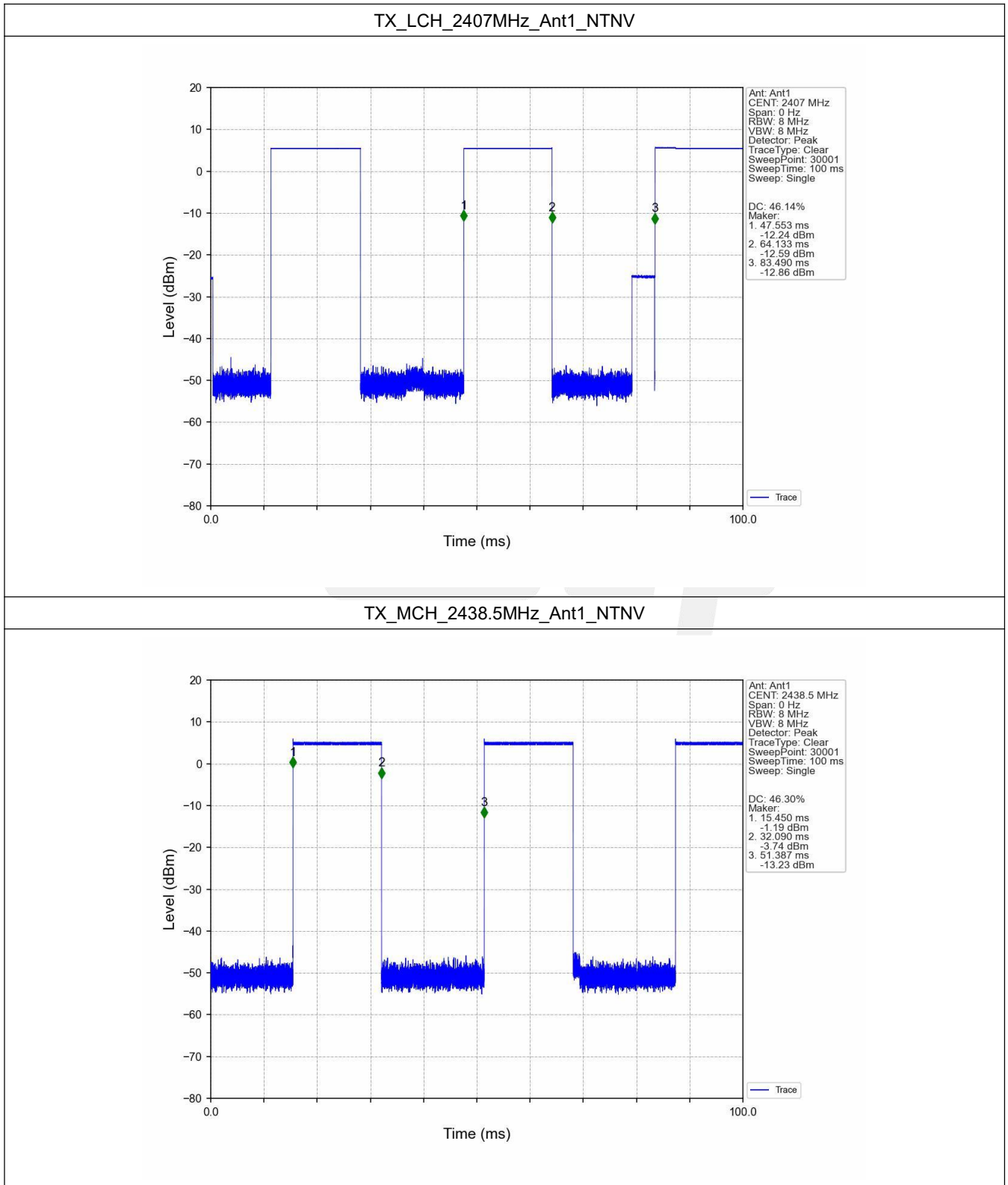
1.1.1 Ant1

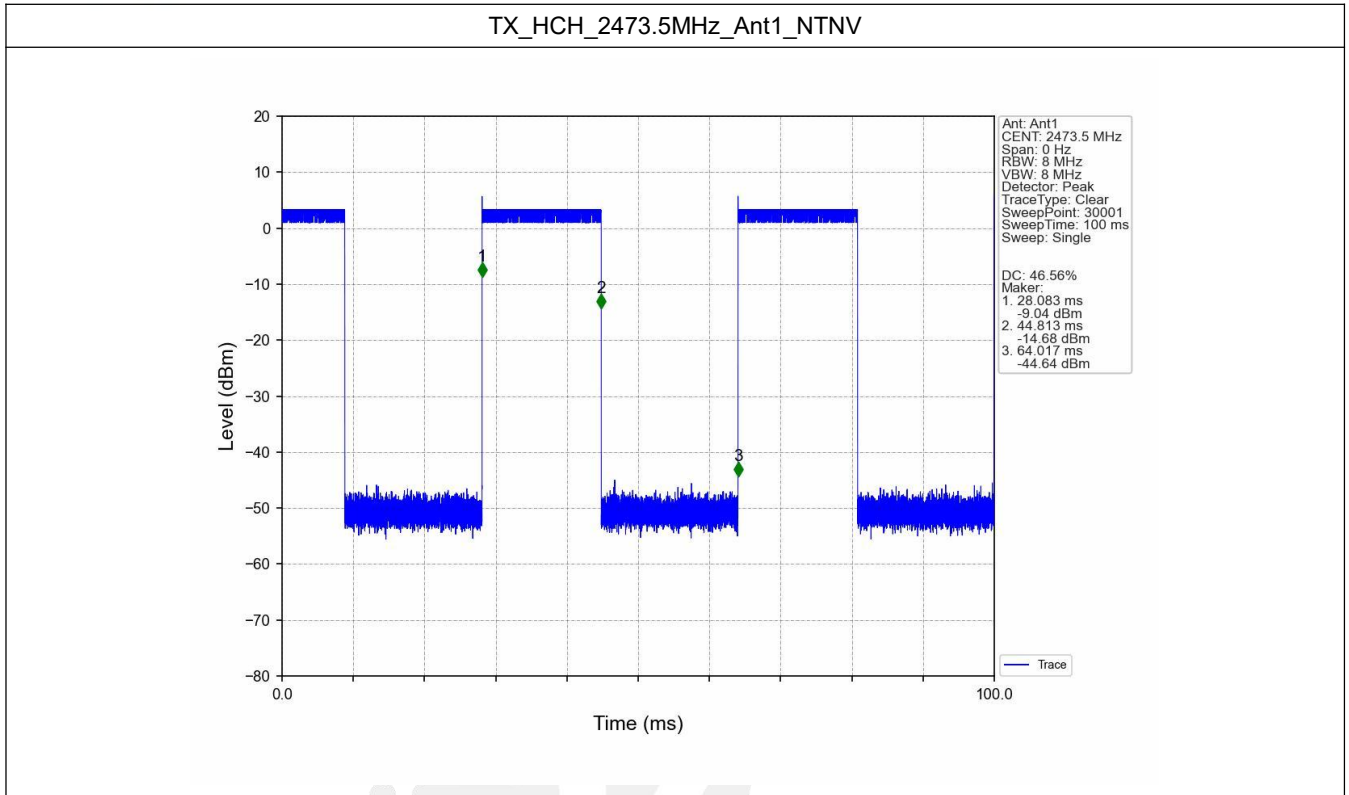
Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
TX	SISO	2407	16.580	35.937	46.14	3.36	0.28
		2438.5	16.640	35.937	46.30	3.34	0.19
		2473.5	16.730	35.934	46.56	3.32	0.16



1.2 Test Graph

1.2.1 Ant1





2. Bandwidth

2.1 Test Result

2.1.1 OBW

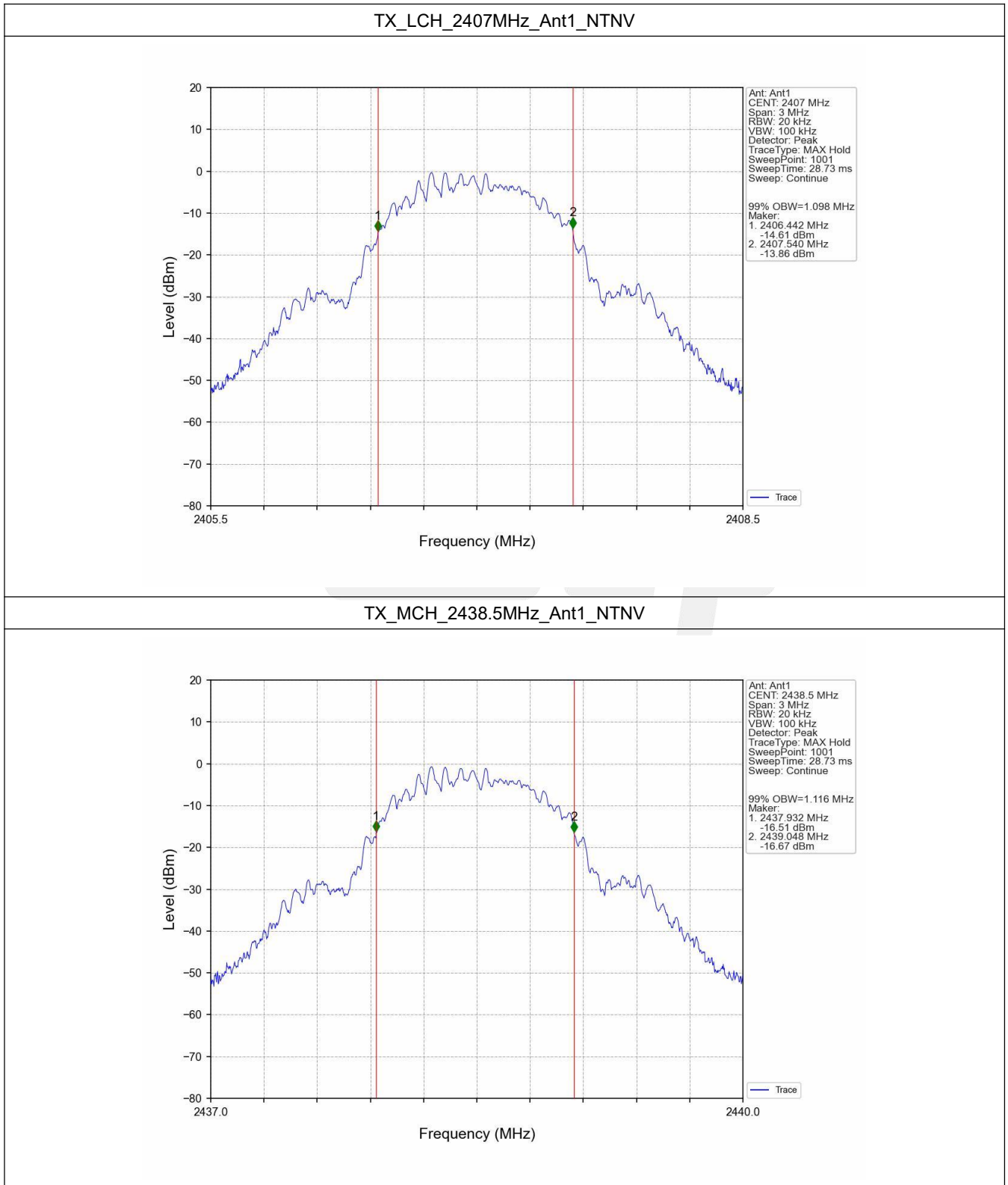
Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
TX	SISO	2407	1	1.098	/	Pass
		2438.5	1	1.116	/	Pass
		2473.5	1	1.202	/	Pass

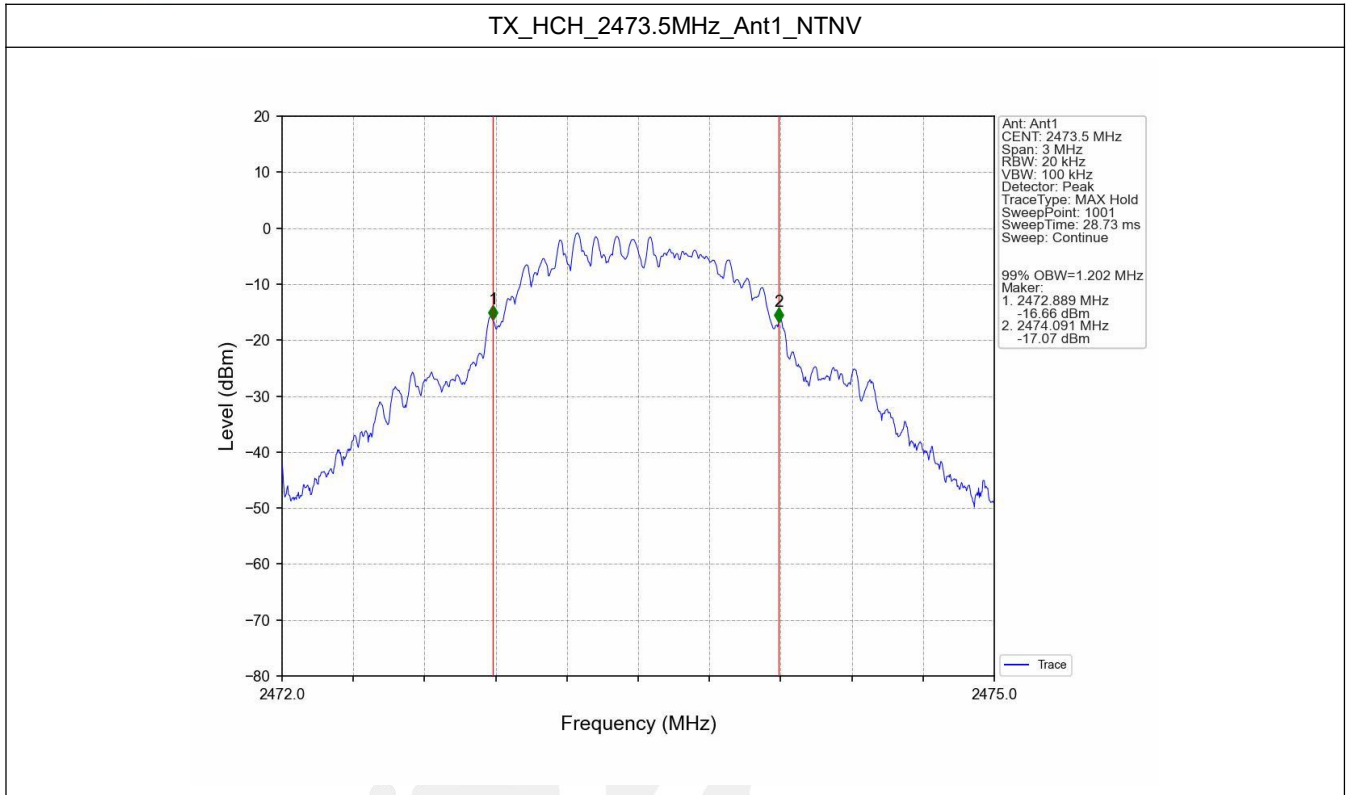
2.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
TX	SISO	2407	1	0.730	≥ 0.5	Pass
		2438.5	1	0.793	≥ 0.5	Pass
		2473.5	1	0.829	≥ 0.5	Pass

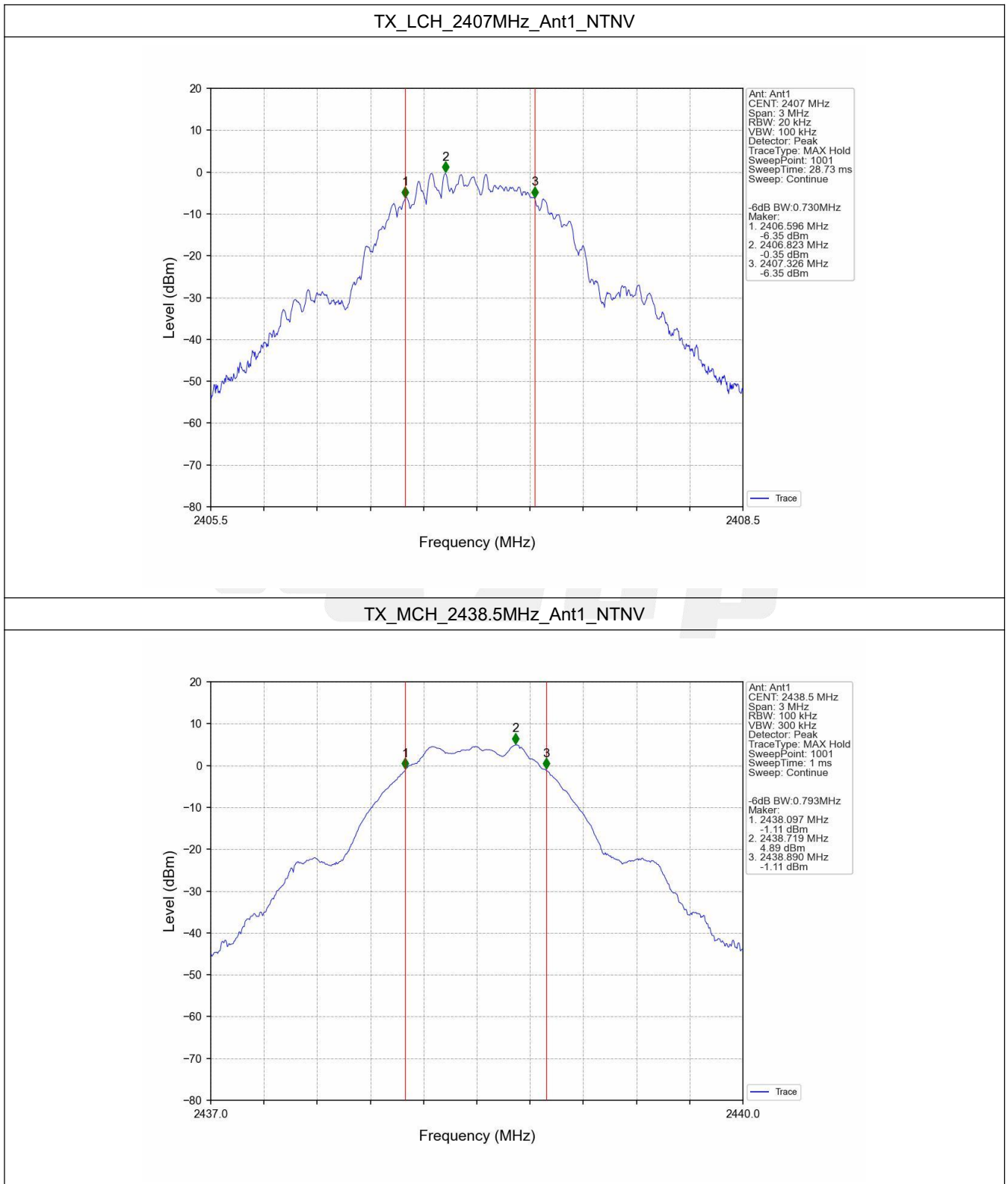
2.2 Test Graph

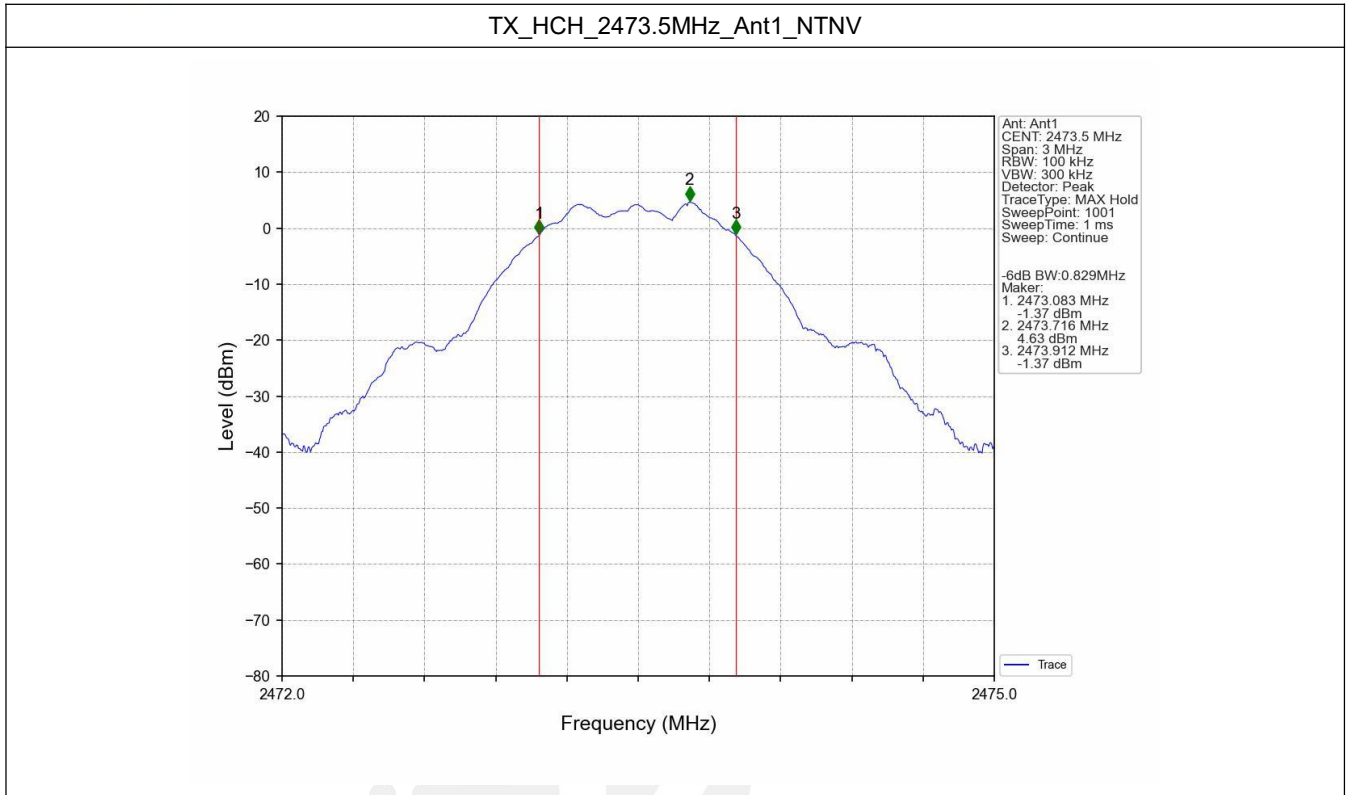
2.2.1 OBW





2.2.2 6dB BW





3. Maximum Conducted Output Power

3.1 Test Result

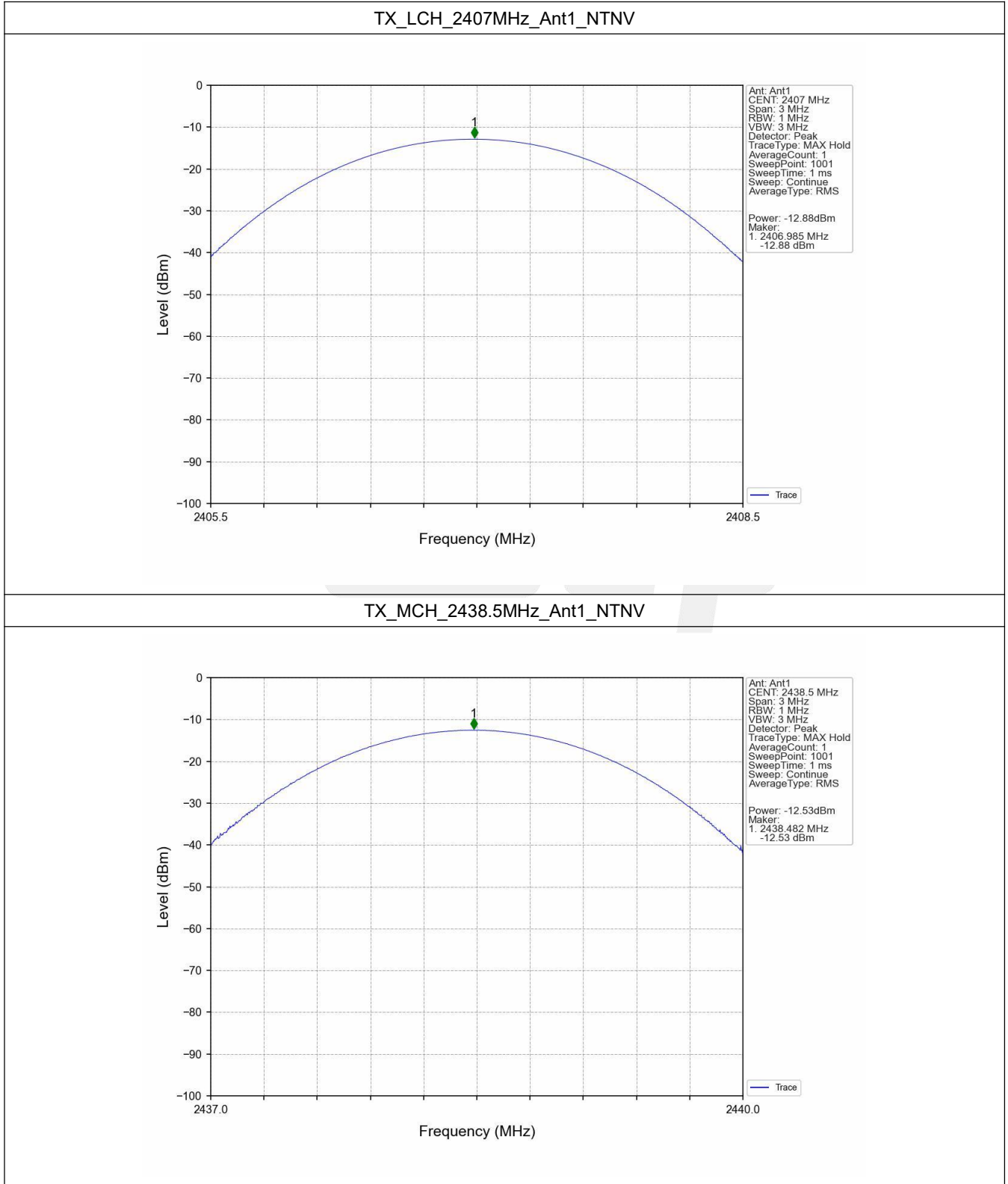
3.1.1 Power

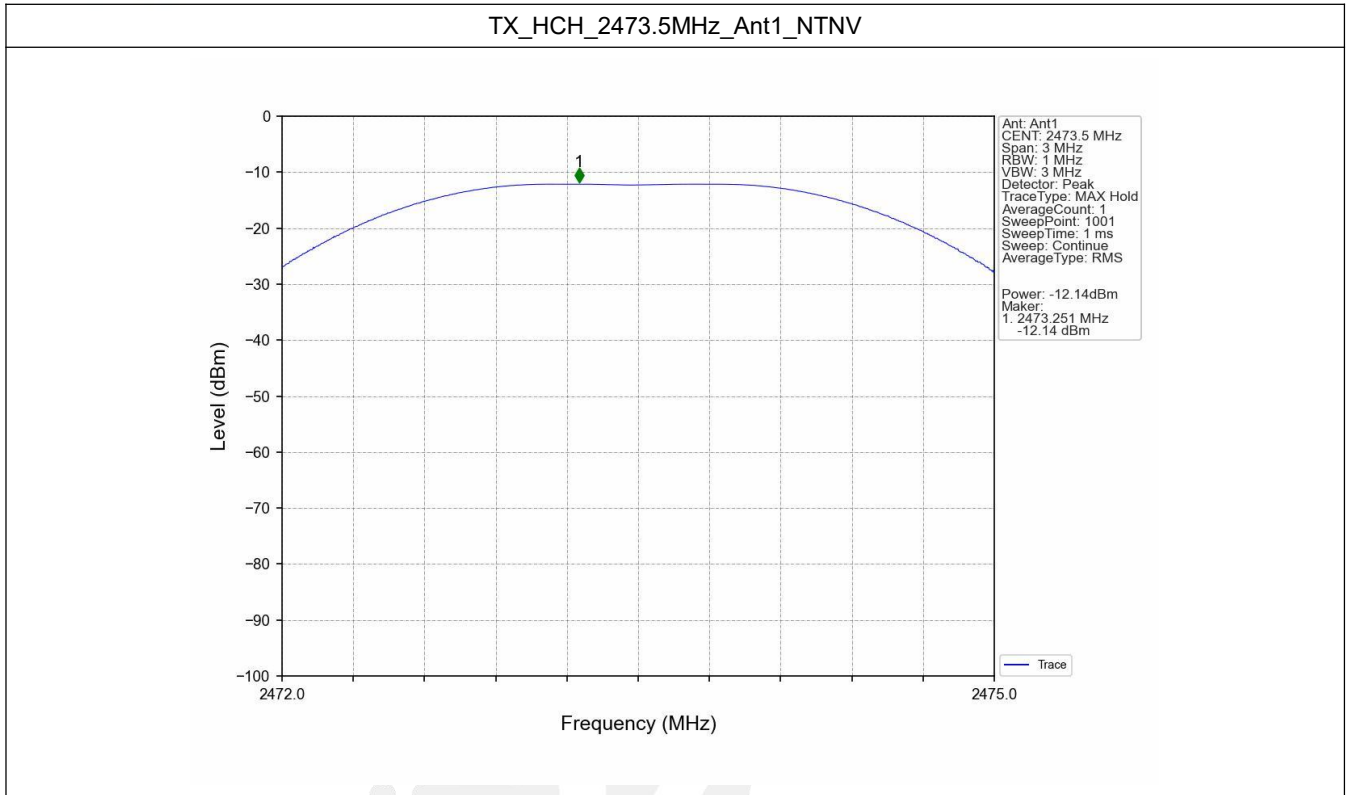
Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
TX	SISO	2407	-12.88	<=30	Pass
		2438.5	-12.53	<=30	Pass
		2473.5	-12.14	<=30	Pass
Note1: Antenna Gain: Ant1: 2.34dBi;					



3.2 Test Graph

3.2.1 Power





4. Maximum Power Spectral Density

4.1 Test Result

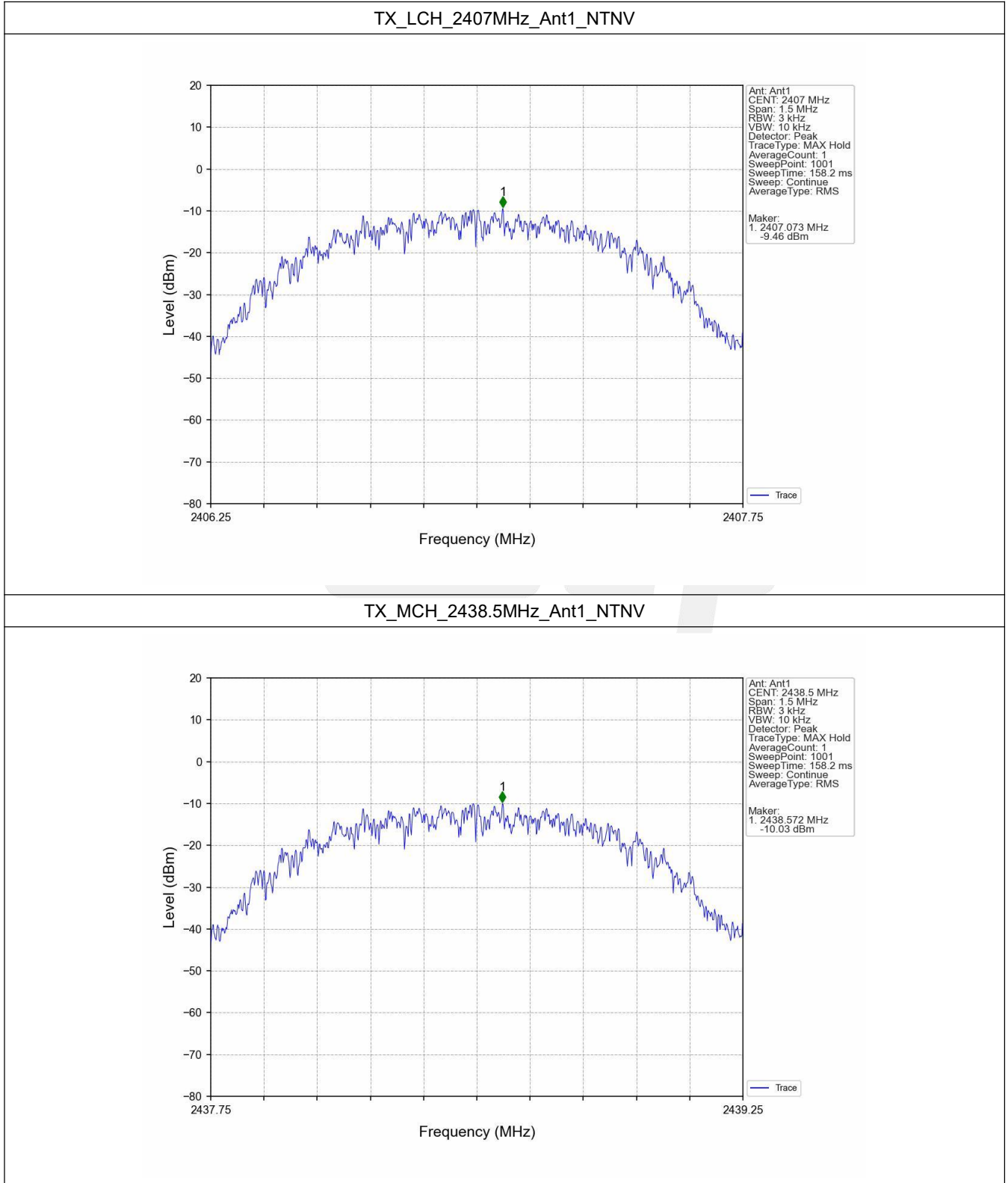
4.1.1 PSD

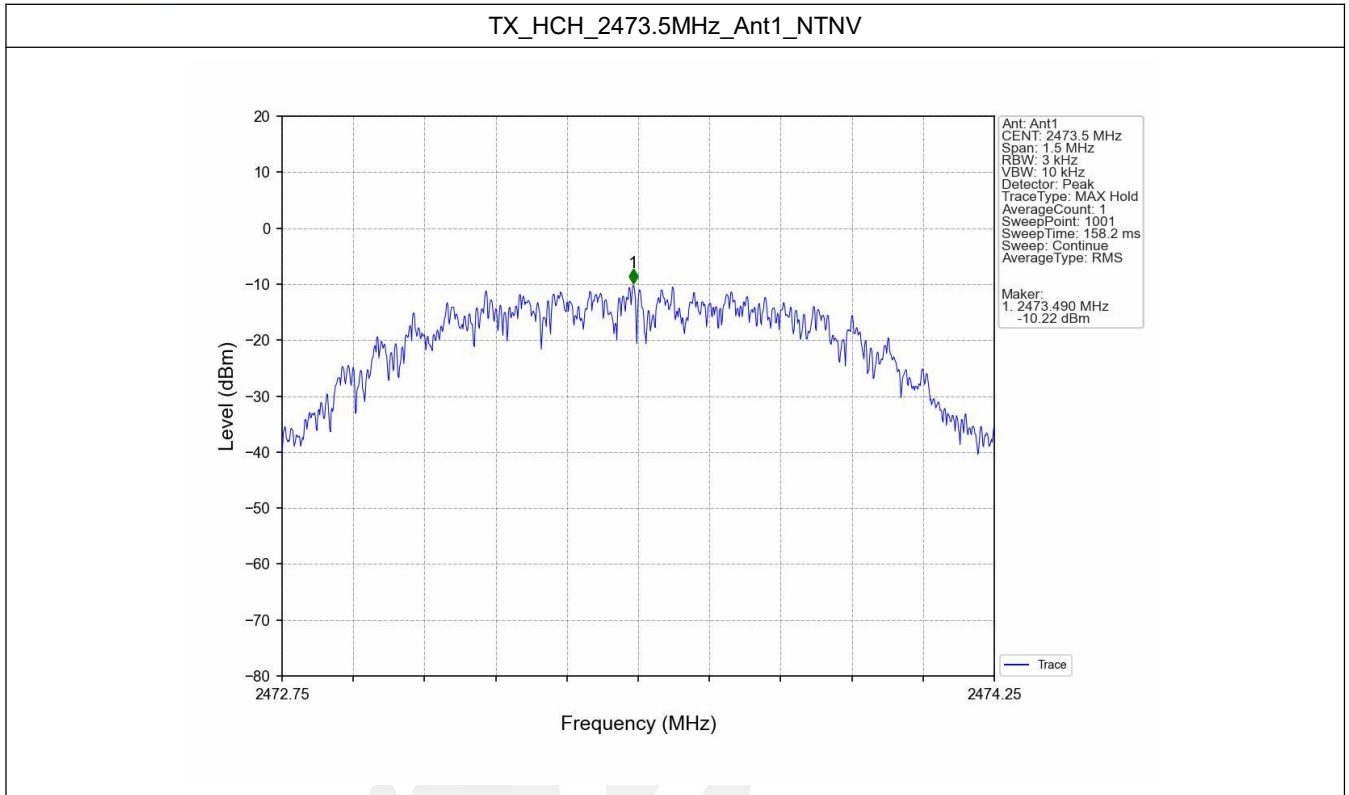
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm)		Verdict
			ANT1	Limit(dBm/3kHz)	
TX	SISO	2407	-9.46dBm/3kHz	<=8	Pass
		2438.5	-10.03dBm/3kHz	<=8	Pass
		2473.5	-10.22dBm/3kHz	<=8	Pass
Note1: Antenna Gain: Ant1: 2.34dBi;					



4.2 Test Graph

4.2.1 PSD





5. Unwanted Emissions In Non-restricted Frequency Bands

5.1 Test Result

5.1.1 Ref

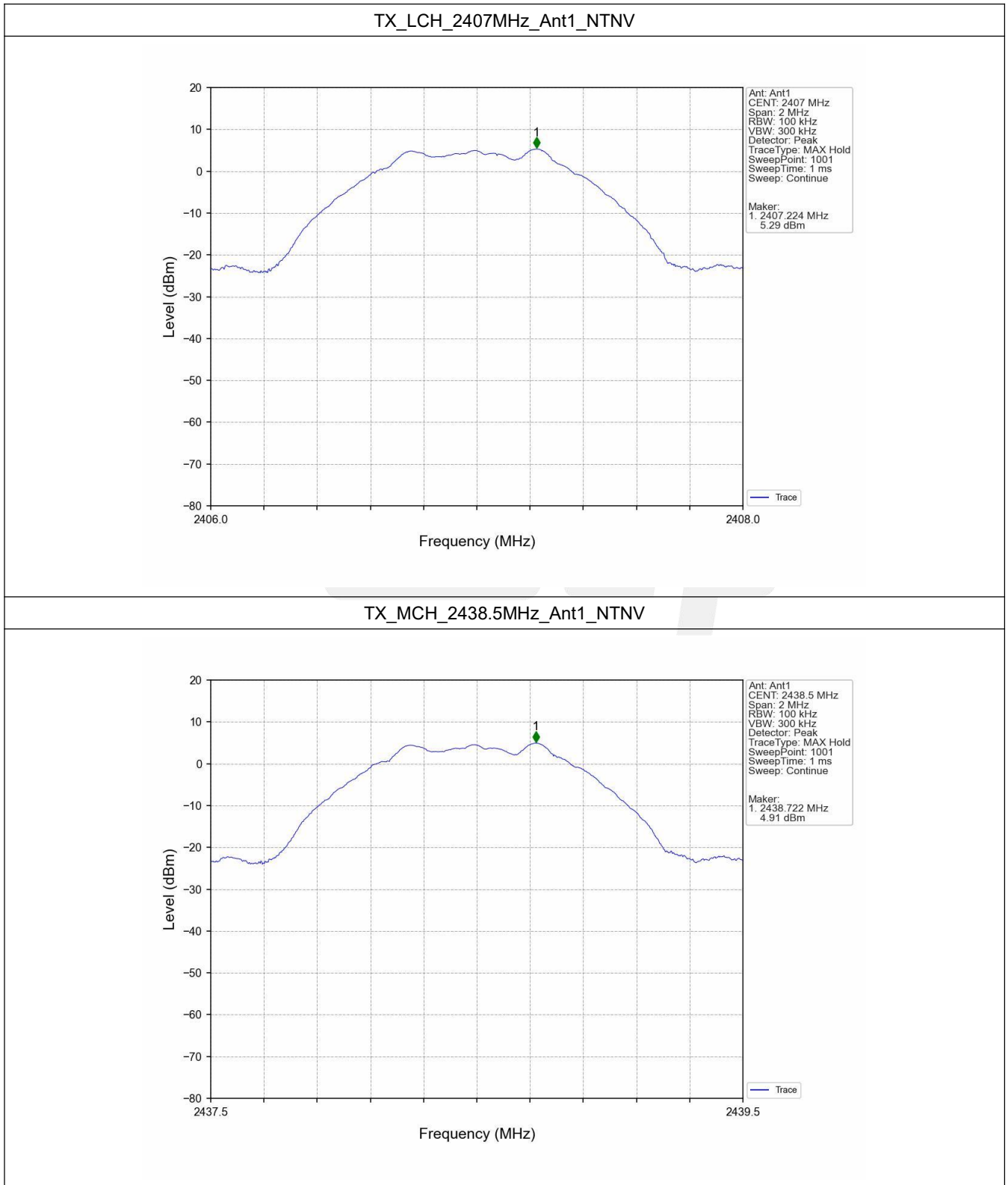
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
TX	SISO	2407	1	5.29
		2438.5	1	4.91
		2473.5	1	4.63

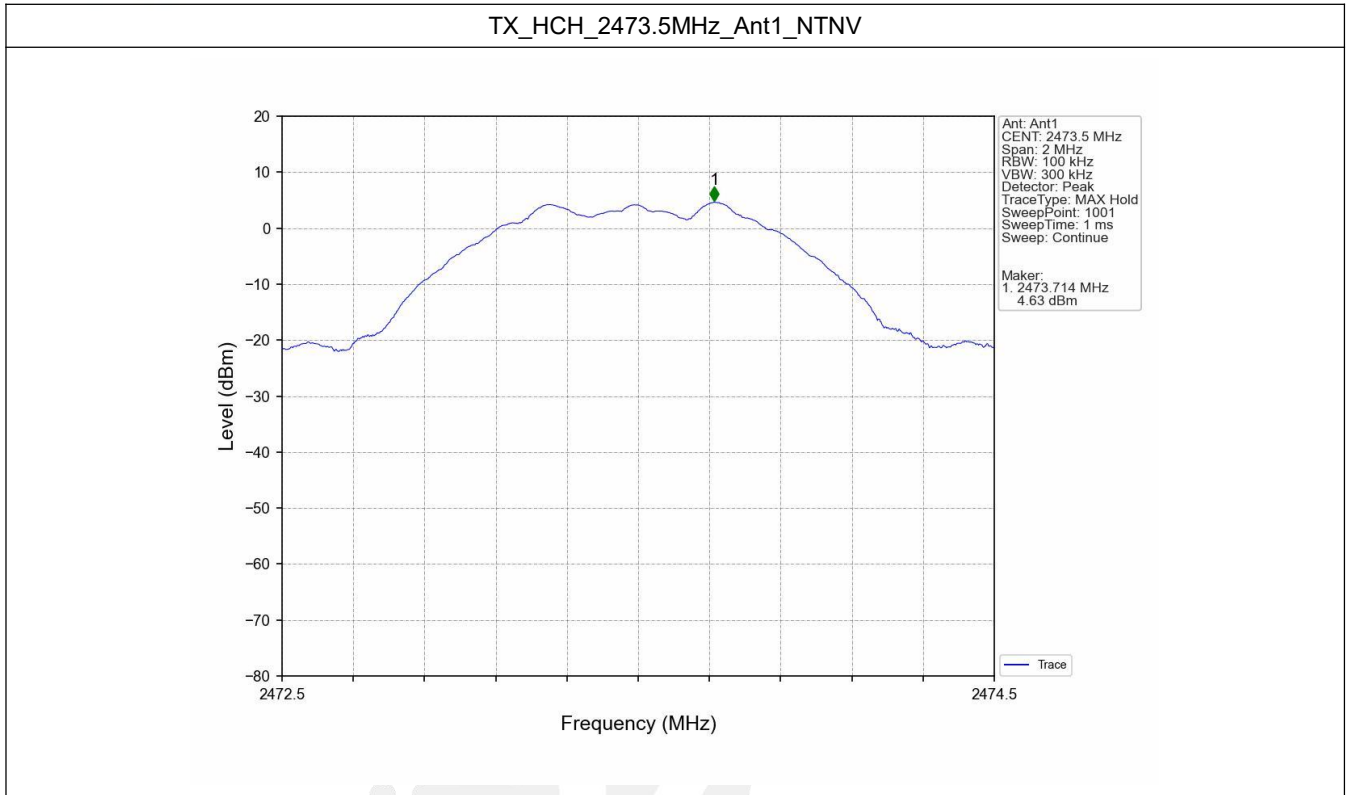
5.1.2 CSE

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
TX	SISO	2407	1	5.29	-14.71	Pass
		2438.5	1	4.91	-15.09	Pass
		2473.5	1	4.63	-15.37	Pass

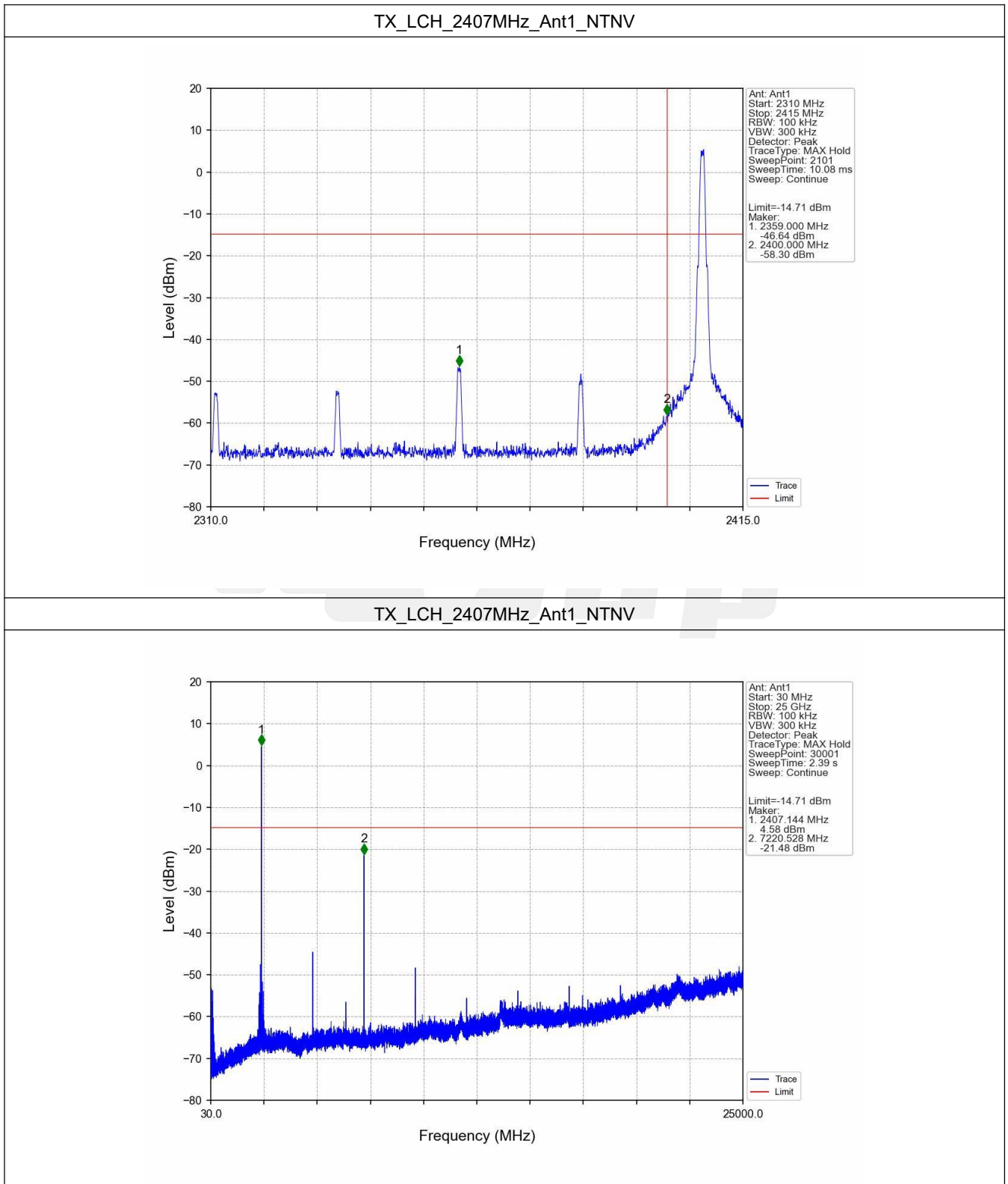
5.2 Test Graph

5.2.1 Ref

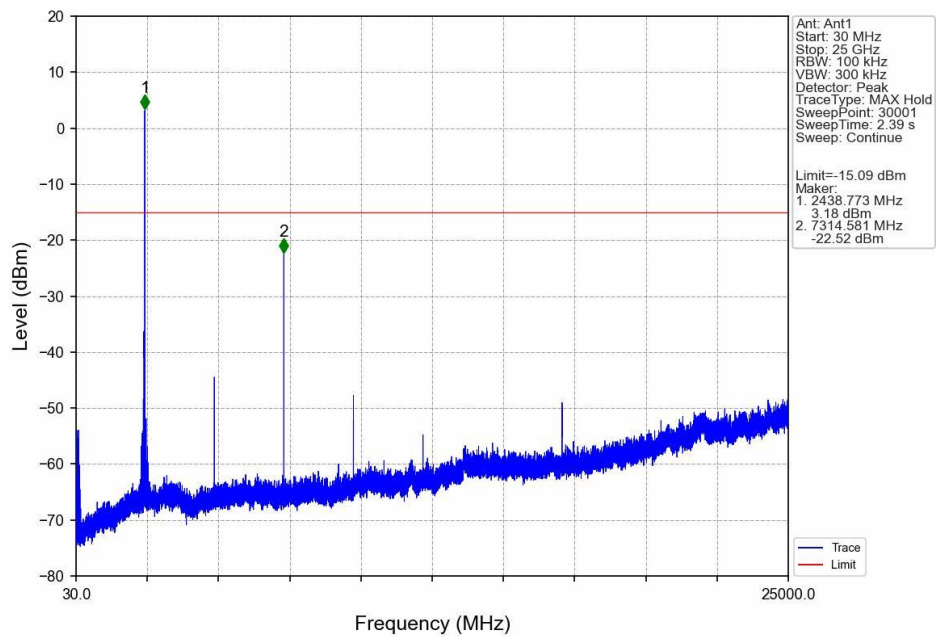




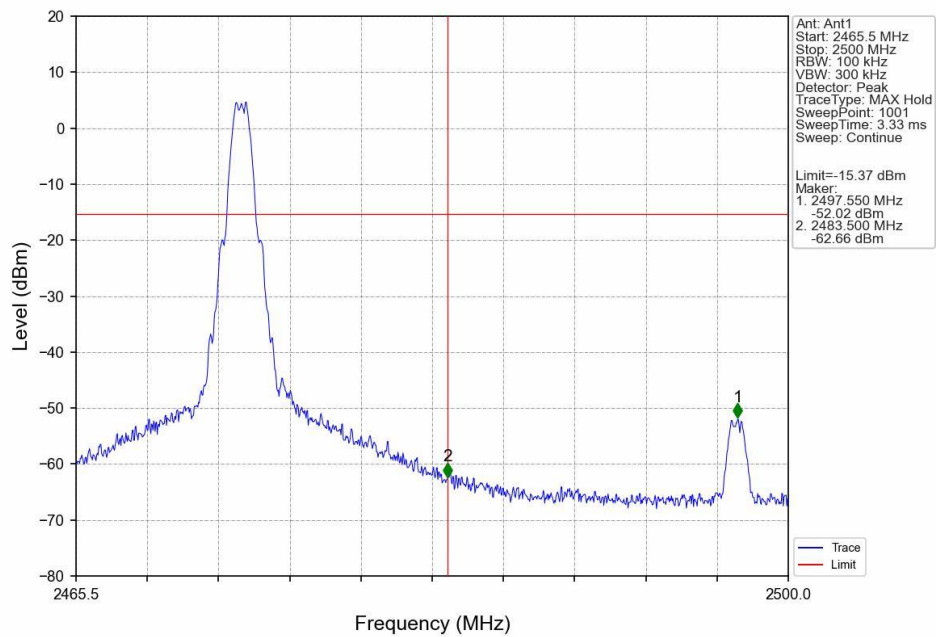
5.2.2 CSE

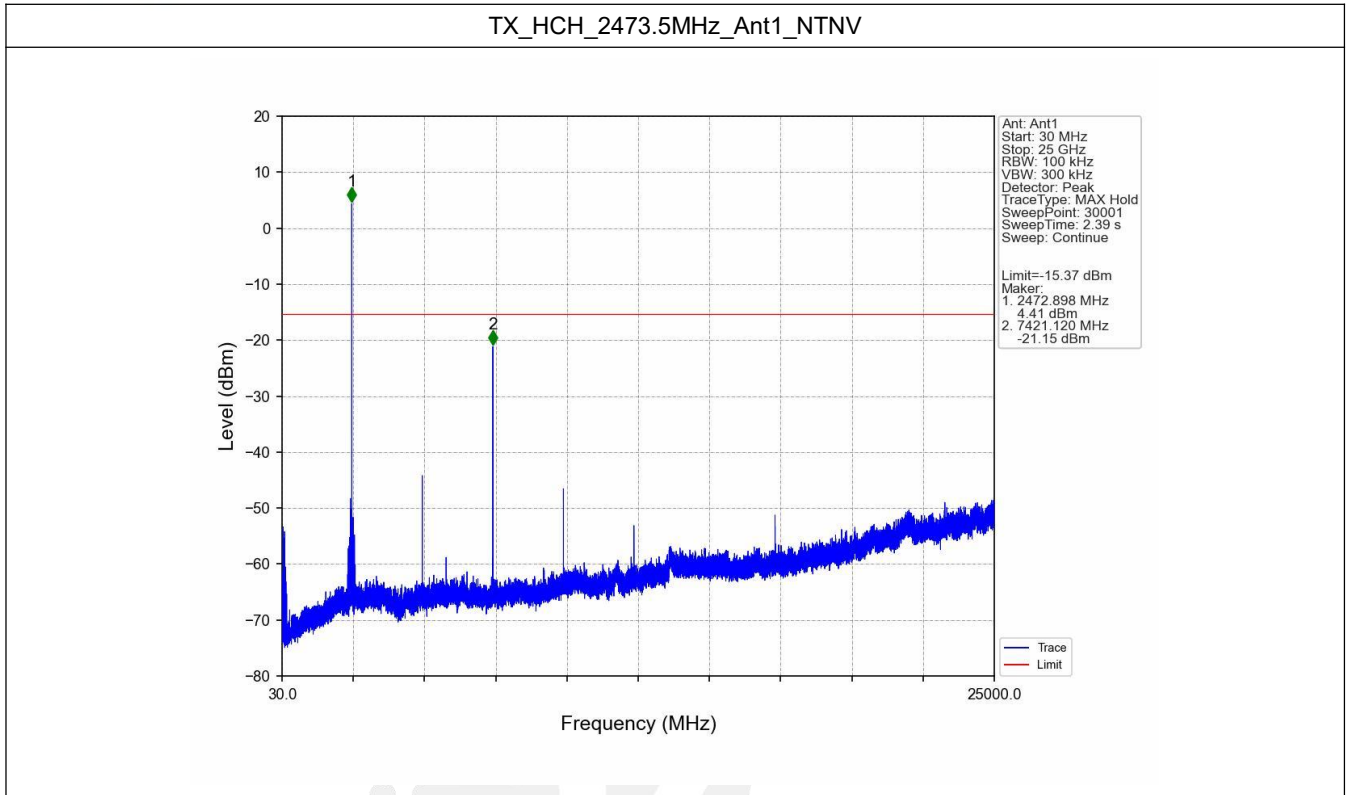


TX_MCH_2438.5MHz_Ant1_NTNV



TX_HCH_2473.5MHz_Ant1_NTNV






6. Form731

6.1 Test Result

6.1.1 Form731

Lower Freq (MHz)	High Freq (MHz)	MAX Power (W)	MAX Power (dBm)
2407	2473.5	0.0001	-12.14

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

