CFR 47 FCC PART 15 SUBPART C(DTS)

TEST REPORT

For

Floodlight Cam Pro

MODEL NUMBER: L5P2CA11, DL5P2CA11, DL5P2CA12, DL5P3CA14, L5P3CA14, DL5P2CA14, L5P2CA14, DL5P3CA13, L5P3CA13, DL5P2CA13, L5P2CA13, DL5P3CA15, L5P3CA15, DL5P2CA15, L5P2CA15, DL5P3CA17, L5P3CA17, DL5P2CA17, L5P2CA17

REPORT NUMBER: E01A23060128F00201

ISSUE DATE: August 22, 2023

FCC ID: 2A2VW-L5P

Trademark: AOSU, DEKCO, Saato, zoohi

Prepared for

Shenzhen Zhiling Technology Co., Ltd

Room 201, Building A, No1 Qianwan Road, Qianhai Shenzhen-Hong Kong Cooperation Zone, Shenzhen, Guangdong, China

Prepared by

Dong Guan Anci Electronic Technology Co., Ltd.

1-2 Floor, Building A, No.11, Headquarters 2 Road, Songshan, Lake Hi-tech Industrial Development Zone, Dongguan City, Guangdong Pr., China.

This report shall not be reproduced, except in full, without the written approval of Dong Guan Anci Electronic Technology Co., Ltd.

Revision History

Rev.	Issue Date	Revisions	Revised By
V0	August 22, 2023	Initial Issue	LUKE

Summary of Test Results			
Test Item	**Clause**	**Limit/Requirement**	**Result**
Antenna Requirement	N/A	FCC Part 15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	ANSI C63.10-2013, Clause 6.2	FCC Part 15.207	Pass
Conducted Output Power	ANSI C63.10-2013, Clause 11.9.1.3	FCC Part 15.247 (b)(3)	Pass
6dB Bandwidth and 99% Occupied Bandwidth	ANSI C63.10-2013, Clause 11.8.1	FCC Part 15.247 (a)(2)	Pass
Power Spectral Density	ANSI C63.10-2013, Clause 11.10.2	FCC Part 15.247 (e)	Pass
Conducted Band edge and spurious emission	ANSI C63.10-2013, Clause 11.11	FCC Part 15.247(d)	Pass
Radiated Band edge and Spurious Emission	ANSI C63.10-2013, Clause 11.11 & Clause 11.12	FCC Part 15.205/15.209	Pass
Duty Cycle	ANSI C63.10-2013, Clause 11.6	None; for reporting purposes only.	Pass

*This test report is only published to and used by the applicant, and it is not for evidence purpose in China.
*The measurement result for the sample received is <Pass> according to <CFR 47 FCC PART 15 SUBPART C(DTS)> when <Accuracy Method> decision rule is applied.

Table of Contents

1. ATTESTATION OF TEST RESULTS 5

2. TEST METHODOLOGY 6

3. FACILITIES AND ACCREDITATION 6

4. CALIBRATION AND UNCERTAINTY 7

4.1. MEASURING INSTRUMENT CALIBRATION 7

4.2. MEASUREMENT UNCERTAINTY 7

5. EQUIPMENT UNDER TEST 8

5.1. DESCRIPTION OF EUT 8

5.2. CHANNEL LIST 8

5.3. MAXIMUM AVERAGE EIRP 9

6. MEASURING EQUIPMENT AND SOFTWARE USED 12

7. ANTENNA PORT TEST RESULTS 14

7.1. CONDUCTED OUTPUT POWER 14

7.2. 6DB BANDWIDTH 15

7.3. POWER SPECTRAL DENSITY 16

7.4. CONDUCTED BAND EDGE AND SPURIOUS EMISSION 17

7.5. DUTY CYCLE 19

8. RADIATED TEST RESULTS 20

9. ANTENNA REQUIREMENT 32

10. AC POWER LINE CONDUCTED EMISSION 33

11. Maximum Conducted Output Power Test 36

12. Antenna Application 80

APPENDIX: PHOTOGRAPHS OF THE EUT 82

1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name:	Shenzhen Zhiling Technology Co., Ltd
Address:	Room 201, Building A, No1 Qianwan Road, Qianhai Shenzhen-Hong Kong Cooperation Zone, Shenzhen, Guangdong, China

Manufacturer Information

Company Name:	Shenzhen Zhiling Technology Co., Ltd
Address:	Room 201, Building A, No1 Qianwan Road, Qianhai Shenzhen-Hong Kong Cooperation Zone, Shenzhen, Guangdong, China

EUT Information

EUT Name:	Floodlight Cam Pro
Model:	L5P2CA11, DL5P2CA11, DL5P2CA12, DL5P3CA14, L5P3CA14, DL5P2CA14, L5P2CA14, DL5P3CA13, L5P3CA13, DL5P2CA13, L5P2CA13, DL5P3CA15, L5P3CA15, DL5P2CA15, L5P2CA15, DL5P3CA17, L5P3CA17, DL5P2CA17, L5P2CA17 (Note: All models are the same, except the model name and Trade Mark are different, We choose model L5P2CA11 to do all tests)
Sample Received Date:	July 12, 2023
Sample Status:	Normal
Sample ID:	A23060128 002

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 FCC PART 15 SUBPART C(DTS)	**Pass**

Date of Test : July 13, 2023 to July 18, 2023

Prepared by : Luke Li

Luke Li/Editor

Reviewer & Authorized Signer : Tiger Xu

Tiger Xu/ Supervisor

2. TEST METHODOLOGY

All tests were performed in accordance with the standard CFR 47 FCC PART 15 SUBPART C(DTS)

3. FACILITIES AND ACCREDITATION

Site Description

EMC Lab.	:	Accredited by FCC, May 30, 2019 Designation Number: CN1230 Test Firm Registration Number: 991798
Name of Firm	:	Dong Guan Anci Electronic Technology Co., Ltd.
Site Location	:	1-2 Floor, Building A, No.11, Headquarters 2 Road, Songshan, Lake Hi-tech Industrial Development Zone, Dongguan City, Guangdong Pr., China.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Items	k	Uncertainty
DTS Bandwidth	1.96	±9.2 PPM
20dB Emission Bandwidth	1.96	±9.2 PPM
Carrier Frequency Separation	1.96	±9.2 PPM
Number of Hopping Channel	1.96	±9.2 PPM
Time of Occupancy	1.96	±0.57%
Maximum Conducted Output Power	1.96	± 0.73 dB
Max Peak Conducted Output Power	1.96	±1.5 dB
Maximum Power Spectral Density Level	1.96	±1.9 dB
Conducted Band edge	1.96	±9.2 PPM
Conducted spurious emission	1.96	9 kHz-30 MHz: ± 0.95 dB 30 MHz-1 GHz: ± 1.5 dB 1GHz-12.75GHz: ± 1.8 dB 12.75 GHz-26.5 GHz: ± 2.1dB
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.		

Test Item	Measurement Frequency Range	K	U(dB)
Conducted emissions from the AC mains power ports (AMN)	150 kHz ~ 30 MHz	2	3.37
Radiated emissions	30 MHz ~ 1 GHz	2	3.79
Radiated emissions	1 GHz ~ 18 GHz	2	5.62
Radiated emissions	18 GHz ~ 40 GHz	2	5.54
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.			

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name		Floodlight Cam Pro
Model		L5P2CA11
Series Model		DL5P2CA11, DL5P2CA12, DL5P3CA14, L5P3CA14, DL5P2CA14, L5P2CA14, DL5P3CA13, L5P3CA13, DL5P2CA13, L5P2CA13, DL5P3CA15, L5P3CA15, DL5P2CA15, L5P2CA15, DL5P3CA17, L5P3CA17, DL5P2CA17, L5P2CA17
EUT Classification		Class B
Internal Frequency		2400MHz
Ratings		100-240V~ 50/60Hz
Power Supply	AC	120V/60Hz
	Battery	/

Frequency Band:	2400 MHz to 2483.5 MHz
Frequency Range:	2412 MHz to 2462 MHz
Support Standards:	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n-HT20, IEEE 802.11n-HT40
Type of Modulation:	IEEE 802.11b: DSSS(CCK, DQPSK, DBPSK) IEEE 802.11g/n: OFDM(64-QAM, 16-QAM, QPSK, BPSK)
Data Rate:	IEEE 802.11b: Up to 11 Mbps IEEE 802.11g: Up to 54 Mbps IEEE 802.11n: Up to MCS7
Number of Channels:	IEEE 802.11b/g/n-HT20: 11 IEEE 802.11n-HT40: 7
Maximum Peak Power:	IEEE 802.11b: 16.94 dBm IEEE 802.11g: 15 dBm IEEE 802.11n-HT20: 14.9 dBm IEEE 802.11n-HT40: 15.33 dBm
Antenna Type:	External Antenna
Antenna Gain:	2.55dBi
Hardware version:	V1.0
Software version:	V1.0

5.2. CHANNEL LIST

Channel List for 802.11b/g/n (20 MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	4	2427	7	2442	10	2457
2	2417	5	2432	8	2447	11	2462
3	2422	6	2437	9	2452	/	/

Channel List for 802.11n (40 MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
3	2422	5	2432	7	2442	9	2452
4	2427	6	2437	8	2447	/	/

5.3. MAXIMUM AVERAGE EIRP

IEEE Std. 802.11	Frequency (MHz)	Channel Number	Maximum Conducted AVG Output Power (dBm)
b	2412 ~ 2462	1-11[11]	16.94
g	2412 ~ 2462	1-11[11]	17.55
n HT20	2412 ~ 2462	1-11[11]	17.45
n HT40	2422 ~ 2452	3-9[7]	17.88

5.1. TEST CHANNEL CONFIGURATION

IEEE Std. 802.11	Test Channel Number	Frequency
b	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel)	2412 MHz, 2437 MHz, 2462 MHz
g	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel)	2412 MHz, 2437 MHz, 2462 MHz
n HT20	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel)	2412 MHz, 2437 MHz, 2462 MHz
n HT40	CH 3(Low Channel), CH 6(MID Channel), CH 9(High Channel)	2422 MHz, 2437 MHz, 2452 MHz

5.2. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band							
Test Software		SecureCRT Portable					
Modulation Mode	Transmit Antenna Number	Test Channel					
		NCB: 20MHz			NCB: 40MHz		
		CH 1	CH 6	CH 11	CH 3	CH 6	CH 9
802.11b	1	0	0	0			
802.11g	1	0	0	0			
802.11n HT20	1	0	0	0			
802.11n HT40	1				0	0	0

WORST-CASE CONFIGURATIONS

The EUT was tested in the following configuration(s):

Controlled in test mode using a software application on the EUT supplied by customer. The application was used to enable a continuous transmission and to select the mode, test channels, bandwidth, data rates as required.

Test channels referring to section 5.1.

Maximum power setting referring to section 5.2.

Worst-case data rates as provided by the client were:

802.11b mode: 1 Mbps
802.11g mode: 6 Mbps
802.11n HT20 mode: MCS0
802.11n HT40 mode: MCS0

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
1	2412-2462	External Antenna	2.55

Test Mode	Transmit and Receive Mode	Description
IEEE 802.11b	☒1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.
IEEE 802.11g	☒1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.
IEEE 802.11n HT20	☒1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.
IEEE 802.11n HT40	☒1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.

Note: The value of the antenna gain was declared by customer.

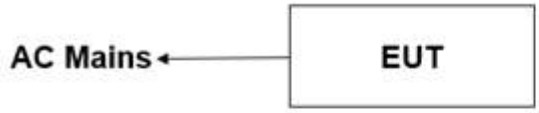
5.4. SUPPORT UNITS FOR SYSTEM TEST

The EUT has been tested as an independent unit

Item	Equipment	Trademark	Model No.	FCC ID	Note
1.	Floodlight Cam Pro	AOSU, DEKCO, Saato, zoohi	L5P2CA11	2A2VW-L5P	***EUT***

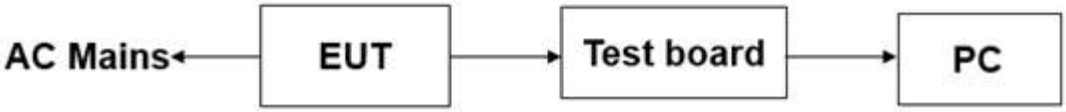
5.5. SETUP DIAGRAM

AC conducted emission :



Radiated Emission:

RF conducted:



6. MEASURING EQUIPMENT AND SOFTWARE USED

Test Equipment of Conducted RF					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
Spectrum Analyzer	Rohde & Schwarz	FSV40	US40240623	2022-10-29	2023-10-28
RF Test Software	MWRF-test	MTS 8310	N/A	N/A	N/A
Radio Frequency control box	MWRF-test	MW200-RFCB	MW220111ANCI	2023/5/10	2024-05-09
Radio Frequency control box	MWRF-test	MW200-RFCB 2#	/	2023/5/10	2024-05-09

Test Equipment of Radiated emissions below 1GHz					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	100302	2023/5/10	2024-05-09
Bilog Antenna	Schwarzbeck	VULB9163	VULB9163-1290	2022/12/12	2023-12-11
RF Cable	ZKJC	ZT06S-NJ-NJ-11M	19060398	2023/5/10	2024-05-09
RF Cable	ZKJC	ZT06S-NJ-NJ-0.5M	19060400	2023/5/10	2024-05-09

RF Cable	ZKJC	ZT06S-NJ-NJ-2.5M	19060404	2023/5/10	2024-05-09
EMI Test Receiver	ROHDE&SCHWARZ	ESPI7	100502	2022/10/8	2023-10-07
3m Semi-anechoic Chamber	Keysight	9m*6m*6m	N/A	2021/11/13	2024-11-12

Test Equipment of Radiated emissions above 1GHz					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
Low noise Amplifiers	A-INFO	LA1018N4009	J1013130524001	2023/5/10	2024-05-09
Horn antenna	A-INFO	LB-10180-SF	J2031090612123	2023/5/10	2024-05-09
RF Cable	ZKJC	ZT26-NJ-NJ-11M	19060401	2023/5/10	2024-05-09
RF Cable	ZKJC	ZT26-NJ-NJ-2.5M	19060402	2023/5/10	2024-05-09
RF Cable	ZKJC	ZT26-NJ-NJ-0.5M	19060403	2023/5/10	2024-05-09
Spectrum Analyzer	Rohde & Schwarz	FSV40	US40240623	2022-10-29	2023-10-28
3m Semi-anechoic Chamber	Keysight	9m*6m*6m	N/A	2021/11/13	2024-11-12
Test Software	Farad	EZ-EMC (Ver.FA-03A2 RE)	N/A	N/A	N/A

Test Equipment of Conducted emissions					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	101358	2023/5/10	2024-05-09
1# Shielded Room	chengyu	8m*4m*3.3m	N/A	2022/11/22	2025-11-21
LISN	ROHDE&SCHWARZ	ENV216	101413	2022/10/8	2023-10-07
Test Software	Farad	EZ-EMC (Ver.ANCI-3A1)	N/A	N/A	N/A
RF Cable	N/A	ZT06S-NJ-NJ-2.5M	19044022	2023/5/10	2024-05-09

7. ANTENNA PORT TEST RESULTS

7.1. CONDUCTED OUTPUT POWER

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(b)(3)	Peak Conduct Output Power	1 watt or 30 dBm	2400-2483.5

TEST PROCEDURE

Connect the EUT to a low loss RF cable from the antenna port to the power sensor (video bandwidth is greater than the occupied bandwidth).
Measure peak emission level, the indicated level is the peak output power, after any corrections for external attenuators and cables.

TEST ENVIRONMENT

Temperature	24℃	Relative Humidity	55%
Atmosphere Pressure	101kPa		

TEST RESULTS

Please refer to section "Test Data"

7.2. 6DB BANDWIDTH

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(a)(2)	6 dB Bandwidth	≥ 500 kHz	2400-2483.5

TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.8 for DTS bandwidth and clause 6.9 for Occupied Bandwidth.

Connect the EUT to the spectrum analyser and use the following settings:

Center Frequency	The center frequency of the channel under test
Frequency Span	For 6 dB Bandwidth: Enough to capture all products of the modulation carrier emission
Detector	Peak
RBW	For 6 dB Bandwidth: 100 kHz
VBW	For 6 dB Bandwidth: ≥3 × RBW
Trace	Max hold
Sweep	Auto couple

a) Use the 99 % power bandwidth function of the instrument, allow the trace to stabilize and report the measured bandwidth.

b) Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

TEST ENVIRONMENT

Temperature	24℃	Relative Humidity	55%
Atmosphere Pressure	101kPa		

TEST RESULTS

Please refer to section "Test Data"

7.3. POWER SPECTRAL DENSITY

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC §15.247 (e)	Power Spectral Density	8 dBm in any 3 kHz band	2400-2483.5

TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.10.

Connect the EUT to the spectrum analyser and use the following settings:

Center Frequency	The center frequency of the channel under test
Detector	PEAK
RBW	3 kHz ≤ RBW ≤ 100 kHz
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple

Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.
If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

TEST ENVIRONMENT

Temperature	24℃	Relative Humidity	55%
Atmosphere Pressure	101kPa		

TEST RESULTS

Please refer to section "Test Data"

7.4. CONDUCTED BAND EDGE AND SPURIOUS EMISSION

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C		
Section	Test Item	Limit
CFR 47 FCC §15.247 (d)	Conducted Bandedge and Spurious Emissions	at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.11 and 11.13.

Connect the EUT to the spectrum analyser and use the following settings for reference level measurement:

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	100 kHz
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum PSD level.
Change the settings for emission level measurement:

Span	Set the center frequency and span to encompass frequency range to be measured
Detector	Peak
RBW	100 kHz
VBW	≥3 × RBW
measurement points	≥span/RBW
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum PSD level. Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11.

TEST ENVIRONMENT

Temperature	24℃	Relative Humidity	55%
Atmosphere Pressure	101kPa		

TEST RESULTS

Please refer to section "Test Data"

7.5. DUTY CYCLE

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.6 Zero – Span Spectrum Analyzer method.

TEST ENVIRONMENT

Temperature	24℃	Relative Humidity	55%
Atmosphere Pressure	101kPa		

TEST RESULTS

Please refer to section "Test Data"

8. RADIATED TEST RESULTS

LIMITS

Please refer to CFR 47 FCC §15.205 and §15.209.

Radiation Disturbance Test Limit for FCC (Class B) (9 kHz ~ 1 GHz)

Emissions radiated outside of the specified frequency bands above 30 MHz			
Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m	
		Quasi-Peak	
30 - 88	100	40	
88 - 216	150	43.5	
216 - 960	200	46	
Above 960	500	54	
Above 1000	500	Peak	Average
		74	54

FCC Emissions radiated outside of the specified frequency bands below 30 MHz		
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

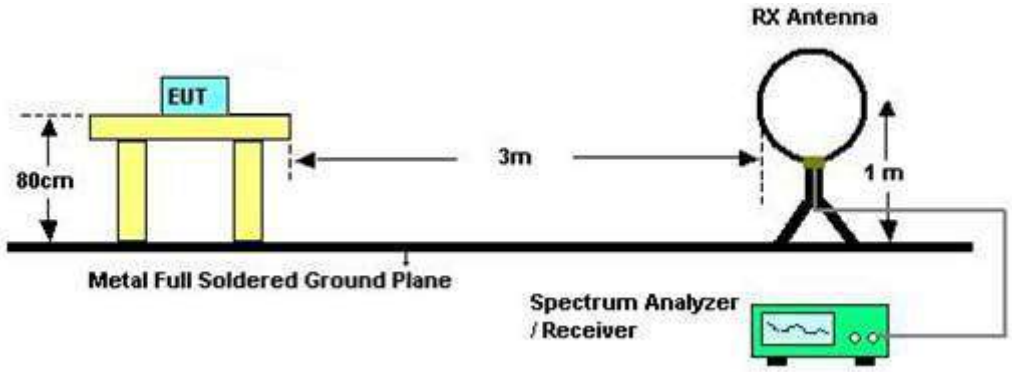
FCC Restricted bands of operation refer to FCC §15.205 (a):

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

Note: [1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
[2]Above 38.6c

TEST PROCEDURE

Below 30 MHz



The setting of the spectrum analyser

RBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
VBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
Sweep	Auto

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.4.

2. The EUT was arranged to its worst case and then 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. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80 cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1 m height antenna tower.

5. The radiated emission limits 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.

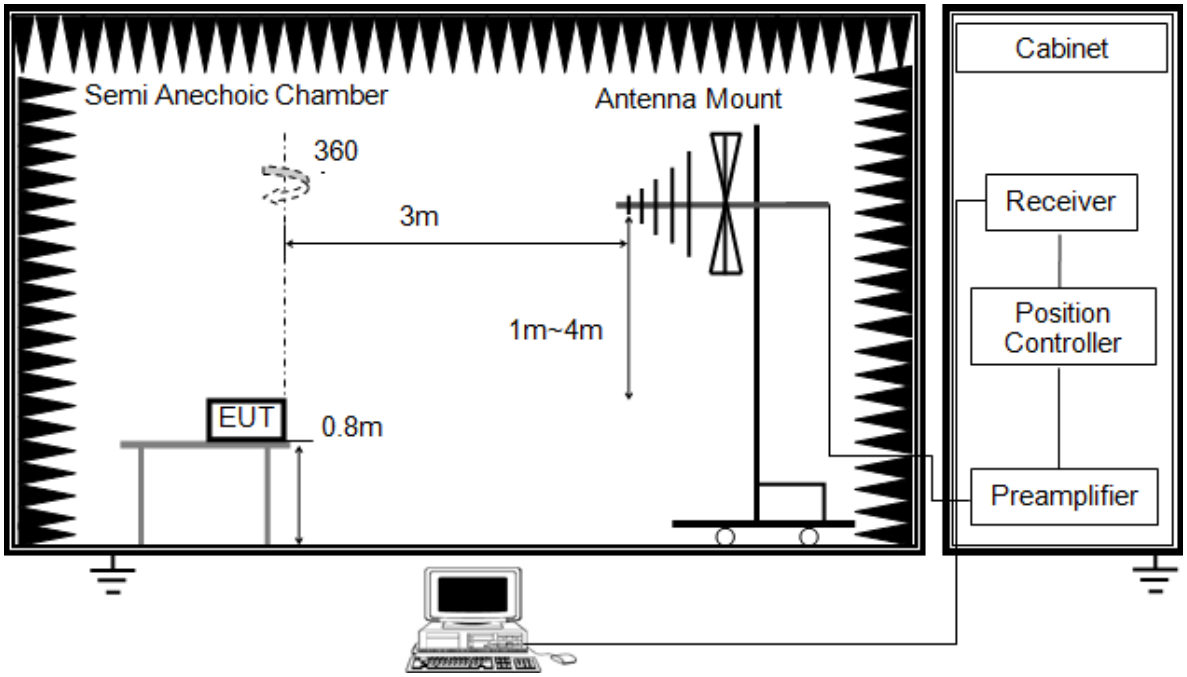
6. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak and average detector mode re-measured. If the emission level of the EUT 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 and average detector and reported.

7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field site based on KDB 414788.

8. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377Ω. For example, the measurement frequency X KHz resulted in a level of

Y dBuV/m, which is equivalent to Y-51.5 = Z dBuA/m, which has the same margin, W dB, to the corresponding RSS-GEN Table 6 limit as it has to be 15.209(a) limit.

Below 1 GHz and above 30 MHz



The setting of the spectrum analyser

RBW	120 kHz
VBW	300 kHz
Sweep	Auto
Detector	Peak/QP
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.5.

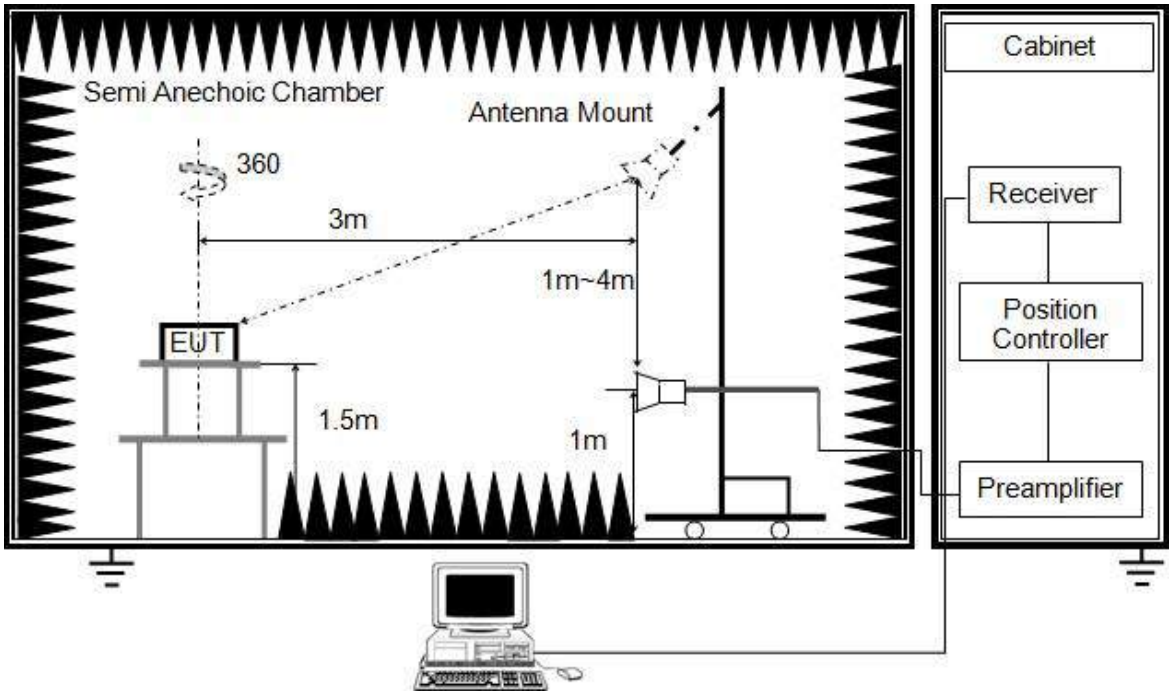
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80 cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. 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.

Above 1G



The setting of the spectrum analyser

RBW	1 MHz
VBW	PEAK: 3 MHz AVG: see note 6
Sweep	Auto
Detector	Peak
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.6.

2. 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. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

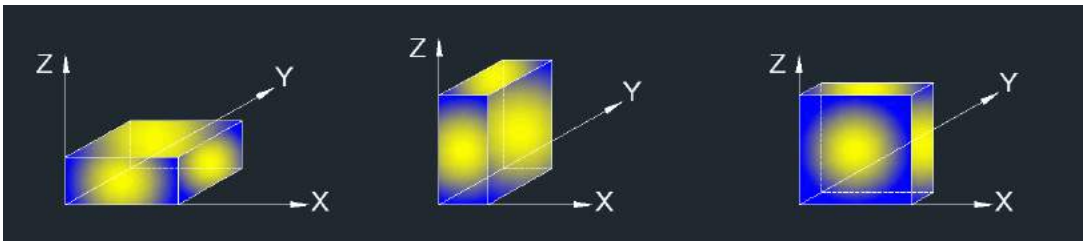
3. The EUT was placed on a turntable with 1.5 m above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement above 1 GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.

6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 7.1.ON TIME AND DUTY CYCLE.

X axis, Y axis, Z axis positions:



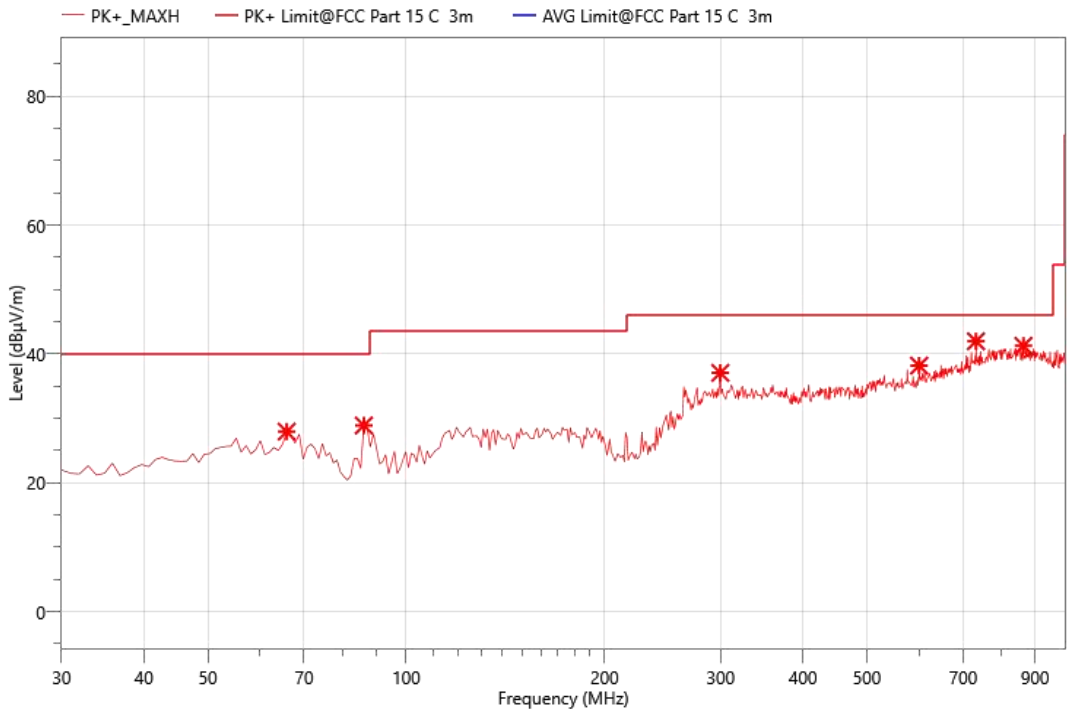
Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

TEST ENVIRONMENT

Temperature	24℃	Relative Humidity	55%
Atmosphere Pressure	101kPa		

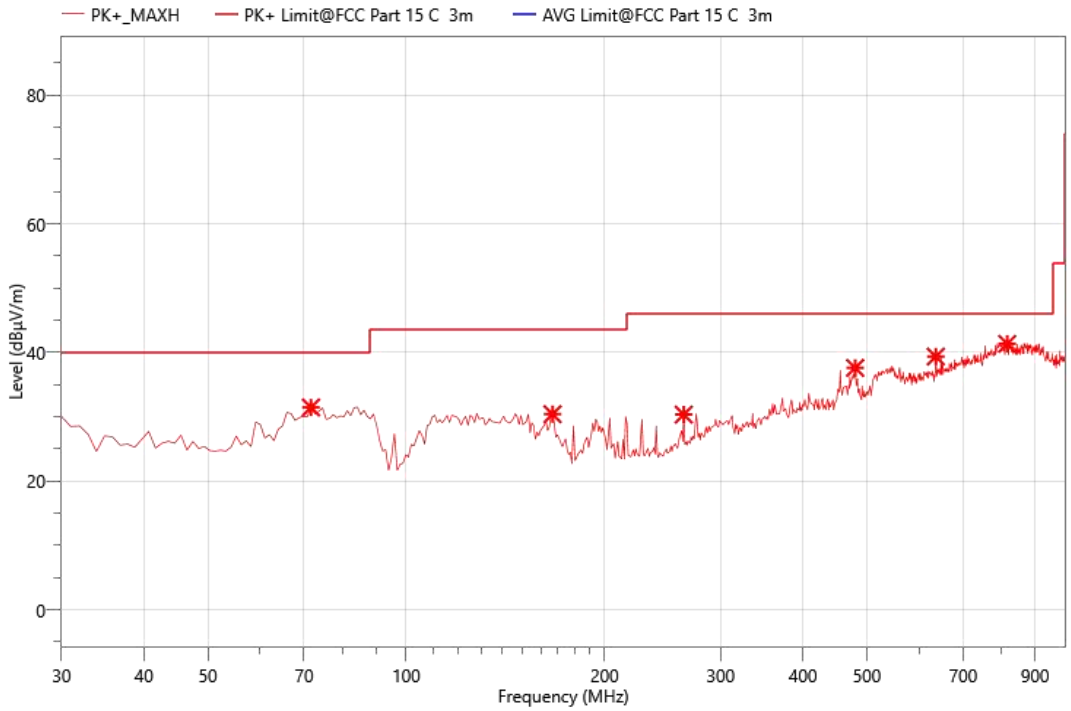
TEST RESULTS

The worst data of the mode (802.11b 2412MHz) are recorded in the following pages.



Site:	**LAB**	**Antenna: Horizontal**	**Temperature(C):23(C)**
Limit:	**FCC Part 15 C 3m Radiation(QP)**		**Humidity(%):57%**
EUT:	**Floodlight Cam Pro**	**Test Time:**	**2023-07-13**
M/N.:	**L5P2CA11**	**Power Rating:**	**AC 120V**
Mode:	**802.11b 2412MHz**	**Test Engineer:**	**Luffy**
Note:			

Freq. (MHz)	Reading (dBµV)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)	Det.	Pol.	Corr. (dB)
65.890	31.73	27.95	40.00	12.05	PK+	H	-3.78
86.260	35.89	28.91	40.00	11.09	PK+	H	-6.98
299.660	37.51	37.07	46.00	8.93	PK+	H	-0.44
600.360	30.00	38.20	46.00	7.80	PK+	H	8.2
732.280	31.19	41.97	46.00	4.03	PK+	H	10.78
864.200	27.96	41.27	46.00	4.73	PK+	H	13.31



Site:	**LAB**	**Antenna: Vertical**	**Temperature(C):23(C)**
Limit:	**FCC Part 15 C 3m Radiation(QP)**		**Humidity(%):57%**
EUT:	**Floodlight Cam Pro**	**Test Time:**	**2023-07-13**
M/N.:	**L5P2CA11**	**Power Rating:**	**AC 120V**
Mode:	**802.11b 2412MHz**	**Test Engineer:**	**Luffy**
Note:			

Freq. (MHz)	Reading (dBµV)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)	Det.	Pol.	Corr. (dB)
71.710	36.53	31.46	40.00	8.54	PK+	V	-5.07
166.770	35.78	30.42	43.50	13.08	PK+	V	-5.36
263.770	32.62	30.35	46.00	15.65	PK+	V	-2.27
480.080	32.84	37.61	46.00	8.39	PK+	V	4.77
636.250	30.79	39.37	46.00	6.63	PK+	V	8.58
816.670	28.55	41.35	46.00	4.65	PK+	V	12.8

Above 1000MHz~10th Harmonics:

All the modulation modes were tested the data of the worst mode (TX 802.11b) are recorded in the following pages and the others modulation methods do not exceed the limits. The frequency range from 1GHz to 25GHz is investigated.

Temperature :	24℃	Test Date :	2023-07-13
Humidity :	55 %	Test By:	Luffy
Test mode:	801.11b(2412MHz)	Frequency(MHz):	2412

Freq. (MHz)	Reading (dBμV)	Meas. (dBμV/m)	Limit (dBμV/m)	Margin (dBμV/m)	Det.	Pol.	Corr. (dB)
4383.000	54.04	42.96	74.00	31.04	PK+	V	-11.08
5879.000	51.66	46.54	74.00	27.46	PK+	V	-5.12
8327.000	49.81	47.70	74.00	26.30	PK+	V	-2.11
9296.000	50.44	49.59	74.00	24.41	PK+	V	-0.85
14795.500	48.15	49.77	74.00	24.23	PK+	V	1.62
15798.500	47.10	50.01	74.00	23.99	PK+	V	2.91
1858.500	57.67	34.37	74.00	39.63	PK+	H	-23.3
2385.500	57.44	36.70	74.00	37.30	PK+	H	-20.74
5292.500	52.83	45.64	74.00	28.36	PK+	H	-7.19
9160.000	48.67	48.32	74.00	25.68	PK+	H	-0.35
11506.000	48.84	49.04	74.00	24.96	PK+	H	0.2
15798.500	47.29	50.20	74.00	23.80	PK+	H	2.91

Temperature :	24℃	Test Date :	2023-07-13
Humidity :	55 %	Test By:	Luffy
Test mode:	801.11b(2437MHz)	Frequency(MHz):	2437

Freq. (MHz)	Reading (dBμV)	Meas. (dBμV/m)	Limit (dBμV/m)	Margin (dBμV/m)	Det.	Pol.	Corr. (dB)
1357.000	60.88	34.71	74.00	39.29	PK+	V	-26.17
5488.000	52.40	45.47	74.00	28.53	PK+	V	-6.93
9177.000	49.46	49.38	74.00	24.62	PK+	V	-0.08
10452.000	49.78	49.64	74.00	24.36	PK+	V	-0.14
13639.500	47.91	49.50	74.00	24.50	PK+	V	1.59
16189.500	45.50	50.69	74.00	23.31	PK+	V	5.19
1858.500	58.75	35.45	74.00	38.55	PK+	H	-23.3
3380.000	55.01	39.82	74.00	34.18	PK+	H	-15.19
5394.500	52.98	45.42	74.00	28.58	PK+	H	-7.56
9721.000	49.32	48.66	74.00	25.34	PK+	H	-0.66
13639.500	48.34	49.93	74.00	24.07	PK+	H	1.59
17099.000	46.60	50.33	74.00	23.67	PK+	H	3.73

Temperature :	24℃	Test Date :	2023-07-13
Humidity :	55 %	Test By:	Luffy
Test mode:	801.11b(2462MHz)	Frequency(MHz):	2462

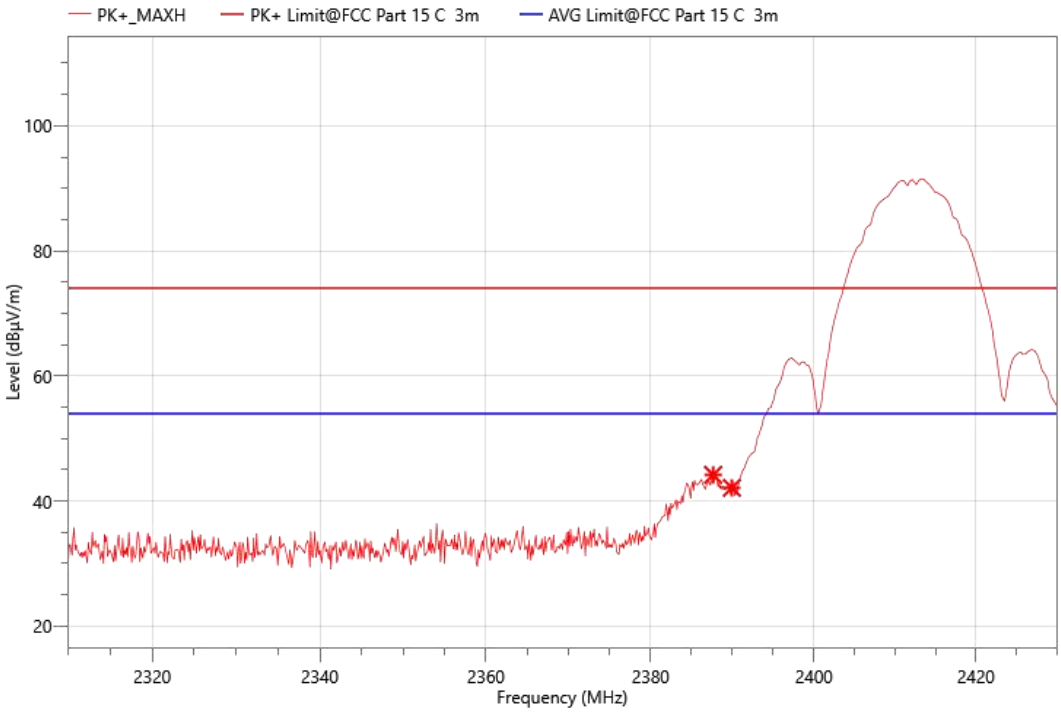
Freq. (MHz)	Reading (dBμV)	Meas. (dBμV/m)	Limit (dBμV/m)	Margin (dBμV/m)	Det.	Pol.	Corr. (dB)
3839.000	56.15	42.82	74.00	31.18	PK+	V	-13.33
5896.000	51.67	46.54	74.00	27.46	PK+	V	-5.13
7876.500	50.03	47.87	74.00	26.13	PK+	V	-2.16
9780.500	49.93	48.84	74.00	25.16	PK+	V	-1.09
12152.000	50.28	50.07	74.00	23.93	PK+	V	-0.21
17226.500	46.50	50.11	74.00	23.89	PK+	V	3.61
1867.000	57.82	34.57	74.00	39.43	PK+	H	-23.25
3788.000	55.01	41.72	74.00	32.28	PK+	H	-13.29
5828.000	51.79	45.90	74.00	28.10	PK+	H	-5.89
7298.500	49.78	46.66	74.00	27.34	PK+	H	-3.12
9228.000	49.38	49.02	74.00	24.98	PK+	H	-0.36
16198.000	45.03	50.05	74.00	23.95	PK+	H	5.02

No others harmonics emissions are higher than 20 dB below the limits of 47 CFR Part 15.247.

Note: (1) All Readings are Peak Value and AV.
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3) Data of measurement within this frequency range shown " – " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

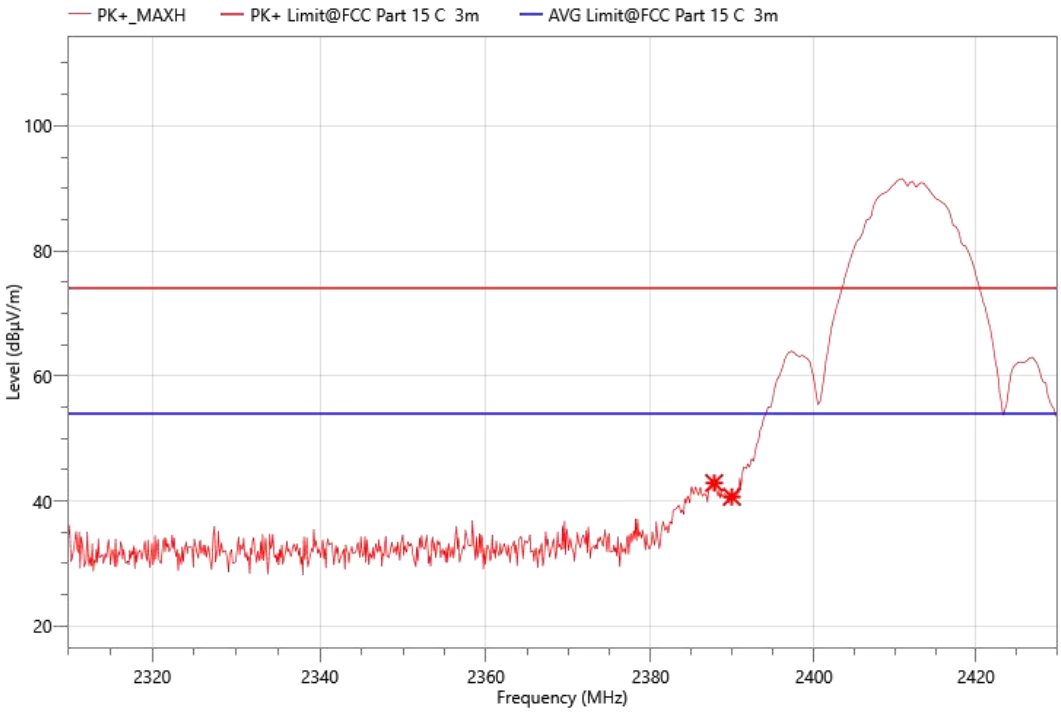
Band Edge (Radiated Test)

802.11b 2412MHz
Horizontal



Freq. (MHz)	Reading (dBµV)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)	Det.	Pol.	Corr. (dB)
2387.640	64.93	44.19	74.00	29.81	PK+	H	-20.74
2389.920	62.84	42.11	74.00	31.89	PK+	H	-20.73

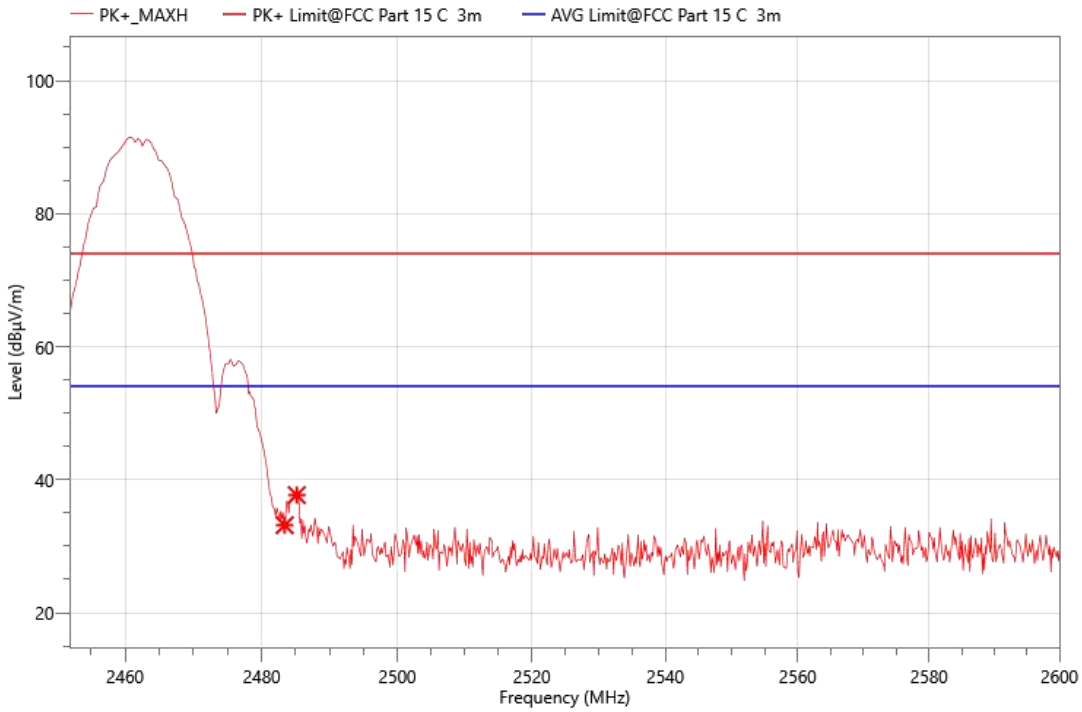
Vertical



Freq. (MHz)	Reading (dBµV)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)	Det.	Pol.	Corr. (dB)
2387.760	63.62	42.89	74.00	31.11	PK+	V	-20.73
2389.920	61.40	40.67	74.00	33.33	PK+	V	-20.73

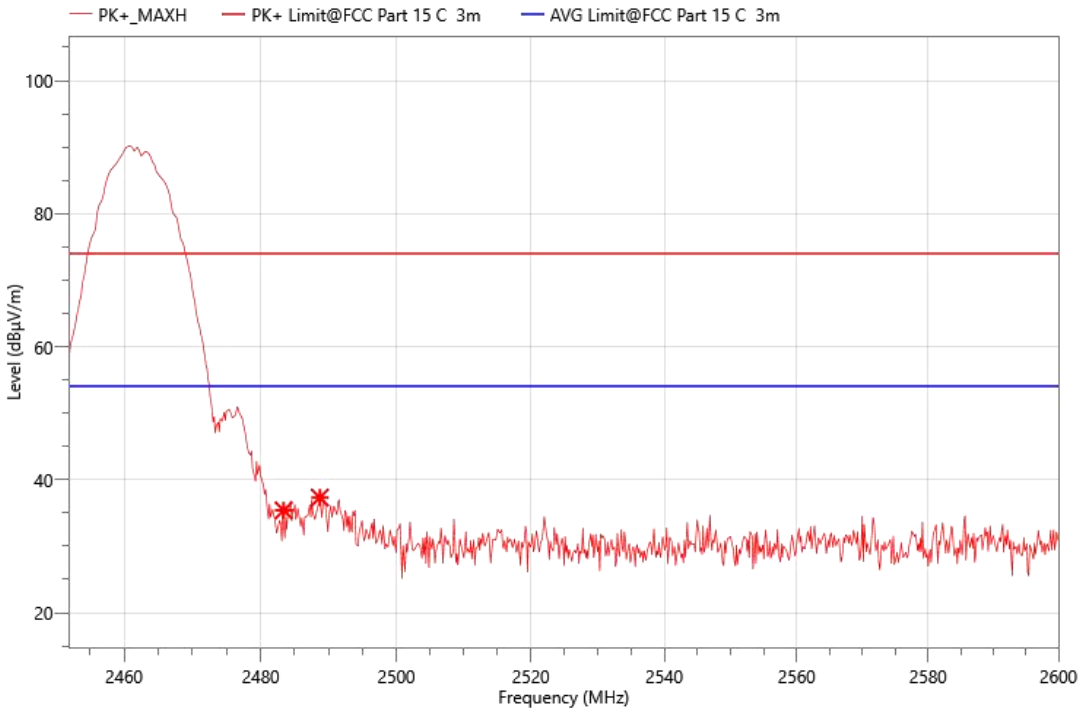
802.11b 2462MHz

Horizontal



Freq. (MHz)	Reading (dBµV)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)	Det.	Pol.	Corr. (dB)
2483.376	53.46	33.16	74.00	40.84	PK+	H	-20.3
2485.152	57.98	37.69	74.00	36.31	PK+	H	-20.29

Vertical



Freq. (MHz)	Reading (dBµV)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)	Det.	Pol.	Corr. (dB)
2483.376	55.69	35.39	74.00	38.61	PK+	V	-20.3
2488.704	57.59	37.31	74.00	36.69	PK+	V	-20.28

Note:802.11b, 802.11g, 802.11n (HT-20), 802.11n (HT-40), 802.11n (VHT-20), 802.11ax (HE-20), 802.11ac (VHT-40), 802.11ax (HE-40) all has been tested, the worst case is 802.11a, only shown the worst case.

9. ANTENNA REQUIREMENT

REQUIREMENT

The EUT'S antenna is met the requirement of FCC part 15C section 15.203 and 15.247.

FCC part 15C section 15.247 requirements:

Systems operating in the 2402-2480MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum peak output power of the intentional radiator is reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

DESCRIPTION

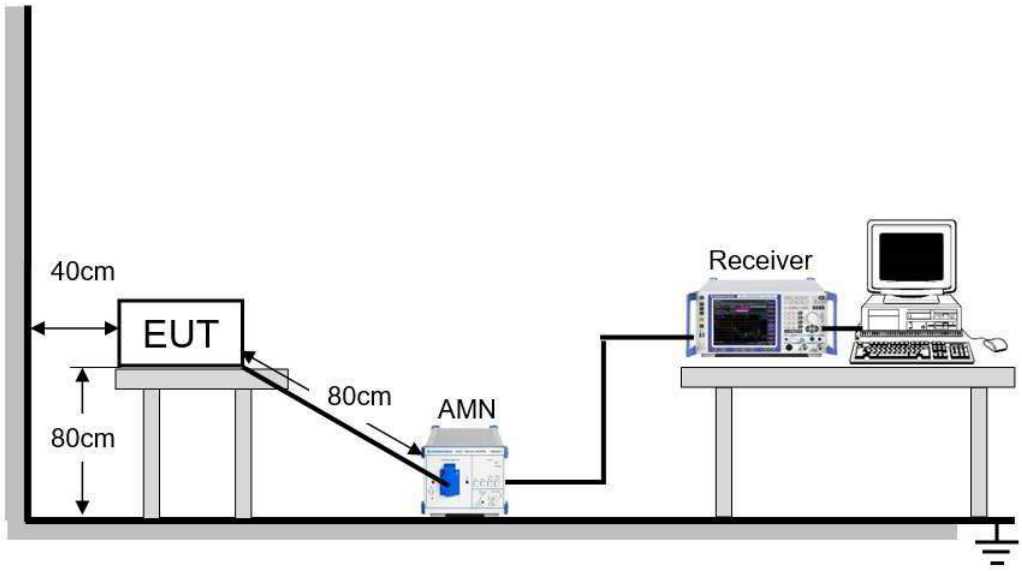
The EUT's antenna, permanent attached antenna, used Internal PCB antenna and integrated on PCB, The antenna's gain is 2.21dBi and meets the requirement.

10. AC POWER LINE CONDUCTED EMISSION

LIMITS

Please refer to CFR 47 FCC §15.207 (a)

FREQUENCY (MHz)	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00



TEST PROCEDURE

The EUT is put on a table of non-conducting material that is 80 cm high. The vertical conducting wall of shielding is located 40 cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2013.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9 kHz.

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

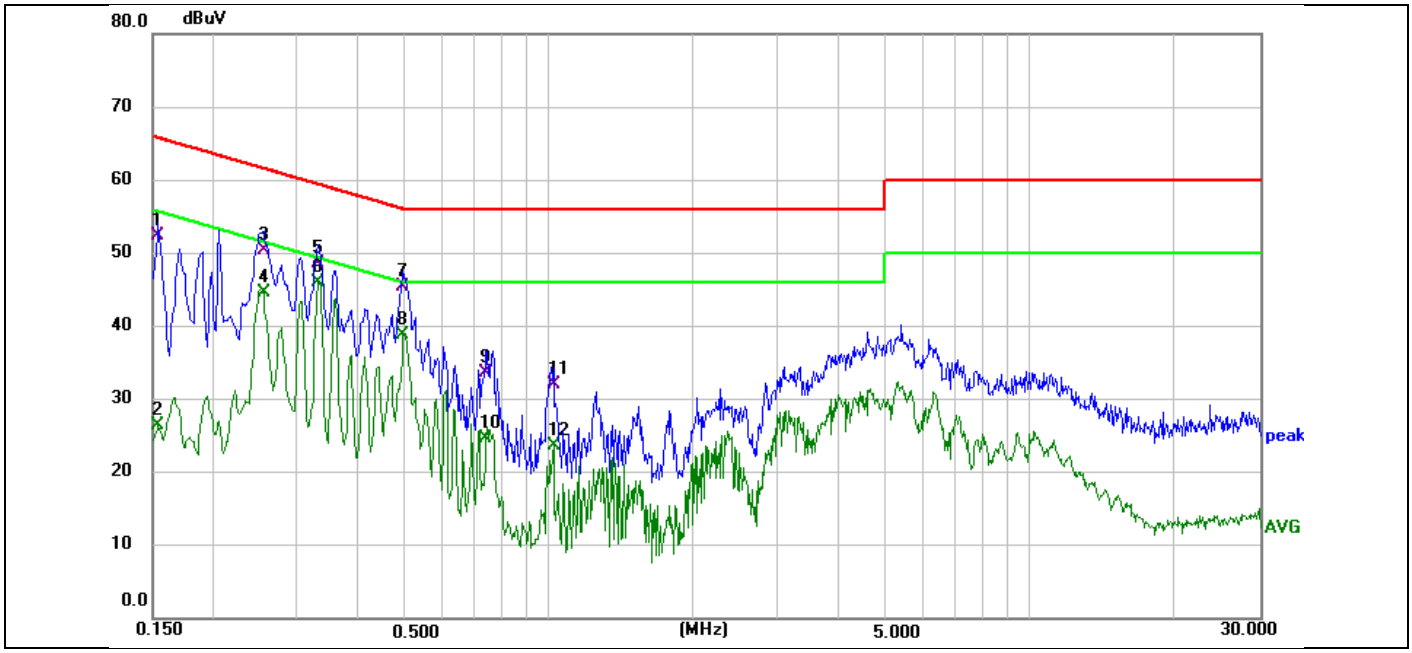
TEST ENVIRONMENT

Temperature	23.5℃	Relative Humidity	52.6%
Atmosphere Pressure	101kPa		

TEST RESULTS

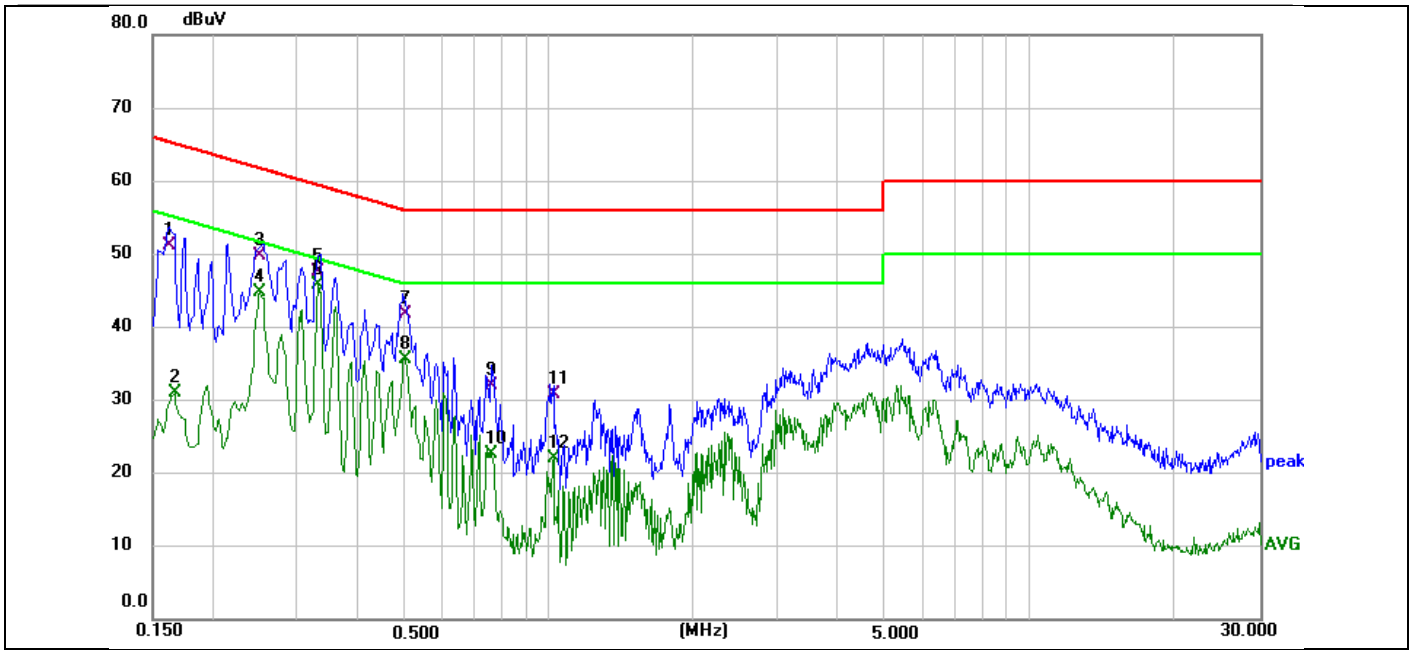
Passs

All the modulation modes were tested the data of the worst mode (802.11 b TX2462) are recorded in the following pages and the others modulation methods do not exceed the limits. Please refer to following pages.



Site:	**843**	**Phase:L1**	**Temperature(C):24.2(C)**
Limit:	**FCC Part 15 C Conduction(QP)**		**Humidity(%):51.9%**
EUT:	**Floodlight Cam Pro**	**Test Time:**	**2023-07-13**
M/N.:	**L5P2CA11**	**Power Rating:**	**AC 120V**
Mode:	**TX2462**	**Test Engineer:**	**Luffy**
Note:			

No.	Frequency (MHz)	Reading Level(dBuV)	Factor (dB)	Measure-ment(dBuV)	Limit (dBuV)	Over (dB)	Detector	Comment
1	0.1539	42.56	9.84	52.40	65.79	-13.39	QP	
2	0.1539	16.65	9.84	26.49	55.79	-29.30	AVG	
3	0.2540	40.25	10.05	50.30	61.63	-11.33	QP	
4	0.2540	34.46	10.05	44.51	51.63	-7.12	AVG	
5	0.3300	38.38	10.22	48.60	59.45	-10.85	QP	
6 *	0.3300	35.77	10.22	45.99	49.45	-3.46	AVG	
7	0.4980	34.83	10.57	45.40	56.03	-10.63	QP	
8	0.4980	28.21	10.57	38.78	46.03	-7.25	AVG	
9	0.7420	22.53	11.07	33.60	56.00	-22.40	QP	
10	0.7420	13.64	11.07	24.71	46.00	-21.29	AVG	
11	1.0220	22.49	9.61	32.10	56.00	-23.90	QP	
12	1.0220	14.10	9.61	23.71	46.00	-22.29	AVG	



Site:	**843**	**Phase:N**	**Temperature(C):24.2(C)**
Limit:	**FCC Part 15 C Conduction(QP)**		**Humidity(%):51.9%**
EUT:	**Floodlight Cam Pro**	**Test Time:**	**2023-07-13**
M/N.:	**L5P2CA11**	**Power Rating:**	**AC 120V**
Mode:	**TX2462**	**Test Engineer:**	**Luffy**
Note:			

No.	Frequency (MHz)	Reading Level(dBuV)	Factor (dB)	Measure-ment(dBuV)	Limit (dBuV)	Over (dB)	Detector	Comment
1	0.1620	41.33	9.87	51.20	65.36	-14.16	QP	
2	0.1660	21.04	9.89	30.93	55.16	-24.23	AVG	
3	0.2500	39.75	10.05	49.80	61.76	-11.96	QP	
4	0.2500	34.82	10.05	44.87	51.76	-6.89	AVG	
5	0.3300	37.38	10.22	47.60	59.45	-11.85	QP	
6 *	0.3300	35.48	10.22	45.70	49.45	-3.75	AVG	
7	0.5020	31.13	10.57	41.70	56.00	-14.30	QP	
8	0.5020	25.05	10.57	35.62	46.00	-10.38	AVG	
9	0.7620	20.99	11.11	32.10	56.00	-23.90	QP	
10	0.7620	11.53	11.11	22.64	46.00	-23.36	AVG	
11	1.0220	21.19	9.61	30.80	56.00	-25.20	QP	
12	1.0220	12.40	9.61	22.01	46.00	-23.99	AVG	

*:Maximum data x:Over limit !:over margin

Note: 1. Result = Reading + Correct Factor.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz ~ 150 kHz), 9 kHz (150 kHz ~ 30 MHz).
4. Step size: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), Scan time: auto.

Note: All the modes have been tested, only the worst data was recorded in the report.

11. Maximum Conducted Output Power Test

Maximum Conducted Output Power

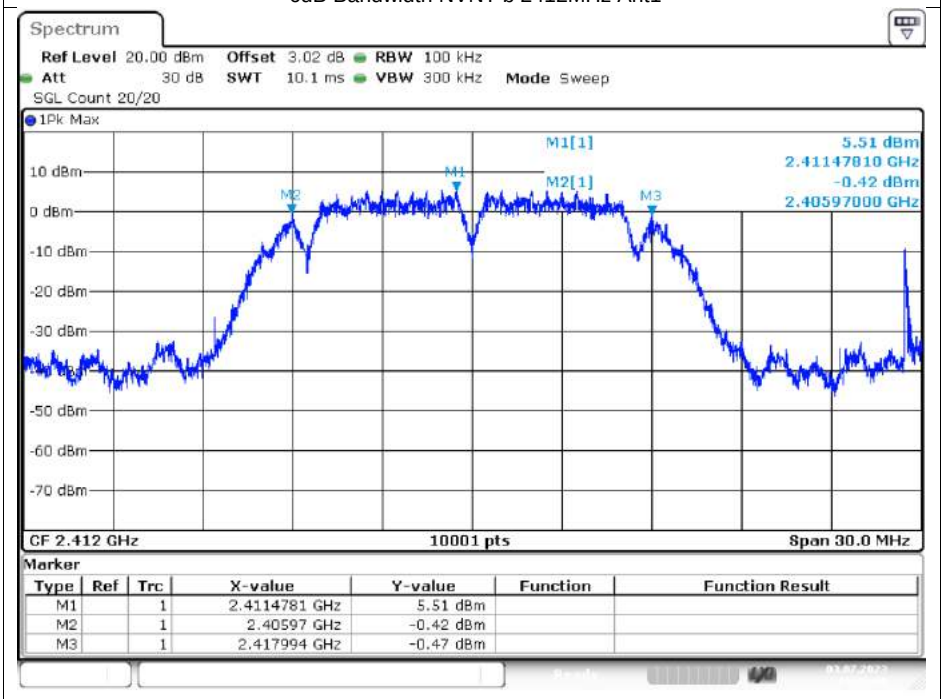
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	EIRP (dBm)	EIRP Limit (dBm)	Verdict
NVNT	b	2412	Ant1	16.85	0	19.4	36	Pass
NVNT	b	2437	Ant1	16.94	0	19.49	36	Pass
NVNT	b	2462	Ant1	16.94	0	19.49	36	Pass
NVNT	g	2412	Ant1	14.83	0	17.38	36	Pass
NVNT	g	2437	Ant1	14.95	0	17.5	36	Pass
NVNT	g	2462	Ant1	15	0	17.55	36	Pass
NVNT	n20	2412	Ant1	14.69	0	17.24	36	Pass
NVNT	n20	2437	Ant1	14.9	0	17.45	36	Pass
NVNT	n20	2462	Ant1	14.87	0	17.42	36	Pass
NVNT	n40	2422	Ant1	15.24	0	17.79	36	Pass
NVNT	n40	2437	Ant1	15.29	0	17.84	36	Pass
NVNT	n40	2452	Ant1	15.33	0	17.88	36	Pass

-6dB Bandwidth

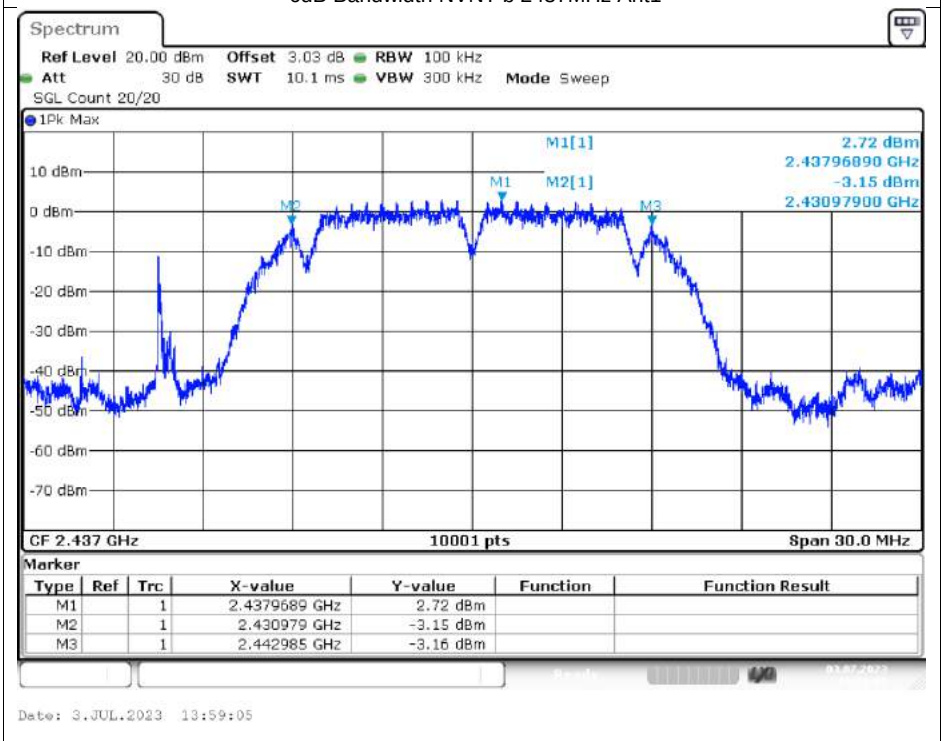
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	12.024	0.5	Pass
NVNT	b	2437	Ant1	12.006	0.5	Pass
NVNT	b	2462	Ant1	12.018	0.5	Pass
NVNT	g	2412	Ant1	14.415	0.5	Pass
NVNT	g	2437	Ant1	13.761	0.5	Pass
NVNT	g	2462	Ant1	14.349	0.5	Pass
NVNT	n20	2412	Ant1	17.52	0.5	Pass
NVNT	n20	2437	Ant1	17.568	0.5	Pass
NVNT	n20	2462	Ant1	13.38	0.5	Pass
NVNT	n40	2422	Ant1	32.532	0.5	Pass
NVNT	n40	2437	Ant1	32.658	0.5	Pass
NVNT	n40	2452	Ant1	34.098	0.5	Pass

Test Graphs

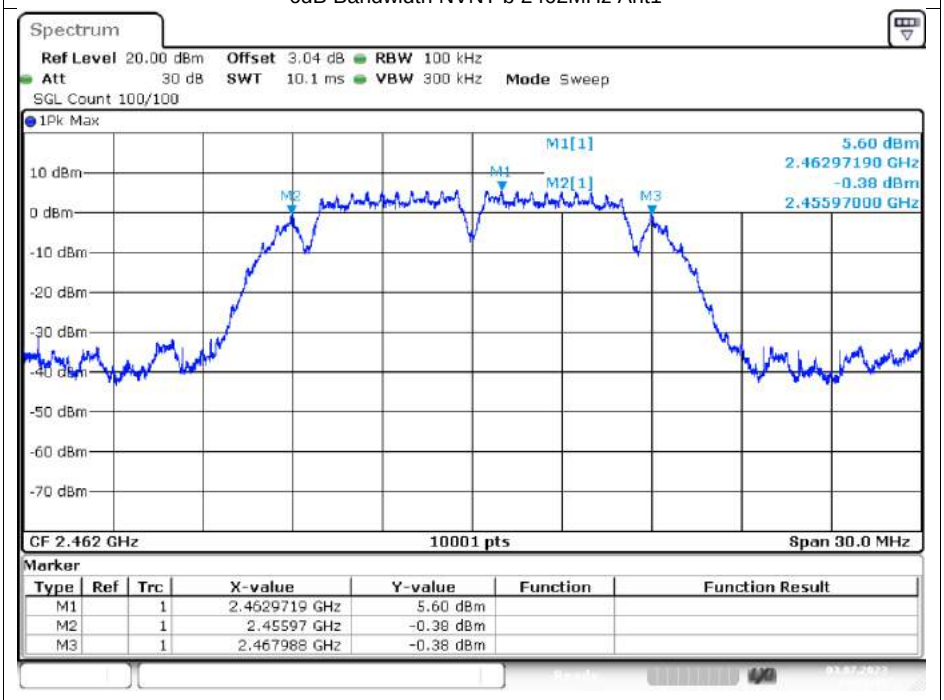
-6dB Bandwidth NVNT b 2412MHz Ant1



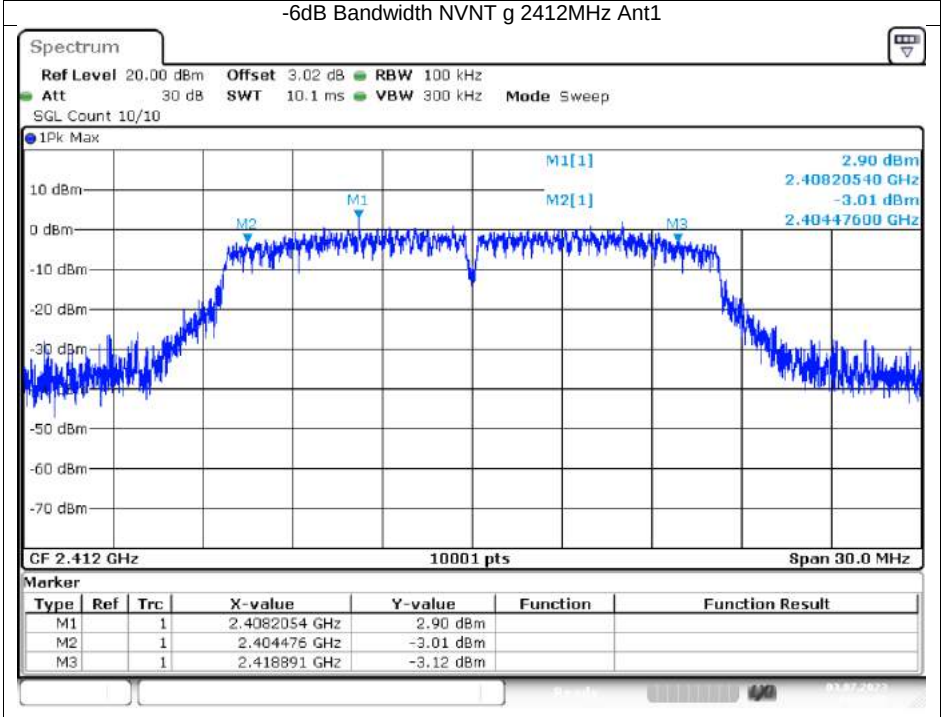
-6dB Bandwidth NVNT b 2437MHz Ant1



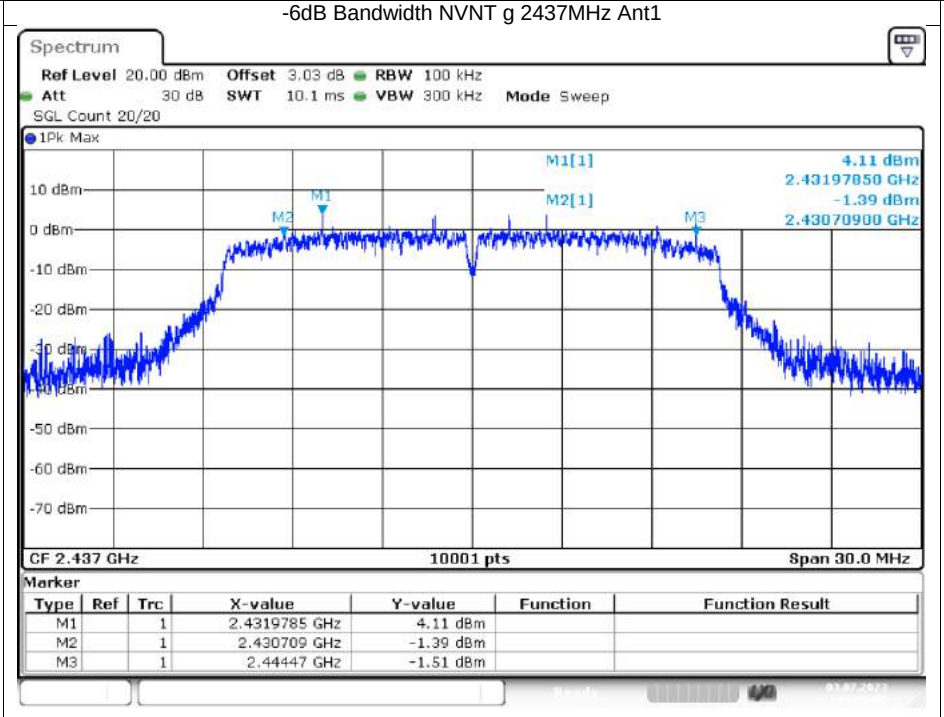
-6dB Bandwidth NVNT b 2462MHz Ant1



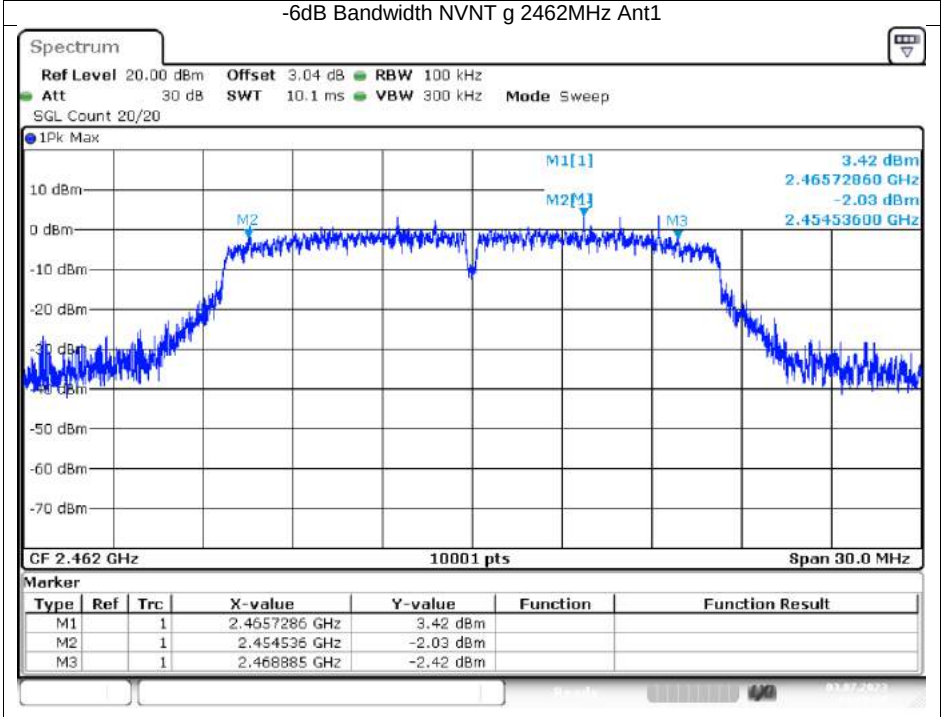
-6dB Bandwidth NVNT g 2412MHz Ant1



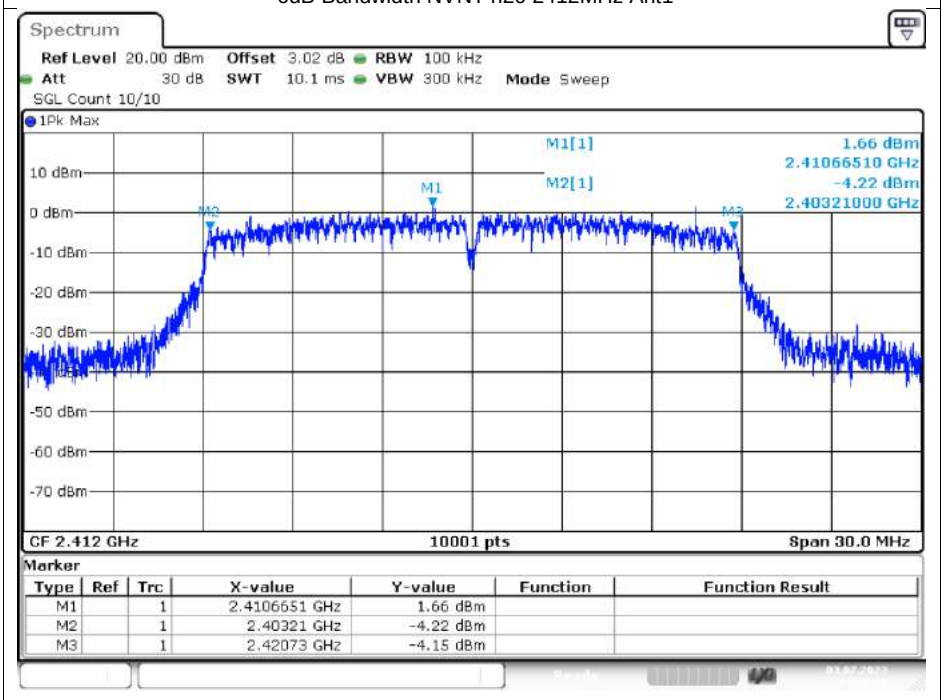
-6dB Bandwidth NVNT g 2437MHz Ant1



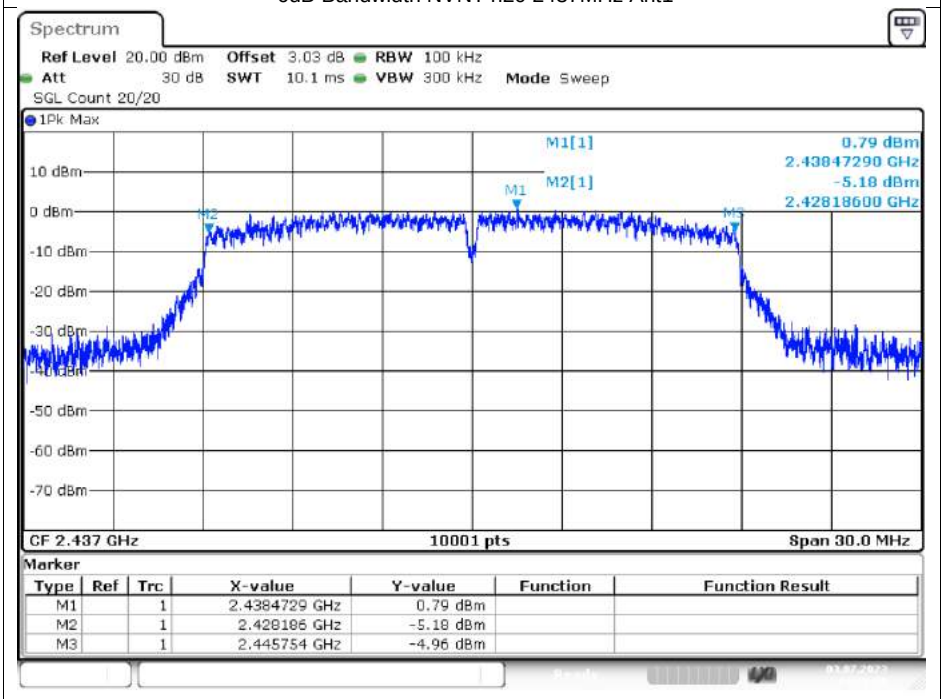
-6dB Bandwidth NVNT g 2462MHz Ant1



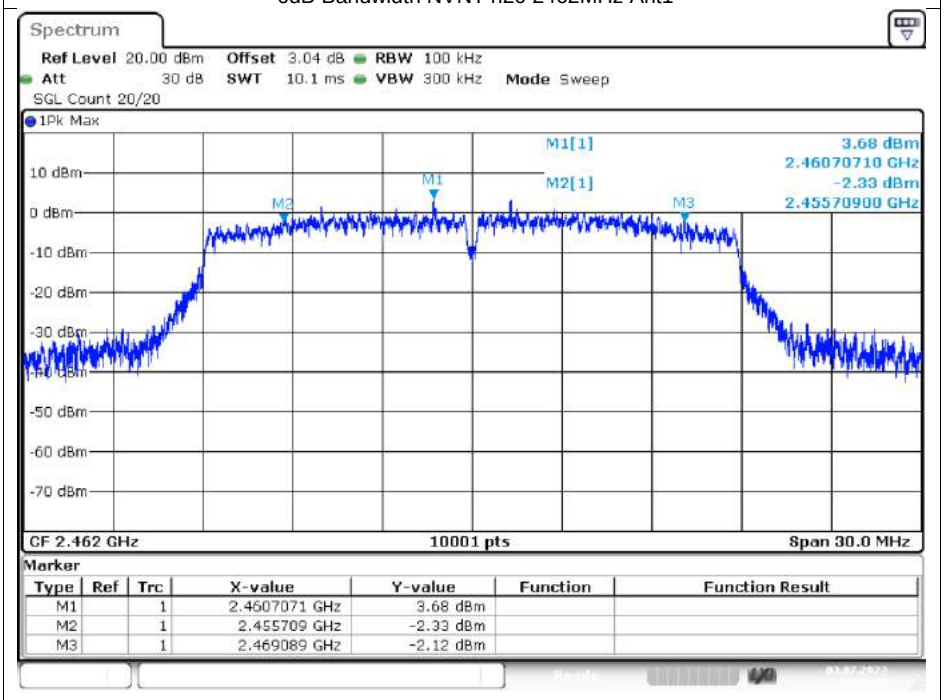
-6dB Bandwidth NVNT n20 2412MHz Ant1



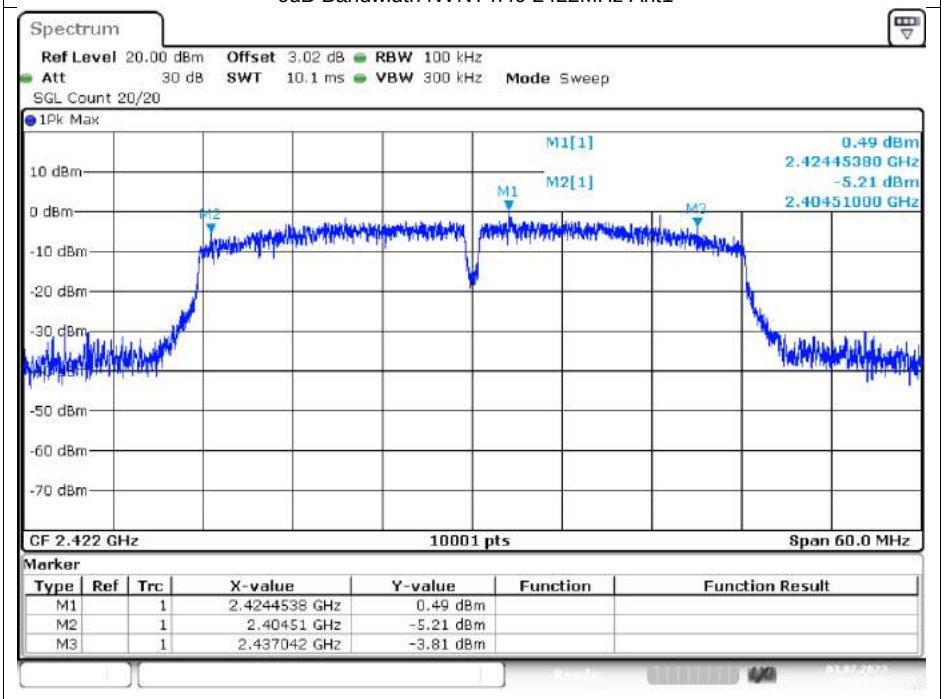
-6dB Bandwidth NVNT n20 2437MHz Ant1



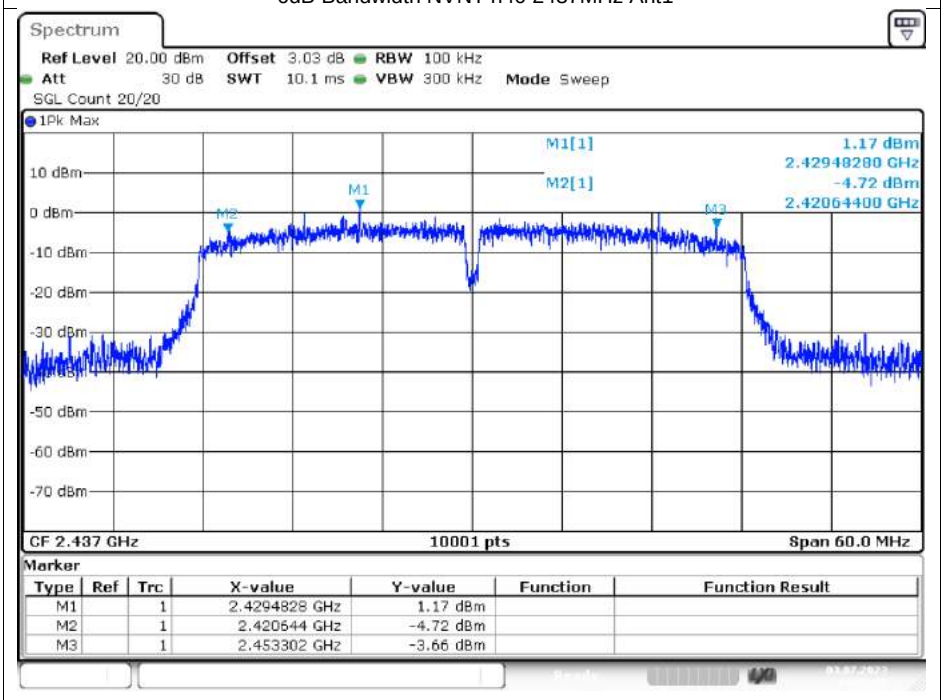
-6dB Bandwidth NVNT n20 2462MHz Ant1



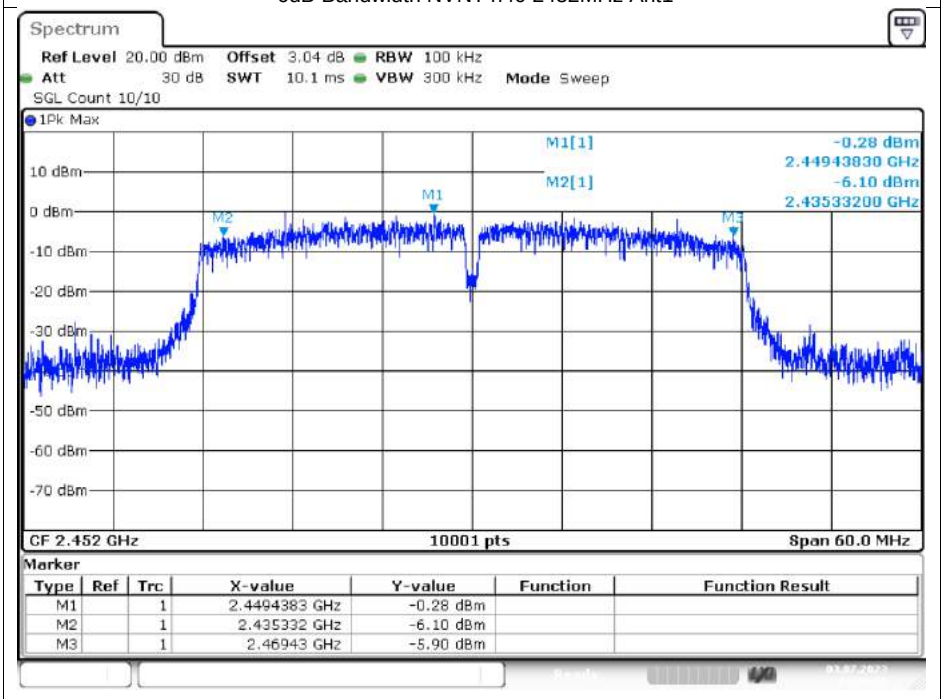
-6dB Bandwidth NVNT n40 2422MHz Ant1



-6dB Bandwidth NVNT n40 2437MHz Ant1



-6dB Bandwidth NVNT n40 2452MHz Ant1

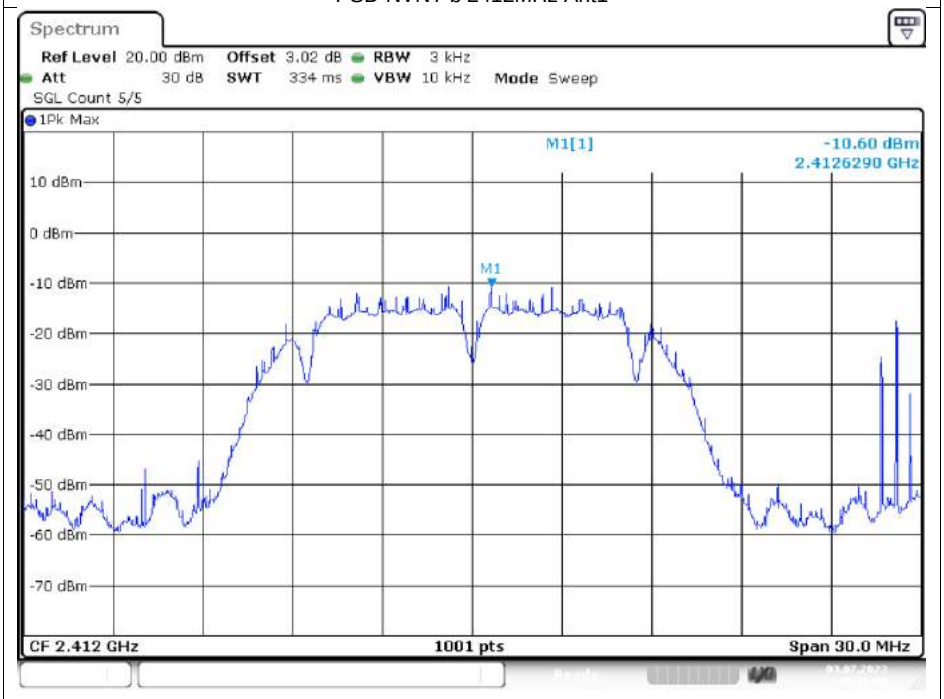


Maximum Power Spectral Density Level

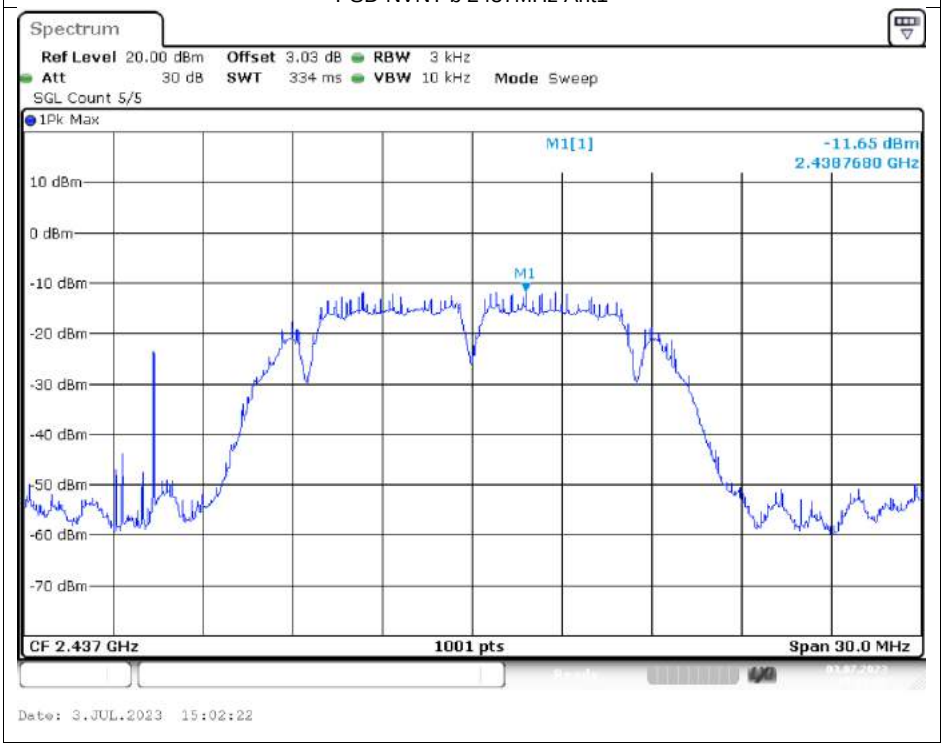
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Duty Factor (dB)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	Ant1	-10.6	0	-10.6	8	Pass
NVNT	b	2437	Ant1	-11.65	0	-11.65	8	Pass
NVNT	b	2462	Ant1	-10.55	0	-10.55	8	Pass
NVNT	g	2412	Ant1	-11.83	0	-11.83	8	Pass
NVNT	g	2437	Ant1	-11.41	0	-11.41	8	Pass
NVNT	g	2462	Ant1	-11.84	0	-11.84	8	Pass
NVNT	n20	2412	Ant1	-13.01	0	-13.01	8	Pass
NVNT	n20	2437	Ant1	-12.94	0	-12.94	8	Pass
NVNT	n20	2462	Ant1	-12.63	0	-12.63	8	Pass
NVNT	n40	2422	Ant1	-11.09	0	-11.09	8	Pass
NVNT	n40	2437	Ant1	-13.64	0	-13.64	8	Pass
NVNT	n40	2452	Ant1	-14.51	0	-14.51	8	Pass

Test Graphs

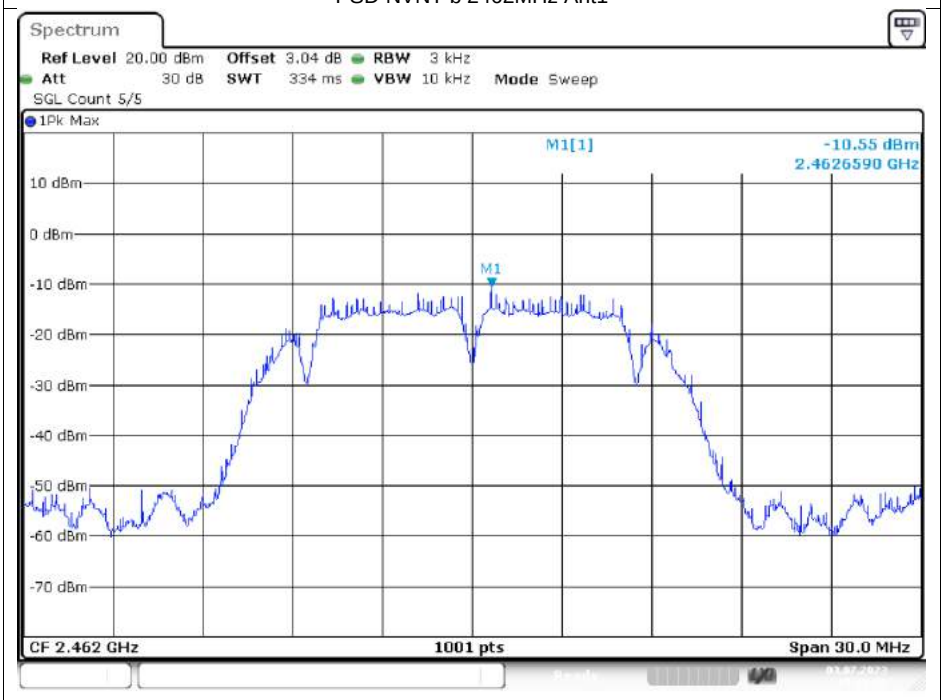
PSD NVNT b 2412MHz Ant1



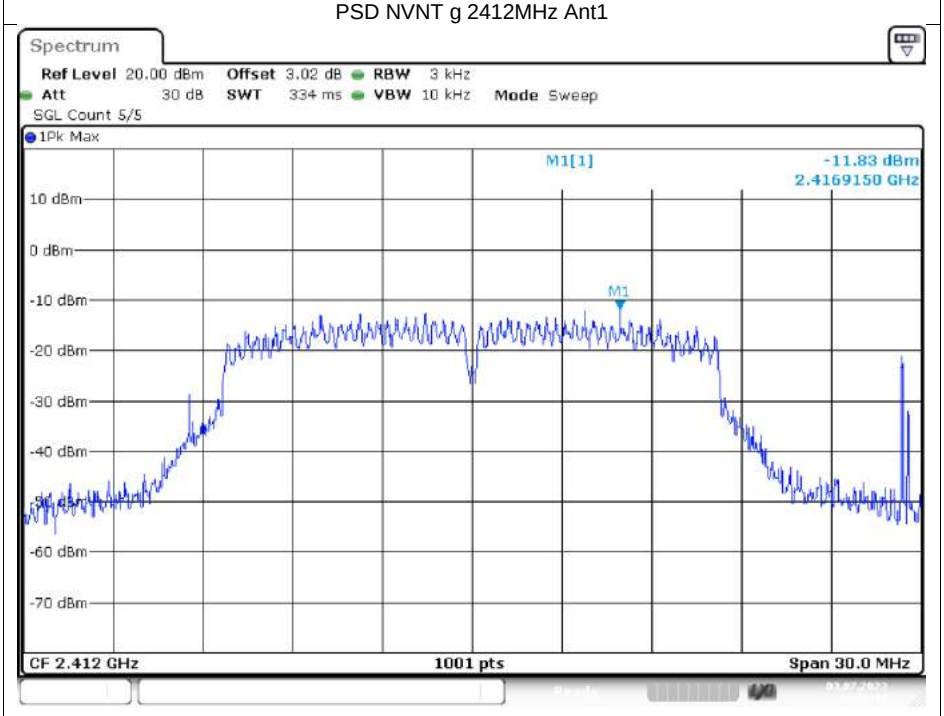
PSD NVNT b 2437MHz Ant1



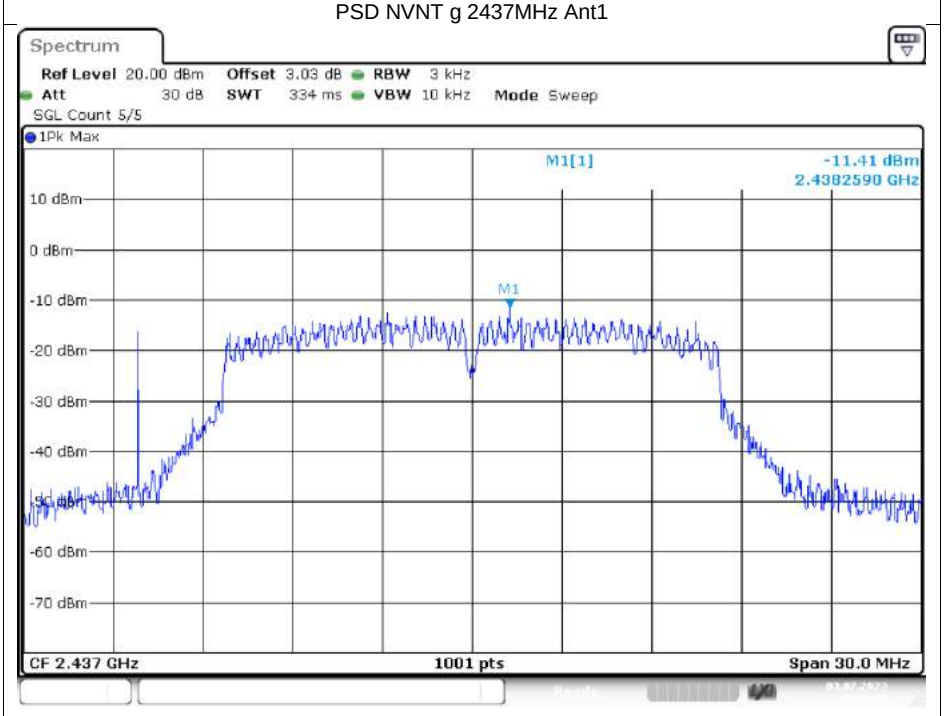
PSD NVNT b 2462MHz Ant1



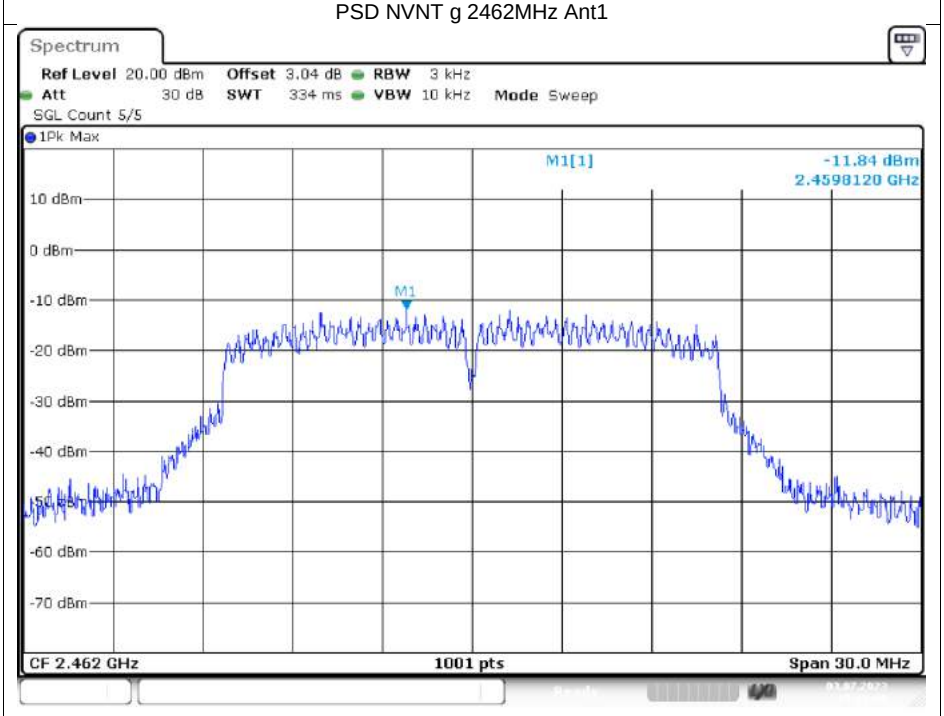
PSD NVNT g 2412MHz Ant1



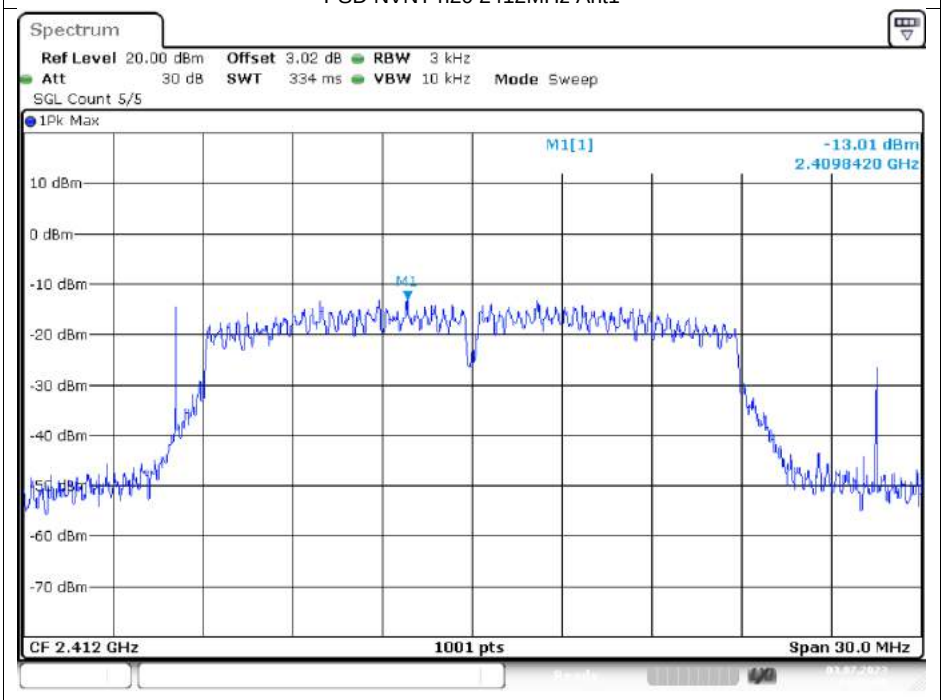
PSD NVNT g 2437MHz Ant1



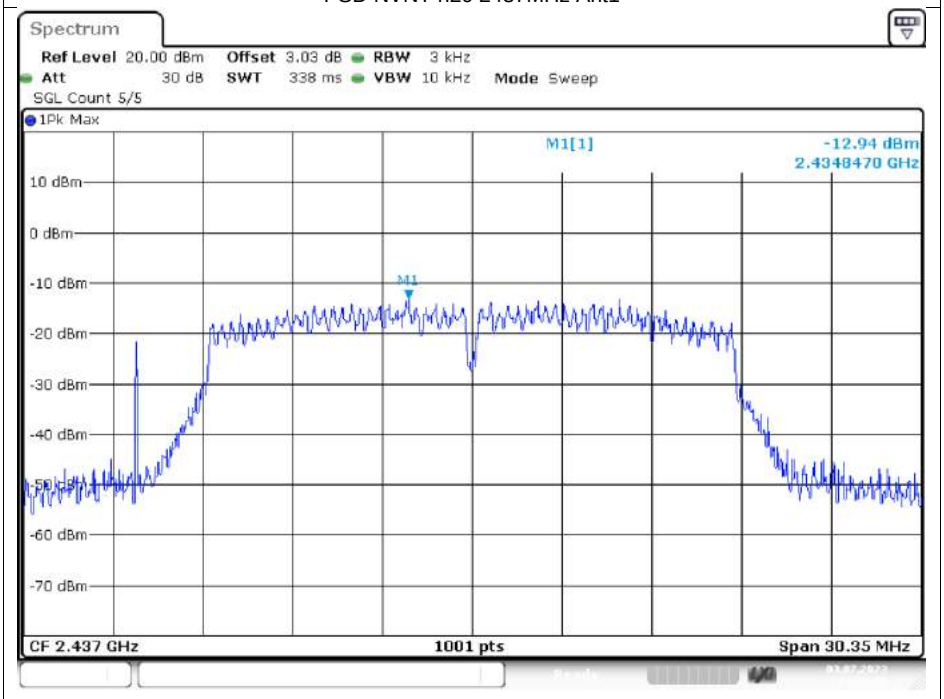
PSD NVNT g 2462MHz Ant1



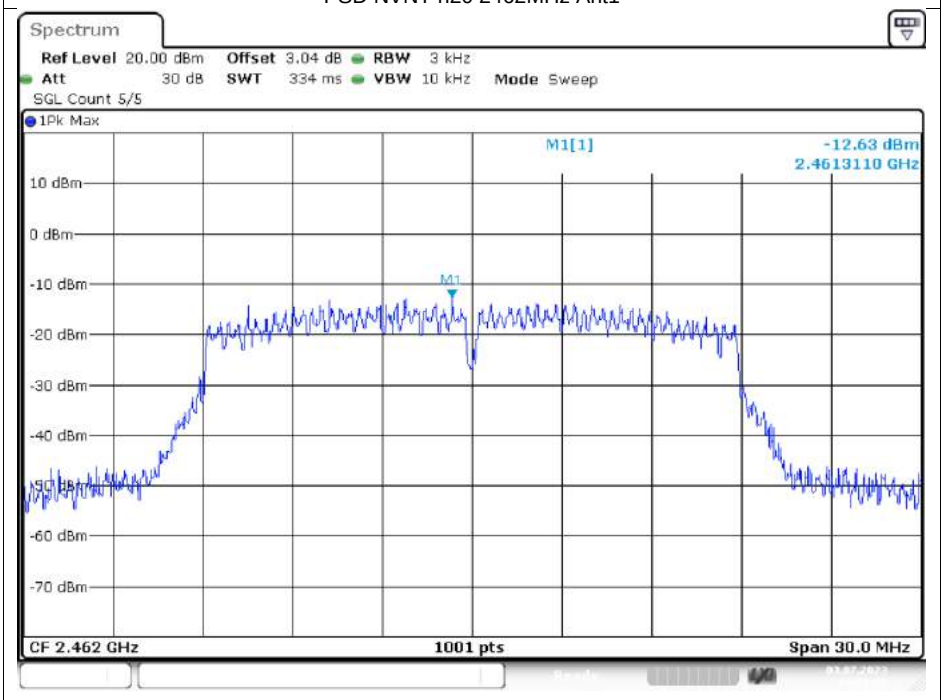
PSD NVNT n20 2412MHz Ant1



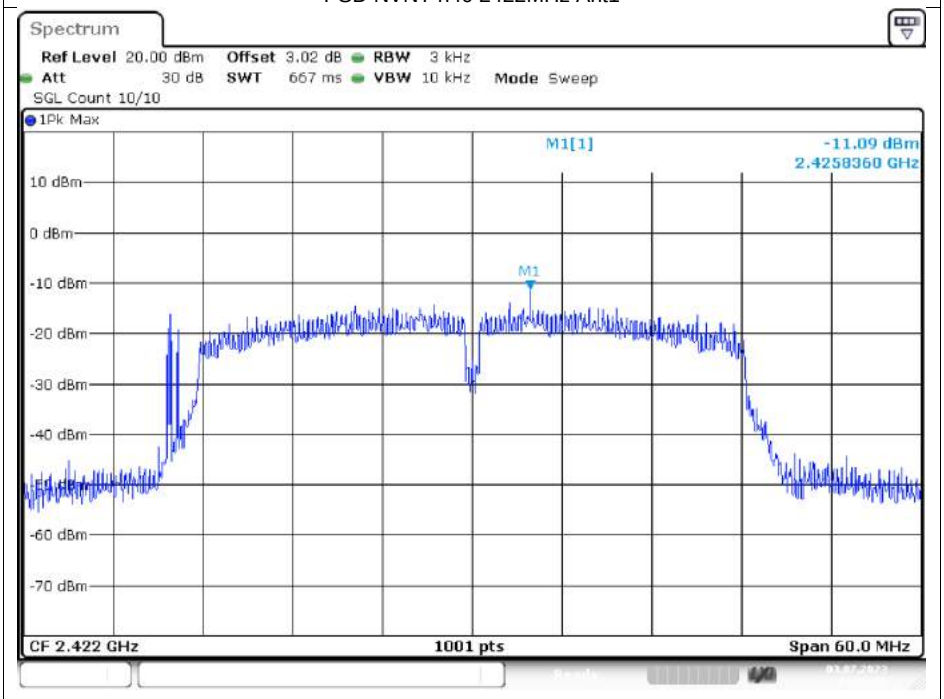
PSD NVNT n20 2437MHz Ant1



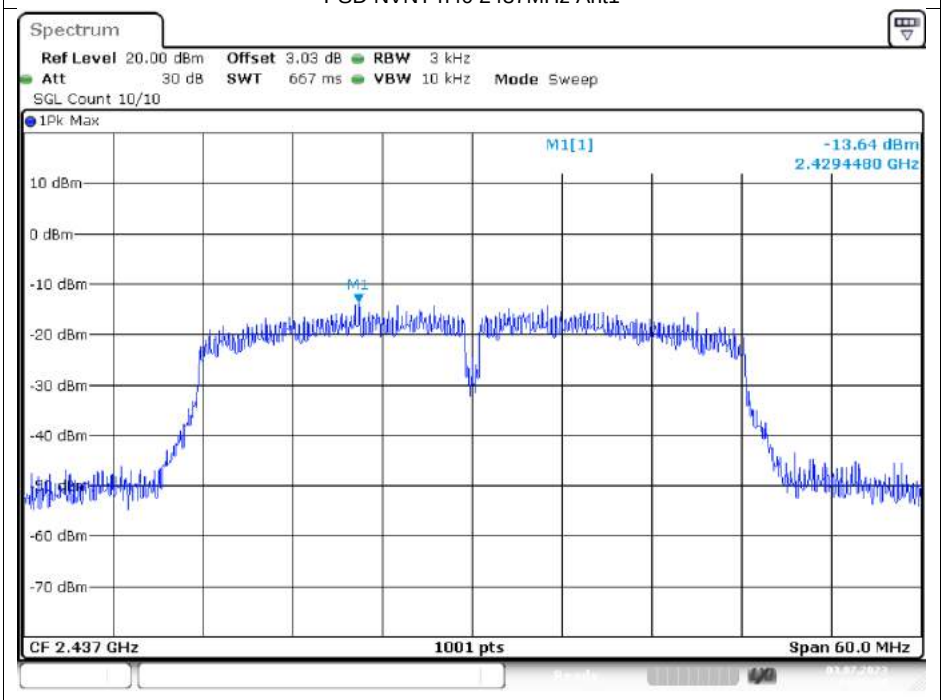
PSD NVNT n20 2462MHz Ant1



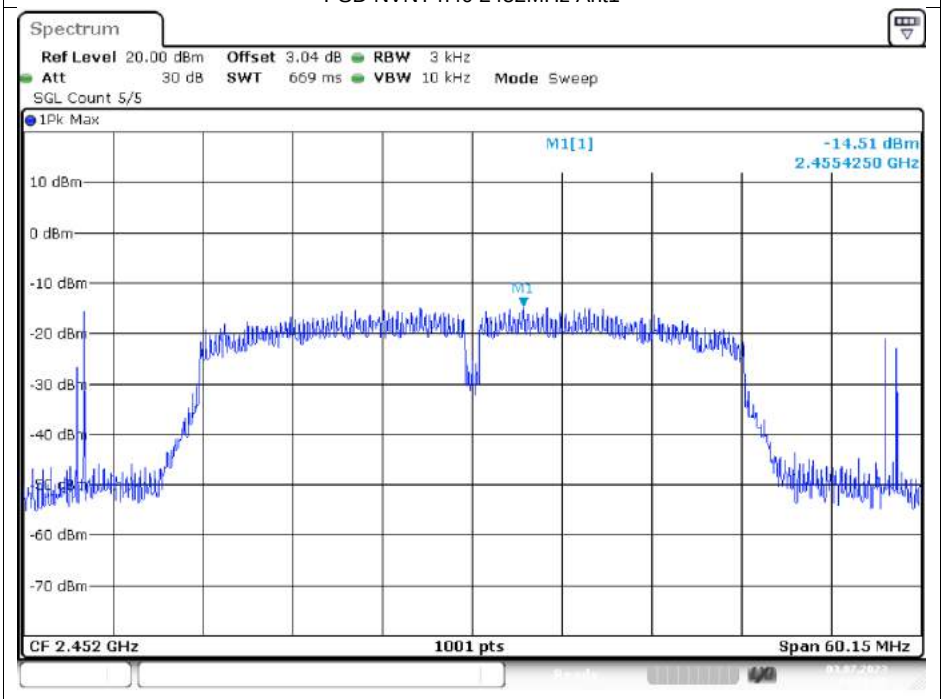
PSD NVNT n40 2422MHz Ant1



PSD NVNT n40 2437MHz Ant1



PSD NVNT n40 2452MHz Ant1

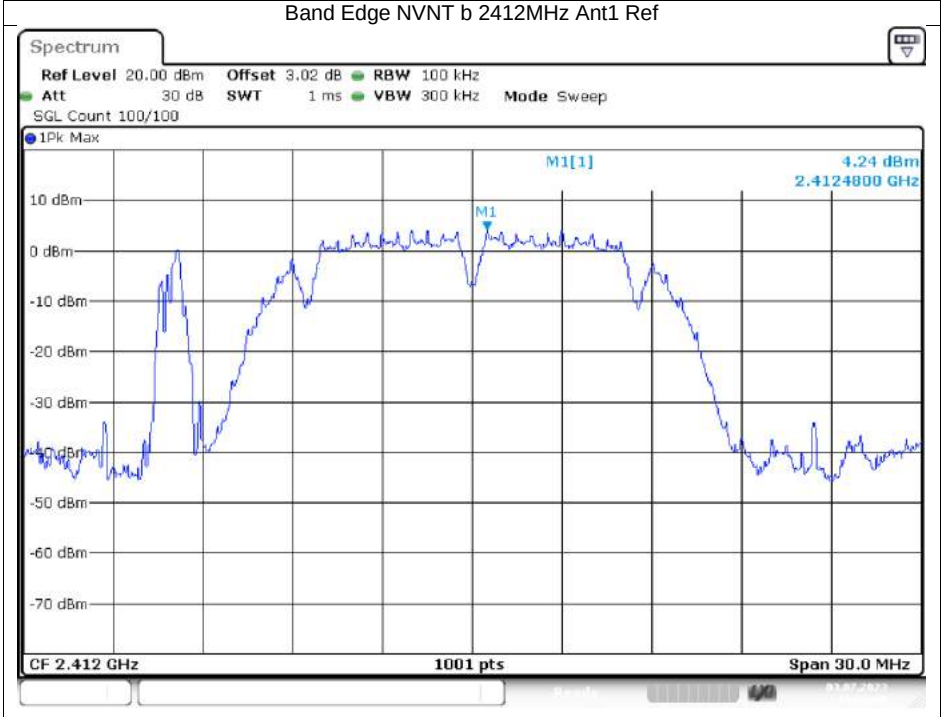


Band Edge(Conducted Test)

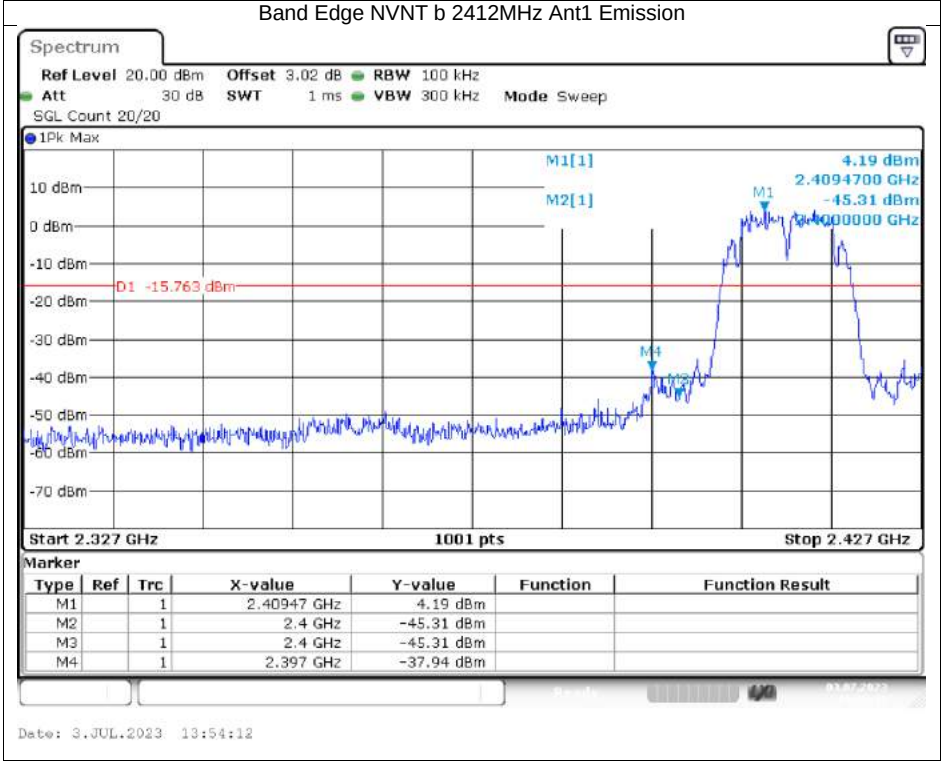
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-42.17	-20	Pass
NVNT	b	2462	Ant1	-50.91	-20	Pass
NVNT	g	2412	Ant1	-34.61	-20	Pass
NVNT	g	2462	Ant1	-47.19	-20	Pass
NVNT	n20	2412	Ant1	-32.69	-20	Pass
NVNT	n20	2462	Ant1	-43.88	-20	Pass
NVNT	n40	2422	Ant1	-34.04	-20	Pass
NVNT	n40	2452	Ant1	-33.28	-20	Pass

Test Graphs

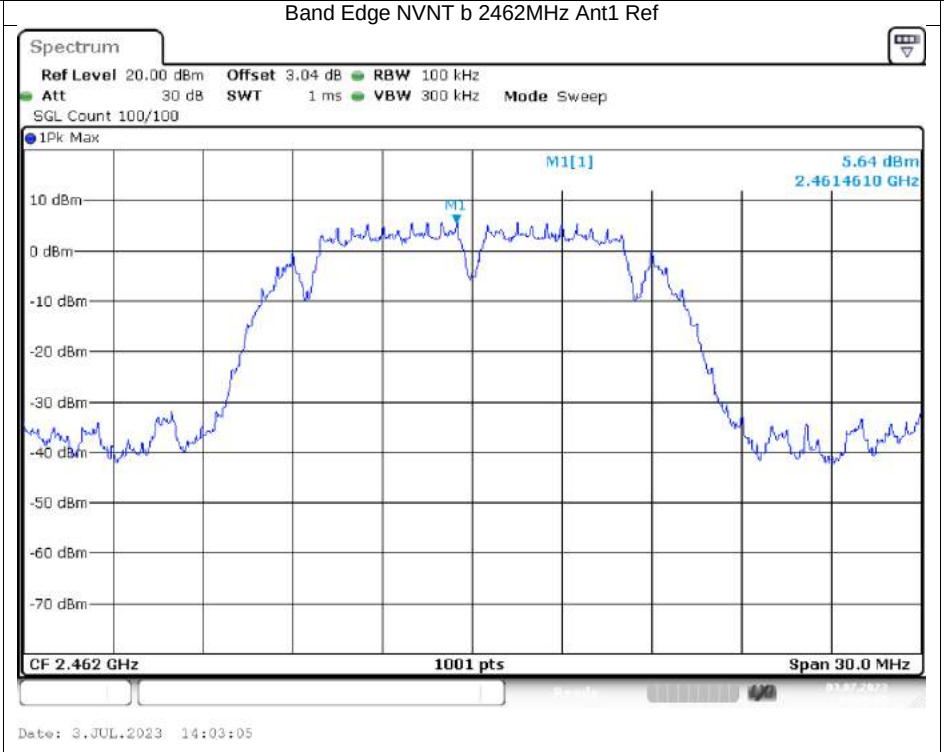
Band Edge NVNT b 2412MHz Ant1 Ref



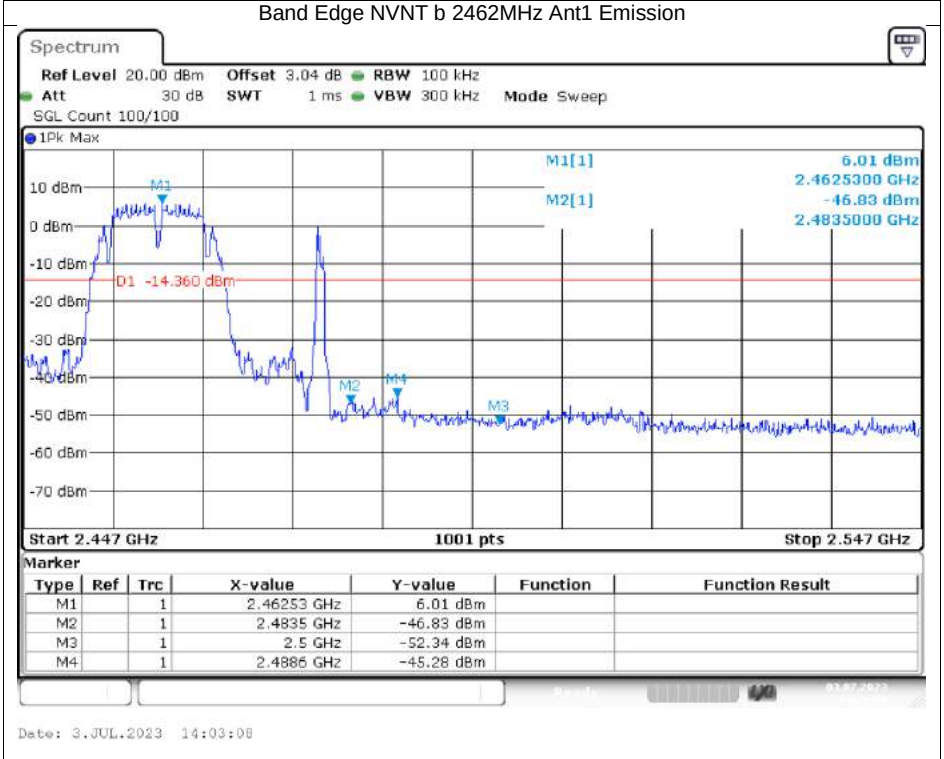
Band Edge NVNT b 2412MHz Ant1 Emission



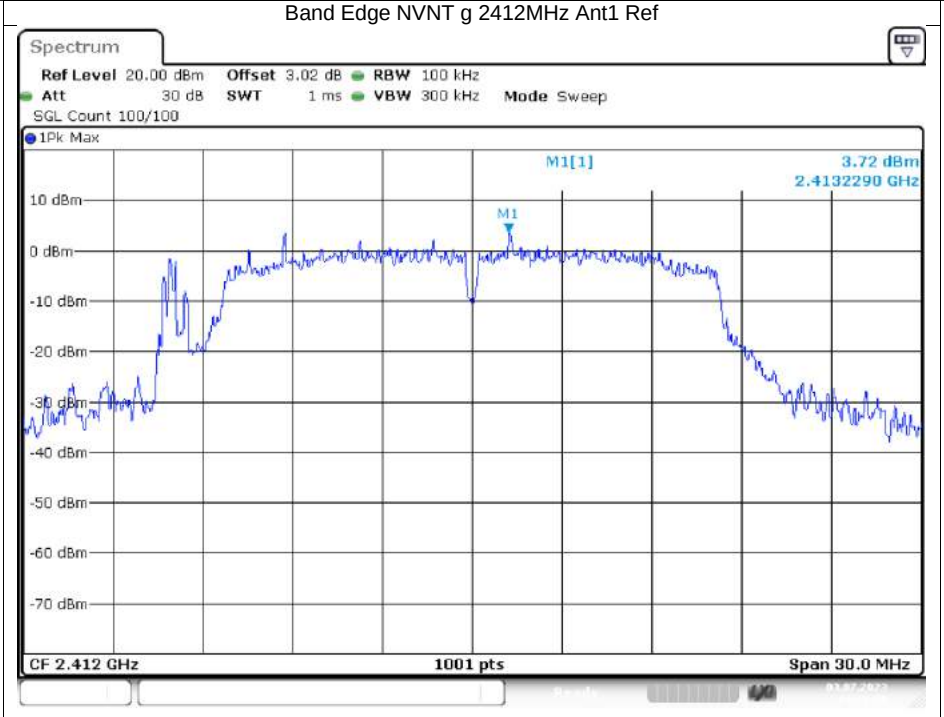
Band Edge NVNT b 2462MHz Ant1 Ref



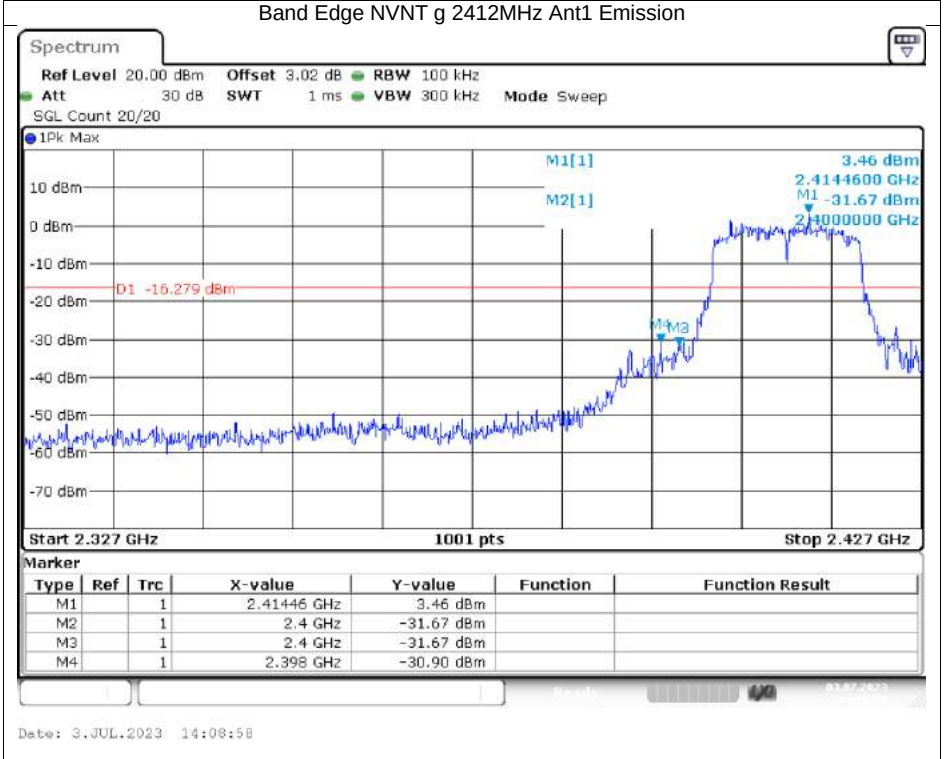
Band Edge NVNT b 2462MHz Ant1 Emission



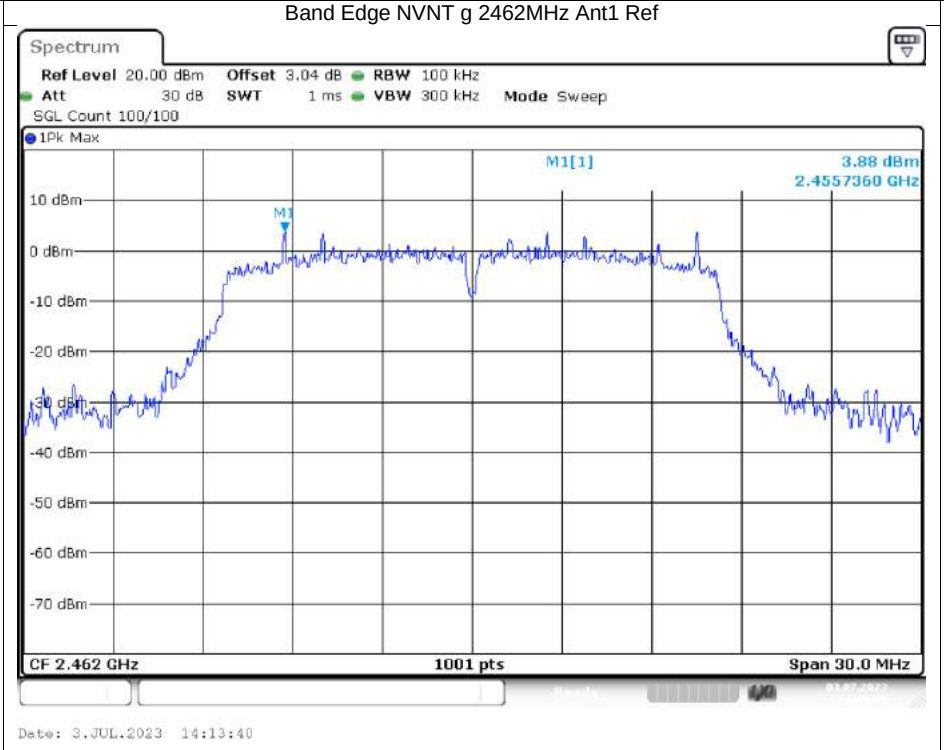
Band Edge NVNT g 2412MHz Ant1 Ref



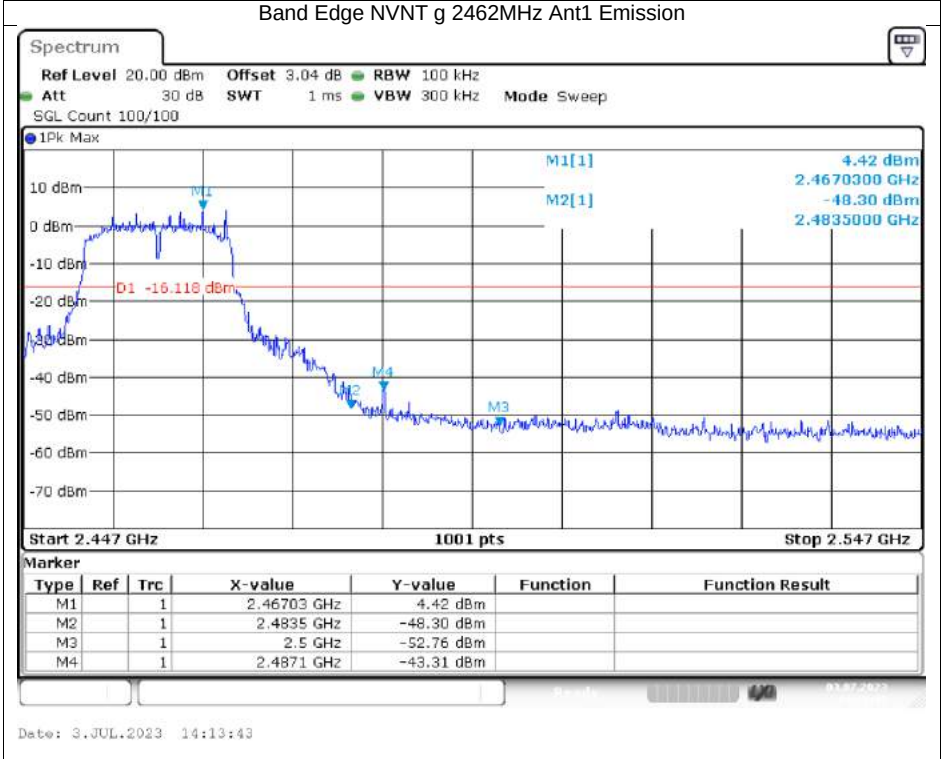
Band Edge NVNT g 2412MHz Ant1 Emission



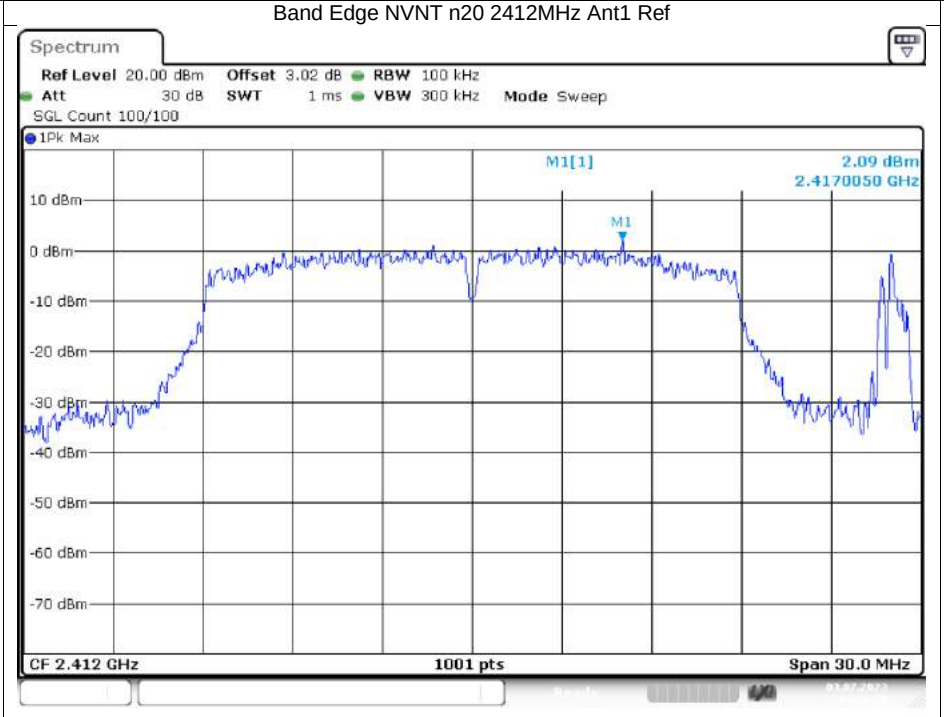
Band Edge NVNT g 2462MHz Ant1 Ref



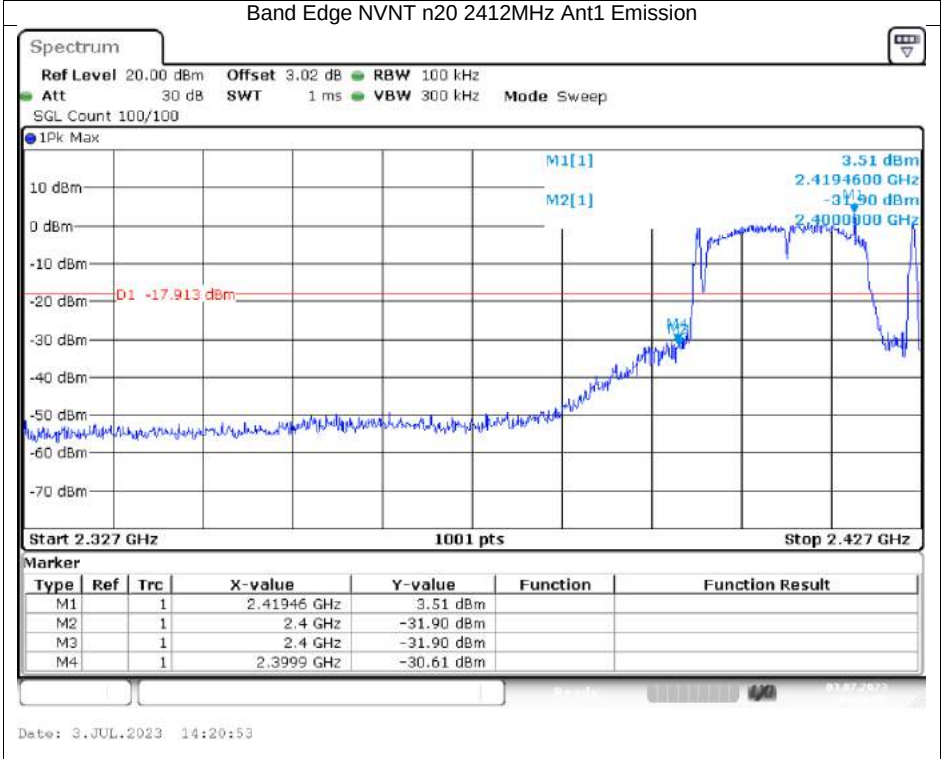
Band Edge NVNT g 2462MHz Ant1 Emission



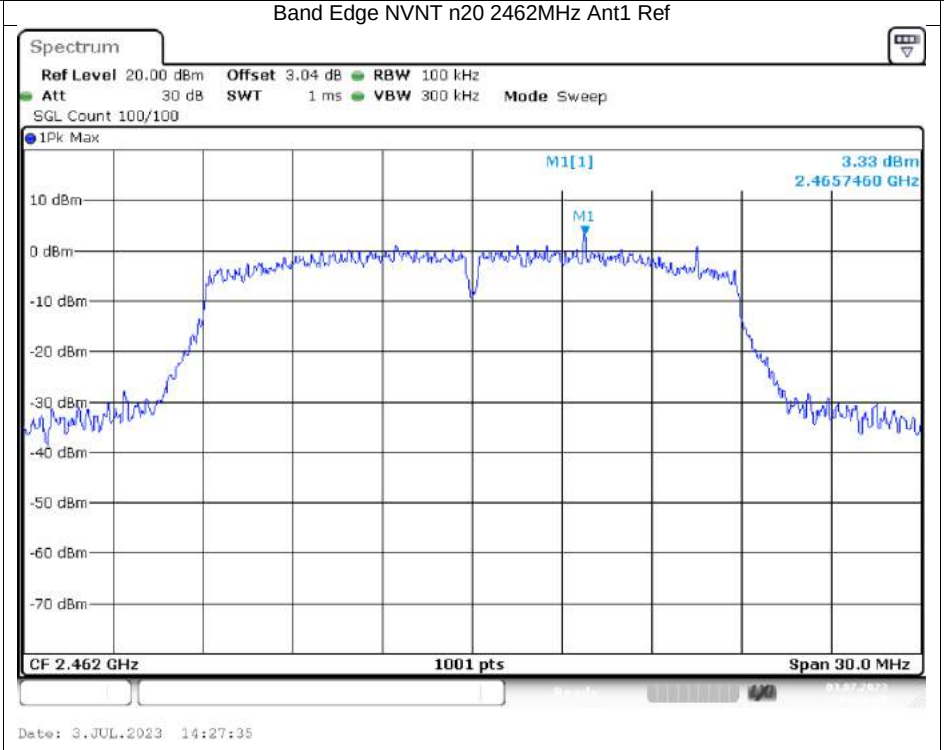
Band Edge NVNT n20 2412MHz Ant1 Ref



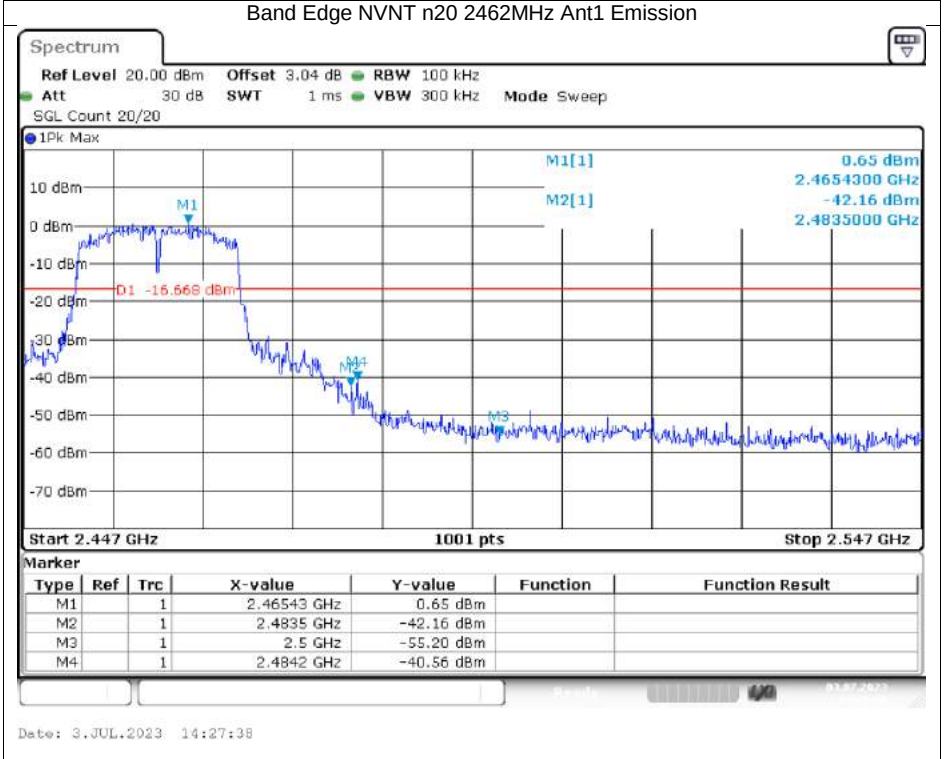
Band Edge NVNT n20 2412MHz Ant1 Emission



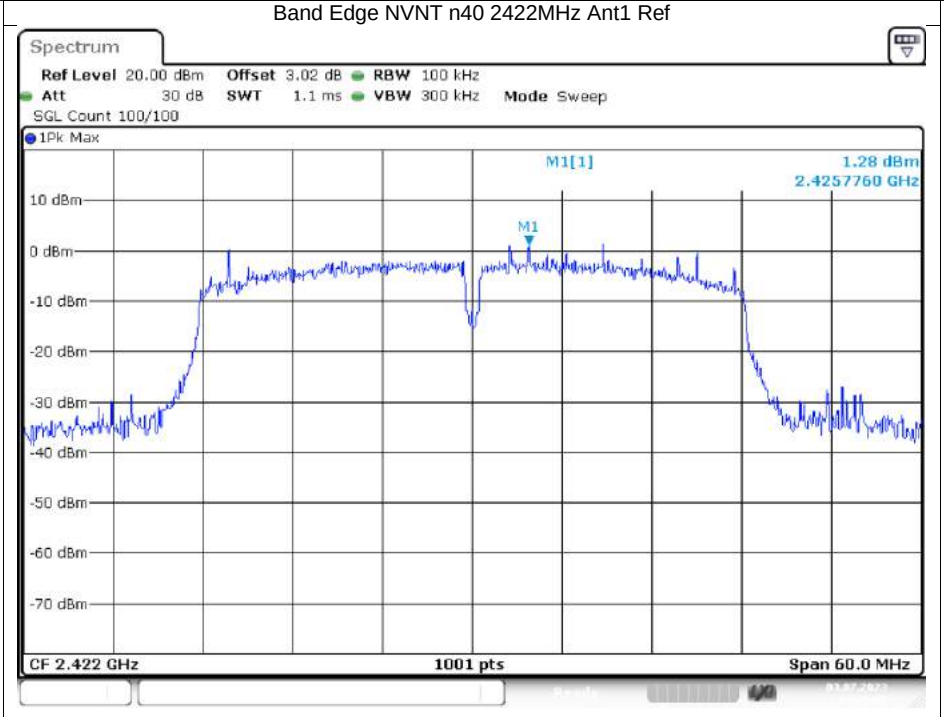
Band Edge NVNT n20 2462MHz Ant1 Ref



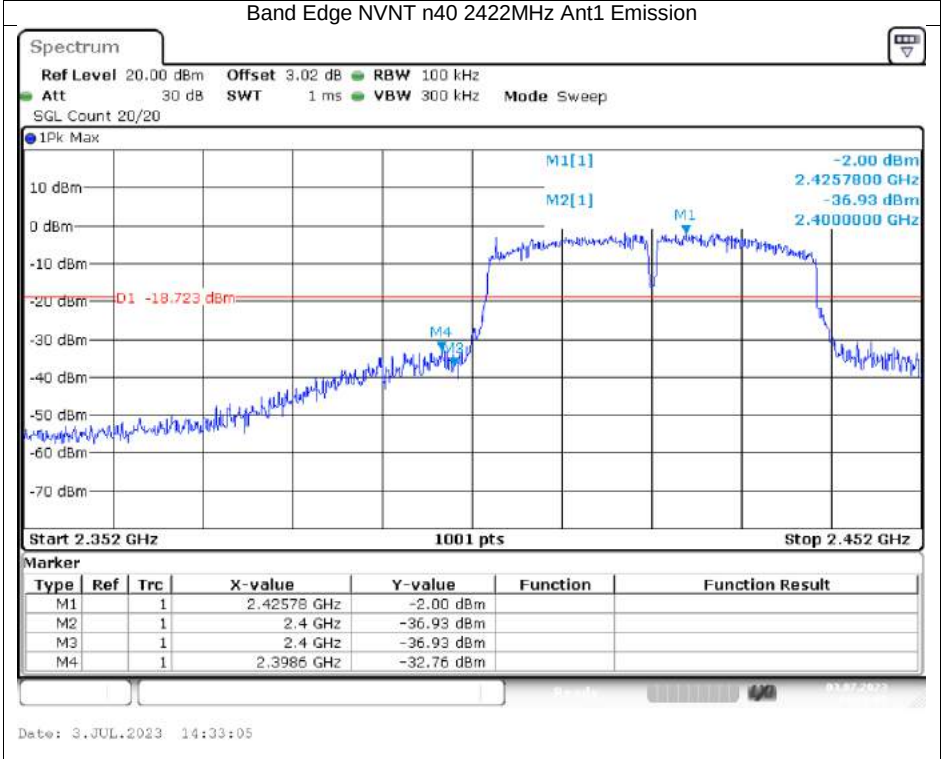
Band Edge NVNT n20 2462MHz Ant1 Emission



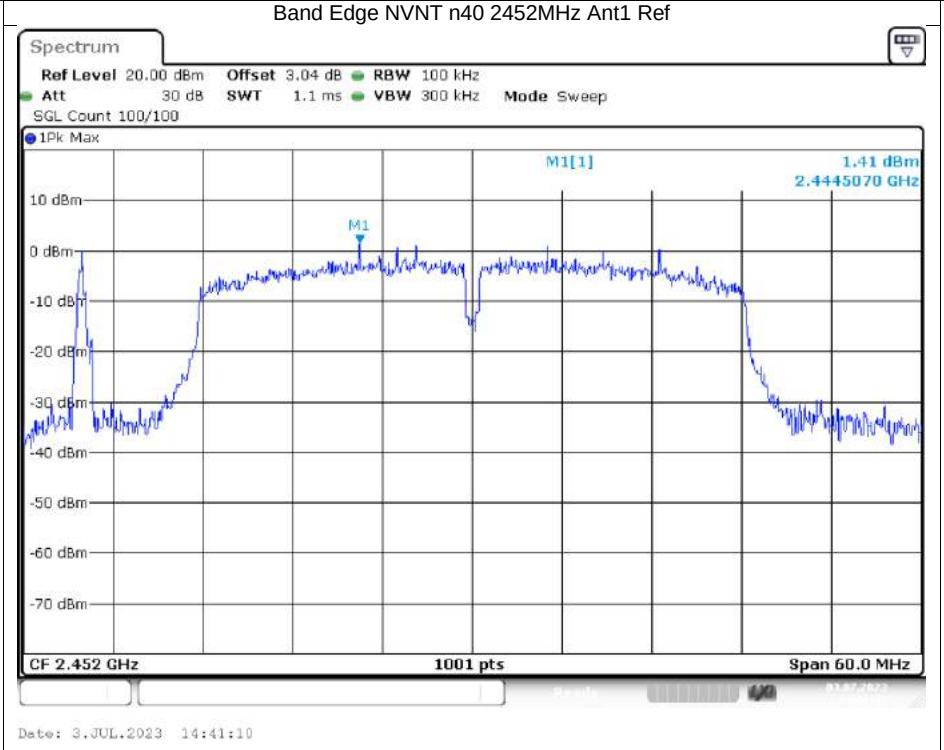
Band Edge NVNT n40 2422MHz Ant1 Ref



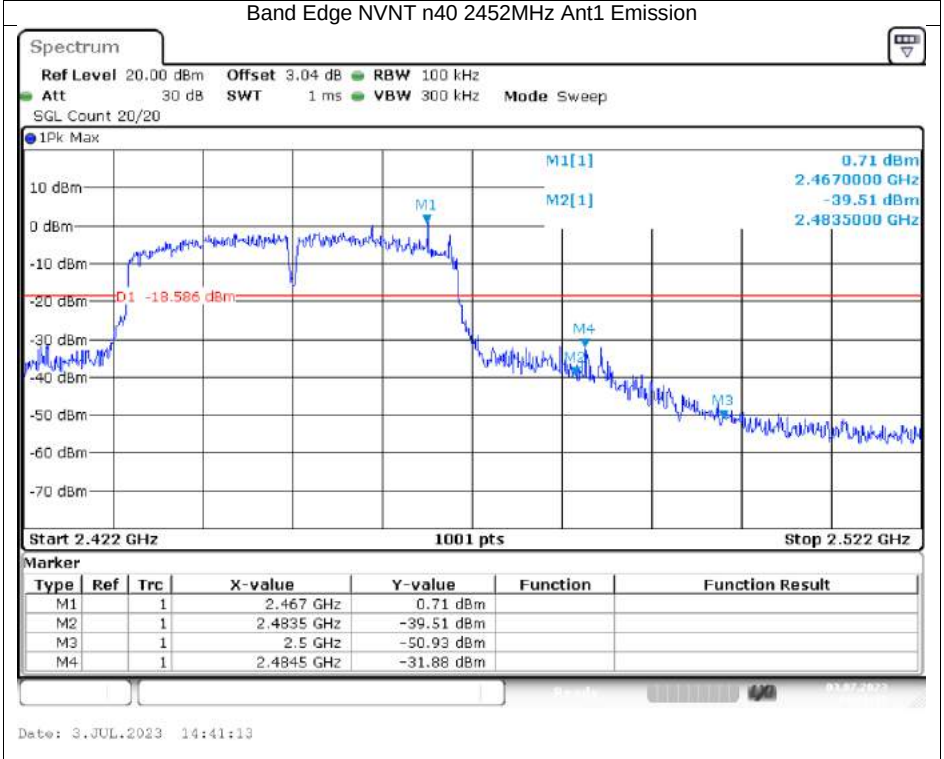
Band Edge NVNT n40 2422MHz Ant1 Emission



Band Edge NVNT n40 2452MHz Ant1 Ref



Band Edge NVNT n40 2452MHz Ant1 Emission

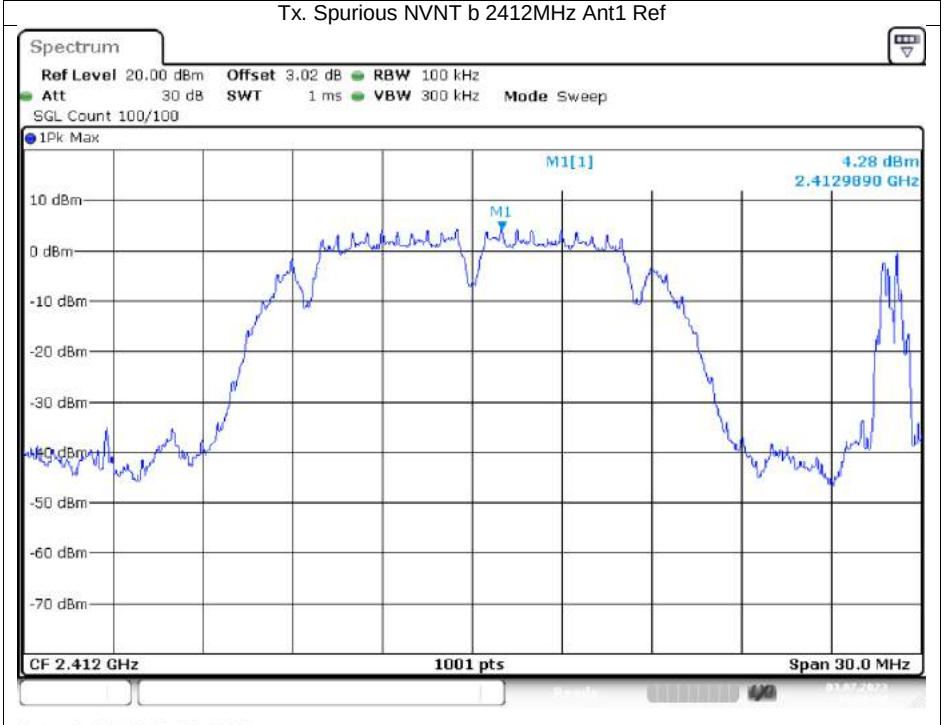


Conducted RF Spurious Emission

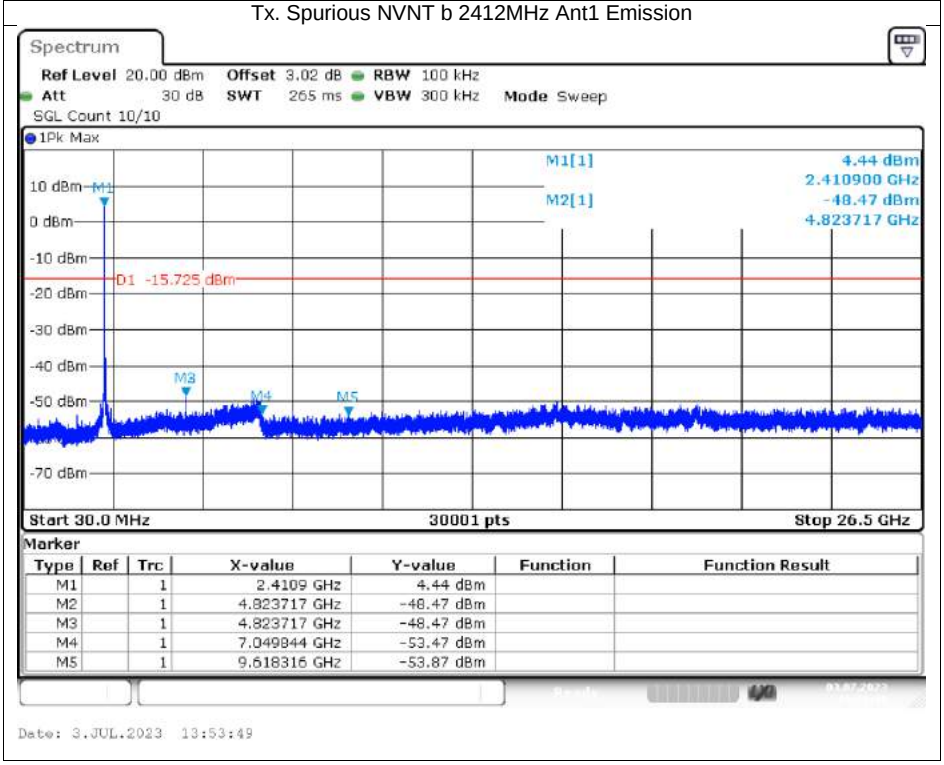
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-52.75	-20	Pass
NVNT	b	2437	Ant1	-52.93	-20	Pass
NVNT	b	2462	Ant1	-54.78	-20	Pass
NVNT	g	2412	Ant1	-52.68	-20	Pass
NVNT	g	2437	Ant1	-54.03	-20	Pass
NVNT	g	2462	Ant1	-52.6	-20	Pass
NVNT	n20	2412	Ant1	-51.4	-20	Pass
NVNT	n20	2437	Ant1	-53.18	-20	Pass
NVNT	n20	2462	Ant1	-51.83	-20	Pass
NVNT	n40	2422	Ant1	-50	-20	Pass
NVNT	n40	2437	Ant1	-50.79	-20	Pass
NVNT	n40	2452	Ant1	-49.98	-20	Pass

Test Graphs

Tx. Spurious NVNT b 2412MHz Ant1 Ref



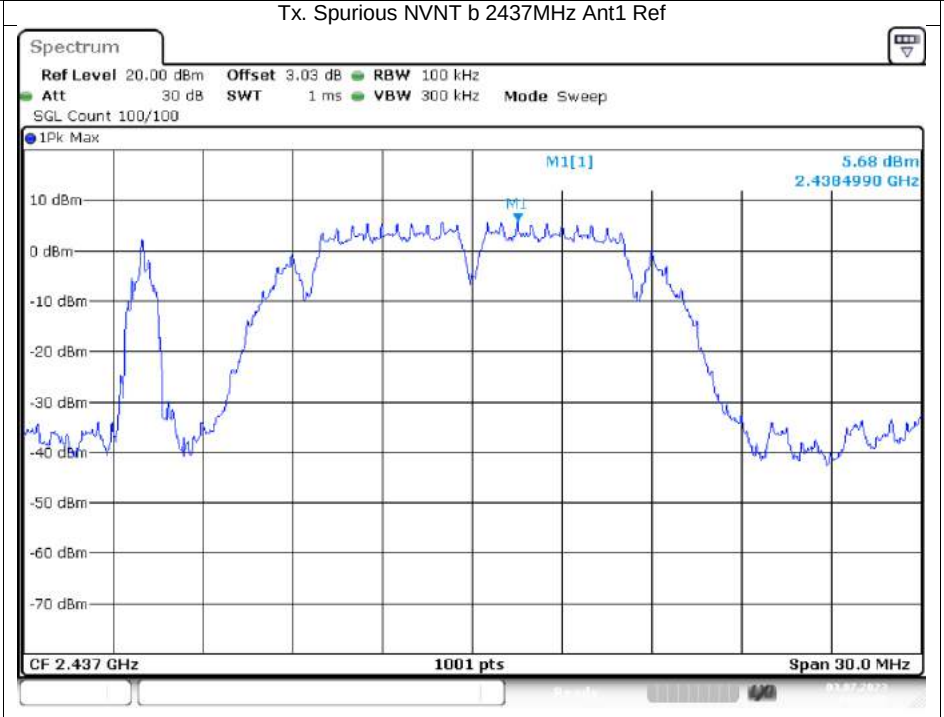
Tx. Spurious NVNT b 2412MHz Ant1 Emission



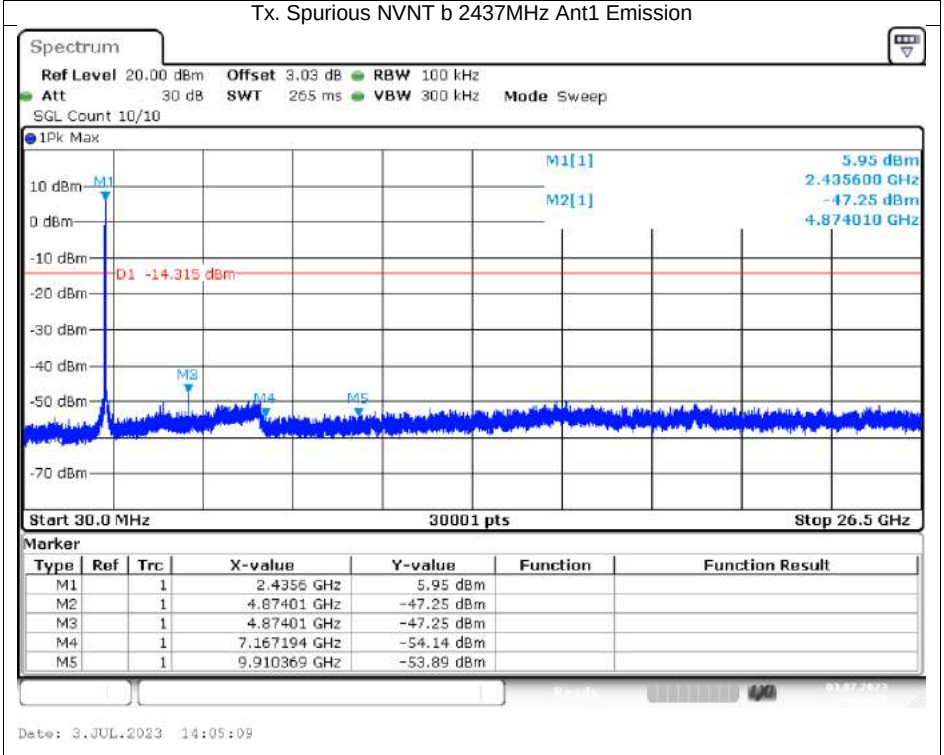
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4109 GHz	4.44 dBm		
M2		1	4.823717 GHz	-48.47 dBm		
M3		1	4.823717 GHz	-48.47 dBm		
M4		1	7.049844 GHz	-53.47 dBm		
M5		1	9.618316 GHz	-53.87 dBm		

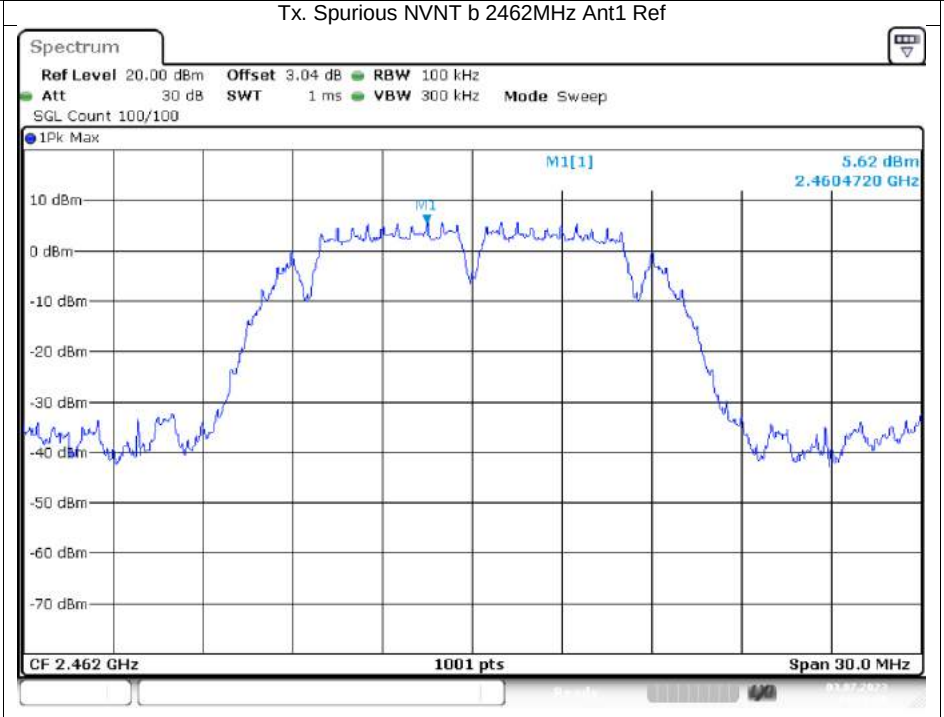
Tx. Spurious NVNT b 2437MHz Ant1 Ref



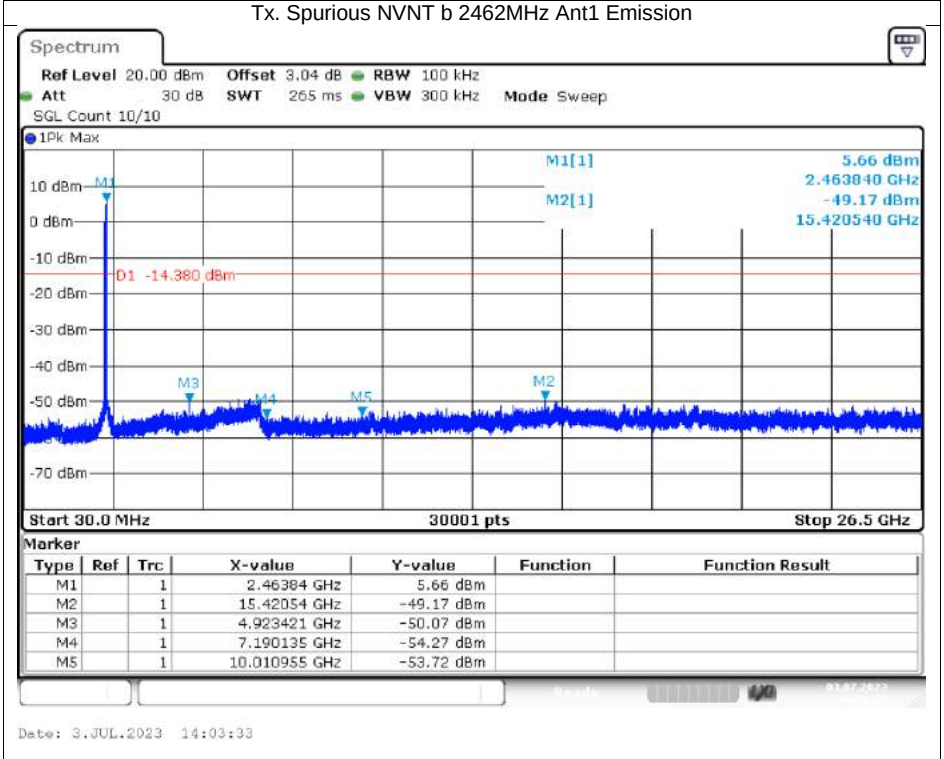
Tx. Spurious NVNT b 2437MHz Ant1 Emission



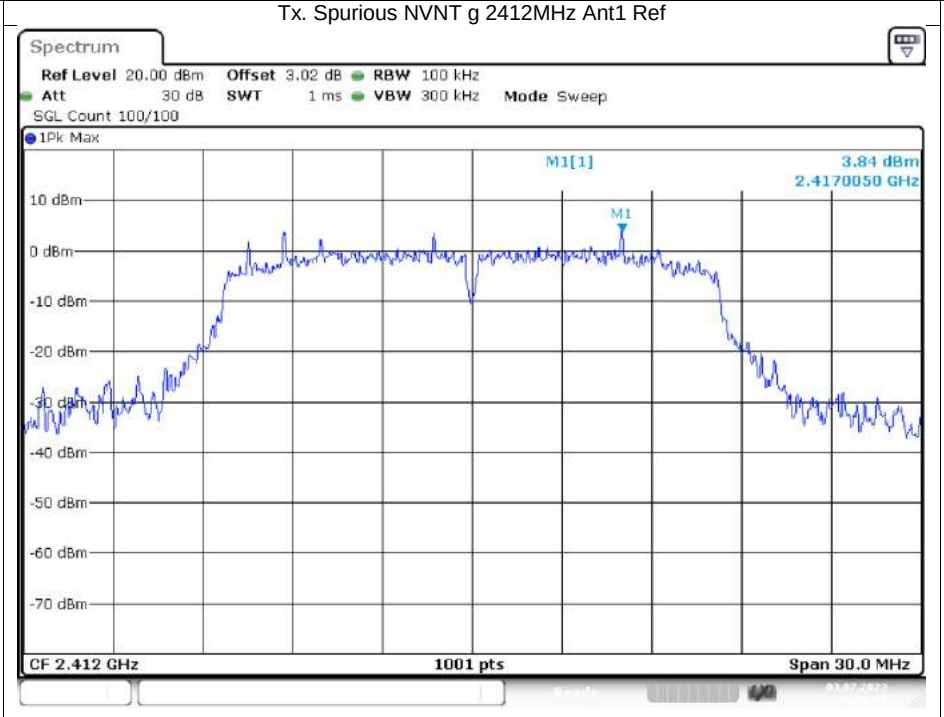
Tx. Spurious NVNT b 2462MHz Ant1 Ref



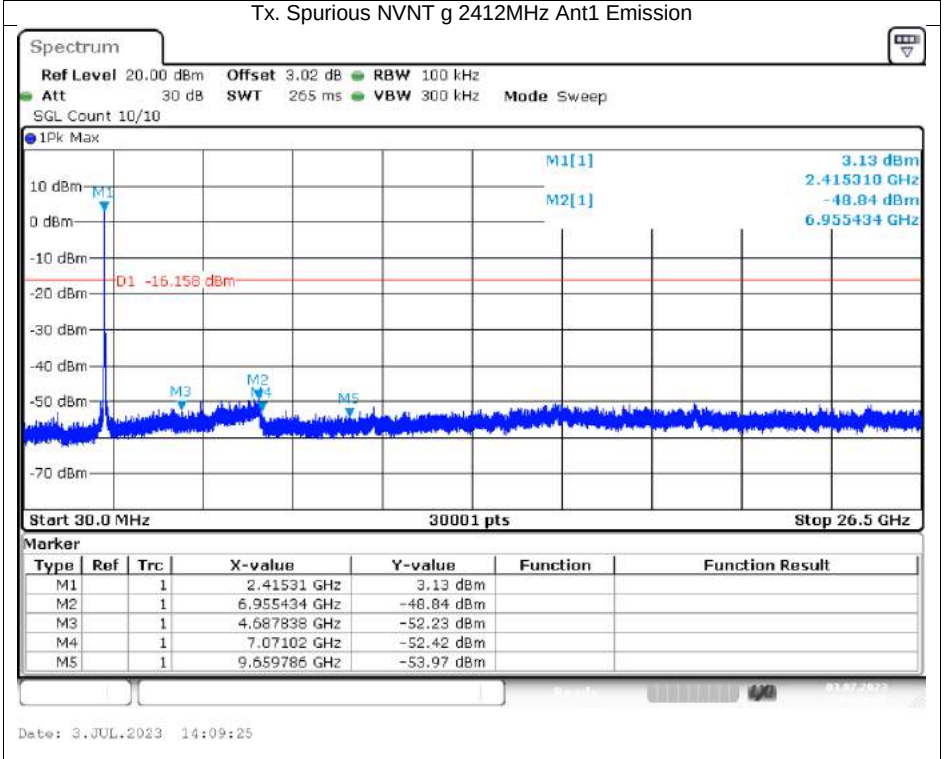
Tx. Spurious NVNT b 2462MHz Ant1 Emission



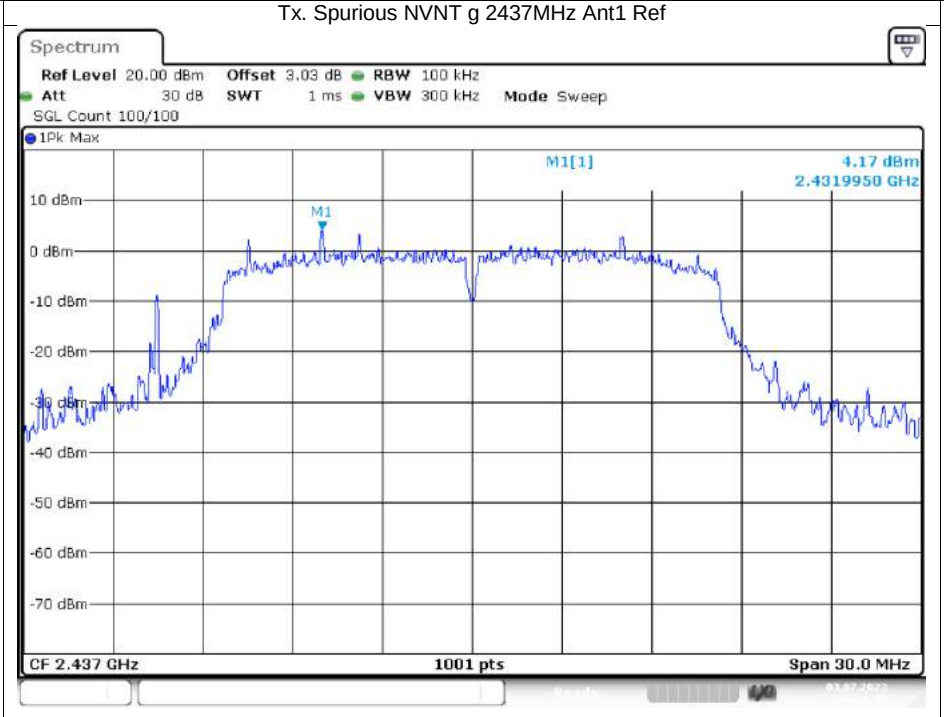
Tx. Spurious NVNT g 2412MHz Ant1 Ref



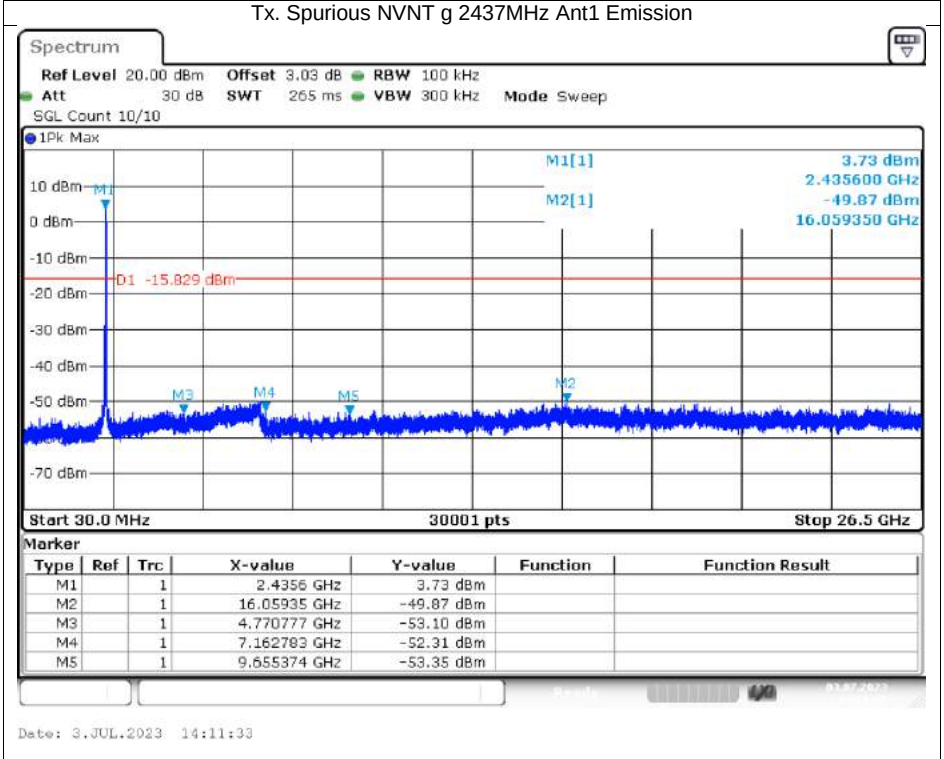
Tx. Spurious NVNT g 2412MHz Ant1 Emission



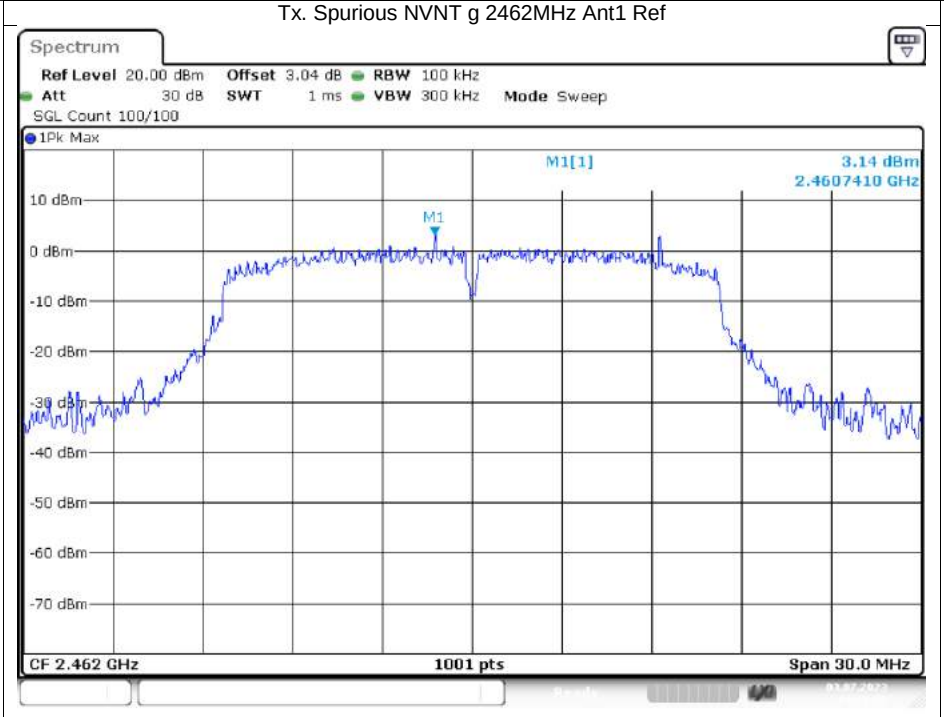
Tx. Spurious NVNT g 2437MHz Ant1 Ref



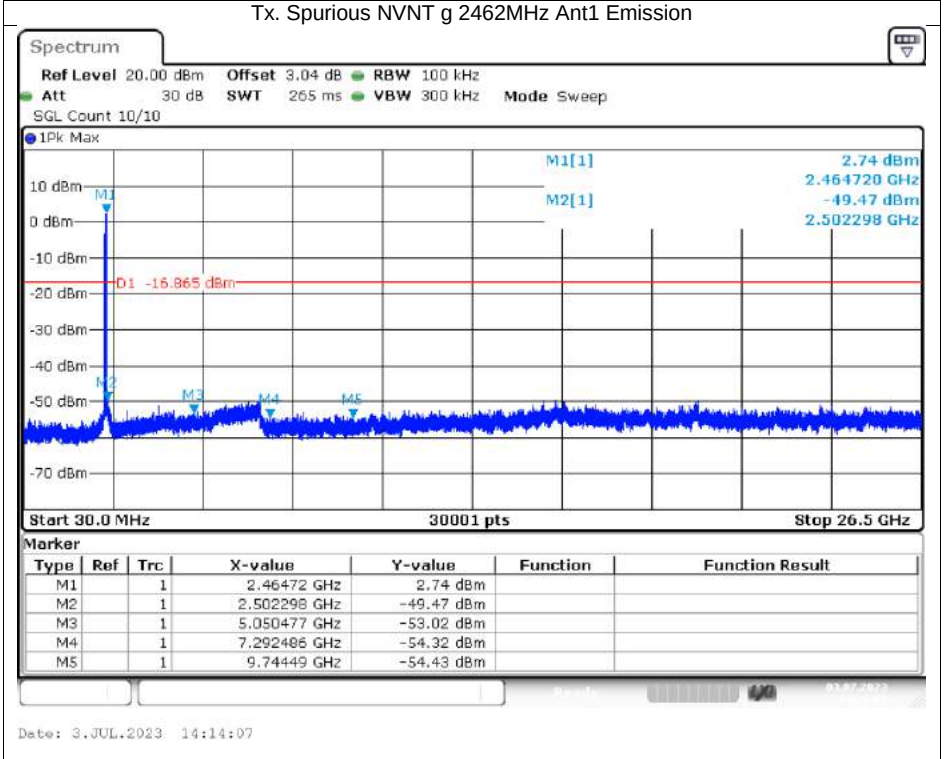
Tx. Spurious NVNT g 2437MHz Ant1 Emission



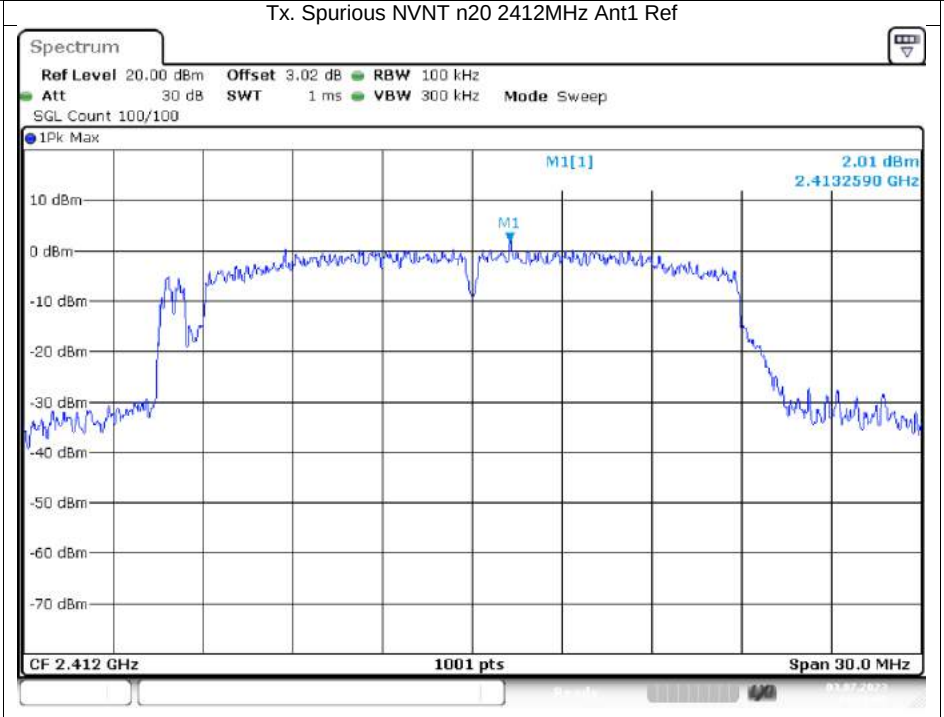
Tx. Spurious NVNT g 2462MHz Ant1 Ref



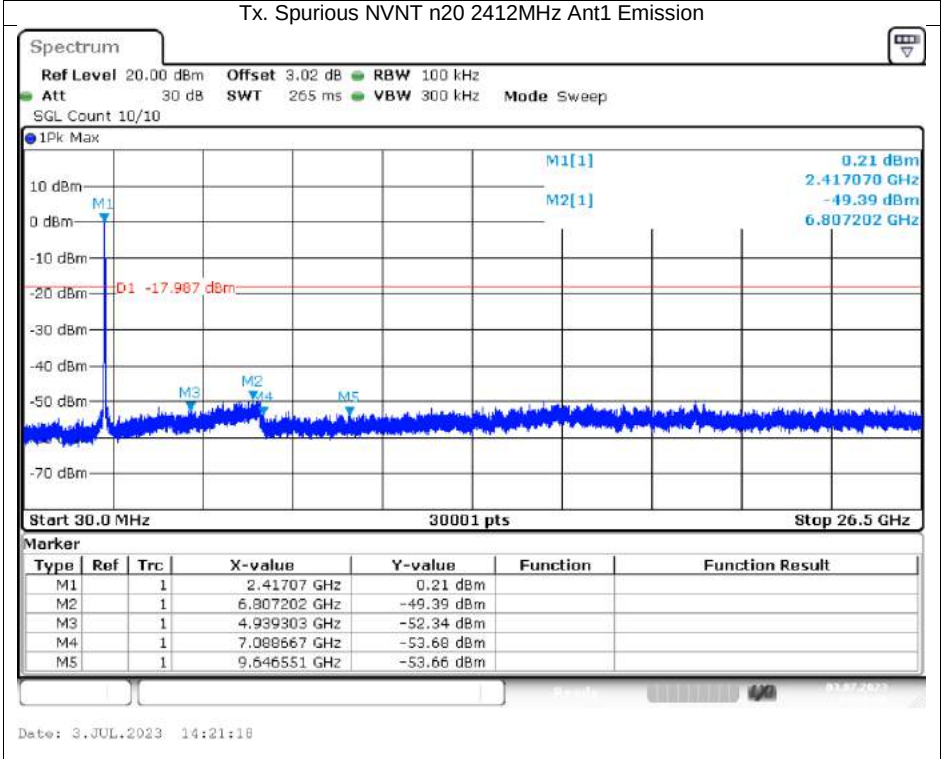
Tx. Spurious NVNT g 2462MHz Ant1 Emission



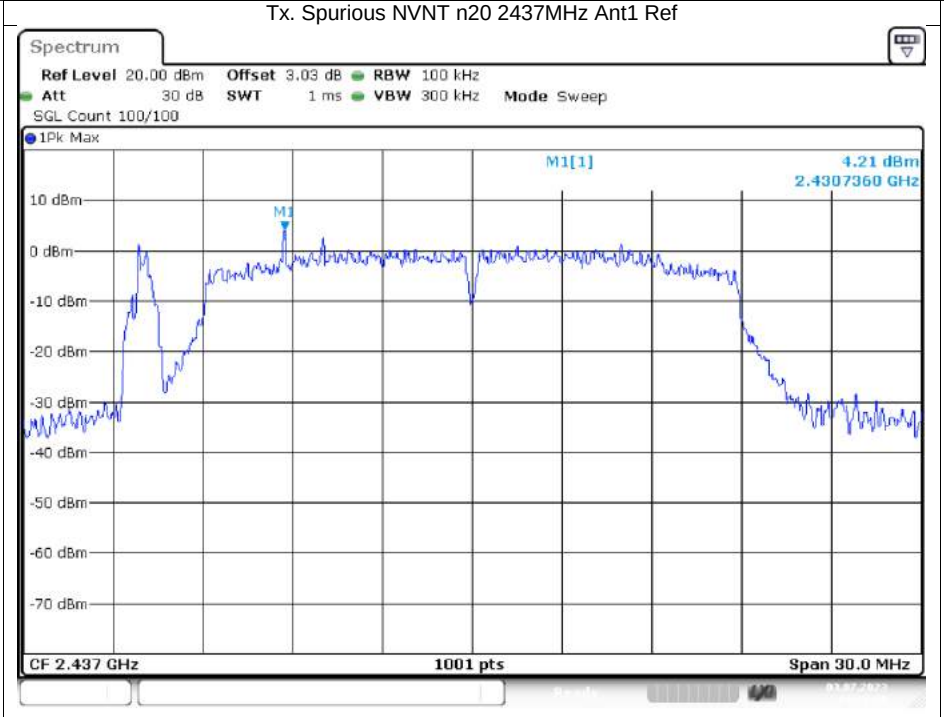
Tx. Spurious NVNT n20 2412MHz Ant1 Ref



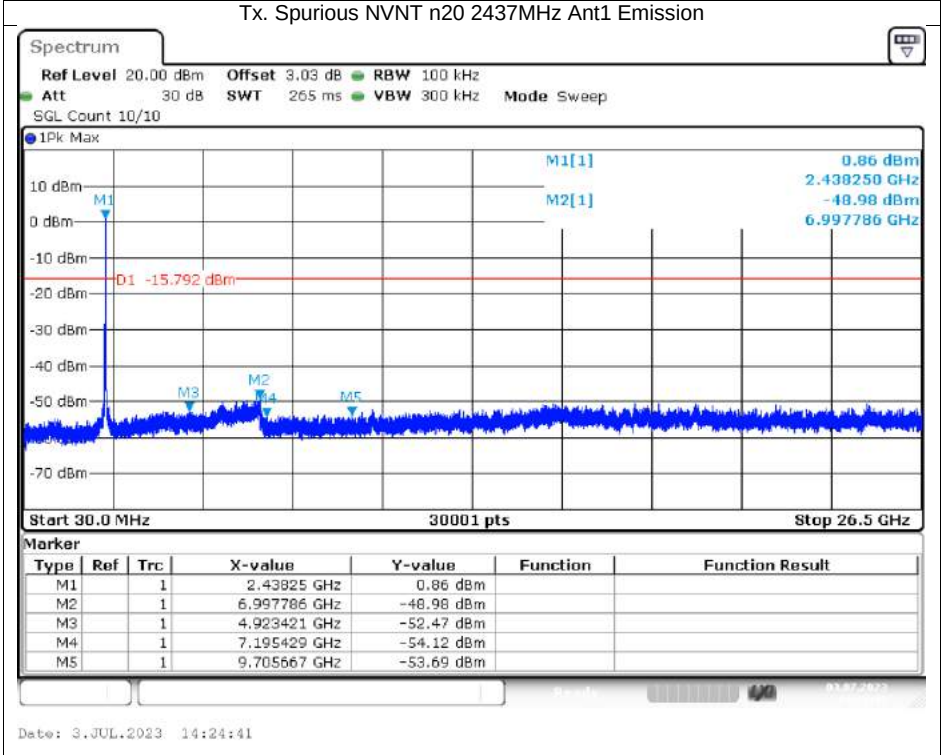
Tx. Spurious NVNT n20 2412MHz Ant1 Emission



Tx. Spurious NVNT n20 2437MHz Ant1 Ref



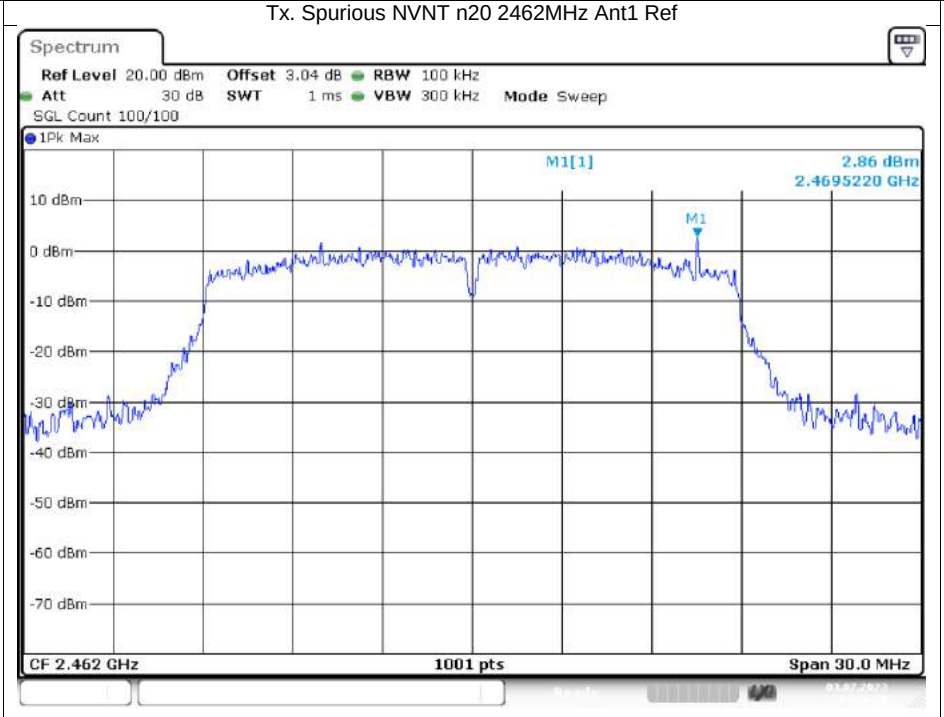
Tx. Spurious NVNT n20 2437MHz Ant1 Emission



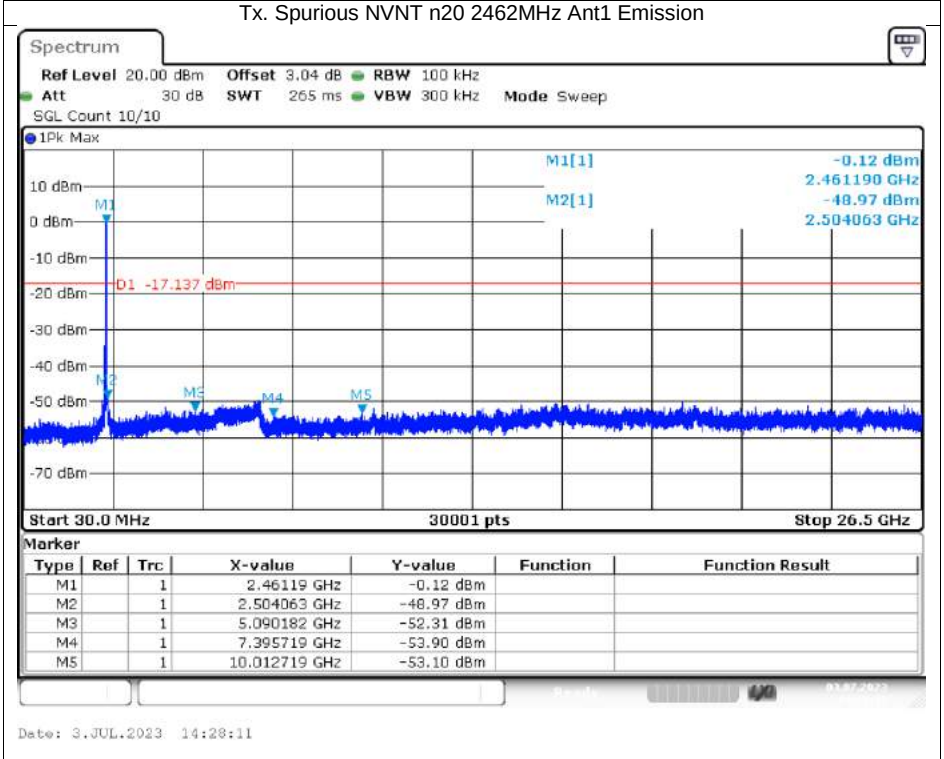
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.43825 GHz	0.86 dBm		
M2		1	6.997786 GHz	-48.98 dBm		
M3		1	4.923421 GHz	-52.47 dBm		
M4		1	7.195429 GHz	-54.12 dBm		
M5		1	9.705667 GHz	-53.69 dBm		

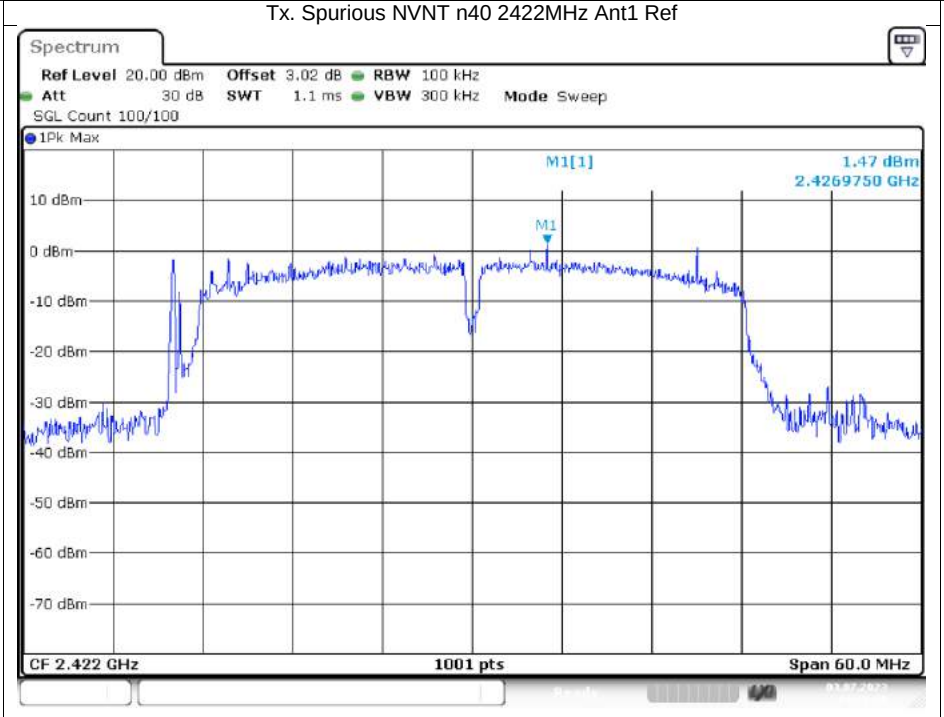
Tx. Spurious NVNT n20 2462MHz Ant1 Ref



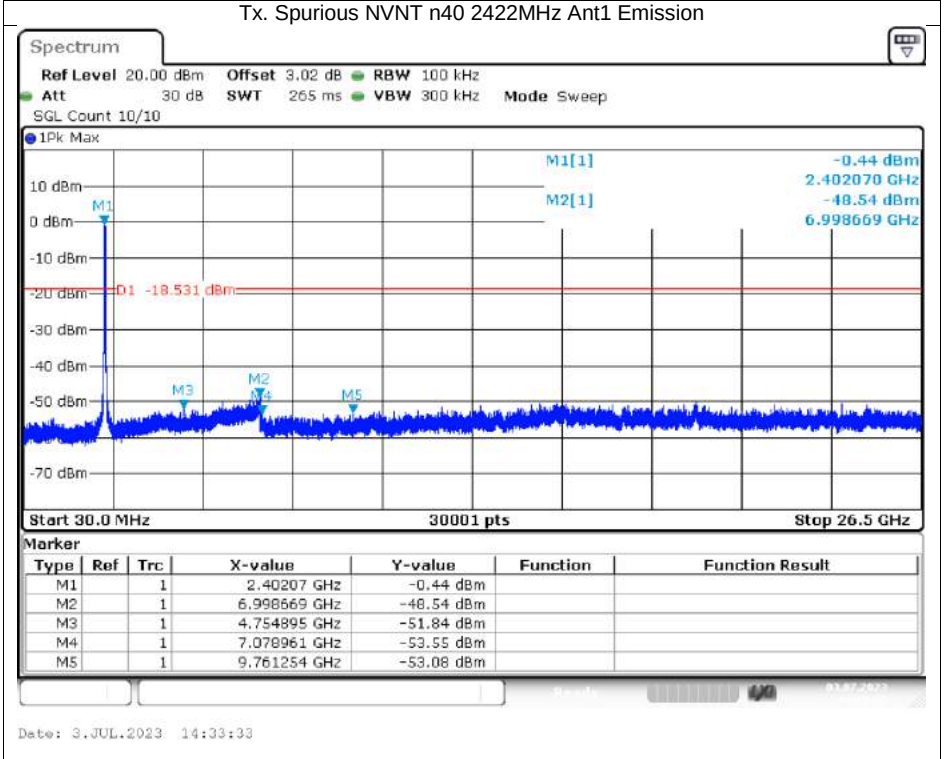
Tx. Spurious NVNT n20 2462MHz Ant1 Emission



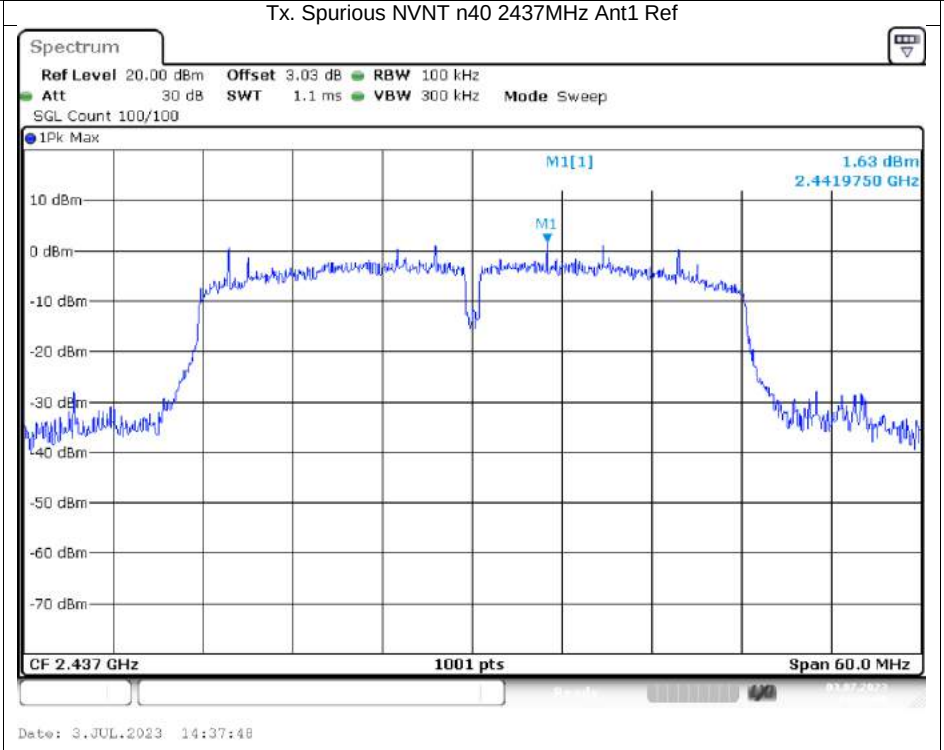
Tx. Spurious NVNT n40 2422MHz Ant1 Ref



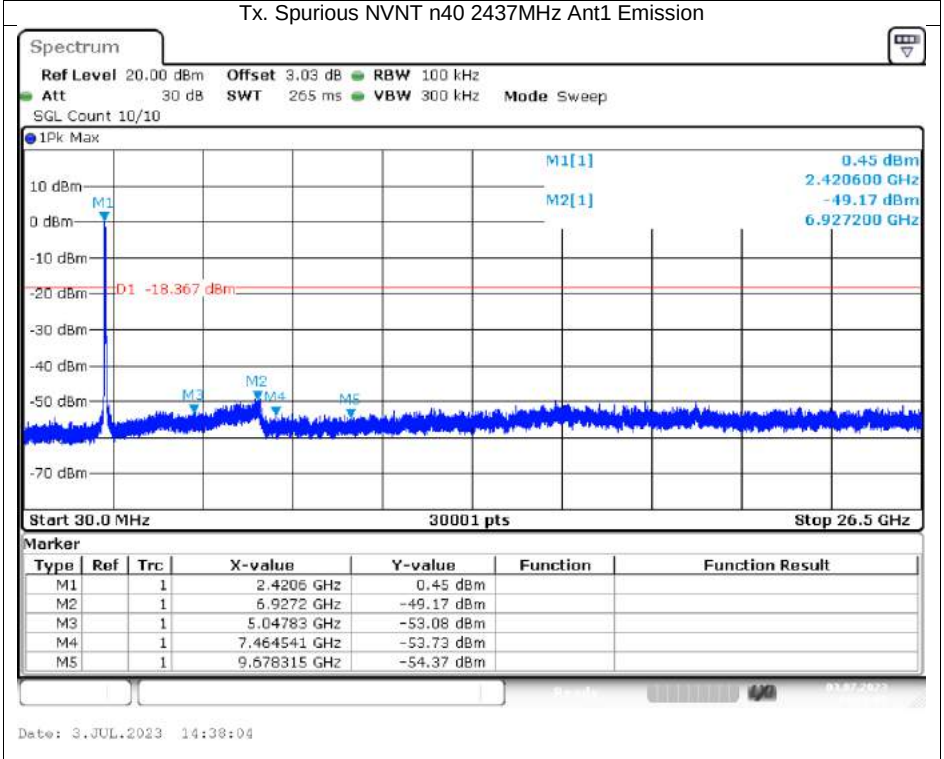
Tx. Spurious NVNT n40 2422MHz Ant1 Emission



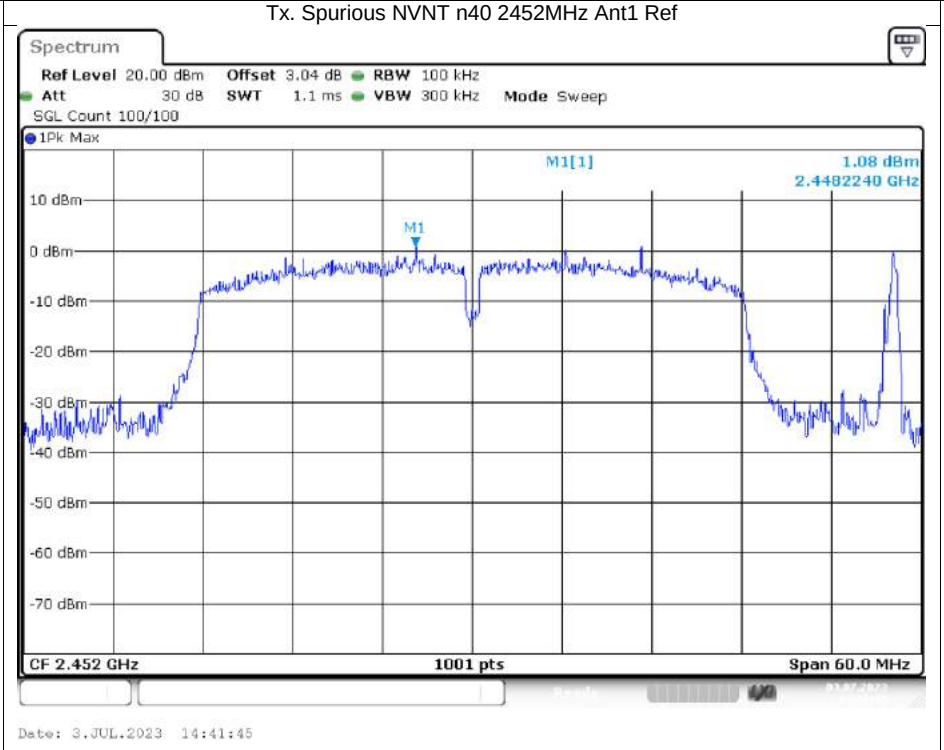
Tx. Spurious NVNT n40 2437MHz Ant1 Ref



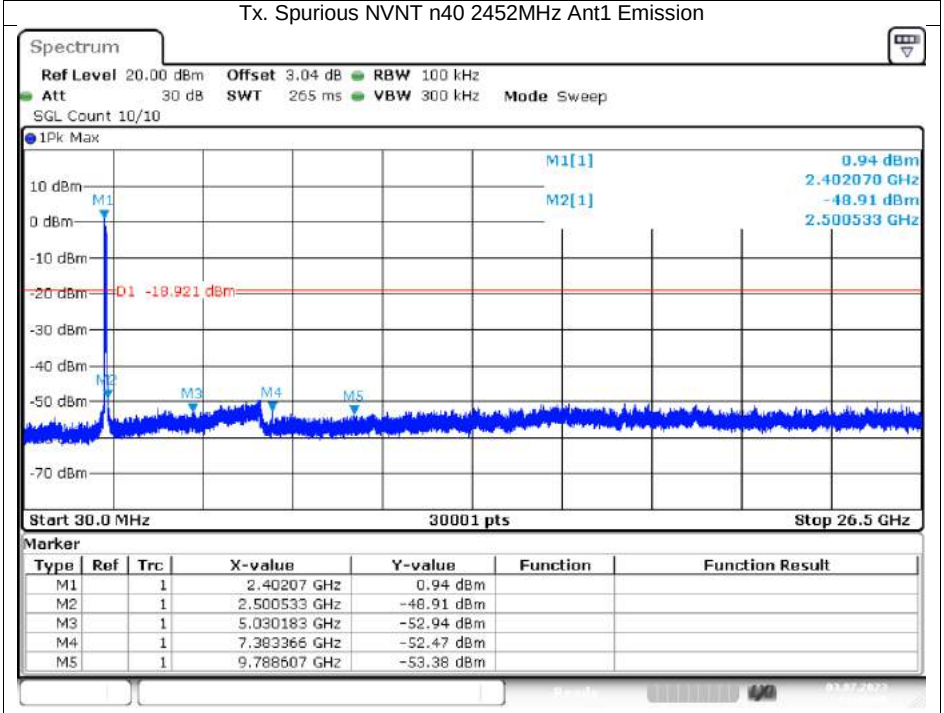
Tx. Spurious NVNT n40 2437MHz Ant1 Emission



Tx. Spurious NVNT n40 2452MHz Ant1 Ref



Tx. Spurious NVNT n40 2452MHz Ant1 Emission

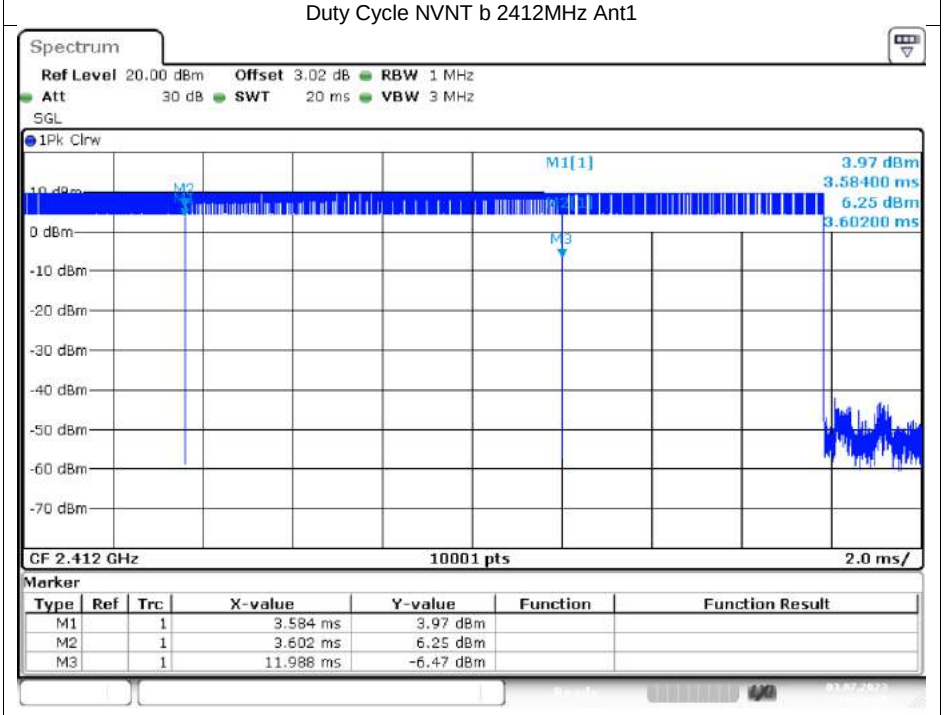


Duty Cycle

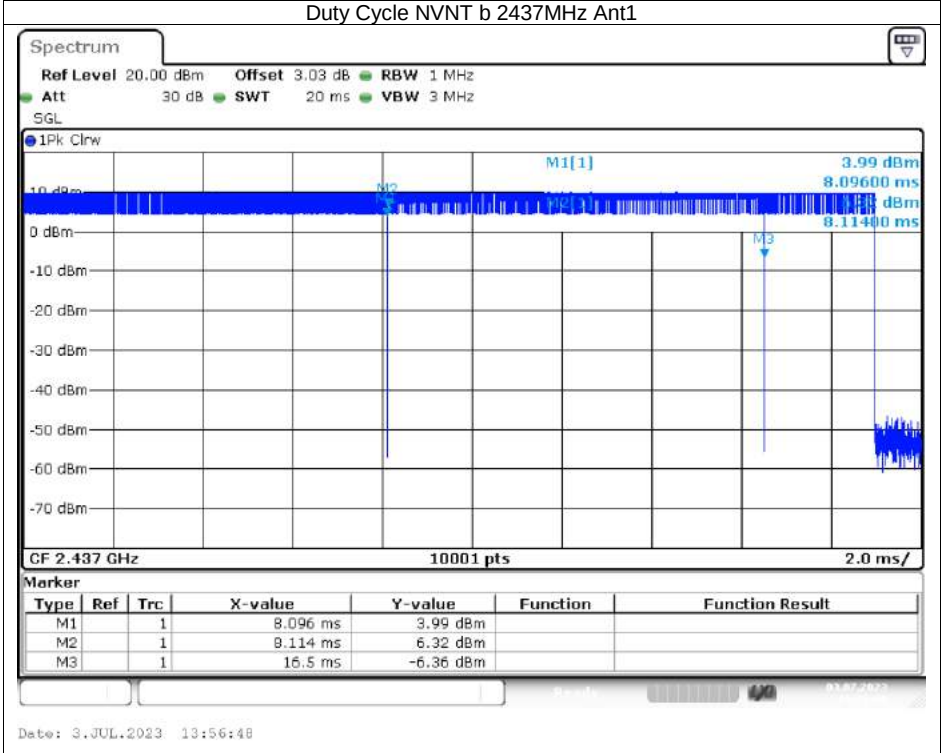
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	Ant1	99.79	0	0.12
NVNT	b	2437	Ant1	99.79	0	0.12
NVNT	b	2462	Ant1	99.81	0	0.12
NVNT	g	2412	Ant1	98.87	0	0.72
NVNT	g	2437	Ant1	98.86	0	0.72
NVNT	g	2462	Ant1	98.87	0	0.72
NVNT	n20	2412	Ant1	99.69	0	0.2
NVNT	n20	2437	Ant1	99.65	0	0.2
NVNT	n20	2462	Ant1	99.69	0	0.2
NVNT	n40	2422	Ant1	99.28	0	0.41
NVNT	n40	2437	Ant1	99.36	0	0.4
NVNT	n40	2452	Ant1	99.36	0	0.4

1. Test Graphs

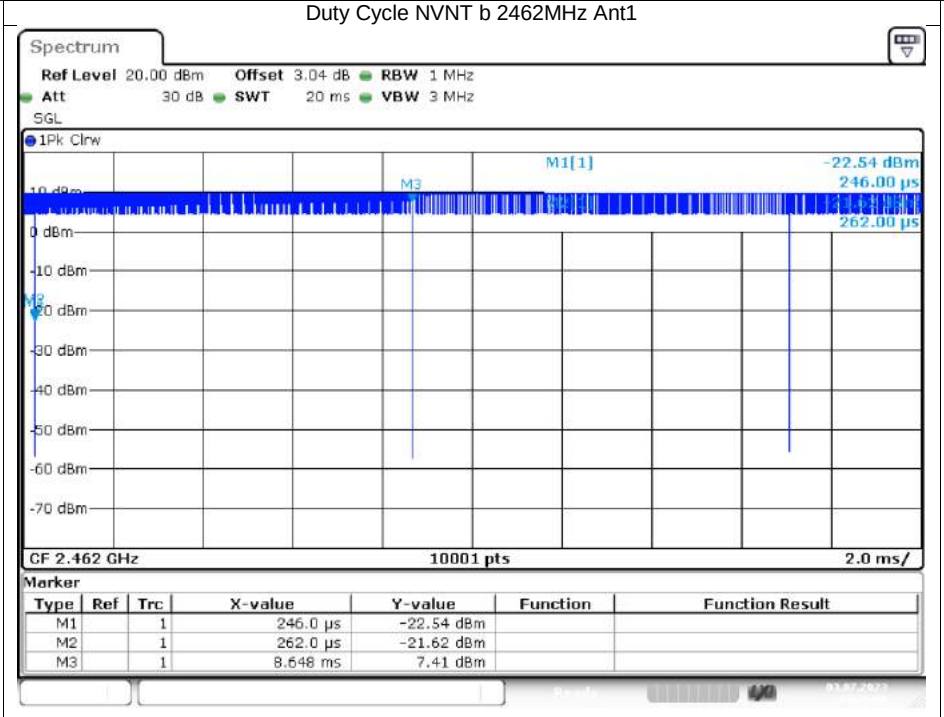
Duty Cycle NVNT b 2412MHz Ant1



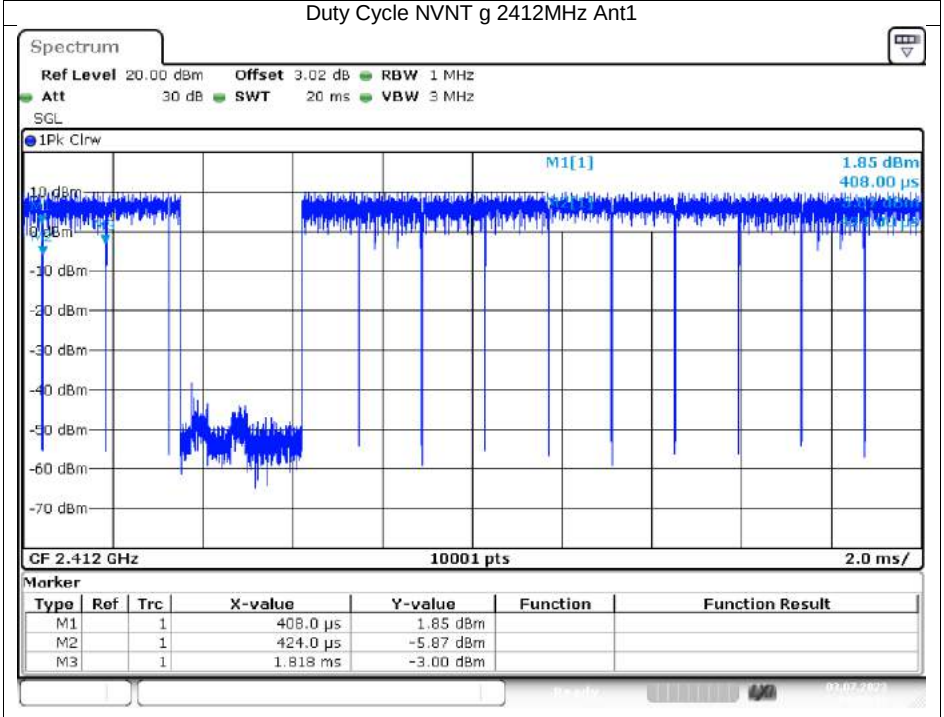
Duty Cycle NVNT b 2437MHz Ant1



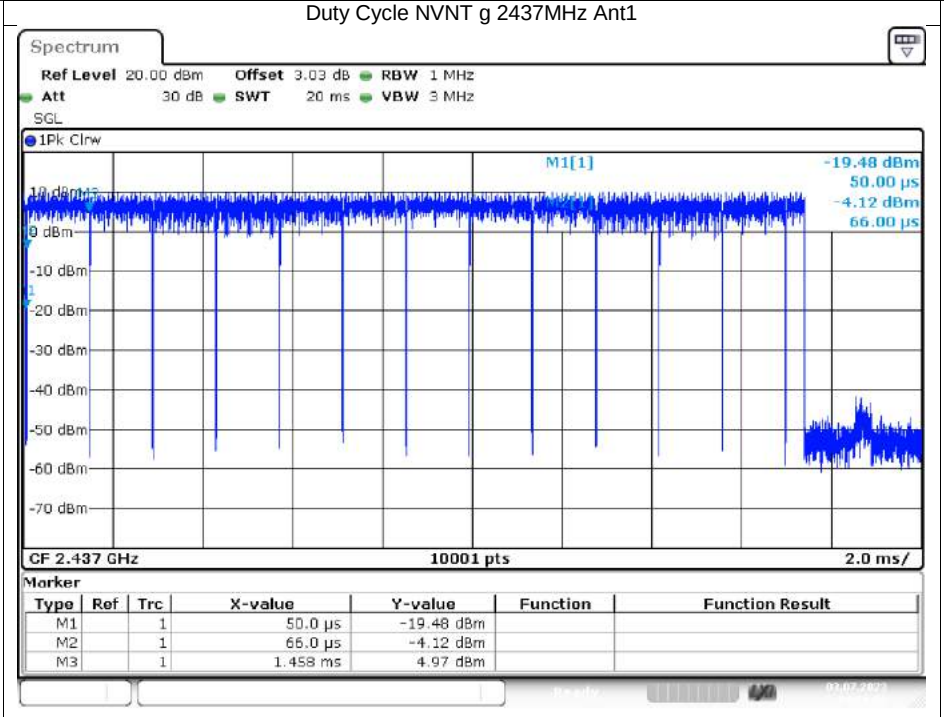
Duty Cycle NVNT b 2462MHz Ant1



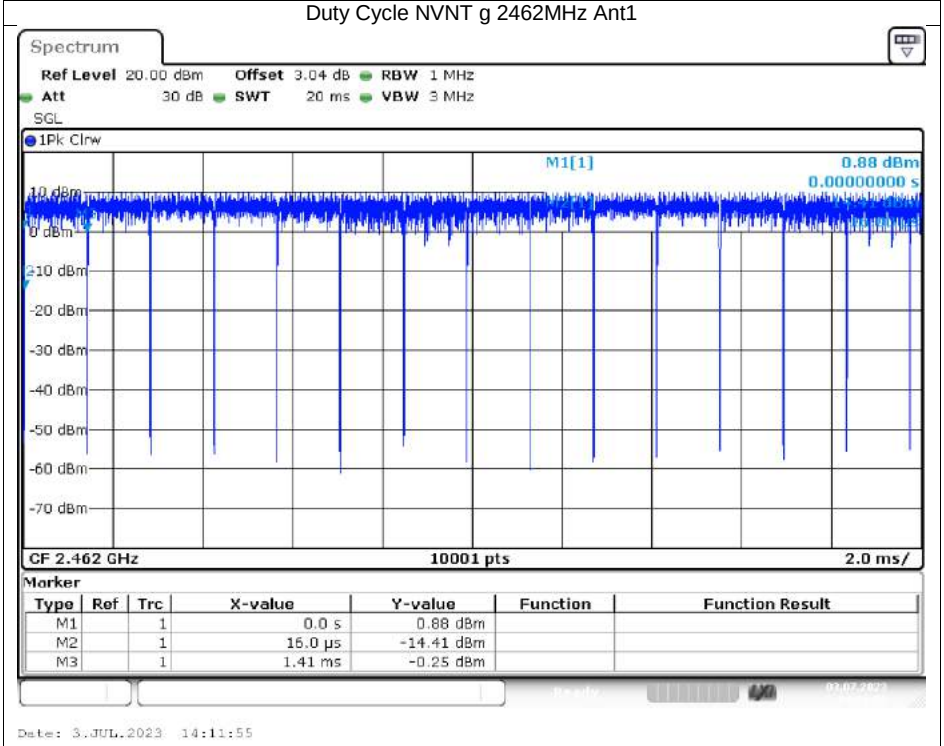
Duty Cycle NVNT g 2412MHz Ant1



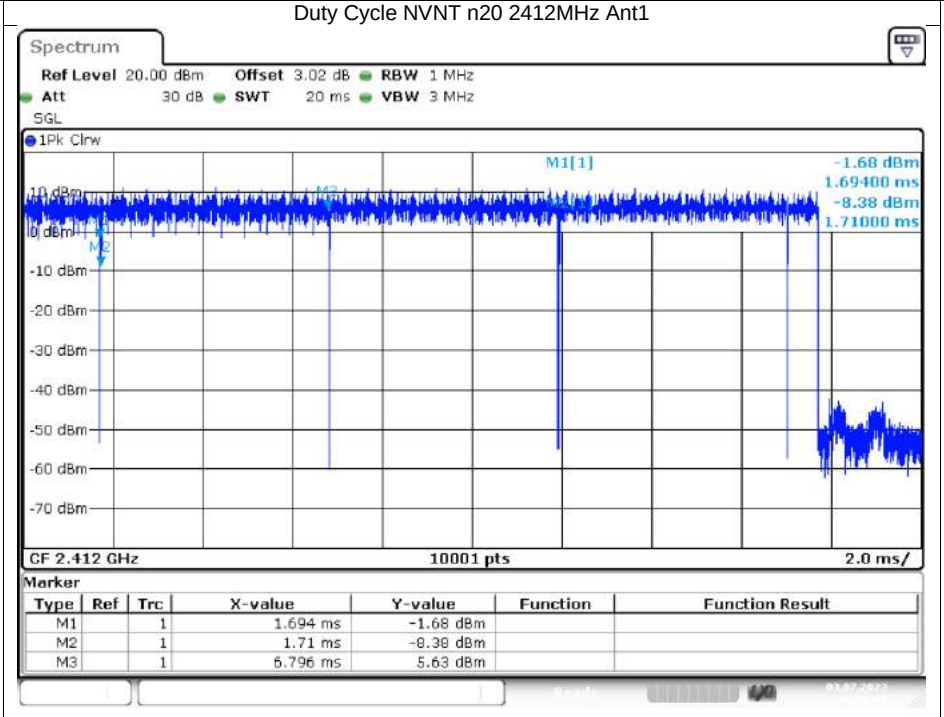
Duty Cycle NVNT g 2437MHz Ant1



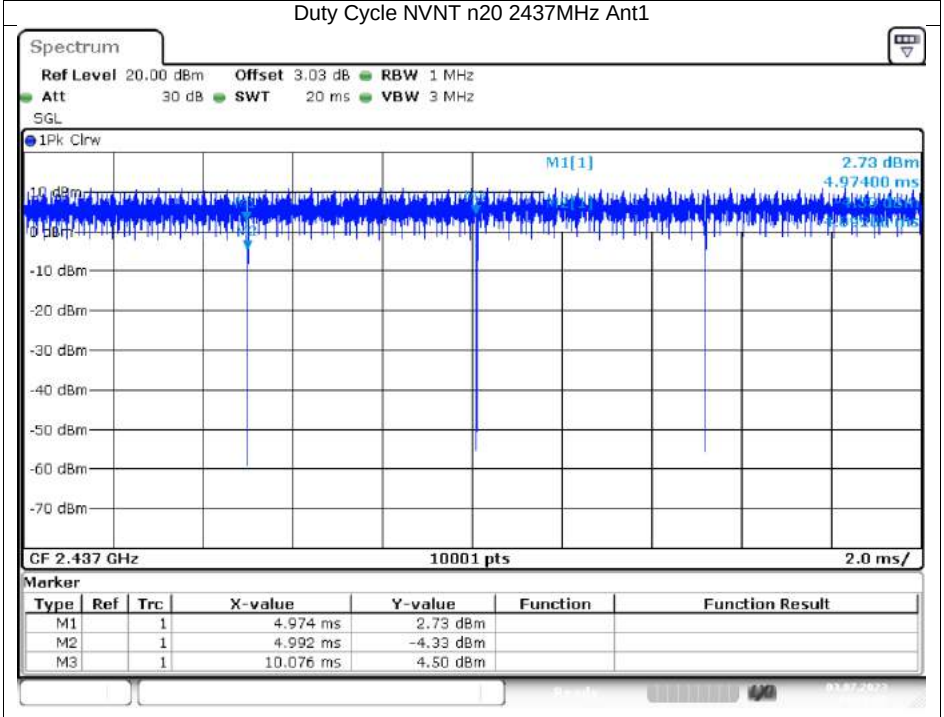
Duty Cycle NVNT g 2462MHz Ant1



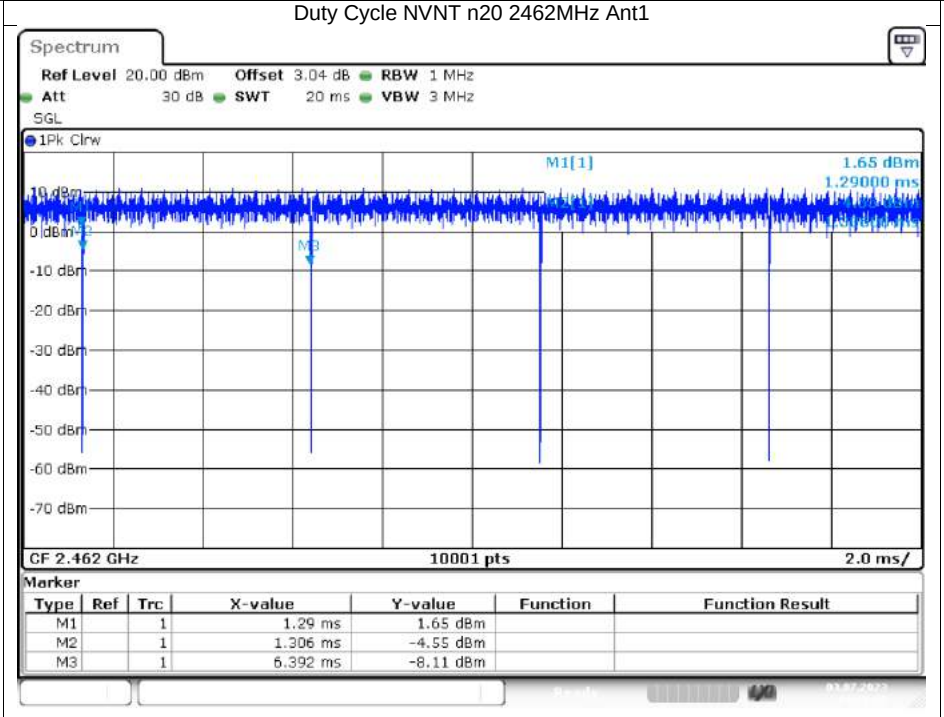
Duty Cycle NVNT n20 2412MHz Ant1



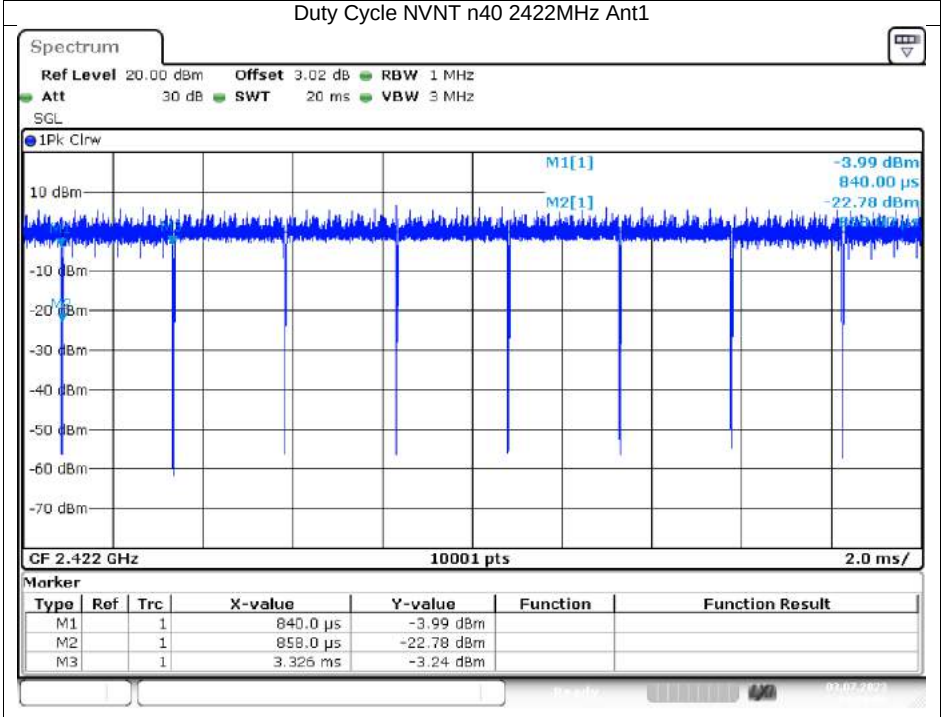
Duty Cycle NVNT n20 2437MHz Ant1



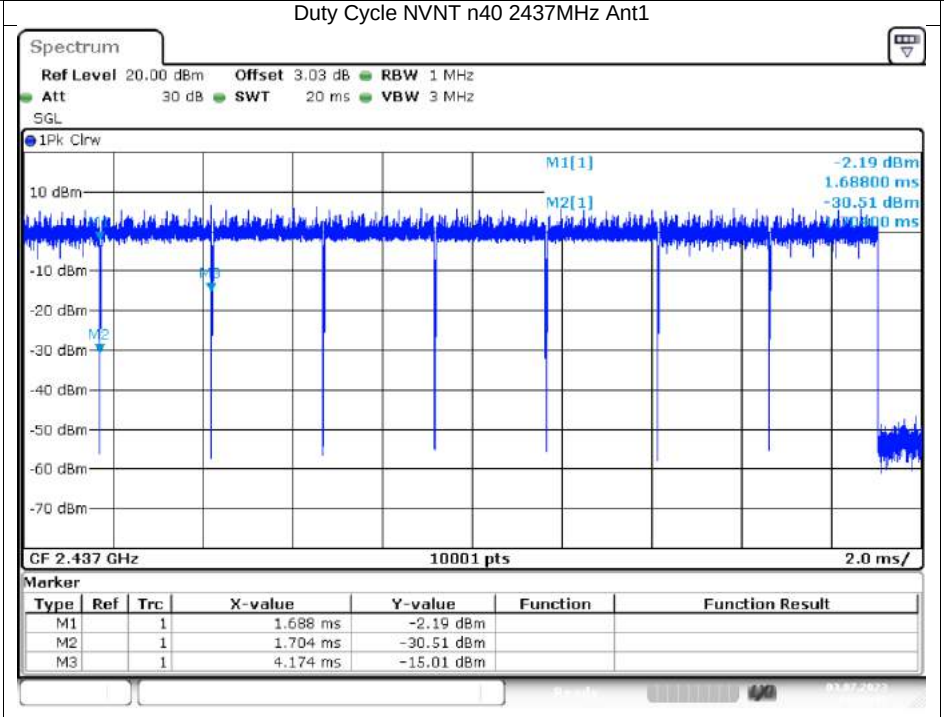
Duty Cycle NVNT n20 2462MHz Ant1



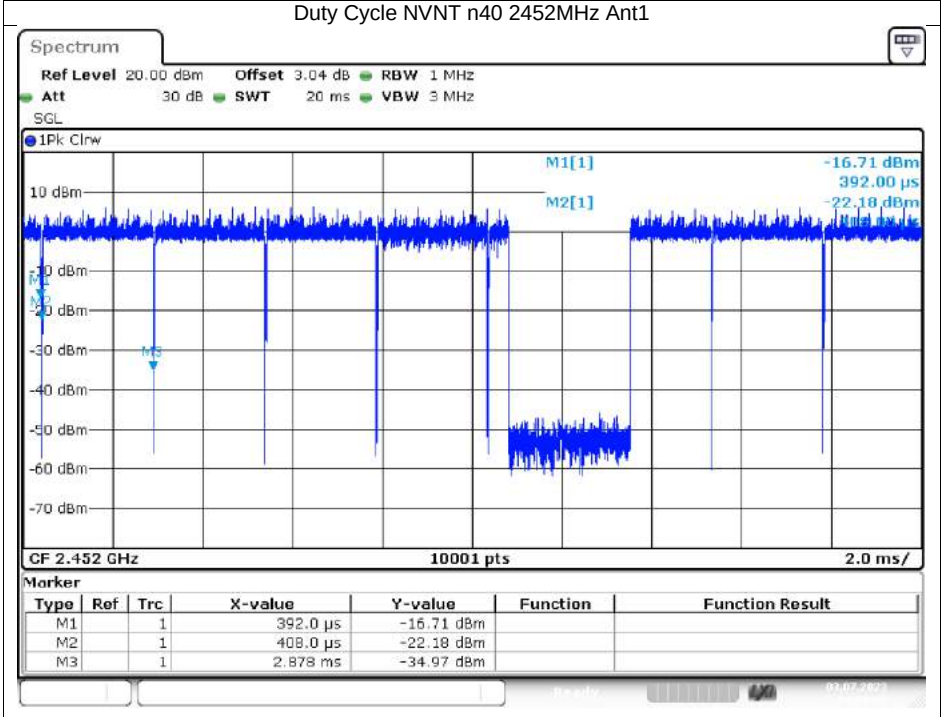
Duty Cycle NVNT n40 2422MHz Ant1



Duty Cycle NVNT n40 2437MHz Ant1



Duty Cycle NVNT n40 2452MHz Ant1



12. Antenna Application

Antenna requirement

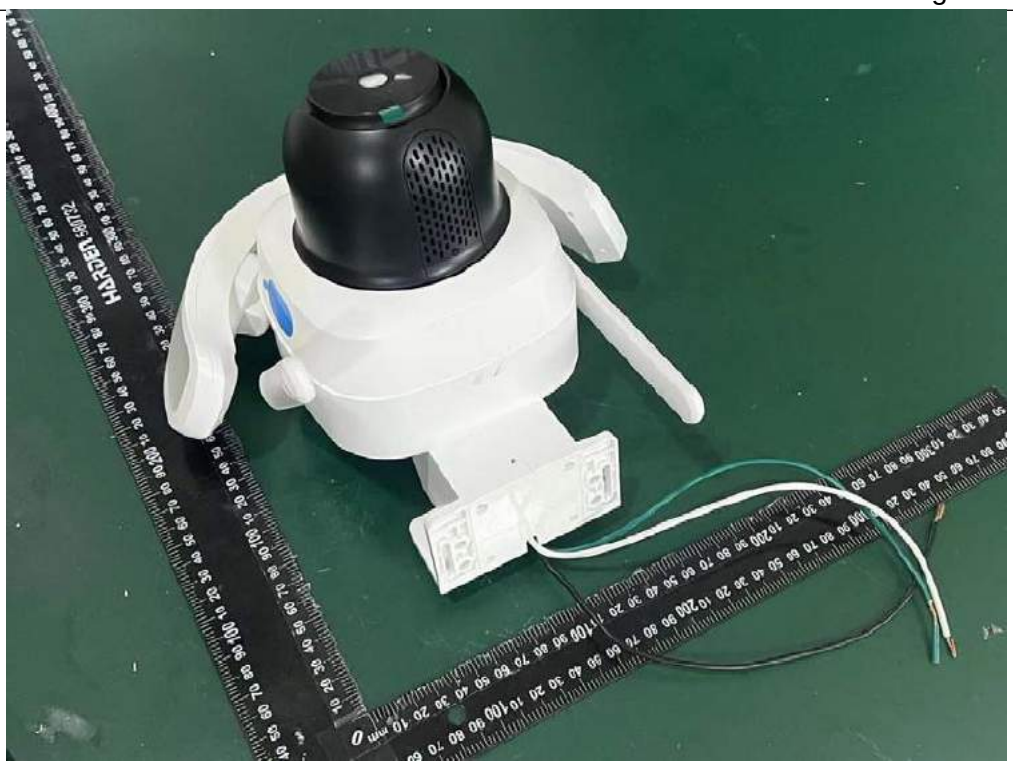
The EUT'S antenna is met the requirement of FCC part 15C section 15.203 and 15.247.

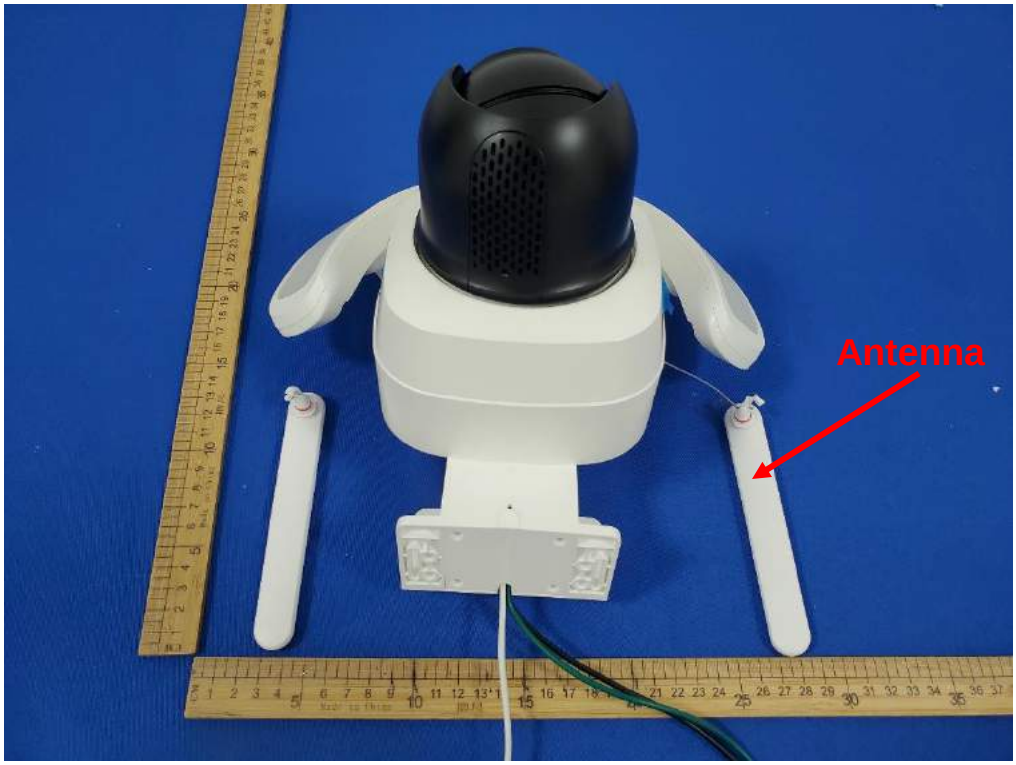
FCC part 15C section 15.247 requirements:
Systems operating in the 2402-2480MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum peak output power of the intentional radiator is reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

Result

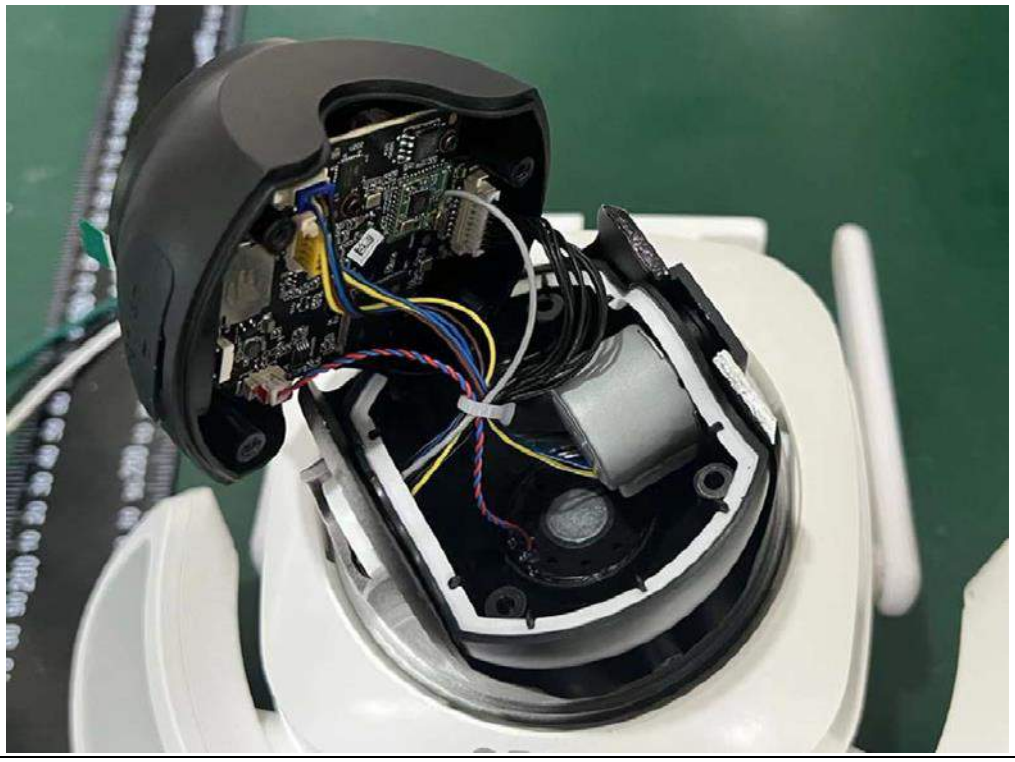
The EUT's antenna, permanent attached antenna, used External Antenna, The antenna's gain is 2.55dBi and meets the requirement.

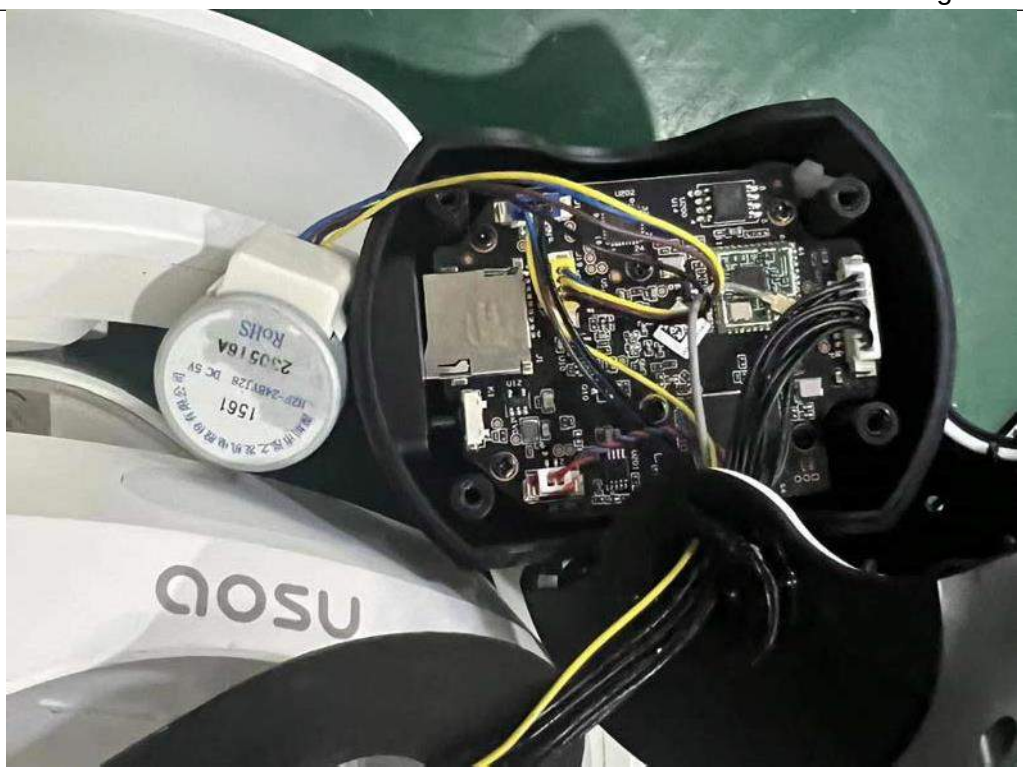
External

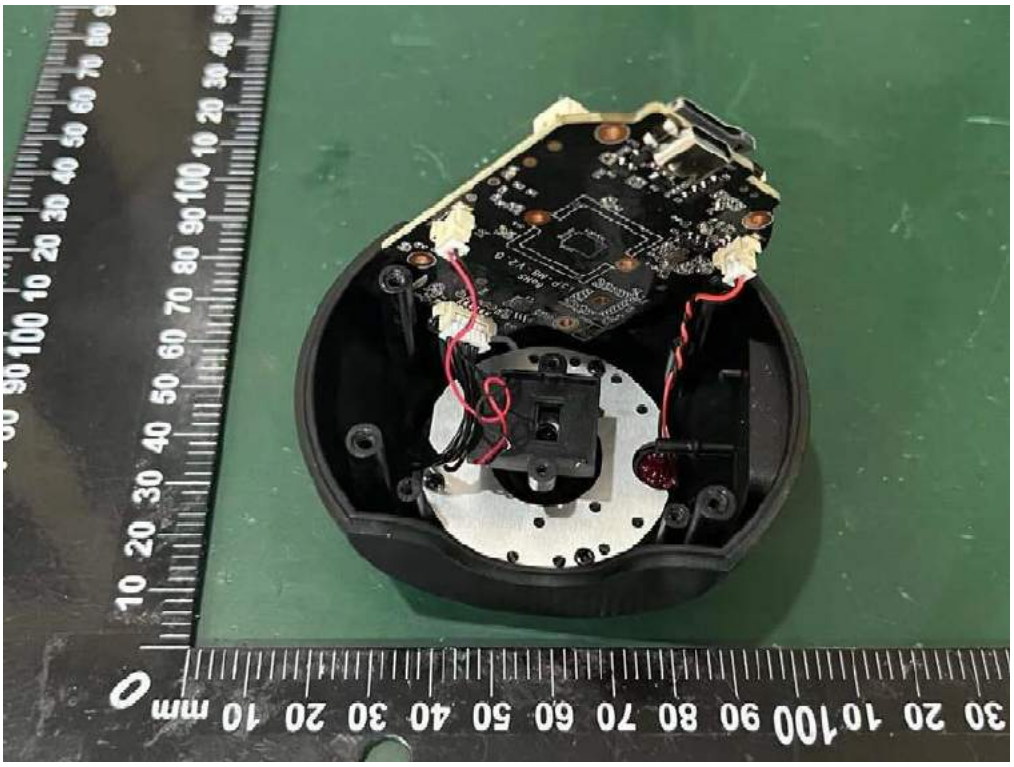


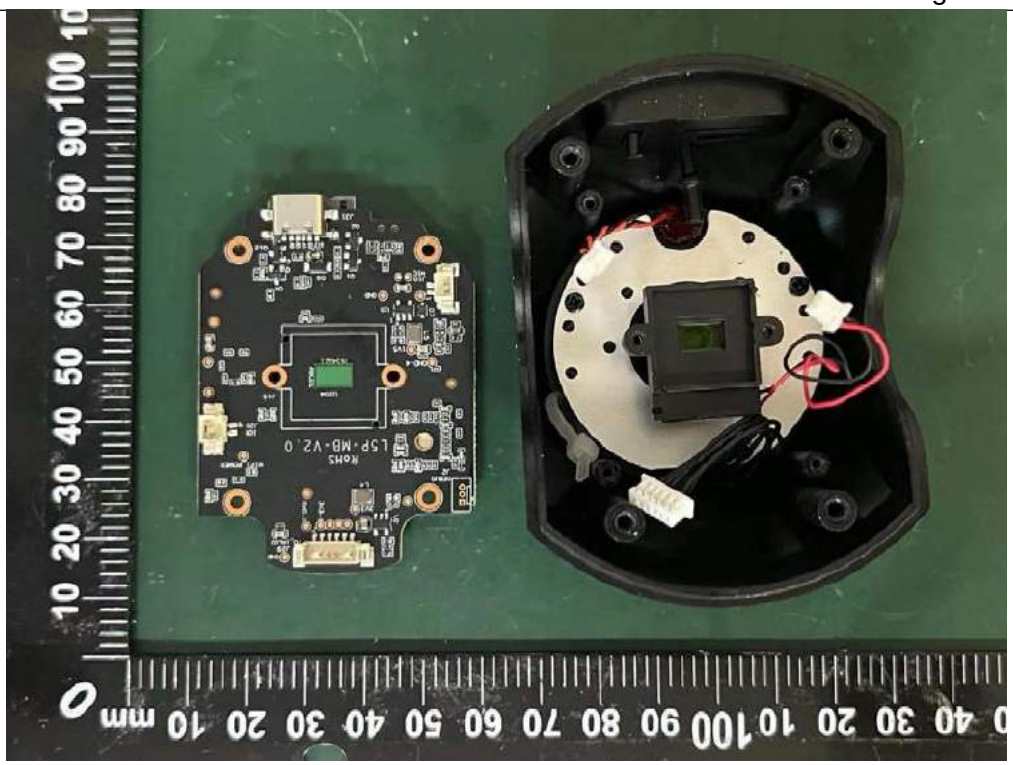

Antenna

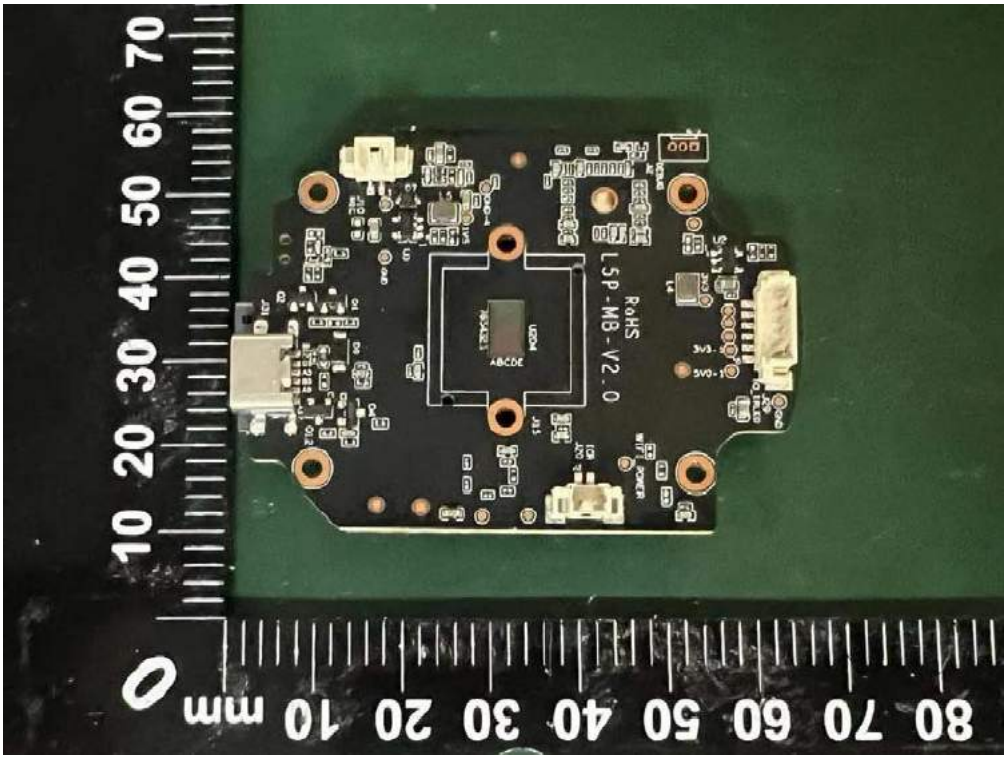
Internal photos

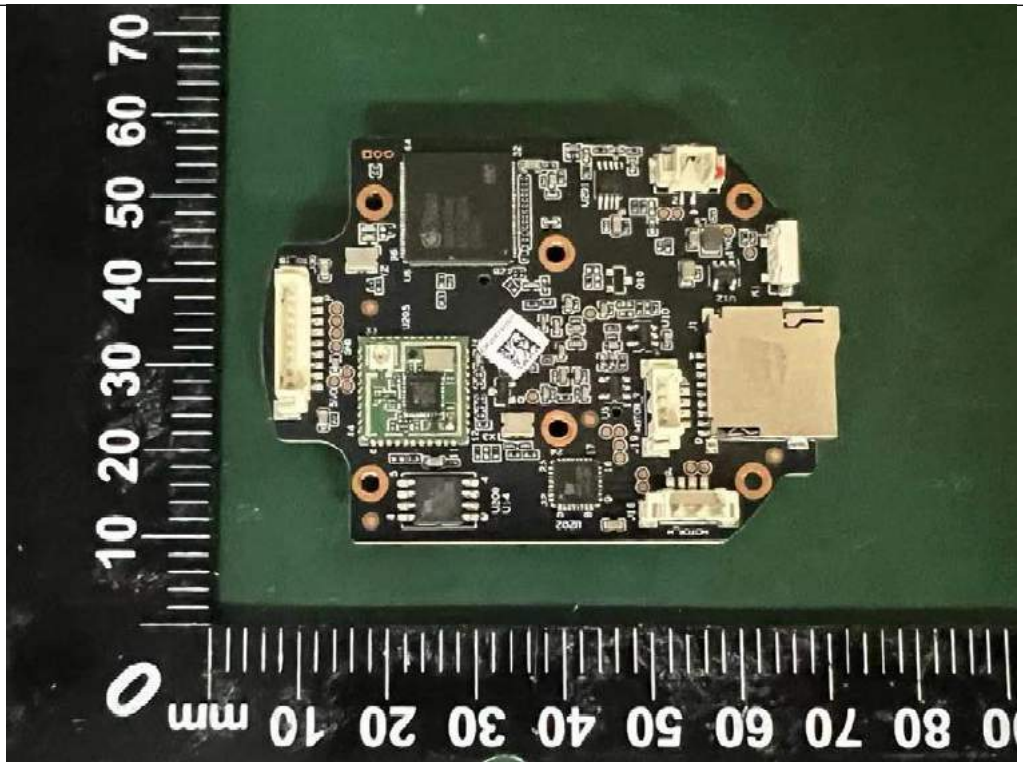


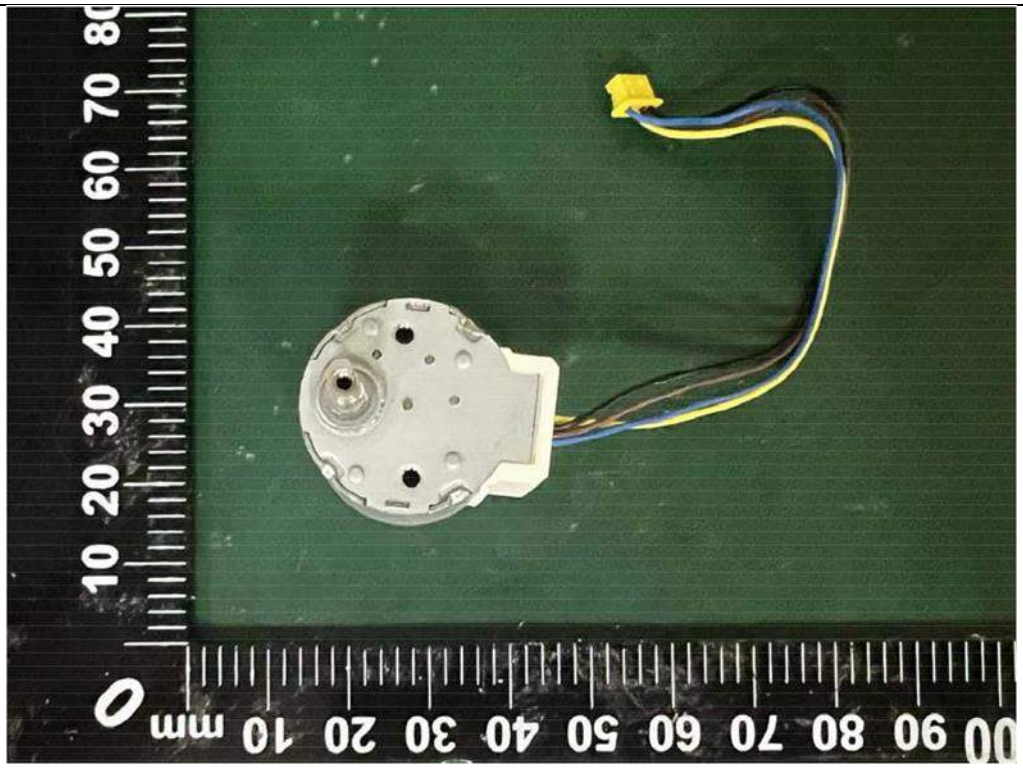

aosu

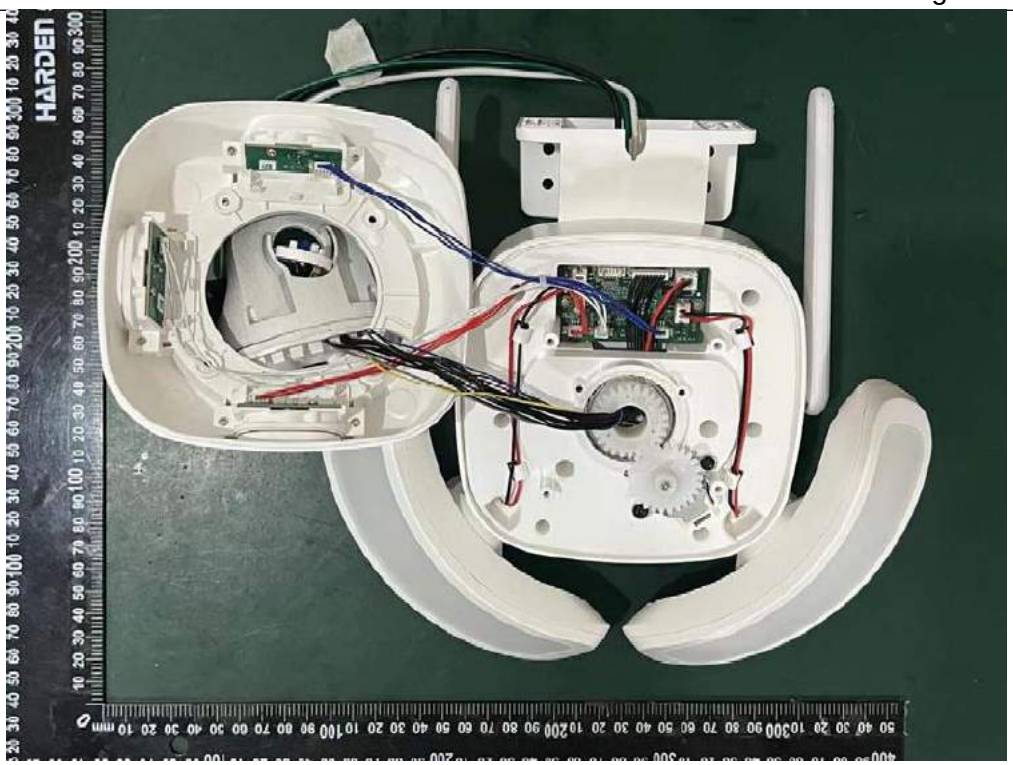


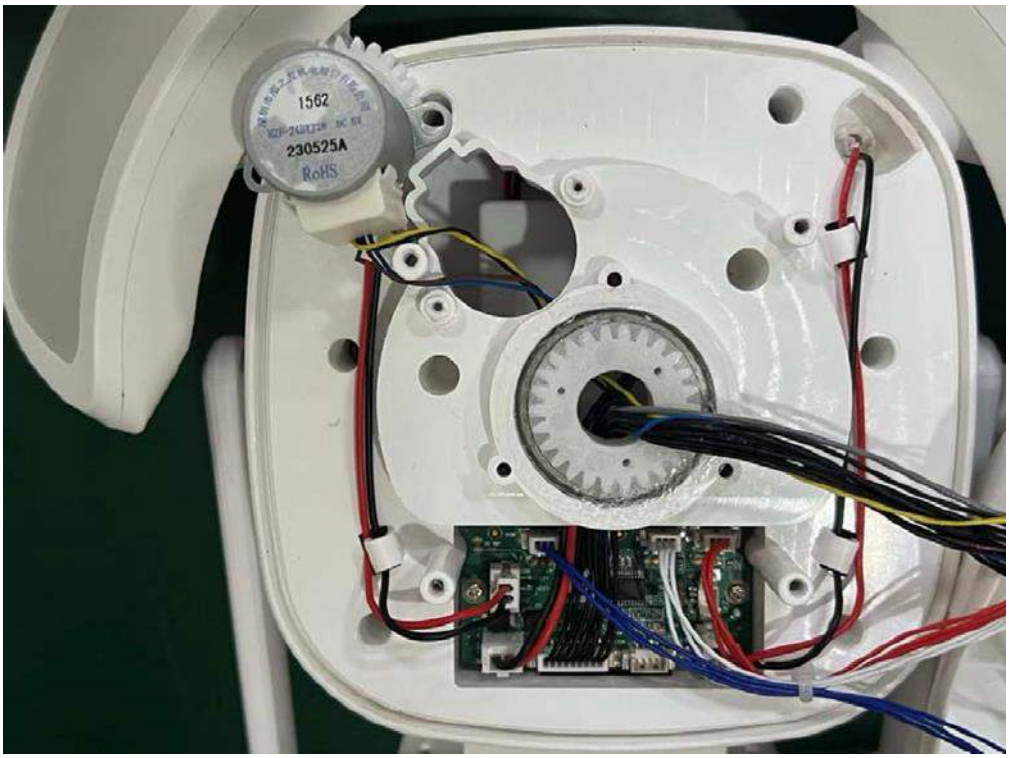

L5P-MB-V2.0
RoHS

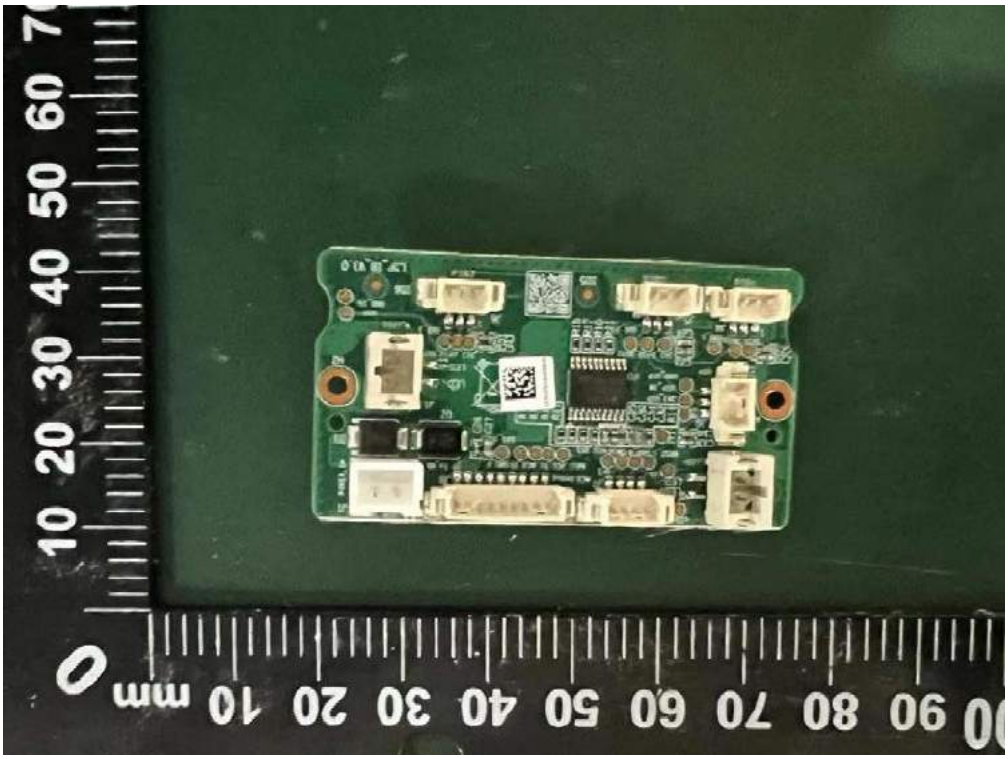

L5P-MB-V2.0
RoHS
ABCDE

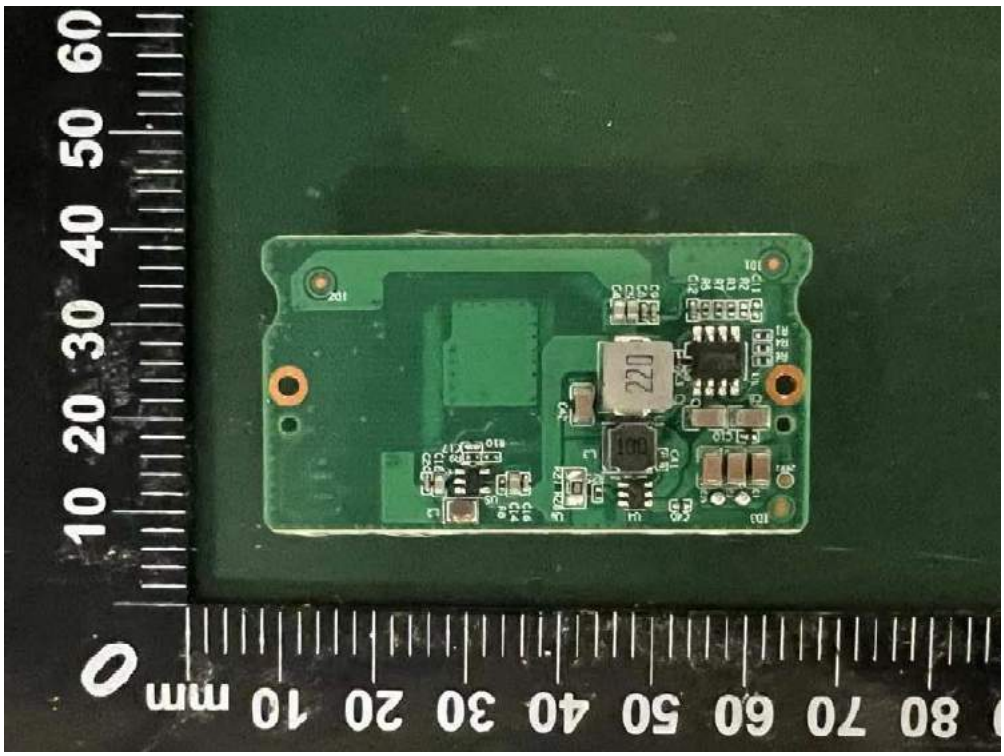


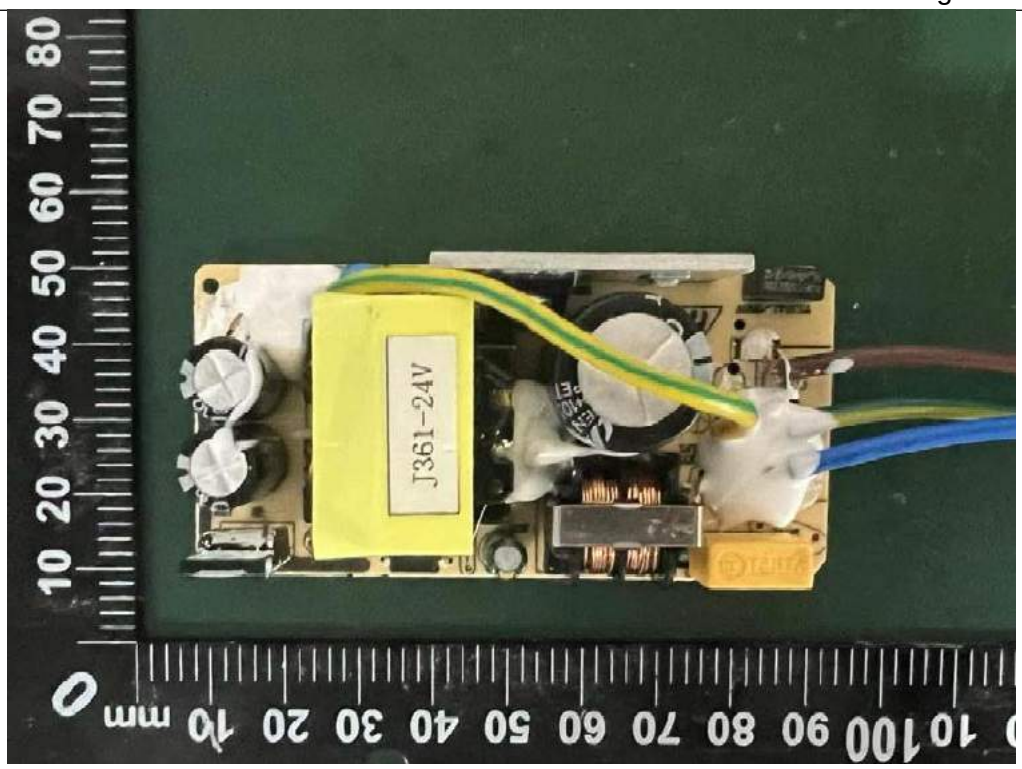


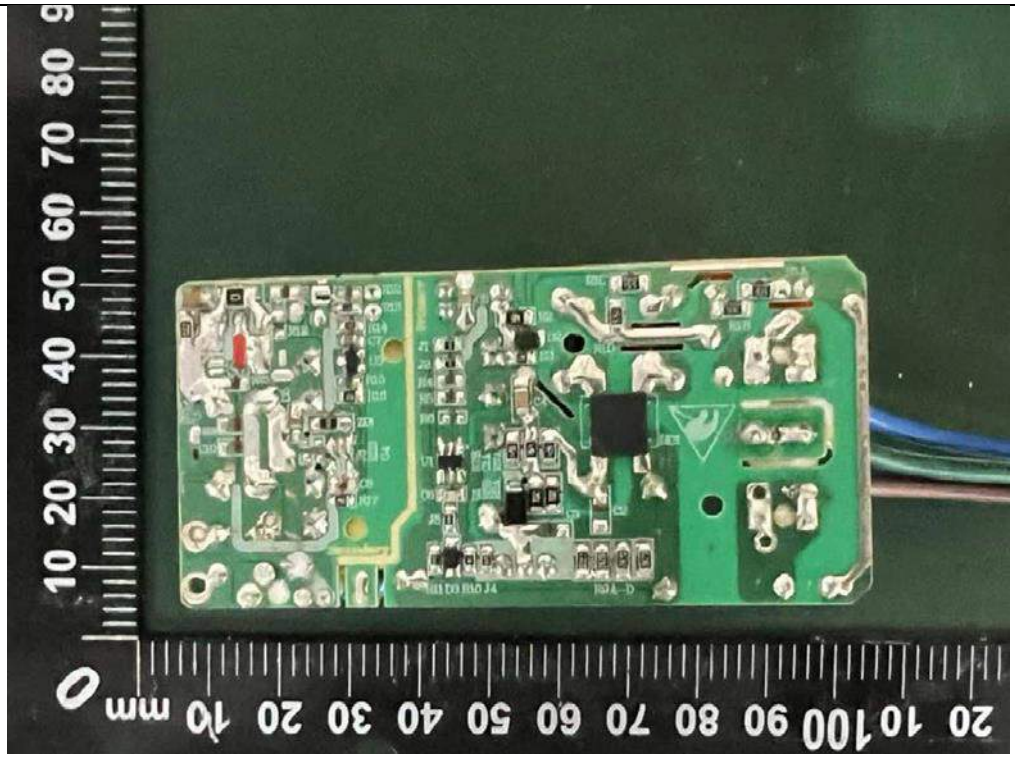



1562
230525A
RoHS









---The end of report---