Test report No.: 2340476R-RFUSV01S-C

TEST REPORT
(Class II Permissive Change)

Product Name	xPico® 200 Series Wi-Fi® IoT Gateway Module
Trademark	Lantronix
Model and /or type reference	xPico 270
FCC ID	R68XPICO200
Applicant´s name / address	Lantronix, Inc. 48 Discovery, Suite 250, Irvine, California, United States 92618
Manufacturer´s name	Lantronix, Inc.
Test method requested, standard	FCC CFR Title 47 Part 15 Subpart C ANSI C63.4: 2014, ANSI C63.10: 2013
Verdict Summary	IN COMPLIANCE
Documented By (Supervisor / Jinn Chen)	Jinn Chen
Tested By (Senior Engineer / Bill Lin)	Bill Lin
Approved By (Senior Engineer / Alan Chen)	Alan Chen
Date of Receipt	2023/04/18
Date of Issue	2023/11/02
Report Version	V1.0

INDEX

Page

1. General Information 5

1.1. EUT Description 5
1.2. Tested System Details 7
1.3. Configuration of Tested System 7
1.4. EUT Exercise Software 7
1.5. Test Facility 8
1.6. List of Test Item and Equipment 9
1.7. Uncertainty 10

2. Maximum Power Output 11

2.1. Test Setup 11
2.2. Limits 11
2.3. Test Procedure 11
2.4. Test Result of Peak Power Output 12

3. Radiated Emission 15

3.1. Test Setup 15
3.2. Limits 16
3.3. Test Procedure 17
3.4. Test Result of Radiated Emission 18

4. Band Edge 23

4.1. Test Setup 23
4.2. Limits 24
4.3. Test Procedure 24
4.4. Test Result of Band Edge 25

5. Duty Cycle 31

5.1. Test Setup 31
5.2. Test Procedure 31
5.3. Test Result of Duty Cycle 32

Appendix 1: EUT Test Photographs
Appendix 2: Product Photos-Please refer to the file: 2340476R-Product Photos

Competences and Guarantees

DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

IMPORTANT: No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA.

General conditions

1. The test results relate only to the samples tested.
2. The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.
3. This report must not be used to claim product endorsement by TAF or any agency of the government.
4. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.
5. Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Revision History

Report No.	Version	Description	Issued Date
2340476R-RFUSV01S-C	V1.0	Initial issue of report.	2023/11/02

1. General Information

1.1. EUT Description

Product Name	xPico® 200 Series Wi-Fi® IoT Gateway Module
Trademark	Lantronix
Model and /or type reference	xPico 270
EUT Rated Voltage	DC 3.3V (Power by Test Fixture)
EUT Test Voltage	AC 120V, 60Hz
Frequency Range	802.11b/g/n-20 MHz: 2412-2462 MHz
Number of Channels	802.11b/g/n-20 MHz: 11
Data Speed	802.11b: 1-11 Mbps, 802.11g: 6-54 Mbps, 802.11n: up to 72.2Mbps
Channel separation	802.11b/g/n: 5 MHz
Type of Modulation	802.11b: DSSS, DBPSK, DQPSK, CCK 802.11g/n: OFDM. BPSK, QPSK, 16QAM, 64QAM
Channel Control	Auto

Antenna List

No.	Brand	Part No.	Antenna Type	Peak Gain
1	WHA YU INDUSTRIAL CO., LTD.	C056-511080-A	PIFA	4.00 dBi for 2400 MHz

Note: The antenna of EUT is conforming to FCC 15.203.

802.11b/g/n-20 MHz Center Frequency of Each Channel:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	02	2417	03	2422	04	2427
05	2432	06	2437	07	2442	08	2447
09	2452	10	2457	11	2462	--	--

Note:

1. The EUT is a xPico® 200 Series Wi-Fi® IoT Gateway Module with a built-in WLAN and Bluetooth transceiver, this report for 2.4GHz WLAN.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test. The other channels are for reference only.
3. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report.
4. This is to request a Class II permissive change.
   The major change filed under this application is:
   Change #1: Addition a PIFA Antenna, the antenna type is different with the original application.
   Change #2: Reduce the BT & WLAN 2.4GHz/5GHz output power through firmware (SW Version: 5.4).
5. These tests are conducted on a sample for the purpose of demonstrating compliance of transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices.

Test Mode	Mode 1	Transmit (802.11b)
		Transmit (802.11g)
		Transmit (802.11n-20 MHz)

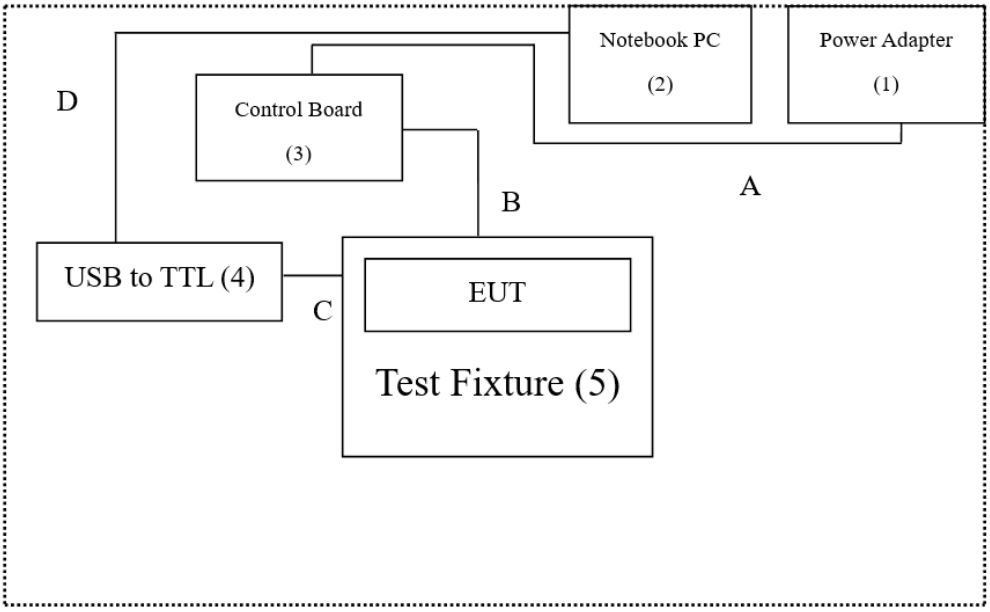
1.2. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Power Adapter	EDAC	EA11013C-2400	N/A	N/A
2	Notebook PC	DELL	Latitude 5501	4H94P13	N/A
3	Control Board	TSC	40-2250001	N/A	N/A
4	USB to TTL	TSC	CP2102	N/A	N/A
5	Test Fixture	TSC	RF-WX27N	N/A	N/A

Cable Type		Cable Description
A	Power Cable	Non-shielded, 1.2m, with one ferrite core bonded.
B	WiFi & BT Cable	Non-shielded, 0.06m
C	Jumper Wire	Non-shielded, 0.3m
D	USB Cable	Shielded, 1m

1.3. Configuration of Tested System



1.4. EUT Exercise Software

1.	Setup the EUT as shown in Section 1.3.
2.	Execute software ‘Tera Term Version 4.105’ on the Notebook PC.
3.	Configure the test mode, the test channel, and the data rate.
4.	Press “OK” to start the continuous Transmit.
5.	Verify that the EUT works properly.

1.5. Test Facility

Ambient conditions in the laboratory:

Performed Item	Items	Required	Actual
Radiated Emission	Temperature (°C)	10~40 °C	22.5 °C
	Humidity (%RH)	10~90 %	63.4 %
Conductive	Temperature (°C)	10~40 °C	22.0 °C
	Humidity (%RH)	10~90 %	55.0 %

USA	FCC Registration Number: TW0033
Canada	CAB Identifier Number: TW3023 / Company Number: 26930

Site Description	Accredited by TAF
	Accredited Number: 3023

Test Laboratory	DEKRA Testing and Certification Co., Ltd.
	Linkou Laboratory
Address	No.5-22, Ruishukeng Linkou District, New Taipei City, 24451, Taiwan, R.O.C.
Performed Location	No. 26, Huaya 1st Rd., Guishan Dist.,Taoyuan City 333411, Taiwan, R.O.C.
Phone Number	+886-3-275-7255
Fax Number	+886-3-327-8031

1.6. List of Test Item and Equipment

For Conduction Measurements / HY-SR01

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
	EMI Test Receiver	R&S	ESR7	101601	2022/06/23	2023/06/22
	Two-Line V-Network	R&S	ENV216	101306	2023/03/16	2024/03/15
	Two-Line V-Network	R&S	ENV216	101307	2022/07/04	2023/07/03
	Coaxial Cable	SUHNER	RG400_BNC	RF001	2022/05/24	2023/05/23

Note:
1. All equipments are calibrated every one year.
2. The test instruments marked with "V" are used to measure the final test results.
3. Test Software Version: e3 230303 dekra V9.

For Conducted Measurements / HY-SR02

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
V	Spectrum Analyzer	R&S	FSV30	103466	2022/12/22	2023/12/21
V	Peak Power Analyzer	KEYSIGHT	8990B	MY51000410	2022/08/06	2023/08/05
V	Wideband Power Sensor	KEYSIGHT	N1923A	MY56080003	2022/08/05	2023/08/04
V	Wideband Power Sensor	KEYSIGHT	N1923A	MY56080004	2022/08/05	2023/08/04

Note:
1. All equipments are calibrated every one year.
2. The test instruments marked with "V" are used to measure the final test results.
3. Test Software Version: RF Conducted Test Tools R3 V3.0.1.14.

For Radiated Measurements / HY-CB01

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
V	Loop Antenna	AMETEK	HLA6121	49611	2023/02/21	2024/02/20
V	Bi-Log Antenna	SCHWARZBECK	VULB9168	9168-675	2021/08/11	2023/08/10
V	Horn Antenna	RF SPIN	DRH18-E	210802A18ES	2023/03/23	2024/03/22
V	Horn Antenna	Com-Power	AH-840	101101	2021/11/30	2023/11/29
V	Pre-Asmplifier	SGH	0301	20211007-7	2023/01/10	2024/01/09
V	Pre-Amplifier	EMCI	EMC051845SE	980632	2023/01/10	2024/01/09
V	Pre-Amplifier	EMCI	EMC05820SE	980361	2023/01/10	2024/01/09
V	Pre-Amplifier	EMCI	EMC184045SE	980369	2023/01/10	2024/01/09
	Coaxial Cable	EMCI	EMC102-KM-KM-600	1160314		
	Coaxial Cable	EMCI	EMC102-KM-KM-7000	170242		
V	Filter	MICRO TRONICS	BRM50702	G269	2023/01/05	2024/01/04
	Filter	MICRO TRONICS	BRM50716	G196	2023/01/05	2024/01/04
V	EMI Test Receiver	R&S	ESR3	102793	2022/12/05	2023/12/04
V	Spectrum Analyzer	R&S	FSV3044	101115	2023/01/06	2024/01/05
V	Coaxial Cable	SUHNER	SUCOFLEX 106	25450/6	2023/01/10	2024/01/09
	Coaxial Cable	SGH	HA800	GD20110222-8		
	Coaxial Cable	SGH	SGH18	2021003-8		
	Coaxial Cable	EMCI	EMC106	151113		

Note:
1. Bi-Log Antenna and Horn Antenna(AH-840) is calibrated every two years, the other equipments are calibrated every one year.
2. The test instruments marked with "V" are used to measure the final test results.
3. Test Software Version: e3 230303 dekra V9.

1.7. Uncertainty

Uncertainties have been calculated according to the DEKRA internal document.

The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Test item	**Uncertainty**
Maximum Power Output	Spectrum Analyzer: ±2.14 dB Power Meter: ±1.05 dB
Radiated Emission	9 kHz~30 MHz: ±3.88 dB 30 MHz~1 GHz: ±4.42 dB 1 GHz~18 GHz: ±4.28 dB 18 GHz~40 GHz: ±3.90 dB
Band Edge	9 kHz~30 MHz: ±3.88 dB 30 MHz~1 GHz: ±4.42 dB 1 GHz~18 GHz: ±4.28 dB 18 GHz~40 GHz: ±3.90 dB
Duty Cycle	±0.53 %

2. Maximum Power Output

2.1. Test Setup

2.2. Limits

The maximum peak power shall be less 1 Watt.

2.3. Test Procedure

The EUT was tested according to C63.10:2013 for compliance to FCC 47CFR 15.247 requirements. The maximum peak conducted output power using C63.10:2013 Section 11.9.1.3 PKPM1 Peak power meter method. The maximum average conducted output power using C63.10:2013 Section 11.9.2.3 Measurement using a power meter (PM). (Measurement using a gated RF average-reading power meter).

2.4. Test Result of Peak Power Output

Product : xPico® 200 Series Wi-Fi® IoT Gateway Module
Test Item : Maximum Power Output Data
Test Mode : Transmit (802.11b)
Test Date : 2023/04/25

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Average Power (dBm)	Limit (dBm)	Result
01	2412	1	17.11	<30	Pass
06	2437	1	17.17	<30	Pass
11	2462	1	17.12	<30	Pass

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Peak Power (dBm)	Limit (dBm)	Result
01	2412	1	19.94	<30	Pass
06	2437	1	20.09	<30	Pass
11	2462	1	20.02	<30	Pass

Product : xPico® 200 Series Wi-Fi® IoT Gateway Module
Test Item : Maximum Power Output Data
Test Mode : Transmit (802.11g)
Test Date : 2023/04/25

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Average Power (dBm)	Limit (dBm)	Result
01	2412	6	14.91	<30	Pass
06	2437	6	16.54	<30	Pass
11	2462	6	14.87	<30	Pass

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Peak Power (dBm)	Limit (dBm)	Result
01	2412	6	23.44	<30	Pass
06	2437	6	24.41	<30	Pass
11	2462	6	23.40	<30	Pass

Product : xPico® 200 Series Wi-Fi® IoT Gateway Module
Test Item : Maximum Power Output Data
Test Mode : Transmit (802.11n-20 MHz)
Test Date : 2023/04/25

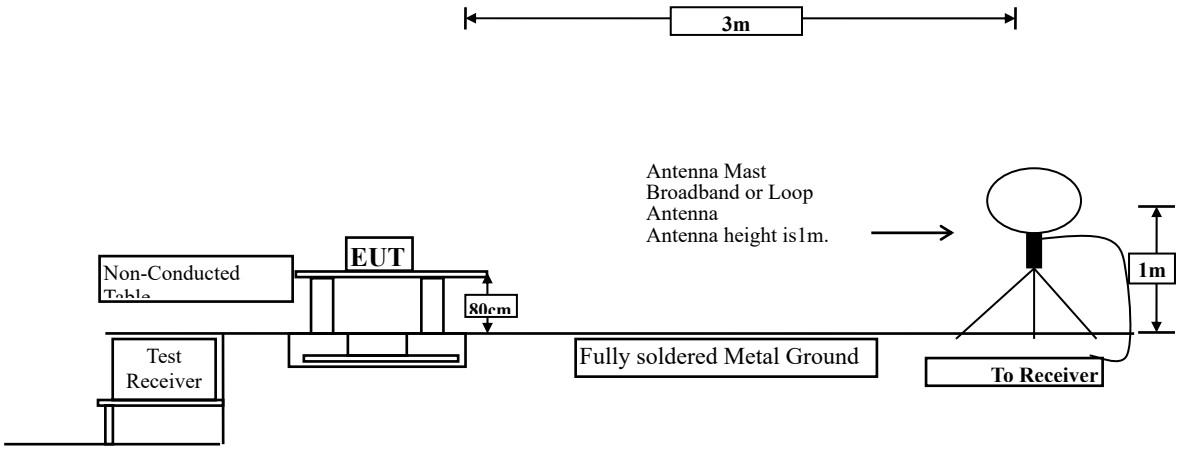
Channel No.	Frequency (MHz)	Data Rate	Average Power (dBm)	Limit (dBm)	Result
01	2412	HT0	13.05	<30	Pass
06	2437	HT0	15.94	<30	Pass
11	2462	HT0	12.52	<30	Pass

Channel No.	Frequency (MHz)	Data Rate	Peak Power (dBm)	Limit (dBm)	Result
01	2412	HT0	22.57	<30	Pass
06	2437	HT0	22.98	<30	Pass
11	2462	HT0	21.43	<30	Pass

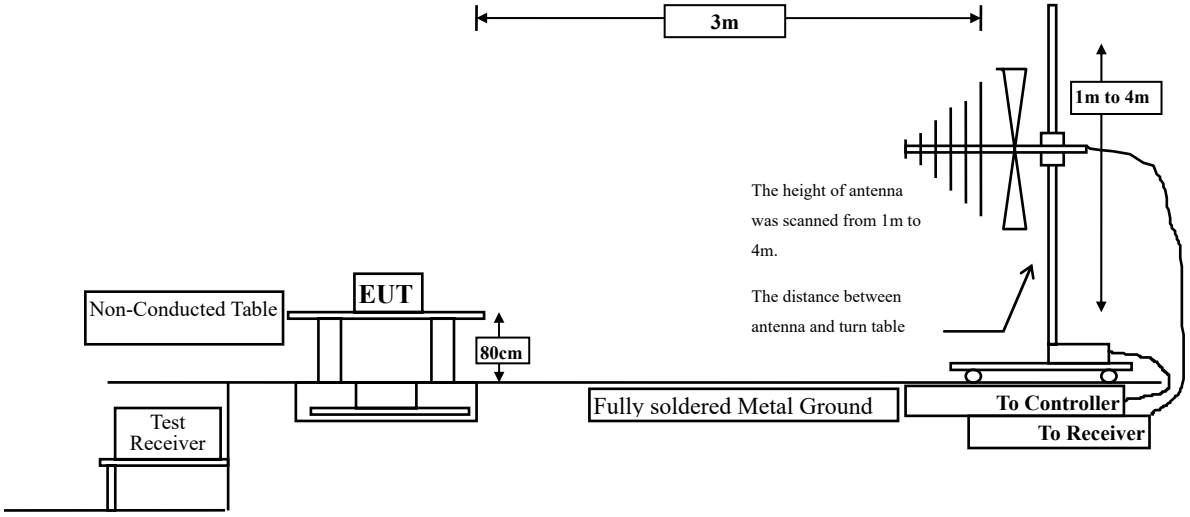
3. Radiated Emission

3.1. Test Setup

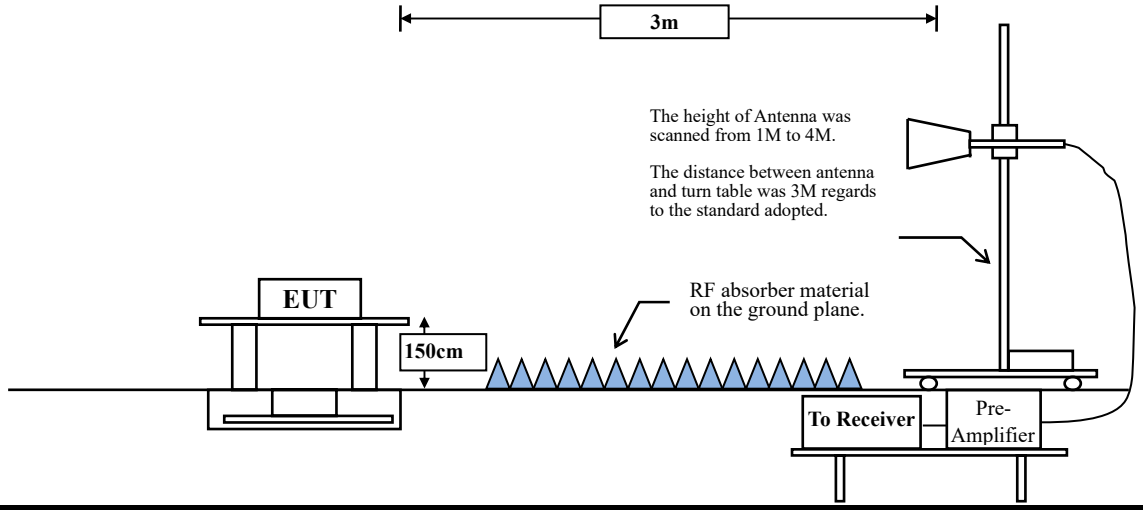
Radiated Emission Under 30 MHz



Radiated Emission Below 1 GHz



Radiated Emission Above 1 GHz



3.2. Limits

➢ **General Radiated Emission Limits**

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20 dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remarks: 1. RF Voltage (dBμV) = 20 log RF Voltage (μV)

2. In the Above Table, the tighter limit applies at the band edges.

3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

3.3. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to C63.10:2013 Section 11.12.1 for compliance to FCC 47CFR 15.247 requirements.
Measuring the frequency range below 1 GHz, the EUT is placed on a turn table which is 0.8 meter above ground,when measuring the frequency range above 1GHz, the EUT is placed on a turn table which is 1.5 meter above ground.
The turn table is rotated 360 degrees to determine the position of the maximum emission level.
The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2013 on radiated measurement.
The resolution bandwidth below 30 MHz setting on the field strength meter is 9 kHz and
30 MHz~1 GHz is 120 kHz and above 1 GHz is 1 MHz.
Radiated emission measurements below 30 MHz are made using Loop Antenna and 30 MHz~1 GHz are made using broadband Bilog antenna and above 1 GHz are made using Horn Antennas.
The measurement is divided into the Preliminary Measurement and the Final Measurement.
The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.
The measurement frequency range form 9 kHz - 10th Harmonic of fundamental was investigated.

RBW and VBW Parameter setting:
According to C63.10 Section 11.12.2.4 Peak measurement procedure.
RBW = as specified in Table 1.
VBW ≥ 3 x RBW.

Table 1 —RBW as a function of frequency

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
> 1000 MHz	1 MHz

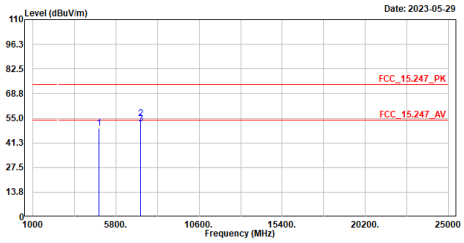
According to C63.10 Section 11.12.2.5 Average measurement procedure.
RBW = 1MHz.
VBW = 10Hz, when duty cycle ≥ 98 %
VBW ≥ 1/T, when duty cycle < 98 %
(T refers to the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.)

2.4GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
802.11 b	100.00	24.8000	40	10
802.11 g	97.94	1.4280	700	1000
802.11 n20	95.87	2.7840	359	500

Note: Duty Cycle Refer to Section 5.

3.4. Test Result of Radiated Emission

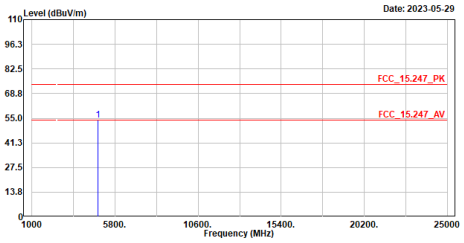
Site :HY-CB01
Condition :3m ,HORIZONTAL
Mode :TX_b_2412MHz
TEST BY :Sam



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	4824.000	49.52	74.00	-24.48	62.85	-13.33	Peak
2	7236.000	54.80	74.00	-19.20	64.14	-9.34	Peak
3	7236.000	52.00	54.00	-2.00	61.34	-9.34	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

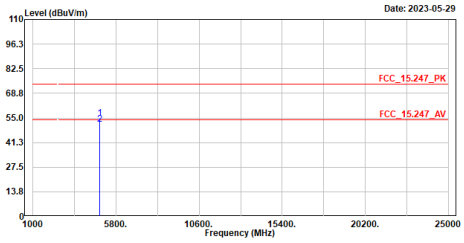
Site :HY-CB01
Condition :3m ,VERTICAL
Mode :TX_b_2412MHz
TEST BY :Sam



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	4824.000	53.97	74.00	-20.03	67.30	-13.33	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

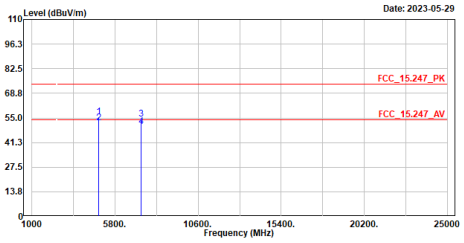
Site :HY-CB01
Condition :3m ,HORIZONTAL
Mode :TX_b_2437MHz
TEST BY :Sam



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	4874.000	54.99	74.00	-19.01	68.33	-13.34	Peak
2	4874.000	51.60	54.00	-2.40	64.94	-13.34	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

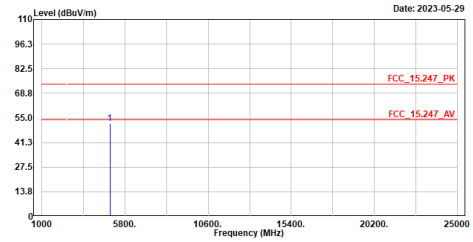
Site :HY-CB01
Condition :3m ,VERTICAL
Mode :TX_b_2437MHz
TEST BY :Sam



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	4874.000	55.45	74.00	-18.55	68.79	-13.34	Peak
2	4874.000	52.38	54.00	-1.62	65.72	-13.34	Average
3	7311.000	54.33	74.00	-19.67	63.55	-9.22	Peak
4	7311.000	50.35	54.00	-3.65	59.57	-9.22	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

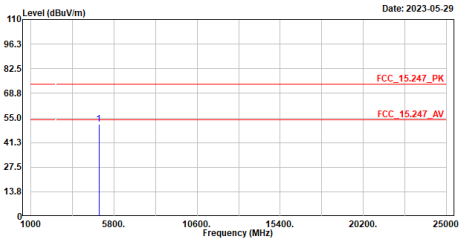
Site :HY-CB01
Condition :3m ,HORIZONTAL
Mode :TX_b_2462MHz
TEST BY :Sam



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	4924.000	51.72	74.00	-22.28	65.07	-13.35	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

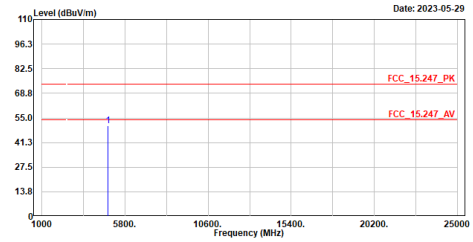
Site :HY-CB01
Condition :3m ,VERTICAL
Mode :TX_b_2462MHz
TEST BY :Sam



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	4924.000	51.44	74.00	-22.56	64.79	-13.35	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

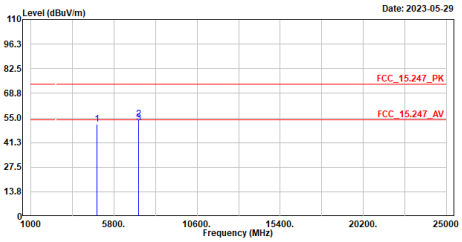
Site :HY-CB01
Condition :3m ,HORIZONTAL
Mode :TX_g_2412MHz
TEST BY :Sam



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	4824.000	50.45	74.00	-23.55	63.78	-13.33	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

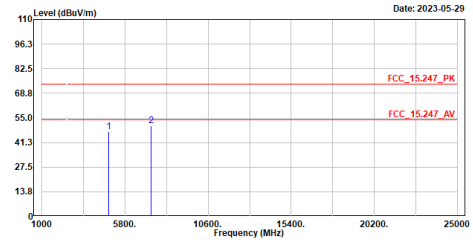
Site :HY-CB01
Condition :3m ,VERTICAL
Mode :TX_g_2412MHz
TEST BY :Sam



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	4824.000	51.42	74.00	-22.58	64.75	-13.33	Peak
2	7236.000	54.30	74.00	-19.70	63.62	-9.32	Peak
3	7236.000	52.47	54.00	-1.53	61.81	-9.34	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

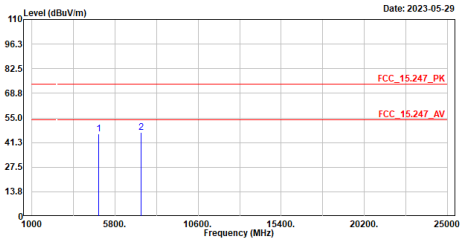
Site :HY-CB01
Condition :3m ,HORIZONTAL
Mode :TX_g_2437MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	4874.000	47.41	74.00	-26.59	60.75	-13.34	Peak
2	7311.000	50.56	74.00	-23.44	59.78	-9.22	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

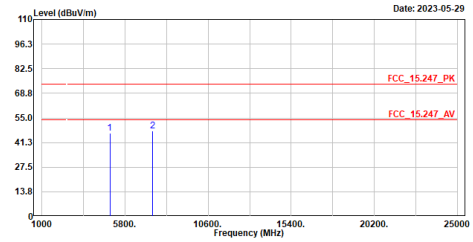
Site :HY-CB01
Condition :3m ,VERTICAL
Mode :TX_g_2437MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	4874.000	46.23	74.00	-27.77	59.57	-13.34	Peak
2	7311.000	46.89	74.00	-27.11	56.11	-9.22	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

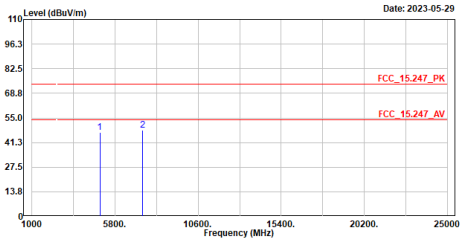
Site :HY-CB01
Condition :3m ,HORIZONTAL
Mode :TX_g_2462MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	4924.000	46.60	74.00	-27.40	59.95	-13.35	Peak
2	7386.000	47.58	74.00	-26.42	56.80	-9.22	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

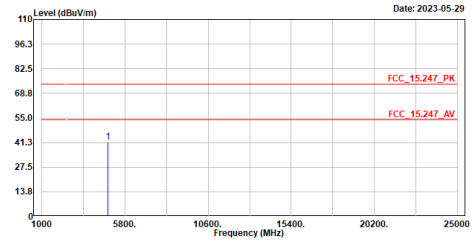
Site :HY-CB01
Condition :3m ,VERTICAL
Mode :TX_g_2462MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	4924.000	46.94	74.00	-27.06	60.29	-13.35	Peak
2	7386.000	48.27	74.00	-25.73	57.49	-9.22	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

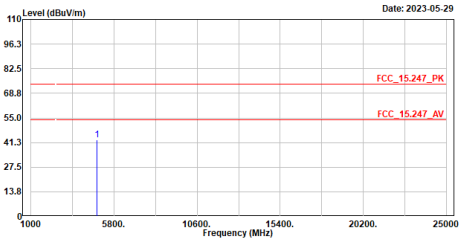
Site :HY-CB01
Condition :3m ,HORIZONTAL
Mode :TX_n20_2412MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	4824.000	41.36	74.00	-32.64	54.69	-13.33	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

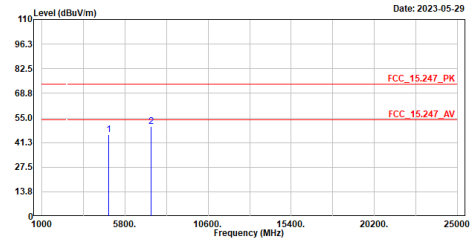
Site :HY-CB01
Condition :3m ,VERTICAL
Mode :TX_n20_2412MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	4824.000	42.69	74.00	-31.31	56.02	-13.33	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

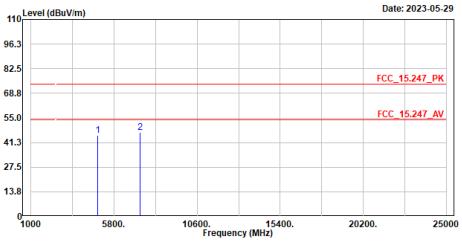
Site :HY-CB01
Condition :3m ,HORIZONTAL
Mode :TX_n20_2437MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	4874.000	45.86	74.00	-28.14	59.20	-13.34	Peak
2	7311.000	50.40	74.00	-23.60	59.62	-9.22	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

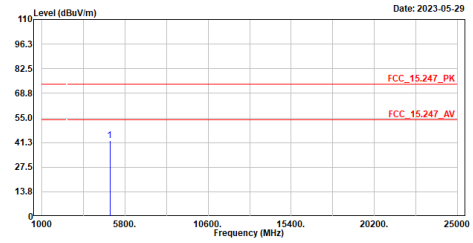
Site :HY-CB01
Condition :3m ,VERTICAL
Mode :TX_n20_2437MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	4874.000	45.07	74.00	-28.93	58.41	-13.34	Peak
2	7311.000	46.73	74.00	-27.27	55.95	-9.22	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

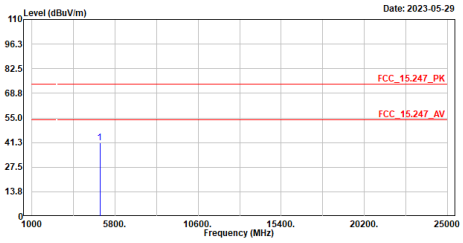
Site :HY-CB01
Condition :3m ,HORIZONTAL
Mode :TX_n20_2462MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	4924.000	42.33	74.00	-31.67	55.68	-13.35	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

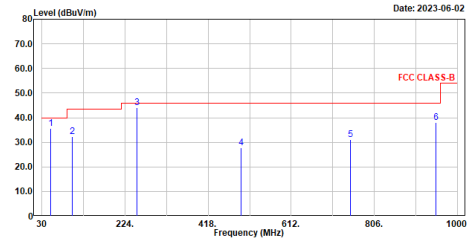
Site :HY-CB01
Condition :3m ,VERTICAL
Mode :TX_n20_2462MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	4924.000	41.19	74.00	-32.81	54.54	-13.35	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

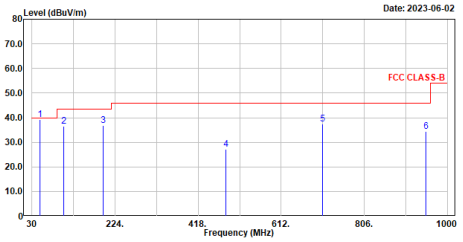
Site :HY-CB01
Condition :3m ,HORIZONTAL
Mode :TX_n20_2437MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	50.370	35.54	40.00	-4.46	59.22	-23.68	QP
2	100.810	32.38	43.50	-11.12	60.72	-28.34	QP
3	251.160	44.10	46.00	-1.90	69.16	-25.06	QP
4	495.600	27.75	46.00	-18.25	46.12	-18.37	QP
5	750.710	31.06	46.00	-14.94	44.63	-13.57	QP
6	950.530	37.91	46.00	-8.09	49.29	-11.38	QP

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

Site :HY-CB01
Condition :3m ,VERTICAL
Mode :TX_n20_2437MHz
TEST BY :Caster



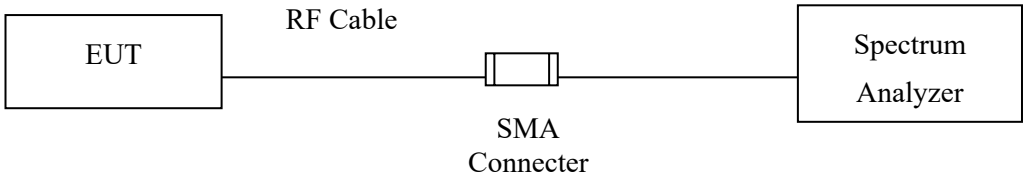
No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	49.400	39.28	40.00	-0.72	62.97	-23.69	QP
2	103.720	36.55	43.50	-6.95	64.42	-27.87	QP
3	196.840	36.92	43.50	-6.58	63.60	-26.68	QP
4	482.990	27.25	46.00	-18.75	45.98	-18.73	QP
5	708.030	37.43	46.00	-8.57	51.82	-14.39	QP
6	950.530	34.34	46.00	-11.66	45.72	-11.38	QP

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

4. Band Edge

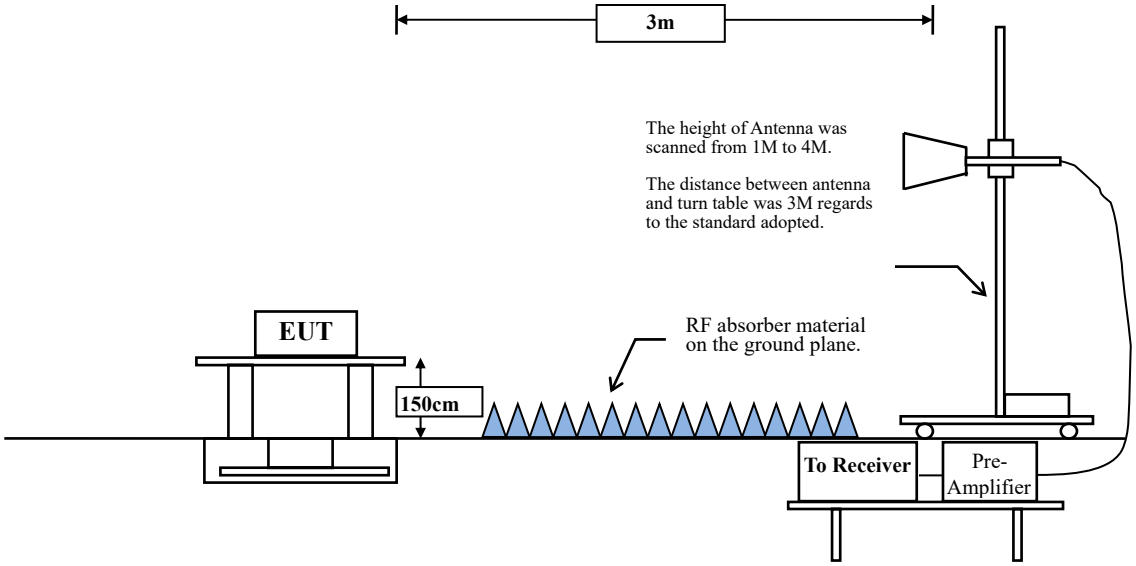
4.1. Test Setup

RF Conducted Measurement



RF Radiated Measurement:

Above 1 GHz



4.2. Limits

According to FCC Section 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 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, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

4.3. Test Procedure

The EUT was setup according to ANSI C63.10, 2013 and tested according to C63.10:2013 Section 11.12.1 for compliance to FCC 47CFR 15.247 requirements.
The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2013 on radiated measurement.

RBW and VBW Parameter setting:
According to C63.10 Section 11.12.2.4 Peak measurement procedure.
RBW = as specified in Table 1.
VBW ≥ 3 x RBW.

Table 1 —RBW as a function of frequency

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
> 1000 MHz	1 MHz

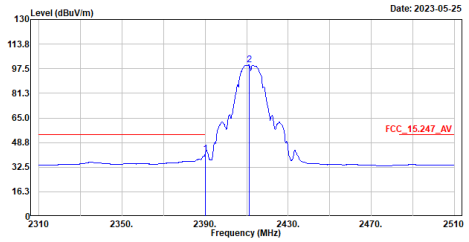
According to C63.10 Section 11.12.2.5 Average measurement procedure.
RBW = 1 MHz.
VBW = 10 Hz, when duty cycle ≥ 98 %
VBW ≥ 1/T, when duty cycle < 98 %
(T refers to the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.)

2.4GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
802.11 b	100.00	24.8000	40	10
802.11 g	97.94	1.4280	700	1000
802.11 n20	95.87	2.7840	359	500

Note: Duty Cycle Refer to Section 5.

4.4. Test Result of Band Edge

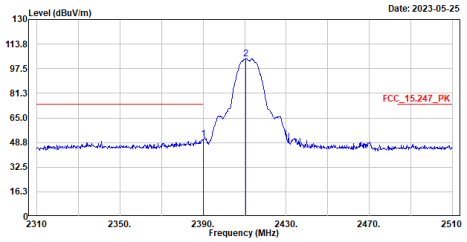
Site :HY-CB01
Condition :3m ,Horizontal
Mode :TX_b_2412MHz
TEST BY :Sam



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2390.000	41.20	54.00	-12.80	35.53	5.67	Average
2	2411.200	100.03	------	------	94.41	5.62	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

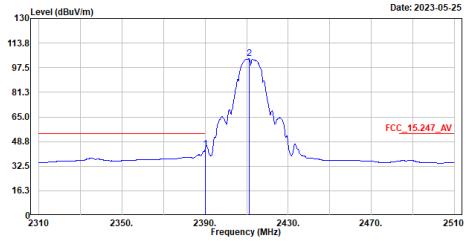
Site :HY-CB01
Condition :3m ,Horizontal
Mode :TX_b_2412MHz
TEST BY :Sam



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2390.000	51.03	74.00	-22.97	45.36	5.67	Peak
2	2410.600	104.13	------	------	98.51	5.62	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

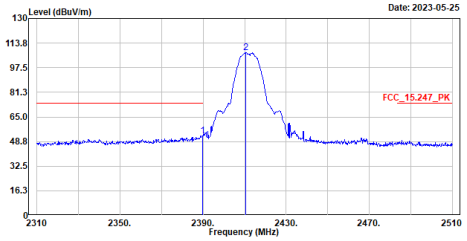
Site :HY-CB01
Condition :3m ,Vertical
Mode :TX_b_2412MHz
TEST BY :Sam



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2390.000	43.47	54.00	-10.53	37.80	5.67	Average
2	2411.200	103.35	------	------	97.73	5.62	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

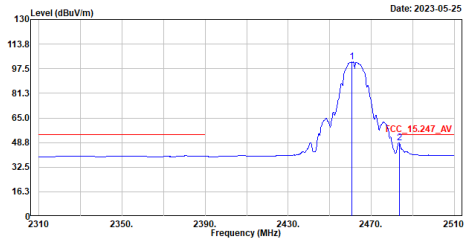
Site :HY-CB01
Condition :3m ,Vertical
Mode :TX_b_2412MHz
TEST BY :Sam



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2389.800	52.52	74.00	-21.48	46.85	5.67	Peak
2	2410.600	107.50	------	------	101.88	5.62	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

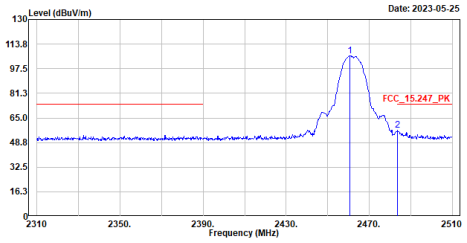
Site :HY-CB01
Condition :3m ,Horizontal
Mode :TX_b_2462MHz
TEST BY :Sam



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2460.800	101.81	------	------	96.21	5.60	Average
2	2483.600	48.37	54.00	-5.63	42.71	5.66	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

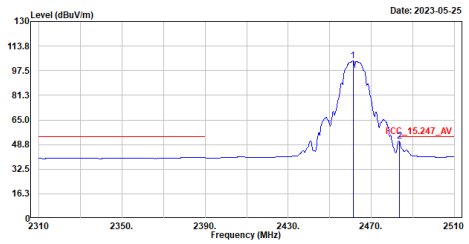
Site :HY-CB01
Condition :3m ,Horizontal
Mode :TX_b_2462MHz
TEST BY :Sam



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2460.600	106.15	------	------	100.55	5.60	Peak
2	2483.600	56.85	74.00	-17.15	51.19	5.66	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

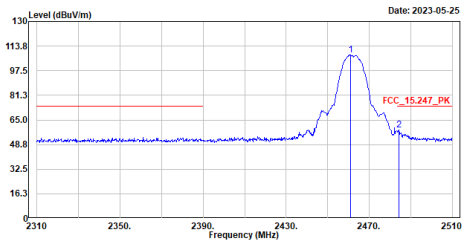
Site :HY-CB01
Condition :3m ,Vertical
Mode :TX_b_2462MHz
TEST BY :Sam



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2461.200	103.97	------	------	98.37	5.60	Average
2	2483.600	50.77	54.00	-3.23	45.11	5.66	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

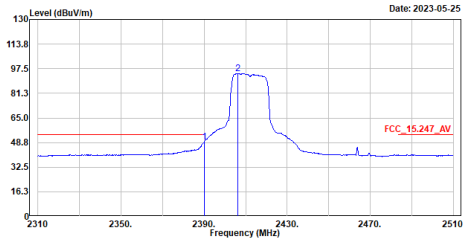
Site :HY-CB01
Condition :3m ,Vertical
Mode :TX_b_2462MHz
TEST BY :Sam



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2461.000	107.88	------	------	102.28	5.60	Peak
2	2484.200	58.49	74.00	-15.51	52.83	5.66	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

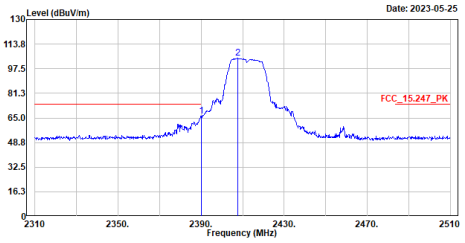
Site :HY-CB01
Condition :3m ,HORIZONTAL
Mode :TX_g_2412MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2390.000	49.25	54.00	-4.75	43.58	5.67	Average
2	2406.200	94.36	------	------	88.73	5.63	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

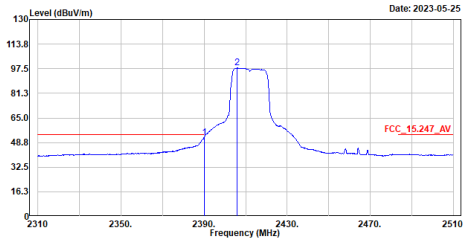
Site :HY-CB01
Condition :3m ,HORIZONTAL
Mode :TX_g_2412MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2390.000	66.29	74.00	-7.71	60.62	5.67	Peak
2	2407.800	104.38	------	------	98.76	5.62	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

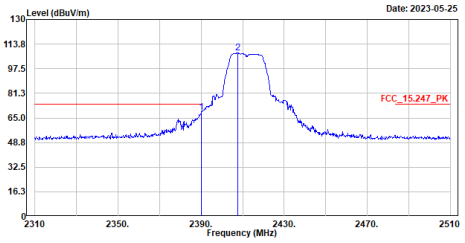
Site :HY-CB01
Condition :3m ,Vertical
Mode :TX_g_2412MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2390.000	52.21	54.00	-1.79	46.54	5.67	Average
2	2406.000	97.96	------	------	92.33	5.63	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

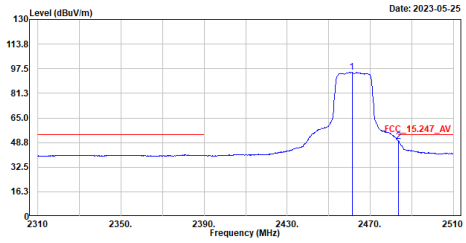
Site :HY-CB01
Condition :3m ,Vertical
Mode :TX_g_2412MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2390.000	68.77	74.00	-5.23	63.10	5.67	Peak
2	2407.800	107.87	------	------	102.25	5.62	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

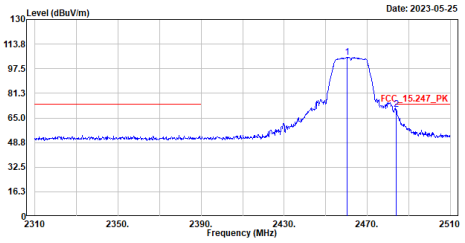
Site :HY-CB01
Condition :3m ,HORIZONTAL
Mode :TX_g_2462MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2461.200	95.12	------	------	89.52	5.60	Average
2	2483.600	49.65	54.00	-4.35	43.99	5.66	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

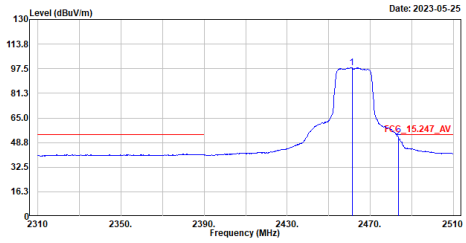
Site :HY-CB01
Condition :3m ,HORIZONTAL
Mode :TX_g_2462MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2460.400	105.16	------	------	99.56	5.60	Peak
2	2484.000	70.76	74.00	-3.24	65.10	5.66	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

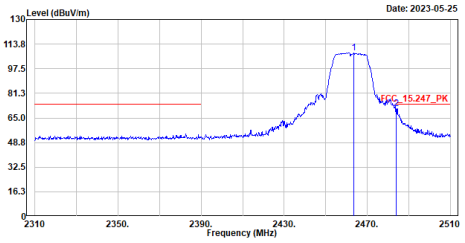
Site :HY-CB01
Condition :3m ,VERTICAL
Mode :TX_g_2462MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2461.200	98.15	------	------	92.55	5.60	Average
2	2483.600	52.02	54.00	-1.98	46.36	5.66	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

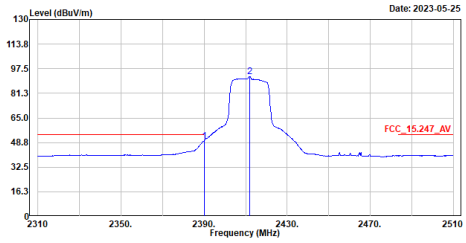
Site :HY-CB01
Condition :3m ,VERTICAL
Mode :TX_g_2462MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2463.400	107.88	------	------	102.27	5.61	Peak
2	2483.800	71.26	74.00	-2.74	65.60	5.66	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

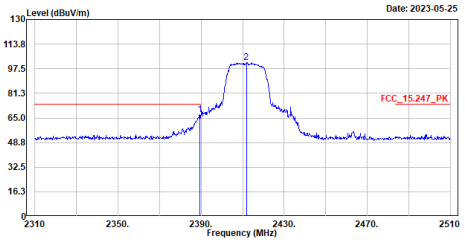
Site :HY-CB01
Condition :3m ,HORIZONTAL
Mode :TX_n20_2412MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2390.000	49.78	54.00	-4.22	44.11	5.67	Average
2	2412.000	92.36	------	------	86.74	5.62	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

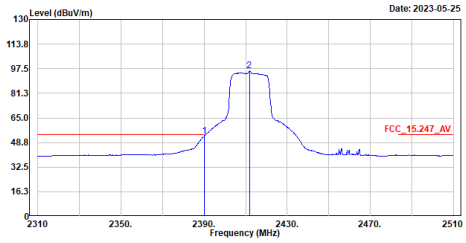
Site :HY-CB01
Condition :3m ,HORIZONTAL
Mode :TX_n20_2412MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2389.400	66.99	74.00	-7.01	61.32	5.67	Peak
2	2411.800	101.51	------	------	95.89	5.62	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

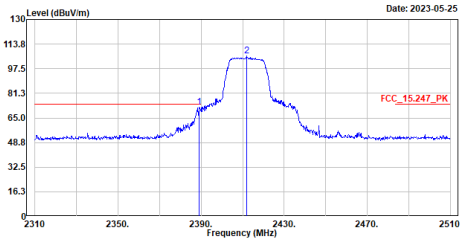
Site :HY-CB01
Condition :3m ,Vertical
Mode :TX_n20_2412MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2390.000	52.99	54.00	-1.01	47.32	5.67	Average
2	2411.800	95.95	------	------	90.33	5.62	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

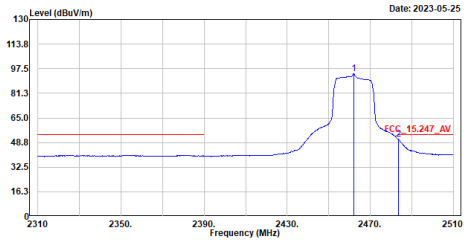
Site :HY-CB01
Condition :3m ,Vertical
Mode :TX_n20_2412MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2389.200	71.98	74.00	-2.02	66.31	5.67	Peak
2	2412.000	105.88	------	------	100.26	5.62	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

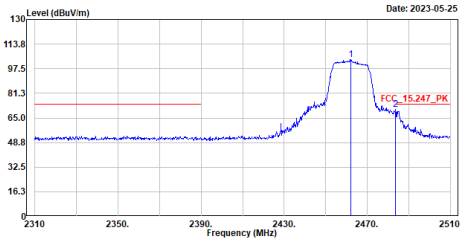
Site :HY-CB01
Condition :3m ,HORIZONTAL
Mode :TX_n20_2462MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2462.000	94.03	------	------	88.43	5.60	Average
2	2483.600	50.91	54.00	-3.09	45.25	5.66	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

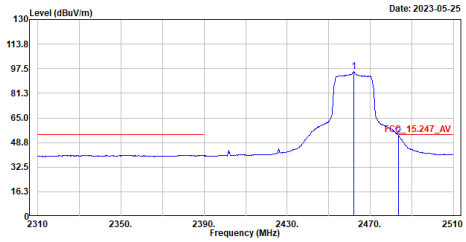
Site :HY-CB01
Condition :3m ,HORIZONTAL
Mode :TX_n20_2462MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2462.200	103.38	------	------	97.78	5.60	Peak
2	2483.600	70.66	74.00	-3.34	65.00	5.66	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

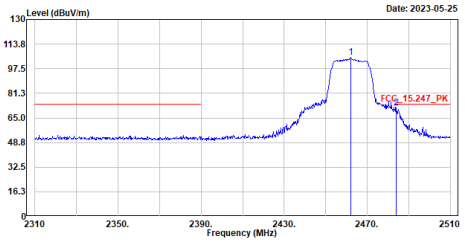
Site :HY-CB01
Condition :3m ,VERTICAL
Mode :TX_n20_2462MHz
TEST BY :Caster



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2462.000	95.45	------	------	89.85	5.60	Average
2	2483.600	53.15	54.00	-0.85	47.49	5.66	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

Site :HY-CB01
Condition :3m ,VERTICAL
Mode :TX_n20_2462MHz
TEST BY :Caster

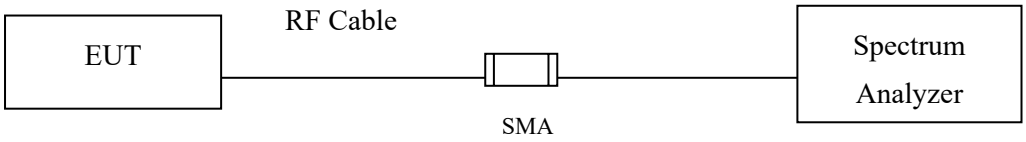


No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2462.000	105.20	------	------	99.60	5.60	Peak
2	2483.800	71.84	74.00	-2.16	66.18	5.66	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

5. Duty Cycle

5.1. Test Setup



5.2. Test Procedure

The EUT was setup according to ANSI C63.10 2013; tested according to ANSI C63.10 2013 for compliance to FCC 47CFR 15.247 requirements.

5.3. Test Result of Duty Cycle

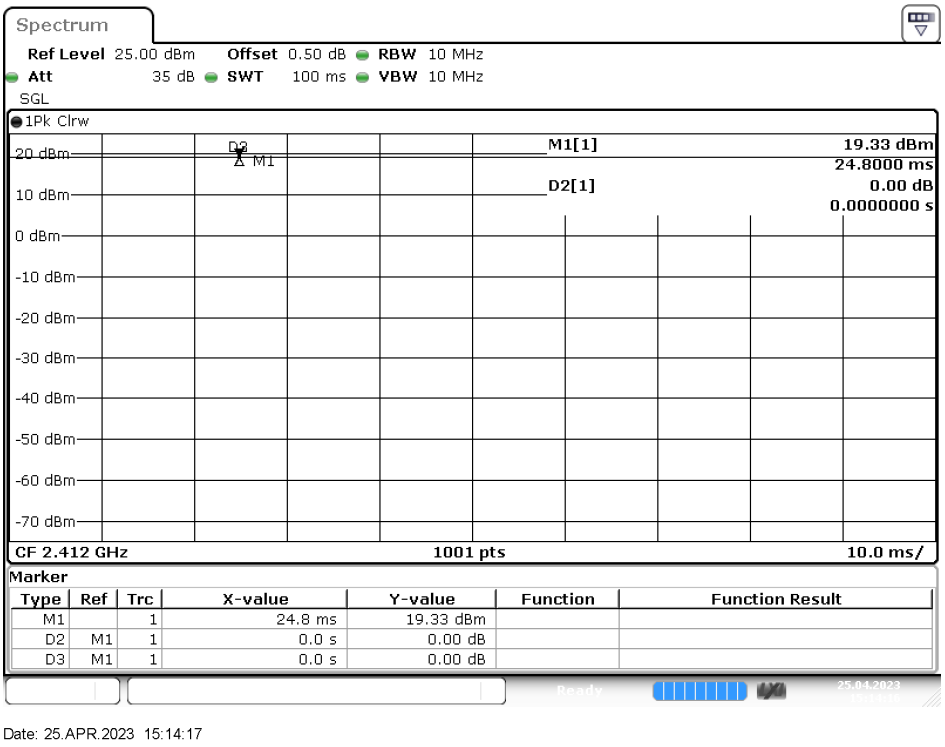
Product : xPico® 200 Series Wi-Fi® IoT Gateway Module
Test Item : Duty Cycle
Test Mode : Transmit

Duty Cycle Formula:
Duty Cycle = Ton / (Ton + Toff)
Duty Factor = 10 Log (1/Duty Cycle)

Results:

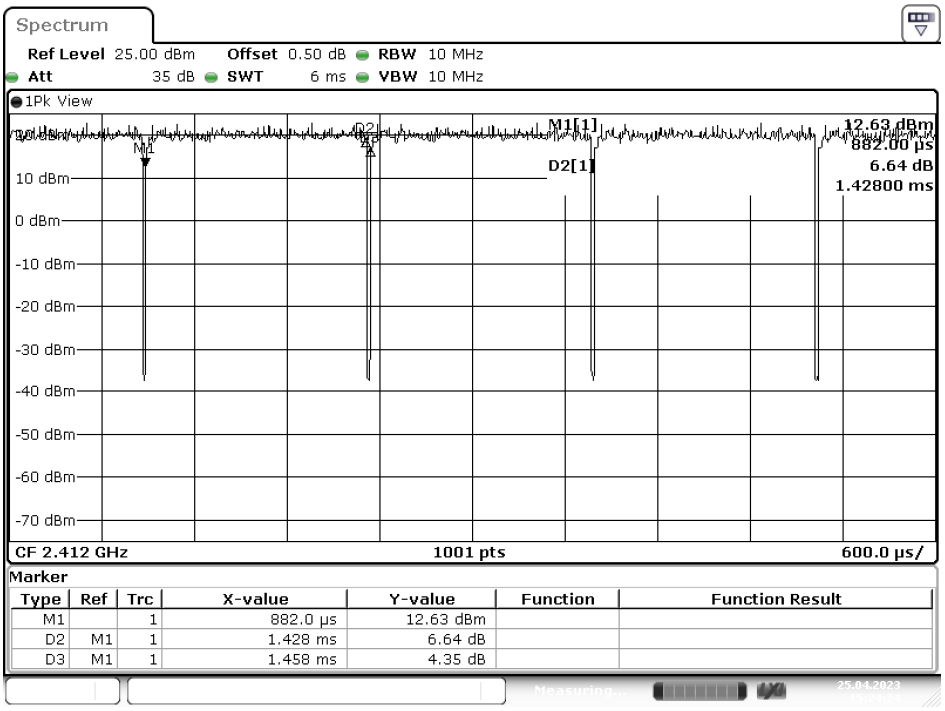
2.4 GHz band	Ton (ms)	Ton + Toff (ms)	Duty Cycle (%)	Duty Factor (dB)
802.11 b	24.8000	24.8000	100.00	0.00
802.11 g	1.4280	1.4580	97.94	0.09
802.11 n20	2.7840	2.9040	95.87	0.18

802.11b



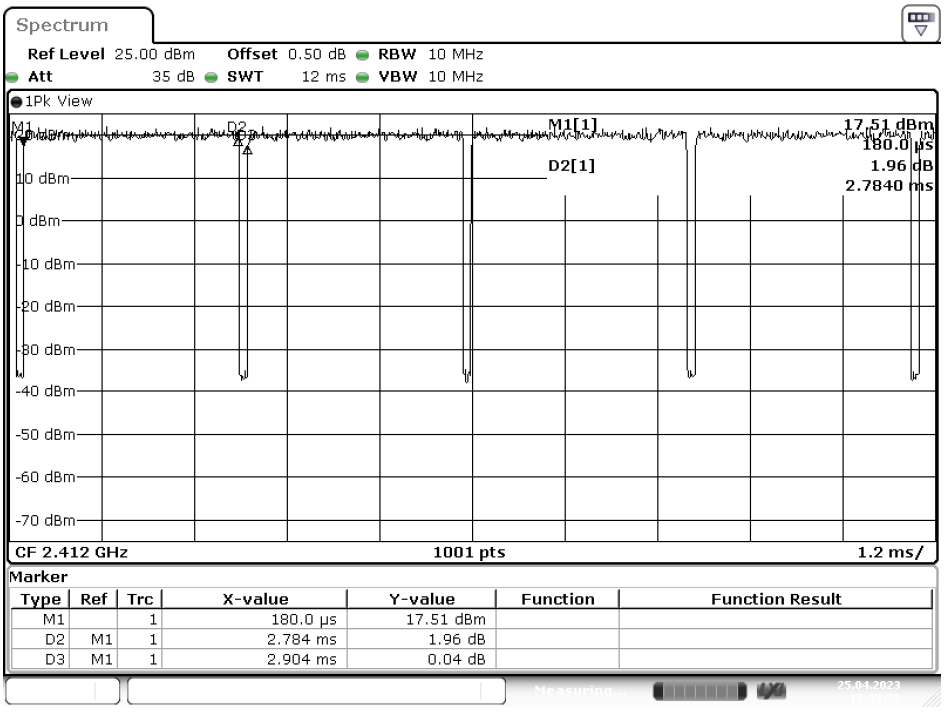
Date: 25.APR.2023 15:14:17

802.11g



Date: 25.APR.2023 15:24:24

802.11n20



Date: 25.APR.2023 15:35:35