FCC PART 15.247
TEST REPORT

For

Altenergy Power System Inc.

Building 2, No. 522, Yatai Road, Jiaxing, China 314050

FCC ID: 2AFGR-APSC3

Report Type:	Product Type:
Original Report	Aps-c3

Report Number:	RSHA231229004-00B
Report Date:	2024-02-18
Reviewed By:	Bard Liu
Approved By:	Kyle Xu
Prepared By:	Bay Area Compliance Laboratories Corp. (Kunshan) No.248 Chenghu Road, Kunshan, Jiangsu Province, China Tel: +86-512-86175000 Fax: +86-512-88934268 www.baclcorp.com.cn

TABLE OF CONTENTS

REPORT REVISION HISTORY

Number of Revisions	Report No.	Version	Issue Date	Description
0	RSHA231229004-00B	R1V1	2024-02-18	Initial Release

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant:	Altenergy Power System Inc.
Product Name:	Aps-c3
Tested Model:	Aps-c3-02uc
Power Supply:	DC 3.3V
Maximum Conducted Peak Output Power:	2.4G Wi-Fi: 802.11b: 18.01dBm 802.11g: 21.76dBm 802.11n20: 21.04dBm BLE(1Mbps): 2.64dBm BLE(2Mbps): 2.25dBm
RF Function:	2.4G Wi-Fi, BLE
Operating Band/Frequency:	2.4G Wi-Fi: 2412-2462 MHz(802.11b/g/n20) BLE(1Mbps)/BLE(2Mbps): 2402-2480 MHz
Channel Number:	2.4G Wi-Fi: 11(802.11b/g/n20) BLE(1Mbps)/BLE(2Mbps): 40
Channel Separation:	2.4G Wi-Fi: 5 MHz, BLE(1Mbps)/BLE(2Mbps): 2 MHz
Modulation Type:	2.4G Wi-Fi: OFDM,DSSS BLE(1Mbps)/BLE(2Mbps): GFSK
★Maximum Antenna Gain:	2.4G Wi-Fi: 2.7dBi BLE(1Mbps)/BLE(2Mbps): 2.7dBi

Note: The maximum antenna gain is provided by the applicant.

All measurement and test data in this report was gathered from production sample serial number: RSHA231229004-1 (Assigned by the BACL (Kunshan) The EUT supplied by the applicant was received on 2024-01-02.)

Objective

This report is prepared for *Altenergy Power System Inc.* in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commissions rules.

The tests were performed in order to determine Compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices and FCC KDB 558074 D01 15.247 Meas Guidance v05r02.

Measurement Uncertainty

Item		Uncertainty
AC Power Lines Conducted Emissions		3.19dB
RF conducted test with spectrum		0.9dB
RF Output Power with Power meter		0.5dB
Radiated emission	9 kHz~150 kHz	3.8dB
	150 kHz~30 MHz	3.4dB
	30MHz~1GHz	4.61dB
	1GHz~6GHz	4.52dB
	6GHz~18GHz	5.39dB
	18GHz~40GHz	5.65dB
Occupied Bandwidth		0.5kHz
Temperature		1.0℃
Humidity		6%

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the No.248 Chenghu Road, Kunshan, Jiangsu Province, China.

Bay Area Compliance Laboratories Corp. (Kunshan) is accredited in accordance with ISO/IEC 17025:2017 by NVLAP (Lab code: 600338-0), and the lab has been recognized as the FCC accredited lab under the KDB 974614 D01, the FCC Designation No. : CN5055.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

Test channel list is as below:

For 802.11b, 802.11g and 802.11n-HT20 mode, EUT was tested with Channel 1, 6 and 11.

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

For BLE mode, EUT was tested with channel 0, 19 and 39.

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	20	2442
1	2404	…	…
…	…	…	…
…	…	…	…
18	2438	38	2478
19	2440	39	2480

Equipment Modifications

No modification was made to the EUT tested.

EUT Exercise Software

RF test tool: EspRFTestTool

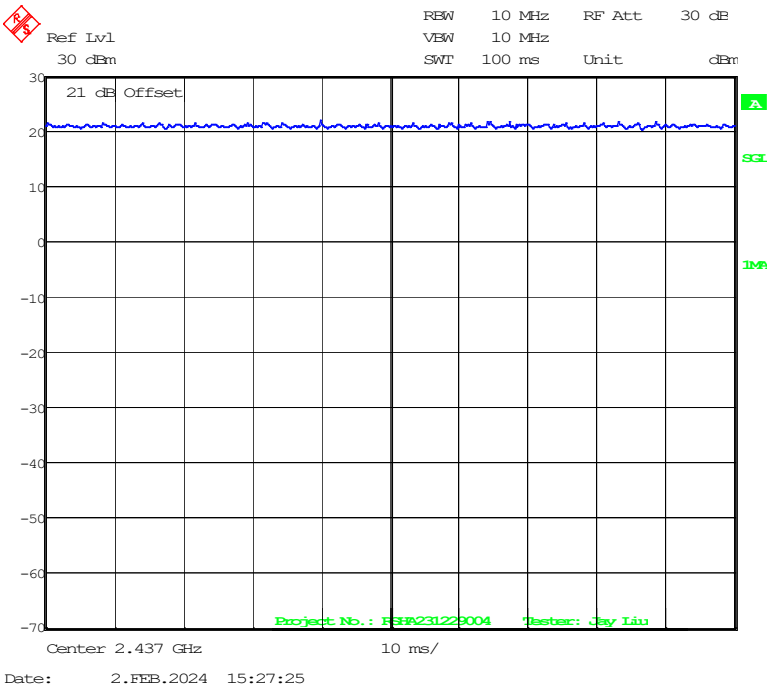
Pre-scan with all the data rates, and the worst case was performed as below:

Mode	Data Rate	Channel	★Power Level setting
802.11b	1 Mbps	2412	16
		2437	16
		2462	16
802.11g	6 Mbps	2412	24
		2437	24
		2462	24
802.11n-HT20	MCS0	2412	24
		2437	24
		2462	24
BLE	1Mbps	Low	Default
		Middle	Default
		High	Default
	2Mbps	Low	Default
		Middle	Default
		High	Default

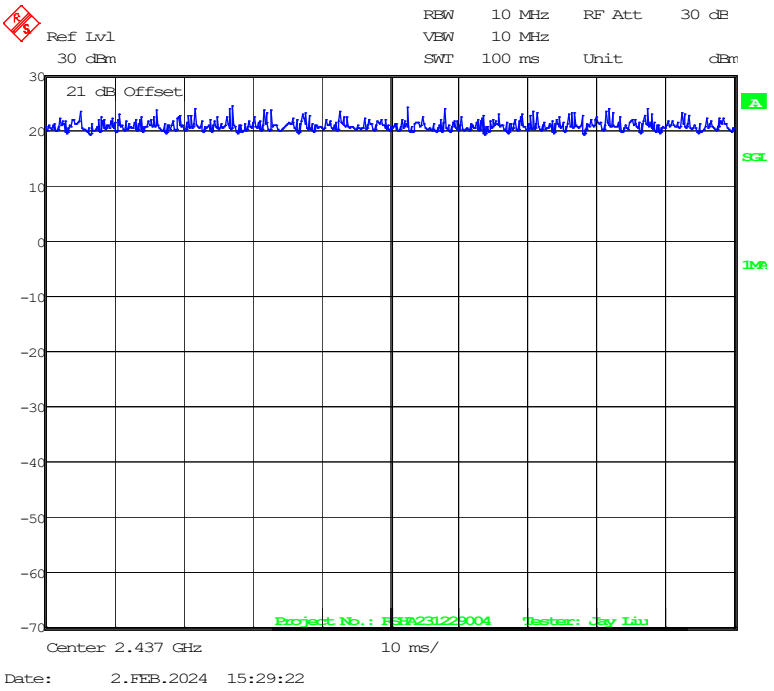
Note: The power level setting was declared by the applicant.

Duty Cycle:

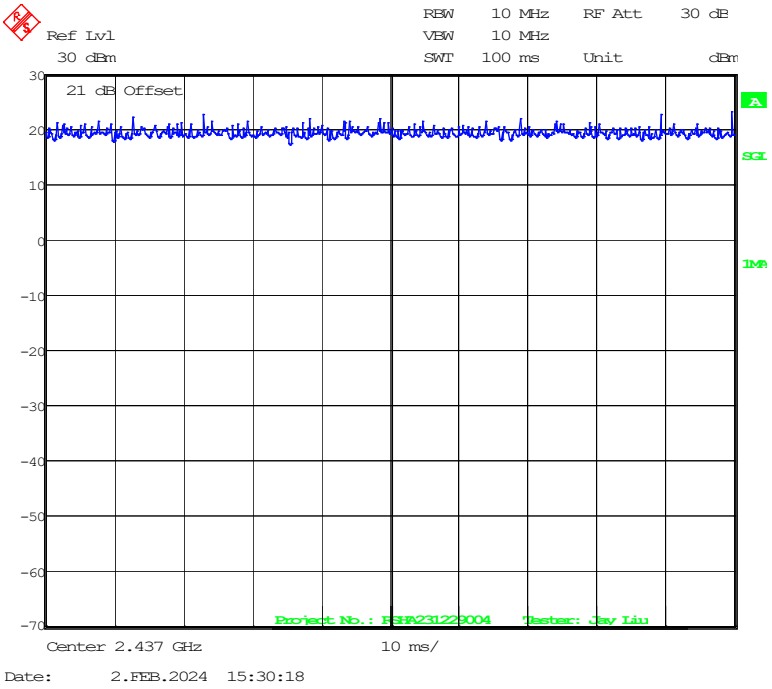
802.11b Mode Middle Channel



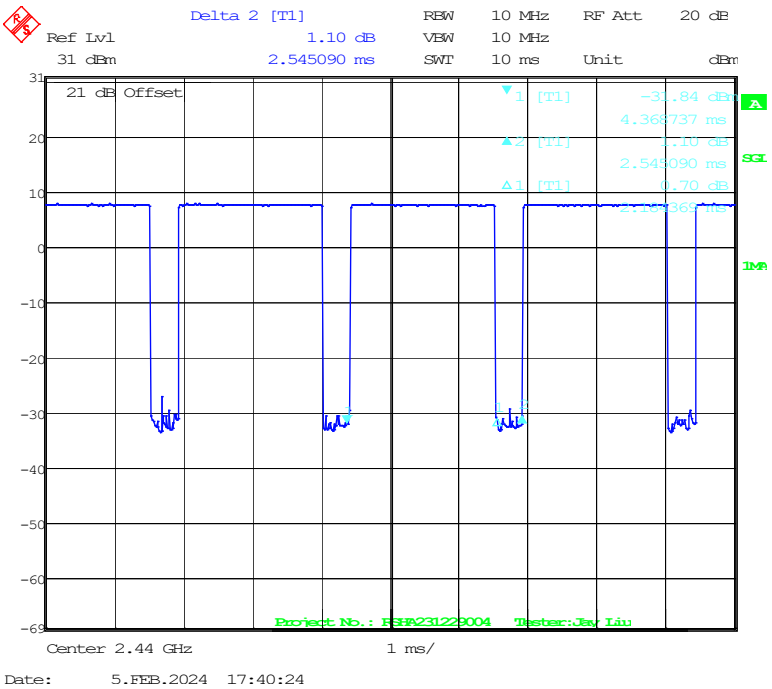
802.11g Mode Middle Channel



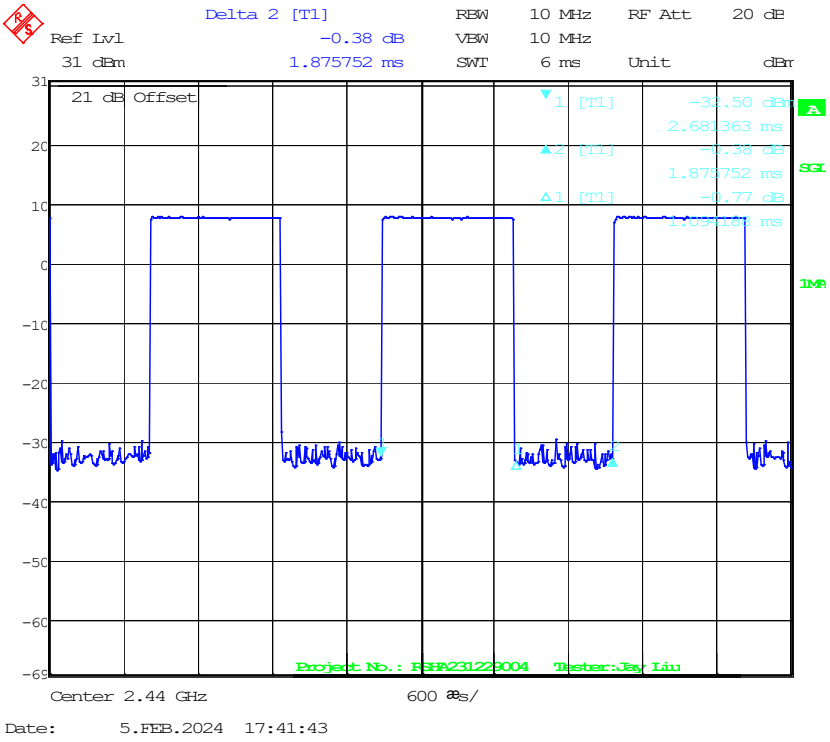
802.11n-HT20 Mode Middle Channel



BLE(1Mbps) Mode Middle Channel



BLE(2Mbps) Mode Middle Channel



Mode	Duty Cycle (%)	T_{on} (ms)	T_{on+off} (ms)	10log(1/x)
802.11b	100	100	100	0
802.11g	100	100	100	0
802.11n-HT20	100	100	100	0
BLE(1Mbps)	85.49	2.18	2.55	0.68
BLE(2Mbps)	57.98	1.09	1.88	2.37

Note: "x" means the Duty Cycle.

Support Equipment List and Details

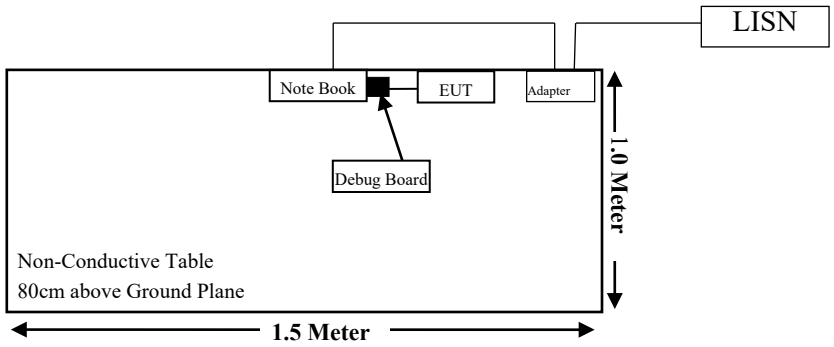
Manufacturer	Description	Model	Serial Number
/	Debug Board	/	/
Lenovo	Notebook	Thinkpad T470S	83ECAF1B-E1AF-4053-95DE-2E51B8D188D7
Power on Tools Co.,Ltd	Adapter	DA-00051000EU001	/

External I/O Cable

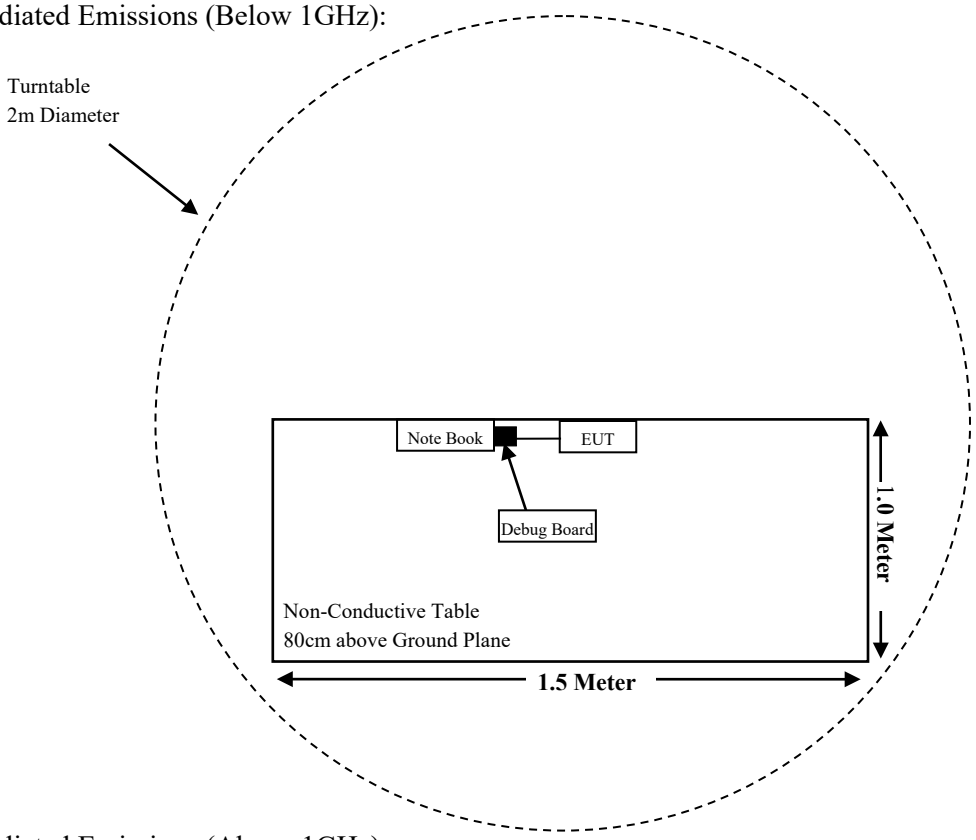
Cable Description	Length (m)	From Port	To
USB Cable	2.0	Debug Board	Notebook
Data cable	0.2	EUT	Debug Board

Block Diagram of Radiation Test Setup

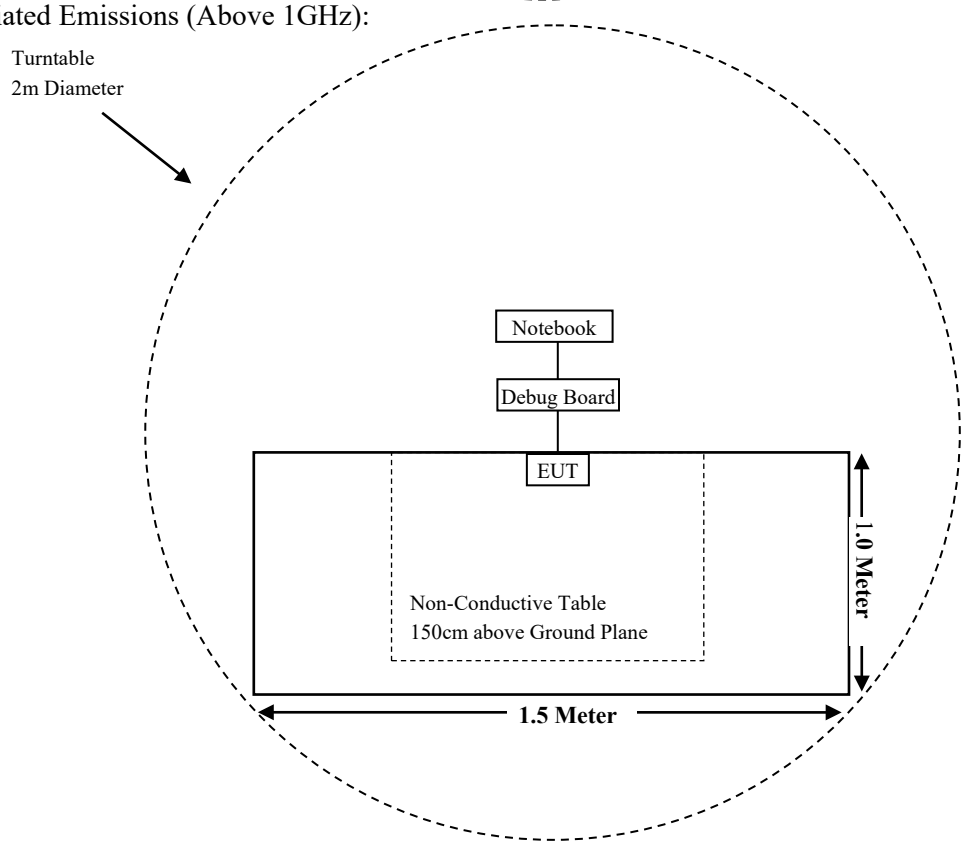
For Conducted Emissions:



For Radiated Emissions (Below 1GHz):



For Radiated Emissions (Above 1GHz):



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.247 (i), §1.1307 (b)(3) &§2.1091	RF Exposure	Compliant
§15.203	Antenna Requirement	Compliant
§15.207 (a)	AC Line Conducted Emissions	Compliant
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliant
§15.247 (a)(2)	6 dB Emission Bandwidth	Compliant
§15.247(b)(3)	Maximum Conducted Output Power	Compliant
§15.247(d)	Band Edge	Compliant
§15.247(e)	Power Spectral Density	Compliant

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test(Chamber 3#)					
Rohde & Schwarz	EMI Test Receiver	ESR3	102454	2023-05-19	2024-05-18
Sunol Sciences	Hybrid Antenna	JB3	A060217	2023-12-14	2024-12-13
Narda	6 dB Attenuator	773-6	10690812-2-2	2023-12-14	2024-12-13
Sonoma Instrument	Amplifier	310N	185700	2023-05-23	2024-05-22
MICRO-COAX	Coaxial Cable	Cable-18	018	2023-05-23	2024-05-22
MICRO-COAX	Coaxial Cable	Cable-19	019	2023-05-23	2024-05-22
MICRO-COAX	Coaxial Cable	Cable-20	020	2023-05-23	2024-05-22
Audix	Test Software	e3	V9	N/A	N/A
ETS-LINDGREN	Loop Antenna	6512	108100	2023-11-09	2024-11-08
Radiated Emission Test(Chamber 2#)					
Rohde & Schwarz	EMI Test Receiver	ESU40	100207/040	2023-05-19	2024-05-18
ETS-LINDGREN	Horn Antenna	3115	9311-4159	2023-12-02	2024-12-01
ETS-LINDGREN	Horn Antenna	3116	2516	2023-12-08	2024-12-07
A.H.Systems,inc	Amplifier	2641-1 （PAM-0118P）	512	2023-05-23	2024-05-22
EM Electronics Corporation	Amplifier	EM18G40G	060726	2023-05-23	2024-05-22
MICRO-TRONICS	Band Reject Filter	BRM50702	G024	2023-08-05	2024-08-04
Narda	Attenuator	10dB	010	2023-08-15	2024-08-14
Rohde & Schwarz	Auto test Software	EMC32	100361	N/A	N/A
MICRO-COAX	Coaxial Cable	Cable-11	011	2023-05-23	2024-05-22
MICRO-COAX	Coaxial Cable	Cable-12	012	2023-05-23	2024-05-22
MICRO-COAX	Coaxial Cable	Cable-13	013	2023-05-23	2024-05-22
RF Conducted Test					
Rohde & Schwarz	EMI Test Receiver	ESIB26	100146	2023-05-23	2024-05-22
Rohde & Schwarz	Signal Analyzer	FSIQ26	100048/027	2023-05-23	2024-05-22
Narda	Attenuator	20dB	020	2023-08-15	2024-08-14
Anritsu	Power Sensor	MA24418A	12621	2023-09-27	2024-09-26
Conducted Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESR	1316.3003K03 -101746-zn	2023-07-28	2024-07-27
Rohde & Schwarz	LISN	ENV216	101115	2023-05-23	2024-05-22
Audix	Test Software	e3	V9	N/A	N/A
Rohde & Schwarz	Pulse limiter	ESH3-Z2	100552	2023-05-23	2024-05-22
MICRO-COAX	Coaxial Cable	Cable-15	015	2023-05-23	2024-05-22

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC§15.247 (i), §1.1307 (b) (3) &§2.1091 – RF EXPOSURE

Applicable Standard

According to subpart 15.247 (i) and subpart 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

According to KDB 447498 D04 Interim General RF Exposure Guidance

MPE-Based Exemption:

General frequency and separation-distance dependent MPE-based effective radiated power(ERP) thresholds are in Table B.1 [Table 1 of § 1.1307(b)(1)(i)(C)] to support an exemptionfrom further evaluation from 300 kHz through 100 GHz.

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	1,920 R^2.
1.34-30	3,450 R^2/f^2.
30-300	3.83 R^2.
300-1,500	0.0128 R^2f.
1,500-100,000	19.2R^2.

R is the minimum separation distance in meters
f = frequency in MHz

Result

Mode	Frequency (MHz)	Antenna Gain		★Tune up conducted Power (dBm)	ERP		Evaluation Distance (m)	ERP Limit (W)
		(dBi)	(dBd)		(dBm)	(W)		
Wi-Fi	2412-2462	2.7	0.55	22.50	23.05	0.202	0.2	0.768
BLE	2402-2480	2.7	0.55	3.00	3.55	0.002	0.2	0.768

Note: 1. Wi-Fi and Bluetooth cannot transmit simultaneous
2. For the above tune-up output power were all declared by the manufacturer.

To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliance

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine Compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.
c. Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT has a Dipole antenna for 2.4G Wi-Fi and BLE which the antenna gain is 2.7 dBi use a unique type of connector to attach to the EUT, fulfill the requirement of this section. Please refer to the EUT photos.

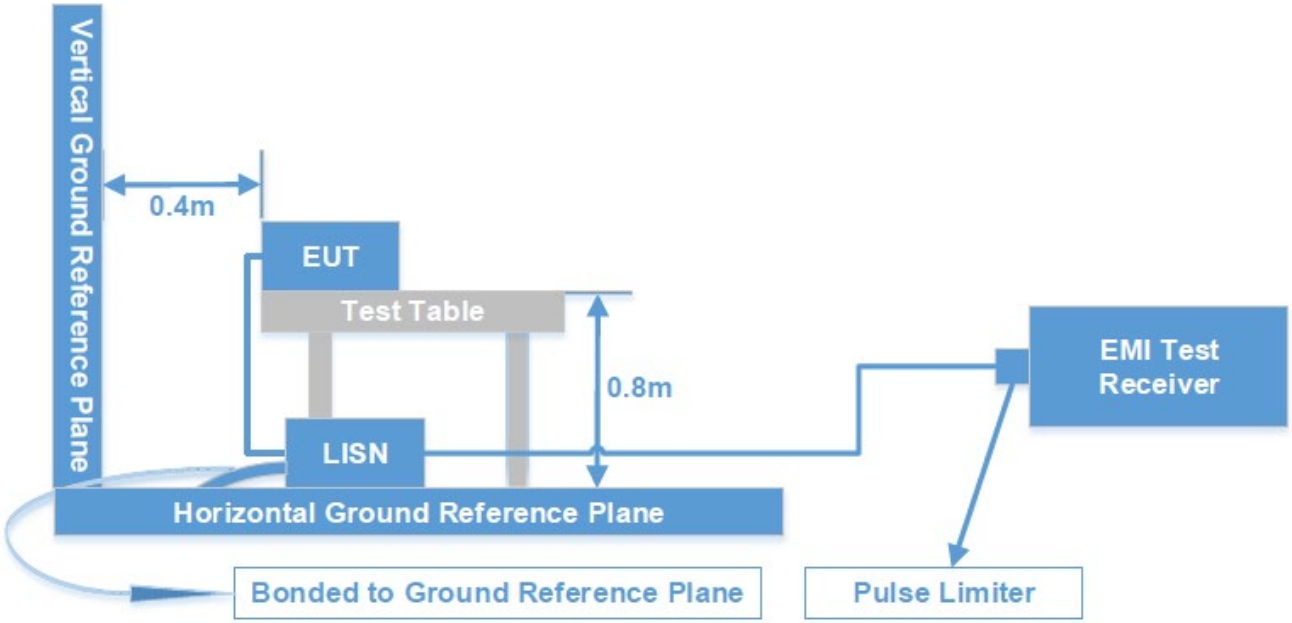
Result: Compliant.

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207(a)

Test System Setup



The measurement procedure of EUT setup is according with ANSI C63.10-2013. The related limit was specified in FCC Part 15.207.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW	VBW
150 kHz - 30 MHz	9 kHz	30 kHz

Test Procedure

ANSI C63.10-2013 clause 6.2

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

If the maximum peak value of the emissions is below the average limit, the QP value and average value measurement will not need to be performed and only record the maximum peak measured value to meet the requirements.

Level & Over Limit Calculation

The Level is calculated by adding LISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation from the Meter Reading. The basic equation is as follows:

Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)
Level (dBμV) = Read level (dBμV) + Factor (dB)

The "**Over Limit**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over Limit of 7 dB means the emission is 7 dB above the limit. The equation for Over Limit calculation is as follows:

Over Limit (dB) = Level (dBμV) - Limit (dBμV)

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.207.

Test Data

Environmental Conditions & Test Information

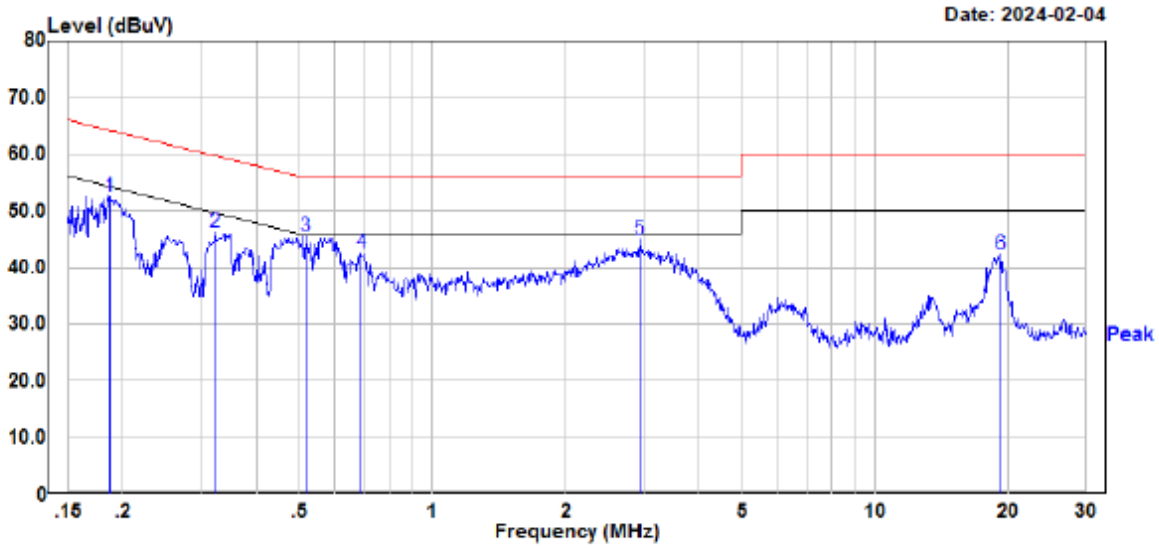
Temperature:	15.1°C
Relative Humidity:	50 %
ATM Pressure:	102.1 kPa
Test Date:	2024-02-04
Test Engineer:	Aaron Sun

Test Result: Compliant.

For Wi-Fi Mode:

EUT operation mode: Transmitting in maximum output power mode 802.11g mode Low channel

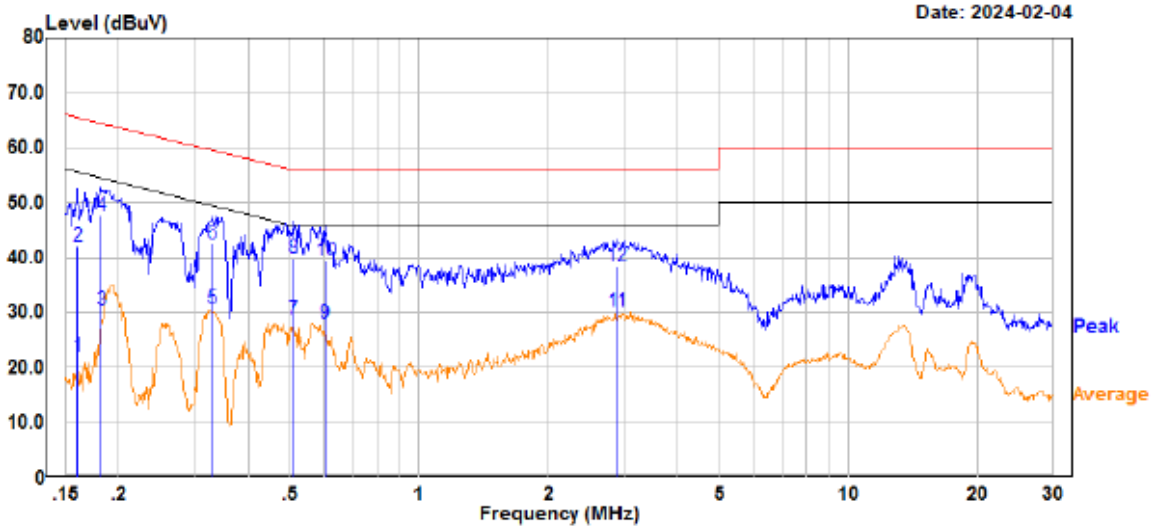
AC 120V/60 Hz, Line




```
Site                : CE
Condition           : FCC PART 15.247
                    : DET:Peak
Model               : Aps-c3-02uc
Phase               : L
Voltage             : 120V/60HZ
Mode                : Transmitting in 802.11g mode low channel
Test Equipment      : ENV216,ESR
Temperature         : 15.1℃
Humidity            : 50%
Atmospheric pressure: 102.1kPa
Test Engineer       : Aaron
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.187	32.45	19.93	52.38	64.18	-11.80	Peak
2	0.323	26.13	20.02	46.15	59.62	-13.47	Peak
3	0.516	25.45	20.10	45.55	56.00	-10.45	Peak
4	0.689	22.58	20.07	42.65	56.00	-13.35	Peak
5	2.940	24.72	20.25	44.97	56.00	-11.03	Peak
6	19.156	22.48	19.82	42.30	60.00	-17.70	Peak

AC 120V/60 Hz, Neutral



Trace: 1

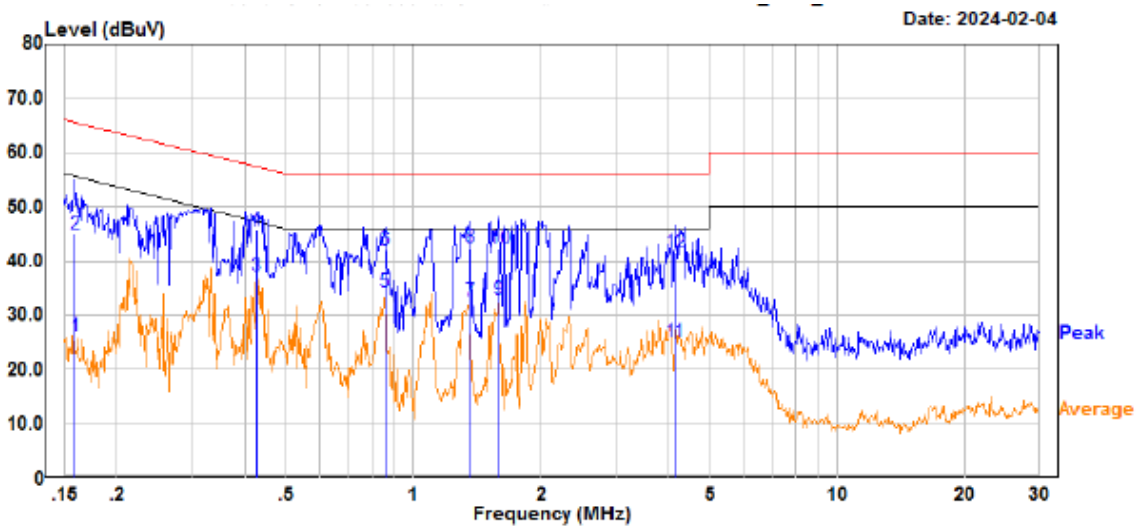
Site : CE
Condition : FCC PART 15.247
: DET:Peak
Model : Aps-c3-02uc
Phase : N
Voltage : 120V/60HZ
Mode : Transmitting in 802.11g mode low channel
Test Equipment : ENV216,ESR
Temperature : 15.1℃
Humidity : 50%
Atmospheric pressure: 102.1kPa
Test Engineer : Aaron

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.160	2.10	19.90	22.00	55.46	-33.46	Average
2	0.160	22.20	19.90	42.10	65.46	-23.36	QP
3	0.182	10.50	19.93	30.43	54.39	-23.96	Average
4	0.182	27.80	19.93	47.73	64.39	-16.66	QP
5	0.330	10.60	20.03	30.63	49.46	-18.83	Average
6	0.330	22.50	20.03	42.53	59.46	-16.93	QP
7	0.509	8.70	20.11	28.81	46.00	-17.19	Average
8	0.509	19.80	20.11	39.91	56.00	-16.09	QP
9	0.606	7.89	20.09	27.98	46.00	-18.02	Average
10	0.606	19.29	20.09	39.38	56.00	-16.62	QP
11	2.882	9.90	20.25	30.15	46.00	-15.85	Average
12	2.882	18.10	20.25	38.35	56.00	-17.65	QP

For BLE Mode:

EUT operation mode: Transmitting in maximum output power mode BLE 1M mode Low channel

AC 120V/60 Hz, Line

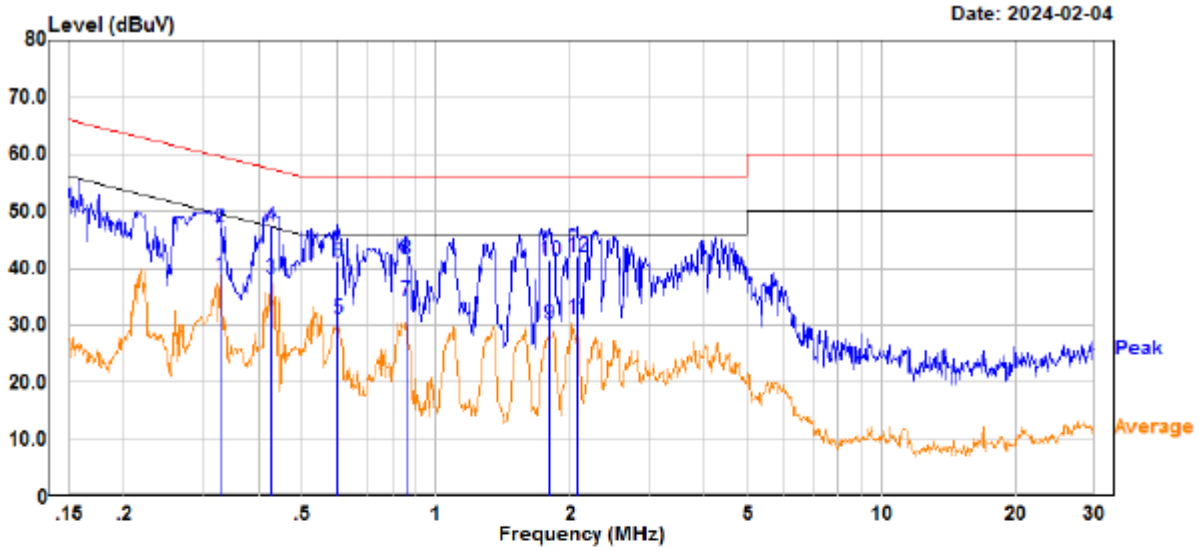


Trace: 1

Site : CE
Condition : FCC PART 15.247
: DET:Peak
Model : Aps-c3-02uc
Phase : L
Voltage : 120V/60HZ
Mode : Transmitting in BLE-1M mode low channel
Test Equipment : ENV216,ESR
Temperature : 15.1℃
Humidity : 50%
Atmospheric pressure: 102.1kPa
Test Engineer : Aaron

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.159	6.20	19.90	26.10	55.50	-29.40	Average
2	0.159	25.00	19.90	44.90	65.50	-20.60	QP
3	0.427	17.20	20.08	37.28	47.31	-10.03	Average
4	0.427	25.50	20.08	45.58	57.31	-11.73	QP
5	0.858	14.39	19.89	34.28	46.00	-11.72	Average
6	0.858	22.29	19.89	42.18	56.00	-13.82	QP
7	1.358	12.70	19.95	32.65	46.00	-13.35	Average
8	1.358	22.70	19.95	42.65	56.00	-13.35	QP
9	1.593	12.71	20.05	32.76	46.00	-13.24	Average
10	1.593	22.21	20.05	42.26	56.00	-13.74	QP
11	4.127	4.80	20.29	25.09	46.00	-20.91	Average
12	4.127	21.30	20.29	41.59	56.00	-14.41	QP

AC 120V/60 Hz, Neutral



Site : CE
Condition :FCC PART 15.247
: DET:Peak
Model : Aps-c3-02uc
Phase : N
Voltage : 120V/60HZ
Mode : Transmitting in BLE-1M mode low channel
Test Equipment : ENV216,ESR
Temperature : 15.1℃
Humidity : 50%
Atmospheric pressure: 102.1kPa
Test Engineer : Aaron

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.328	18.60	20.03	38.63	49.50	-10.87	Average
2	0.328	27.00	20.03	47.03	59.50	-12.47	QP
3	0.427	18.10	20.08	38.18	47.31	-9.13	Average
4	0.427	27.30	20.08	47.38	57.31	-9.93	QP
5	0.603	11.19	20.09	31.28	46.00	-14.72	Average
6	0.603	20.99	20.09	41.08	56.00	-14.92	QP
7	0.858	14.49	19.89	34.38	46.00	-11.62	Average
8	0.858	21.59	19.89	41.48	56.00	-14.52	QP
9	1.795	10.21	20.13	30.34	46.00	-15.66	Average
10	1.795	21.21	20.13	41.34	56.00	-14.66	QP
11	2.074	10.90	20.21	31.11	46.00	-14.89	Average
12	2.074	21.80	20.21	42.01	56.00	-13.99	QP

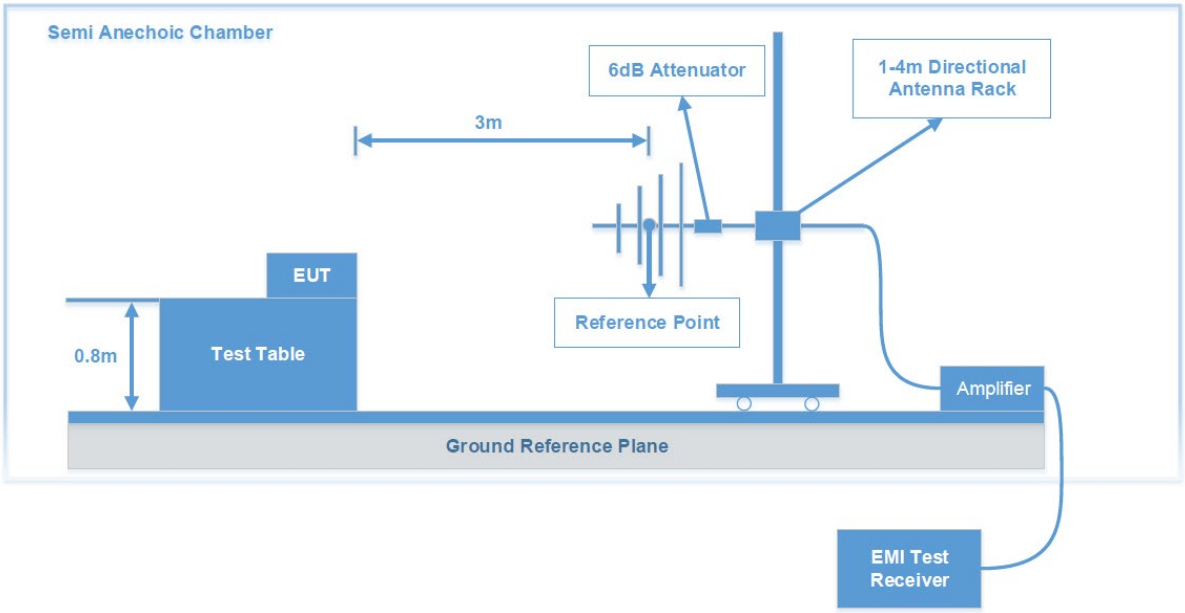
FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

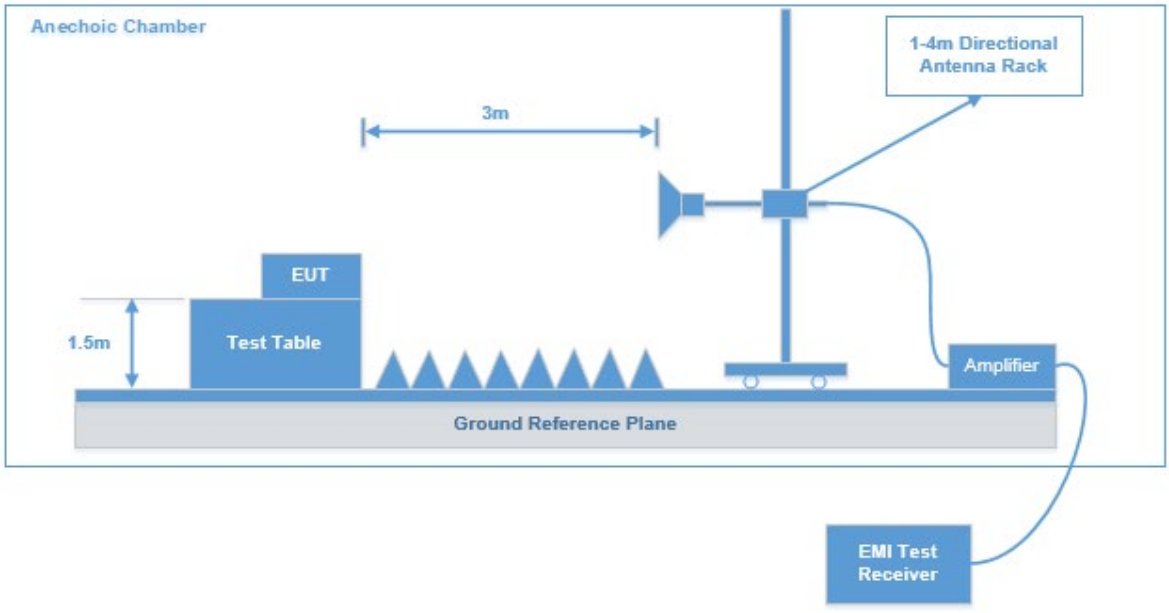
FCC §15.247 (d); §15.209; §15.205;

Test System Setup

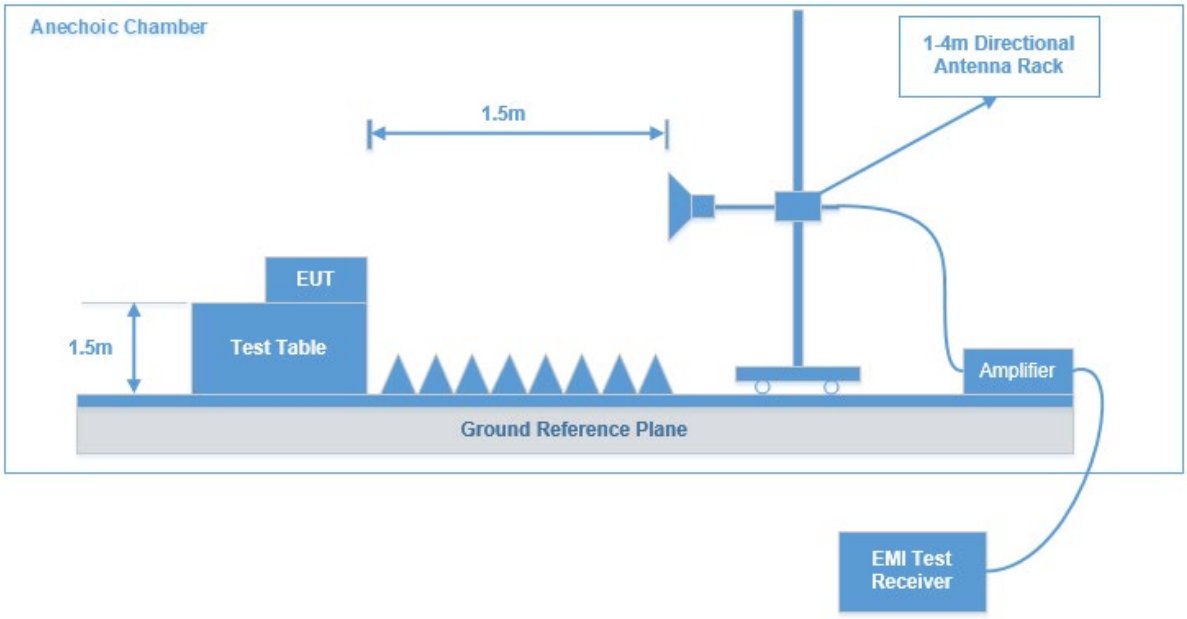
Below 1 GHz:



1-18GHz:



18-25GHz:



The radiated emission tests were performed in the 3 meters test site for below 18GHz and 1.5m for 18-25 GHz, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.247 limits. The limit at 1.5m for 18-25 GHz is 80dBμV/m（Peak）and 60dBμV/m（Average）.

EMI Test Receiver Setup

The system was investigated from 9 kHz to 25 GHz.

During the radiated emission test, the EMI test receiver Setup was set with the following configurations:

Frequency Range	RBW	VBW	Detector
9 kHz – 150 kHz	200 Hz	1 kHz	QP/Peak/Average
150 kHz – 30 MHz	9 kHz	30 kHz	QP/Peak/Average
30 MHz – 1000 MHz	120 kHz	300 kHz	QP/Peak
Above 1GHz	1MHz	3 MHz	Peak
	1MHz	3 MHz	Average

Note: If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

Test Procedure

According to ANSI C63.10-2013 clause 6.5, 6.6 and 6.7.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 9 kHz-1 GHz except 9–90 kHz, 110–490 kHz, employing an average detector, peak and Average detection modes for frequencies above 1GHz.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude (dBμV/m) = Meter Reading (dBμV) + Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB)

Note: The QuasiPeak (dBμV/m), MaxPeak (dBμV/m), Average (dBμV/m) which shown in the data table are all Corrected Amplitude.

The "**Margin/ Over Limit**" column of the following data tables indicates the degree of Compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)
Over Limit (dB) = Level (dBμV/m) - Limit (dBμV/m)

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Subpart C, section 15.205, 15.209 and 15.247.

Test Data

Environmental Conditions & Test Information

Test Frequency Range:	Below 1 GHz	Above 1 GHz	
Temperature:	20.1°C	20.3 °C	19.8 °C
Relative Humidity:	39 %	52 %	45 %
ATM Pressure:	102.1 kPa	103.0kPa	101.6kPa
Test Date:	2024-02-04	2024-01-29	2024-02-05
Test Engineer:	Klein Zhu	Peter Wang	

Test Result: Compliant.

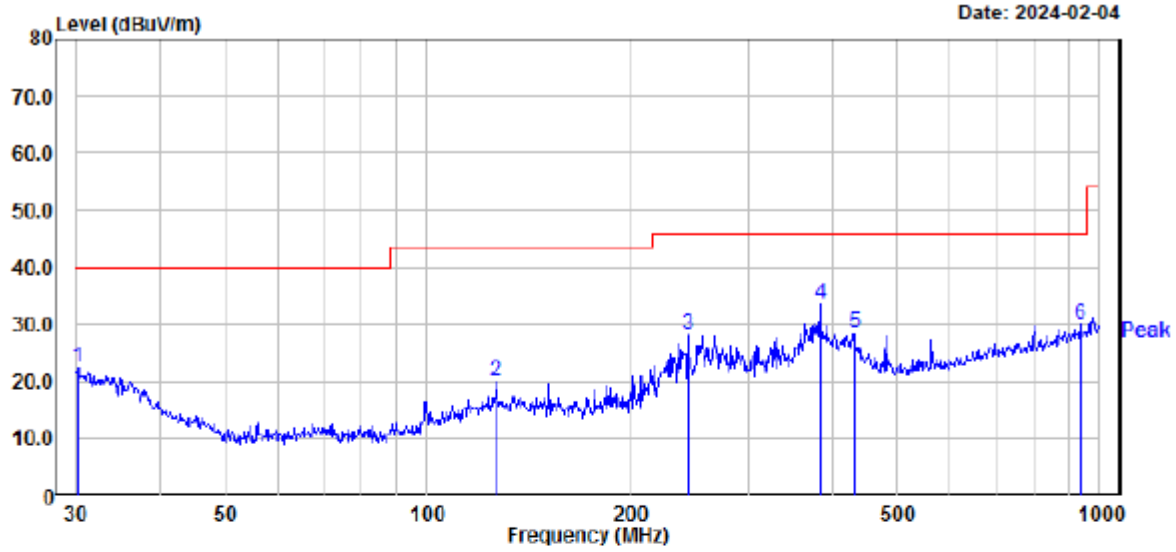
EUT operation mode: Transmitting

After pre-scan in the X, Y and Z axes of orientation, the worst case is below:

For 9 kHz-30 MHz, the amplitude of spurious emissions attenuated more than 20 dB below the limit was not be recorded.

For Wi-Fi Mode:

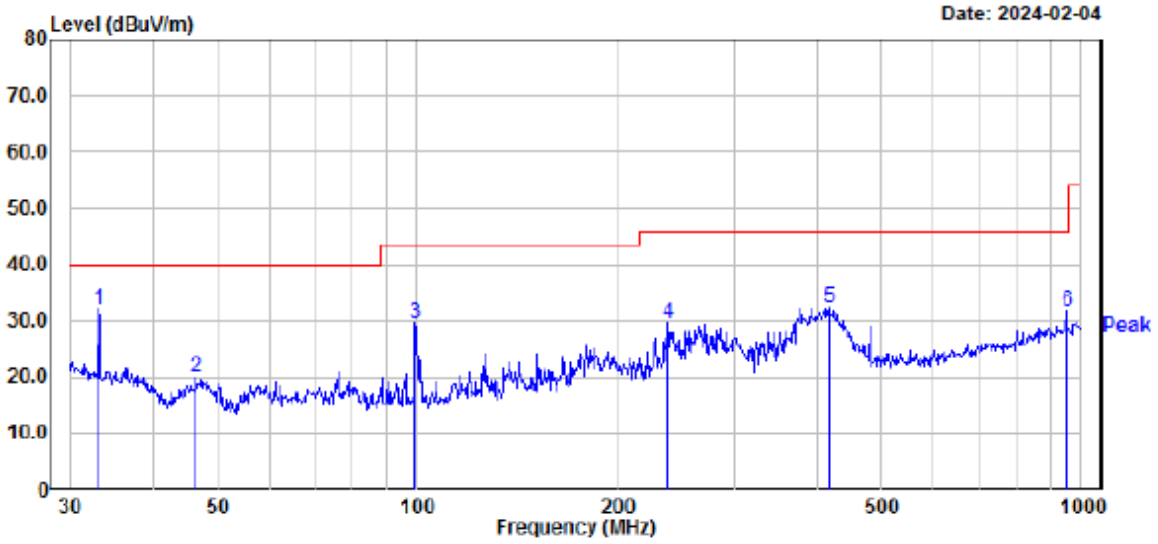
30MHz-1GHz（802.11g mode is worst case）:
Horizontal: 2412MHz




```
Site                : 966 Chamber #3
Condition           : limit\FCC PART 15.247 .csv 3m horizontal
                    : DET:Peak
Model               : Aps-c3-02uc
Voltage             : DC 3.3V
Mode                : Transmitting in 802.11g mode low channel
Test equipment      : JB3,310N,ESR
Ambient temperature : 20.1℃
Relative humidity   : 39%
Atmospheric pressure: 102.1kPa
Test  by            : Klein Zhu
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	30.21	28.12	-5.74	22.38	40.00	-17.62	200	173	Peak
2	126.77	30.82	-10.95	19.87	43.50	-23.63	100	250	Peak
3	244.23	40.88	-12.87	28.01	46.00	-17.99	200	192	Peak
4	383.93	42.22	-8.60	33.62	46.00	-12.38	200	173	Peak
5	432.55	35.57	-7.08	28.49	46.00	-17.51	200	135	Peak
6	935.55	28.23	1.60	29.83	46.00	-16.17	200	192	Peak

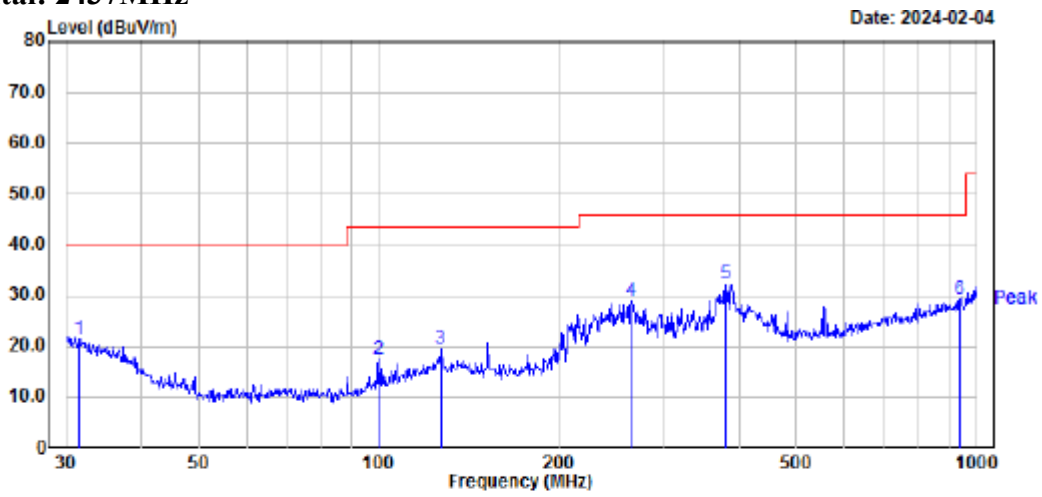
Vertical: 2412MHz




```
Site                : 966 Chamber #3
Condition           : limit\FCC PART 15.247 .csv 3m vertical
                    : DET:Peak
Model               : Aps-c3-02uc
Voltage             : DC 3.3V
Mode                :Transmitting in 802.11g mode low channel
Test equipment      : JB3,310N,ESR
Ambient temperature : 20.1℃
Relative humidity   : 39%
Atmospheric pressure: 102.1kPa
Test  by            : Klein Zhu
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	33.21	39.28	-7.29	31.99	40.00	-8.01	100	15	Peak
2	46.50	35.69	-15.80	19.89	40.00	-20.11	100	251	Peak
3	99.53	44.59	-14.92	29.67	43.50	-13.83	100	68	Peak
4	239.15	42.66	-13.03	29.63	46.00	-16.37	100	215	Peak
5	417.64	39.71	-7.53	32.18	46.00	-13.82	100	164	Peak
6	952.09	29.75	1.84	31.59	46.00	-14.41	100	83	Peak

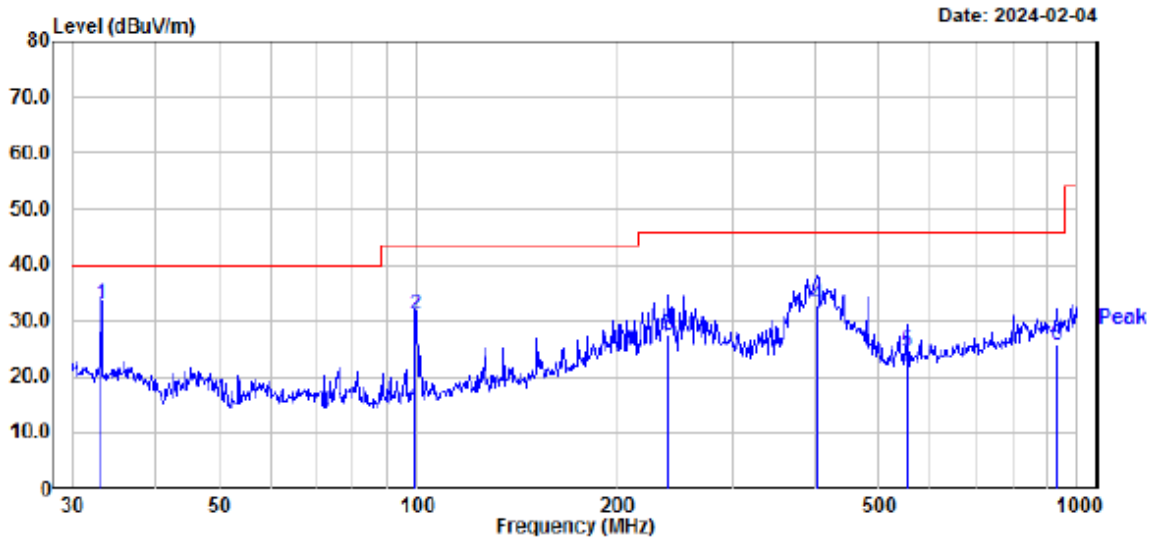
Horizontal: 2437MHz




```
Site                : 966 Chamber #3
Condition           : limit\FCC Part 15.247.csv 3m horizontal
                    : DET:Peak
Model               : Aps-c3-02uc
Voltage             : DC 3.3V
Mode                : Transmitting in 802.11g mode middle channel
Test equipment      : JB3,310N,ESR
Ambient temperature : 20.1℃
Relative humidity   : 39%
Atmospheric pressure: 102.1kPa
Test  by            : Klein Zhu
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	31.51	27.98	-6.41	21.57	40.00	-18.43	100	332	Peak
2	99.88	32.29	-14.82	17.47	43.50	-26.03	200	12	Peak
3	126.77	30.56	-10.95	19.61	43.50	-23.89	200	230	Peak
4	264.75	40.62	-11.63	28.99	46.00	-17.01	200	345	Peak
5	379.91	41.15	-8.70	32.45	46.00	-13.55	200	160	Peak
6	935.55	27.82	1.60	29.42	46.00	-16.58	200	345	Peak

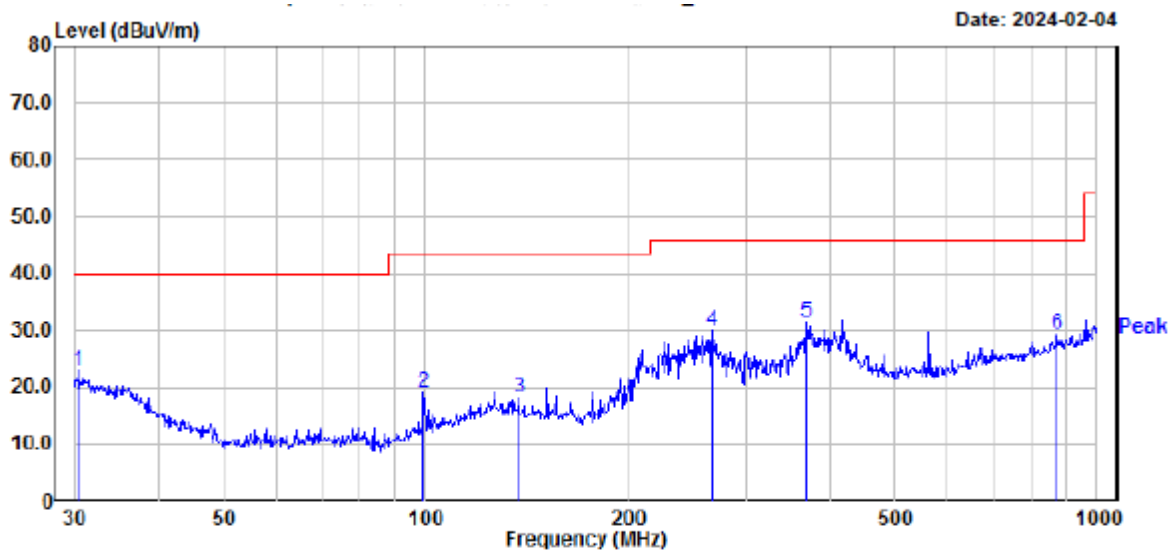
Vertical: 2437MHz




```
Site                : 966 Chamber #3
Condition           : limit\FCC Part 15.247.csv 3m vertical
                    : DET:Peak
Model               : Aps-c3-02uc
Voltage             : DC 3.3V
Mode                : Transmitting in 802.11g mode middle channel
Test equipment      : JB3,310N,ESR
Ambient temperature : 20.1℃
Relative humidity   : 39%
Atmospheric pressure: 102.1kPa
Test  by            : Klein Zhu
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	33.21	40.20	-7.29	32.91	40.00	-7.09	100	317	QP
2	99.53	46.10	-14.92	31.18	43.50	-12.32	100	52	QP
3	240.83	40.50	-12.98	27.52	46.00	-18.48	100	251	QP
4	403.25	41.10	-8.10	33.00	46.00	-13.00	100	118	QP
5	552.88	29.30	-4.81	24.49	46.00	-21.51	100	269	QP
6	929.01	24.10	1.51	25.61	46.00	-20.39	100	289	QP

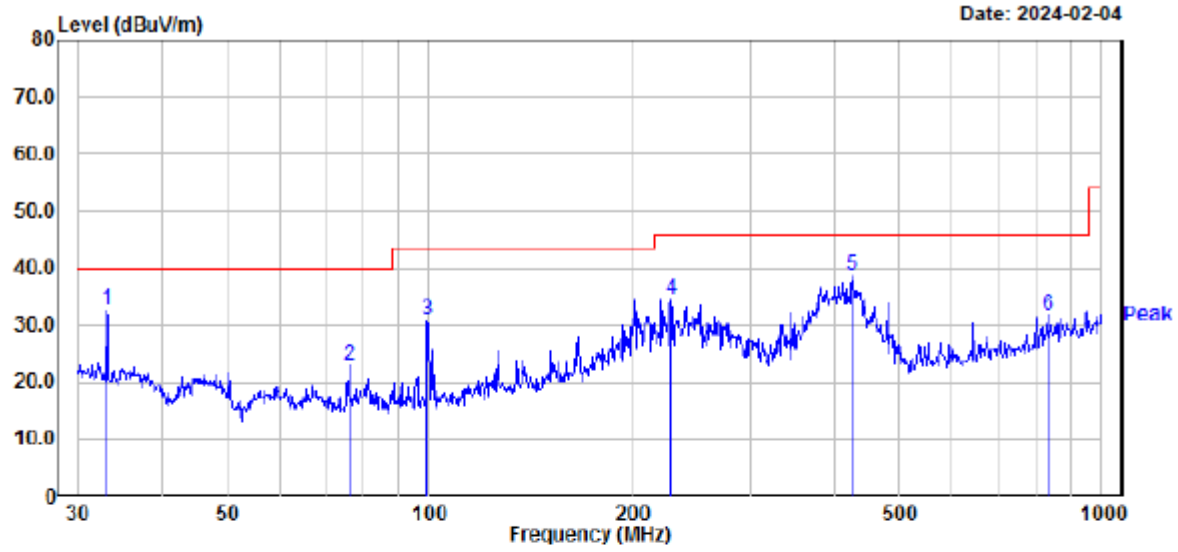
Horizontal: 2462MHz



Site : 966 Chamber #3
Condition : limit\FCC PART 15.247.csv 3m horizontal
: DET:Peak
Model : Aps-c3-02uc
Voltage : DC 3.3V
Mode : Transmitting in 802.11g mode high channel
Test equipment : JB3,310N,ESR
Ambient temperature : 20.1℃
Relative humidity : 39%
Atmospheric pressure: 102.1kPa
Test by : Klein Zhu

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	30.42	28.82	-5.86	22.96	40.00	-17.04	200	221	Peak
2	99.53	33.84	-14.92	18.92	43.50	-24.58	100	330	Peak
3	137.90	29.79	-11.55	18.24	43.50	-25.26	100	132	Peak
4	266.61	41.40	-11.51	29.89	46.00	-16.11	200	5	Peak
5	369.40	40.41	-8.95	31.46	46.00	-14.54	200	212	Peak
6	875.25	28.41	0.74	29.15	46.00	-16.85	100	315	Peak

Vertical: 2462MHz




```
Site                : 966 Chamber #3
Condition           : limit\FCC Part 15.247.csv 3m vertical
                    : DET:Peak
Model               : Aps-c3-02uc
Voltage             : DC 3.3V
Mode                : Transmitting in 802.11g mode high channel
Test equipment      : JB3,310N,ESR
Ambient temperature : 20.1℃
Relative humidity   : 39%
Atmospheric pressure: 102.1kPa
Test  by            : Klein Zhu
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	33.21	39.89	-7.29	32.60	40.00	-7.40	100	329	Peak
2	75.98	40.24	-17.38	22.86	40.00	-17.14	100	314	Peak
3	99.53	45.74	-14.92	30.82	43.50	-12.68	100	270	Peak
4	229.29	47.85	-13.37	34.48	46.00	-11.52	100	270	Peak
5	426.52	45.76	-7.22	38.54	46.00	-7.46	100	159	Peak
6	830.40	32.08	-0.24	31.84	46.00	-14.16	100	218	Peak

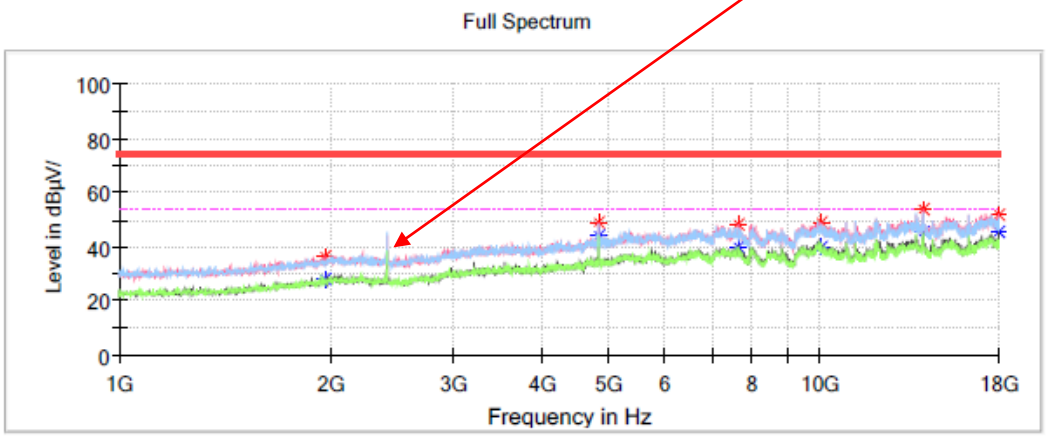
1GHz-18GHz:
Spurious Emission Test:
802.11b Mode :

Low Channel: 2412MHz

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	Transmitting in 802.11b Mode of Low Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29

Fundamental Test with notch filter



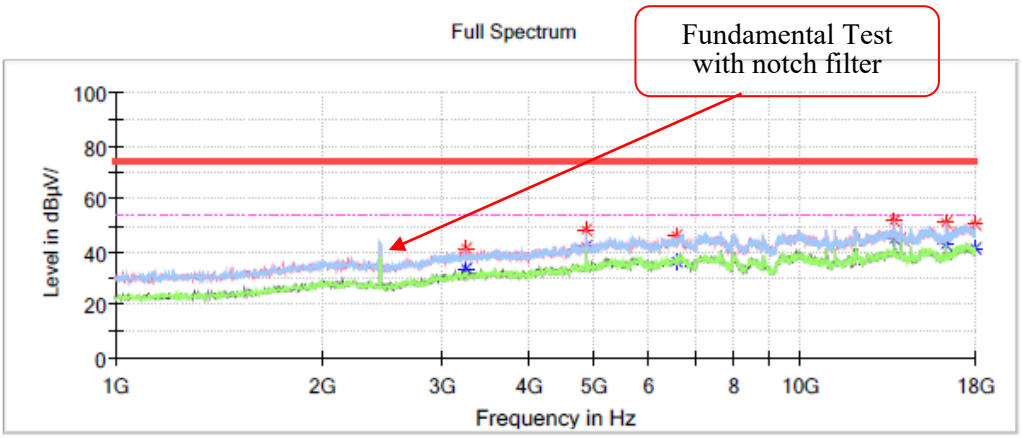
Critical_Freqs

Frequency (MHz)	Corrected Amplitude		Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
	MaxPeak (dB µ V/m)	Average (dB µ V/m)				
1967.300000	---	28.28	54.00	25.72	V	-10.8
1967.300000	36.29	---	74.00	37.71	V	-10.8
4823.300000	---	43.87	54.00	10.13	H	-2.1
4823.300000	48.99	---	74.00	25.01	H	-2.1
7641.900000	---	39.78	54.00	14.22	H	4.1
7641.900000	48.30	---	74.00	25.70	H	4.1
10055.900000	---	39.73	54.00	14.27	V	7.7
10055.900000	49.27	---	74.00	24.73	V	7.7
14001.600000	---	45.55	54.00	8.45	V	10.5
14001.600000	53.86	---	74.00	20.14	V	10.5
17998.300000	51.80	---	74.00	22.20	V	11.5
17998.300000	---	45.36	54.00	8.64	V	11.5

Middle Channel: 2437MHz

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	Transmitting in 802.11b Mode of Middle Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29



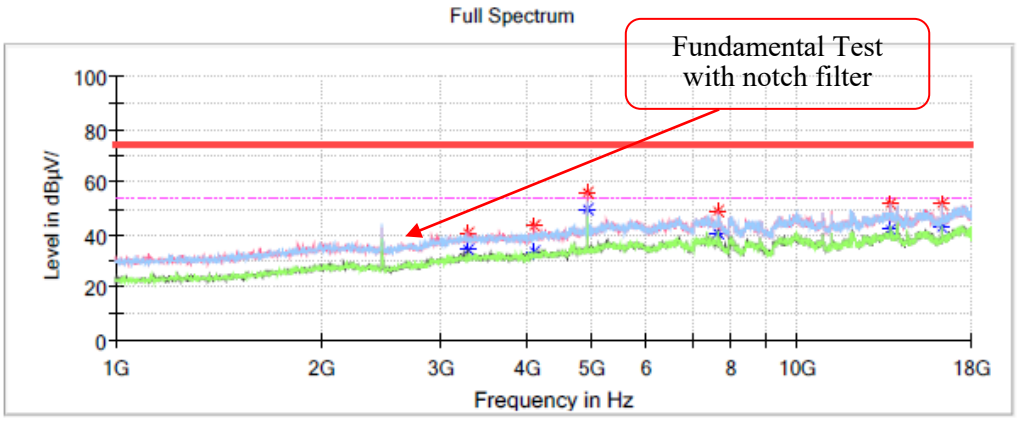
Critical_Freqs

Frequency (MHz)	Corrected Amplitude		Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
	MaxPeak (dB µ V/m)	Average (dB µ V/m)				
3249.100000	---	33.64	54.00	20.36	V	-7.1
3249.100000	41.60	---	74.00	32.40	V	-7.1
4872.600000	---	42.19	54.00	11.81	V	-1.9
4872.600000	48.41	---	74.00	25.59	V	-1.9
6572.600000	---	36.37	54.00	17.63	H	1.3
6572.600000	46.39	---	74.00	27.61	H	1.3
13676.900000	---	44.49	54.00	9.51	V	10.8
13676.900000	51.51	---	74.00	22.49	V	10.8
16303.400000	---	42.69	54.00	11.31	H	9.7
16303.400000	50.98	---	74.00	23.02	H	9.7
17996.600000	---	41.23	54.00	12.77	V	11.5
17996.600000	50.59	---	74.00	23.41	V	11.5

High Channel: 2462MHz

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	802.11b Mode of High Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29



Critical_Freqs

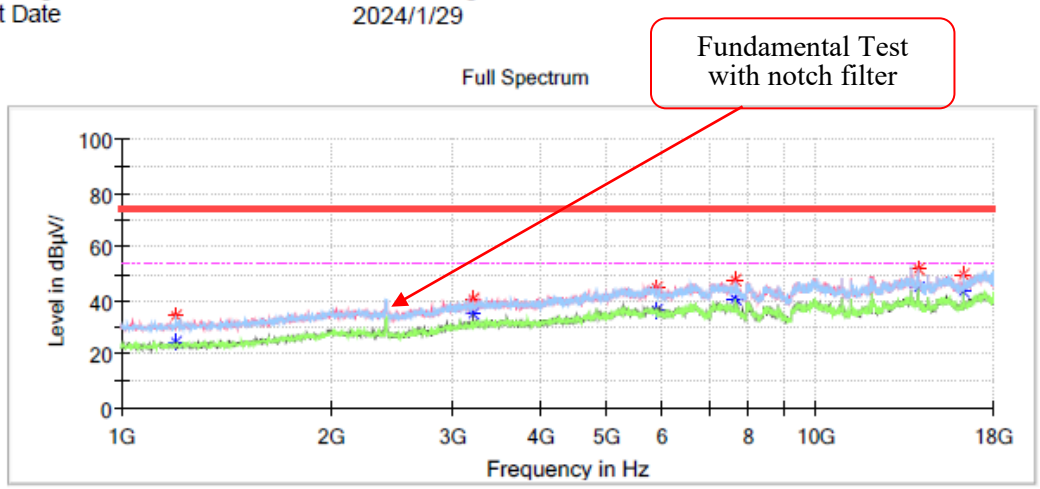
Frequency (MHz)	Corrected Amplitude		Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
	MaxPeak (dB µ V/m)	Average (dB µ V/m)				
3281.400000	---	34.58	54.00	19.42	V	-6.9
3281.400000	40.83	---	74.00	33.17	V	-6.9
4109.300000	---	33.84	54.00	20.16	V	-4.8
4109.300000	43.40	---	74.00	30.60	V	-4.8
4923.600000	---	49.38	54.00	4.62	V	-1.6
4923.600000	55.88	---	74.00	18.12	V	-1.6
7638.500000	---	40.47	54.00	13.53	H	4.1
7638.500000	48.74	---	74.00	25.26	H	4.1
13683.700000	---	41.89	54.00	12.11	V	10.8
13683.700000	51.60	---	74.00	22.40	V	10.8
16303.400000	---	42.72	54.00	11.28	H	9.7
16303.400000	51.52	---	74.00	22.48	H	9.7

802.11g Mode:

Low Channel: 2412MHz

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	Transmitting in 802.11g Mode of Low Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29



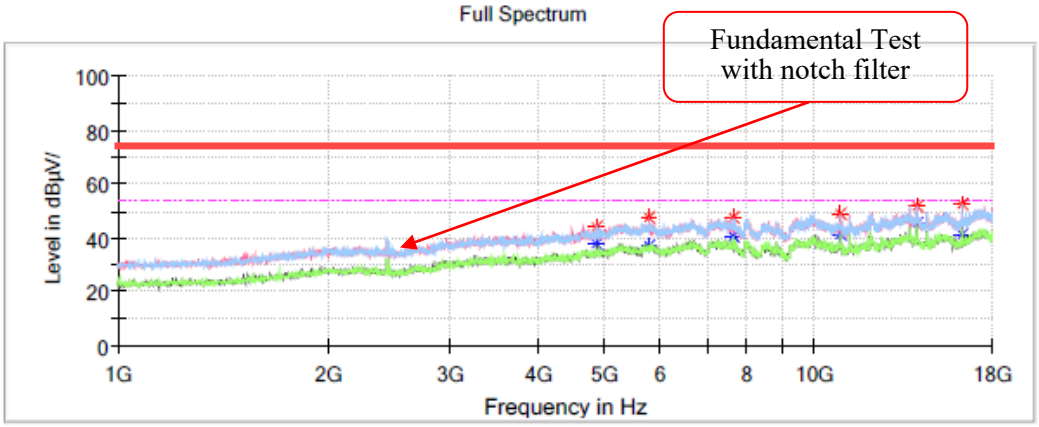
Critical_Freqs

Frequency (MHz)	Corrected Amplitude		Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
	MaxPeak (dB µ V/m)	Average (dB µ V/m)				
1195.500000	---	24.32	54.00	29.68	V	-14.9
1195.500000	34.03	---	74.00	39.97	V	-14.9
3215.100000	40.61	---	74.00	33.39	V	-7.2
3215.100000	---	34.71	54.00	19.29	V	-7.2
5911.300000	---	36.08	54.00	17.92	V	0.3
5911.300000	44.42	---	74.00	29.58	V	0.3
7638.500000	---	40.28	54.00	13.72	H	4.1
7638.500000	47.81	---	74.00	26.19	H	4.1
14001.600000	51.91	---	74.00	22.09	V	10.5
14001.600000	---	44.60	54.00	9.40	V	10.5
16301.700000	49.84	---	74.00	24.16	V	9.7
16301.700000	---	43.32	54.00	10.68	V	9.7

Middle Channel: 2437MHz

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	Transmitting in 802.11g Mode of Middle Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29



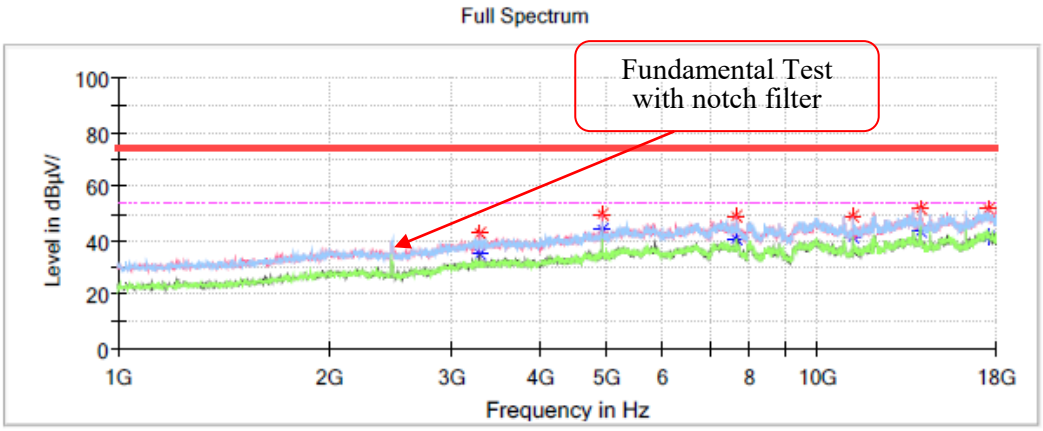
Critical_Freqs

Frequency (MHz)	Corrected Amplitude		Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
	MaxPeak (dB µ V/m)	Average (dB µ V/m)				
4864.100000	---	38.05	54.00	15.95	V	-1.9
4864.100000	44.10	---	74.00	29.90	V	-1.9
5771.900000	---	37.02	54.00	16.98	V	0.5
5771.900000	47.23	---	74.00	26.77	V	0.5
7638.500000	---	40.23	54.00	13.77	H	4.1
7638.500000	47.85	---	74.00	26.15	H	4.1
10861.700000	---	41.14	54.00	12.86	V	6.6
10861.700000	48.99	---	74.00	25.01	V	6.6
14001.600000	---	45.15	54.00	8.85	V	10.5
14001.600000	52.04	---	74.00	21.96	V	10.5
16306.800000	---	41.58	54.00	12.42	H	9.7
16306.800000	52.11	---	74.00	21.89	H	9.7

High Channel: 2462MHz

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	Transmitting in 802.11g Mode of High Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29



Critical_Freqs

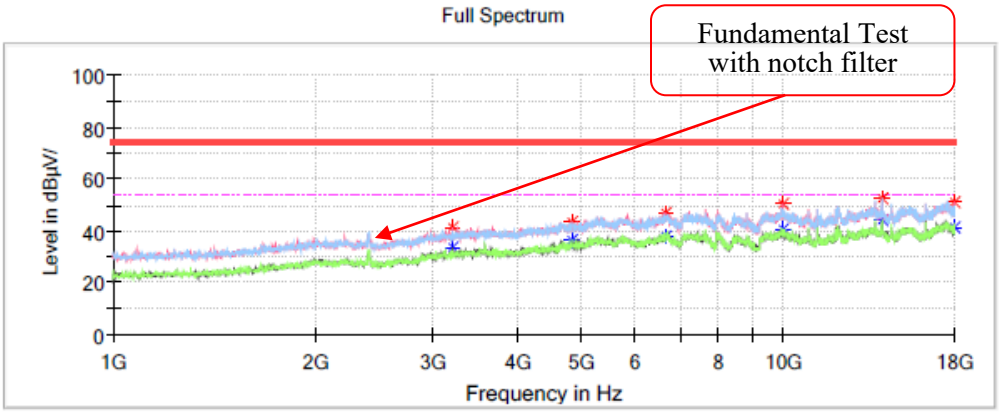
Frequency (MHz)	Corrected Amplitude		Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
	MaxPeak (dB µ V/m)	Average (dB µ V/m)				
3281.400000	---	35.30	54.00	18.70	V	-6.9
3281.400000	42.44	---	74.00	31.56	V	-6.9
4923.600000	49.52	---	74.00	24.48	V	-1.6
4923.600000	---	43.73	54.00	10.27	V	-1.6
7638.500000	---	40.30	54.00	13.70	H	4.1
7638.500000	48.85	---	74.00	25.15	H	4.1
11201.700000	---	41.34	54.00	12.66	H	6.7
11201.700000	49.17	---	74.00	24.83	H	6.7
14003.300000	---	43.62	54.00	10.38	V	10.5
14003.300000	52.01	---	74.00	21.99	V	10.5
17546.100000	---	41.50	54.00	12.50	V	13.4
17546.100000	51.58	---	74.00	22.42	V	13.4

802.11n-HT20 Mode :

Low Channel: 2412MHz

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	Transmitting in 802.11n20 Mode of Low Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29



Critical_Freqs

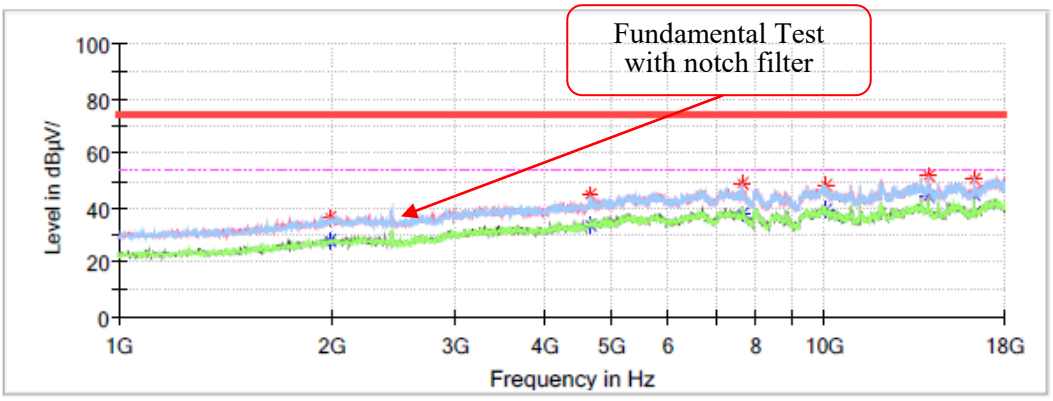
Frequency (MHz)	Corrected Amplitude		Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
	MaxPeak (dB µ V/m)	Average (dB µ V/m)				
3215.100000	---	33.91	54.00	20.09	V	-7.2
3215.100000	41.05	---	74.00	32.95	V	-7.2
4825.000000	43.37	---	74.00	30.63	V	-2.1
4825.000000	---	36.18	54.00	17.82	V	-2.1
6678.000000	---	38.02	54.00	15.98	H	1.9
6678.000000	46.85	---	74.00	27.15	H	1.9
9957.300000	---	40.65	54.00	13.35	V	7.7
9957.300000	50.24	---	74.00	23.76	V	7.7
14001.600000	---	44.19	54.00	9.81	V	10.5
14001.600000	52.20	---	74.00	21.80	V	10.5
17996.600000	---	41.52	54.00	12.48	V	11.5
17996.600000	50.88	---	74.00	23.12	V	11.5

Middle Channel: 2437MHz

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	Transmitting in 802.11n20 Mode of Middle Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29

Full Spectrum



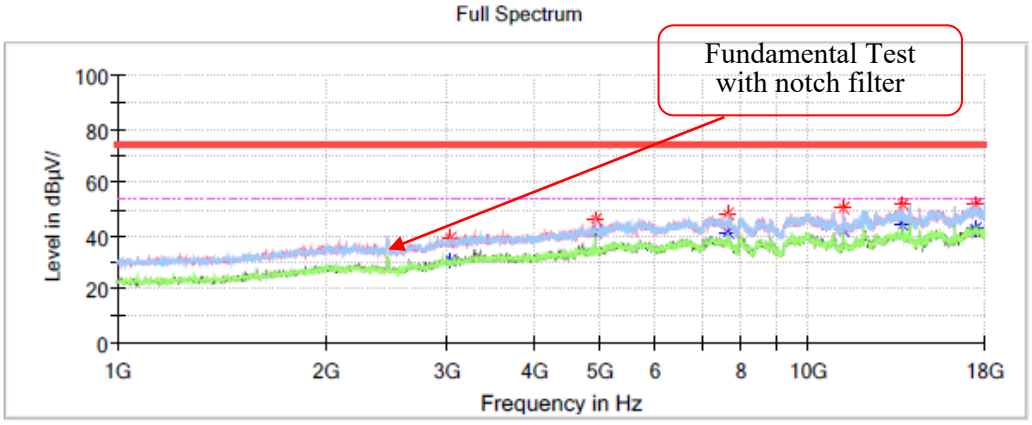
Critical_Freqs

Frequency (MHz)	Corrected Amplitude		Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
	MaxPeak (dB µ V/m)	Average (dB µ V/m)				
1989.400000	---	28.09	54.00	25.91	H	-10.6
1989.400000	36.61	---	74.00	37.39	H	-10.6
4646.500000	---	33.87	54.00	20.13	H	-3.0
4646.500000	45.06	---	74.00	28.94	H	-3.0
7636.800000	---	38.11	54.00	15.89	V	4.1
7636.800000	48.60	---	74.00	25.40	V	4.1
10035.500000	---	39.21	54.00	14.79	H	7.8
10035.500000	48.59	---	74.00	25.41	H	7.8
14001.600000	51.45	---	74.00	22.55	V	10.5
14001.600000	---	44.16	54.00	9.84	V	10.5
16301.700000	---	44.66	54.00	9.34	V	9.7
16301.700000	50.61	---	74.00	23.39	V	9.7

High Channel: 2462MHz

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	Transmitting in 802.11n20 Mode of High Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29



Critical_Freqs

Frequency (MHz)	Corrected Amplitude		Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
	MaxPeak (dB µ V/m)	Average (dB µ V/m)				
3026.400000	---	30.55	54.00	23.45	V	-7.9
3026.400000	39.41	---	74.00	34.59	V	-7.9
4920.200000	46.16	---	74.00	27.84	V	-1.6
4920.200000	---	41.41	54.00	12.59	V	-1.6
7640.200000	---	41.60	54.00	12.40	H	4.1
7640.200000	48.08	---	74.00	25.92	H	4.1
11201.700000	---	41.79	54.00	12.21	H	6.7
11201.700000	50.10	---	74.00	23.90	H	6.7
13676.900000	---	43.83	54.00	10.17	H	10.8
13676.900000	51.96	---	74.00	22.04	H	10.8
17498.500000	---	42.66	54.00	11.34	V	13.6
17498.500000	51.50	---	74.00	22.50	V	13.6

Band Edge:

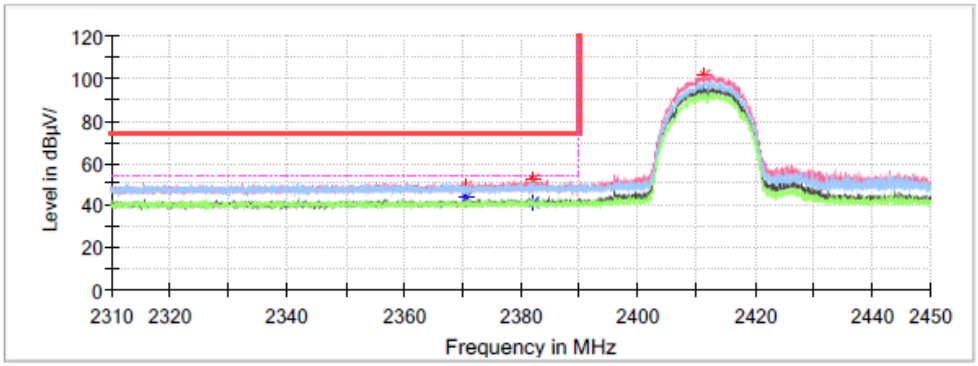
802.11b Mode :

Low Channel

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	Transmitting in 802.11b Mode of Low Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29

Full Spectrum



Critical_Freqs

Frequency (MHz)	Corrected Amplitude		Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
	MaxPeak (dB µ V/m)	Average (dB µ V/m)				
2370.690000	49.02	---	74.00	24.98	V	0.0
2370.690000	---	43.29	54.00	10.71	V	0.0
2382.002000	52.32	---	74.00	21.68	V	0.0
2382.002000	---	40.80	54.00	13.20	V	0.0
2411.486000	---	94.11	---	---	V	0.1
2411.486000	101.87	---	---	---	V	0.1

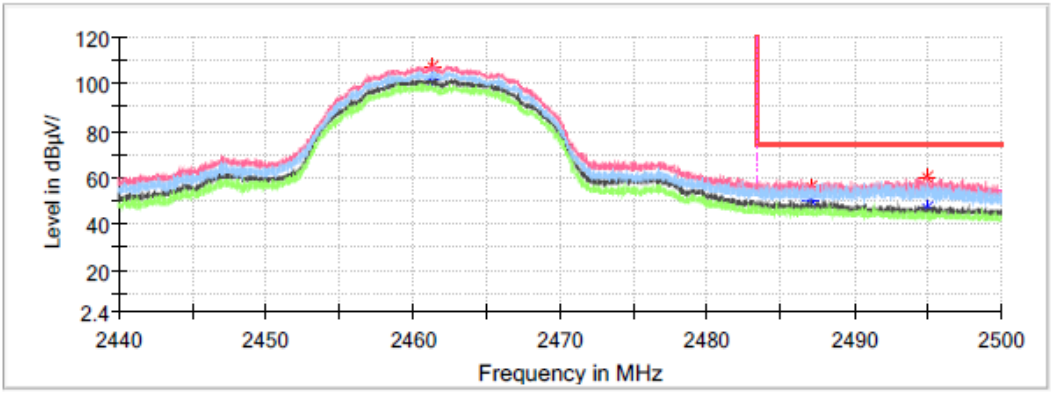
Band Edge:
802.11b Mode :

High Channel

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	Transmitting in 802.11b Mode of High Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29

Full Spectrum



Critical_Freqs

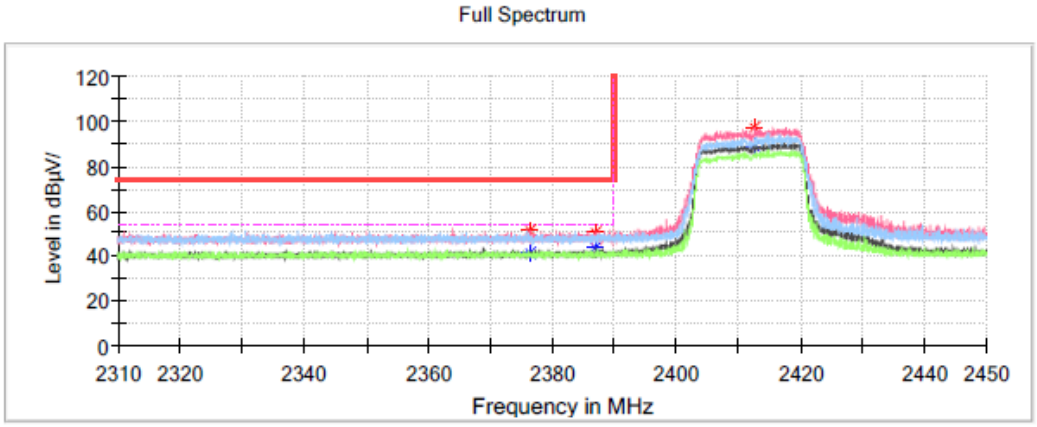
Frequency (MHz)	Corrected Amplitude		Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
	MaxPeak (dB µ V/m)	Average (dB µ V/m)				
2461.360000	---	102.10	---	---	V	0.2
2461.360000	107.91	---	---	---	V	0.2
2487.022000	56.06	---	74.00	17.94	V	0.2
2487.022000	---	49.93	54.00	3.84	V	0.2
2494.948000	59.77	---	74.00	14.23	V	0.2
2494.948000	---	46.69	54.00	7.31	V	0.2

802.11g Mode :

Low Channel

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	Transmitting in 802.11g Mode of Low Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29



Critical_Freqs

Frequency (MHz)	Corrected Amplitude		Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
	MaxPeak (dB µ V/m)	Average (dB µ V/m)				
2376.332000	---	40.72	54.00	13.28	V	0.0
2376.332000	51.14	---	74.00	22.86	V	0.0
2386.888000	---	43.63	54.00	10.37	V	0.1
2386.888000	50.42	---	74.00	23.58	V	0.1
2412.466000	---	88.82	---	---	V	0.1
2412.466000	97.09	---	---	---	V	0.1

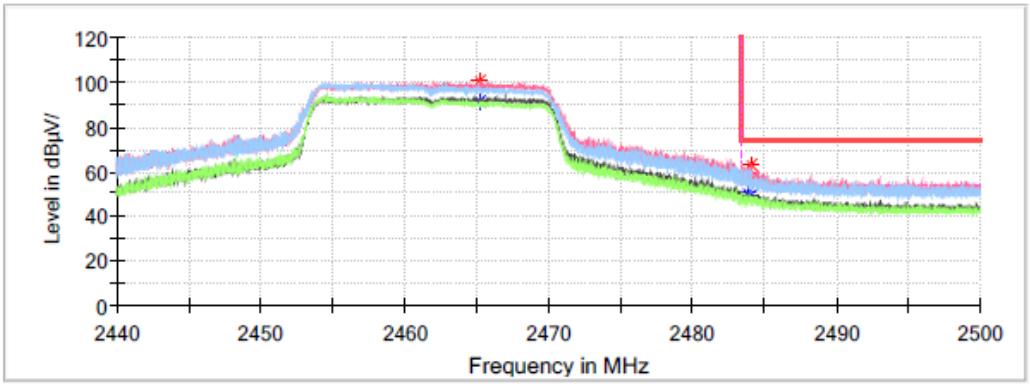
802.11g Mode :

High Channel

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	Transmitting in 802.11g Mode of High Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29

Full Spectrum



Critical_Freqs

Frequency (MHz)	Corrected Amplitude		Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
	MaxPeak (dB µ V/m)	Average (dB µ V/m)				
2465.170000	---	91.75	---	---	V	0.2
2465.170000	100.60	---	---	---	V	0.2
2483.854000	59.89	---	74.00	14.11	H	0.2
2483.854000	---	50.07	54.00	3.93	H	0.2
2484.046000	63.31	---	74.00	10.69	V	0.2
2484.046000	---	49.76	54.00	4.24	V	0.2

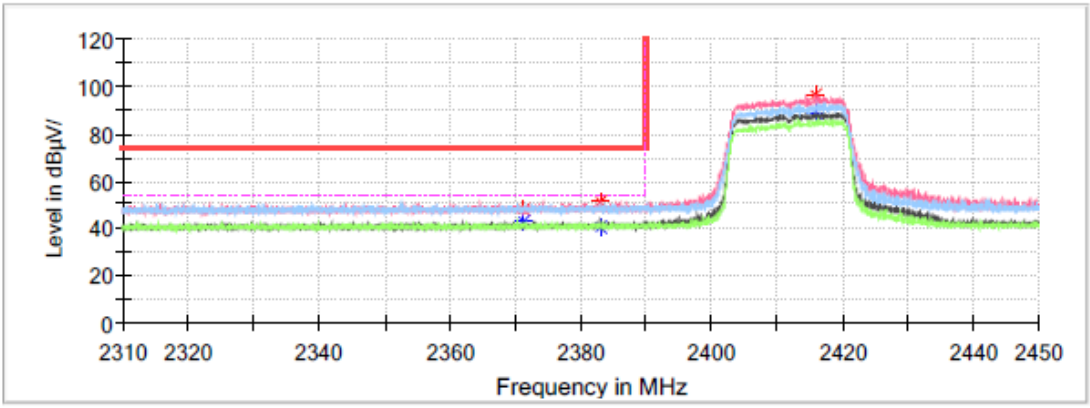
802.11n-HT20 Mode:

Low Channel

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	Transmitting in 802.11n20 Mode of Low Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29

Full Spectrum



Critical_Freqs

Frequency (MHz)	Corrected Amplitude		Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
	MaxPeak (dB µ V/m)	Average (dB µ V/m)				
2371.222000	47.68	---	74.00	26.32	V	0.0
2371.222000	---	43.14	54.00	10.86	V	0.0
2382.968000	51.21	---	74.00	22.79	V	0.1
2382.968000	---	40.40	54.00	13.60	V	0.1
2416.008000	---	88.56	---	---	V	0.1
2416.008000	96.27	---	---	---	V	0.1

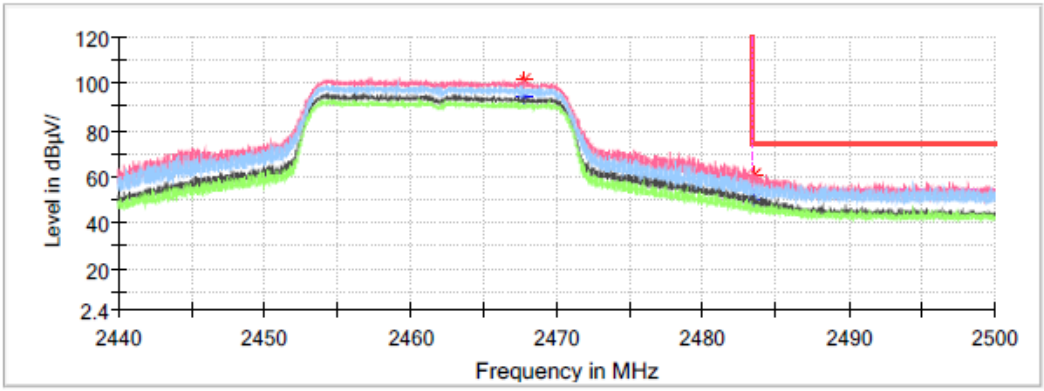
802.11n-HT20 Mode:

High Channel

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	Transmitting in 802.11n20 Mode of High Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29

Full Spectrum

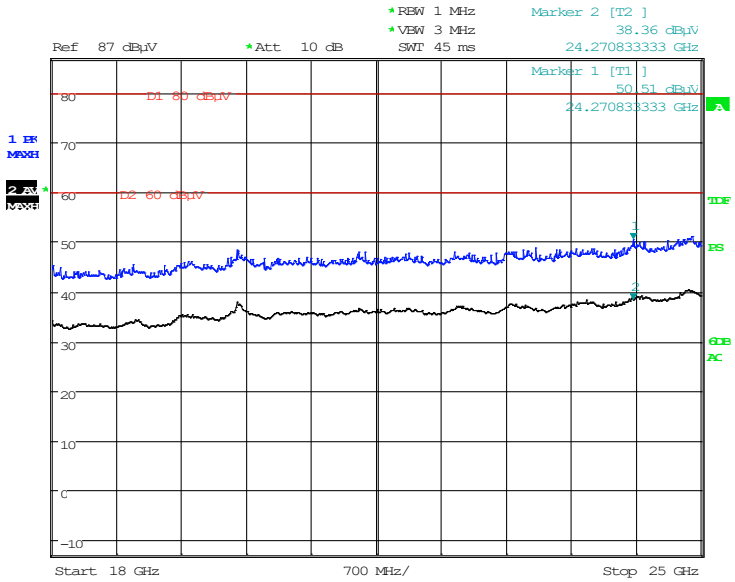


Critical_Freqs

Frequency (MHz)	Corrected Amplitude		Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
	MaxPeak (dB µ V/m)	Average (dB µ V/m)				
2467.798000	---	94.11	---	---	V	0.2
2467.798000	101.54	---	---	---	V	0.2
2483.566000	---	50.03	54.00	3.97	V	0.2
2483.566000	60.58	---	74.00	13.42	V	0.2

18GHz-25GHz （Transmitting in 802.11g mode Low channel is worst case）:

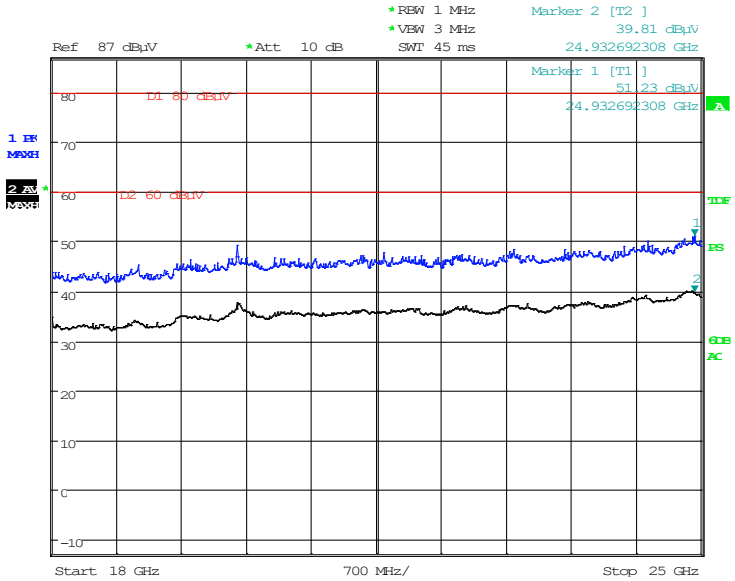
Horizontal:



Project No.: RKSA231229004 Tester: Peter Wang

Date: 5.FEB.2024 13:44:44

Vertical:

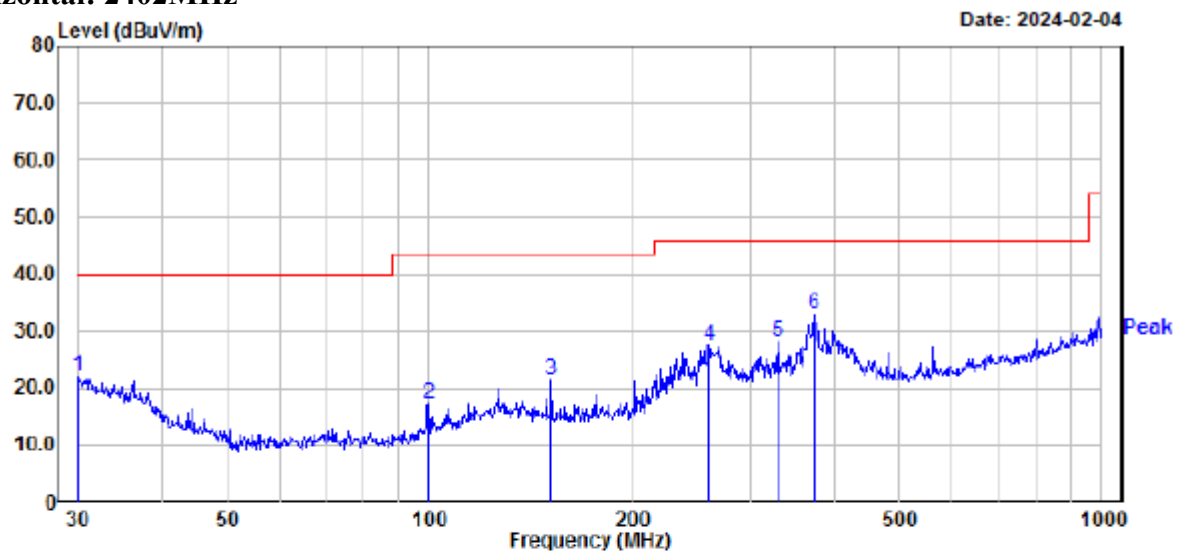


Project No.: RKSA231229004 Tester: Peter Wang

Date: 5.FEB.2024 14:22:13

For BLE(1Mbps) Mode:

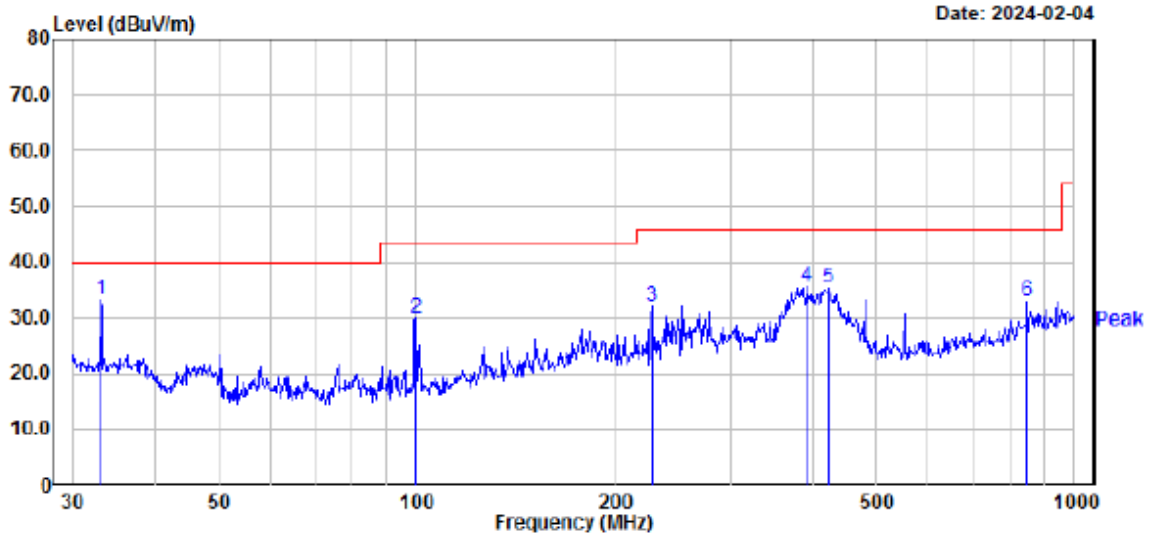
30MHz-1GHz:
Horizontal: 2402MHz




```
Site                : 966 Chamber #3
Condition           : limit\FCC PART 15.247 .csv 3m horizontal
                    : DET:Peak
Model               : Aps-c3-02uc
Voltage             : DC 3.3V
Mode                : Transmitting in BLE1M mode low channel
Test equipment      : JB3,310N,ESR
Ambient temperature : 20.1℃
Relative humidity   : 39%
Atmospheric pressure: 102.1kPa
Test  by            : Klein Zhu
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	30.11	27.86	-5.69	22.17	40.00	-17.83	200	350	Peak
2	99.88	32.07	-14.82	17.25	43.50	-26.25	200	211	Peak
3	152.13	33.62	-12.29	21.33	43.50	-22.17	200	270	Peak
4	261.06	39.47	-11.90	27.57	46.00	-18.43	200	328	Peak
5	330.19	38.05	-9.86	28.19	46.00	-17.81	200	173	Peak
6	374.62	41.74	-8.82	32.92	46.00	-13.08	200	181	Peak

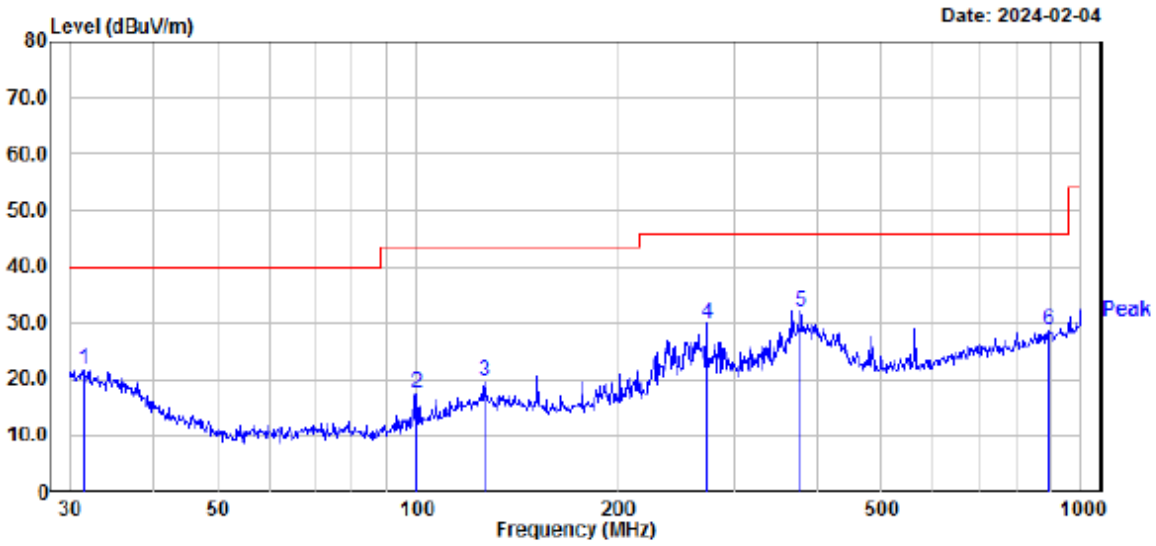
Vertical: 2402MHz




```
Site                : 966 Chamber #3
Condition           : limit\FCC Part 15.247.csv 3m vertical
                    : DET:Peak
Model               : Aps-c3-02uc
Voltage             : DC 3.3V
Mode                : Transmitting in BLE1M  mode low channel
Test equipment      : JB3,310N,ESR
Ambient temperature : 20.1℃
Relative humidity   : 39%
Atmospheric pressure: 102.1kPa
Test  by            : Klein Zhu
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	33.21	40.62	-7.29	33.33	40.00	-6.67	100	278	Peak
2	99.88	44.74	-14.82	29.92	43.50	-13.58	100	297	Peak
3	228.49	45.44	-13.39	32.05	46.00	-13.95	100	278	Peak
4	392.10	44.04	-8.42	35.62	46.00	-10.38	100	4	Peak
5	423.54	42.58	-7.30	35.28	46.00	-10.72	100	20	Peak
6	848.06	32.78	0.27	33.05	46.00	-12.95	100	173	Peak

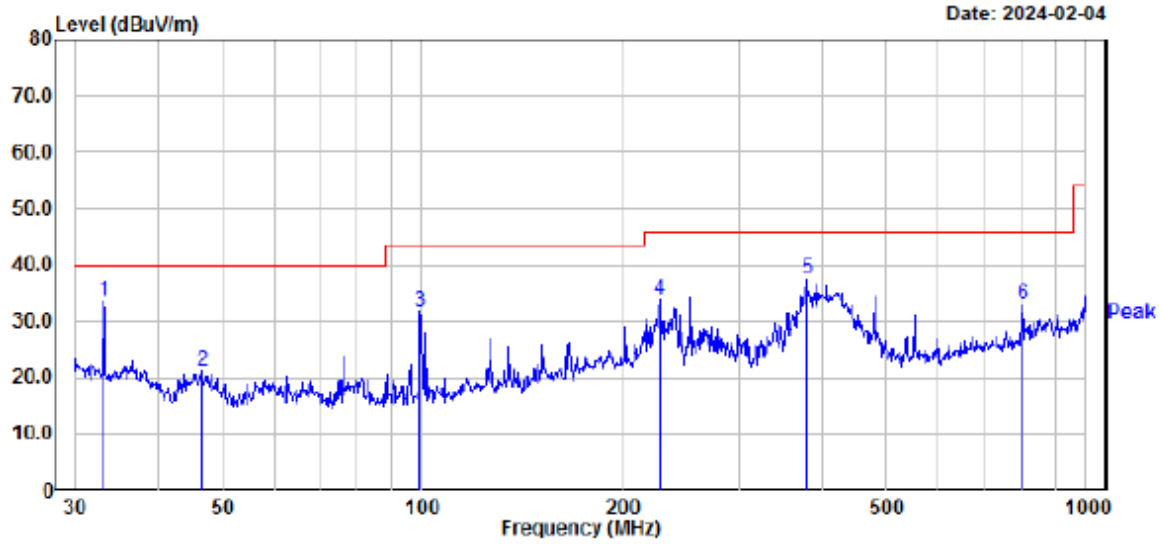
Horizontal: 2440MHz




```
Site                : 966 Chamber #3
Condition           : limit\FCC Part 15.247.csv 3m horizontal
                    : DET:Peak
Model               : Aps-c3-02uc
Voltage             : DC 3.3V
Mode                : Transmitting in BLE1M  mode middle channel
Test equipment      : JB3,310N,ESR
Ambient temperature : 20.1℃
Relative humidity   : 39%
Atmospheric pressure: 102.1kPa
Test  by            : Klein Zhu
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	31.40	28.20	-6.35	21.85	40.00	-18.15	100	234	Peak
2	99.88	32.34	-14.82	17.52	43.50	-25.98	100	349	Peak
3	126.77	30.49	-10.95	19.54	43.50	-23.96	200	260	Peak
4	273.23	40.93	-11.04	29.89	46.00	-16.11	200	175	Peak
5	378.58	40.65	-8.73	31.92	46.00	-14.08	200	184	Peak
6	893.86	27.55	1.05	28.60	46.00	-17.40	200	98	Peak

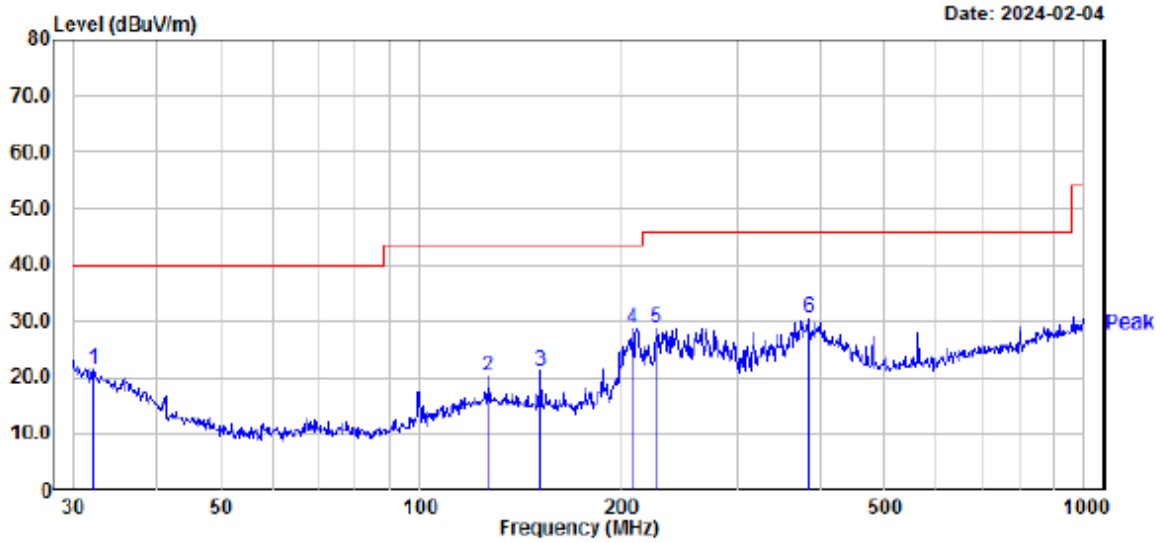
Vertical: 2440MHz




```
Site                : 966 Chamber #3
Condition           : limit\FCC Part 15.247.csv 3m vertical
                    : DET:Peak
Model               : Aps-c3-02uc
Voltage             : DC 3.3V
Mode                : Transmitting in BLE1M  mode middle channel
Test equipment      : JB3,310N,ESR
Ambient temperature : 20.1℃
Relative humidity   : 39%
Atmospheric pressure: 102.1kPa
Test  by            : Klein Zhu
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	33.09	40.88	-7.24	33.64	40.00	-6.36	100	92	Peak
2	46.67	37.06	-15.87	21.19	40.00	-18.81	100	231	Peak
3	99.53	46.55	-14.92	31.63	43.50	-11.87	100	269	Peak
4	228.49	47.25	-13.39	33.86	46.00	-12.14	100	316	Peak
5	379.91	46.15	-8.70	37.45	46.00	-8.55	100	165	Peak
6	801.79	34.10	-1.07	33.03	46.00	-12.97	100	307	Peak

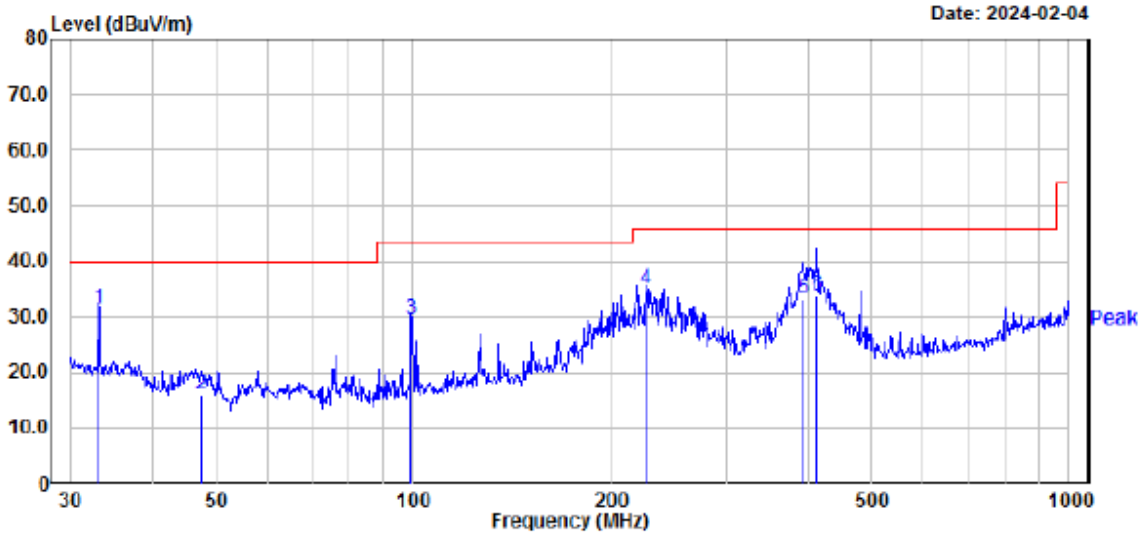
Horizontal: 2480MHz




```
Site                : 966 Chamber #3
Condition           : limit\FCC Part 15.247.csv 3m horizontal
                    : DET:Peak
Model               : Aps-c3-02uc
Voltage             : DC 3.3V
Mode                : Transmitting in BLE1M  mode high channel
Test equipment      : JB3,310N,ESR
Ambient temperature : 20.1℃
Relative humidity   : 39%
Atmospheric pressure: 102.1kPa
Test  by            : Klein Zhu
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	32.18	28.13	-6.76	21.37	40.00	-18.63	100	173	Peak
2	126.77	31.21	-10.95	20.26	43.50	-23.24	200	243	Peak
3	152.13	33.40	-12.29	21.11	43.50	-22.39	200	253	Peak
4	208.58	41.36	-12.79	28.57	43.50	-14.93	200	1	Peak
5	226.10	42.17	-13.47	28.70	46.00	-17.30	200	35	Peak
6	383.93	38.95	-8.60	30.35	46.00	-15.65	200	196	Peak

Vertical: 2480MHz




```
Site                : 966 Chamber #3
Condition           : limit\FCC Part 15.247.csv 3m vertical
                    : DET:Peak
Model               : Aps-c3-02uc
Voltage             : DC 3.3V
Mode                : Transmitting in BLE1M  mode high channel
Test equipment      : JB3,310N,ESR
Ambient temperature : 20.1℃
Relative humidity   : 39%
Atmospheric pressure: 102.1kPa
Test  by            : Klein Zhu
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	33.21	38.60	-7.29	31.31	40.00	-8.69	100	205	QP
2	47.66	32.40	-16.30	16.10	40.00	-23.90	100	234	QP
3	99.53	44.40	-14.92	29.48	43.50	-14.02	100	329	QP
4	226.10	48.49	-13.47	35.02	46.00	-10.98	100	300	QP
5	393.47	41.60	-8.38	33.22	46.00	-12.78	100	130	QP
6	413.27	41.40	-7.70	33.70	46.00	-12.30	100	130	QP

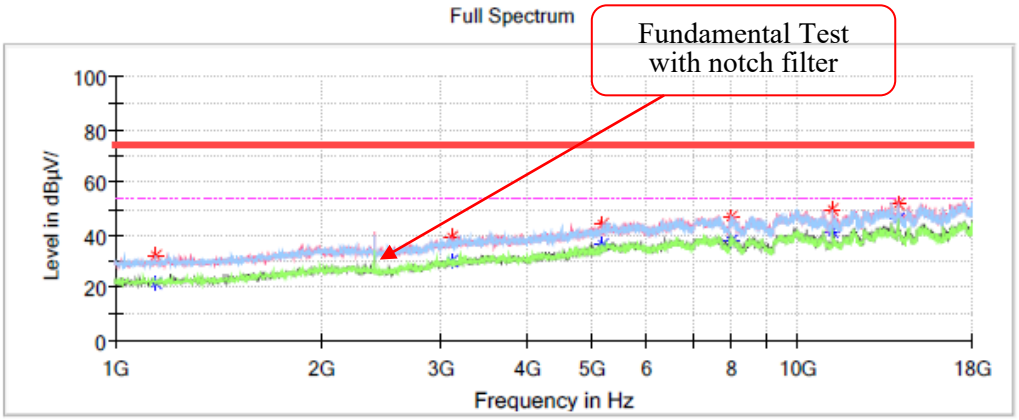
1GHz-18GHz:

BLE (1Mbps) mode:

Low Channel: 2402MHz

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	Transmitting in BLE 1M Mode of Low Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29



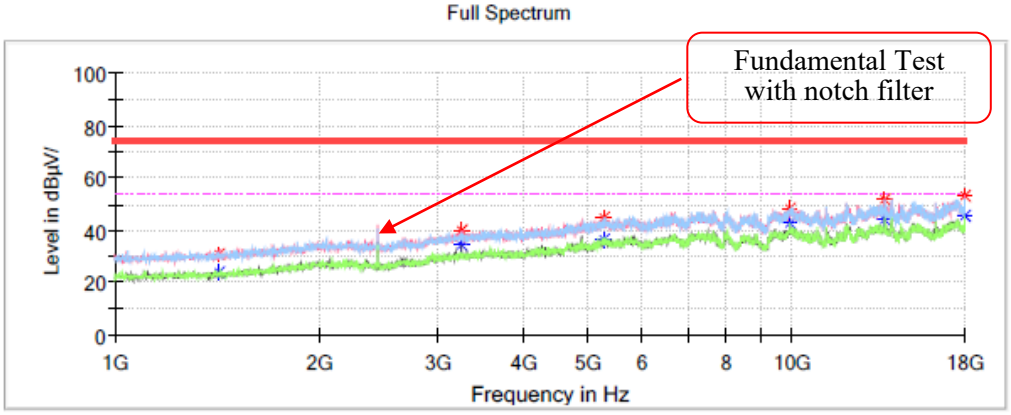
Critical_Freqs

Frequency (MHz)	Corrected Amplitude		Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
	MaxPeak (dB µ V/m)	Average (dB µ V/m)				
1146.200000	---	22.01	54.00	31.99	V	-15.1
1146.200000	32.41	---	74.00	41.59	V	-15.1
3114.800000	---	30.36	54.00	23.64	H	-7.6
3114.800000	39.51	---	74.00	34.49	H	-7.6
5185.400000	---	36.05	54.00	17.95	H	-0.4
5185.400000	44.09	---	74.00	29.91	H	-0.4
7990.400000	---	38.00	54.00	16.00	H	3.8
7990.400000	47.16	---	74.00	26.84	H	3.8
11203.400000	---	41.36	54.00	12.64	H	6.7
11203.400000	49.62	---	74.00	24.38	H	6.7
14001.600000	---	45.94	54.00	8.06	H	10.5
14001.600000	51.63	---	74.00	22.37	H	10.5

Middle Channel: 2440MHz

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	Transmitting in BLE 1M Mode of Middle Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29



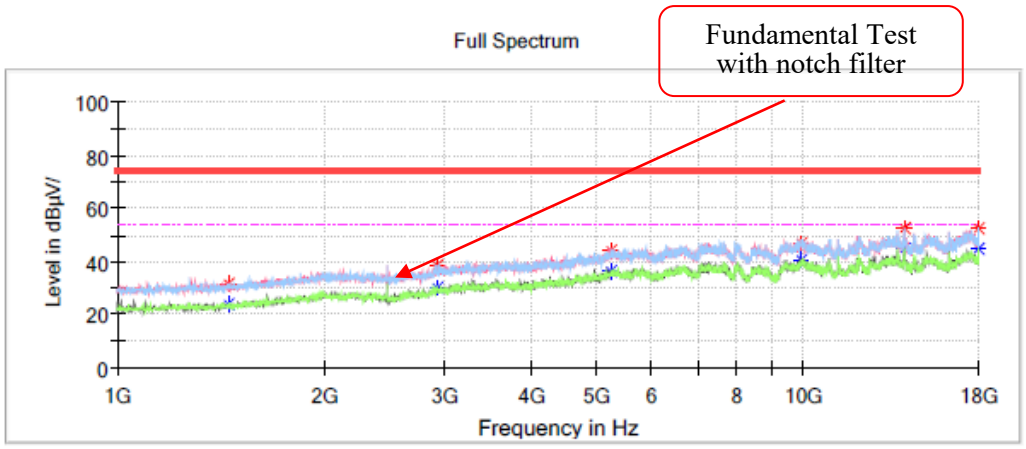
Critical_Freqs

Frequency (MHz)	Corrected Amplitude		Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
	MaxPeak (dB µ V/m)	Average (dB µ V/m)				
1428.400000	---	23.89	54.00	30.11	V	-14.2
1428.400000	30.62	---	74.00	43.38	V	-14.2
3252.500000	---	34.21	54.00	19.79	V	-7.1
3252.500000	39.80	---	74.00	34.20	V	-7.1
5265.300000	---	36.51	54.00	17.49	V	-0.1
5265.300000	44.64	---	74.00	29.36	V	-0.1
9947.100000	---	42.73	54.00	11.27	H	7.6
9947.100000	47.95	---	74.00	26.05	H	7.6
13676.900000	---	44.27	54.00	9.73	V	10.8
13676.900000	52.09	---	74.00	21.91	V	10.8
17998.300000	---	45.38	54.00	8.62	H	11.5
17998.300000	52.81	---	74.00	21.19	H	11.5

High Channel: 2480MHz

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	Transmitting in BLE 1M Mode of High Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29



Critical_Freqs

Frequency (MHz)	Corrected Amplitude		Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
	MaxPeak (dB µ V/m)	Average (dB µ V/m)				
1447.100000	---	23.77	54.00	30.23	H	-14.1
1447.100000	31.33	---	74.00	42.67	H	-14.1
2917.600000	---	30.17	54.00	23.83	V	-8.3
2917.600000	38.74	---	74.00	35.26	V	-8.3
5238.100000	---	36.39	54.00	17.61	V	-0.2
5238.100000	44.21	---	74.00	29.79	V	-0.2
9904.600000	---	40.76	54.00	13.24	V	7.5
9904.600000	46.90	---	74.00	27.10	V	7.5
14001.600000	---	45.01	54.00	8.99	H	10.5
14001.600000	52.69	---	74.00	21.31	H	10.5
17998.300000	52.17	---	74.00	21.83	H	11.5
17998.300000	---	44.71	54.00	9.29	H	11.5

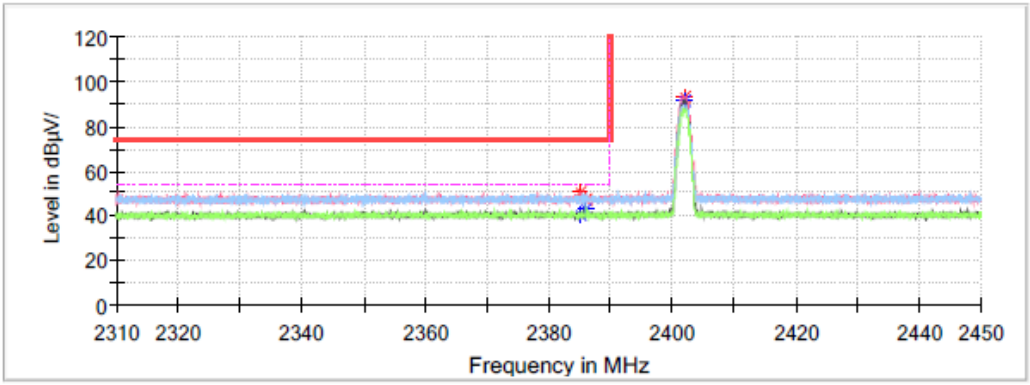
Band Edge:
BLE (1Mbps) mode:

Low Channel

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	Transmitting in BLE 1M Mode of Low Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29

Full Spectrum



Critical_Freqs

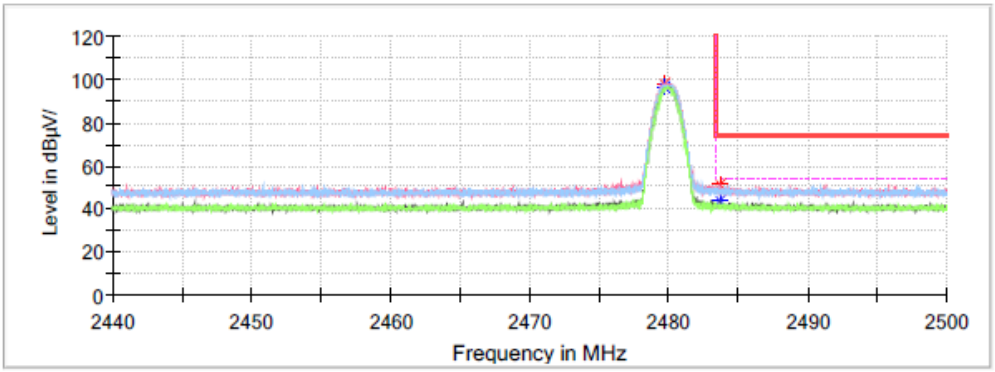
Frequency (MHz)	Corrected Amplitude		Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
	MaxPeak (dB µ V/m)	Average (dB µ V/m)				
2385.152000	---	40.08	54.00	13.92	V	0.1
2385.152000	50.21	---	74.00	23.79	V	0.1
2386.174000	---	42.46	54.00	11.54	H	0.1
2386.174000	46.83	---	74.00	27.17	H	0.1
2402.064000	---	91.88	---	---	V	0.1
2402.064000	93.02	---	---	---	V	0.1

High Channel

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	Transmitting in BLE 1M Mode of High Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29

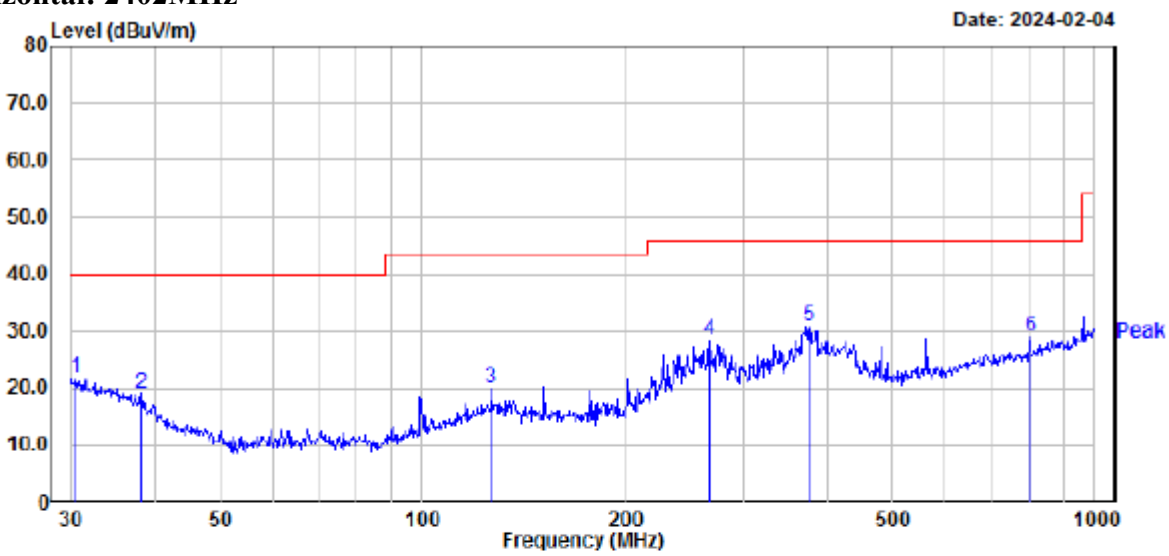
Full Spectrum



Critical_Freqs

Frequency (MHz)	Corrected Amplitude		Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
	MaxPeak (dB µ V/m)	Average (dB µ V/m)				
2479.708000	---	96.51	---	---	V	0.2
2479.708000	97.77	---	---	---	V	0.2
2483.686000	---	43.90	54.00	10.10	V	0.2
2483.686000	51.46	---	74.00	22.54	V	0.2

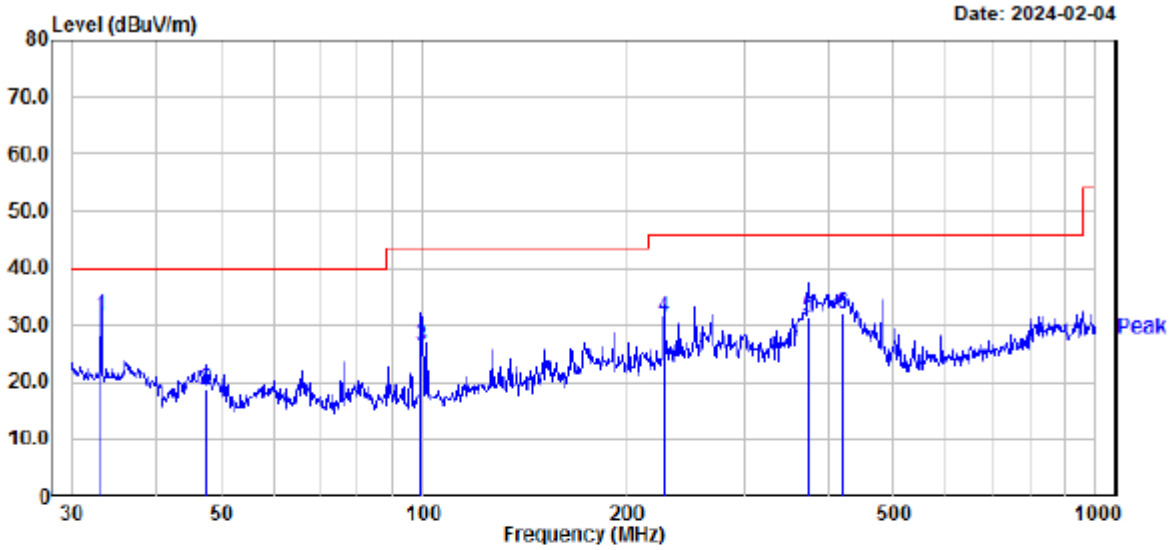
For BLE (2Mbps) Mode:
Spurious Emission Test:
30MHz-1GHz
Horizontal: 2402MHz




```
Site                : 966 Chamber #3
Condition           : limit\FCC PART 15.247 .csv 3m horizontal
                    : DET:Peak
Model               : Aps-c3-02uc
Voltage             : DC 3.3V
Mode                : Transmitting in BLE 2M low channel
Test equipment      : JB3,310N,ESR
Ambient temperature : 20.1℃
Relative humidity   : 39%
Atmospheric pressure: 102.1kPa
Test  by            : Klein Zhu
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	30.64	27.68	-5.96	21.72	40.00	-18.28	100	242	Peak
2	38.21	29.45	-10.55	18.90	40.00	-21.10	200	136	Peak
3	126.77	30.81	-10.95	19.86	43.50	-23.64	100	280	Peak
4	267.55	39.80	-11.44	28.36	46.00	-17.64	200	23	Peak
5	375.94	39.67	-8.79	30.88	46.00	-15.12	200	175	Peak
6	801.79	29.91	-1.07	28.84	46.00	-17.16	200	107	Peak

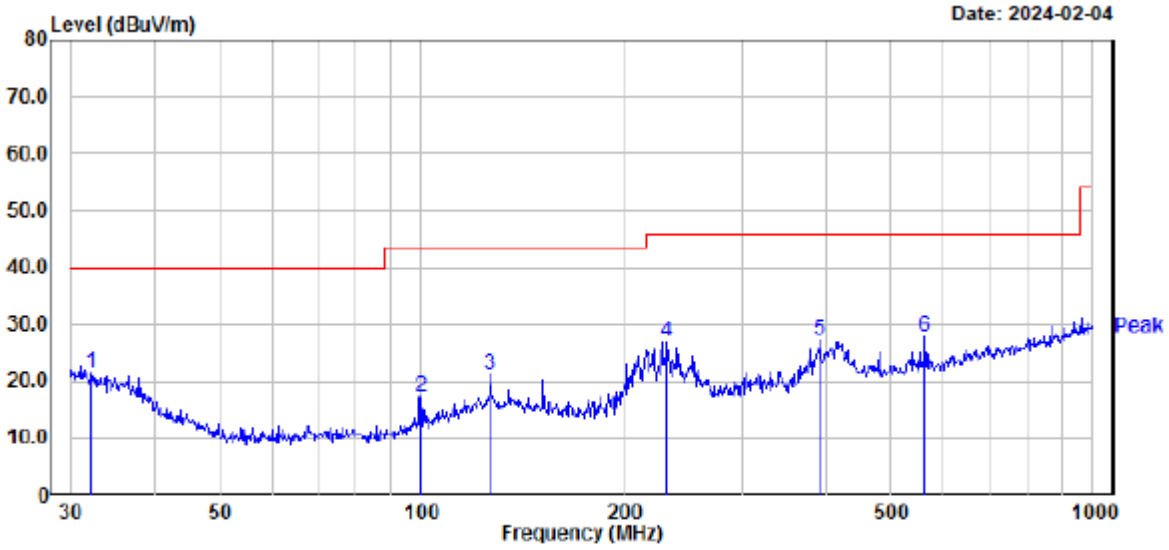
Vertical: 2402MHz




```
Site                : 966 Chamber #3
Condition           : limit\FCC PART 15.247 .csv 3m vertical
                    : DET:Peak
Model               : Aps-c3-02uc
Voltage             : DC 3.3V
Mode                : Transmitting in BLE 2M low channel
Test equipment      : JB3,310N,ESR
Ambient temperature : 20.1℃
Relative humidity   : 39%
Atmospheric pressure: 102.1kPa
Test  by            : Klein Zhu
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	33.21	38.90	-7.29	31.61	40.00	-8.39	100	282	QP
2	47.49	35.00	-16.23	18.77	40.00	-21.23	100	253	QP
3	99.53	41.10	-14.92	26.18	43.50	-17.32	100	114	QP
4	228.49	44.89	-13.39	31.50	46.00	-14.50	100	275	QP
5	373.31	40.19	-8.84	31.35	46.00	-14.65	100	138	QP
6	420.58	39.51	-7.42	32.09	46.00	-13.91	100	47	QP

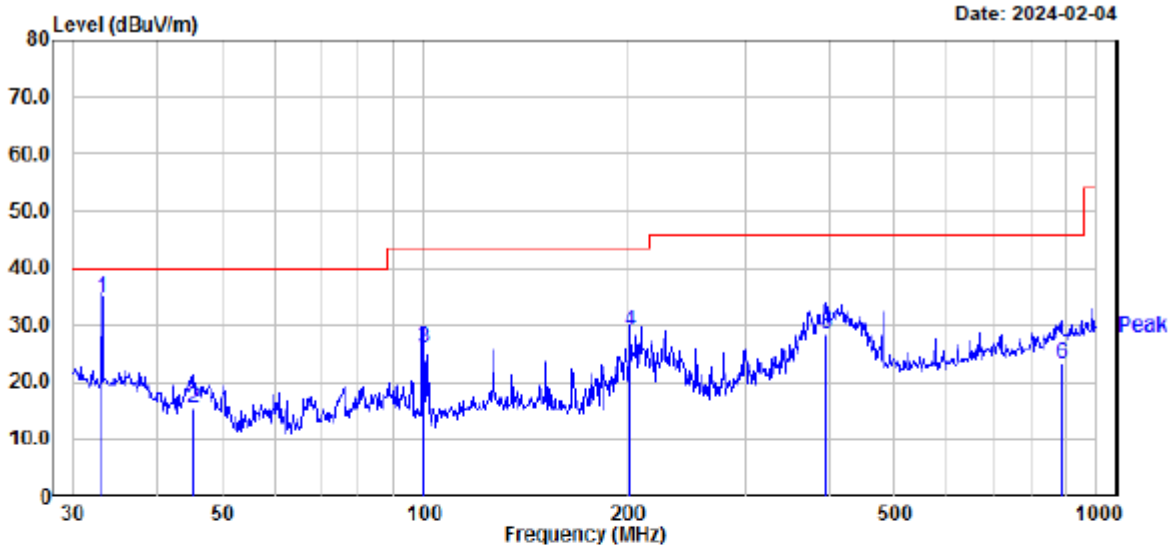
Horizontal: 2440MHz




```
Site                : 966 Chamber #3
Condition           : limit\FCC Part 15.247.csv 3m horizontal
                    : DET:Peak
Model               : Aps-c3-02uc
Voltage             : DC 3.3V
Mode                : Transmitting in BLE 2M middle channel
Test equipment      : JB3,310N,ESR
Ambient temperature : 20.1℃
Relative humidity   : 39%
Atmospheric pressure: 102.1kPa
Test  by            : Klein Zhu
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	32.29	28.31	-6.82	21.49	40.00	-18.51	100	7	Peak
2	99.88	32.17	-14.82	17.35	43.50	-26.15	200	359	Peak
3	126.77	32.04	-10.95	21.09	43.50	-22.41	200	288	Peak
4	232.53	40.07	-13.26	26.81	46.00	-19.19	200	353	Peak
5	392.10	35.65	-8.42	27.23	46.00	-18.77	200	69	Peak
6	562.66	32.42	-4.74	27.68	46.00	-18.32	100	119	Peak

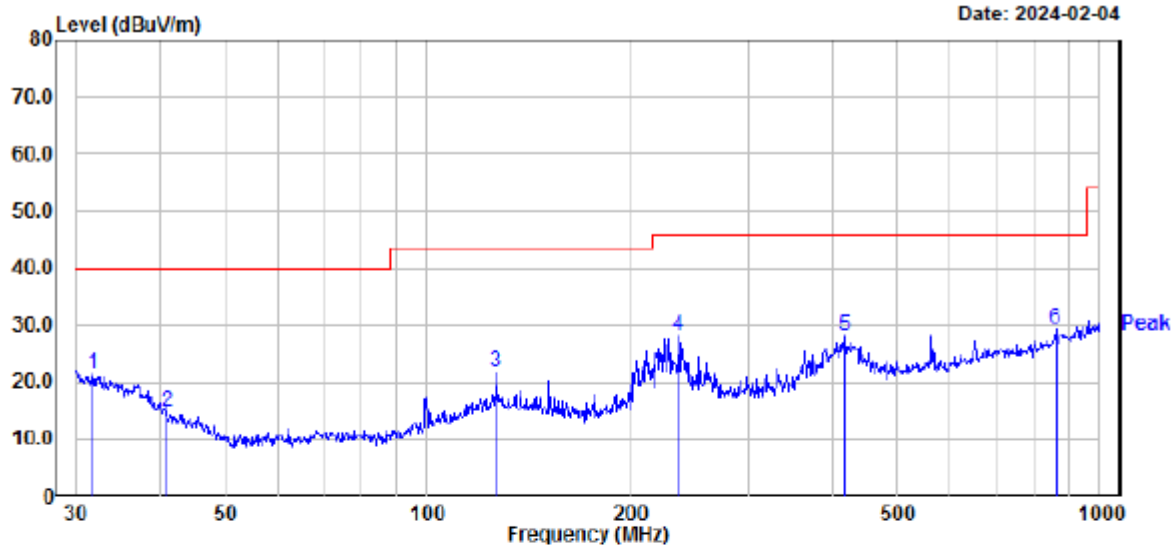
Vertical: 2440MHz




```
Site                : 966 Chamber #3
Condition           : limit\FCC Part 15.247.csv 3m vertical
                    : DET:Peak
Model               : Aps-c3-02uc
Voltage             : DC 3.3V
Mode                : Transmitting in BLE 2M high channel
Test equipment      : JB3,310N,ESR
Ambient temperature : 20.1℃
Relative humidity   : 39%
Atmospheric pressure: 102.1kPa
Test  by            : Klein Zhu
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	33.21	41.90	-7.29	34.61	40.00	-5.39	100	13	QP
2	45.38	30.81	-15.32	15.49	40.00	-24.51	200	272	QP
3	99.88	40.80	-14.82	25.98	43.50	-17.52	100	335	QP
4	202.81	41.61	-12.57	29.04	43.50	-14.46	100	212	QP
5	396.24	36.70	-8.32	28.38	46.00	-17.62	100	107	QP
6	887.61	22.30	0.94	23.24	46.00	-22.76	100	230	QP

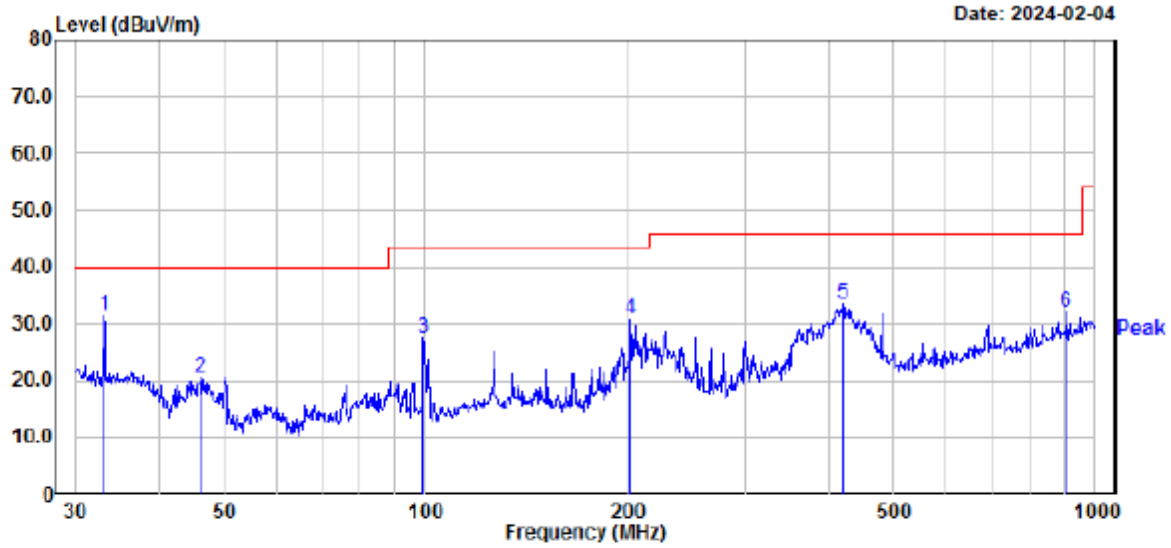
Horizontal: 2480MHz




```
Site                : 966 Chamber #3
Condition           : limit\FCC Part 15.247.csv 3m horizontal
                    : DET:Peak
Model               : Aps-c3-02uc
Voltage             : DC 3.3V
Mode                : Transmitting in BLE 2M high channel
Test equipment      : JB3,310N,ESR
Ambient temperature : 20.1℃
Relative humidity   : 39%
Atmospheric pressure: 102.1kPa
Test  by            : Klein Zhu
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	31.84	27.89	-6.59	21.30	40.00	-18.70	100	115	Peak
2	40.99	27.26	-12.49	14.77	40.00	-25.23	200	63	Peak
3	126.77	32.61	-10.95	21.66	43.50	-21.84	100	57	Peak
4	236.65	41.08	-13.11	27.97	46.00	-18.03	100	4	Peak
5	419.11	35.46	-7.47	27.99	46.00	-18.01	100	85	Peak
6	860.04	28.70	0.49	29.19	46.00	-16.81	200	72	Peak

Vertical: 2480MHz




```
Site                : 966 Chamber #3
Condition           : limit\FCC Part 15.247.csv 3m vertical
                    : DET:Peak
Model               : Aps-c3-02uc
Voltage             : DC 3.3V
Mode                : Transmitting in BLE 2M high channel
Test equipment      : JB3,310N,ESR
Ambient temperature : 20.1℃
Relative humidity   : 39%
Atmospheric pressure: 102.1kPa
Test  by            : Klein Zhu
```

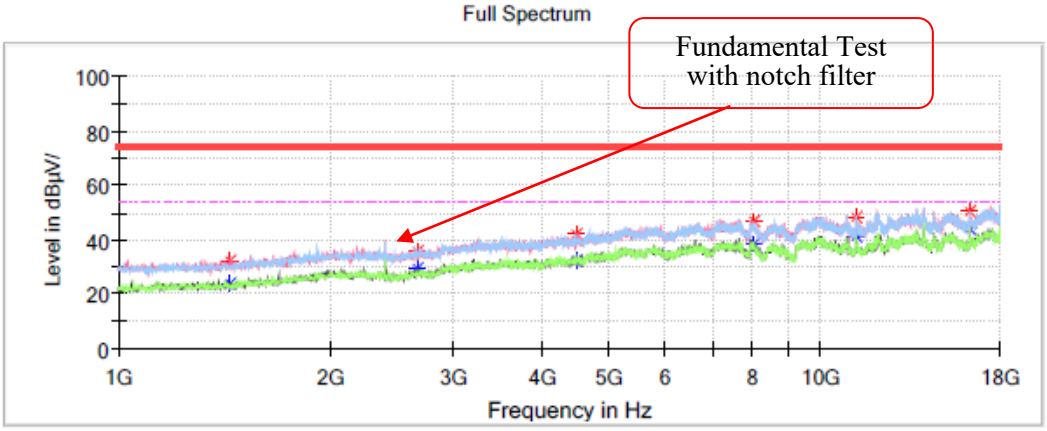
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	33.21	38.82	-7.29	31.53	40.00	-8.47	100	234	Peak
2	46.18	36.05	-15.66	20.39	40.00	-19.61	100	254	Peak
3	99.53	42.26	-14.92	27.34	43.50	-16.16	100	301	Peak
4	202.81	43.38	-12.57	30.81	43.50	-12.69	100	139	Peak
5	420.58	40.85	-7.42	33.43	46.00	-12.57	100	130	Peak
6	906.48	30.91	1.23	32.14	46.00	-13.86	100	254	Peak

1GHz-18GHz:
Spurious Emission Test:
BLE (2Mbps) mode:

Low Channel: 2402MHz

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	BLE 2M Mode of Low Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29



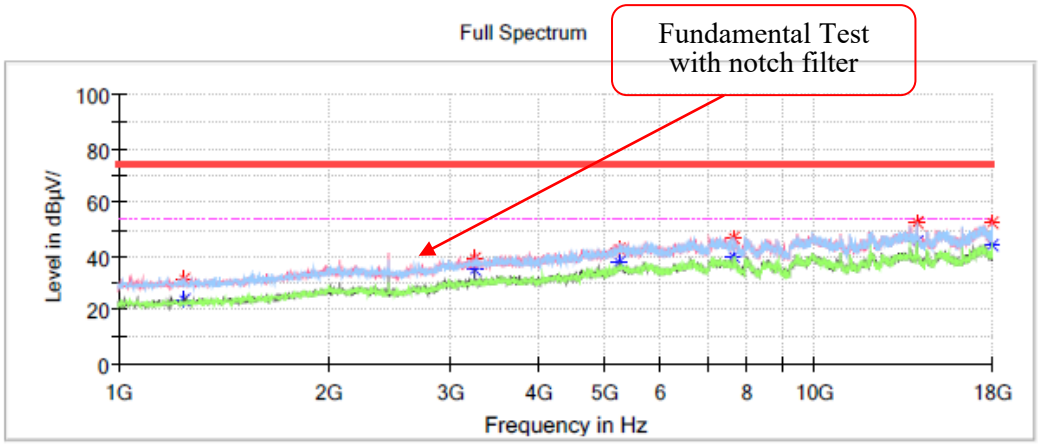
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1445.400000	---	23.62	54.00	30.38	V	-14.1
1445.400000	31.88	---	74.00	42.12	V	-14.1
2667.700000	---	29.39	54.00	24.61	V	-9.2
2667.700000	35.49	---	74.00	38.51	V	-9.2
4490.100000	---	32.42	54.00	21.58	H	-3.8
4490.100000	42.24	---	74.00	31.76	H	-3.8
8051.600000	---	38.39	54.00	15.61	H	3.8
8051.600000	47.09	---	74.00	26.91	H	3.8
11201.700000	---	41.33	54.00	12.67	V	6.7
11201.700000	48.15	---	74.00	25.85	V	6.7
16301.700000	---	44.05	54.00	9.95	H	9.7
16301.700000	50.25	---	74.00	23.75	H	9.7

Middle Channel: 2440MHz

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	BLE 2M Mode of Middle Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29



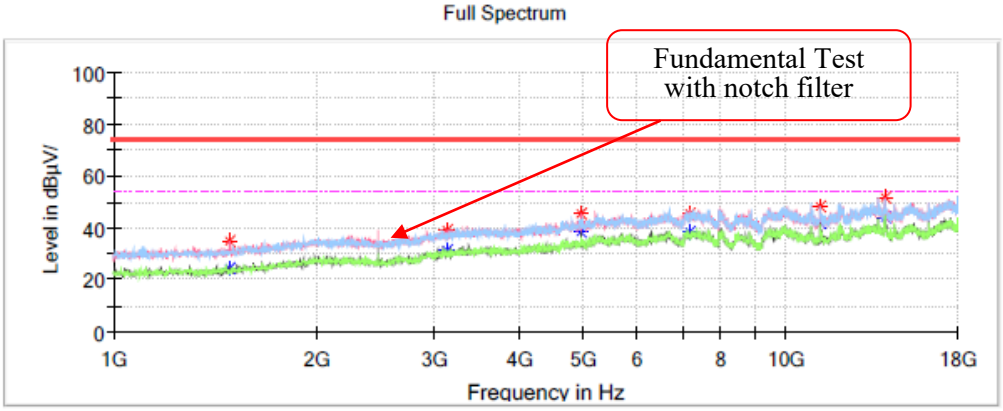
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1239.700000	---	23.83	54.00	30.17	V	-14.8
1239.700000	31.75	---	74.00	42.25	V	-14.8
3252.500000	---	35.03	54.00	18.97	V	-7.1
3252.500000	39.38	---	74.00	34.62	V	-7.1
5246.600000	---	37.43	54.00	16.57	V	-0.2
5246.600000	42.47	---	74.00	31.53	V	-0.2
7640.200000	---	39.88	54.00	14.12	H	4.1
7640.200000	46.68	---	74.00	27.32	H	4.1
14001.600000	---	45.17	54.00	8.83	H	10.5
14001.600000	52.58	---	74.00	21.42	H	10.5
17996.600000	---	43.86	54.00	10.14	H	11.5
17996.600000	52.26	---	74.00	21.74	H	11.5

High Channel: 2480MHz

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	BLE 2M Mode of High Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29



Critical_Freqs

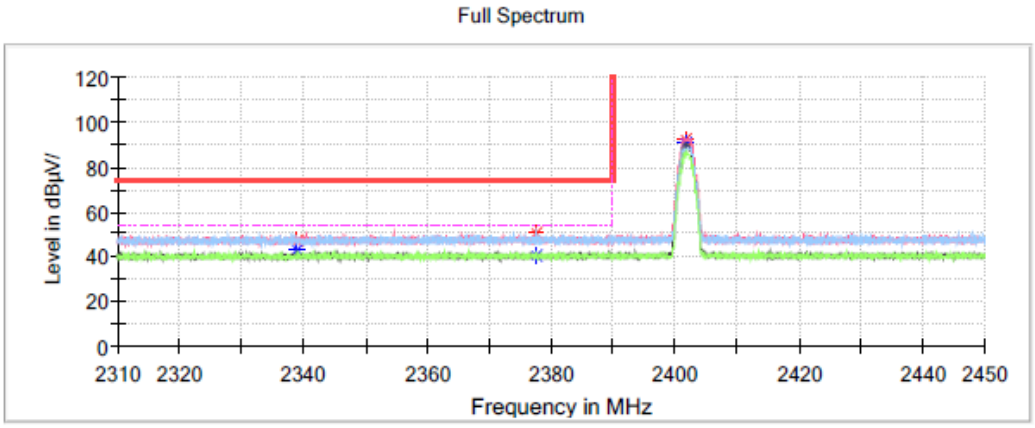
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1491.300000	---	24.66	54.00	29.34	V	-14.0
1491.300000	34.77	---	74.00	39.23	V	-14.0
3131.800000	---	31.30	54.00	22.70	V	-7.5
3131.800000	39.03	---	74.00	34.97	V	-7.5
4959.300000	---	38.51	54.00	15.49	V	-1.4
4959.300000	45.12	---	74.00	28.88	V	-1.4
7208.400000	---	38.35	54.00	15.65	V	4.0
7208.400000	45.54	---	74.00	28.46	V	4.0
11203.400000	---	41.69	54.00	12.31	V	6.7
11203.400000	48.44	---	74.00	25.56	V	6.7
14005.000000	---	44.13	54.00	9.87	V	10.5
14005.000000	51.84	---	74.00	22.16	V	10.5

Band Edge:
BLE (2Mbps) mode:

Low Channel

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	Transmitting in BLE 2M Mode of Low Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29



Critical_Freqs

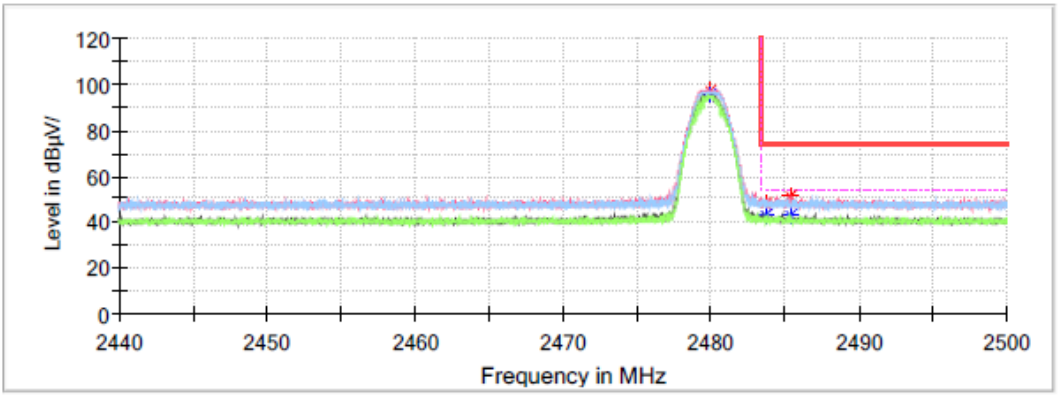
Frequency (MHz)	Corrected Amplitude		Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
	MaxPeak (dB µ V/m)	Average (dB µ V/m)				
2338.896000	47.20	---	74.00	26.80	H	0.0
2338.896000	---	42.79	54.00	11.21	H	0.0
2377.732000	50.05	---	74.00	23.95	H	0.0
2377.732000	---	40.09	54.00	13.91	H	0.0
2401.784000	---	90.80	---	---	V	0.1
2401.784000	92.17	---	---	---	V	0.1

High Channel

Common Information

Project No.:	RSHA231229004
EUT Model:	Aps-c3-02uc
Test Mode:	Transmitting in BLE 2M Mode of High Channel
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Equipment:	ESU40、3115、2641-1
Temperature:	20.3℃
Humidity:	52%
Atmospheric pressure:	103.0KPa
Test Engineer:	Peter Wang
Test Date	2024/1/29

Full Spectrum

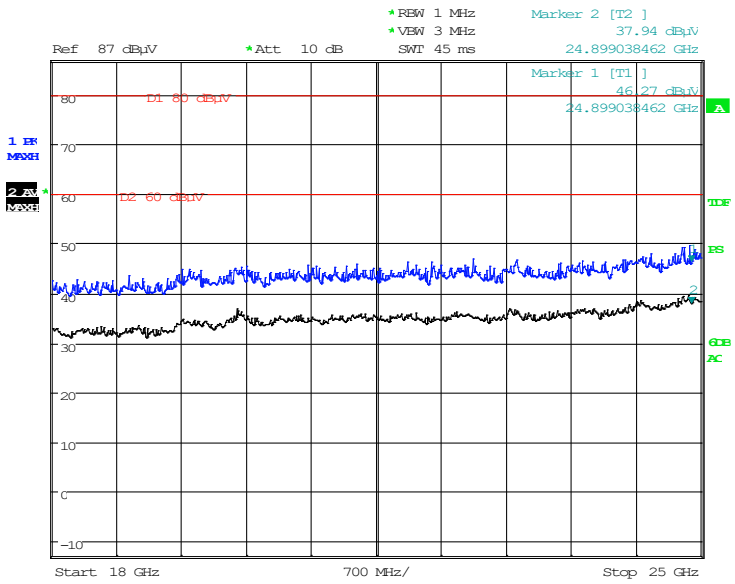


Critical_Freqs

Frequency (MHz)	Corrected Amplitude		Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
	MaxPeak (dB µ V/m)	Average (dB µ V/m)				
2479.918000	---	95.73	---	---	V	0.2
2479.918000	97.47	---	---	---	V	0.2
2483.728000	48.11	---	74.00	25.89	H	0.2
2483.728000	---	43.01	54.00	10.99	H	0.2
2485.360000	50.77	---	74.00	23.23	V	0.2
2485.360000	---	42.63	54.00	11.37	V	0.2

18GHz-25GHz(BLE 1M low channel is worst):

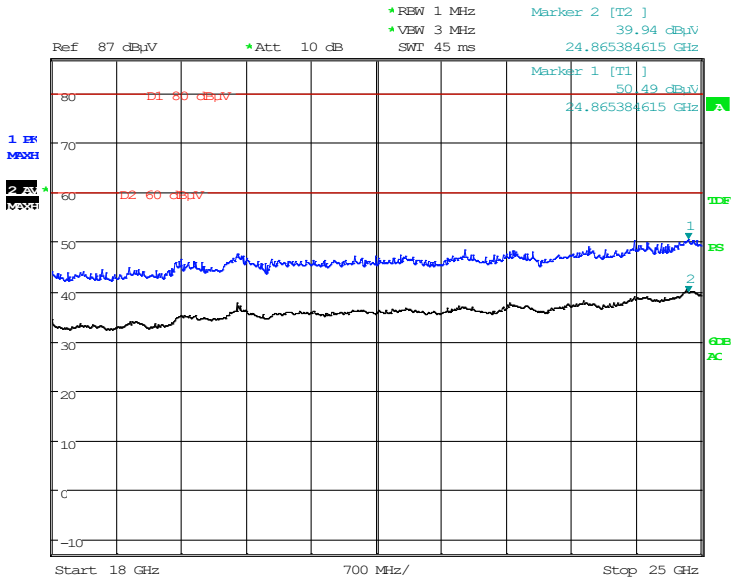
Horizontal:



Project No.: RKSA231229004 Tester: Peter Wang

Date: 5.FEB.2024 13:14:06

Vertical:



Project No.: RKSA231229004 Tester: Peter Wang

Date: 5.FEB.2024 15:22:20

FCC §15.247(a) (2) – 6 dB EMISSION BANDWIDTH

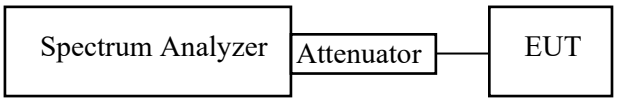
Applicable Standard

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Test Procedure

According to ANSI C63.10-2013 sub-clause 11.8.1

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 x RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. 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 Data

Environmental Conditions & Test Information

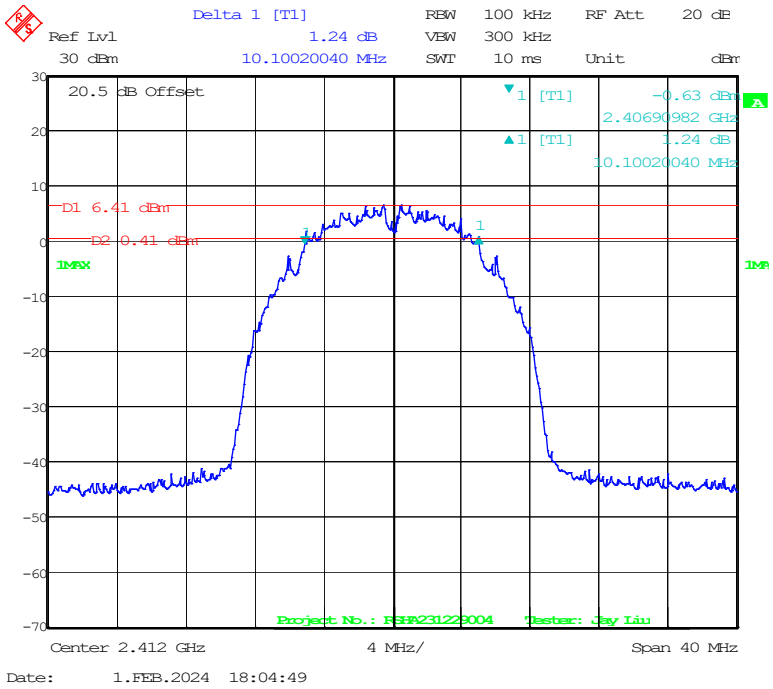
Temperature:	19.8 ℃
Relative Humidity:	40 %
ATM Pressure:	101.4 kPa
Test Date:	2024-02-01
Test Engineer:	Jay Liu

Test Result: Compliant.

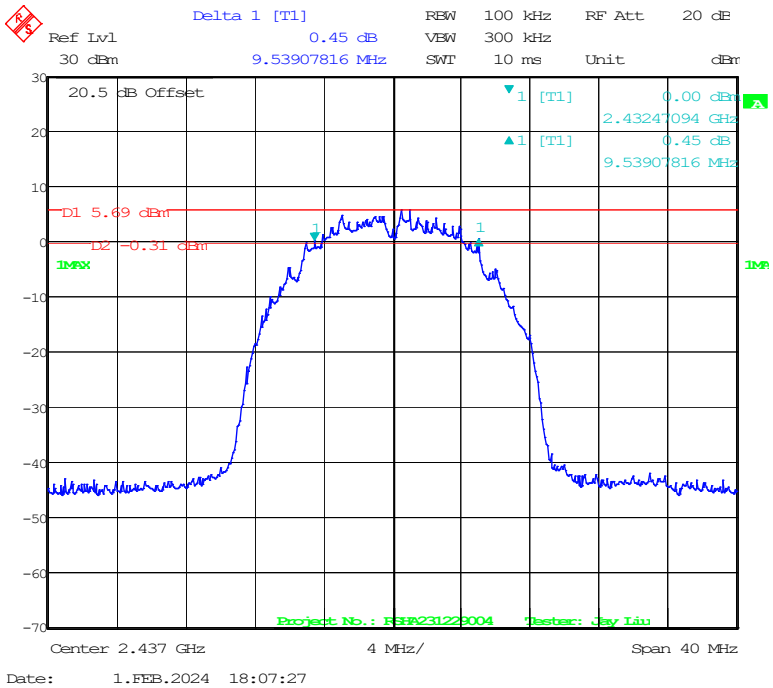
EUT operation mode: Transmitting

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	Limit (MHz)
802.11b Mode			
Low	2412	10.100	≥0.5
Middle	2437	9.539	≥0.5
High	2462	10.020	≥0.5
802.11g Mode			
Low	2412	16.513	≥0.5
Middle	2437	16.513	≥0.5
High	2462	16.513	≥0.5
802.11n-HT20 Mode			
Low	2412	17.154	≥0.5
Middle	2437	17.234	≥0.5
High	2462	17.154	≥0.5
BLE(1Mbps) Mode			
Low	2402	0.701	≥0.5
Middle	2440	0.709	≥0.5
High	2480	0.701	≥0.5
BLE(2Mbps) Mode			
Low	2402	1.339	≥0.5
Middle	2440	1.331	≥0.5
High	2480	1.331	≥0.5

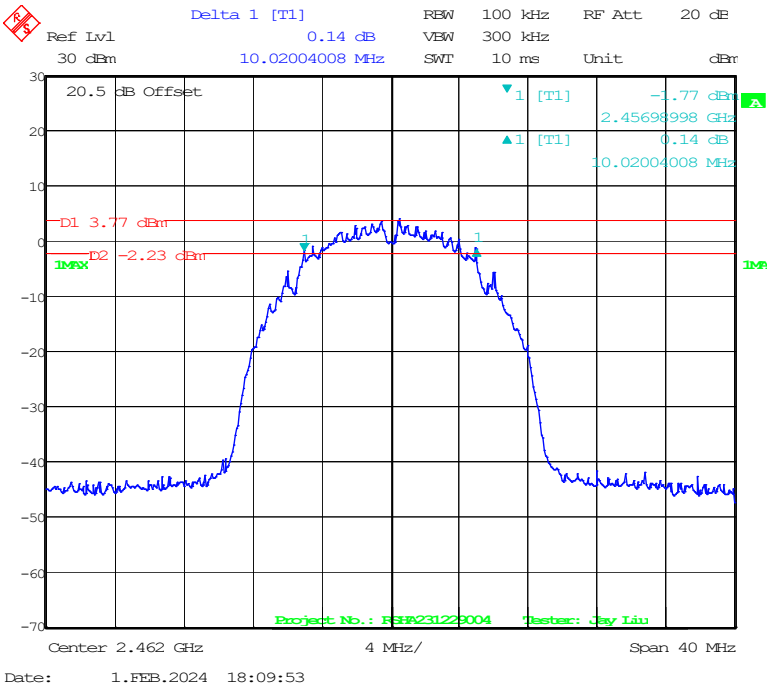
802.11b Mode Low Channel



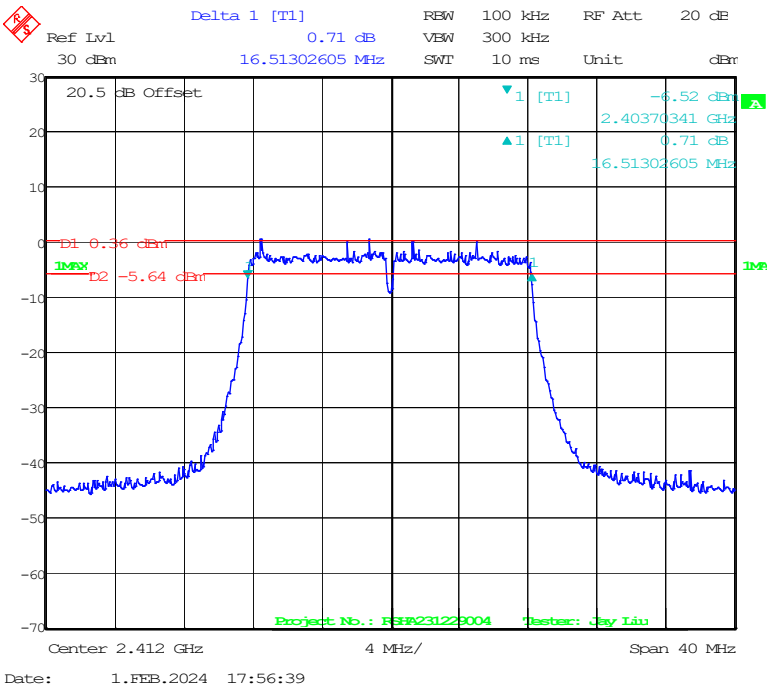
802.11b Mode Middle Channel



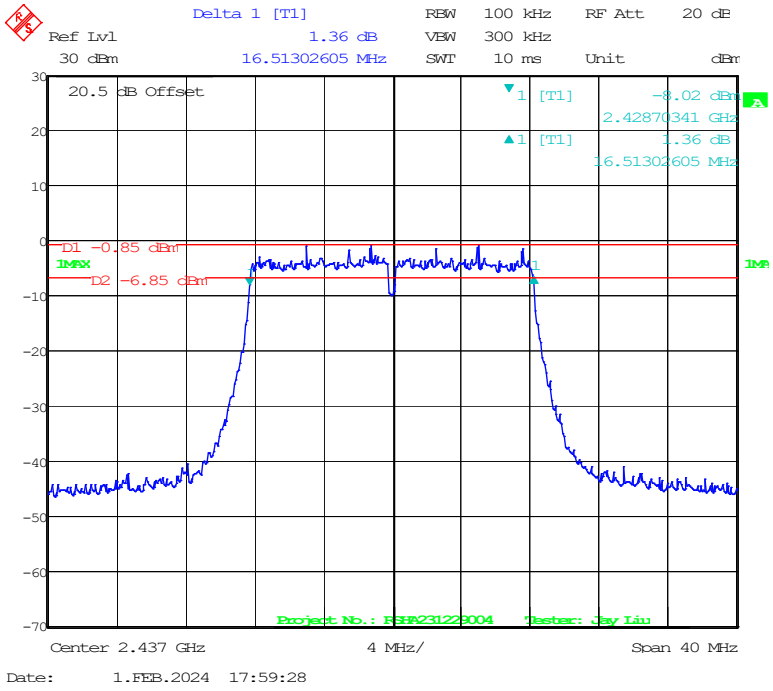
802.11b Mode High Channel



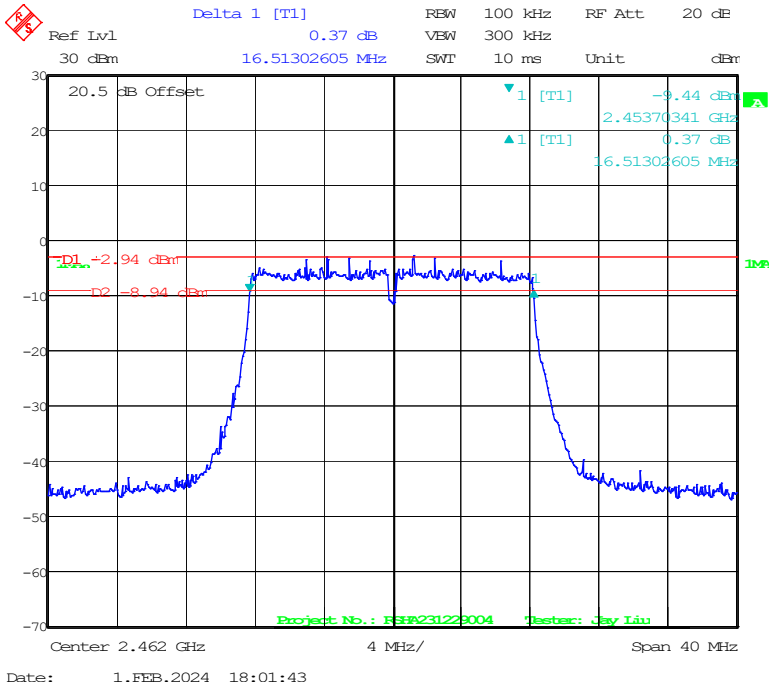
802.11g Mode Low Channel



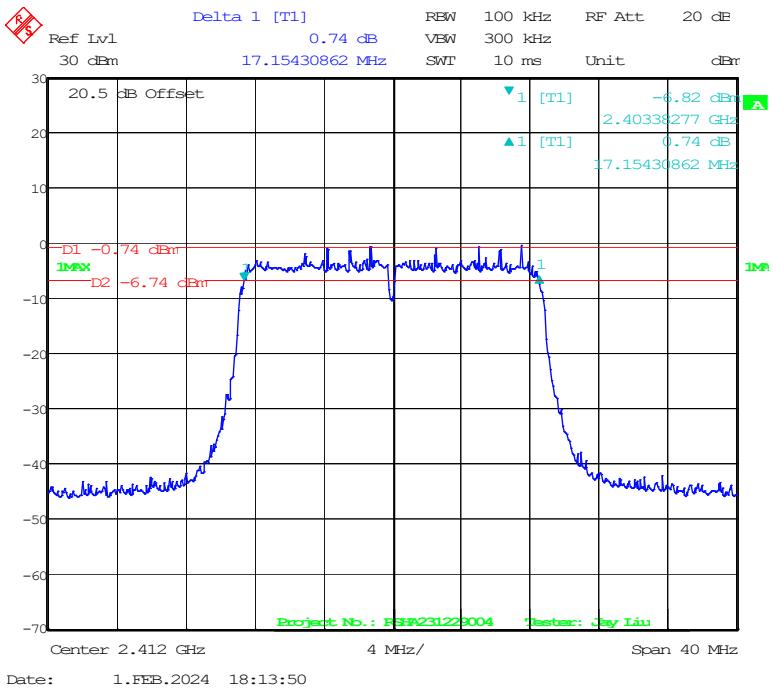
802.11g Mode Middle Channel



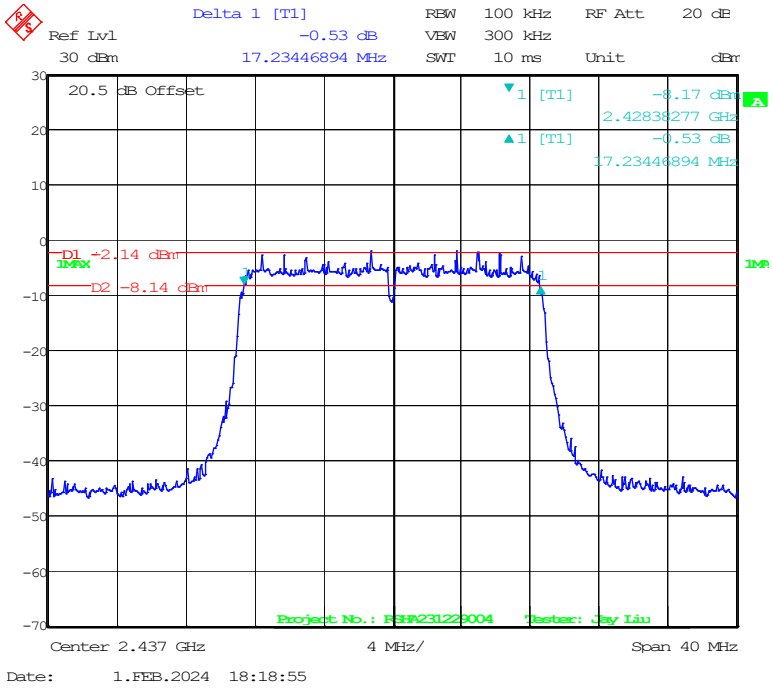
802.11g Mode High Channel



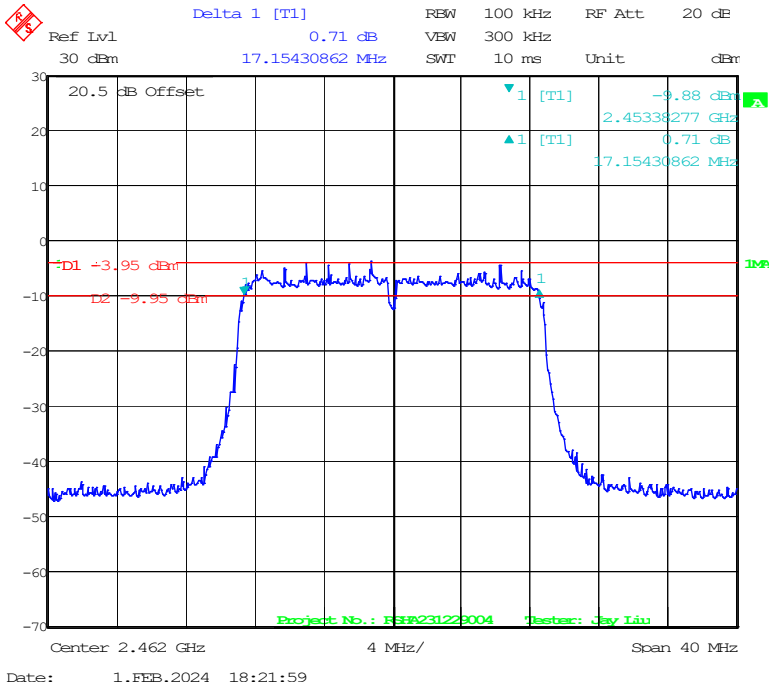
802.11n-HT20 Mode Low Channel



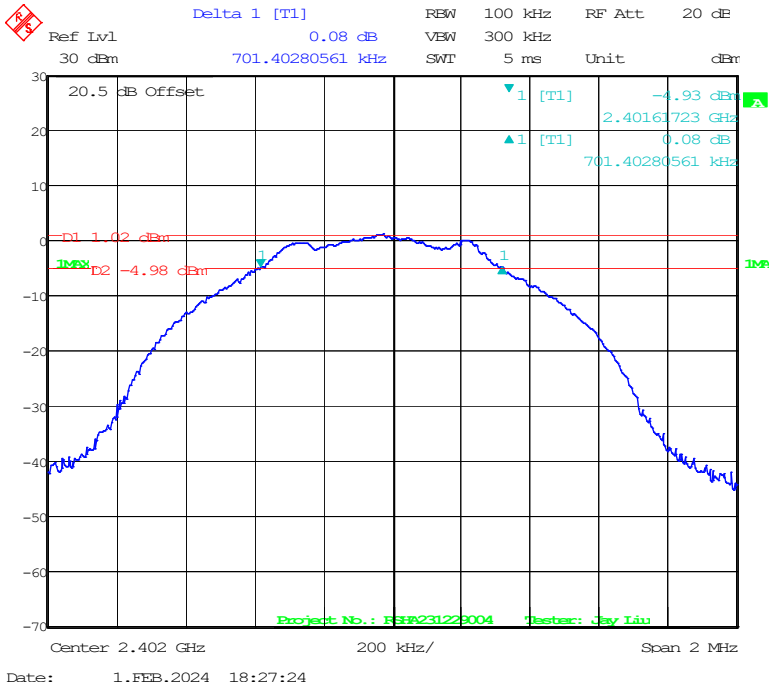
802.11n-HT20 Mode Middle Channel



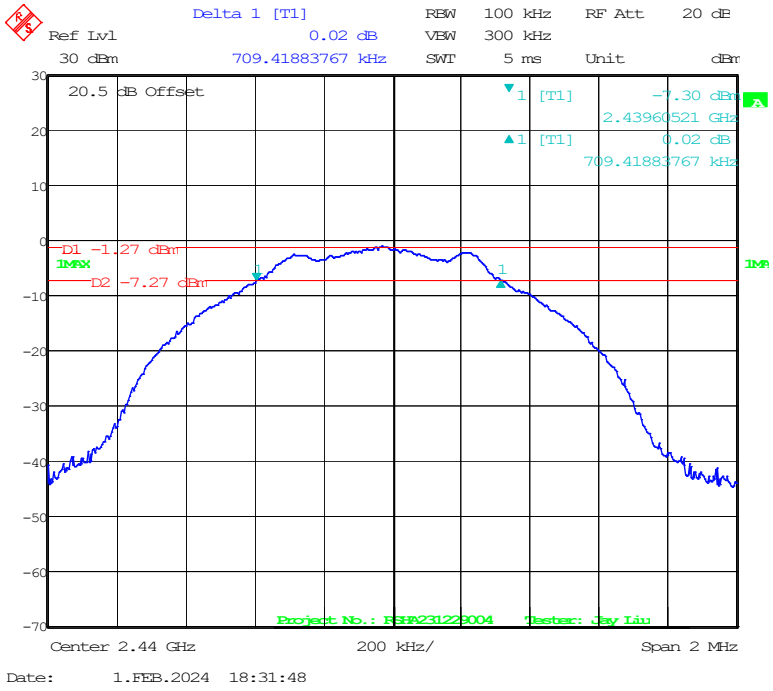
802.11n-HT20 Mode High Channel



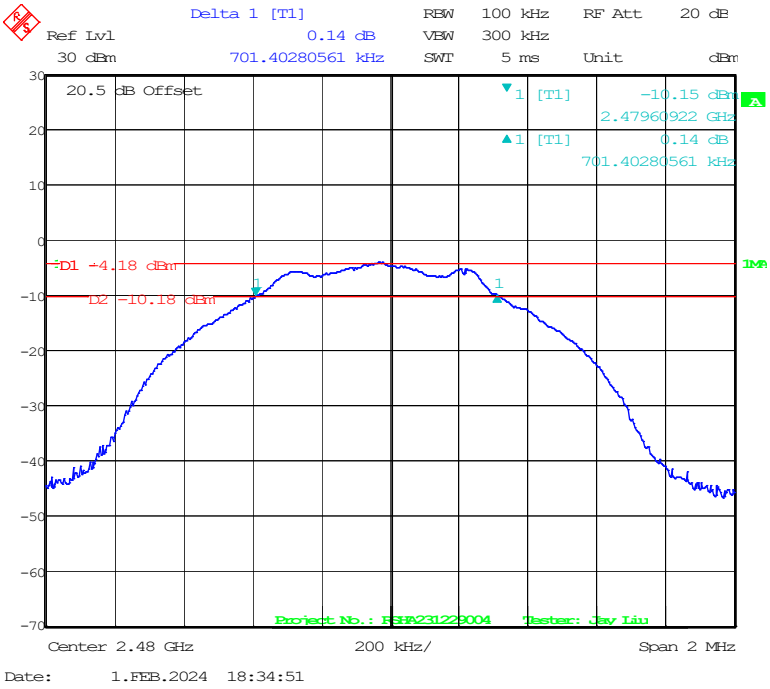
BLE(1Mbps) Mode Low Channel



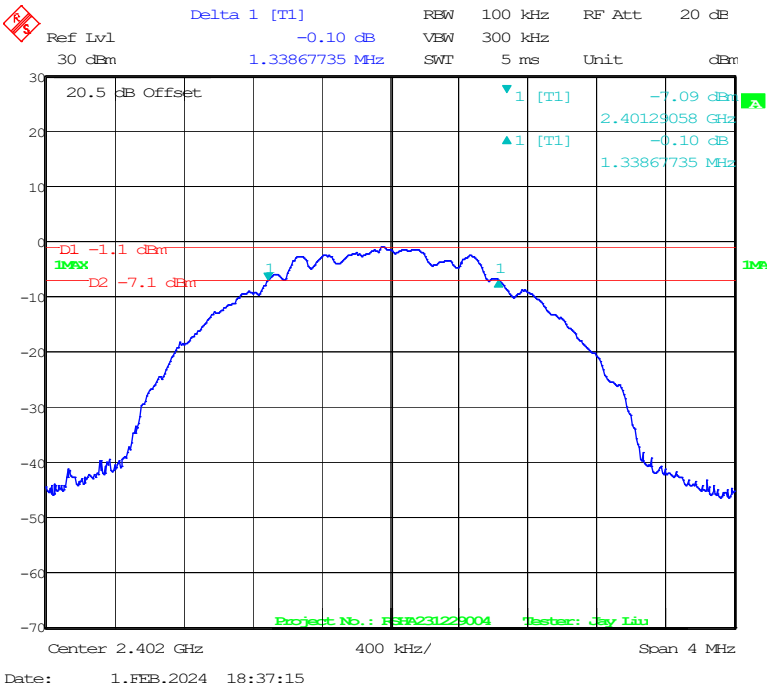
BLE(1Mbps) Mode Middle Channel



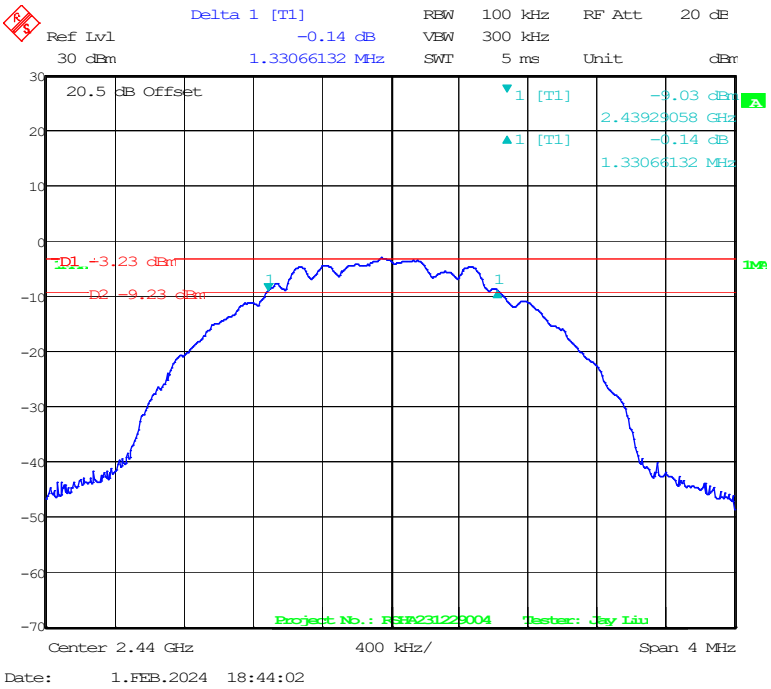
BLE(1Mbps) Mode High Channel



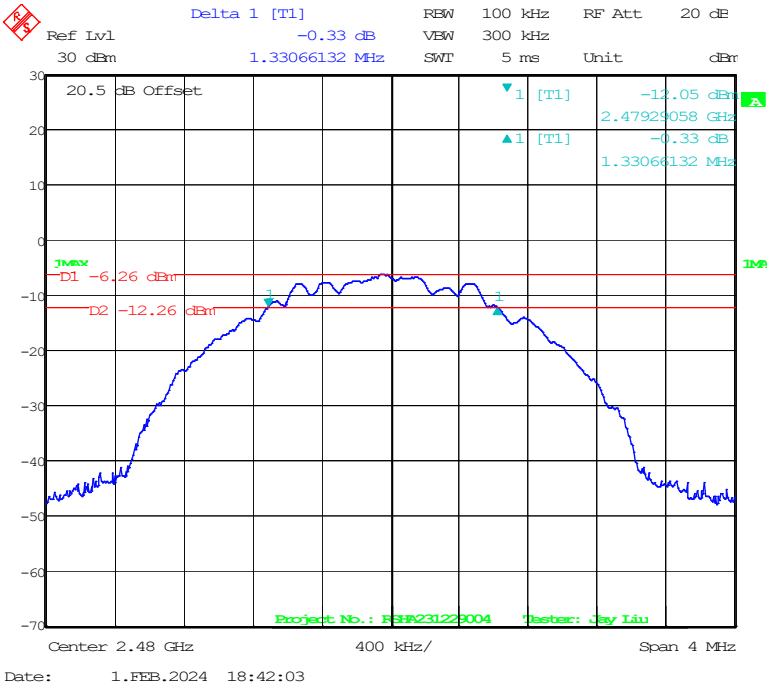
BLE(2Mbps) Mode Low Channel



BLE(2Mbps) Mode Middle Channel



BLE(2Mbps) Mode High Channel



FCC §15.247(b) (3) - MAXIMUM CONDUCTED OUTPUT POWER

Applicable Standard

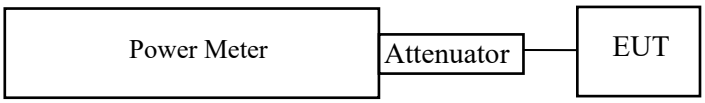
According to FCC §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, Compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted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

Test Procedure

For Wi-Fi:

According to ANSI C63.10-2013 sub-clause 11.9.1.3

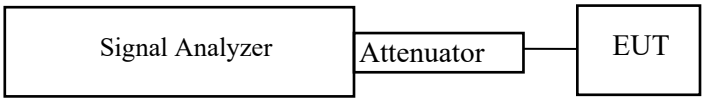
The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall use a fast-responding diode detector.



For BLE:

According to ANSI C63.10-2013 sub-clause 11.9.1.1

1. Set the RBW ≥ DTS bandwidth.
2. Set VBW ≥ 3 x RBW.
3. Set span ≥ 3 x RBW
4. Sweep time = auto couple.
5. Detector = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use peak marker function to determine the peak amplitude level.



Test Data

Environmental Conditions & Test Information

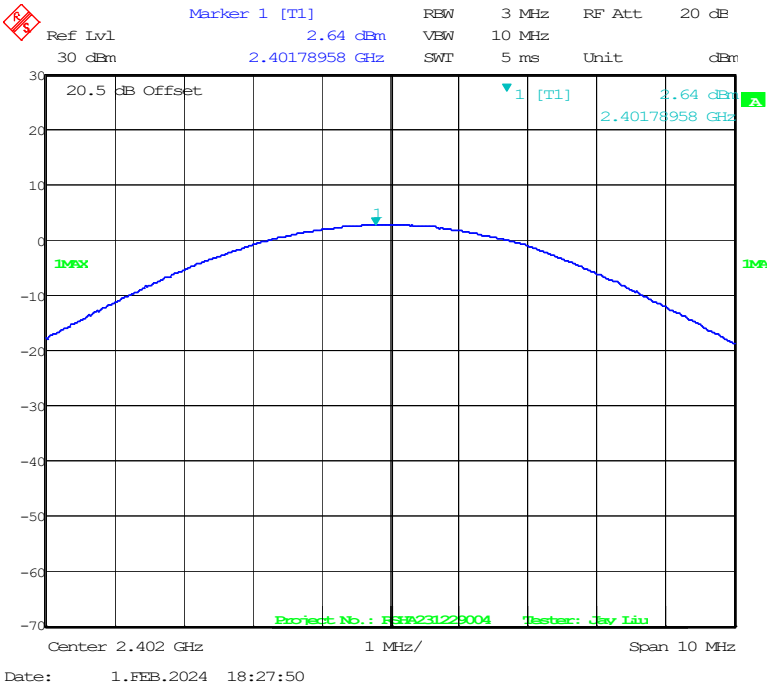
Temperature:	19.8 ℃
Relative Humidity:	40 %
ATM Pressure:	101.4 kPa
Test Date:	2024-02-01
Test Engineer:	Jay Liu

Test Result: Compliant.

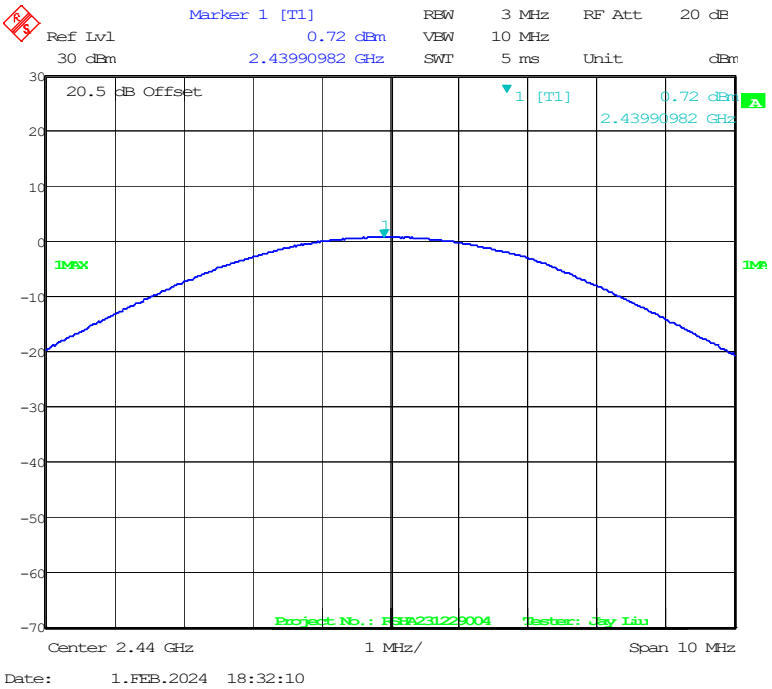
EUT operation mode: Transmitting

Channel	Frequency (MHz)	Conducted Peak Power (dBm)	Limit (dBm)	Result
802.11b Mode				
Low	2412	18.01	30	Pass
Middle	2437	16.71	30	Pass
High	2462	14.77	30	Pass
802.11g Mode				
Low	2412	21.76	30	Pass
Middle	2437	20.54	30	Pass
High	2462	18.47	30	Pass
802.11n-HT20 Mode				
Low	2412	21.04	30	Pass
Middle	2437	19.77	30	Pass
High	2462	17.45	30	Pass
BLE (1Mbps) Mode				
Low	2402	2.64	30	Pass
Middle	2440	0.72	30	Pass
High	2480	-2.41	30	Pass
BLE (2Mbps) Mode				
Low	2402	2.25	30	Pass
Middle	2440	0.21	30	Pass
High	2480	-2.68	30	Pass

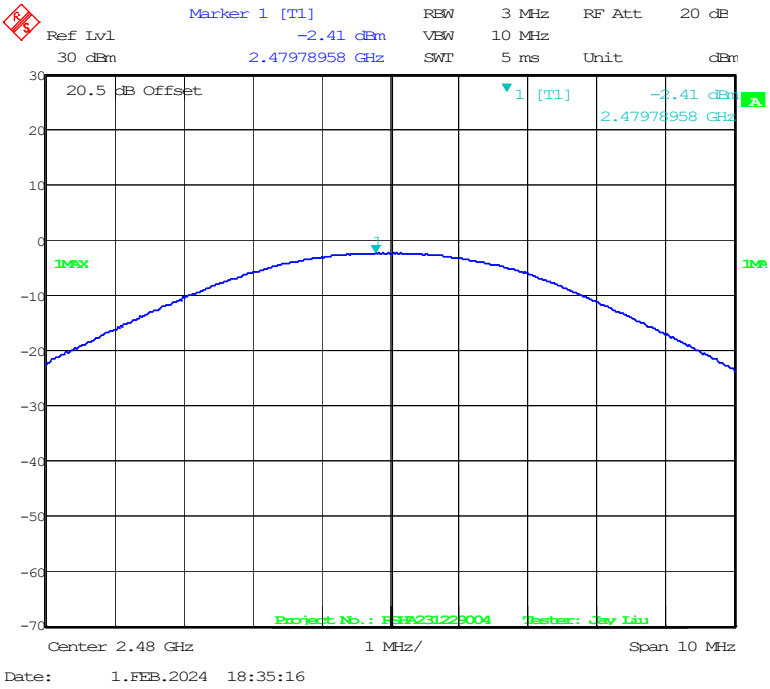
BLE(1Mbps) Mode Low Channel



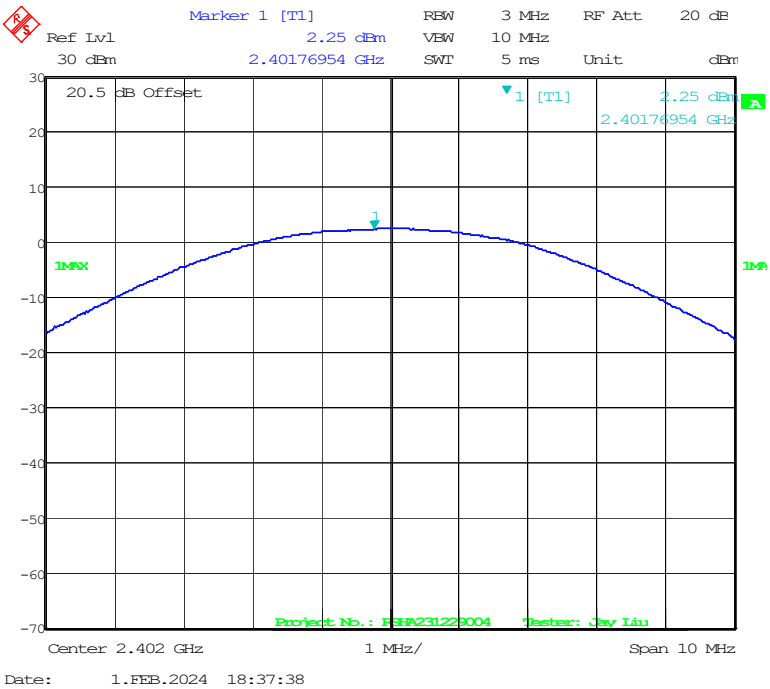
BLE(1Mbps) Mode Middle Channel



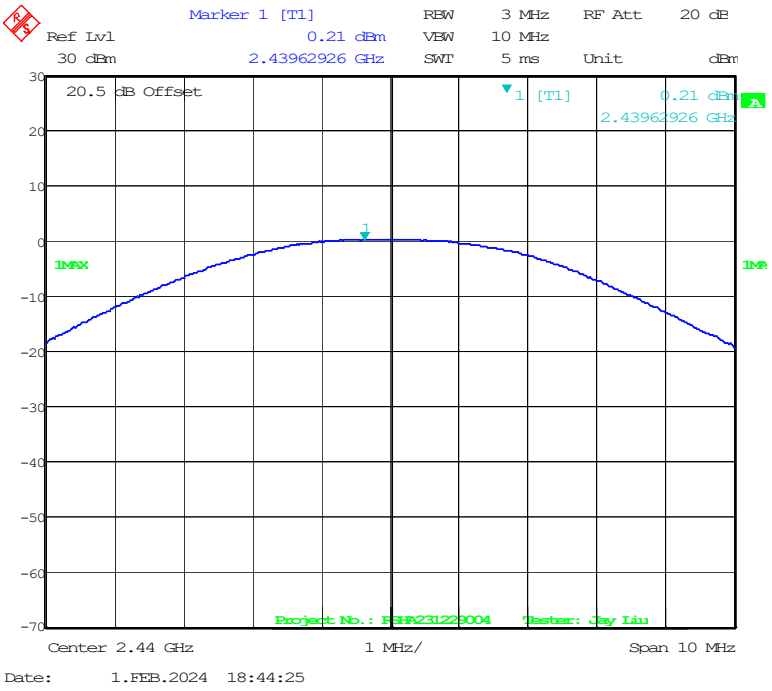
BLE(1Mbps) Mode High Channel



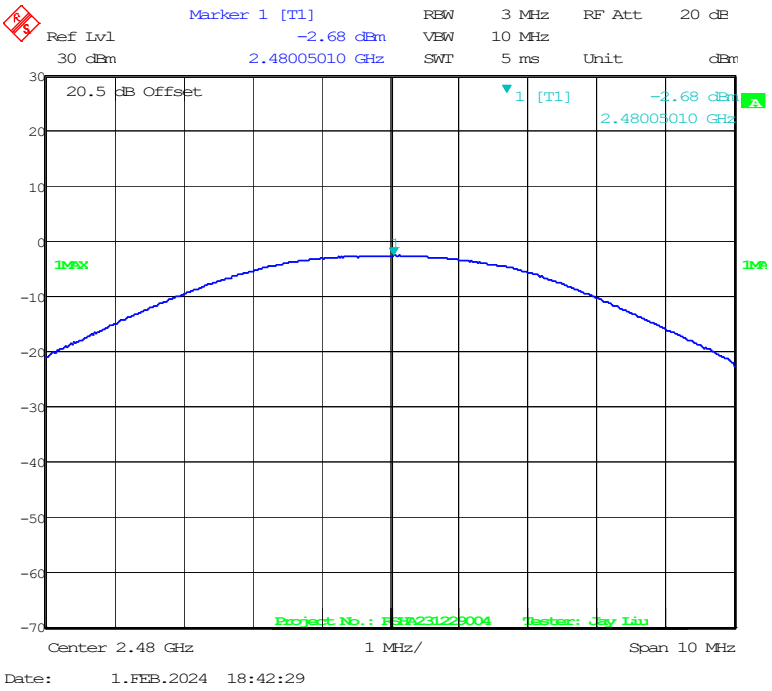
BLE(2Mbps) Mode Low Channel



BLE(2Mbps) Mode Middle Channel



BLE(2Mbps) Mode High Channel



FCC §15.247(d) - BAND EDGE

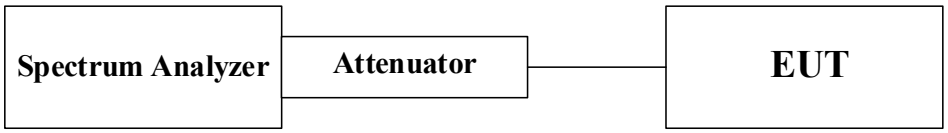
Applicable Standard

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates Compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Test Procedure

According to ANSI C63.10-2013 sub-clause 6.10.

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.



Test Data

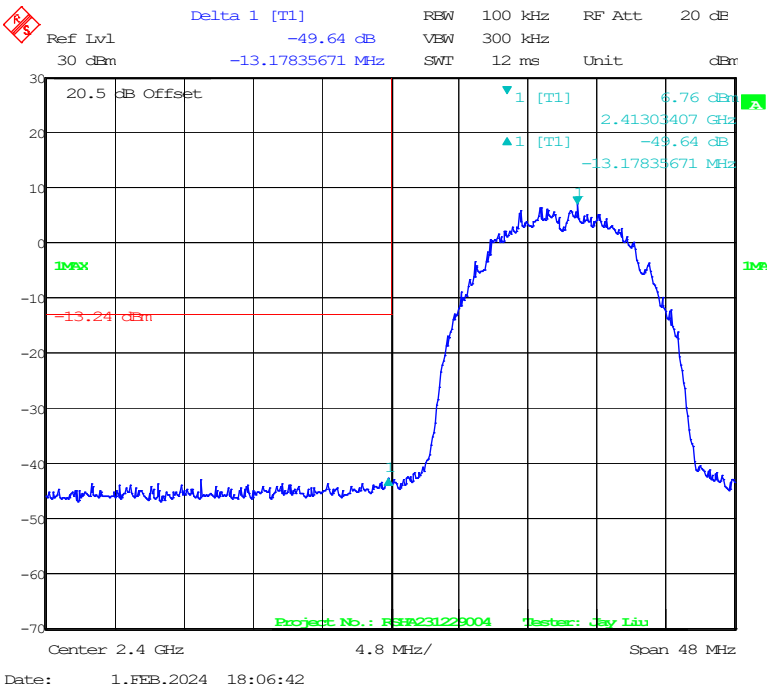
Environmental Conditions & Test Information

Temperature:	19.8 ℃
Relative Humidity:	40 %
ATM Pressure:	101.4 kPa
Test Date:	2024-02-01
Test Engineer:	Jay Liu

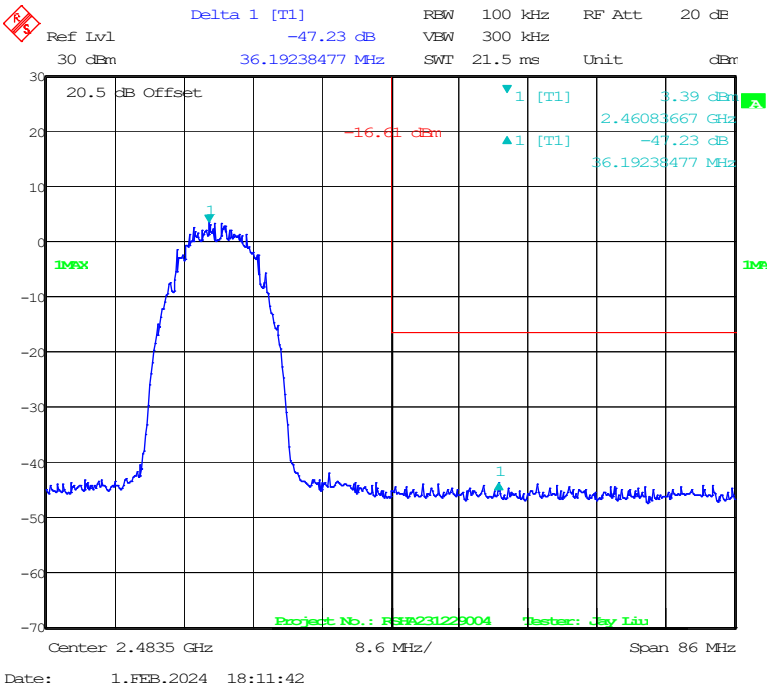
Test Result: Compliant.

EUT operation mode: Transmitting

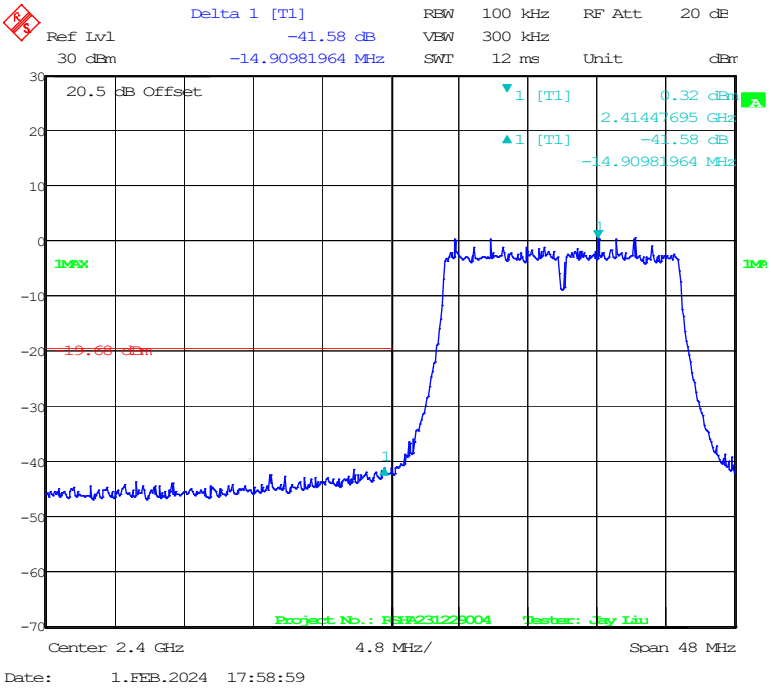
802.11b Mode Left Side



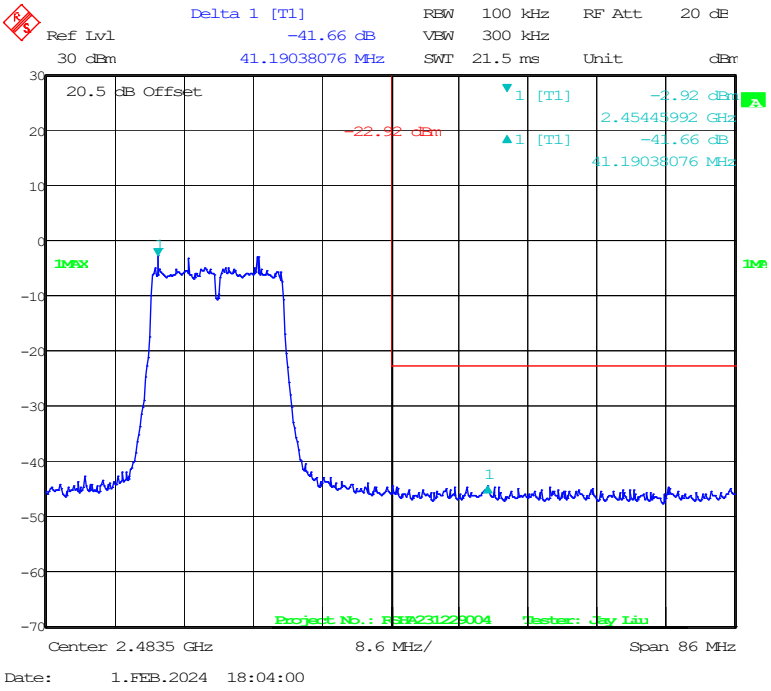
802.11b Mode Right Side



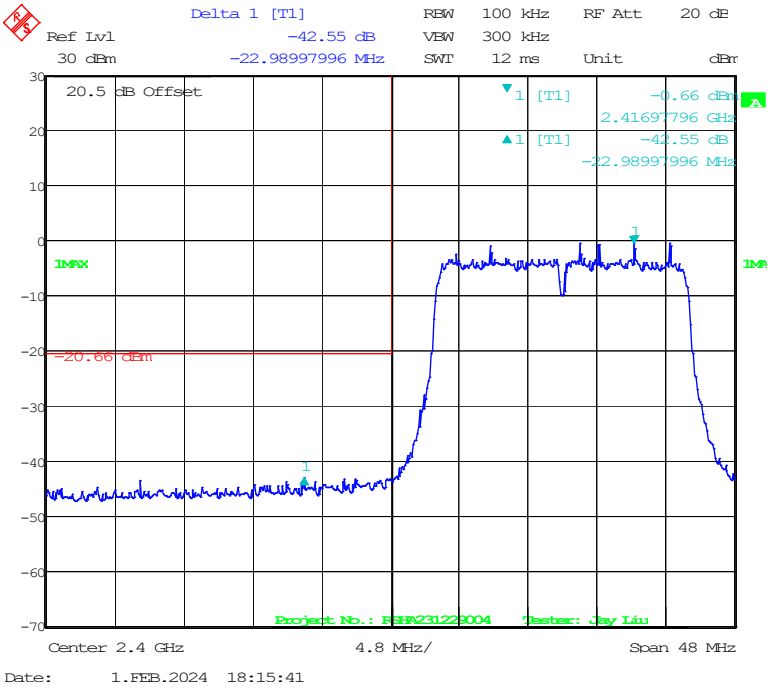
802.11g Mode Left Side



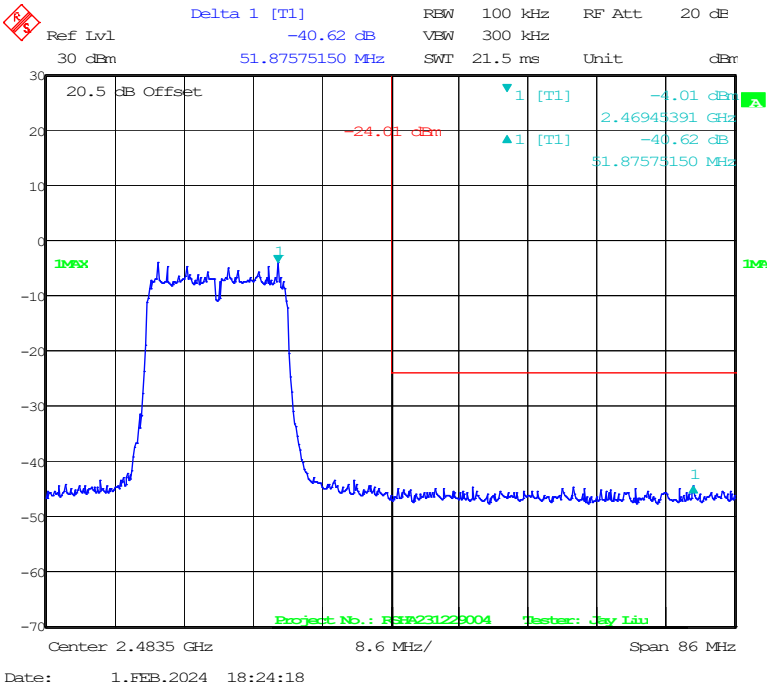
802.11g Mode Right Side



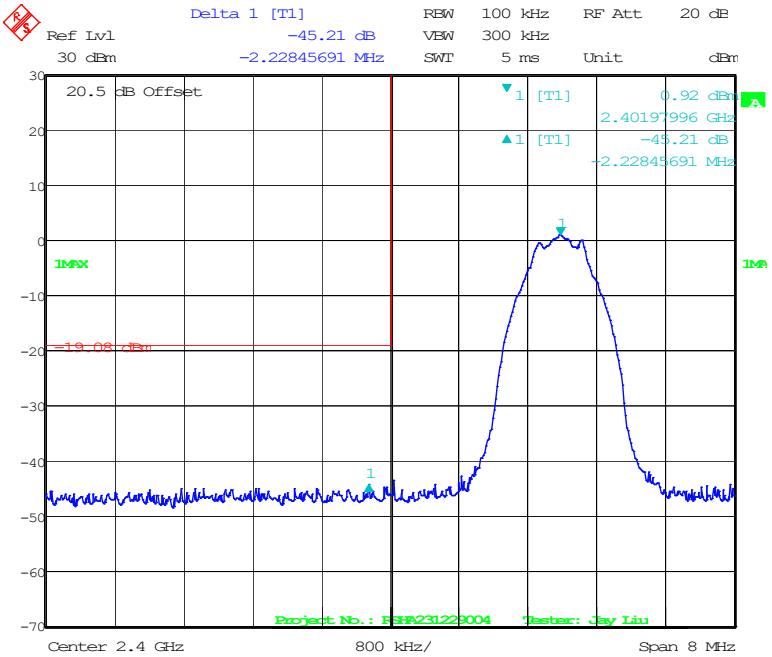
802.11n-HT20 Mode Left Side



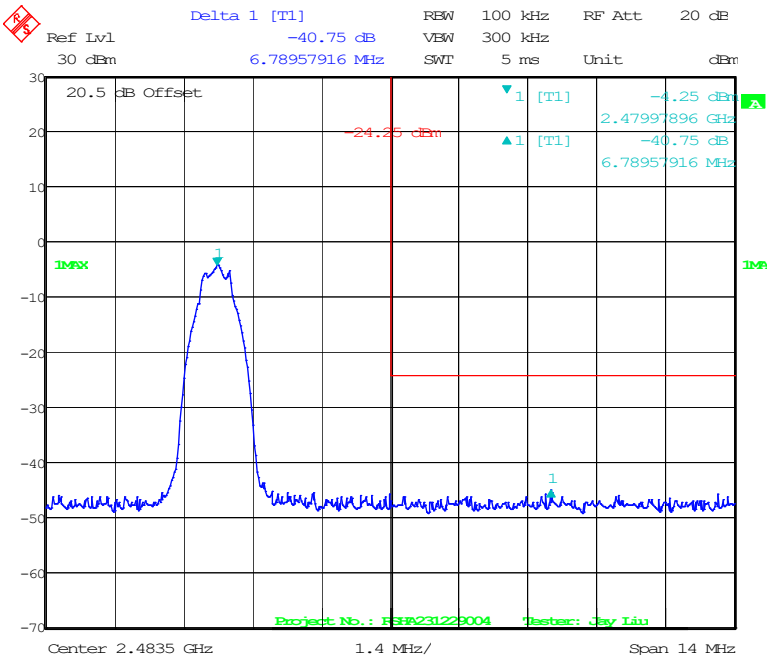
802.11n-HT20 Mode Right Side



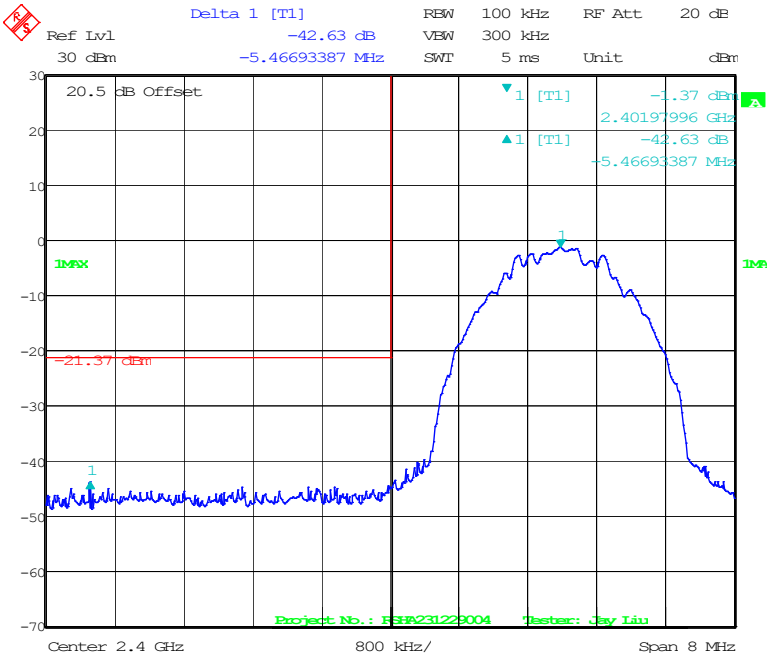
BLE(1Mbps) Mode Left Side



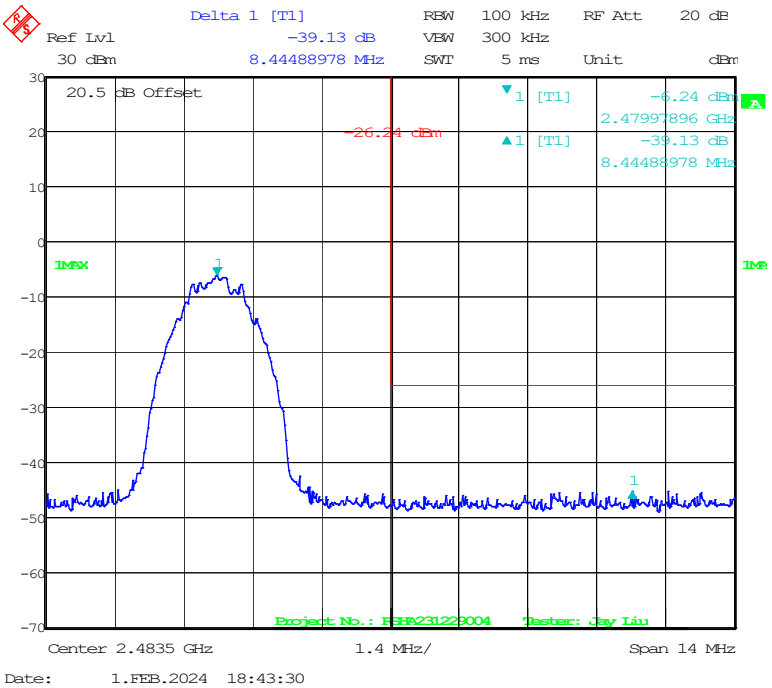
BLE(1Mbps) Mode: Right Side



BLE(2Mbps) Mode Left Side



BLE(2Mbps) Mode: Right Side



FCC §15.247(e) - POWER SPECTRAL DENSITY

Applicable Standard

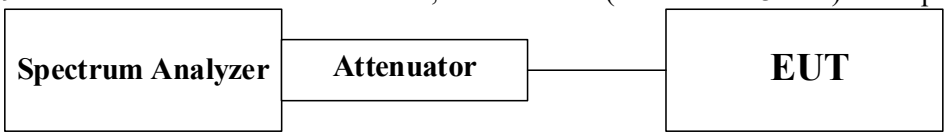
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

Test Procedure

According to ANSI C63.10-2013 sub-clause 11.10.2

The following procedure shall be used if maximum peak conducted output power was used to determine compliance, and it is optional if the maximum conducted (average) output power was used to determine compliance:

1. Set the RBW to: 3kHz≤ RBW≤100 kHz.
2. Set the VBW ≥ 3xRBW.
3. Set the span to 1.5 times the DTS bandwidth.
4. Detector = peak.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum amplitude level within the RBW.
9. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.



Test Data

Environmental Conditions & Test Information

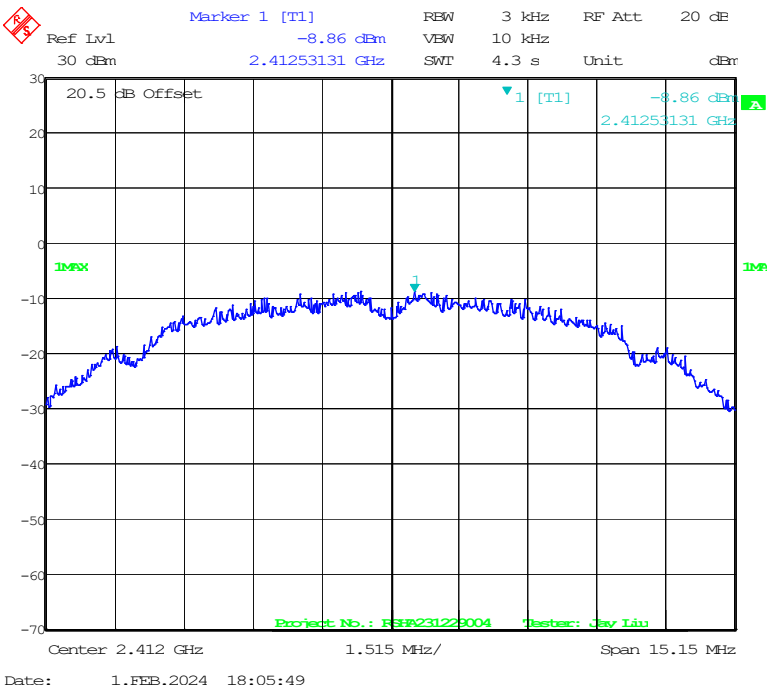
Temperature:	19.8 ℃
Relative Humidity:	40 %
ATM Pressure:	101.4 kPa
Test Date:	2024-02-01
Test Engineer:	Jay Liu

Test Result: Compliant.

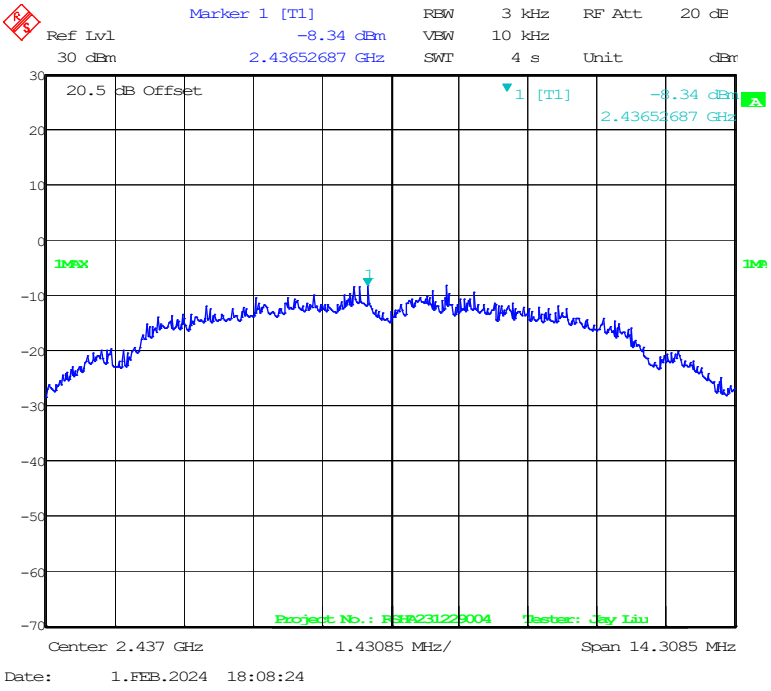
EUT operation mode: Transmitting

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)
802.11b Mode			
Low	2412	-8.85	≤8
Middle	2437	-8.34	≤8
High	2462	-9.83	≤8
802.11g Mode			
Low	2412	-12.94	≤8
Middle	2437	-14.10	≤8
High	2462	-16.12	≤8
802.11n-HT20 mode			
Low	2412	-14.23	≤8
Middle	2437	-15.29	≤8
High	2462	-17.16	≤8
BLE (1Mbps) mode			
Low	2402	-14.30	≤8
Middle	2440	-15.92	≤8
High	2480	-19.07	≤8
BLE (2Mbps) mode			
Low	2402	-19.06	≤8
Middle	2440	-20.71	≤8
High	2480	-22.76	≤8

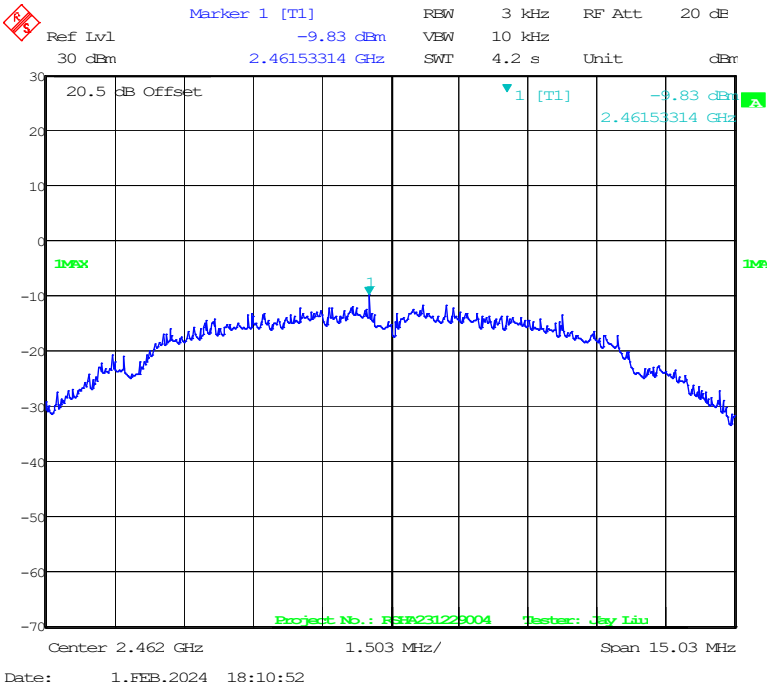
802.11b Low Channel



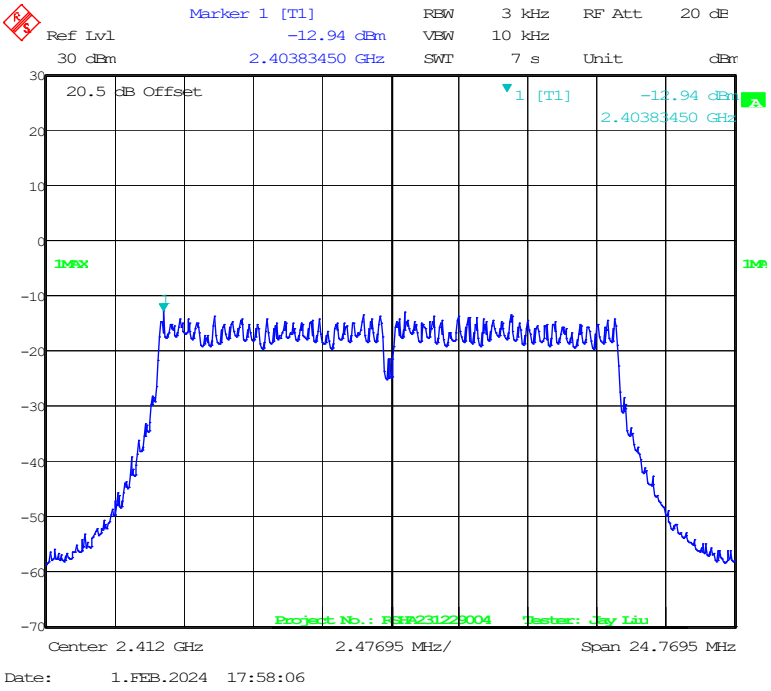
802.11b Middle Channel



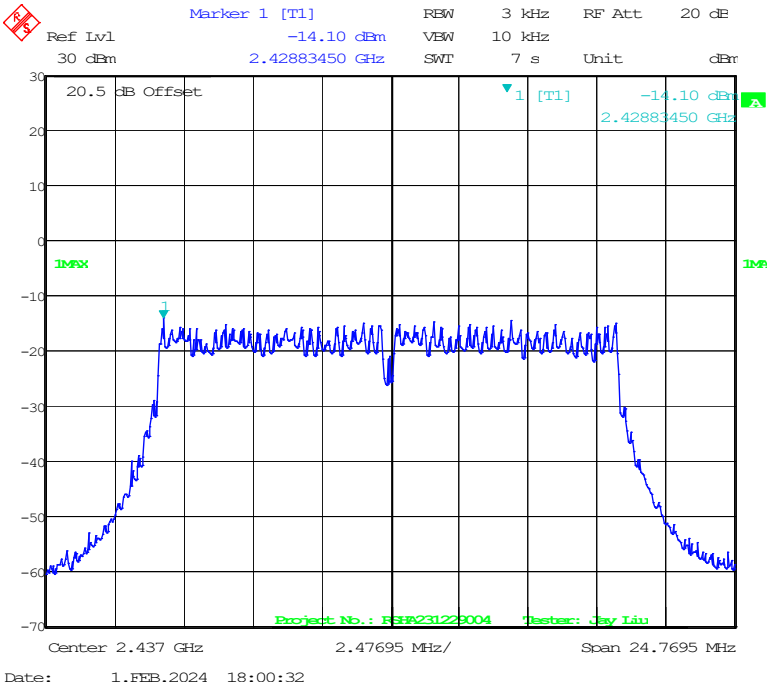
802.11b High Channel



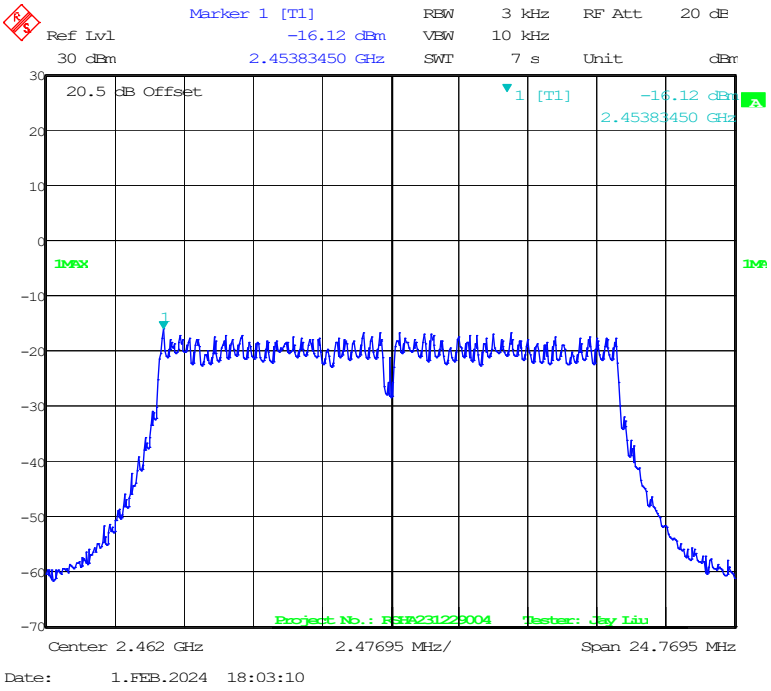
802.11g Low Channel



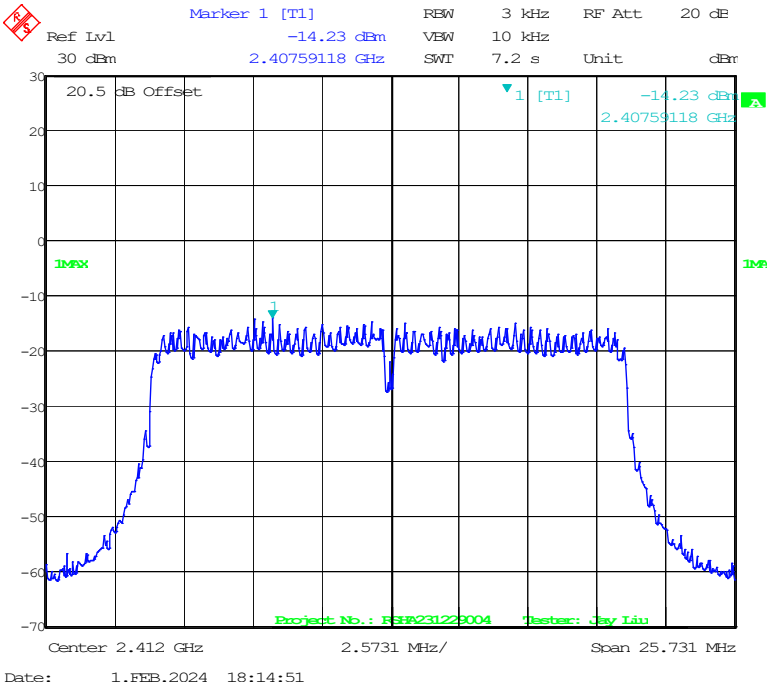
802.11g Middle Channel



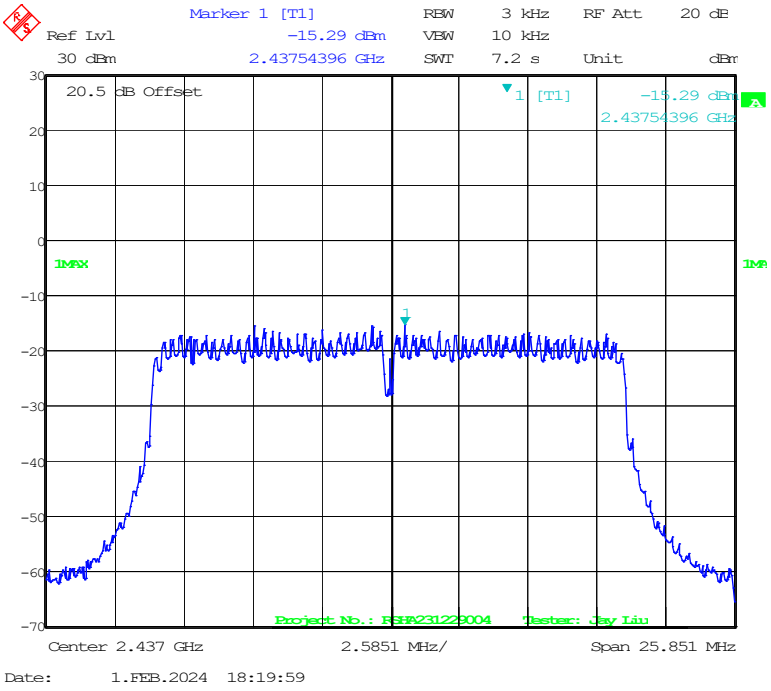
802.11g High Channel



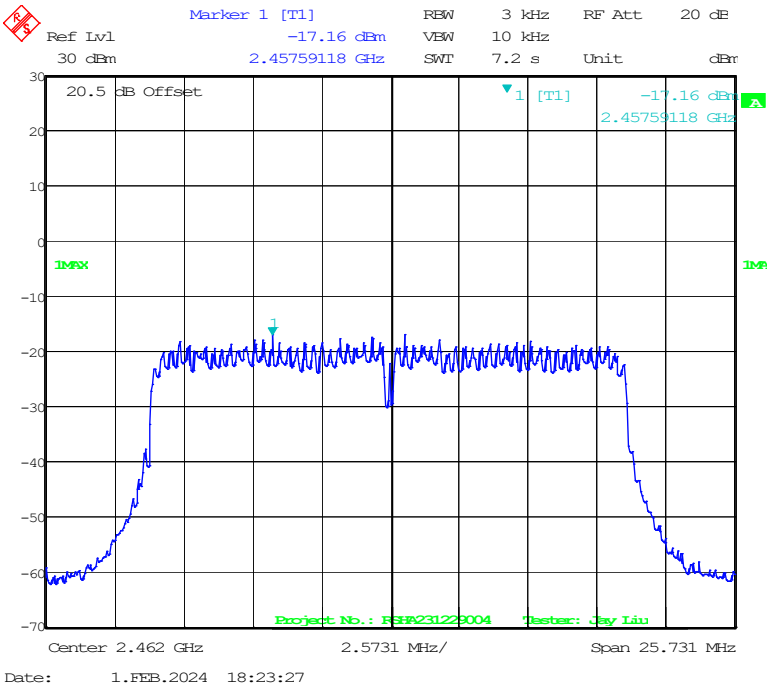
802.11n-HT20 Low Channel



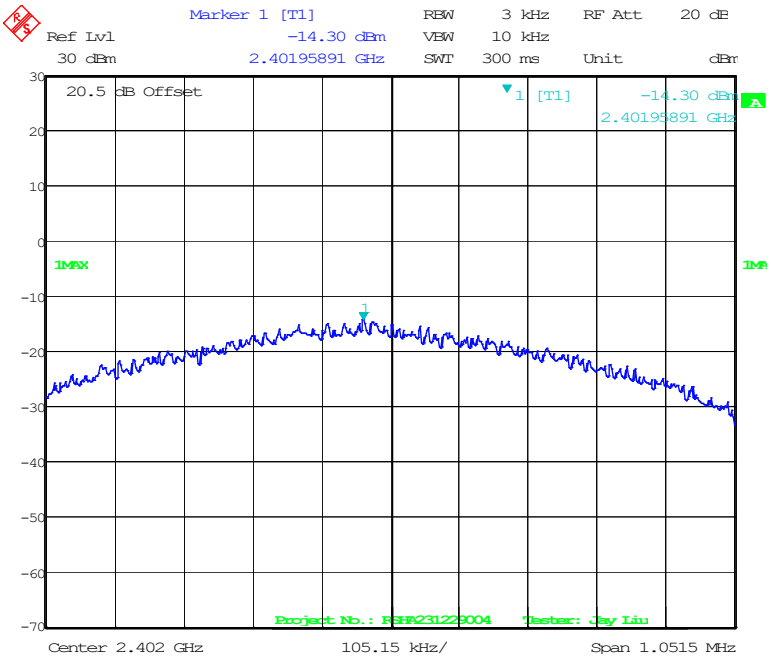
802.11n-HT20 Middle Channel



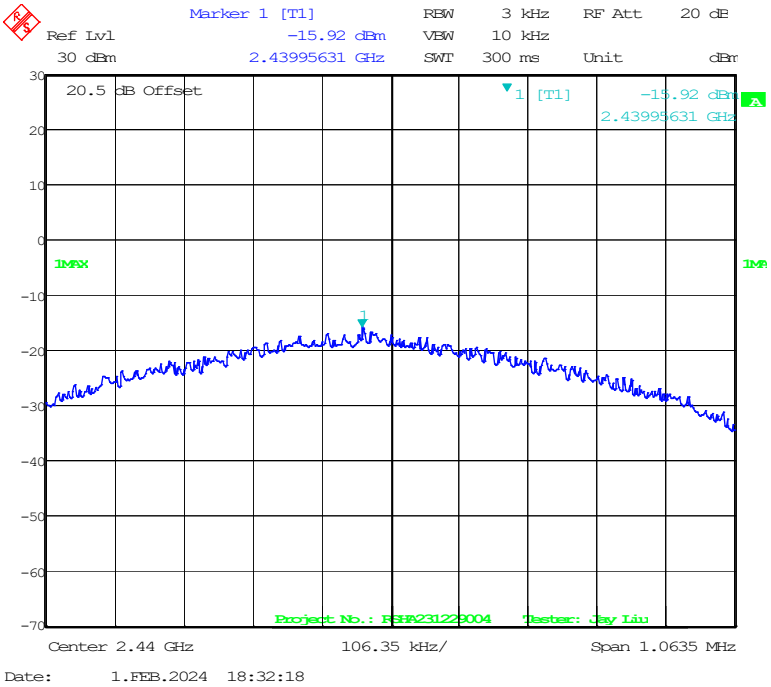
802.11n-HT20 High Channel



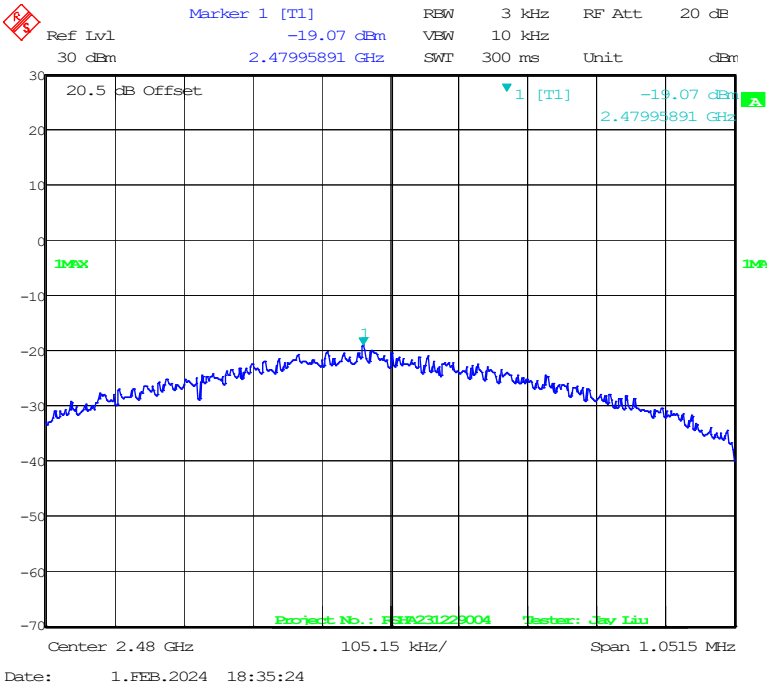
BLE(1Mbps) Mode Low Channel



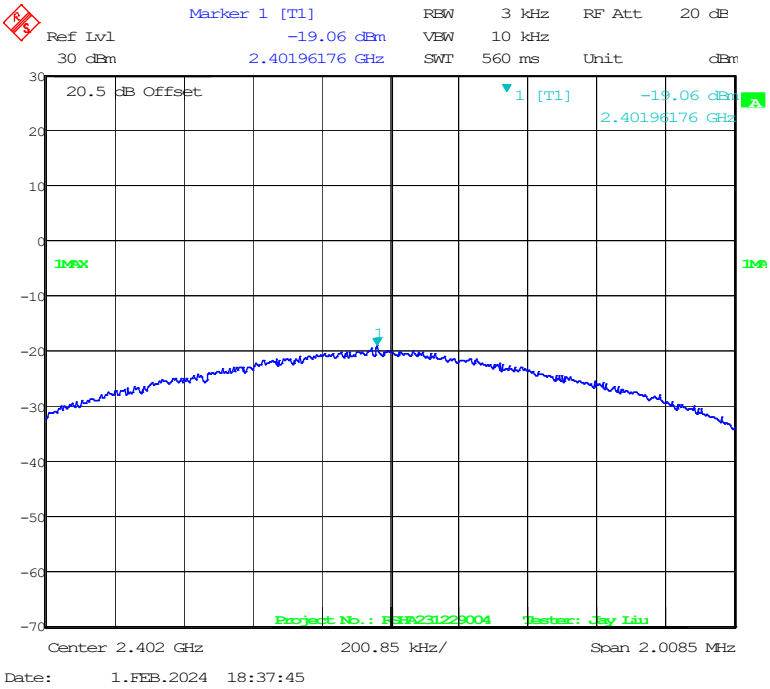
BLE(1Mbps) Mode Middle Channel



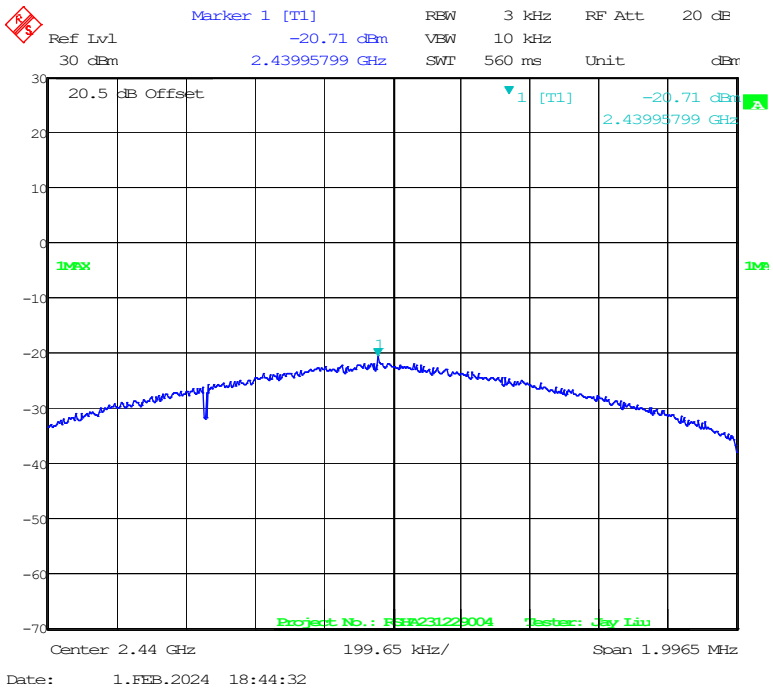
BLE(1Mbps) Mode High Channel



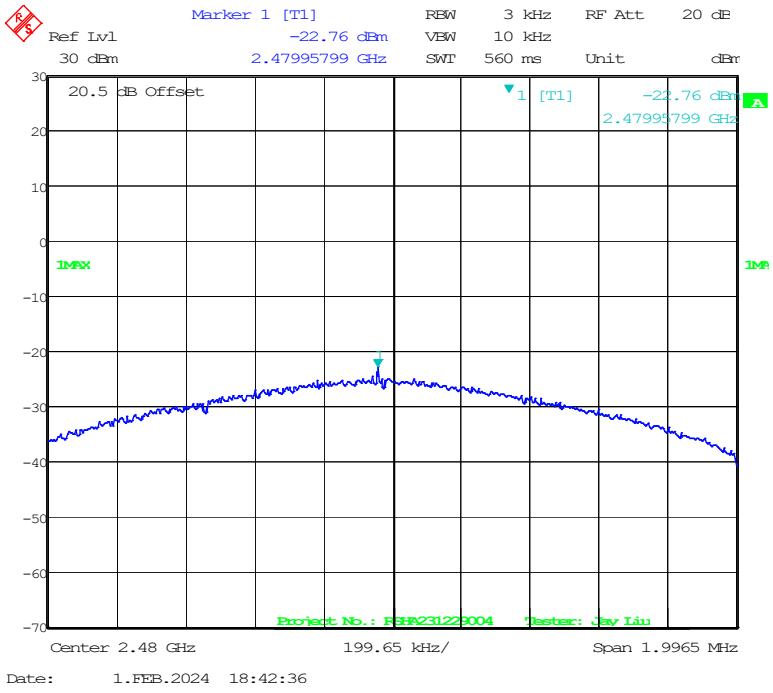
BLE(2Mbps) Mode Low Channel



BLE(2Mbps) Mode Middle Channel



BLE(2Mbps) Mode High Channel



EUT PHOTOGRAPHS

Please refer to the attachment EXHIBIT A_EUT EXTERNAL PHOTOGRAPHS and EXHIBIT B_EUT INTERNAL PHOTOGRAPHS.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment EXHIBIT C_TEST SETUP PHOTOGRAPHS.

Declarations

1. Bay Area Compliance Laboratories Corp. (Kunshan) is not responsible for authenticity of any test data provided by the applicant. Test data from the applicant that may affect test results are marked with an asterisk "★". The model number, product name, address, trademark, etc. from the applicant are not considered as test data.

2. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested.

3. Unless required by the rule provided by the applicant or product regulations, then decision rule in this report did not consider the uncertainty.

4. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor k=2 with the 95.45% confidence interval.

5. This report cannot be reproduced except in full, without prior written approval of Bay Area Compliance Laboratories Corp. (Kunshan).

6. This report is valid only with a valid digital signature. The digital signature may be available only under the adobe software above version 7.0.

******* END OF REPORT *******