

TEST REPORT

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Guangdong, China
Report Number: 2401Z54419E-RF-00A
FCC ID: 2ASYE-T3-S3

Test Standard (s)

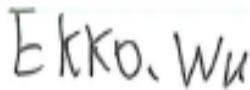
FCC PART 15.247

Sample Description

Product Type: T3-S3
Model No.: T3-S3
Multiple Model(s) No.: N/A
Trade Mark: LILYGO
Date Received: 2024-11-12
Issue Date: 2025-05-13

Test Result:	Pass▲
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▲ In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

Ekko Wu
RF Engineer

Approved By:

Michelle Zeng
RF Supervisor

Note: The information marked[#] is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Customer model name, addresses, names, trademarks etc. are included.

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	2401Z54419E-RF-00A	Original Report	2025-05-13

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Frequency Range	2412~2462MHz
Maximum Conducted Output Peak Power	16.15 dBm
Modulation Technique	DSSS, OFDM
Antenna Specification[#]	4.9dBi (provided by the applicant)
Voltage Range	DC 5V from USB Port
Sample serial number	2UD0-1 for Conducted and Radiated Emissions Test 2UD0-2 for RF Conducted Test (Assigned by BACL, Shenzhen)
Sample/EUT Status	Good condition
Adapter Information	N/A

Objective

This test report is in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commission's 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 KDB 558074 D01 15.247 Meas Guidance v05r02.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Each test item follows test standards and with no deviation.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		109.2kHz(k=2, 95% level of confidence)
RF output power, conducted		0.86dB(k=2, 95% level of confidence)
AC Power Lines Conducted Emissions	9kHz~150 kHz	3.63dB(k=2, 95% level of confidence)
	150 kHz ~30MHz	3.66dB(k=2, 95% level of confidence)
Radiated Emissions	0.009MHz~30MHz	3.60dB(k=2, 95% level of confidence)
	30MHz~200MHz (Horizontal)	5.32dB(k=2, 95% level of confidence)
	30MHz~200MHz (Vertical)	5.43dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Horizontal)	5.77dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Vertical)	5.73dB(k=2, 95% level of confidence)
	1GHz - 6GHz	5.34dB(k=2, 95% level of confidence)
	6GHz - 18GHz	5.40dB(k=2, 95% level of confidence)
	18GHz - 40GHz	5.64dB(k=2, 95% level of confidence)
	Temperature	±1°C
Humidity		±1%
Supply voltages		±0.4%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West) , 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 715558, the FCC Designation No. : CN5045.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

For 2.4GHz Wi-Fi mode, total 13 channels are provided to testing:

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

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

802.11n-HT40 mode was tested with Channel 3, 6 and 9.

EUT Exercise Software

Exercise Software [#]		EspRFTestTool_v3.6_manual.exe		
Mode	Data rate	Power Level [#]		
		Low Channel	Middle Channel	High Channel
802.11b	1Mbps	30	30	30
802.11g	6Mbps	30	30	30
802.11n20	MCS0	30	30	30
802.11n40	MCS0	30	30	30

Special Accessories

No special accessory.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

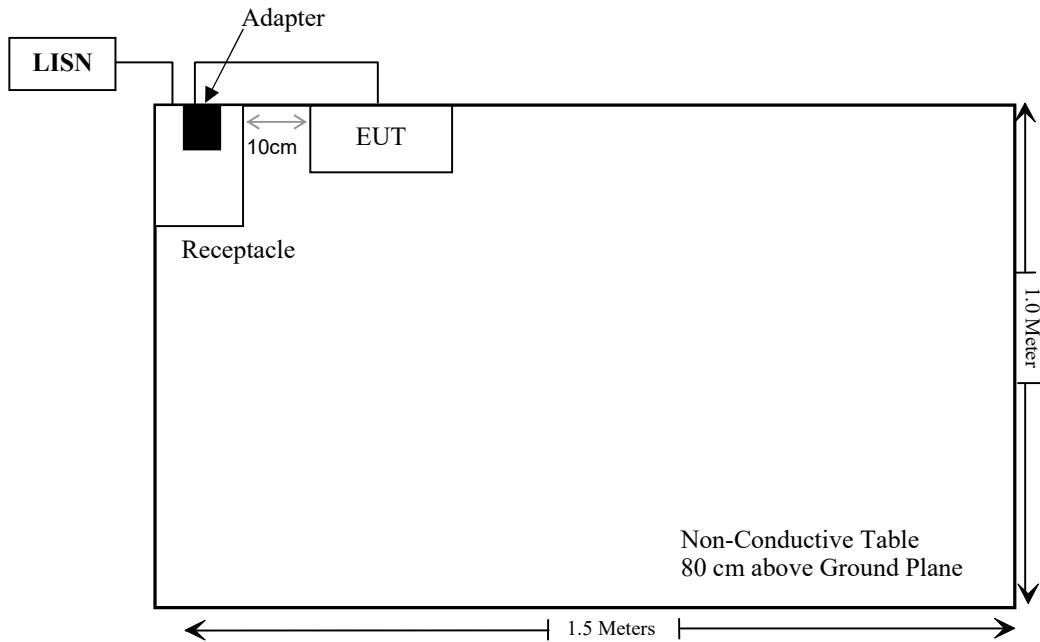
Manufacturer	Description	Model	Serial Number
BLU	Adapter	US-CR-2000	Unknown
Huajin	Adapter	HJ-0502000W2-US	Unknown
Oupu	Receptacle	Unknown	Unknown

External I/O Cable

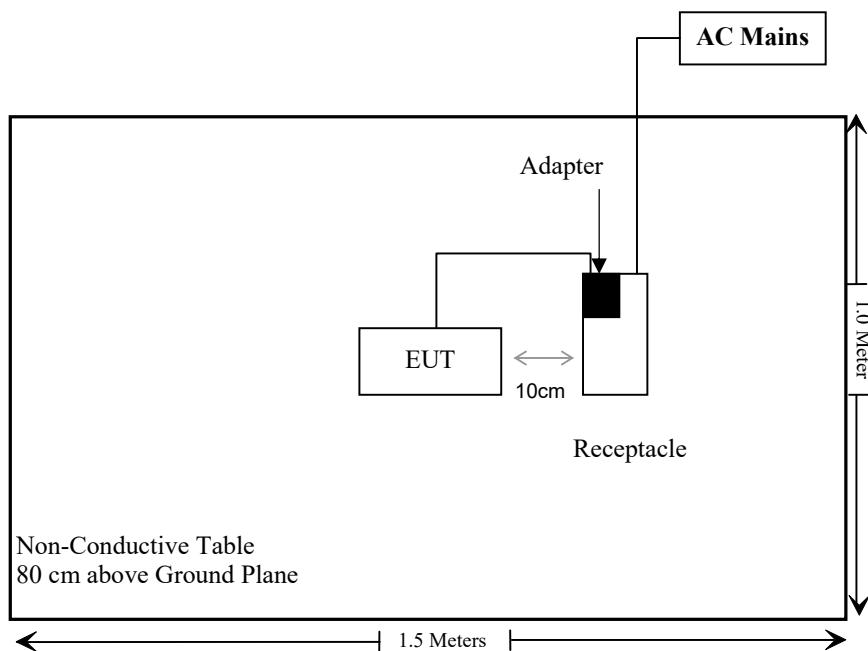
Cable Description	Length (m)	From Port	To
Un-shielding Detachable USB Cable	0.5	EUT	Adapter
Unshielded detachable AC cable	1.0	Receptacle	LISN/AC Mains

Block Diagram of Test Setup

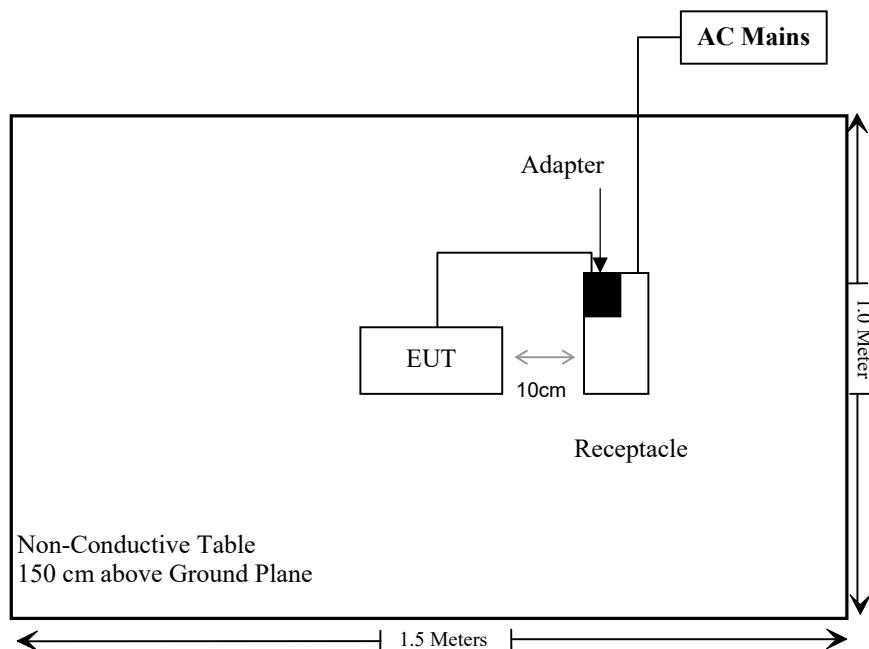
For Conducted Emissions:



For Radiated Emissions below 1GHz:



For Radiated Emissions above 1GHz:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.203	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)	100 kHz Bandwidth of Frequency Band Edge	Compliant
§15.247(e)	Power Spectral Density	Compliant
C63.10 §11.6	Duty Cycle	/
§15.247 (i) & §1.1307(b)(3)(i)(C)& §2.1091	MPE-based Exemption	Compliant

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emission Test					
Audix	EMI Test software	E3	191218(V9)	NCR	NCR
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2024/01/16	2025/01/15
Rohde & Schwarz	LISN	ENV216	101613	2024/01/16	2025/01/15
Unknown	CE Cable	Unknown	UF A210B-1-0720-504504	2024/05/21	2025/05/20
Rohde & Schwarz	Transient Limiter	ESH3Z2	DE25985	2024/05/21	2025/05/20
Radiated Emission Test					
Audix	EMI Test software	E3	19821b(V9)	NCR	NCR
Rohde & Schwarz	EMI Test Receiver	ESR3	102455	2024/01/16	2025/01/15
Sonoma instrument	Pre-amplifier	310N	186238	2024/05/21	2025/05/20
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2026/07/19
Unknown	Cable	Chamber Cable 1	F-03-EM236	2024/06/18	2025/06/17
Unknown	Cable	XH500C	J-10M-A	2024/06/18	2025/06/17
BACL	Active Loop Antenna	1313-1A	4031911	2024/05/14	2027/05/13
Unknown	Cable	2Y194	0735	2024/05/21	2025/05/20
Unknown	Cable	PNG214	1354	2024/05/21	2025/05/20
Rohde&Schwarz	Spectrum Analyzer	FSV40	101605	2024/03/27	2025/03/26
COM-POWER	Pre-amplifier	PA-122	181919	2024/06/18	2025/06/17
Schwarzbeck	Horn Antenna	BBHA9120D(12 01)	1143	2023/07/26	2026/07/25
Unknown	RF Cable	KMSE	0735	2024/06/18	2025/06/17
Unknown	RF Cable	UFA147	219661	2024/06/18	2025/06/17
Unknown	RF Cable	XH750A-N	J-10M	2024/06/18	2025/06/17
JD	Filter Switch Unit	DT7220FSU	DS79906	2024/09/09	2025/09/08
JD	Multiplex Switch Test Control Set	DT7220FSU	DQ77926	2024/06/18	2025/06/17
A.H.System	Pre-amplifier	PAM-1840VH	190	2024/06/18	2025/06/17
Electro-Mechanics Co	Horn Antenna	3116	9510-2270	2023/09/18	2026/09/17
UTIFLEX	RF Cable	NO. 13	232308-001	2024/06/18	2025/06/17

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
MARCONI	10dB Attenuator	6534/3	2942	2024/06/27	2025/06/26
Rohde&Schwarz	Spectrum Analyzer	FSV40-N	102259	2024/01/16	2025/01/15
ANRITSU	Microwave peak power sensor	MA24418A	12622	2024/05/21	2025/05/20

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

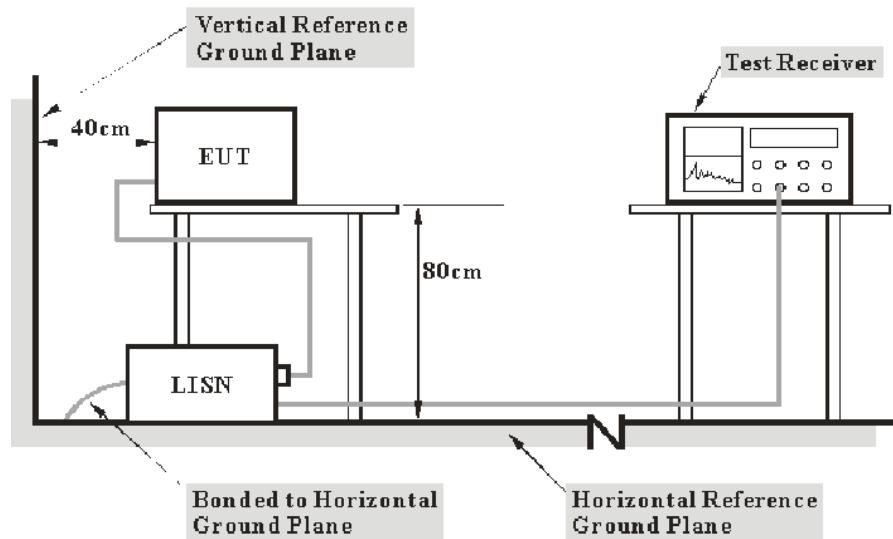
REQUIREMENTS AND TEST PROCEDURES

AC Line Conducted Emissions

Applicable Standard

FCC§15.207

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

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	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

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

All final data was recorded in the Quasi-peak and average detection mode.

Factor & Over Limit Calculation

The factor is calculated by adding LISN VDF (Voltage Division Factor) and Cable Loss. The basic equation is as follows:

$$\text{Factor} = \text{LISN VDF} + \text{Cable Loss}$$

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 below the limit. The equation for margin calculation is as follows:

$$\text{Over Limit} = \text{level} - \text{Limit}$$

$$\text{Level} = \text{reading level} + \text{Factor}$$

Note: The term "cable loss" refers to the combination of a cable and a 10dB transient limiter (attenuator).

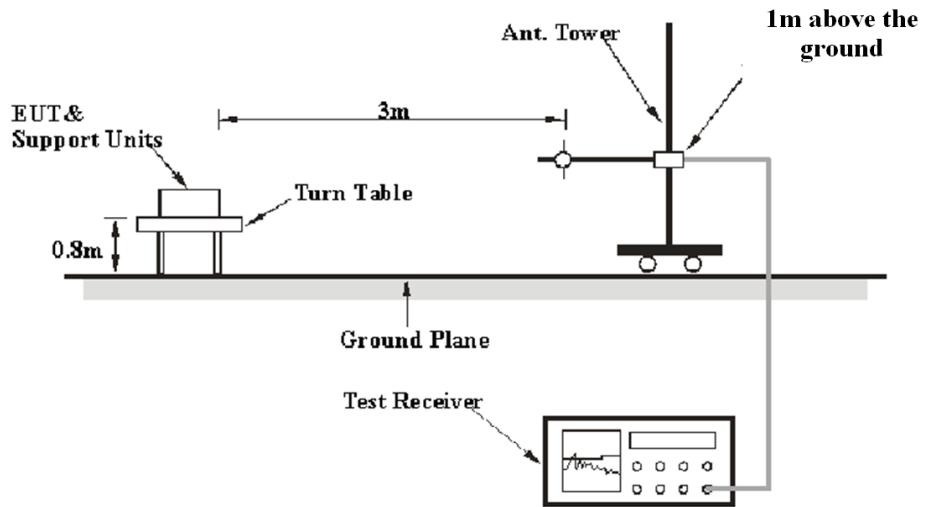
Spurious Emissions

Applicable Standard

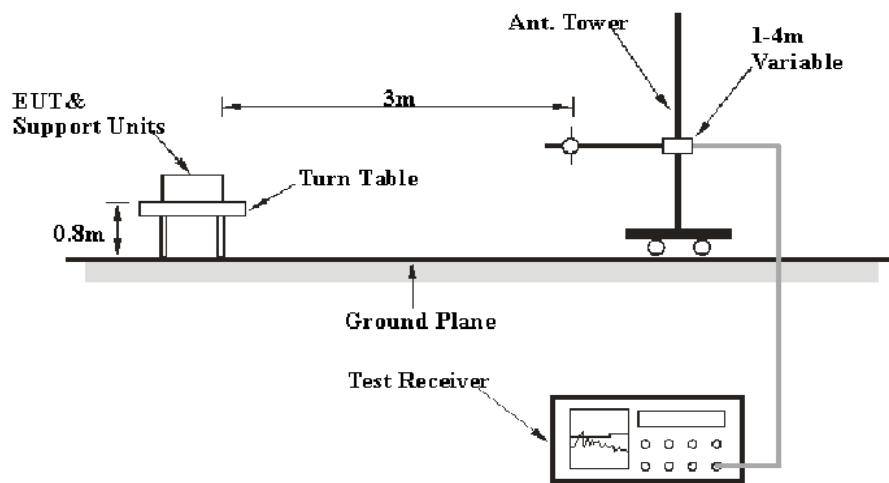
FCC §15.247 (d); §15.209; §15.205;

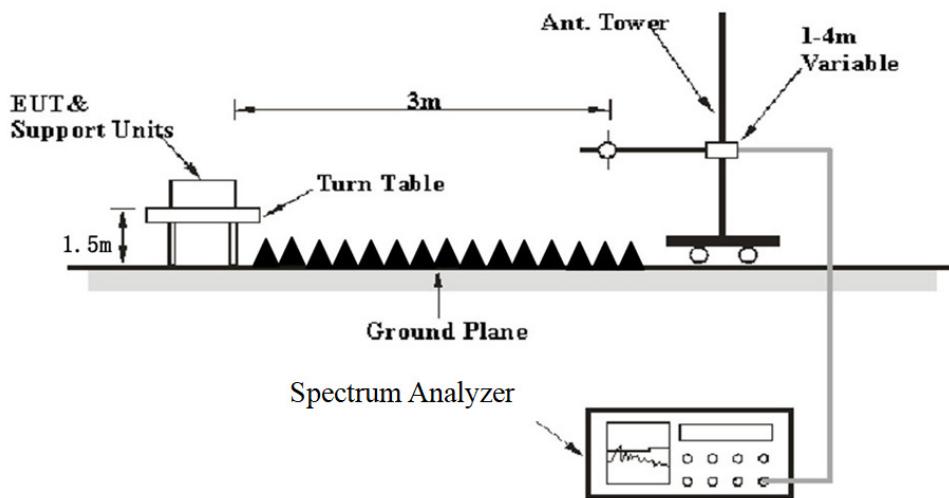
EUT Setup

9 kHz-30MHz:



30MHz-1GHz:



Above 1GHz:

The radiated emission performed in the 3 meters, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, FCC 15.247 limits.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 9 kHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

9 kHz-1GHz:

Frequency Range	RBW	Video B/W	IF B/W	Measurement	Detector
9 kHz – 150 kHz	/	/	200 Hz	QP	QP
	300 Hz	1 kHz	/	PK	PK
150 kHz – 30 MHz	/	/	9 kHz	QP	QP
	10 kHz	30 kHz	/	PK	PK
30 MHz – 1000 MHz	/	/	120 kHz	QP	QP
	100 kHz	300 kHz	/	PK	PK

1-25GHz:

Pre-scan

Measurement	Duty cycle	RBW	Video B/W	Detector
PK	Any	1MHz	3 MHz	PK
AV	>98%	1MHz	1 kHz	PK
	<98%	1MHz	≥1/Ton	PK

Final measurement for emission identified during pre-scan

Measurement	Duty cycle	RBW	Video B/W	Detector
PK	Any	1MHz	3 MHz	PK
AV	>98%	1MHz	10 Hz	PK
	<98%	1MHz	≥1/Ton	PK

Note: Ton is minimum transmission duration

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

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

All final data was recorded in Quasi-peak detection mode except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz, average detection modes for frequency bands 9–90 kHz and 110–490 kHz, peak and average detection modes for frequencies above 1 GHz.

For 9 kHz-30MHz, the report shall list the six emissions with the smallest margin relative to the limit, for each of the three antenna orientations (parallel, perpendicular, and ground-parallel) unless the margin is greater than 20 dB.

All emissions under the average limit and under the noise floor have not recorded in the report.

Factor & Over Limit/Margin Calculation

The **Factor** is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain. The basic equation is as follows:

$$\text{Factor} = \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

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

$$\begin{aligned} \text{Over Limit/Margin} &= \text{Level/Corrected Amplitude} - \text{Limit} \\ \text{Level / Corrected Amplitude} &= \text{Read Level} + \text{Factor} \end{aligned}$$

6 dB Emission Bandwidth

Applicable Standard

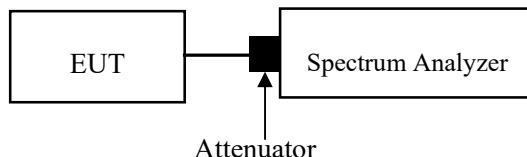
According to FCC §15.247(a) (2)

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

Test Method: ANSI C63.10-2013 Clause 11.8.1

- a) Set RBW = 100 kHz.
- b) Set the VBW $\geq [3 \times \text{RBW}]$.
- c) Detector = peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) 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.



Maximum Conducted Output Power

Applicable Standard

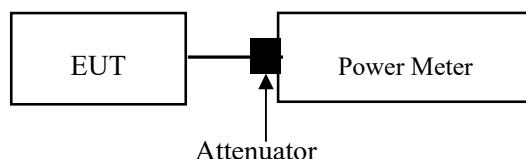
According to FCC §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power.

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

Test method: ANSI C63.10-2013 clause 11.9.1.3 for peak power method or clause 11.9.2.3.2 for average power method.

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to one test equipment.
3. Add a correction factor to the display.



Note: A short RF cable with low cable loss connected to the EUT antenna port, which was provided by client or lab, the cable loss was add with offset into test equipment, the total offset consists of attenuator and/or RF cable and/or power splitter loss

100 kHz Bandwidth of Frequency Band Edge

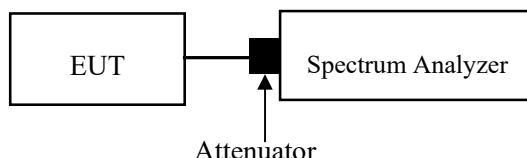
Applicable Standard

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

Test Method: ANSI C63.10-2013 Clause 11.11

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.



Power Spectral Density

Applicable Standard

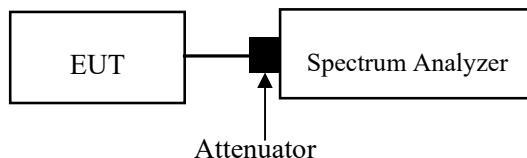
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of 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

Test Method: ANSI C63.10-2013 Clause 11.10.2

Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.

1. Set the RBW to: $3\text{kHz} \leq \text{RBW} \leq 100\text{ kHz}$.
2. Set the VBW $\geq 3 \times \text{RBW}$.
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.



Note: A short RF cable with low cable loss connected to the EUT antenna port, which was provided by client or lab, the cable loss was add with offset into test equipment, the total offset consists of attenuator and/or RF cable and/or power splitter loss

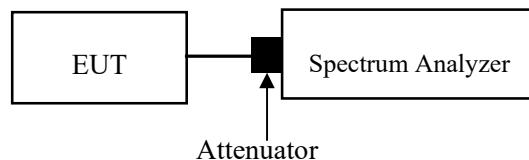
Duty Cycle

Test Procedure

According to ANSI C63.10-2013 Section 11.6

The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the ON and OFF times of the transmitted signal:

- 1) Set the center frequency of the instrument to the center frequency of the transmission.
- 2) Set $RBW \geq OBW$ if possible; otherwise, set RBW to the largest available value.
- 3) Set $VBW \geq RBW$. Set detector = peak or average.
- 4) The zero-span measurement method shall not be used unless both RBW and VBW are $> 50/T$ and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring the duty cycle shall not be used if $T \leq 16.7 \mu s$.)



ANTENNA REQUIREMENT

Applicable Standard

According to FCC § 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 use of a standard antenna jack or electrical connector is prohibited.

Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

Antenna Connector Construction

The EUT has an internal antenna arrangement, which was permanently attached, the antenna gain[#] is 4.9dBi, fulfill the requirement of this section. Please refer to the EUT photos.

Result: Compliant

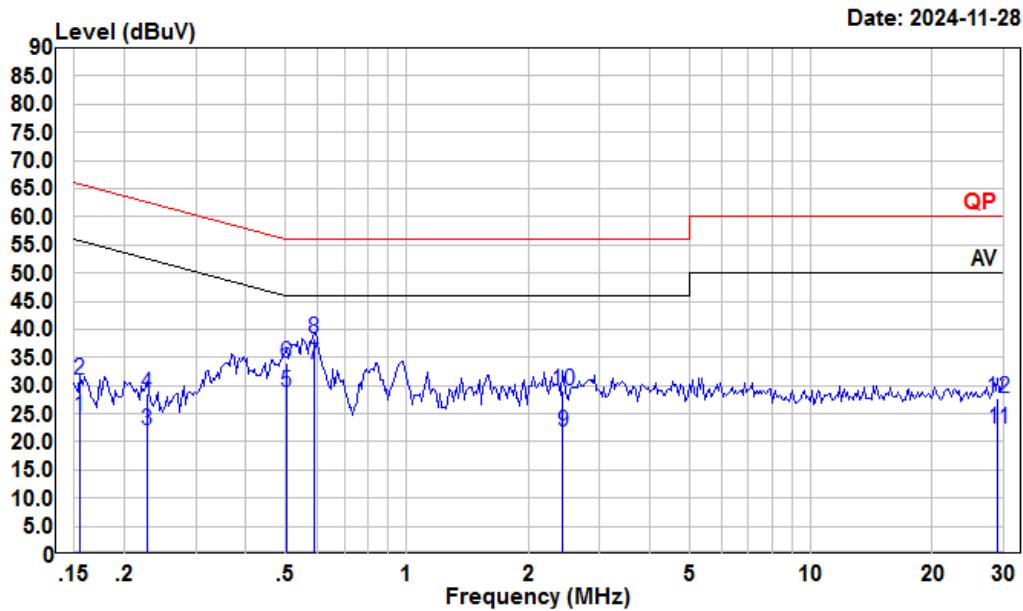
TEST DATA AND RESULTS

AC Line Conducted Emissions

Environmental Conditions

Temperature (°C)	24	Relative Humidity (%)	45
ATM Pressure (kPa)	101	Test engineer	Macy.shi
Test date	2024.11.28		
EUT operation mode	Transmitting(Maximum output power mode, 802.11n40, high channel)		

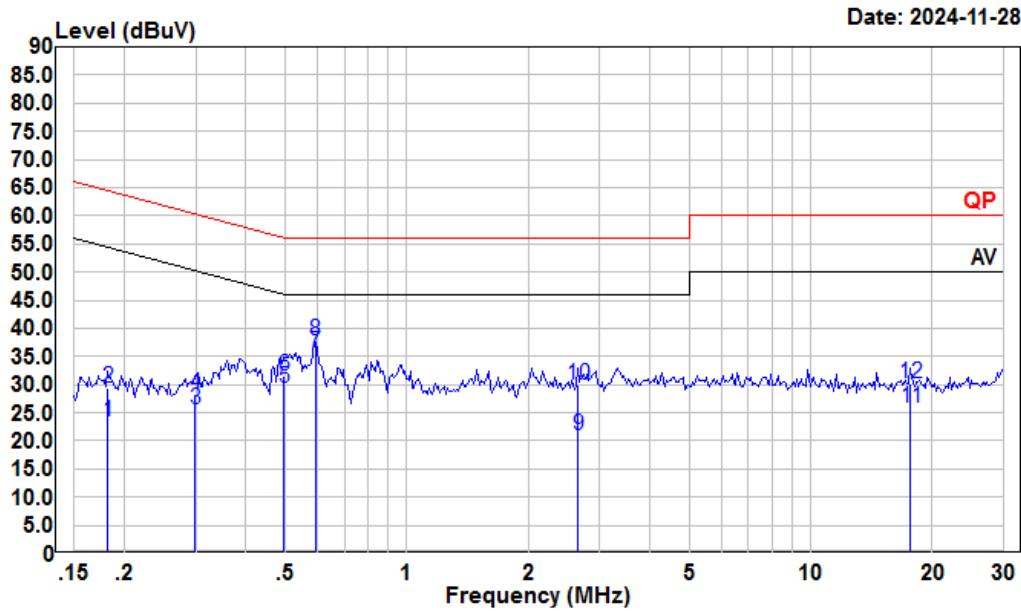
AC 120V 60 Hz, Line



Condition: Line
Project : 2401Z54419E-RF
tester : Macy.shi Note:Transmitting
Setting : RBW:9KHz

	Freq	Read Level	LISN Level	LISN Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV		dB	dBuV	dB	
1	0.155	3.38	24.39	10.89	10.12	55.74	-31.35	Average
2	0.155	9.87	30.88	10.89	10.12	65.74	-34.86	QP
3	0.227	1.28	22.12	10.76	10.08	52.57	-30.45	Average
4	0.227	7.66	28.50	10.76	10.08	62.57	-34.07	QP
5	0.502	8.09	28.73	10.50	10.14	46.00	-17.27	Average
6	0.502	13.28	33.92	10.50	10.14	56.00	-22.08	QP
7	0.589	13.12	33.74	10.50	10.12	46.00	-12.26	Average
8	0.589	17.63	38.25	10.50	10.12	56.00	-17.75	QP
9	2.435	1.10	21.78	10.51	10.17	46.00	-24.22	Average
10	2.435	8.55	29.23	10.51	10.17	56.00	-26.77	QP
11	29.061	1.69	22.43	10.53	10.21	50.00	-27.57	Average
12	29.061	7.09	27.83	10.53	10.21	60.00	-32.17	QP

AC 120V 60 Hz, Neutral



Condition: Neutral

Project : 2401Z54419E-RF

tester : Macy.shi Note:Transmitting

Setting : RBW:9KHz

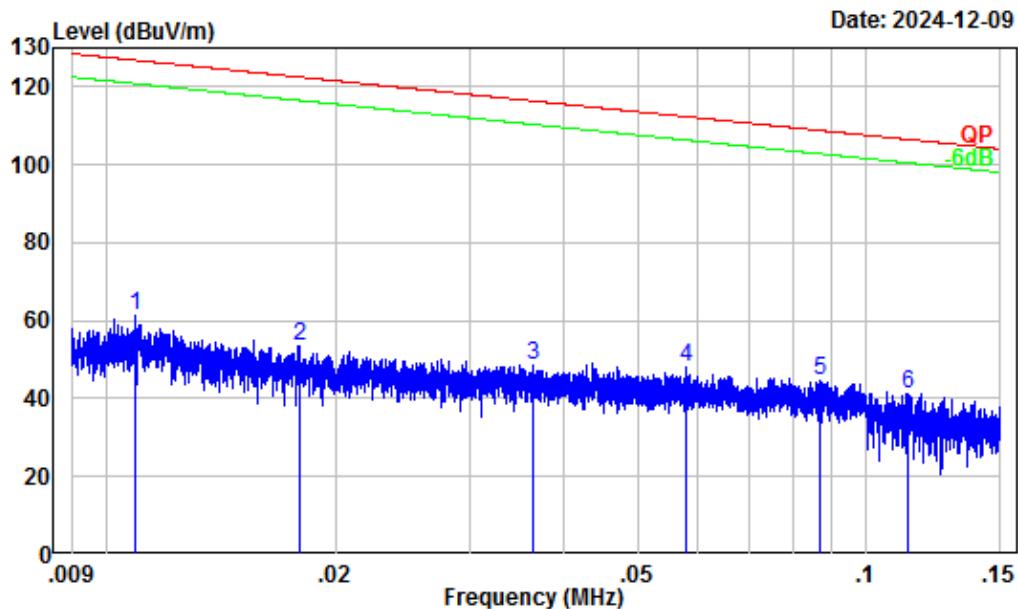
Freq	Read		LISN Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV					
1	0.182	2.90	23.47	10.47	10.10	54.42	-30.95 Average
2	0.182	8.91	29.48	10.47	10.10	64.42	-34.94 QP
3	0.299	4.92	25.56	10.53	10.11	50.28	-24.72 Average
4	0.299	7.60	28.24	10.53	10.11	60.28	-32.04 QP
5	0.497	8.42	29.26	10.70	10.14	46.05	-16.79 Average
6	0.497	10.84	31.68	10.70	10.14	56.05	-24.37 QP
7	0.595	14.77	35.59	10.70	10.12	46.00	-10.41 Average
8	0.595	16.95	37.77	10.70	10.12	56.00	-18.23 QP
9	2.650	0.33	20.90	10.40	10.17	46.00	-25.10 Average
10	2.650	9.22	29.79	10.40	10.17	56.00	-26.21 QP
11	17.661	4.95	25.88	10.74	10.19	50.00	-24.12 Average
12	17.661	9.32	30.25	10.74	10.19	60.00	-29.75 QP

Spurious Emissions**Environmental Conditions**

Temperature (°C)	18.6&24.1	Relative Humidity (%)	48&50
ATM Pressure (kPa):	102.2&101	Test engineer:	Carl Zhu & Dylan Yang
Test date:	2024-12-02~2024-12-09		
EUT operation mode:	Below 1GHz: Transmitting(Maximum output power mode, 802.11n40, high channel) Above 1GHz: Transmitting		
Note:	After pre-scan in the X, Y and Z axes of orientation, the worst case z-axis of orientation were recorded.		

Below 1GHz:

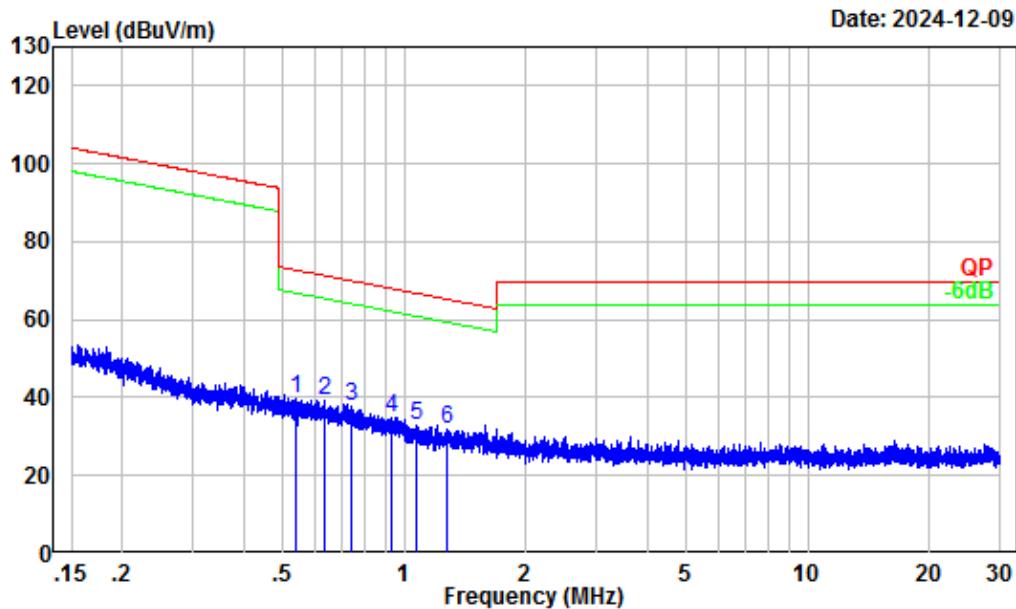
9kHz-150kHz



Site : Chamber A
Condition : 3m
Project Number : 2401Z54419E-RF
Test Mode : 2.4G WIFI Transmitting
Detector: Peak RBW/VBW: 0.3/1kHz
Tester : Carl Zhu

	Freq	Factor	Read Level	Limit Level	Over Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.01	32.12	29.01	61.13	126.83	-65.70	Peak
2	0.02	30.80	22.70	53.50	122.54	-69.04	Peak
3	0.04	27.83	20.75	48.58	116.38	-67.80	Peak
4	0.06	25.61	22.30	47.91	112.35	-64.44	Peak
5	0.09	22.91	21.78	44.69	108.81	-64.12	Peak
6	0.11	21.23	20.11	41.34	106.54	-65.20	Peak

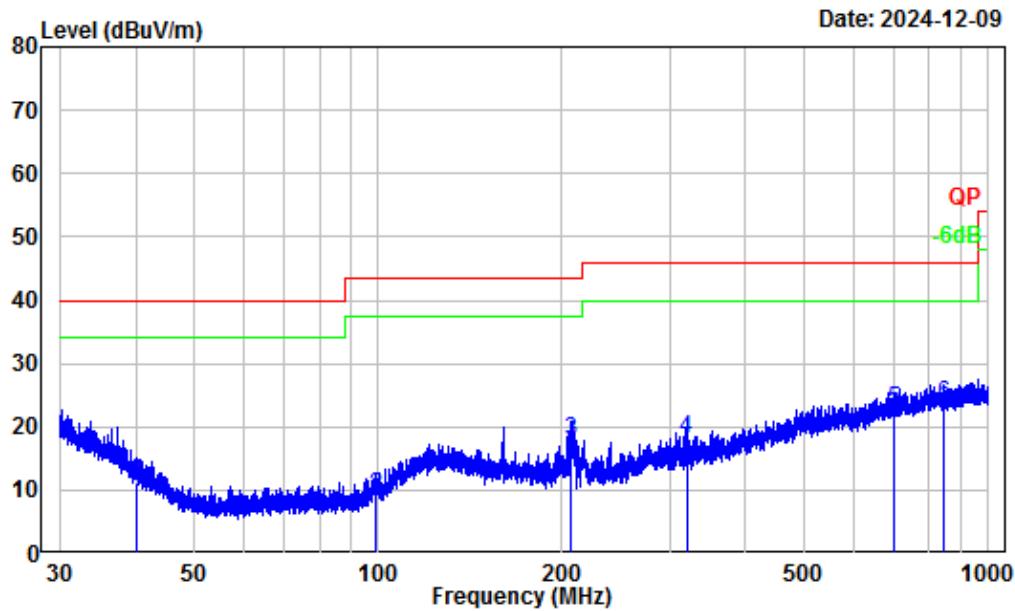
150kHz-30MHz



Site : Chamber A
Condition : 3m
Project Number : 2401Z54419E-RF
Test Mode : 2.4G WIFI Transmitting
Detector: Peak RBW/VBW: 10/30kHz
Tester : Carl Zhu

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
1	0.54	5.95	33.95	39.90	72.99 -33.09 Peak
2	0.63	4.75	34.47	39.22	71.52 -32.30 Peak
3	0.74	3.43	34.34	37.77	70.14 -32.37 Peak
4	0.93	1.72	33.22	34.94	68.10 -33.16 Peak
5	1.08	0.98	31.89	32.87	66.81 -33.94 Peak
6	1.28	0.43	31.55	31.98	65.31 -33.33 Peak

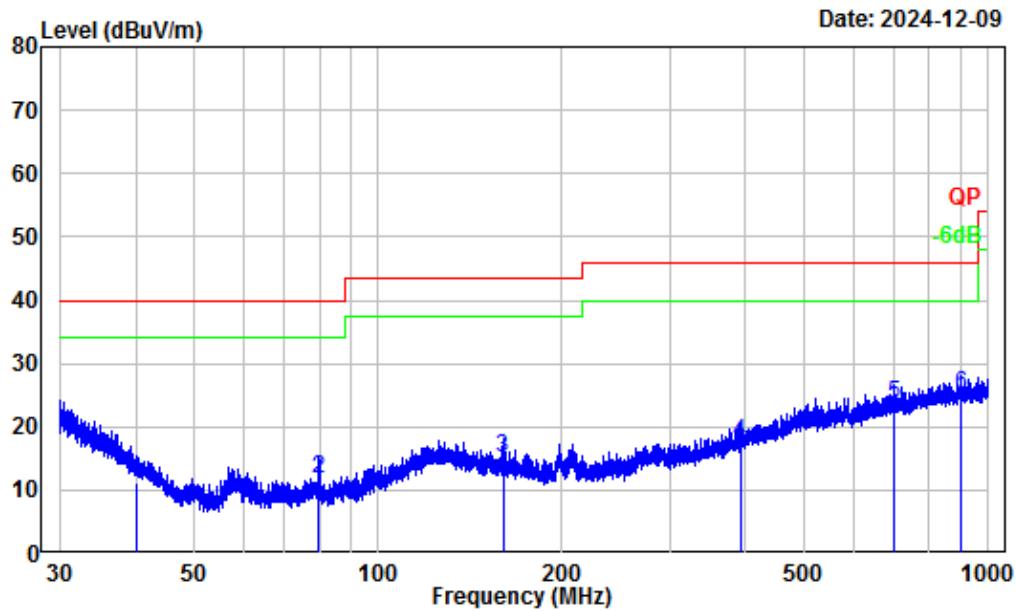
30MHz-1GHz_Horizontal



Site : Chamber A
Condition : 3m Horizontal
Project Number : 2401Z54419E-RF
Test Mode : 2.4G WIFI Transmitting
Detector: Peak RBW/VBW: 100/300kHz
Tester : Carl Zhu

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
1	40.08	-12.43	23.54	11.11	40.00 -28.89 QP
2	98.70	-16.29	25.45	9.16	43.50 -34.34 QP
3	207.40	-13.73	31.47	17.74	43.50 -25.76 QP
4	320.08	-10.81	28.98	18.17	46.00 -27.83 QP
5	699.00	-3.52	26.04	22.52	46.00 -23.48 QP
6	844.72	-1.74	25.25	23.51	46.00 -22.49 QP

30MHz-1GHz_Vertical



Site : Chamber A
Condition : 3m Vertical
Project Number : 2401Z54419E-RF
Test Mode : 2.4G WIFI Transmitting
Detector: Peak RBW/VBW: 100/300kHz
Tester : Carl Zhu

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	40.01	-12.38	23.64	11.26	40.00 -28.74 QP
2	79.98	-17.90	29.78	11.88	40.00 -28.12 QP
3	159.99	-12.72	27.68	14.96	43.50 -28.54 QP
4	391.75	-8.80	26.24	17.44	46.00 -28.56 QP
5	699.00	-3.52	27.08	23.56	46.00 -22.44 QP
6	900.15	-1.31	26.29	24.98	46.00 -21.02 QP

Above 1GHz:

Frequency (MHz)	Reading (dB μ V)	Detector (PK/AV)	Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
802.11b							
Low Channel							
4824	55.11	PK	H	2.45	57.56	74	-16.44
4824	48.41	AV	H	2.45	50.86	54	-3.14
4824	49.33	PK	V	2.45	51.78	74	-22.22
4824	40.51	AV	V	2.45	42.96	54	-11.04
Middle Channel							
4874	54.31	PK	H	2.56	56.87	74	-17.13
4874	47.95	AV	H	2.56	50.51	54	-3.49
4874	49.06	PK	V	2.56	51.62	74	-22.38
4874	39.58	AV	V	2.56	42.14	54	-11.86
High Channel							
4924	54.51	PK	H	2.63	57.14	74	-16.86
4924	47.69	AV	H	2.63	50.32	54	-3.68
4924	50.42	PK	V	2.63	53.05	74	-20.95
4924	40.75	AV	V	2.63	43.38	54	-10.62
802.11g							
Low Channel							
4824	61.91	PK	H	2.45	64.36	74	-9.64
4824	46.66	AV	H	2.45	49.11	54	-4.89
4824	56.08	PK	V	2.45	58.53	74	-15.47
4824	41.58	AV	V	2.45	44.03	54	-9.97
Middle Channel							
4874	61.75	PK	H	2.56	64.31	74	-9.69
4874	46.68	AV	H	2.56	49.24	54	-4.76
4874	54.38	PK	V	2.56	56.94	74	-17.06
4874	42.25	AV	V	2.56	44.81	54	-9.19
High Channel							
4924	62.38	PK	H	2.63	65.01	74	-8.99
4924	47.68	AV	H	2.63	50.31	54	-3.69
4924	54.97	PK	V	2.63	57.6	74	-16.4
4924	39.78	AV	V	2.63	42.41	54	-11.59

Frequency (MHz)	Reading (dB μ V)	Detector (PK/AV)	Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
802.11n20							
Low Channel							
4824	61.24	PK	H	2.45	63.69	74	-10.31
4824	46.82	AV	H	2.45	49.27	54	-4.73
4824	55.06	PK	V	2.45	57.51	74	-16.49
4824	40.15	AV	V	2.45	42.6	54	-11.4
Middle Channel							
4874	61.24	PK	H	2.56	63.8	74	-10.2
4874	47.05	AV	H	2.56	49.61	54	-4.39
4874	54.78	PK	V	2.56	57.34	74	-16.66
4874	39.68	AV	V	2.56	42.24	54	-11.76
High Channel							
4924	61.92	PK	H	2.63	64.55	74	-9.45
4924	47.58	AV	H	2.63	50.21	54	-3.79
4924	54.64	PK	V	2.63	57.27	74	-16.73
4924	39.57	AV	V	2.63	42.2	54	-11.8
802.11n40							
Low Channel							
4844	60.79	PK	H	2.47	63.26	74	-10.74
4844	46.82	AV	H	2.47	49.29	54	-4.71
4844	55.55	PK	V	2.47	58.02	74	-15.98
4844	41.26	AV	V	2.47	43.73	54	-10.27
Middle Channel							
4874	61.55	PK	H	2.56	64.11	74	-9.89
4874	47.36	AV	H	2.56	49.92	54	-4.08
4874	54.65	PK	V	2.56	57.21	74	-16.79
4874	40.84	AV	V	2.56	43.4	54	-10.6
High Channel							
4904	62.04	PK	H	2.64	64.68	74	-9.32
4904	48.29	AV	H	2.64	50.93	54	-3.07
4904	54.14	PK	V	2.64	56.78	74	-17.22
4904	40.86	AV	V	2.64	43.5	54	-10.5

Note:

Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor

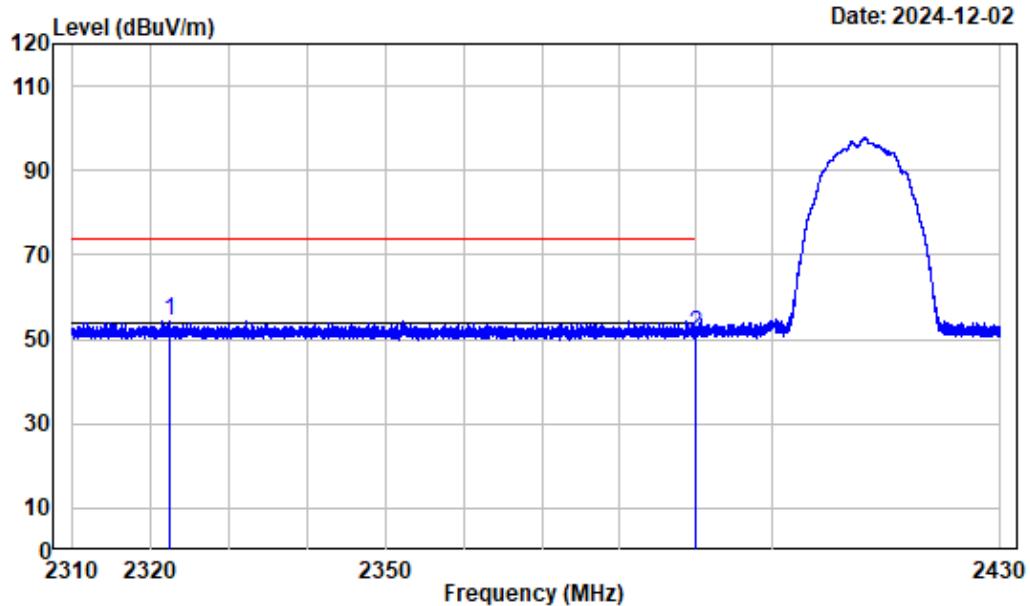
Corrected Amplitude/Level = Corrected Factor + Reading

Margin = Corrected Amplitude/Level - Limit

The other spurious emission which is in the noise floor level was not recorded.

Test plots

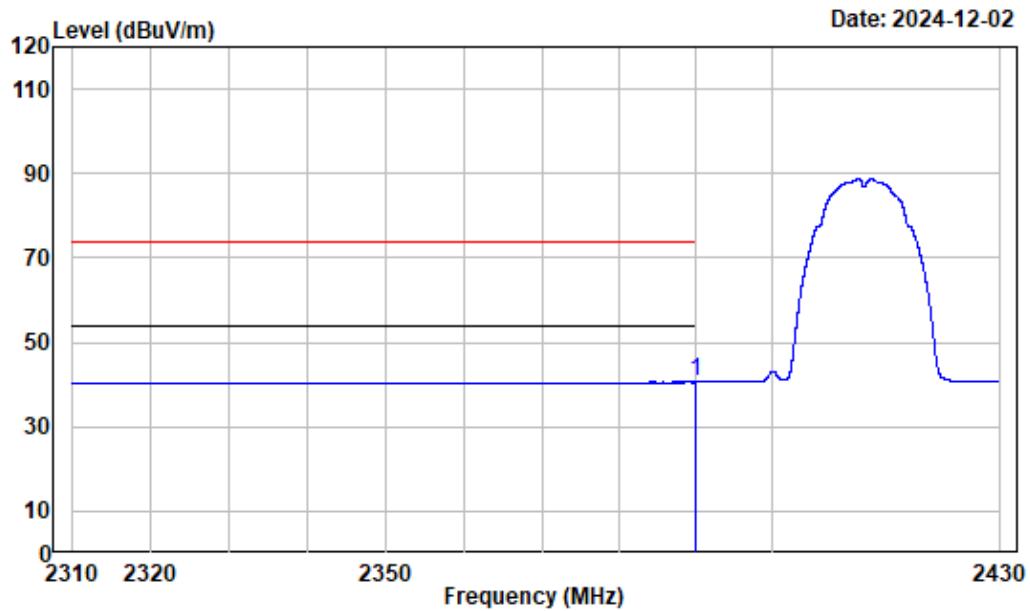
Left Bandedge_Horizontal_Peak_802.11b



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11B_2412

Freq	Factor	Read		Limit		Over	Remark
		MHz	dB/m	dBuV	dBuV/m		
1	2322.302	-3.11	57.63	54.52	74.00	-19.48	peak
2	2390.000	-3.20	54.48	51.28	74.00	-22.72	Peak

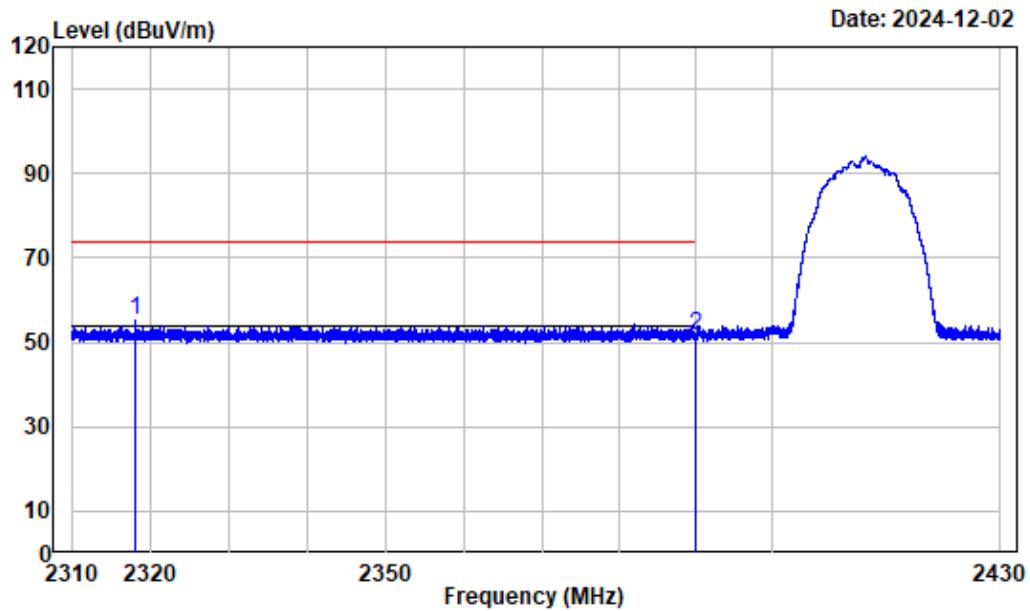
Left Bandedge_Horizontal_Average_802.11b



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Average reading: RBW:1MHz VBW:1KHz Detector:Peak
Note : 802.11B_2412

Freq	Factor	Read	Limit	Over	Remark			
		Level	Level	Line				
		MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1		2390.000	-3.20	43.73	40.53	54.00	-13.47	Average

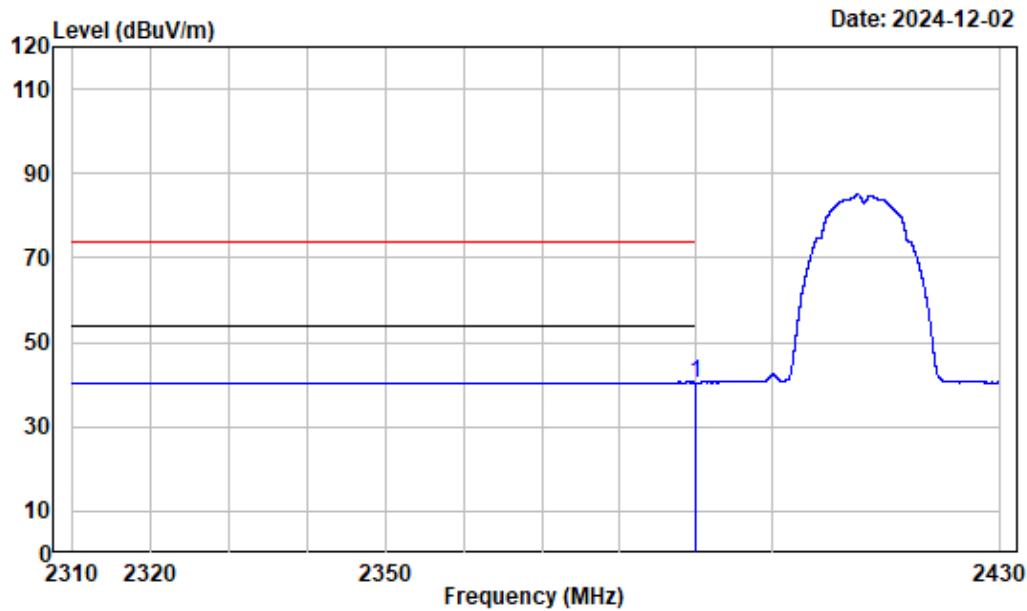
Left Bandedge_Vertical_Peak_802.11b



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11B_2412

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
1	2317.951	-3.11	58.21	55.10	74.00 -18.90 peak
2	2390.000	-3.20	54.84	51.64	74.00 -22.36 Peak

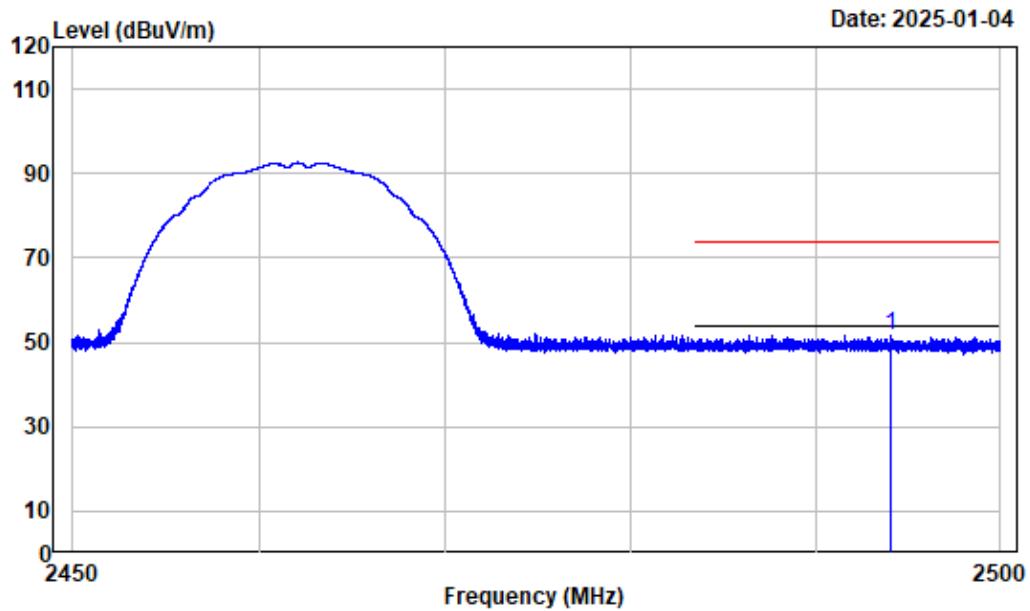
Left Bandedge_Vertical_Average_802.11b



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Average reading: RBW:1MHz VBW:1KHz Detector:Peak
Note : 802.11B_2412

Freq	Factor	Read	Limit	Over	Remark			
		Level	Level	Line				
		MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1		2390.000	-3.20	43.71	40.51	54.00	-13.49	Average

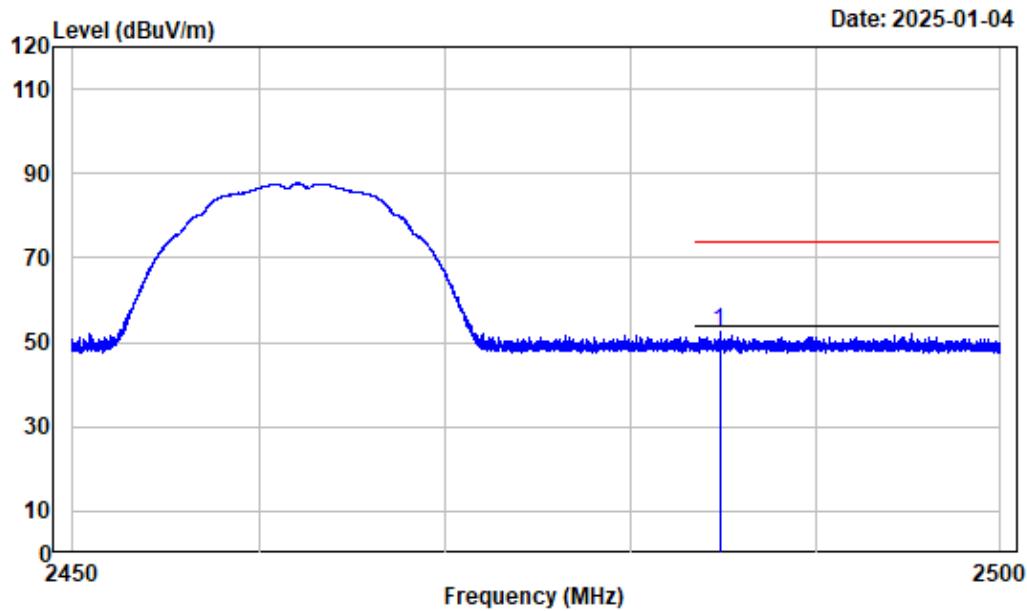
Right Bandedge_Horizontal_Peak_802.11b



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11B_2462

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 2494.074	-10.99	62.76	51.77	74.00	-22.23 peak

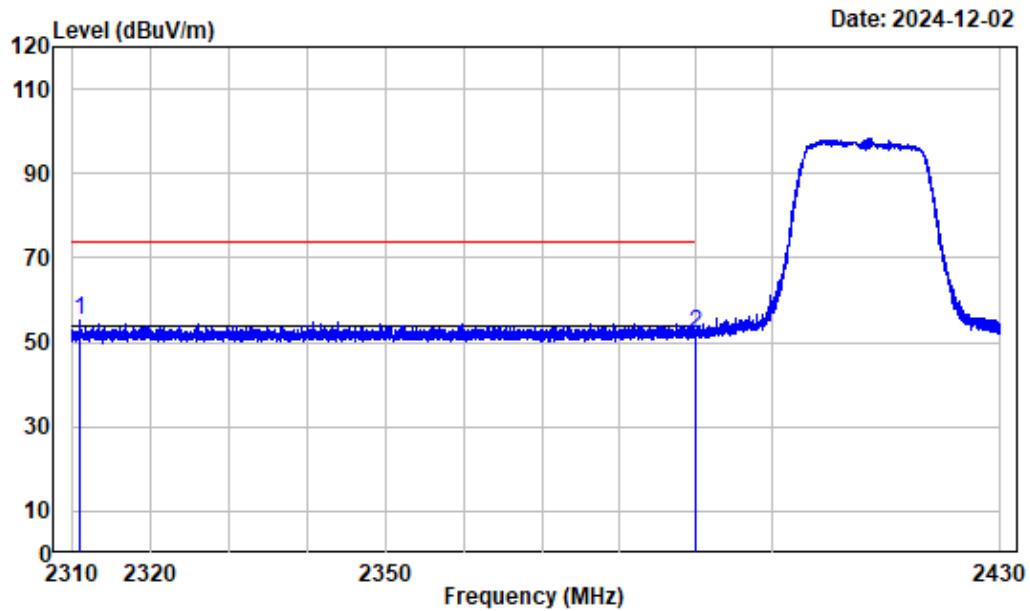
Right Bandedge_Vertical_Peak_802.11b



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11B_2462

Freq	Factor	Read	Limit	Over	Remark	
		Level	Level	Line		
		dB _{uV}	dB _{uV/m}	dB _{uV/m}	dB	
1	2484.779	-10.97	63.28	52.31	74.00	-21.69 peak

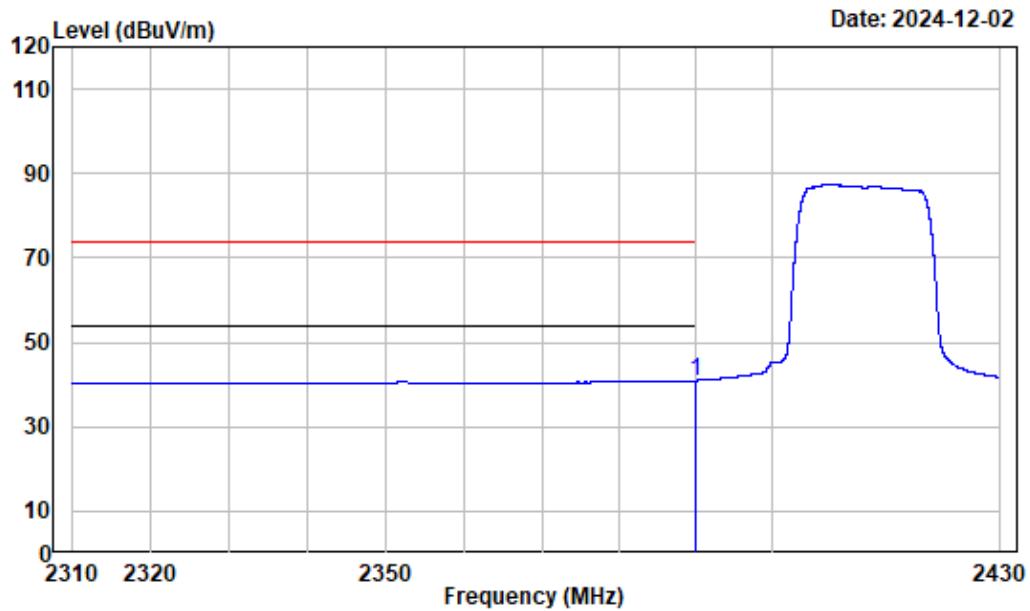
Left Bandedge_Horizontal_Peak_802.11g



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11G_2412

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 2311.020	-3.10	58.34	55.24	74.00	-18.76 peak
2 2390.000	-3.20	55.45	52.25	74.00	-21.75 Peak

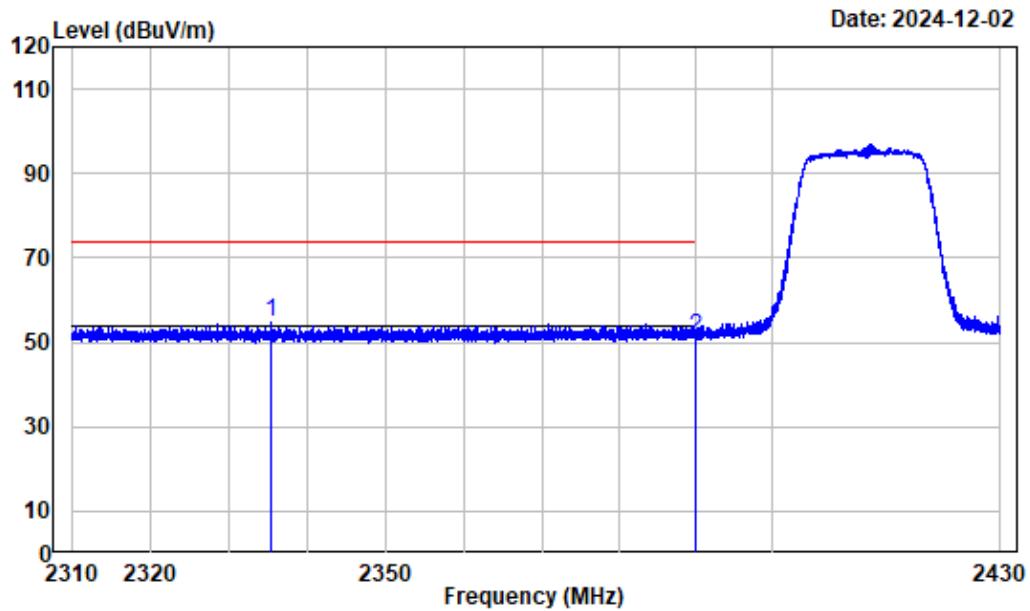
Left Bandedge_Horizontal_Average_802.11g



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Average reading: RBW:1MHz VBW:1KHz Detector:Peak
Note : 802.11G_2412

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 2390.000	-3.20	44.14	40.94	54.00	-13.06 Average

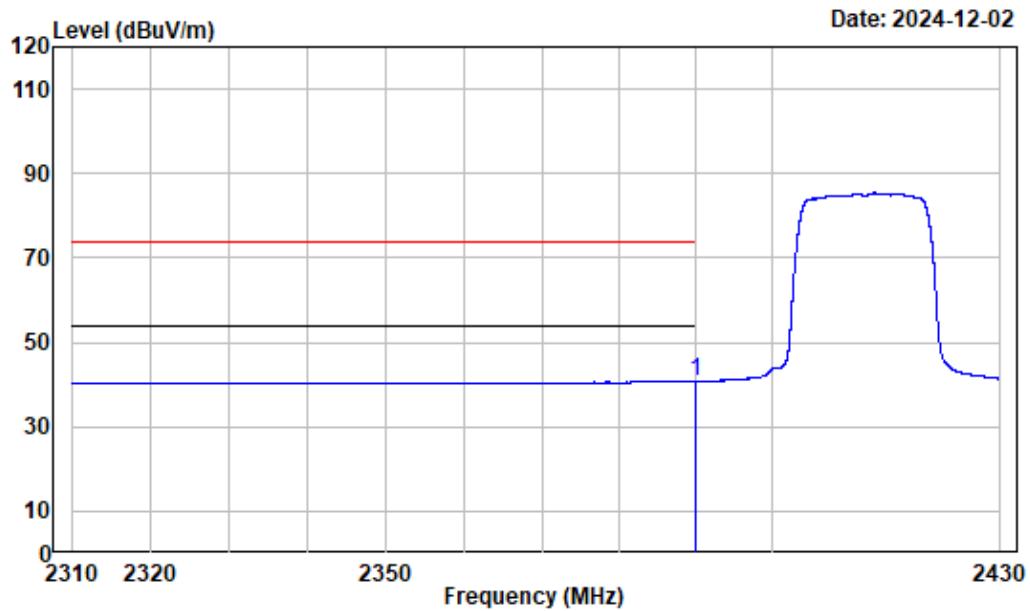
Left Bandedge_Vertical_Peak_802.11g



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11G_2412

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
1	2335.368	-3.13	57.93	54.80	74.00 -19.20 peak
2	2390.000	-3.20	54.55	51.35	74.00 -22.65 Peak

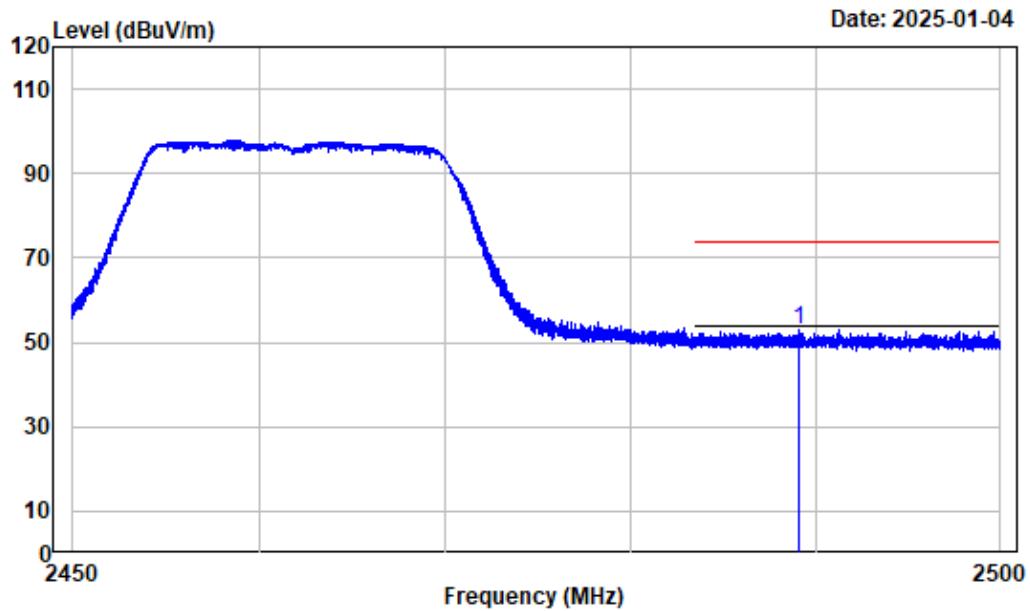
Left Bandedge_Vertical_Average_802.11g



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Average reading: RBW:1MHz VBW:1KHz Detector:Peak
Note : 802.11G_2412

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 2390.000	-3.20	43.92	40.72	54.00	-13.28 Average

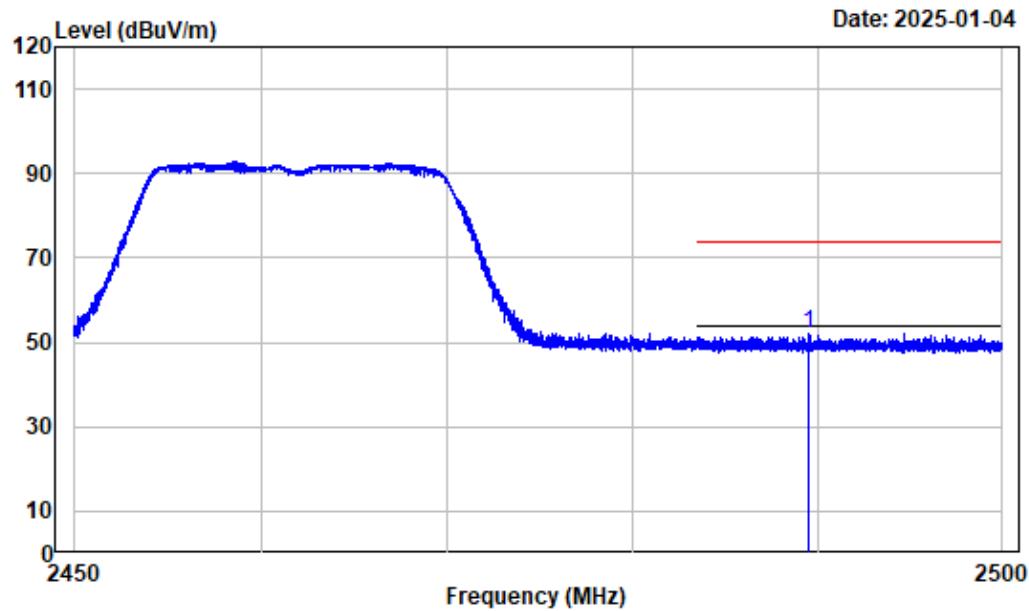
Right Bandedge_Horizontal_Peak_802.11g



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11G_2462

Freq	Factor	Read	Limit	Over	Remark			
		Level	Level	Line				
		MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1		2489.105	-10.98	63.98	53.00	74.00	-21.00	peak

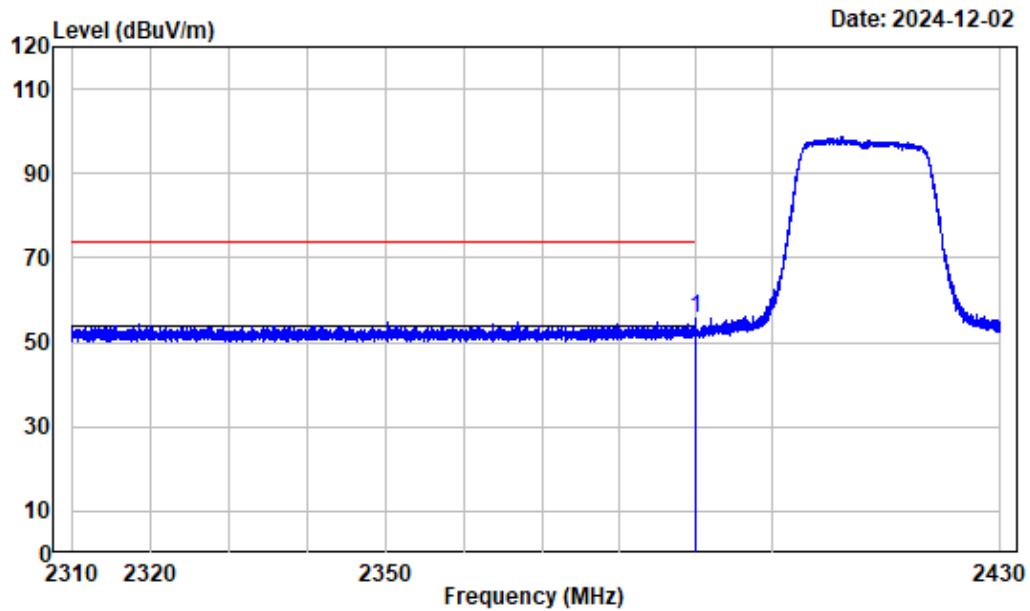
Right Bandedge_Vertical_Peak_802.11g



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11G_2462

Freq	Factor	Read	Limit	Over	Remark			
		Level	Level	Line				
		MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2489.536	-10.98	63.08	52.10	74.00	-21.90	peak	

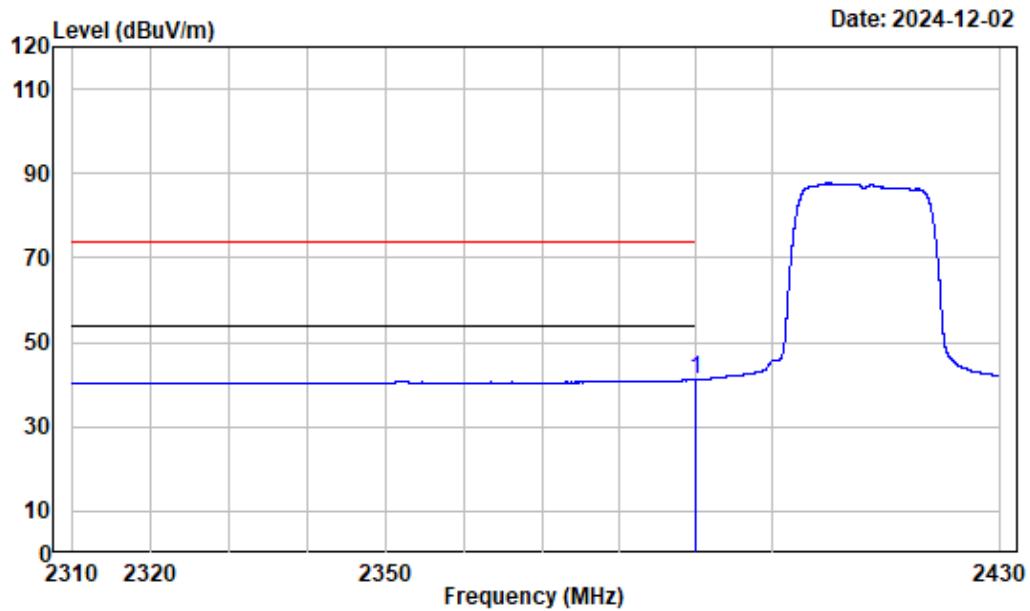
Left Bandedge_Horizontal_Peak_802.11n20



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11N20_2412

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 2390.000	-3.20	58.74	55.54	74.00	-18.46 peak

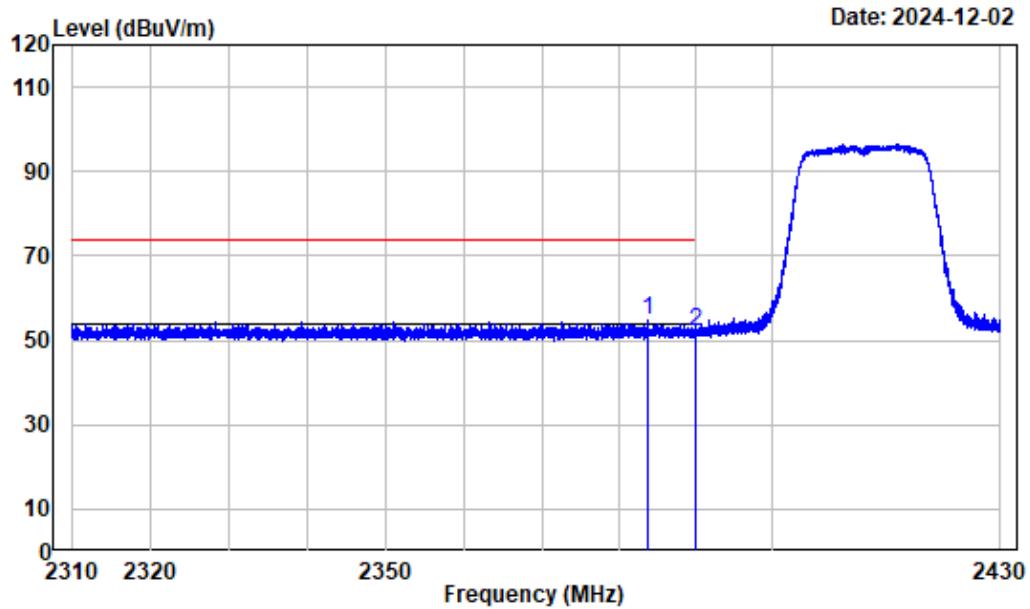
Left Bandedge_Horizontal_Average_802.11n20



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Average reading: RBW:1MHz VBW:1KHz Detector:Peak
Note : 802.11N20_2412

Freq	Factor	Read	Limit	Over	Remark			
		Level	Level	Line				
		MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2390.000	-3.20	44.32	41.12	54.00	-12.88	Average	

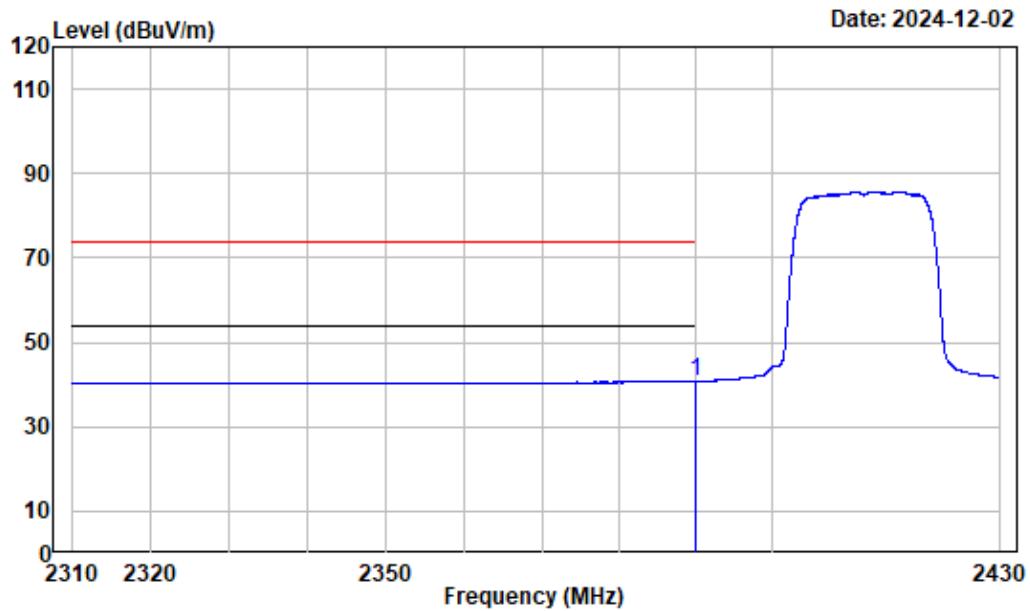
Left Bandedge_Vertical_Peak_802.11n20



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11N20_2412

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 2383.734	-3.20	58.16	54.96	74.00	-19.04 peak
2 2390.000	-3.20	55.14	51.94	74.00	-22.06 Peak

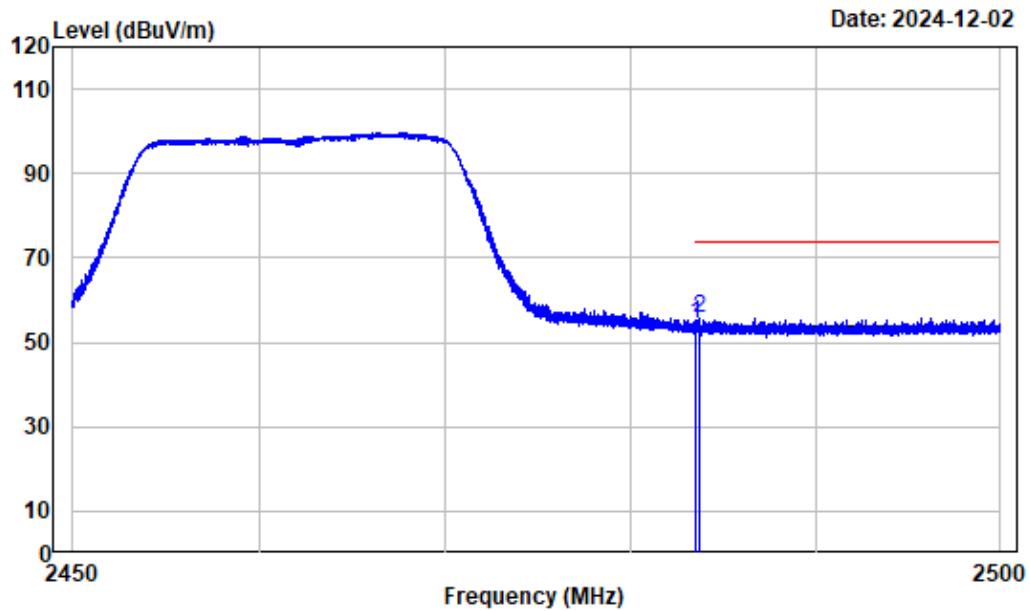
Left Bandedge_Vertical_Average_802.11n20



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Average reading: RBW:1MHz VBW:1KHz Detector:Peak
Note : 802.11N20_2412

Freq	Factor	Read	Limit	Over	Remark			
		Level	Level	Line				
		MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1		2390.000	-3.20	44.05	40.85	54.00	-13.15	Average

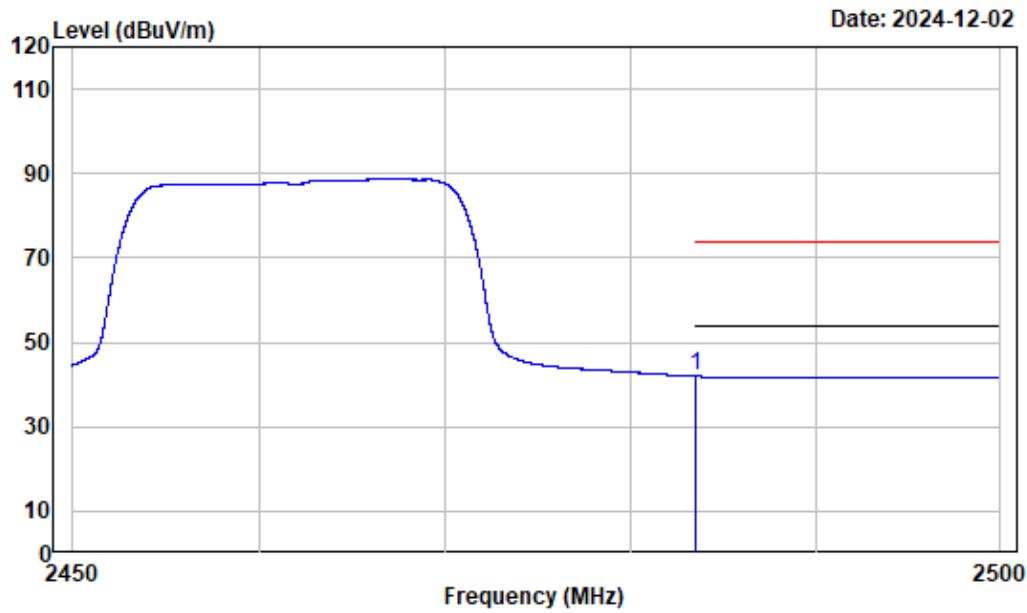
Right Bandedge_Horizontal_Peak_802.11n20



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11N20_2462

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 2483.500	-3.17	57.61	54.44	74.00	-19.56 Peak
2 2483.673	-3.17	58.86	55.69	74.00	-18.31 peak

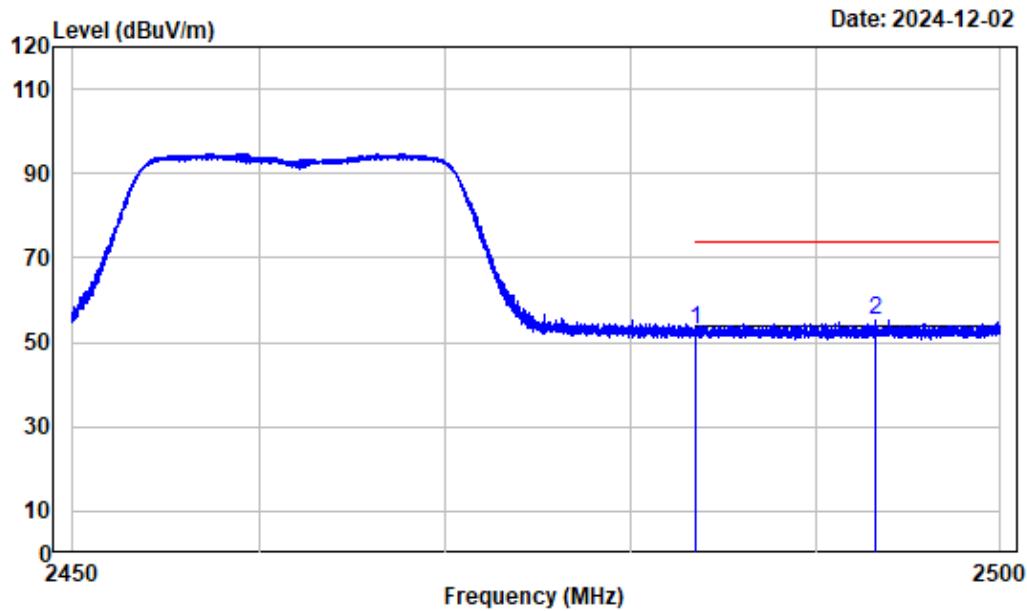
Right Bandedge_Horizontal_Average_802.11n20



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Average reading: RBW:1MHz VBW:1KHz Detector:Peak
Note : 802.11N20_2462

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
		dB/m	dBuV	dBuV/m	dB
1	2483.500	-3.17	45.14	41.97	-12.03 Average

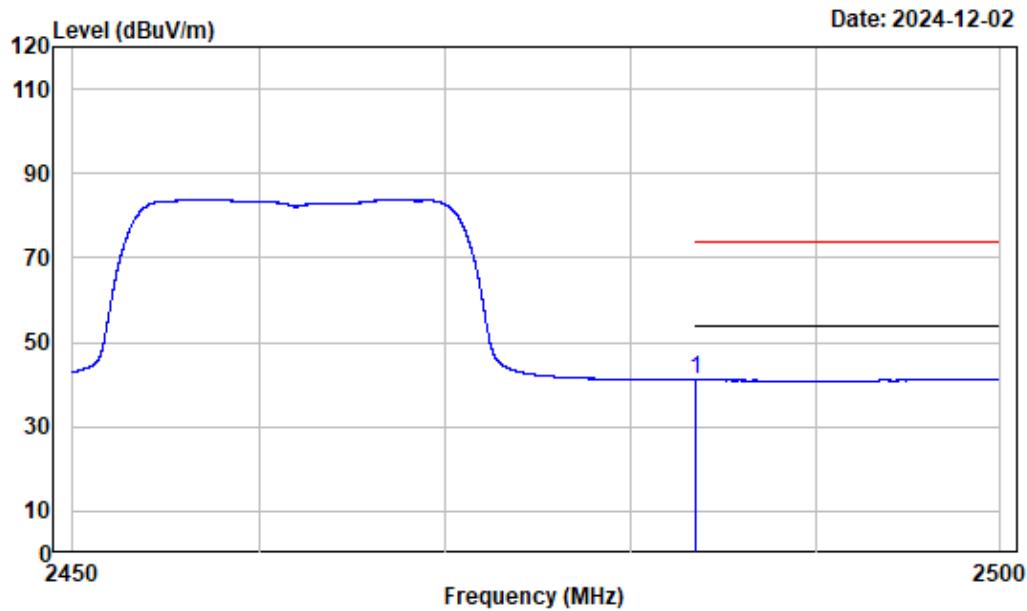
Right Bandedge_Vertical_Peak_802.11n20



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11N20_2462

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 2483.500	-3.17	55.99	52.82	74.00	-21.18 Peak
2 2493.193	-3.19	58.48	55.29	74.00	-18.71 peak

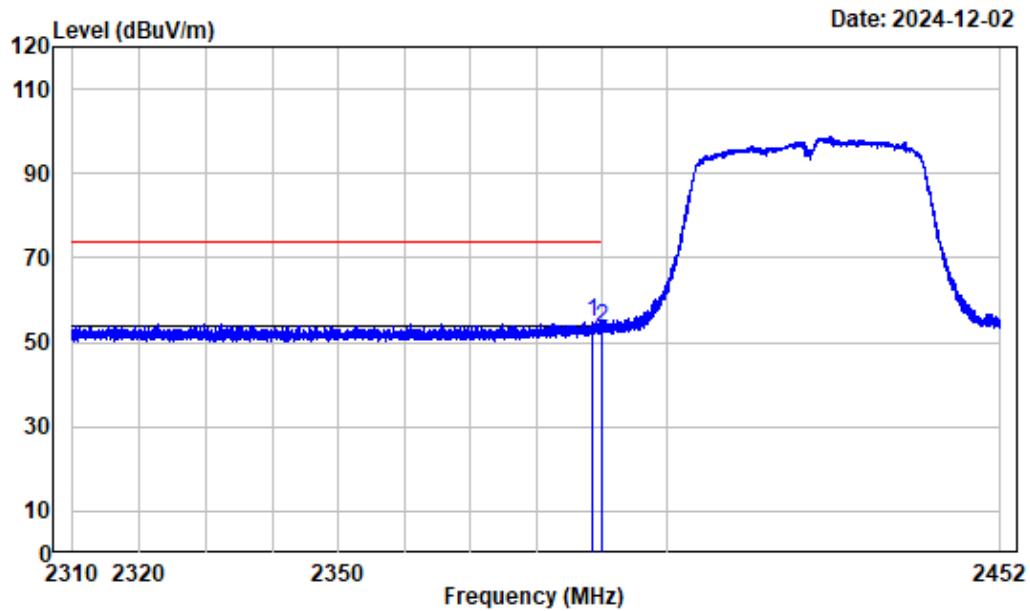
Right Bandedge_Vertical_Average_802.11n20



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Average reading: RBW:1MHz VBW:1KHz Detector:Peak
Note : 802.11N20_2462

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 2483.500	-3.17	44.26	41.09	54.00	-12.91 Average

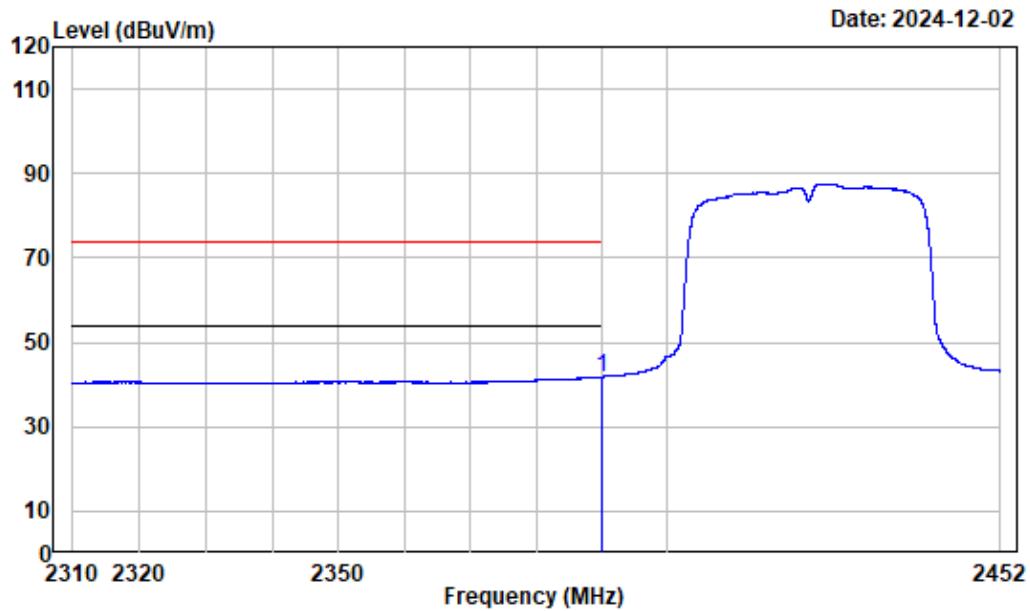
Left Bandedge_Horizontal_Peak_802.11n40



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11N40_2422

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 2388.625	-3.20	57.99	54.79	74.00	-19.21 peak
2 2390.000	-3.20	56.61	53.41	74.00	-20.59 Peak

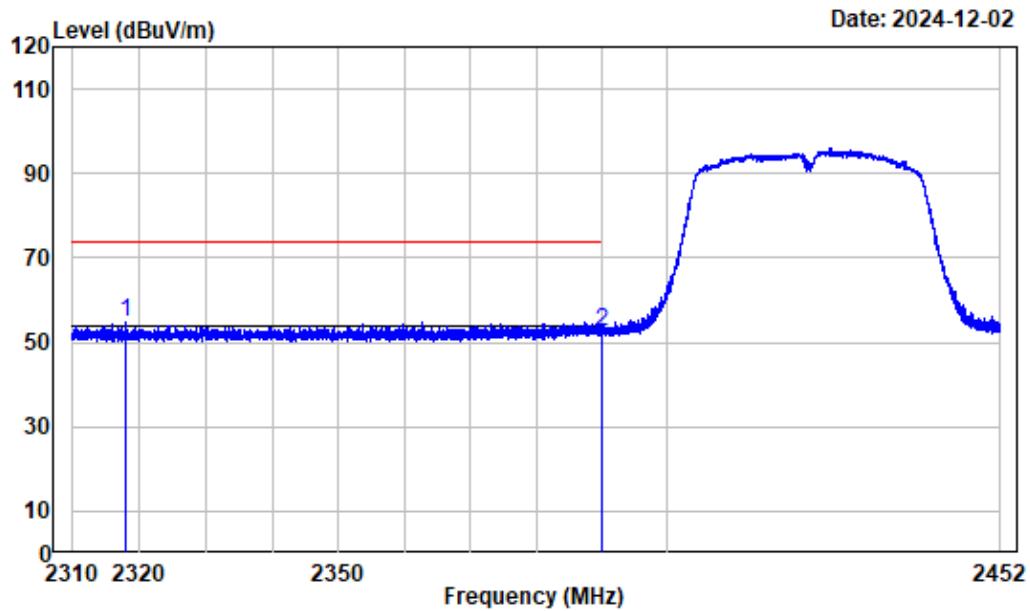
Left Bandedge_Horizontal_Average_802.11n40



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Average reading: RBW:1MHz VBW:1KHz Detector:Peak
Note : 802.11N40_2422

Freq	Factor	Read	Limit	Over	Remark			
		Level	Level	Line				
		MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2390.000	-3.20	45.03	41.83	54.00	-12.17	Average	

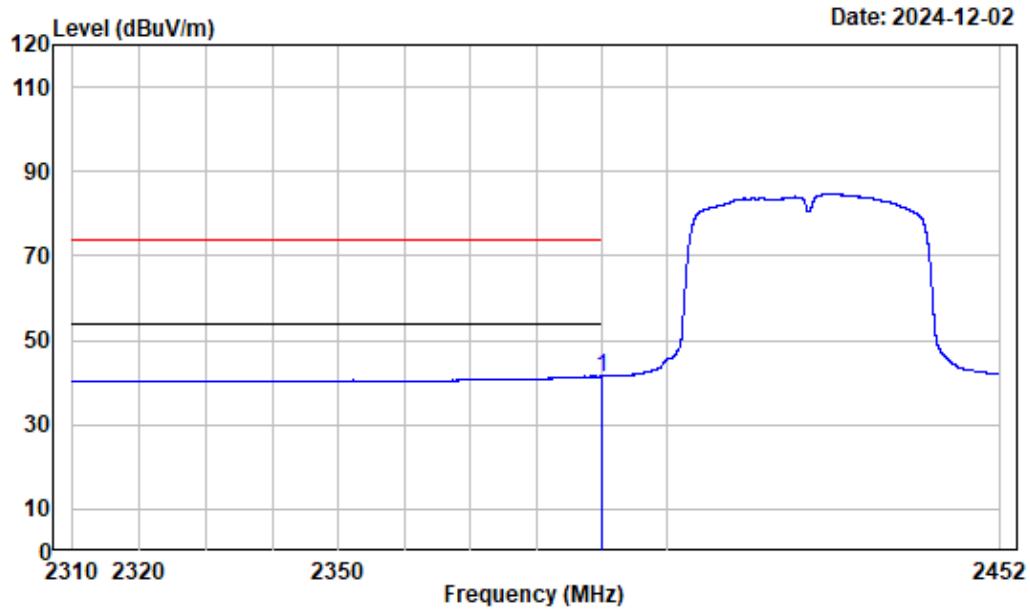
Left Bandedge_Vertical_Peak_802.11n40



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11N40_2422

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 2317.989	-3.11	57.99	54.88	74.00	-19.12 peak
2 2390.000	-3.20	55.77	52.57	74.00	-21.43 Peak

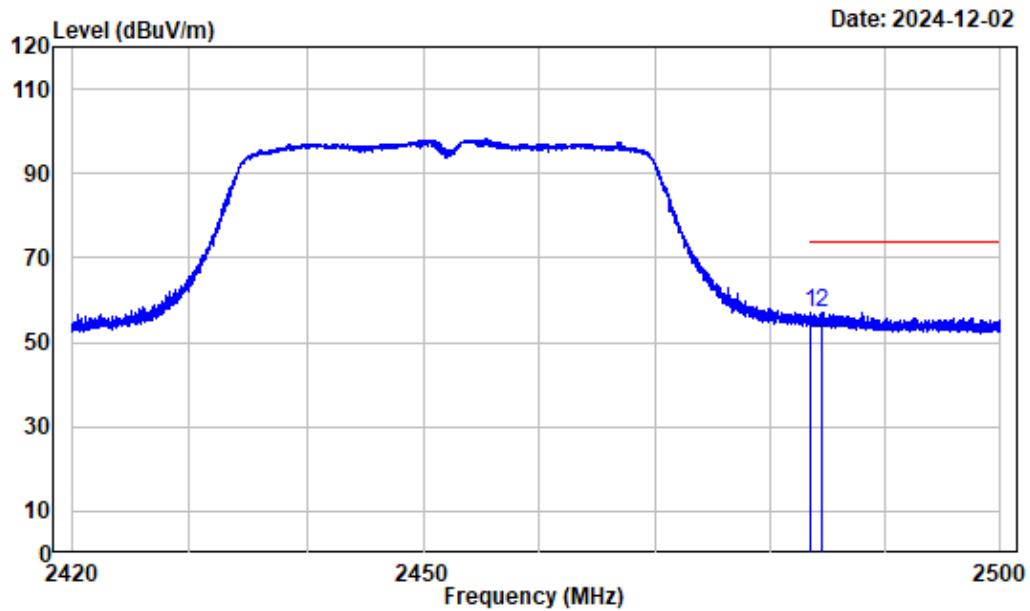
Left Bandedge_Vertical_Average_802.11n40



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Average reading: RBW:1MHz VBW:1KHz Detector:Peak
Note : 802.11N40_2422

Freq	Factor	Read	Limit	Over	Remark			
		Level	Level	Line				
		MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1		2390.000	-3.20	44.61	41.41	54.00	-12.59	Average

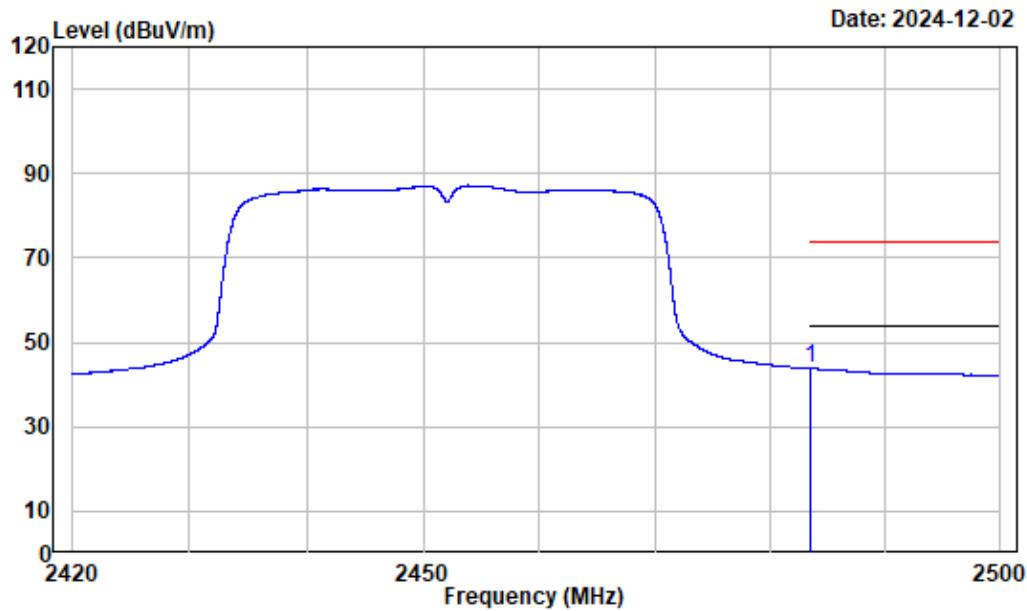
Right Bandedge_Horizontal_Peak_802.11n40



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11N40_2452

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 2483.500	-3.17	60.31	57.14	74.00	-16.86 Peak
2 2484.368	-3.17	60.30	57.13	74.00	-16.87 peak

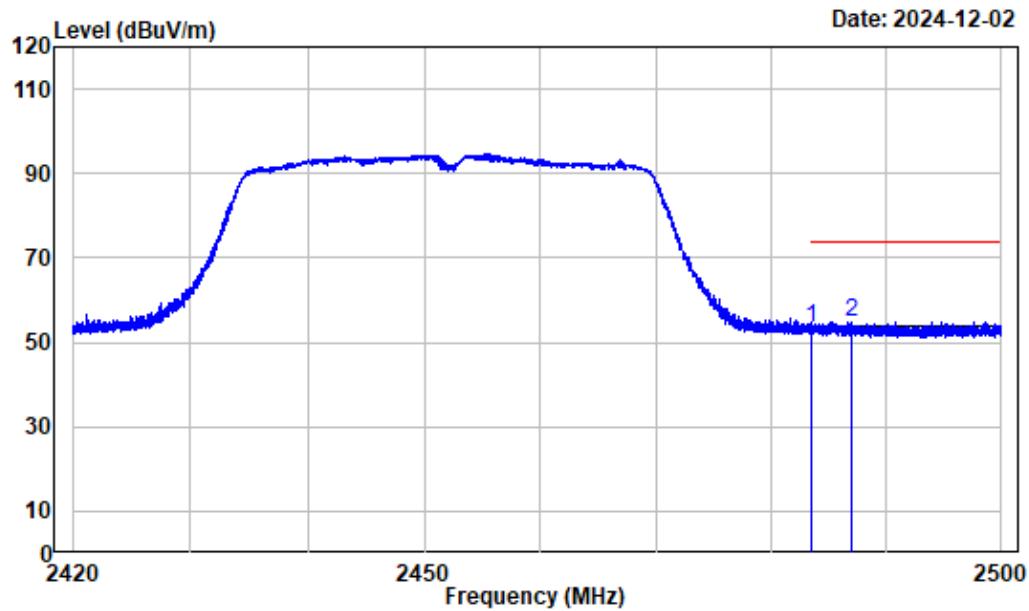
Right Bandedge_Horizontal_Average_802.11n40



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Average reading: RBW:1MHz VBW:1KHz Detector:Peak
Note : 802.11N40_2452

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 2483.500	-3.17	46.96	43.79	54.00	-10.21 Average

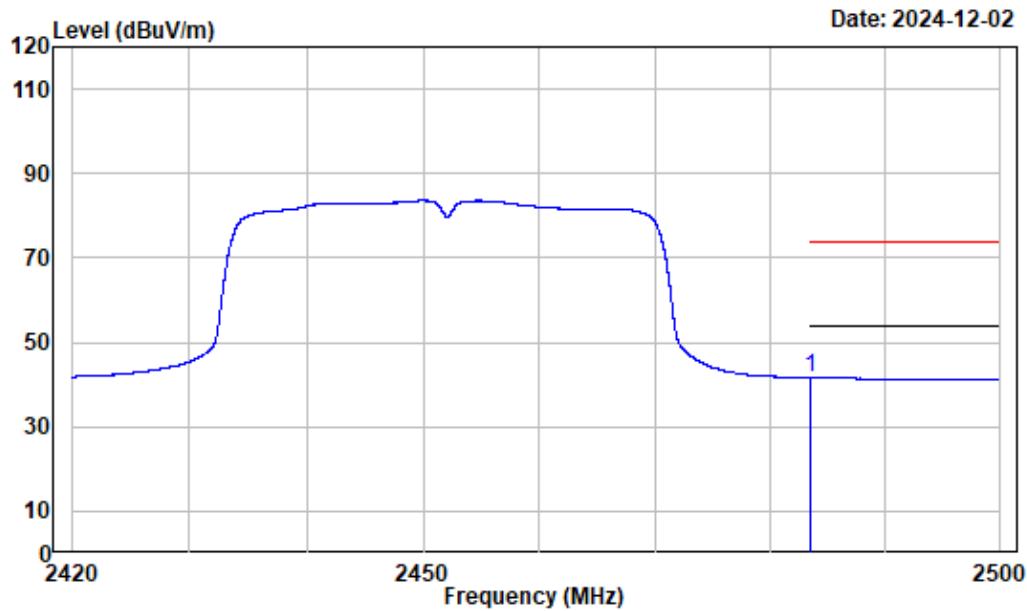
Right Bandedge_Vertical_Peak_802.11n40



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11N40_2452

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	2483.500	-3.17	56.64	53.47	74.00 -20.53 Peak
2	2486.968	-3.17	58.02	54.85	74.00 -19.15 peak

Right Bandedge_Vertical_Average_802.11n40

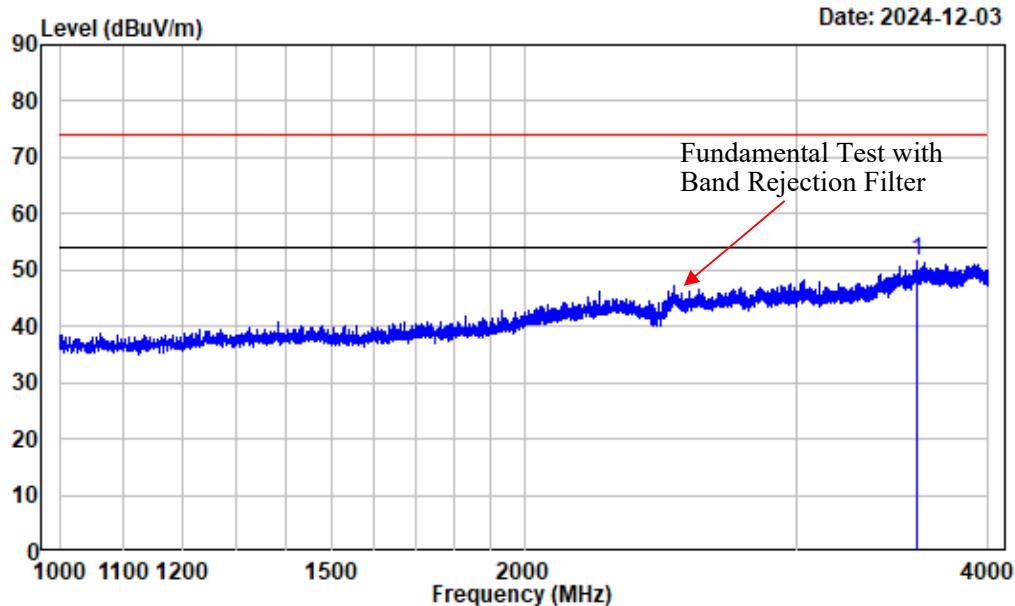


Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Average reading: RBW:1MHz VBW:1KHz Detector:Peak
Note : 802.11N40_2452

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 2483.500	-3.17	44.97	41.80	54.00	-12.20 Average

Listed with the worst harmonic margin test plot for each mode:

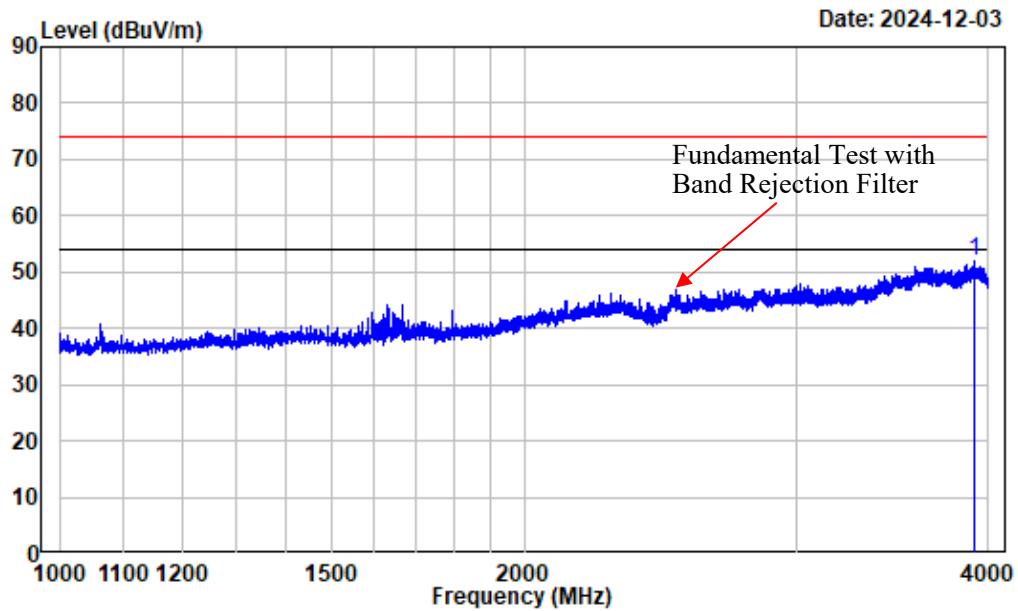
1-4GHz_Horizontal_802.11b



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11B_2412

	Freq	Factor	Read Level	Limit Level	Line	Over Limit	Remark
1	3600.575	-1.77	53.23	51.46	74.00	-22.54	Peak

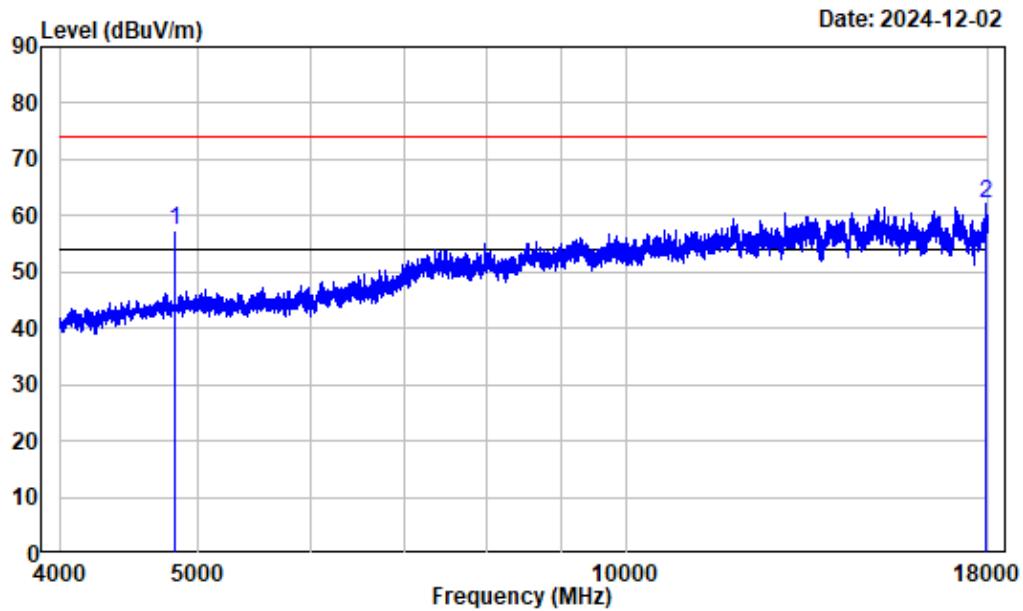
1-4GHz_Vertical_802.11b



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11B_2412

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 3912.989	-0.43	52.24	51.81	74.00	-22.19 Peak

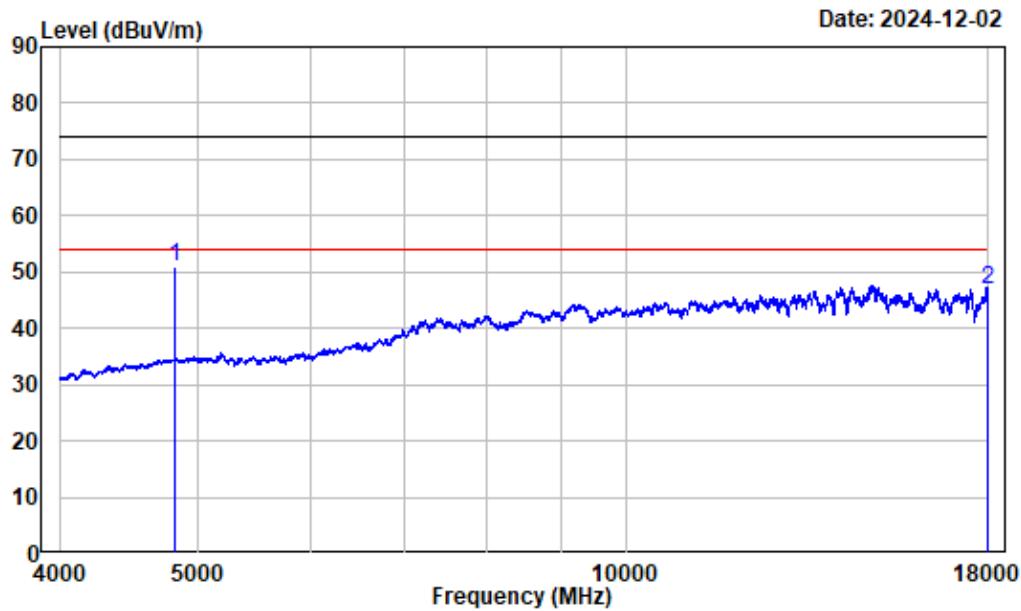
4-18GHz_Horizontal_Peak_802.11b



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11B_2412

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dB _{uV}	dB _{uV/m}	dB _{uV/m}	dB
1 4824.000	2.45	55.11	57.56	74.00	-16.44 Peak
2 17950.990	24.28	37.85	62.13	74.00	-11.87 Peak

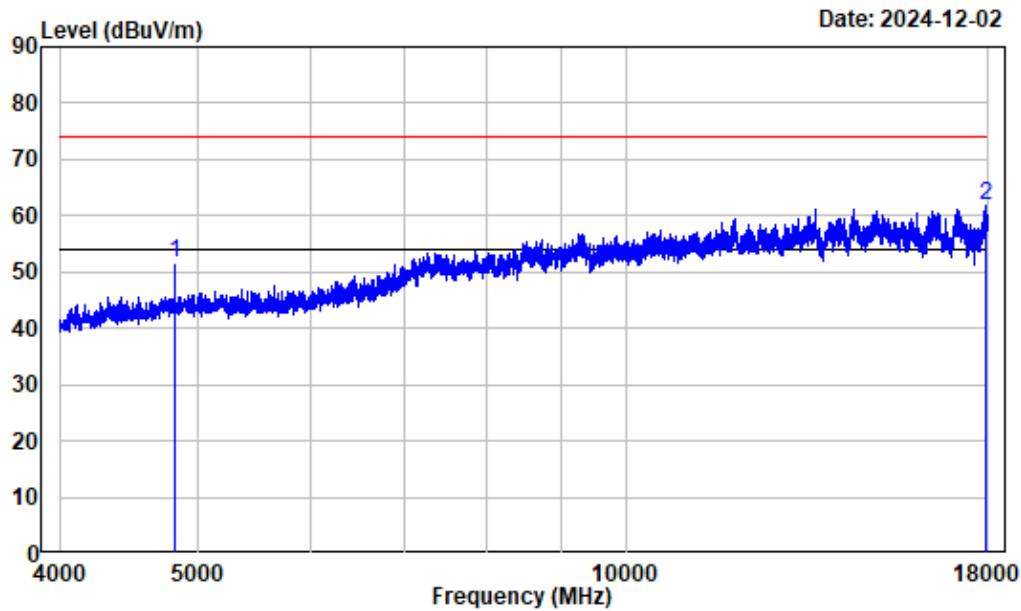
4-18GHz_Horizontal_Average_802.11b



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Average reading: RBW:1MHz VBW:1KHz Detector:Peak
Note : 802.11B_2412

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dB _{uV}	dB _{uV/m}	dB _{uV/m}	dB
1 4824.000	2.45	48.41	50.86	54.00	-3.14 Average
2 17994.750	24.58	22.14	46.72	54.00	-7.28 Average

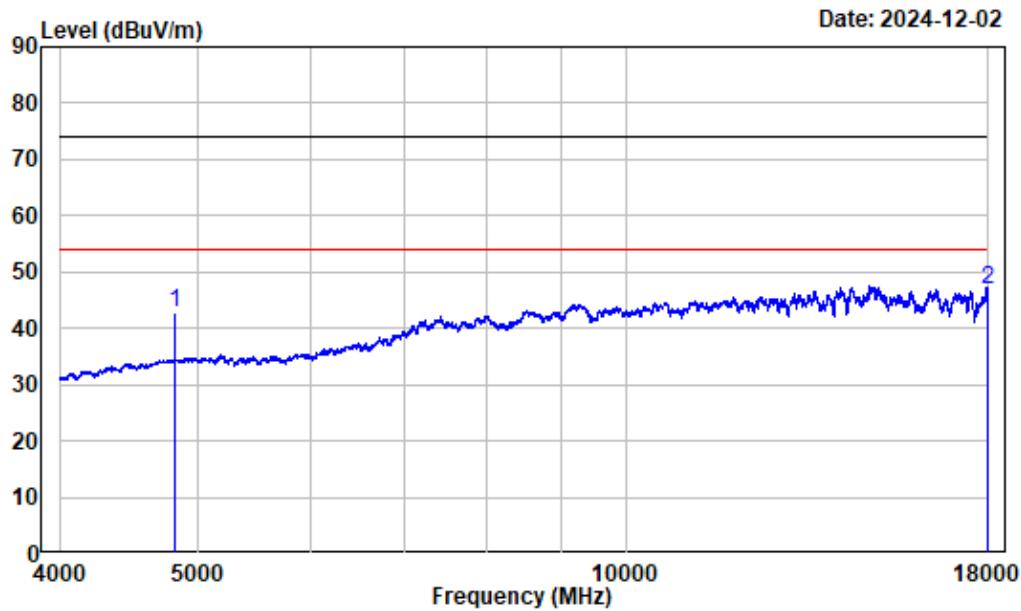
4-18GHz_Vertical_Peak_802.11b



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11B_2412

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
1	4824.000	2.45	49.33	51.78	74.00 -22.22 Peak
2	17936.990	24.17	37.48	61.65	74.00 -12.35 Peak

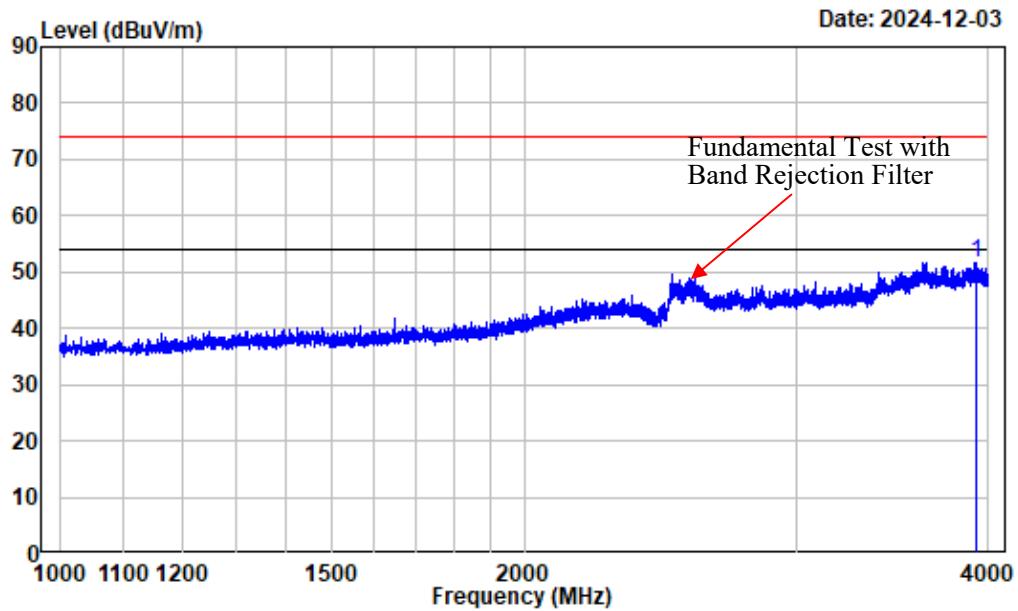
4-18GHz_Vertical_Average_802.11b



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Average reading: RBW:1MHz VBW:1KHz Detector:Peak
Note : 802.11B_2412

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dB _{uV}	dB _{uV/m}	dB _{uV/m}	dB
1 4824.000	2.45	40.51	42.96	54.00	-11.04 Average
2 18000.000	24.62	22.39	47.01	54.00	-6.99 Average

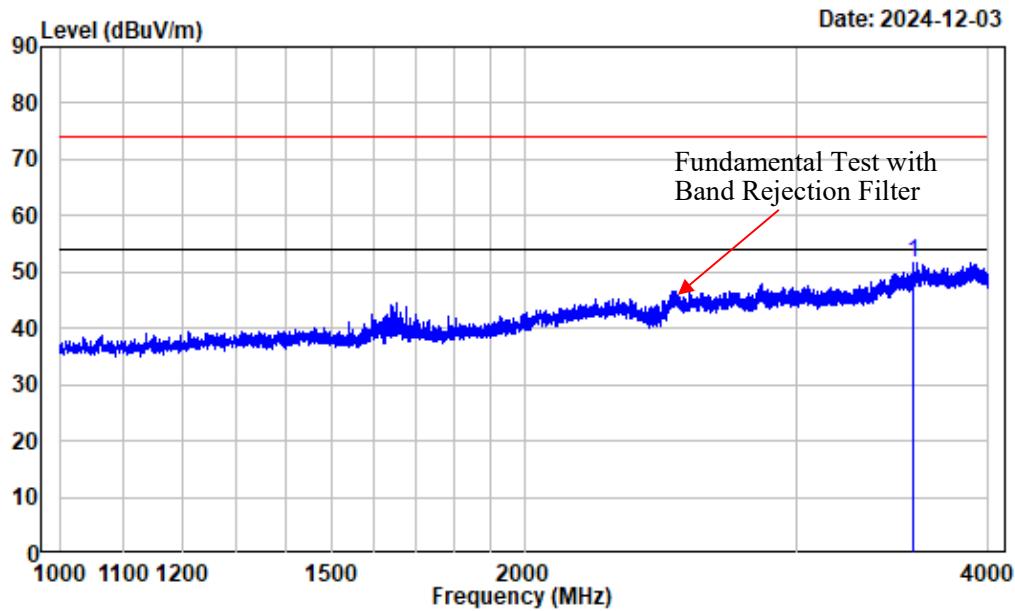
1-4GHz_Horizontal_802.11g



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11G_2462

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dB _{uV}	dB _{uV/m}	dB _{uV/m}	dB
1 3925.366	-0.34	51.99	51.65	74.00	-22.35 Peak

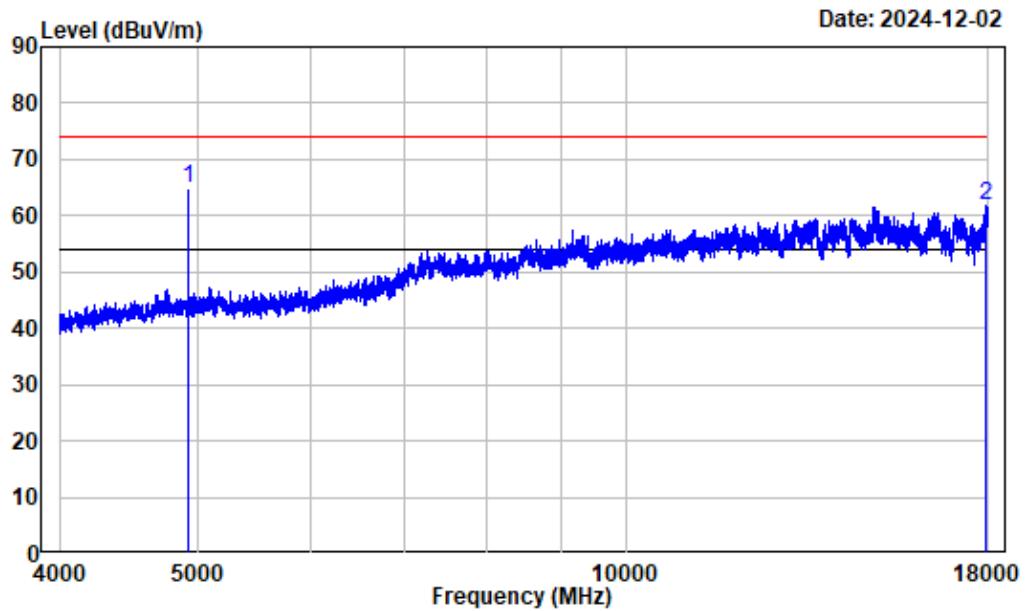
1-4GHz_Vertical_802.11g



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11G_2462

Freq	Factor	Read	Limit	Over	Remark			
		Level	Level	Line				
		MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1		3577.697	-1.67	53.40	51.73	74.00	-22.27	Peak

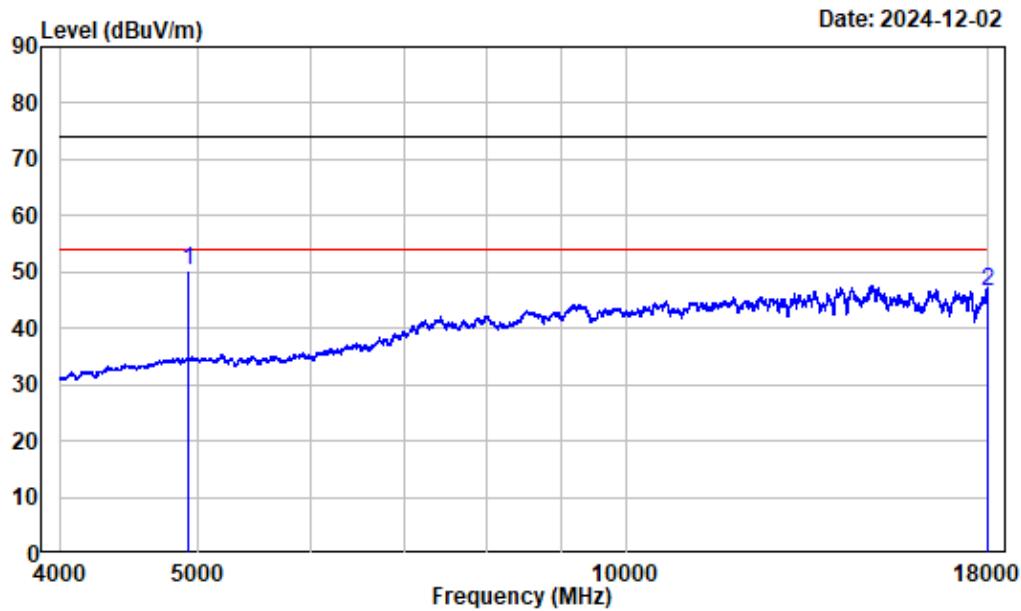
4-18GHz_Horizontal_Peak_802.11g



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11G_2462

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 4924.000	2.63	62.38	65.01	74.00	-8.99 Peak
2 17942.240	24.21	37.63	61.84	74.00	-12.16 Peak

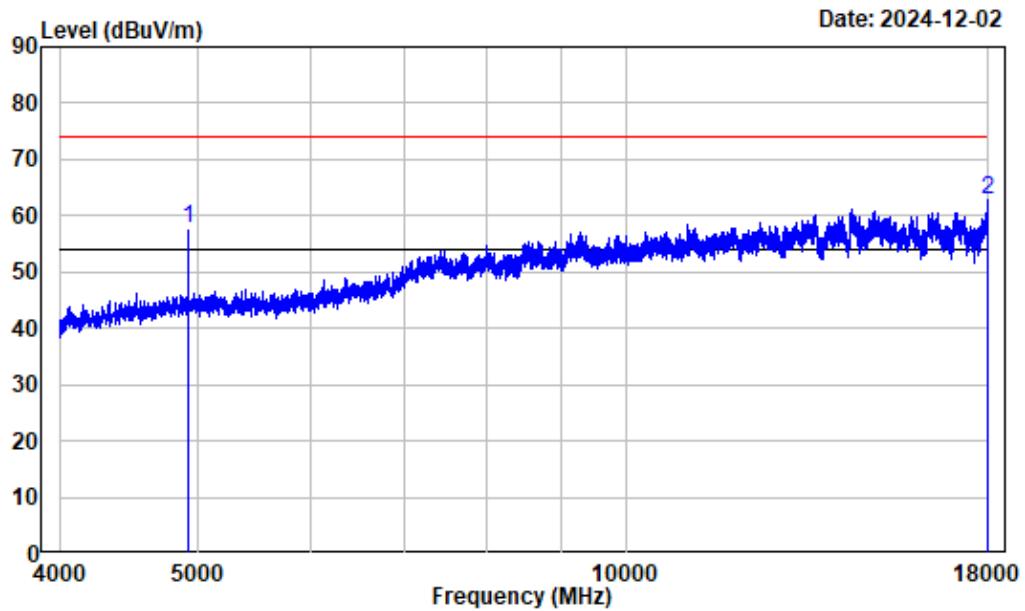
4-18GHz_Horizontal_Average_802.11g



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Average reading: RBW:1MHz VBW:1KHz Detector:Peak
Note : 802.11G_2462

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dB _{uV}	dB _{uV/m}	dB _{uV/m}	dB
1 4924.000	2.63	47.68	50.31	54.00	-3.69 Average
2 18000.000	24.62	22.07	46.69	54.00	-7.31 Average

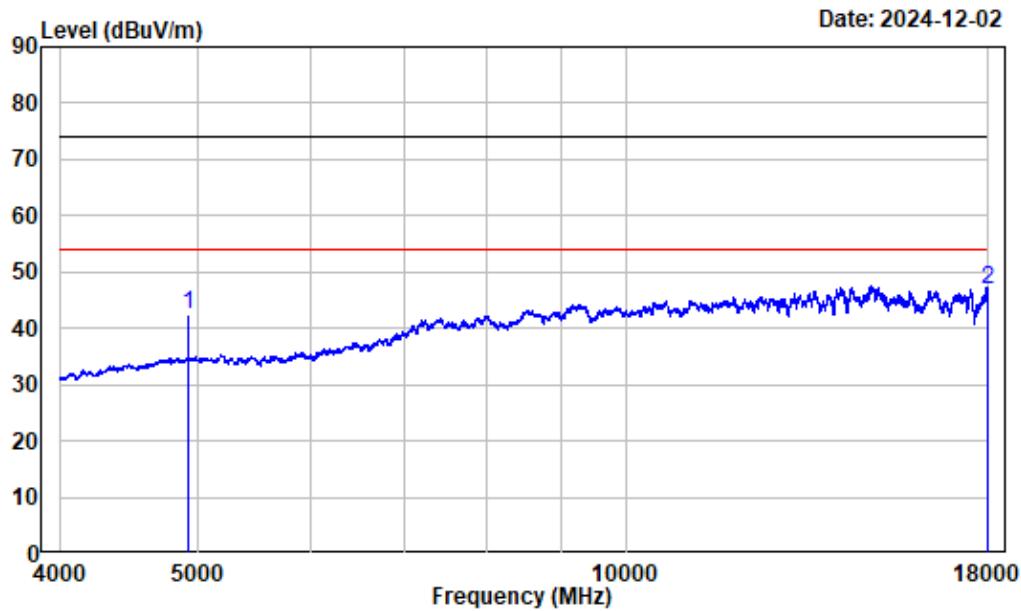
4-18GHz_Vertical_Peak_802.11g



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11G_2462

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 4924.000	2.63	54.97	57.60	74.00	-16.40 Peak
2 17977.250	24.45	38.30	62.75	74.00	-11.25 Peak

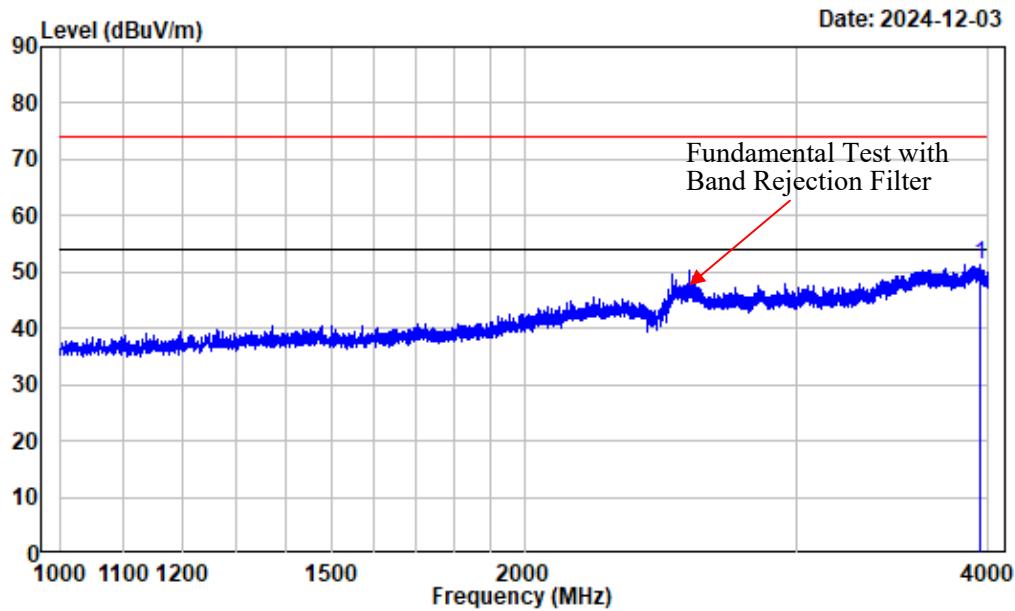
4-18GHz_Vertical_Average_802.11g



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Average reading: RBW:1MHz VBW:1KHz Detector:Peak
Note : 802.11G_2462

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 4924.000	2.63	39.78	42.41	54.00	-11.59 Average
2 17998.250	24.61	22.19	46.80	54.00	-7.20 Average

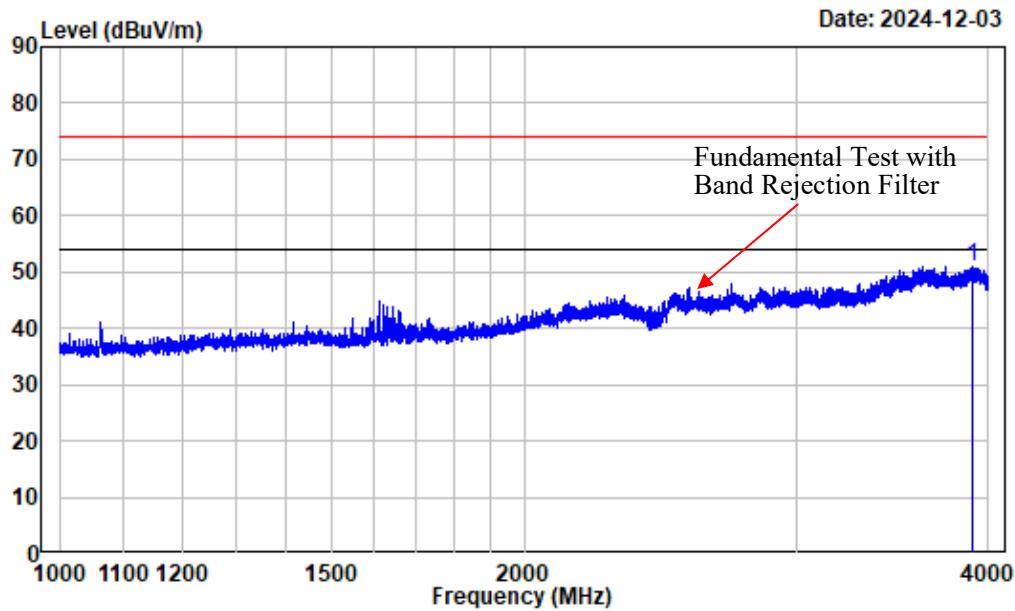
1-4GHz_Horizontal_802.11n20



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11N20_2462

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 3951.619	-0.16	51.41	51.25	74.00	-22.75 Peak

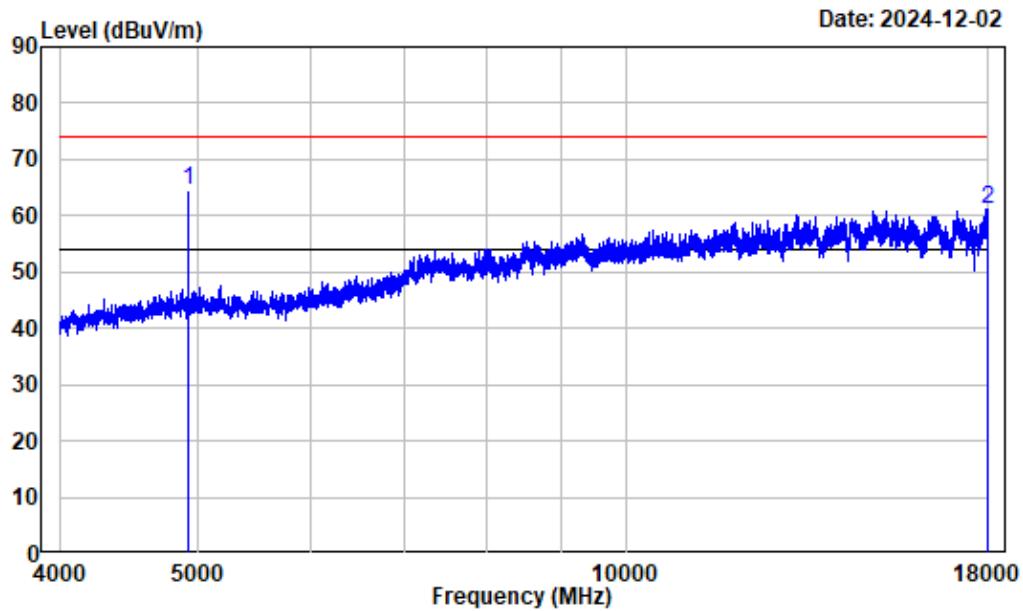
1-4GHz_Vertical_802.11n20



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11N20_2462

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 3903.988	-0.50	51.60	51.10	74.00	-22.90 Peak

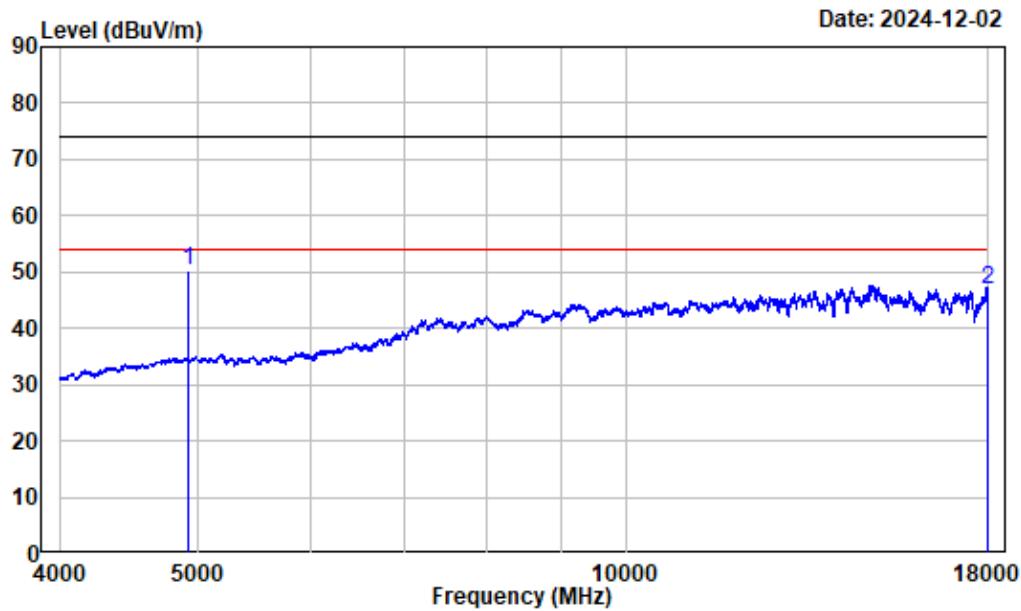
4-18GHz_Horizontal_Peak_802.11n20



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11N20_2462

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 4924.000	2.63	61.92	64.55	74.00	-9.45 Peak
2 17963.250	24.36	36.81	61.17	74.00	-12.83 Peak

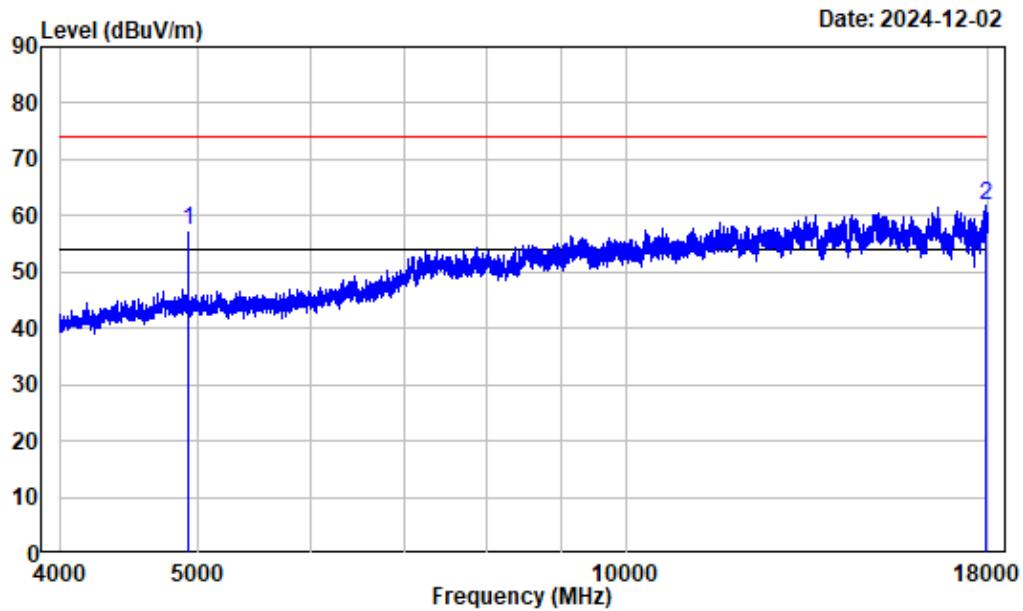
4-18GHz_Horizontal_Average_802.11n20



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Average reading: RBW:1MHz VBW:1KHz Detector:Peak
Note : 802.11N20_2462

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 4924.000	2.63	47.58	50.21	54.00	-3.79 Average
2 18000.000	24.62	22.15	46.77	54.00	-7.23 Average

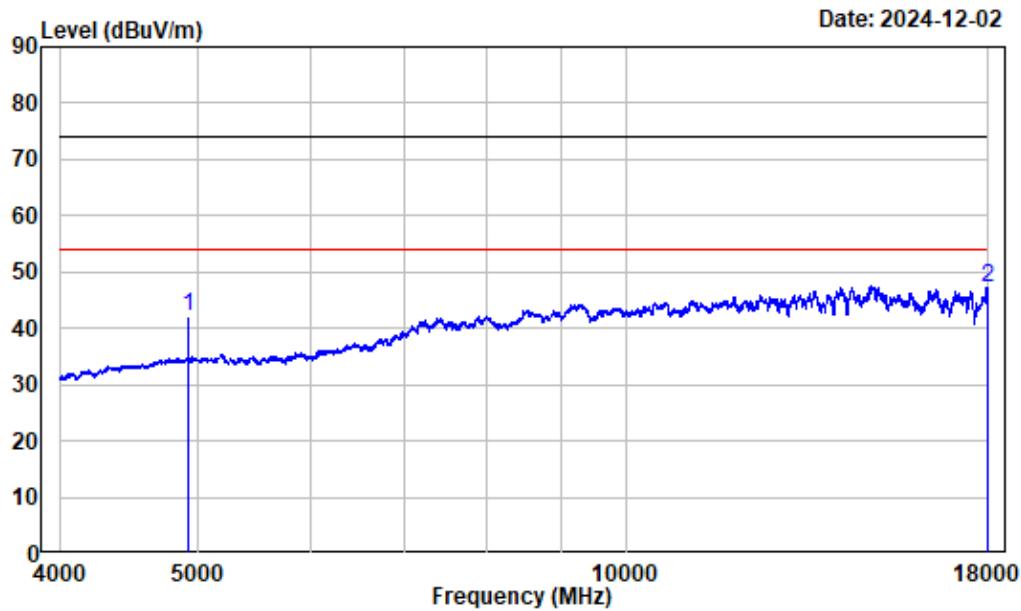
4-18GHz_Vertical_Peak_802.11n20



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11N20_2462

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 4924.000	2.63	54.64	57.27	74.00	-16.73 Peak
2 17952.740	24.29	37.44	61.73	74.00	-12.27 Peak

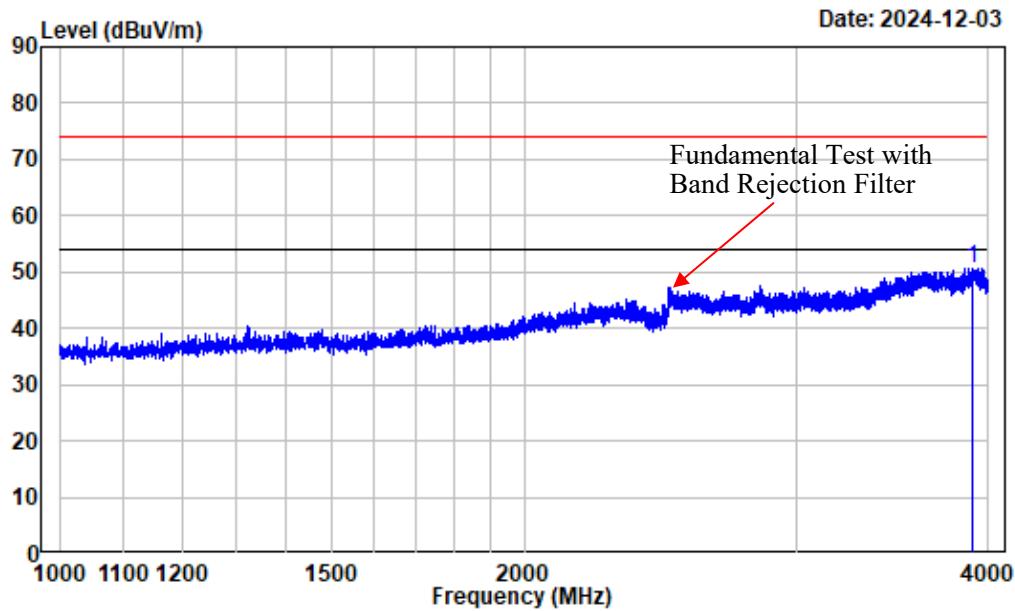
4-18GHz_Vertical_Average_802.11n20



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Average reading: RBW:1MHz VBW:1KHz Detector:Peak
Note : 802.11N20_2462

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dB _{uV}	dB _{uV/m}	dB _{uV/m}	dB
1 4924.000	2.63	39.57	42.20	54.00	-11.80 Average
2 17998.250	24.61	22.47	47.08	54.00	-6.92 Average

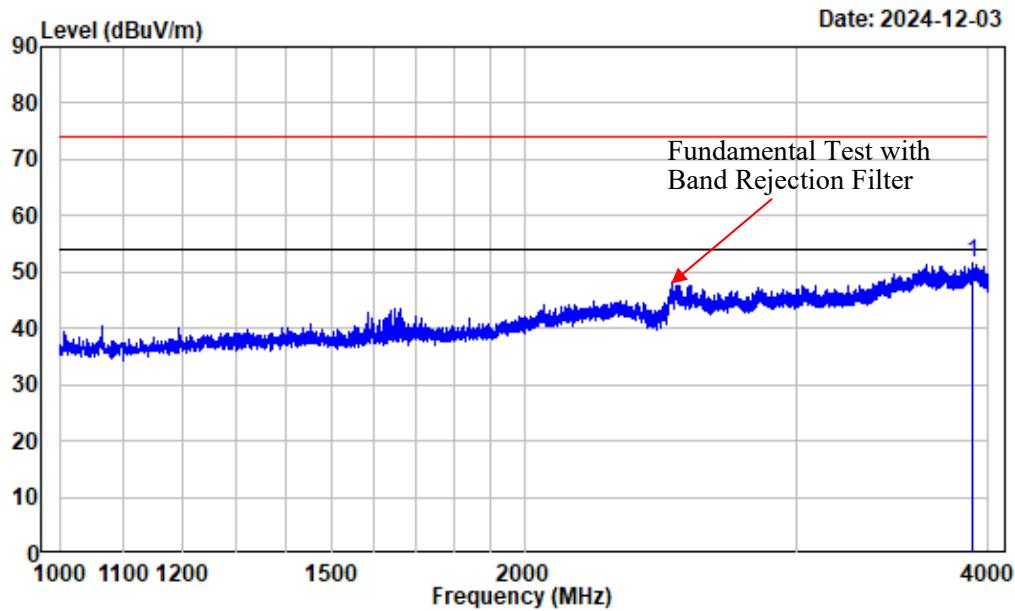
1-4GHz_Horizontal_802.11n40



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11N40_2452

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 3910.739	-0.46	51.18	50.72	74.00	-23.28 Peak

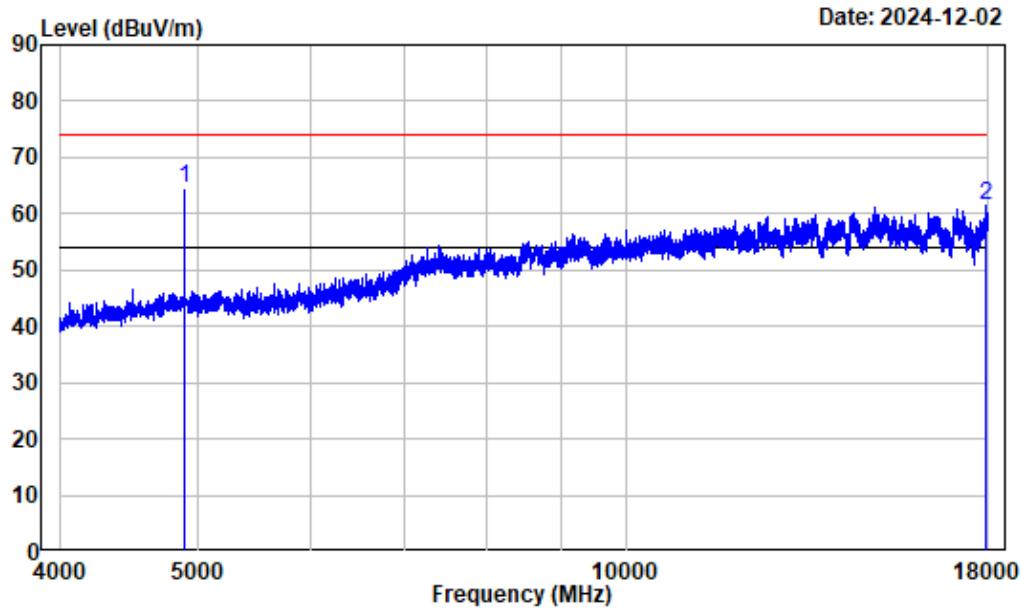
1-4GHz_Vertical_802.11n40



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11N40_2452

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 3909.239	-0.46	52.23	51.77	74.00	-22.23 Peak

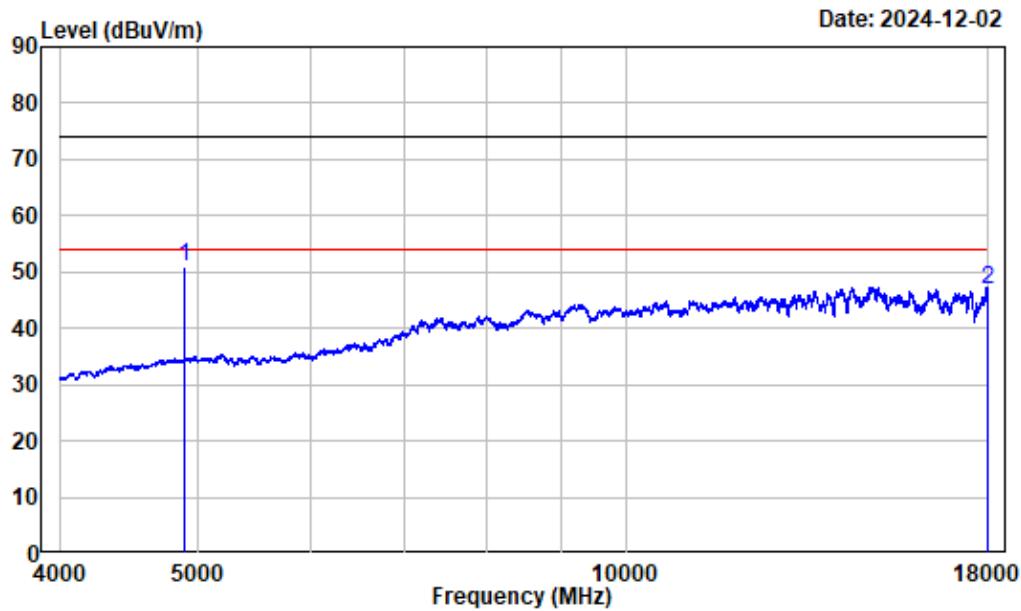
4-18GHz_Horizontal_Peak_802.11n40



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11N40_2452

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 4904.000	2.64	62.04	64.68	74.00	-9.32 Peak
2 17945.740	24.23	37.15	61.38	74.00	-12.62 Peak

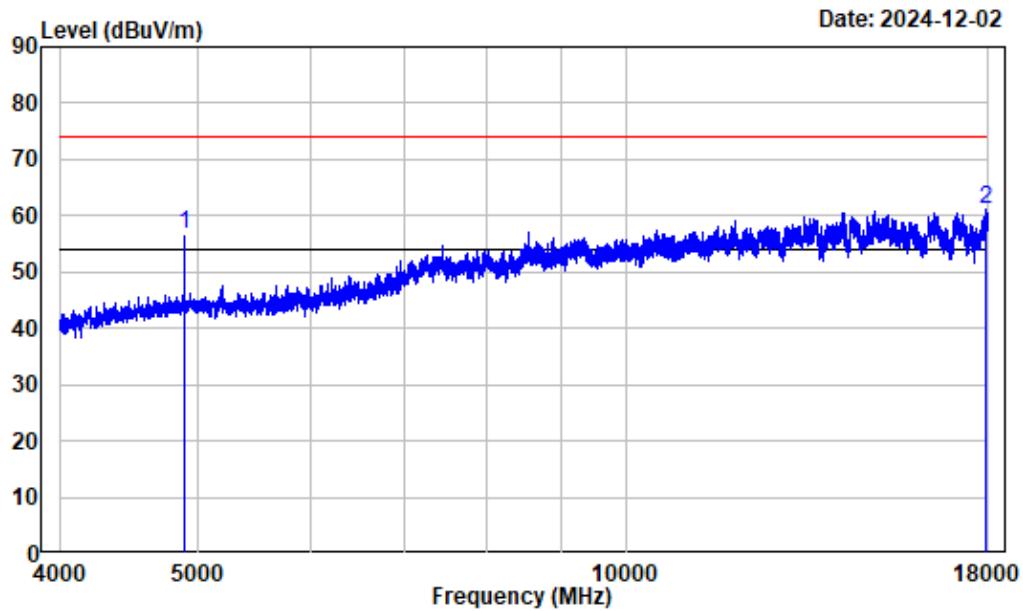
4-18GHz_Horizontal_Average_802.11n40



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Average reading: RBW:1MHz VBW:1KHz Detector:Peak
Note : 802.11N40_2452

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 4904.000	2.64	48.29	50.93	54.00	-3.07 Average
2 17993.000	24.57	22.14	46.71	54.00	-7.29 Average

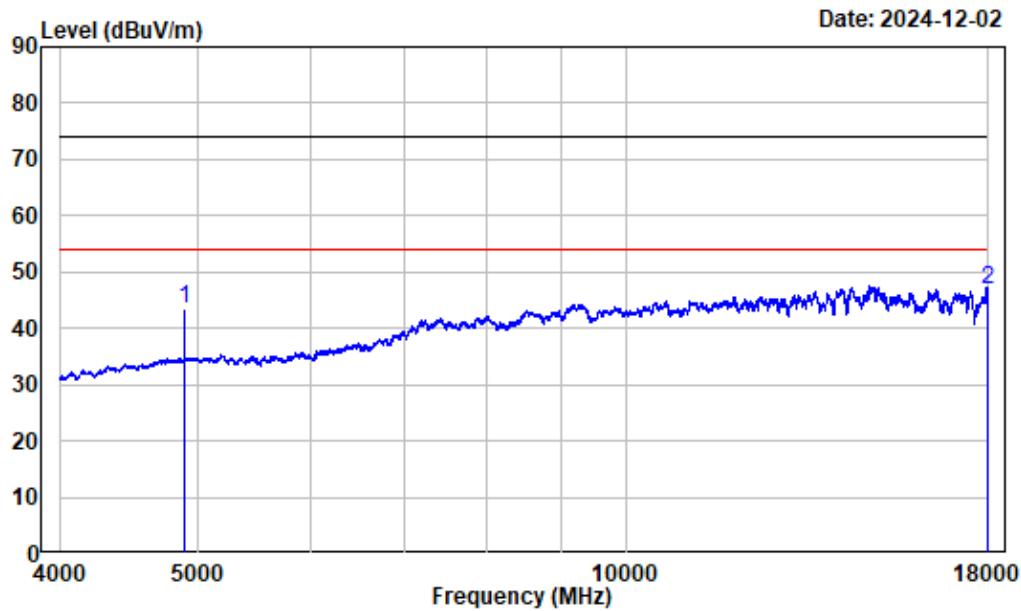
4-18GHz_Vertical_Peak_802.11n40



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11N40_2452

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 4904.000	2.64	54.14	56.78	74.00	-17.22 Peak
2 17952.740	24.29	36.71	61.00	74.00	-13.00 Peak

4-18GHz_Vertical_Average_802.11n40

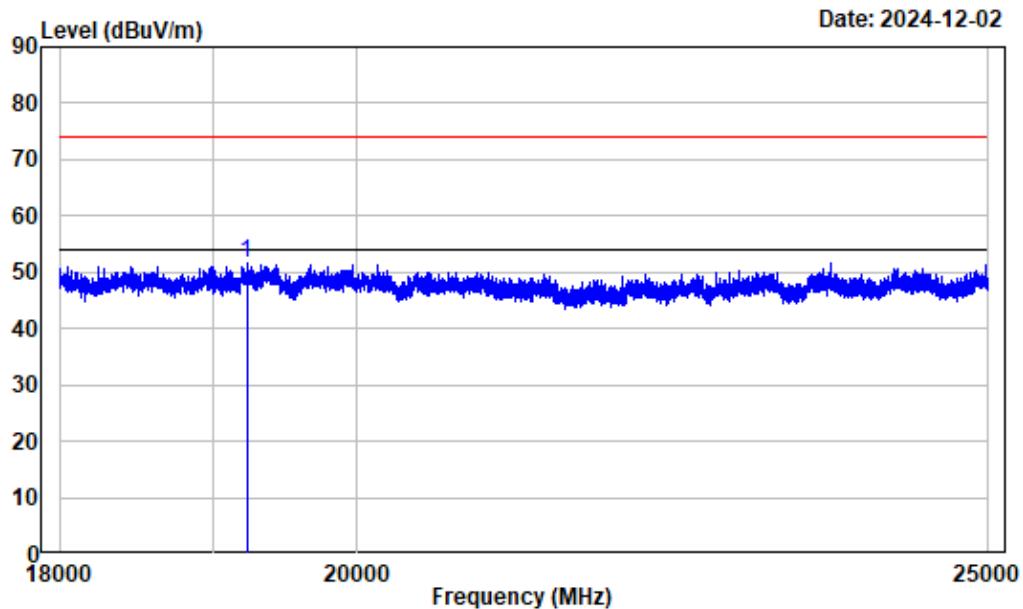


Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Average reading: RBW:1MHz VBW:1KHz Detector:Peak
Note : 802.11N40_2452

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 4904.000	2.64	40.86	43.50	54.00	-10.50 Average
2 18000.000	24.62	22.16	46.78	54.00	-7.22 Average

For 18-25 GHz, just show the worst case mode (802.11n40)

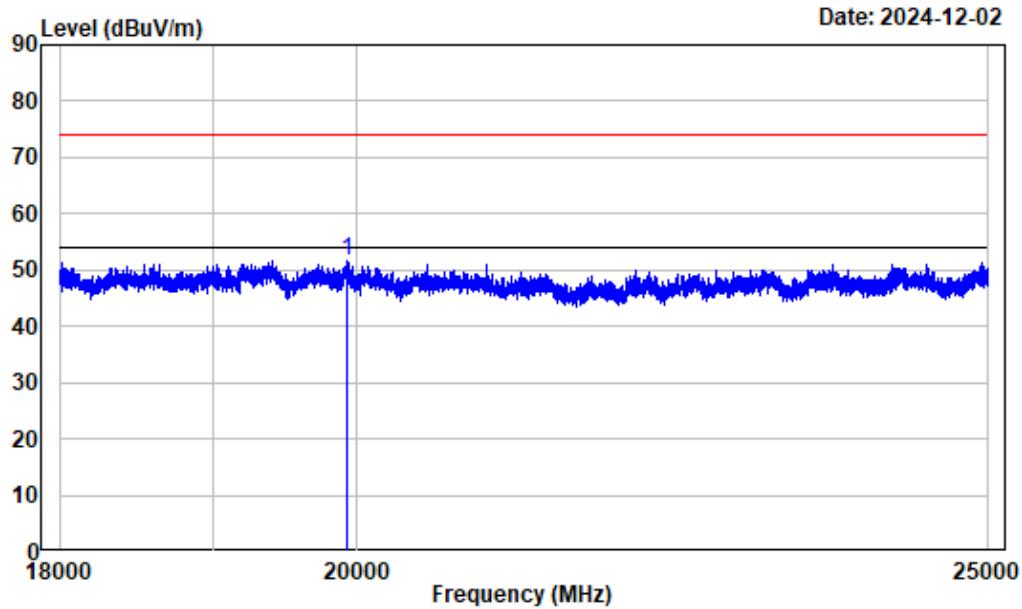
18-25GHz_Horizontal_802.11n40



Condition : Horizontal
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11N40_2452

Freq	Factor	Read		Limit		Over	Remark
		Level	Level	Line	Line		
1	19231.280	15.29	36.46	51.75	74.00	-22.25	Peak

18-25GHz_Vertical_802.11n40



Condition : Vertical
Project No. : 2401Z54419E-RF
Tester : Dylan.Yang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 802.11N40_2452

Freq	Factor	Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 19926.120	15.42	36.36	51.78	74.00	-22.22 Peak

6dB Emission Bandwidth**Test Information:**

Sample No.:	2UD0-2	Test Date:	2025/01/02
Test Site:	RF	Test Mode:	Transmitting
Tester:	Cheeb Huang	Test Result:	Pass

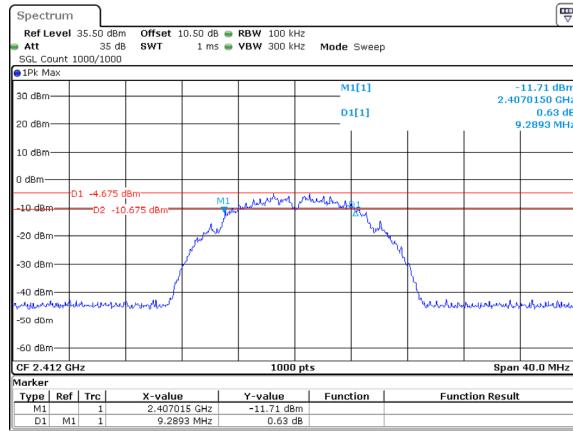
Environmental Conditions:

Temperature: (°C):	24.2	Relative Humidity: (%)	42	ATM Pressure: (kPa)	101
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Test Data:

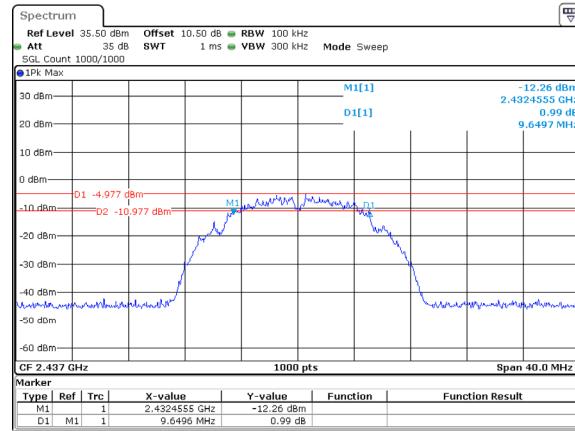
Mode	Antenna	Test Frequency (MHz)	Result (MHz)	Limit (MHz)	Verdict
802.11b	Chain 0	2412	9.289	≥0.5	Pass
		2437	9.650	≥0.5	Pass
		2462	8.769	≥0.5	Pass
802.11g	Chain 0	2412	16.376	≥0.5	Pass
		2437	16.376	≥0.5	Pass
		2462	16.376	≥0.5	Pass
802.11n20	Chain 0	2412	16.336	≥0.5	Pass
		2437	16.416	≥0.5	Pass
		2462	16.376	≥0.5	Pass
802.11n40	Chain 0	2422	35.235	≥0.5	Pass
		2437	35.315	≥0.5	Pass
		2452	35.235	≥0.5	Pass

802.11b_2412MHz 9.289MHz



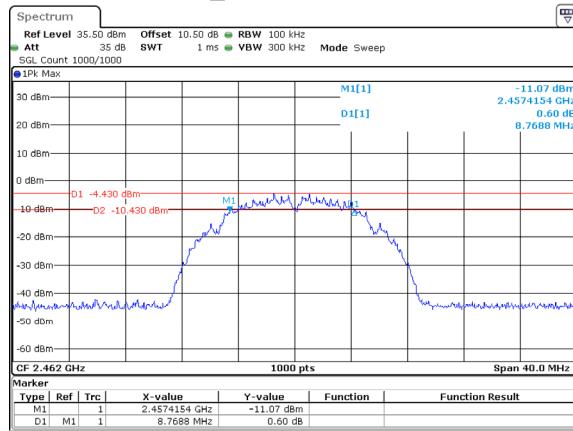
ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 19:40:16

802.11b_2437MHz 9.650MHz



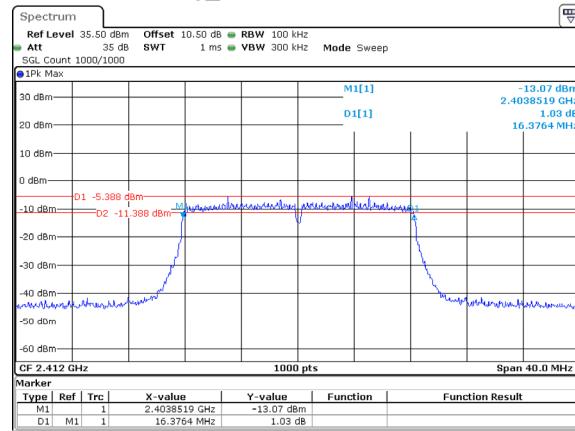
ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 19:43:55

802.11b_2462MHz 8.769MHz



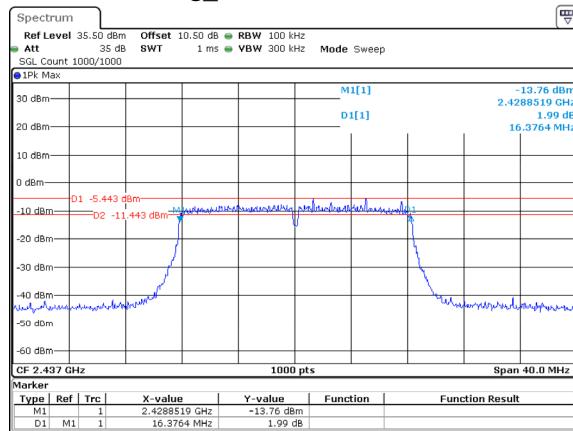
ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 19:47:42

802.11g_2412MHz 16.376MHz



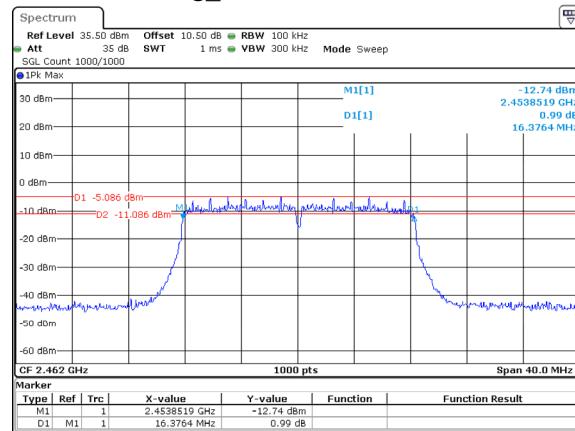
ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 19:52:12

802.11g_2437MHz 16.376MHz



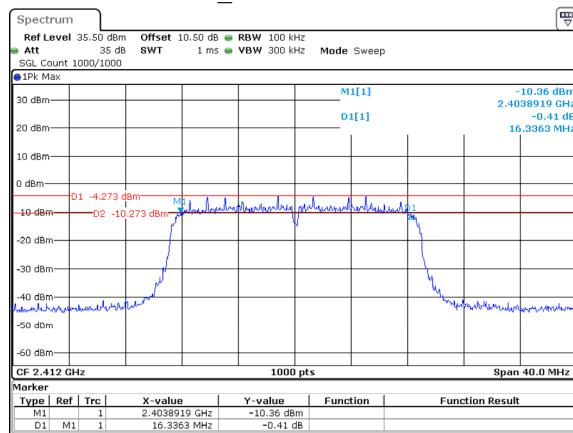
ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 19:55:04

802.11g_2462MHz 16.376MHz



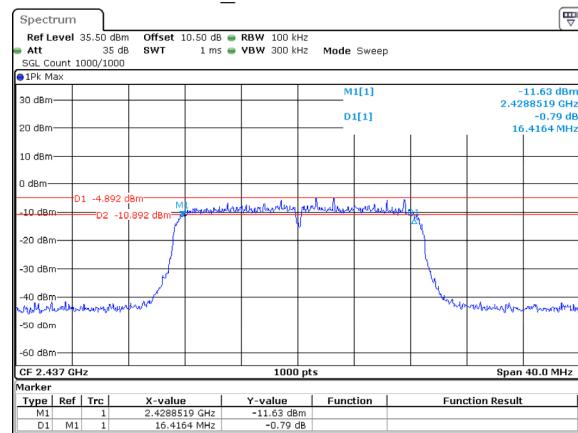
ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 19:58:19

802.11n20_2412MHz 16.336MHz



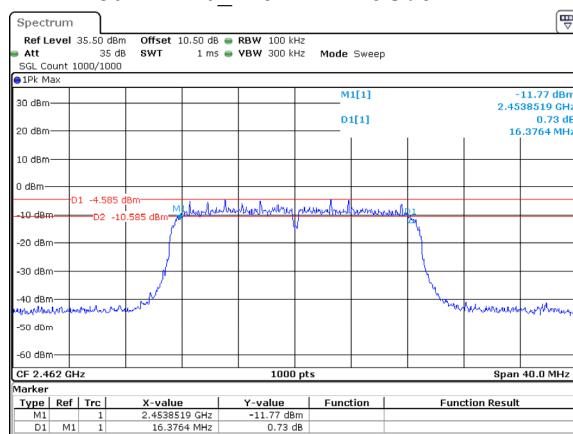
ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 20:04:26

802.11n20_2437MHz 16.416MHz



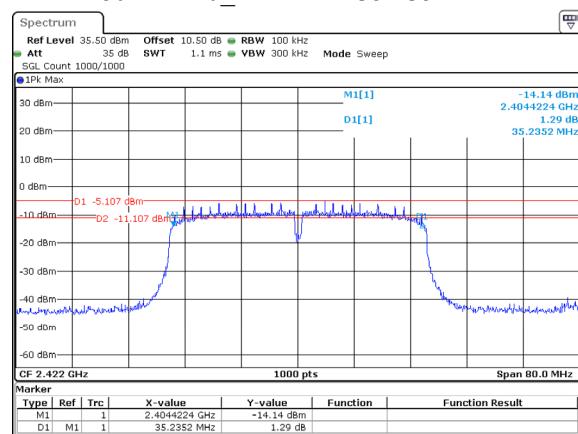
ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 20:14:20

802.11n20_2462MHz 16.376MHz



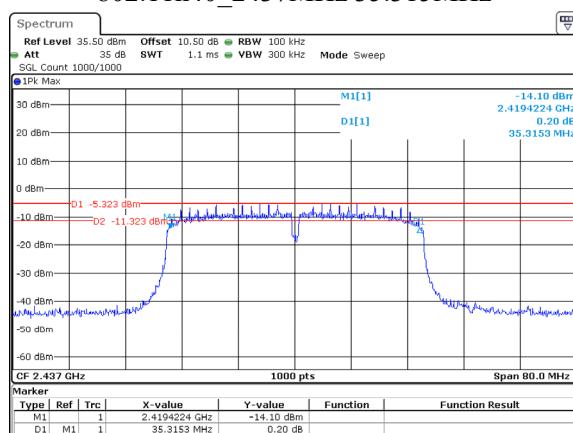
ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 20:18:45

802.11n40_2422MHz 35.235MHz



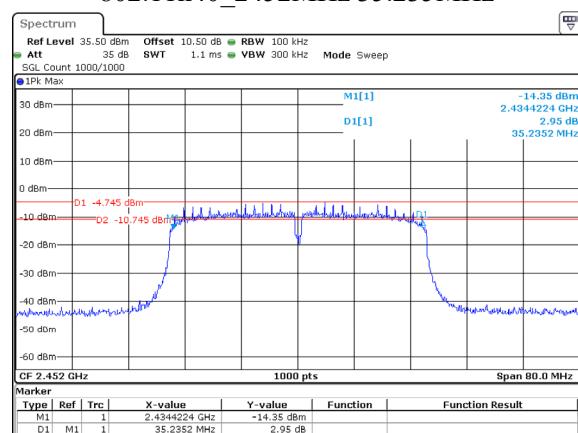
ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 20:21:51

802.11n40_2437MHz 35.315MHz



ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 20:24:50

802.11n40_2452MHz 35.235MHz



ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 20:27:40

99% Occupied Bandwidth**Test Information:**

Sample No.:	2UD0-2	Test Date:	2025/01/02
Test Site:	RF	Test Mode:	Transmitting
Tester:	Cheeb Huang	Test Result:	Pass

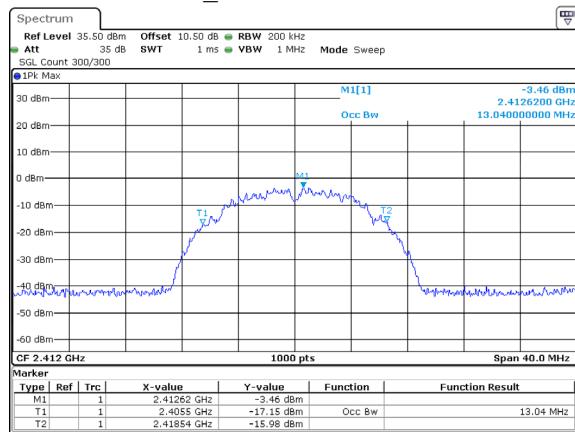
Environmental Conditions:

Temperature: (°C):	24.2	Relative Humidity: (%)	42	ATM Pressure: (kPa)	101
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Test Data:

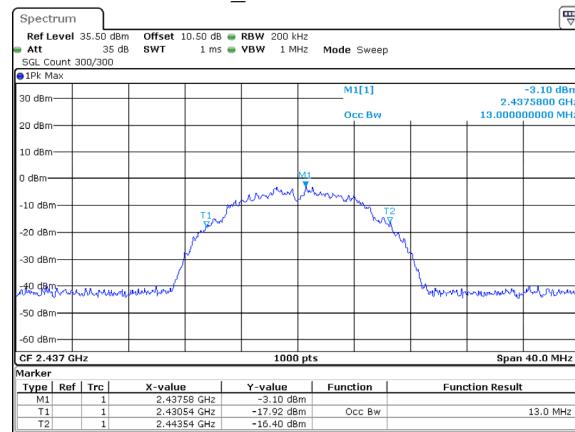
Mode	Antenna	Test Frequency (MHz)	99% OBW (MHz)
802.11b	Chain 0	2412	13.040
		2437	13.000
		2462	13.000
802.11g	Chain 0	2412	16.320
		2437	16.320
		2462	16.320
802.11n20	Chain 0	2412	17.200
		2437	17.240
		2462	17.200
802.11n40	Chain 0	2422	35.840
		2437	35.680
		2452	35.680

802.11b_2412MHz 13.040MHz



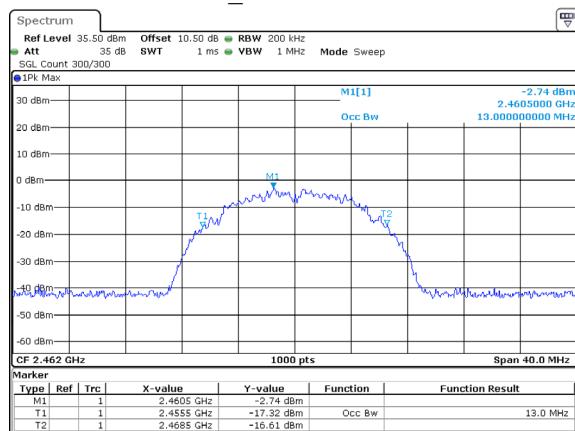
ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 19:40:40

802.11b_2437MHz 13MHz



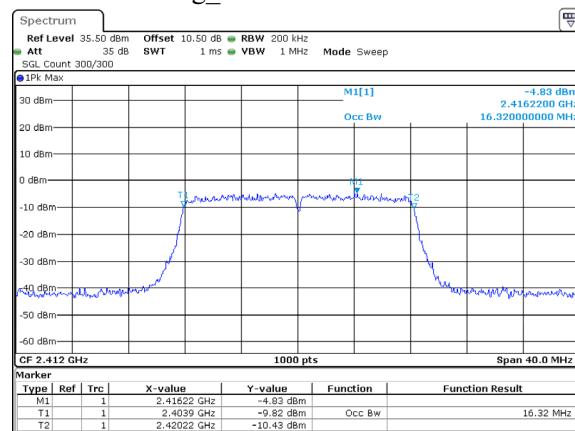
ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 19:44:17

802.11b_2462MHz 13MHz



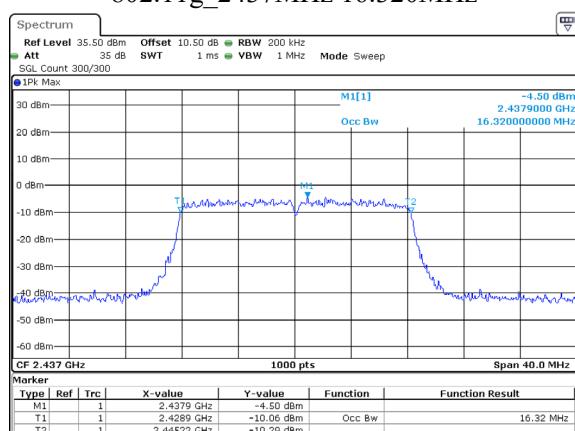
ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 19:48:05

802.11b_2412MHz 16.320MHz



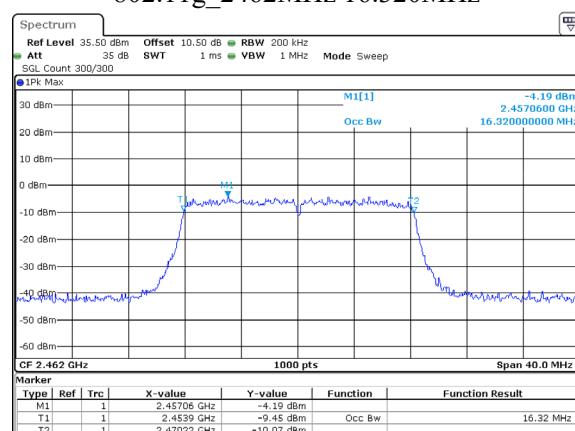
ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 19:52:36

802.11g_2437MHz 16.320MHz



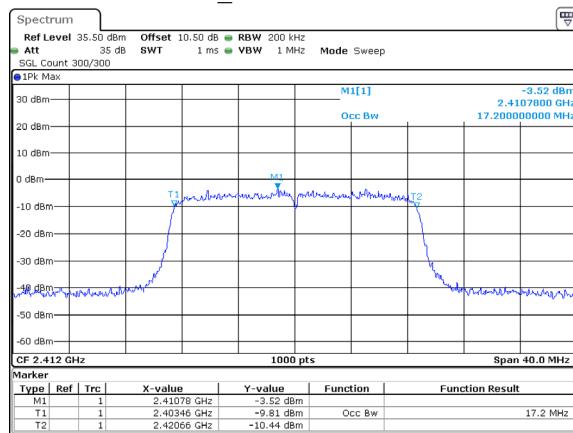
ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 19:55:25

802.11g_2462MHz 16.320MHz



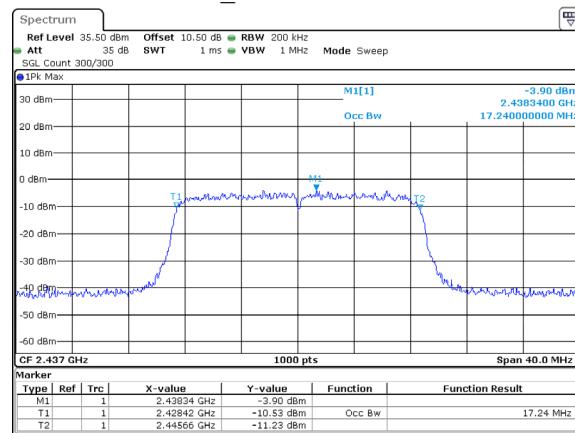
ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 19:58:42

802.11n20_2412MHz 17.200MHz



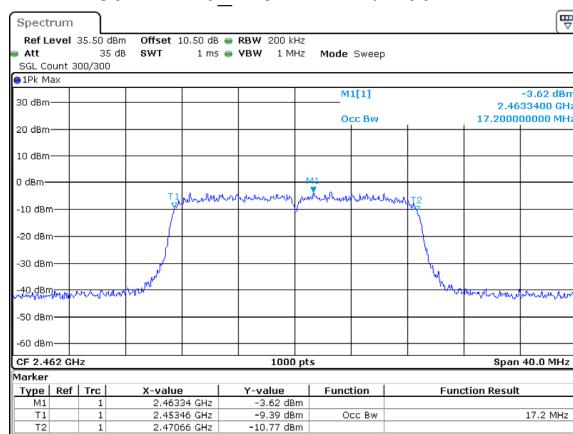
ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 20:04:51

802.11n20_2437MHz 17.240MHz



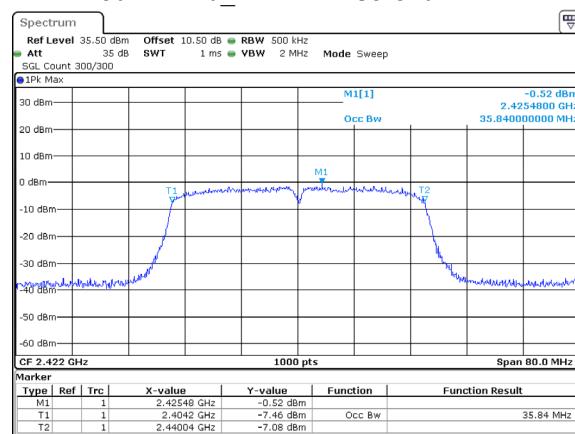
ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 20:14:41

802.11n20_2462MHz 17.200MHz



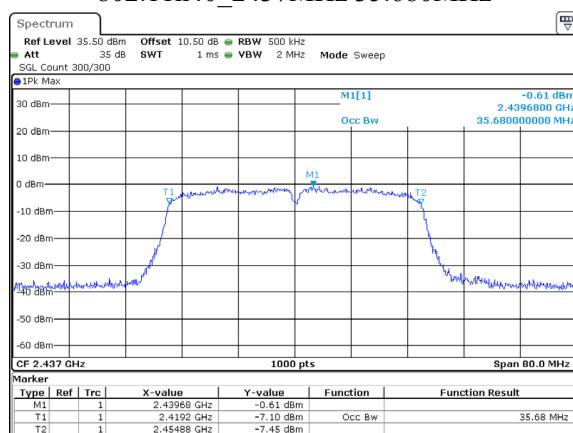
ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 20:19:08

802.11n40_2422MHz 35.840MHz



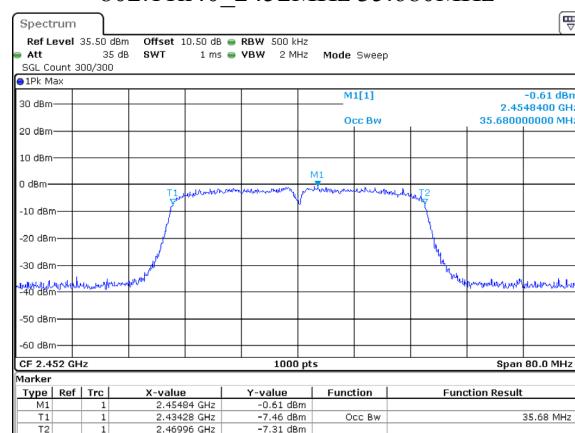
ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 20:22:02

802.11n40_2437MHz 35.680MHz



ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 20:25:03

802.11n40_2452MHz 35.680MHz



ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 20:27:53

Maximum Conducted Output Power**Test Information:**

Sample No.:	2UD0-2	Test Date:	2025/01/02
Test Site:	RF	Test Mode:	Transmitting
Tester:	Cheeb Huang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C):	24.2	Relative Humidity: (%)	42	ATM Pressure: (kPa)	101
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Test Data:

Mode	Antenna	Test Frequency (MHz)	Peak Output Power(dBm)	Average Output Power(dBm)	Limit (dBm)	Verdict
802.11b	Chain 0	2412	9.96	3.55	30	Pass
		2437	9.76	3.26	30	Pass
		2462	10.02	3.58	30	Pass
802.11g	Chain 0	2412	13.51	6.28	30	Pass
		2437	13.40	6.12	30	Pass
		2462	13.54	6.32	30	Pass
802.11n20	Chain 0	2412	14.02	6.75	30	Pass
		2437	13.69	6.48	30	Pass
		2462	13.99	6.78	30	Pass
802.11n40	Chain 0	2422	16.05	8.47	30	Pass
		2437	16.03	8.63	30	Pass
		2452	16.15	8.83	30	Pass

100 kHz Bandwidth of Frequency Band Edge**Test Information:**

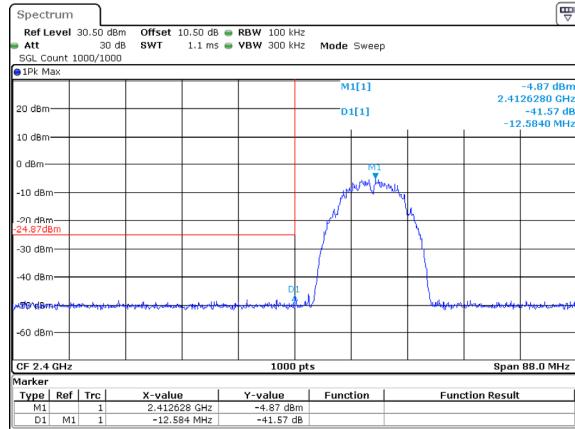
Sample No.:	2UD0-2	Test Date:	2025/01/02
Test Site:	RF	Test Mode:	Transmitting
Tester:	Cheeb Huang	Test Result:	Pass

Environmental Conditions:

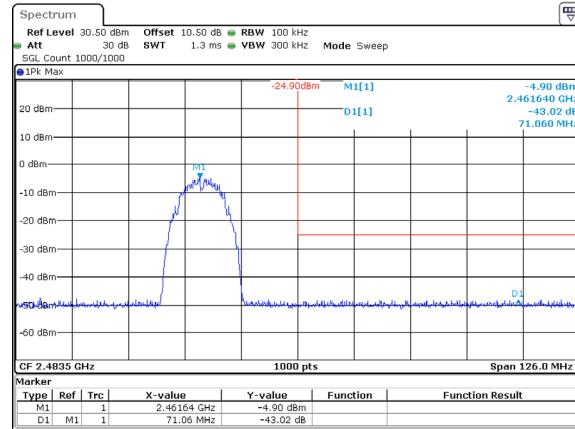
Temperature: (°C):	24.2	Relative Humidity: (%)	42	ATM Pressure: (kPa)	101
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Test Data:

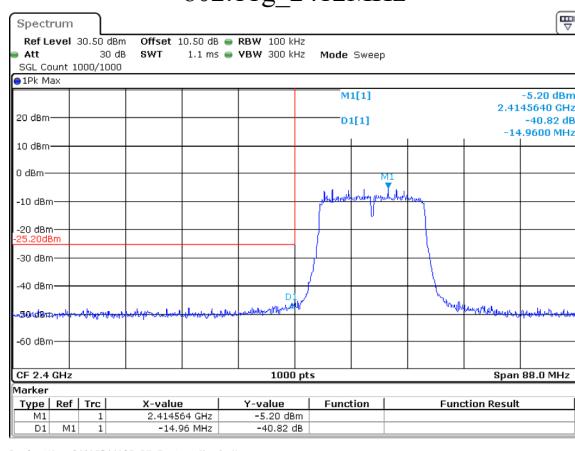
802.11b_2412MHz



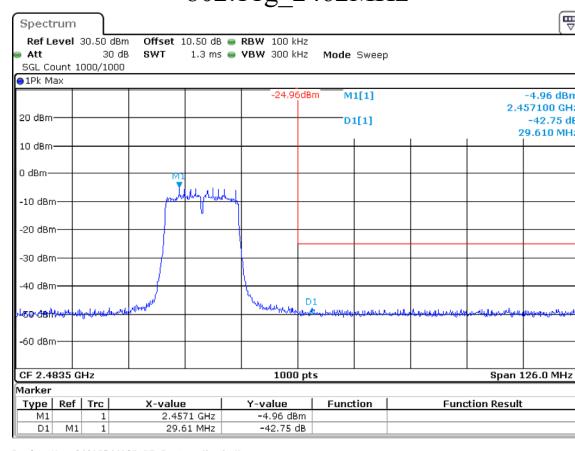
802.11b_2462MHz



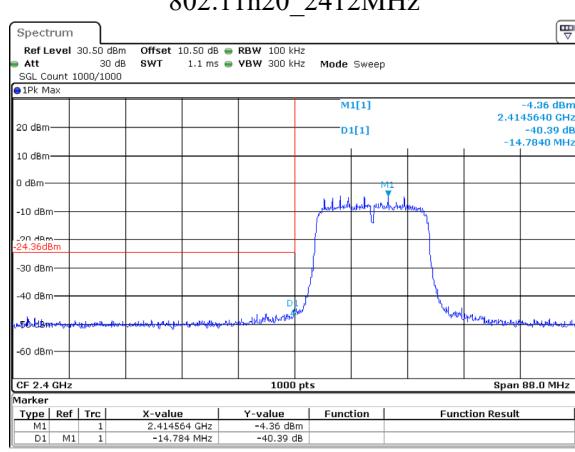
802.11g_2412MHz



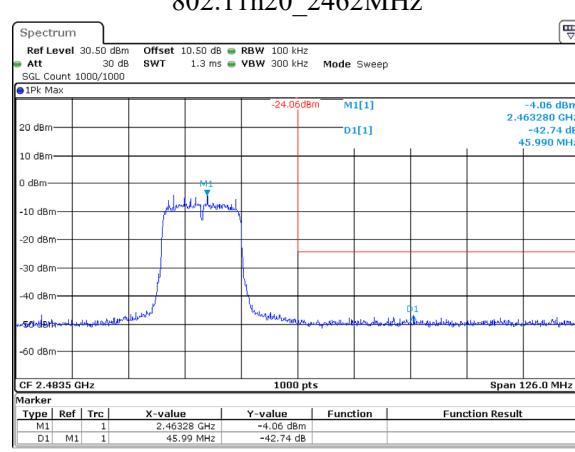
802.11g_2462MHz



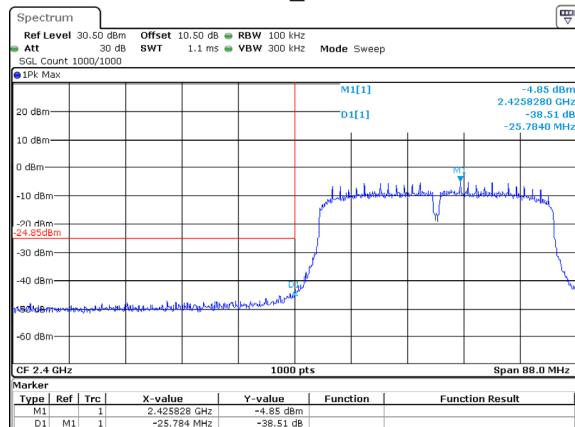
802.11n20_2412MHz



802.11n20_2462MHz

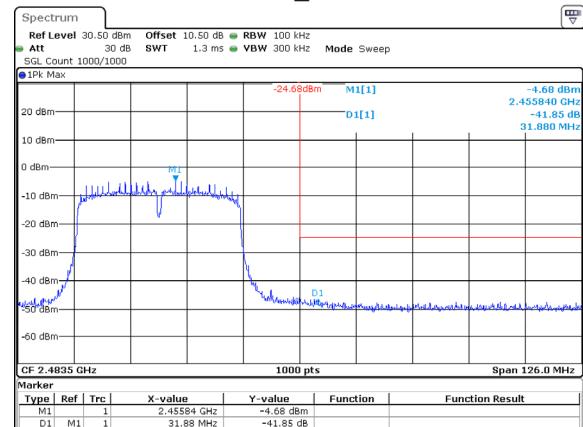


802.11n40_2422MHz



ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 20:22:37

802.11n40_2452MHz



ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 20:28:28

Power Spectral Density**Test Information:**

Sample No.:	2UD0-2	Test Date:	2025/01/02
Test Site:	RF	Test Mode:	Transmitting
Tester:	Cheeb Huang	Test Result:	Pass

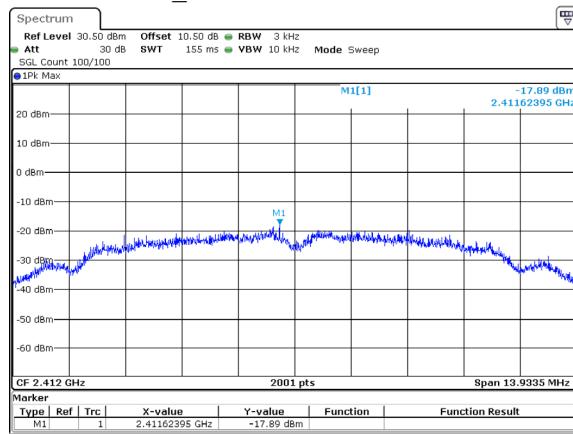
Environmental Conditions:

Temperature: (°C):	24.2	Relative Humidity: (%)	42	ATM Pressure: (kPa)	101
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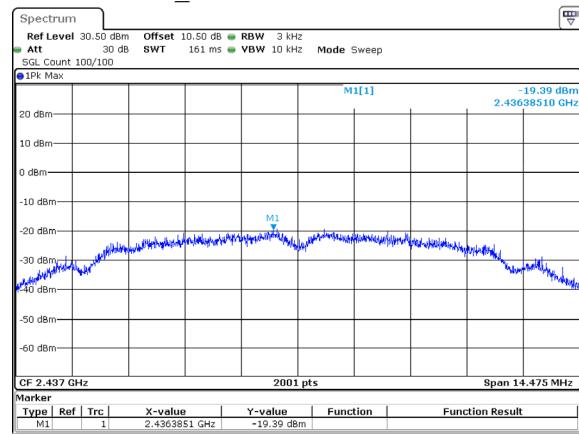
Test Data:

Mode	Antenna	Test Frequency (MHz)	Result (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
802.11b	Chain 0	2412	-17.89	8	Pass
		2437	-19.39	8	Pass
		2462	-17.40	8	Pass
802.11g	Chain 0	2412	-18.97	8	Pass
		2437	-19.13	8	Pass
		2462	-18.90	8	Pass
802.11n20	Chain 0	2412	-17.44	8	Pass
		2437	-17.57	8	Pass
		2462	-17.48	8	Pass
802.11n40	Chain 0	2422	-18.35	8	Pass
		2437	-18.41	8	Pass
		2452	-18.29	8	Pass

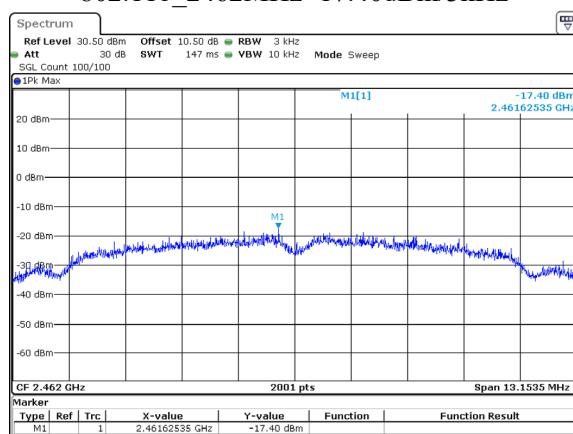
802.11b_2412MHz -17.89dBm/3kHz



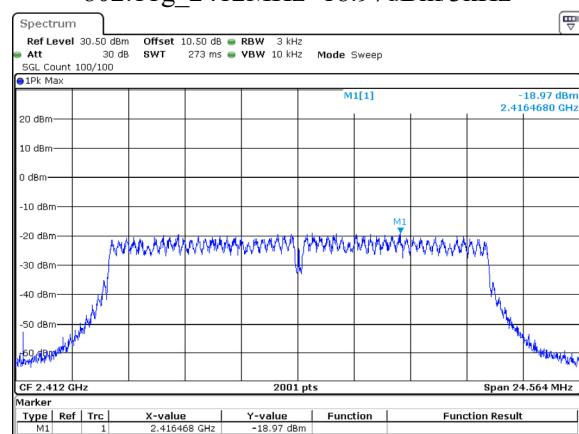
802.11b_2437MHz -19.39dBm/3kHz



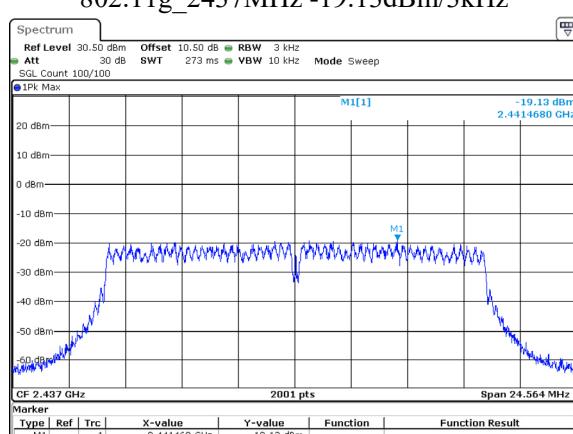
802.11b_2462MHz -17.40dBm/3kHz



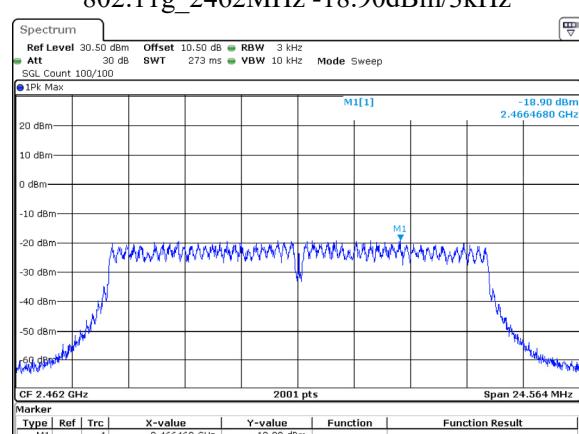
802.11g_2412MHz -18.97dBm/3kHz



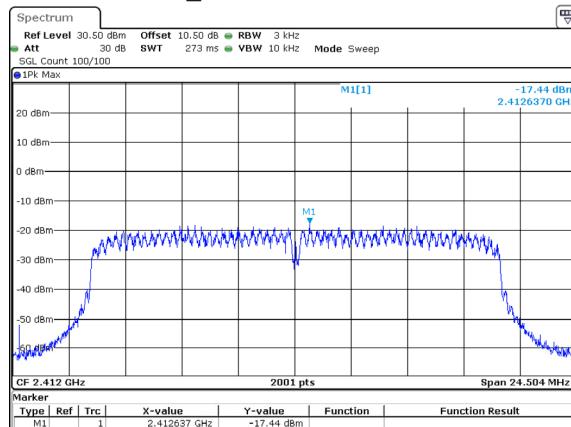
802.11g_2437MHz -19.13dBm/3kHz



802.11g_2462MHz -18.90dBm/3kHz



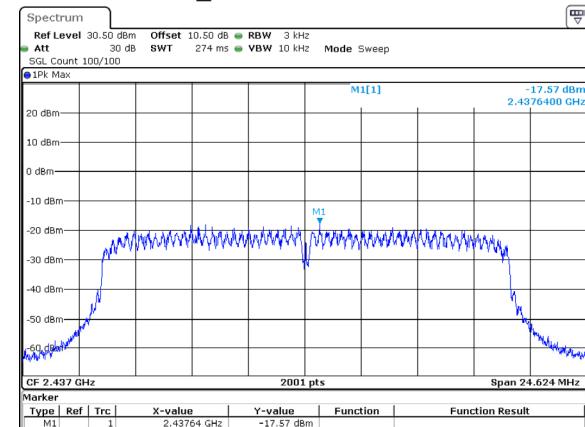
802.11n20_2412MHz -17.44dBm/3kHz



ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 20:10:56

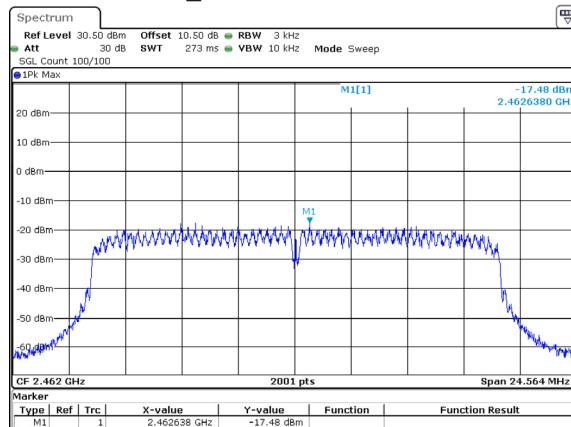
802.11n20_2437MHz -17.57dBm/3kHz

802.11n20_2437MHz -17.57dBm/3kHz



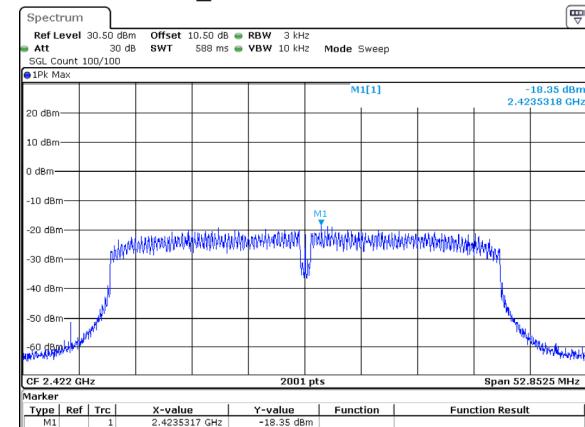
ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 20:15:42

802.11n20_2462MHz -17.48dBm/3kHz



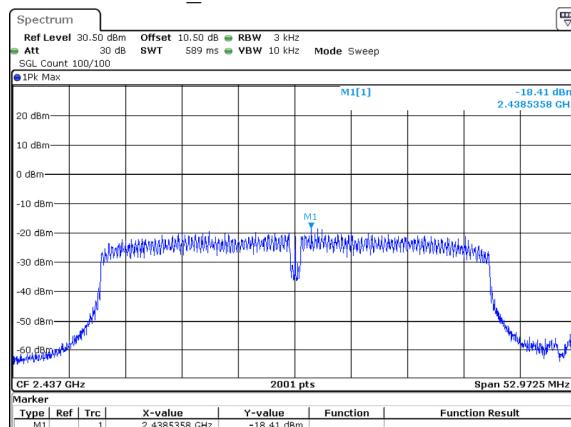
ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 20:20:31

802.11n40_2422MHz -18.35dBm/3kHz



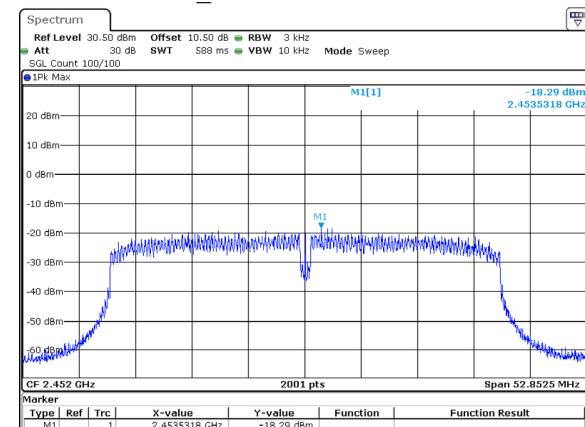
ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 20:24:08

802.11n40_2437MHz -18.41dBm/3kHz



ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 20:26:51

802.11n40_2452MHz -18.29dBm/3kHz



ProjectNo.:2401Z54419E-RF Tester:Cheeb Huang
Date: 2.JAN.2025 20:29:59

Duty Cycle**Test Information:**

Sample No.:	2UD0-2	Test Date:	2025/01/02
Test Site:	RF	Test Mode:	Transmitting
Tester:	Cheeb Huang	Test Result:	Pass

Environmental Conditions:

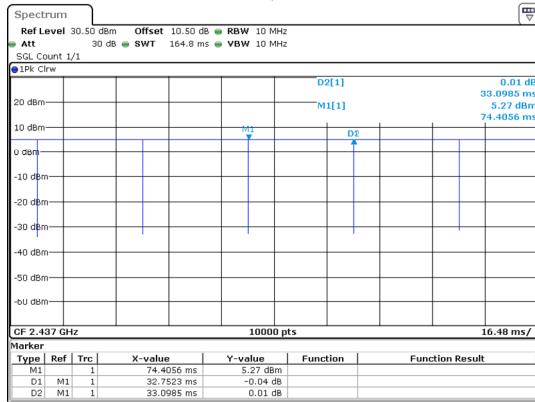
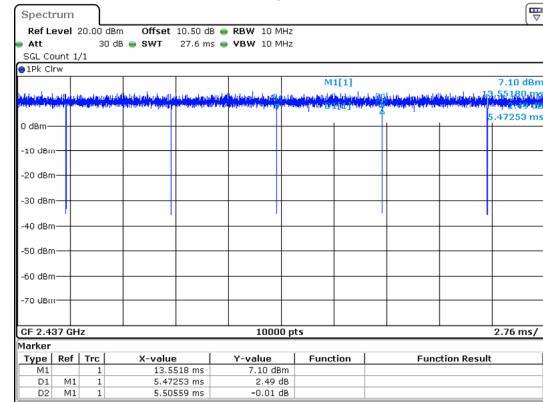
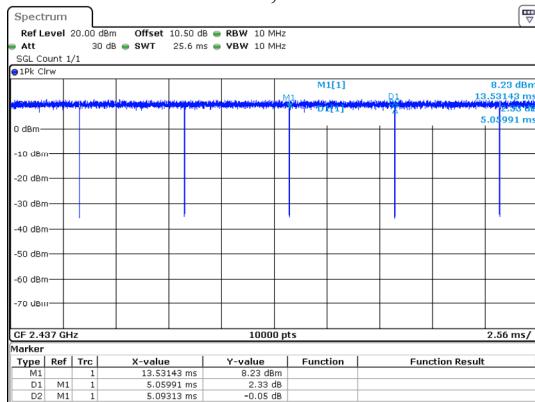
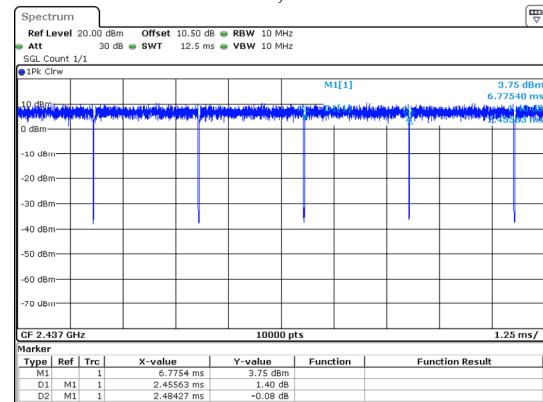
Temperature: (°C):	24.2	Relative Humidity: (%)	42	ATM Pressure: (kPa)	101
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Test Data:

Mode	Antenna	Test Frequency (MHz)	Ton (ms)	Ton+Toff (ms)	Duty Cycle (%)	Duty Cycle Factor(dB)	1/Ton (Hz)	VBW Setting (kHz)
802.11b	Chain 0	2437	32.752	33.098	98.95	/	/	0.010
802.11g	Chain 0	2437	5.473	5.506	99.40	/	/	0.010
802.11n20	Chain 0	2437	5.060	5.093	99.35	/	/	0.010
802.11n40	Chain 0	2437	2.456	2.484	98.87	/	/	0.010

Duty Cycle = Ton/(Ton+Toff)*100%

2412~2462

802.11b_2437MHz
32.752ms,33.098ms802.11g_2437MHz
5.473ms,5.506ms802.11n20_2437MHz
5.060ms,5.093ms802.11n40_2437MHz
2.456ms,2.484ms

RF EXPOSURE EVALUATION

MPE-BASED EXEMPTION

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 V01

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)(3)(i)(C)] to support an exemption from 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	$0.0128 R^2 f$.
1,500-100,000	$19.2 R^2$.

R is the minimum separation distance in meters

f = frequency in MHz

Result

Mode	Frequency (MHz)	Tune up conducted power [#] (dBm)	Antenna Gain [#]		ERP		Evaluation Distance (m)	ERP Limit (W)
			(dBi)	(dBd)	(dBm)	(W)		
BLE	2402-2480	7.0	4.9	2.75	9.75	0.009	0.2	0.768
2.4G Wi-Fi	2412-2462	16.50	4.9	2.75	19.25	0.084	0.2	0.768
Lora	915	8.00	-3.33	-5.48	2.52	0.002	0.2	0.462

Note: The tune up conducted power[#] and antenna gain[#] were declared and provided by the applicant.

The BLE, 2.4G Wi-Fi and Lora can't transmit at the same time

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

Result: Compliant

EUT PHOTOGRAPHS

Please refer to the attachment 2401Z54419E-RF External photo and 2401Z54419E-RF Internal photo.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2401Z54419E-RFA Test Setup photo.

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