

TEST REPORT

Applicant Name: Meizhou Guo Wei Electronics Co., Ltd.
Address: AD1 Section, Economic Development Area, Dongsheng Industrial District, Meizhou, Guangdong, China.
Report Number: 2401Z105001E-RF-00
FCC ID: 2ARRB-02814

Test Standard (s)

FCC PART 15.407

Sample Description

Product Type: Wireless Car Adapter for Android Auto
Model No.: MA2
Multiple Model(s) No.: N/A
Trade Mark: N/A
Date Received: 2024-11-19
Issue Date: 2025-10-28

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

Prepared and Checked By:

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Approved By:

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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	2401Z105001E-RF-00	Original Report	2025-10-28

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Frequency Range	5150-5250MHz, 5725-5850MHz
Mode	802.11a/n20/n40/ac20/ac40
Maximum Conducted Average Output Power	5150-5250MHz: 13.40dBm 5725-5850MHz: 12.24dBm
Modulation Technique	OFDM
Antenna Specification [#]	5150-5250MHz: 0.74dBi 5725-5850MHz: 3.47dBi (provided by the applicant)
Voltage Range	DC 5V from USB Port
Sample serial number	2UJT-2 for Radiated Emissions Test 2UJT-1 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 E of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart E, section 15.203, 15.205, 15.209 and 15.407 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 ▼, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

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 Frequency		56.6Hz(k=2, 95% level of confidence)
RF output power, conducted		0.86dB(k=2, 95% level of confidence)
Unwanted Emission, conducted		1.60dB(k=2, 95% level of confidence)
AC Power Lines Conducted Emissions	9kHz-150kHz	3.63dB(k=2, 95% level of confidence)
	150kHz-30MHz	3.66dB(k=2, 95% level of confidence)
Radiated Emissions	9kHz - 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, test firm registration No.: 715558, the FCC Designation No. : CN5045.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in an engineering mode, which was provided by manufacturer.

For 5150-5250MHz Band, 6 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
38	5190	46	5230
40	5200	48	5240

For 802.11a/ac20 mode: channel 36, 40, 48 were tested

For 802.11ac40 mode: channel 38, 46 were tested

For 5725-5850MHz Band, 7 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	159	5795
151	5755	161	5805
153	5765	165	5825
157	5785	/	/

For 802.11a/ac20 mode: channel 149, 157, 165 were tested

For 802.11ac40 mode: channel 151, 159 were tested

EUT Exercise Software

Exercise Software#	SecureCRT		
5150-5250 MHz Band			
Mode	Test Channels	Data rate	Power Level#
802.11a	Low	6Mbps	50
	Middle	6Mbps	50
	High	6Mbps	50
802.11ac-VHT20	Low	MCS0	50
	Middle	MCS0	50
	High	MCS0	50
802.11ac-VHT40	Low	MCS0	50
	High	MCS0	50

5725-5850 MHz Band			
Mode	Test Channels	Data rate	Power Level [#]
802.11a	Low	6Mbps	63
	Middle	6Mbps	63
	High	6Mbps	63
802.11ac-VHT20	Low	MCS0	63
	Middle	MCS0	63
	High	MCS0	63
802.11ac-VHT40	Low	MCS0	63
	High	MCS0	63

Note: 1. The worst-case data rates are determined to be as follows for each mode based upon investigation by measuring the power and PSD across all data rates bandwidths, and modulations.
 2. The n20/n40 mode was reduced test as identical parameter with ac20/ac40 mode.

Special Accessories

No special accessory.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

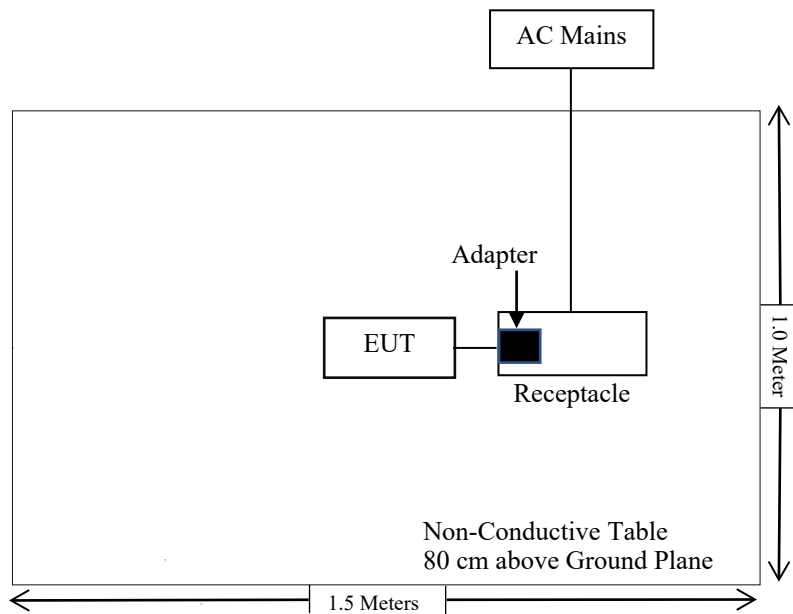
Manufacturer	Description	Model	Serial Number
HuaJin	Adapter	HJ-0502000W20US	N/A

External I/O Cable

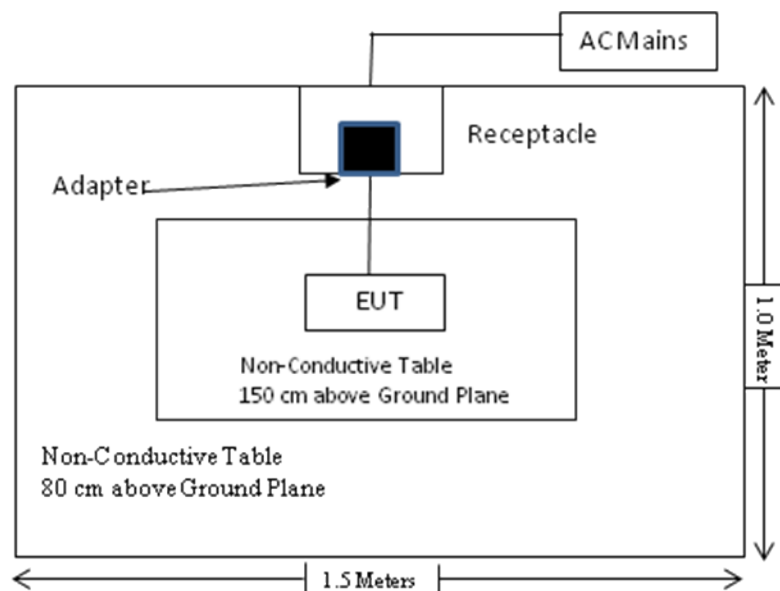
Cable Description	Length (m)	From Port	To
Un-shielding Detachable USB Cable	0.8	EUT	Adapter
Unshielded Un-detachable AC Cable	1.0	Receptacle	AC Mains

Block Diagram of Test Setup

For Radiated Emissions below 1GHz:



For Radiated Emissions above 1GHz:



SUMMARY OF TEST RESULTS

Test Rules	Description of Test	Result
FCC §15.203	Antenna Requirement	Compliant
FCC §15.207(a)	AC Line Conducted Emissions	Not Applicable
FCC §15.205& §15.209 &§15.407(b)	Undesirable Emission& Restricted Bands	Compliant
FCC §15.407(a) (e)	Emission Bandwidth & 99% Occupied Bandwidth	Compliant
FCC §15.407(a)	Conducted Transmitter Output Power	Compliant
FCC §15.407 (a)	Power Spectral Density	Compliant
FCC §15.407 (h)	Transmit Power Control (TPC)	Not Applicable*
FCC §15.407 (h)	Dynamic Frequency Selection (DFS)	Not Applicable*
C63.10 §11.6	Duty Cycle	/
§1.1307 (b) & §2.1091	MPE-Based Exemption	Compliant

Not Applicable: This device is a vehicle-mounted device.

Not Applicable*: The device operates on W52 and W58 bands only.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test_ Below 1GHz					
Rohde & Schwarz	EMI Test Receiver	ESR3	102455	2024/12/04	2025/12/03
Sonoma instrument	Pre-amplifier	310N	186238	2025/04/29	2026/04/28
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2026/07/19
Unknown	Cable	Chamber Cable 1	F-03-EM236	2025/04/29	2026/04/28
Unknown	Cable	XH500C	J-10M-A	2025/04/29	2026/04/28
BACL	Active Loop Antenna	1313-1A	4031911	2024/05/14	2027/05/13
Unknown	Cable	2Y194	0735	2024/12/04	2025/12/03
Unknown	Cable	PNG214	1354	2024/12/04	2025/12/03
Audix	EMI Test software	E3	19821b(V9)	NCR	NCR
Radiated Emission Test_ Above 1GHz					
Rohde&Schwarz	Spectrum Analyzer	FSV40	101605	2024/03/27	2025/03/26
Rohde & Schwarz	Spectrum Analyzer	FSV40	101605	2025/09/01	2026/08/31
A.H.System	Preamplifier	PAM-0118P	489	2024/11/15	2025/11/14
Schwarzbeck	Horn Antenna	BBHA9120D(1201)	1143	2023/07/26	2026/07/25
Unknown	RF Cable	KMSE	0735	2024/12/06	2025/12/05
Unknown	RF Cable	UFA147	219661	2024/12/06	2025/12/05
Unknown	RF Cable	XH750A-N	J-10M	2024/12/06	2025/12/05
JD	Filter Switch Unit	DT7220FSU	DS79906	2024/09/09	2025/09/08
JD	Filter Switch Unit	DT7220FSU	DS79906	2025/08/12	2026/08/11
JD	Multiplex Switch Test Control Set	DT7220SCU	DS79903	2024/09/09	2025/09/08
JD	Multiplex Switch Test Control Set	DT7220SCU	DS79903	2025/08/12	2026/08/11
A.H.System	Pre-amplifier	PAM-1840VH	190	2024/06/18	2025/06/17
A.H.System	Pre-amplifier	PAM-1840VH	190	2025/04/29	2026/04/28
Electro-Mechanics Co	Horn Antenna	3116	9510-2270	2023/09/18	2026/09/17
UTIFLEX	RF Cable	NO. 13	232308-001	2024/12/18	2025/12/17
Audix	EMI Test software	E3	191218(V9)	NCR	NCR

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
ANRITSU	Microwave peak power sensor	MA24418A	12622	2024/05/21	2025/05/20
ANRITSU	Microwave peak power sensor	MA24418A	12622	2025/09/01	2026/08/31
Rohde&Schwarz	Spectrum Analyzer	FSV40-N	102259	2024/12/04	2025/12/03
Unknown	10dB Attenuator	Unknown	F-03-EM014	2024/06/27	2025/06/26
Unknown	10dB Attenuator	Unknown	F-03-EM014	2025/06/26	2026/06/25

* **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).

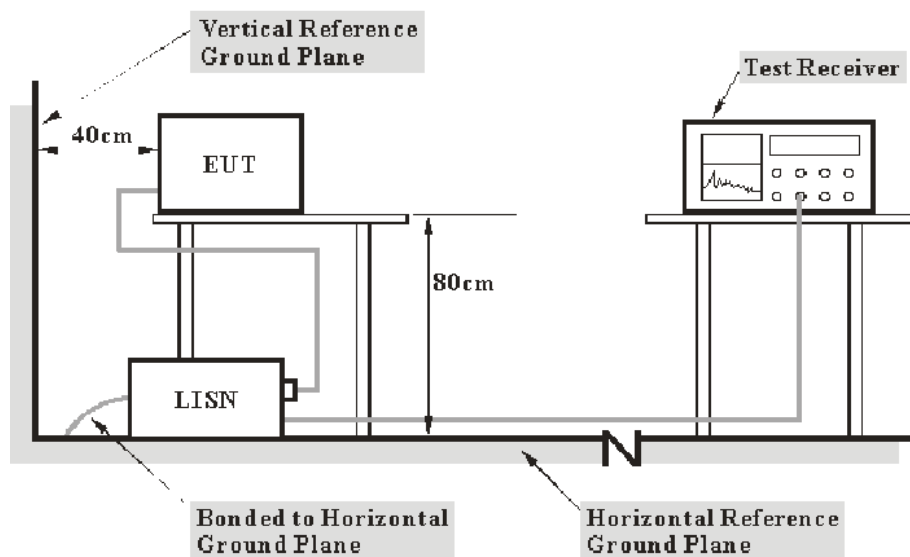
REQUIREMENTS AND TEST PROCEDURES

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 C63.10-2020 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	RBW
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the LISN.

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

All 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 calculation is as follows:

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

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

Undesirable Emission

Applicable Standard

FCC §15.407 (b); §15.209; §15.205;

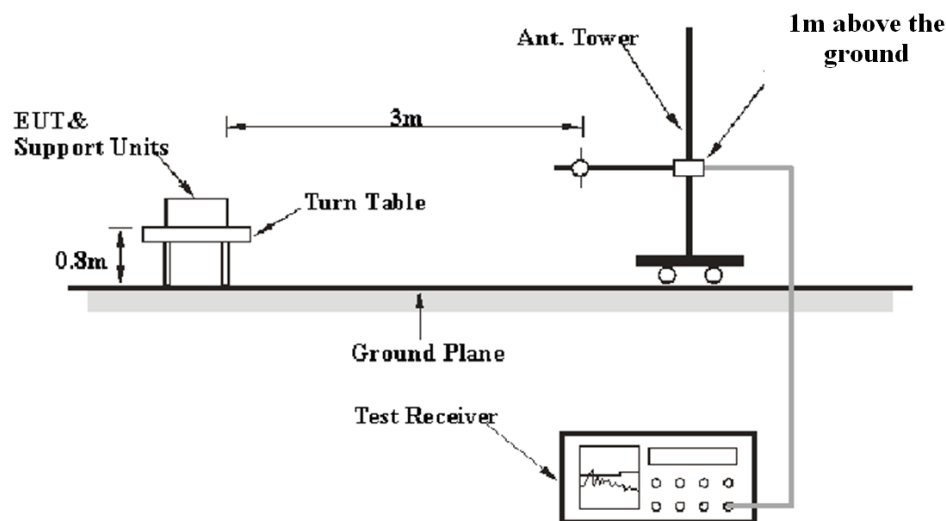
(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

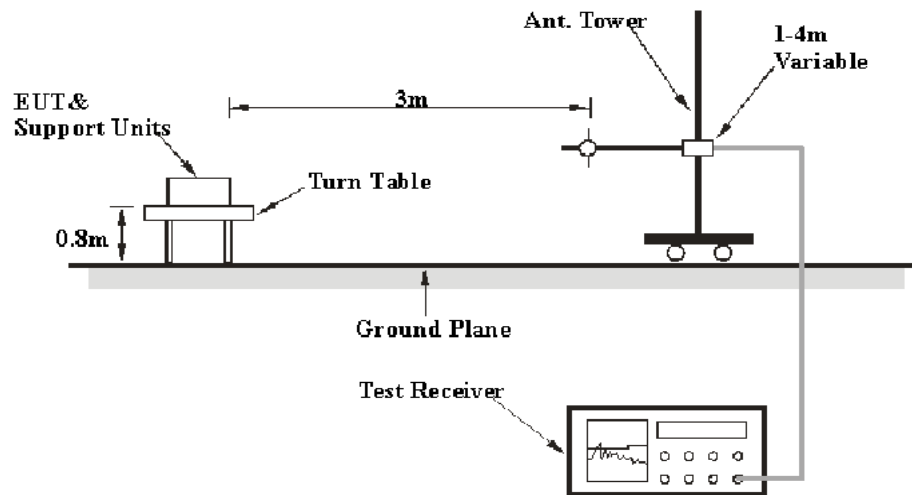
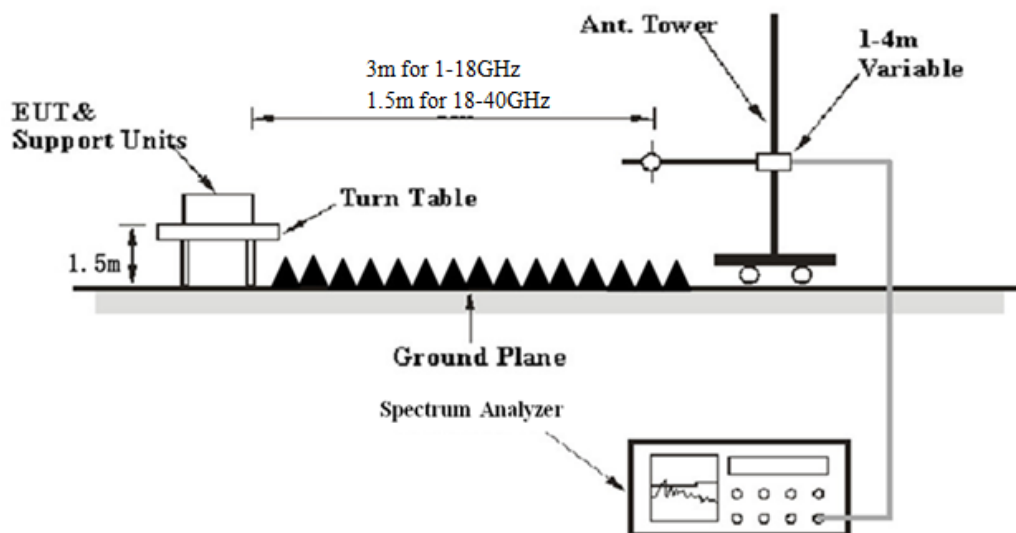
- (1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (4) For transmitters operating in the 5.725-5.85 GHz band:
 - (i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

EUT Setup

9 kHz-30MHz:



30MHz-1GHz:**Above 1 GHz:**

The setup of EUT is according with per ANSI C63.10-2020 measurement procedure. The specification used was with the FCC 15.209 and FCC 15.407 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 9 kHz to 40 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	Peak
150 kHz – 30 MHz	/	/	9 kHz	QP	QP
	10 kHz	30 kHz	/	PK	Peak
30 MHz – 1000 MHz	/	/	120 kHz	QP	QP
	100 kHz	300 kHz	/	PK	Peak

1-40GHz:

Pre-scan

Measurement	Duty cycle	RBW	Video B/W	Detector
PK	Any	1MHz	3 MHz	Peak
AV	>98%	1MHz	1 kHz	Peak
	<98%	1MHz	>1/Ton, not less than 1kHz	Peak

Final measurement for emission identified during pre-scan

Measurement	Duty cycle	RBW	Video B/W	Detector
PK	Any	1MHz	3 MHz	Peak
AV	>98%	1MHz	10 Hz	Peak
	<98%	1MHz	$\geq 1/\text{Ton}$	Peak

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

Radiated Spurious Emission

During the radiated emission test, the adapter was connected to the AC floor outlet.

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

According to ANSI C63.10-2020,9.2.1: For field strength measurements made at other than the distance specified by the limit, extrapolate the measured field strength to the field strength at the distance specified by the limit using an inverse distance correction factor (20 dB/decade of distance)

$$E_{\text{SpecLimit}} = E_{\text{Meas}} + 20 \log \left(\frac{d_{\text{Meas}}}{d_{\text{SpecLimit}}} \right)$$

where

$E_{\text{SpecLimit}}$	is the field strength of the emission at the distance specified by the limit, in dBμV/m
E_{Meas}	is the field strength of the emission at the measurement distance, in dBμV/m
d_{Meas}	is the measurement distance, in m
$d_{\text{SpecLimit}}$	is the distance specified by the limit, in m

So the extrapolation factor of 1m is $20 \cdot \log(1.5/3) = -6.0$ dB, for 18-40GHz range, the limit of 1.5m distance was added by 6.0dB from limit of 3m to compared with the result measurement at 1.5m distance.

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:

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

Emission Bandwidth & 99% Occupied Bandwidth

Applicable Standard

The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Test Procedure

According to ANSI C63.10-2020 Section 12.5.1 & 12.5.2 & 12.5.3

12.5.1 Emission bandwidth for the band 5.725 GHz to 5.85 GHz

The following procedure shall be used for measuring this bandwidth:

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- c) Detector = Peak.
- d) Trace mode = max-hold.
- e) Sweep = No faster than coupled (auto) time.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission 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.

12.5.2 Emission bandwidth for all other bands

The procedure for this method is as follows:

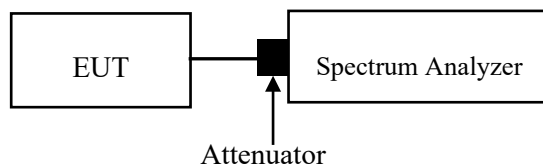
- a) Set RBW = shall be in the range of 1% to 5% of the emission bandwidth.
- b) Set the VBW $>$ RBW.
- c) Detector = peak.
- d) Trace mode = max-hold.
- e) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the instrument. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is in the range of 1% to 5%.

12.5.3 Occupied bandwidth

See 6.9.3 for the measurement procedure for OBW.

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. The following procedure shall be used for measuring 99% power bandwidth:

- a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be at least three times the RBW, unless otherwise specified by the applicable requirement.
- c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (OBW/RBW)]$ below the reference level. Specific guidance is given in 4.1.6.2.
- d) Step a) through step c) might require iteration to adjust within the specified range.
- e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max-hold mode (until the trace stabilizes) shall be used.
- f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.
- g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.
- h) The occupied bandwidth shall be reported by providing spectral plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).



Note: Offset (10.5dB) = Attenuator (10dB) + Cable loss (0.5dB)

Conducted Transmitter Output Power

Applicable Standard

For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

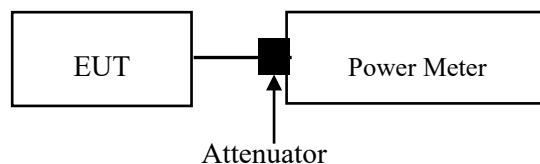
For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple colocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Test Procedure

According to ANSI C63.10-2020 Section 12.4.3.2 Method PM-G

- a. Place the EUT on a bench and set it in transmitting mode.
- b. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to one test equipment.



Note 1: 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

Note 2: Offset (10.5dB) = Attenuator (10dB) + Cable loss (0.5dB)

Power Spectral Density

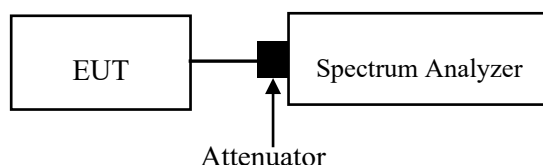
For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple colocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Test Procedure

According to ANSI C63.10-2020 Clause 12.6 Method SA-2 should be applied



Note 1: 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

Note 2: Offset (10.5dB) = Attenuator (10dB) + Cable loss (0.5dB)

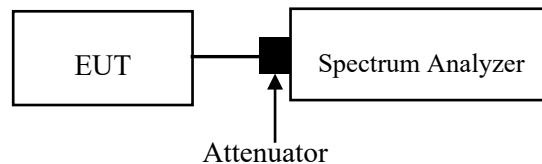
Duty Cycle

Test Procedure

According to ANSI C63.10-2020 Section 12.2

Measurements of duty cycle and transmission duration shall be performed using one of the following techniques:

- a) A diode detector and an oscilloscope that together have a sufficiently short response time to permit accurate measurements of the ON and OFF times of the transmitted signal.
- b) 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 $T \leq 16.7 \mu s$.)



Note: Offset (10.5dB) = Attenuator (10dB) + Cable loss (0.5dB)

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 one internal antenna arrangement for 5G Wi-Fi which were permanently attached. Please refer to the EUT photos.

Type	Antenna Gain [#]	Impedance	Frequency Range
PCB	0.74dBi	50Ω	5150-5250MHz
PCB	3.47dBi	50Ω	5725-5850MHz

Result: Compliant

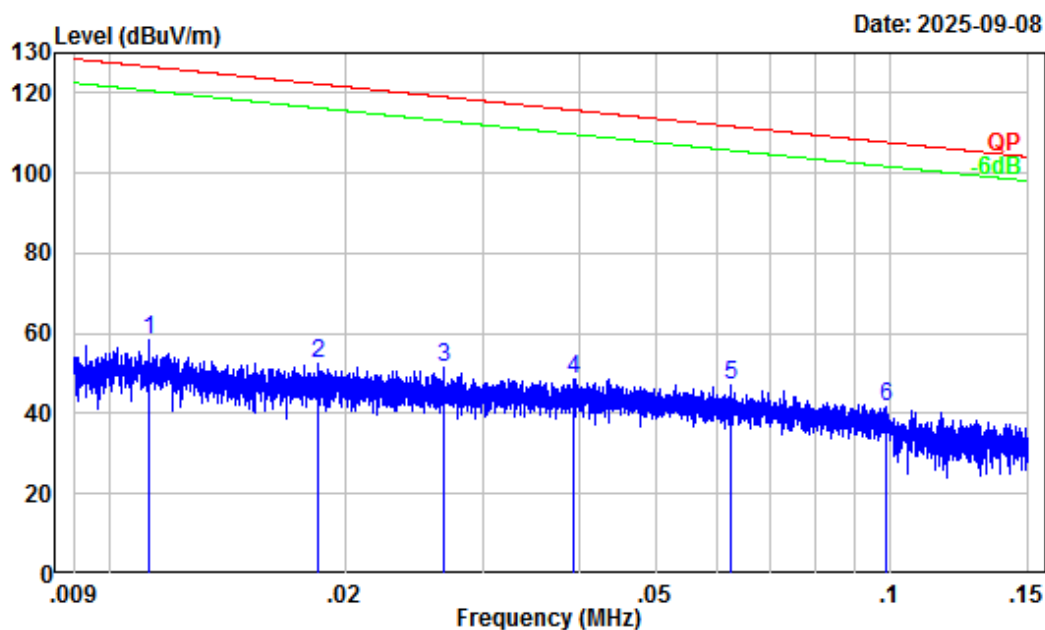
TEST DATA AND RESULTS

Undesirable Emission

Temperature (°C)	24.5~25	Relative Humidity (%)	50~50.4
ATM Pressure (kPa):	101~101.7	Test engineer:	Anson Su & Zenos Qiao
Test date:	Below 1GHz: 2025.09.08 Above 1GHz: 2024.12.23 and 2025.09.27		
EUT operation mode:	Below 1GHz: Transmitting (Maximum output power mode, 802.11ac40 5230MHz) Above 1GHz: Transmitting		
Note:	1. After pre-scan in the X, Y and Z axes of orientation, the worst case z-axis of orientation were recorded. 2. For the radiated spurious emission below 30MHz, only the worst case (parallel) was recorded. 3. For the radiated spurious emission below 30MHz, When the test result of peak was less than the limit of QP/Average more than 6dB, just peak value were recorded.		

Below 1GHz:

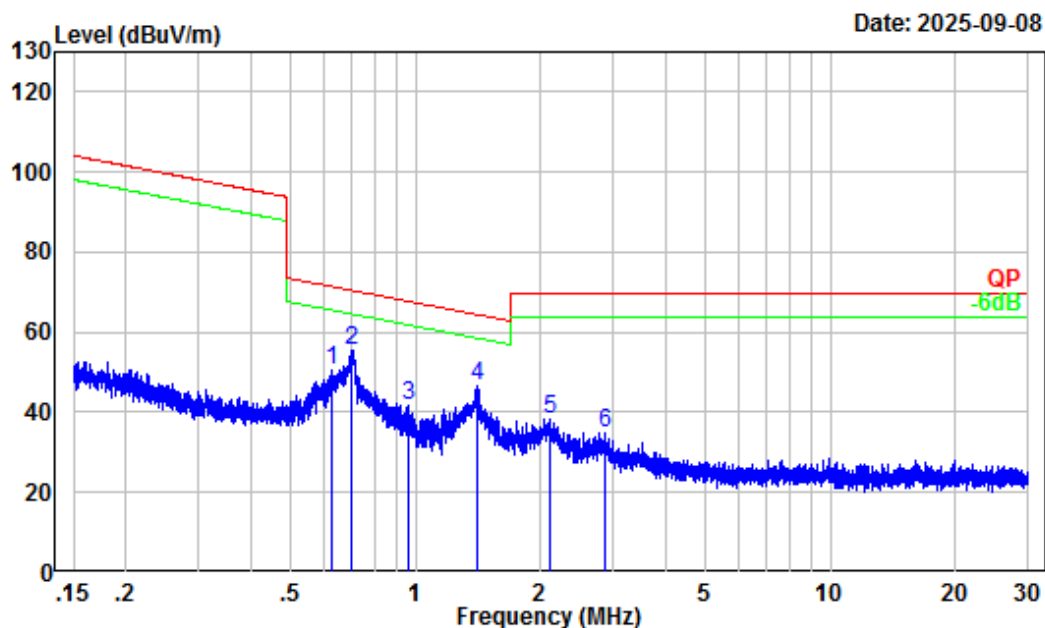
9kHz-150kHz



Site : Chamber A
Condition : 3m
Project Number : 2401Z105001E-RF
Test Mode : 5G WIFI Transmitting
Detector: Peak RBW/VBW: 0.3/1kHz
Tester : Anson Su

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.011	32.06	26.53	58.59	126.57	-67.98	Peak
2	0.019	30.68	22.02	52.70	122.26	-69.56	Peak
3	0.027	29.12	22.19	51.31	119.07	-67.76	Peak
4	0.039	27.52	21.25	48.77	115.70	-66.93	Peak
5	0.062	25.17	21.90	47.07	111.71	-64.64	Peak
6	0.099	22.10	19.50	41.60	107.72	-66.12	Peak

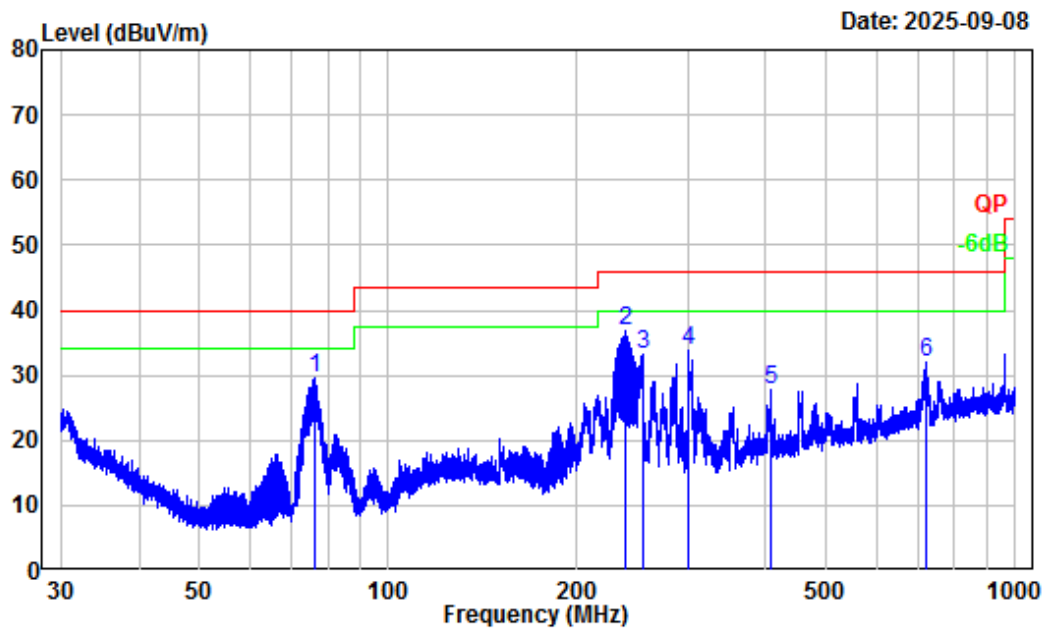
150kHz-30MHz



Site : Chamber A
Condition : 3m
Project Number : 2401Z105001E-RF
Test Mode : 5G WIFI Transmitting
Detector: Peak RBW/VBW: 10/30kHz
Tester : Anson Su

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.626	4.84	45.75	50.59	71.62	-21.03	Peak
2	0.703	3.89	51.57	55.46	70.59	-15.13	Peak
3	0.958	1.51	40.13	41.64	67.85	-26.21	Peak
4	1.405	0.07	46.70	46.77	64.46	-17.69	Peak
5	2.117	-1.66	39.68	38.02	69.54	-31.52	Peak
6	2.877	-2.08	37.04	34.96	69.54	-34.58	Peak

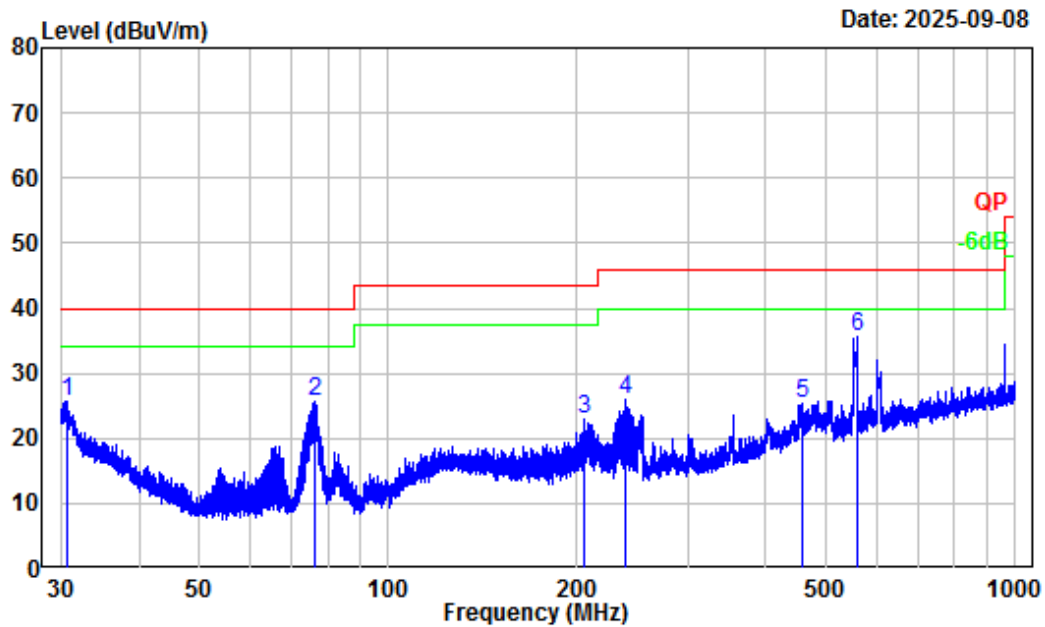
30MHz-1GHz_Horizontal



Site : Chamber A
Condition : 3m Horizontal
Project Number : 2401Z105001E-RF
Test Mode : 5G WIFI Transmitting
Detector: Peak RBW/VBW: 100/300kHz
Tester : Anson Su

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	76.14	-17.83	47.28	29.45	40.00	-10.55	Peak
2	239.25	-13.36	50.09	36.73	46.00	-9.27	Peak
3	254.28	-13.08	46.39	33.31	46.00	-12.69	Peak
4	301.16	-11.18	44.91	33.73	46.00	-12.27	Peak
5	406.62	-8.23	35.93	27.70	46.00	-18.30	Peak
6	720.15	-3.20	35.28	32.08	46.00	-13.92	Peak

30MHz-1GHz_Vertical



Site : Chamber A
Condition : 3m Vertical
Project Number : 2401Z105001E-RF
Test Mode : 5G WIFI Transmitting
Detector: Peak RBW/VBW: 100/300kHz
Tester : Anson Su

	Freq		Read	Limit	Over	Remark
	Factor		Level	Level	Line	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	30.69	-6.32	31.92	25.60	40.00	-14.40 Peak
2	76.14	-17.83	43.58	25.75	40.00	-14.25 Peak
3	204.78	-13.42	36.45	23.03	43.50	-20.47 Peak
4	239.25	-13.36	39.37	26.01	46.00	-19.99 Peak
5	457.51	-7.19	32.62	25.43	46.00	-20.57 Peak
6	559.22	-5.25	40.98	35.73	46.00	-10.27 Peak

Above 1GHz:**5150-5250 MHz**

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
802.11a							
Low Channel							
10360	62.57	PK	H	2.53	65.1	68.2	-3.1
10360	61.32	PK	V	2.53	63.85	68.2	-4.35
Middle Channel							
10400	61.96	PK	H	2.55	64.51	68.2	-3.69
10400	60.78	PK	V	2.55	63.33	68.2	-4.87
High Channel							
10480	62.29	PK	H	2.25	64.54	68.2	-3.66
10480	61.11	PK	V	2.25	63.36	68.2	-4.84
802.11ac20							
Low Channel							
10360	62.39	PK	H	2.53	64.92	68.2	-3.28
10360	61.16	PK	V	2.53	63.69	68.2	-4.51
Middle Channel							
10400	61.72	PK	H	2.55	64.27	68.2	-3.93
10400	60.5	PK	V	2.55	63.05	68.2	-5.15
High Channel							
10480	62.08	PK	H	2.25	64.33	68.2	-3.87
10480	60.87	PK	V	2.25	63.12	68.2	-5.08
802.11ac40							
Low Channel							
10380	61.68	PK	H	2.54	64.22	68.2	-3.98
10380	60.54	PK	V	2.54	63.08	68.2	-5.12
High Channel							
10460	61.21	PK	H	2.32	63.53	68.2	-4.67
10460	60.05	PK	V	2.32	62.37	68.2	-5.83

5725-5850 MHz

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
802.11a							
Low Channel							
11490	52.27	PK	H	3.54	55.81	74	-18.19
11490	38.24	AV	H	3.54	41.78	54	-12.22
11490	51.82	PK	V	3.54	55.36	74	-18.64
11490	38.34	AV	V	3.54	41.88	54	-12.12
Middle Channel							
11570	52.36	PK	H	3.3	55.66	74	-18.34
11570	38.67	AV	H	3.3	41.97	54	-12.03
11570	52.08	PK	V	3.3	55.38	74	-18.62
11570	38.62	AV	V	3.3	41.92	54	-12.08
High Channel							
11650	52.52	PK	H	3.42	55.94	74	-18.06
11650	39.24	AV	H	3.42	42.66	54	-11.34
11650	52.45	PK	V	3.42	55.87	74	-18.13
11650	39.28	AV	V	3.42	42.7	54	-11.3
802.11ac20							
Low Channel							
11490	51.41	PK	H	3.54	54.95	74	-19.05
11490	38.28	AV	H	3.54	41.82	54	-12.18
11490	51.85	PK	V	3.54	55.39	74	-18.61
11490	38.24	AV	V	3.54	41.78	54	-12.22
Middle Channel							
11570	51.53	PK	H	3.3	54.83	74	-19.17
11570	39.08	AV	H	3.3	42.38	54	-11.62
11570	51.92	PK	V	3.3	55.22	74	-18.78
11570	38.67	AV	V	3.3	41.97	54	-12.03
High Channel							
11650	51.9	PK	H	3.42	55.32	74	-18.68
11650	39.31	AV	H	3.42	42.73	54	-11.27
11650	52.48	PK	V	3.42	55.9	74	-18.1
11650	39.25	AV	V	3.42	42.67	54	-11.33

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
802.11ac40							
Low Channel							
11510	51.81	PK	H	3.53	55.34	74	-18.66
11510	38.86	AV	H	3.53	42.39	54	-11.61
11510	51.94	PK	V	3.53	55.47	74	-18.53
11510	38.65	AV	V	3.53	42.18	54	-11.82
High Channel							
11590	51.29	PK	H	3.21	54.5	74	-19.5
11590	39.04	AV	H	3.21	42.25	54	-11.75
11590	51.72	PK	V	3.21	54.93	74	-19.07
11590	39.99	AV	V	3.21	43.2	54	-10.8

Note:

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

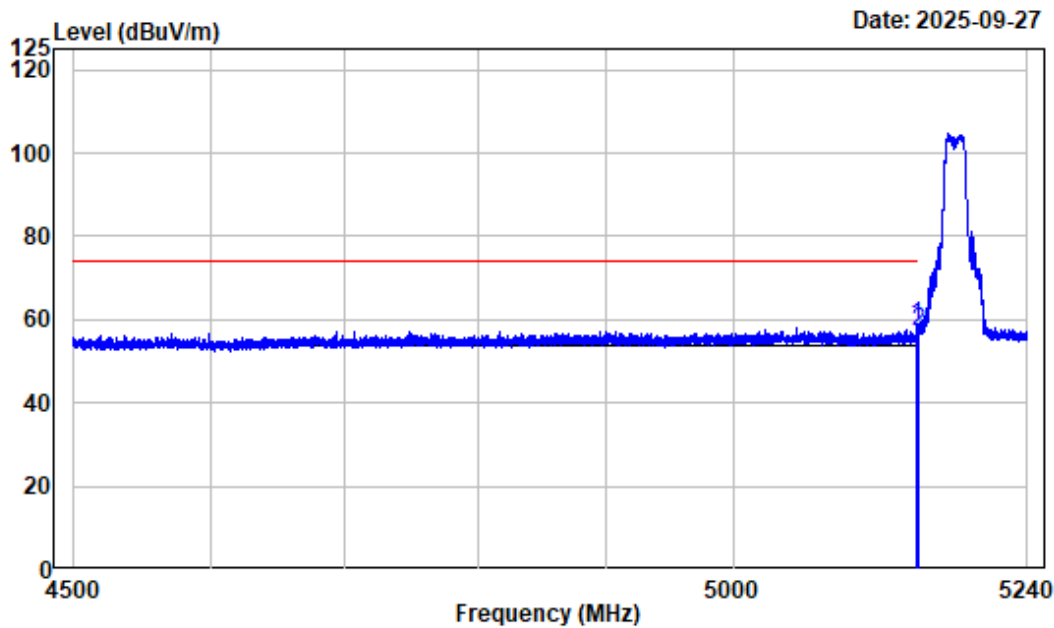
Corrected Amplitude = Factor + Reading

Margin = Corrected. Amplitude - Limit

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

Test plots:
5150-5250MHz

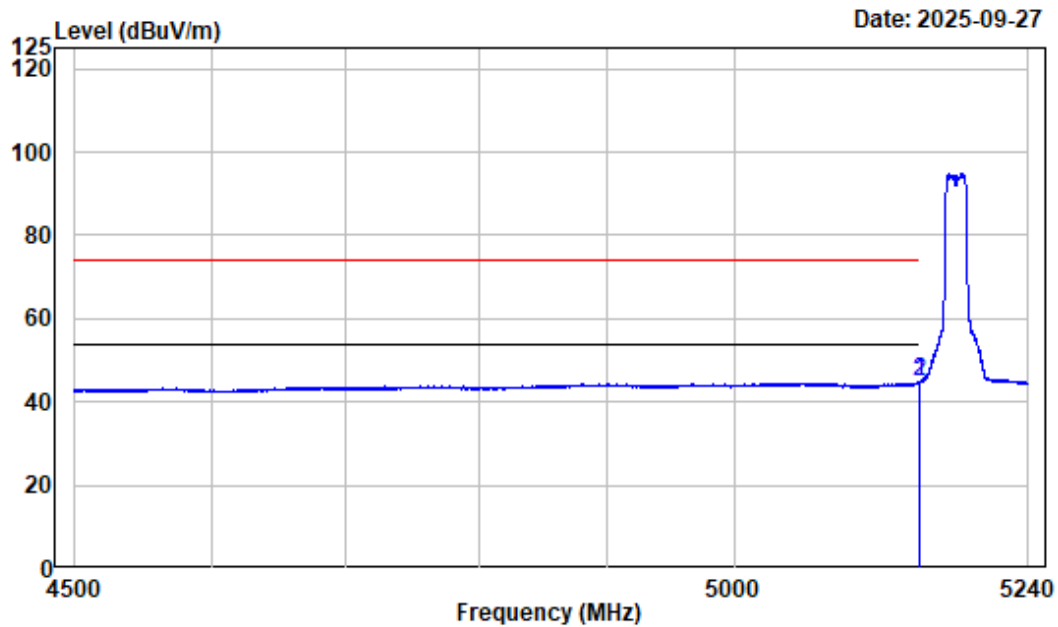
802.11a
Left Band edge_Horizontal_Peak



Condition : Horizontal
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band1-A-5180

		Read		Limit	Over	Remark
Freq	Factor	Level	Level	Line	Limit	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5148.055	-7.46	65.82	58.36	74.00	-15.64 Peak
2	5150.000	-7.46	64.61	57.15	74.00	-16.85 Peak

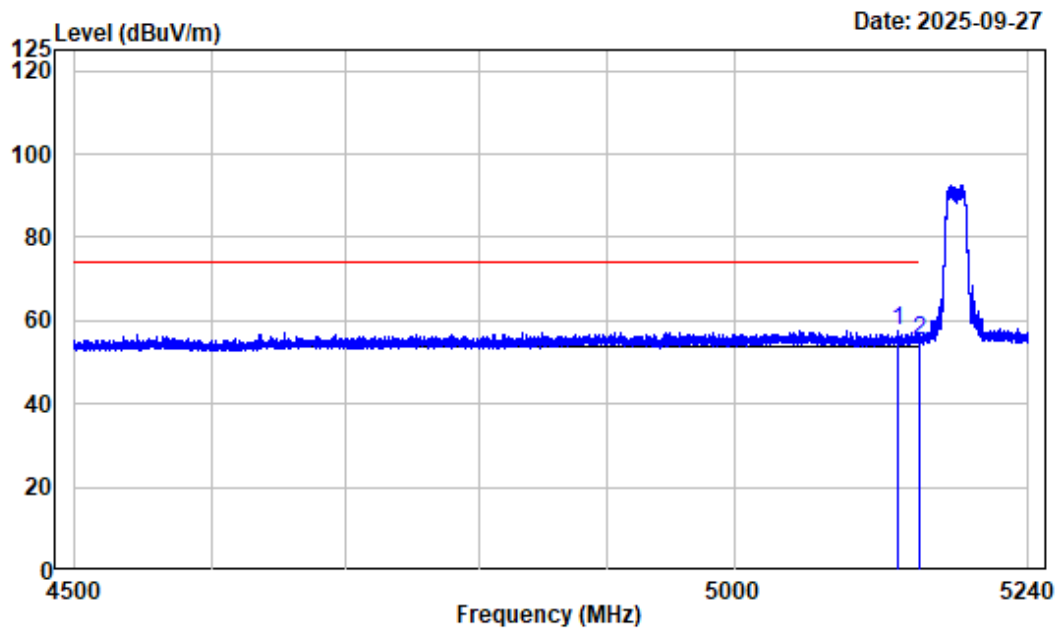
Left Band edge_Horizontal_Average



Condition : Horizontal
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak
Note : 5GWiFi-Band1-A-5180

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5149.998	-7.45	52.31	44.86	54.00	-9.14	Average
2	5150.000	-7.46	52.24	44.78	54.00	-9.22	Average

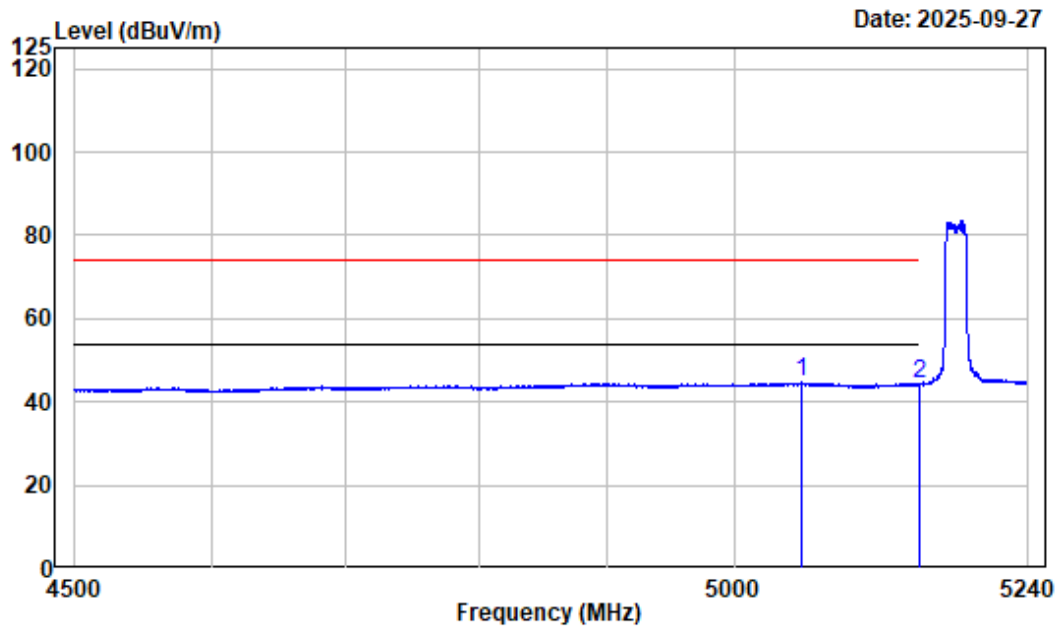
Left Band edge_Vertical_Peak



Condition : Vertical
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band1-A-5180

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5131.498	-7.47	65.07	57.60	74.00	-16.40	Peak
2	5150.000	-7.46	62.75	55.29	74.00	-18.71	Peak

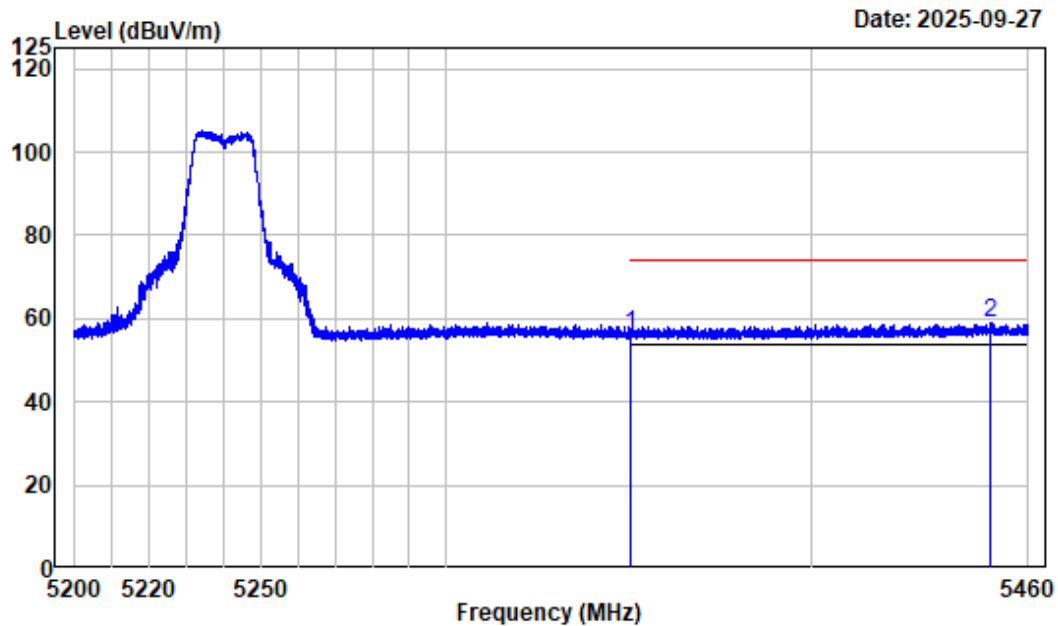
Left Band edge_Vertical_Average



Condition : Vertical
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak
Note : 5GWiFi-Band1-A-5180

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5053.890	-7.33	51.94	44.61	54.00	-9.39	Average
2	5150.000	-7.46	51.70	44.24	54.00	-9.76	Average

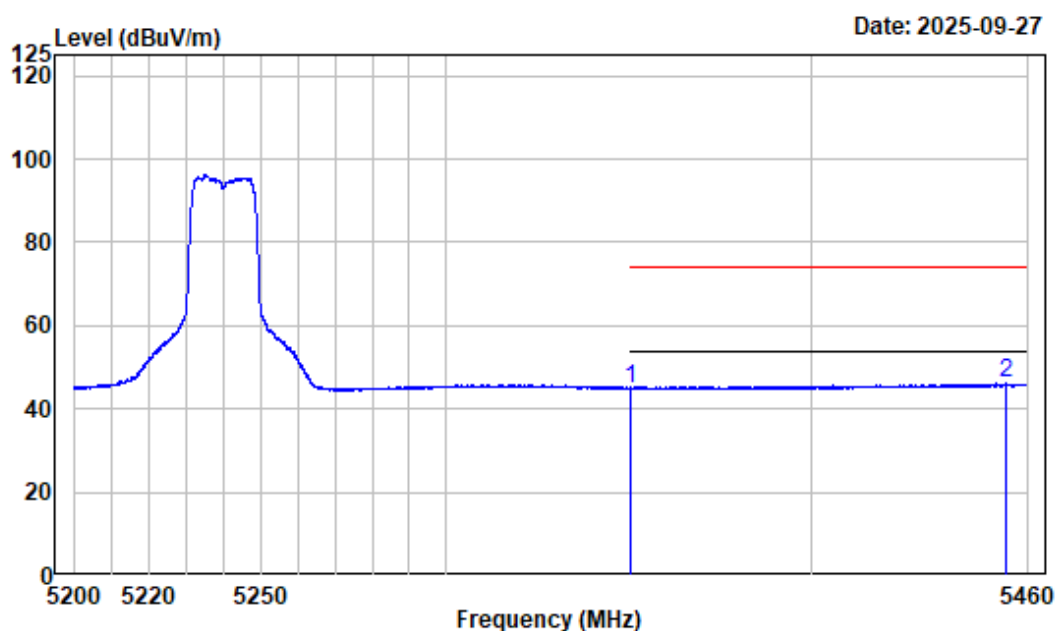
Right Band edge_Horizontal_Peak



Condition : Horizontal
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band1-A-5240

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	62.89	56.15	74.00	-17.85	Peak
2	5449.697	-6.33	65.37	59.04	74.00	-14.96	Peak

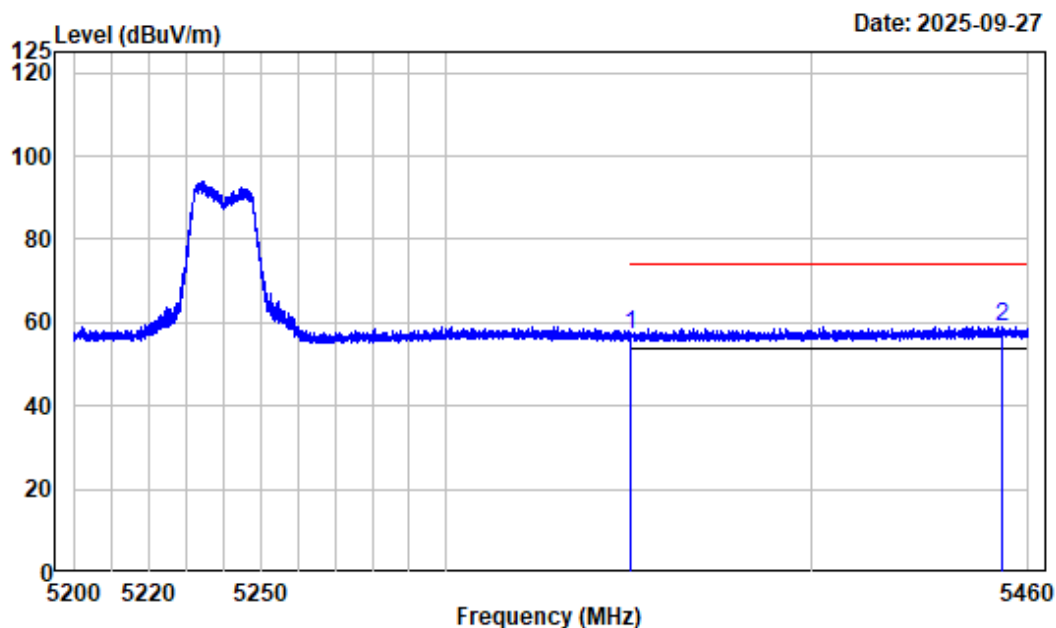
Right Band edge_Horizontal_Average



Condition : Horizontal
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak
Note : 5GWiFi-Band1-A-5240

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	51.75	45.01	54.00	-8.99	Average
2	5453.728	-6.31	52.34	46.03	54.00	-7.97	Average

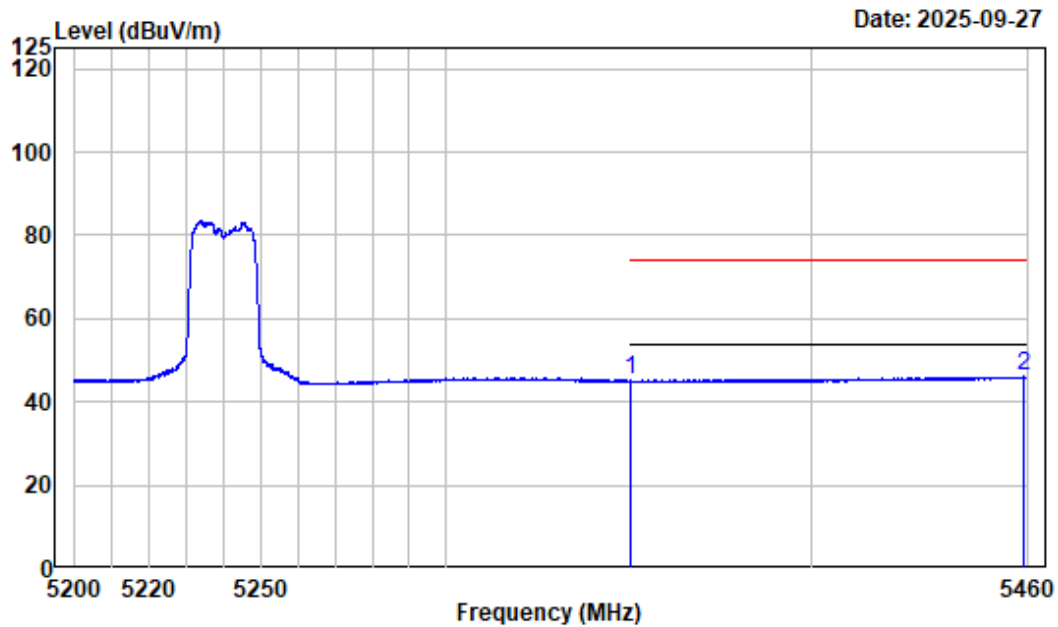
Right Band edge_ Vertical_Peak



Condition : Vertical
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band1-A-5240

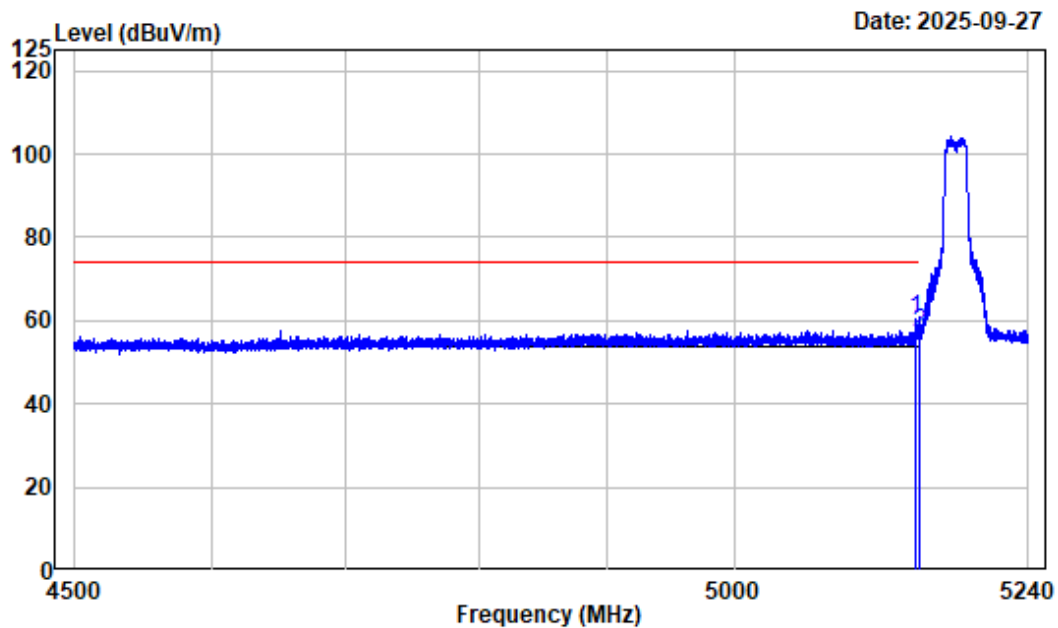
	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	64.05	57.31	74.00	-16.69	Peak
2	5452.752	-6.31	65.22	58.91	74.00	-15.09	Peak

Right Band edge_Vertical_Average



Condition : Vertical
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak
Note : 5GWiFi-Band1-A-5240

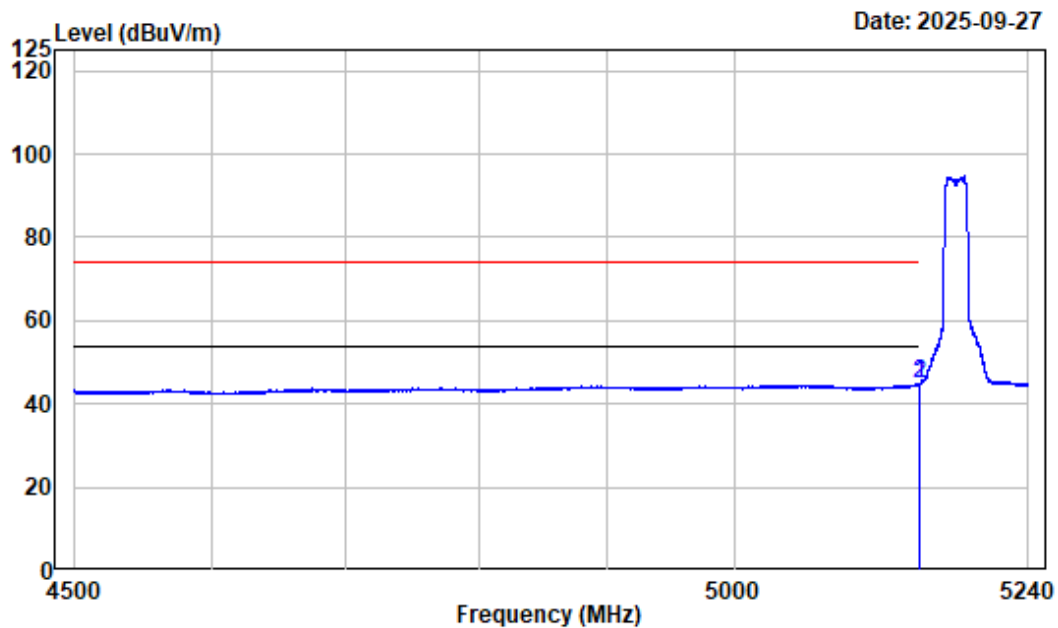
	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	51.86	45.12	54.00	-8.88	Average
2	5458.862	-6.29	52.32	46.03	54.00	-7.97	Average

802.11ac20
Left Band edge_Horizontal_Peak

Condition : Horizontal
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band1-AC20-5180

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5147.315	-7.46	67.75	60.29	74.00	-13.71	Peak
2	5150.000	-7.46	64.56	57.10	74.00	-16.90	Peak

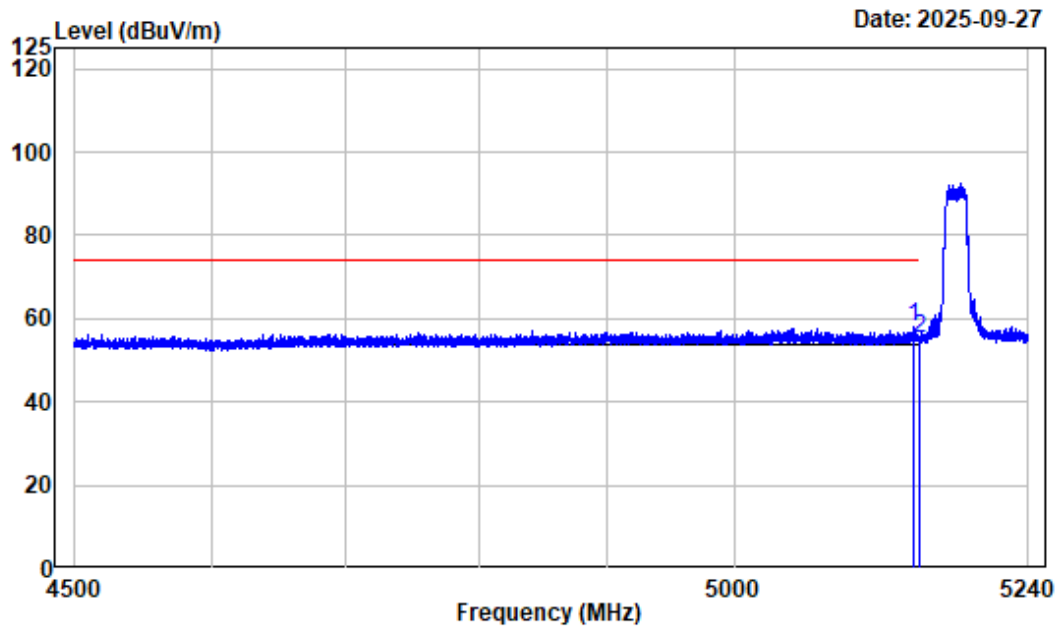
Left Band edge_Horizontal_Average



Condition : Horizontal
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak
Note : 5GWiFi-Band1-AC20-5180

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5149.535	-7.46	52.47	45.01	54.00	-8.99	Average
2	5150.000	-7.46	52.27	44.81	54.00	-9.19	Average

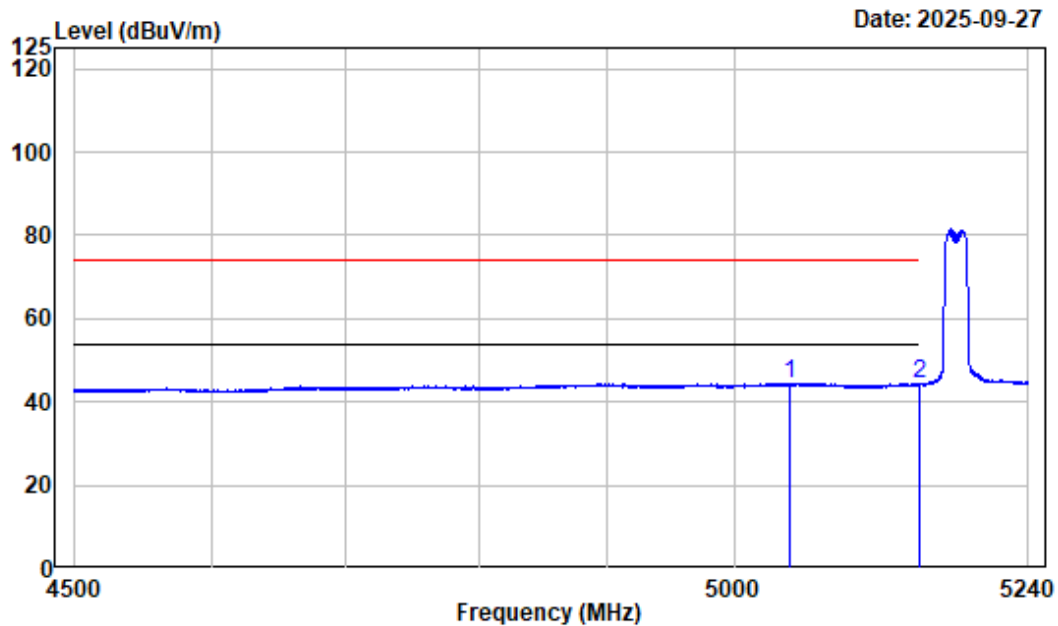
Left Band edge_Vertical_Peak



Condition : Vertical
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band1-AC20-5180

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5144.447	-7.46	65.65	58.19	74.00	-15.81	Peak
2	5150.000	-7.46	62.87	55.41	74.00	-18.59	Peak

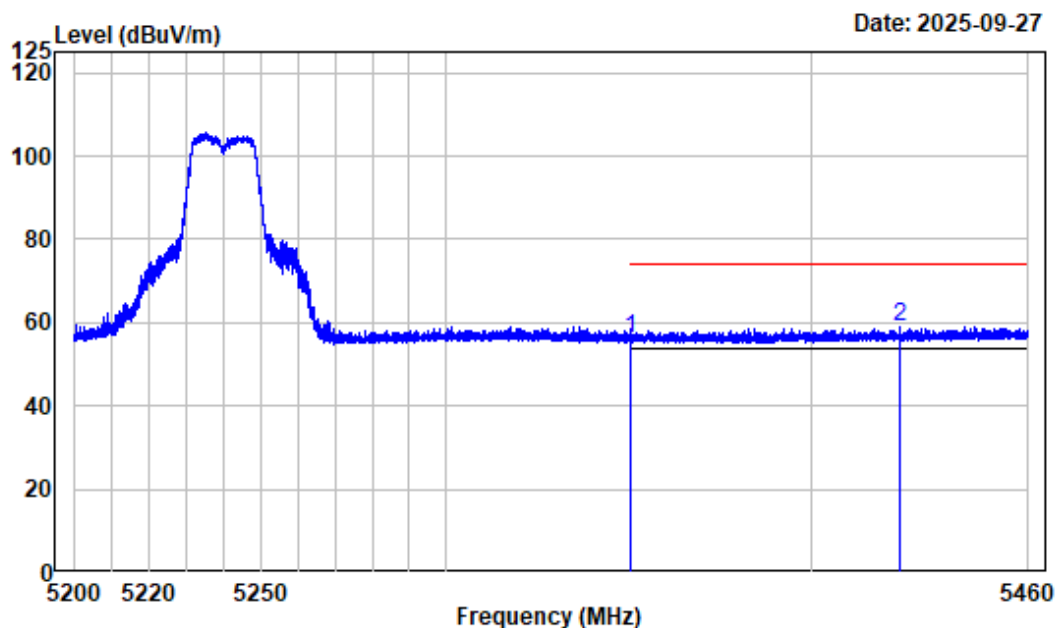
Left Band edge_Vertical_Average



Condition : Vertical
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak
Note : 5GWiFi-Band1-AC20-5180

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5043.900	-7.31	51.84	44.53	54.00	-9.47	Average
2	5150.000	-7.46	51.65	44.19	54.00	-9.81	Average

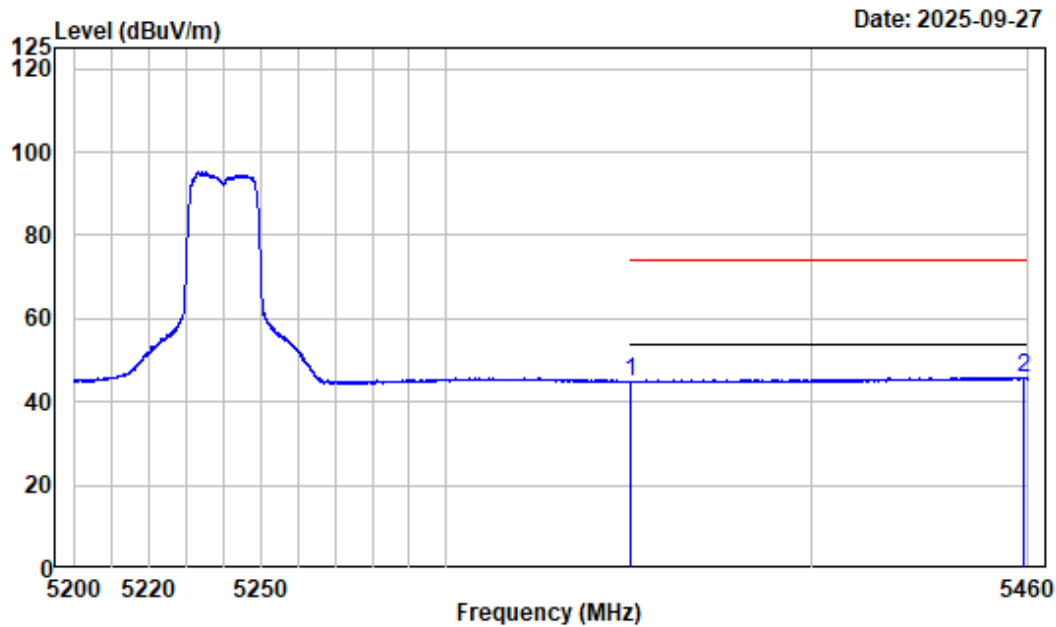
Right Band edge_Horizontal_Peak



Condition : Horizontal
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band1-AC20-5240

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	62.78	56.04	74.00	-17.96	Peak
2	5424.250	-6.46	65.60	59.14	74.00	-14.86	Peak

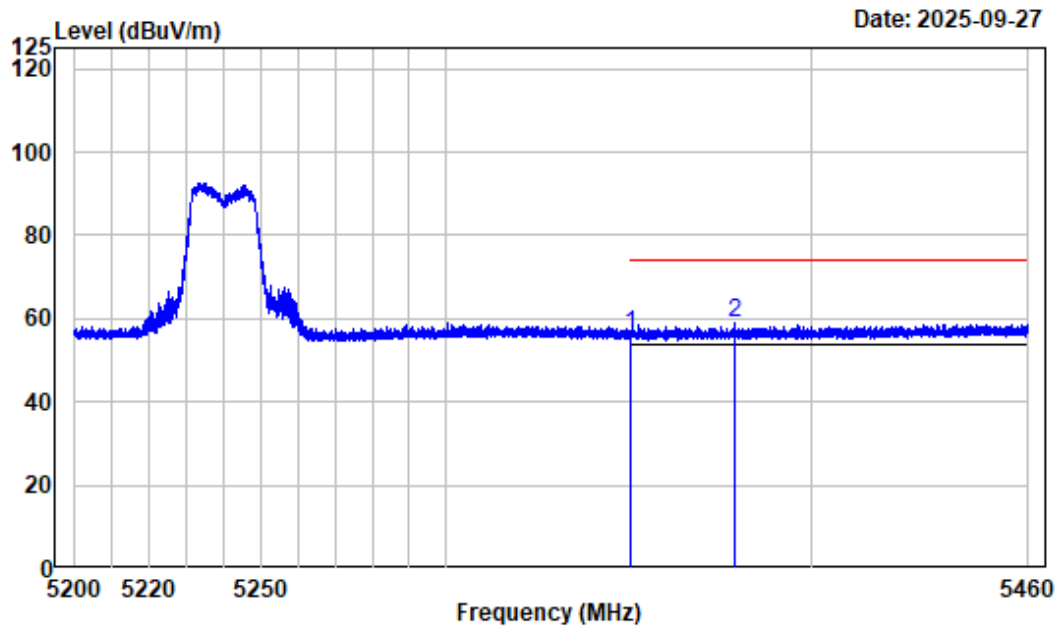
Right Band edge_Horizontal_Average



Condition : Horizontal
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak
Note : 5GWiFi-Band1-AC20-5240

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	51.47	44.73	54.00	-9.27	Average
2	5458.830	-6.29	52.19	45.90	54.00	-8.10	Average

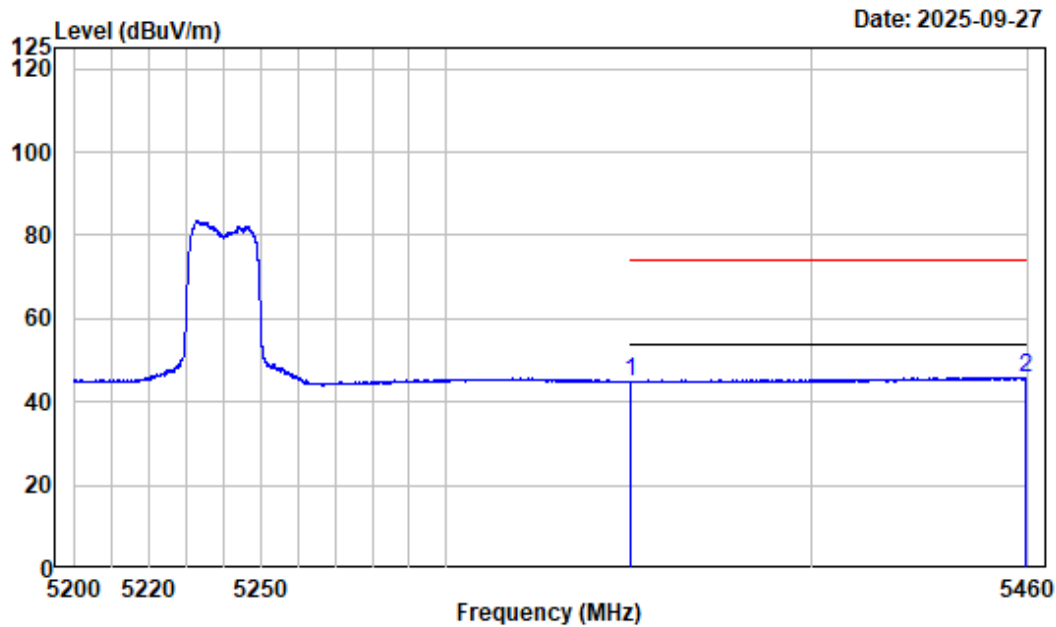
Right Band edge_ Vertical_Peak



Condition : Vertical
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band1-AC20-5240

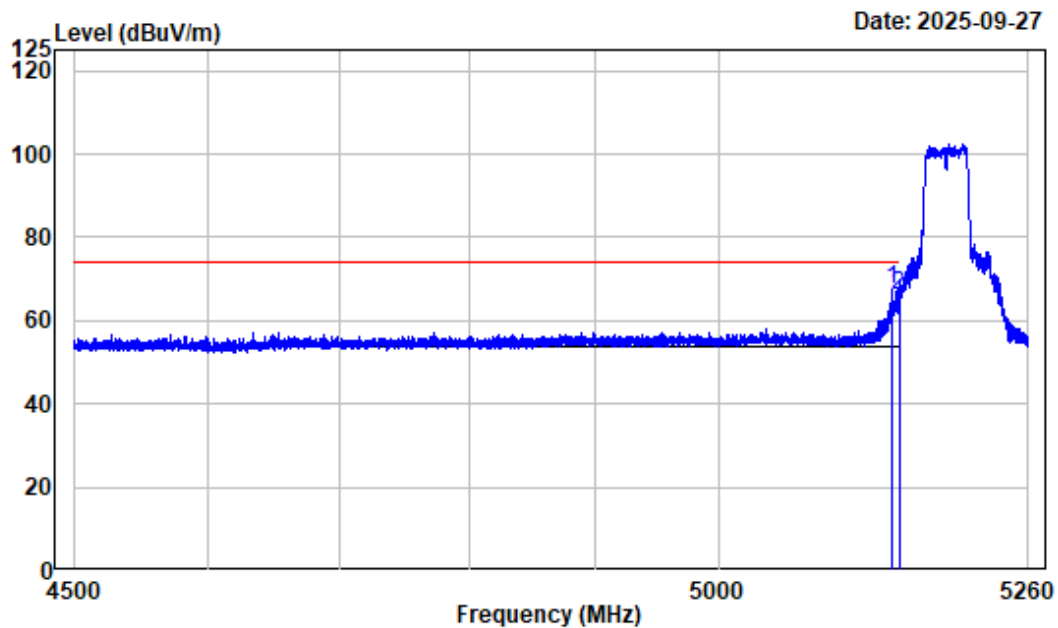
	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	62.68	55.94	74.00	-18.06	Peak
2	5378.555	-6.65	65.54	58.89	74.00	-15.11	Peak

Right Band edge_Vertical_Average



Condition : Vertical
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak
Note : 5GWiFi-Band1-AC20-5240

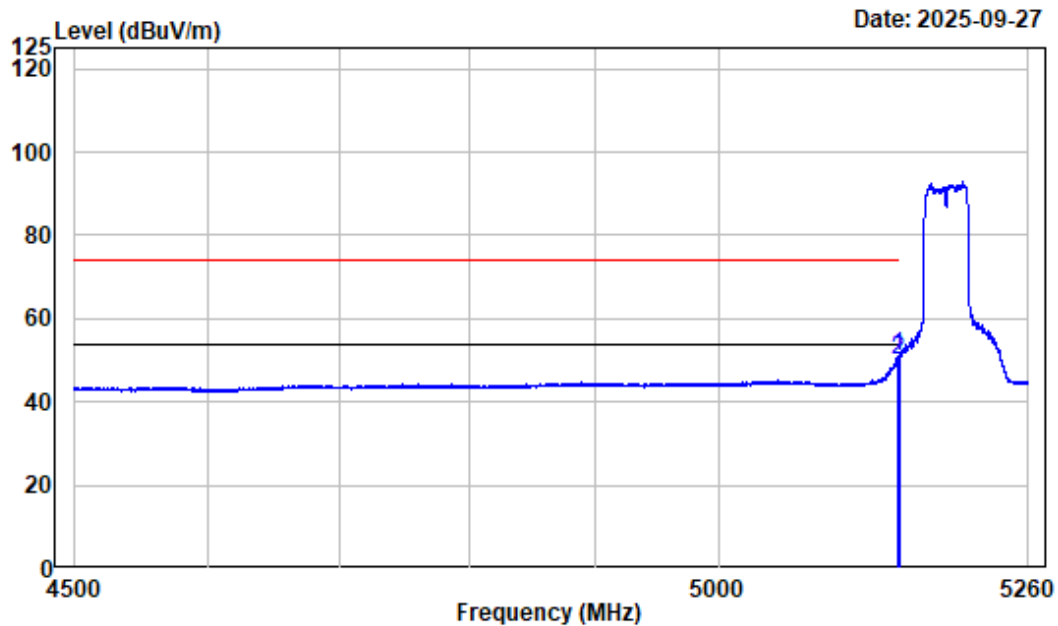
	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	51.62	44.88	54.00	-9.12	Average
2	5459.058	-6.29	52.20	45.91	54.00	-8.09	Average

802.11ac40
Left Band edge_Horizontal_Peak

Condition : Horizontal
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band1-AC40-5190

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5143.720	-7.46	74.95	67.49	74.00	-6.51	Peak
2	5150.000	-7.46	73.66	66.20	74.00	-7.80	Peak

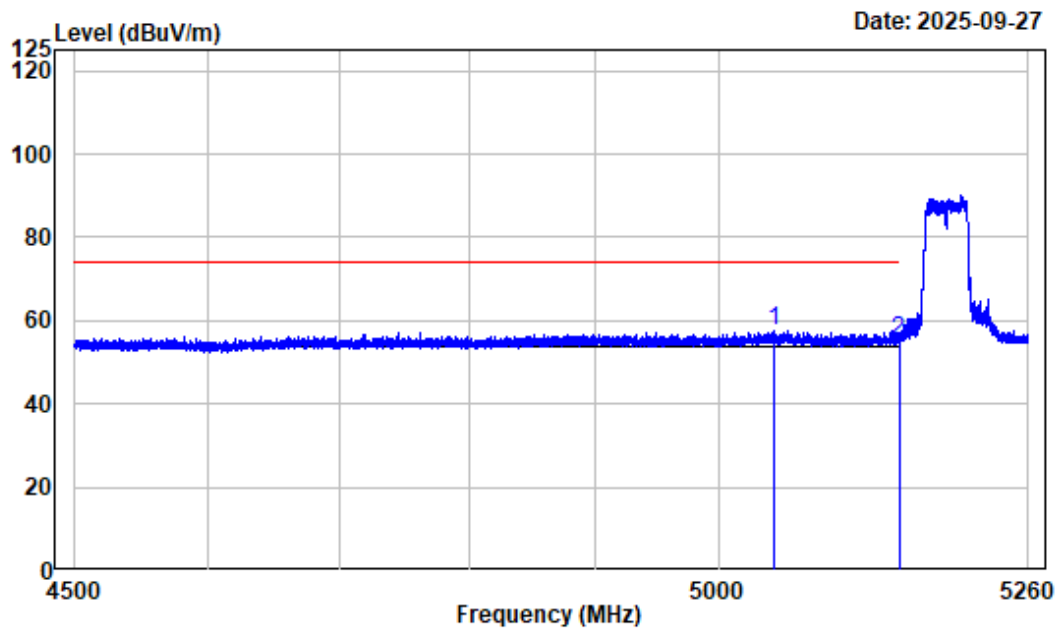
Left Band edge_Horizontal_Average



Condition : Horizontal
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:2kHz Detector:Peak
Note : 5GWiFi-Band1-AC40-5190

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5149.515	-7.46	58.21	50.75	54.00	-3.25	Average
2	5150.000	-7.46	57.55	50.09	54.00	-3.91	Average

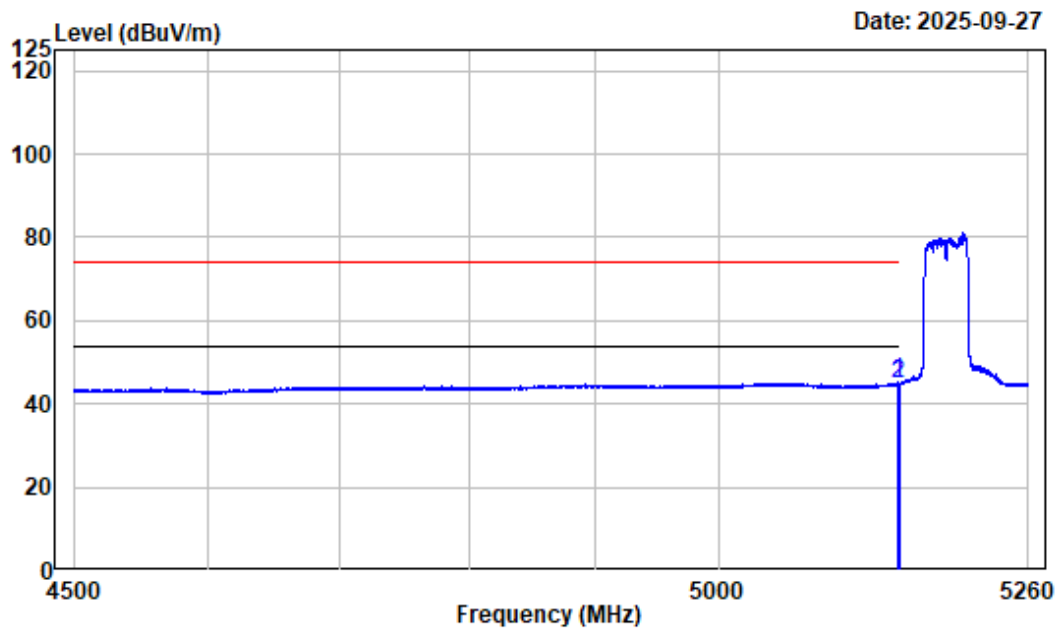
Left Band edge_Vertical_Peak



Condition : Vertical
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band1-AC40-5190

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5046.535	-7.31	64.93	57.62	74.00	-16.38	Peak
2	5150.000	-7.46	62.50	55.04	74.00	-18.96	Peak

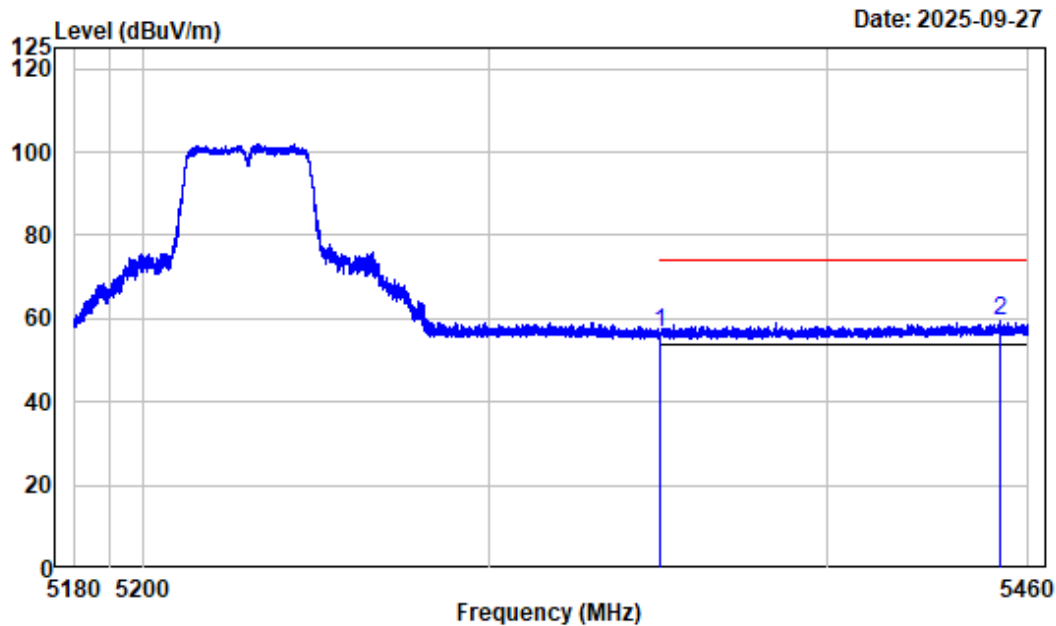
Left Band edge_Vertical_Average



Condition : Vertical
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:2kHz Detector:Peak
Note : 5GWiFi-Band1-AC40-5190

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5149.895	-7.46	52.59	45.13	54.00	-8.87	Average
2	5150.000	-7.46	52.15	44.69	54.00	-9.31	Average

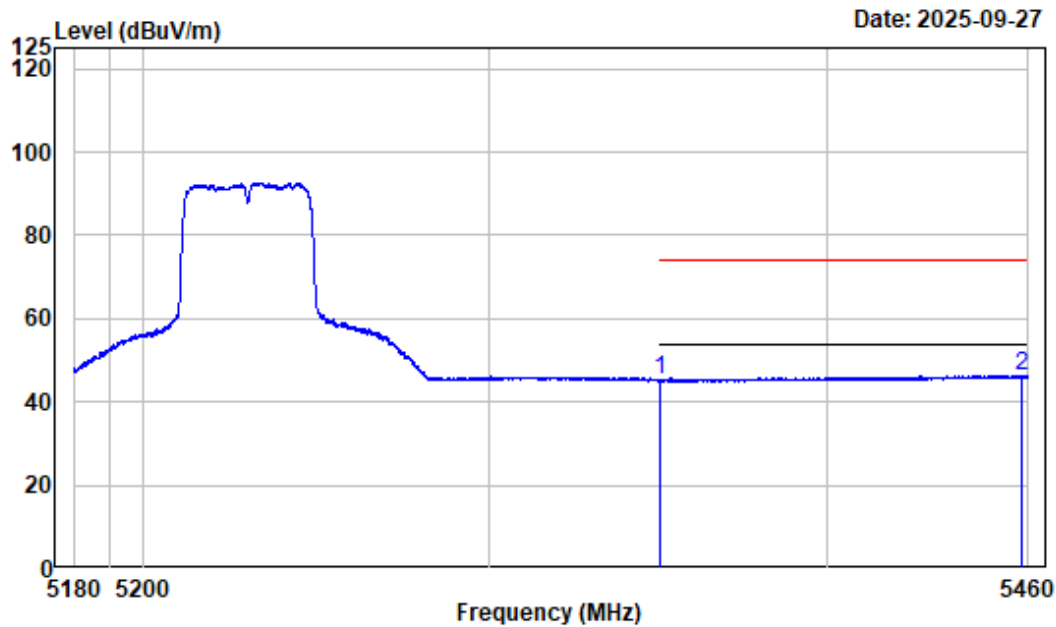
Right Band edge_Horizontal_Peak



Condition : Horizontal
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band1-AC40-5230

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	63.31	56.57	74.00	-17.43	Peak
2	5451.460	-6.32	65.75	59.43	74.00	-14.57	Peak

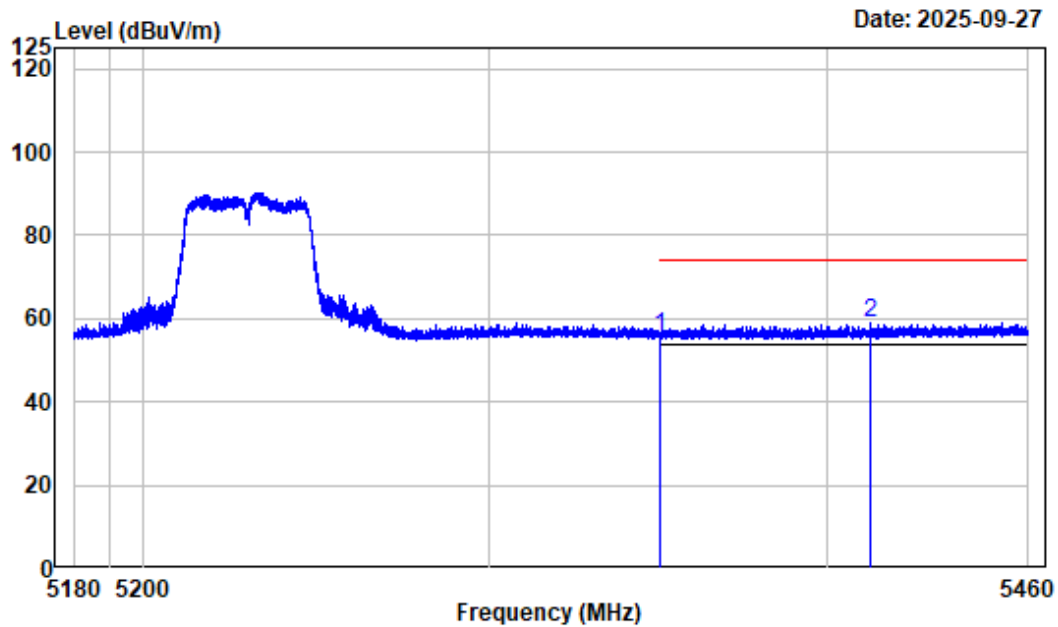
Right Band edge_Horizontal_Average



Condition : Horizontal
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:2kHz Detector:Peak
Note : 5GWiFi-Band1-AC40-5230

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	51.99	45.25	54.00	-8.75	Average
2	5458.075	-6.29	52.68	46.39	54.00	-7.61	Average

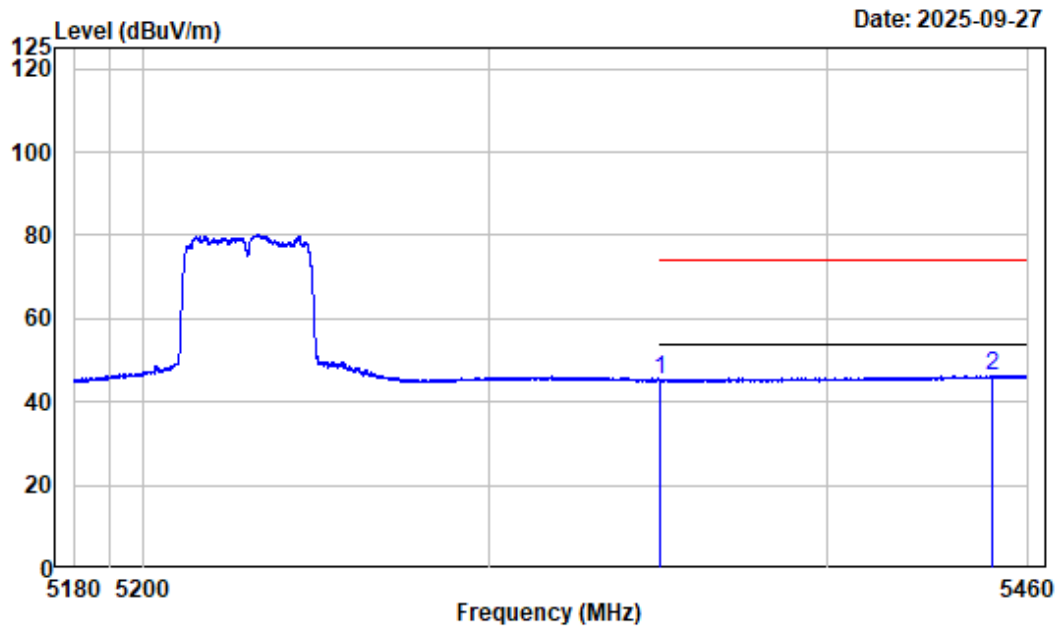
Right Band edge_ Vertical_Peak



Condition : Vertical
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band1-AC40-5230

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	62.51	55.77	74.00	-18.23	Peak
2	5412.470	-6.53	65.45	58.92	74.00	-15.08	Peak

Right Band edge_ Vertical_Average

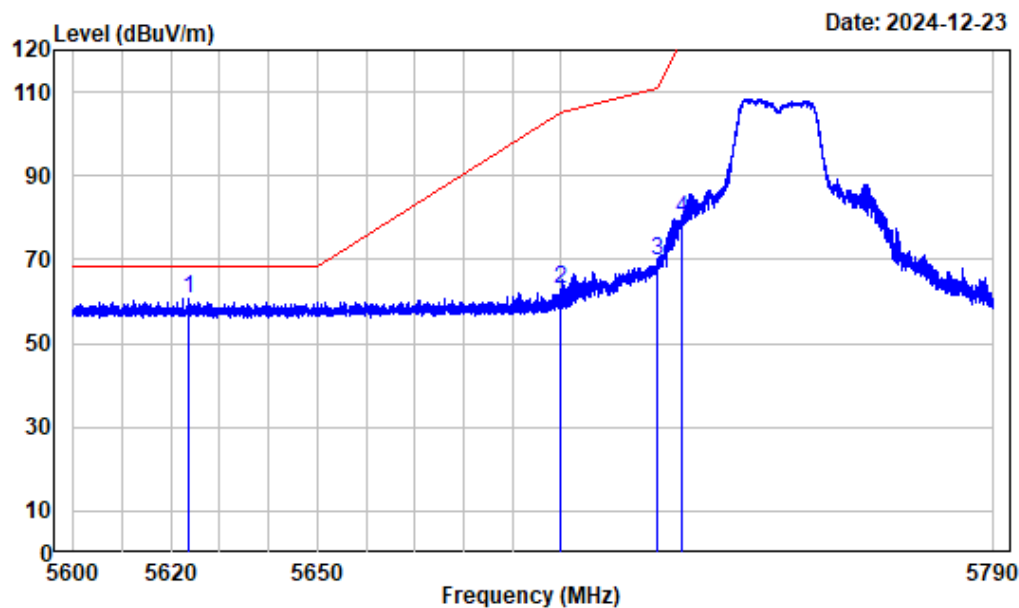


Condition : Vertical
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:2kHz Detector:Peak
Note : 5GWiFi-Band1-AC40-5230

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	51.87	45.13	54.00	-8.87	Average
2	5448.940	-6.33	52.63	46.30	54.00	-7.70	Average

5725-5850MHz

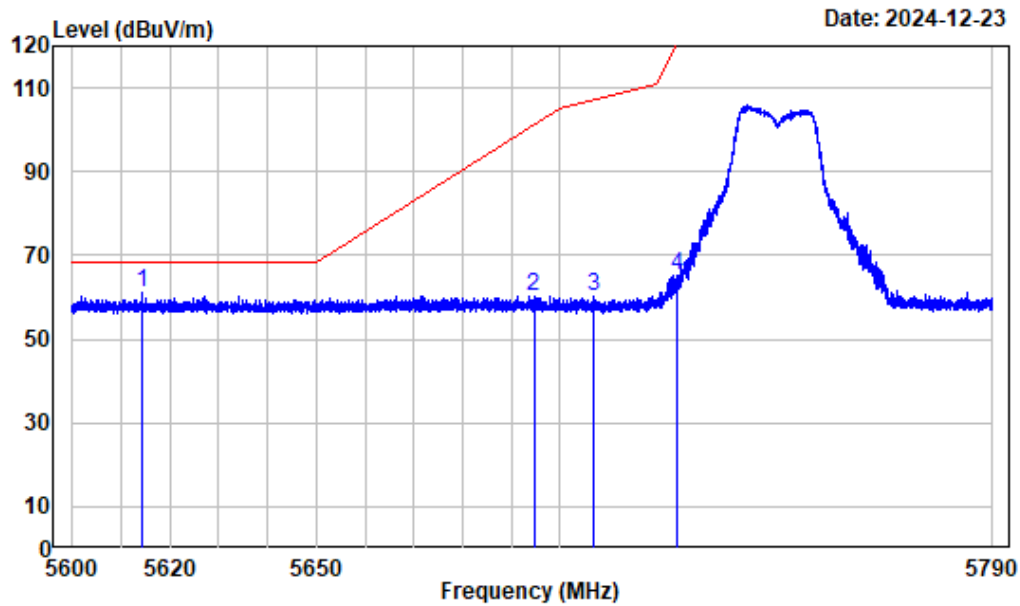
802.11a
Left Band edge_Horizontal



Condition : Horizontal
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-A-5745

		Read		Limit	Over	Remark
Freq	Factor	Level	Level	Line	Limit	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5623.492	-6.05	66.55	60.50	68.20	-7.70 peak
2	5699.804	-5.71	68.62	62.91	105.06	-42.15 peak
3	5719.931	-5.53	75.28	69.75	110.78	-41.03 peak
4	5724.935	-5.49	85.15	79.66	122.05	-42.39 peak

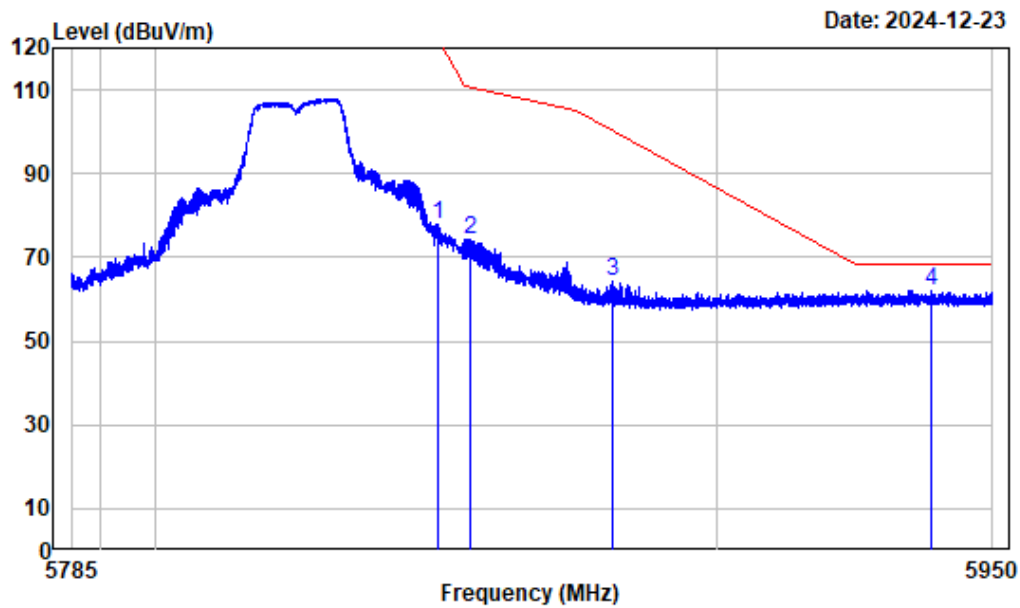
Left Band edge_Vertical



Condition : Vertical
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-A-5745

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5614.348	-6.11	67.28	61.17	68.20	-7.03	peak
2	5694.599	-5.73	66.03	60.30	101.22	-40.92	peak
3	5707.021	-5.65	65.75	60.10	107.17	-47.07	peak
4	5724.388	-5.49	70.89	65.40	120.81	-55.41	peak

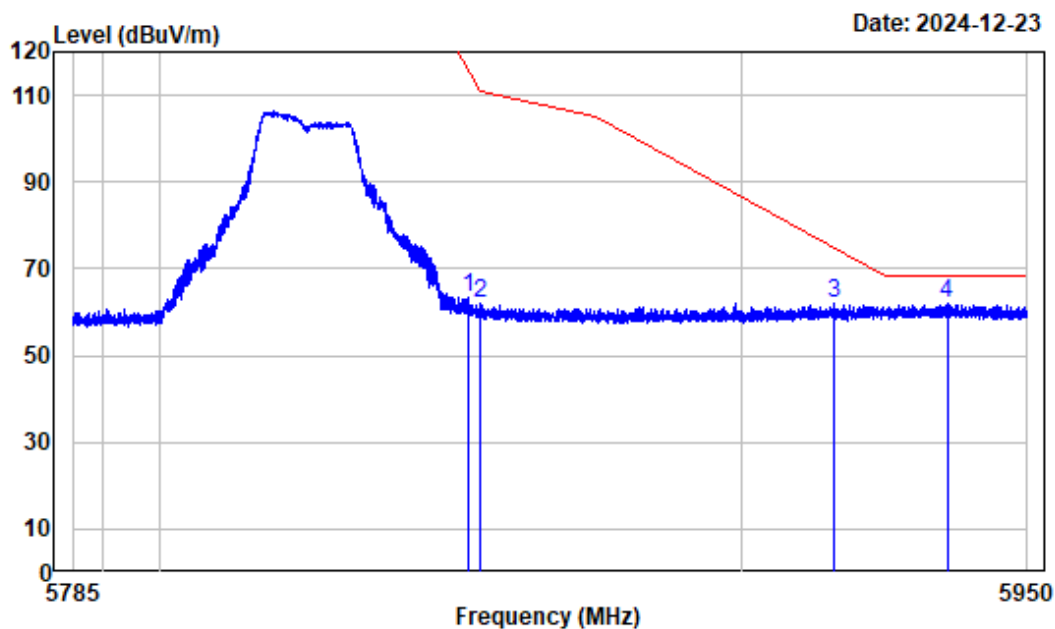
Right Band edge_Horizontal_Peak



Condition : Horizontal
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-A-5825

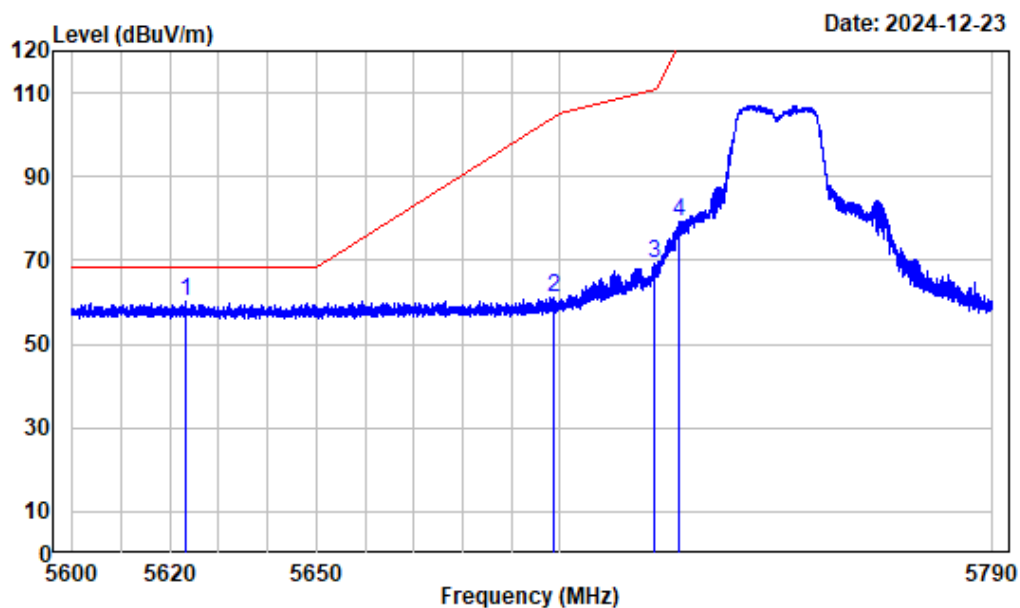
	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5850.116	-4.68	82.55	77.87	121.94	-44.07	peak
2	5856.051	-4.66	79.07	74.41	110.51	-36.10	peak
3	5881.282	-4.53	68.69	64.16	100.53	-36.37	peak
4	5938.861	-4.45	66.60	62.15	68.20	-6.05	peak

Right Band edge_ Vertical_Peak



Condition : Vertical
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-A-5825

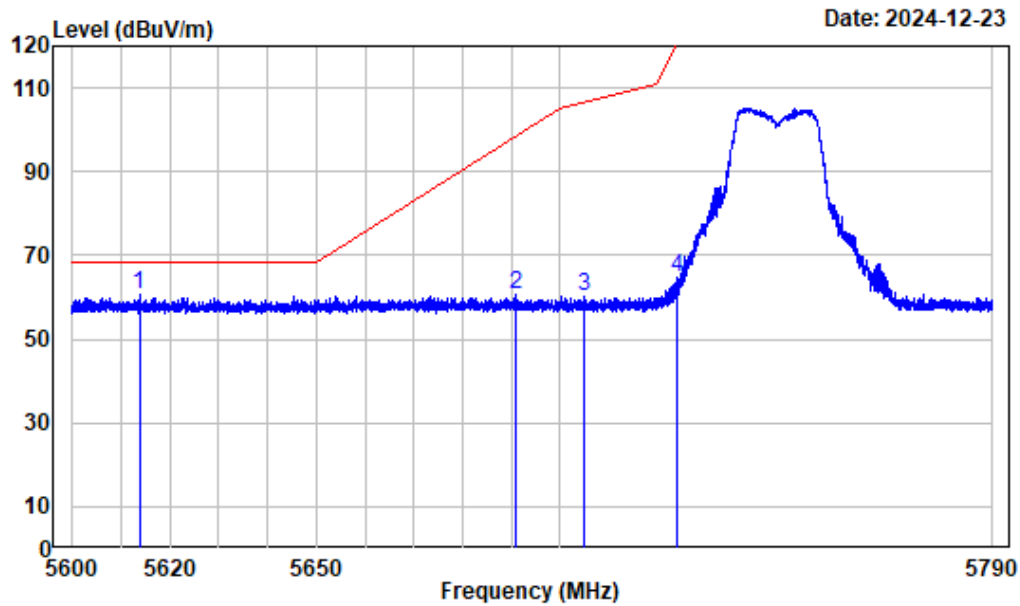
	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5852.816	-4.66	68.07	63.41	115.78	-52.37	peak
2	5855.010	-4.66	66.55	61.89	110.80	-48.91	peak
3	5916.274	-4.46	66.72	62.26	74.63	-12.37	peak
4	5935.964	-4.45	66.43	61.98	68.20	-6.22	Peak

802.11ac20
Left Band edge_Horizontal

Condition : Horizontal
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-AC20-5745

Freq Factor		Read Level		Limit	Over	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5623.405	-6.05	66.34	60.29	68.20	-7.91 peak
2	5698.539	-5.73	66.99	61.26	104.12	-42.86 peak
3	5719.644	-5.54	74.63	69.09	110.70	-41.61 peak
4	5724.791	-5.49	84.73	79.24	121.72	-42.48 peak

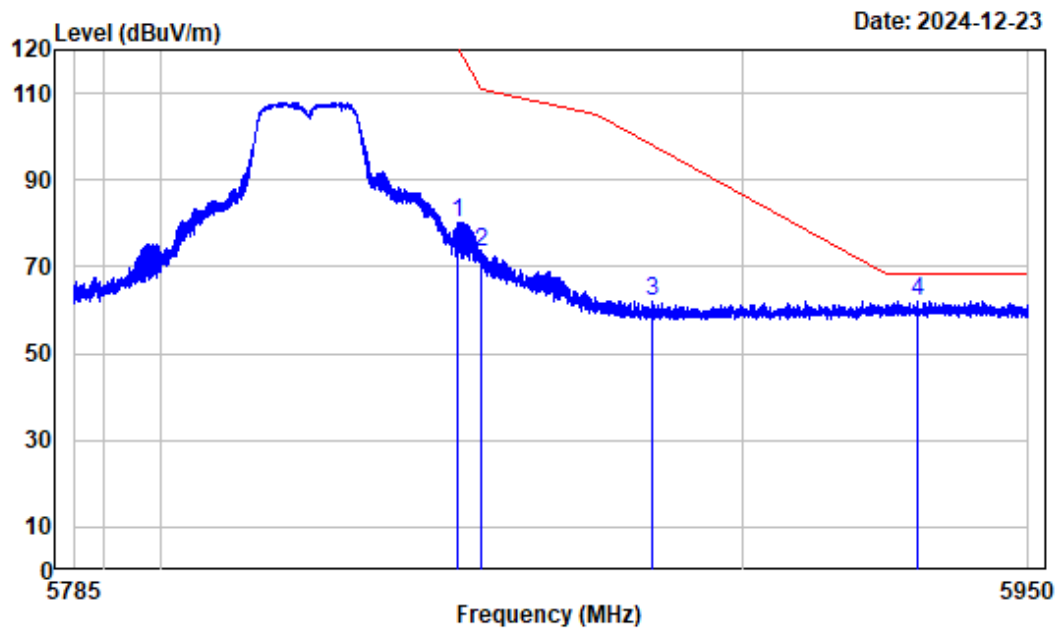
Left Band edge_Vertical



Condition : Vertical
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-AC20-5745

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5613.802	-6.11	66.58	60.47	68.20	-7.73	peak
2	5690.804	-5.75	66.30	60.55	98.42	-37.87	peak
3	5705.008	-5.67	66.09	60.42	106.60	-46.18	peak
4	5724.359	-5.49	70.13	64.64	120.74	-56.10	peak

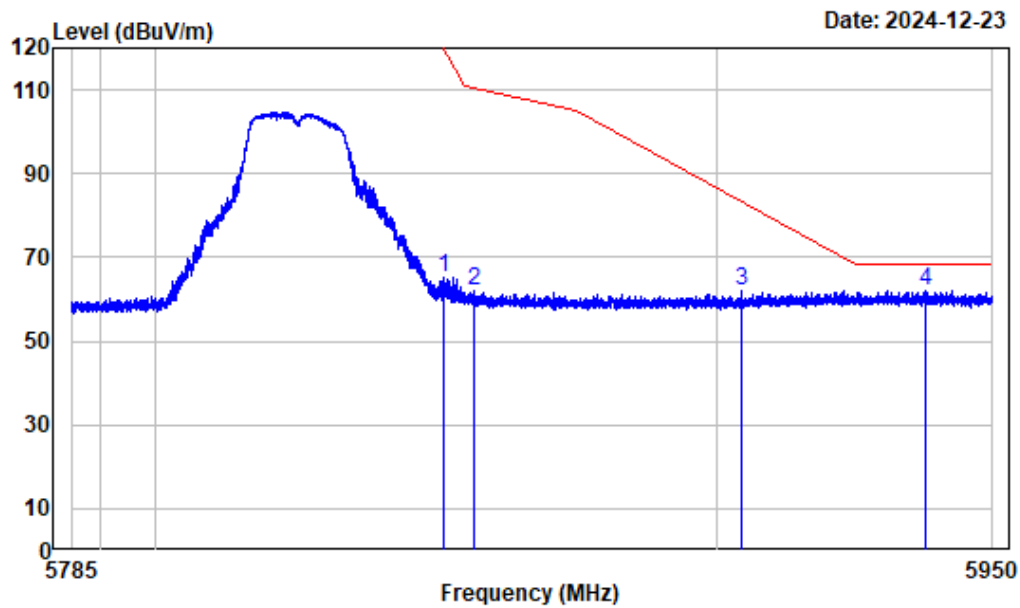
Right Band edge_Horizontal_Peak



Condition : Horizontal
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-AC20-5825

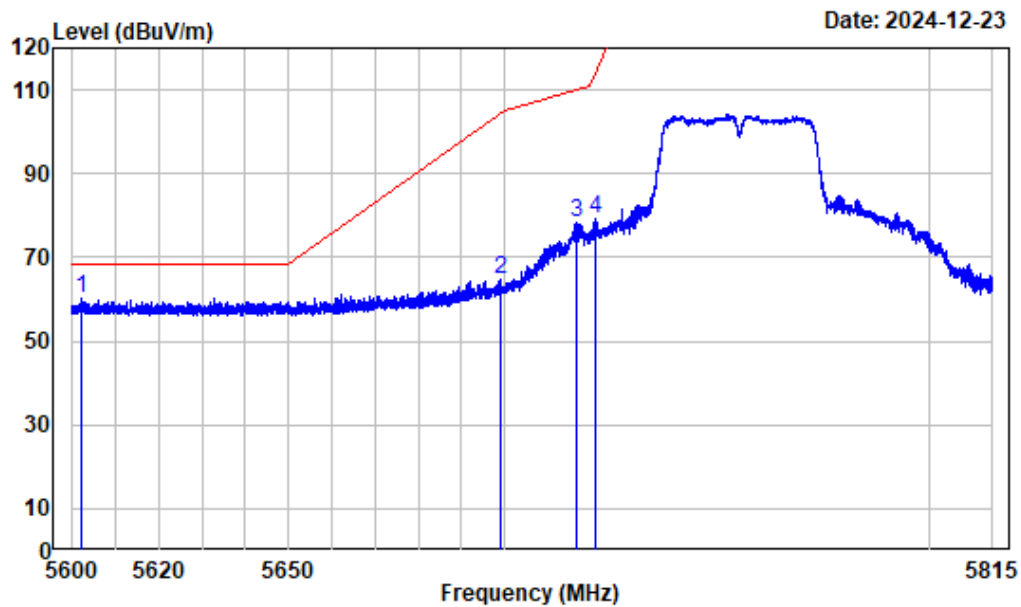
	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5850.707	-4.68	84.86	80.18	120.59	-40.41	peak
2	5855.038	-4.66	78.10	73.44	110.79	-37.35	peak
3	5884.376	-4.52	66.73	62.21	98.24	-36.03	peak
4	5930.732	-4.45	66.63	62.18	68.20	-6.02	Peak

Right Band edge_ Vertical _Peak



Condition : Vertical
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-AC20-5825

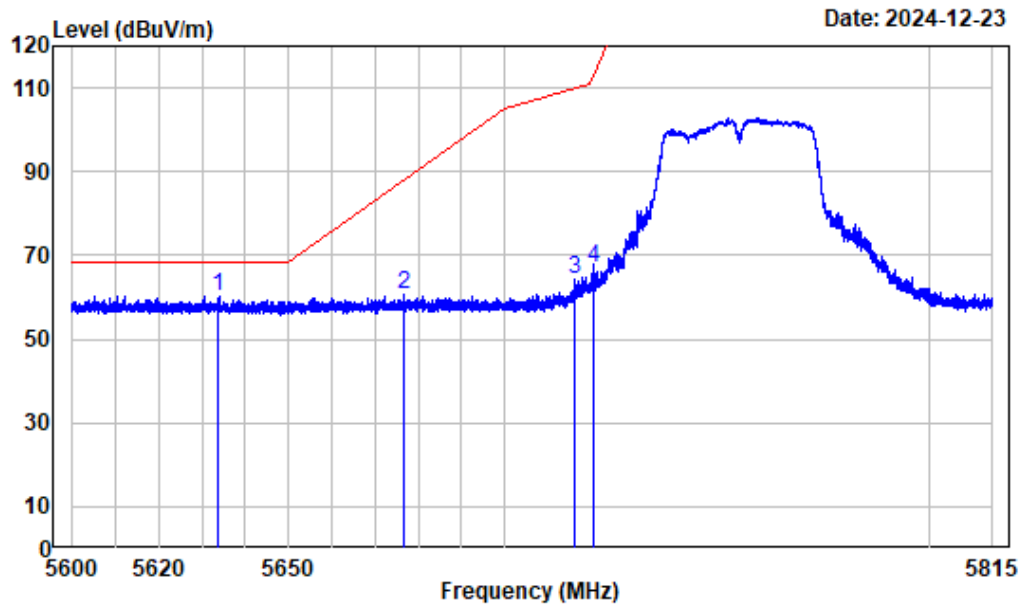
	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5851.156	-4.68	70.11	65.43	119.56	-54.13	peak
2	5856.669	-4.65	66.53	61.88	110.33	-48.45	peak
3	5904.601	-4.46	66.70	62.24	83.26	-21.02	peak
4	5937.876	-4.46	66.60	62.14	68.20	-6.06	peak

802.11ac40
Left Band edge_Horizontal

Condition : Horizontal
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-AC40-5755

Freq Factor		Read Level		Limit	Over	Remark
MHz	dB/m	dBuV	dBuV/m	Line	Limit	
1	5602.358	-6.20	66.49	60.29	68.20	-7.91 peak
2	5699.257	-5.72	70.30	64.58	104.65	-40.07 peak
3	5716.941	-5.56	83.71	78.15	109.94	-31.79 peak
4	5721.283	-5.52	84.78	79.26	113.73	-34.47 peak

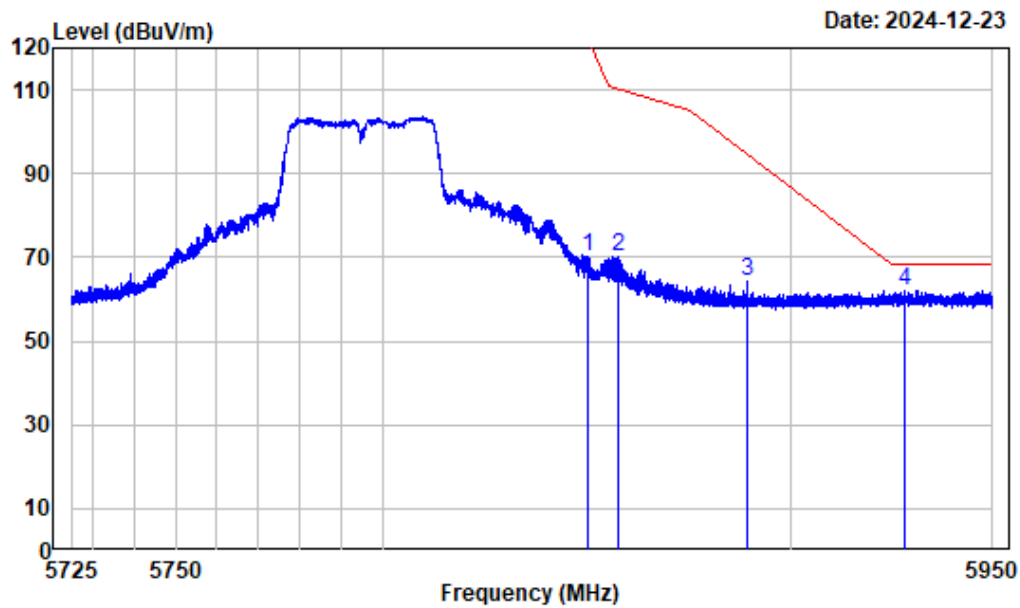
Left Band edge_Vertical



Condition : Vertical
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-AC40-5755

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5633.900	-5.98	66.31	60.33	68.20	-7.87	peak
2	5676.628	-5.78	66.25	60.47	87.95	-27.48	peak
3	5716.653	-5.56	69.74	64.18	109.86	-45.68	peak
4	5721.082	-5.52	72.32	66.80	113.27	-46.47	peak

Right Band edge_Horizontal_Peak



Condition : Horizontal

Project Number : 2401Z105001E-RF

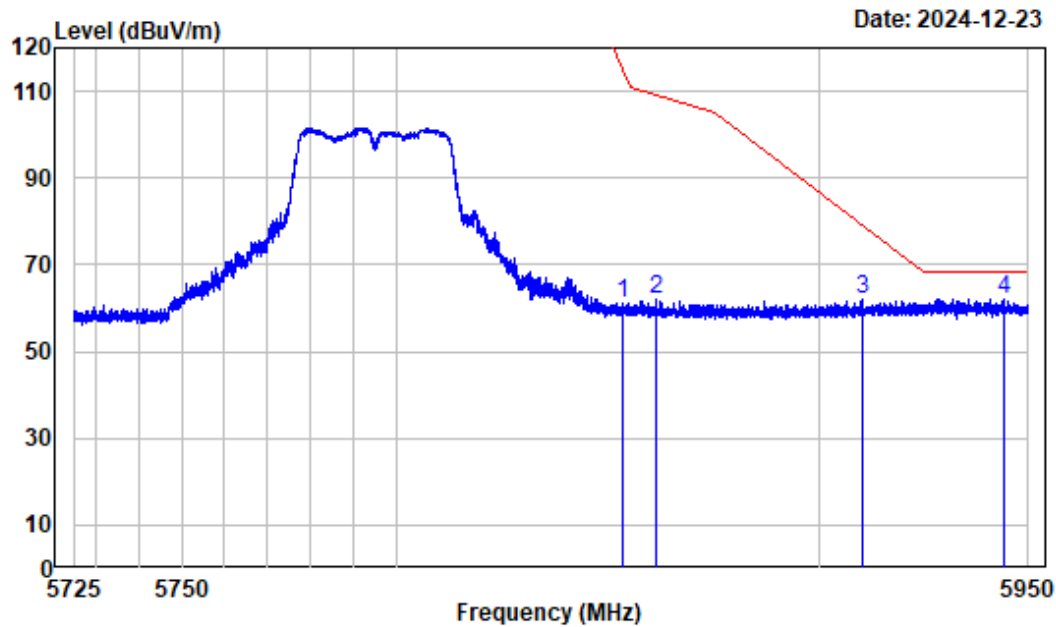
Tester : Zenos Qiao

Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak

Note : 5GWiFi-Band4-AC40-5795

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5850.144	-4.68	74.96	70.28	121.87	-51.59	peak
2	5857.767	-4.65	74.77	70.12	110.02	-39.90	peak
3	5889.045	-4.50	68.77	64.27	94.77	-30.50	peak
4	5928.285	-4.45	66.58	62.13	68.20	-6.07	peak

Right Band edge_ Vertical _Peak



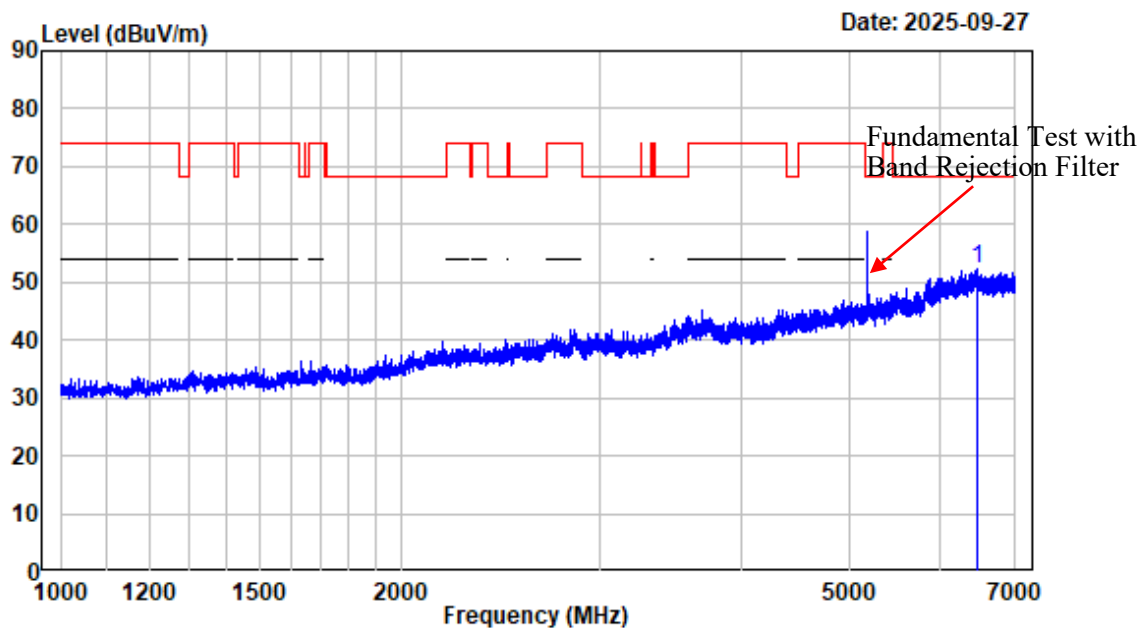
Condition : Vertical
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-AC40-5795

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5853.378	-4.66	65.99	61.33	114.50	-53.17	peak
2	5861.254	-4.62	66.50	61.88	109.05	-47.17	peak
3	5910.142	-4.45	66.34	61.89	79.16	-17.27	peak
4	5944.262	-4.45	66.56	62.11	68.20	-6.09	Peak

5150-5250MHz

1-18GHz (Listed with the worst case test plot)

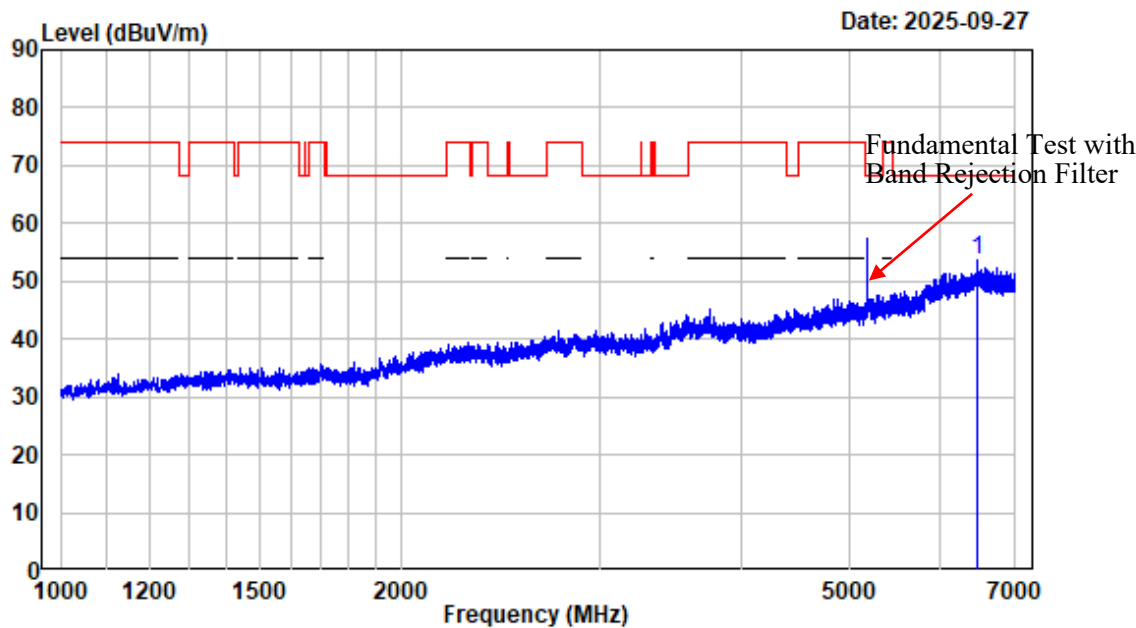
A-1-7GHz_Horizontal



Condition : Horizontal
 Project No. : 2401Z105001E-RF
 Tester : Zenos Qiao
 Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
 Note : 5GWiFi-Band1-A-5180

	Freq	Factor	Read Level	Level	Limit	Over	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	6478.750	-2.92	55.28	52.36	68.20	-15.84	Peak

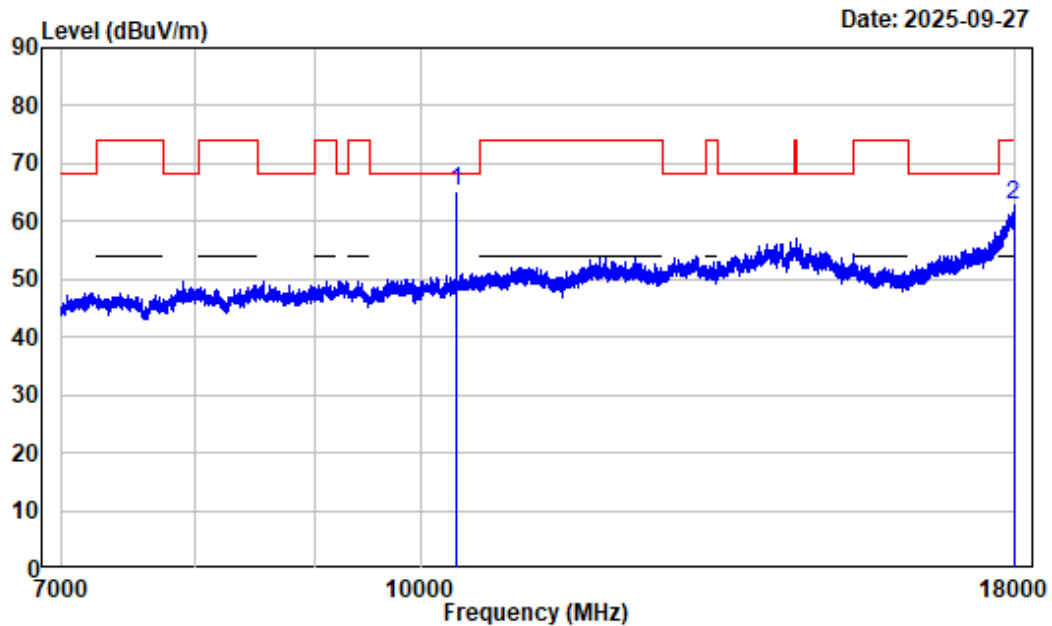
A-1-7GHz_Vertical



Condition : Vertical
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band1-A-5180

Freq		Factor	Read Level	Level	Limit Line	Over Limit	Remark
MHz		dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	6479.500	-2.92	56.44	53.52	68.20	-14.68	Peak

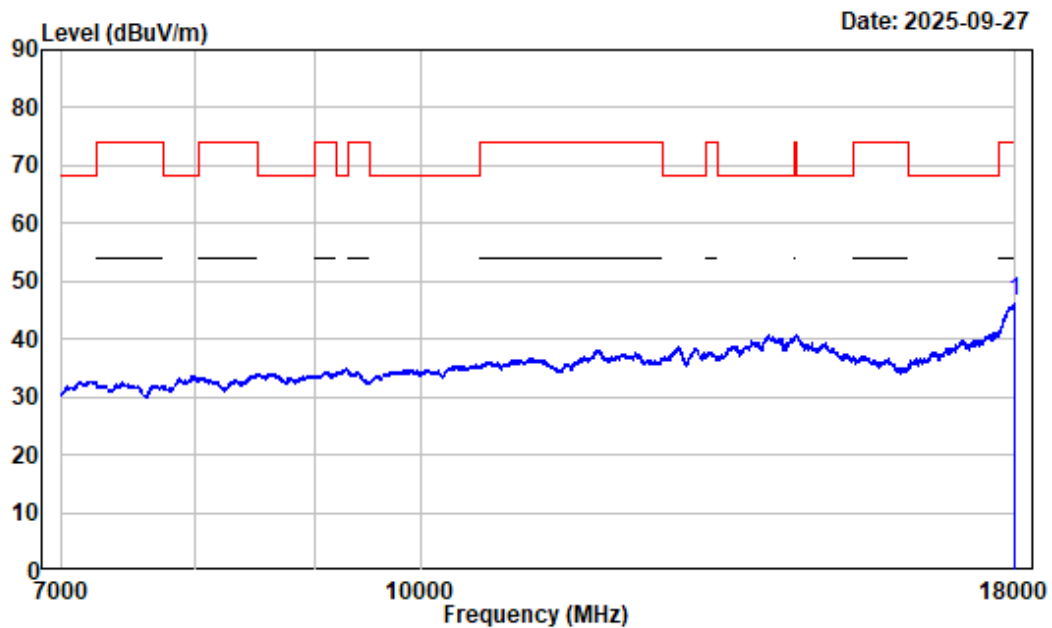
A-7-18GHz_Horizontal_Peak



Condition : Horizontal
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band1-A-5180

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	10360.000	2.53	62.57	65.10	68.20	-3.10	Peak
2	17972.500	13.07	49.69	62.76	74.00	-11.24	Peak

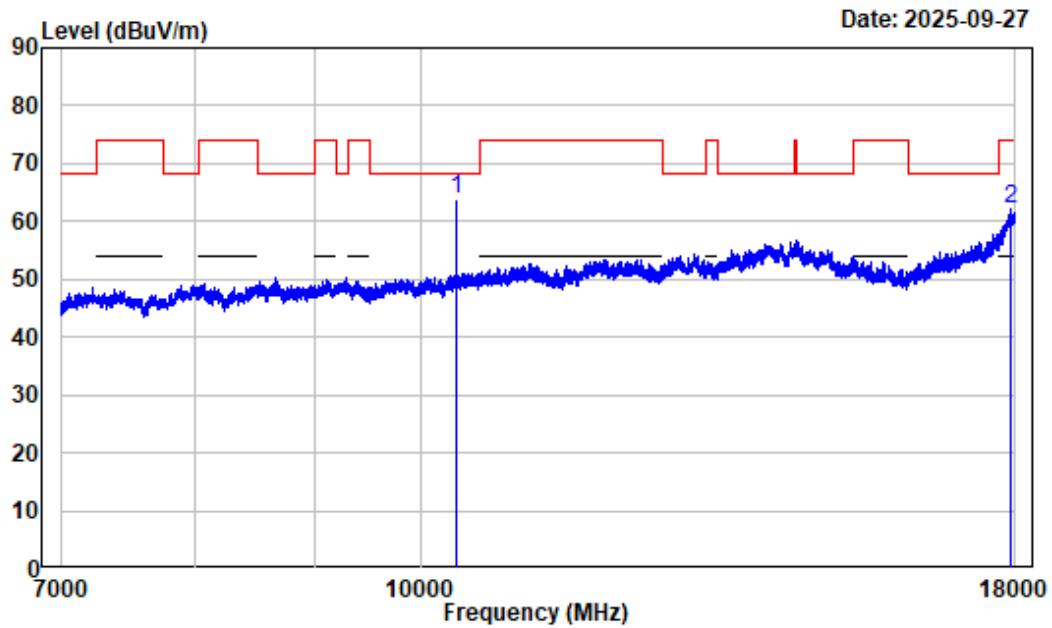
A-7-18GHz_Horizontal_Average



Condition : Horizontal
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak
Note : 5GWiFi-Band1-A-5180

Freq	Factor	Read		Limit	Over	Remark
		Level	Level	Line	Limit	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 17995.880	13.18	33.36	46.54	54.00	-7.46	Average

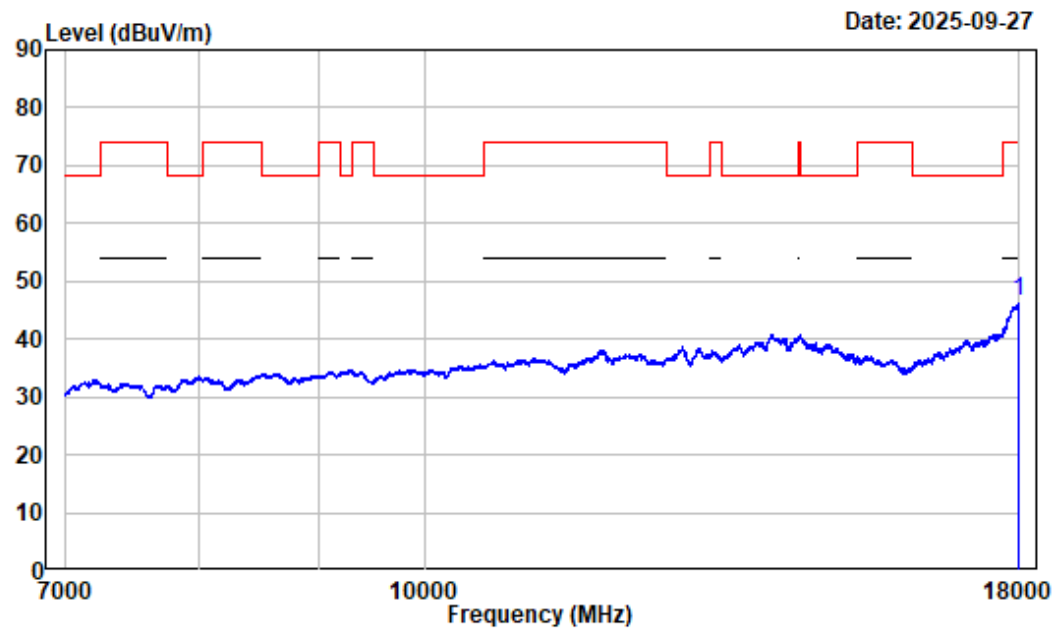
A-7-18GHz_Vertical_Peak



Condition : Vertical
 Project No. : 2401Z105001E-RF
 Tester : Zenos Qiao
 Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
 Note : 5GWiFi-Band1-A-5180

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	10360.000	2.53	61.32	63.85	68.20	-4.35	Peak
2	17920.250	12.80	49.27	62.07	74.00	-11.93	Peak

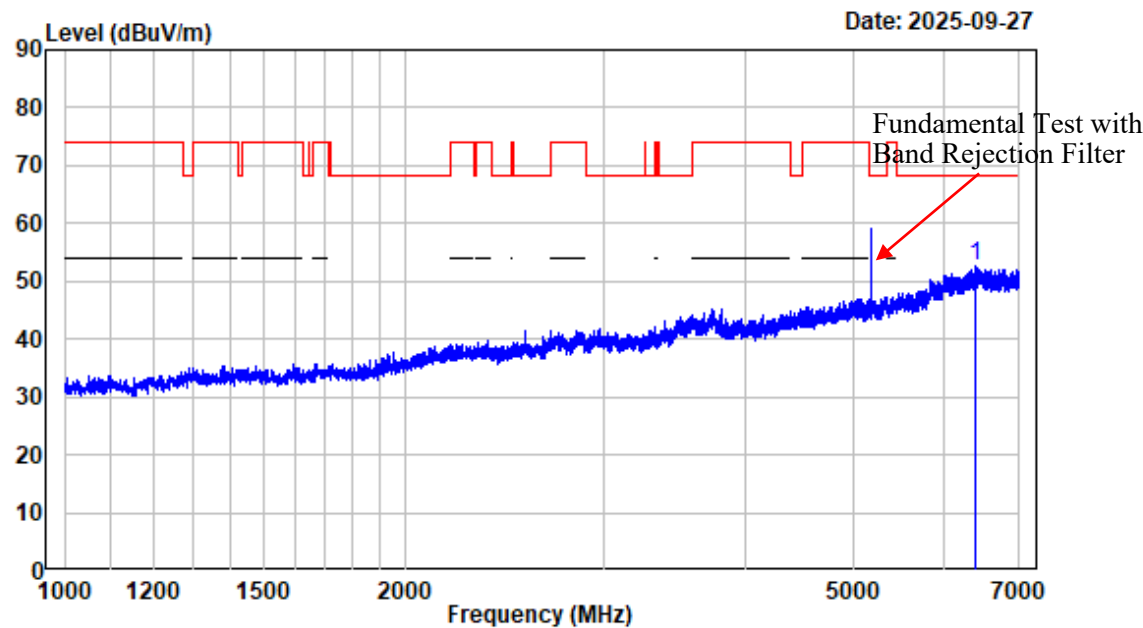
A-7-18GHz_Vertical_Average



Condition : Vertical
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak
Note : 5GWiFi-Band1-A-5180

Freq		Factor	Read Level	Level	Limit Line	Over Limit	Remark
MHz		dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	17998.630	13.19	33.27	46.46	54.00	-7.54	Average

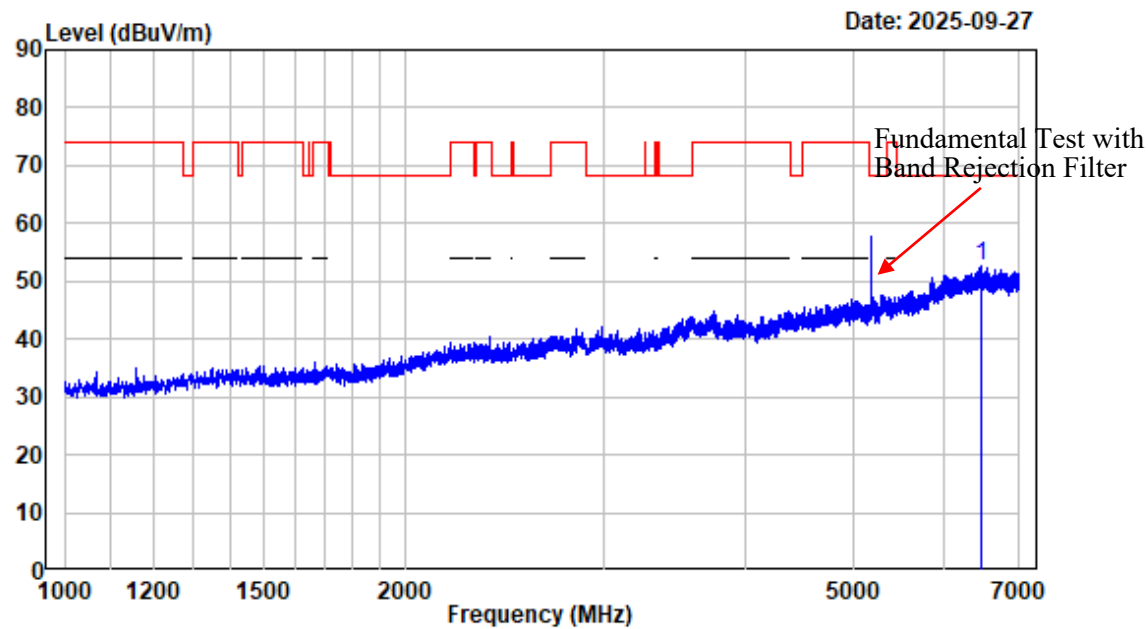
AC20-1-7GHz_Horizontal



Condition : Horizontal
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band1-AC20-5180

		Read	Limit	Over		
Freq	Factor	Level	Level	Line	Limit	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 6408.250	-2.90	55.64	52.74	68.20	-15.46	Peak

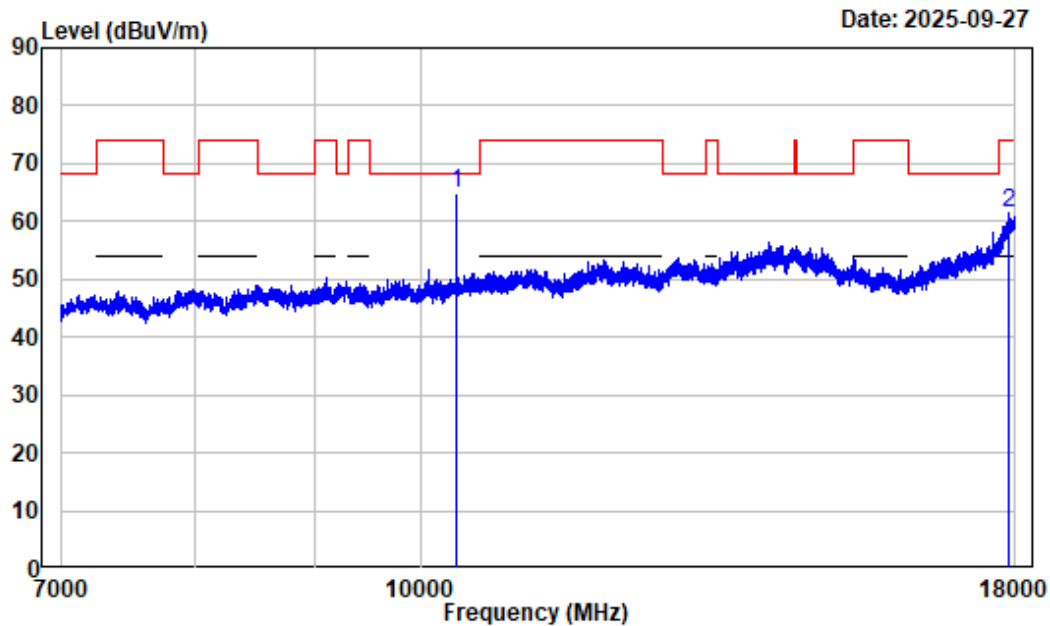
AC20-1-7GHz_Vertical



Condition : Vertical
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band1-AC20-5180

Freq		Factor	Read Level	Level	Limit Line	Over Limit	Remark
MHz		dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	6480.250	-2.92	55.71	52.79	68.20	-15.41	Peak

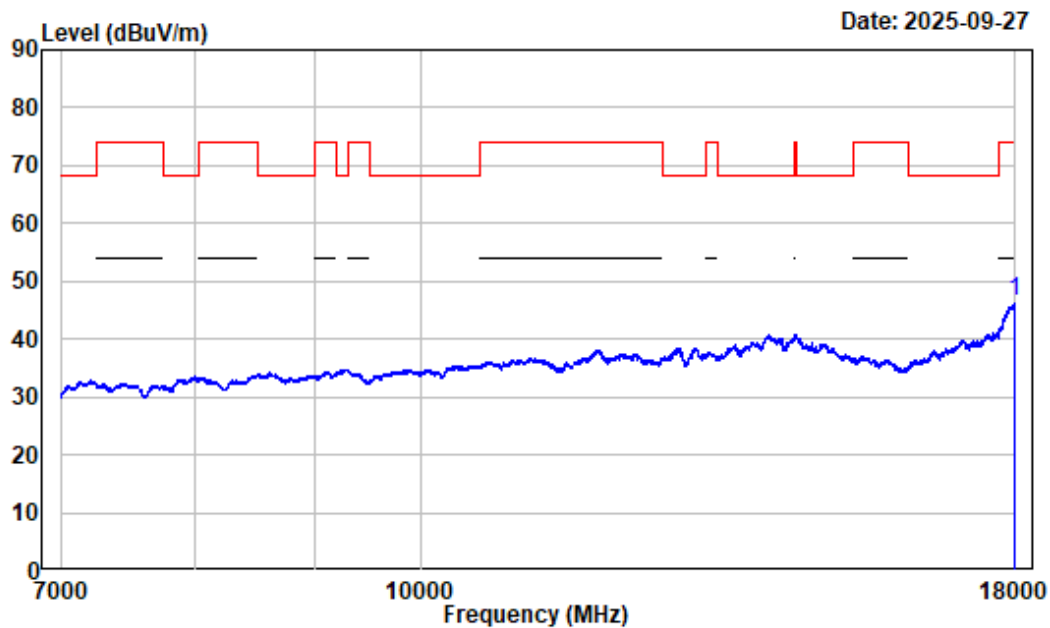
AC20-7-18GHz_Horizontal_Peak



Condition : Horizontal
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band1-AC20-5180

Freq		Factor	Read Level	Level	Limit Line	Over Limit	Remark
MHz		dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	10360.000	2.53	62.39	64.92	68.20	-3.28	Peak
2	17899.630	12.69	48.69	61.38	74.00	-12.62	Peak

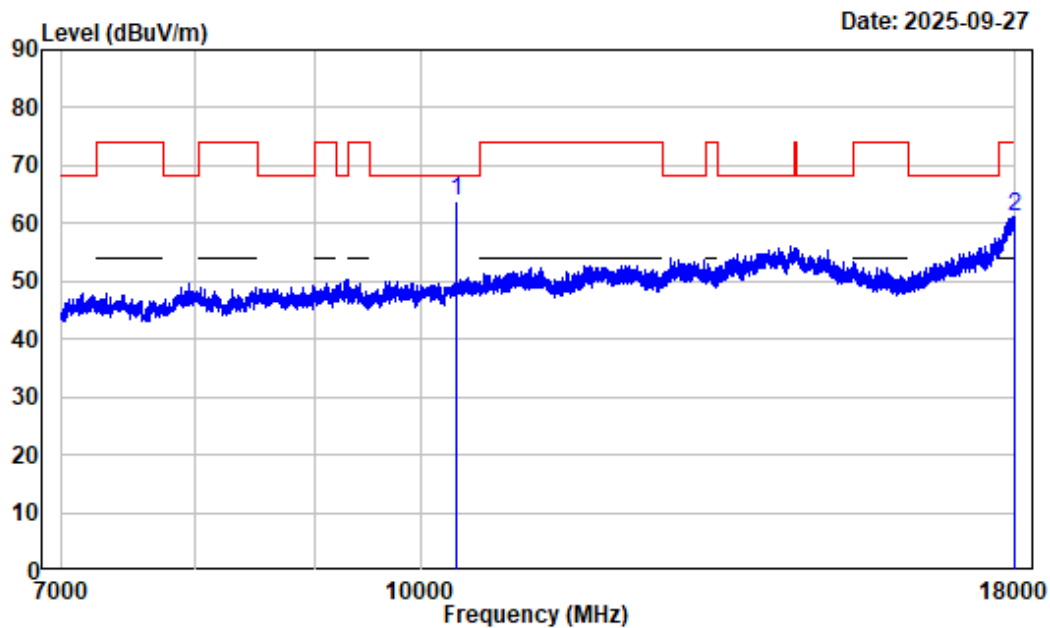
AC20-7-18GHz_Horizontal_Average



Condition : Horizontal
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak
Note : 5GWiFi-Band1-AC20-5180

Freq	Factor	Read		Limit	Over	Remark
		Level	Level	Line	Limit	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 17991.750	13.16	33.36	46.52	54.00	-7.48	Average

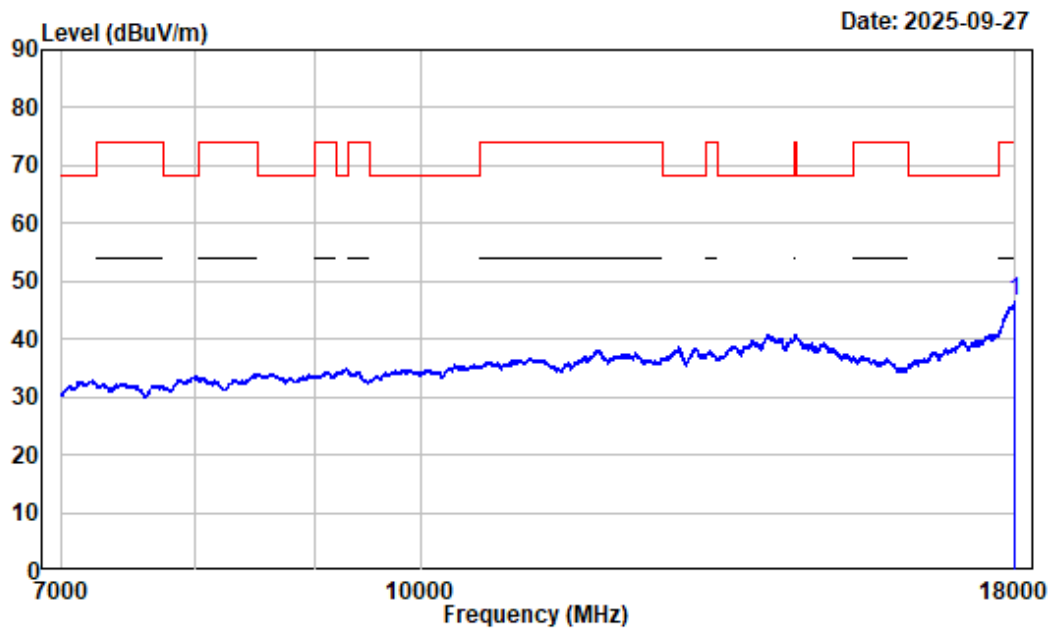
AC20-7-18GHz_Vertical_Peak



Condition : Vertical
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band1-AC20-5180

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	10360.000	2.53	61.16	63.69	68.20	-4.51	Peak
2	17986.250	13.12	47.96	61.08	74.00	-12.92	Peak

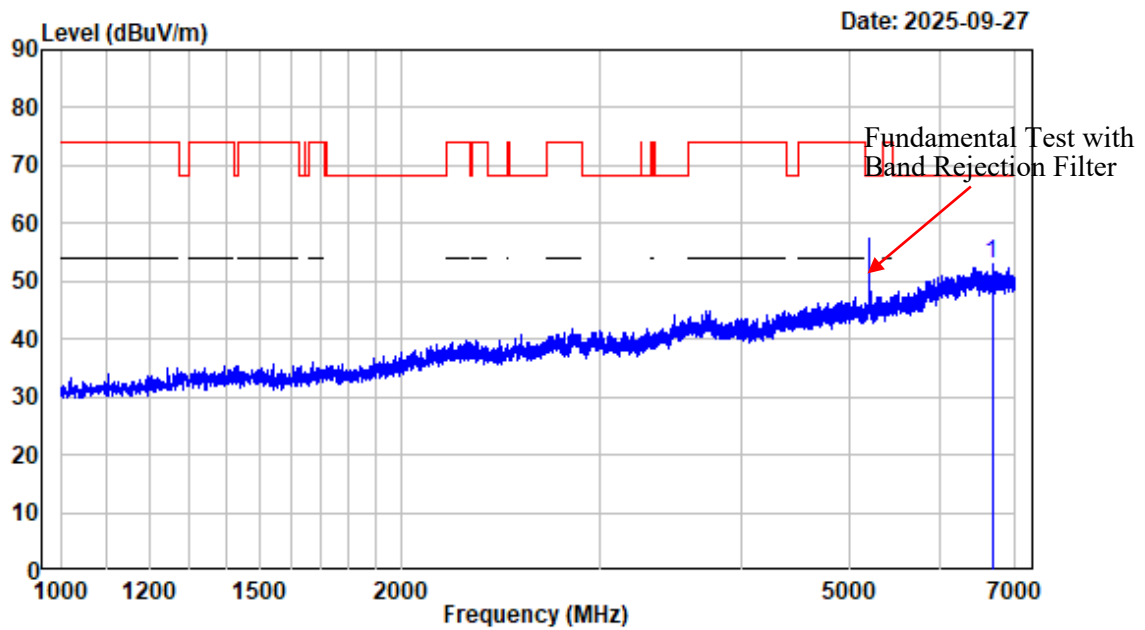
AC20-7-18GHz_Vertical_Average



Condition : Vertical
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak
Note : 5GWiFi-Band1-AC20-5180

Freq	Factor	Read		Limit	Over	Remark
		Level	Level	Line	Limit	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 17995.880	13.18	33.25	46.43	54.00	-7.57	Average

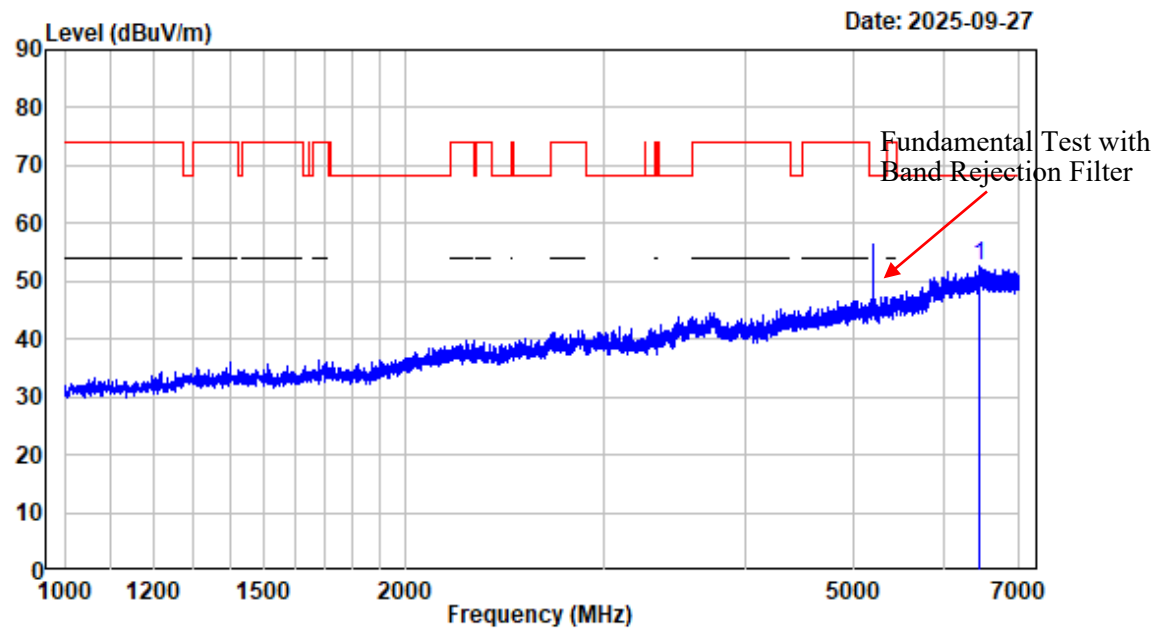
AC40-1-7GHz_Horizontal



Condition : Horizontal
 Project No. : 2401Z105001E-RF
 Tester : Zenos Qiao
 Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
 Note : 5GWiFi-Band1-AC40-5190

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	6677.500	-3.17	56.07	52.90	68.20	-15.30	Peak

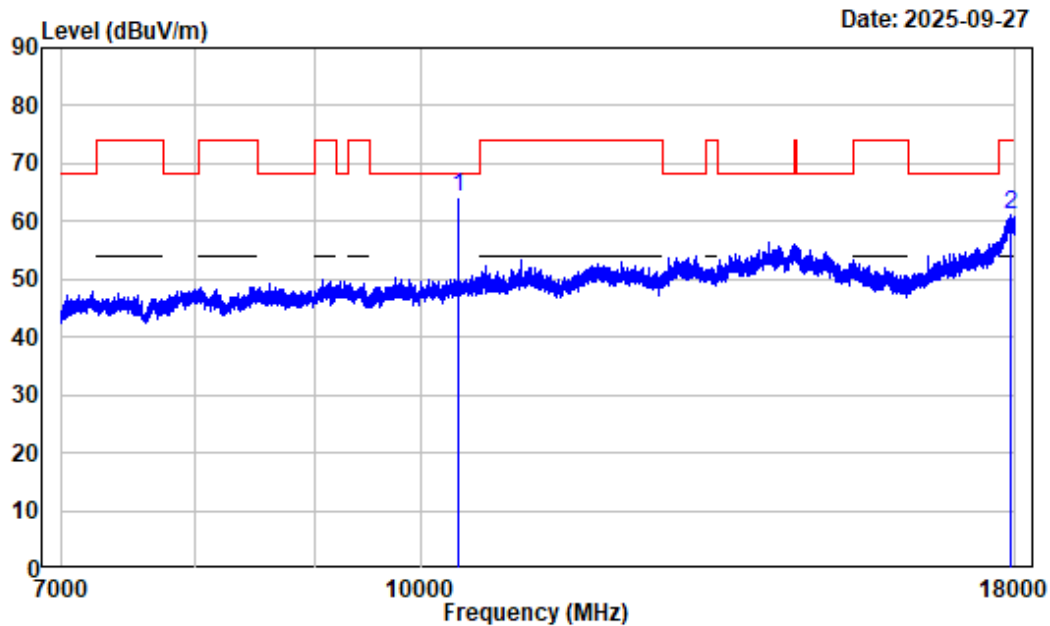
AC40-1-7GHz_Vertical



Condition : Vertical
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band1-AC40-5190

		Read		Limit	Over	Remark
Freq	Factor	Level	Level	Line	Limit	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	6442.750	-2.88	55.60	52.72	68.20	-15.48 Peak

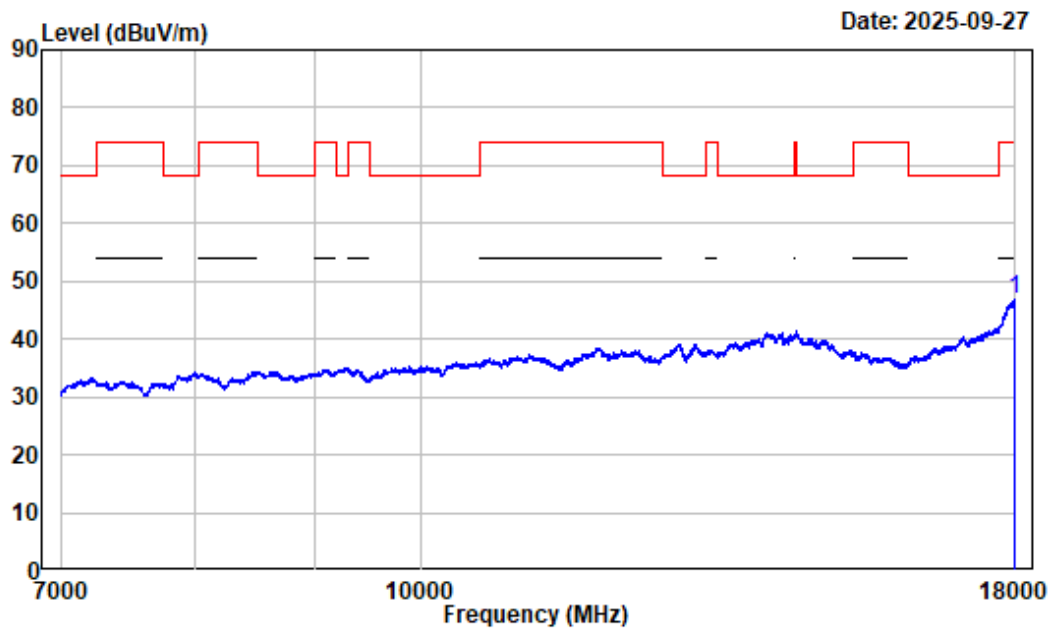
AC40-7-18GHz_Horizontal_Peak



Condition : Horizontal
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band1-AC40-5190

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	10380.000	2.54	61.68	64.22	68.20	-3.98	Peak
2	17918.880	12.79	48.45	61.24	74.00	-12.76	Peak

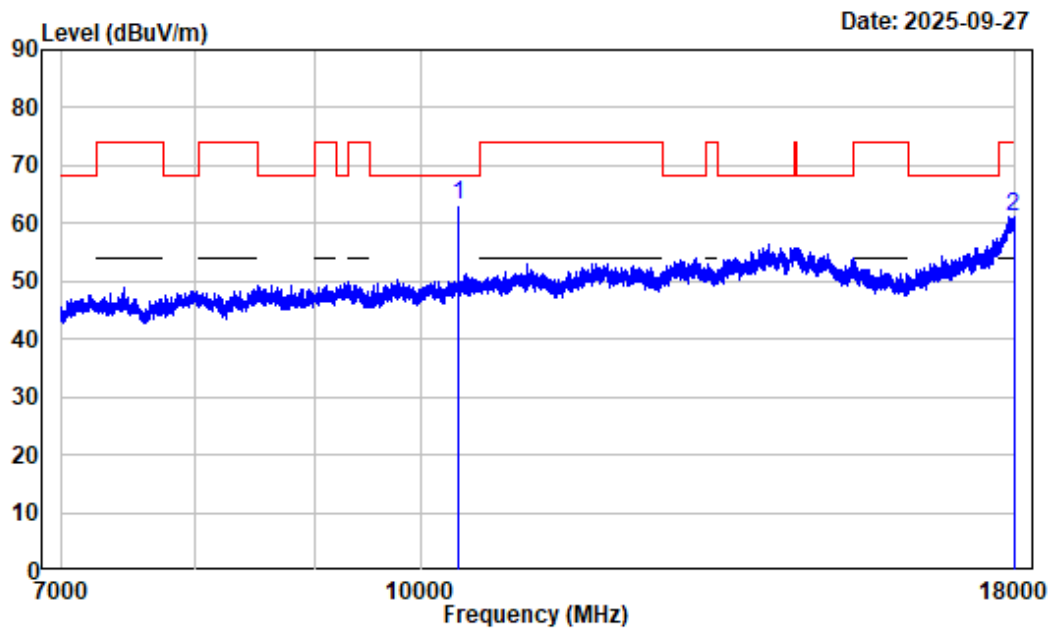
AC40-7-18GHz_Horizontal_Average



Condition : Horizontal
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:2kHz Detector:Peak
Note : 5GWiFi-Band1-AC40-5190

Freq	Factor	Read		Limit	Over	Remark
		Level	Level	Line	Limit	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 17994.500	13.17	33.77	46.94	54.00	-7.06	Average

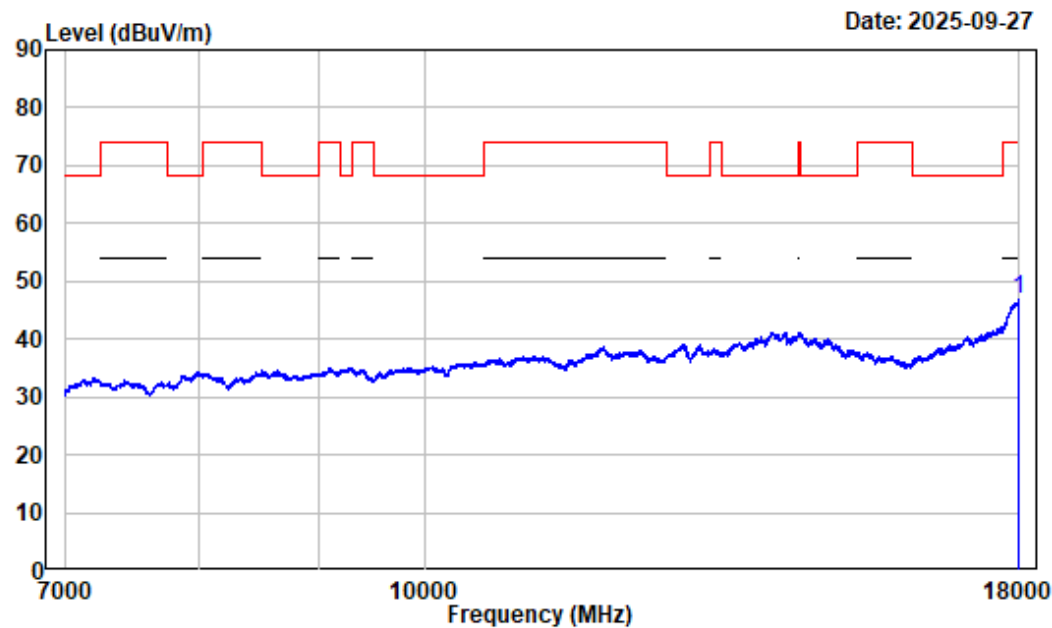
AC40-7-18GHz_Vertical_Peak



Condition : Vertical
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band1-AC40-5190

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	10380.000	2.54	60.54	63.08	68.20	-5.12	Peak
2	17973.880	13.08	48.16	61.24	74.00	-12.76	Peak

AC40-7-18GHz_Vertical_Average

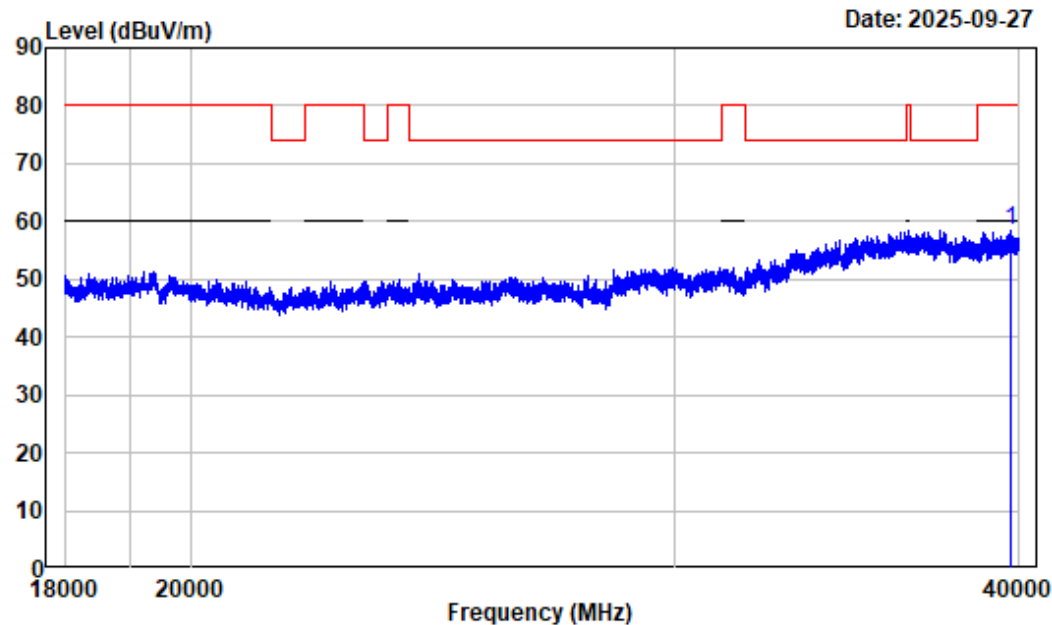


Condition : Vertical
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:2kHz Detector:Peak
Note : 5GWiFi-Band1-AC40-5190

Freq		Factor	Read Level	Level	Limit Line	Over Limit	Remark
MHz		dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	17995.880	13.18	33.68	46.86	54.00	-7.14	Average

18-40GHz (Only with worst case margin mode plot):

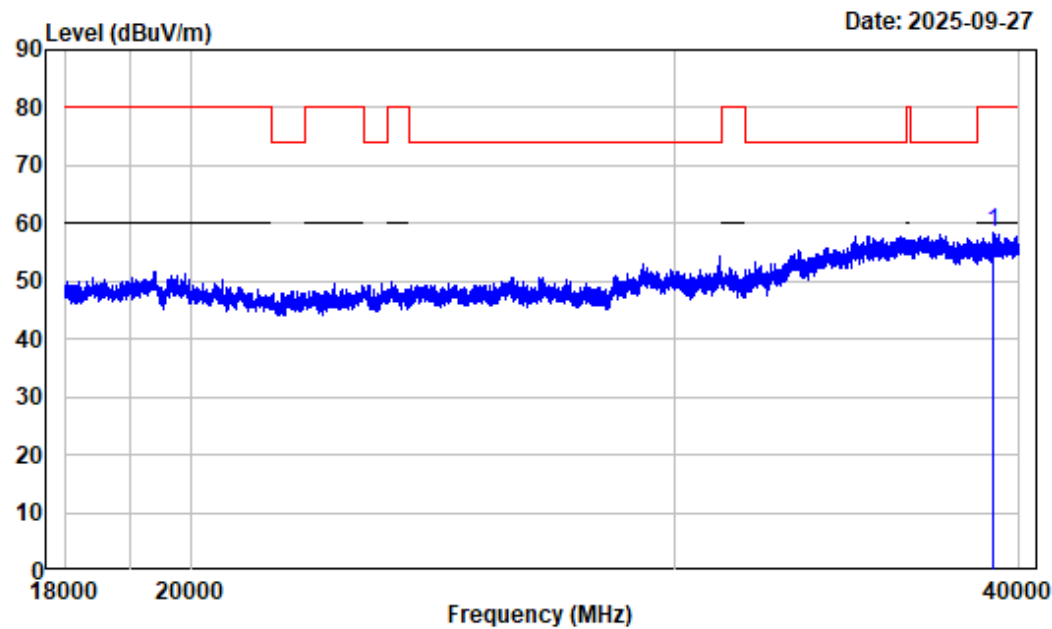
AC40-18-40GHz_Horizontal



Condition : Horizontal
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band1-A-5180

Freq	Factor	Read		Limit	Over	Remark
		Level	Level	Line	Limit	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 39711.210	22.26	36.29	58.55	80.00	-21.45	Peak

AC40-18-40GHz_Vertical



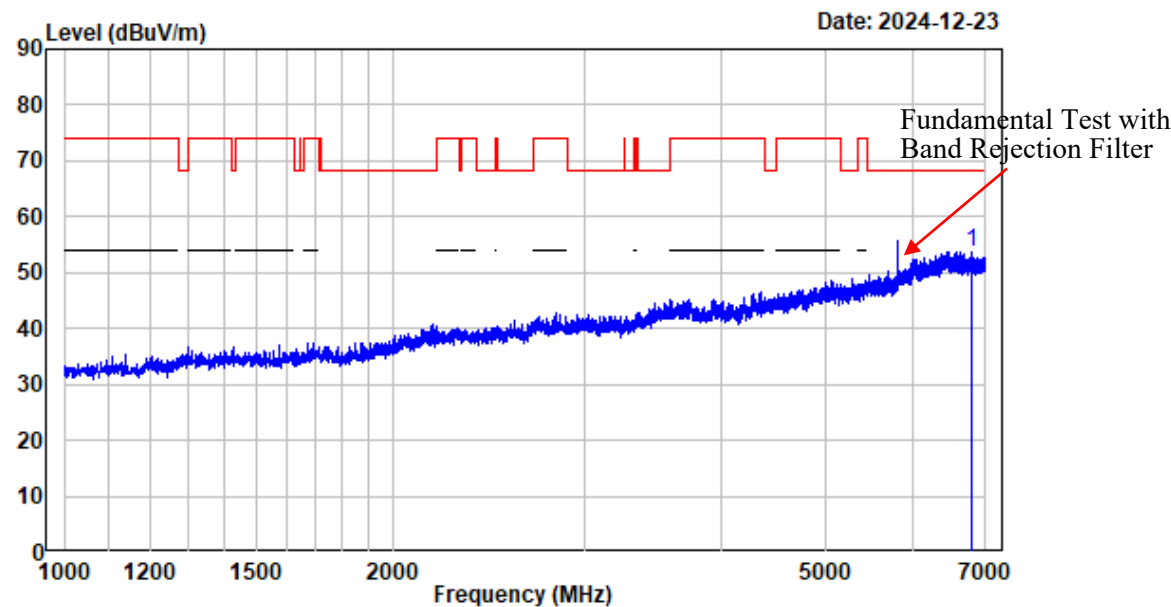
Condition : Vertical
Project No. : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band1-A-5180

Freq		Factor	Read	Limit	Over	Remark
			Level	Level	Line	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	39161.140	22.39	35.91	58.30	80.00	-21.70 Peak

5725-5850MHz

1-18GHz (Listed with the worst harmonic margin test plot)

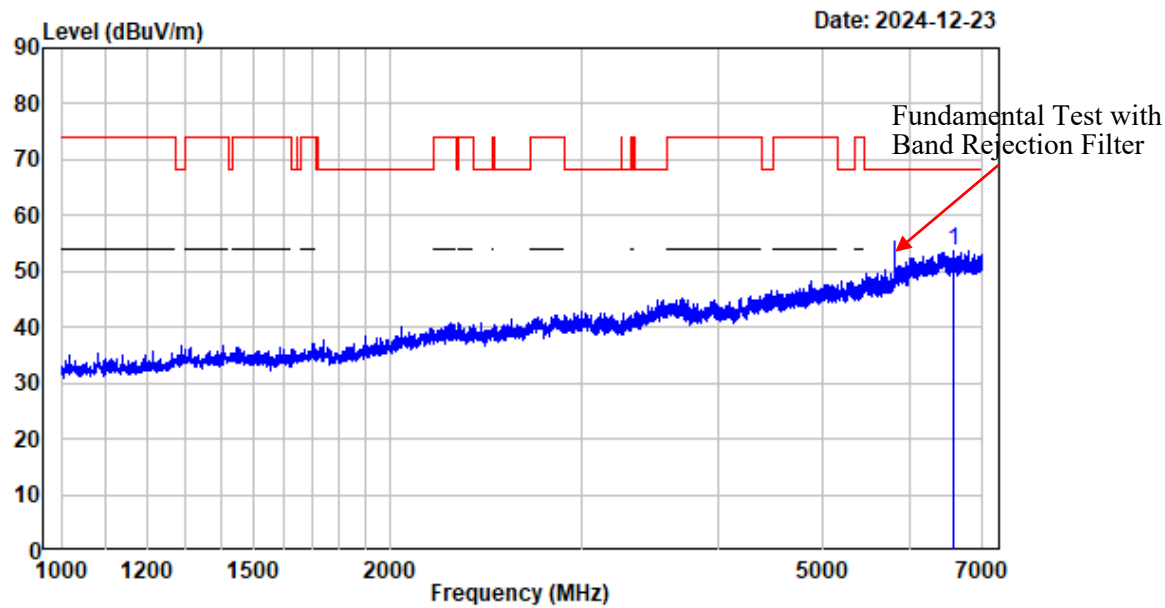
A-1-7GHz_Horizontal



Condition : Horizontal
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-A-5825

Freq	Factor	Read		Limit	Over	Remark
		Level	Level	Line	Limit	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 6793.724	-3.34	57.03	53.69	68.20	-14.51	Peak

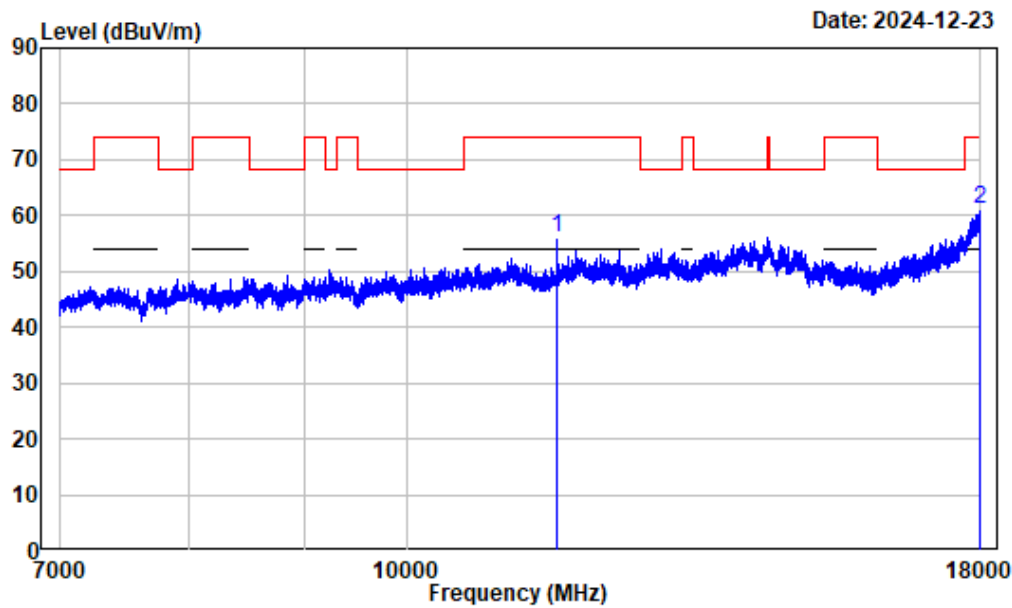
A-1-7GHz_Vertical



Condition : Vertical
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-A-5825

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	6575.447	-3.08	56.66	53.58	68.20	-14.62	Peak

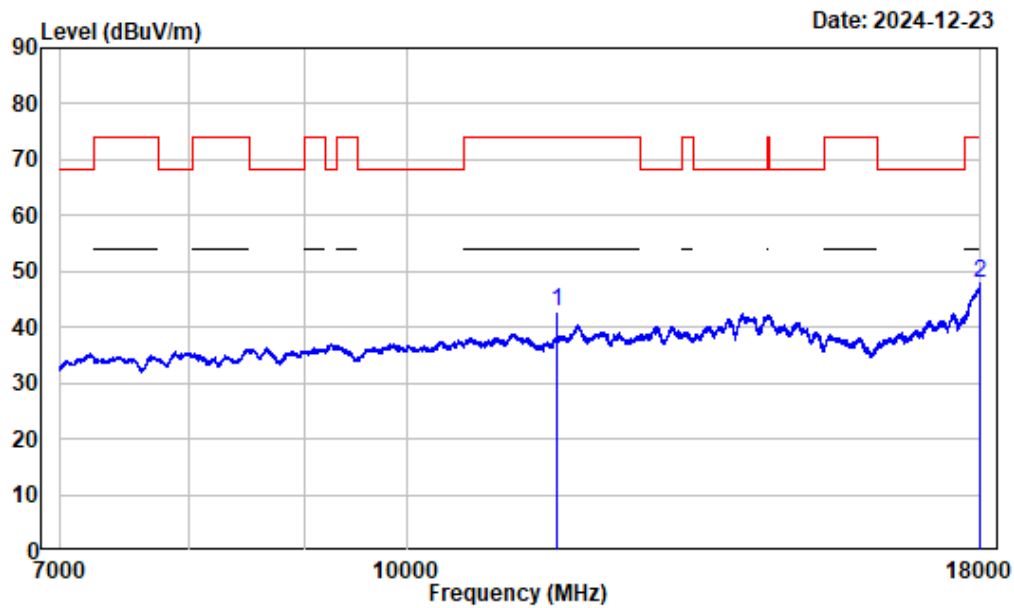
A-7-18GHz_Horizontal_Peak



Condition : Horizontal
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-A-5825

Freq Factor		Read Level		Limit	Over	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	11650.000	3.42	52.52	55.94	74.00	-18.06 Peak
2	17998.630	13.20	47.91	61.11	74.00	-12.89 Peak

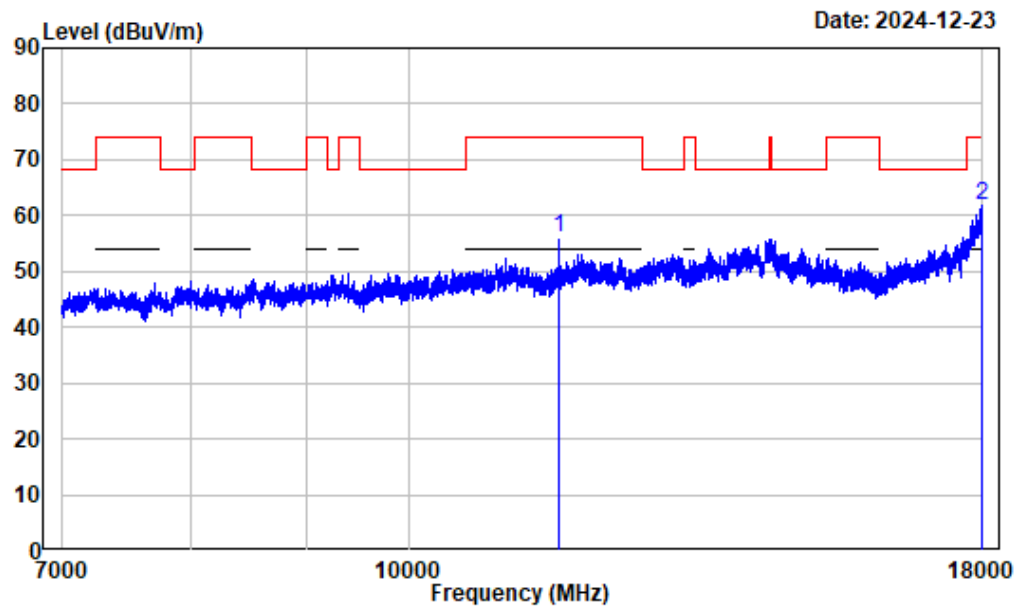
A-7-18GHz_Horizontal_Average



Condition : Horizontal
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak
Note : 5GWiFi-Band4-A-5825

Freq Factor		Read Level		Limit	Over	Remark
				Line	Limit	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 11650.000	3.42	39.24	42.66	54.00	-11.34	Average
2 17995.880	13.18	34.74	47.92	54.00	-6.08	Average

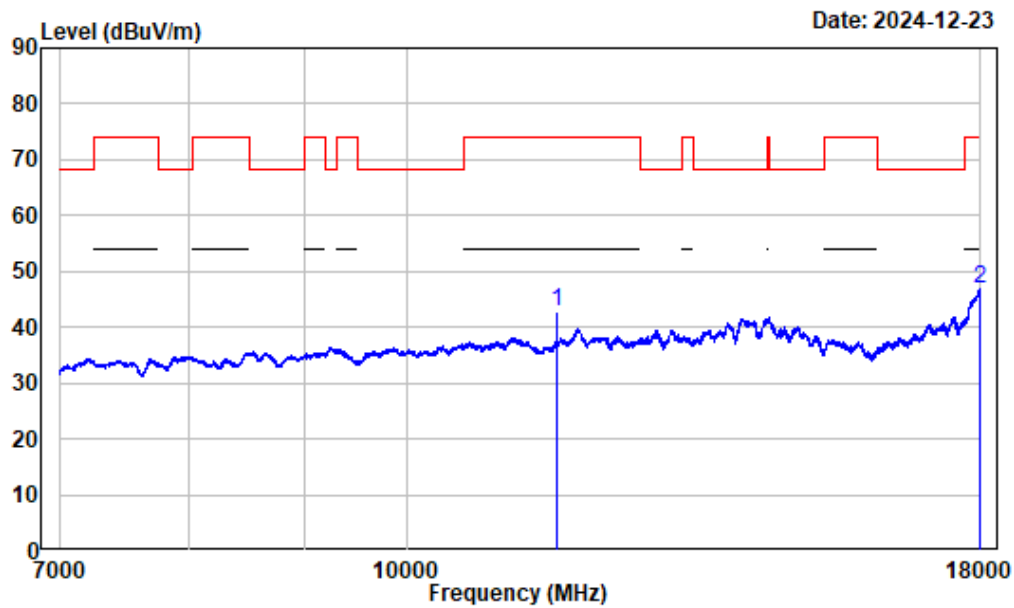
A-7-18GHz_Vertical_Peak



Condition : Vertical
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-A-5825

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	11650.000	3.42	52.45	55.87	74.00	-18.13	Peak
2	17989.000	13.14	48.51	61.65	74.00	-12.35	Peak

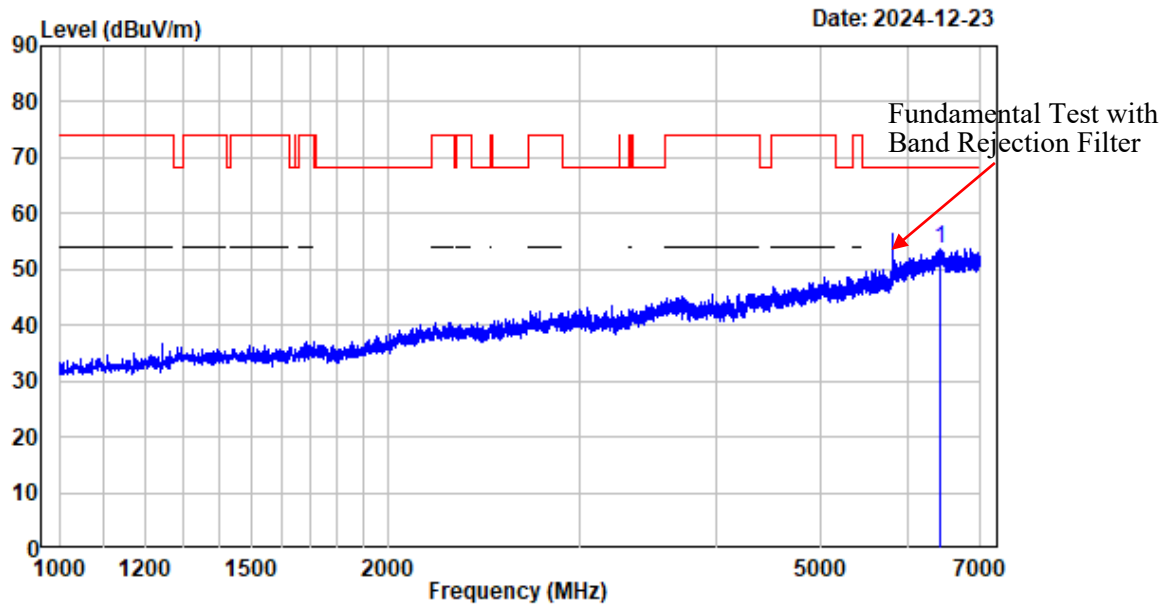
A-7-18GHz_Vertical_Average



Condition : Vertical
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak
Note : 5GWiFi-Band4-A-5825

Freq Factor		Read Level		Limit	Over	Remark
				Line	Limit	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 11650.000	3.42	39.28	42.70	54.00	-11.30	Average
2 17995.880	13.18	33.78	46.96	54.00	-7.04	Average

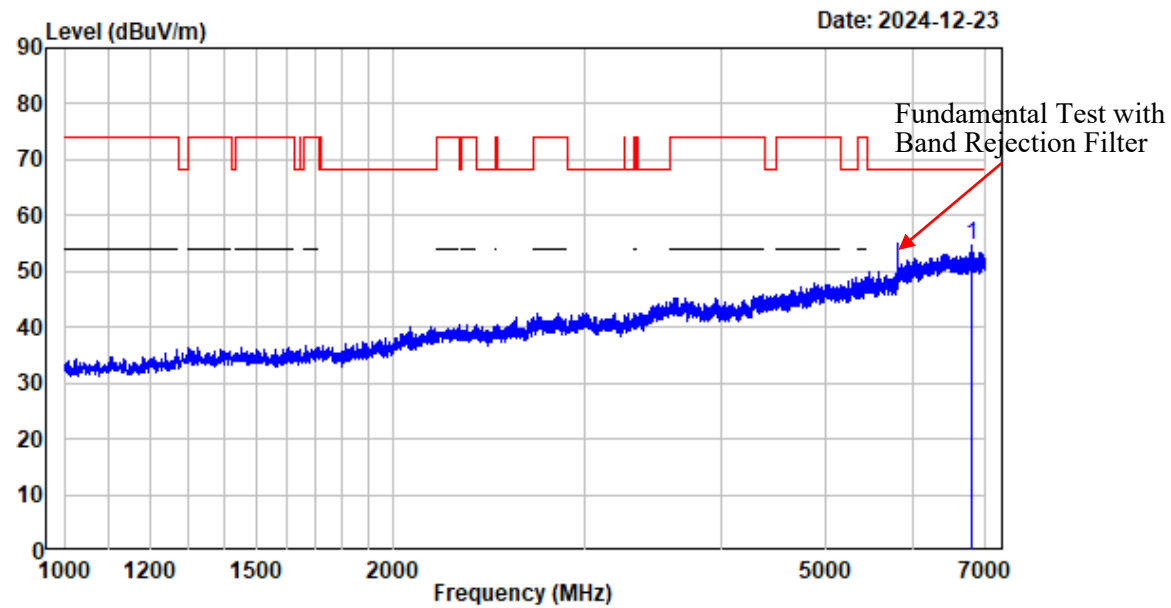
AC20-1-7GHz_Horizontal



Condition : Horizontal
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-AC20-5825

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	6426.928	-2.88	56.60	53.72	68.20	-14.48	Peak

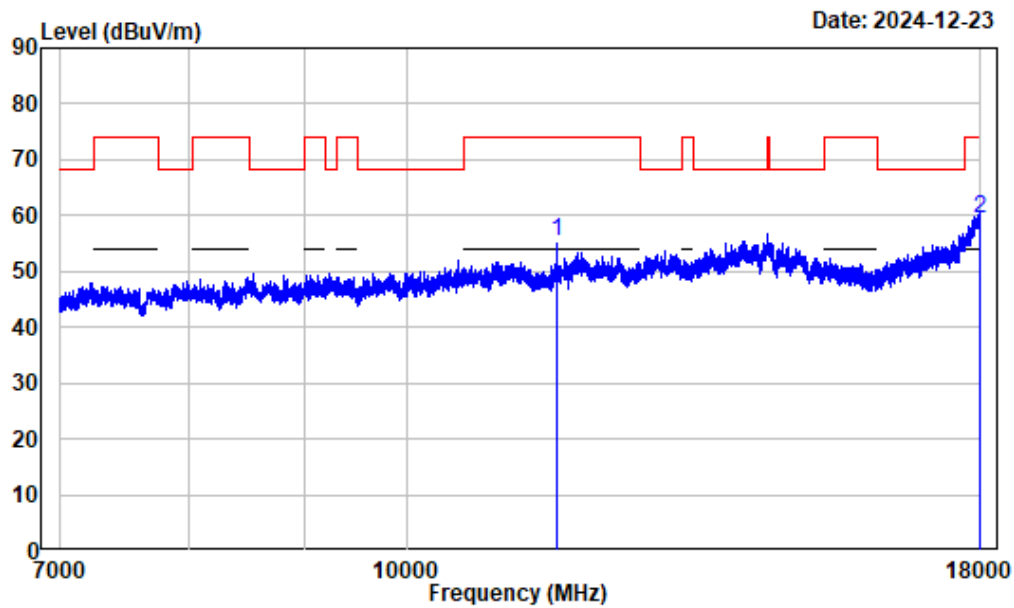
AC20-1-7GHz_Vertical



Condition : Vertical
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-AC20-5825

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	6791.474	-3.33	57.92	54.59	68.20	-13.61	Peak

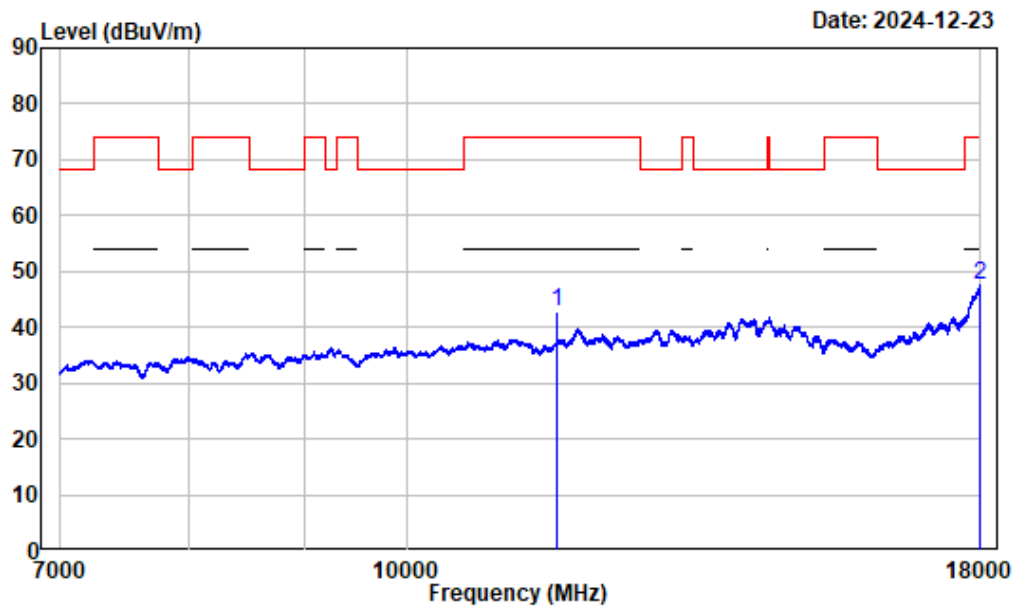
AC20-7-18GHz_Horizontal_Peak



Condition : Horizontal
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-AC20-5825

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	11650.000	3.42	51.90	55.32	74.00	-18.68	Peak
2	17979.370	13.10	46.33	59.43	74.00	-14.57	Peak

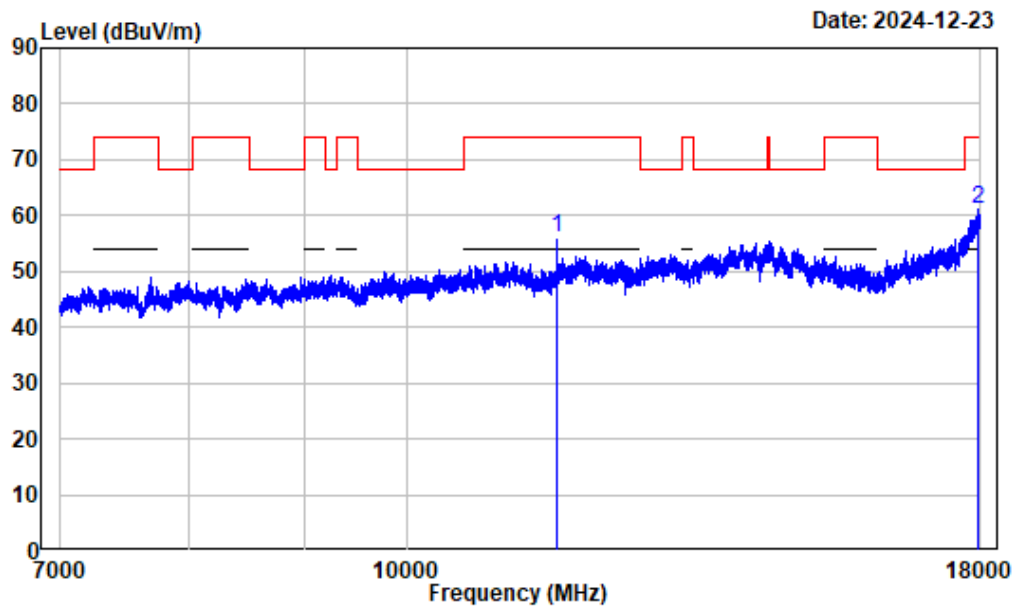
AC20-7-18GHz_Horizontal_Average



Condition : Horizontal
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak
Note : 5GWiFi-Band4-AC20-5825

Freq Factor		Read Level		Limit	Over	Remark
				Line	Limit	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 11650.000	3.42	39.31	42.73	54.00	-11.27	Average
2 17991.750	13.16	34.28	47.44	54.00	-6.56	Average

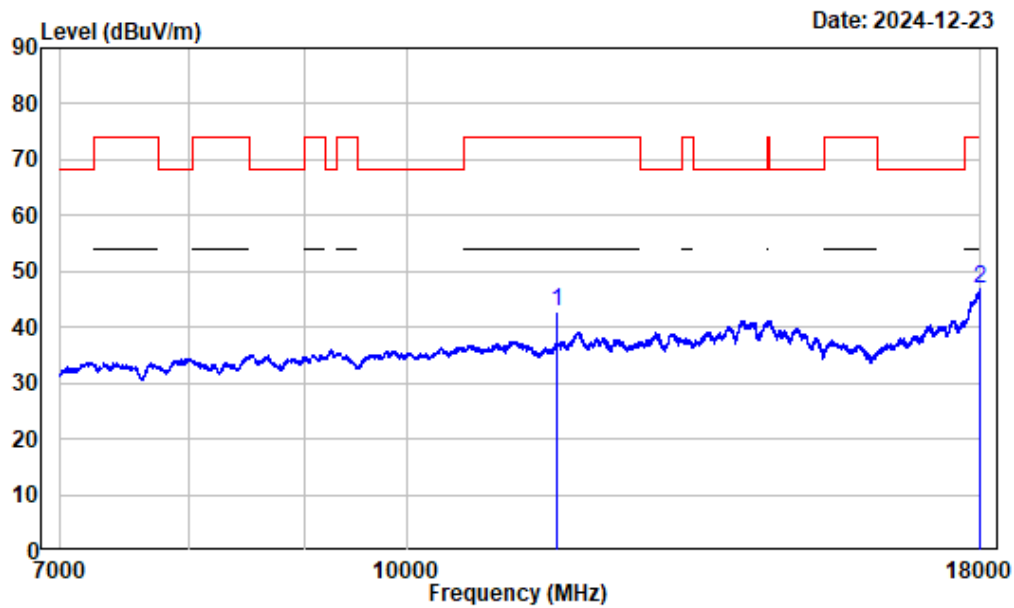
AC20-7-18GHz_Vertical_Peak



Condition : Vertical
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-AC20-5825

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	11650.000	3.42	52.48	55.90	74.00	-18.10	Peak
2	17961.500	13.01	48.17	61.18	74.00	-12.82	Peak

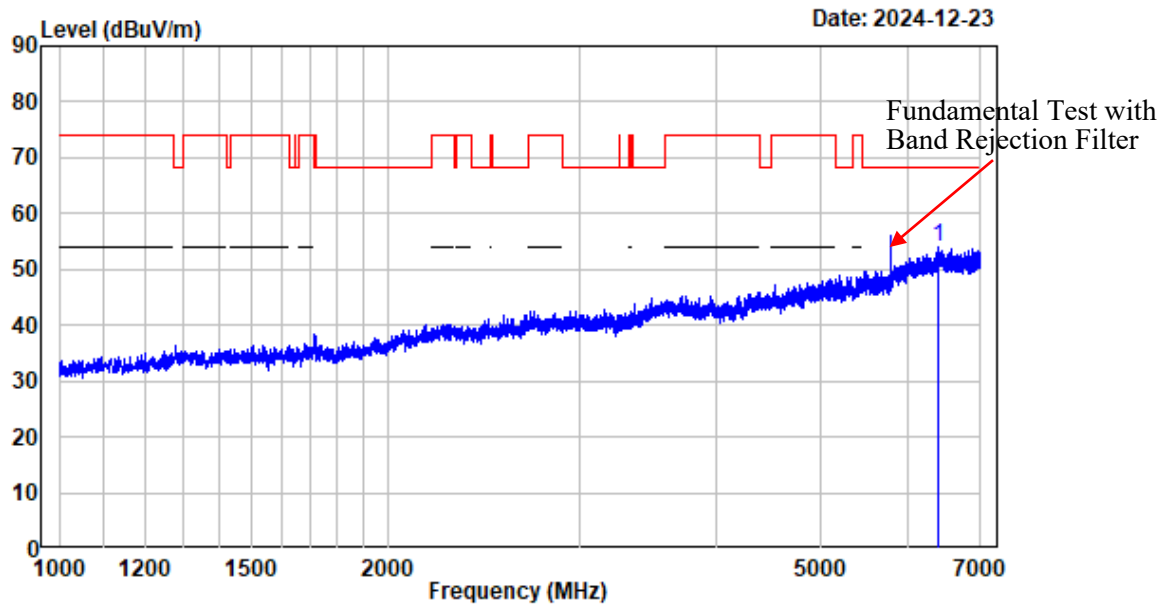
AC20-7-18GHz_Vertical_Average



Condition : Vertical
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak
Note : 5GWiFi-Band4-AC20-5825

Freq Factor		Read Level		Limit	Over	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 11650.000	3.42	39.25	42.67	54.00	-11.33	Average
2 17995.880	13.18	33.69	46.87	54.00	-7.13	Average

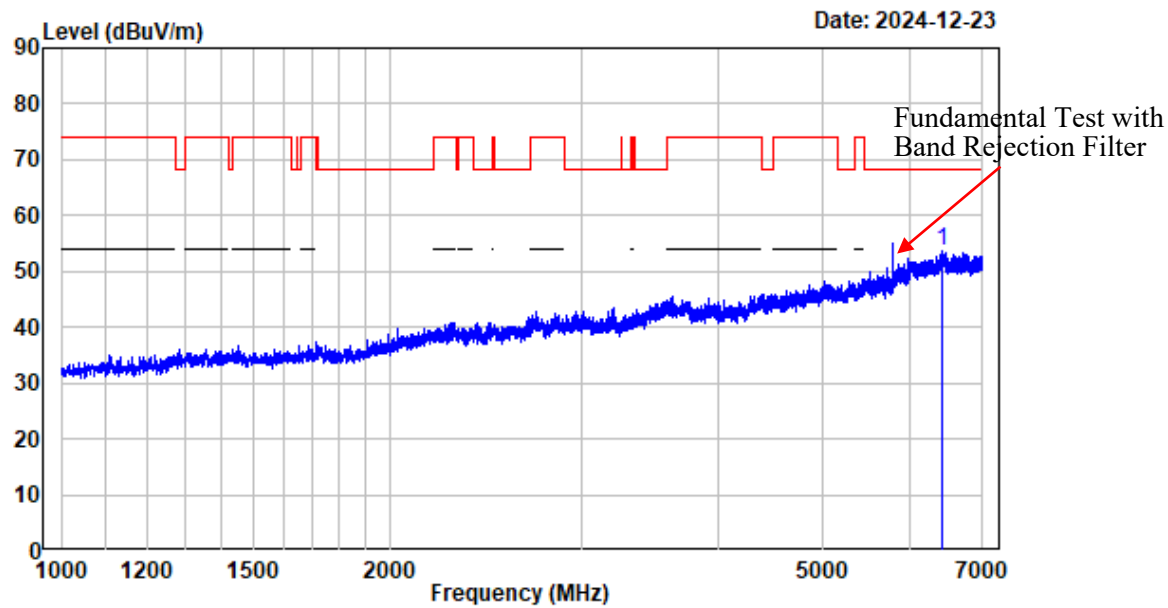
AC40-1-7GHz_Horizontal



Condition : Horizontal
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-AC40-5795

Freq Factor		Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	6399.175	-2.90	56.98	54.08	68.20 -14.12 Peak

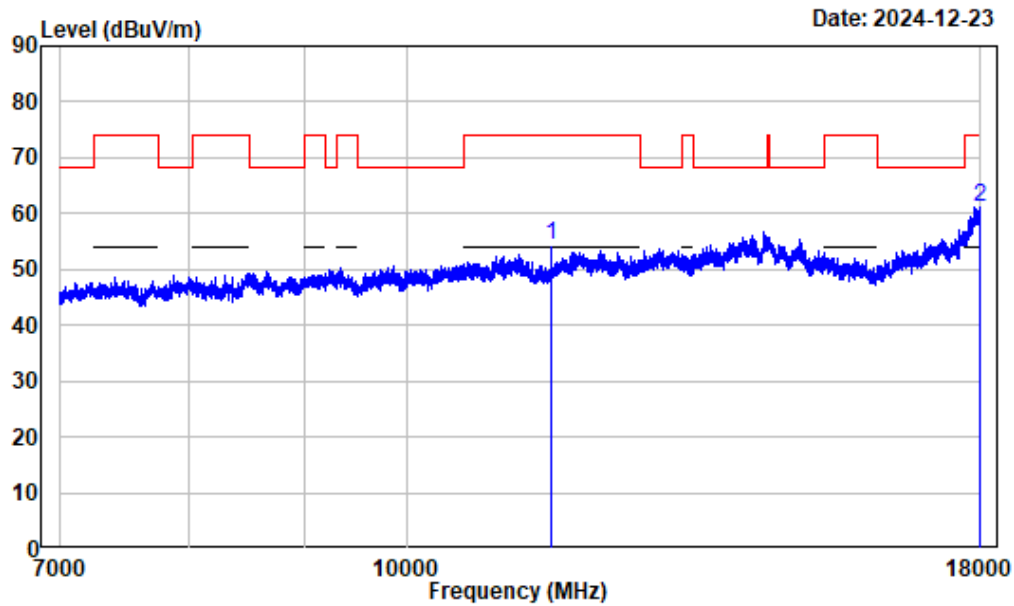
AC40-1-7GHz_Vertical



Condition : Vertical
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-AC40-5795

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	6434.429	-2.88	56.65	53.77	68.20	-14.43	Peak

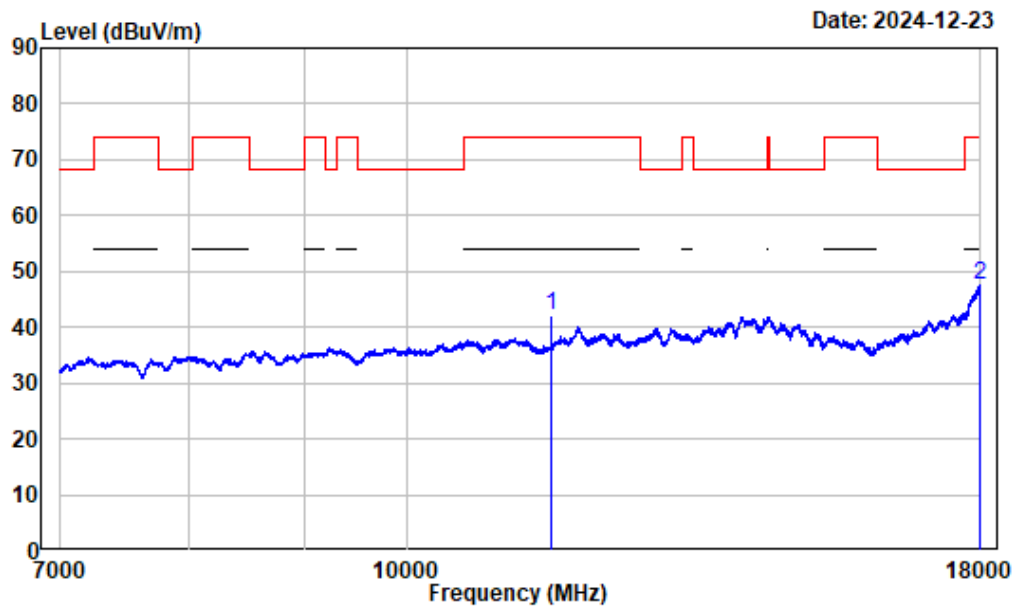
AC40-7-18GHz_Horizontal_Peak



Condition : Horizontal
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-AC40-5795

Freq Factor		Read	Limit	Over	Remark
MHz	dB/m	Level	Level	Line	
		dBuV	dBuV/m	dBuV/m	dB
1 11590.000	3.21	51.29	54.50	74.00	-19.50 Peak
2 17983.500	13.11	48.06	61.17	74.00	-12.83 Peak

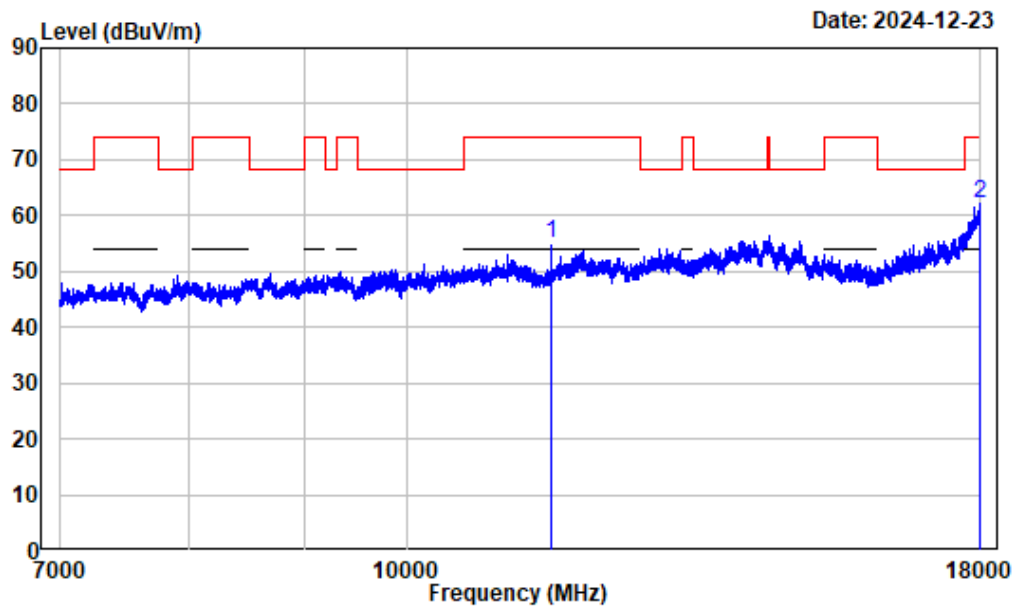
AC40-7-18GHz_Horizontal_Average



Condition : Horizontal
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:2kHz Detector:Peak
Note : 5GWiFi-Band4-AC40-5795

Freq Factor		Read Level		Limit	Over	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 11590.000	3.21	39.04	42.25	54.00	-11.75	Average
2 17993.130	13.17	34.44	47.61	54.00	-6.39	Average

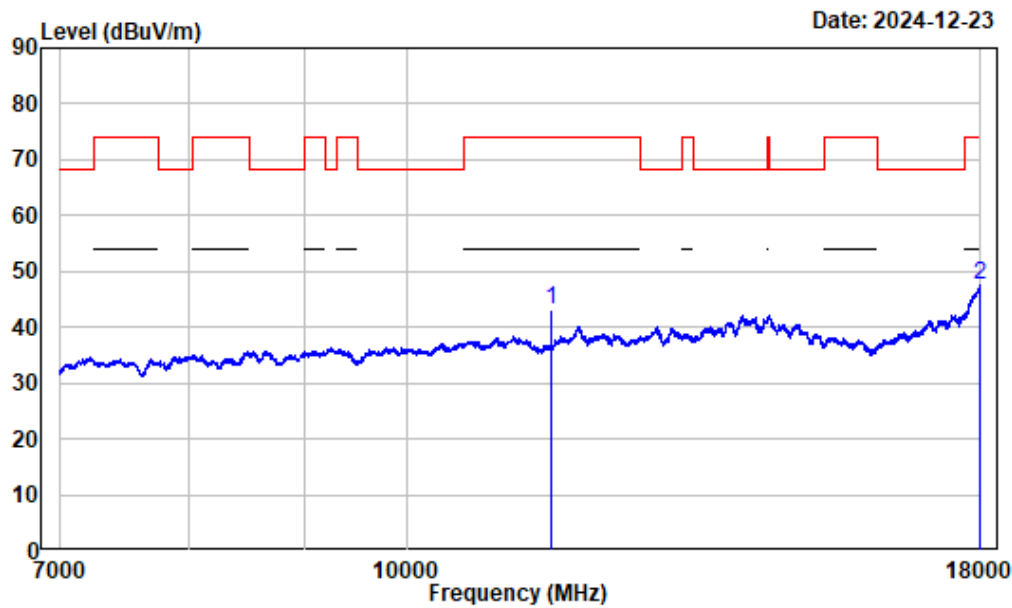
AC40-7-18GHz_Vertical_Peak



Condition : Vertical
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-AC40-5795

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	11590.000	3.21	51.72	54.93	74.00	-19.07	Peak
2	17980.750	13.11	49.20	62.31	74.00	-11.69	Peak

AC40-7-18GHz_Vertical_Average

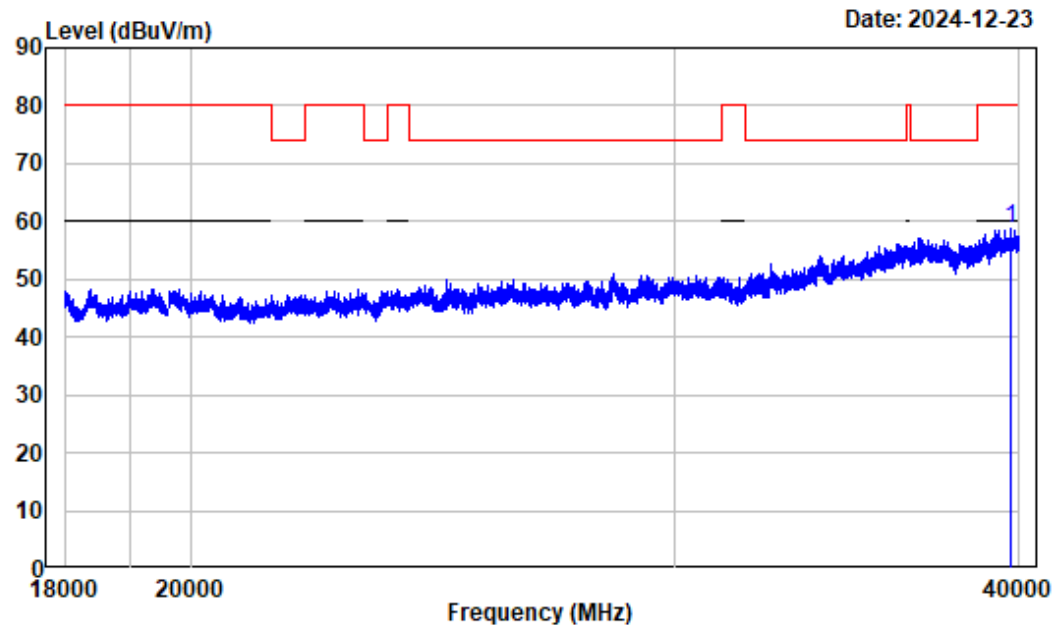


Condition : Vertical
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Average reading:RBW:1MHz VBW:2kHz Detector:Peak
Note : 5GWiFi-Band4-AC40-5795

Freq Factor		Read Level		Limit	Over	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 11590.000	3.21	39.99	43.20	54.00	-10.80	Average
2 17990.370	13.15	34.51	47.66	54.00	-6.34	Average

18-40GHz (Only with worst case margin mode plot):

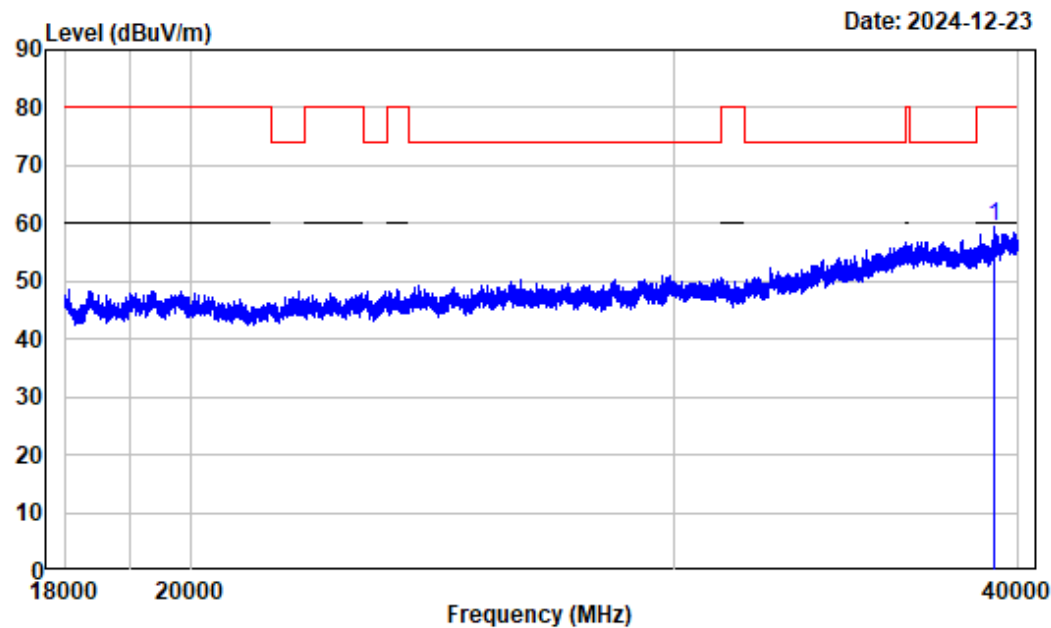
AC40-18-40GHz_Horizontal



Condition : Horizontal
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-AC40-5795

Freq		Factor	Read Level	Level	Limit Line	Over Limit	Remark
MHz		dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	39746.970	22.58	36.22	58.80	80.00	-21.20	Peak

AC40-18-40GHz_Vertical



Condition : Vertical
Project Number : 2401Z105001E-RF
Tester : Zenos Qiao
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-AC40-5795

Freq Factor		Read Level	Level	Limit Line	Over Limit	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 39205.150	22.91	36.38	59.29	80.00	-20.71	Peak

RF Conducted data

Please refer to Annex "Appendix A&B" for detail test data.

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

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 (mW)
			(dBi)	(dBd)	(dBm)	(mW)		
BT	2402-2480	4.5	4.18	2.03	6.53	4.50	0.2	768
5.2G Wi-Fi	5180-5240	13.5	0.74	-1.41	12.09	16.18	0.2	768
5.8G Wi-Fi	5745-5825	12.5	3.47	1.32	13.82	24.10	0.2	768

Note:

The tune up conducted power and antenna gain was declared by the applicant.

The BT and Wi-Fi cannot 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 2401Z105001E-RF External photo and 2401Z105001E-RF Internal photo.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2401Z105001E-RF-TSPB Test Setup photo.

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