



# **TEST REPORT**

Applicant Name: Address: Report Number: FCC ID:

F5CS LTD 3500 S Dupont Hwy Ste 300 Dover Delaware 19901 United States 2501R29190E-RF-00D 2AIKX-AIOA7N5

# Test Standard (s)

FCC PART 15.407

# Sample Description

Product Type:	ALL IN ONE PC
Model No.:	A7 N5
Multiple Model(s) No.:	A7 N4,A7 N6, A7 N7, A2 N4, A2 N5, A2 N6, A2 N7
Trade Mark:	Fusion5, Lapbook
Date Received:	2025-03-19
Issue Date:	2025-05-21

### Test Result:

Pass▲

▲ In the configuration tested, the EUT complied with the standards above.

### Prepared and Checked By:

llen, Bai

Allen Bai RF Engineer

### **Approved By:**

Wans

Nancy Wang RF Supervisor

Note: The information marked<sup>#</sup> 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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#### Bay Area Compliance Laboratories Corp. (Shenzhen)

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TR-EM-RF015

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Version 4.1

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# **DOCUMENT REVISION HISTORY**

Revision Number	Report Number	Description of Revision	Date of Revision	
0	2501R29190E-RF-00D	Original Report	2025-05-21	

### **GENERAL INFORMATION**

Product	ALL IN ONE PC			
Tested Model	A7 N5			
Multiple Model(s)	A7 N4,A7 N6, A7 N7, A2 N4, A2 N5, A2 N6, A2 N7			
Frequency Range	5150-5250MHz			
Mode	802.11a/n20/n40/ac20/ac40/ac80			
Device Type	Client Device			
Maximum Conducted Average Output Power	5150-5250MHz: 14.54dBm			
Modulation Technique	OFDM			
Antenna Specification <sup>#</sup>	ANT0=1.59dBi, ANT1=1.02dBi (provided by the applicant)			
Voltage Range	DC 12V from adapter			
Sample serial number301H-1 for Conducted and Radiated Emissions Test 301H-1 for RF Conducted Test (Assigned by BACL, Shenzh				
Sample/EUT Status	Good condition			
Adapter InformationModel:AS100B-12006500DH Input:100-240V~50/60Hz 2.5A Max Output:12.0V=6.5A 78W				
Note: The Multiple models are electrically identical with the test model except for model name and sales channel. Please refer to the declaration letter <sup>#</sup> for more detail, which was provided by manufacturer.				

# 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, 15.207, 15.209 and 15.407 rules.

#### **Test Methodology**

All measurements contained in this report were conducted with ANSI C63.10-2020, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

And KDB789033 D02 General U-NII Test Procedures New Rules v02r01.

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 l	Bandwidth	109.2kHz(k=2, 95% level of confidence)	
R	F Frequen	cy	56.6Hz(k=2, 95% level of confidence)	
RF outpu	it power, c	conducted	0.86dB(k=2, 95% level of confidence)	
Unwanted	Emission	conducted	1.60dB(k=2, 95% level of confidence)	
Power	Spectral I	Density	0.90dB(k=2, 95% level of confidence)	
AC Power Lines Cond	lucted	9kHz-150kHz	3.63dB(k=2, 95% level of confidence)	
Emissions		150kHz-30MHz	3.66dB(k=2, 95% level of confidence)	
		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)	
Radiated Emissions	200MHz~1000MHz (Horizontal)		5.77dB(k=2, 95% level of confidence)	
Radiated Emissions	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)	
Т	Temperature		±1°C	
	Humidity		±1%	
Supply voltages		ges	±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**

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

#### For 5150-5250MHz Band, 7 channels are provided to testing:

Channel	Channel Frequency (MHz) Channel		Frequency (MHz)	
36	5180 44		5220	
38	5190	46	5230	
40	5200	48	5240	
42	5210	/	/	

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

For 802.11ac40 mode: channel 38, 46 were tested;

For 802.11ac80 mode, channel 42 was tested.

#### **EUT Exercise Software**

Exercise Software <sup>#</sup>	DRTU				
5150-5250 MHz Band					
Mode		Data rate	Power	Power Level <sup>#</sup>	
wioue	Test Channels	Data rate	ANT 0	ANT 1	
	Low	6Mbps	16	16	
802.11a	Middle	6Mbps	16	16	
	High	6Mbps	16	16	
802.11ac-VHT20	Low	MCS0	16	16	
	Middle	MCS0	16	16	
	High	MCS0	16	16	
802.11ac-VHT40	Low	MCS0	14	14	
	High	MCS0	14	14	
802.11ac-VHT80	Middle	MCS0	13	13	

Note:

1. The worst-case data rates are determined to be as follows for each mode based upon

inverstigation by measuring the power and PSD across all data rates bandwidths, and modulations.

For 802.11a/ n/ac modes, the device supports SISO only.
 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.

Manufacturer	ufacturer Description Model		Serial Number	
OUPU	Receptacle	PDU-OP1606K	6971041358020	
Redmi	Monitor1	RMMNT238NF	Unknown	
Redmi	Monitor2	A22FAB-RA	Unknown	
Sandisk	USB disk*4pcs CZ73-64G		Unknown	
Vivo	Earphone	XE160	Unknown	
TP-Link	Router	EAP225	Unknown	
Dell	Mouse	MS116t	Unknown	
Dell	Keyboard	L100	Unknown	

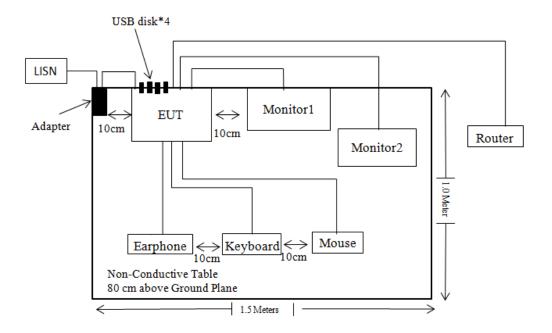
#### Support Equipment List and Details

#### External I/O Cable

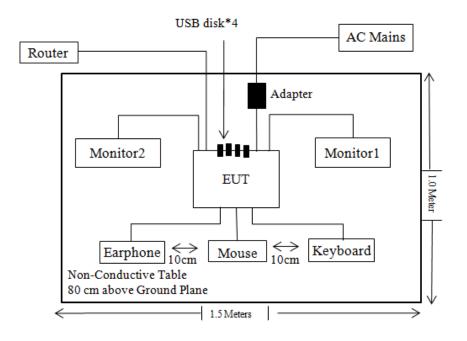
Cable Description	Length (m)	From Port	То
Unshielded Un-detachable AC Cable	1.2	AC Mains	Receptacle
Unshielded detachable AC Cable	1.5	Adapter	LISN/ Receptacle/ AC Mains
Shielded Un-detachable DC Cable	1.2	EUT	Adapter
Unshielded Un-detachable Audio Cable	1.0	EUT	Earphone
Unshielded Un-detachable USB Cable	1.5	EUT	Mouse
Unshielded Un-detachable USB Cable	1.5	EUT	Keyboard
Unshielded detachable HDMI Cable	2.0	EUT	Monitor1
Unshielded detachable VGA Cable	2.0	EUT	Monitor2
Unshielded detachable RJ45 Cable	10.0	EUT	Router

#### **Block Diagram of Test Setup**

For Conducted Emissions:



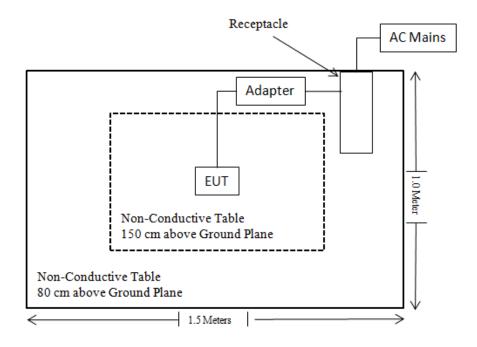
For Radiated Emissions below 1GHz:



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For Radiated Emissions above 1GHz:



# SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307(b) (3), §2.1091	MPE-Based Exemption	Compliant
§15.203	Antenna Requirement	Compliant
§15.207(a)	Conducted Emissions	Compliant
§15.205& §15.209 &§15.407(b)	Undesirable Emission& Restricted Bands	Compliant
§15.407(a)	26 dB Emission Bandwidth	Compliant
§15.407(a)	Conducted Transmitter Output Power	Compliant
§15.407 (a)	Power Spectral Density	Compliant
§15.407 (h)	Transmit Power Control (TPC)	Not Applicable
§15.407 (h)	Dynamic Frequency Selection (DFS)	Not Applicable
C63.10 §11.6	Duty Cycle	/

Not Applicable: The EUT is support the 5150-5250MHz only.

# **TEST EQUIPMENT LIST**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date		
Conducted Emission Test							
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2024/12/04	2025/12/03		
Rohde & Schwarz	LISN	ENV216	101613	2024/12/04	2025/12/03		
Rohde & Schwarz	Transient Limiter	ESH3Z2	DE25985	2024/05/21	2025/05/20		
Unknown	CE Cable	Unknown	UF A210B-1- 0720-504504	2024/05/21	2025/05/20		
Audix	EMI Test software	E3	191218(V9)	NCR	NCR		
		Radiated Emissio	n Test				
Rohde & Schwarz	EMI Test Receiver	ESR3	102455	2024/12/04	2025/12/03		
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	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	2024/12/04	2025/12/03		
Unknown	Cable	PNG214	1354	2024/12/04	2025/12/03		
Audix	EMI Test software	E3	19821b(V9)	NCR	NCR		
Rohde&Schwarz	Spectrum Analyzer	FSV40	101605	2025/03/26	2026/03/25		
A.H.System	Preamplifier	PAM-0118P	489	2024/11/15	2025/11/14		
Schwarzbeck	Horn Antenna	BBHA9120D(1 201)	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	Multiplex Switch Test Control Set	DT7220SCU	DS79903	2024/09/09	2025/09/08		
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	2024/12/18	2025/12/17		
Audix	EMI Test software	E3	191218(V9)	NCR	NCR		

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Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
		<b>RF</b> Conducted	Гest		
Rohde&Schwarz	Spectrum Analyzer	FSV40-N	102259	2024/12/04	2025/12/03
ANRITSU	Microwave peak power sensor	MA24418A	12622	2024/05/21	2025/05/20
Unknown	10dB Attenuator	Unknown	F-03-EM190	2024/06/27	2025/06/26

\* **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).

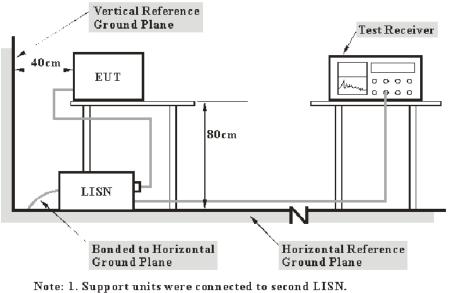
# **REQUIREMENTS AND TEST PROCEDURES**

#### **Conducted Emissions**

#### Applicable Standard

FCC §15.207

#### **EUT Setup**



Support units were connected to second LISN.
 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.

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#### Factor & Over Limit Calculation

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

Factor = LISN VDF + 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:

Over Limit = Level – Limit Level = Read Level + Factor

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

#### **Undesirable Emission**

#### **Applicable Standard**

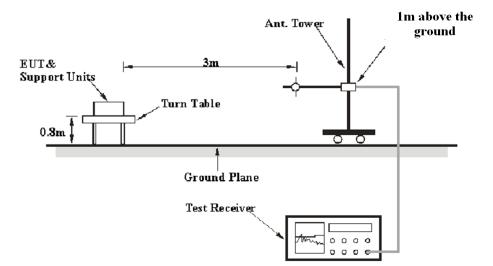
FCC §15.407 (b); §15.209; §15.205;

- (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.

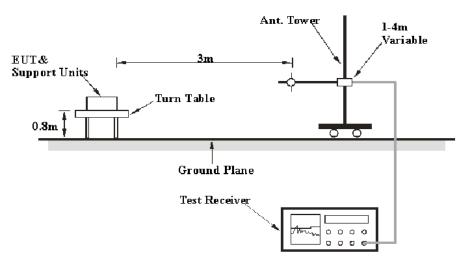
Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

#### **EUT Setup**

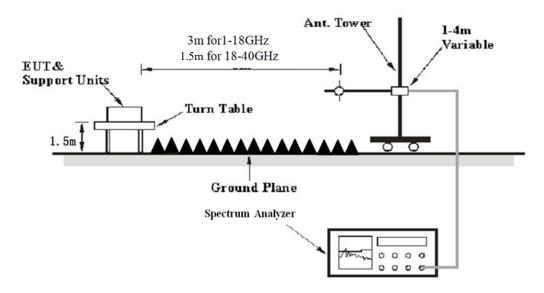
#### 9 kHz-30MHz:



#### 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
9 KHZ – 130 KHZ	300 Hz	1 kHz	/	PK	Peak
150 kHz – 30 MHz	/	/	9 kHz	QP	QP
	10 kHz	30 kHz	/	PK	Peak
20 MHz 1000 MHz	/	/	120 kHz	QP	QP
30 MHz – 1000 MHz	100 kHz	300 kHz	/	PK	Peak

1-40GHz:

Pre-scan

Measurement	Duty cycle	Duty cycle RBW		Detector
РК	Any	1MHz	3 MHz	Peak
AV	>98%	1MHz	1 kHz	Peak
Av	<98%	1MHz	≥1/Ton	Peak

Final measurement for emission identified during pre-scan

Measurement	Duty cycle	RBW	Video B/W	Detector
РК	Any	1MHz	3 MHz	Peak
AV	>98%	1MHz	100 Hz	Peak
Av	<98%	1MHz	≥1/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.

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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

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

So the extrapolation factor of 1m is  $20*\log(1.5/3) = -6.0$  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:

Factor = Antenna Factor + Cable Loss - 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:

Over Limit = Level – Limit; Margin = Limit–Corrected Amplitude Level / Corrected Amplitude = Read Level + Factor

#### 26 dB Emission 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.

#### **Test Procedure**

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

#### 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.

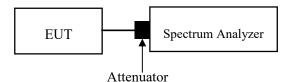
e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max-hold mode (until the trace stabilizes) shall be used.

f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.

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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).



#### **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 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.

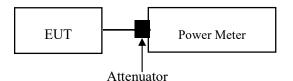
For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum 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 collocated 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: 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

#### **Power Spectral Density**

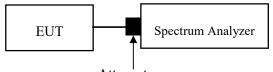
For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting 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 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 collocated 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: 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

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#### **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.

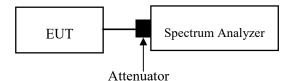
b) The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the ON and OFF times of the transmitted signal:

1) Set the center frequency of the instrument to the center frequency of the transmission.

2) Set  $RBW \ge OBW$  if possible; otherwise, set RBW to the largest available value.

3) Set  $VBW \ge RBW$ . 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  $T \le 16.7 \ \mu s.$ )



# 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**

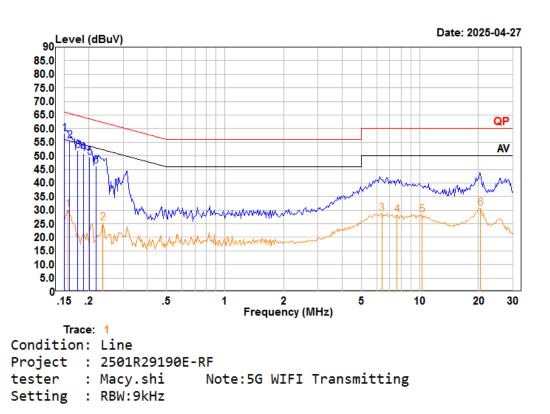
The EUT has two internal antennas arrangement, which were permanently attached, the antenna gain<sup>#</sup> is 1.59dBi for ANT 0 and 1.02dBi for ANT 1, fulfill the requirement of this section. Please refer to the EUT photos.

#### **Result: Compliant**

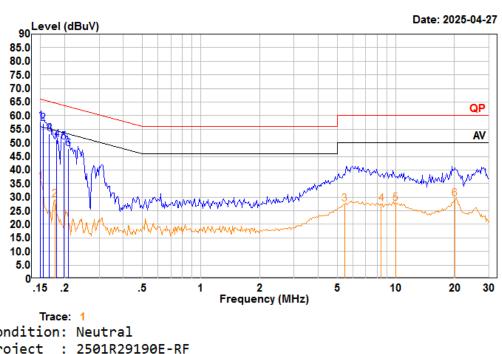
# **TEST DATA AND RESULTS**

#### **Conducted Emissions**

Temperature (°C)	23.1	Relative Humidity (%)	48				
ATM Pressure (kPa)	101.2	Test engineer	Macy.shi				
Test date	2025/4/27						
EUT operation mode	Transmitting (Maximun	Transmitting (Maximum output power mode, 802.11ac20 ANT1 5200MHz)					



		Read		LISN	Cable	Limit	0ver	
	Freq	Level	Level	Factor	Loss	Line	Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.150	37.80	58.13	10.20	10.13	66.00	-7.87	QP
2	0.160	35.20	55.45	10.13	10.12	65.47	-10.02	QP
3	0.176	31.90	52.03	10.03	10.10	64.68	-12.65	QP
4	0.187	30.70	50.76	9.97	10.09	64.15	-13.39	QP
5	0.202	29.60	49.60	9.91	10.09	63.54	-13.94	QP
6	0.217	26.30	46.34	9.95	10.09	62.92	-16.58	QP
		Read		LISN	Cable	Limit	0ver	
	Freq	Level	Level	Factor	Loss	Line	Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.156	9.79	30.07	10.16	10.12	55.65	-25.58	Average
2	0.237	5.22	25.31	10.01	10.08	52.22	-26.91	Average
3	6.386	8.28	28.97	10.50	10.19	50.00	-21.03	Average
4	7.646	7.47	28.19	10.53	10.19	50.00	-21.81	Average
5	10.288	7.92	28.42	10.29	10.21	50.00	-21.58	Average
6	20.486	10.26	30.82	10.39	10.17	50.00	-19.18	Average



AC 120V	60 Hz, Neutral	
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Condition: Neutral Project : 2501R29190E-RF Note:5G WIFI Transmitting tester : Macy.shi Setting : RBW:9kHz

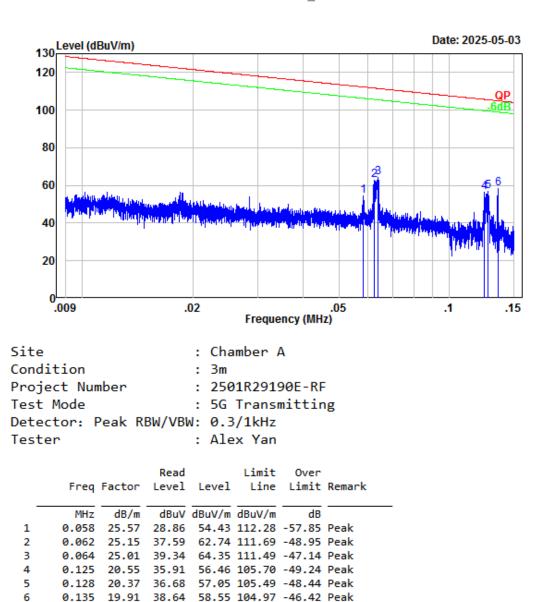
		Read		LISN	Cable	Limit	0ver	
	Freq	Level	Level	Factor	Loss	Line	Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.150	37.50	57.93	10.30	10.13	66.00	-8.07	QP
2	0.155	36.60	57.00	10.28	10.12	65.74	-8.74	QP
3	0.167	33.00	53.33	10.23	10.10	65.12	-11.79	QP
4	0.182	30.79	51.06	10.17	10.10	64.42	-13.36	QP
5	0.198	30.10	50.30	10.11	10.09	63.71	-13.41	QP
6	0.208	27.60	47.81	10.12	10.09	63.27	-15.46	QP
		Read		LISN	Cable	Limit	0ver	-
	_	_	_					
	Freq	Level	Level	Factor	Loss	Line	Limit	Remark
	Freq	Level	Level	Factor	Loss	Line	Limit	Remark
	Freq MHz	Level dBuV	Level dBuV	Factor 	Loss dB	dBuV	Limit 	Remark 
1						dBuV	dB	Remark Average
1 2	MHz	dBuV	dBuV	dB	dB	dBuV 56.00	dB -20.32	
	MHz 0.150	dBuV 15.25	dBuV 35.68	dB 10.30	dB 10.13	dBuV 56.00 54.59	dB -20.32 -25.51	Average
2	MHz 0.150 0.178	dBuV 15.25 8.80	dBuV 35.68 29.08	dB 10.30 10.18	dB 10.13 10.10	dBuV 56.00 54.59 50.00	dB -20.32 -25.51 -22.55	Average Average
2 3	MHz 0.150 0.178 5.447	dBuV 15.25 8.80 6.89	dBuV 35.68 29.08 27.45	dB 10.30 10.18 10.38	dB 10.13 10.10 10.18	dBuV 56.00 54.59 50.00 50.00	dB -20.32 -25.51 -22.55 -22.55	Average Average Average
2 3 4	MHz 0.150 0.178 5.447 8.412	dBuV 15.25 8.80 6.89 6.75	dBuV 35.68 29.08 27.45 27.45	dB 10.30 10.18 10.38 10.50	dB 10.13 10.10 10.18 10.20	dBuV 56.00 54.59 50.00 50.00 50.00	dB -20.32 -25.51 -22.55 -22.55 -22.22	Average Average Average Average

# Undesirable Emission

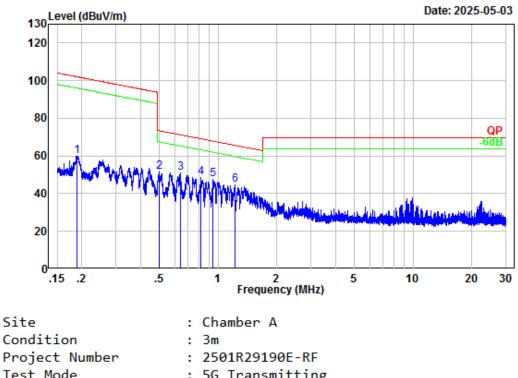
Temperature (°C)	21.5-23.6	Relative Humidity (%)	35-49			
ATM Pressure (kPa):	101.5	Test engineer:	Alex Yan&Zenos Qiao			
Test date:	2025/04/23-2025/05/03					
EUT operation mode:	Transmitting					
Note:	1. For the radiated spurious emission below 30MHz, only the worst case (parallel) was					

#### Below 1GHz:

**ANT0** (Maximum output power mode, 802.11a 5180MHz)



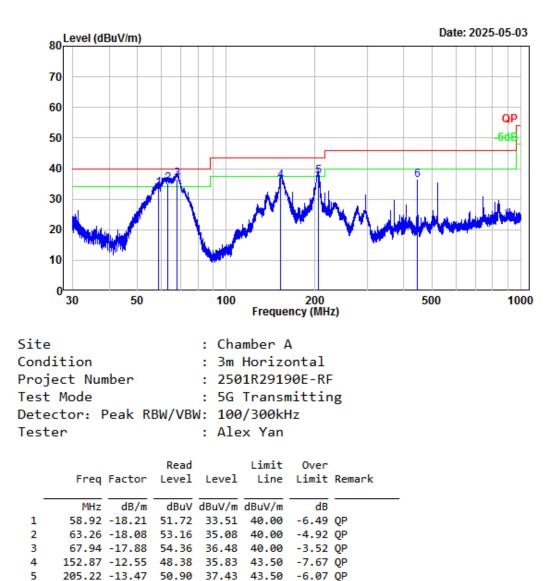




150kHz-30MHz\_ANT0

Condition : 3m Project Number : 2501R29190E-RF Test Mode : 5G Transmitting Detector: Peak RBW/VBW: 10/30kHz Tester : Alex Yan

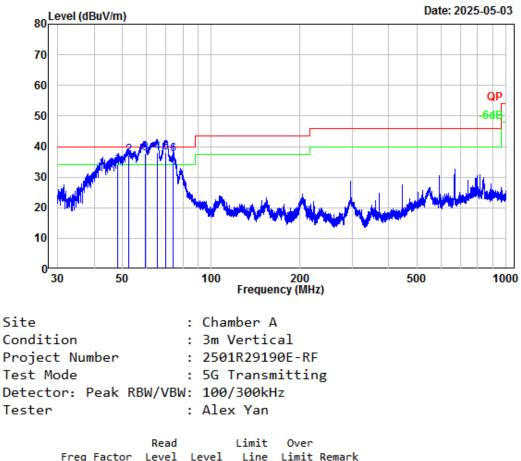
	Freq	Factor		Level		Over Limit	Remark
-	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.189	16.73	43.22	59.95	102.06	-42.11	Peak
2	0.499	6.41	44.91	51.32	73.63	-22.31	Peak
3	0.639	4.68	46.40	51.08	71.44	-20.36	Peak
4	0.816	2.58	45.90	48.48	69.28	-20.80	Peak
5	0.946	1.61	45.90	47.51	67.97	-20.46	Peak
6	1.219	0.59	44.27	44.86	65.72	-20.86	Peak



#### 30MHz-1GHz\_Horizontal\_ANT0

6

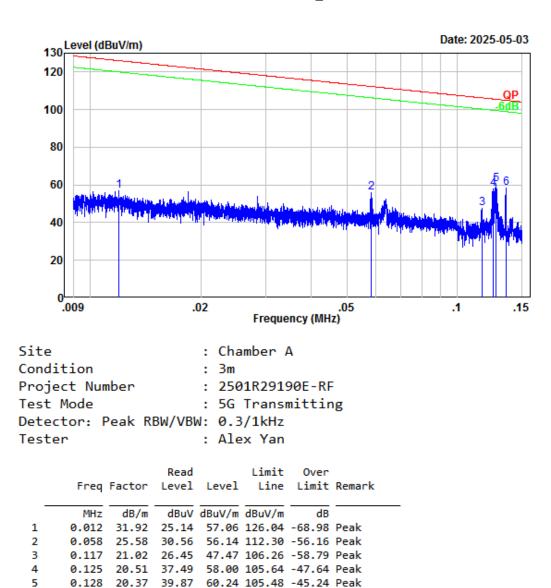
445.63 -7.52 43.61 36.09 46.00 -9.91 Peak



30MHz-1GHz\_Vertical\_ANT0

	Freq	Factor	Level	Level	Line	Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	48.23	-17.42	51.49	34.07	40.00	-5.93	QP
2	52.39	-18.25	55.38	37.13	40.00	-2.87	QP
3	59.60	-18.16	55.96	37.80	40.00	-2.20	QP
4	65.54	-17.94	56.01	38.07	40.00	-1.93	QP
5	70.06	-17.87	56.00	38.13	40.00	-1.87	QP
6	74.23	-17.84	55.16	37.32	40.00	-2.68	QP

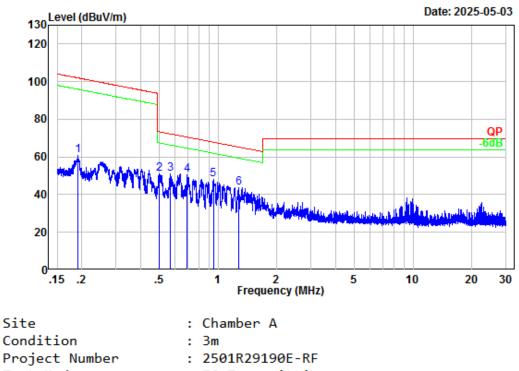
ANT1 (Maximum output power mode, 802.11ac20 5200MHz)



9kHz-150kHz\_ANT1

6

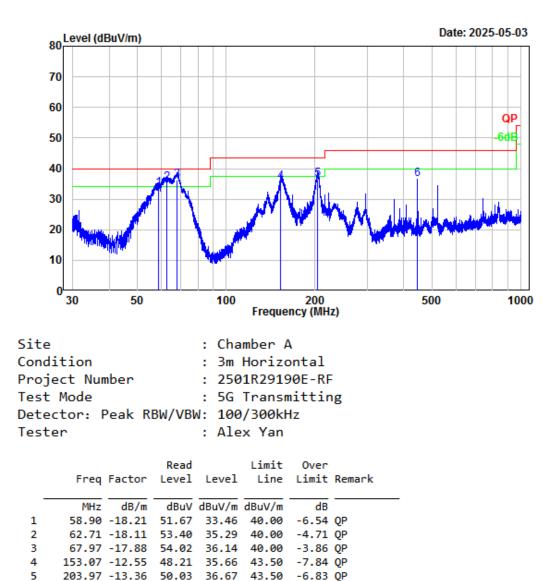
0.135 19.91 38.64 58.55 104.97 -46.42 Peak



150kHz-30MHz\_ANT1

Condition : 3m Project Number : 2501R29190E-RF Test Mode : 5G Transmitting Detector: Peak RBW/VBW: 10/30kHz Tester : Alex Yan

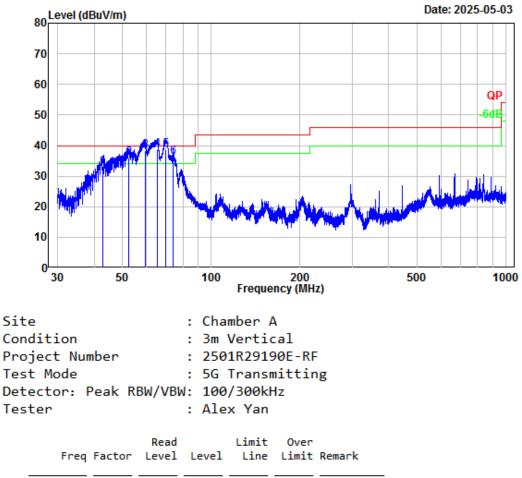
	Freq	Factor		Level		Over Limit	Remark
-	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.191	16.64	44.00	60.64	101.99	-41.35	Peak
2	0.498	6.44	44.67	51.11	73.66	-22.55	Peak
3	0.568	5.56	45.66	51.22	72.49	-21.27	Peak
4	0.697	3.97	46.46	50.43	70.68	-20.25	Peak
5	0.946	1.60	46.50	48.10	67.96	-19.86	Peak
6	1.280	0.42	43.29	43.71	65.28	-21.57	Peak



#### 30MHz-1GHz\_Horizontal\_ANT1

6

445.44 -7.51 43.93 36.42 46.00 -9.58 Peak



30MHz-1GHz\_Vertical\_ANT1

	Freq	Factor	Level	Level	Line	Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1		-14.43	47.65	33.22	40.00	-6.78	QP
2	52.41	-18.25	54.04	35.79	40.00	-4.21	QP
3	59.60	-18.16	56.45	38.29	40.00	-1.71	QP
4	65.52	-17.94	56.58	38.64	40.00	-1.36	QP
5	69.97	-17.87	56.40	38.53	40.00	-1.47	QP
6	74.33	-17.84	54.01	36.17	40.00	-3.83	QP

#### Above 1GHz:

#### 5150-5250 MHz

Frequency (MHz)	Reading (dBµV)	PK/Ave	Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
			802.11	a_ANT0			
			Low C	Channel			
10360	51.45	РК	Н	2.53	53.98	68.2	-14.22
10360	51.82	РК	V	2.53	54.35	68.2	-13.85
			Middle	Channel			
10400	51.78	РК	Н	2.55	54.33	68.2	-13.87
10400	52.14	РК	V	2.55	54.69	68.2	-13.51
			High (	Channel			
10480	52.17	РК	Н	2.25	54.42	68.2	-13.78
10480	52.53	РК	V	2.25	54.78	68.2	-13.42
			802.11	a_ANT1			
			Low C	Channel			
10360	51.57	РК	Н	2.53	54.10	68.2	-14.10
10360	51.92	РК	V	2.53	54.45	68.2	-13.75
			Middle	Channel			
10400	51.98	РК	Н	2.55	54.53	68.2	-13.67
10400	52.34	РК	V	2.55	54.89	68.2	-13.31
			High (	Channel			
10480	52.49	РК	Н	2.25	54.74	68.2	-13.46
10480	52.83	РК	V	2.25	55.08	68.2	-13.12
			802.11ac	20_ANT0			
			Low C	Channel			
10360	51.36	РК	Η	2.53	53.89	68.2	-14.31
10360	51.70	РК	V	2.53	54.23	68.2	-13.97
			Middle	Channel			
10400	51.69	РК	Н	2.55	54.24	68.2	-13.96
10400	52.02	РК	V	2.55	54.57	68.2	-13.63
			High (	Channel			
10480	52.05	РК	Н	2.25	54.30	68.2	-13.90
10480	52.38	PK	V	2.25	54.63	68.2	-13.57

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Report No.: 2501R29190E-RF-00D

Frequency (MHz)	Reading (dBµV)	PK/Ave	Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
			802.11ac	20_ANT1	• /		
			Low C	Channel			
10360	51.32	РК	Н	2.53	53.85	68.2	-14.35
10360	51.79	РК	V	2.53	54.32	68.2	-13.88
		<u>.                                    </u>	Middle	Channel		<u> </u>	
10400	51.87	РК	Н	2.55	54.42	68.2	-13.78
10400	52.23	РК	V	2.55	54.78	68.2	-13.42
			High (	Channel			
10480	52.36	РК	Н	2.25	54.61	68.2	-13.59
10480	52.71	РК	V	2.25	54.96	68.2	-13.24
			802.11ac	40_ANT0			
			Low C	Channel			
10380	51.27	РК	Н	2.54	53.81	68.2	-14.39
10380	51.61	РК	V	2.54	54.15	68.2	-14.05
			High (	Channel			
10460	51.76	РК	Н	2.32	54.08	68.2	-14.12
10460	52.09	РК	V	2.32	54.41	68.2	-13.79
			802.11ac	40_ANT1			
			Low C	Channel			
10380	51.50	РК	Н	2.54	54.04	68.2	-14.16
10380	51.86	РК	V	2.54	54.40	68.2	-13.80
			High (	Channel			
10460	52.01	РК	Н	2.32	54.33	68.2	-13.87
10460	52.35	РК	V	2.32	54.67	68.2	-13.53
			802.11ac	80_ANT0			
			Middle	Channel	1		
10420	51.54	РК	Н	2.48	54.02	68.2	-14.18
10420	51.85	РК	V	2.48	54.33	68.2	-13.87
			802.11ac	80_ANT1			
			Middle	Channel	1		
10420	51.75	РК	Н	2.48	54.23	68.2	-13.97
10420	52.02	PK	V	2.48	54.50	68.2	-13.70

Note:

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

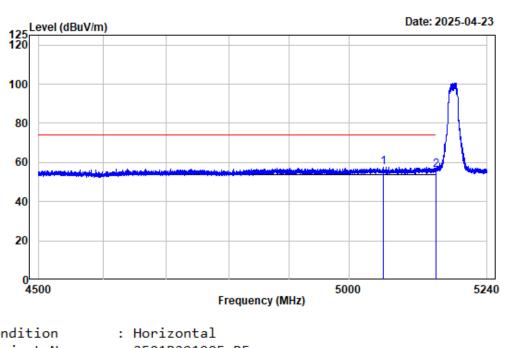
Corrected Amplitude = Corrected Factor + Reading

Margin = Corrected. Amplitude - Limit

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

The test result of peak was less than the limit of average, so just peak values were recorded.

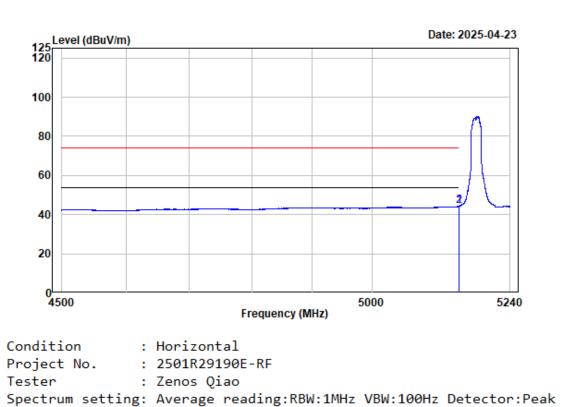
# Test plots:



Left Band edge\_Horizontal\_Peak\_802.11a\_ANT0

Condition	:	Horizontal		
Project No.	:	2501R29190E-RF		
Tester	:	Zenos Qiao		
Spectrum setting	:	Peak reading:RBW:1MHz	VBW:3MHz	Detector:Peak
Note	:	5GWiFi-Band1-A-5180		

	Freq	Factor			Limit Line		Remark	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB		
1	5058.122	-7.33	65.03	57.70	74.00	-16.30	Peak	
2	5150.000	-7.46	63.82	56.36	74.00	-17.64	Peak	



Limit Over

Line Limit Remark

dB

: 5GWiFi-Band1-A-5180

dBuV dBuV/m dBuV/m

5149.431 -7.46 51.84 44.38 54.00 -9.62 Average

2 5150.000 -7.46 51.69 44.23 54.00 -9.77 Average

Read

Freq Factor Level Level

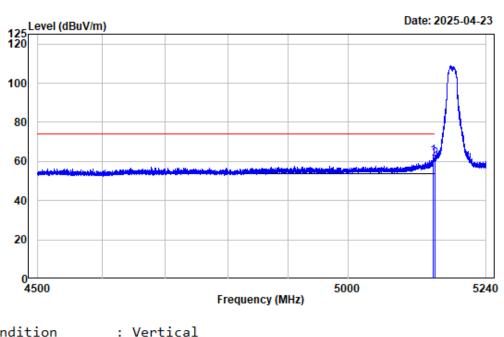
dB/m

MHz

Left Band edge\_Horizontal\_Average\_802.11a\_ANT0

Note

1

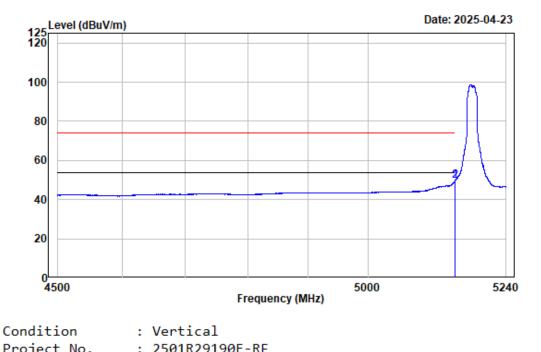


Left Band edge\_Vertical\_Peak\_802.11a\_ANT0

Condition	:	Vertical		
Project No.	:	2501R29190E-RF		
Tester	:	Zenos Qiao		
Spectrum setting	:	Peak reading:RBW:1MHz	VBW:3MHz	Detector:Peak
Note	:	5GWiFi-Band1-A-5180		

. .

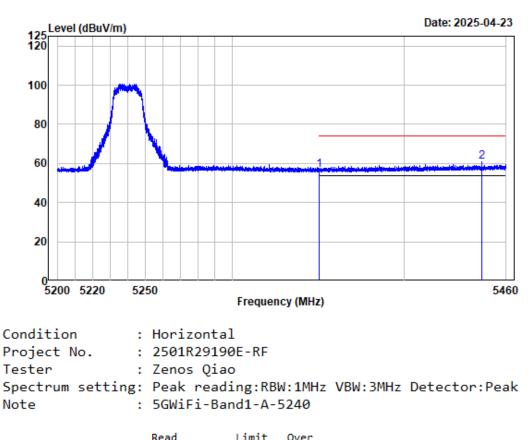
	Freq	Factor	Read Level			Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5147.118	-7.46	70.04	62.58	74.00	-11.42	Peak
2	5150.000	-7.46	69.01	61.55	74.00	-12.45	Peak



Left Band edge\_Vertical\_Average\_802.11a\_ANT0

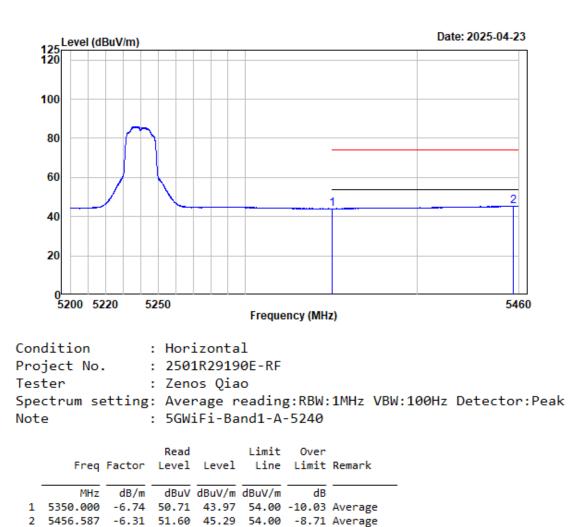
Condition : Vertical Project No. : 2501R29190E-RF Tester : Zenos Qiao Spectrum setting: Average reading:RBW:1MHz VBW:100Hz Detector:Peak Note : 5GWiFi-Band1-A-5180

	Freq	Factor		Level	Limit Line		Remark
		dB/m		-	-	dB	
1	5149.894	-7.46	57.01	49.55	54.00	-4.45	Average
2	5150.000	-7.46	56.85	49.39	54.00	-4.61	Average

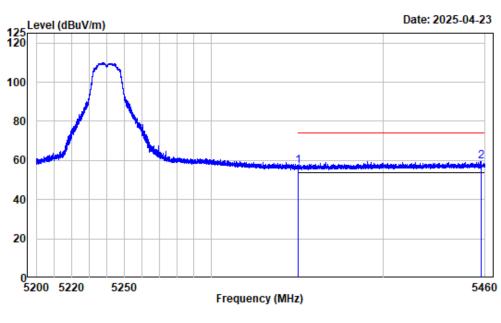


Right Band edge\_Horizontal\_Peak\_802.11a\_ANT0

	Freq	Factor			Limit		Remark	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB		
1	5350.000	-6.74	63.18	56.44	74.00	-17.56	Peak	
2	5445.633	-6.35	67.04	60.69	74.00	-13.31	Peak	



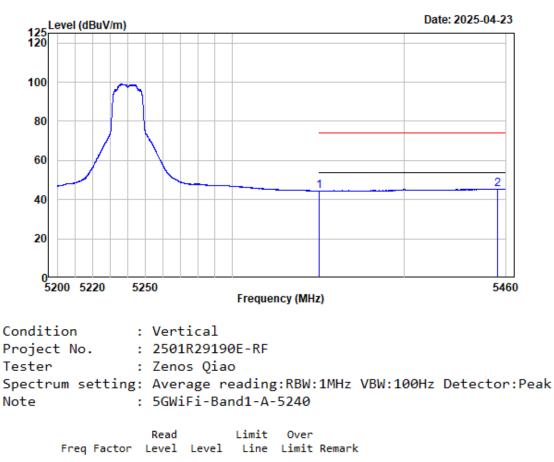
### Right Band edge\_Horizontal\_Average\_802.11a\_ANT0



Right Band edge\_Vertical\_Peak\_802.11a\_ANT0

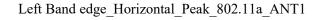
Condition	:	Vertical		
Project No.	:	2501R29190E-RF		
Tester	:	Zenos Qiao		
Spectrum setting	:	Peak reading:RBW:1MHz	VBW:3MHz	Detector:Peak
Note	:	5GWiFi-Band1-A-5240		

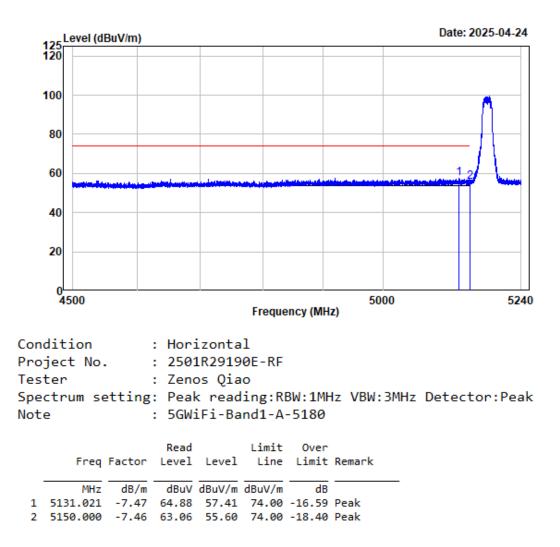
	Freq	Factor	Read Level			Over Limit	Remark	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB		_
1	5350.000	-6.74	63.88	57.14	74.00	-16.86	Peak	
2	5457.822	-6.29	65.95	59.66	74.00	-14.34	Peak	



### Right Band edge\_Vertical\_Average\_802.11a\_ANT0

	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	51.14	44.40	54.00	-9.60	Average
2	5455.027	-6.31	51.71	45.40	54.00	-8.60	Average





125 120 120 Date: 2025-04-24 100 80 60 12 40 20 0 4500 5000 5240 Frequency (MHz) Condition : Horizontal Project No. : 2501R29190E-RF Tester : Zenos Qiao

Spectrum setting: Average reading:RBW:1MHz VBW:100Hz Detector:Peak

#### Left Band edge\_Horizontal\_Average\_802.11a\_ANT1

 Read
 Limit
 Over

 Freq
 Factor
 Level
 Level
 Line
 Limit
 Remark

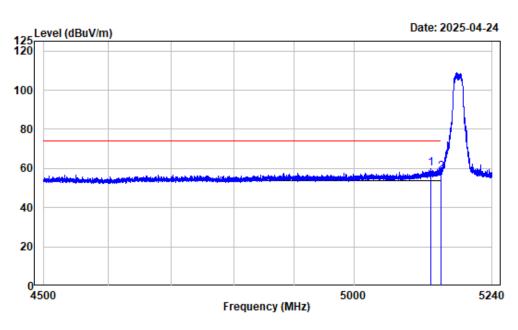
 MHz
 dB/m
 dBuV
 dBuV/m
 dBuV/m
 dB
 dB

 1
 5137.405
 -7.46
 51.83
 44.37
 54.00
 -9.63
 Average

 2
 5150.000
 -7.46
 51.70
 44.24
 54.00
 -9.76
 Average

: 5GWiFi-Band1-A-5180

Note

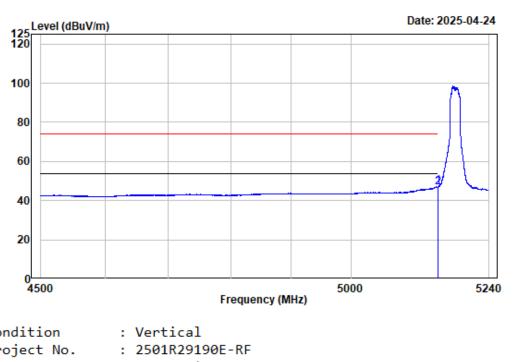


Left Band edge\_Vertical\_Peak\_802.11a\_ANT1

Condition	:	Vertical		
Project No.	:	2501R29190E-RF		
Tester	:	Zenos Qiao		
Spectrum setting	:	Peak reading:RBW:1MHz	VBW:3MHz	Detector:Peak
Note	:	5GWiFi-Band1-A-5180		

. .

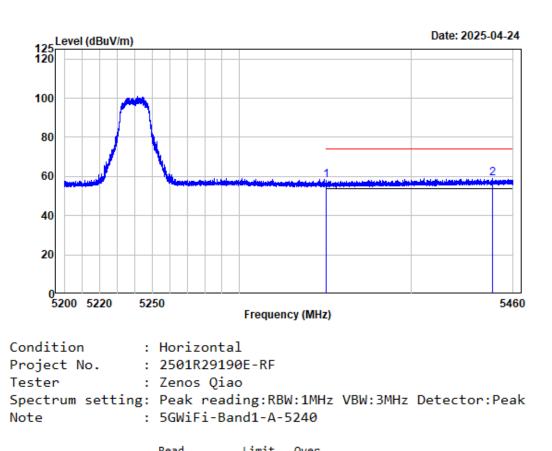
	Freq	Factor			Limit Line		Remark	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB		
1	5132.131	-7.47	67.16	59.69	74.00	-14.31	Peak	
2	5150.000	-7.46	65.26	57.80	74.00	-16.20	Peak	



Left Band edge\_Vertical\_Average\_802.11a\_ANT1

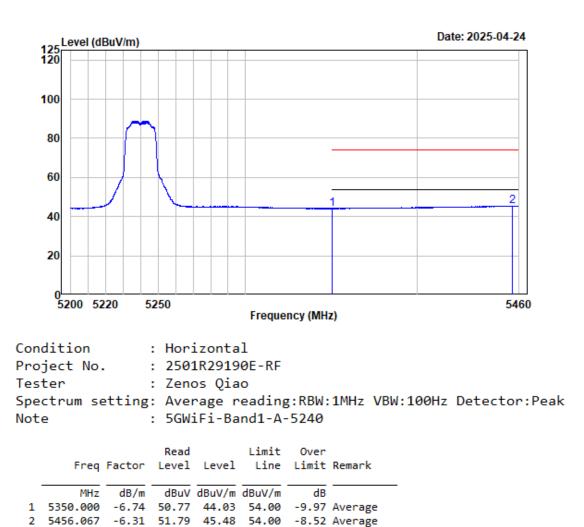
Condition	:	Vertical
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	g:	Average reading:RBW:1MHz VBW:100Hz Detector:Peak
Note	:	5GWiFi-Band1-A-5180

	Freq	Factor			Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5149.708	-7.46	54.47	47.01	54.00	-6.99	Average
2	5150.000	-7.46	54.33	46.87	54.00	-7.13	Average

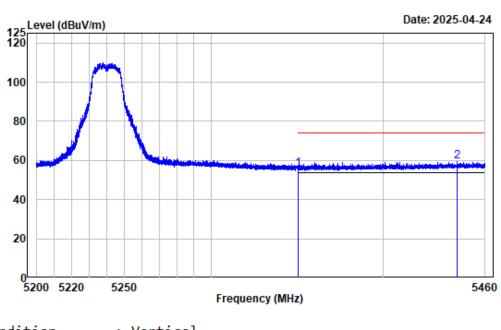


Right Band edge\_Horizontal\_Peak\_802.11a\_ANT1

	Freq	Factor			Limit Line		Remark	
		dB/m		-	-			
1	5350.000	-6.74	64.77	58.03	74.00	-15.97	Peak	
2	5447.648	-6.33	65.20	58.87	74.00	-15.13	Peak	



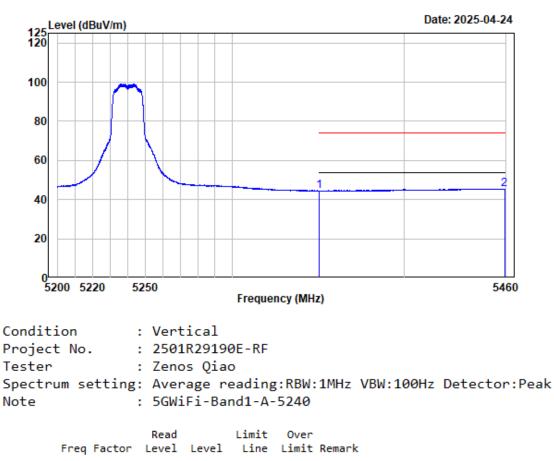
Right Band edge\_Horizontal\_Average\_802.11a\_ANT1



Right Band edge\_Vertical\_Peak\_802.11a\_ANT1

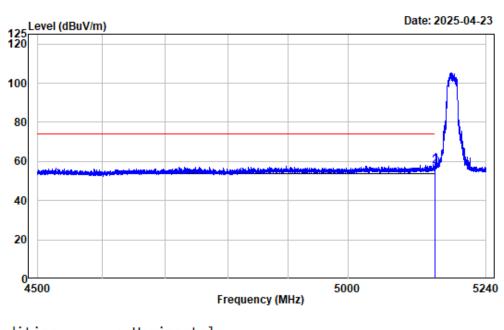
Condition	:	Vertical		
Project No.	:	2501R29190E-RF		
Tester	:	Zenos Qiao		
Spectrum setting	:	Peak reading:RBW:1MHz	VBW:3MHz	Detector:Peak
Note	:	5GWiFi-Band1-A-5240		

	Freq	Factor	Read Level		Limit Line		Remark	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB		
1	5350.000	-6.74	62.58	55.84	74.00	-18.16	Peak	
2	5443.391	-6.35	65.78	59.43	74.00	-14.57	Peak	



### Right Band edge\_Vertical\_Average\_802.11a\_ANT1

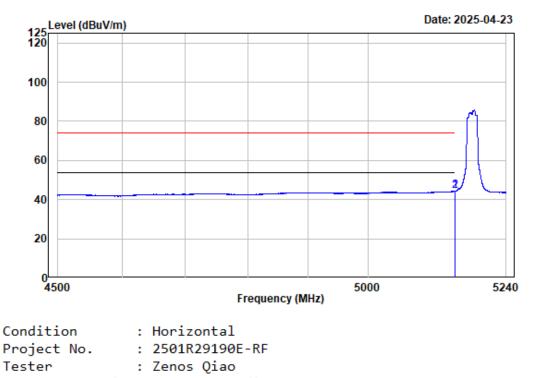
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	51.13	44.39	54.00	-9.61 Aver	age
2	5459.025	-6.29	51.80	45.51	54.00	-8.49 Aver	age



### Left Band edge\_Horizontal\_Peak\_802.11ac-VHT20\_ANT0

Condition	:	Horizontal
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	g :	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note	:	5GWiFi-Band1-AC20-5180

	Freq	Factor	Read Level			Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5149.708	-7.46	66.11	58.65	74.00	-15.35	Peak
2	5150.000	-7.46	64.96	57.50	74.00	-16.50	Peak

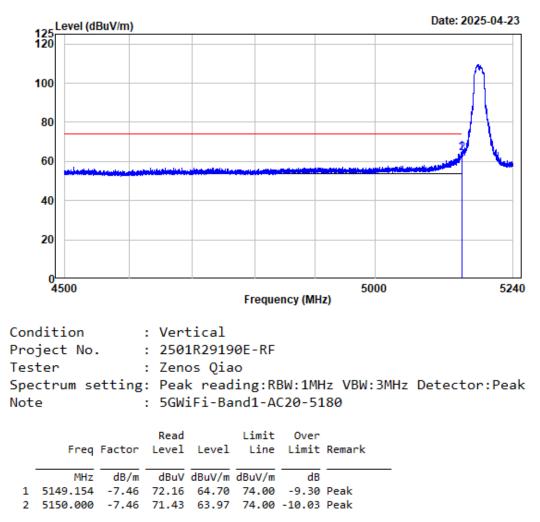


### Left Band edge\_Horizontal\_Average\_802.11ac-VHT20\_ANT0

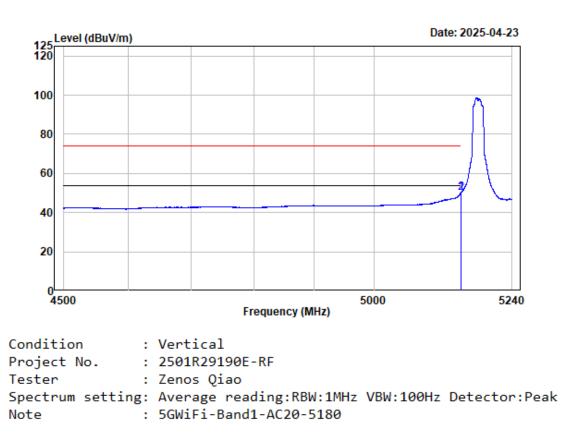
Tester : Zenos Qiao Spectrum setting: Average reading:RBW:1MHz VBW:100Hz Detector:Peak Note : 5GWiFi-Band1-AC20-5180

	Freq	Factor	Read Level		Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5149.339	-7.46	51.88	44.42	54.00	-9.58	Average
2	5150.000	-7.46	51.78	44.32	54.00	-9.68	Average

Report No.: 2501R29190E-RF-00D

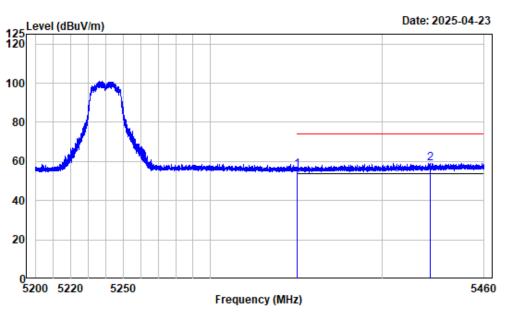


TR-EM-RF015



Left Band edge\_Vertical\_Average\_802.11ac-VHT20\_ANT0

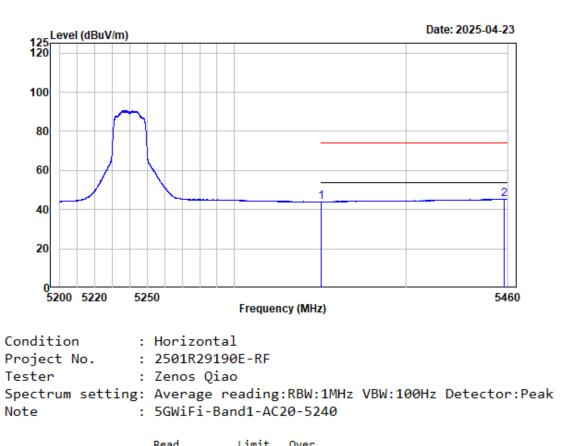
	Freq	Factor			Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5149.986	-7.46	57.67	50.21	54.00	-3.79	Average
2	5150.000	-7.46	57.56	50.10	54.00	-3.90	Average



# Right Band edge\_Horizontal\_Peak\_802.11ac-VHT20\_ANT0

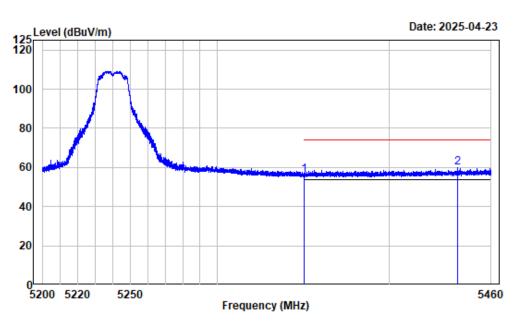
Condition	:	Horizontal
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note	:	5GWiFi-Band1-AC20-5240

	Freq	Factor			Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	62.31	55.57	74.00	-18.43	Peak
2	5427.886	-6.43	65.52	59.09	74.00	-14.91	Peak



### Right Band edge\_Horizontal\_Average\_802.11ac-VHT20\_ANT0

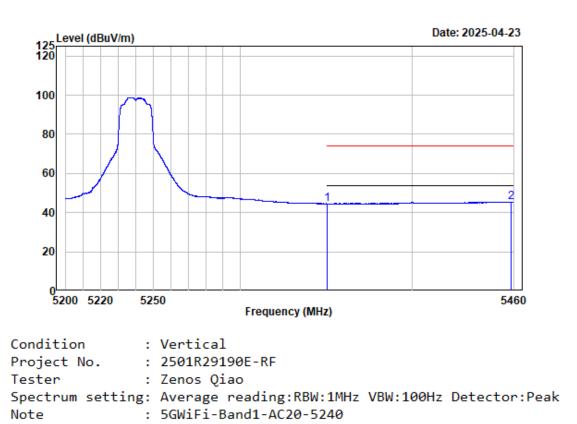
	Freq	Factor		Level		Over Limit	Remark	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB		-
1	5350.000	-6.74	50.69	43.95	54.00	-10.05	Average	
2	5457.692	-6.30	51.53	45.23	54.00	-8.77	Average	



# Right Band edge\_Vertical\_Peak\_802.11ac-VHT20\_ANT0

Condition	:	Vertical
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	;:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note	:	5GWiFi-Band1-AC20-5240

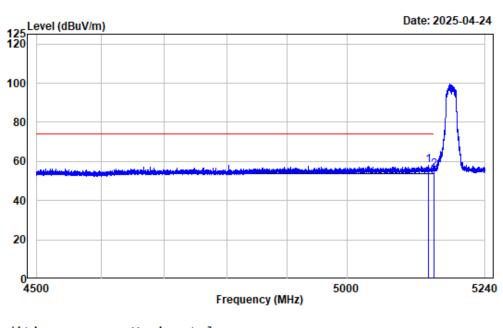
	Freq	Factor	Read Level			Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	62.69	55.95	74.00	-18.05	Peak
2	5440.400	-6.38	66.08	59.70	74.00	-14.30	Peak



#### Right Band edge\_Vertical\_Average\_802.11ac-VHT20\_ANT0

Report No.: 2501R29190E-RF-00D

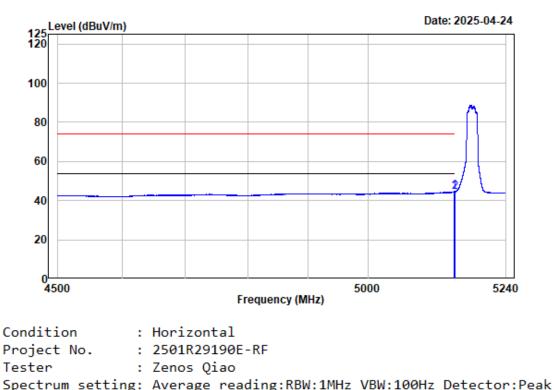
	Freq	Factor			Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	51.18	44.44	54.00	-9.56	Average
2	5458.375	-6.29	51.69	45.40	54.00	-8.60	Average



Left Band edge\_Horizontal\_Peak\_802.11ac-VHT20\_ANT1

Condition	:	Horizontal
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	:	<pre>Peak reading:RBW:1MHz VBW:3MHz Detector:Peak</pre>
Note	:	5GWiFi-Band1-AC20-5180

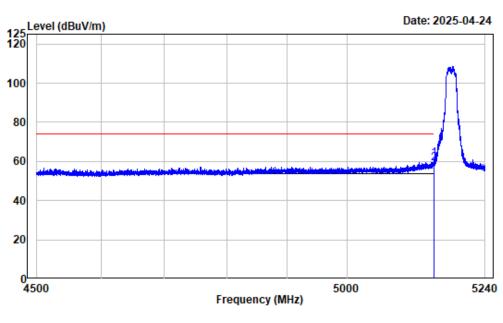
	Freq	Factor		Level	Limit Line		Remark
		dB/m		-	-		
1	5140.550	-7.47	65.57	58.10	74.00	-15.90	Peak
2	5150.000	-7.46	62.97	55.51	74.00	-18.49	Peak



#### Left Band edge\_Horizontal\_Average\_802.11ac-VHT20\_ANT1

Tester :	Zenos Qiao
Spectrum setting:	Average reading:RBW:1MHz VBW:100Hz Detector
Note :	5GWiFi-Band1-AC20-5180
	Read Limit Over
Freq Factor	Level Level Line Limit Remark

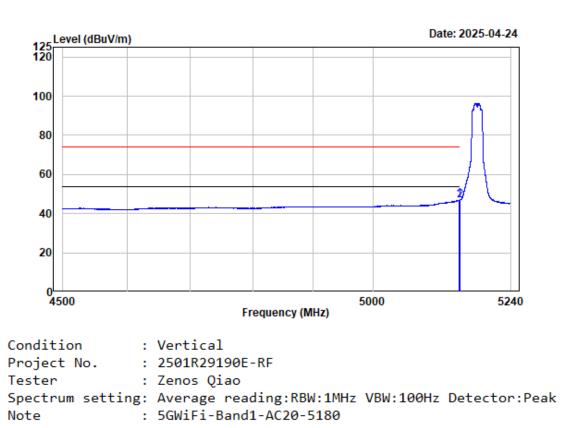
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5148.506	-7.46	52.09	44.63	54.00	-9.37	Average
2	5150.000	-7.46	51.92	44.46	54.00	-9.54	Average



Left Band edge\_Vertical\_Peak\_802.11ac-VHT20\_ANT1

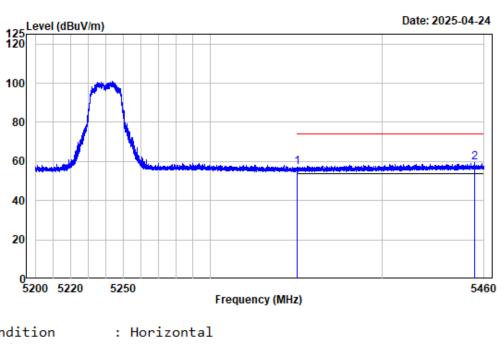
Condition	:	Vertical
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	:	<pre>Peak reading:RBW:1MHz VBW:3MHz Detector:Peak</pre>
Note	:	5GWiFi-Band1-AC20-5180

	Freq	Factor			Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5149.616	-7.46	69.00	61.54	74.00	-12.46	Peak
2	5150.000	-7.46	66.19	58.73	74.00	-15.27	Peak



Left Band edge\_Vertical\_Average\_802.11ac-VHT20\_ANT1

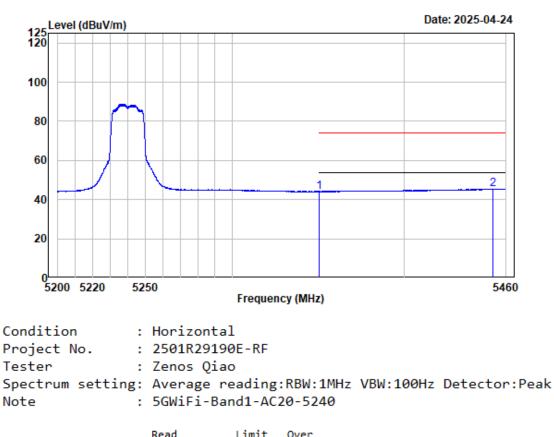
	Freq	Factor	Read Level		Limit Line		Remark	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB		
1	5148.136	-7.46	54.43	46.97	54.00	-7.03	Average	
2	5150.000	-7.46	54.28	46.82	54.00	-7.18	Average	



# Right Band edge\_Horizontal\_Peak\_802.11ac-VHT20\_ANT1

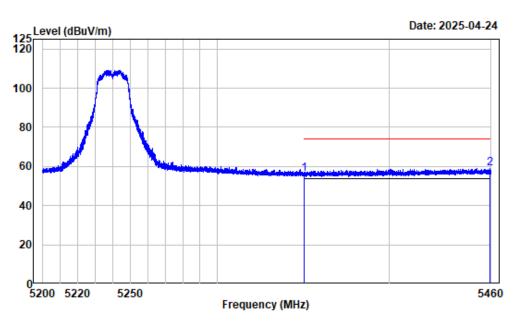
Condition	:	Horizontal
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note	:	5GWiFi-Band1-AC20-5240

	Freq	Factor			Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	63.63	56.89	74.00	-17.11	Peak
2	5454.442	-6.31	65.54	59.23	74.00	-14.77	Peak



Right Band edge\_Horizontal\_Average\_802.11ac-VHT20\_ANT1

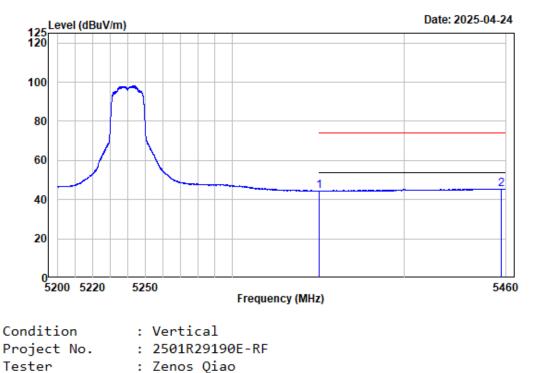
	Freq	Factor	Level			Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	50.79	44.05	54.00	-9.95	Average
2	5452.199	-6.32	51.67	45.35	54.00	-8.65	Average



# Right Band edge\_Vertical\_Peak\_802.11ac-VHT20\_ANT1

Condition	:	Vertical
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	:	<pre>Peak reading:RBW:1MHz VBW:3MHz Detector:Peak</pre>
Note	:	5GWiFi-Band1-AC20-5240

	Freq	Factor			Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	62.99	56.25	74.00	-17.75	Peak
2	5459.123	-6.29	65.13	58.84	74.00	-15.16	Peak

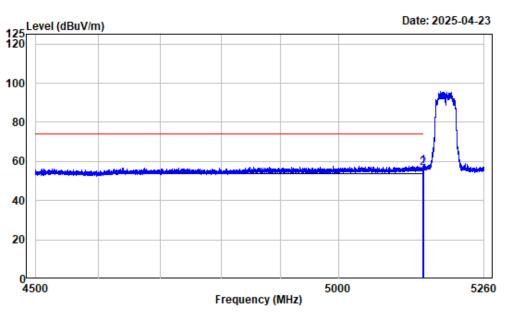


### Right Band edge\_Vertical\_Average\_802.11ac-VHT20\_ANT1

Tester : Zenos Qiao Spectrum setting: Average reading:RBW:1MHz VBW:100Hz Detector:Peak Note : 5GWiFi-Band1-AC20-5240

	Freq	Factor			Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	51.12	44.38	54.00	-9.62	Average
2	5457.205	-6.31	51.77	45.46	54.00	-8.54	Average

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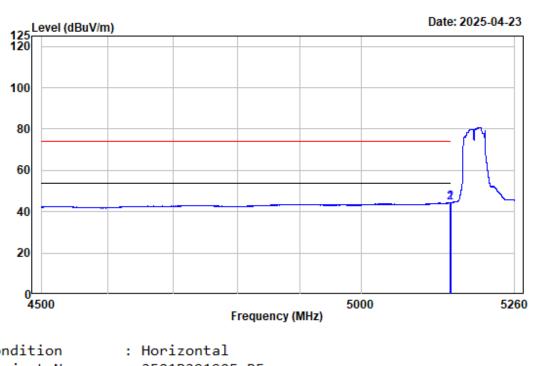


Left Band edge\_Horizontal\_Peak\_802.11ac-VHT40\_ANT0

Condition	:	Horizontal
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	::	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note	:	5GWiFi-Band1-AC40-5190

.

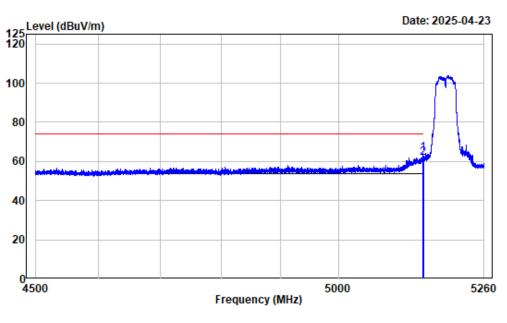
Read Limit Ove Freq Factor Level Level Line Limi	
MHz dB/m dBuV dBuV/m dBuV/m d	
1 5149.501 -7.46 65.24 57.78 74.00 -16.2	Peak
2 5150.000 -7.46 64.28 56.82 74.00 -17.12	Peak



Left Band edge\_Horizontal\_Average\_802.11ac-VHT40\_ANT0

Condition	:	Horizontal		
Project No.	:	2501R29190E-RF		
Tester	:	Zenos Qiao		
Spectrum setting	g:	Average reading:RBW:1MHz	VBW:2kHz	Detector:Peak
Note	:	5GWiFi-Band1-AC40-5190		

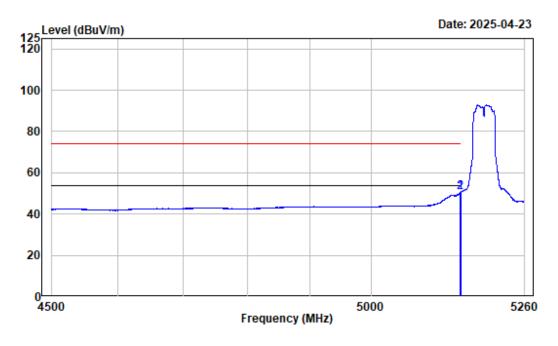
	Freq	Factor	Read Level		Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5149.311	-7.46	51.89	44.43	54.00	-9.57	Average
2	5150.000	-7.46	51.77	44.31	54.00	-9.69	Average



Left Band edge\_Vertical\_Peak\_802.11ac-VHT40\_ANT0

Condition	:	Vertical
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note	:	5GWiFi-Band1-AC40-5190

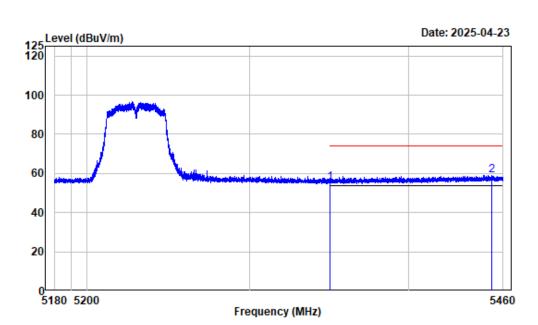
	Freq	Factor			Limit Line		Remark	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB		
1	5149.881	-7.46	71.53	64.07	74.00	-9.93	Peak	
2	5150.000	-7.46	69.17	61.71	74.00	-12.29	Peak	



Left Band edge\_Vertical\_Average\_802.11ac-VHT40\_ANT0

r:Peak

	Freq	Factor			Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5149.786	-7.46	58.03	50.57	54.00	-3.43	Average
2	5150.000	-7.46	57.91	50.45	54.00	-3.55	Average

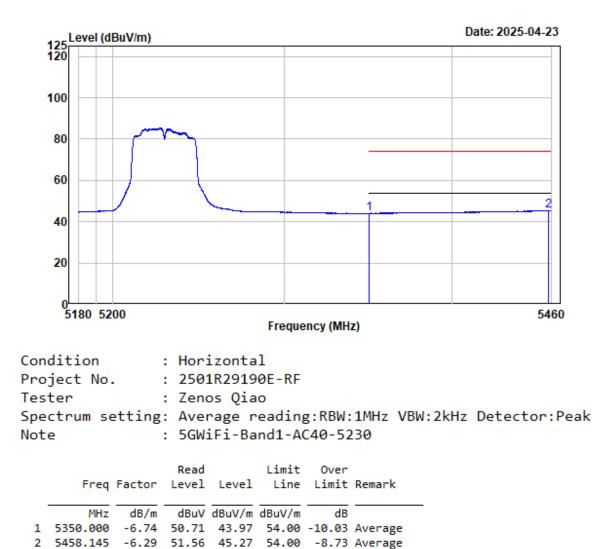


Right Band edge\_Horizontal\_Peak\_802.11ac-VHT40\_ANT0

Condition	:	Horizontal
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note	:	5GWiFi-Band1-AC40-5230

	Freq	Factor			Limit Line		Remark	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB		
1	5350.000	-6.74	61.80	55.06	74.00	-18.94	Peak	
2	5452.579	-6.31	65.46	59.15	74.00	-14.85	Peak	

Right Band edge\_Horizontal\_Average\_802.11ac-VHT40\_ANT0

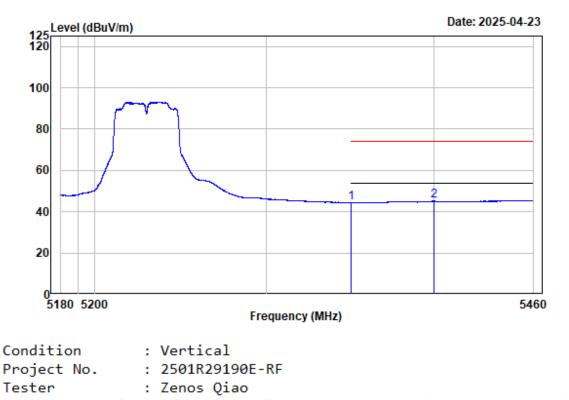


### Date: 2025-04-23 Det: 2025-04-23 Det:

# Right Band edge\_Vertical\_Peak\_802.11ac-VHT40\_ANT0

Condition	:	Vertical
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note	:	5GWiFi-Band1-AC40-5230

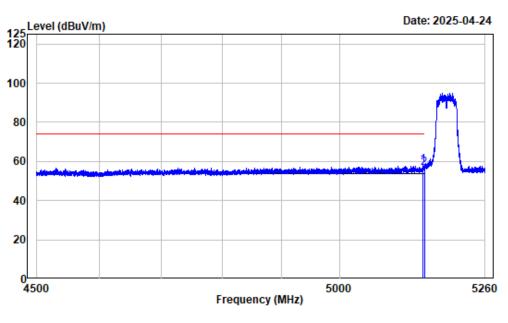
	Freq	Factor			Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	63.57	56.83	74.00	-17.17	Peak
2	5401.333	-6.59	65.97	59.38	74.00	-14.62	Peak



### Right Band edge\_Vertical\_Average\_802.11ac-VHT40\_ANT0

Tester : Zenos Qiao Spectrum setting: Average reading:RBW:1MHz VBW:2kHz Detector:Peak Note : 5GWiFi-Band1-AC40-5230

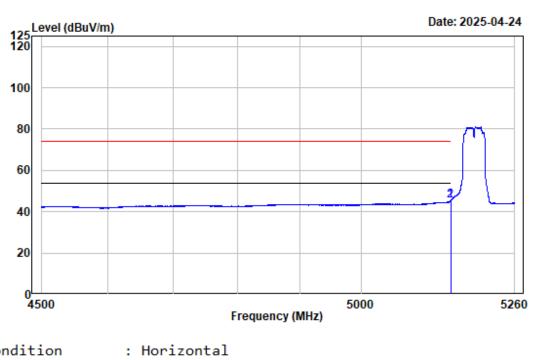
	Freq	Factor			Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	51.08	44.34	54.00	-9.66	Average
2	5399.933	-6.59	52.08	45.49	54.00	-8.51	Average



Left Band edge\_Horizontal\_Peak\_802.11ac-VHT40\_ANT1

Condition	:	Horizontal
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note	:	5GWiFi-Band1-AC40-5190

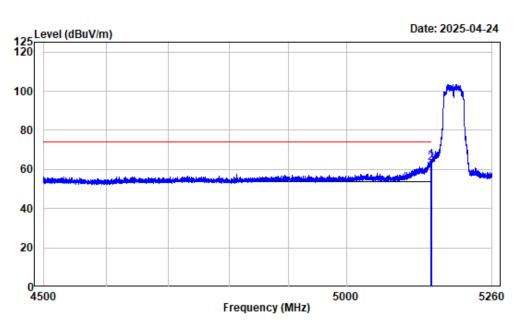
	Freq	Factor	Read Level		Limit Line		Remark	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB		
1	5147.316	-7.46	65.42	57.96	74.00	-16.04	Peak	
2	5150.000	-7.46	63.90	56.44	74.00	-17.56	Peak	



Left Band edge\_Horizontal\_Average\_802.11ac-VHT40\_ANT1

Condition	:	Horizontal		
Project No.	:	2501R29190E-RF		
Tester	:	Zenos Qiao		
Spectrum setting	g :	Average reading:RBW:1MHz	VBW:2kHz	Detector:Peak
Note	:	5GWiFi-Band1-AC40-5190		

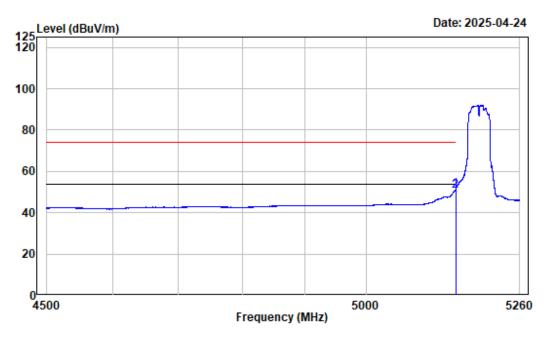
	Freq	Factor	Read Level		Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5149.976	-7.46	52.94	45.48	54.00	-8.52	Average
2	5150.000	-7.46	52.81	45.35	54.00	-8.65	Average



Left Band edge\_Vertical\_Peak\_802.11ac-VHT40\_ANT1

Condition	:	Vertical
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	g :	<pre>Peak reading:RBW:1MHz VBW:3MHz Detector:Peak</pre>
Note	:	5GWiFi-Band1-AC40-5190

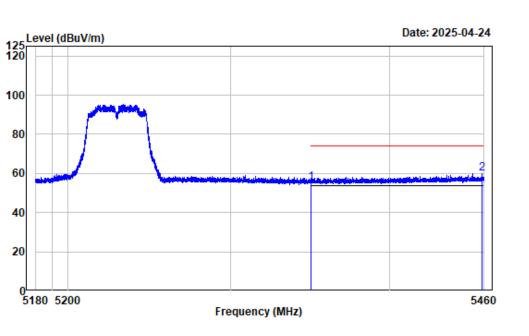
	Freq	Factor	Read Level			Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5149.881	-7.46	72.14	64.68	74.00	-9.32	Peak
2	5150.000	-7.46	70.57	63.11	74.00	-10.89	Peak



Left Band edge\_Vertical\_Average\_802.11ac-VHT40\_ANT1

Condition	:	Vertical	
Project No.	:	2501R29190E-RF	
Tester	:	Zenos Qiao	
Spectrum setting	g :	Average reading:RBW:1MHz VBW:2kHz	Detector:Peak
Note	:	5GWiFi-Band1-AC40-5190	

	Freq	Factor	Read Level		Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5149.976	-7.46	58.23	50.77	54.00	-3.23	Average
2	5150.000	-7.46	58.11	50.65	54.00	-3.35	Average

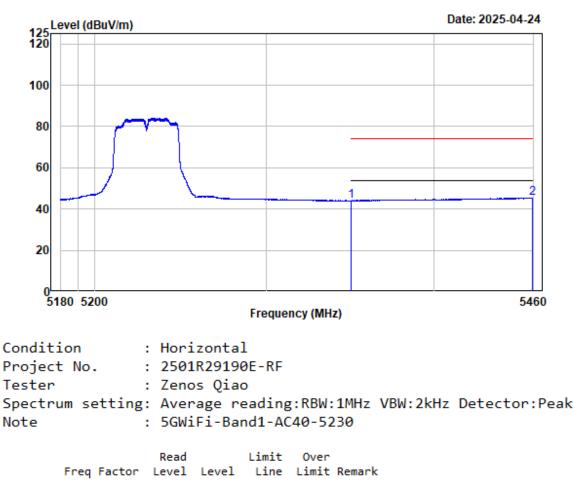


Right Band edge\_Horizontal\_Peak\_802.11ac-VHT40\_ANT1

Condition	:	Horizontal
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note	:	5GWiFi-Band1-AC40-5230

	Remark	Over Limit			Read Level	Factor	Freq	
-		dB	dBuV/m	dBuV/m	dBuV	dB/m	MHz	
	Peak	-18.71	74.00	55.29	62.03	-6.74	5350.000	1
	Peak	-14.08	74.00	59.92	66.21	-6.29	5458.390	2
		-18.71	74.00	55.29	62.03	-6.74	5350.000	

### Right Band edge\_Horizontal\_Average\_802.11ac-VHT40\_ANT1



	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	50.76	44.02	54.00	-9.98	Average
2	5459.125	-6.29	51.62	45.33	54.00	-8.67	Average

100

80

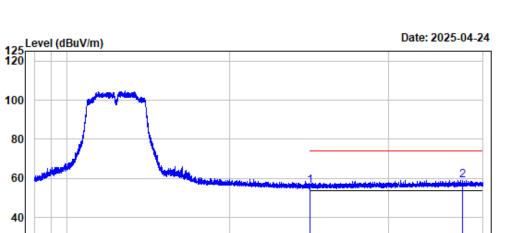
60

40

20

Note

0 5180 5200



### Right Band edge\_Vertical\_Peak\_802.11ac-VHT40\_ANT1

Condition : Vertical Project No. : 2501R29190E-RF Tester : Zenos Qiao Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak

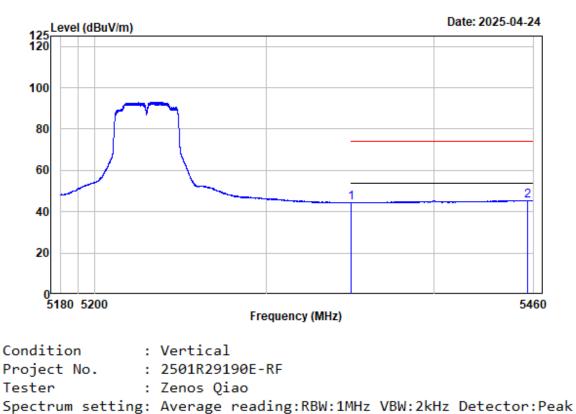
: 5GWiFi-Band1-AC40-5230

Frequency (MHz)

	Freq	Factor			Limit Line		Remark
		dB/m		-	-		
1	5350.000	-6.74	63.06	56.32	74.00	-17.68	Peak
2	5446.908	-6.35	65.46	59.11	74.00	-14.89	Peak

Report No.: 2501R29190E-RF-00D

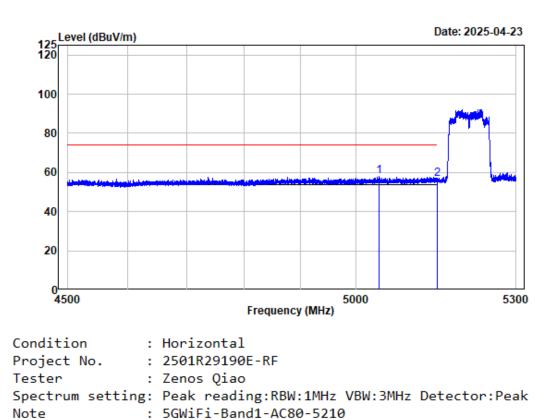
5460



### Right Band edge Vertical Average 802.11ac-VHT40 ANT1

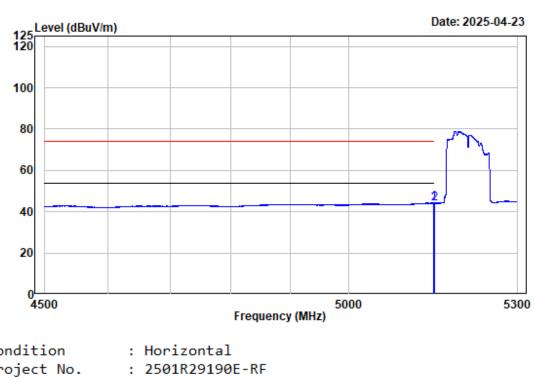
Spectrum setting: Average reading:RBW:1MHz VBW:2kHz Detect Note : 5GWiFi-Band1-AC40-5230 Read Limit Over Freq Factor Level Level Line Limit Remark

	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	50.93	44.19	54.00	-9.81	Average
2	5456.569	-6.31	51.77	45.46	54.00	-8.54	Average



Left Band edge\_Horizontal\_Peak\_802.11ac-VHT80\_ANT0

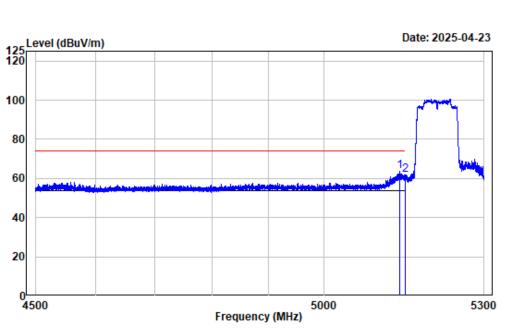
	Freq	Factor			Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5041.768	-7.32	65.20	57.88	74.00	-16.12	Peak
2	5150.000	-7.46	63.96	56.50	74.00	-17.50	Peak



Left Band edge\_Horizontal\_Average\_802.11ac-VHT80\_ANT0

Condition	:	Horizontal		
Project No.	:	2501R29190E-RF		
Tester	:	Zenos Qiao		
Spectrum setting	:	Average reading:RBW:1MHz	VBW:3kHz	Detector:Peak
Note	:	5GWiFi-Band1-AC80-5210		

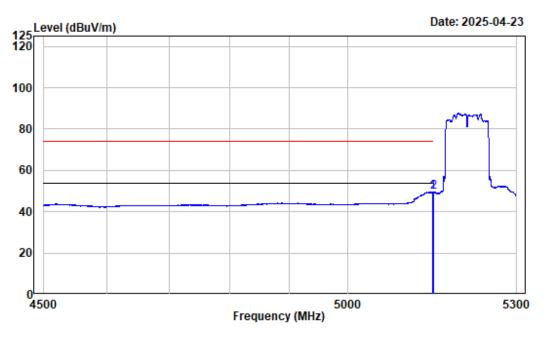
	Freq	Factor			Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5147.781	-7.46	51.67	44.21	54.00	-9.79	Average
2	5150.000	-7.46	51.52	44.06	54.00	-9.94	Average



Left Band edge\_Vertical\_Peak\_802.11ac-VHT80\_ANT0

Condition	:	Vertical
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note	:	5GWiFi-Band1-AC80-5210

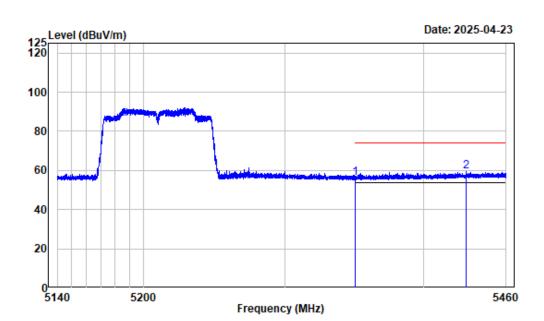
	Freq	Factor			Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5140.080	-7.47	70.97	63.50	74.00	-10.50	Peak
2	5150.000	-7.46	69.25	61.79	74.00	-12.21	Peak



Left Band edge\_Vertical\_Average\_802.11ac-VHT80\_ANT0

Condition	:	Vertical		
Project No. :		2501R29190E-RF		
Tester	:	Zenos Qiao		
Spectrum setting	g :	Average reading:RBW:1MHz	VBW:3kHz	Detector:Peak
Note	:	5GWiFi-Band1-AC80-5210		

	Freq	Factor		Level			Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5148.081	-7.46	56.98	49.52	54.00	-4.48	Average
2	5150.000	-7.46	56.76	49.30	54.00	-4.70	Average



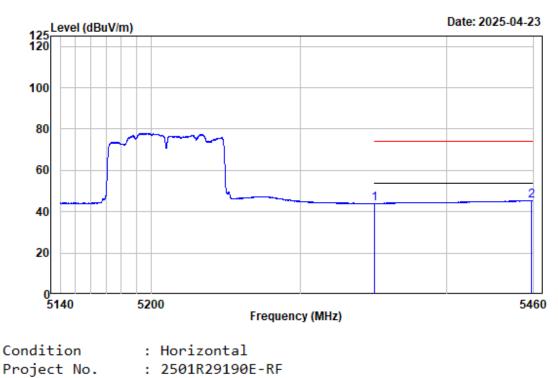
Right Band edge\_Horizontal\_Peak\_802.11ac-VHT80\_ANT0

Condition	:	Horizontal
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	:	<pre>Peak reading:RBW:1MHz VBW:3MHz Detector:Peak</pre>
Note	:	5GWiFi-Band1-AC80-5210

	Freq	Factor			Limit Line		Remark	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB		
1	5350.000	-6.74	62.95	56.21	74.00	-17.79	Peak	
2	5430.676	-6.43	65.70	59.27	74.00	-14.73	Peak	



Right Band edge\_Horizontal\_Average\_802.11ac-VHT80\_ANT0



Tester : Zenos Qiao Spectrum setting: Average reading:RBW:1MHz VBW:3kHz Detector:Peak Note : 5GWiFi-Band1-AC80-5210

	Freq	Factor			Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	50.71	43.97	54.00	-10.03	Average
2	5458.280	-6.29	51.52	45.23	54.00	-8.77	Average

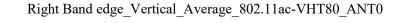
### Date: 2025-04-23 Det: 2025-04-23 Det:

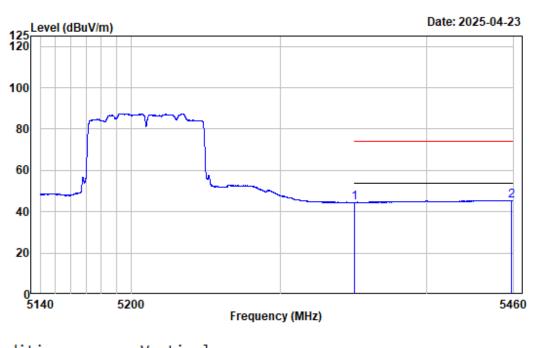
### Right Band edge\_Vertical\_Peak\_802.11ac-VHT80\_ANT0

Condition : Vertical Project No. : 2501R29190E-RF Tester : Zenos Qiao Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak Note : 5GWiFi-Band1-AC80-5210

	Freq	Factor	Read Level			Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	63.92	57.18	74.00	-16.82	Peak
2	5442.558	-6.35	65.68	59.33	74.00	-14.67	Peak

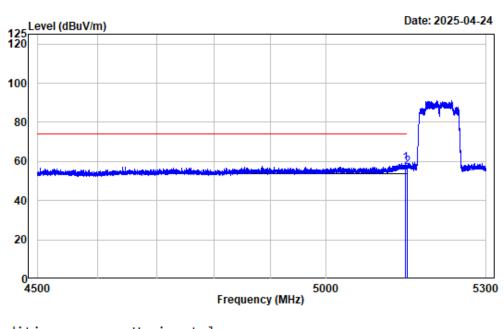






Condition : Vertical Project No. : 2501R29190E-RF Tester : Zenos Qiao Spectrum setting: Average reading:RBW:1MHz VBW:3kHz Detector:Peak Note : 5GWiFi-Band1-AC80-5210

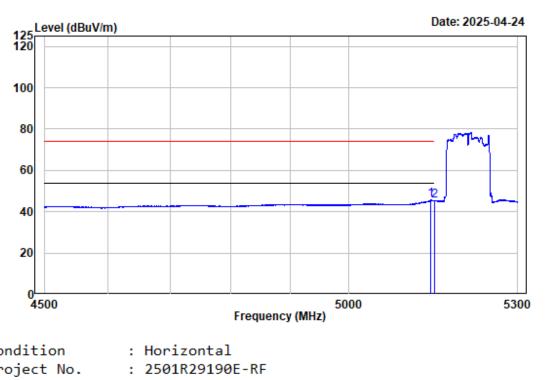
	Freq	Factor			Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	51.20	44.46	54.00	-9.54	Average
2	5458.720	-6.29	51.80	45.51	54.00	-8.49	Average



# Left Band edge\_Horizontal\_Peak\_802.11ac-VHT80\_ANT1

Condition	:	Horizontal
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note	:	5GWiFi-Band1-AC80-5210

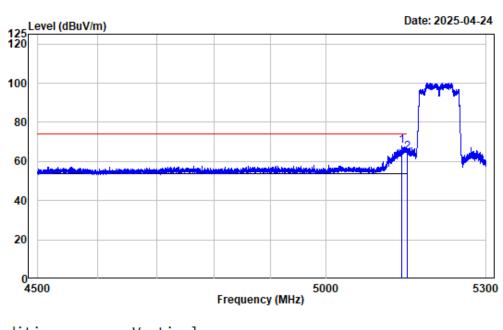
	Freq	Factor			Limit Line		Remark
		dB/m		-	-	dB	
1	5147.081	-7.46	66.43	58.97	74.00	-15.03	Peak
2	5150.000	-7.46	64.32	56.86	74.00	-17.14	Peak



Left Band edge\_Horizontal\_Average\_802.11ac-VHT80\_ANT1

Condition : I	Horizontal
Project No. : :	2501R29190E-RF
Tester : 2	Zenos Qiao
Spectrum setting: /	Average reading:RBW:1MHz VBW:3kHz Detector:Peak
Note :!	5GWiFi-Band1-AC80-5210

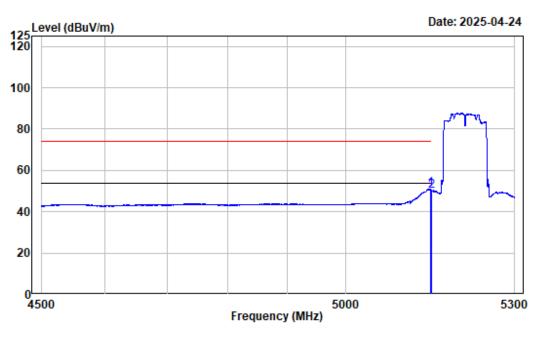
	Freq	Factor			Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5143.581	-7.46	53.04	45.58	54.00	-8.42	Average
2	5150.000	-7.46	52.57	45.11	54.00	-8.89	Average



# Left Band edge\_Vertical\_Peak\_802.11ac-VHT80\_ANT1

Condition	:	Vertical
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note	:	5GWiFi-Band1-AC80-5210

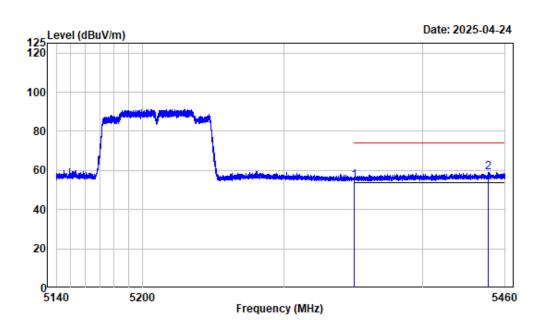
	Freq	Factor			Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5139.780	-7.47	75.39	67.92	74.00	-6.08	Peak
2	5150.000	-7.46	71.90	64.44	74.00	-9.56	Peak



Left Band edge\_Vertical\_Average\_802.11ac-VHT80\_ANT1

Condition	:	Vertical
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	;:	Average reading:RBW:1MHz VBW:3kHz Detector:Peak
Note	:	5GWiFi-Band1-AC80-5210

	Freq	Factor	Read Level		Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5147.681	-7.46	58.40	50.94	54.00	-3.06	Average
2	5150.000	-7.46	57.46	50.00	54.00	-4.00	Average

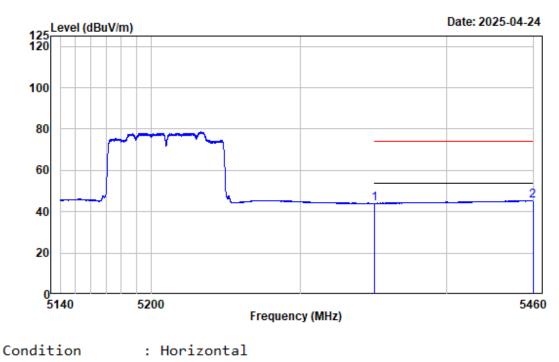


Right Band edge\_Horizontal\_Peak\_802.11ac-VHT80\_ANT1

Condition	:	Horizontal
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	:	<pre>Peak reading:RBW:1MHz VBW:3MHz Detector:Peak</pre>
Note	:	5GWiFi-Band1-AC80-5210

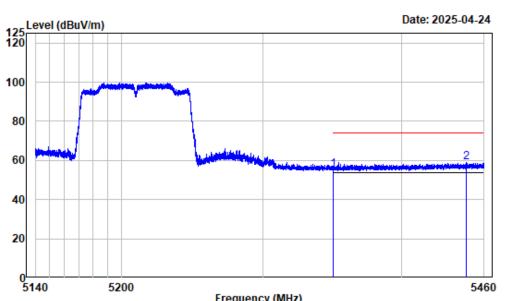
	Freq	Factor			Limit Line		Remark	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB		
1	5350.000	-6.74	61.38	54.64	74.00	-19.36	Peak	
2	5447.519	-6.33	65.37	59.04	74.00	-14.96	Peak	

Right Band edge\_Horizontal\_Average\_802.11ac-VHT80\_ANT1



Project No. : 2501R29190E-RF Tester : Zenos Qiao Spectrum setting: Average reading:RBW:1MHz VBW:3kHz Detector:Peak Note : 5GWiFi-Band1-AC80-5210

	Freq	Factor			Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	50.75	44.01	54.00	-9.99	Average
2	5459.480	-6.29	51.60	45.31	54.00	-8.69	Average



Right Band edge\_Vertical\_Peak\_802.11ac-VHT80\_ANT1

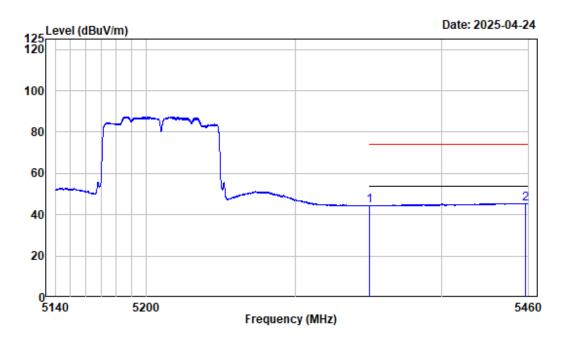
Frequency	(MHZ)

Condition	:	Vertical
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note	:	5GWiFi-Band1-AC80-5210

	Freq	Factor			Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	62.06	55.32	74.00	-18.68	Peak
2	5447.158	-6.35	65.38	59.03	74.00	-14.97	Peak



Right Band edge\_Vertical\_Average\_802.11ac-VHT80\_ANT1

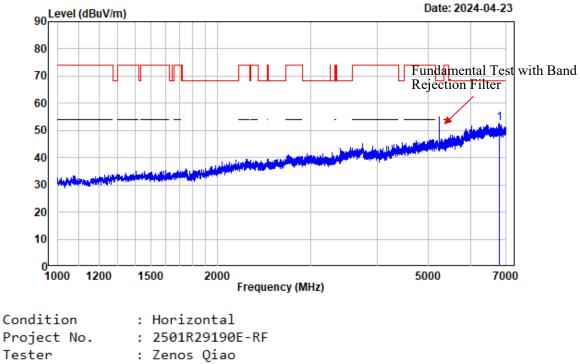


Condition : Vertical Project No. : 2501R29190E-RF Tester : Zenos Qiao Spectrum setting: Average reading:RBW:1MHz VBW:3kHz Detector:Peak Note : 5GWiFi-Band1-AC80-5210

	Freq	Factor			Limit Line		Remark	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB		
1	5350.000	-6.74	51.07	44.33	54.00	-9.67	Average	
2	5458.040	-6.29	51.80	45.51	54.00	-8.49	Average	

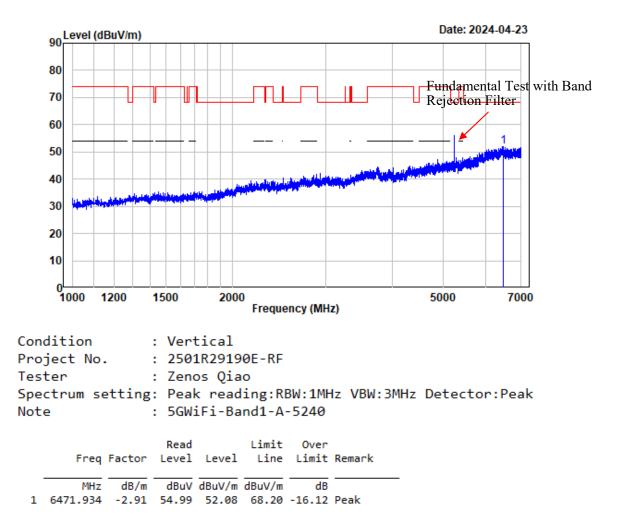
### 1-18GHz (Listed with the worst harmonic margin test plot)

1-7GHz\_Horizontal\_802.11a\_ANT0

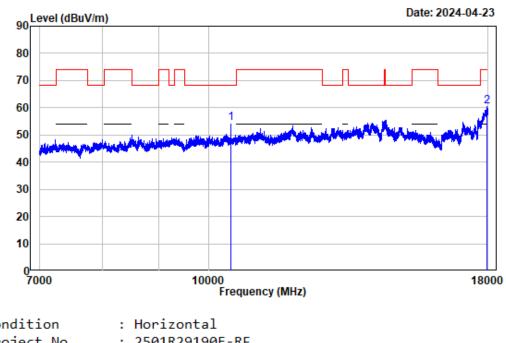


Spectrum setting:	Peak reading:RBW:1MHz	VBW:3MHz	Detector:Peak
Note :	5GWiFi-Band1-A-5240		

	Freq	Factor	 Level		Over Limit	Remark
1	MHz 6807.226	dB/m -3.32	-	-	dB -15.71	Peak



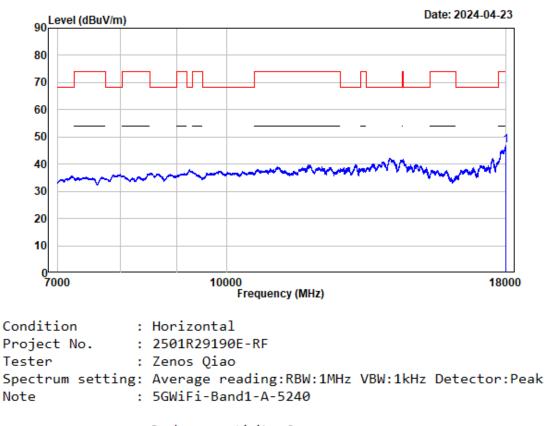
1-7GHz\_Vertical\_802.11a\_ANT0



7-18GHz\_Horizontal\_Peak\_802.11a\_ANT0

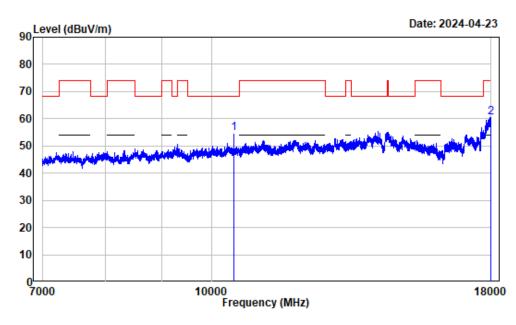
Condition	:	Horizontal
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note	:	5GWiFi-Band1-A-5240

Freq	Factor			Limit		Remark	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB		
1 10480.000	2.25	52.17	54.42	68.20	-13.78	Peak	
2 17967.000	13.03	47.37	60.40	74.00	-13.60	Peak	



7-18GHz\_Horizontal\_Average\_802.11a\_ANT0

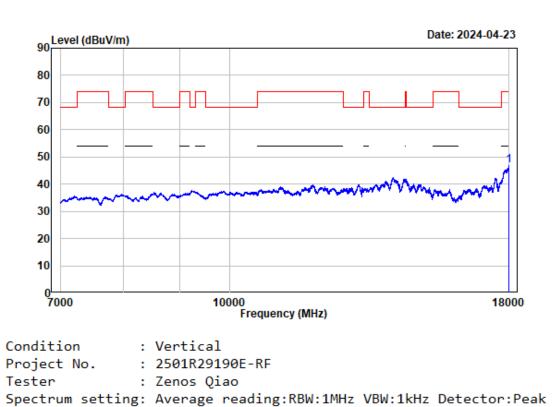
Freq	Factor		Level	Limit Line		Remark	
	dB/m		-	-	dB		
1 17998.630	13.19	33./1	46.90	54.00	-7.10	Average	



7-18GHz\_Vertical\_Peak\_802.11a\_ANT0

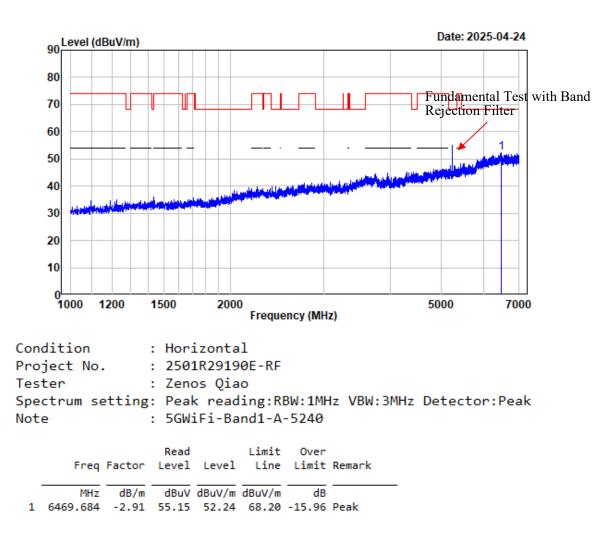
Condition	:	Vertical
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	:	<pre>Peak reading:RBW:1MHz VBW:3MHz Detector:Peak</pre>
Note	:	5GWiFi-Band1-A-5240

Freq	Factor	Read Level		Limit Line		Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 10480.000	2.25	52.53	54.78	68.20	-13.42	Peak
2 17975.250	13.08	47.31	60.39	74.00	-13.61	Peak

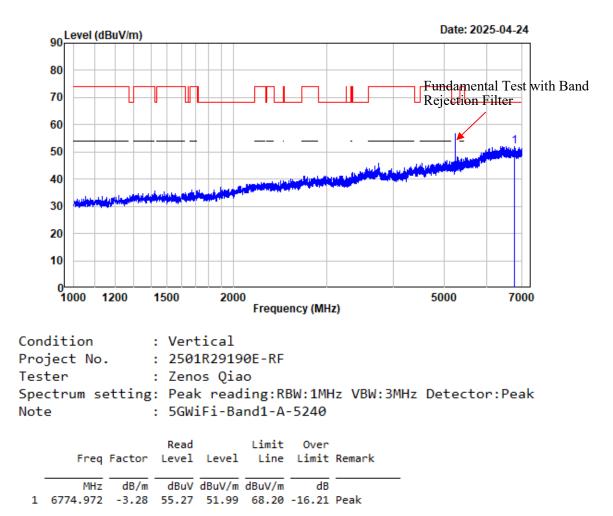


7-18GHz\_Vertical\_Average\_802.11a\_ANT0

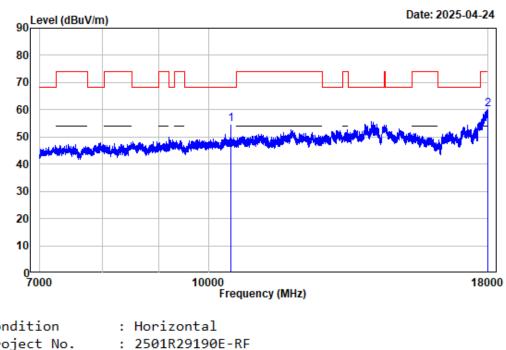
Note	: 5GWiFi-Band1-A-5240								
I	Freq Factor			Limit Line		Remark			
1 17998	MHz dB/m .630 13.19					Average			



1-7GHz\_Horizontal\_802.11a\_ANT1



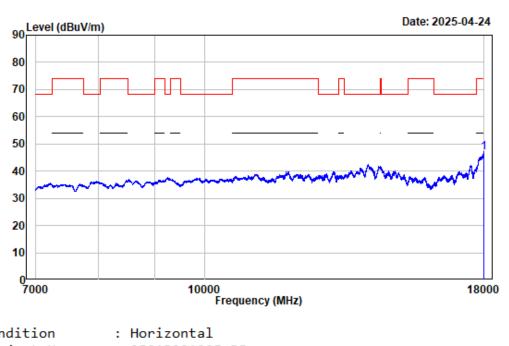
1-7GHz\_Vertical\_802.11a\_ANT1



7-18GHz\_Horizontal\_Peak\_802.11a\_ANT1

Condition :	Horizontal
Project No. :	2501R29190E-RF
Tester :	Zenos Qiao
Spectrum setting:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note :	5GWiFi-Band1-A-5240

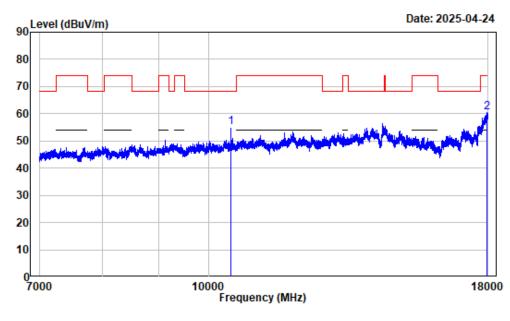
	Freq	Factor		Level			Remark	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB		
1 1048	80.000	2.25	52.49	54.74	68.20	-13.46	Peak	
2 1799	93.130	13.17	46.85	60.02	74.00	-13.98	Peak	



7-18GHz\_Horizontal\_Average\_802.11a\_ANT1

Condition Project No. Tester	: Horizontal : 2501R29190E-RF : Zenos Qiao
Spectrum settin	g: Average reading:RBW:1MHz VBW:1kHz Detector:Peak
Note	: 5GWiFi-Band1-A-5240
Freq Facto	Read Limit Over Level Level Line Limit Remark
MHz dB/	

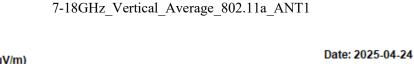
11112	ub/m	abav	ubuv/m	ubuv/m	u D	
1 17994.500	13.17	33.78	46.95	54.00	-7.05	Average

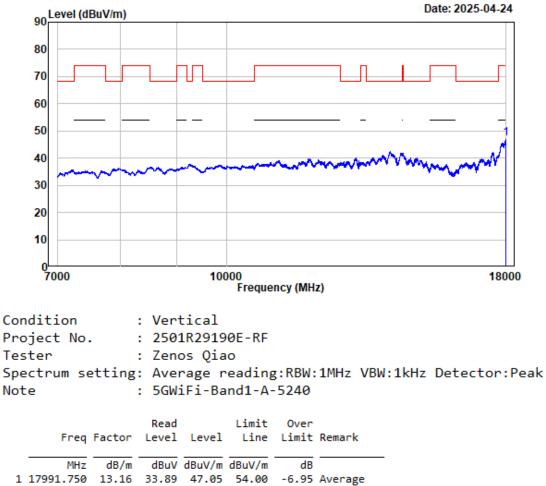


7-18GHz\_Vertical\_Peak\_802.11a\_ANT1

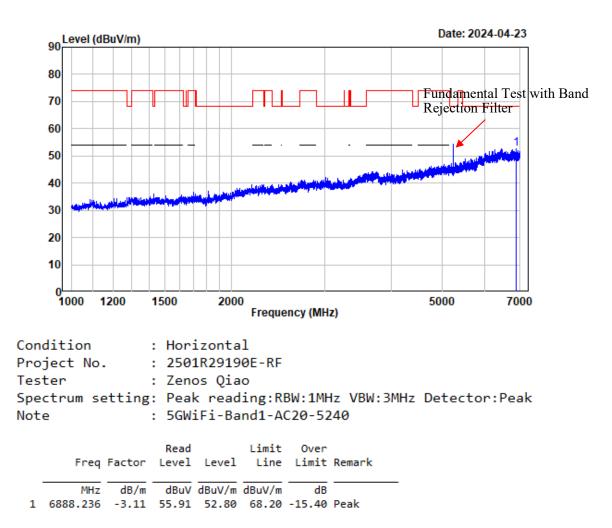
Condition :	Vertical
Project No. :	2501R29190E-RF
Tester :	Zenos Qiao
Spectrum setting:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note :	5GWiFi-Band1-A-5240

Freq	Factor			Limit		Remark	
	dB/m		-	-			-
1 10480.000	2.25	52.83	55.08	68.20	-13.12	Peak	
2 17962.870	13.01	47.38	60.39	74.00	-13.61	Peak	

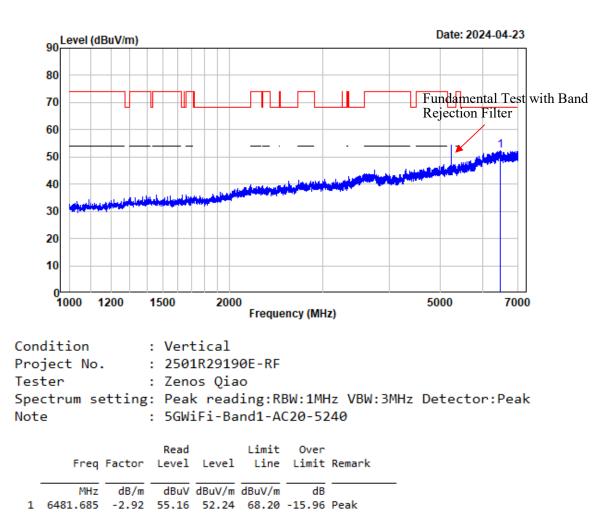




TR-EM-RF015



1-7GHz\_Horizontal\_802.11ac-VHT20\_ANT0



1-7GHz\_Vertical\_802.11ac-VHT20\_ANT0

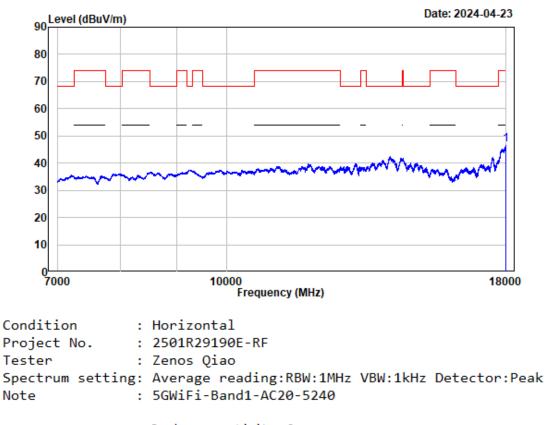
90 Level (dBuV/m) Date: 2024-04-23 80 70 60 50 40 30 20 10 0 7000 10000 Frequency (MHz) 18000 Condition : Horizontal Project No. : 2501R29190E-RF : Zenos Qiao

#### 7-18GHz\_Horizontal\_Peak\_802.11ac-VHT20\_ANT0

Bay Area Compliance Laboratories Corp. (Shenzhen)

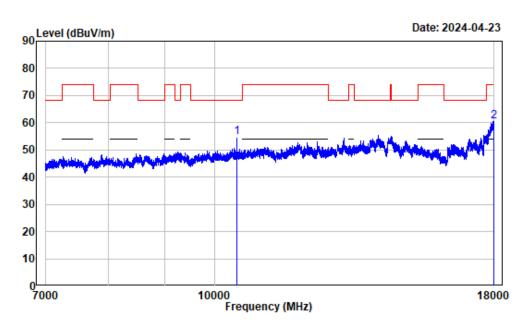
Tester Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak Note : 5GWiFi-Band1-AC20-5240 Read Limit Over

	Freq	Factor	Level	Level	Line	Limit	Remark	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB		
1	10480.000						Peak	
2	17995.880	13.18	47.80	60.98	74.00	-13.02	Peak	



### 7-18GHz\_Horizontal\_Average\_802.11ac-VHT20\_ANT0

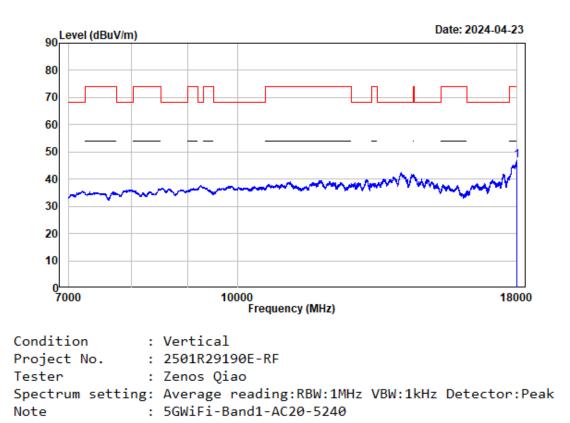
Freq	Factor	 Level	Limit Line		Remark	
MHz 1 17991.750	dB/m 13.16	-	-	dB -7.11	Average	



7-18GHz\_Vertical\_Peak\_802.11ac-VHT20\_ANT0

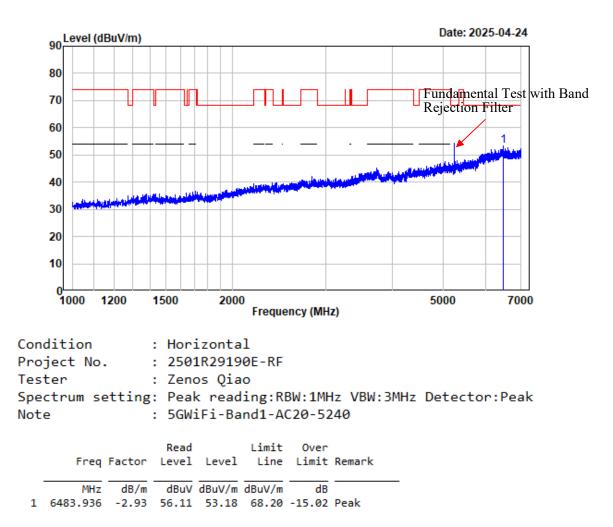
Condition	:	Vertical
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting:	:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note	:	5GWiFi-Band1-AC20-5240

Freq	Factor		Level		Over Limit	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 10480.000	2.25	52.38	54.63	68.20	-13.57	Peak
2 17993.130	13.17	47.32	60.49	74.00	-13.51	Peak

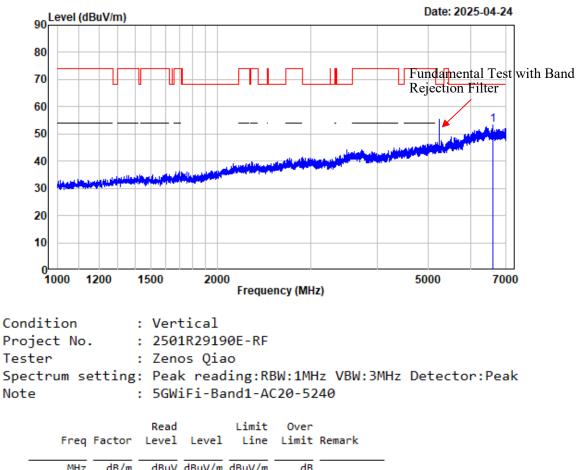


#### 7-18GHz\_Vertical\_Average\_802.11ac-VHT20\_ANT0

Freq	Factor		Limit Line		Remark
MHz 1 17995.880	dB/m 13.18	-	-	dB -7.07	Average

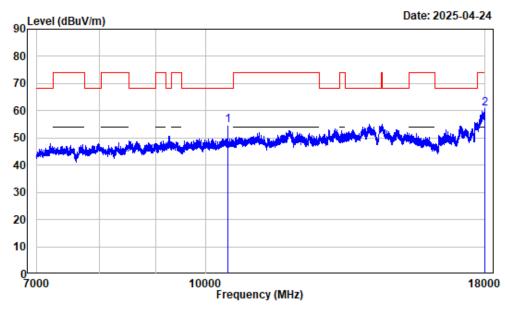


1-7GHz\_Horizontal\_802.11ac-VHT20\_ANT1



1-7GHz\_Vertical\_802.11ac-VHT20\_ANT1

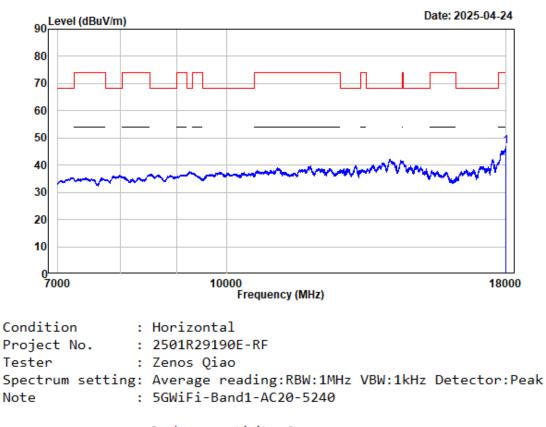
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	6615.952	-3.07	56.37	53.30	68.20	-14.90	Peak



## 7-18GHz\_Horizontal\_Peak\_802.11ac-VHT20\_ANT1

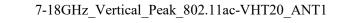
Condition	:	Horizontal
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting:	:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note	:	5GWiFi-Band1-AC20-5240

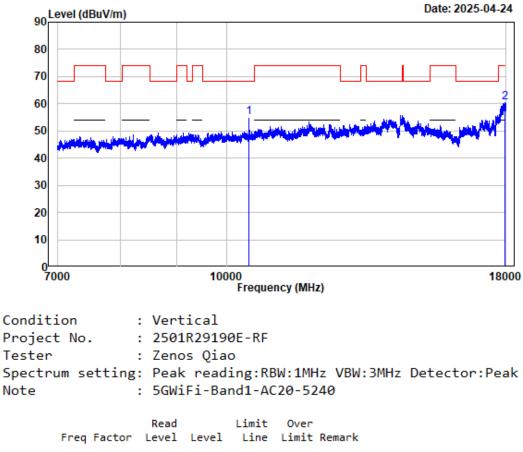
Freq	Factor	Read Level		Limit Line		Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 10480.000	2.25	52.36	54.61	68.20	-13.59	Peak
2 17990.370	13.15	47.81	60.96	74.00	-13.04	Peak



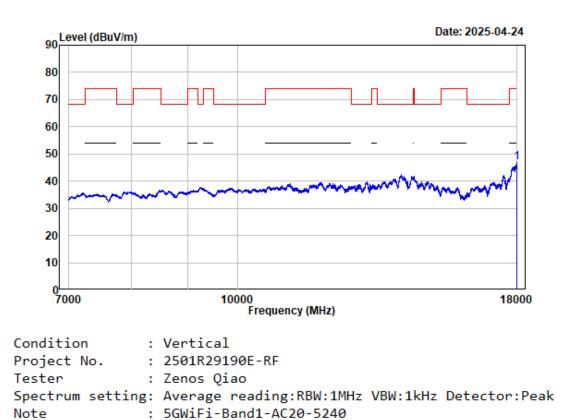
### 7-18GHz\_Horizontal\_Average\_802.11ac-VHT20\_ANT1

Freq	Factor		Level		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	



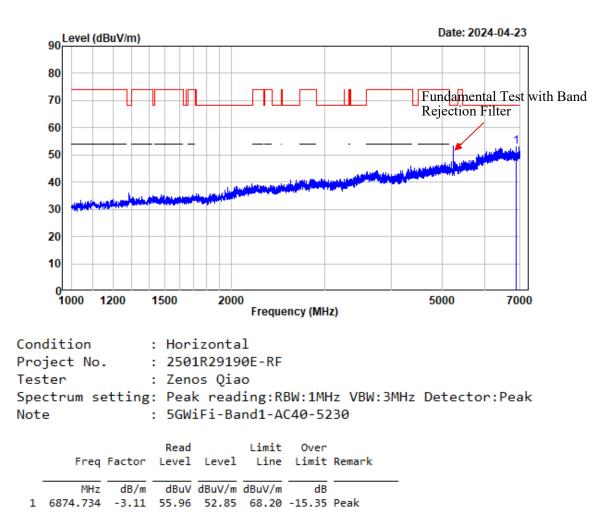


	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 10480	0.000	2.25	52.71	54.96	68.20	-13.24	Peak
2 1797	1.120	13.06	47.32	60.38	74.00	-13.62	Peak

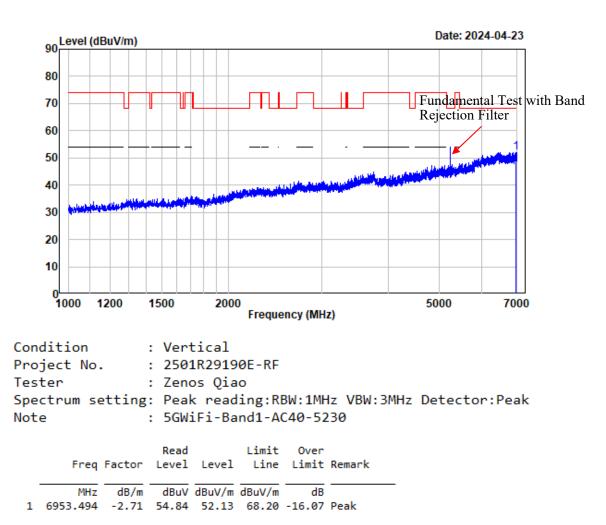


#### 7-18GHz\_Vertical\_Average\_802.11ac-VHT20\_ANT1

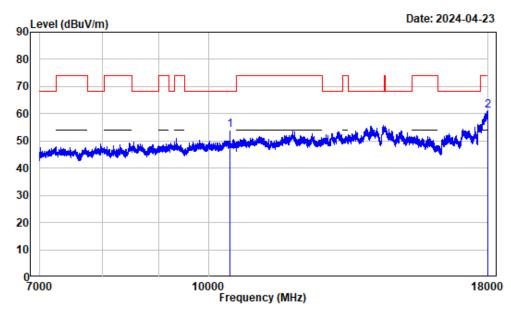
Freq	Factor		Limit Line		Remark
MHz 1 17998.630	dB/m 13.19	-		dB -7.02	Average



1-7GHz\_Horizontal\_802.11ac-VHT40\_ANT0



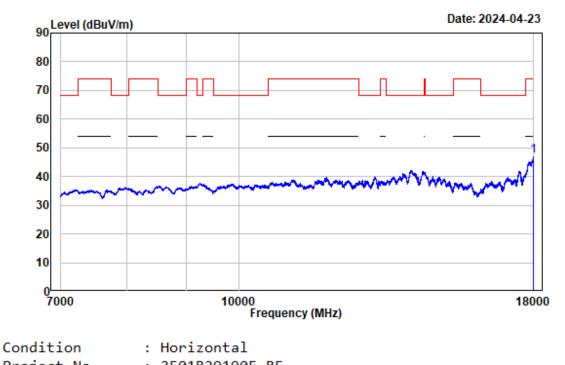
1-7GHz\_Vertical\_802.11ac-VHT40\_ANT0



## 7-18GHz\_Horizontal\_Peak\_802.11ac-VHT40\_ANT0

Condition	:	Horizontal
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note	:	5GWiFi-Band1-AC40-5230

Freq	Factor		Level		Over Limit	Remark	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB		
1 10460.000	2.32	51.76	54.08	68.20	-14.12	Peak	
2 17982.120	13.10	48.07	61.17	74.00	-12.83	Peak	

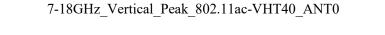


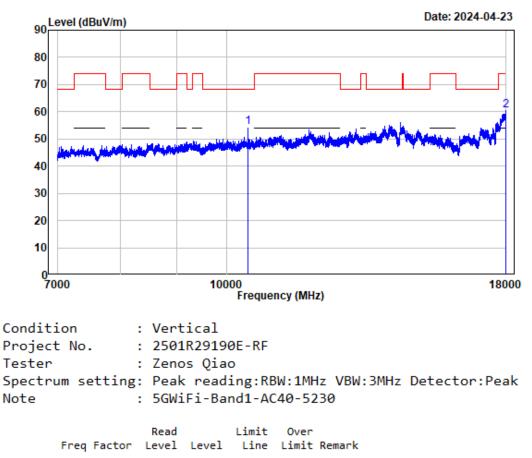
## 7-18GHz\_Horizontal\_Average\_802.11ac-VHT40\_ANT0

Project No. :	2501R29190E-RF
Tester :	Zenos Qiao
Spectrum setting:	Average reading:RBW:1MHz VBW:2kHz Detector:Peak
Note :	5GWiFi-Band1-AC40-5230

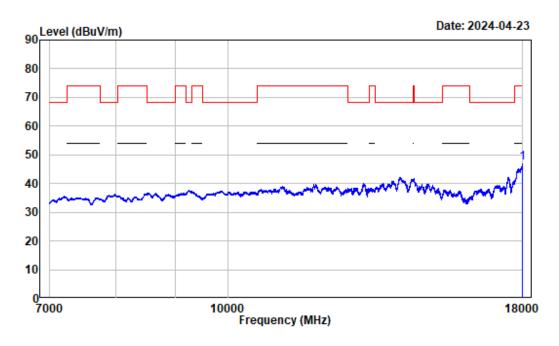
Freq	Factor	 Level	Limit Line		Remark	
MHz 1 17998.630	dB/m			dB	Average	

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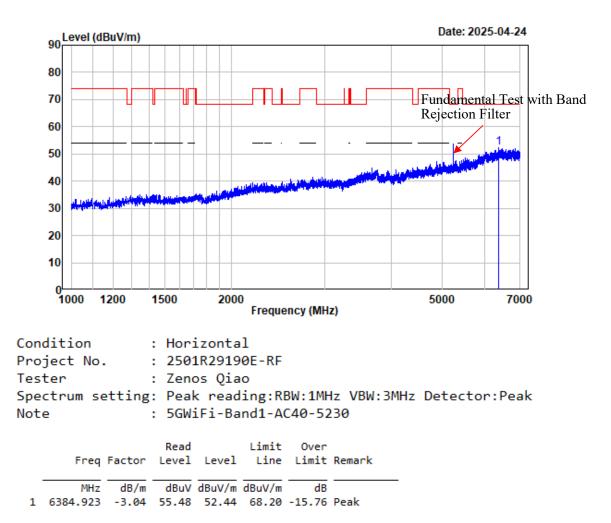
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 10460.000	2.32	52.09	54.41	68.20	-13.79	Peak
2 17983.500	13.11	47.23	60.34	74.00	-13.66	Peak



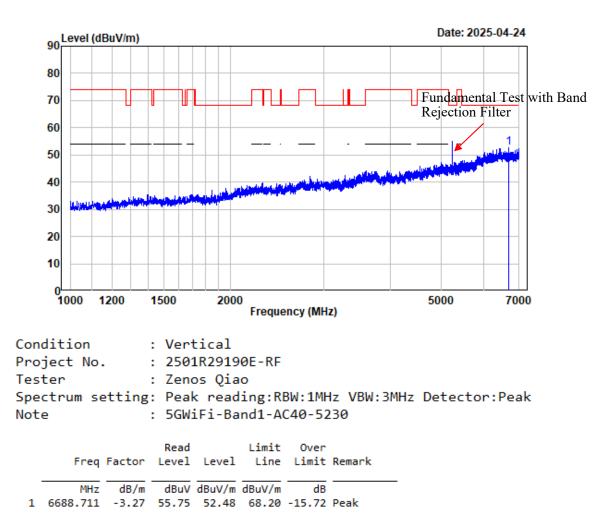
# 7-18GHz\_Vertical\_Average\_802.11ac-VHT40-ANT0

Condition	:	Vertical		
Project No.	:	2501R29190E-RF		
Tester	:	Zenos Qiao		
Spectrum setting	g :	Average reading:RBW:1MHz	VBW:2kHz	Detector:Peak
Note	:	5GWiFi-Band1-AC40-5230		

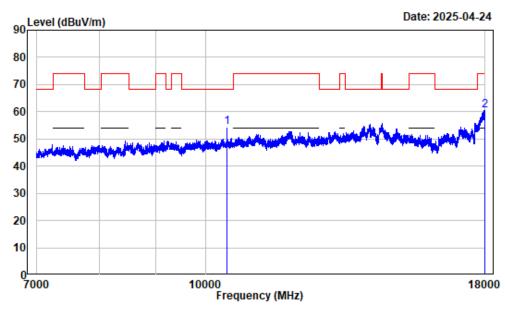
Freq	Factor	 Level	Limit Line		Remark	
MHz 1 17995.880	dB/m 13.18			dB -6.71	Average	



1-7GHz\_Horizontal\_802.11ac-VHT40\_ANT1



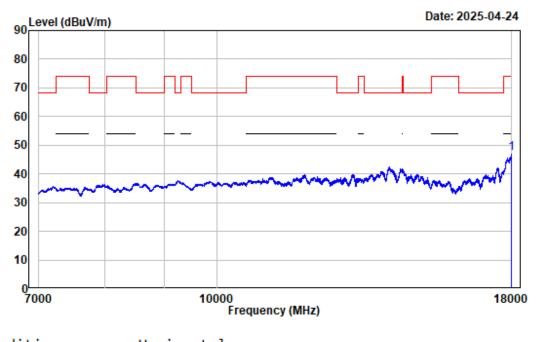
1-7GHz\_Vertical\_802.11ac-VHT40\_ANT1



## 7-18GHz\_Horizontal\_Peak\_802.11ac-VHT40\_ANT1

Condition	:	Horizontal
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting:	:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note	:	5GWiFi-Band1-AC40-5230

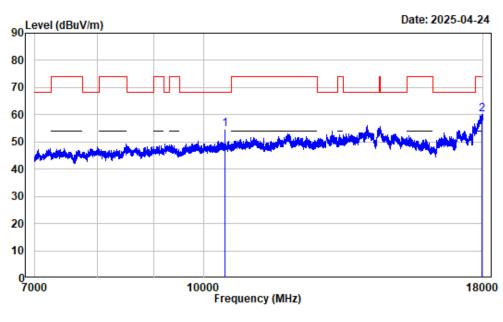
Freq	Factor	Read Level			Over Limit	Remark
MHz 1 10460.000 2 17982.120		52.01	54.33	68.20	-13.87	



#### 7-18GHz\_Horizontal\_Average\_802.11ac-VHT40\_ANT1

Condition : Horizontal Project No. : 2501R29190E-RF Tester : Zenos Qiao Spectrum setting: Average reading:RBW:1MHz VBW:2kHz Detector:Peak Note : 5GWiFi-Band1-AC40-5230

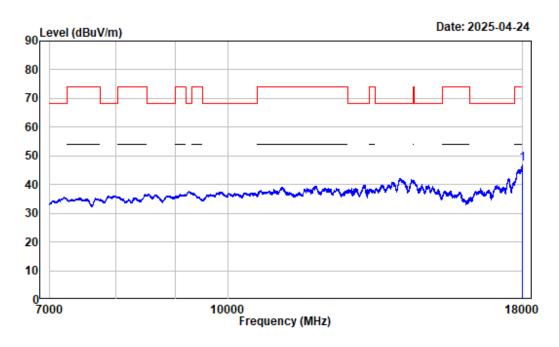
Freq	Factor		Limit Line		Remark	
MHz 1 17998.630	dB/m 13.19			dB -6.72	Average	



7-18GHz\_Vertical\_Peak\_802.11ac-VHT40\_ANT1

Condition	:	Vertical
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note	:	5GWiFi-Band1-AC40-5230

Freq	Factor		Level		Over Limit	Remark	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB		
1 10460.000	2.32	52.35	54.67	68.20	-13.53	Peak	
2 17971.120	13.06	47.19	60.25	74.00	-13.75	Peak	

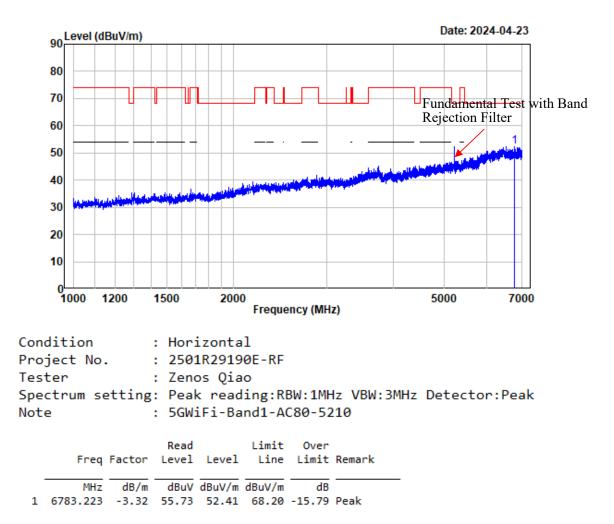


7-18GHz\_Vertical\_Average\_802.11ac-VHT4-ANT1

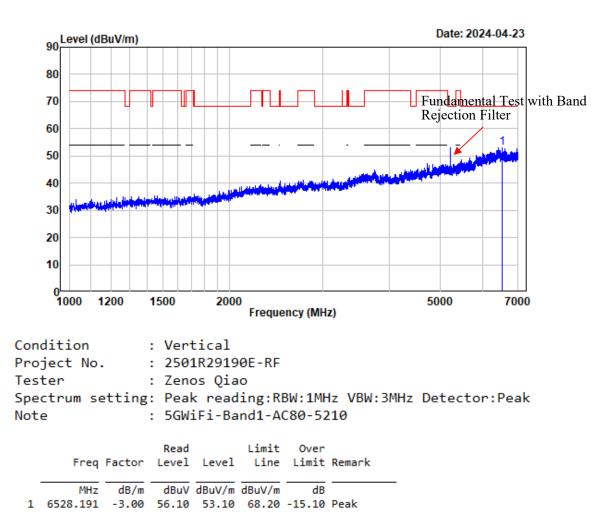
Condition	:	Vertical		
Project No.	:	2501R29190E-RF		
Tester	:	Zenos Qiao		
Spectrum setting	;:	Average reading:RBW:1MHz	VBW:2kHz	Detector:Peak
Note	:	5GWiFi-Band1-AC40-5230		

Freq	Factor	Read Level		Over Limit	Remark	
MHz 1 17998.630	dB/m 13.19			dB -6.63	Average	

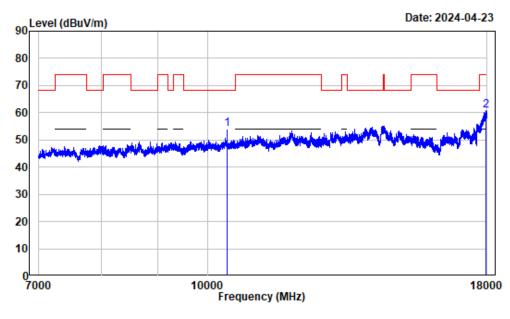
TR-EM-RF015



1-7GHz\_Horizontal\_802.11ac-VHT80\_ANT0



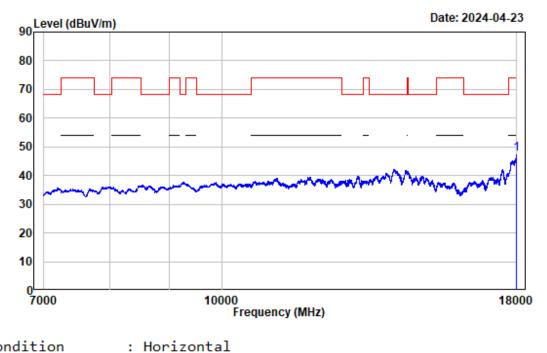
1-7GHz\_Vertical\_802.11ac-VHT80\_ANT0



## 7-18GHz\_Horizontal\_Peak\_802.11ac-VHT80\_ANT0

Condition	:	Horizontal
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note	:	5GWiFi-Band1-AC80-5210

Freq	Factor	Read Level			Over Limit	Remark
MHz 1 10420.000 2 17950.490		51.54	54.02	68.20		

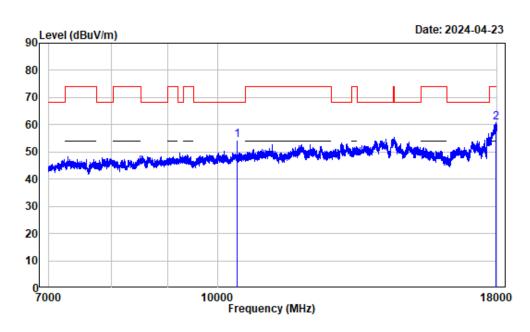


## 7-18GHz\_Horizontal\_Average\_802.11ac-VHT80\_ANT0

Condition	:	Horizontal	
Project No.	:	2501R29190E-RF	
Tester	:	Zenos Qiao	
Spectrum setting	g:	Average reading:RBW:1MHz VBW:3kHz Detector:Pe	ak
Note	:	5GWiFi-Band1-AC80-5210	

Freq	Factor	 Level	Limit Line		Remark	
MHz 1 17995.880	dB/m 13.18			dB -6.35	Average	

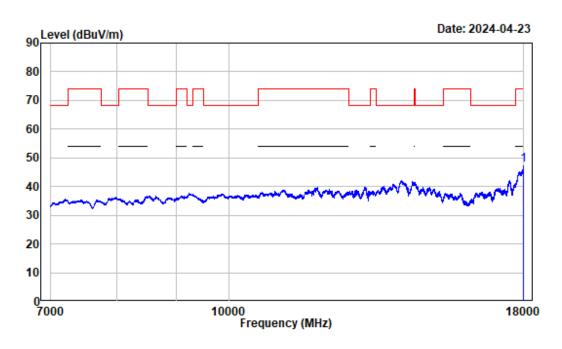
TR-EM-RF015



# 7-18GHz\_Vertical\_Peak\_802.11ac-VHT80\_ANT0

Condition :	Vertical
Project No. :	2501R29190E-RF
Tester :	Zenos Qiao
Spectrum setting:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note :	5GWiFi-Band1-AC80-5210

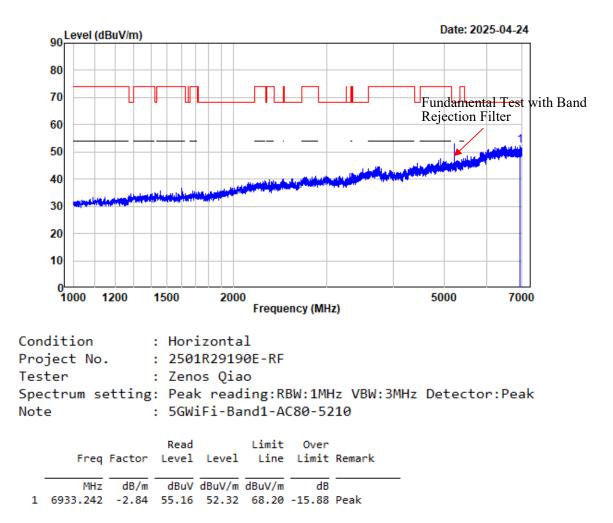
Freq	Factor		Level		Over Limit	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 10420.000	2.48	51.85	54.33	68.20	-13.87	Peak
2 17955.990	12.98	47.72	60.70	74.00	-13.30	Peak



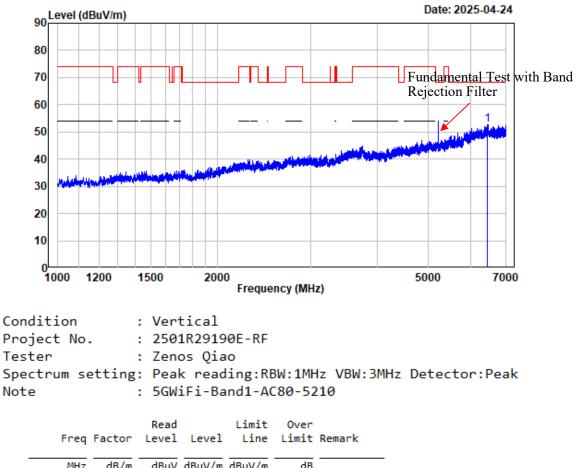
# 7-18GHz\_Vertical\_Average\_802.11ac-VHT80\_ANT0

Condition	:	Vertical
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum setting	g :	Average reading:RBW:1MHz VBW:3kHz Detector:Peak
Note	:	5GWiFi-Band1-AC80-5210

Freq	Factor	 Level	Limit Line		Remark	
MHz 1 17998.630	dB/m 13.19			dB -6,28	Average	

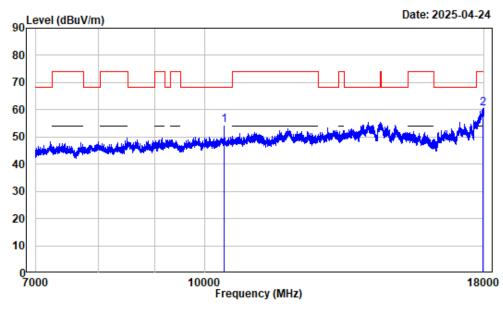


1-7GHz\_Horizontal\_802.11ac-VHT80\_ANT1



1-7GHz\_Vertical\_802.11ac-VHT80\_ANT1

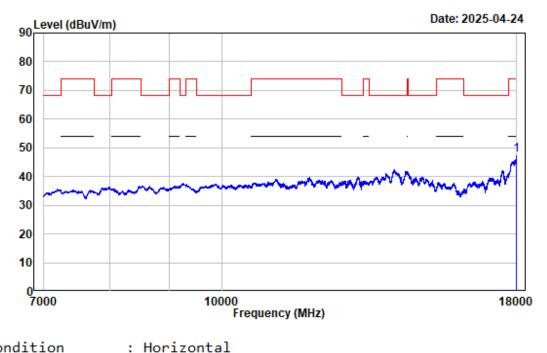
	1112	ub/m	ubuv	ubuv/m	ubuv/m	ub	
1	6459.183	-2.89	55.50	52.61	68.20	-15.59	Peak



### 7-18GHz\_Horizontal\_Peak\_802.11ac-VHT80\_ANT1

Condition :	:	Horizontal
Project No. :	:	2501R29190E-RF
Tester :	:	Zenos Qiao
Spectrum setting:	:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note :	:	5GWiFi-Band1-AC80-5210

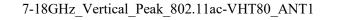
	Freq	Factor	Read Level			Over Limit	Remark
-		dB/m		-	-	dB	
1 1	0420.000	2.48	51.75	54.23	68.20	-13.97	Реак
21	7969.750	13.06	47.37	60.43	74.00	-13.57	Peak

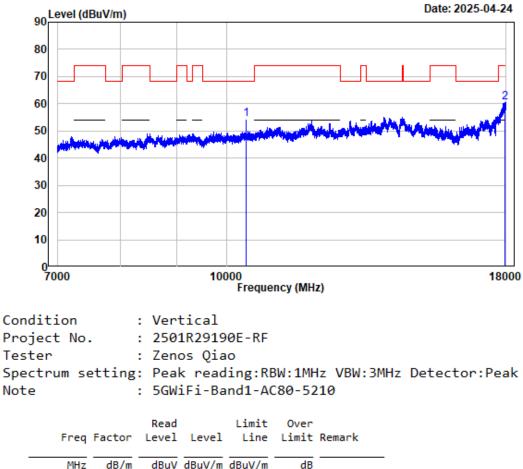


7-18GHz\_Horizontal\_Average\_802.11ac-VHT80\_ANT1

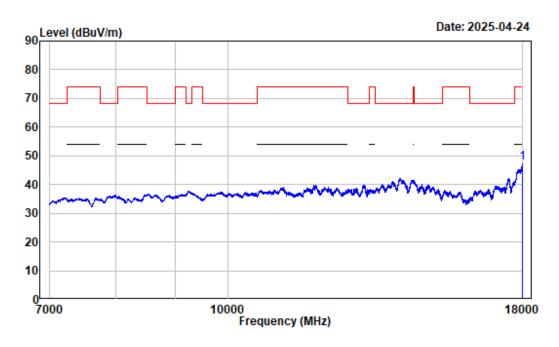
Condition	:	Horizontal		
Project No.	:	2501R29190E-RF		
Tester	:	Zenos Qiao		
Spectrum setting	g :	Average reading:RBW:1MHz	VBW:3kHz	Detector:Peak
Note	:	5GWiFi-Band1-AC80-5210		

Freq	Factor	 Level	Limit Line		Remark	
MHz 1 17995.880	dB/m 13.18			dB -6,45	Average	





init.	2 00/11	ubuv	ubuv/m	ubuv/m	ub	
1 10420.000	2.48	52.02	54.50	68.20	-13.70	Peak
2 17964.250	0 13.02	47.54	60.56	74.00	-13.44	Peak



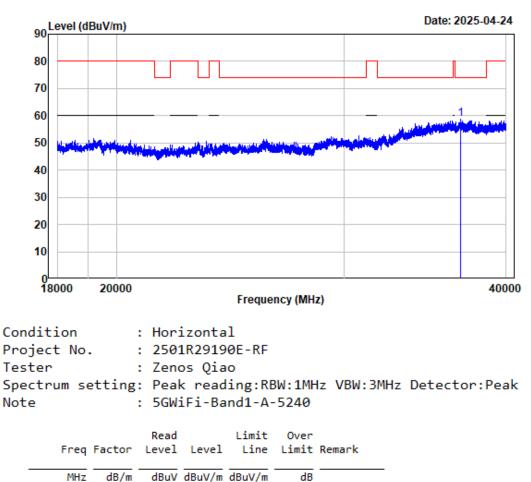
7-18GHz\_Vertical\_Average\_802.11ac-VHT80\_ANT1

Condition	:	Vertical		
Project No.	:	2501R29190E-RF		
Tester	:	Zenos Qiao		
Spectrum setting	g :	Average reading:RBW:1MHz	VBW:3kHz	Detector:Peak
Note	:	5GWiFi-Band1-AC80-5210		

Freq	Factor	Read Level		Over Limit	Remark	
MHz 1 17991.750	dB/m 13.16			dB -6.34	Average	

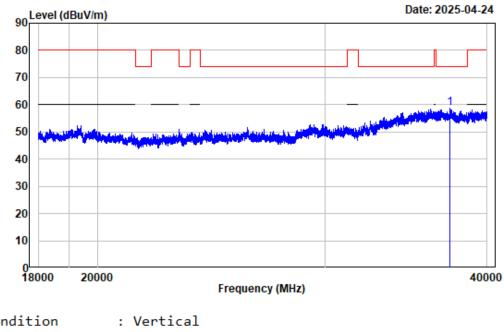
### 18-40GHz (Only with worst case margin mode plot):

18-40GHz\_Horizontal\_802.11a\_ANT1



1 36859.110	22.84	35.85	58.69	74.20	-15.51	peak

18-40GHz\_Vertical\_802.11a\_ANT1



Condition	:	Vertical
Project No.	:	2501R29190E-RF
Tester	:	Zenos Qiao
Spectrum settin	g:	Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note	:	5GWiFi-Band1-A-5240
		Read Limit Over
Freq Facto	r	Level Level Line Limit Remark

	dB/m					
1 37455.930	22.64	36.13	58.77	74.20	-15.43	peak

### **RF** Conducted data

### **Emission Bandwidth**

### **Test Information:**

Sample No.:	301H-1	Test Date:	2025/04/29~2025/04/30
Test Site:	RF	Test Mode:	Transmitting
Tester:	Brian Li	Test Result:	Pass

### **Environmental Conditions:**

Temperature: 25.9	Relative Humidity: (%)	38	ATM Pressure: (kPa)	101
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Report No.: 2501R29190E-RF-00D

### Test Data:

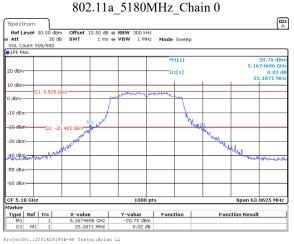
### 26dB Emission Bandwidth

#### 5150-5250MHz

Mode	Antenna	Test Frequency (MHz)	Result (MHz)		
		5180	25.187		
	Chain 0	5200	25.426		
802.11a		5240	23.396		
002.11a		5180	23.956		
	Chain 1 5200 24.59				
		5240	25.223		
		5180	23.898		
	Chain 0	5200	24.723		
802.11ac20		5240	24.788		
802.11ac20		5180	24.514		
	Chain 1	5200	24.357		
		5240	25.944		
	Chain 0	5190	44.645		
802.11ac40	Chain 0	5230	44.144		
802.11ac40	Chain 1	5190	43.243		
	Chain 1	5230	43.944		
802.11ac80	Chain 0	5210	81.882		
002.114000	Chain 1	5210	81.882		

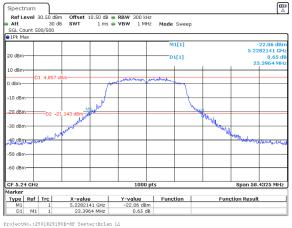
#### Report No.: 2501R29190E-RF-00D

#### 5150-5250MHz



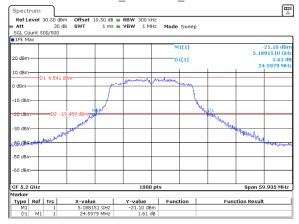
Date: 29.APR.2025 23:51:44

802.11a\_5240MHz\_Chain 0

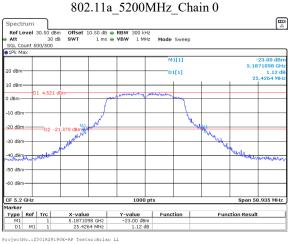


Date: 29.APR.2025 23:54:58

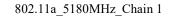
802.11a\_5200MHz\_Chain 1



ProjectNo.:2501R29190E-RF Tester:Brian Li Date: 30.APR.2025 00:12:29

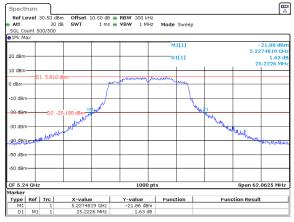


Date: 29.APR.2025 23:53:28



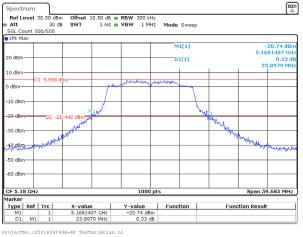


#### 802.11a\_5240MHz\_Chain 1



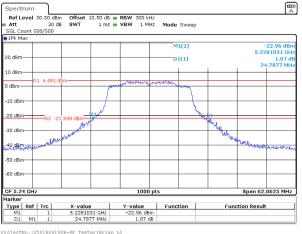
ProjectNo.:2501R29190E-RF Tester:Brian Li Date: 30.APR.2025 00:14:12

#### 802.11ac20 5180MHz Chain 0



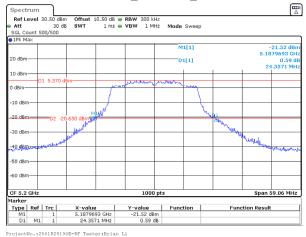
Date: 29.APR.2025 23:56:44

# 802.11ac20\_5240MHz\_Chain 0



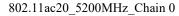
Date: 30.APR.2025 00:01:17

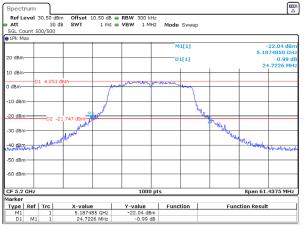
#### 802.11ac20\_5200MHz\_Chain 1



Date: 30.APR.2025 00:17:56

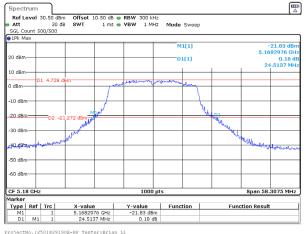
#### Report No.: 2501R29190E-RF-00D





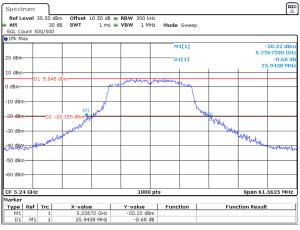
ProjectNo.:2501R29190E-RF Tester:Brian Li Date: 29.APR.2025 23:59:23

#### 802.11ac20\_5180MHz\_Chain 1



Date: 30.APR.2025 00:16:23

#### 802.11ac20\_5240MHz\_Chain 1

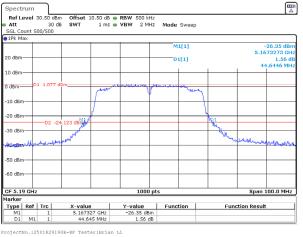


ProjectNo.:2501R29190E-RF Tester:Brian Li Date: 30.APR.2025 00:19:20

#### TR-EM-RF015

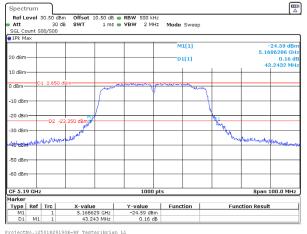
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#### 802.11ac40 5190MHz Chain 0



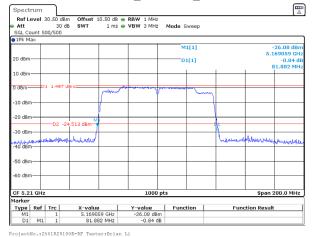
Date: 30.APR.2025 00:02:49

#### 802.11ac40\_5190MHz\_Chain 1



Date: 30.APR.2025 00:21:01

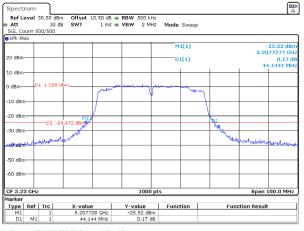
#### 802.11ac80\_5210MHz\_Chain 0



Date: 30.APR.2025 00:05:45

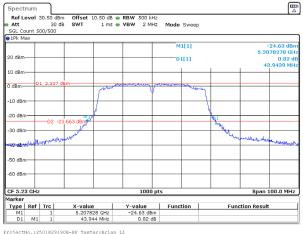
#### Report No.: 2501R29190E-RF-00D

#### 802.11ac40 5230MHz Chain 0



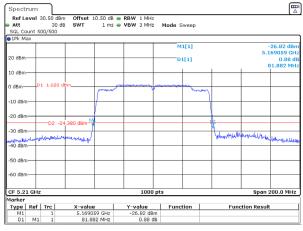
ProjectNo.:2501R29190E-RF Tester:Brian Li Date: 30.APR.2025 00:04:18

#### 802.11ac40\_5230MHz\_Chain 1



Date: 30.APR.2025 00:22:09

#### 802.11ac80\_5210MHz\_Chain 1



ProjectNo.:2501R29190E-RF Tester:Brian Li Date: 30.APR.2025 00:24:08

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### 99% Occupied Bandwidth

### **Test Information:**

Sample No.:	301H-1	Test Date:	2025/04/29~2025/05/10
Test Site:	RF	Test Mode:	Transmitting
Tester:	Brian Li	Test Result:	N/A

#### **Environmental Conditions:**

Temperature:         24.6~25.9           (°C)         24.6~25.9	Relative Humidity: (%)	38~44	ATM Pressure: (kPa)	101
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Report No.: 2501R29190E-RF-00D

### Test Data:

### 5150-5250MHz

Mode	Antenna	Test Frequency (MHz)	99% OBW (MHz)	
		5180	16.600	
	Chain 0	5200	16.600	
802.11a		5240	16.550	
802.11a		5180	16.550	
	Chain 1	5200	16.600	
		5240	16.550	
		5180	17.800	
	Chain 0	5200	17.750	
		5240	17.700	
802.11ac20		5180	17.750	
	Chain 1	5200	17.750	
		5240	17.800	
	Chain 0	5190	36.300	
902 1140	Chain 0	5230	36.300	
802.11ac40	Chain 1	5190	36.200	
	Chain I	5230	36.200	
000 11 00	Chain 0	5210	75.400	
802.11ac80	Chain 1	5210	75.200	

Note:

The 99% Occupied Bandwidth have not fall into the band 5250-5350MHz, please refer to the test plots of 99% Occupied Bandwidth.

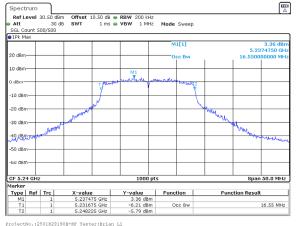
#### Report No.: 2501R29190E-RF-00D

#### 5150-5250MHz



Date: 29.APR.2025 23:52:11



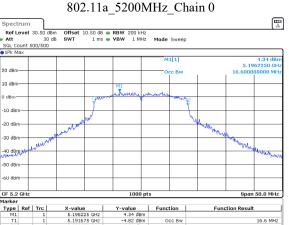


Date: 29.APR.2025 23:55:23

#### 802.11a\_5200MHz\_Chain 1

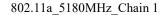


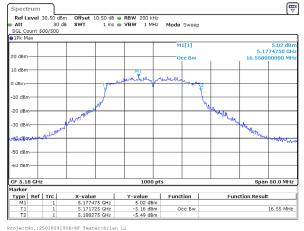
Date: 10.MAY.2025 21:27:55





Date: 29.APR.2025 23:53:51





Date: 10.MAY.2025 21:27:24

#### 802.11a\_5240MHz\_Chain 1



Date: 10.MAY.2025 21:28:37

#### 802.11ac20 5180MHz Chain 0



Date: 29.APR.2025 23:57:11

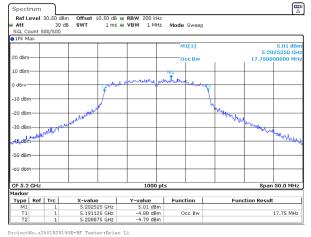
#### Spectrum Ref Level 30.50 dBm Att 30 dB Offset 10.50 dB RBW 200 kHz SWT 1 ms VBW 1 MHz Mode Sweep SGL C 3.68 dBi 5.2412750 GH 17.700000000 M1[1] 20 dBr Bw 10 dBm 10 dBr -20 dBm Then. ...... -30 dBm America -40 dBm -50 dBm 6U dBm CF 5.24 GHz Span 50.0 MHz Type Ref Trc X-value 5.241275 GHz 5.231125 GHz 5.248825 GHz Y-value 3.68 dBm -6.16 dBm -4.74 dBm Function Function Result 17.7 MHz T1 T2 Occ Bw

802.11ac20\_5240MHz\_Chain 0

ProjectNo.:2501R29190E-RF Tester:Brian Li

Date: 30.APR.2025 00:01:43

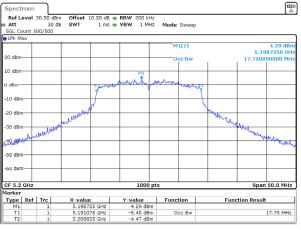
#### 802.11ac20\_5200MHz\_Chain 1



Date: 30.APR.2025 00:18:19

#### Report No.: 2501R29190E-RF-00D

#### 802.11ac20 5200MHz Chain 0



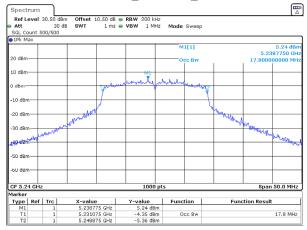
ProjectNo.:2501R29190E-RF Tester:Brian Li Date: 29.APR.2025 23:59:47

#### 802.11ac20\_5180MHz\_Chain 1



Date: 30.APR.2025 00:16:50

#### 802.11ac20\_5240MHz\_Chain 1

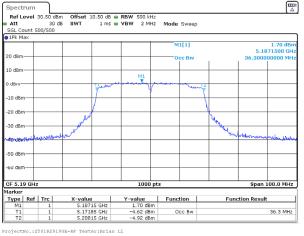


ProjectNo.:2501R29190E-RF Tester:Brian Li Date: 30.APR.2025 00:19:46

#### TR-EM-RF015

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#### 802.11ac40 5190MHz Chain 0



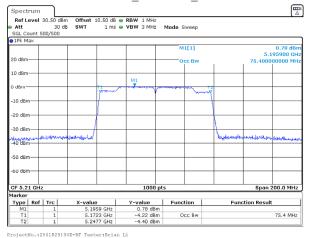
Date: 30.APR.2025 00:03:07

#### 802.11ac40\_5190MHz\_Chain 1



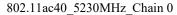
Date: 30.APR.2025 00:21:18

#### 802.11ac80\_5210MHz\_Chain 0



Date: 30.APR.2025 00:06:06

#### Report No.: 2501R29190E-RF-00D





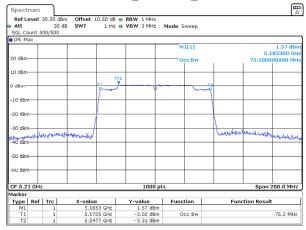
Date: 30.APR.2025 00:04:36

#### 802.11ac40\_5230MHz\_Chain 1



Date: 30.APR.2025 00:22:54

#### 802.11ac80\_5210MHz\_Chain 1



ProjectNo.:2501R29190E-RF Tester:Brian Li Date: 30.APR.2025 00:24:27

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### Maximum Conducted Output Power

### **Test Information:**

Sample No.:	301H-1	Test Date:	2025/04/29~2025/04/30
Test Site:	RF	Test Mode:	Transmitting
Tester:	Brian Li	Test Result:	Pass

#### **Environmental Conditions:**

Temperature: (°C)	25.9	Relative Humidity: (%)	38	ATM Pressure: (kPa)	101
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### Test Data:

### 5150-5250MHz

Mode	Antenna	Test Frequency (MHz)	Average Output Power(dBm)	Limit (dBm)	Verdict
		5180	14.10	24	Pass
	Chain 0	5200	13.72	24	Pass
802.11a		5240	13.09	24	Pass
802.11a		5180	14.11	24	Pass
	Chain 1	5200	13.83	24	Pass
		5240	13.80	24	Pass
		5180	13.89	24	Pass
	Chain 0	5200	13.56	24	Pass
902 11 20		5240	12.98	24	Pass
802.11ac20		5180	14.09	24	Pass
	Chain 1	5200	14.54	24	Pass
		5240	14.39	24	Pass
		5190	11.18	24	Pass
802.11ac40	Chain 0	5230	10.84	24	Pass
802.11ac40	Chain 1	5190	12.50	24	Pass
	Chain I	5230	12.37	24	Pass
<u>802 11 a 80</u>	Chain 0	5210	10.71	24	Pass
802.11ac80	Chain 1	5210	11.53	24	Pass

### **Power Spectral Density**

### **Test Information:**

Sample No.:	301H-1	Test Date:	2025/04/29~2025/04/30
Test Site:	RF	Test Mode:	Transmitting
Tester:	Brian Li	Test Result:	Pass

### **Environmental Conditions:**

Temperature: (°C)	25.9	Relative Humidity: (%)	38	ATM Pressure: (kPa)	101
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### Test Data:

### 5150-5250MHz

Mode	Antenna	Test Frequency (MHz)	Reading (dBm/MHz)	Duty Cycle Factor(dB)	Result (dBm/MHz)	Limit (dBm/MHz)	Verdict
		5180	3.81	/	3.81	11	Pass
	Chain 0	5200	3.34	/	3.34	11	Pass
802.11a		5240	2.58	/	2.58	11	Pass
802.11a		5180	3.61	/	3.61	11	Pass
	Chain 1	5200	4.03	/	4.03	11	Pass
		5240	3.87	/	3.87	11	Pass
		5180	3.43	/	3.43	11	Pass
	Chain 0	5200	3.11	/	3.11	11	Pass
802.11ac20		5240	1.89	/	1.89	11	Pass
802.11ac20		5180	3.56	/	3.56	11	Pass
	Chain 1	5200	4.05	/	4.05	11	Pass
		5240	3.89	/	3.89	11	Pass
	Chain 0	5190	-1.67	0.12	-1.55	11	Pass
<u>802 11 a 40</u>	Chain 0	5230	-2.38	0.12	-2.26	11	Pass
802.11ac40 —	Chaire 1	5190	-1.66	0.12	-1.54	11	Pass
	Chain 1	5230	-1.60	0.12	-1.48	11	Pass
802.11ac80	Chain 0	5210	-6.36	0.26	-6.10	11	Pass
002.11ac80	Chain 1	5210	-5.58	0.26	-5.32	11	Pass

**Result = Reading + Duty Cycle Factor** 

#### Report No.: 2501R29190E-RF-00D

#### 5150-5250MHz

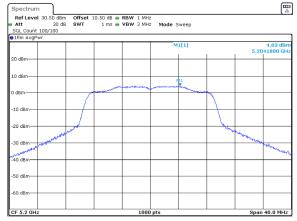


Date: 29.APR.2025 23:52:32



ProjectNo.:2501R29190E-RF Tester:Brian Li Date: 29.APR.2025 23:55:43

#### 802.11a\_5200MHz\_Chain 1

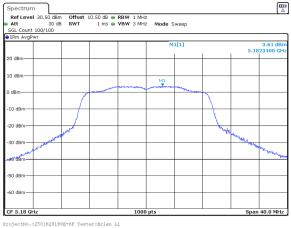


ProjectNo.:2501R29190E-RF Tester:Brian Li Date: 30.APR.2025 00:13:16



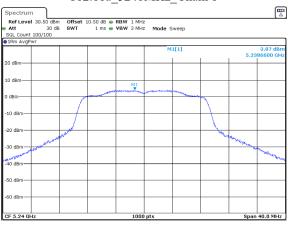
Date: 29.APR.2025 23:54:10





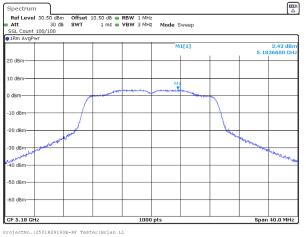
Date: 30.APR.2025 00:11:45

### 802.11a\_5240MHz\_Chain 1



ProjectNo.:2501R29190E-RF Tester:Brian Li Date: 30.APR.2025 00:14:59

#### 802.11ac20\_5180MHz\_Chain 0



ProjectNo.:2501R29190E-RF Tester:Bria Date: 29.APR.2025 23:57:35

#### 802.11ac20\_5240MHz\_Chain 0 Appendix 1.89 dB 5.2413800 GH - -----10 dBm M1 dBr -10 dBn -20 dBn 30 dBm edem-50 dBn Span 40.0 MHz CF 5.24 GHz 1000 pts

ProjectNo.:2501R29190E-RF Tester:Brian Li

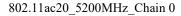
Date: 30.APR.2025 00:02:08

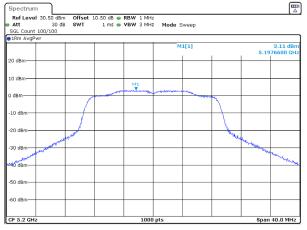
#### 802.11ac20\_5200MHz\_Chain 1



ProjectNo.:2501R29190E-RF Tester:Brian Li Date: 30.APR.2025 00:18:40

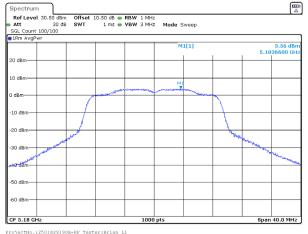
#### Report No.: 2501R29190E-RF-00D





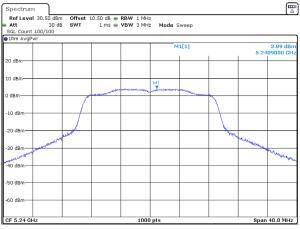
ProjectNo.:2501R29190E-RF Tester:Brian Li Date: 30.APR.2025 00:00:07

#### 802.11ac20\_5180MHz\_Chain 1



Date: 30.APR.2025 00:17:12

#### 802.11ac20\_5240MHz\_Chain 1

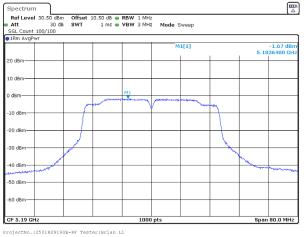


ProjectNo.:2501R29190E-RF Tester:Brian Li Date: 30.APR.2025 00:20:06

### TR-EM-RF015

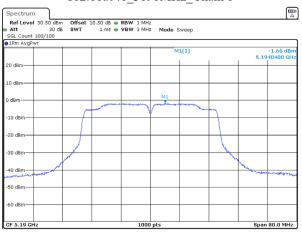
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#### 802.11ac40\_5190MHz\_Chain 0



ProjectNo.:2501R29190E-RF Tester:Bria Date: 30.APR.2025 00:03:28

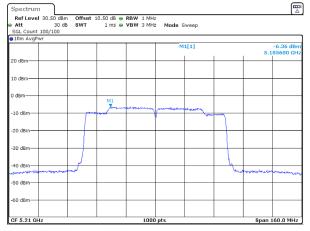
### 802.11ac40\_5190MHz\_Chain 1



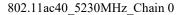
ProjectNo.:2501R29190E-RF Tester:Brian Li

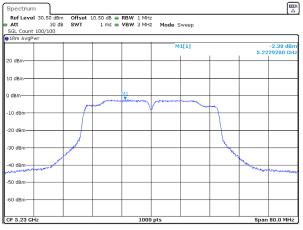
Date: 30.APR.2025 00:21:41

#### 802.11ac80\_5210MHz\_Chain 0



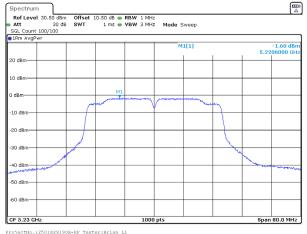
ProjectNo.:2501R29190E-RF Tester:Brian Li Date: 30.APR.2025 00:06:36 Report No.: 2501R29190E-RF-00D





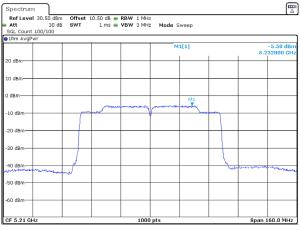
ProjectNo.:2501R29190E-RF Tester:Brian Li Date: 30.APR.2025 00:05:00

#### 802.11ac40\_5230MHz\_Chain 1



Date: 30.APR.2025 00:23:17

#### 802.11ac80\_5210MHz\_Chain 1



ProjectNo.:2501R29190E-RF Tester:Brian Li Date: 30.APR.2025 00:24:50

### TR-EM-RF015

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### Duty Cycle

### **Test Information:**

Sample No.:	301H-1	Test Date:	2025/04/29
Test Site:	RF	Test Mode:	Transmitting
Tester:	Brian Li	Test Result:	N/A

### **Environmental Conditions:**

Temperature: (°C)	25.9	Relative Humidity: (%)	38	ATM Pressure: (kPa)	101
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Report No.: 2501R29190E-RF-00D

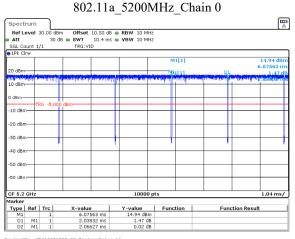
#### Test Data:

#### 5150-5250MHz

Mode	Antenna	Test Frequency (MHz)	Ton (ms)	Ton+Toff (ms)	Duty Cycle (%)	Duty Cycle Factor(dB)	1/Ton (Hz)	VBW Setting (kHz)
802.11a	Chain 0	5200	2.038	2.066	98.64	/	/	0.100
802.11ac20	Chain 0	5200	1.894	1.922	98.54	/	/	0.100
802.11ac40	Chain 0	5190	0.922	0.948	97.26	0.12	1085	2
802.11ac80	Chain 0	5210	0.436	0.463	94.17	0.26	2294	3

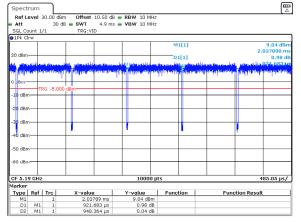
Duty Cycle = Ton/(Ton+Toff)\*100%

#### 5150-5250MHz



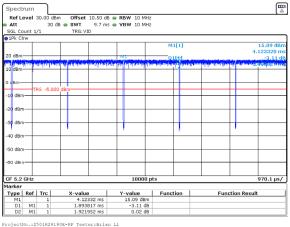
ProjectNo.:2501R29190E-RF Tester:Brian Li Date: 29.APR.2025 23:48:05

#### 802.11ac40\_5190MHz\_Chain 0



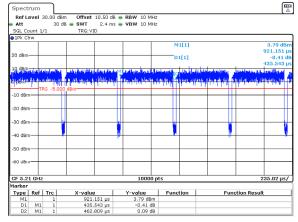
ProjectNo.:2501R29190E-RF Tester:Brian Li Date: 29.APR.2025 23:49:38

#### 802.11ac20\_5200MHz\_Chain 0



ProjectNo.:2501R29190E-RF Tester:Brian Date: 29.APR.2025 23:48:57

#### 802.11ac80\_5210MHz\_Chain 0



ProjectNo.:2501R29190E-RF Tester:Brian Li Date: 29.APR.2025 23:50:18

### **RF EXPOSURE EVALUATION**

### **MPE-Based Exemption**

### **Applicable Standard**

According to 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 v01 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 <sup>2</sup> .			
1.34-30	3,450 R <sup>2</sup> /f <sup>2</sup> .			
30-300	3.83 R <sup>2</sup> .			
300-1,500	0.0128 R <sup>2</sup> f.			
1,500-100,000	19.2R <sup>2</sup> .			

### R is the minimum separation distance in meters

f = frequency in MHz

For multiple RF sources: Multiple RF sources are exempt if:

in the case of fixed RF sources operating in the same time-averaging period, or of multiple mobile or portable RF sources within a device operating in the same time averaging period, if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1 as indicated in the following equation:

$$\sum_{i=1}^{a} \frac{P_i}{P_{th,i}} + \sum_{j=1}^{b} \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^{c} \frac{Evaluated_k}{Exposure\ Limit_k} \le 1$$

### Result

Mode	Frequency (MHz)	Tune up conducted power <sup>#</sup> (dBm)	Antenna Gain <sup>#</sup>		ERP		Evaluation Distance	ERP Limit
			(dBi)	(dBd)	(dBm)	(mW)	(m)	(mW)
BT	2402-2480	4.0	3.22	1.07	5.07	3.21	0.2	768
BLE	2402-2480	1.5	3.22	1.07	2.57	1.81	0.2	768
2.4G Wi-Fi	2412-2462	22.0	3.22	1.07	23.07	202.77	0.2	768
5.2G Wi-Fi	5180-5240	15.0	1.59	-0.56	14.44	27.80	0.2	768

Note: 1. The tune up conducted power and antenna gain was declared by the applicant. 2 0 dP d= 215 dP;

2. 0dBd=2.15dBi
 3. The BT, 2.4G and 5G Wi-Fi cannot transmit at 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 2501R29190E-RF External photo and 2501R29190E-RF Internal photo.

## **TEST SETUP PHOTOGRAPHS**

Please refer to the attachment 2501R29190E-RF-00D Test Setup photo.

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