

# TEST REPORT

Applicant Name: Shenzhen Neutop Optoelectronics Co., Ltd  
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IC: 502, BLDG 4, Pingshan minQi Technology Park, No. 65  
Lishan Road, Pingshan Community, Taoyuan Street, Nanshan  
District, Shenzhen 518000 China (Peoples Republic Of)  
Report Number: 2501U27810E-RFD  
FCC ID: 2BEGB-A02A11  
IC: 31892-A02A11

## Test Standard (s)

FCC PART 15.407;  
RSS-GEN ISSUE 5, FEBRUARY 2021 AMENDMENT 2; RSS-247 ISSUE 3, AUGUST 2023

## Sample Description

Product Type: Projector  
Model No.: A02A11  
Multiple Model(s) No.: For FCC: A\*\*A11 ( "\*\*\*" = 01-99, indicates for different  
market or business purposes)  
Trade Mark: Aurzen  
Date Received: 2025-06-09  
Issue Date: 2025-07-29

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

**Prepared and Checked By:**

Ekko Wu

Ekko Wu  
RF Engineer

**Approved By:**

Nancy Wang

Nancy Wang  
RF Supervisor

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

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	2501U27810E-RFD	Original Report	2025-07-29

## GENERAL INFORMATION

### Product Description for Equipment under Test (EUT)

<b>HVIN</b>	A02A11
<b>FVIN</b>	N/A
<b>Product</b>	Projector
<b>Tested Model</b>	A02A11
<b>Multiple Model(s)</b>	For FCC: A**A11 (“**”= 01-99, indicates for different market or business purposes)
<b>Frequency Range</b>	5150-5250MHz; 5725-5850MHz
<b>Mode</b>	802.11a/n20/n40
<b>Maximum Conducted Average Output Power</b>	5150-5250MHz: 14.54dBm 5725-5850MHz: 14.94dBm
<b>EIRP</b>	5150-5250MHz: 18.02dBm
<b>Modulation Technique</b>	OFDM
<b>Antenna Specification<sup>#</sup></b>	5150-5250MHz: 3.48dBi 5725-5850MHz: 4.19dBi (provided by the applicant)
<b>Voltage Range</b>	AC100-240V~ 50/60Hz
<b>Sample serial number</b>	34AZ-5 for Conducted and Radiated Emissions Test 34AZ-1 for RF Conducted Test (Assigned by BACL, Shenzhen)
<b>Sample/EUT Status</b>	Good condition
<b>Adapter Information</b>	N/A
Note: The Multiple models are electrically identical with the test model except for model number 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 and RSS-GEN Issue 5, February 2021 Amendment 2 and RSS-247 Issue 3, August 2023 of the Innovation, Science and Economic Development Canada 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 RSS-GEN Issue 5, February 2021 Amendment 2 and RSS-247 Issue 3, August 2023.

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

Each test item follows test standards and with no deviation.

## Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		109.2kHz(k=2, 95% level of confidence)
RF Frequency		56.6Hz(k=2, 95% level of confidence)
RF output power, conducted		0.86dB(k=2, 95% level of confidence)
Unwanted Emission, conducted		1.60dB(k=2, 95% level of confidence)
Power Spectral Density		0.90dB(k=2, 95% level of confidence)
AC Power Lines Conducted Emissions	9kHz-150kHz	3.63dB(k=2, 95% level of confidence)
	150kHz-30MHz	3.66dB(k=2, 95% level of confidence)
Radiated Emissions	9kHz - 30MHz	3.60dB(k=2, 95% level of confidence)
	30MHz~200MHz (Horizontal)	5.32dB(k=2, 95% level of confidence)
	30MHz~200MHz (Vertical)	5.43dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Horizontal)	5.77dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Vertical)	5.73dB(k=2, 95% level of confidence)
	1GHz - 6GHz	5.34dB(k=2, 95% level of confidence)
	6GHz - 18GHz	5.40dB(k=2, 95% level of confidence)
18GHz - 40GHz		5.64dB(k=2, 95% level of confidence)
Temperature		±1°C
Humidity		±1%
Supply voltages		±0.4%

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

## Test Facility

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

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

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0023.

## SYSTEM TEST CONFIGURATION

### Description of Test Configuration

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

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

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

For 802.11a/n20 mode: channel 36, 40, 48 were tested;

For 802.11n40 mode: channel 38, 46 were tested;

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

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

For 802.11a/n20 mode: channel 149, 157, 165 were tested;

For 802.11n40 mode: channel 151, 159 were tested;

### EUT Exercise Software

Exercise Software <sup>#</sup>	MPTool			
	5150-5250 MHz Band			
Mode	Test Channels	Test Frequency (MHz)	Data rate	Power Level <sup>#</sup>
802.11a	Low	5180	6Mbps	16
	Middle	5200	6Mbps	16
	High	5240	6Mbps	16
802.11n-HT20	Low	5180	MCS0	16
	Middle	5200	MCS0	16
	High	5240	MCS0	16
802.11n-HT40	Low	5190	MCS0	16
	High	5230	MCS0	16

**5725-5850 MHz Band**

Mode	Test Channels	Test Frequency (MHz)	Data rate	Power Level <sup>#</sup>
802.11a	Low	5745	6Mbps	16
	Middle	5785	6Mbps	16
	High	5825	6Mbps	16
802.11n-HT20	Low	5745	MCS0	16
	Middle	5785	MCS0	16
	High	5825	MCS0	16
802.11n-HT40	Low	5755	MCS0	16
	High	5795	MCS0	16

Note: The worst-case data rates are determined to be as follows for each mode based upon investigation by measuring the power and PSD across all data rates bandwidths, and modulations.

**Special Accessories**

No special accessory.

**Equipment Modifications**

No modification was made to the EUT tested.

**Support Equipment List and Details**

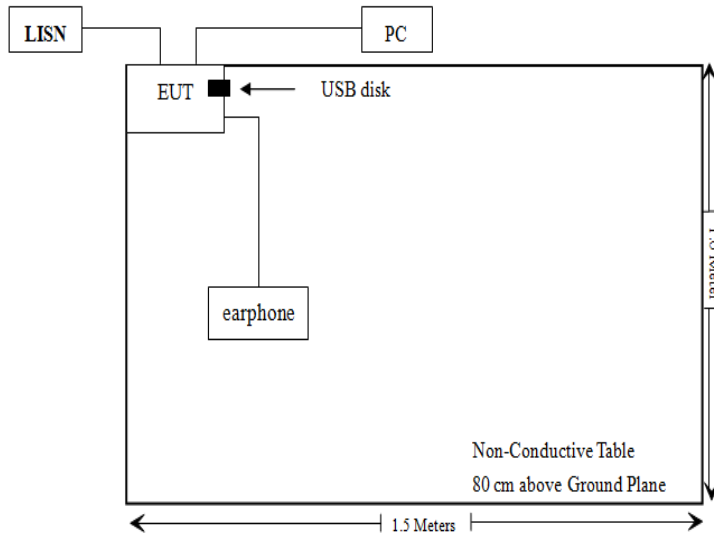
Manufacturer	Description	Model	Serial Number
GREATWALL	PC	NF50AL	Unknown
Redmi	Earphone	Unknown	Unknown
snom	Earphone	A100D	100D4342013597
SUOSHI	USB disk	S1256J	Unknown

**External I/O Cable**

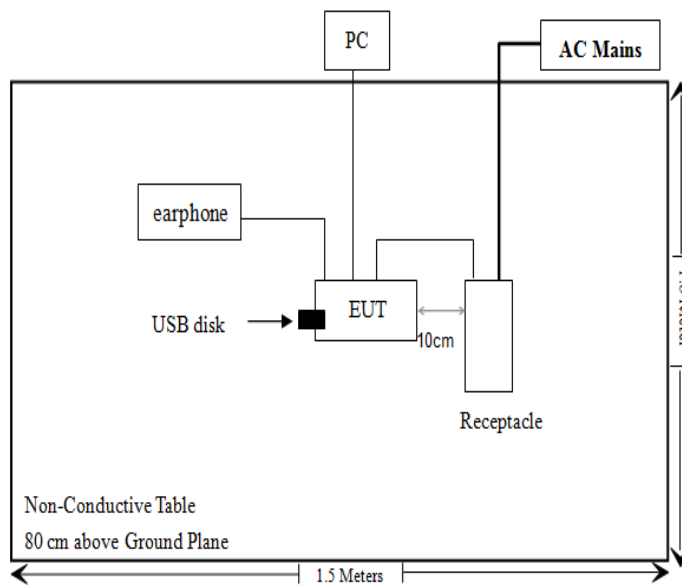
Cable Description	Length (m)	From Port	To
Unshielded Detachable AC Cable	1.5	EUT	AC Mains/LISN
Unshielded Un-detachable AC Cable	1.5	Receptacle	AC Mains
Unshielded Un-detachable Audio Cable	1.5	EUT	Earphone
Shielded Detachable HDMI Cable	2.0	EUT	PC

## Block Diagram of Test Setup

For Conducted Emissions:

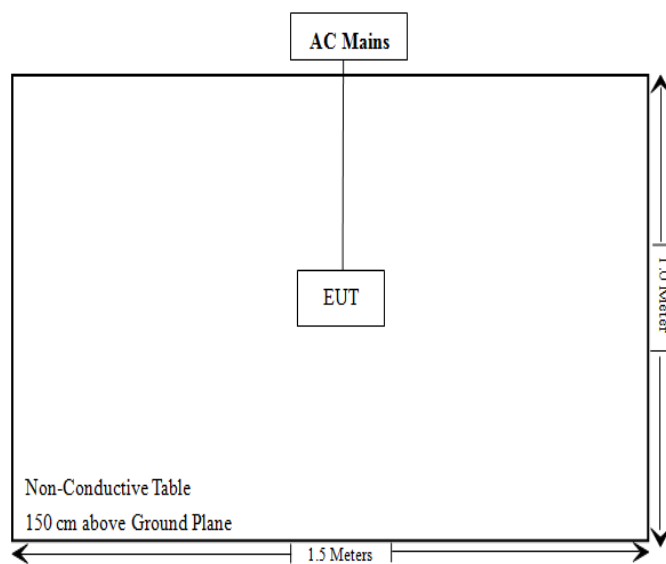


For Radiated Emissions below 1GHz:





For Radiated Emissions above 1GHz:



## SUMMARY OF TEST RESULTS

Test Rules	Test Rules	Description of Test	Result
FCC §1.1310 & §2.1091	/	Maximum Permissible Exposure (MPE)	Compliant
/	RSS-102 § 6.6	Field reference level exposure exemption limits	Compliant
FCC §15.203	RSS-Gen §6.8	Antenna Requirement	Compliant
FCC §15.207(a)	RSS-Gen §8.8	Conducted Emissions	Compliant
FCC §15.205& §15.209 & §15.407(b)	RSS-Gen §8.10& RSS-247 §6.2	Undesirable Emission& Restricted Bands	Compliant
FCC §15.407(a) (e)	RSS- Gen §6.7, RSS-247 § 6.2	Emission Bandwidth & 99% Bandwidth	Compliant
FCC §15.407(a)	RSS-247 §6.2	Conducted Transmitter Output Power	Compliant
FCC §15.407 (a)	RSS-247 §6.2	Power Spectral Density	Compliant
FCC §15.407 (h)	RSS-247 §6.2	Transmit Power Control (TPC)	Not Applicable
FCC §15.407 (h)	RSS-247 §6.3	Dynamic Frequency Selection (DFS)	Not Applicable
/	RSS-247 §6.4	Additional requirement	Compliant
C63.10 §11.6	C63.10 §11.6	Duty Cycle	/
/	RSS-Gen clause 6.11	Frequency Stability	Compliant

Not Applicable: The product only supports 5150-5250MHz and 5725-5850MHz.

## TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
<b>Conducted Emission Test</b>					
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	2025/04/29	2026/04/28
Unknown	CE Cable	Unknown	UF A210B-1-0720-504504	2025/04/29	2026/04/28
Audix	EMI Test software	E3	191218(V9)	NCR	NCR
<b>Radiated Emission Test</b>					
Rohde & Schwarz	EMI Test Receiver	ESR3	102455	2024/12/04	2025/12/03
Sonoma instrument	Pre-amplifier	310N	186238	2025/04/29	2026/04/28
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2026/07/19
Unknown	Cable	XH500C	J-10M-A	2025/04/29	2026/04/28
Unknown	Cable	Chamber Cable 1	F-03-EM236	2025/04/29	2026/04/28
BACL	Active Loop Antenna	1313-1A	4031911	2024/05/14	2027/05/13
unknown	Cable	PNG214	1354	2024/12/04	2025/12/03
Unknown	Cable	2Y194	0735	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(1201)	1143	2023/07/26	2026/07/25
Unknown	RF Cable	KMSE	0735	2024/12/06	2025/12/05
Unknown	RF Cable	UFA147	219661	2024/12/06	2025/12/05
Unknown	RF Cable	XH750A-N	J-10M	2024/12/06	2025/12/05
JD	Filter Switch Unit	DT7220FSU	DS79906	2024/09/09	2025/09/08
JD	Multiplex Switch Test Control Set	DT7220SCU	DS79903	2024/09/09	2025/09/08
A.H.System	Pre-amplifier	PAM-1840VH	190	2025/04/29	2026/04/28
Electro-Mechanics Co	Horn Antenna	3116	9510-2270	2023/09/18	2026/09/17
UTIFLEX	RF Cable	NO. 13	232308-001	2024/12/18	2025/12/17
Audix	EMI Test software	E3	191218(V9)	NCR	NCR

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Rohde&Schwarz	Spectrum Analyzer	FSV40-N	102259	2024/12/04	2025/12/03
ANRITSU	Microwave peak power sensor	MA24418A	12622	2025/04/29	2026/04/28
Unknown	10dB Attenuator	Unknown	F-03-EM190	2025/06/26	2026/06/25
HELLVIAO	Contact voltage regulator	TDGC2-5KVA	Unknown	NCR	NCR
BACL	Temperature & Humidity Chamber	BTH-150-40	30145	2024/12/06	2025/12/05
Fluke	Digital Multimeter	287	19000011	2025/04/29	2026/04/28

\* **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 & RSS-Gen §8.8

Unless stated otherwise in the applicable RSS, for radio apparatus that are designed to be connected to the public utility AC power network, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the range 150 kHz to 30 MHz shall not exceed the limits in table 4, as measured using a 50  $\mu$ H / 50  $\Omega$  line impedance stabilization network. This requirement applies for the radio frequency voltage measured between each power line and the ground terminal of each AC power-line mains cable of the EUT.

For an EUT that connects to the AC power lines indirectly, through another device, the requirement for compliance with the limits in table 4 shall apply at the terminals of the AC power-line mains cable of a representative support device, while it provides power to the EUT. The lower limit applies at the boundary between the frequency ranges. The device used to power the EUT shall be representative of typical applications.

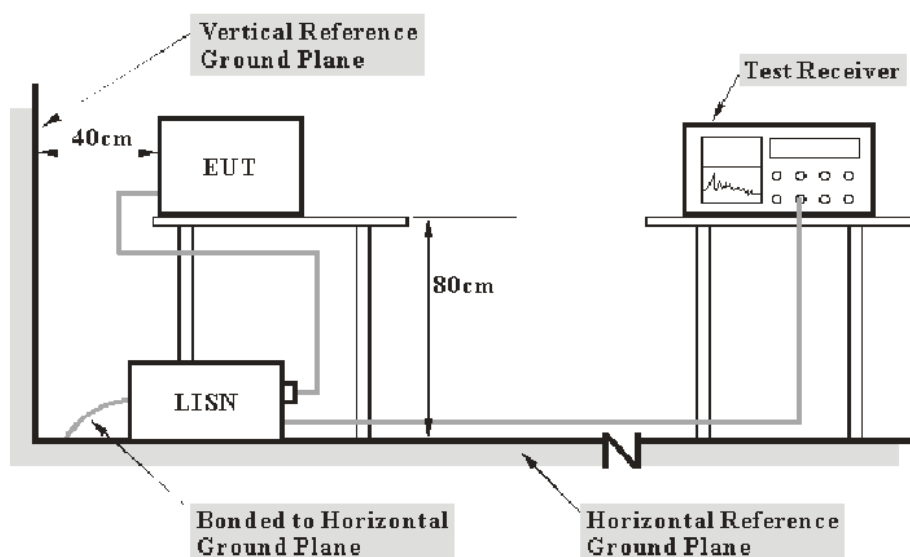
Table 4 - AC Power Lines Conducted Emission Limits		
Frequency range (MHz)	Conducted limit (dB $\mu$ V)	
	Quasi-Peak	Average
0.15 – 0.5	66 to 56 <sup>1</sup>	56 to 46 <sup>1</sup>
0.5 – 5	56	46
5 – 30	60	50

**Note 1:** The level decreases linearly with the logarithm of the frequency.

For an EUT with a permanent or detachable antenna operating between 150 kHz and 30 MHz, the AC power-line conducted emissions must be measured using the following configurations:

- Perform the AC power-line conducted emissions test with the antenna connected to determine compliance with the limits of table 4 outside the transmitter's fundamental emission band.
- Retest with a dummy load instead of the antenna to determine compliance with the limits of table 4 within the transmitter's fundamental emission band. For a detachable antenna, remove the antenna and connect a suitable dummy load to the antenna connector. For a permanent antenna, remove the antenna and terminate the RF output with a dummy load or network that simulates the antenna in the fundamental frequency band.

## EUT Setup



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

The setup of EUT is according with per ANSI C63.10-2020 measurement procedure. The specification used was with the FCC Part 15.207 & RSS-247/RSS-Gen limits.

The spacing between the peripherals was 10 cm.

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 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 outlet of the LISN; the other related equipments were connected to the other LISN.

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

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

**Factor & Over Limit Calculation**

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

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

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

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

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

## Undesirable Emission & Restricted Bands

### 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.

According to RSS-247§6.2

Frequency band 5150-5250 MHz

#### 6.2.1.2 Unwanted emission limits

For transmitters with operating frequencies in the band 5150-5250 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. Any unwanted emissions that fall into the band 5250-5350 MHz shall be attenuated below the channel power by at least 26 dB, when measured using a resolution bandwidth between 1 and 5% of the occupied bandwidth (i.e. 99% bandwidth), above 5250 MHz. The 26 dB bandwidth may fall into the 5250-5350 MHz band; however, if the occupied bandwidth also falls within the 5250-5350 MHz band, the transmission is considered as intentional and the devices shall comply with all requirements in the band 5250-5350 MHz including implementing dynamic frequency selection (DFS) and TPC, on the portion of the emission that resides in the 5250-5350 MHz band.

Frequency band 5250-5350 MHz

#### 6.2.2.2 Unwanted emission limits

Devices shall comply with the following:

- a. All emissions outside the band 5250-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p.; or
- b. All emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. and its power shall comply with the spectral power density for operation within the band 5150-5250 MHz. The device, except devices installed in vehicles, shall be labelled or include in the user manual the following text “for indoor use only.”



## Frequency band 5470-5600 MHz and 5650-5725 MHz

## 6.2.3.2 Unwanted emission limits

Emissions outside the band 5470-5725 MHz shall not exceed -27 dBm/MHz e.i.r.p. However, devices with bandwidth overlapping the band edge of 5725 MHz can meet the emission limit of -27 dBm/MHz e.i.r.p. at 5850 MHz instead of 5725 MHz.

## Frequency band 5725-5850 MHz

## 6.2.4.3 Unwanted emission limits

Devices operating in the band 5725-5850 MHz shall have e.i.r.p. of unwanted emissions comply with the following:

- 27 dBm/MHz at frequencies from the band edges decreasing linearly to 15.6 dBm/MHz at 5 MHz above or below the band edges;
- 15.6 dBm/MHz at 5 MHz above or below the band edges decreasing linearly to 10 dBm/MHz at 25 MHz above or below the band edges;
- 10 dBm/MHz at 25 MHz above or below the band edges decreasing linearly to -27 dBm/MHz at 75 MHz above or below the band edges; and
- 27 dBm/MHz at frequencies more than 75 MHz above or below the band edges.

According to RSS-Gen §8.10

Restricted frequency bands, identified in table 7, are designated primarily for safety-of-life services (distress calling and certain aeronautical activities), certain satellite downlinks, radio astronomy and some government uses. Except where otherwise indicated, the following conditions related to the restricted frequency bands apply:

- The transmit frequency, including fundamental components of modulation, of license-exempt radio apparatus shall not fall within the restricted frequency bands listed in table 7 except for apparatus compliant with RSS-287.
- Unwanted emissions that fall into restricted frequency bands listed in table 7 shall comply with the limits specified in table 5 and table 6.
- Unwanted emissions that do not fall within the restricted frequency bands listed in table 7 shall comply either with the limits specified in the applicable RSS or with those specified in table 5 and table 6.

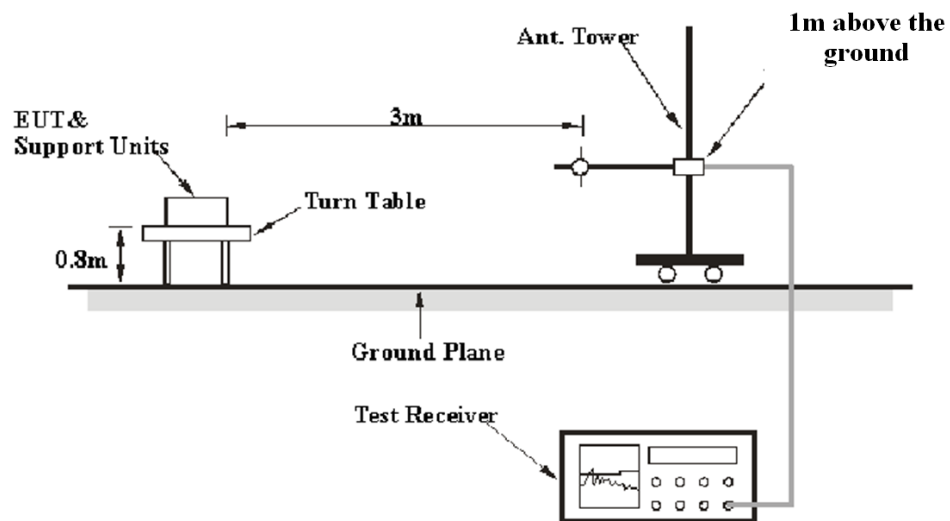
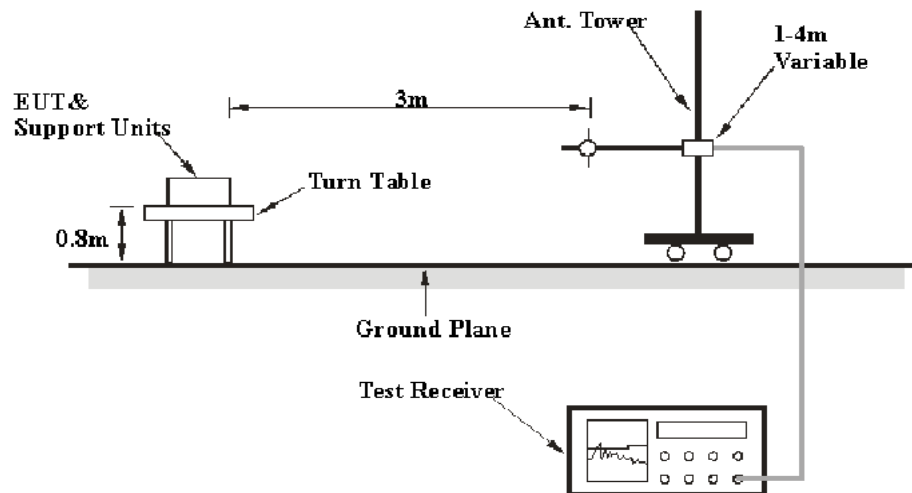
**Table 5 – General field strength limits at frequencies above 30 MHz**

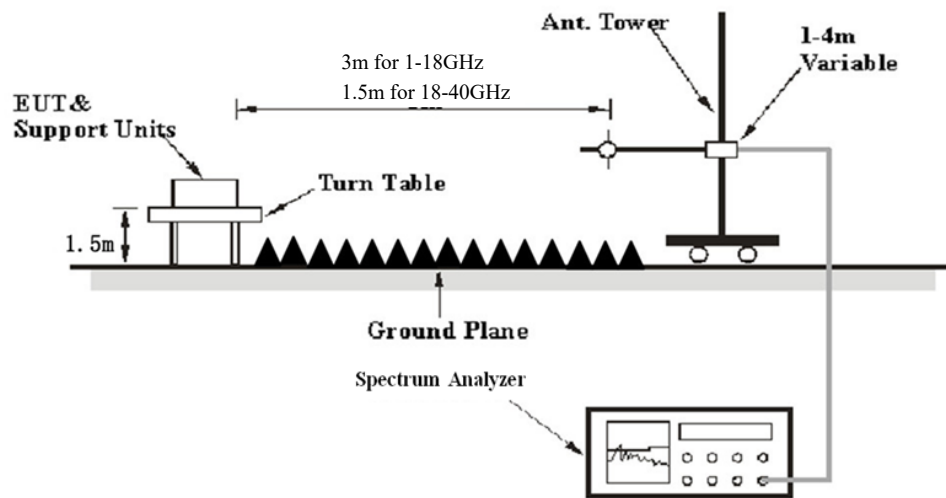
Frequency (MHz)	Field strength (µV/m at 3 m)
30 – 88	100
88 – 216	150
216 – 960	200
Above 960	500

**Table 6 – General field strength limits at frequencies below 30 MHz**

Frequency	Magnetic field strength (H-Field) (µA/m)	Measurement distance (m)
9 - 490 kHz <sup>Note 1</sup>	6.37/F (F in kHz)	300
490 - 1705 kHz	63.7/F (F in kHz)	30
1.705 - 30 MHz	0.08	30

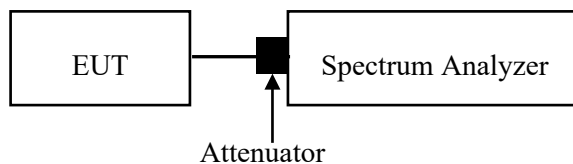
**Note 1:** The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

**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, FCC 15.407, RSS-247 and RSS-Gen limits.

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

**Unwanted emissions fall into the band 5250-5350 MHz:****EMI Test Receiver & Spectrum Analyzer Setup**

The system was investigated from 9 kHz to 40 GHz.

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

9 kHz-1GHz:

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

1-40GHz:

Pre-scan

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

Final measurement for emission identified during pre-scan

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

Note: Ton is minimum transmission duration

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

Unwanted emissions fall into the band 5250-5350 MHz:

Frequency Range	RBW	Video B/W	Measurement
5250-5350 MHz	(1%-5%)* 99% Bandwidth	3*RBW	Peak

Note: The limit was calculated by attenuated below the channel power by at least 26 dB per RSS-247 §6.2.1.2

## Test Procedure

### Radiated Spurious Emission

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

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

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

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

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

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

where

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

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

### Factor & Over Limit/Margin Calculation

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

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

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

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

## Emission Bandwidth & 99% Occupied Bandwidth

### Applicable Standard

According to FCC §15.407(a) (13), 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.

According to FCC §15.407(e), Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

According to RSS-247 § 6.2.4.2, For equipment operating in the band 5725-5850 MHz, the minimum 6 dB bandwidth shall be at least 500 kHz.

According to RSS-Gen § 6.7, the occupied bandwidth or the “99% emission bandwidth” is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

In some cases, the “x dB bandwidth” is required, which is defined as the frequency range between two points, one at the lowest frequency below and one at the highest frequency above the carrier frequency, at which the maximum power level of the transmitted emission is attenuated x dB below the maximum in-band power level of the modulated signal, where the two points are on the outskirts of the in-band emission.

The following conditions shall be observed for measuring the occupied bandwidth and x dB bandwidth:

- The transmitter shall be operated at its maximum carrier power measured under normal test conditions.
- The span of the spectrum analyzer shall be set large enough to capture all products of the modulation process, including the emission skirts, around the carrier frequency, but small enough to avoid having other emissions (e.g. on adjacent channels) within the span.
- The detector of the spectrum analyzer shall be set to “Sample”. However, a peak, or peak hold, may be used in place of the sampling detector since this usually produces a wider bandwidth than the actual bandwidth (worst-case measurement). Use of a peak hold (or “Max Hold”) may be necessary to determine the occupied / x dB bandwidth if the device is not transmitting continuously.
- The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the actual occupied / x dB bandwidth and the video bandwidth (VBW) shall not be smaller than three times the RBW value. Video averaging is not permitted.

Note: It may be necessary to repeat the measurement a few times until the RBW and VBW are in compliance with the above requirement.

For the 99% emission bandwidth, the trace data points are recovered and directly summed in linear power level 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, and that frequency recorded. The process is repeated for the highest frequency data points (starting at the highest frequency, at the right side of the span, and going down in frequency). This frequency is then recorded. The difference between the two recorded frequencies is the occupied bandwidth (or the 99% emission bandwidth).

## Test Procedure

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

### 12.5.1 Emission bandwidth for the band 5.725 GHz to 5.85 GHz

The following procedure shall be used for measuring this bandwidth:

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW)  $\geq 3 \times$  RBW.
- c) Detector = Peak.
- d) Trace mode = max-hold.
- e) Sweep = No faster than coupled (auto) time.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

### 12.5.2 Emission bandwidth for all other bands

The procedure for this method is as follows:

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

### 12.5.3 Occupied bandwidth

See 6.9.3 for the measurement procedure for OBW.

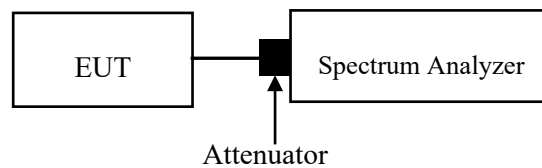
The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. The following procedure shall be used for measuring 99% power bandwidth:

- a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be at least three times the RBW, unless otherwise specified by the applicable requirement.
- c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than  $[10 \log (\text{OBW}/\text{RBW})]$  below the reference level. Specific guidance is given in 4.1.6.2.
- d) Step a) through step c) might require iteration to adjust within the specified range.
- e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max-hold mode (until the trace stabilizes) shall be used.

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

g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.

h) The occupied bandwidth shall be reported by providing spectral plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).





## Transmitter Output Power

### Applicable Standard

According to FCC §15.407(a)

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

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

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

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple 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.

According to RSS-247 §6.2:

Frequency band 5150-5250 MHz

For OEM devices installed in vehicles, the maximum e.i.r.p. shall not exceed 30 mW or  $1.76 + 10 \log 10B$ , dBm, whichever is less. Devices shall implement transmitter power control (TPC) in order to have the capability to operate at least 3 dB below the maximum permitted e.i.r.p. of 30 mW.

For other devices, the maximum e.i.r.p. shall not exceed 200 mW or  $10 + 10 \log 10B$ , dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

**Frequency band 5250-5350 MHz**

6.2.2.1(a) The maximum conducted output power shall not exceed 250 mW or  $11 + 10 \log_{10} B$ , dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band;

6.2.2.1(b) The maximum e.i.r.p. shall not exceed 1.0 W or  $17 + 10 \log_{10} B$ , dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

**Frequency band 5470-5600 MHz and 5650-5725MHz**

6.2.3.1 The maximum conducted output power shall not exceed 250 mW or  $11 + 10 \log_{10} B$ , dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or  $17 + 10 \log_{10} B$ , dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

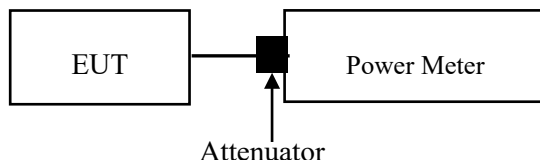
**Frequency band 5725-5850 MHz**

6.2.4.2 The maximum conducted output power shall not exceed 1 W. The output 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 output 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 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-multipointFootnote3 systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

**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 added with offset into test equipment, the total offset consists of attenuator and/or RF cable and/or power splitter loss

## Power Spectral Density

According to FCC §15.407(a)

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

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

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

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple 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.

According to RSS-247 §6.2:

Frequency band 5150-5250 MHz

For OEM devices installed in vehicles, the maximum e.i.r.p. shall not exceed 30 mW or  $1.76 + 10 \log 10B$ , dBm, whichever is less. Devices shall implement transmitter power control (TPC) in order to have the capability to operate at least 3 dB below the maximum permitted e.i.r.p. of 30 mW.

For other devices, the maximum e.i.r.p. shall not exceed 200 mW or  $10 + 10 \log 10B$ , dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

Frequency band 5250-5350 MHz

6.2.2.1(a) The maximum conducted output power shall not exceed 250 mW or  $11 + 10 \log 10B$ , dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band;

Frequency band 5470-5600 MHz and 5650-5725MHz

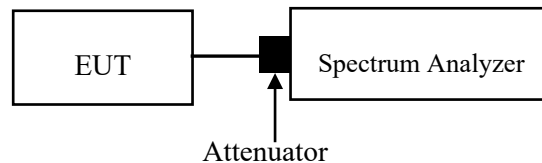
6.2.3.1 The maximum conducted output power shall not exceed 250 mW or  $11 + 10 \log_{10} B$ , dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

Frequency band 5725-5850 MHz

6.2.4.2 The maximum conducted output power shall not exceed 1 W. The output 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 output 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 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-multipointFootnote3 systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

### 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

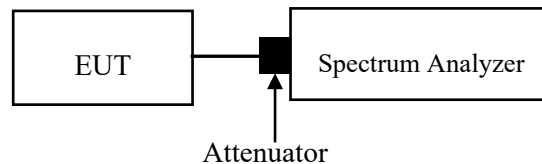
## Duty Cycle

### Test Procedure

According to ANSI C63.10-2020 Section 12.2

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

- a) A diode detector and an oscilloscope that together have a sufficiently short response time to permit accurate measurements of the ON and OFF times of the transmitted signal.
- b) The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the ON and OFF times of the transmitted signal:
  - 1) Set the center frequency of the instrument to the center frequency of the transmission.
  - 2) Set  $RBW \geq OBW$  if possible; otherwise, set RBW to the largest available value.
  - 3) Set  $VBW \geq RBW$ . Set detector = peak or average.
  - 4) The zero-span measurement method shall not be used unless both RBW and VBW are  $> 50/T$  and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring the duty cycle shall not be used if  $T \leq 16.7 \mu s$ .)



## Frequency stability

### Applicable Standard

According to RSS-GEN Clause 6.11

Frequency stability is a measure of frequency drift due to temperature and supply voltage variations, with reference to the frequency measured at an appropriate reference temperature and the rated supply voltage.

When the measurement method of transmitter frequency stability is not stated in the applicable RSS or reference standards, the following conditions apply:

- a. The reference temperature for radio transmitters is +20°C (+68°F).
- b. A hand-held device that is only capable of operating using internal batteries shall be tested at the battery's nominal voltage, and again at the battery's operating end-point voltage, which shall be specified by the equipment manufacturer. For this test, either a battery or an external power supply can be used.
- c. The operating carrier frequency shall be set up in accordance with the manufacturer's published operation and instruction manual prior to the commencement of these tests. No adjustment of any frequency-determining circuit element shall be made subsequent to this initial set-up.

With the transmitter installed in an environmental test chamber, the unmodulated carrier frequency and frequency stability shall be measured under the conditions specified below for licensed and licence-exempt devices, unless specified otherwise in the applicable RSS. A sufficient stabilization period at each temperature shall be used prior to each frequency measurement.

For licensed devices, the following measurement conditions apply:

- a. at the temperatures of -30°C (-22°F), +20°C (+68°F) and +50°C (+122°F), and at the manufacturer's rated supply voltage
- b. at the temperature of +20°C (+68°F) and at ±15% of the manufacturer's rated supply voltage

For licence-exempt devices, the following conditions apply:

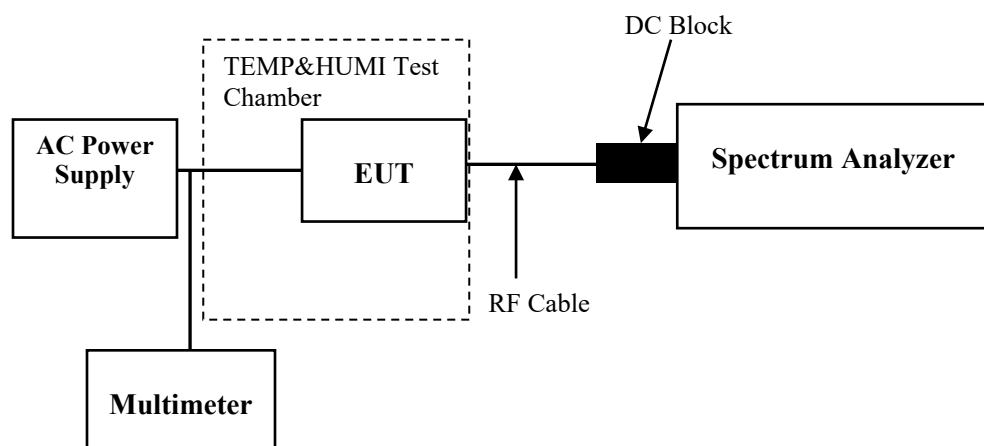
- a. at the temperatures of -20°C (-4°F), +20°C (+68°F) and +50°C (+122°F), and at the manufacturer's rated supply voltage
- b. at the temperature of +20°C (+68°F) and at ±15% of the manufacturer's rated supply voltage

If the frequency stability limits are only met within a temperature range that is smaller than the range specified in (a) for licensed or licence-exempt devices, the frequency stability requirement will be deemed to be met if the transmitter is automatically prevented from operating outside this smaller temperature range and if the published operating characteristics for the equipment are revised to reflect this restricted temperature range.

If the device contains both licence and licence-exempt transmitter modules, the device's frequency stability shall be measured under the most stringent condition specified in the applicable RSS of the transmitter module.

In addition, if an unmodulated carrier is not available, the method used to measure frequency stability shall be described in the test report.

## Test Procedure



## Additional requirements

### Applicable Standard

According to RSS-247 Clause 6.4 Additional requirement

The following requirements shall apply:

- a. The device shall automatically discontinue transmission in cases of absence of information to transmit, or operational failure. A description on how this is done shall accompany the application for equipment certification. Note that this is not intended to prohibit transmission of control or signalling information or the use of repetitive codes where required by the technology.
- b. All LE-LAN devices must contain security features to protect against modification of software by unauthorized parties.

Manufacturers must implement security features in any digitally modulated devices capable of operating in any of the frequency ranges within the 5 GHz band, so that third parties are not able to reprogram the device to operate outside the parameters for which the device was certified. The software must prevent the user from operating the transmitter with operating frequencies, output power, modulation types or other radio frequency parameters outside those that were approved for the device. Manufacturers may use various means, including the use of a private network that allows only authenticated users to download software, electronic signatures in software or coding in hardware that is decoded by software to verify that new software can be legally loaded into a device to meet these requirements and must describe the methods in their application for equipment certification.

Manufacturers must take steps to ensure that DFS functionality cannot be disabled by the operator of the LE-LAN device.

- c. The user manual for LE-LAN devices shall contain instructions related to the restrictions mentioned in the above sections, namely that:
  - i. the device for operation in the band 5150–5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;
  - ii. for devices with detachable antenna(s), the maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall be such that the equipment still complies with the e.i.r.p. limit;
  - iii. for devices with detachable antenna(s), the maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the e.i.r.p. limits as appropriate; and
  - iv. where applicable, antenna type(s), antenna models(s), and worst-case tilt angle(s) necessary to remain compliant with the e.i.r.p. elevation mask requirement set forth in section 6.2.2.3 shall be clearly indicated.



**Result****Pass**

RSS-247 Clause 6.4 a):

The device shall automatically discontinue transmission in cases of absence of information to transmit, or operation failure. Please refer to declaration.

RSS-247 Clause 6.4 b):

The device must contain security features to protect against modification of software by unauthorized parties. Please refer to declaration.

RSS-247 Clause 6.4 c):

1. Compliant, please refer to the User Manual.
2. Not Applicable, The device cannot operate on 5250-5350MHz/5470-5600MHz&5650-5725MHz.
- 3 Not Applicable, The device has no detachable antenna.
4. Not Applicable, The device cannot operate on 5250-5350MHz.

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## ANTENNA REQUIREMENT

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### 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.

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).

When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer.

The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

For licence-exempt equipment with detachable antennas, the user manual shall also contain the following notice in a conspicuous location:

This radio transmitter [enter the device's ISED certification number] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.

**Antenna Connector Construction**

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

Type	Antenna Gain <sup>#</sup>	Impedance	Frequency Range
FPC	3.48dBi	50Ω	5150-5250MHz
FPC	4.19dBi	50Ω	5725-5850MHz

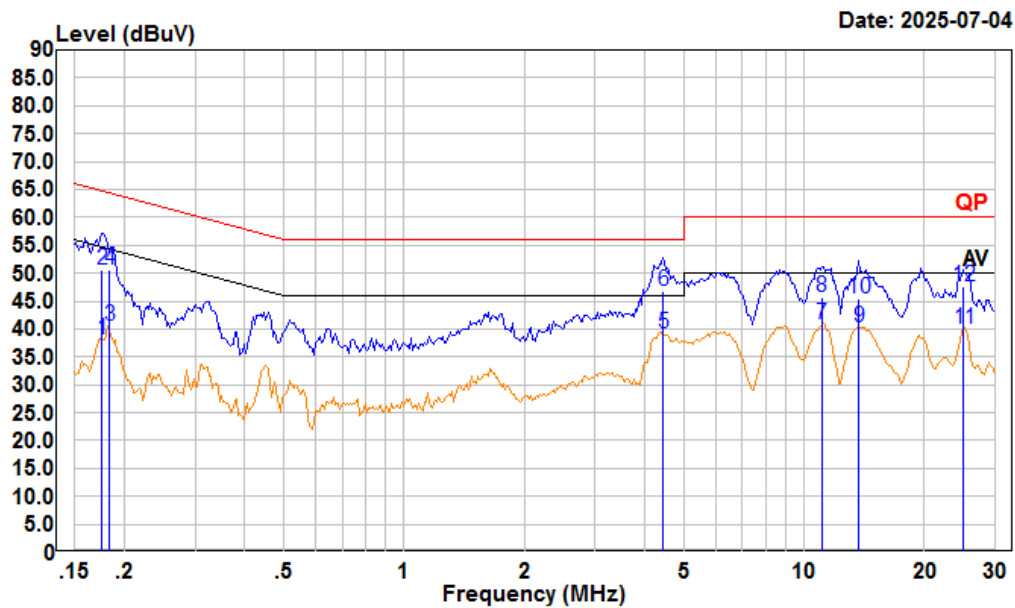
**Result: Compliant**

## TEST DATA AND RESULTS

### Conducted Emissions

<b>Temperature (°C)</b>	25.4	<b>Relative Humidity (%)</b>	67
<b>ATM Pressure (kPa)</b>	100	<b>Test engineer</b>	Macy.shi
<b>Test date</b>	2025.7.4		
<b>EUT operation mode</b>	Transmitting (Maximum output power mode, 802.11n20 5785MHz)		

## AC 120V 60 Hz, Line



Condition: Line

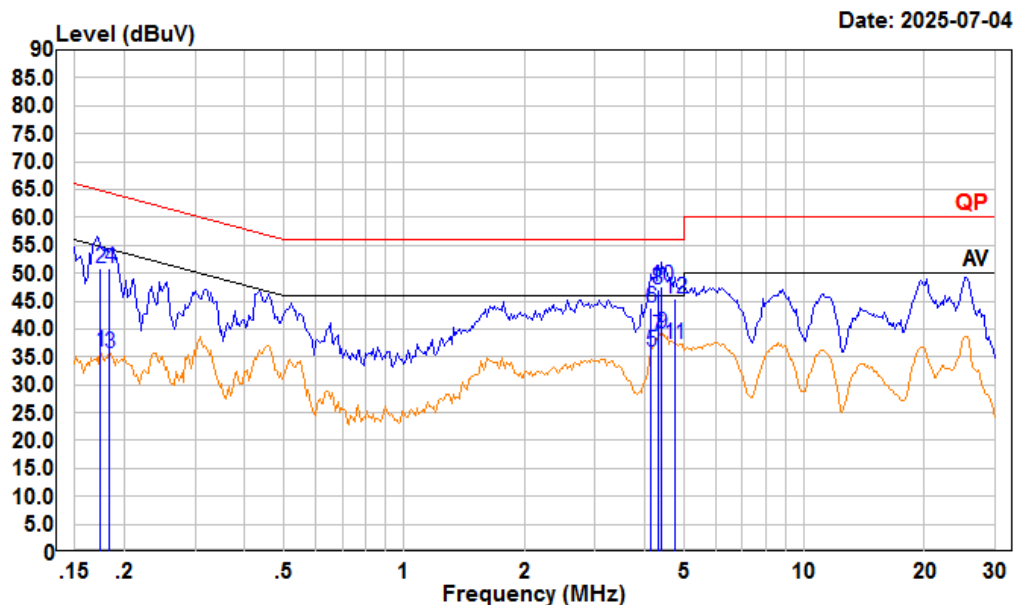
Project : 2501U27810E-RF

tester : Macy.shi Note:5G WIFI Transmitting

Setting : RBW:9kHz

	Freq	Read Level	Level	LISN Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.176	17.80	38.02	10.03	10.19	54.68	-16.66	Average
2	0.176	30.40	50.62	10.03	10.19	64.68	-14.06	QP
3	0.183	20.40	40.58	9.99	10.19	54.33	-13.75	Average
4	0.183	30.30	50.48	9.99	10.19	64.33	-13.85	QP
5	4.454	18.69	39.07	10.12	10.26	46.00	-6.93	Average
6	4.454	26.49	46.87	10.12	10.26	56.00	-9.13	QP
7	11.080	20.31	40.84	10.27	10.26	50.00	-9.16	Average
8	11.080	25.11	45.64	10.27	10.26	60.00	-14.36	QP
9	13.695	19.63	40.12	10.22	10.27	50.00	-9.88	Average
10	13.695	24.90	45.39	10.22	10.27	60.00	-14.61	QP
11	25.055	19.47	40.07	10.34	10.26	50.00	-9.93	Average
12	25.055	26.90	47.50	10.34	10.26	60.00	-12.50	QP

## AC 120V 60 Hz, Neutral



Condition: Neutral

Project : 2501U27810E-RF

tester : Macy.shi Note: 5G WIFI Transmitting

Setting : RBW:9kHz

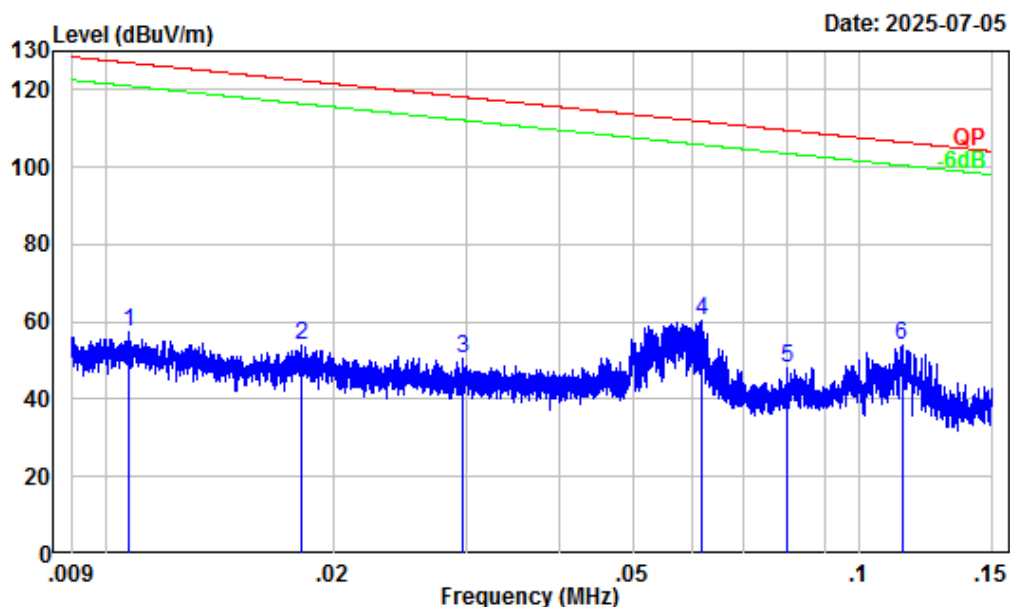
	Freq	Read Level	LISN Level	Cable Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.174	15.40	35.79	10.20	10.19	54.77	-18.98	Average
2	0.174	30.60	50.99	10.20	10.19	64.77	-13.78	QP
3	0.183	15.30	35.65	10.16	10.19	54.33	-18.68	Average
4	0.183	30.40	50.75	10.16	10.19	64.33	-13.58	QP
5	4.136	15.40	35.78	10.13	10.25	46.00	-10.22	Average
6	4.136	23.50	43.88	10.13	10.25	56.00	-12.12	QP
7	4.315	18.10	38.52	10.17	10.25	46.00	-7.48	Average
8	4.315	26.50	46.92	10.17	10.25	56.00	-9.08	QP
9	4.407	18.59	39.04	10.19	10.26	46.00	-6.96	Average
10	4.407	27.09	47.54	10.19	10.26	56.00	-8.46	QP
11	4.746	16.80	37.32	10.25	10.27	46.00	-8.68	Average
12	4.746	24.80	45.32	10.25	10.27	56.00	-10.68	QP

**Undesirable Emission**

<b>Temperature (°C)</b>	25.2&25.5	<b>Relative Humidity (%)</b>	52&50.2
<b>ATM Pressure (kPa):</b>	100.1&101.3	<b>Test engineer:</b>	Anson Su&Zenos Qiao
<b>Test date:</b>	2025.7.5&2025.6.24		
<b>EUT operation mode:</b>	Below 1GHz: Transmitting (Maximum output power mode, 802.11n20 5785MHz) Above 1GHz: Transmitting		
<b>Note:</b>	<ol style="list-style-type: none"><li>1. For the radiated spurious emission below 30MHz, only the worst case (parallel) was recorded.</li><li>2. For the radiated spurious emission below 1GHz, When the test result of peak was less than the limit of QP/Average more than 6dB, just peak value were recorded.</li><li>3. The spurious emission from 9 kHz-30MHz of IC RSS-GEN standard, the unit of final result on the test plots are dBμV/m, so the limit should be added by 51,5 dB from dBμA/m to dBμV/m.</li></ol>		

**Below 1GHz:**

9kHz-150kHz

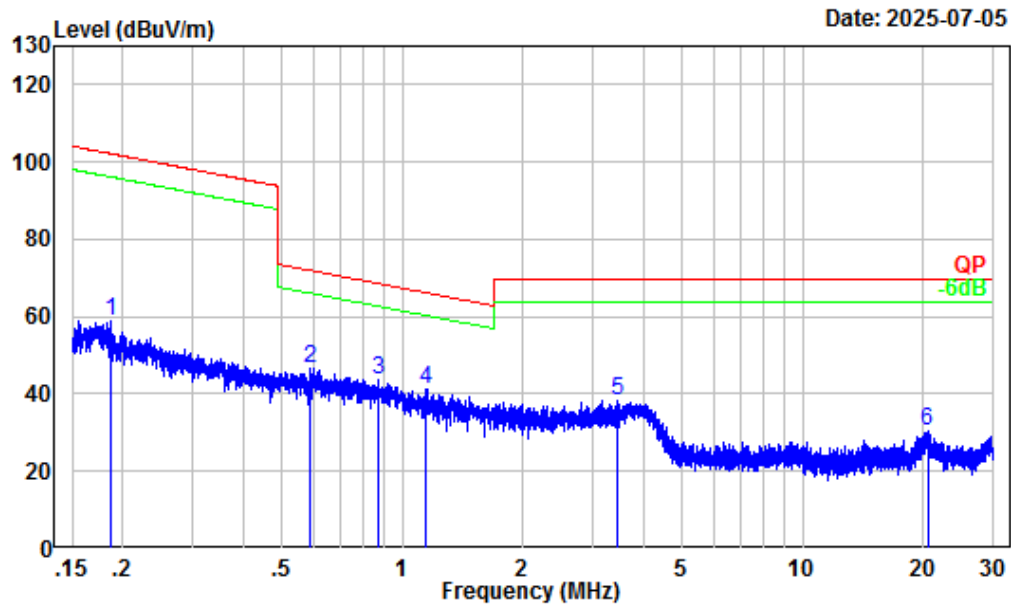


Site : Chamber A  
Condition : 3m  
Project Number : 2501U27810E-RF  
Test Mode : 5G WIFI Transmitting  
Detector: Peak RBW/VBW: 0.3/1kHz  
Tester : Anson Su

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.011	32.16	25.01	57.17	127.01	-69.84	Peak
2	0.018	30.74	23.42	54.16	122.40	-68.24	Peak
3	0.030	28.54	21.79	50.33	118.12	-67.79	Peak
4	0.062	25.24	35.16	60.40	111.81	-51.41	Peak
5	0.080	23.39	24.62	48.01	109.53	-61.52	Peak
6	0.114	21.19	32.54	53.73	106.49	-52.76	Peak



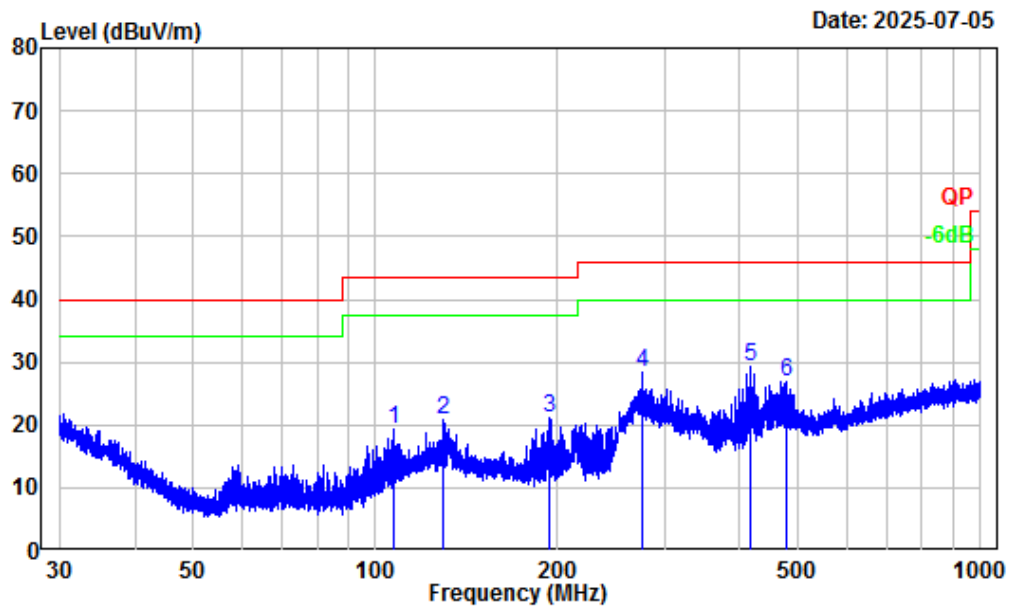
## 150kHz-30MHz



Site : Chamber A  
Condition : 3m  
Project Number : 2501U27810E-RF  
Test Mode : 5G WIFI Transmitting  
Detector: Peak RBW/VBW: 10/30kHz  
Tester : Anson Su

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.187	16.87	41.80	58.67	102.17	-43.50	Peak
2	0.586	5.34	41.24	46.58	72.21	-25.63	Peak
3	0.874	2.14	41.46	43.60	68.66	-25.06	Peak
4	1.151	0.78	40.41	41.19	66.22	-25.03	Peak
5	3.454	-2.40	40.75	38.35	69.54	-31.19	Peak
6	20.526	-3.10	33.33	30.23	69.54	-39.31	Peak

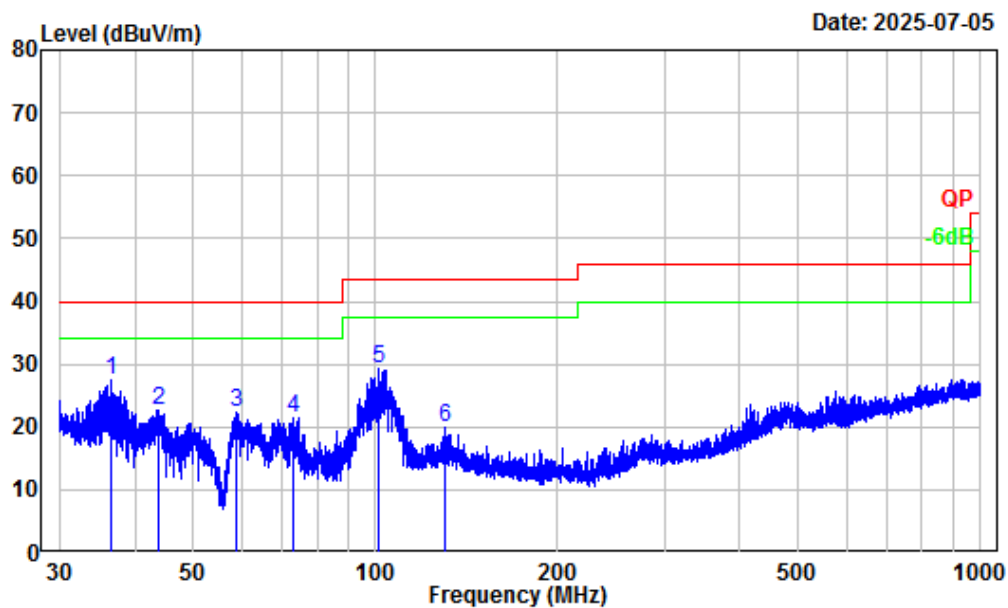
## 30MHz-1GHz\_Horizontal



Site : Chamber A  
Condition : 3m Horizontal  
Project Number : 2501U27810E-RF  
Test Mode : 5G WIFI Transmitting  
Detector: Peak RBW/VBW: 100/300kHz  
Tester : Anson Su

	Freq Factor		Read		Limit	Over	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	106.90	-13.81	33.24	19.43	43.50	-24.07	Peak
2	129.58	-11.18	32.03	20.85	43.50	-22.65	Peak
3	193.35	-13.56	34.69	21.13	43.50	-22.37	Peak
4	275.28	-11.26	39.71	28.45	46.00	-17.55	Peak
5	417.64	-7.80	37.10	29.30	46.00	-16.70	Peak
6	476.33	-6.20	32.97	26.77	46.00	-19.23	Peak

## 30MHz-1GHz\_Vertical



Site : Chamber A  
Condition : 3m Vertical  
Project Number : 2501U27810E-RF  
Test Mode : 5G WIFI Transmitting  
Detector: Peak RBW/VBW: 100/300kHz  
Tester : Anson Su

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	36.49	-9.80	37.15	27.35	40.00	-12.65	Peak
2	43.77	-14.93	37.71	22.78	40.00	-17.22	Peak
3	58.97	-18.15	40.38	22.23	40.00	-17.77	Peak
4	72.94	-17.79	39.33	21.54	40.00	-18.46	Peak
5	101.02	-15.65	44.98	29.33	43.50	-14.17	Peak
6	130.49	-11.23	31.04	19.81	43.50	-23.69	Peak

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

Frequency (MHz)	Reading (dB $\mu$ V)	PK/Ave	Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
<b>802.11a</b>							
Low Channel							
10360	56.64	PK	H	2.53	59.17	68.2	-9.03
10360	57.21	PK	V	2.53	59.74	68.2	-8.46
Middle Channel							
10400	57.03	PK	H	2.55	59.58	68.2	-8.62
10400	57.57	PK	V	2.55	60.12	68.2	-8.08
High Channel							
10480	57.32	PK	H	2.25	59.57	68.2	-8.63
10480	57.95	PK	V	2.25	60.2	68.2	-8
<b>802.11n20</b>							
Low Channel							
10360	56.38	PK	H	2.53	58.91	68.2	-9.29
10360	56.93	PK	V	2.53	59.46	68.2	-8.74
Middle Channel							
10400	56.85	PK	H	2.55	59.4	68.2	-8.8
10400	57.36	PK	V	2.55	59.91	68.2	-8.29
High Channel							
10480	57.14	PK	H	2.25	59.39	68.2	-8.81
10480	57.69	PK	V	2.25	59.94	68.2	-8.26
<b>802.11n40</b>							
Low Channel							
10380	54.45	PK	H	2.54	56.99	68.2	-11.21
10380	54.98	PK	V	2.54	57.52	68.2	-10.68
High Channel							
10460	55.07	PK	H	2.32	57.39	68.2	-10.81
10460	55.61	PK	V	2.32	57.93	68.2	-10.27

**5725-5850MHz**

Frequency (MHz)	Reading (dB $\mu$ V)	PK/Ave	Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
<b>802.11a</b>							
Low Channel							
11490	51.34	PK	H	3.54	54.88	74	-19.12
11490	37.59	AV	H	3.54	41.13	54	-12.87
11490	51.9	PK	V	3.54	55.44	74	-18.56
11490	37.83	AV	V	3.54	41.37	54	-12.63
Middle Channel							
11570	52.25	PK	H	3.3	55.55	74	-18.45
11570	38.67	AV	H	3.3	41.97	54	-12.03
11570	52.79	PK	V	3.3	56.09	74	-17.91
11570	38.88	AV	V	3.3	42.18	54	-11.82
High Channel							
11650	53.19	PK	H	3.43	56.62	74	-17.38
11650	39.26	AV	H	3.43	42.69	54	-11.31
11650	53.72	PK	V	3.43	57.15	74	-16.85
11650	39.47	AV	V	3.43	42.9	54	-11.1
<b>802.11n20</b>							
Low Channel							
11490	51.21	PK	H	3.54	54.75	74	-19.25
11490	37.5	AV	H	3.54	41.04	54	-12.96
11490	51.76	PK	V	3.54	55.3	74	-18.7
11490	37.73	AV	V	3.54	41.27	54	-12.73
Middle Channel							
11570	52.04	PK	H	3.3	55.34	74	-18.66
11570	38.55	AV	H	3.3	41.85	54	-12.15
11570	52.6	PK	V	3.3	55.9	74	-18.1
11570	38.78	AV	V	3.3	42.08	54	-11.92
High Channel							
11650	52.96	PK	H	3.43	56.39	74	-17.61
11650	39.17	AV	H	3.43	42.6	54	-11.4
11650	53.51	PK	V	3.43	56.94	74	-17.06
11650	39.39	AV	V	3.43	42.82	54	-11.18

Frequency (MHz)	Reading (dBμV)	PK/Ave	Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
<b>802.11n40</b>							
Low Channel							
11510	51.51	PK	H	3.53	55.04	74	-18.96
11510	38.46	AV	H	3.53	41.99	54	-12.01
11510	52.05	PK	V	3.53	55.58	74	-18.42
11510	38.69	AV	V	3.53	42.22	54	-11.78
High Channel							
11590	52.38	PK	H	3.21	55.59	74	-18.41
11590	39.04	AV	H	3.21	42.25	54	-11.75
11590	52.93	PK	V	3.21	56.14	74	-17.86
11590	39.26	AV	V	3.21	42.47	54	-11.53

Note:

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

Corrected Amplitude = Factor + Reading

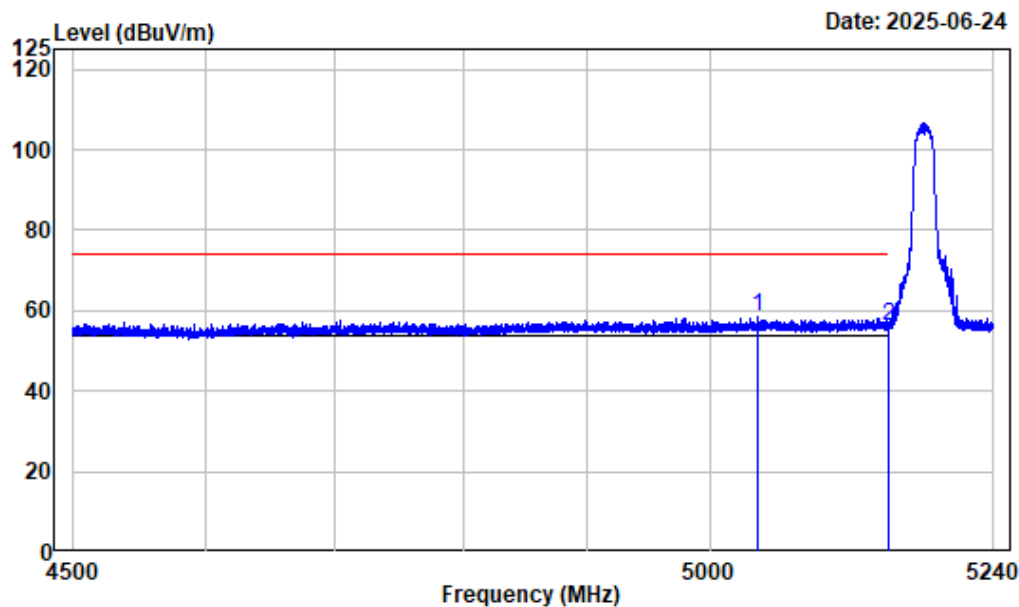
Margin = Corrected. Amplitude - Limit

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

Test plots:

Band Edge

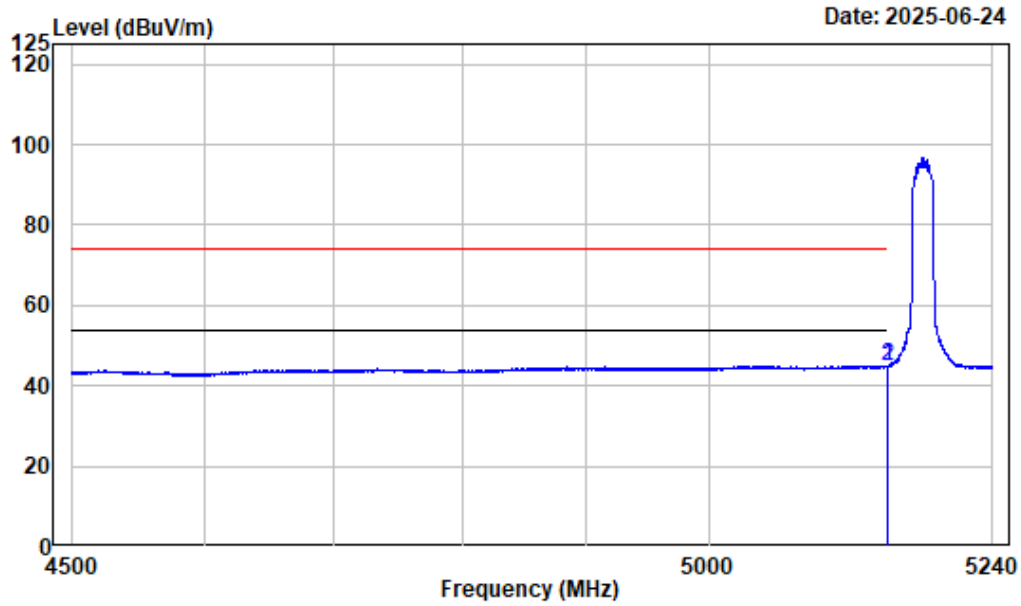
Left Band edge\_Horizontal\_Peak\_5G Wi-Fi\_Band1\_A\_5180MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-A-5180

		Read		Limit	Over	Remark
Freq Factor		Level	Level	Line	Limit	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	5039.620	-7.32	65.82	58.50	74.00	-15.50 Peak
2	5150.000	-7.46	63.68	56.22	74.00	-17.78 Peak

## Left Band edge\_Horizontal\_Average\_5G Wi-Fi\_Band1\_A\_5180MHz

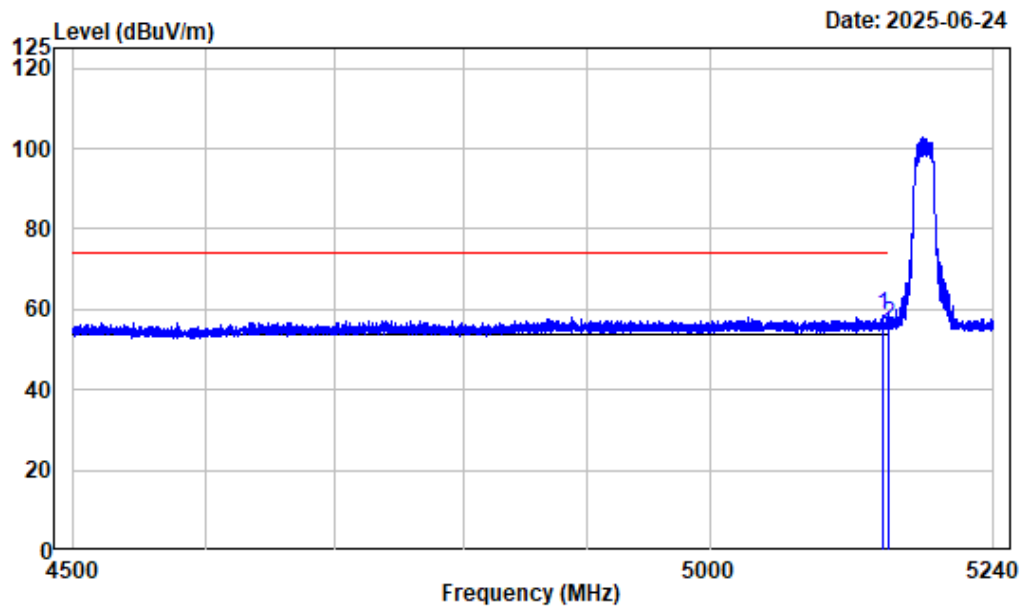


Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak  
Note : 5GWiFi-Band1-A-5180

Freq Factor		Read		Limit	Over	Remark
		Level	Level	Line	Limit	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	5149.801	-7.46	52.49	45.03	54.00	-8.97 Average
2	5150.000	-7.46	52.37	44.91	54.00	-9.09 Average



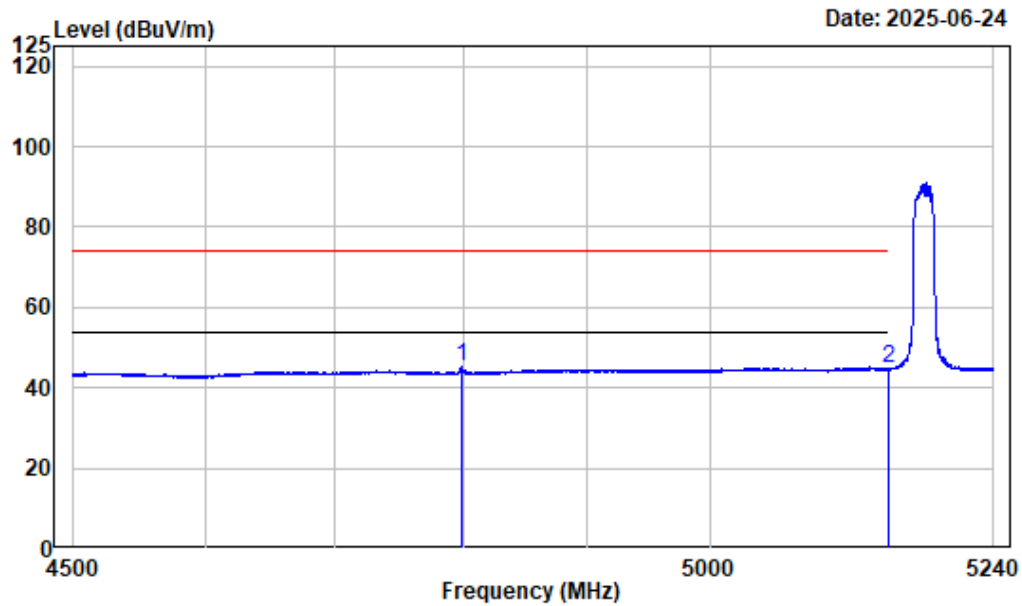
## Left Band edge\_Vertical\_Peak\_5G Wi-Fi\_Band1\_A\_5180MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-A-5180

Freq Factor		Read		Limit	Over	Remark
		Level	Level	Line	Limit	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	5144.528	-7.46	65.88	58.42	74.00	-15.58 Peak
2	5150.000	-7.46	63.70	56.24	74.00	-17.76 Peak

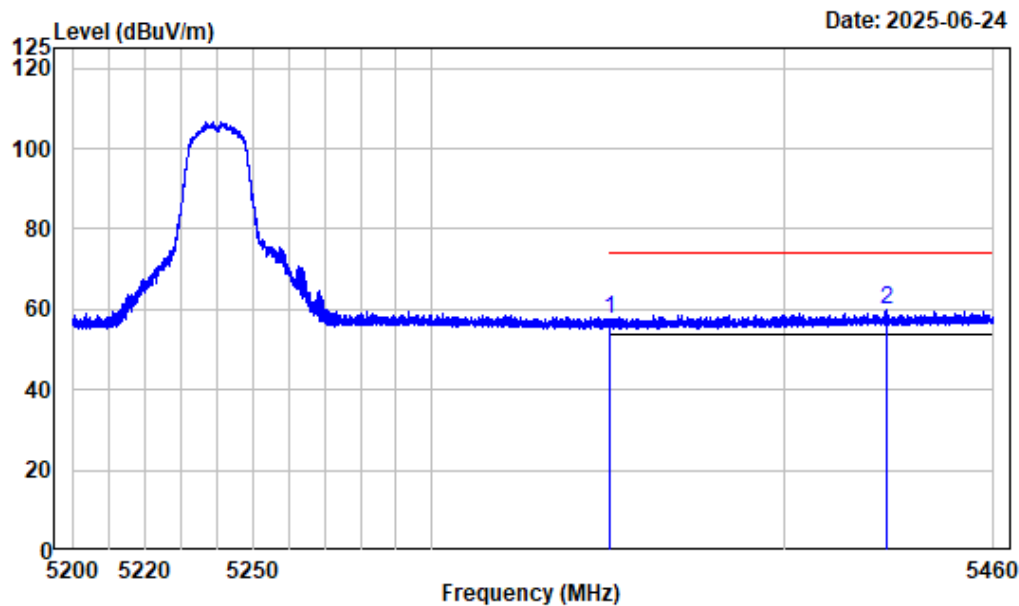
## Left Band edge\_Vertical\_Average\_5G Wi-Fi\_Band1\_A\_5180MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak  
Note : 5GWiFi-Band1-A-5180

Freq Factor		Read		Limit	Over	Remark
MHz	dB/m	Level	Level	Line	Limit	
		dBuV	dBuV/m	dBuV/m	dB	
1	4798.627	-7.80	52.93	45.13	54.00	-8.87 Average
2	5150.000	-7.46	52.18	44.72	54.00	-9.28 Average

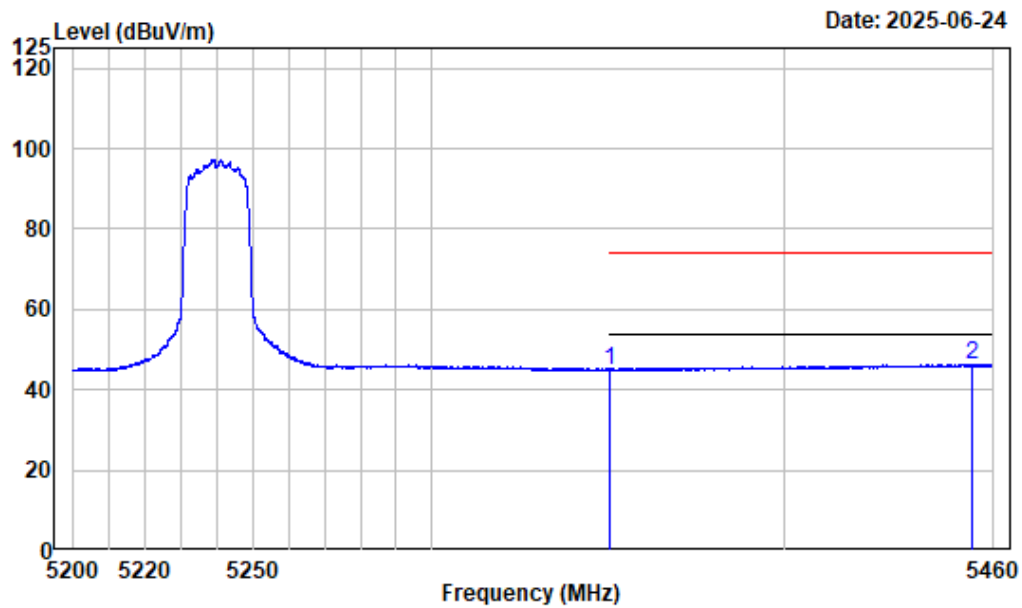
Right Band edge\_Horizontal\_Peak\_5G Wi-Fi-Band1\_A\_5240MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-A-5240

Freq Factor		Read Level		Limit	Over	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	64.31	57.57	74.00	-16.43 Peak
2	5428.958	-6.43	66.21	59.78	74.00	-14.22 Peak

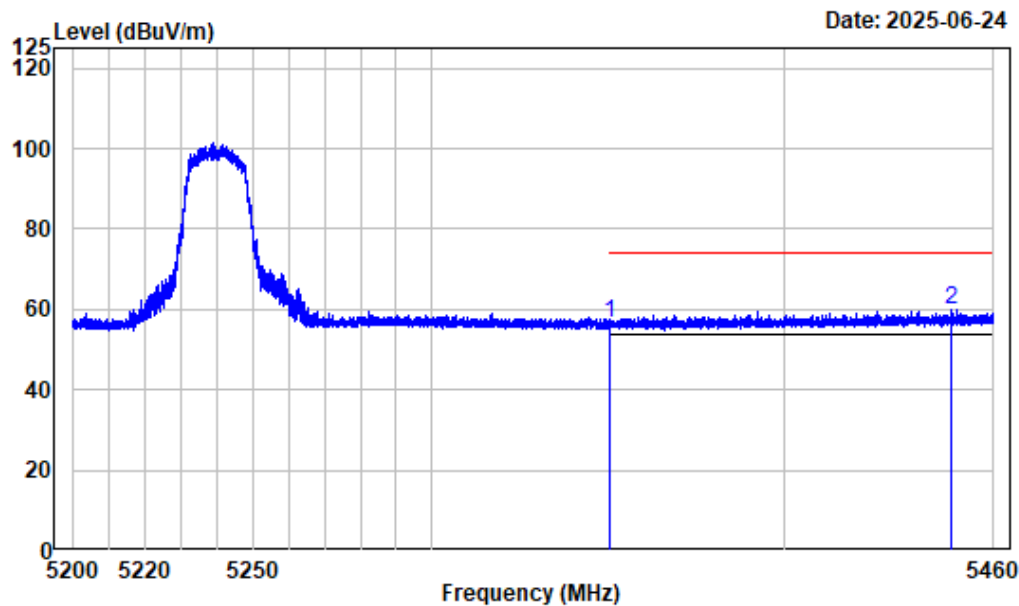
## Right Band edge\_Horizontal\_Average\_5G Wi-Fi-Band1\_A\_5240MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak  
Note : 5GWiFi-Band1-A-5240

Freq Factor		Read Level		Limit	Over	Remark
				Line	Limit	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	5350.000	-6.74	51.74	45.00	54.00	-9.00 Average
2	5454.019	-6.31	52.62	46.31	54.00	-7.69 Average

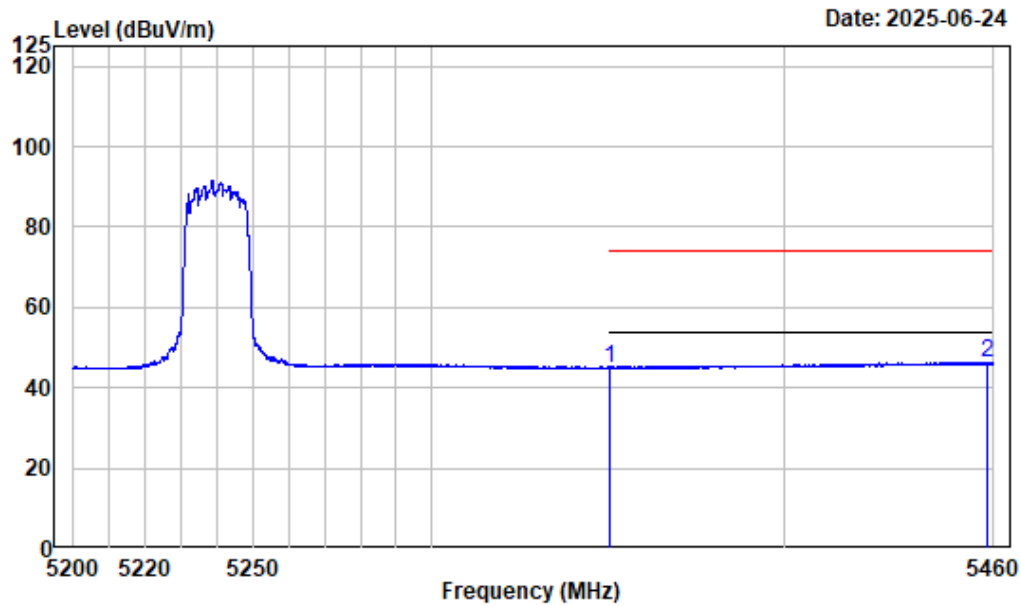
Right Band edge\_Vertical\_Peak\_5G Wi-Fi-Band1\_A\_5240MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-A-5240

Freq Factor		Read Level		Limit	Over	Remark
				Line	Limit	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	5350.000	-6.74	63.18	56.44	74.00	-17.56 Peak
2	5448.006	-6.33	66.11	59.78	74.00	-14.22 Peak

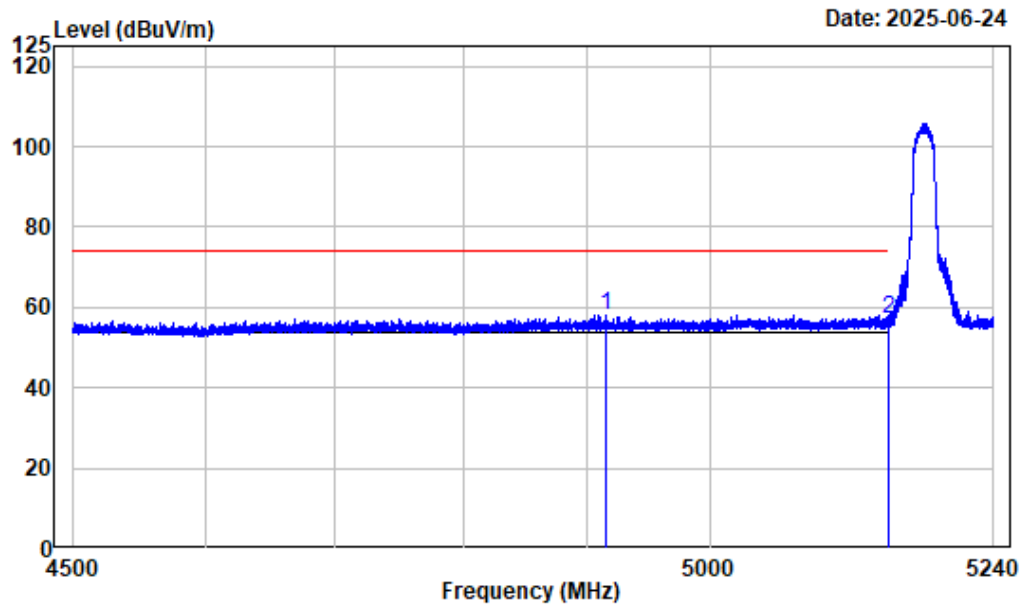
## Right Band edge\_Vertical\_Average\_5G Wi-Fi-Band1\_A\_5240MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak  
Note : 5GWiFi-Band1-A-5240

Freq Factor		Read Level		Limit	Over	Remark
				Line	Limit	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	5350.000	-6.74	51.77	45.03	54.00	-8.97 Average
2	5458.050	-6.29	52.67	46.38	54.00	-7.62 Average

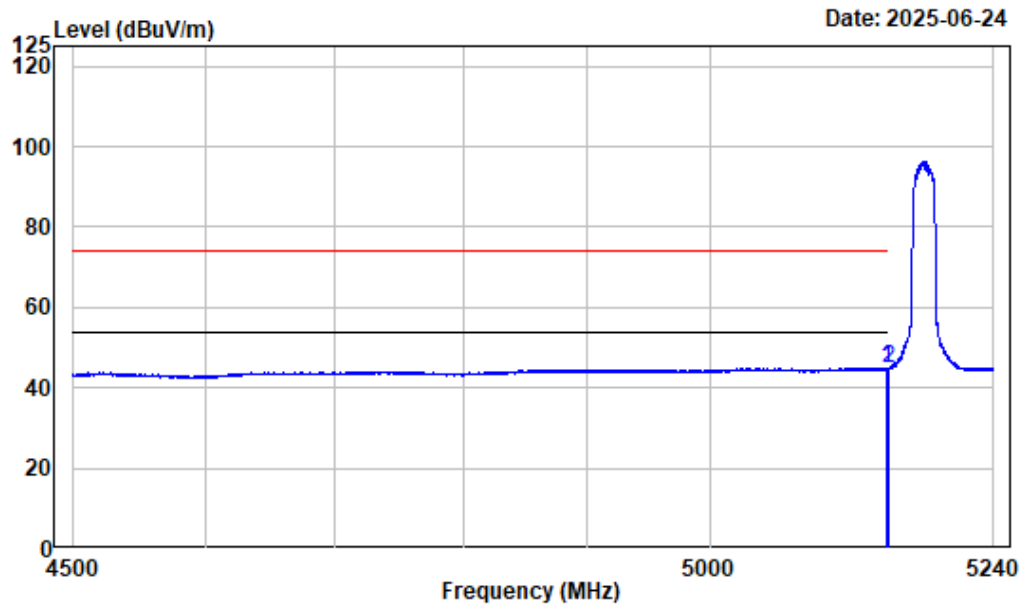
## Left Band edge\_Horizontal\_Peak\_5G Wi-Fi\_Band1\_N20\_5180MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-N20-5180

Freq Factor		Read		Limit	Over	Remark
		Level	Level	Line	Limit	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	4915.192	-7.56	65.77	58.21	74.00	-15.79 Peak
2	5150.000	-7.46	64.65	57.19	74.00	-16.81 Peak

## Left Band edge\_Horizontal\_Average\_5G Wi-Fi\_Band1\_N20\_5180MHz

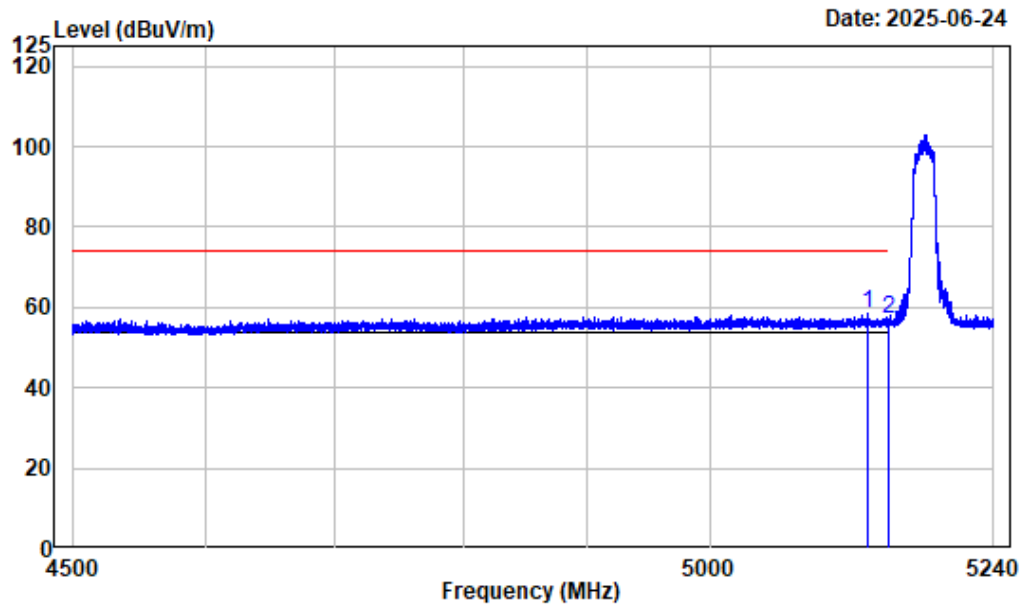


Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak  
Note : 5GWiFi-Band1-N20-5180

Freq Factor		Read		Limit	Over	Remark
		Level	Level	Line	Limit	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	5148.969	-7.46	52.47	45.01	54.00	-8.99 Average
2	5150.000	-7.46	52.07	44.61	54.00	-9.39 Average



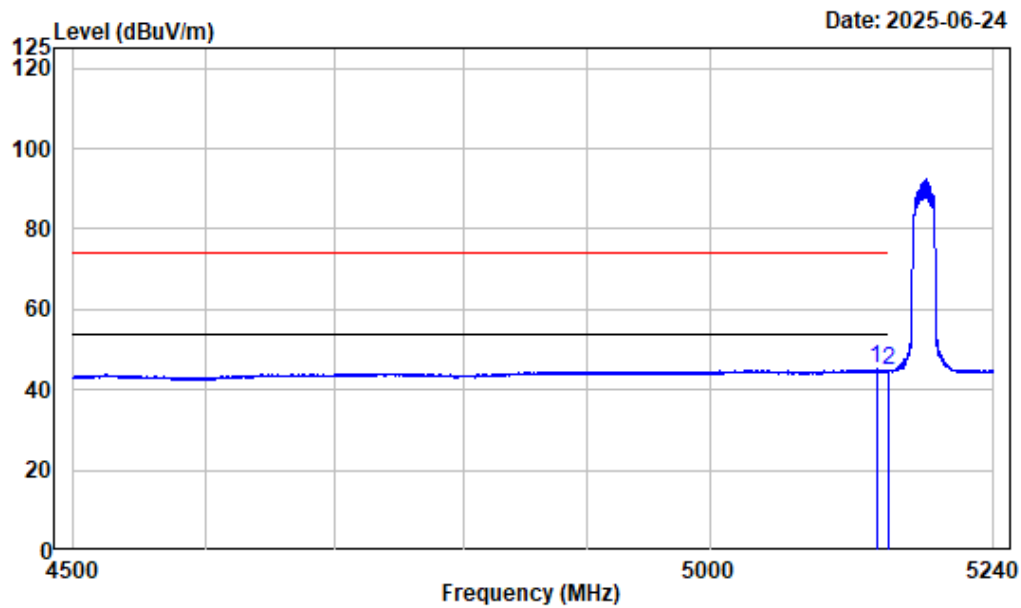
## Left Band edge\_Vertical\_Peak\_5G Wi-Fi\_Band1\_N20\_5180MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-N20-5180

Freq Factor		Read		Limit	Over	Remark
		Level	Level	Line	Limit	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	5132.872	-7.47	65.75	58.28	74.00	-15.72 Peak
2	5150.000	-7.46	64.49	57.03	74.00	-16.97 Peak

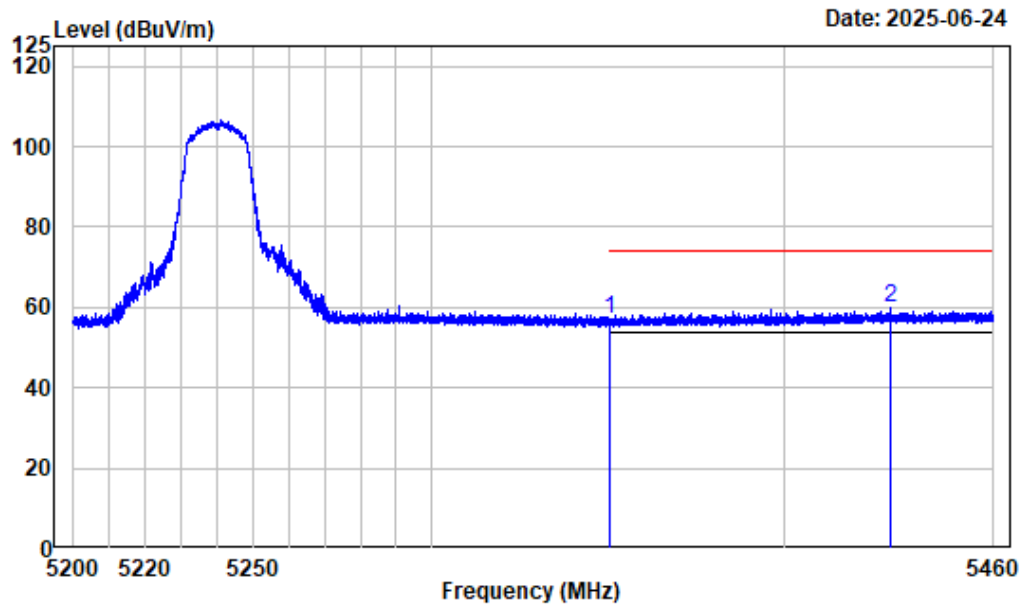
## Left Band edge\_Vertical\_Average\_5G Wi-Fi\_Band1\_N20\_5180MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak  
Note : 5GWiFi-Band1-N20-5180

Freq Factor		Read Level		Limit	Over	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5139.532	-7.47	52.59	45.12	54.00	-8.88 Average
2	5150.000	-7.46	52.06	44.60	54.00	-9.40 Average

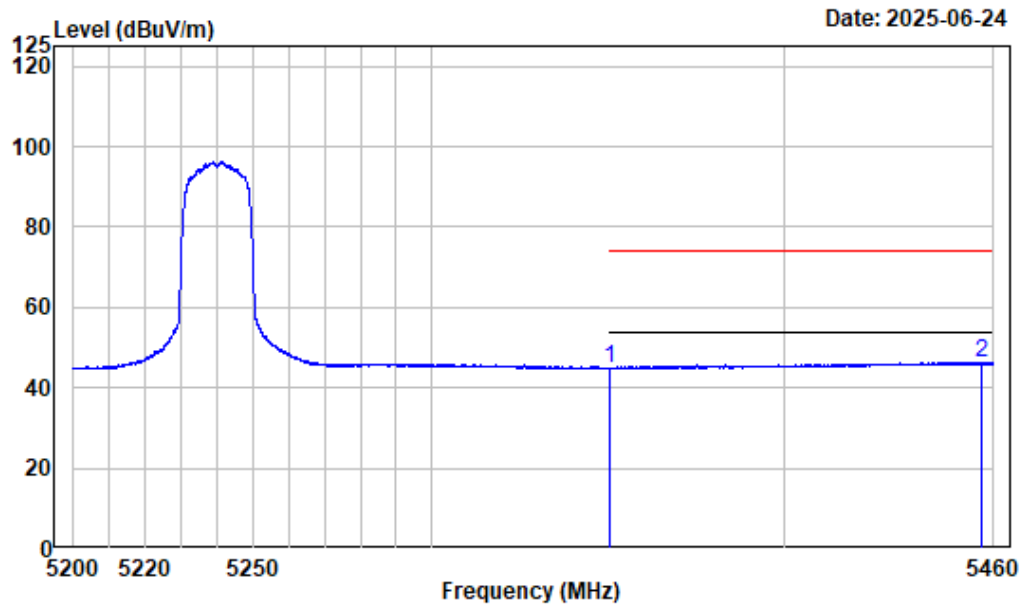
## Right Band edge\_Horizontal\_Peak\_5G Wi-Fi\_Band1\_N20\_5240MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-N20-5240

Freq Factor		Read Level		Limit	Over	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	63.82	57.08	74.00	-16.92 Peak
2	5430.129	-6.43	66.54	60.11	74.00	-13.89 Peak

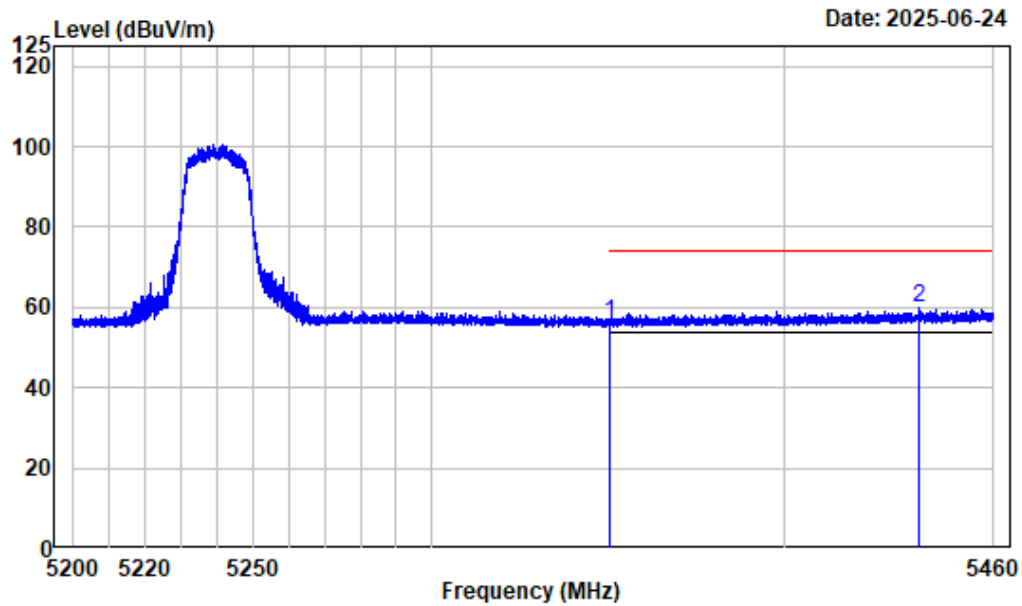
## Right Band edge\_Horizontal\_Average\_5G Wi-Fi\_Band1\_N20\_5240MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak  
Note : 5GWiFi-Band1-N20-5240

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	51.57	44.83	54.00	-9.17	Average
2	5456.522	-6.31	52.63	46.32	54.00	-7.68	Average

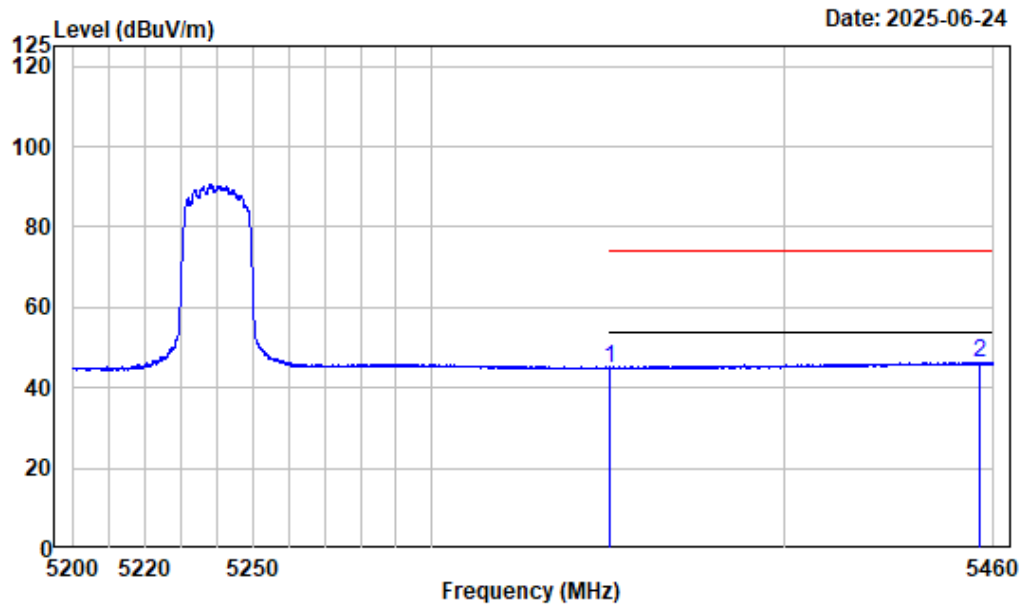
## Right Band edge\_Vertical\_Peak\_5G Wi-Fi\_Band1\_N20\_5240MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-N20-5240

Freq Factor		Read		Limit	Over	Remark
		Level	Level	Line	Limit	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 5350.000	-6.74	62.73	55.99	74.00	-18.01	Peak
2 5438.742	-6.38	66.13	59.75	74.00	-14.25	Peak

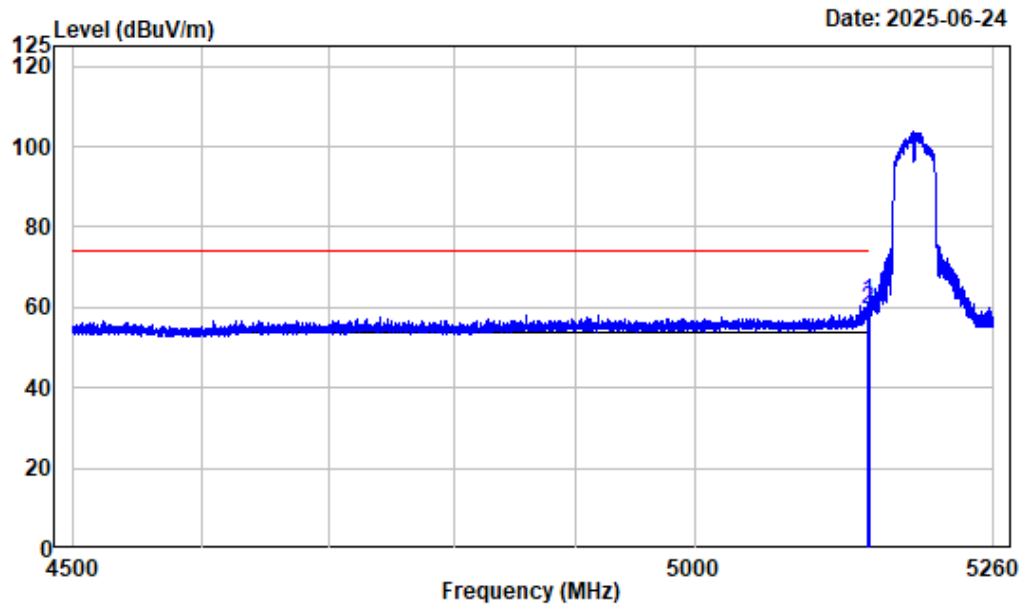
## Right Band edge\_Vertical\_Average\_5G Wi-Fi\_Band1\_N20\_5240MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak  
Note : 5GWiFi-Band1-N20-5240

Freq Factor		Read Level		Limit	Over	Remark
				Line	Limit	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	5350.000	-6.74	51.65	44.91	54.00	-9.09 Average
2	5456.197	-6.31	52.57	46.26	54.00	-7.74 Average

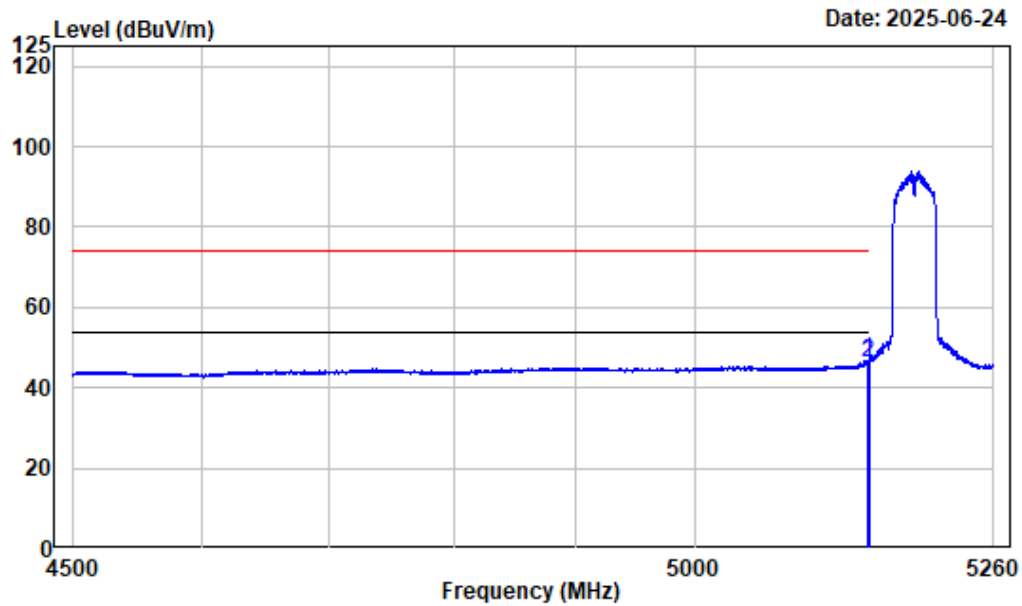
## Left Band edge\_Horizontal\_Peak\_5G Wi-Fi\_Band1\_N40\_5190MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-N40-5190

Freq Factor		Read		Limit	Over	Remark
		Level	Level	Line	Limit	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 5149.026	-7.46	68.98	61.52	74.00	-12.48	Peak
2 5150.000	-7.46	66.67	59.21	74.00	-14.79	Peak

## Left Band edge\_Horizontal\_Average\_5G Wi-Fi\_Band1\_N40\_5190MHz

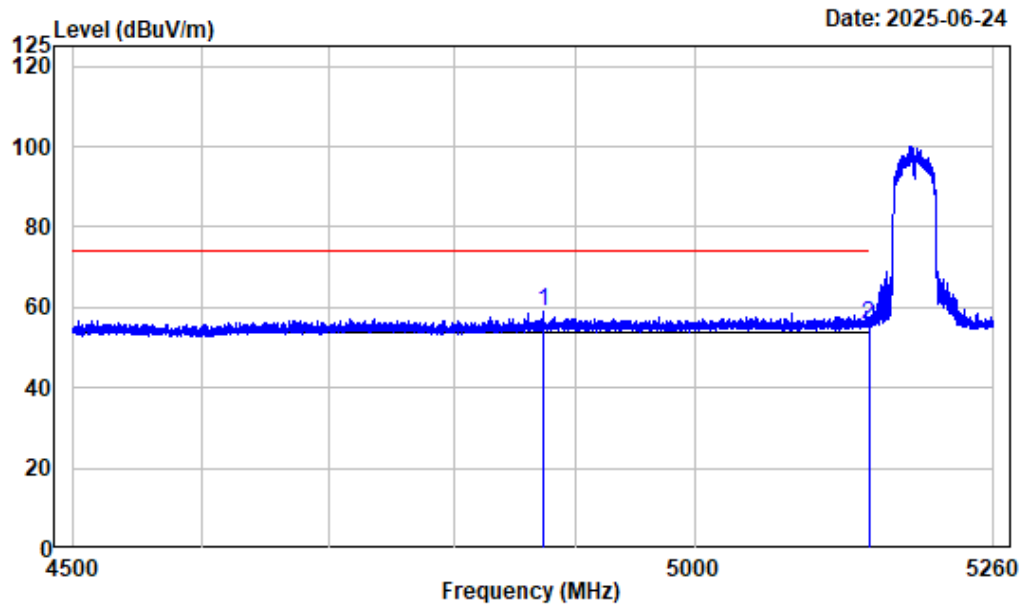


Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Average reading:RBW:1MHz VBW:2kHz Detector:Peak  
Note : 5GWiFi-Band1-N40-5190

Freq Factor		Read		Limit	Over	Remark
		Level	Level	Line	Limit	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	5148.741	-7.46	54.20	46.74	54.00	-7.26 Average
2	5150.000	-7.46	53.82	46.36	54.00	-7.64 Average



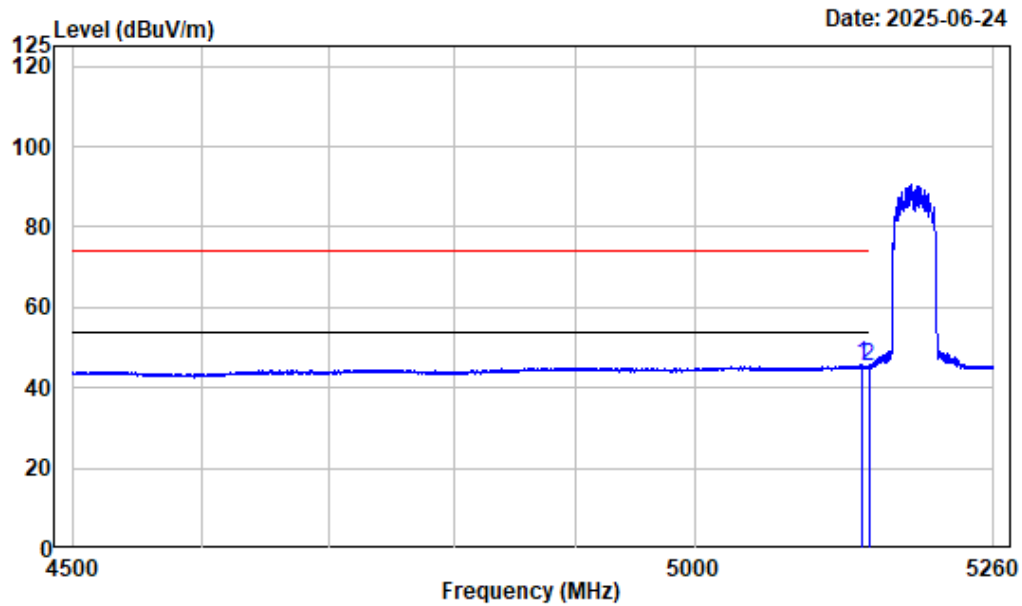
## Left Band edge\_Vertical\_Peak\_5G Wi-Fi\_Band1\_N40\_5190MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-N40-5190

Freq Factor		Read		Limit	Over	Remark
		Level	Level	Line	Limit	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 4874.442	-7.61	66.50	58.89	74.00	-15.11	Peak
2 5150.000	-7.46	62.90	55.44	74.00	-18.56	Peak

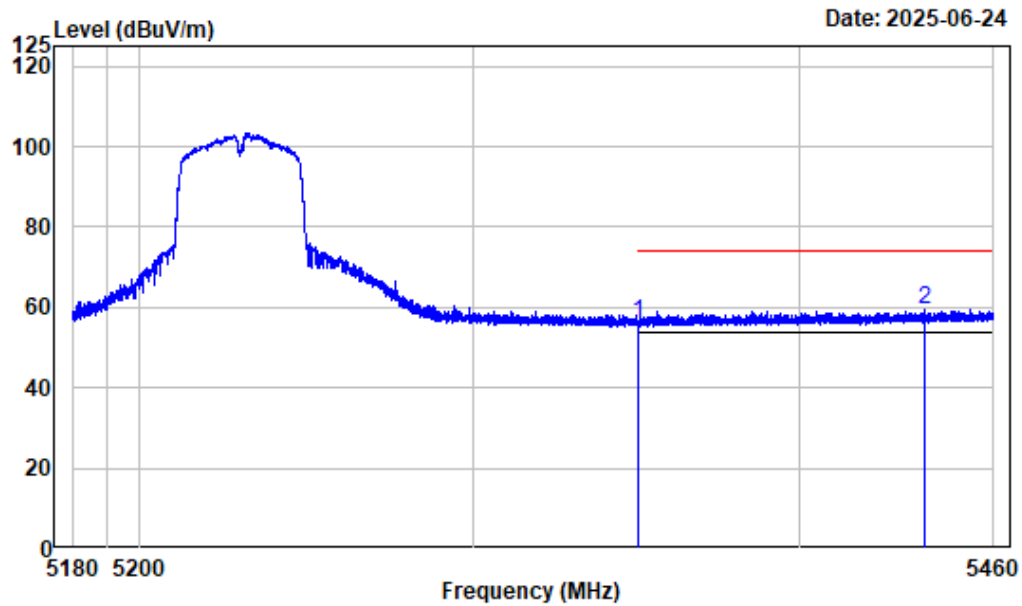
## Left Band edge\_Vertical\_Average\_5G Wi-Fi\_Band1\_N40\_5190MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Average reading:RBW:1MHz VBW:2kHz Detector:Peak  
Note : 5GWiFi-Band1-N40-5190

Freq Factor		Read		Limit	Over	Remark
		Level	Level	Line	Limit	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	5143.516	-7.46	53.18	45.72	54.00	-8.28 Average
2	5150.000	-7.46	52.65	45.19	54.00	-8.81 Average

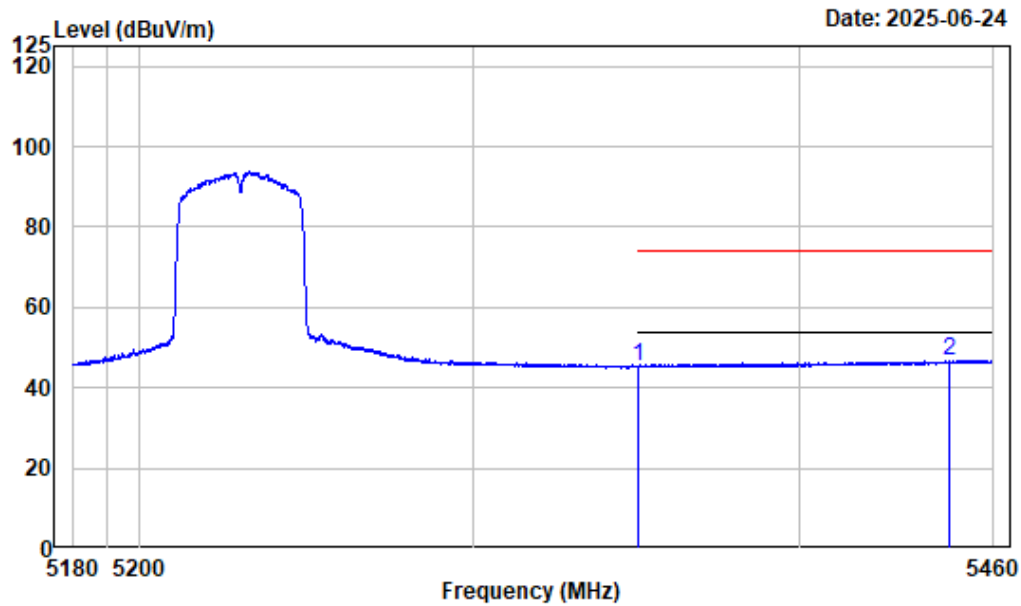
## Right Band edge\_Horizontal\_Peak\_5G Wi-Fi\_Band1\_N40\_5230MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-N40-5230

Freq Factor		Read Level		Limit	Over	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5350.000	-6.74	63.00	56.26	74.00	-17.74 Peak
2	5438.787	-6.38	65.85	59.47	74.00	-14.53 Peak

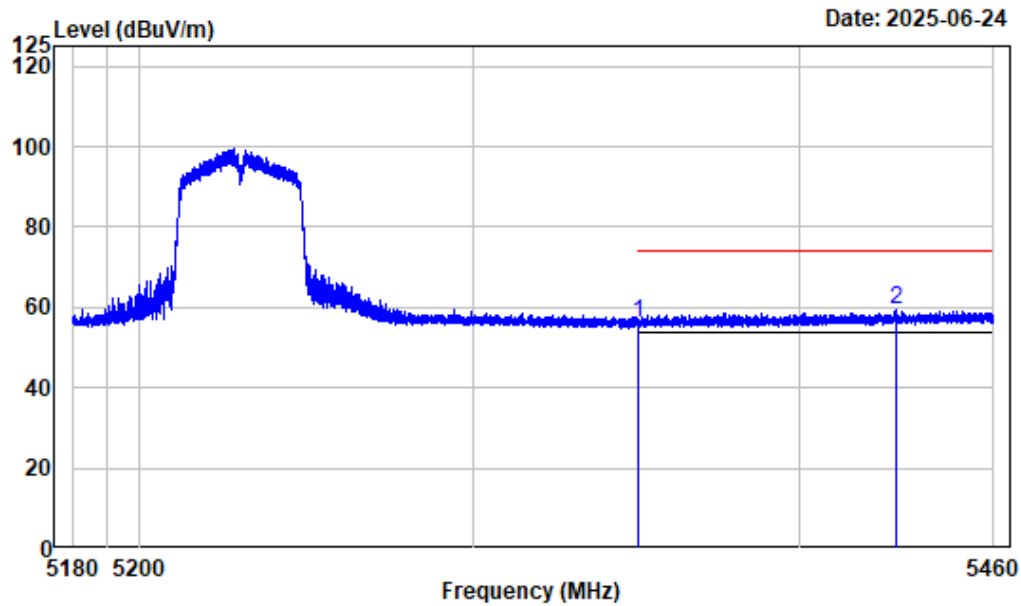
## Right Band edge\_Horizontal\_Average\_5G Wi-Fi\_Band1\_N40\_5230MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Average reading:RBW:1MHz VBW:2kHz Detector:Peak  
Note : 5GWiFi-Band1-N40-5230

Freq Factor		Read Level		Limit	Over	Remark
				Line	Limit	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	5350.000	-6.74	51.98	45.24	54.00	-8.76 Average
2	5446.418	-6.35	53.08	46.73	54.00	-7.27 Average

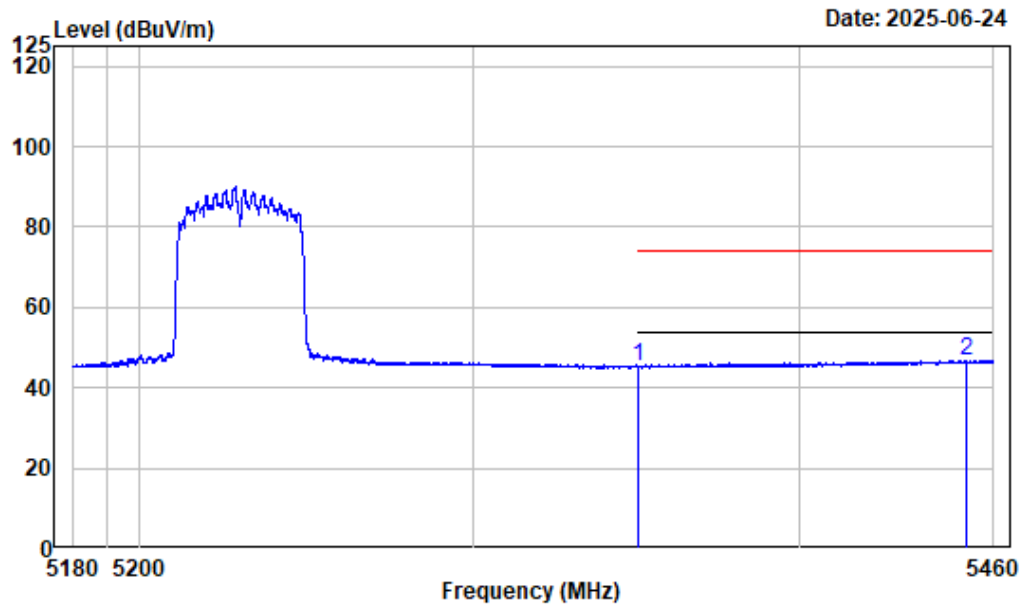
## Right Band edge\_Vertical\_Peak\_5G Wi-Fi\_Band1\_N40\_5230MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-N40-5230

Freq Factor		Read Level		Limit	Over	Remark
				Line	Limit	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	5350.000	-6.74	62.86	56.12	74.00	-17.88 Peak
2	5429.861	-6.43	65.80	59.37	74.00	-14.63 Peak

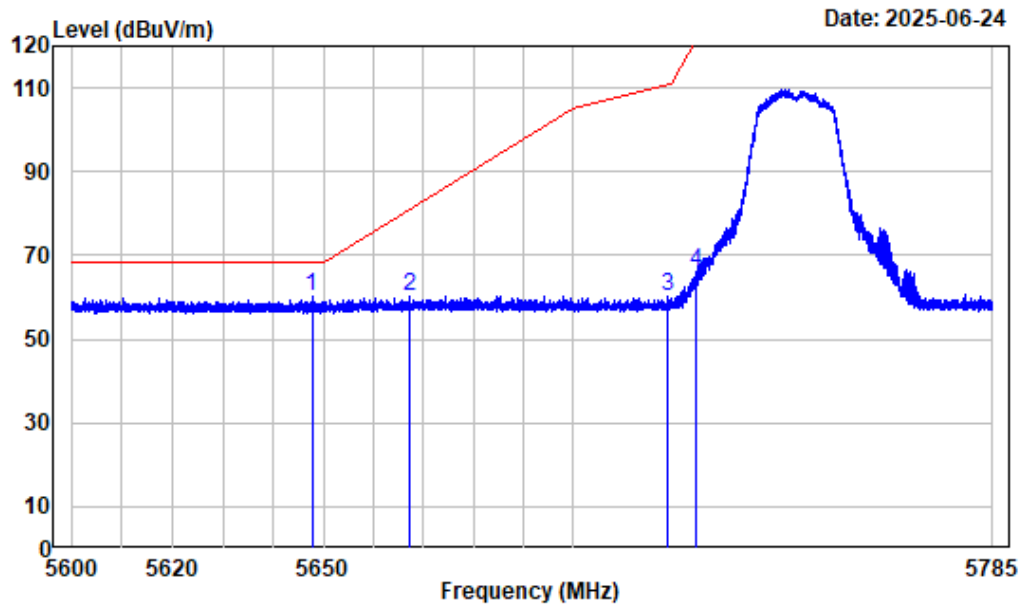
## Right Band edge\_Vertical\_Average\_5G Wi-Fi\_Band1\_N40\_5230MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Average reading:RBW:1MHz VBW:2kHz Detector:Peak  
Note : 5GWiFi-Band1-N40-5230

Freq Factor		Read Level		Limit	Over	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 5350.000	-6.74	51.96	45.22	54.00	-8.78	Average
2 5451.284	-6.32	53.12	46.80	54.00	-7.20	Average

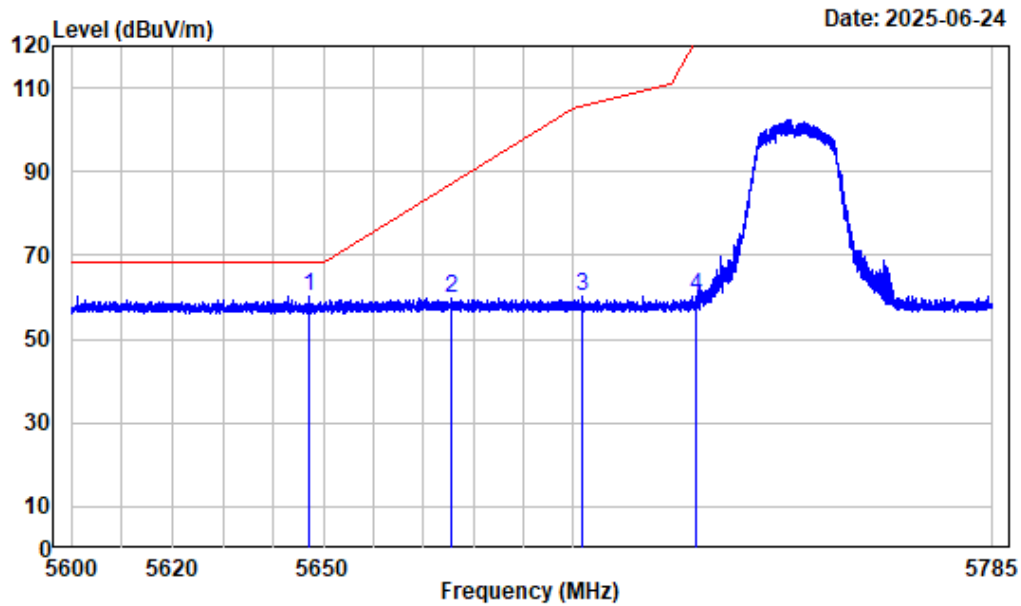
## Left Band edge\_Horizontal\_Peak\_5G Wi-Fi\_Band4\_A\_5745MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band4-A-5745

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5647.736	-5.88	66.13	60.25	68.20	-7.95	Peak
2	5667.209	-5.81	66.24	60.43	80.97	-20.54	Peak
3	5719.085	-5.54	65.62	60.08	110.54	-50.46	Peak
4	5724.914	-5.49	71.56	66.07	122.00	-55.93	Peak

## Left Band edge\_Vertical\_Peak\_5G Wi-Fi\_Band4\_A\_5745MHz

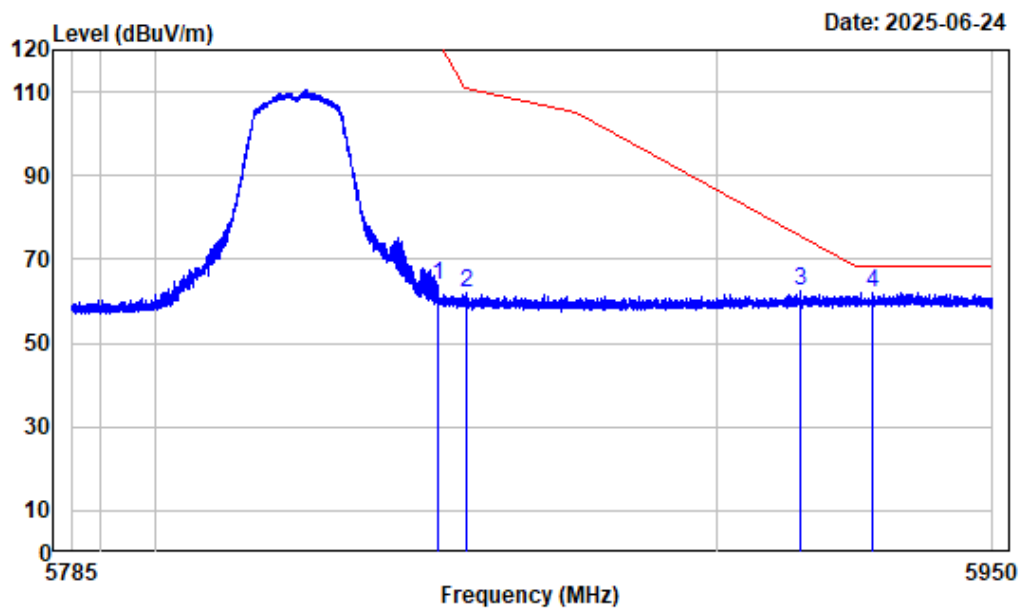


Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band4-A-5745

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5647.250	-5.88	66.09	60.21	68.20	-7.99	Peak
2	5675.651	-5.79	65.58	59.79	87.22	-27.43	Peak
3	5701.832	-5.70	65.73	60.03	105.71	-45.68	Peak
4	5724.775	-5.49	65.65	60.16	121.69	-61.53	Peak



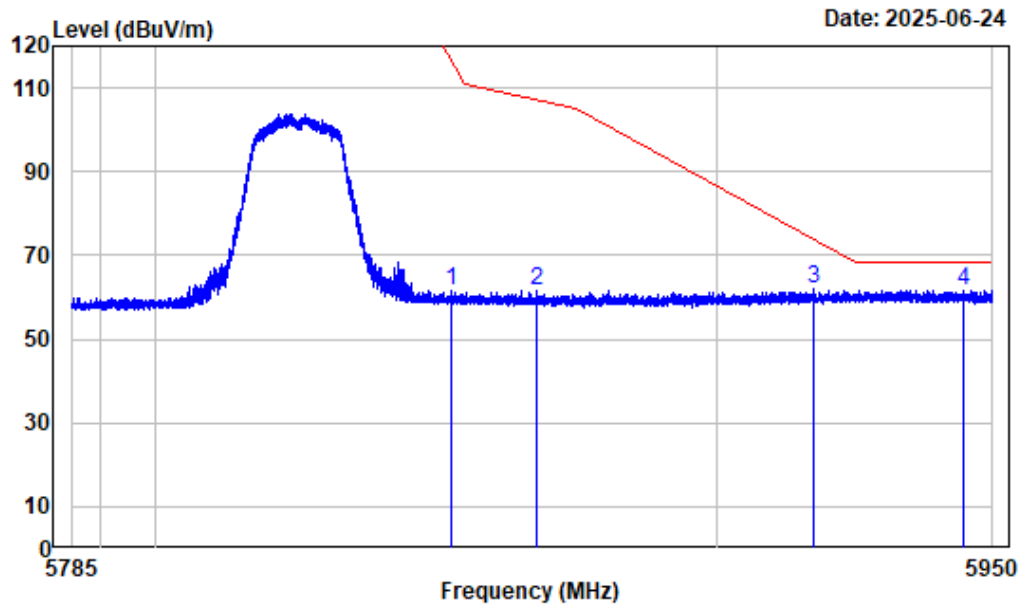
## Right Band edge\_Horizontal\_Peak\_5G Wi-Fi\_Band4\_A\_5825MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band4-A-5825

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5850.060	-4.68	68.46	63.78	122.06	-58.28	Peak
2	5855.216	-4.66	66.74	62.08	110.74	-48.66	Peak
3	5915.160	-4.46	67.05	62.59	75.46	-12.87	Peak
4	5928.320	-4.45	66.40	61.95	68.20	-6.25	Peak

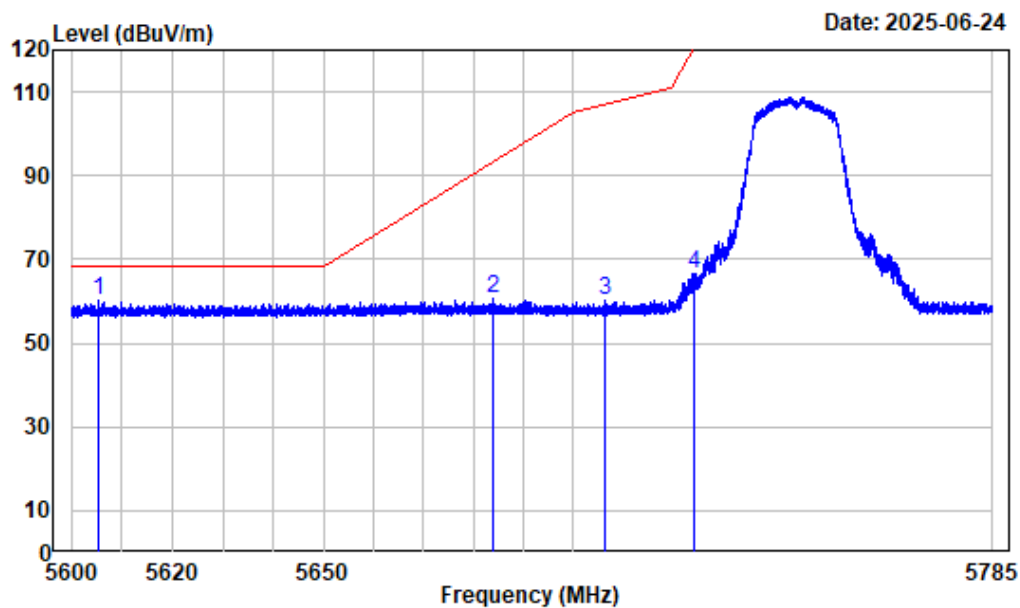
## Right Band edge\_Vertical\_Peak\_5G Wi-Fi\_Band4\_A\_5825MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band4-A-5825

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5852.432	-4.66	66.13	61.47	116.65	-55.18	Peak
2	5867.861	-4.60	66.19	61.59	107.20	-45.61	Peak
3	5917.532	-4.45	66.32	61.87	73.71	-11.84	Peak
4	5944.843	-4.45	66.26	61.81	68.20	-6.39	Peak

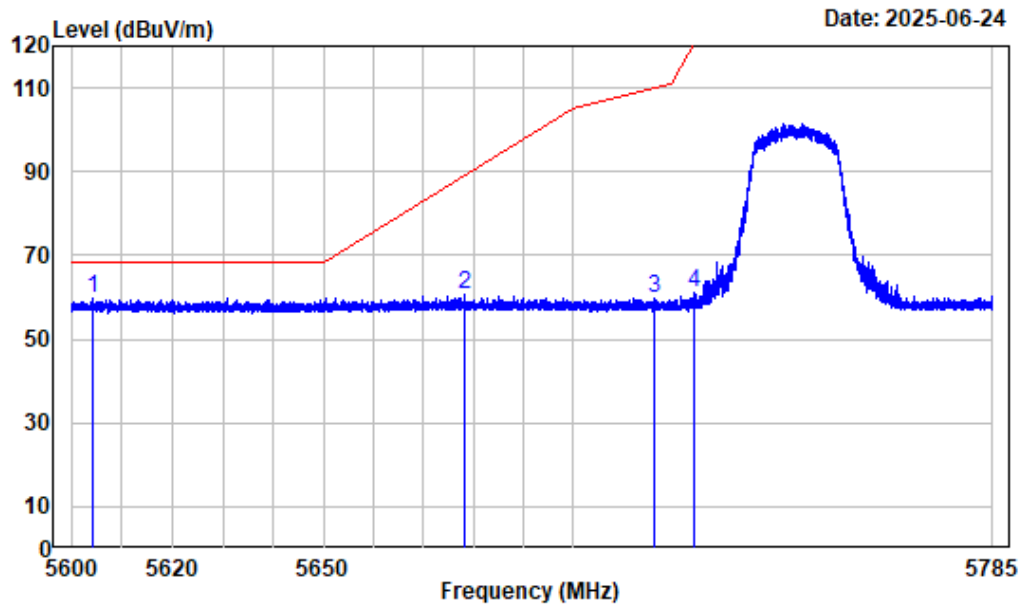
## Left Band edge\_Horizontal\_Peak\_5G Wi-Fi\_Band4\_N20\_5745MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band4-N20-5745

Freq Factor		Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 5605.458	-6.17	66.23	60.06	68.20	-8.14 Peak
2 5684.047	-5.76	66.62	60.86	93.43	-32.57 Peak
3 5706.504	-5.66	65.82	60.16	107.02	-46.86 Peak
4 5724.451	-5.49	72.05	66.56	120.95	-54.39 Peak

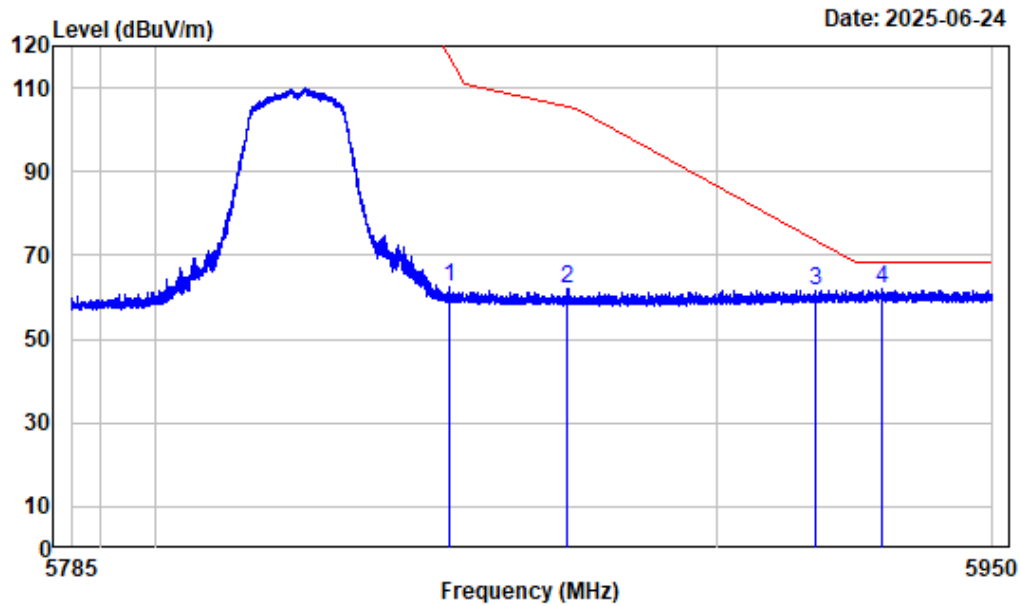
## Left Band edge\_Vertical\_Peak\_5G Wi-Fi\_Band4\_N20\_5745MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band4-N20-5745

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5604.255	-6.19	65.81	59.62	68.20	-8.58	Peak
2	5678.126	-5.78	66.32	60.54	89.05	-28.51	Peak
3	5716.333	-5.57	65.46	59.89	109.77	-49.88	Peak
4	5724.590	-5.49	66.49	61.00	121.27	-60.27	Peak

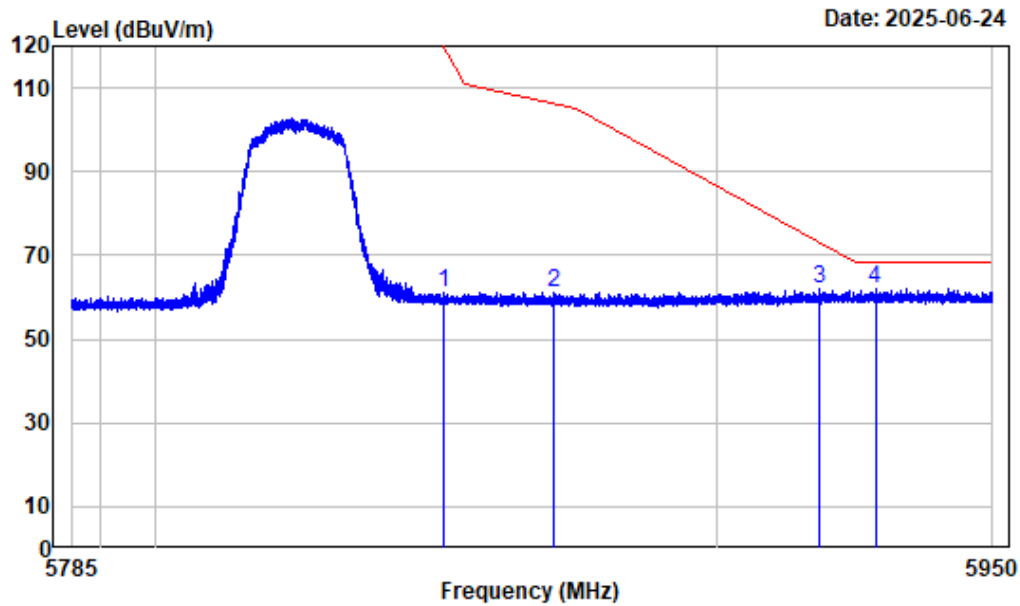
## Right Band edge\_Horizontal\_Peak\_5G Wi-Fi\_Band4\_N20\_5825MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band4-N20-5825

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5852.019	-4.66	67.12	62.46	117.60	-55.14	Peak
2	5873.369	-4.57	66.80	62.23	105.66	-43.43	Peak
3	5918.068	-4.45	66.15	61.70	73.31	-11.61	Peak
4	5930.094	-4.45	66.34	61.89	68.20	-6.31	Peak

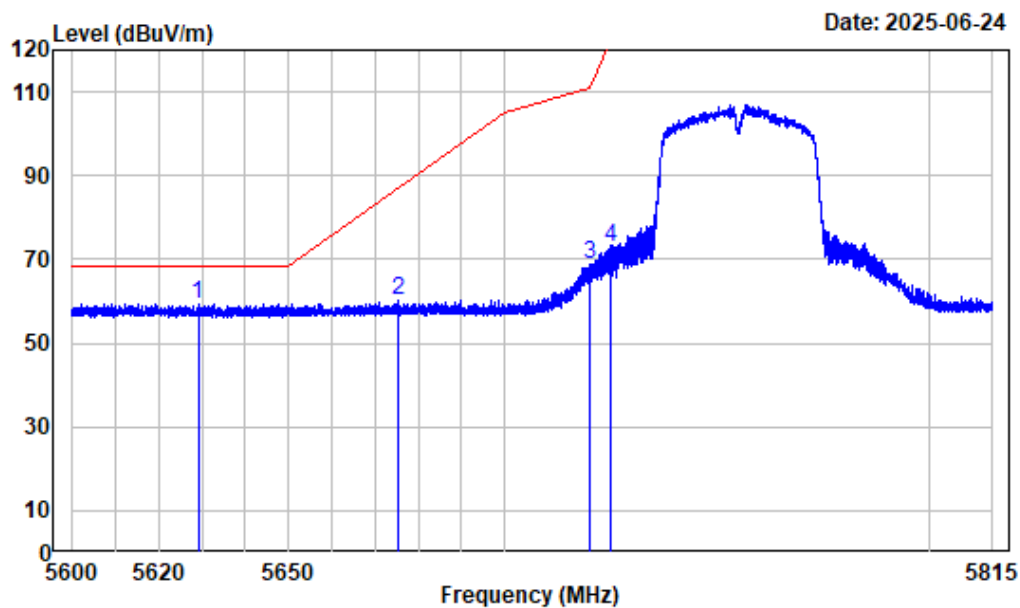
## Right Band edge\_Vertical\_Peak\_5G Wi-Fi\_Band4\_N20\_5825MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band4-N20-5825

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5851.070	-4.68	65.98	61.30	119.76	-58.46	Peak
2	5870.955	-4.59	65.73	61.14	106.33	-45.19	Peak
3	5918.625	-4.45	66.68	62.23	72.90	-10.67	Peak
4	5928.753	-4.45	66.31	61.86	68.20	-6.34	Peak

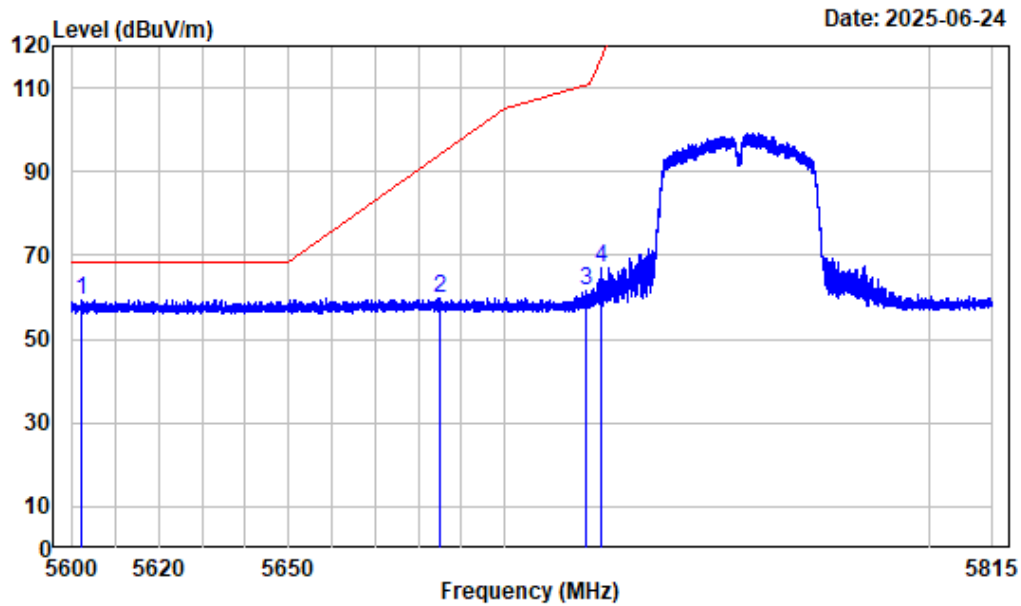
## Left Band edge\_Horizontal\_Peak\_5G Wi-Fi\_Band4\_N40\_5755MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band4-N40-5755

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5629.109	-6.01	65.49	59.48	68.20	-8.72	Peak
2	5675.448	-5.79	66.08	60.29	87.07	-26.78	Peak
3	5719.877	-5.53	74.22	68.69	110.77	-42.08	Peak
4	5724.716	-5.49	78.42	72.93	121.55	-48.62	Peak

## Left Band edge\_Vertical\_Peak\_5G Wi-Fi\_Band4\_N40\_5755MHz

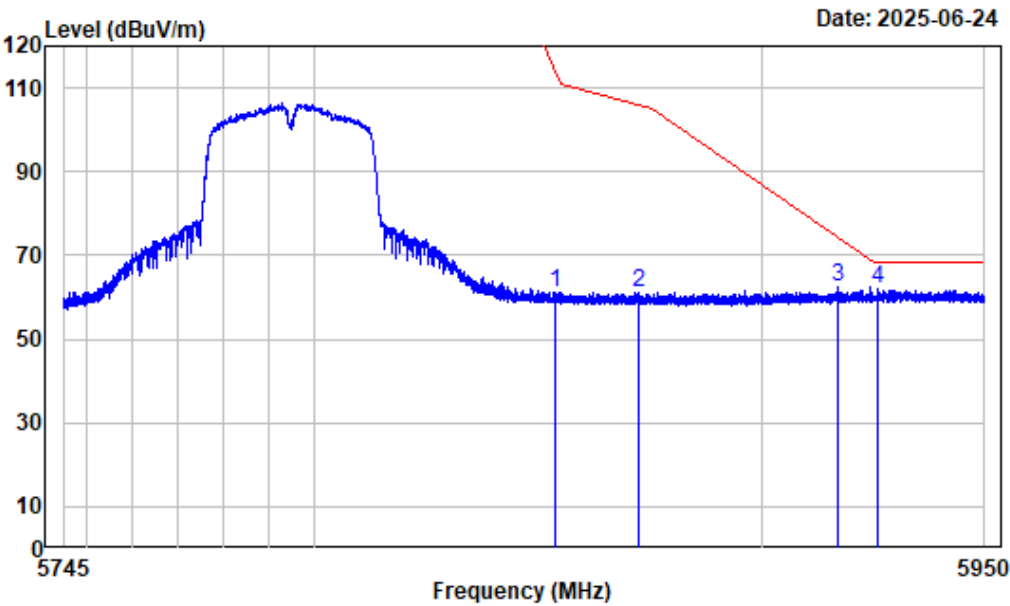


Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band4-N40-5755

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5602.312	-6.20	65.74	59.54	68.20	-8.66	Peak
2	5684.855	-5.75	65.61	59.86	94.03	-34.17	Peak
3	5719.286	-5.54	67.18	61.64	110.60	-48.96	Peak
4	5722.565	-5.50	72.35	66.85	116.65	-49.80	Peak



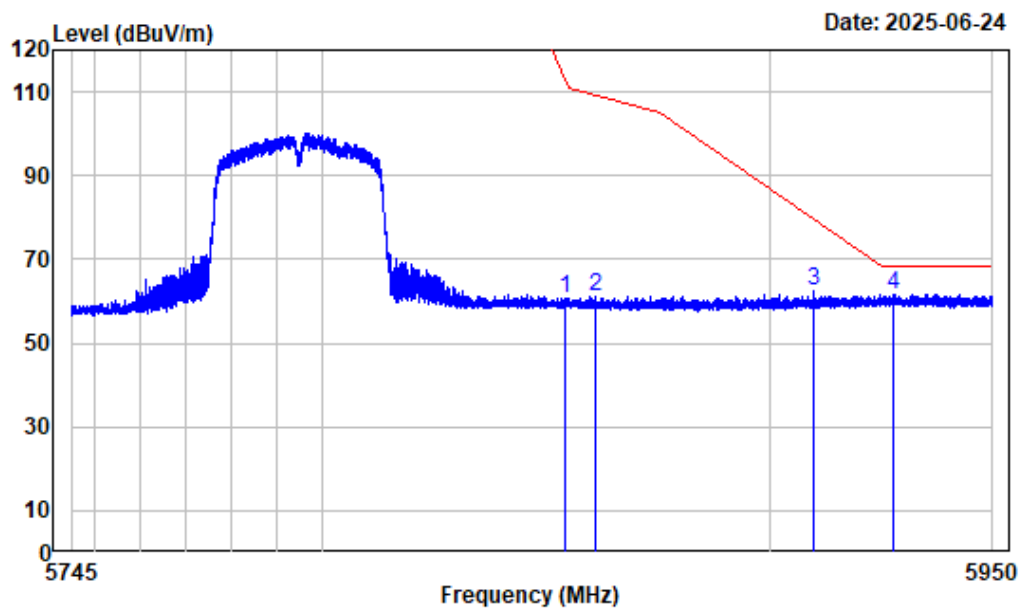
Right Band edge\_Horizontal\_Peak\_5G Wi-Fi\_Band4\_N40\_5795MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band4-N40-5795

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5853.689	-4.66	65.85	61.19	113.79	-52.60	Peak
2	5872.270	-4.58	65.74	61.16	105.96	-44.80	Peak
3	5916.914	-4.44	67.08	62.64	74.16	-11.52	Peak
4	5925.961	-4.45	66.42	61.97	68.20	-6.23	Peak

## Right Band edge\_Vertical\_Peak\_5G Wi-Fi\_Band4\_N40\_5795MHz

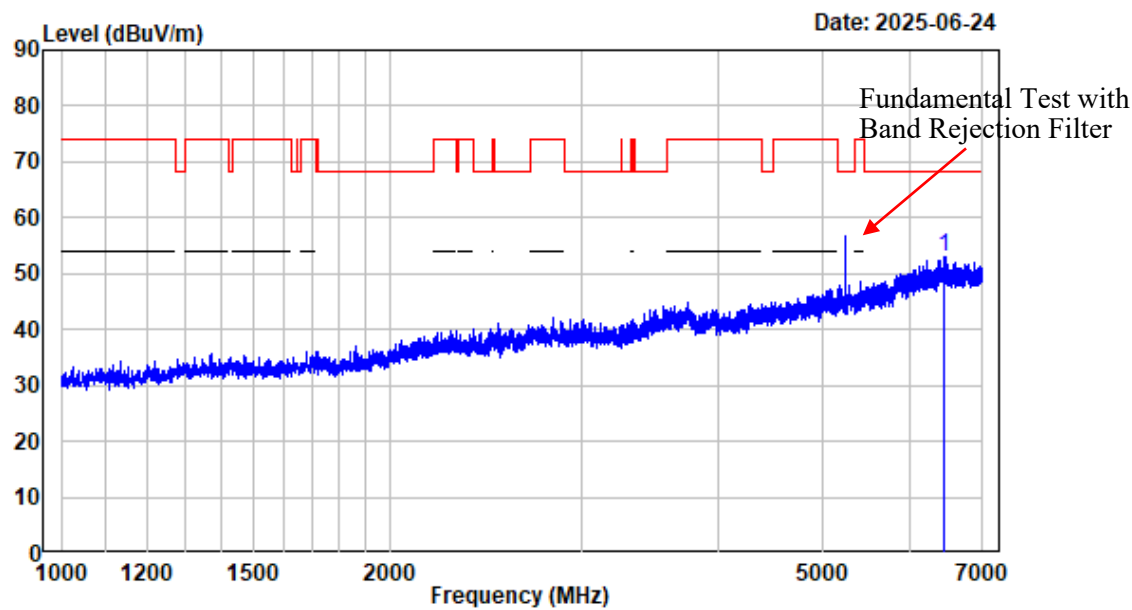


Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band4-N40-5795

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5853.894	-4.65	65.49	60.84	113.32	-52.48	Peak
2	5860.865	-4.63	65.86	61.23	109.16	-47.93	Peak
3	5909.687	-4.45	67.01	62.56	79.50	-16.94	Peak
4	5927.396	-4.45	66.24	61.79	68.20	-6.41	Peak

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

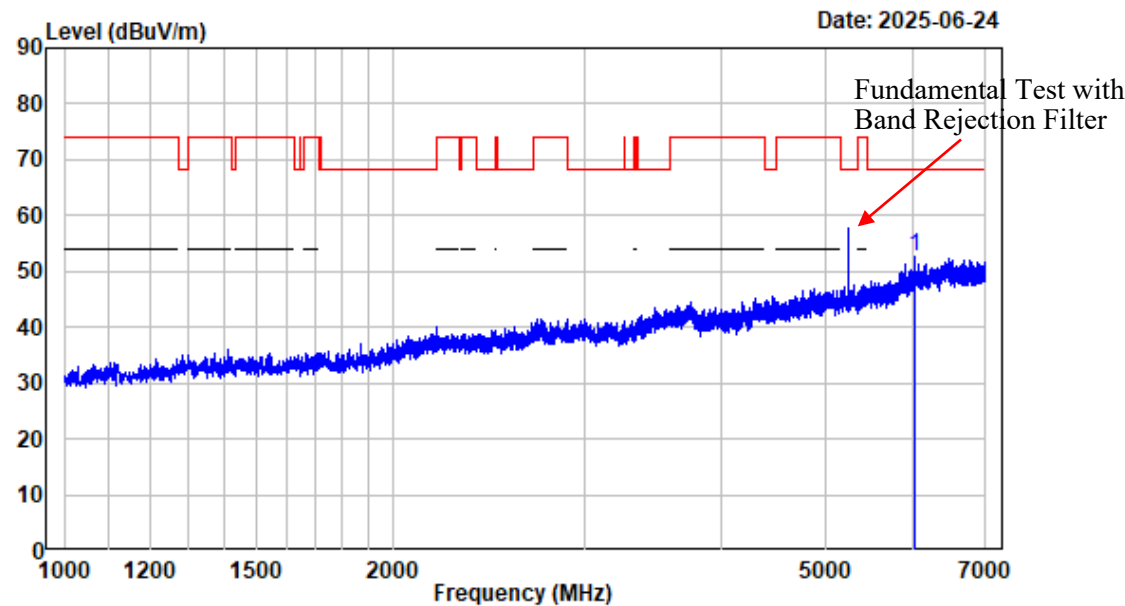
1-7GHz\_Horizontal\_5G Wi-Fi\_Band1\_A\_5240MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-A-5240

	Freq	Factor	Read		Limit	Over	Remark
			Level	Level	Line	Limit	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	6459.183	-2.89	56.01	53.12	68.20	-15.08	Peak

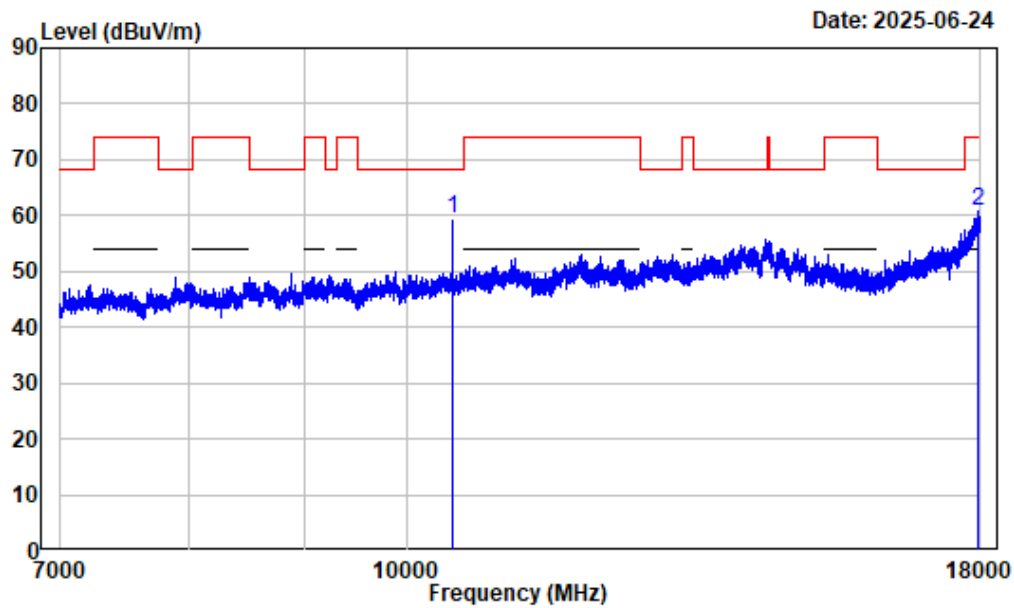
1-7GHz\_Vertical\_5G Wi-Fi\_Band1\_A\_5240MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-A-5240

Freq Factor		Read	Limit	Over	Remark
MHz	dB/m	Level	Level	Line	
		dBuV	dBuV/m	dBuV/m	dB
1	6020.377	-4.41	56.89	52.48	68.20 -15.72 Peak

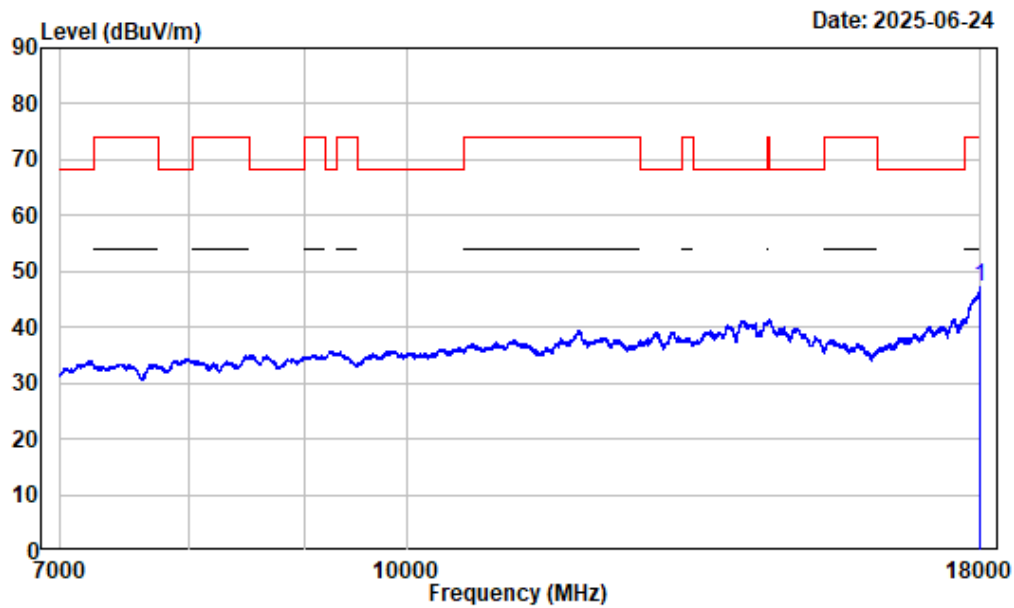
## 7-18GHz\_Horizontal\_Peak\_5G Wi-Fi\_Band1\_A\_5240MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-A-5240

Freq Factor		Read	Limit	Over	Remark
MHz	dB/m	Level	Level	Line	
		dBuV	dBuV/m	dBuV/m	dB
1 10480.000	2.25	57.32	59.57	68.20	-8.63 Peak
2 17953.240	12.97	47.67	60.64	74.00	-13.36 Peak

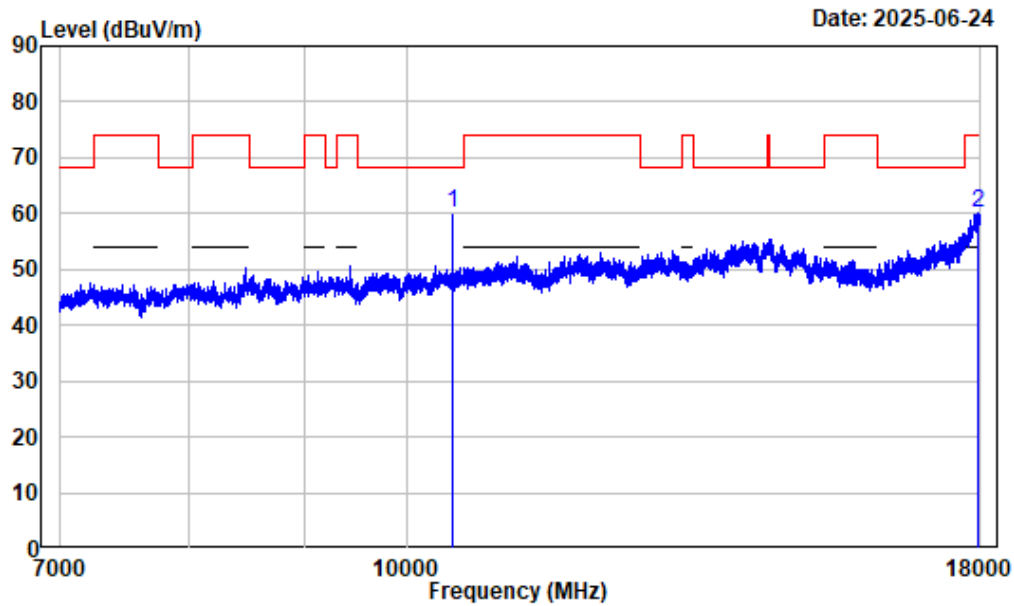
## 7-18GHz\_Horizontal\_Average\_5G Wi-Fi\_Band1\_A\_5240MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak  
Note : 5GWiFi-Band1-A-5240

Freq Factor		Read Level		Limit	Over	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 17998.630	13.19	33.87	47.06	54.00	-6.94	Average

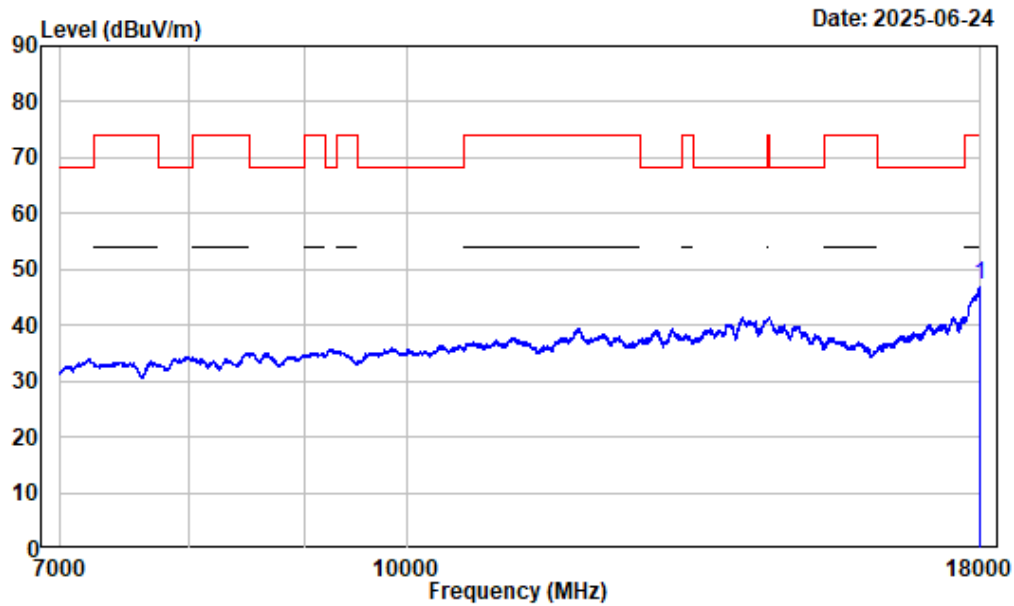
## 7-18GHz\_Vertical\_Peak\_5G Wi-Fi\_Band1\_A\_5240MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-A-5240

Freq Factor		Read	Limit	Over	Remark
MHz	dB/m	Level	Level	Line	
		dBuV	dBuV/m	dBuV/m	dB
1 10480.000	2.25	57.95	60.20	68.20	-8.00 Peak
2 17942.240	12.91	47.09	60.00	74.00	-14.00 Peak

7-18GHz\_Vertical\_Average\_5G Wi-Fi\_Band1\_A\_5240MHz

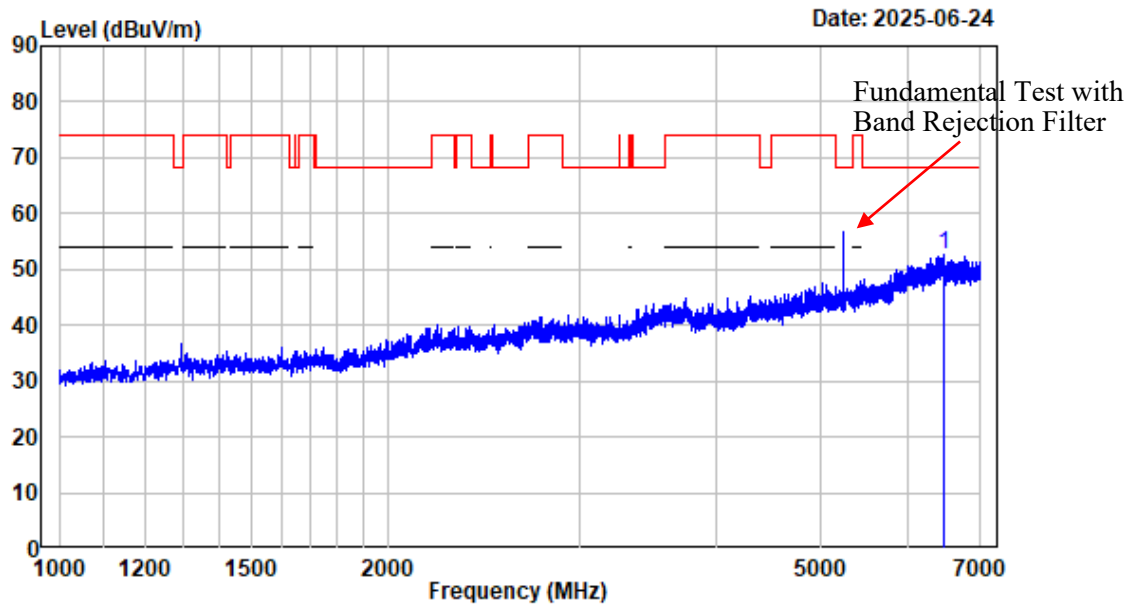


Condition : Vertical  
 Project No. : 2501U27810E-RF  
 Tester : Zenos Qiao  
 Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak  
 Note : 5GWiFi-Band1-A-5240

Freq Factor		Read Level	Level	Limit Line	Over Limit	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 17998.630	13.20	33.94	47.14	54.00	-6.86	Average



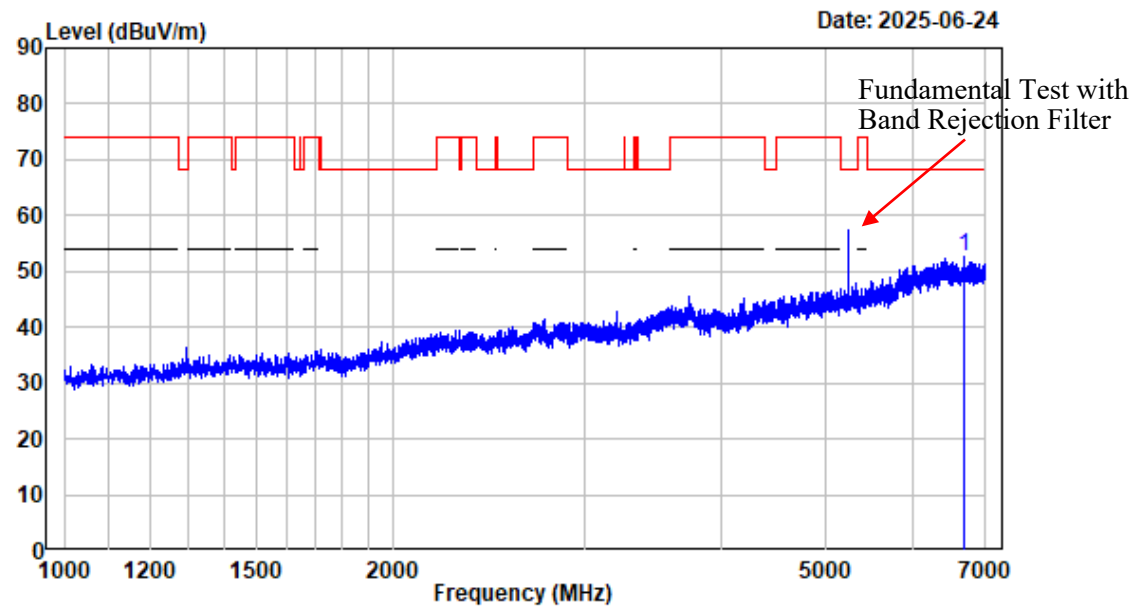
## 1-7GHz\_Horizontal\_5G Wi-Fi\_Band1\_N20\_5240MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-N20-5240

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	6485.436	-2.92	55.47	52.55	68.20	-15.65	Peak

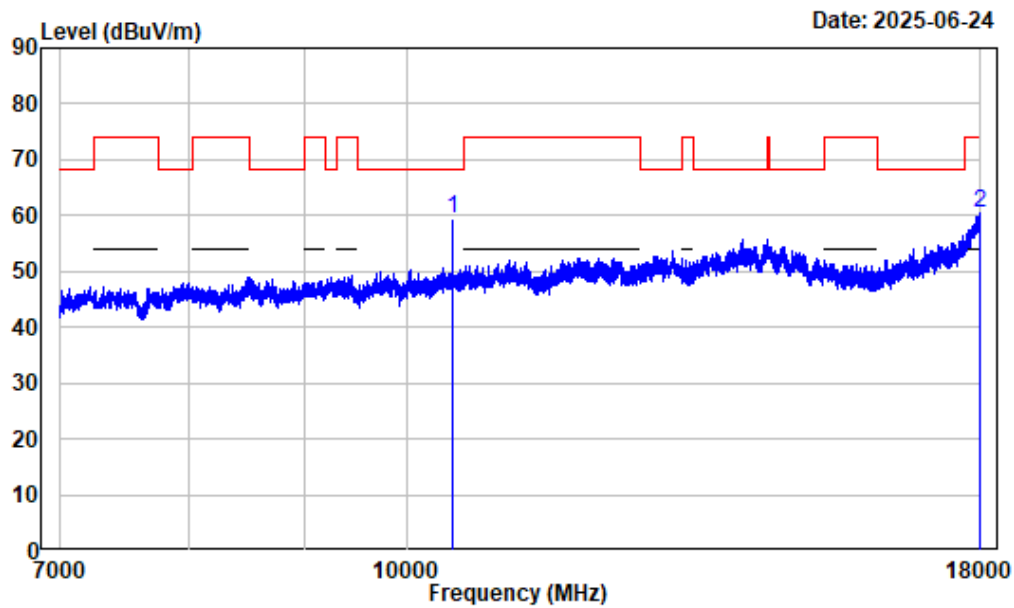
1-7GHz\_Vertical\_5G Wi-Fi\_Band1\_N20\_5240MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-N20-5240

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	6699.962	-3.36	55.84	52.48	68.20	-15.72	Peak

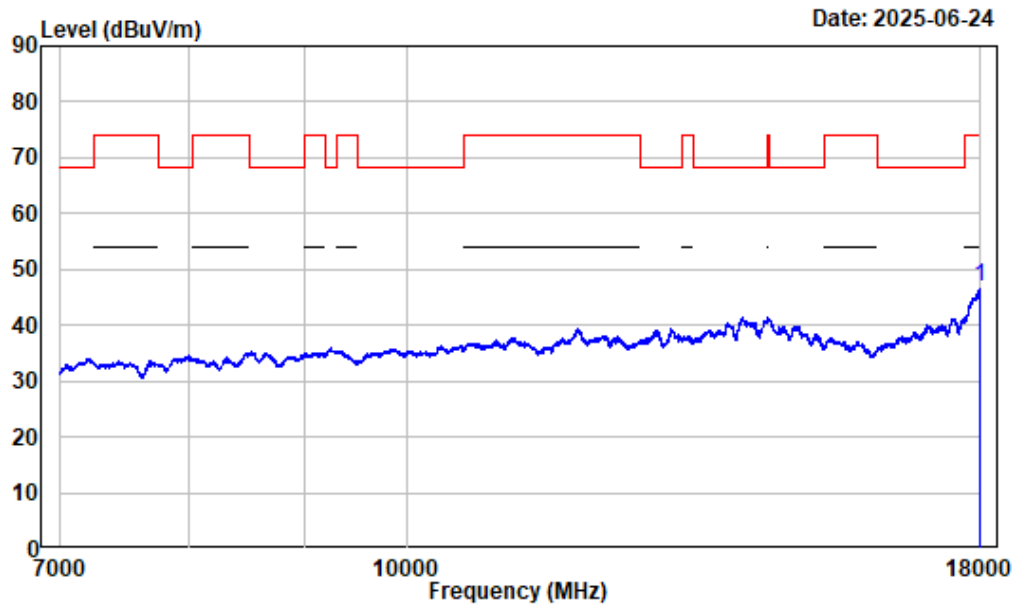
## 7-18GHz\_Horizontal\_Peak\_5G Wi-Fi\_Band1\_N20\_5240MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-N20-5240

Freq Factor		Read	Limit	Over	Remark
MHz	dB/m	Level	Level	Line	
		dBuV	dBuV/m	dBuV/m	dB
1 10480.000	2.25	57.14	59.39	68.20	-8.81 Peak
2 17994.500	13.17	47.35	60.52	74.00	-13.48 Peak

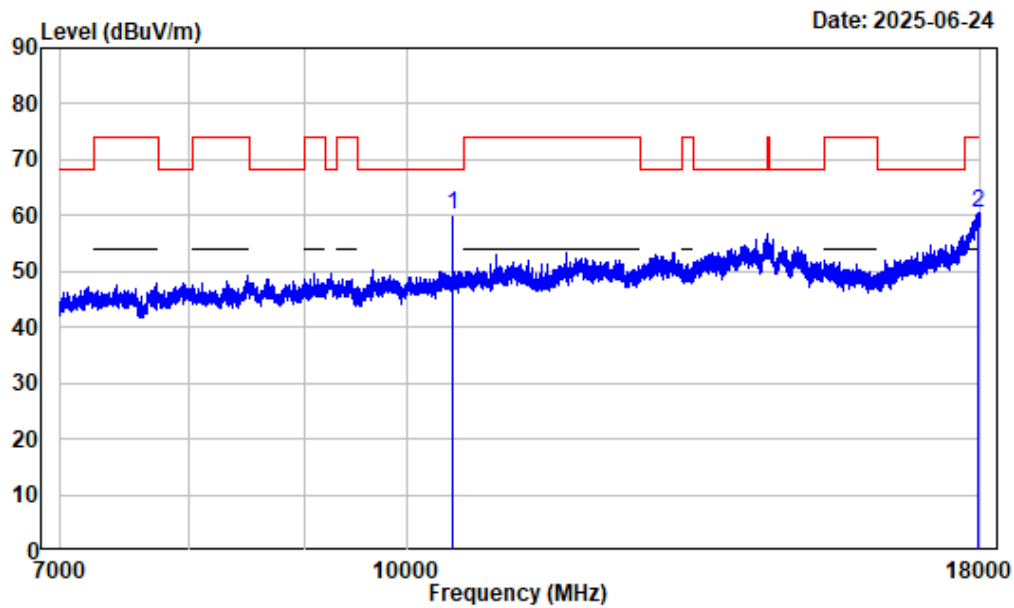
## 7-18GHz\_Horizontal\_Average\_5G Wi-Fi\_Band1\_N20\_5240MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak  
Note : 5GWiFi-Band1-N20-5240

Freq Factor		Read Level		Limit	Over	Remark
				Line	Limit	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 17989.000	13.14	33.89	47.03	54.00	-6.97	Average

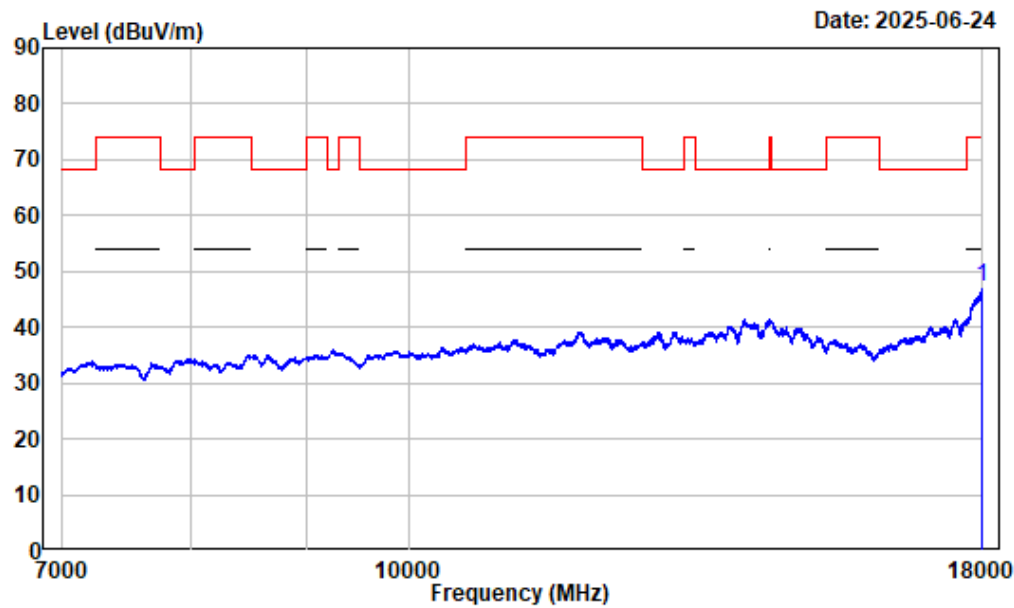
## 7-18GHz\_Vertical\_Peak\_5G Wi-Fi\_Band1\_N20\_5240MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-N20-5240

Freq Factor		Read	Limit	Over	Remark
MHz	dB/m	Level	Level	Line	
		dBuV	dBuV/m	dBuV/m	dB
1 10480.000	2.25	57.69	59.94	68.20	-8.26 Peak
2 17965.620	13.03	47.34	60.37	74.00	-13.63 Peak

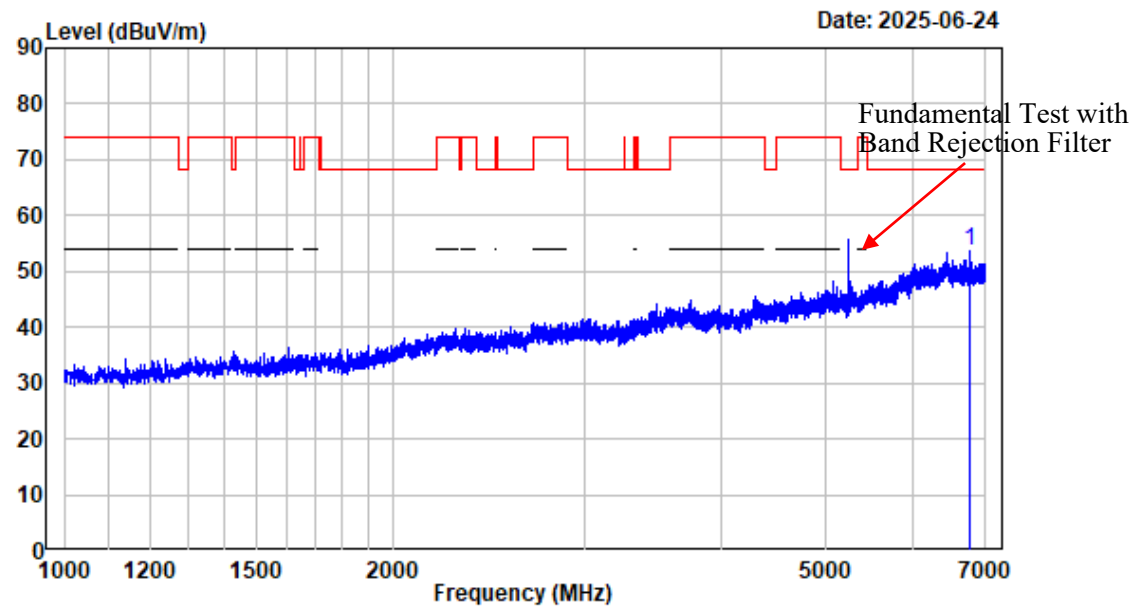
7-18GHz\_Vertical\_Average\_5G Wi-Fi\_Band1\_N20\_5240MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak  
Note : 5GWiFi-Band1-N20-5240

Freq Factor		Read Level		Limit	Over	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 17995.880	13.18	33.99	47.17	54.00	-6.83	Average

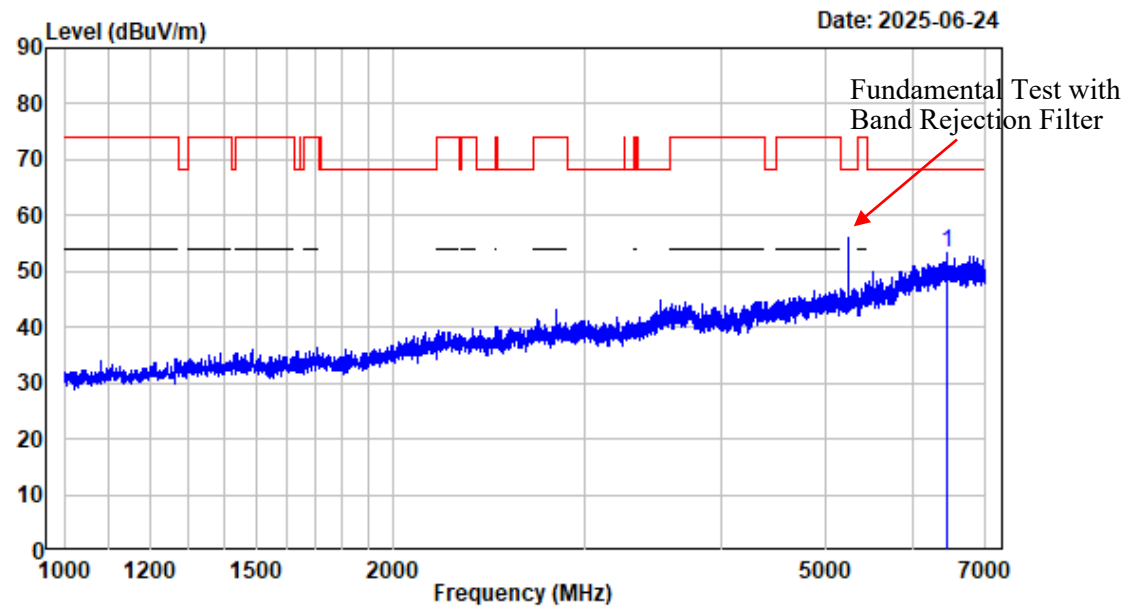
1-7GHz\_Horizontal\_5G Wi-Fi\_Band1\_N40\_5230MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-N40-5230

Freq Factor		Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	6784.723	-3.31	57.04	53.73	68.20 -14.47 Peak

1-7GHz\_Vertical\_5G Wi-Fi\_Band1\_N40\_5230MHz

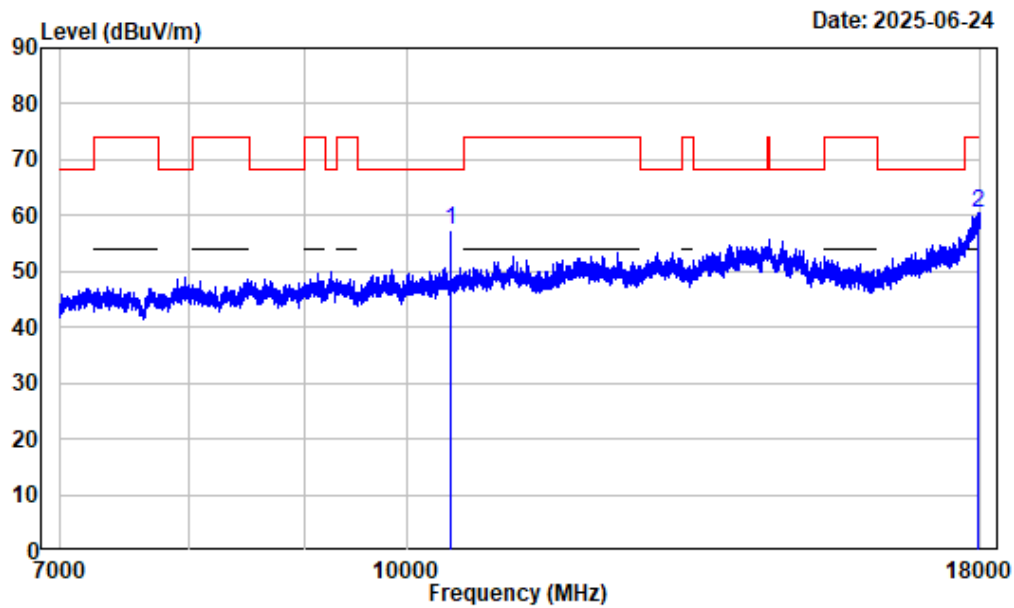


Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-N40-5230

Freq Factor		Read Level	Level	Limit Line	Over Limit	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	6459.933	-2.89	56.18	53.29	68.20	-14.91 Peak



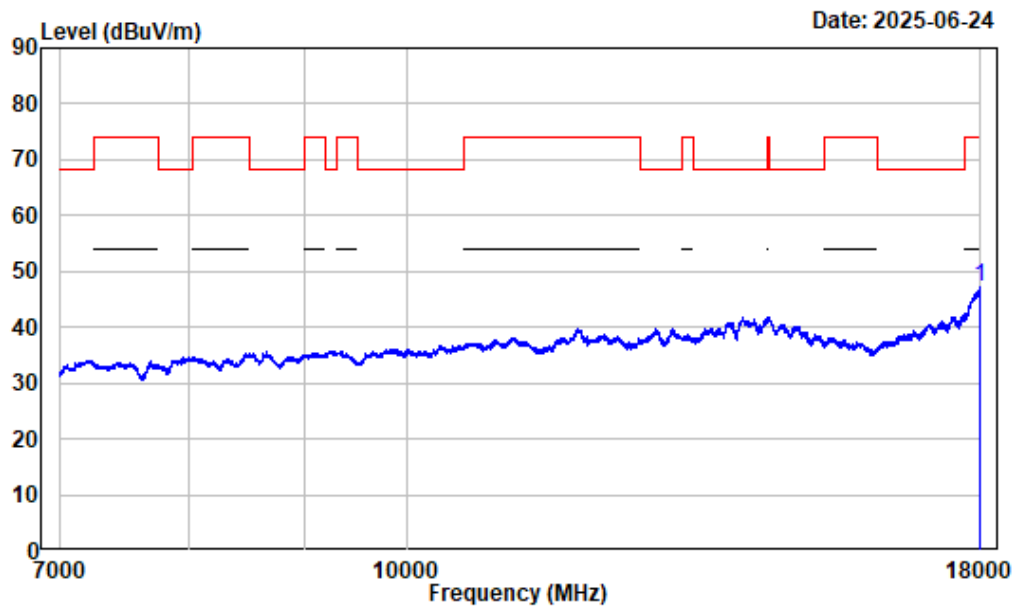
## 7-18GHz\_Horizontal\_Peak\_5G Wi-Fi\_Band1\_N40\_5230MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-N40-5230

Freq Factor		Read	Limit	Over	Remark
MHz	dB/m	Level	Level	Line	
		dBuV	dBuV/m	dBuV/m	dB
1 10460.000	2.32	55.07	57.39	68.20	-10.81 Peak
2 17958.740	12.99	47.57	60.56	74.00	-13.44 Peak

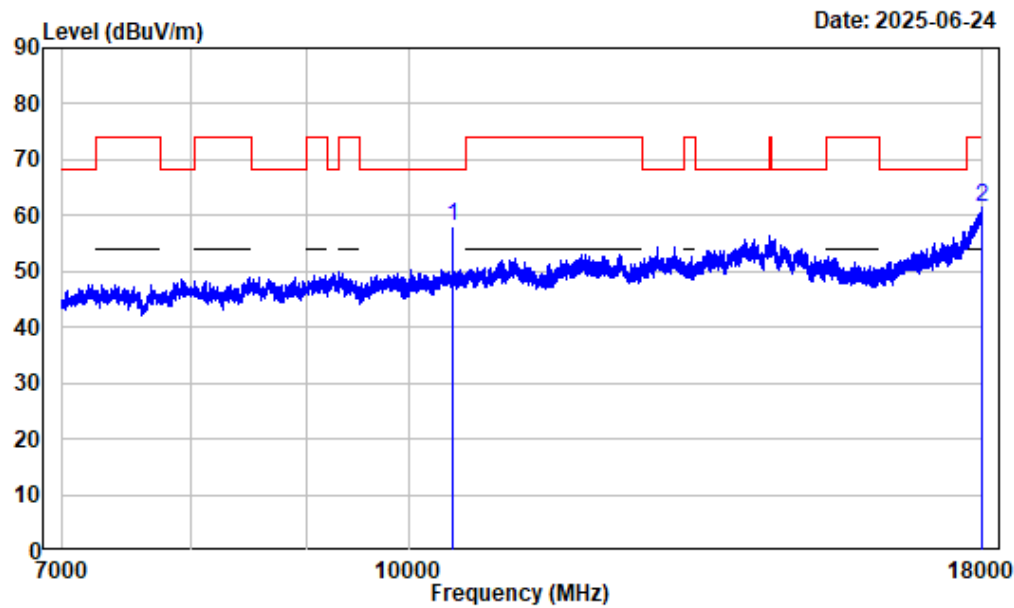
## 7-18GHz\_Horizontal\_Average\_5G Wi-Fi\_Band1\_N40\_5230MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Average reading:RBW:1MHz VBW:2kHz Detector:Peak  
Note : 5GWiFi-Band1-N40-5230

Freq Factor		Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 17995.880	13.18	34.17	47.35	54.00	-6.65 Average

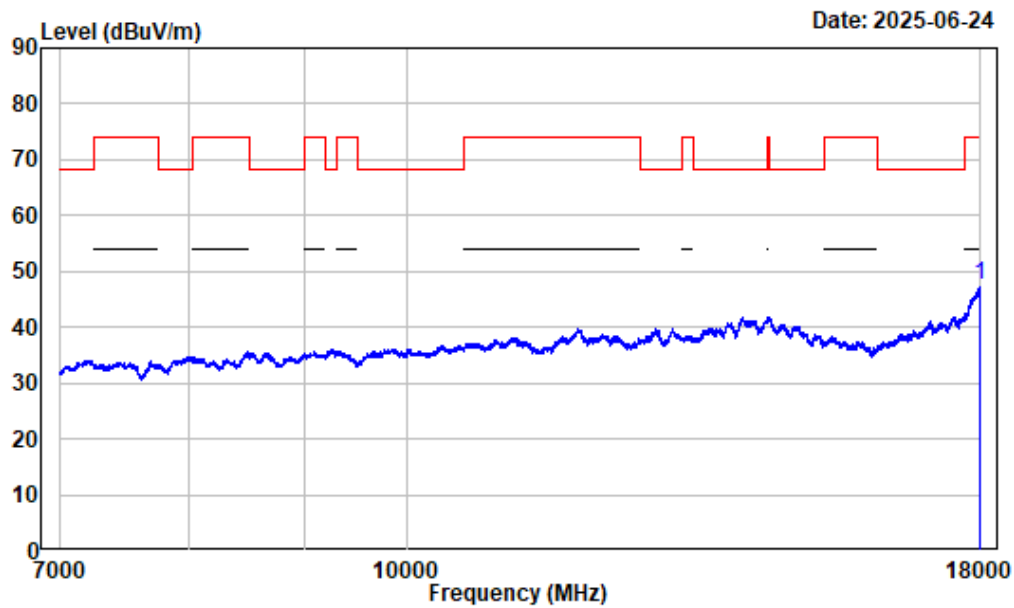
7-18GHz\_Vertical\_Peak\_5G Wi-Fi\_Band1\_N40\_5230MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-N40-5230

Freq Factor		Read	Limit	Over	Remark
MHz	dB/m	Level	Level	Line	
		dBuV	dBuV/m	dBuV/m	dB
1 10460.000	2.32	55.61	57.93	68.20	-10.27 Peak
2 17975.250	13.08	48.41	61.49	74.00	-12.51 Peak

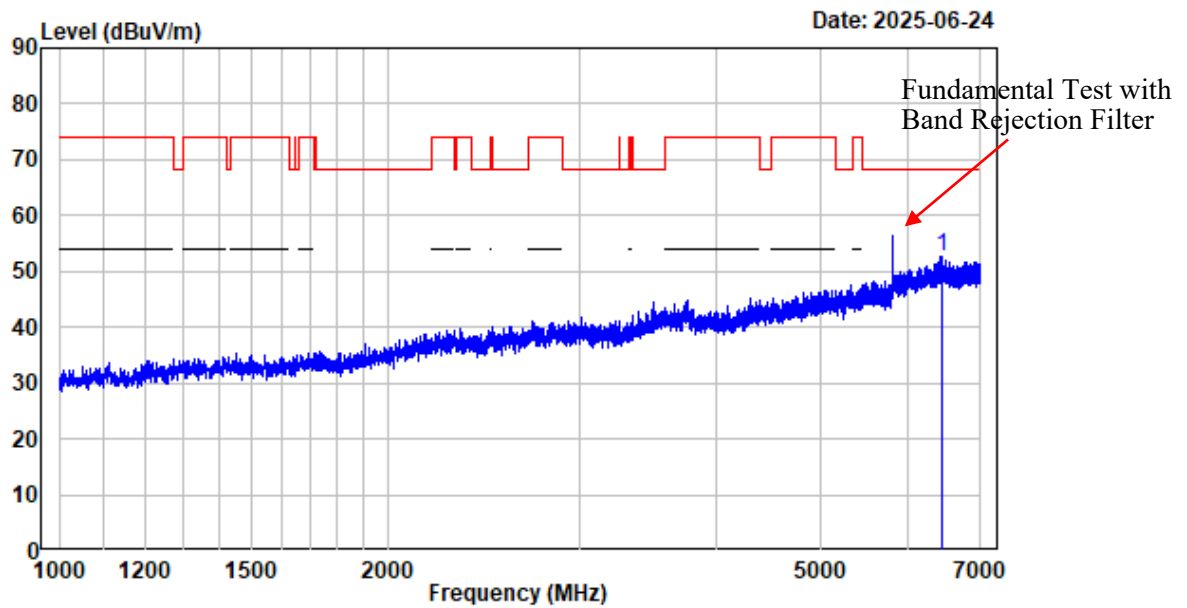
## 7-18GHz\_Vertical\_Average\_5G Wi-Fi\_Band1\_N40\_5230MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Average reading:RBW:1MHz VBW:2kHz Detector:Peak  
Note : 5GWiFi-Band1-N40-5230

Freq Factor		Read Level		Limit	Over	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 17983.500	13.11	34.36	47.47	54.00	-6.53	Average

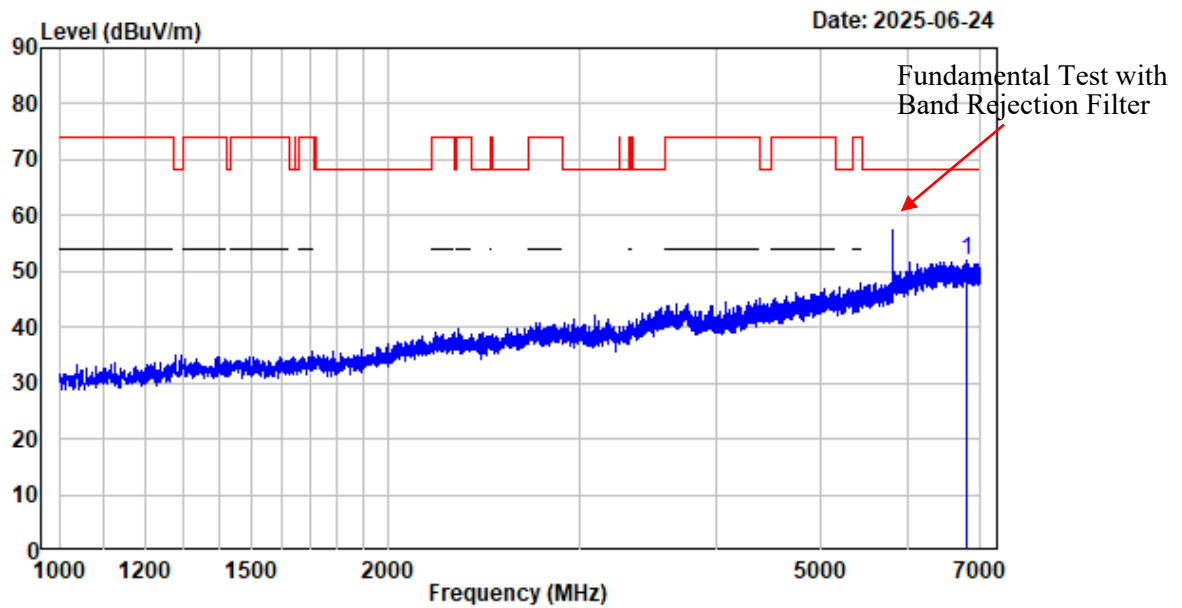
## 1-7GHz\_Horizontal\_5G Wi-Fi\_Ban4\_A\_5825MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band4-A-5825

Freq Factor		Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	6455.432	-2.88	55.66	52.78	68.20 -15.42 Peak

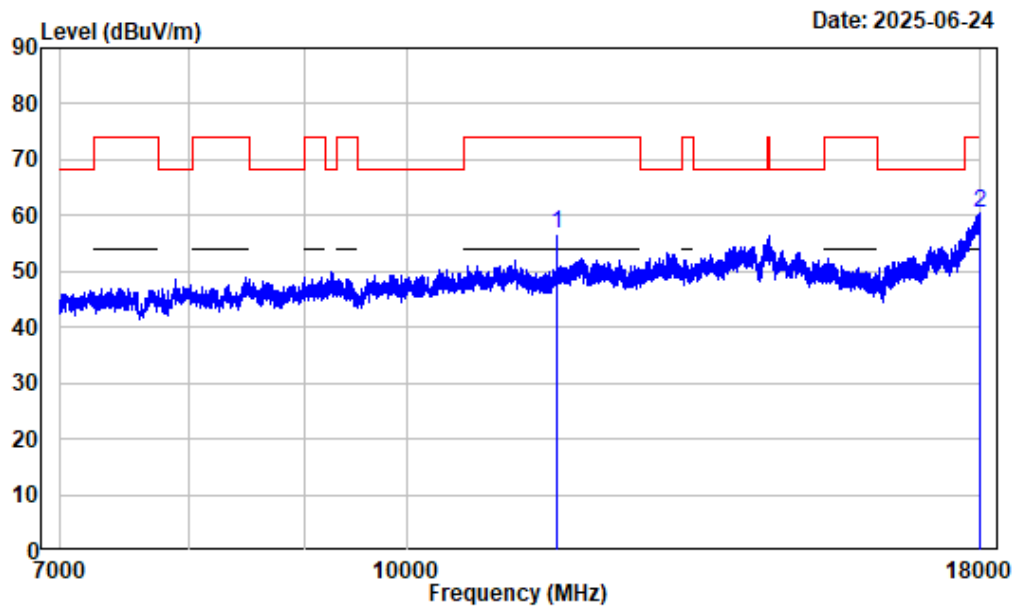
## 1-7GHz\_Vertical\_5G Wi-Fi\_Ban4\_A\_5825MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band4-A-5825

	Freq	Factor	Read		Limit	Over	Remark
			Level	Level	Line	Limit	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	6805.726	-3.33	55.43	52.10	68.20	-16.10	Peak

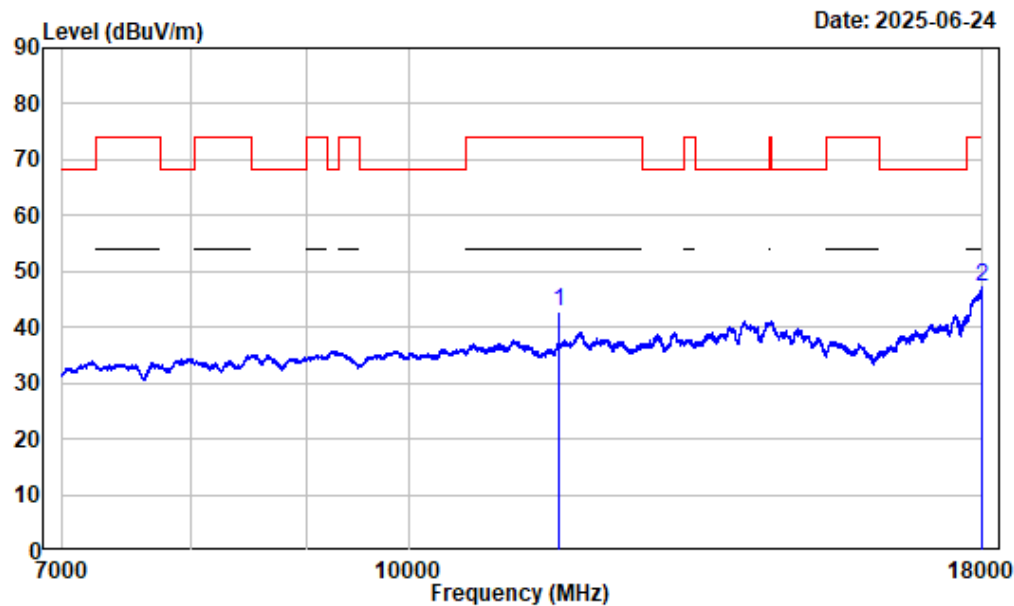
## 7-18GHz\_Horizontal\_Peak\_5G Wi-Fi\_Ban4\_A\_5825MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band4-A-5825

Freq Factor		Read	Limit	Over	Remark
MHz	dB/m	Level	Level	Line	
		dBuV	dBuV/m	dBuV/m	dB
1 11650.000	3.43	53.19	56.62	74.00	-17.38 Peak
2 17997.250	13.19	47.16	60.35	74.00	-13.65 Peak

7-18GHz\_Horizontal\_Average\_5G Wi-Fi\_Ban4\_A\_5825MHz

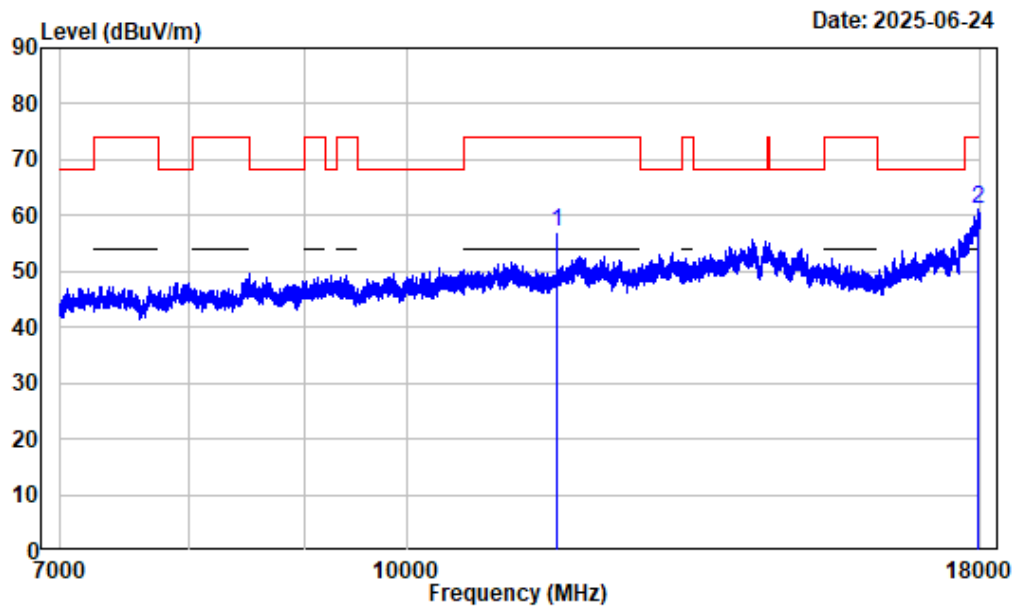


Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak  
Note : 5GWiFi-Band4-A-5825

Freq Factor		Read Level		Limit	Over	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 11650.000	3.43	39.26	42.69	54.00	-11.31	Average
2 17998.630	13.19	33.89	47.08	54.00	-6.92	Average



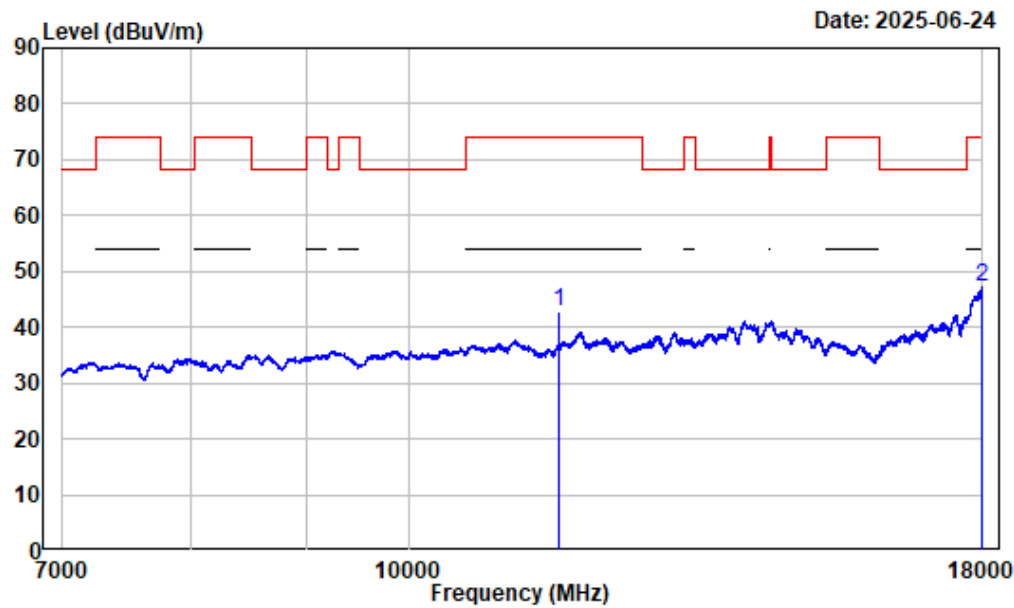
## 7-18GHz\_Vertical\_Peak\_5G Wi-Fi\_Ban4\_A\_5825MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band4-A-5825

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	11650.000	3.43	53.72	57.15	74.00	-16.85	Peak
2	17947.740	12.94	48.27	61.21	74.00	-12.79	Peak

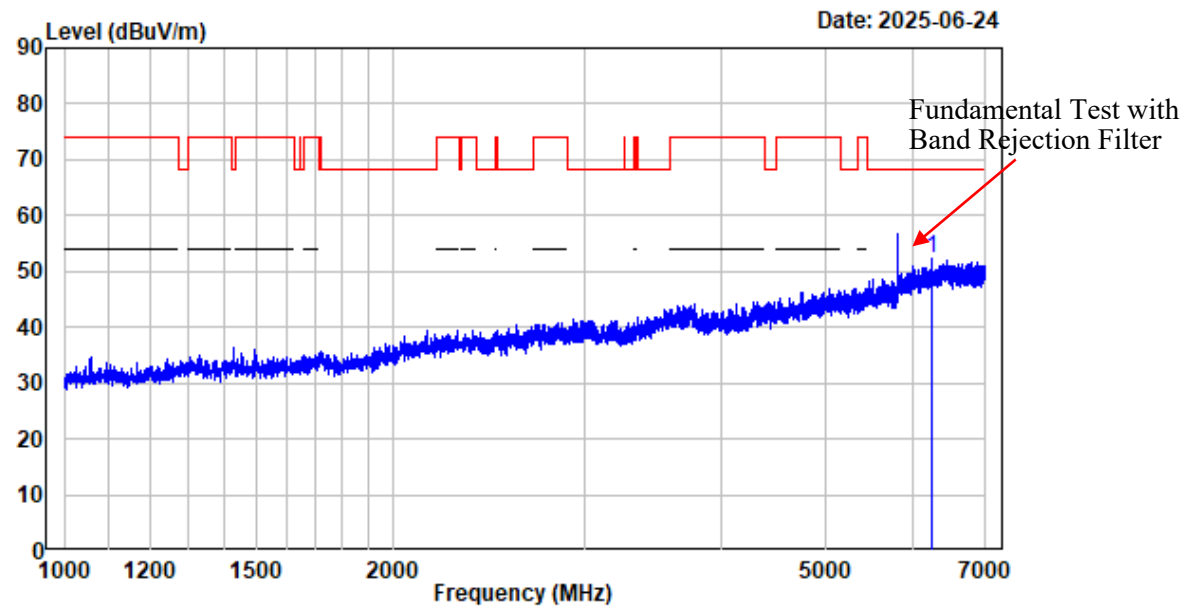
7-18GHz\_Vertical\_Average\_5G Wi-Fi\_Ban4\_A\_5825MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak  
Note : 5GWiFi-Band4-A-5825

Freq Factor		Read Level		Limit	Over	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 11650.000	3.43	39.47	42.90	54.00	-11.10	Average
2 17991.750	13.16	34.04	47.20	54.00	-6.80	Average

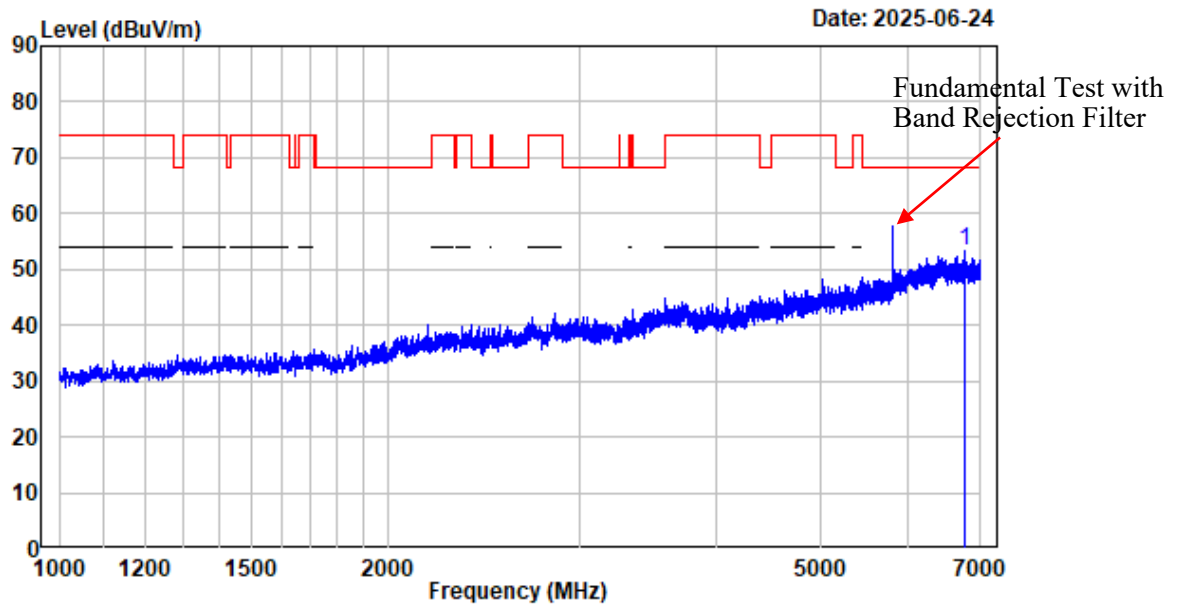
1-7GHz\_Horizontal\_5G Wi-Fi\_Ban4\_N20\_5825MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band4-N20-5825

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	6260.408	-3.80	56.18	52.38	68.20	-15.82	Peak

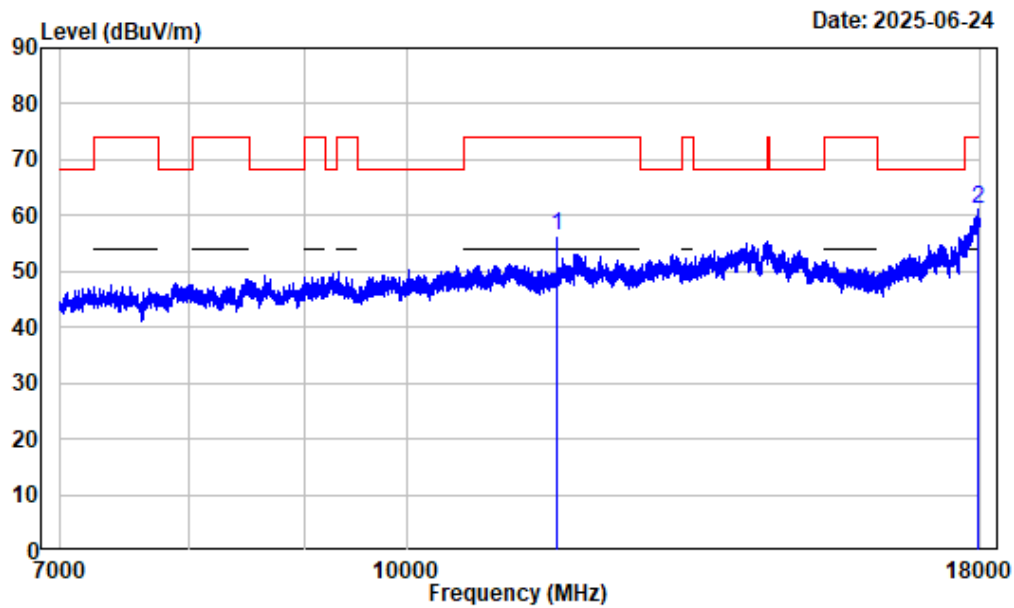
1-7GHz\_Vertical\_5G Wi-Fi\_Ban4\_N20\_5825MHz



Condition : Vertical  
 Project No. : 2501U27810E-RF  
 Tester : Zenos Qiao  
 Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
 Note : 5GWiFi-Band4-N20-5825

Freq Factor		Read Level		Limit Line	Over Limit	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 6773.472	-3.29	56.71	53.42	68.20	-14.78	Peak

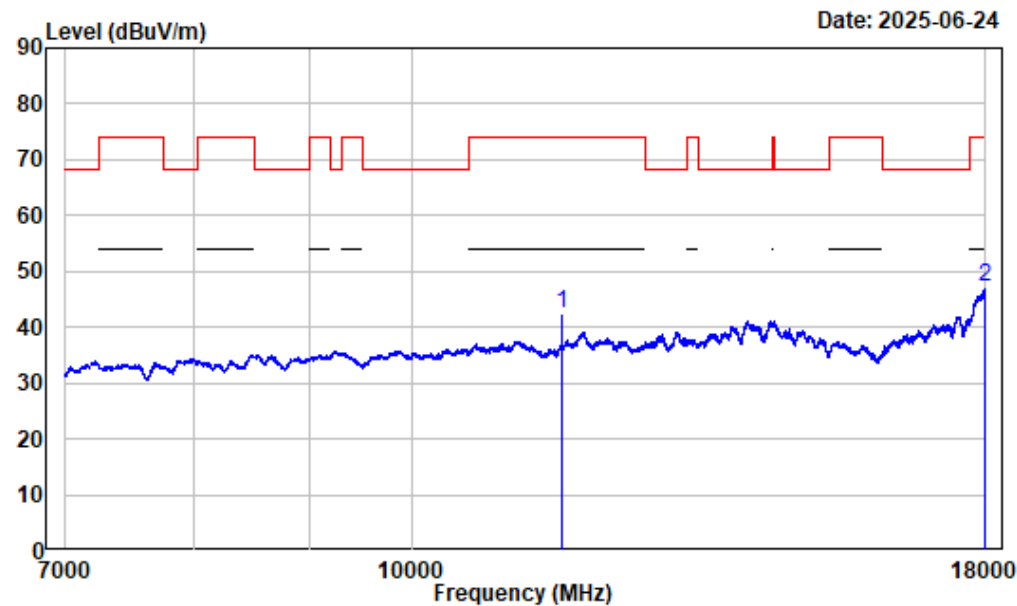
## 7-18GHz\_Horizontal\_Peak\_5G Wi-Fi\_Ban4\_N20\_5825MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band4-N20-5825

Freq Factor		Read	Limit	Over	Remark
MHz	dB/m	Level	Level	Line	
		dBuV	dBuV/m	dBuV/m	dB
1 11650.000	3.43	52.96	56.39	74.00	-17.61 Peak
2 17971.120	13.06	47.94	61.00	74.00	-13.00 Peak

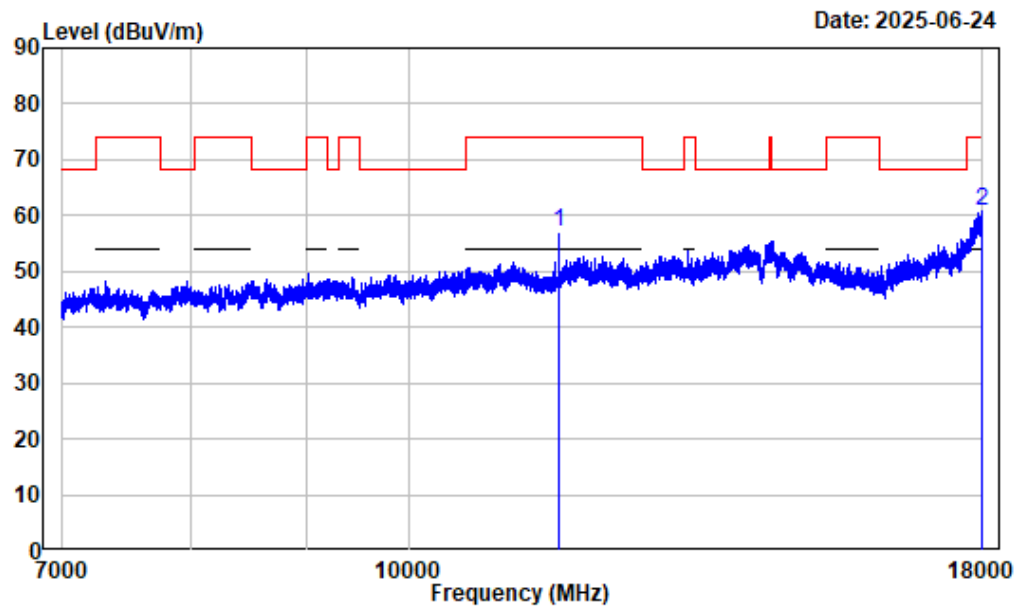
7-18GHz\_Horizontal\_Average\_5G Wi-Fi\_Ban4\_N20\_5825MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak  
Note : 5GWiFi-Band4-N20-5825

Freq Factor		Read Level		Limit	Over	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 11650.000	3.43	39.17	42.60	54.00	-11.40	Average
2 17995.880	13.18	33.87	47.05	54.00	-6.95	Average

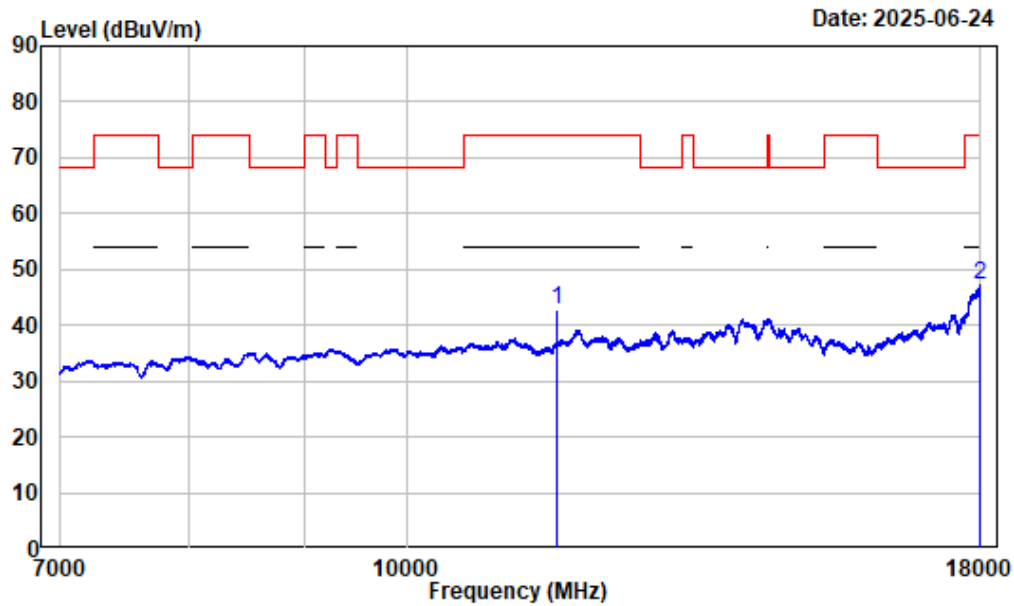
7-18GHz\_Vertical\_Peak\_5G Wi-Fi\_Ban4\_N20\_5825MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band4-N20-5825

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	11650.000	3.43	53.51	56.94	74.00	-17.06	Peak
2	17986.250	13.12	47.55	60.67	74.00	-13.33	Peak

## 7-18GHz\_Vertical\_Average\_5G Wi-Fi\_Ban4\_N20\_5825MHz

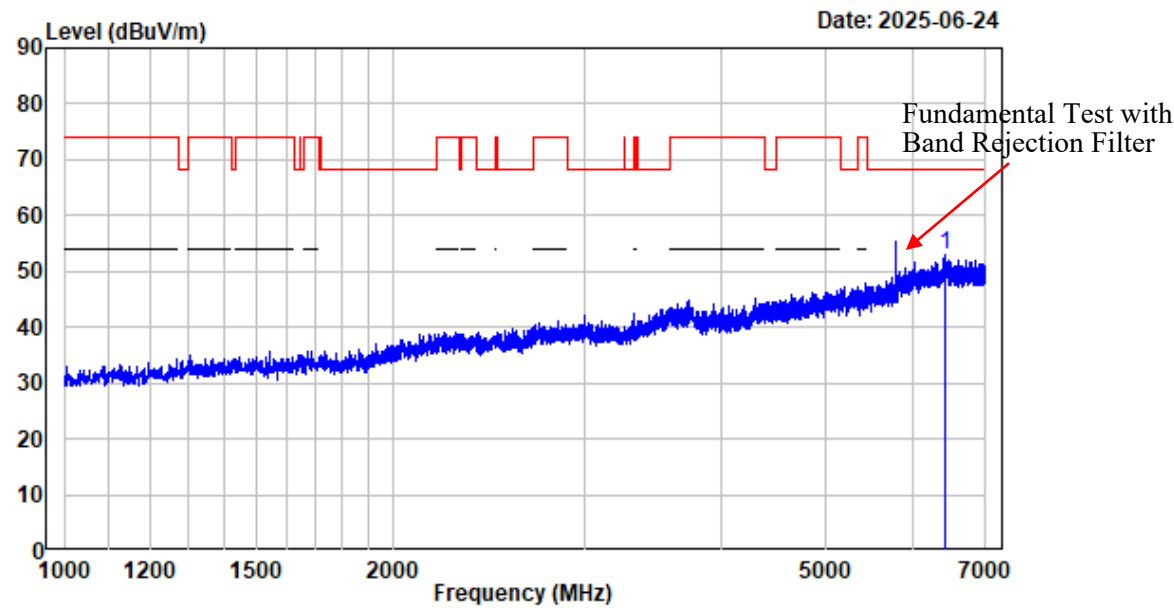


Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak  
Note : 5GWiFi-Band4-N20-5825

Freq Factor		Read Level		Limit	Over	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 11650.000	3.43	39.39	42.82	54.00	-11.18	Average
2 17998.630	13.19	33.99	47.18	54.00	-6.82	Average



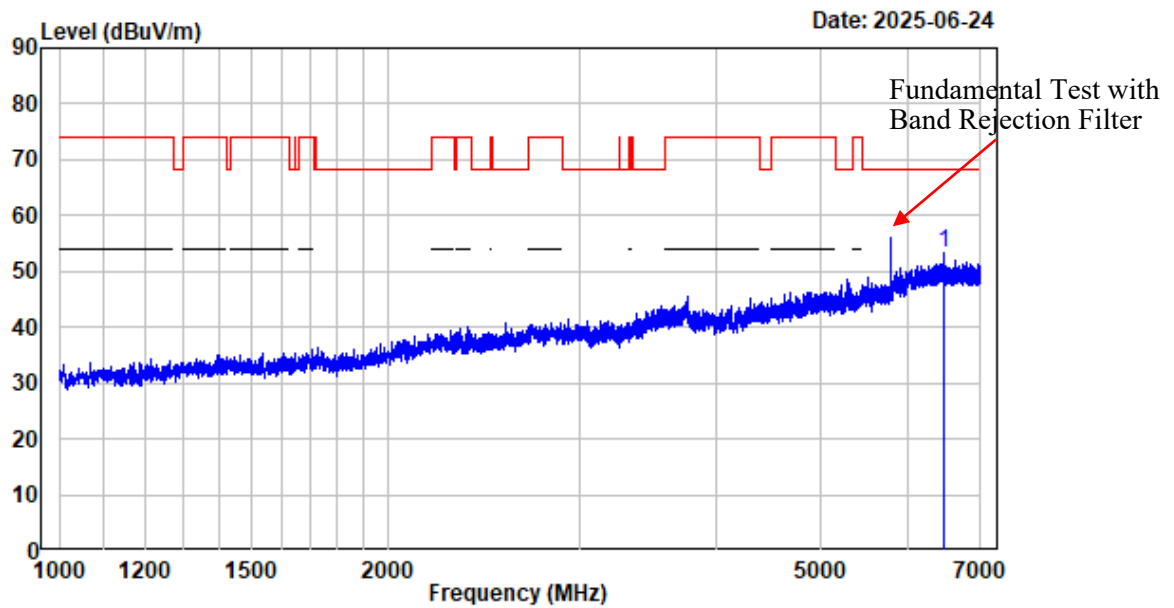
1-7GHz\_Horizontal\_5G Wi-Fi\_Ban4\_N40\_5795MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band4-N40-5795

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	6430.679	-2.88	55.92	53.04	68.20	-15.16	Peak

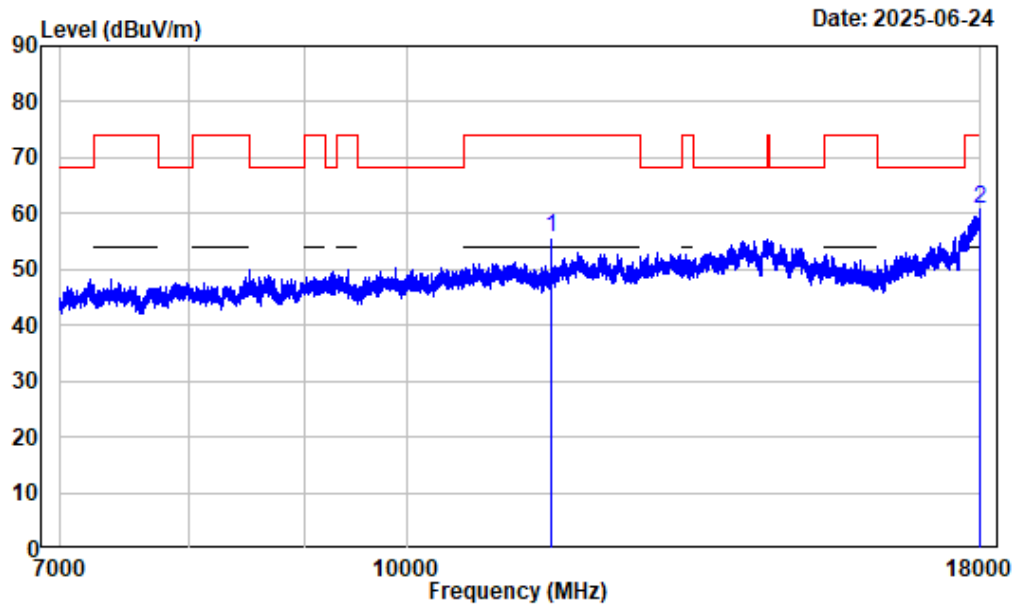
## 1-7GHz\_Vertical\_5G Wi-Fi\_Ban4\_N40\_5795MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band4-N40-5795

Freq Factor		Read Level		Limit	Over	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	6477.935	-2.91	56.15	53.24	68.20	-14.96 Peak

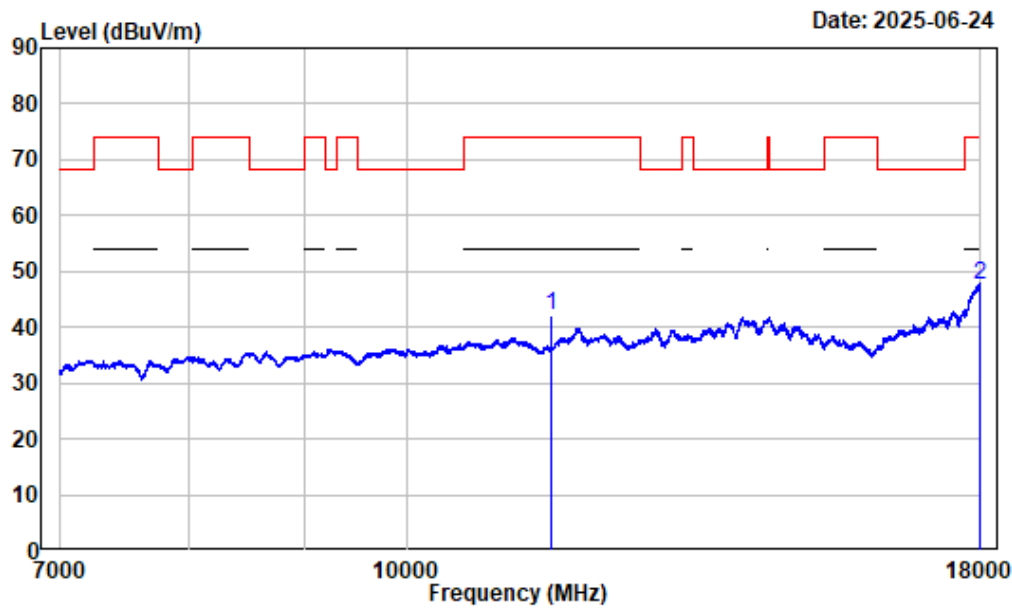
## 7-18GHz\_Horizontal\_Peak\_5G Wi-Fi\_Ban4\_N40\_5795MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band4-N40-5795

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	11590.000	3.21	52.38	55.59	74.00	-18.41	Peak
2	17993.130	13.17	47.47	60.64	74.00	-13.36	Peak

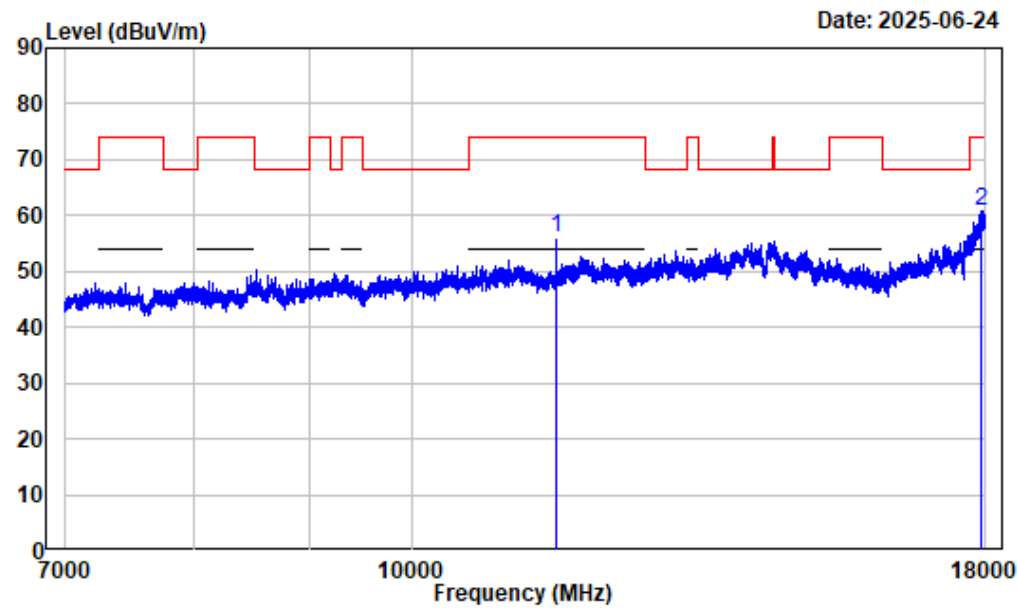
7-18GHz\_Horizontal\_Average\_5G Wi-Fi\_Ban4\_N40\_5795MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Average reading:RBW:1MHz VBW:2kHz Detector:Peak  
Note : 5GWiFi-Band4-N40-5795

Freq Factor		Read Level		Limit	Over	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 11590.000	3.21	39.04	42.25	54.00	-11.75	Average
2 17995.880	13.18	34.20	47.38	54.00	-6.62	Average

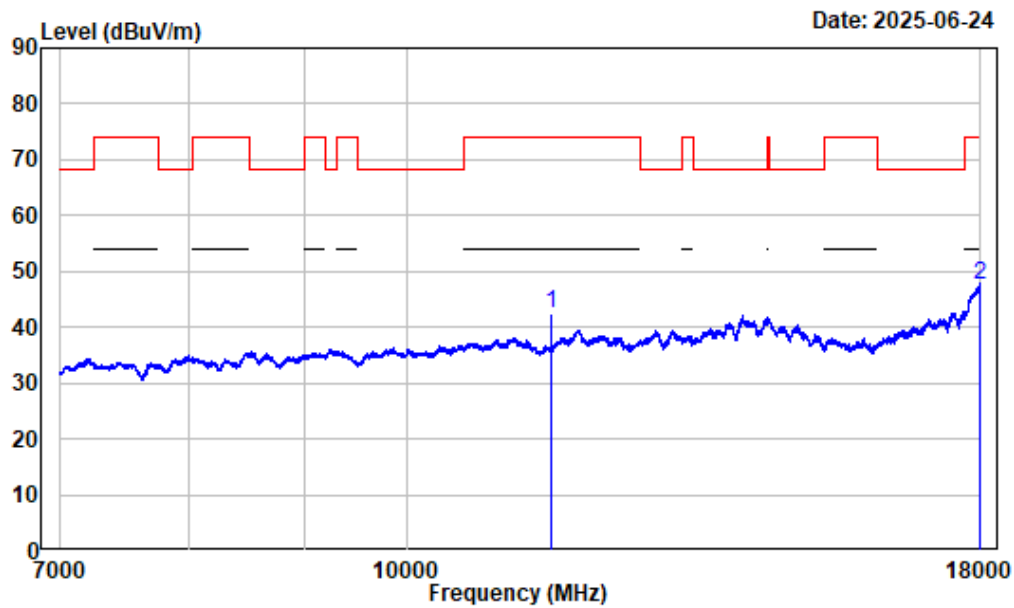
7-18GHz\_Vertical\_Peak\_5G Wi-Fi\_Ban4\_N40\_5795MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band4-N40-5795

Freq Factor		Read	Limit	Over	Remark
MHz	dB/m	Level	Level	Line	
		dBuV	dBuV/m	dBuV/m	dB
1 11590.000	3.21	52.93	56.14	74.00	-17.86 Peak
2 17921.620	12.81	48.04	60.85	74.00	-13.15 Peak

## 7-18GHz\_Vertical\_Average\_5G Wi-Fi\_Ban4\_N40\_5795MHz

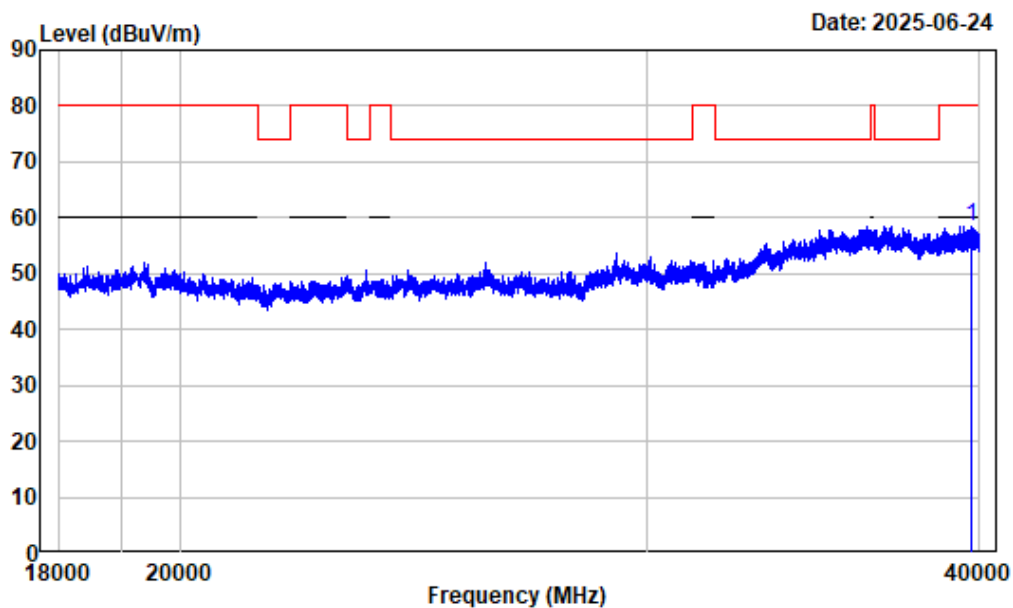


Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Average reading:RBW:1MHz VBW:2kHz Detector:Peak  
Note : 5GWiFi-Band4-N40-5795

Freq Factor		Read Level		Limit	Over	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 11590.000	3.21	39.26	42.47	54.00	-11.53	Average
2 17998.630	13.19	34.30	47.49	54.00	-6.51	Average

**18-40GHz (Only Listed with the worst harmonic margin test plot):**

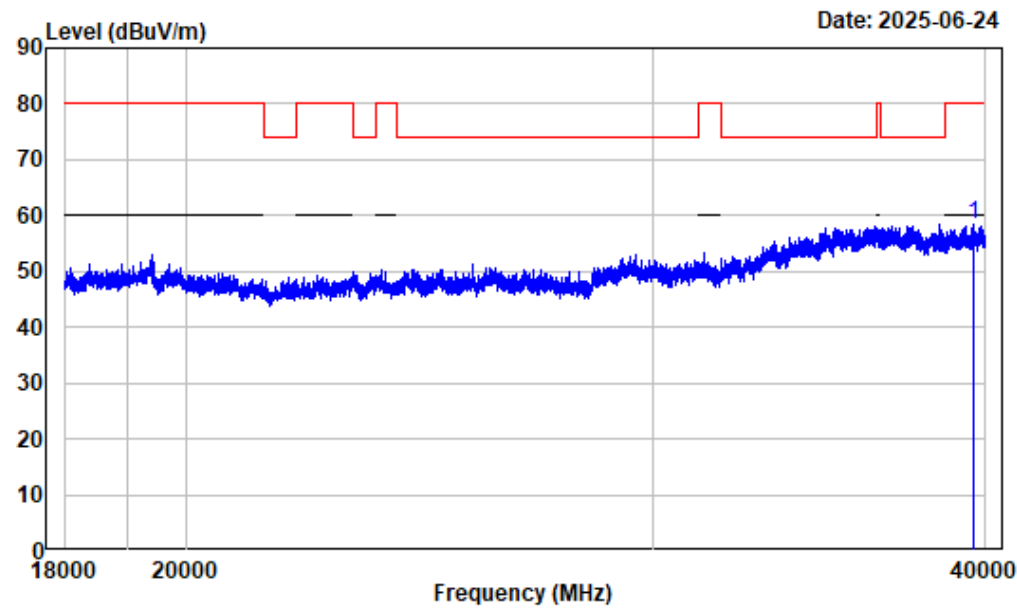
18-40GHz\_Horizontal\_5G Wi-Fi\_Band1\_A\_5240MHz



Condition : Horizontal  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-A-5240

Freq Factor		Read Level		Limit	Over	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1 39749.720	22.27	36.24	58.51	80.00	-21.49	Peak

18-40GHz\_Vertical\_5G Wi-Fi\_Band1\_A\_5240MHz



Condition : Vertical  
Project No. : 2501U27810E-RF  
Tester : Zenos Qiao  
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak  
Note : 5GWiFi-Band1-A-5240

Freq Factor		Read	Limit	Over	Remark
		Level	Level	Line	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 39606.700	22.26	36.13	58.39	80.00	-21.61 Peak



**26dB attenuated below the channel power****Test Information:**

<b>Sample No.:</b>	34AZ-1	<b>Test Date:</b>	2025/06/28
<b>Test Site:</b>	RF	<b>Test Mode:</b>	Transmitting
<b>Tester:</b>	Kungfumaster Liang	<b>Test Result:</b>	Pass

**Environmental Conditions:**

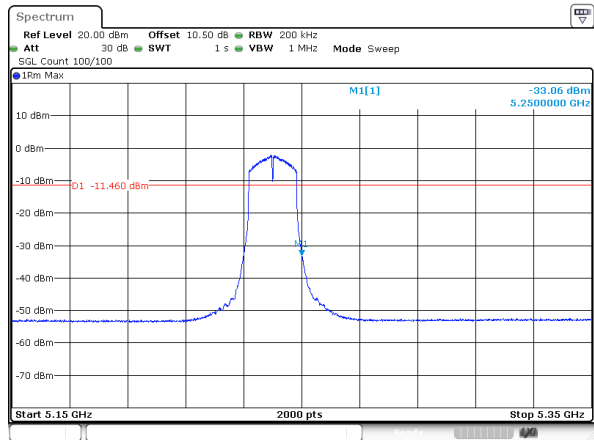
<b>Temperature:</b> (°C)	26.5	<b>Relative Humidity:</b> (%)	50	<b>ATM Pressure:</b> (kPa)	100.1
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**Test Data:****5150-5250MHz**

<b>Mode</b>	<b>Test Frequency (MHz)</b>	<b>Result (dBm)</b>	<b>Limit (dBm)</b>	<b>Verdict</b>
802.11a	5240	-33.06	-11.46	Pass
802.11n20	5240	<b>-30.70</b>	-11.79	Pass
802.11n40	5230	-41.36	-12.23	Pass

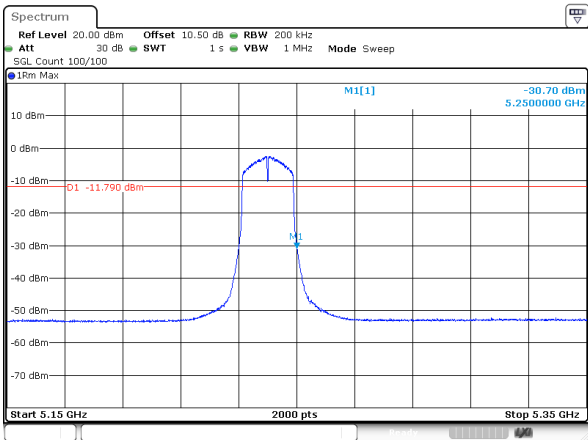
5150-5250MHz

802.11a\_5240MHz



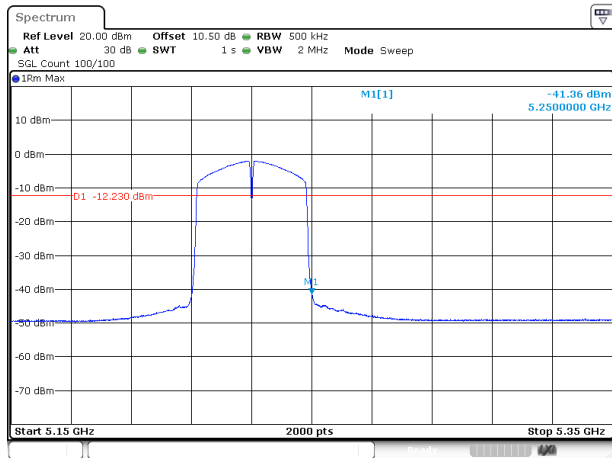
ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 28.JUN.2025 00:08:36

802.11n20\_5240MHz



ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 28.JUN.2025 00:16:17

802.11n40\_5230MHz



ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 28.JUN.2025 00:20:56

**Emission Bandwidth****Test Information:**

<b>Sample No.:</b>	34AZ-1	<b>Test Date:</b>	2025/06/27~2025/06/28
<b>Test Site:</b>	RF	<b>Test Mode:</b>	Transmitting
<b>Tester:</b>	Kungfumaster Liang	<b>Test Result:</b>	Pass

**Environmental Conditions:**

<b>Temperature:</b> (°C)	25.1-26.5	<b>Relative Humidity:</b> (%)	45-50	<b>ATM Pressure:</b> (kPa)	100.1-101.8
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**Test Data:****26dB Emission Bandwidth  
5150-5250MHz**

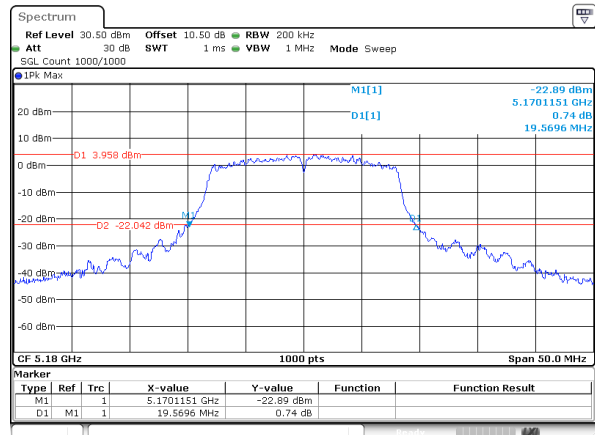
Mode	Test Frequency (MHz)	Result (MHz)
802.11a	5180	19.570
	5200	19.470
	5240	19.820
802.11n20	5180	20.693
	5200	21.003
	5240	20.847
802.11n40	5190	<b>38.539</b>
	5230	<b>38.539</b>

**6dB Emission Bandwidth  
5725-5850MHz**

Mode	Test Frequency (MHz)	Result (MHz)	Limit (MHz)	Verdict
802.11a	5745	16.416	0.5	Pass
	5785	16.416	0.5	Pass
	5825	16.416	0.5	Pass
802.11n20	5745	16.967	0.5	Pass
	5785	16.867	0.5	Pass
	5825	16.917	0.5	Pass
802.11n40	5755	<b>34.134</b>	0.5	Pass
	5795	34.034	0.5	Pass

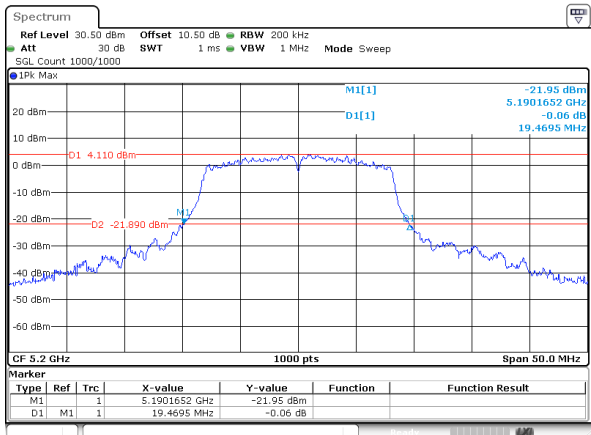
5150-5250MHz

802.11a\_5180MHz



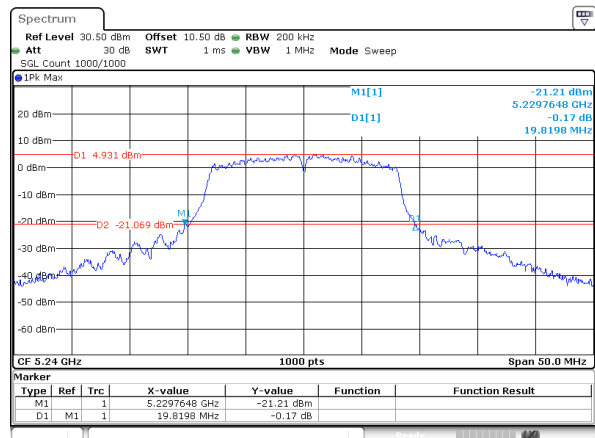
ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 27.JUN.2025 23:33:58

802.11a\_5200MHz



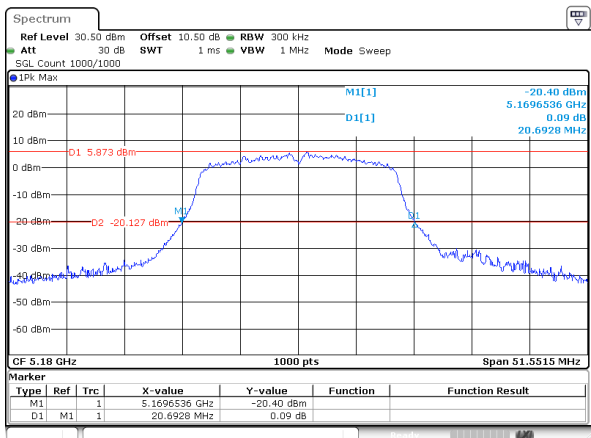
ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 27.JUN.2025 23:36:20

802.11a\_5240MHz



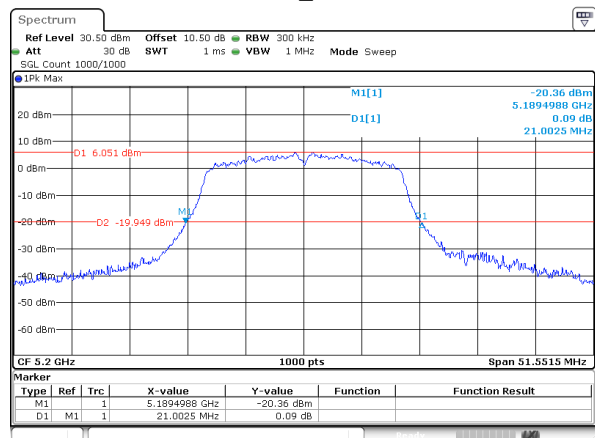
ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 27.JUN.2025 23:38:47

802.11n20\_5180MHz



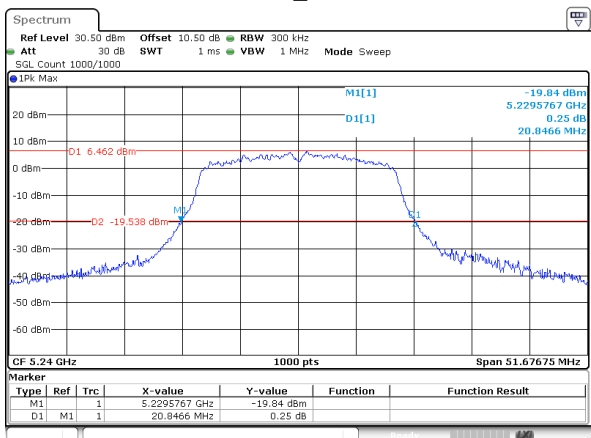
ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 27.JUN.2025 23:50:02

802.11n20\_5200MHz



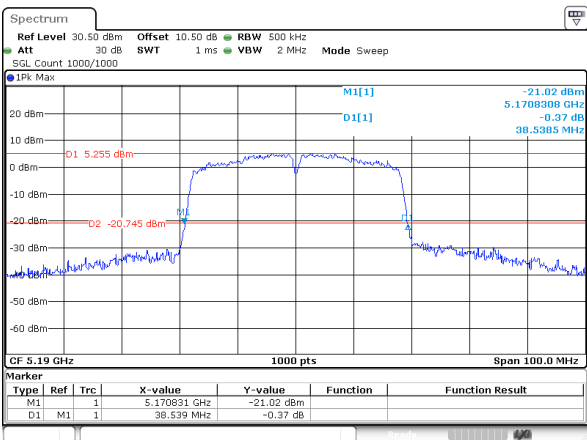
ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 27.JUN.2025 23:53:59

802.11n20\_5240MHz



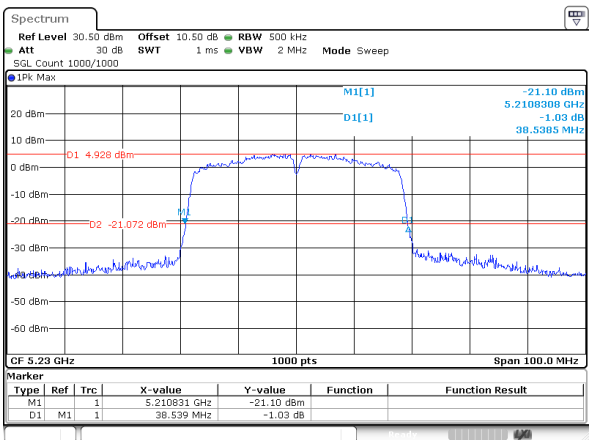
ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 27.JUN.2025 23:56:05

802.11n40\_5190MHz



ProjectNo.:2501U27810E-RF Tester:Kungfumastr Liang  
Date: 27.JUN.2025 23:57:58

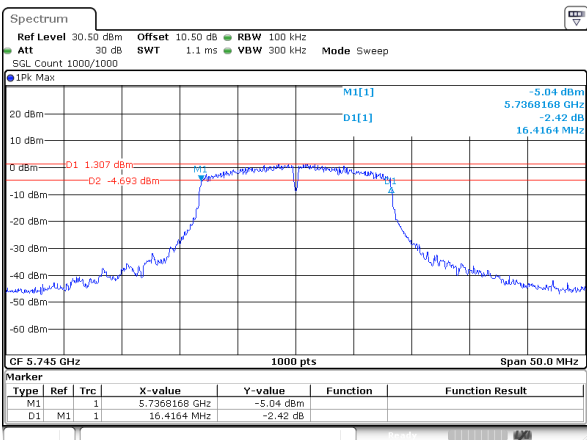
802.11n40\_5230MHz



ProjectNo.:2501U27810E-RF Tester:Kungfumastr Liang  
Date: 27.JUN.2025 23:59:31

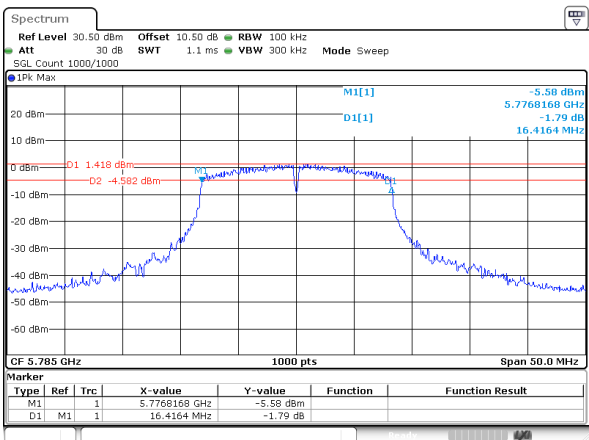
5725-5850MHz

802.11a\_5745MHz



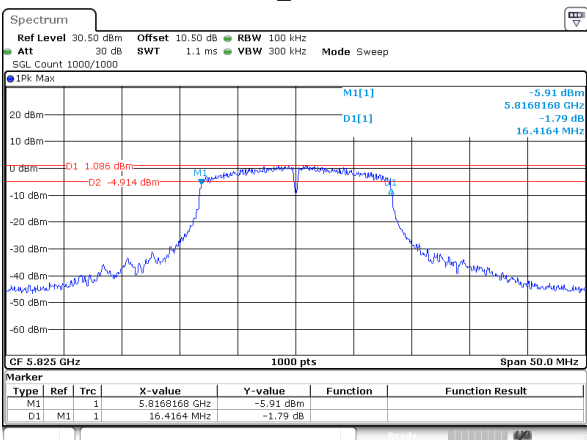
ProjectNo.:2501U27810E-RF Tester:Kungfumastr Liang  
Date: 28.JUN.2025 00:23:38

802.11a\_5785MHz



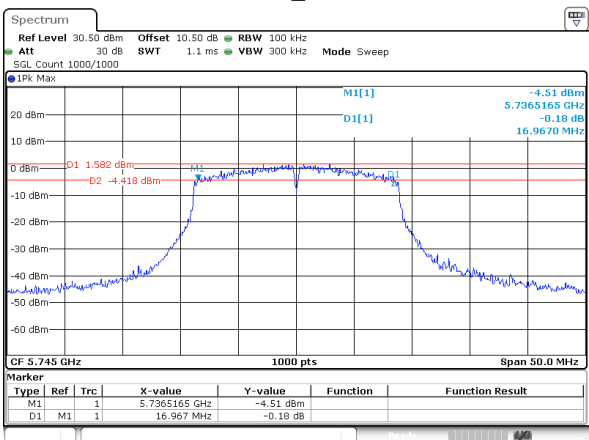
ProjectNo.:2501U27810E-RF Tester:Kungfumastr Liang  
Date: 28.JUN.2025 00:26:02

802.11a\_5825MHz



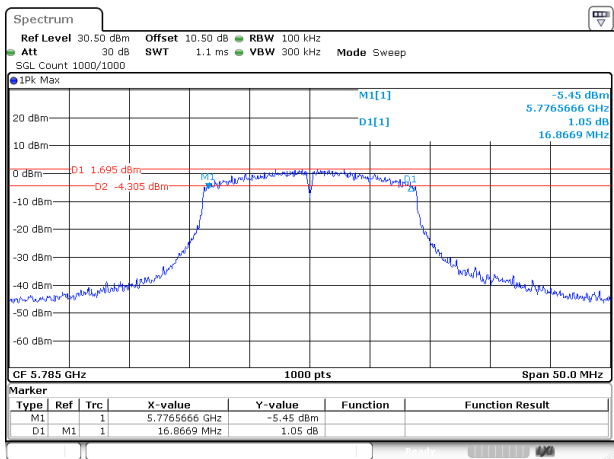
ProjectNo.:2501U27810E-RF Tester:Kungfumastr Liang  
Date: 28.JUN.2025 00:28:48

802.11n20\_5745MHz



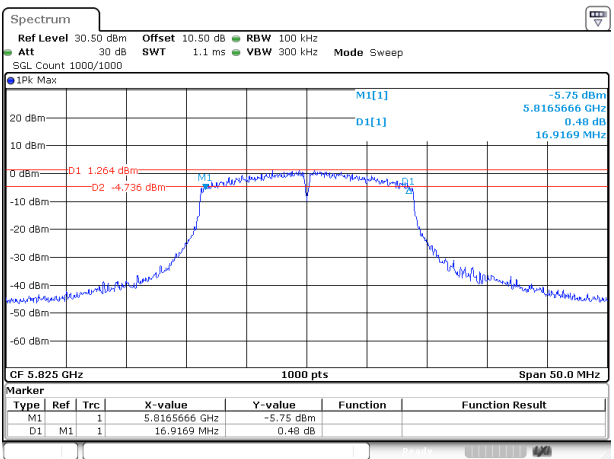
ProjectNo.:2501U27810E-RF Tester:Kungfumastr Liang  
Date: 28.JUN.2025 00:31:01

802.11n20\_5785MHz



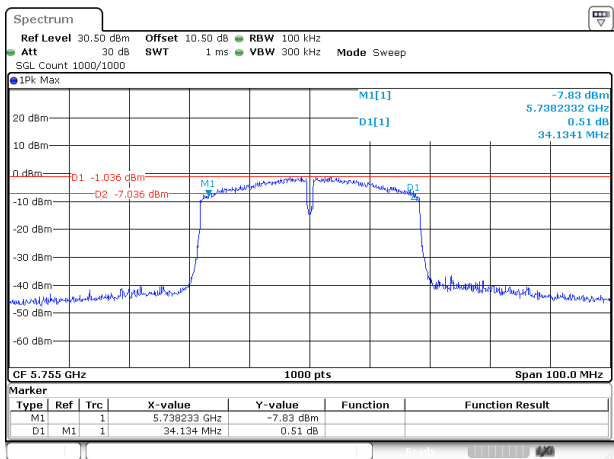
ProjectNo.:2501U27810E-RF Tester:Kungfumaater Liang  
Date: 28.JUN.2025 00:33:26

802.11n20\_5825MHz



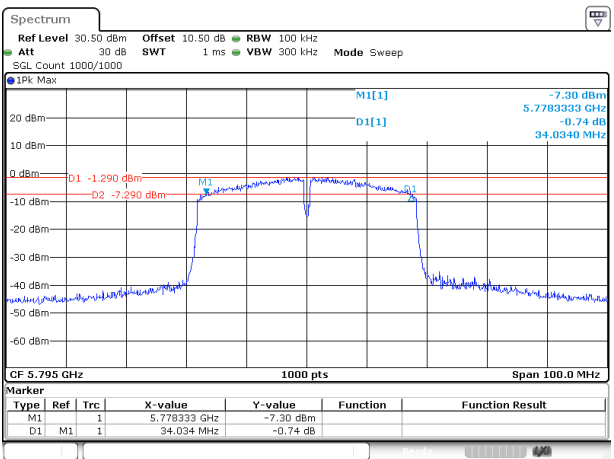
ProjectNo.:2501U27810E-RF Tester:Kungfumaater Liang  
Date: 28.JUN.2025 00:35:47

802.11n40\_5755MHz



ProjectNo.:2501U27810E-RF Tester:Kungfumaater Liang  
Date: 28.JUN.2025 00:37:30

802.11n40\_5795MHz



ProjectNo.:2501U27810E-RF Tester:Kungfumaater Liang  
Date: 28.JUN.2025 00:38:52

**99% Occupied Bandwidth****Test Information:**

<b>Sample No.:</b>	34AZ-1	<b>Test Date:</b>	2025/06/27~2025/06/28
<b>Test Site:</b>	RF	<b>Test Mode:</b>	Transmitting
<b>Tester:</b>	Kungfumaster Liang	<b>Test Result:</b>	Pass

**Environmental Conditions:**

<b>Temperature:</b> (°C)	25.1-26.5	<b>Relative Humidity:</b> (%)	45-50	<b>ATM Pressure:</b> (kPa)	100.1-101.8
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**Test Data:****5150-5250MHz**

Mode	Test Frequency (MHz)	99% OBW (MHz)
802.11a	5180	16.300
	5200	16.300
	5240	16.300
802.11n20	5180	17.450
	5200	17.450
	5240	17.450
802.11n40	5190	<b>35.400</b>
	5230	<b>35.400</b>

**Note:**

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

**5725-5850MHz**

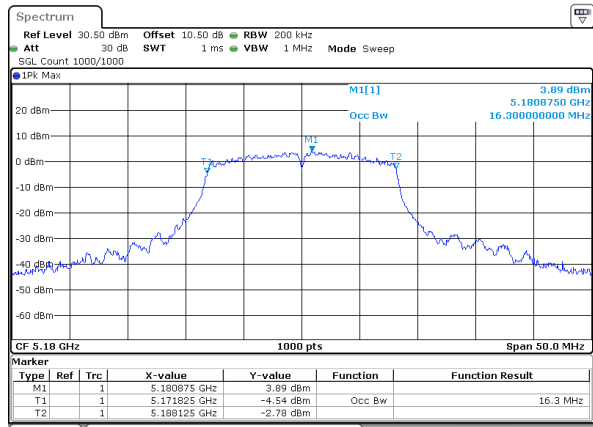
Mode	Test Frequency (MHz)	99% OBW (MHz)
802.11a	5745	16.300
	5785	16.300
	5825	16.350
802.11n20	5745	17.450
	5785	17.500
	5825	17.500
802.11n40	5755	35.300
	5795	<b>35.400</b>

**Note:**

The 99% Occupied Bandwidth have not fall into the band 5470-5725MHz, please refer to the test plots of 99% Occupied Bandwidth.

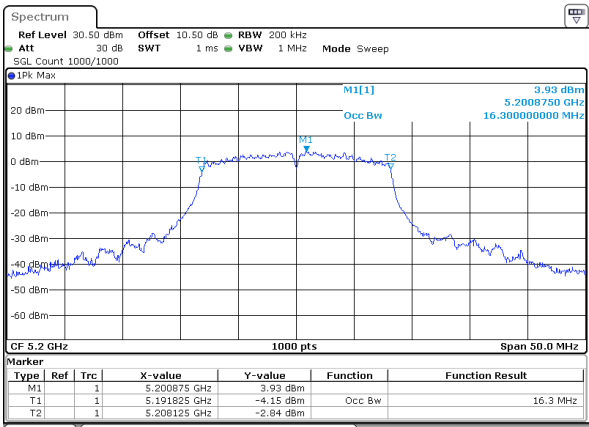
5150-5250MHz

802.11a\_5180MHz



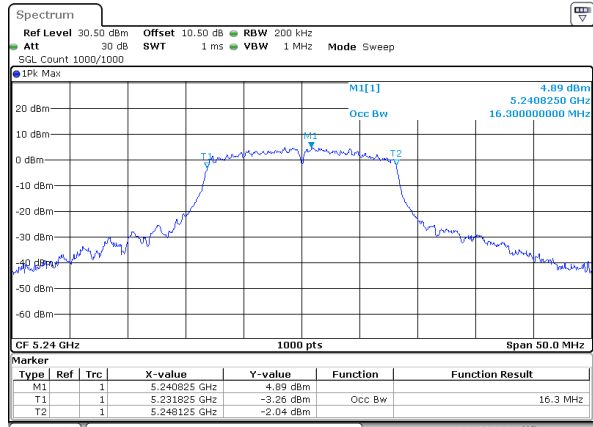
ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 27.JUN.2025 23:34:42

802.11a\_5200MHz



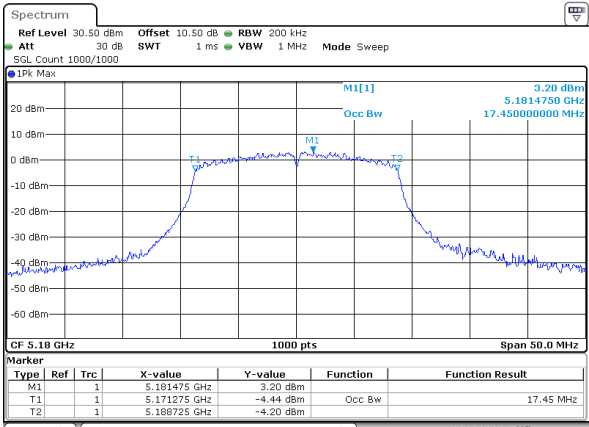
ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 27.JUN.2025 23:36:56

802.11a\_5240MHz



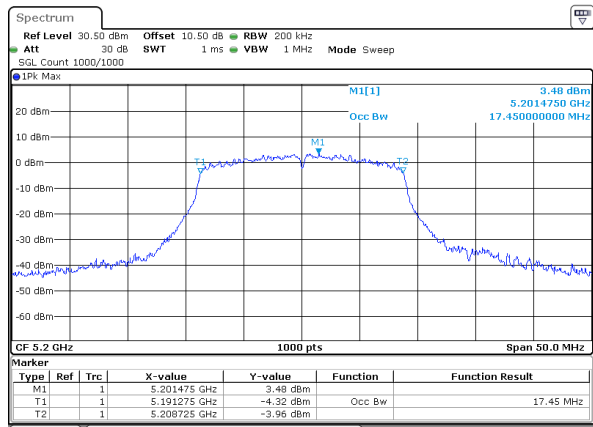
ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 27.JUN.2025 23:39:38

802.11n20\_5180MHz



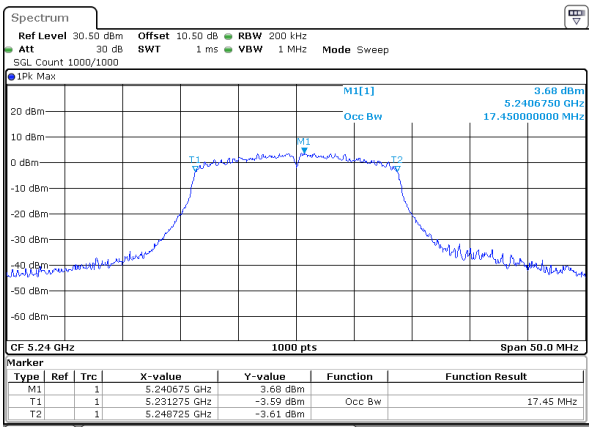
ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 27.JUN.2025 23:50:46

802.11n20\_5200MHz



ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 27.JUN.2025 23:54:34

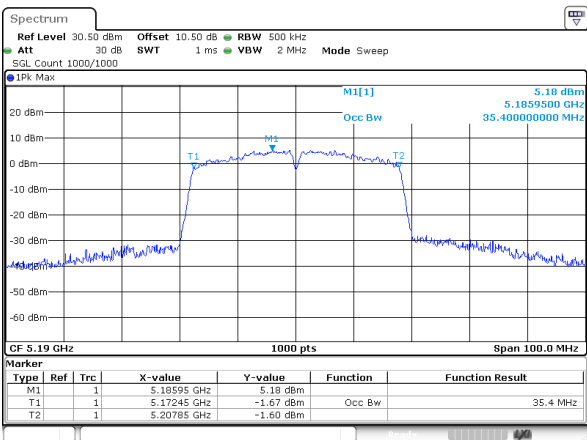
802.11n20\_5240MHz



ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 27.JUN.2025 23:56:44

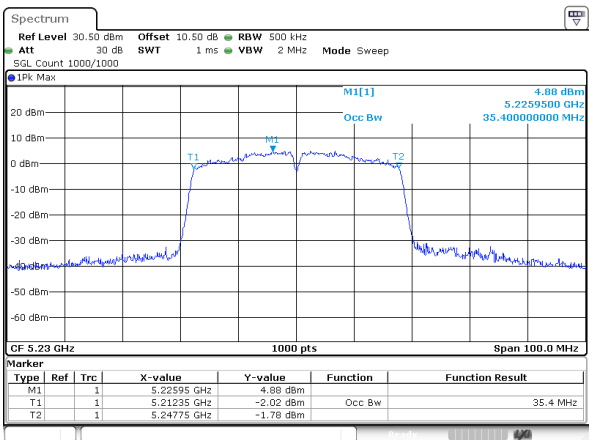


802.11n40\_5190MHz



ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 27.JUN.2025 23:58:21

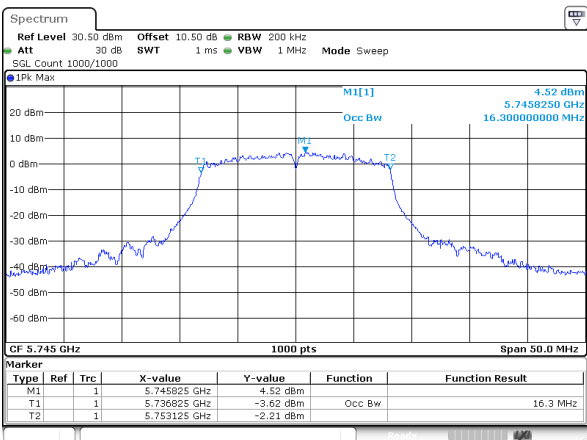
802.11n40\_5230MHz



ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 27.JUN.2025 23:59:54

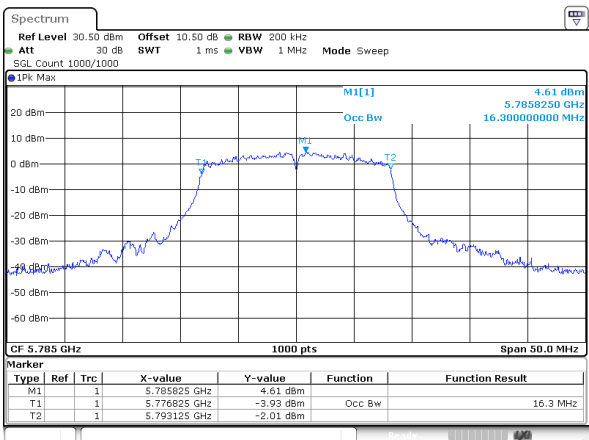
5725-5850MHz

802.11a\_5745MHz



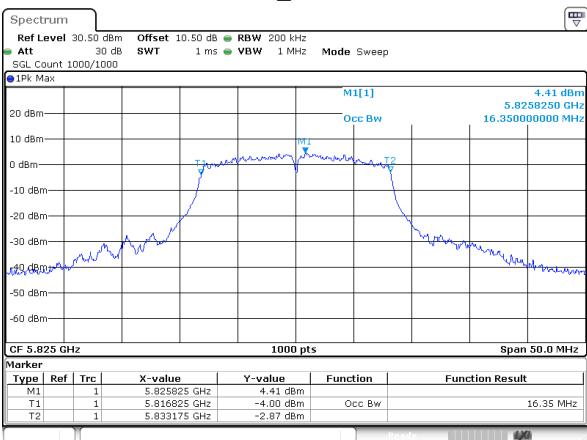
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Date: 28.JUN.2025 00:24:28

802.11a\_5785MHz



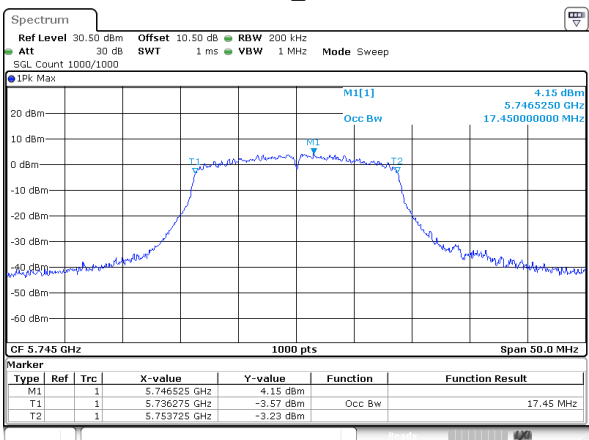
ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 28.JUN.2025 00:26:59

802.11a\_5825MHz



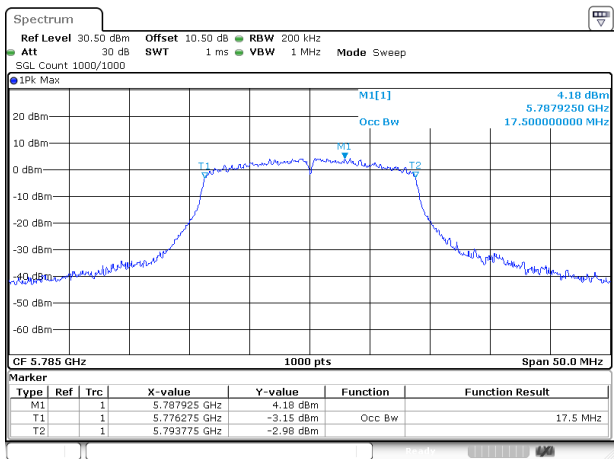
ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 28.JUN.2025 00:29:25

802.11n20\_5745MHz



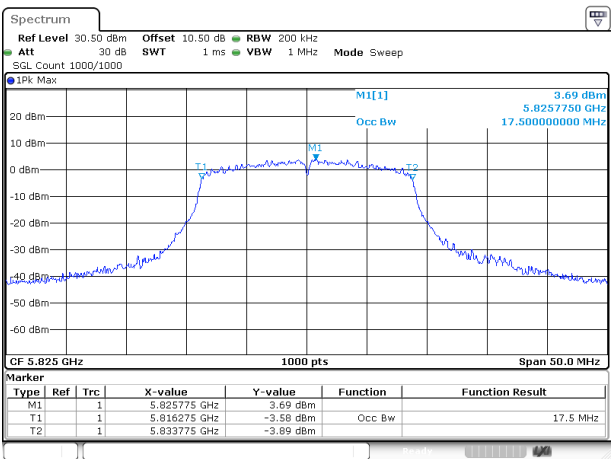
ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 28.JUN.2025 00:31:50

802.11n20\_5785MHz



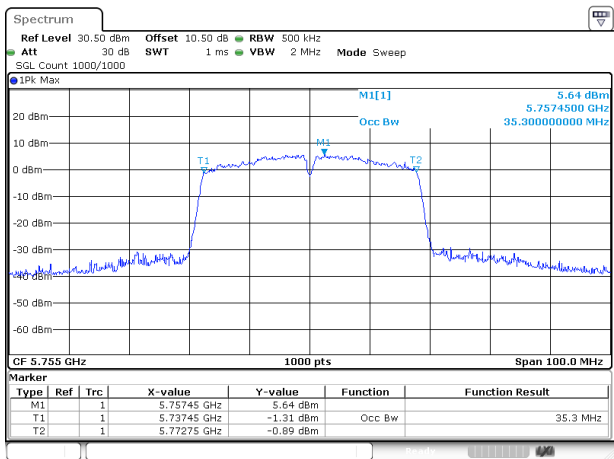
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Date: 28.JUN.2025 00:34:22

802.11n20\_5825MHz



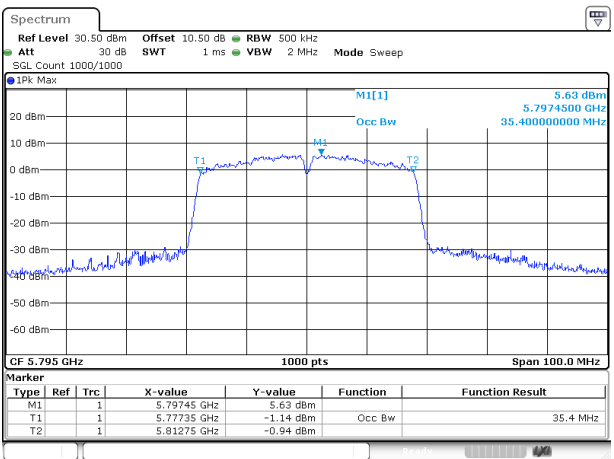
ProjectNo.:2501U27810E-RF Tester:Kungfumaater Liang  
Date: 28.JUN.2025 00:36:24

802.11n40\_5755MHz



ProjectNo.:2501U27810E-RF Tester:Kungfumaater Liang  
Date: 28.JUN.2025 00:37:47

802.11n40\_5795MHz



ProjectNo.:2501U27810E-RF Tester:Kungfumaater Liang  
Date: 28.JUN.2025 00:39:09

**Maximum Conducted Output Power****Test Information:**

<b>Sample No.:</b>	34AZ-1	<b>Test Date:</b>	2025/06/27~2025/06/28
<b>Test Site:</b>	RF	<b>Test Mode:</b>	Transmitting
<b>Tester:</b>	Kungfumaster Liang	<b>Test Result:</b>	Pass

**Environmental Conditions:**

<b>Temperature:</b> (°C)	25.1-26.5	<b>Relative Humidity:</b> (%)	45-50	<b>ATM Pressure:</b> (kPa)	100.1-101.8
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**Test Data:****5150-5250MHz**

Mode	Test Frequency (MHz)	Average Output Power(dBm)	FCC Limit (dBm)	Antenna Gain (dBi)	IC EIRP(dBm)		Verdict
					Result	Limit	
802.11a	5180	13.95	24	3.48	17.43	22.12	Pass
	5200	14.17	24	3.48	17.65	22.12	Pass
	5240	<b>14.54</b>	24	3.48	18.02	22.12	Pass
802.11n20	5180	13.60	24	3.48	17.08	22.42	Pass
	5200	13.87	24	3.48	17.35	22.42	Pass
	5240	14.21	24	3.48	17.69	22.42	Pass
802.11n40	5190	14.18	24	3.48	17.66	23.01	Pass
	5230	13.77	24	3.48	17.25	23.01	Pass

**5725-5850MHz**

Mode	Test Frequency (MHz)	Average Output Power(dBm)	Limit (dBm)	Verdict
802.11a	5745	14.66	30	Pass
	5785	14.80	30	Pass
	5825	14.48	30	Pass
802.11n20	5745	14.63	30	Pass
	5785	<b>14.94</b>	30	Pass
	5825	14.43	30	Pass
802.11n40	5755	14.63	30	Pass
	5795	14.68	30	Pass

**Power Spectral Density****Test Information:**

<b>Sample No.:</b>	34AZ-1	<b>Test Date:</b>	2025/06/27~2025/06/28
<b>Test Site:</b>	RF	<b>Test Mode:</b>	Transmitting
<b>Tester:</b>	Kungfumaster Liang	<b>Test Result:</b>	Pass

**Environmental Conditions:**

<b>Temperature:</b> (°C)	25.1-26.5	<b>Relative Humidity:</b> (%)	45-50	<b>ATM Pressure:</b> (kPa)	100.1-101.8
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**Test Data:****5150-5250MHz**

Mode	Test Frequency (MHz)	Reading (dBm/MHz)	Duty Cycle Factor(dB)	Result (dBm/MHz)	FCC Limit (dBm/MHz)	Antenna Gain(dBi)	IC EIRP PSD (dBm/MHz)		Verdict
							Result	Limit	
802.11a	5180	4.52	/	4.52	11	3.48	8.00	10	Pass
	5200	4.30	/	4.30	11	3.48	7.78	10	Pass
	5240	4.73	/	4.73	11	3.48	8.21	10	Pass
802.11n20	5180	3.60	/	3.60	11	3.48	7.08	10	Pass
	5200	4.03	/	4.03	11	3.48	7.51	10	Pass
	5240	4.22	/	4.22	11	3.48	7.70	10	Pass
802.11n40	5190	1.50	/	1.50	11	3.48	4.98	10	Pass
	5230	0.96	/	0.96	11	3.48	4.44	10	Pass

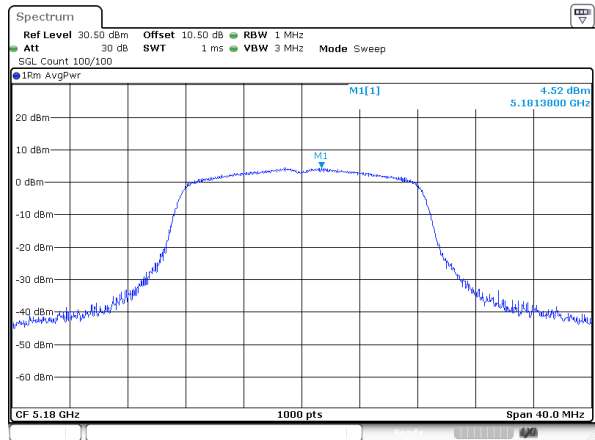
**5725-5850MHz**

Mode	Test Frequency (MHz)	Reading (dBm/500kHz)	Duty Cycle Factor(dB)	Result (dBm/500kHz)	Limit (dBm/500kHz)	Verdict
802.11a	5745	1.82	/	1.82	30	Pass
	5785	2.15	/	2.15	30	Pass
	5825	1.72	/	1.72	30	Pass
802.11n20	5745	1.98	/	1.98	30	Pass
	5785	2.22	/	<b>2.22</b>	30	Pass
	5825	1.74	/	1.74	30	Pass
802.11n40	5755	-1.27	/	-1.27	30	Pass
	5795	-1.23	/	-1.23	30	Pass

**Result = Reading + Duty Cycle Factor****EIRP PSD = Result + Antenna Gain**

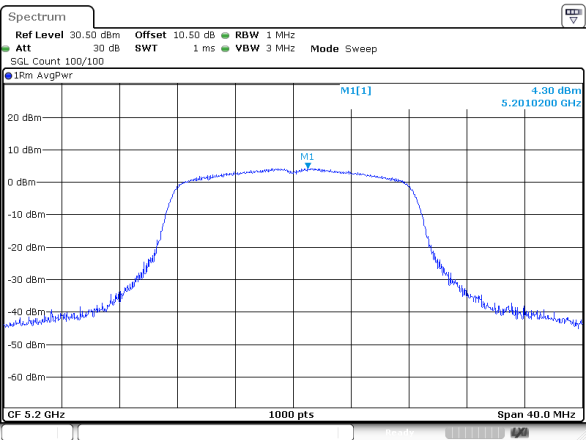
5150-5250MHz

802.11a\_5180MHz



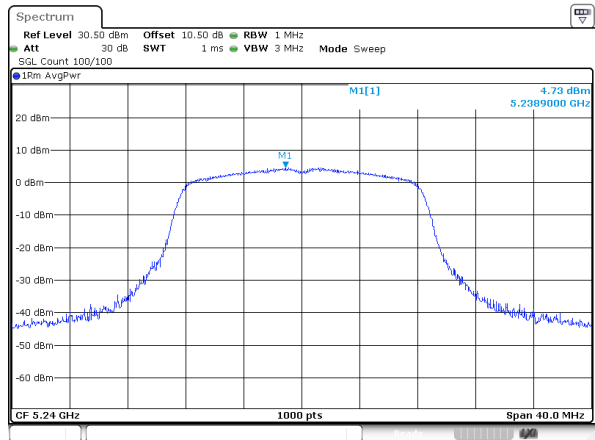
ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 27.JUN.2025 23:46:27

802.11a\_5200MHz



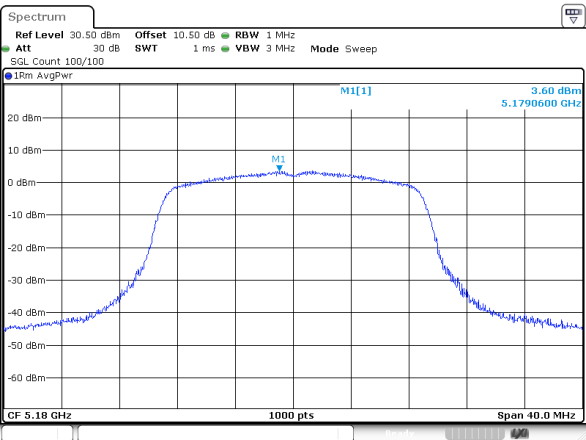
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802.11a\_5240MHz



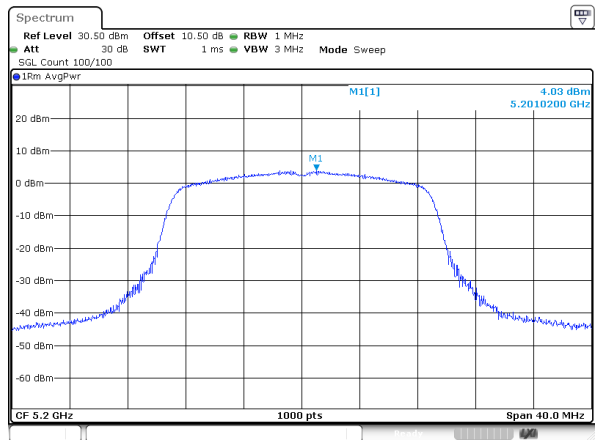
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Date: 27.JUN.2025 23:47:31

802.11n20\_5180MHz



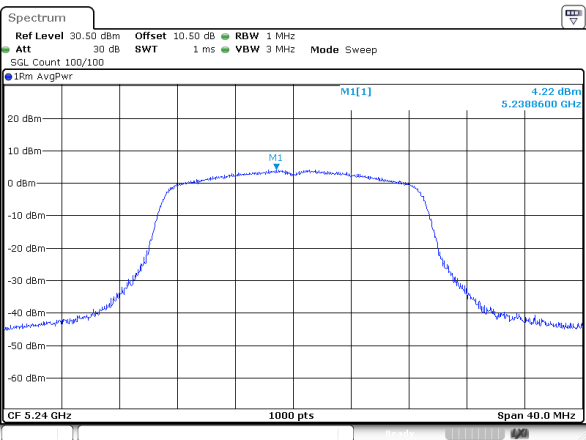
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Date: 27.JUN.2025 23:51:04

802.11n20\_5200MHz



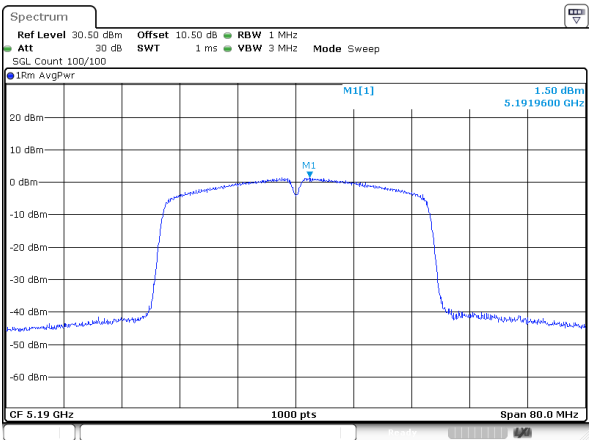
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Date: 27.JUN.2025 23:54:51

802.11n20\_5240MHz



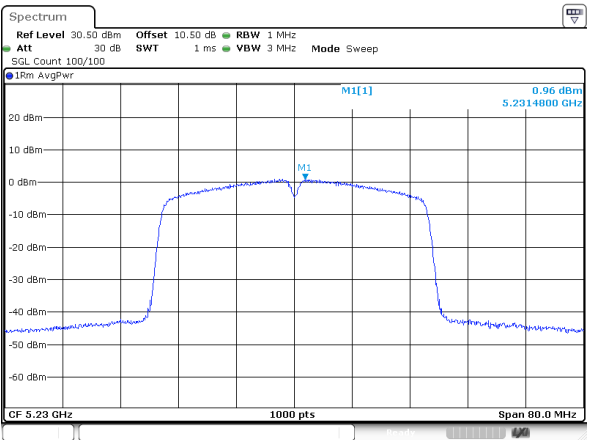
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Date: 27.JUN.2025 23:57:01

802.11n40\_5190MHz



ProjectNo.:2501U27810E-RF Tester:Kungfumaister Liang  
Date: 27.JUN.2025 23:58:40

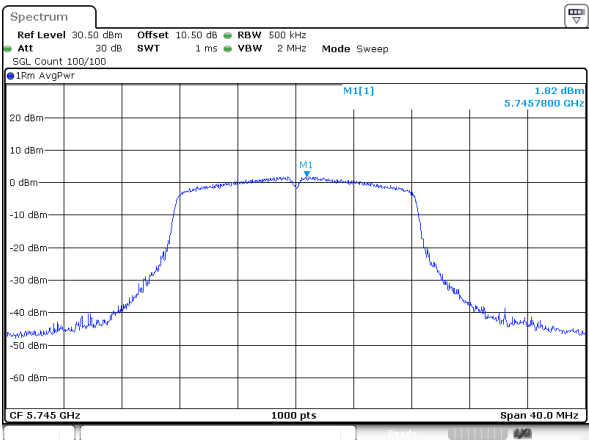
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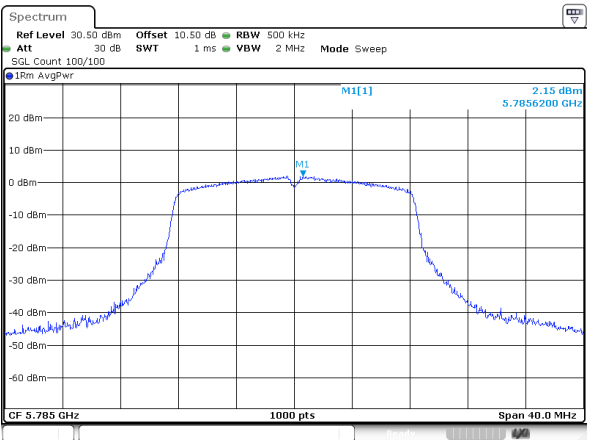
5725-5850MHz

802.11a\_5745MHz



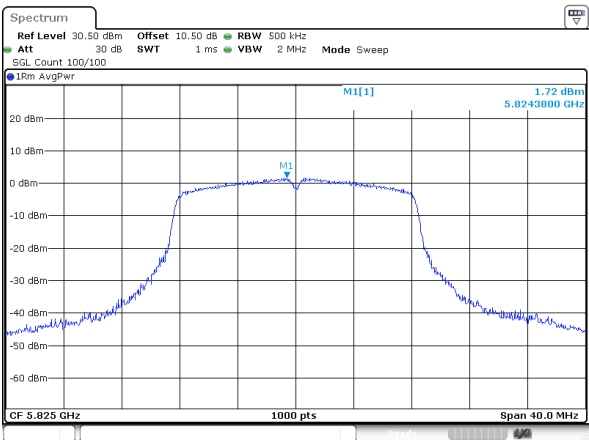
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802.11a\_5785MHz



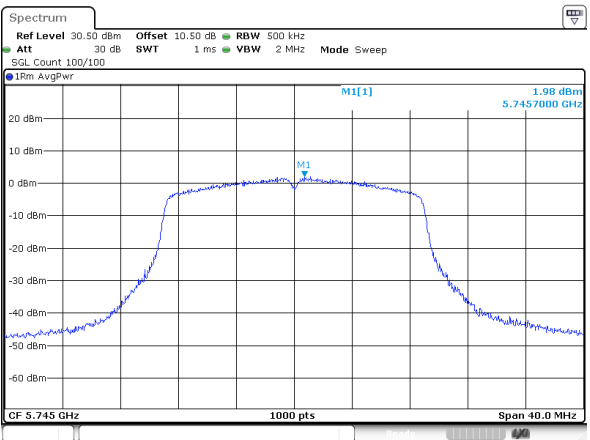
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Date: 28.JUN.2025 00:27:17

802.11a\_5825MHz



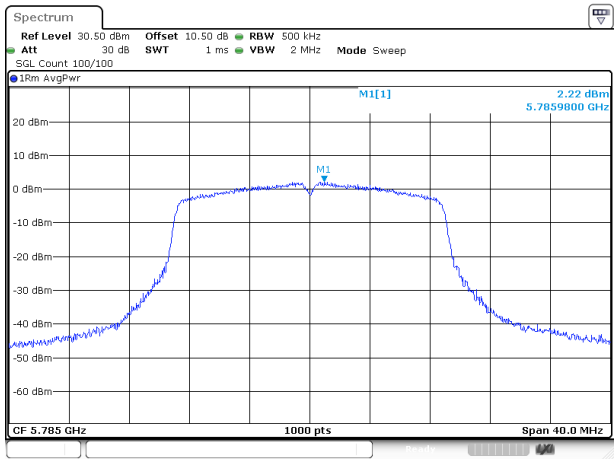
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Date: 28.JUN.2025 00:29:44

802.11n20\_5745MHz



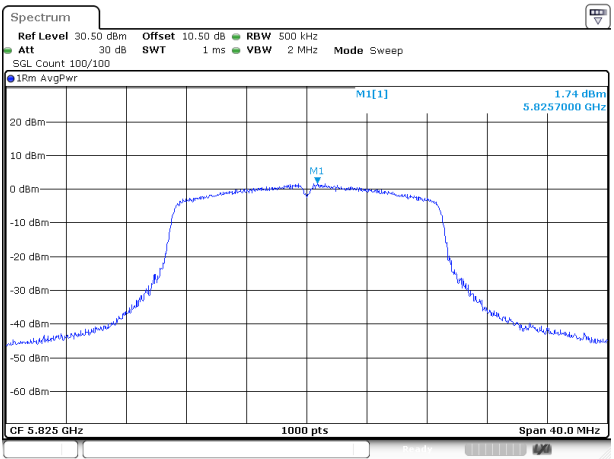
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Date: 28.JUN.2025 00:32:10

802.11n20\_5785MHz



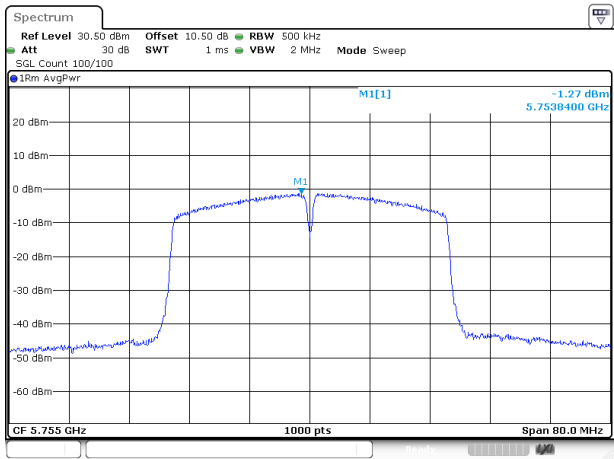
ProjectNo.:2501U27810E-RF Tester:Kungfumaater Liang  
Date: 28.JUN.2025 00:34:41

802.11n20\_5825MHz



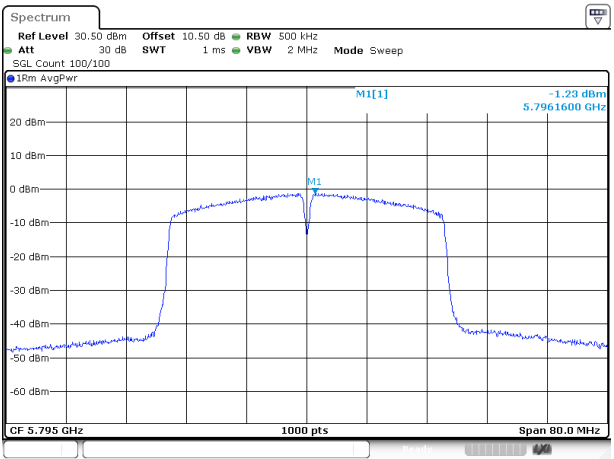
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Date: 28.JUN.2025 00:36:43

802.11n40\_5755MHz



ProjectNo.:2501U27810E-RF Tester:Kungfumaater Liang  
Date: 28.JUN.2025 00:38:05

802.11n40\_5795MHz



ProjectNo.:2501U27810E-RF Tester:Kungfumaater Liang  
Date: 28.JUN.2025 00:39:27

**Duty Cycle****Test Information:**

<b>Sample No.:</b>	34AZ-1	<b>Test Date:</b>	2025/06/27
<b>Test Site:</b>	RF	<b>Test Mode:</b>	Transmitting
<b>Tester:</b>	Kungfumaster Liang	<b>Test Result:</b>	Pass

**Environmental Conditions:**

<b>Temperature:</b> (°C)	25.1-26.5	<b>Relative Humidity:</b> (%)	45-50	<b>ATM Pressure:</b> (kPa)	100.1-101.8
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**Test Data:****5150-5250MHz**

Mode	Test Frequency (MHz)	Ton (ms)	Ton+Toff (ms)	Duty Cycle (%)	Duty Cycle Factor(dB)	1/Ton (Hz)	VBW Setting (kHz)
802.11a	5200	<b>100</b>	100	100	NA	NA	0.010
802.11n20	5200	<b>100</b>	100	100	NA	NA	0.010
802.11n40	5190	<b>100</b>	100	100	NA	NA	0.010

**5725-5850MHz**

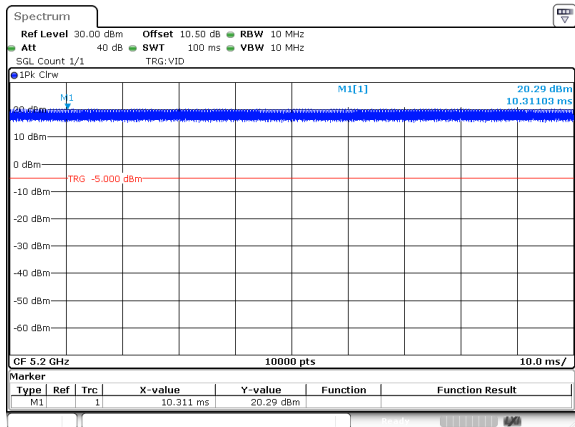
Mode	Test Frequency (MHz)	Ton (ms)	Ton+Toff (ms)	Duty Cycle (%)	Duty Cycle Factor(dB)	1/Ton (Hz)	VBW Setting (kHz)
802.11a	5785	<b>100</b>	100	100	NA	NA	0.010
802.11n20	5785	<b>100</b>	100	100	NA	NA	0.010
802.11n40	5755	<b>100</b>	100	100	NA	NA	0.010

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



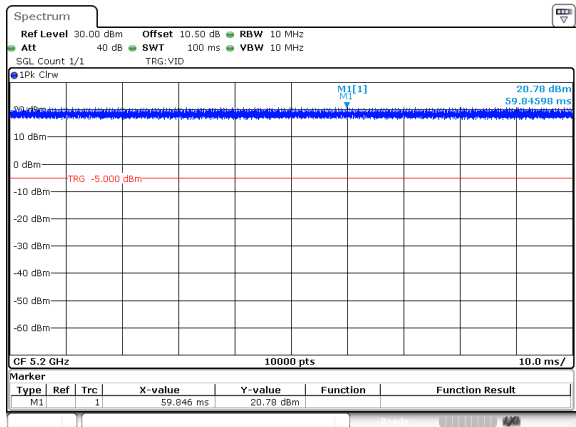
5150-5250MHz

802.11a\_5200MHz



ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 27.JUN.2025 23:25:41

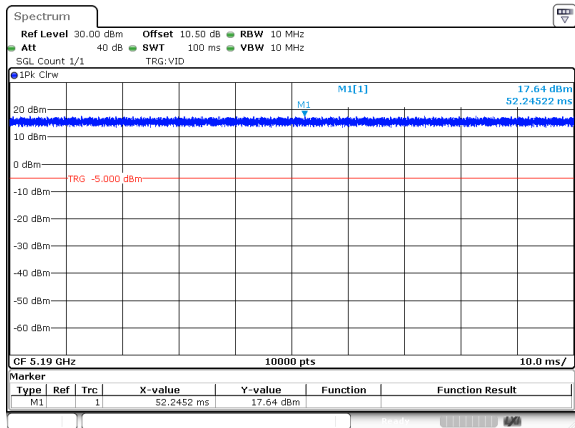
802.11n20\_5200MHz



ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 27.JUN.2025 23:26:41

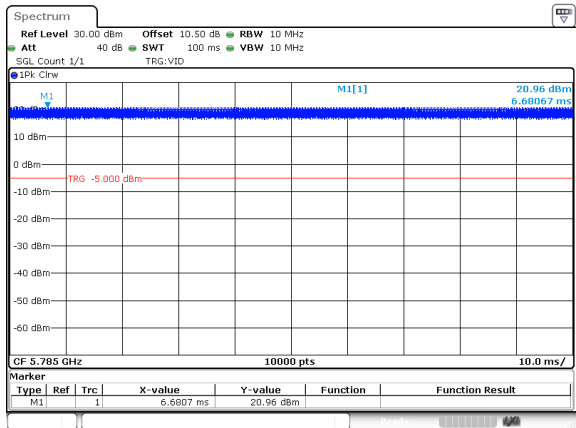
5725-5850MHz

802.11n40\_5190MHz



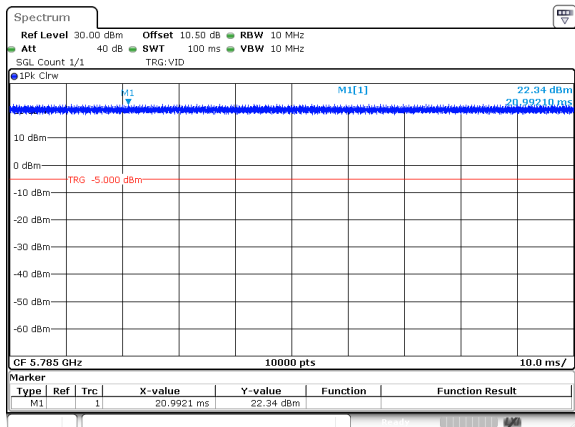
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Date: 27.JUN.2025 23:27:21

802.11a\_5785MHz



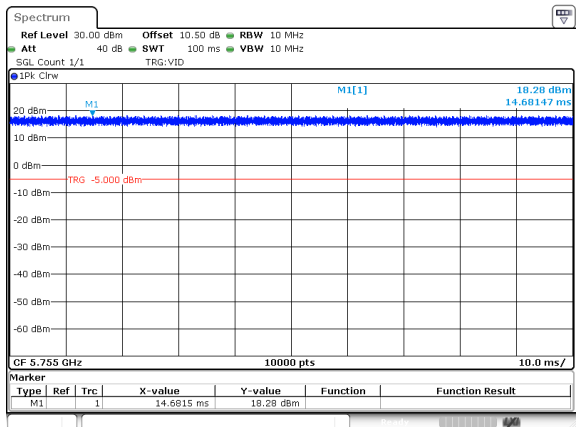
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Date: 27.JUN.2025 23:28:52

802.11n20\_5785MHz



ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 27.JUN.2025 23:29:20

802.11n40\_5755MHz



ProjectNo.:2501U27810E-RF Tester:Kungfumaster Liang  
Date: 27.JUN.2025 23:30:42

**Frequency Stability****Test Information:**

<b>Sample No.:</b>	34AZ-1	<b>Test Date:</b>	2025/06/27~2025/06/28
<b>Test Site:</b>	RF	<b>Test Mode:</b>	Transmitting
<b>Tester:</b>	Kungfumaster Liang	<b>Test Result:</b>	Pass

**Environmental Conditions:**

<b>Temperature:</b> (°C)	25.1-26.5	<b>Relative Humidity:</b> (%)	45-50	<b>ATM Pressure:</b> (kPa)	100.1-101.8
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**5150-5250MHz**

Test Channel: Lowest for Lower Edge, Highest for Upper Edge						
Test mode	Temperature (°C)	Voltage (V <sub>AC</sub> )	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
802.11a	-20	138	5171.3230	5150.0000	5248.7640	5250.0000
	20	138	5171.1200	5150.0000	5248.6610	5250.0000
	50	138	5171.3880	5150.0000	5249.0300	5250.0000
	-20	120	5171.4520	5150.0000	5248.9250	5250.0000
	20	120	5171.3230	5150.0000	5248.8780	5250.0000
	50	120	5171.1240	5150.0000	5248.9130	5250.0000
	-20	102	5171.5480	5150.0000	5248.5600	5250.0000
	20	102	5171.0950	5150.0000	5248.7400	5250.0000
	50	102	5171.2720	5150.0000	5248.6960	5250.0000

Test Channel: Lowest for Lower Edge, Highest for Upper Edge						
Test mode	Temperature (°C)	Voltage (V <sub>AC</sub> )	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
802.11n20	-20	138	5170.9120	5150.0000	5249.2530	5250.0000
	20	138	5171.0620	5150.0000	5249.0080	5250.0000
	50	138	5171.0610	5150.0000	5249.4030	5250.0000
	-20	120	5170.8470	5150.0000	5249.2450	5250.0000
	20	120	5170.8230	5150.0000	5249.1900	5250.0000
	50	120	5170.9220	5150.0000	5249.1030	5250.0000
	-20	102	5170.9360	5150.0000	5249.2880	5250.0000
	20	102	5171.1520	5150.0000	5249.1190	5250.0000
	50	102	5170.8340	5150.0000	5249.3520	5250.0000

Test Channel: Lowest for Lower Edge, Highest for Upper Edge						
Test mode	Temperature (°C)	Voltage (V <sub>AC</sub> )	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
802.11n40	-20	138	5171.7540	5150.0000	5248.2320	5250.0000
	20	138	5171.6280	5150.0000	5248.2930	5250.0000
	50	138	5171.8780	5150.0000	5248.0100	5250.0000
	-20	120	5171.6810	5150.0000	5248.1440	5250.0000
	20	120	5171.7870	5150.0000	5248.1790	5250.0000
	50	120	5171.6810	5150.0000	5248.3130	5250.0000
	-20	102	5171.6110	5150.0000	5248.0320	5250.0000
	20	102	5171.6310	5150.0000	5248.3960	5250.0000
	50	102	5171.7370	5150.0000	5248.2890	5250.0000

**5725-5850MHz**

Test Channel: Lowest for Lower Edge, Highest for Upper Edge						
Test mode	Temperature (°C)	Voltage (V <sub>AC</sub> )	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
802.11a	-20	138	5736.0850	5725.0000	5833.9690	5850.0000
	20	138	5735.9090	5725.0000	5834.0050	5850.0000
	50	138	5736.2780	5725.0000	5833.9080	5850.0000
	-20	120	5735.9840	5725.0000	5833.9500	5850.0000
	20	120	5735.8840	5725.0000	5834.1180	5850.0000
	50	120	5735.9750	5725.0000	5834.0270	5850.0000
	-20	102	5735.9530	5725.0000	5833.8860	5850.0000
	20	102	5736.1710	5725.0000	5834.1060	5850.0000
	50	102	5736.1880	5725.0000	5833.7010	5850.0000

Test Channel: Lowest for Lower Edge, Highest for Upper Edge						
Test mode	Temperature (°C)	Voltage (V <sub>AC</sub> )	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
802.11n20	-20	138	5735.5010	5725.0000	5834.4040	5850.0000
	20	138	5735.3220	5725.0000	5834.3280	5850.0000
	50	138	5735.2590	5725.0000	5834.3890	5850.0000
	-20	120	5735.4770	5725.0000	5834.2710	5850.0000
	20	120	5735.2750	5725.0000	5834.3290	5850.0000
	50	120	5735.4250	5725.0000	5834.5210	5850.0000
	-20	102	5735.3140	5725.0000	5834.6250	5850.0000
	20	102	5735.4170	5725.0000	5834.2710	5850.0000
	50	102	5735.2660	5725.0000	5834.4420	5850.0000

Test Channel: Lowest for Lower Edge, Highest for Upper Edge						
Test mode	Temperature (°C)	Voltage (V <sub>AC</sub> )	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
802.11n40	-20	138	5736.5060	5725.0000	5813.7750	5850.0000
	20	138	5736.5860	5725.0000	5814.0490	5850.0000
	50	138	5736.6660	5725.0000	5813.7950	5850.0000
	-20	120	5736.4710	5725.0000	5813.7470	5850.0000
	20	120	5736.5380	5725.0000	5813.7830	5850.0000
	50	120	5736.4280	5725.0000	5813.7600	5850.0000
	-20	102	5736.5850	5725.0000	5813.8170	5850.0000
	20	102	5736.5110	5725.0000	5813.7750	5850.0000
	50	102	5736.5840	5725.0000	5814.0410	5850.0000

## RF EXPOSURE EVALUATION

### MAXIMUM PERMISSIBLE EXPOSURE (MPE)

#### Applicable Standard

According to subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minutes)
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; \* = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

### Result

#### Calculation formula:

Prediction of power density at the distance of the applicable MPE limit

$S = PG/4\pi R^2$  = power density (in appropriate units, e.g. mW/cm<sup>2</sup>);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

**Calculated Data:**

For worst case:

Mode	Frequency (MHz)	Antenna Gain <sup>#</sup>		Max Tune-up Power <sup>#</sup>		Evaluation Distance (cm)	Power Density (mW/cm <sup>2</sup> )	MPE Limit (mW/cm <sup>2</sup> )
		(dBi)	(numeric)	(dBm)	(mW)			
BT	2402-2480	2.72	1.87	10.0	10.00	20	0.0037	1.0
BLE	2402-2480	2.72	1.87	8.0	6.31	20	0.0023	1.0
2.4G Wi-Fi	2412-2462	4.54	2.84	26.5	446.68	20	0.2524	1.0
5G Wi-Fi	5150-5250	3.48	2.23	15.0	31.62	20	0.0140	1.0
	5725-5850	4.19	2.62	15.0	31.62	20	0.0165	1.0

Note:

- 1) The tune up conducted power and antenna gain was declared by the applicant.
- 2) The BT and Wi-Fi can transmit at same time, the 2.4G and 5G Wi-Fi cannot transmit at same time.

Simultaneous transmitting consideration (worst case):

The ratio= $MPE_{BT}/limit + MPE_{2.4G\ Wi-Fi}/limit = 0.0037/1.0 + 0.2524/1.0 = 0.256 < 1.0$

So simultaneous exposure is compliant.

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

**Result: Compliant.**

## Field Reference Level Exposure Exemption Limits

### Applicable Standard

According to RSS-102 Issue 6§6.6:

Field reference level (FRL) exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm (i.e. mobile devices), except when the device operates as follows:

- below 20 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 1 W (adjusted for tune-up tolerance)
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than  $4.49/f^{0.5}$  W (adjusted for tune-up tolerance), where  $f$  is in MHz
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance)
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than  $1.31 \times 10^{-2} f^{0.6834}$  W (adjusted for tune-up tolerance), where  $f$  is in MHz
- at or above 6 GHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 5 W (adjusted for tune-up tolerance) In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the EIRP was derived.

### Calculated Data:

Mode	Frequency (MHz)	Maximum tune-up conducted power <sup>#</sup> (dBm)	Antenna Gain <sup>#</sup>	Maximum tune-up EIRP		Evaluation Distance (m)	Limit (mW)
			(dBi)	(dBm)	(mW)		
BT	2402-2480	10.0	2.72	12.72	18.71	0.2	2676
BLE	2402-2480	8.0	2.72	10.72	11.80	0.2	2676
2.4G Wi-Fi	2412-2462	26.5	4.54	31.04	1270.57	0.2	2684
5.2G Wi-Fi	5180-5240	15.0	3.48	18.48	70.47	0.2	4525
5.8G Wi-Fi	5745-5825	15.0	4.19	19.19	82.99	0.2	4857

Note: 1. The tune up conducted power<sup>#</sup> and antenna gain<sup>#</sup> was declared by the applicant.  
2. The BT and Wi-Fi can transmit at same time, the 2.4G and 5G Wi-Fi cannot transmit at same time.

Simultaneous transmitting consideration (worst case):

The ratio=  $EIRP_{BT}/limit + EIRP_{2.4G\ Wi-Fi}/limit = 18.71/2676 + 1270.57/2684 = 0.480 < 1.0$

So simultaneous exposure is compliant.

### Result: Compliant

Note: To maintain compliance with the RF exposure guidelines, place the equipment at least 20cm from nearby persons.

## **EUT PHOTOGRAPHS**

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Please refer to the attachment 2501U27810E-RF External photo and 2501U27810E-RF Internal photo.



## TEST SETUP PHOTOGRAPHS

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Please refer to the attachment 2501U27810E-RFD Test Setup photo.

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