TEST REPORT

Applicant Name:	Shenzhen Hunicom Electronics Co., Ltd
Address:	401,BLDG.C1,HENGFENG IND.CITY,NO.739,ZHOUSHI RD.,HEZHOU COMMUNITY,BAOAN DIST.,SHENZHEN,CHINA
Report Number:	2401Z47304E-RF-00
FCC ID:	2ACLVHTR01

Test Standard (s)

FCC PART 15.407

Sample Description

Product Type:	Wireless HDMI Transmitter & Receiver
Model No.:	HTR-01
Multiple Model(s) No.:	N/A
Trade Mark:	HUNICOM
Date Received:	2024-11-25
Issue Date:	2025-04-14

Test Result:	Pass▲

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

Prepared and Checked By:

Wills Yu
RF Engineer

Approved By:

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.

This report cannot be reproduced except in full, without prior written approval of the Company. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.
This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP or any agency of the U.S. Government.

This report may contain data that are not covered by the NVLAP accreditation and are marked with an asterisk "▼".

TABLE OF CONTENTS

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	2401Z47304E-RF-00	Original Report	2025-04-14

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Frequency Range	5725-5850MHz
Mode	802.11a/n20
Maximum Conducted Average Output Power	5725-5850MHz: 7.66dBm
Modulation Technique	OFDM
Antenna Specification#	2.0dBi (provided by the applicant)
Voltage Range	DC 5V from adapter
Sample serial number	2V1C-3 for Conducted and Radiated Emissions Test 2V1C-1 for RF Conducted Test (Assigned by BACL, Shenzhen)
Sample/EUT Status	Good condition
Adapter Information	N/A

Objective

This test report is in accordance with Part 2-Subpart J, Part 15-Subparts A and E of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart E, section 15.203, 15.205, 15.207, 15.209 and 15.407 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices. And KDB789033 D02 General U-NII Test Procedures New Rules v02r01.

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

Each test item follows test standards and with no deviation.

Measurement Uncertainty

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

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

Test Facility

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

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

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in an engineering mode, which was provided by manufacturer.
The device support 802.11a/n ht20.

For 5725-5850MHz Band, 5 channels are provided to testing:

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

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

EUT Exercise Software : MP_Tool

5725-5850 MHz Band				
Mode	Test Channels	Data rate	Power Level#	
			ANT 1	ANT 2
802.11a	Low	6Mbps	11	/
	Middle	6Mbps	11	/
	High	6Mbps	11	/
802.11n ht20	Low	MCS0	11	/
	Middle	MCS0	11	/
	High	MCS0	11	/

Special Accessories

No special accessory.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

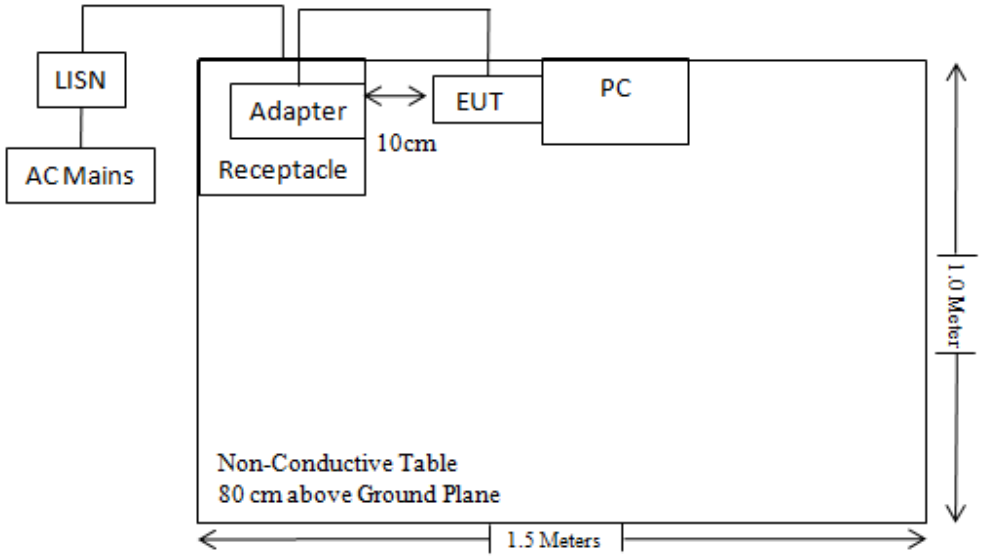
Manufacturer	Description	Model	Serial Number
UMIDIGI	Adapter	HF-0502000U	unknown
Redmi	Adapter	AD-0241200200CN-1	unknown
DELL	PC	DESKTOP-1630AQ3	B0CB5M2

External I/O Cable

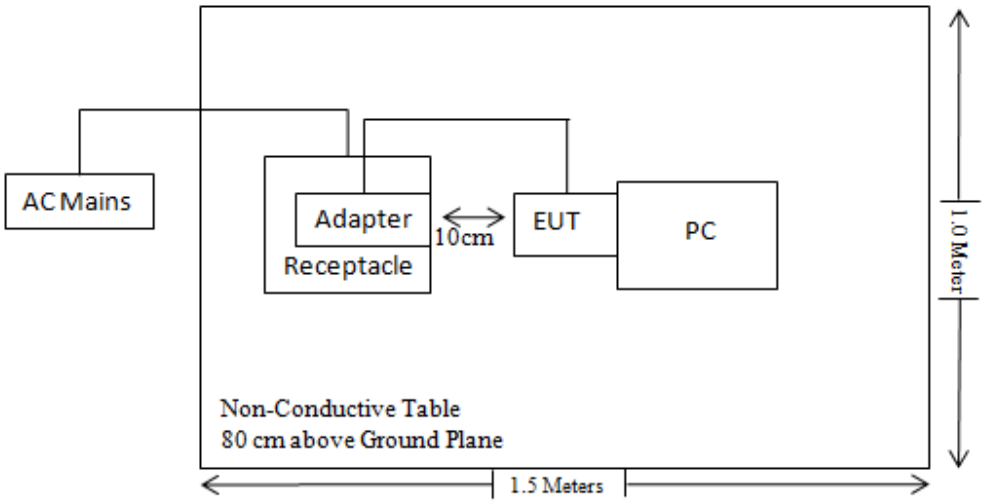
Cable Description	Length (m)	From Port	To
Unshielded detachable DC Cable	1	EUT	Adapter
Unshielded detachable AC Cable	1.5	monitor	Adapter

Block Diagram of Test Setup

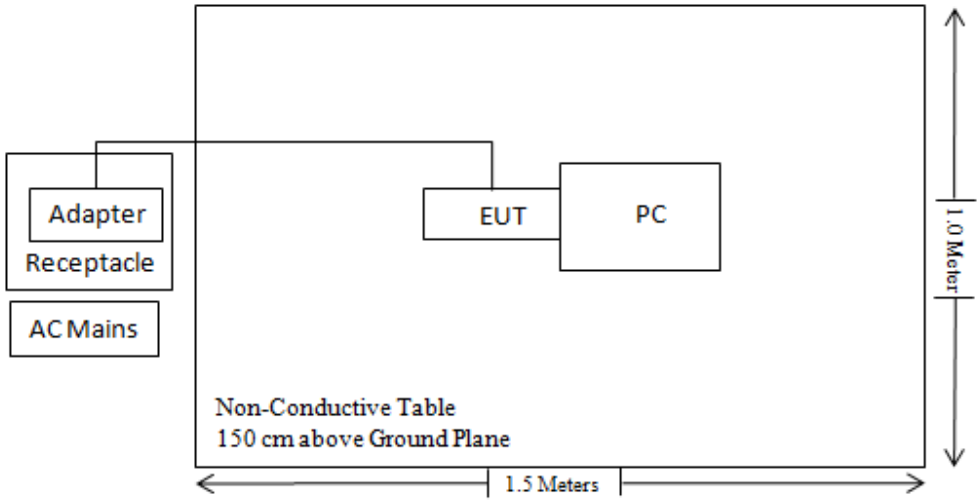
For Conducted Emissions:



For Radiated Emissions below 1GHz:



For Radiated Emissions above 1GHz:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC §15.203	Antenna Requirement	Compliant
FCC §15.207(a)	AC Line Conducted Emissions	Compliant
FCC §15.407 (b); §15.209; §15.205	Undesirable Emission& Restricted Bands	Compliant
FCC§15.407(a)(e)	Emission Bandwidth	Compliant
FCC§15.407 (a)	Maximum Conducted Output Power	Compliant
FCC§15.407 (a)	Power Spectral Density	Compliant
C63.10 §11.6	Duty Cycle	Compliant
FCC §1.1307&§2.1093	RF Exposure	Compliant

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2024/12/04	2025/12/03
Rohde & Schwarz	LISN	ENV216	101613	2024/12/04	2025/12/03
Unknown	CE Cable	Unknown	UF A210B-1-0720-504504	2024/05/21	2025/05/20
Rohde & Schwarz	Transient Limiter	ESH3Z2	DE25985	2024/05/21	2025/05/20
Audix	EMI Test software	E3	19821b(V9)	NCR	NCR
Radiated Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESR3	102455	2024/12/04	2025/12/03
Sonoma instrument	Pre-amplifier	310N	186238	2024/05/21	2025/05/20
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2026/07/19
Unknown	Cable	XH500C	J-10M-A	2024/06/18	2025/06/17
Unknown	Cable	Chamber Cable 1	F-03-EM236	2024/06/18	2025/06/17
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	191218(V9)	NCR	NCR
Rohde&Schwarz	Spectrum Analyzer	FSV40	101605	2024/03/27	2025/03/26
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
JD	Filter Switch Unit	DT7220FSU	DS79906	2024/09/09	2025/09/08
JD	Multiplex Switch Test Control Set	DT7220SCU	DS79903	2024/09/09	2025/09/08
A.H.System	Pre-amplifier	PAM-1840VH	190	2024/06/18	2025/06/17
Electro-Mechanics Co	Horn Antenna	3116	9510-2270	2023/09/18	2026/09/17
UTIFLEX	RF Cable	NO. 13	232308-001	2024/12/18	2025/12/17

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyze	FSU26	200982	2024/09/20	2025/09/19
MARCONI	10dB Attenuator	6534/3	2942	2024/06/27	2025/06/26
ANRITSU	Microwave peak power sensor	MA24418A	12622	2024/05/21	2025/05/20

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

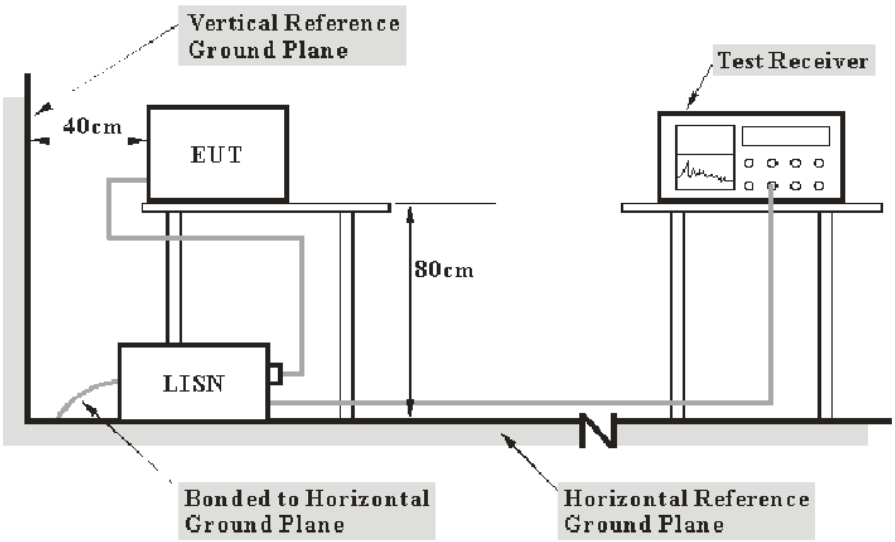
REQUIREMENTS AND TEST PROCEDURES

Conducted Emissions

Applicable Standard

FCC §15.207, §15.407(b) (6)

EUT Setup



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

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

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

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

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

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

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

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

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

Factor & Over Limit Calculation

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

Factor = LISN VDF + Cable Loss

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

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

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

Undesirable Emission

Applicable Standard

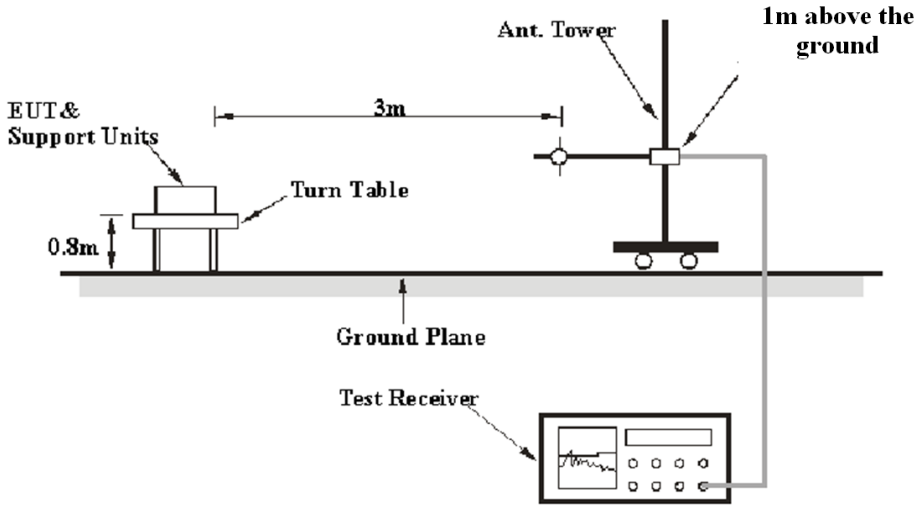
FCC §15.407 (b); §15.209; §15.205;

(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:
(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(4) For transmitters operating in the 5.725-5.85 GHz band:
(i) All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

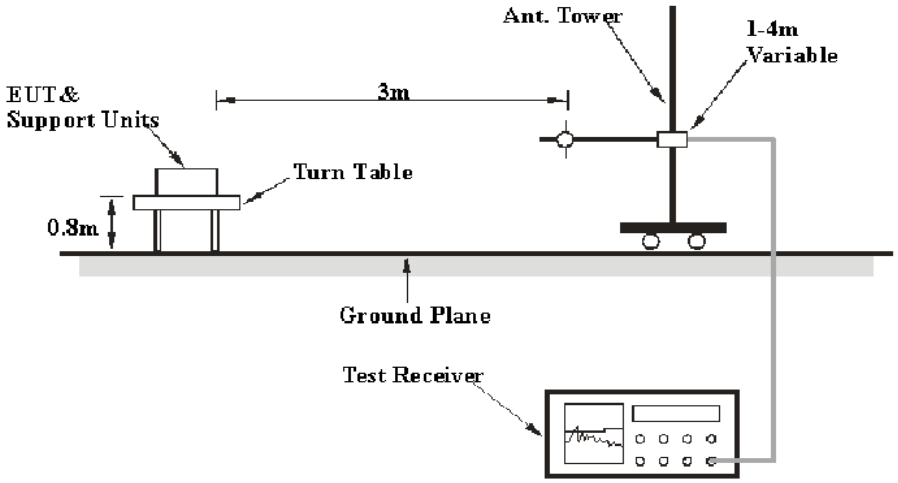
Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

EUT Setup

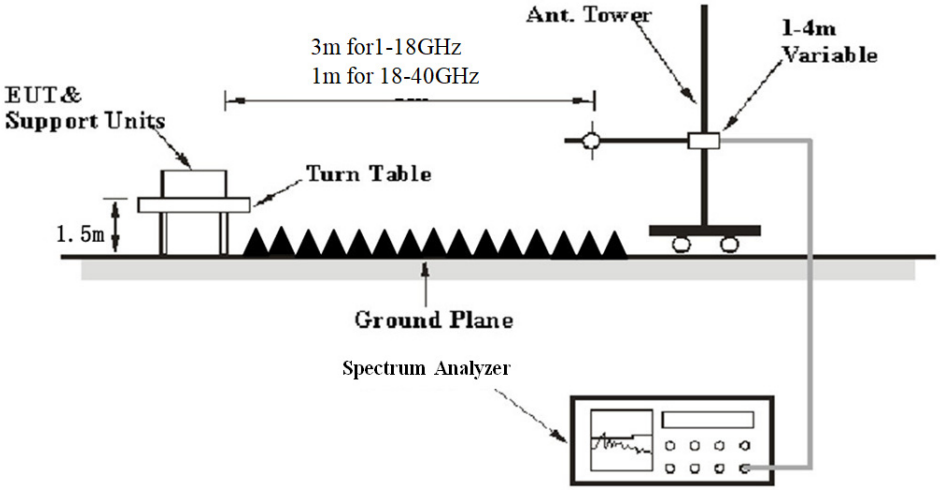
9 kHz-30MHz:



30MHz-1GHz:



Above 1 GHz:



The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC 15.209 and FCC 15.407 limits.

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

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 9 kHz to 40 GHz.

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

9 kHz-1GHz:

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

1-40GHz:

Pre-scan

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

Note: Ton is minimum transmission duration

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

Test Procedure

Radiated Spurious Emission

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

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

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

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 C63.10-2013,9.4: For field strength measurements made at other than the distance at which the applicable limit is specified, 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). In some cases, a different distance correction factor may be required;

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

where

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

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

Factor & Over Limit/Margin Calculation

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

Factor = Antenna Factor + Cable Loss - Amplifier Gain

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

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

26 dB & 6dB Emission Bandwidth

Applicable Standard

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

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

Test Procedure

According to KDB789033 D02 section II.C and section II.D

1. Emission Bandwidth (EBW)
a) Set RBW = approximately 1% 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 maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

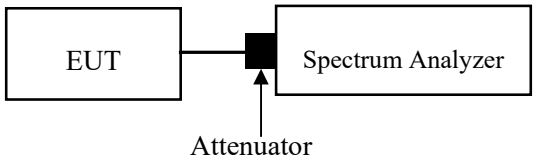
2. Minimum Emission Bandwidth for the band 5.725-5.85 GHz
Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.725-5.85 GHz. The following procedure shall be used for measuring this bandwidth:
a) Set RBW = 100 kHz.
b) Set the video bandwidth (VBW) ≥ 3 × RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

3. 99% Occupied Bandwidth:

According to ANSI C63.10-2013 Section 12.4.2&6.9.3

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 approximately three times the RBW, unless otherwise specified by the applicable requirement.

c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2.
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 plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).



Conducted Transmitter Output Power

Applicable Standard

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

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

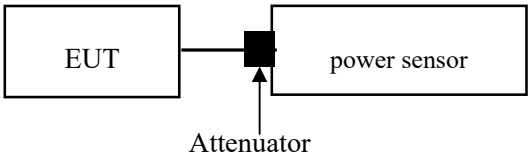
For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11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

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

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Method PM-G should be applied

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



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

Power Spectral Density

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

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

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

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01

Duty cycle ≥98%

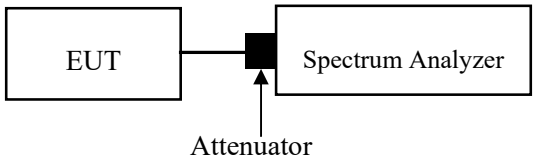
KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Method SA-1 should be applied.

Duty cycle <98%, duty cycle variations are less than ±2%

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Method SA-2 should be applied.

Duty cycle <98%, duty cycle variations exceed ±2%

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Method SA-3 should be applied.



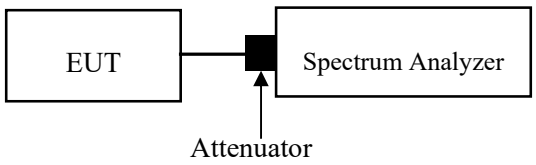
Note: A short RF cable with low cable loss connected to the EUT antenna port,which was provided by client or lab, the cable loss was add with offset into test equipment, the total offset consists of attenuator and/or RF cable and/or power splitter loss

Duty Cycle

Test Procedure

According to ANSI C63.10-2013 Section 12.2

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 ≥ OBW if possible; otherwise, set RBW to the largest available value.
3) Set VBW ≥ 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 ≤ 16.7 μs.)



ANTENNA REQUIREMENT

Applicable Standard

According to FCC § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

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

Antenna Connector Construction

The EUT has an internal antenna arrangement, which was permanently attached, the antenna gain[#] is 2.0dBi, fulfill the requirement of this section. Please refer to the EUT photos.

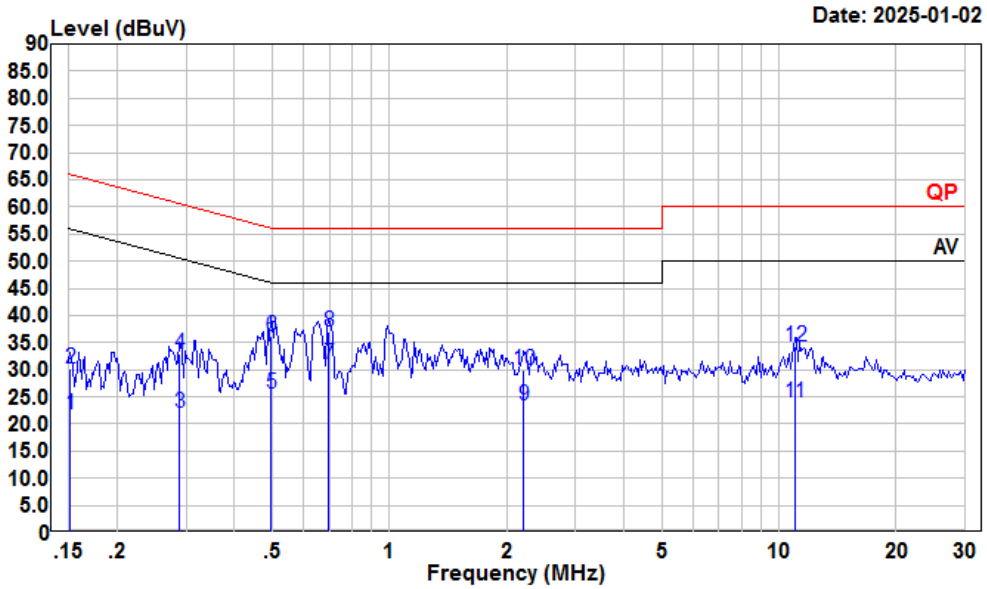
Result: Compliant

TEST DATA AND RESULTS

Conducted Emissions

Temperature (℃)	21-25	**Relative Humidity (%)**	45-56
ATM Pressure (kPa)	101-103	**Test engineer**	Macy Shi
Test date	2025/1/2		
EUT operation mode	Transmitting (Maximum output mode 11a20 5G WIFI B4 middle channel)		

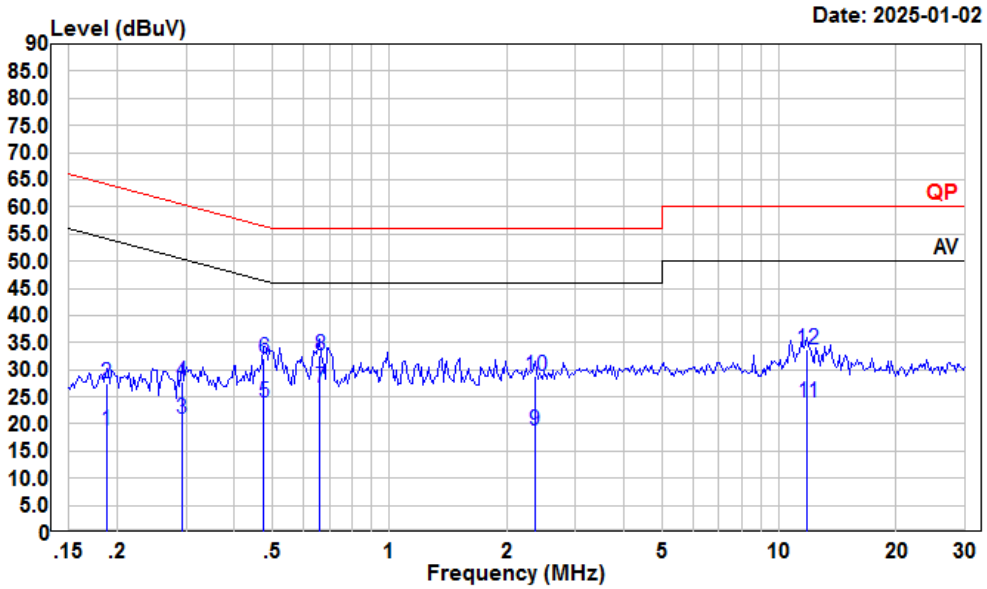
AC 120V 60 Hz, Line-TX



Condition: Line
Project : 2401Z47304E-RF-TX
tester : Macy.shi Note:Transmitting
Setting : RBW:9kHz VBW:Auto SWT:Auto

	Freq	Read Level	LISN Level	Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.152	0.81	21.84	10.90	10.13	55.91	-34.07	Average
2	0.152	9.09	30.12	10.90	10.13	65.91	-35.79	QP
3	0.289	1.34	22.12	10.68	10.10	50.54	-28.42	Average
4	0.289	12.07	32.85	10.68	10.10	60.54	-27.69	QP
5	0.497	4.91	25.55	10.50	10.14	46.05	-20.50	Average
6	0.497	15.55	36.19	10.50	10.14	56.05	-19.86	QP
7	0.697	10.44	31.09	10.50	10.15	46.00	-14.91	Average
8	0.697	16.44	37.09	10.50	10.15	56.00	-18.91	QP
9	2.213	2.75	23.49	10.56	10.18	46.00	-22.51	Average
10	2.213	9.13	29.87	10.56	10.18	56.00	-26.13	QP
11	10.963	3.26	24.07	10.60	10.21	50.00	-25.93	Average
12	10.963	13.46	34.27	10.60	10.21	60.00	-25.73	QP

AC 120V 60 Hz, Neutral-TX



Condition: Neutral
Project : 2401Z47304E-RF-TX
tester : Macy.shi Note:Transmitting
Setting : RBW:9kHz VBW:Auto SWT:Auto

	Freq	Read Level	LISN Level	Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.187	-1.71	18.83	10.45	10.09	54.15	-35.32	Average
2	0.187	6.91	27.45	10.45	10.09	64.15	-36.70	QP
3	0.292	0.39	21.02	10.52	10.11	50.46	-29.44	Average
4	0.292	7.15	27.78	10.52	10.11	60.46	-32.68	QP
5	0.476	3.07	23.88	10.68	10.13	46.41	-22.53	Average
6	0.476	11.42	32.23	10.68	10.13	56.41	-24.18	QP
7	0.661	5.77	26.61	10.70	10.14	46.00	-19.39	Average
8	0.661	11.88	32.72	10.70	10.14	56.00	-23.28	QP
9	2.358	-1.84	18.74	10.40	10.18	46.00	-27.26	Average
10	2.358	8.25	28.83	10.40	10.18	56.00	-27.17	QP
11	11.807	3.01	24.02	10.80	10.21	50.00	-25.98	Average
12	11.807	12.68	33.69	10.80	10.21	60.00	-26.31	QP

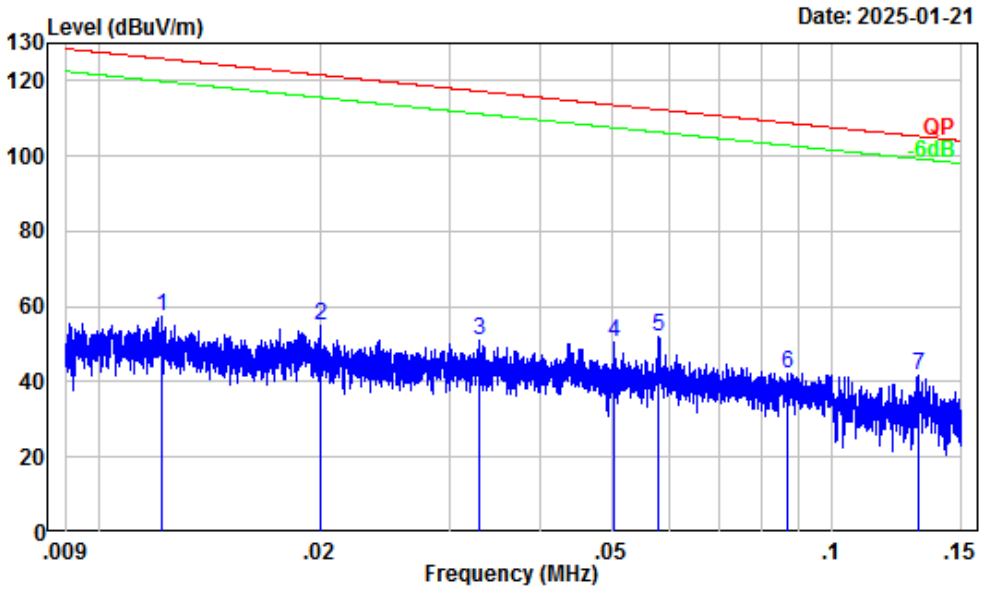
Undesirable Emission

Temperature (℃)	22.2-24.3	**Relative Humidity (%)**	40-50
ATM Pressure (kPa):	101	**Test engineer:**	Jack Liu & Wing K Ji
Test date:	2025/01/02-2025/03/14		
EUT operation mode:	Below 1GHz: Transmitting(Maximum output mode 11a20 5G WIFI B4 middle channel Above 1GHz: Transmitting		
Note:	For the radiated spurious emission below 30MHz, the emissions are 20dB below the limit or the noise floor which are not recorded.		

Below 1GHz:

Note: For the radiated spurious emission below 30MHz, only the worst case (parallel) was recorded.

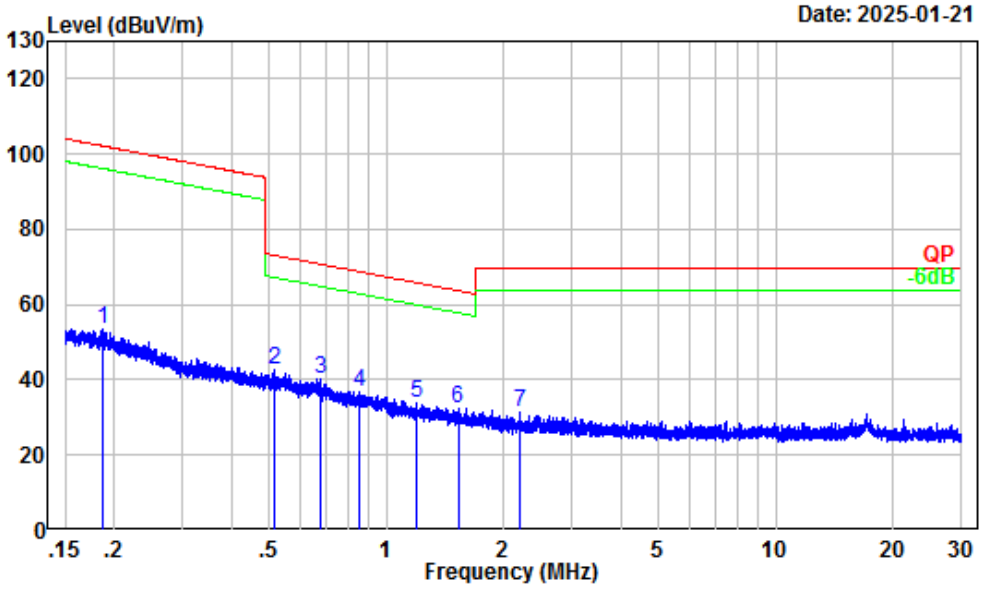
9kHz-150kHz-TX



Site : Chamber A
Condition : 3m
Project Number : 2401Z47304E-RF
Test Mode : Transmitting
Detector: Peak RBW/VBW: 0.3/1kHz
Tester : Jack Liu

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.01	31.88	25.40	57.28	125.89	-68.61	Peak
2	0.02	30.40	24.66	55.06	121.57	-66.51	Peak
3	0.03	28.18	22.77	50.95	117.22	-66.27	Peak
4	0.05	26.36	24.12	50.48	113.55	-63.07	Peak
5	0.06	25.60	26.33	51.93	112.33	-60.40	Peak
6	0.09	22.92	19.45	42.37	108.83	-66.46	Peak
7	0.13	20.19	21.31	41.50	105.28	-63.78	Peak

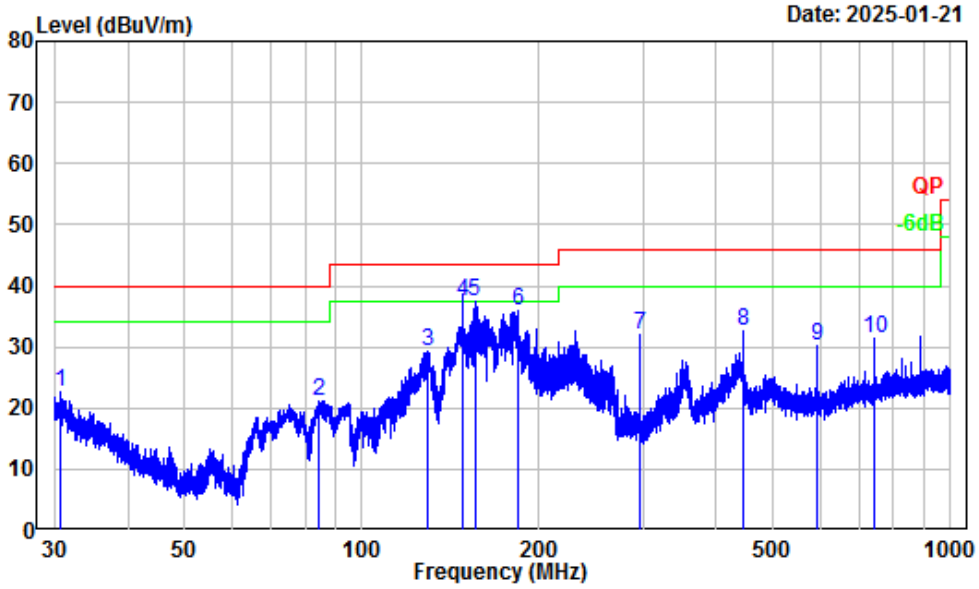
150kHz-30MHz-TX



Site : Chamber A
Condition : 3m
Project Number : 2401Z47304E-RF
Test Mode : Transmitting
Detector: Peak RBW/VBW: 10/30kHz
Tester : Jack Liu

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.19	16.90	36.44	53.34	102.20	-48.86	Peak
2	0.52	6.21	36.25	42.46	73.35	-30.89	Peak
3	0.68	4.20	36.05	40.25	70.91	-30.66	Peak
4	0.85	2.33	34.41	36.74	68.91	-32.17	Peak
5	1.20	0.65	33.26	33.91	65.88	-31.97	Peak
6	1.53	-0.28	32.74	32.46	63.70	-31.24	Peak
7	2.21	-1.71	33.34	31.63	69.54	-37.91	Peak

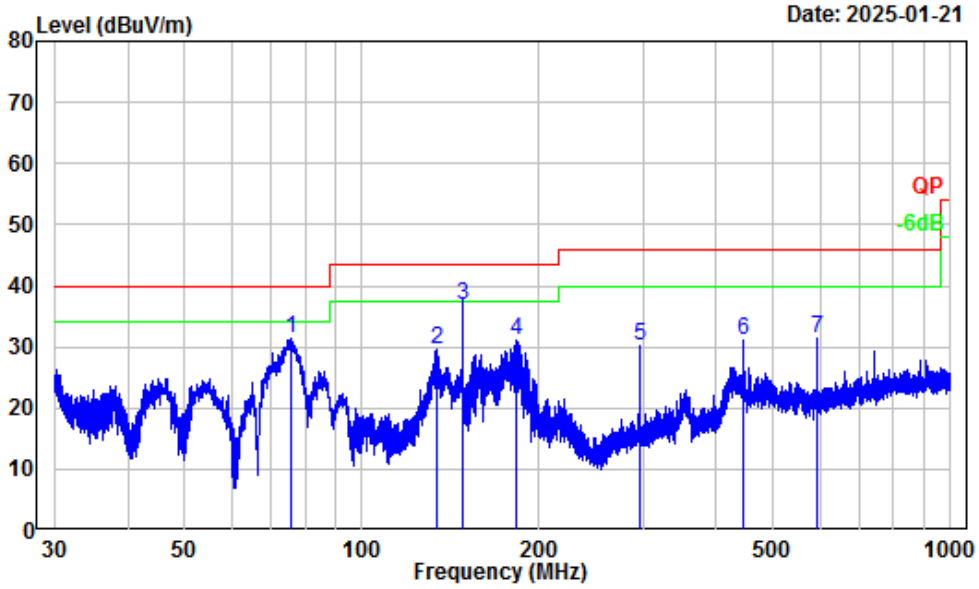
30MHz-1GHz_Horizontal-TX



Site : Chamber A
Condition : 3m Horizontal
Project Number : 2401Z47304E-RF
Test Mode : Transmitting
Detector: Peak RBW/VBW: 100/300kHz
Tester : Jack Liu

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	30.71	-6.32	28.93	22.61	40.00	-17.39	Peak
2	84.52	-18.09	39.28	21.19	40.00	-18.81	Peak
3	128.90	-11.20	40.42	29.22	43.50	-14.28	Peak
4	148.51	-12.36	49.80	37.44	43.50	-6.06	QP
5	155.43	-12.64	50.09	37.45	43.50	-6.05	Peak
6	184.65	-13.97	49.95	35.98	43.50	-7.52	Peak
7	296.96	-11.21	43.08	31.87	46.00	-14.13	Peak
8	445.63	-7.52	40.15	32.63	46.00	-13.37	Peak
9	594.09	-5.27	35.52	30.25	46.00	-15.75	Peak
10	742.58	-2.94	34.39	31.45	46.00	-14.55	Peak

30MHz-1GHz_Vertical-TX



Site : Chamber A
Condition : 3m Vertical
Project Number : 2401Z47304E-RF
Test Mode : Transmitting
Detector: Peak RBW/VBW: 100/300kHz
Tester : Jack Liu

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	75.65	-17.83	49.15	31.32	40.00	-8.68	Peak
2	134.15	-11.41	41.07	29.66	43.50	-13.84	Peak
3	148.44	-12.36	49.20	36.84	43.50	-6.66	QP
4	183.12	-13.90	44.94	31.04	43.50	-12.46	Peak
5	296.96	-11.21	41.41	30.20	46.00	-15.80	Peak
6	445.63	-7.52	38.63	31.11	46.00	-14.89	Peak
7	594.09	-5.27	36.56	31.29	46.00	-14.71	Peak

Above 1GHz:

5725-5850MHz

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	PK/Ave					
802.11a							
Low Channel							
11490	51.35	PK	H	3.54	54.89	74	-19.11
11490	36.78	AV	H	3.54	40.32	54	-13.68
11490	51.95	PK	V	3.54	55.49	74	-18.51
11490	38.28	AV	V	3.54	41.82	54	-12.18
Middle Channel							
11570	52.31	PK	H	3.3	55.61	74	-18.39
11570	38.09	AV	H	3.3	41.39	54	-12.61
11570	52.45	PK	V	3.3	55.75	74	-18.25
11570	38.21	AV	V	3.3	41.51	54	-12.49
High Channel							
11650	53.01	PK	H	3.42	56.43	74	-17.57
11650	39.26	AV	H	3.42	42.68	54	-11.32
11650	52.86	PK	V	3.42	56.28	74	-17.72
11650	38.43	AV	V	3.42	41.85	54	-12.15

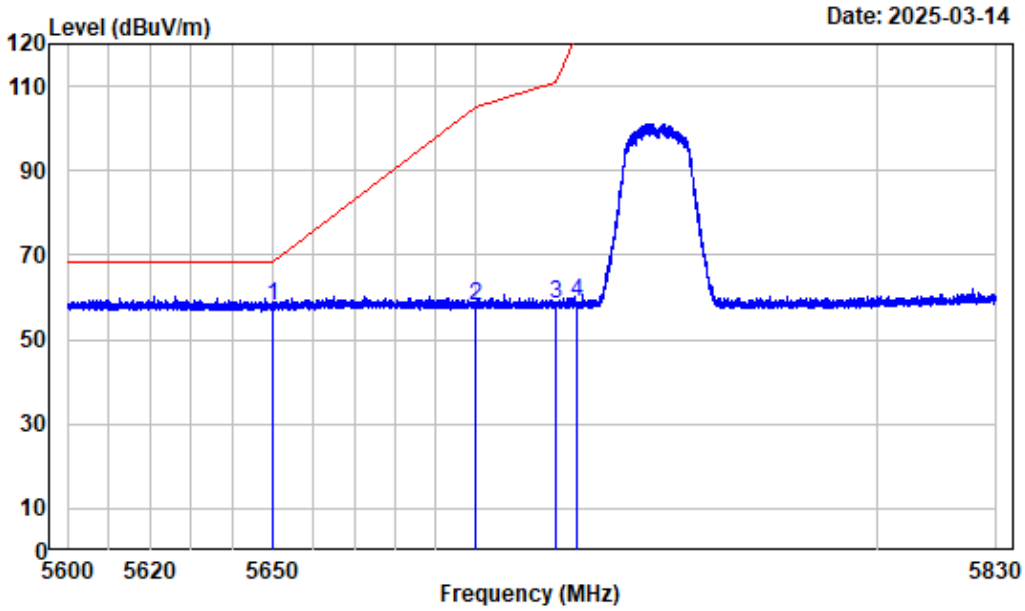
Frequency (MHz)	Reading (dBµV/m)	PK/AV	Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
802.11n20							
Low Channel							
11490	51.49	PK	H	3.54	55.03	74	-18.97
11490	36.86	AV	H	3.54	40.4	54	-13.6
11490	52.06	PK	V	3.54	55.6	74	-18.4
11490	38.33	AV	V	3.54	41.87	54	-12.13
Middle Channel							
11570	52.34	PK	H	3.3	55.64	74	-18.36
11570	38.12	AV	H	3.3	41.42	54	-12.58
11570	52.48	PK	V	3.3	55.78	74	-18.22
11570	38.23	AV	V	3.3	41.53	54	-12.47
High Channel							
11650	53.06	PK	H	3.42	56.48	74	-17.52
11650	39.3	AV	H	3.42	42.72	54	-11.28
11650	52.91	PK	V	3.42	56.33	74	-17.67
11650	38.51	AV	V	3.42	41.93	54	-12.07

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:

802.11a

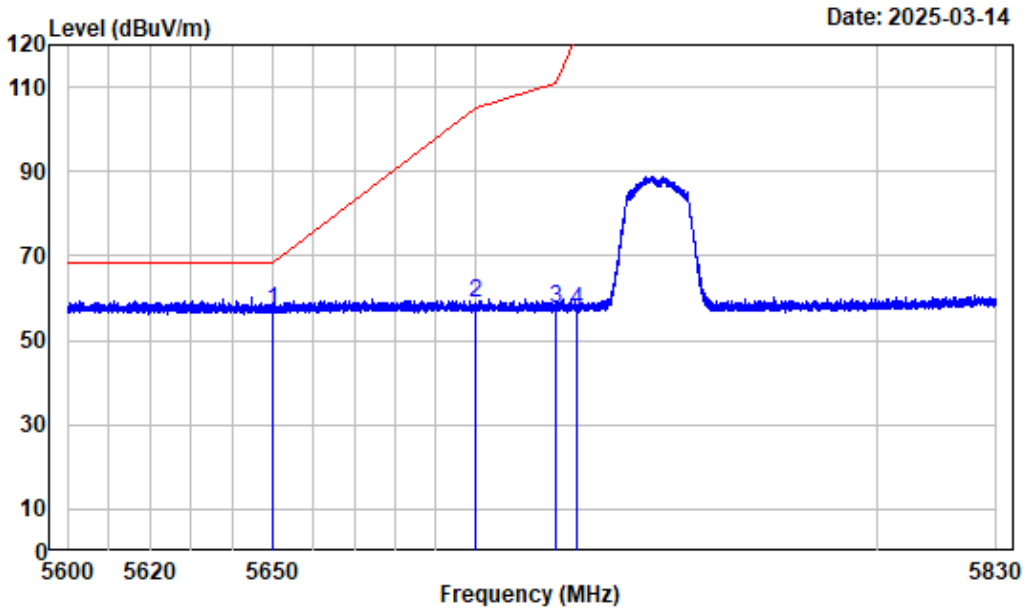
Left Band edge_Horizontal



Condition : Horizontal
Project No. : 2401Z47304E-RF
Tester : Wing K Ji
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	5650.000	-5.86	63.62	57.76	68.20	-10.44	Peak
2	5700.000	-5.71	63.77	58.06	105.20	-47.14	Peak
3	5720.000	-5.53	63.99	58.46	110.80	-52.34	Peak
4	5725.000	-5.48	64.37	58.89	122.20	-63.31	Peak

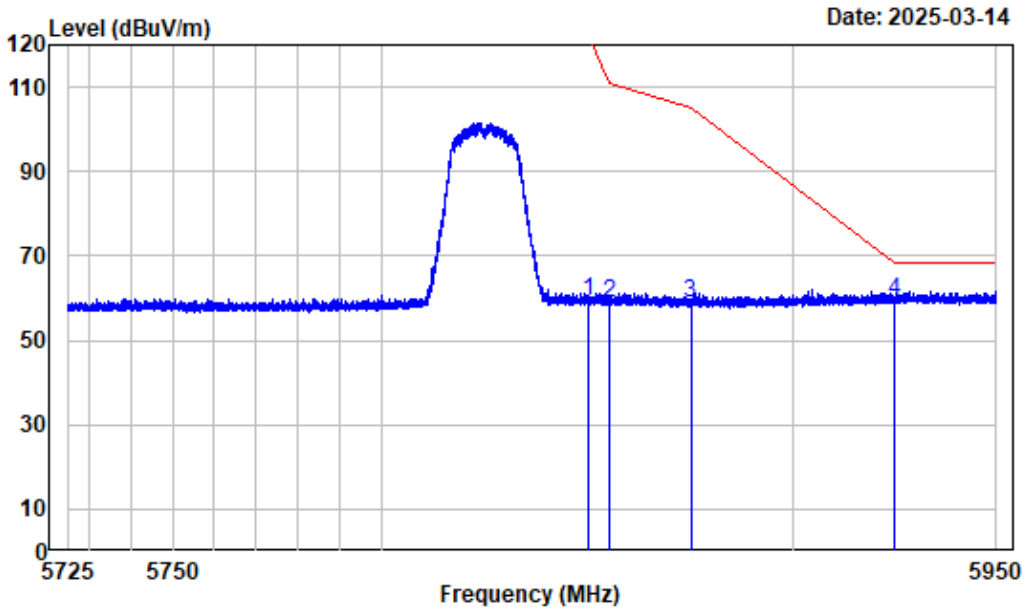
Left Band edge_Vertical



Condition : Vertical
Project No. : 2401Z47304E-RF
Tester : Wing K Ji
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	5650.000	-5.86	63.04	57.18	68.20	-11.02	Peak
2	5700.000	-5.71	64.78	59.07	105.20	-46.13	Peak
3	5720.000	-5.53	63.25	57.72	110.80	-53.08	Peak
4	5725.000	-5.48	62.71	57.23	122.20	-64.97	Peak

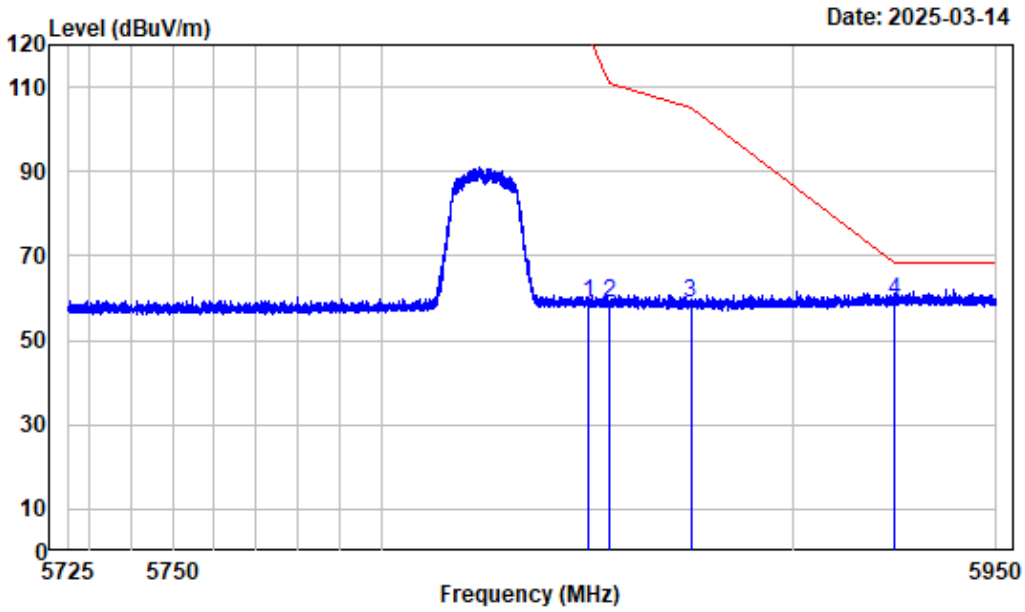
Right Band edge_Horizontal



Condition : Horizontal
Project No. : 2401Z47304E-RF
Tester : Wing K Ji
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	5850.000	-4.68	63.98	59.30	122.19	-62.89	Peak
2	5855.000	-4.65	63.45	58.80	110.80	-52.00	Peak
3	5875.000	-4.56	63.43	58.87	105.20	-46.33	Peak
4	5925.000	-4.45	63.78	59.33	68.20	-8.87	Peak

Right Band edge_Vertical

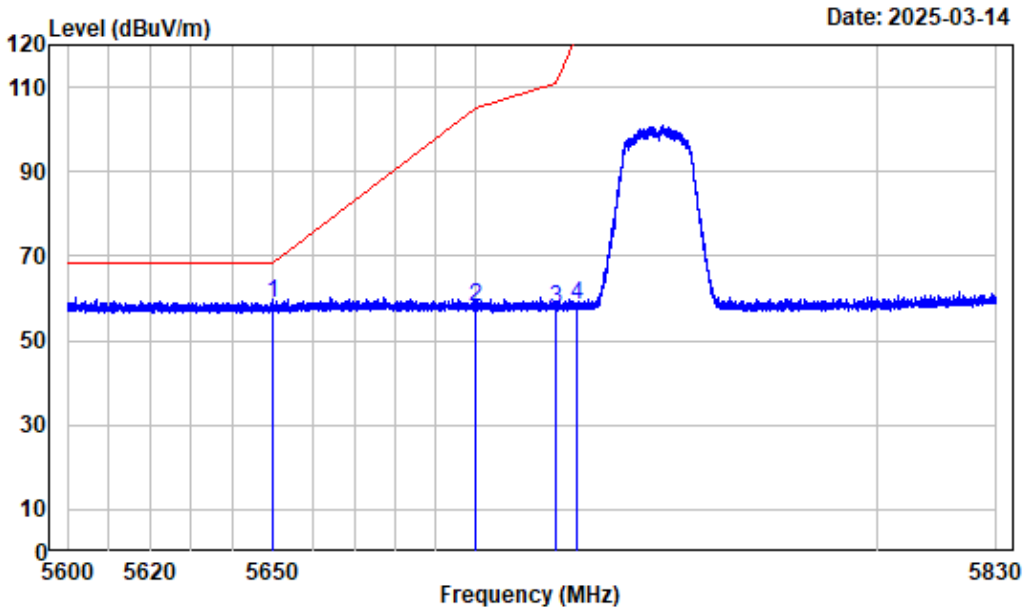


Condition : Vertical
Project No. : 2401Z47304E-RF
Tester : Wing K Ji
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-A-5825

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5850.000	-4.68	63.74	59.06	122.19	-63.13	Peak
2	5855.000	-4.65	63.68	59.03	110.80	-51.77	Peak
3	5875.000	-4.56	63.46	58.90	105.20	-46.30	Peak
4	5925.000	-4.45	63.92	59.47	68.20	-8.73	Peak

802.11n20

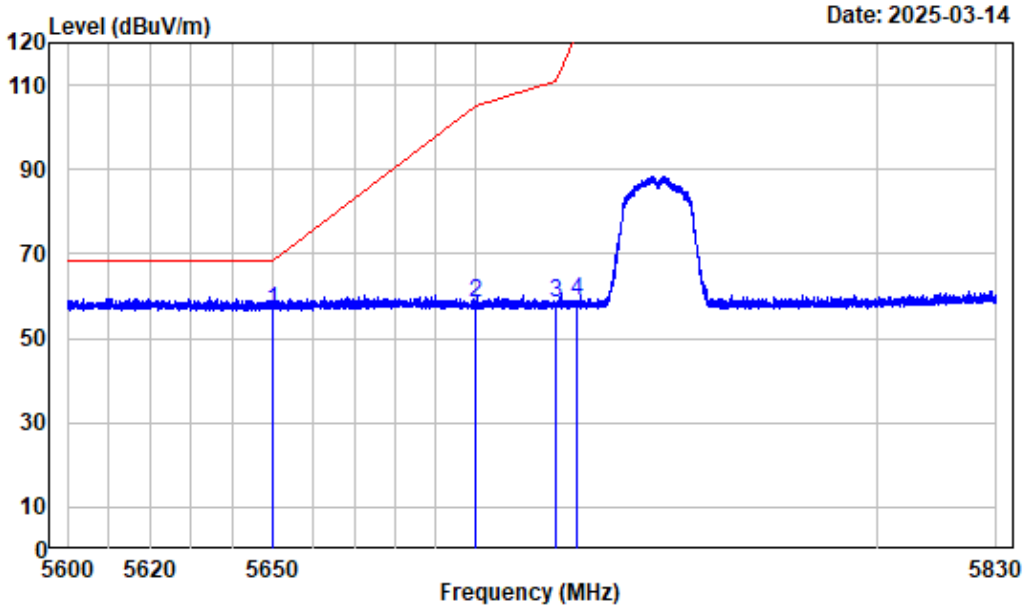
Left Band edge_Horizontal



Condition : Horizontal
Project No. : 2401Z47304E-RF
Tester : Wing K Ji
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	5650.000	-5.86	64.88	59.02	68.20	-9.18	Peak
2	5700.000	-5.71	63.45	57.74	105.20	-47.46	Peak
3	5720.000	-5.53	63.17	57.64	110.80	-53.16	Peak
4	5725.000	-5.49	63.95	58.46	122.20	-63.74	Peak

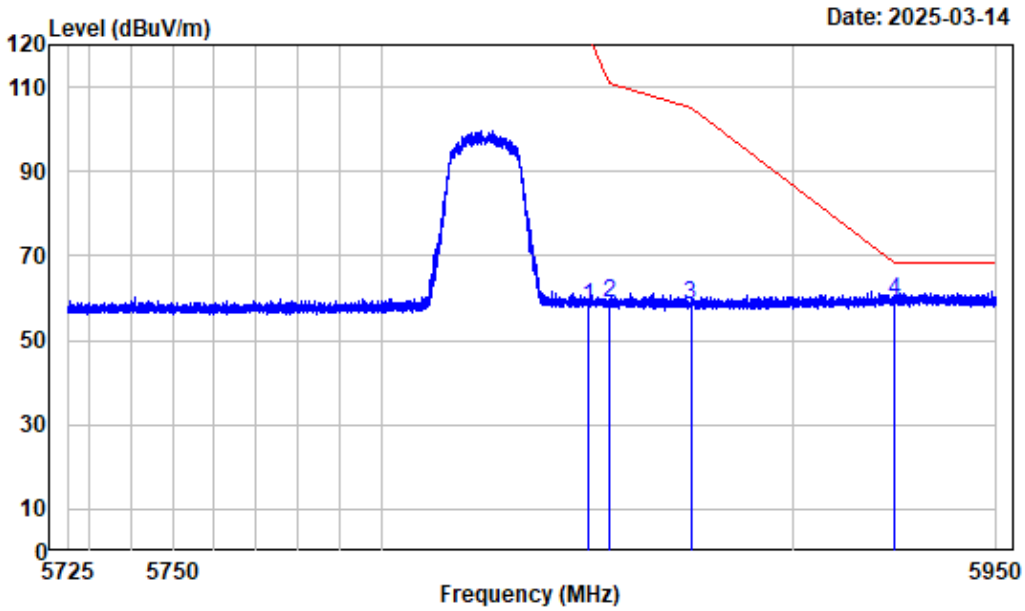
Left Band edge_Vertical



Condition : Vertical
Project No. : 2401Z47304E-RF
Tester : Wing K Ji
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	5650.000	-5.86	62.64	56.78	68.20	-11.42	Peak
2	5700.000	-5.71	64.03	58.32	105.20	-46.88	Peak
3	5720.000	-5.53	63.76	58.23	110.80	-52.57	Peak
4	5725.000	-5.49	64.48	58.99	122.20	-63.21	Peak

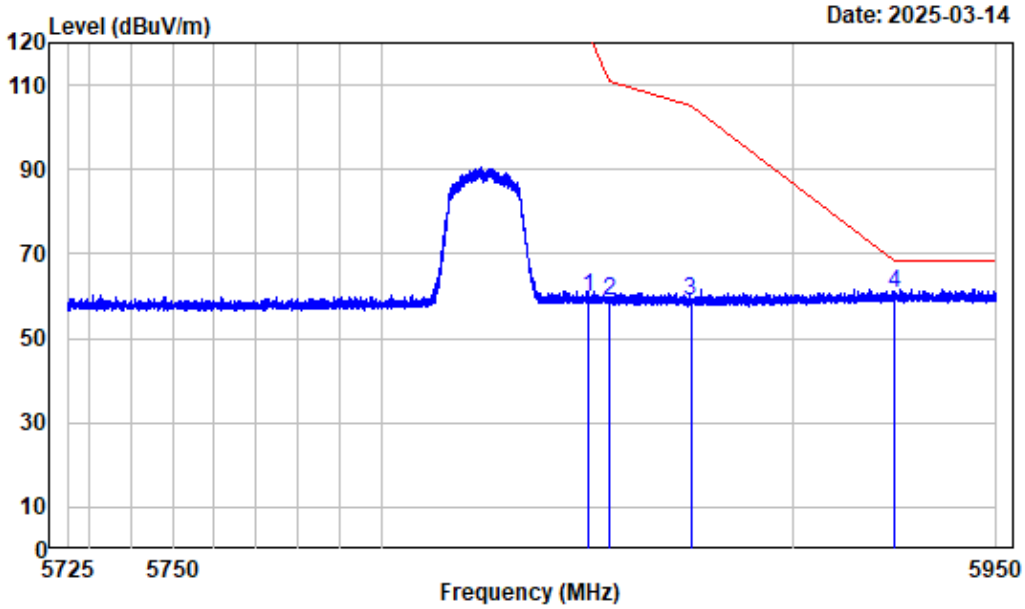
Right Band edge_Horizontal



Condition : Horizontal
Project No. : 2401Z47304E-RF
Tester : Wing K Ji
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	5850.000	-4.68	62.70	58.02	122.19	-64.17	Peak
2	5855.000	-4.65	63.40	58.75	110.80	-52.05	Peak
3	5875.000	-4.56	62.96	58.40	105.20	-46.80	Peak
4	5925.000	-4.45	63.58	59.13	68.20	-9.07	Peak

Right Band edge_Vertical



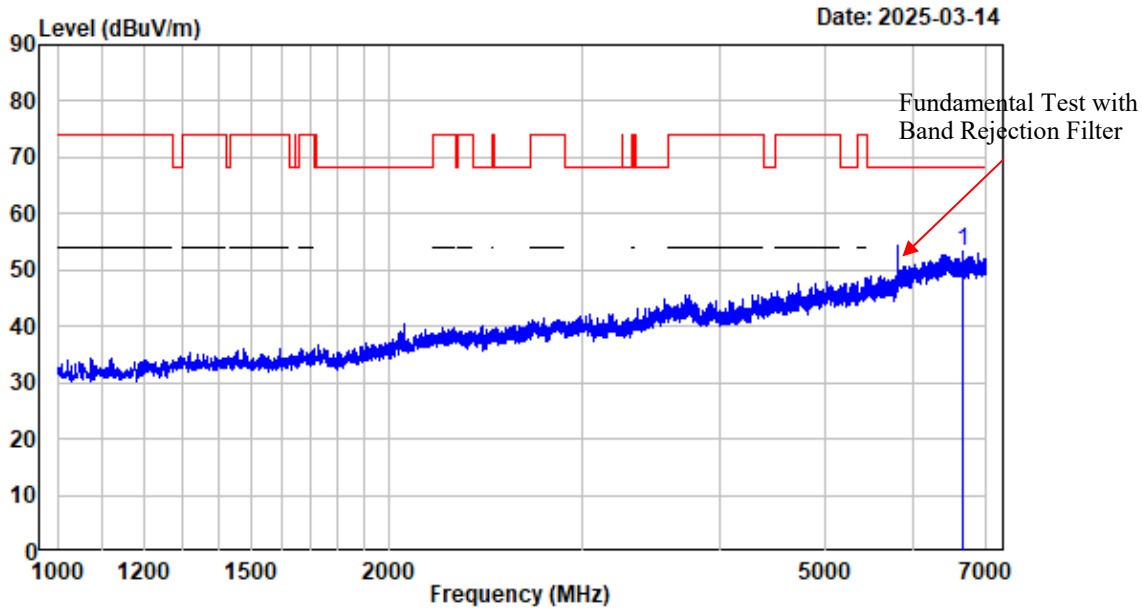
Condition : Vertical
Project No. : 2401Z47304E-RF
Tester : Wing K Ji
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-N20-5825

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5850.000	-4.68	64.55	59.87	122.19	-62.32	Peak
2	5855.000	-4.65	63.35	58.70	110.80	-52.10	Peak
3	5875.000	-4.56	63.31	58.75	105.20	-46.45	Peak
4	5925.000	-4.45	64.96	60.51	68.20	-7.69	Peak

Listed with the worst harmonic margin test plot

802.11a

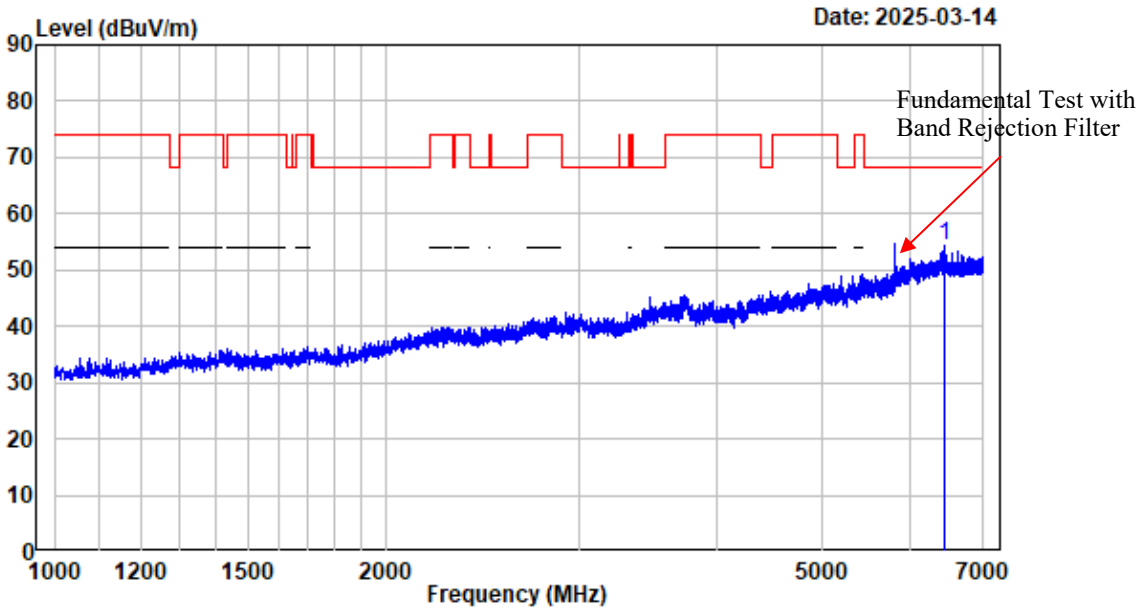
1-7GHz_Horizontal




```
Condition         : Horizontal
Project No.       : 2401Z47304E-RF
Tester            : Wing K Ji
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	6669.959	-3.11	56.29	53.18	68.20	-15.02	Peak

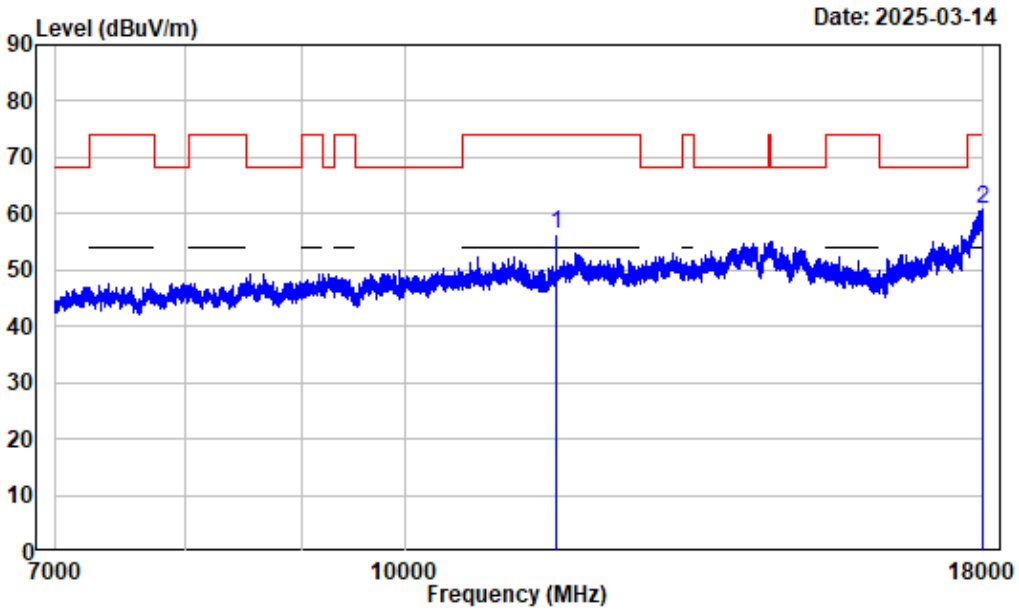
1-7GHz_Vertical



Condition : Vertical
Project No. : 2401Z47304E-RF
Tester : Wing K Ji
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	6453.932	-2.88	57.17	54.29	68.20	-13.91	Peak

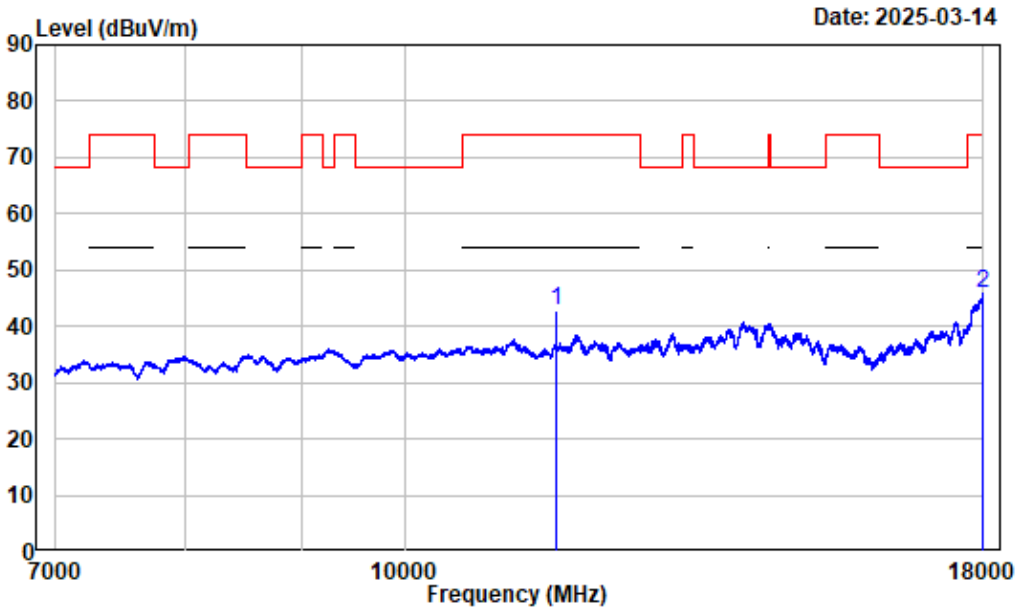
7-18GHz_Horizontal_Peak



Condition : Horizontal
Project No. : 2401Z47304E-RF
Tester : Wing K Ji
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-A-5825

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	11650.000	3.42	53.01	56.43	74.00	-17.57	Peak
2	17982.120	13.10	47.70	60.80	74.00	-13.20	Peak

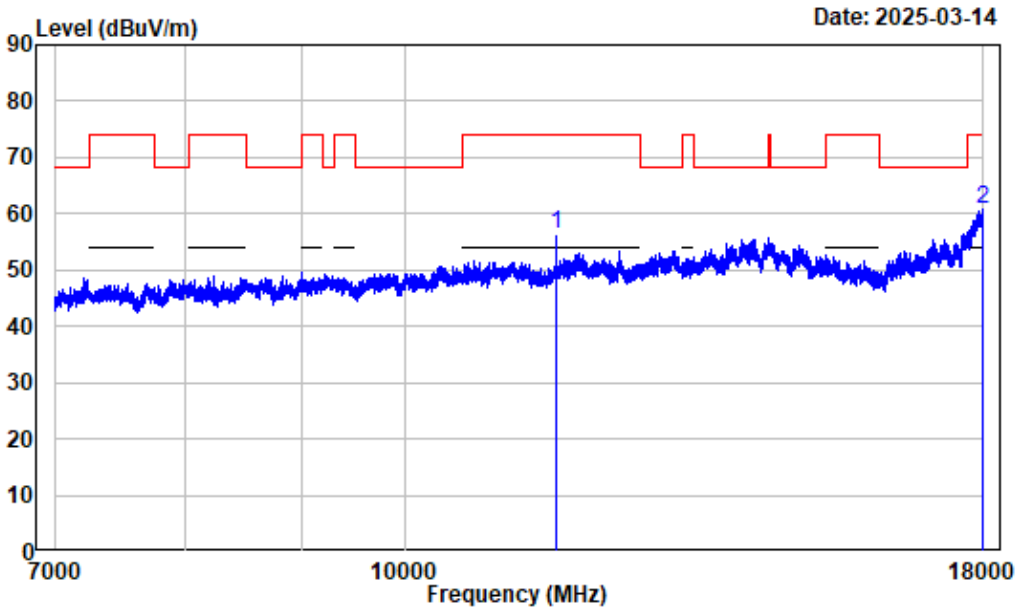
7-18GHz_Horizontal_Average



Condition : Horizontal
Project No. : 2401Z47304E-RF
Tester : Wing K Ji
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak
Note : 5GWiFi-Band4-A-5825

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	11650.000	3.42	39.26	42.68	54.00	-11.32	Average
2	17993.130	13.17	32.71	45.88	54.00	-8.12	Average

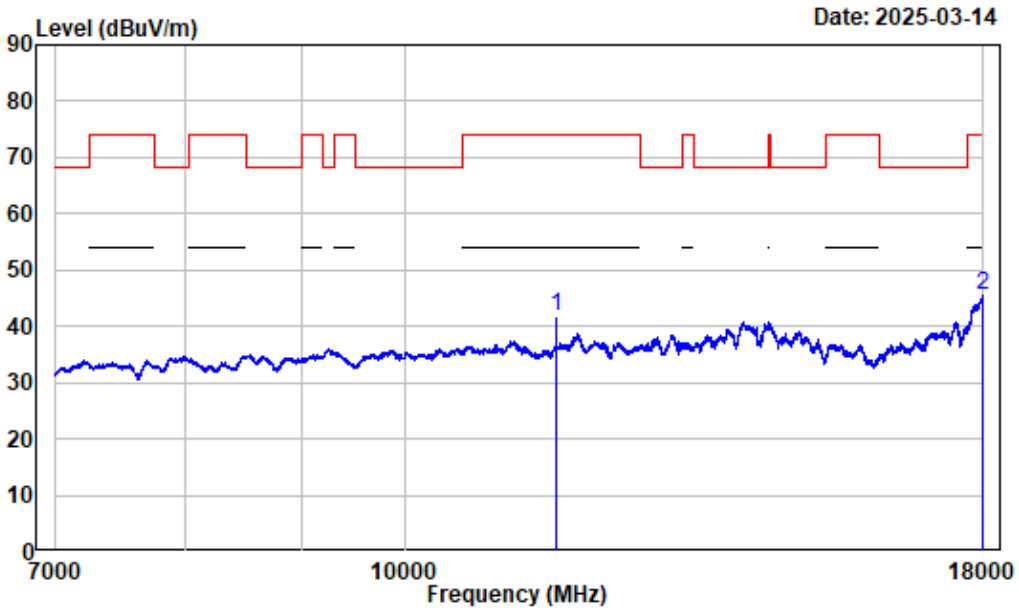
7-18GHz_Vertical_Peak



Condition : Vertical
Project No. : 2401Z47304E-RF
Tester : Wing K Ji
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-A-5825

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	11650.000	3.42	52.86	56.28	74.00	-17.72	Peak
2	17982.120	13.10	47.64	60.74	74.00	-13.26	Peak

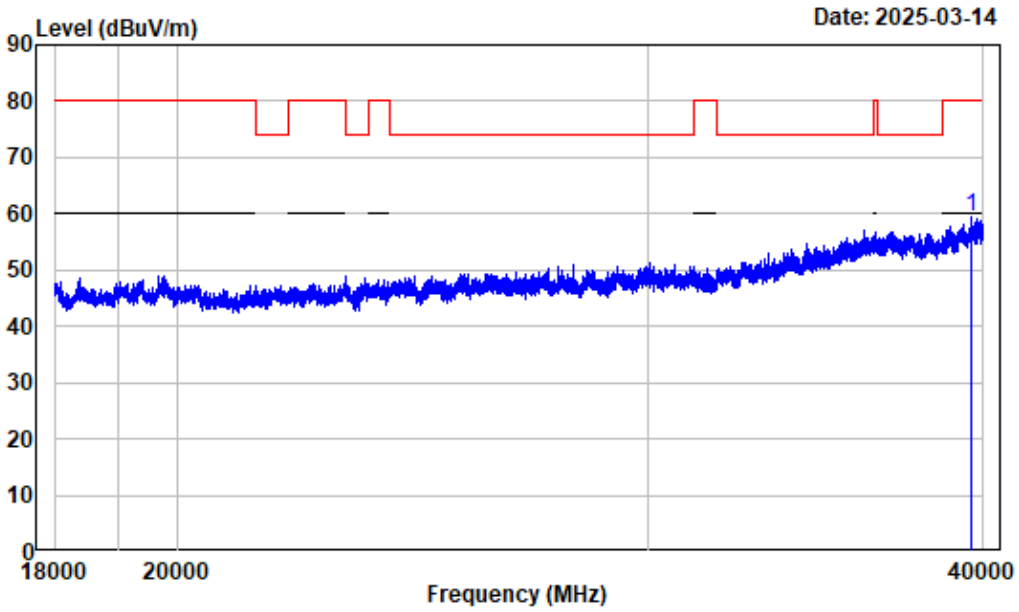
7-18GHz_Vertical_Average



Condition : Vertical
Project No. : 2401Z47304E-RF
Tester : Wing K Ji
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz Detector:Peak
Note : 5GWiFi-Band4-A-5825

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	11650.000	3.42	38.43	41.85	54.00	-12.15	Average
2	17991.750	13.16	32.49	45.65	54.00	-8.35	Average

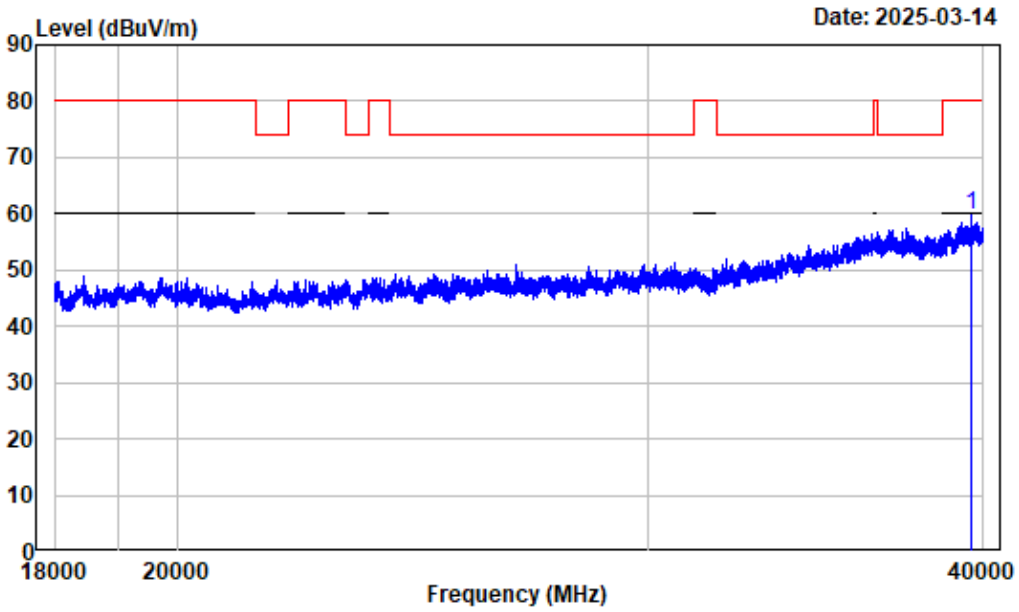
18-40GHz_Horizontal



Condition : Horizontal
Project No. : 2401Z47304E-RF
Tester : Wing K Ji
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	39573.700	22.74	36.67	59.41	80.00	-20.59	Peak

18-40GHz_Vertical

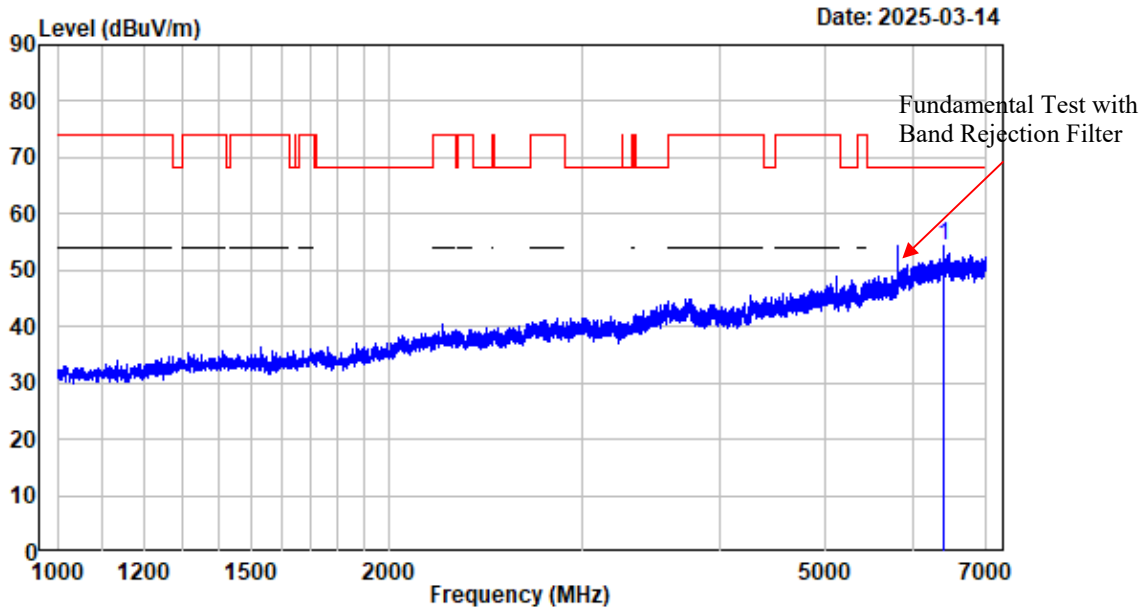


Condition : Vertical
Project No. : 2401Z47304E-RF
Tester : Wing K Ji
Spectrum setting: Peak reading:RBW:1MHz VBW:3MHz Detector:Peak
Note : 5GWiFi-Band4-A-5825

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	39609.450	22.78	36.92	59.70	80.00	-20.30	Peak

802.11n20

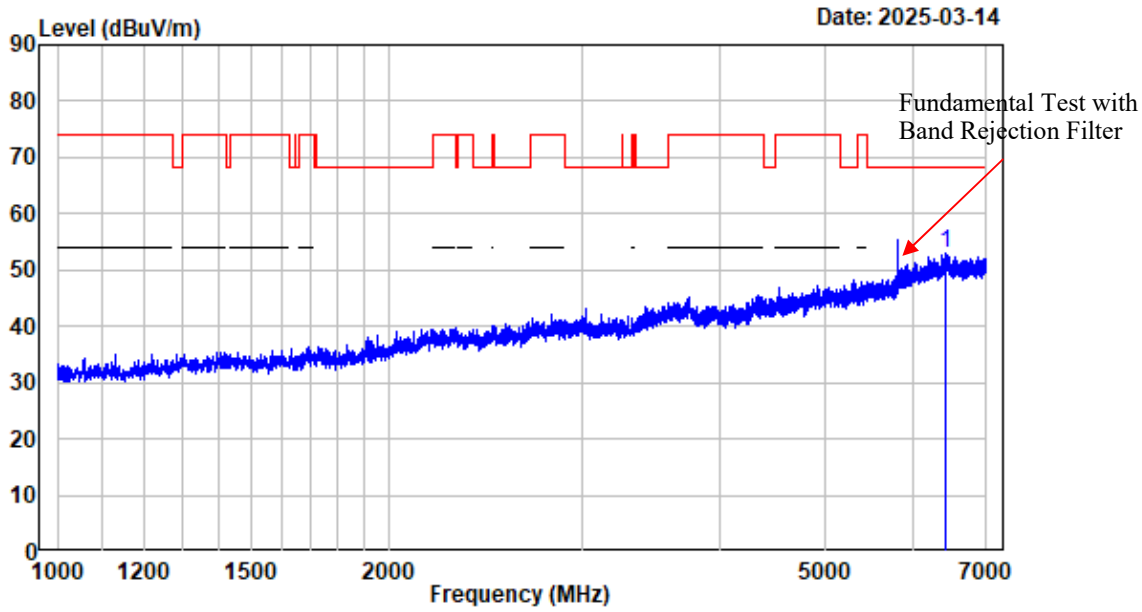
1-7GHz_Horizontal



Condition : Horizontal
Project No. : 2401Z47304E-RF
Tester : Wing K Ji
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	6396.925	-2.92	57.29	54.37	68.20	-13.83	Peak

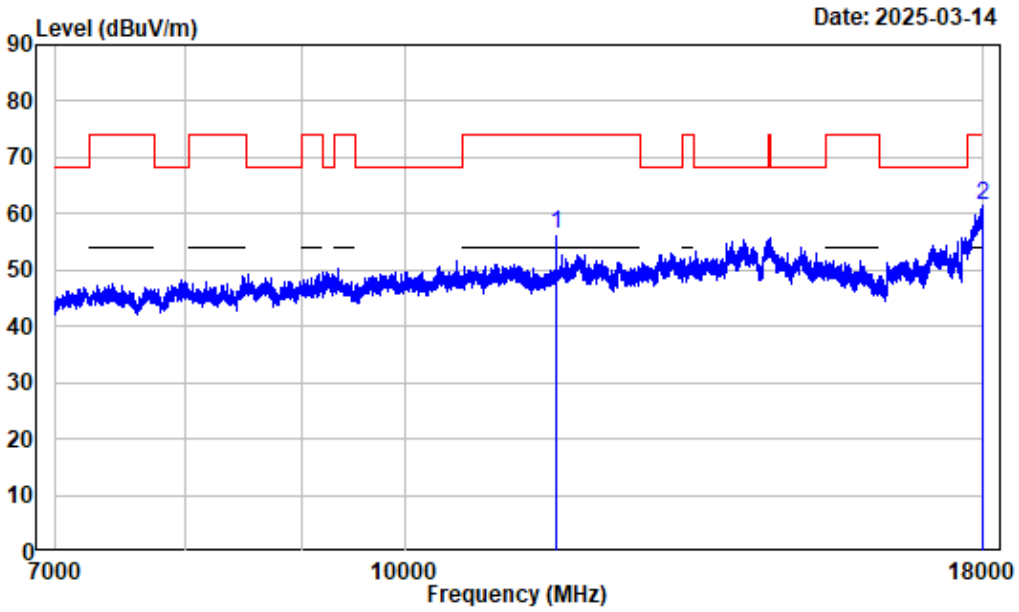
1-7GHz_Vertical



Condition : Vertical
Project No. : 2401Z47304E-RF
Tester : Wing K Ji
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	6438.180	-2.88	55.99	53.11	68.20	-15.09	Peak

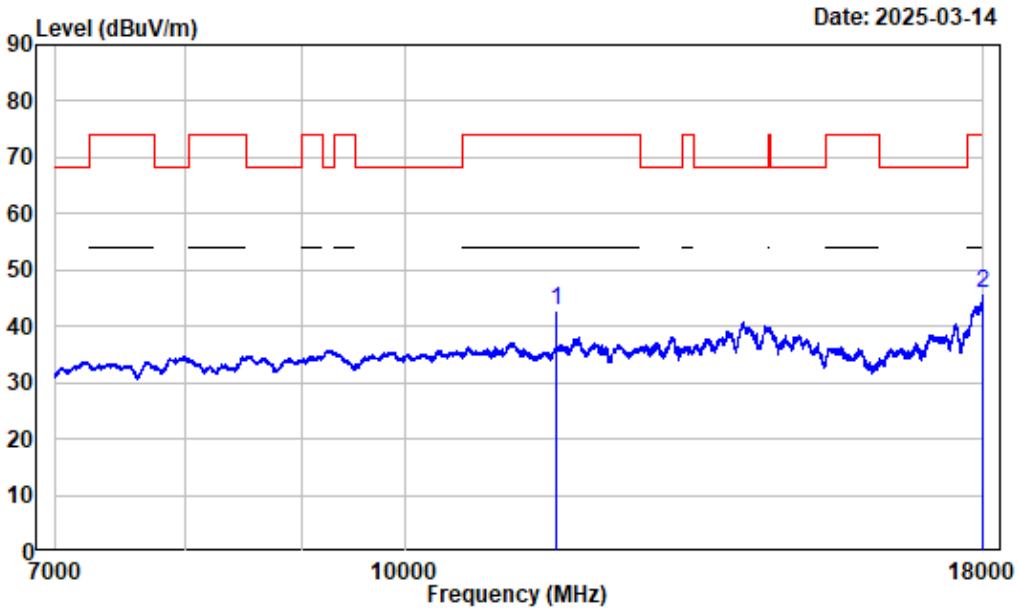
7-18GHz_Horizontal_Peak



Condition : Horizontal
Project No. : 2401Z47304E-RF
Tester : Wing K Ji
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	3.42	53.06	56.48	74.00	-17.52	Peak
2	17997.250	13.19	48.29	61.48	74.00	-12.52	Peak

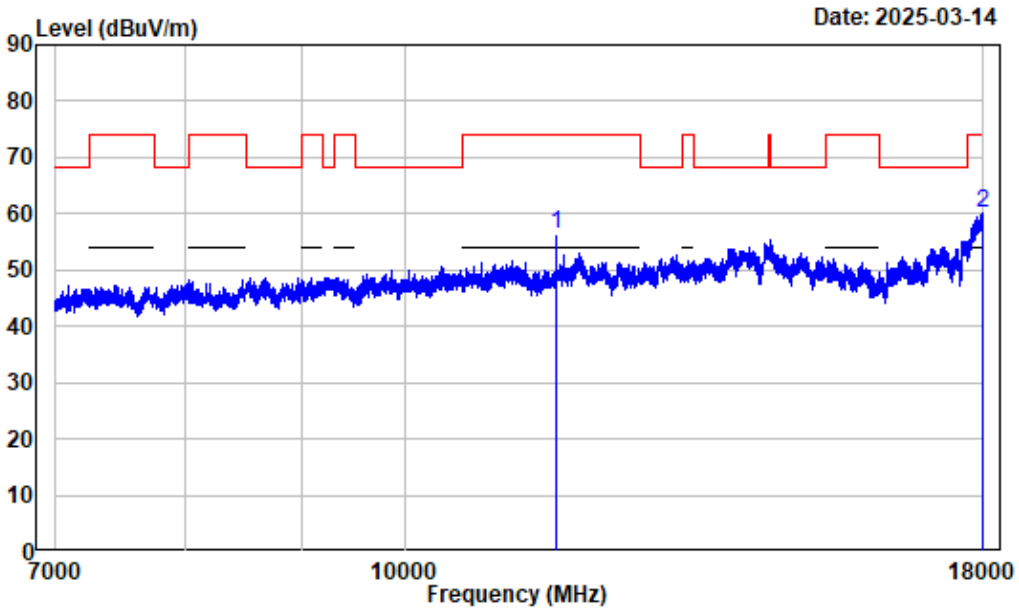
7-18GHz_Horizontal_Average



Condition : Horizontal
Project No. : 2401Z47304E-RF
Tester : Wing K Ji
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz 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	3.42	39.30	42.72	54.00	-11.28	Average
2	17998.630	13.19	32.81	46.00	54.00	-8.00	Average

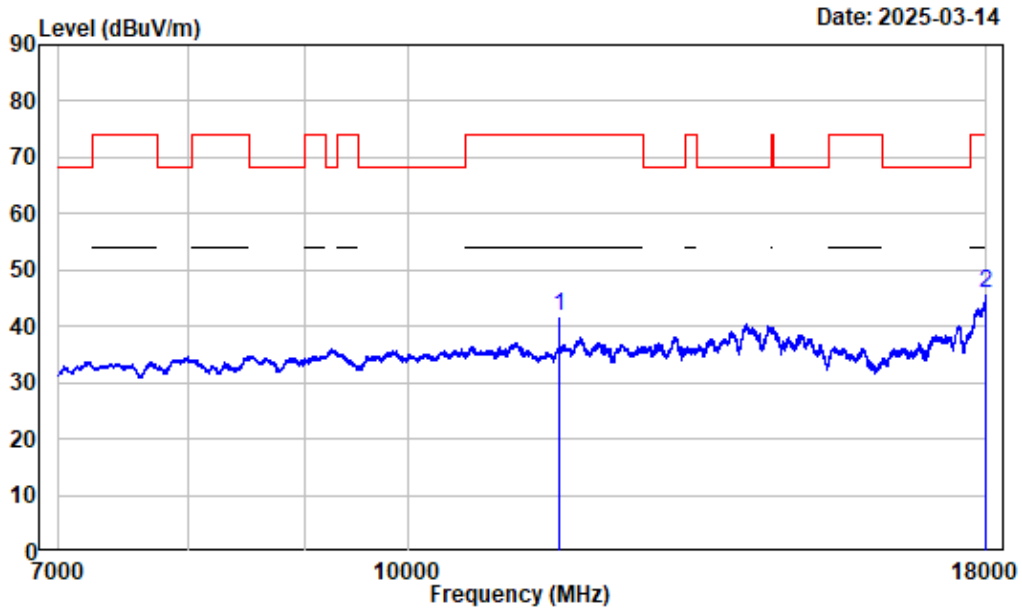
7-18GHz_Vertical_Peak



Condition : Vertical
Project No. : 2401Z47304E-RF
Tester : Wing K Ji
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	3.42	52.91	56.33	74.00	-17.67	Peak
2	17993.130	13.17	46.86	60.03	74.00	-13.97	Peak

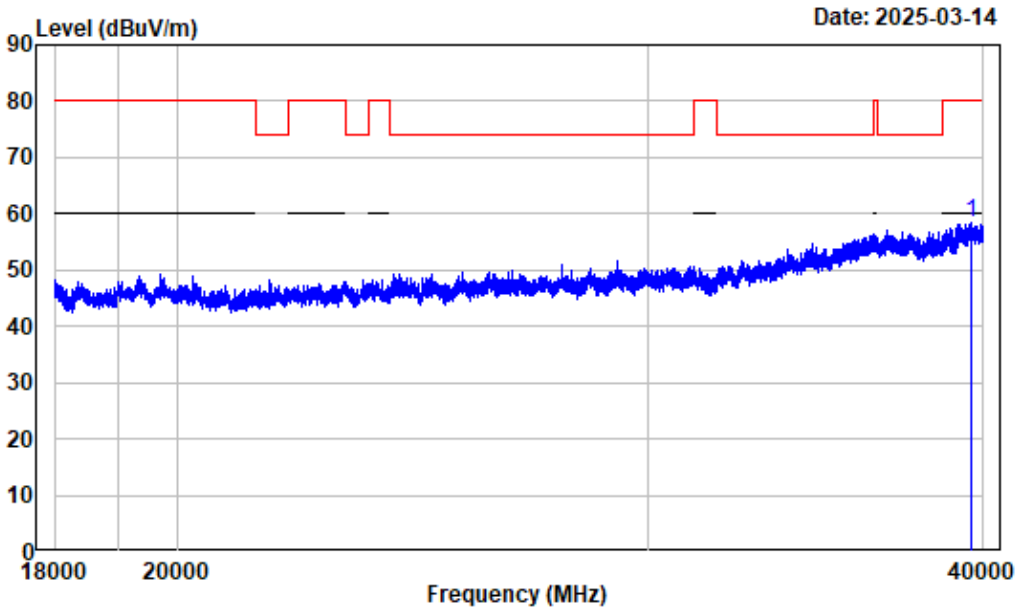
7-18GHz_Vertical_Average



Condition : Vertical
Project No. : 2401Z47304E-RF
Tester : Wing K Ji
Spectrum setting: Average reading:RBW:1MHz VBW:1kHz 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	3.42	38.51	41.93	54.00	-12.07	Average
2	17998.630	13.19	32.72	45.91	54.00	-8.09	Average

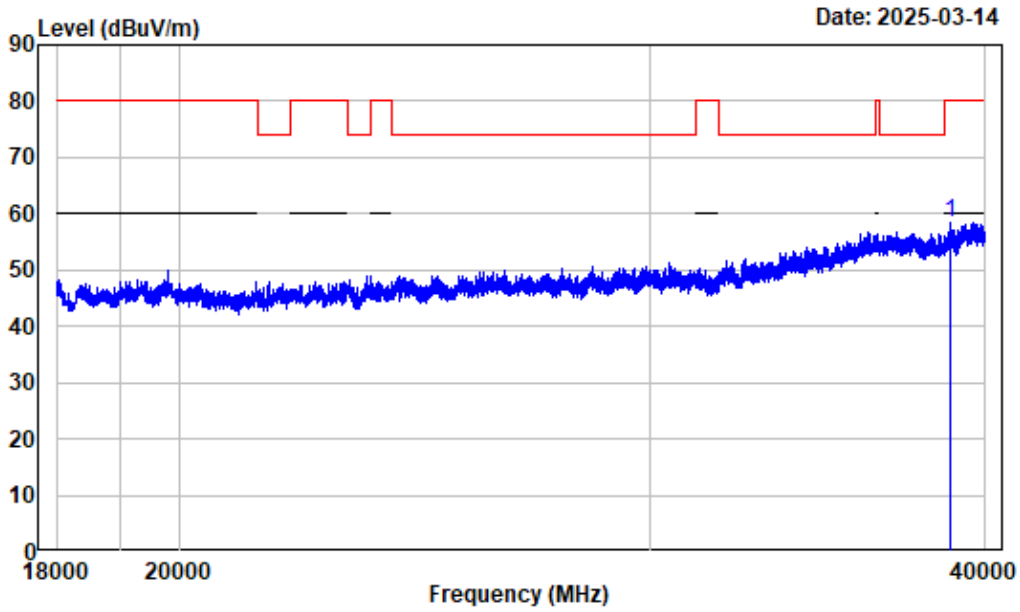
18-40GHz_Horizontal



Condition : Horizontal
Project No. : 2401Z47304E-RF
Tester : Wing K Ji
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	39565.450	22.74	35.58	58.32	80.00	-21.68	Peak

18-40GHz_Vertical



Condition : Vertical
Project No. : 2401Z47304E-RF
Tester : Wing K Ji
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	38839.360	21.67	36.79	58.46	80.00	-21.54	Peak

RF Conducted data

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

RF EXPOSURE EVALUATION

RF EXPOSURE

Applicable Standard

According to FCC §2.1093 and §1.1307(b) (1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

According to KDB 447498 D01 General RF Exposure Guidance v06.

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] • [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where
1. f(GHz) is the RF channel transmit frequency in GHz.
2. Power and distance are rounded to the nearest mW and mm before calculation.
3. The result is rounded to one decimal place for comparison.
4. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test Exclusion.

Measurement Result

For worst case:

Mode	Frequency (MHz)	Max tune-up conducted power[#](dBm)	Max tune-up conducted power[#](mW)	Distance (mm)	Calculated value	Threshold (1-g SAR)	SAR Test Exclusion
5.8G Wi-Fi	5745-5825	7.7	5.89	5	2.8	3.0	**Yes**

Result: Compliant

EUT PHOTOGRAPHS

Please refer to the attachment 2401Z47304E-RF-TX External photo and 2401Z47304E-RF-TX Internal photo.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2401Z47304E-RF-00 Test Setup photo.

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