TEST REPORT

Applicant Name:	M&M Electronics, S.A.
Address:	Cocosolito, Colon Free Zone, Main Entrance Warehouse 10D and 11D, Colon Panama
Report Number:	2401A37173E-RF-00B
FCC ID:	2BLU9-QA25I3

Test Standard (s)

FCC PART 15.407

Sample Description

Product Type:	ALL IN ONE PC
Model No.:	QA25I3GW8256
Multiple Model(s) No.:	N/A
Trade Mark:	COMPAQ
Date Received:	2024-12-19
Issue Date:	2025-01-17

Test Result:	Pass▲

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

Prepared and Checked By:

Ekko Wu
RF Engineer

Approved By:

Jimmy Xiao
EMC Manager

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

Bay Area Compliance Laboratories Corp. (Shenzhen)
5F(B-West) , 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, China
Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

TABLE OF CONTENTS

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	2401A37173E-RF-00B	Original Report	2025-01-17

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Frequency Range	5150-5250MHz; 5725-5850MHz
Mode	802.11a/n20/n40/ac20/ac40/ac80
Maximum Conducted Average Output Power	5150-5250MHz:12.76dBm 5725-5850MHz: 11.83dBm
Modulation Technique	OFDM
Antenna Specification#	5.22dBi for Ant 0 3.52dBi for Ant 1 (provided by the applicant)
Voltage Range	DC 19.0V from Adapter
Sample serial number	2W9C-9 for Conducted and Radiated Emissions Test 2W9C-2 for RF Conducted Test (Assigned by BACL, Shenzhen)
Sample/EUT Status	Good condition
Adapter Information	Model: SOY-1900474 Input: AC 100-240V,50/60Hz, 1.8A Max Output: DC 19.0V, 4.74A, 90.06W
Note: the EUT has two antennas which only support the SISO and share the same power level.	

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/n ht40/ac vht20/ac vht40/ac vht80, the 802.11 n ht20/n ht40 were reduced since the identical parameters with 802.11ac vht20 and vht40.

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

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

For 802.11a/ac20 mode: channel 36, 40, 48 were tested;
For 802.11ac40 mode: channel 38, 46 were tested;
For 802.11ac80 mode, channel 42 was tested.

For 5725-5850MHz Band, 8 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	157	5785
151	5755	159	5795
153	5765	161	5805
155	5775	165	5825

For 802.11a/ac20 mode: channel 149, 157, 165 were tested;
For 802.11ac40 mode: channel 151, 159 were tested;
For 802.11ac80 mode, channel 155 was tested.

EUT Exercise Software

Exercise Software#	MPTOOL			
5150-5250 MHz Band				
Mode	Test Channels	Data rate	**Power Level#**	
			Ant 0 (Chain 0)	Ant 1 (Chain 1)
802.11a	Low	6Mbps	38	38
	Middle	6Mbps	38	38
	High	6Mbps	38	38
802.11ac vht20	Low	MCS0	38	38
	Middle	MCS0	38	38
	High	MCS0	38	38
802.11ac vht40	Low	MCS0	38	38
	High	MCS0	38	38
802.11ac vht80	Middle	MCS0	38	38

5725-5850 MHz Band				
Mode	Test Channels	Data rate	Power Level#	
			Ant 0 (Chain 0)	Ant 1 (Chain 1)
802.11a	Low	6Mbps	38	38
	Middle	6Mbps	38	38
	High	6Mbps	38	38
802.11ac vht20	Low	MCS0	38	38
	Middle	MCS0	38	38
	High	MCS0	38	38
802.11ac vht40	Low	MCS0	38	38
	High	MCS0	38	38
802.11ac vht80	Middle	MCS0	38	38

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

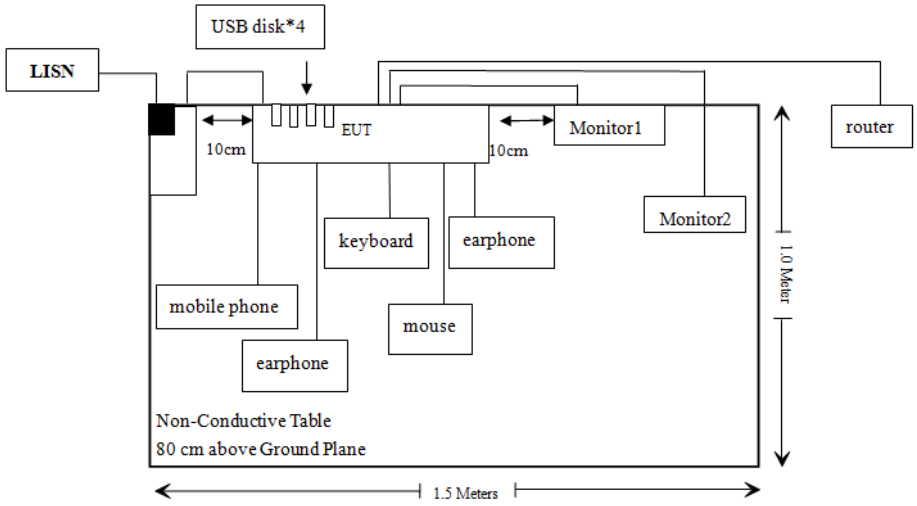
Manufacturer	Description	Model	Serial Number
Redmi	Monitor1	RMMNT238NF	6971041358020
Redmi	Monitor2	A22FAB-RA	DL0ZCS1
TOTOLINK	router	T6	X7D-IP04338
Unknown	Earphone*2	Unknown	Unknown
Unknown	USB disk*4pcs	Unknown	Unknown

External I/O Cable

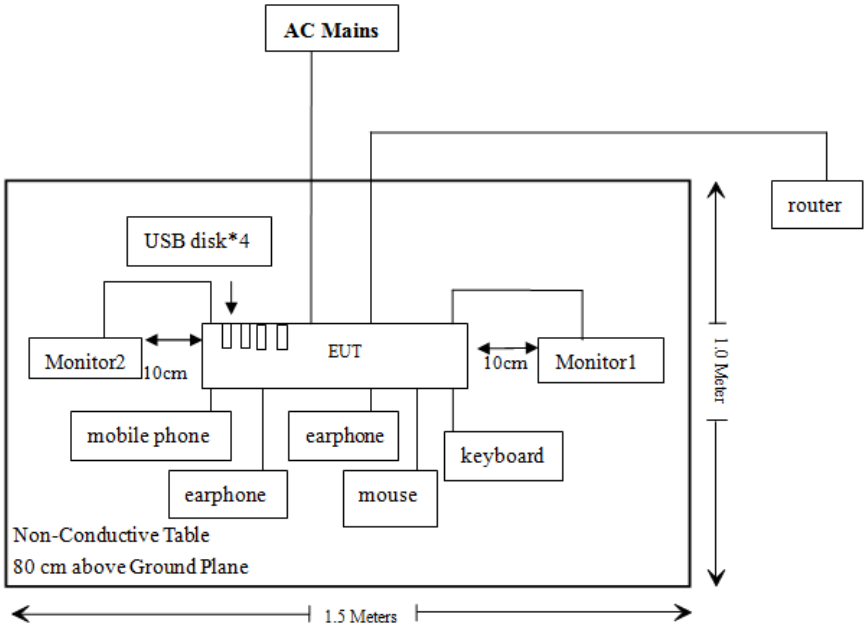
Cable Description	Length (m)	From Port	To
Shielded un-detachable DC cable	1.5	EUT	Adapter
Unshielded detachable AC cable	1.5	Adapter	LISN
Unshielded un-detachable earphone cable	1.2	EUT	earphone
Unshielded un-detachable USB cable	1.5	EUT	mouse
Unshielded un-detachable USB cable	1.5	EUT	keyboard
Unshielded detachable HDMI cable	2	EUT	Monitor1
Unshielded detachable VGA cable	2	EUT	Monitor2
Unshielded detachable RJ45 cable	5	EUT	router

Block Diagram of Test Setup

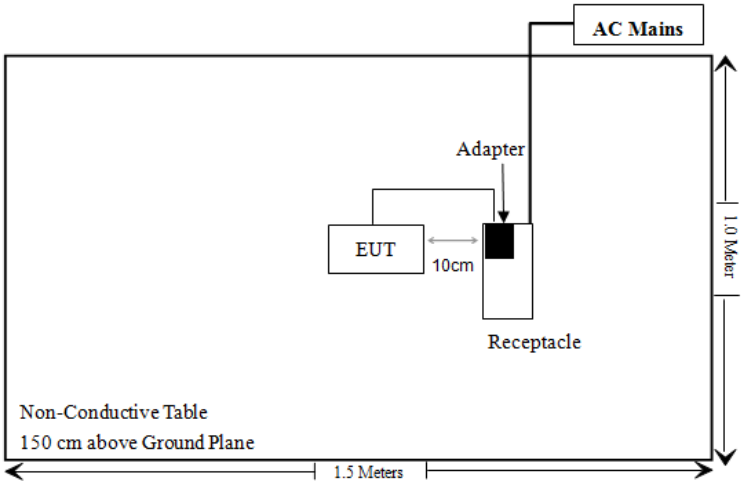
For Conducted Emissions:



For Radiated Emissions below 1GHz:



For Radiated Emissions above 1GHz:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.203	Antenna Requirement	Compliant
§15.407(b)(9)& §15.207(a)	Conducted Emissions	Compliant
§15.205& §15.209 &§15.407(b)	Undesirable Emission& Restricted Bands	Compliant
§15.407(a) (e)	26 dB Emission Bandwidth & 6dB Bandwidth	Compliant
§15.407(a)	Conducted Transmitter Output Power	Compliant
§15.407 (a)	Power Spectral Density	Compliant
§15.407 (h)	Transmit Power Control (TPC)	Not Applicable
§15.407 (h)	Dynamic Frequency Selection (DFS)	Not Applicable
C63.10 §11.6	Duty Cycle	/
§1.1307 (b) (3) & §2.1091	MPE-Based Exemption	Compliant

Not Applicable: The device operates only on 5150-5250MHz and 5725-5850MHz.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2024/12/04	2025/12/03
Rohde & Schwarz	LISN	ENV216	101613	2024/12/04	2025/12/03
Rohde & Schwarz	Transient Limiter	ESH3Z2	DE25985	2024/05/21	2025/05/20
Unknown	CE Cable	Unknown	UF A210B-1-0720-504504	2024/05/21	2025/05/20
Audix	EMI Test software	E3	191218(V9)	NCR	NCR
Radiated Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESR3	102455	2024/12/04	2025/12/03
Sonoma instrument	Pre-amplifier	310 N	186238	2024/05/21	2025/05/20
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2026/07/19
Unknown	Cable	Chamber A Cable 1	N/A	2024/06/18	2025/06/17
Unknown	Cable	XH500C	J-10M-A	2024/06/18	2025/06/17
BACL	Active Loop Antenna	1313-1A	4031911	2024/05/14	2027/05/13
Unknown	Cable	2Y194	0735	2024/12/04	2025/12/03
Unknown	Cable	PNG214	1354	2024/12/04	2025/12/03
Audix	EMI Test software	E3	19821b(V9)	NCR	NCR
Rohde & Schwarz	Spectrum Analyzer	FSV40	101605	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	735	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
Rohde & Schwarz	Spectrum Analyzer	FSV40	101605	2024/03/27	2025/03/26
A.H.System	Pre-amplifier	PAM-1840VH	190	2024/06/18	2025/06/17
Electro-Mechanics Co	Horn Antenna	3116	9510-2270	2023/09/18	2026/09/17
UTIFLEX	RF Cable	NO. 13	232308-001	2024/12/18	2025/12/17
Audix	EMI Test software	E3	191218(V9)	NCR	NCR

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
ANRITSU	Microwave peak power sensor	MA24418A	12622	2024/05/21	2025/05/20
Rohde & Schwarz	Spectrum Analyzer	FSV40	101473	2024/12/04	2025/12/03
MARCONI	10dB Attenuator	6534/3	2942	2024/06/27	2025/06/26

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

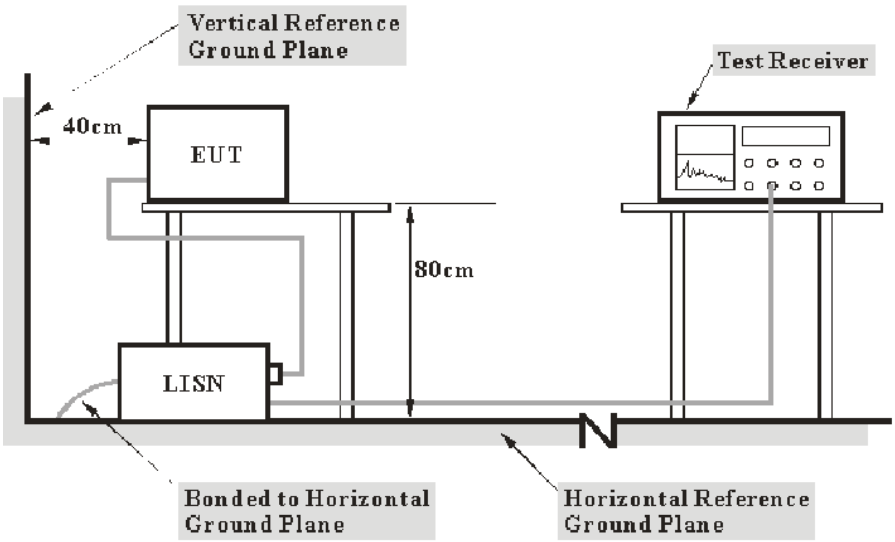
REQUIREMENTS AND TEST PROCEDURES

Conducted Emissions

Applicable Standard

FCC §15.207, §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

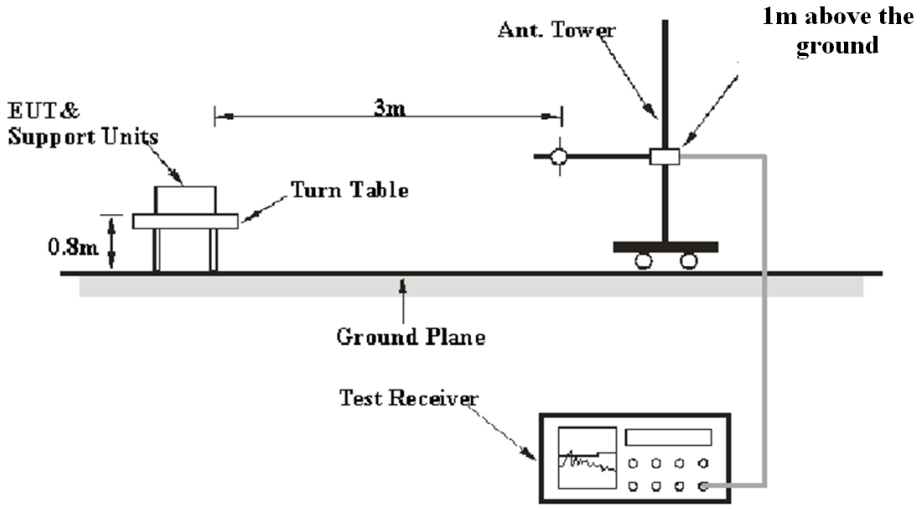
FCC §15.407 (b); §15.209; §15.205;

(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.

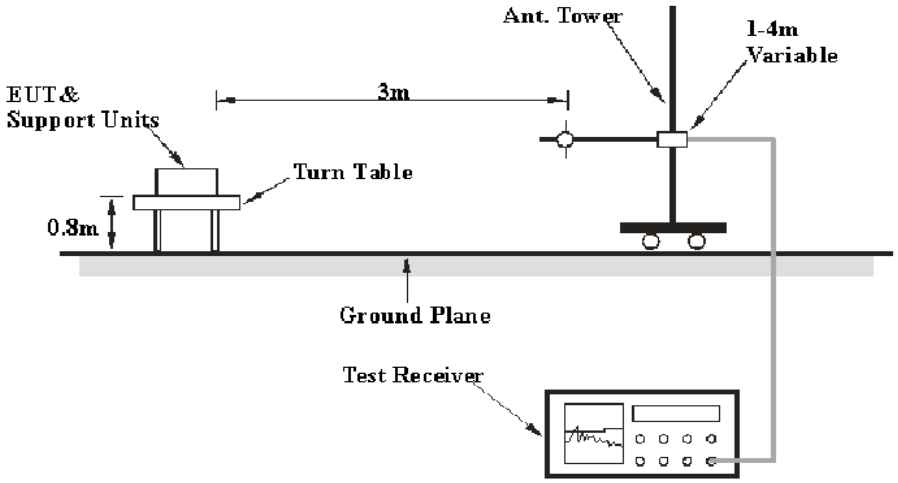
Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

EUT Setup

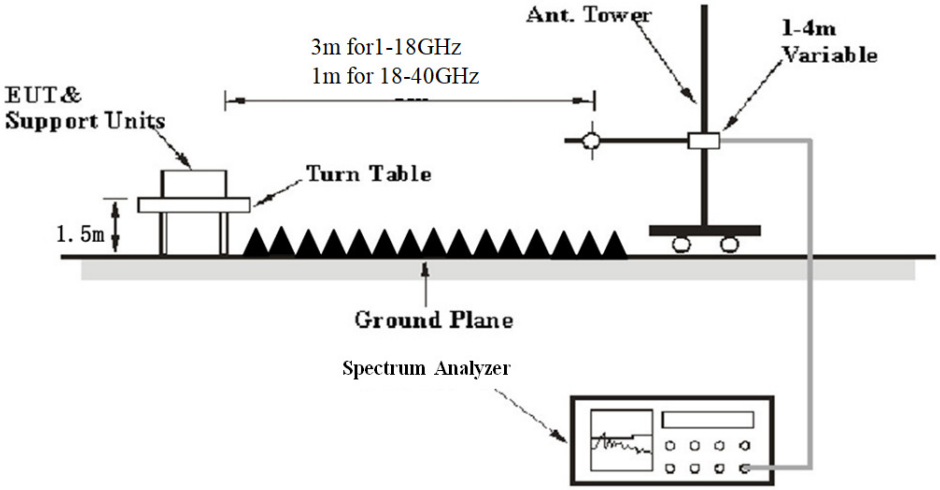
9 kHz-30MHz:



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
9 kHz – 150 kHz	/	/	200 Hz	QP
	300 Hz	1 kHz	/	PK
150 kHz – 30 MHz	/	/	9 kHz	QP
	10 kHz	30 kHz	/	PK
30 MHz – 1000 MHz	/	/	120 kHz	QP
	100 kHz	300 kHz	/	PK

1-40GHz:

Pre-scan

Measurement	Duty cycle	RBW	Video B/W
PK	Any	1MHz	3 MHz
AV	>98%	1MHz	5 kHz
	<98%	1MHz	≥1/Ton, not less than 5 kHz

Final measurement for emission identified during pre-scan

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

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(1/3)= -9.5 dB, for 18-40GHz range, the limit of 1m distance was added by 9.5dB from limit of 3m to compared with the result measurement at 1m 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%.

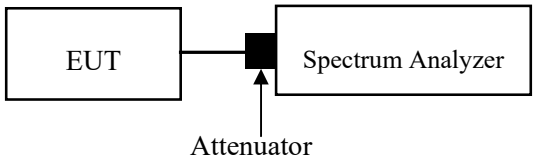
2. Minimum Emission Bandwidth for the band 5.725-5.85 GHz
Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.725-5.85 GHz. The following procedure shall be used for measuring this bandwidth:
a) Set RBW = 100 kHz.
b) Set the video bandwidth (VBW) ≥ 3 × RBW.
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.

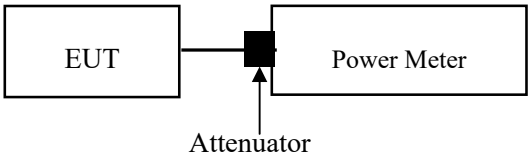
For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 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%

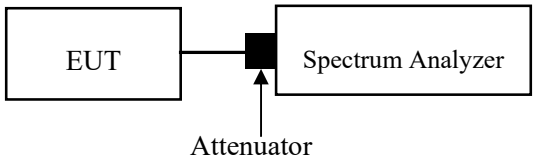
KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Method SA-1 should be applied.

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.



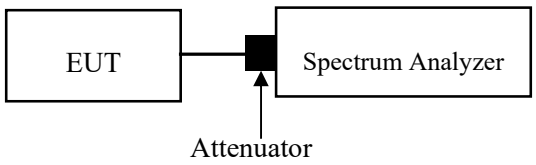
Note: A short RF cable with low cable loss connected to the EUT antenna port,which was provided by client or lab, the cable loss was add with offset into test equipment, the total offset consists of attenuator and/or RF cable and/or power splitter loss

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 two internal antennas arrangement, which were permanently attached, the maximum antenna gain[#] is 5.22dBi for Ant 0 and 3.52dBi for Ant 1, fulfill the requirement of this section. Please refer to the EUT photos.

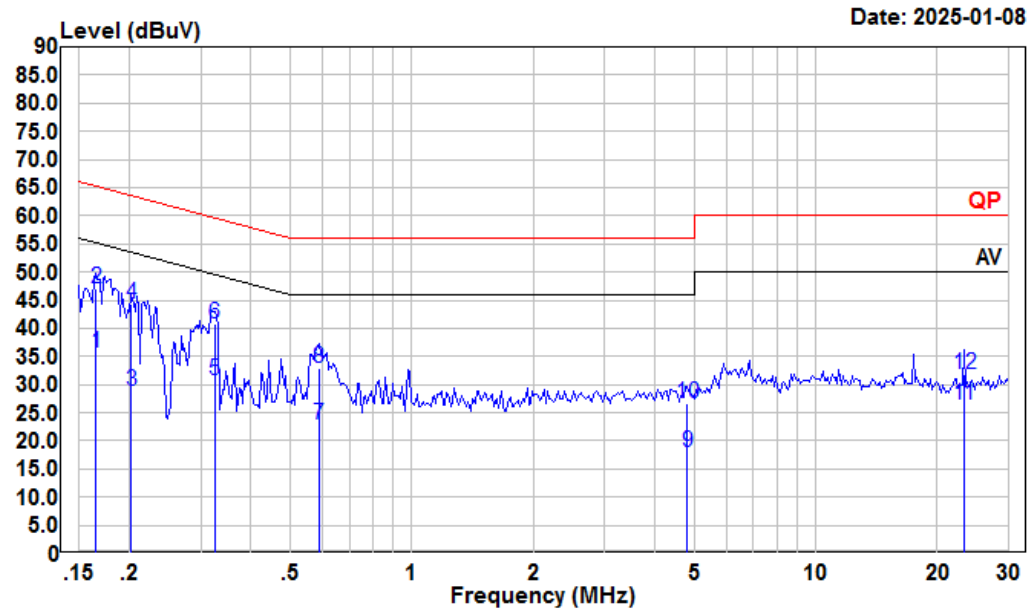
Result: Compliant

TEST DATA AND RESULTS

Conducted Emissions

Temperature (℃)	22.8	**Relative Humidity (%)**	43
ATM Pressure (kPa)	101-103	**Test engineer**	Macy Shi
Test date	2025/01/08		
EUT operation mode	Transmitting (Maximum output power mode, Ant 0 802.11ac40 5230MHz)		

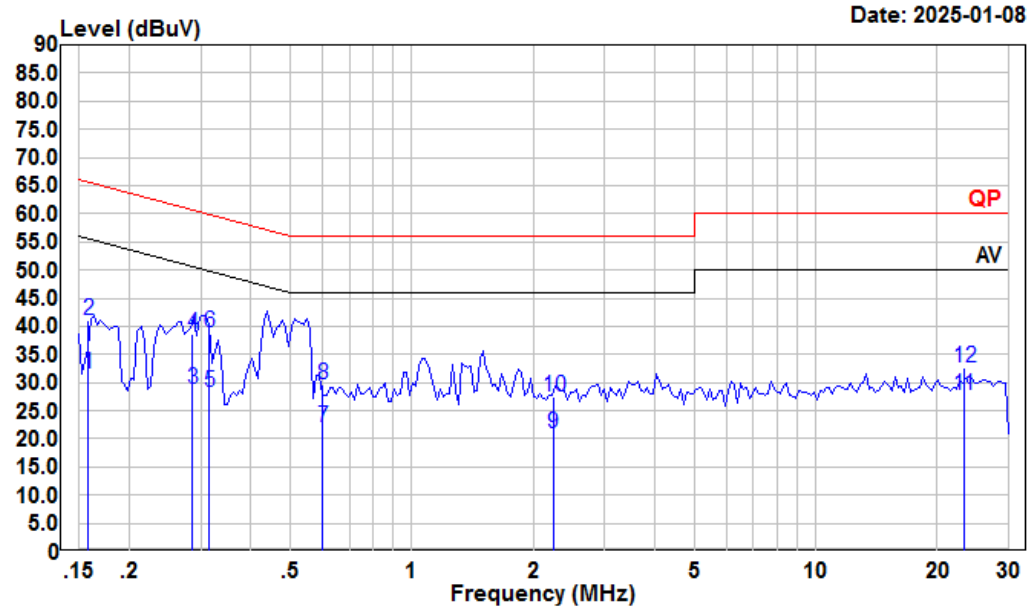
AC 120V 60 Hz, Line



Condition: Line
Project : 2401A37173E-RF
tester : Macy.shi Note:Transmitting
Setting : RBW:9kHz VBW:Auto SWT:Auto

	Freq	Read Level	Level	LISN Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.165	15.52	35.73	10.10	10.11	55.21	-19.48	Average
2	0.165	26.96	47.17	10.10	10.11	65.21	-18.04	QP
3	0.202	8.93	28.93	9.91	10.09	53.54	-24.61	Average
4	0.202	24.21	44.21	9.91	10.09	63.54	-19.33	QP
5	0.325	10.39	30.73	10.22	10.12	49.57	-18.84	Average
6	0.325	20.57	40.91	10.22	10.12	59.57	-18.66	QP
7	0.589	2.19	22.91	10.60	10.12	46.00	-23.09	Average
8	0.589	12.23	32.95	10.60	10.12	56.00	-23.05	QP
9	4.797	-2.37	18.01	10.19	10.19	46.00	-27.99	Average
10	4.797	6.22	26.60	10.19	10.19	56.00	-29.40	QP
11	23.263	5.73	26.27	10.36	10.18	50.00	-23.73	Average
12	23.263	11.31	31.85	10.36	10.18	60.00	-28.15	QP

AC 120V 60 Hz, Neutral



Condition: Neutral
Project : 2401A37173E-RF
tester : Macy.shi Note:Transmitting
Setting : RBW:9kHz VBW:Auto SWT:Auto

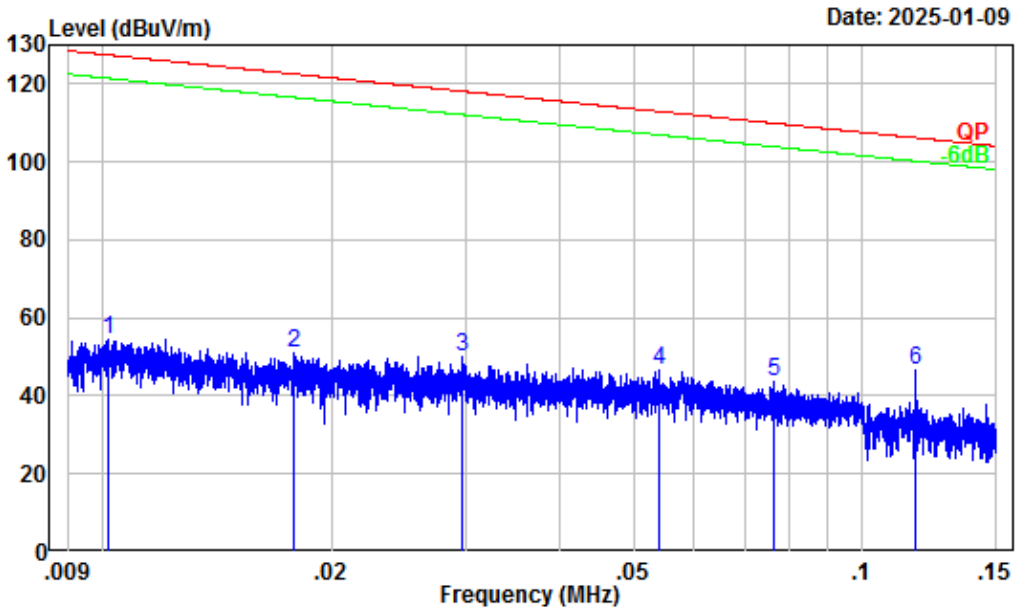
	Freq	Read Level	LISN Level	Cable Factor	Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.158	11.15	31.53	10.26	10.12	55.56	-24.03	Average
2	0.158	20.62	41.00	10.26	10.12	65.56	-24.56	QP
3	0.286	8.49	28.89	10.30	10.10	50.63	-21.74	Average
4	0.286	18.25	38.65	10.30	10.10	60.63	-21.98	QP
5	0.315	7.95	28.41	10.35	10.11	49.84	-21.43	Average
6	0.315	18.32	38.78	10.35	10.11	59.84	-21.06	QP
7	0.601	1.44	22.11	10.55	10.12	46.00	-23.89	Average
8	0.601	8.93	29.60	10.55	10.12	56.00	-26.40	QP
9	2.237	0.63	21.08	10.27	10.18	46.00	-24.92	Average
10	2.237	6.93	27.38	10.27	10.18	56.00	-28.62	QP
11	23.263	7.38	27.83	10.27	10.18	50.00	-22.17	Average
12	23.263	12.16	32.61	10.27	10.18	60.00	-27.39	QP

Undesirable Emission

Temperature (℃)	23.3~23.5	**Relative Humidity (%)**	40~39
ATM Pressure (kPa):	101.4~101.1	**Test engineer:**	Jack Liu & Dylan Yang
Test date:	2025/01/09 ~2025/01/12		
EUT operation mode:	Below 1GHz: Transmitting(Maximum output power mode, 802.11ac40 5230MHz) Above 1GHz: Transmitting		
Note:	1. For the radiated spurious emission below 30MHz, only the worst case (parallel) was recorded. 2. For the radiated spurious emission below 30MHz, When the test result of peak was less than the limit of QP/Average more than 6dB, just peak value were recorded. 3. After pre-scan in the X, Y and Z axes of orientation, the worst case z-axis of orientation were recorded.		

Below 1GHz:

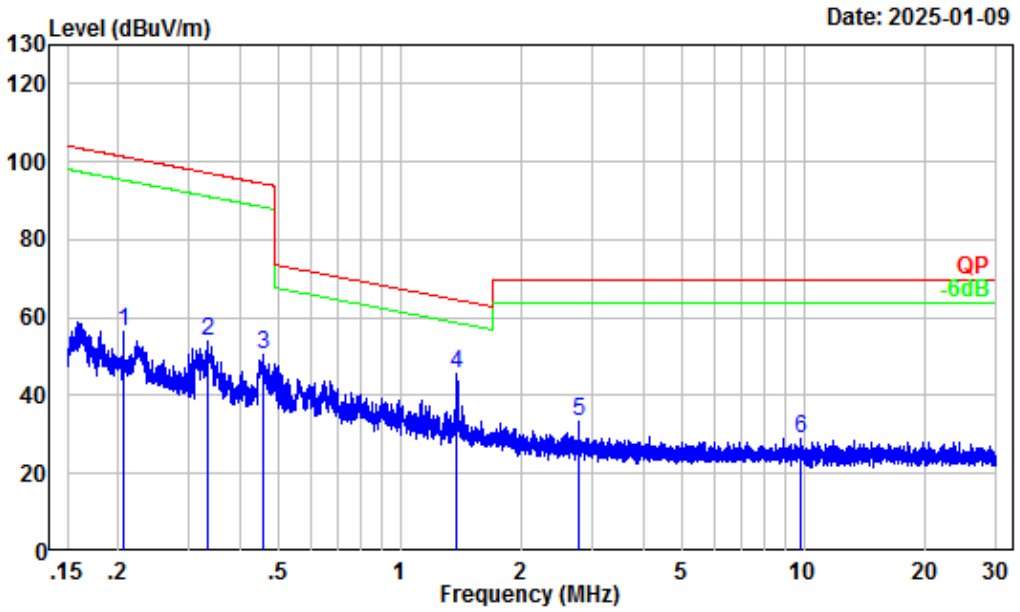
9kHz-150kHz_Ant 0



Site : Chamber A
Condition : 3m
Project Number: 2401A37173E-RF
Test Mode : Transmitting
Setting QP RBW: 0.3KHz VBW: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	32.26	22.18	54.44	127.44	-73.00	Peak
2	0.02	30.81	20.14	50.95	122.58	-71.63	Peak
3	0.03	28.55	21.70	50.25	118.14	-67.89	Peak
4	0.05	26.00	20.70	46.70	112.95	-66.25	Peak
5	0.08	23.77	20.03	43.80	109.95	-66.15	Peak
6	0.12	20.97	25.45	46.42	106.21	-59.79	Peak

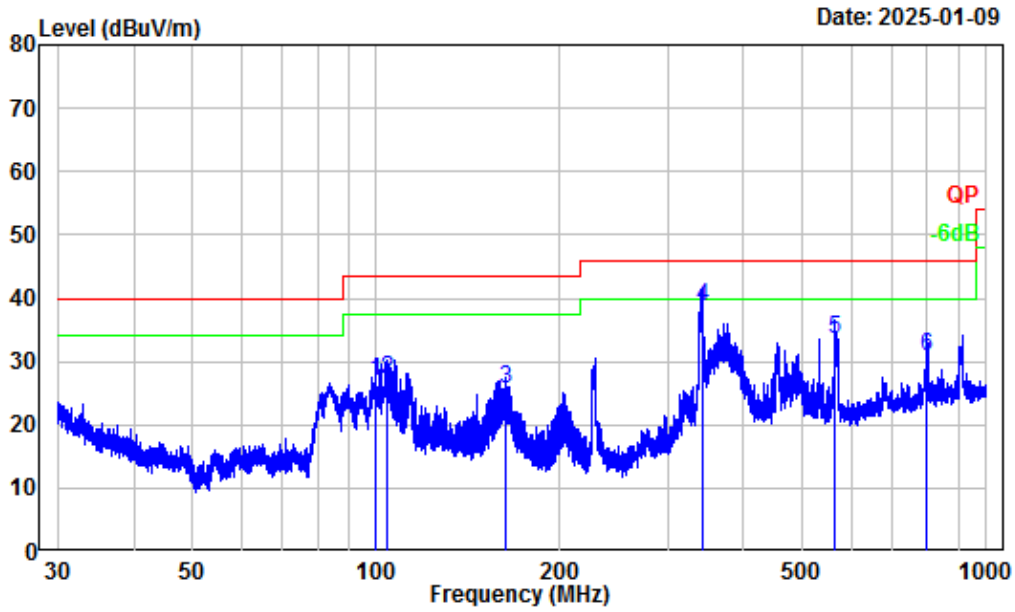
150kHz-30MHz_Ant 0



Site : Chamber A
Condition : 3m
Project Number: 2401A37173E-RF
Test Mode : Transmitting
Setting QP RBW: 10KHz VBW:30KHz
Tester : Jack Liu

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.21	15.71	40.61	56.32	101.30	-44.98	Peak
2	0.33	9.54	44.20	53.74	97.12	-43.38	Peak
3	0.46	7.23	43.28	50.51	94.42	-43.91	Peak
4	1.38	0.13	45.41	45.54	64.60	-19.06	Peak
5	2.76	-2.02	35.34	33.32	69.54	-36.22	Peak
6	9.87	-2.81	31.96	29.15	69.54	-40.39	Peak

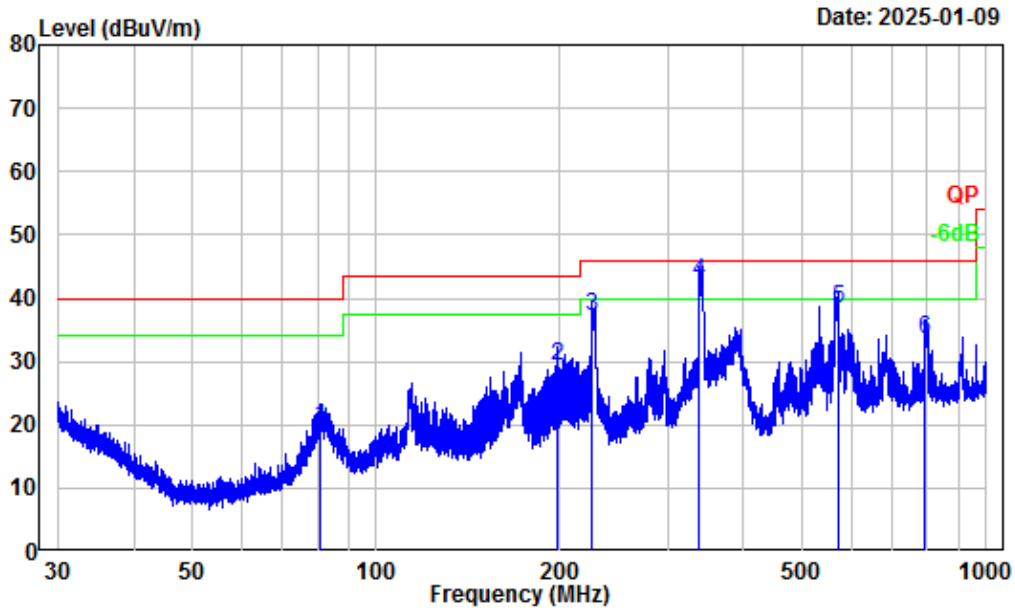
30MHz-1GHz_Horizontal Ant_0



Site : Chamber A
Condition : 3m Vertical
Project Number: 2401A37173E-RF
Test Mode : Transmitting
Setting QP RBW: 120KHz
Tester : Jack Liu

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	99.70	-15.98	42.97	26.99	43.50	-16.51	QP
2	104.44	-14.56	41.60	27.04	43.50	-16.46	QP
3	162.68	-12.78	38.32	25.54	43.50	-17.96	QP
4	343.48	-10.32	49.04	38.72	46.00	-7.28	QP
5	564.39	-5.24	38.76	33.52	46.00	-12.48	QP
6	797.93	-2.18	33.11	30.93	46.00	-15.07	QP

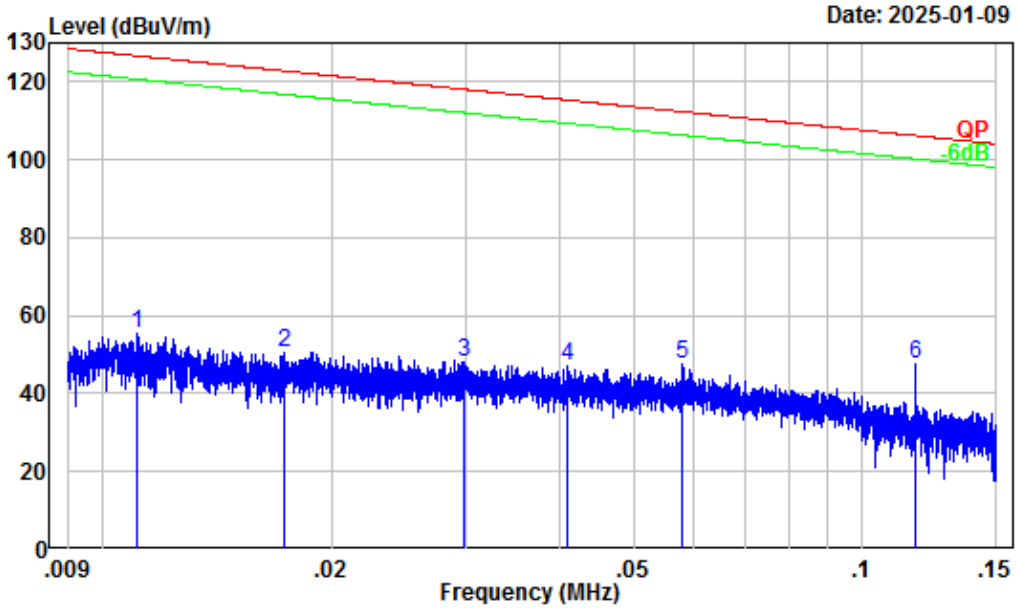
30MHz-1GHz_Vertical_Ant 0



Site : Chamber A
Condition : 3m Horizontal
Project Number: 2401A37173E-RF
Test Mode : Transmitting
Setting QP RBW: 120KHz
Tester : Jack Liu

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	80.68	-17.97	37.67	19.70	40.00	-20.30	QP
2	198.50	-13.20	42.37	29.17	43.50	-14.33	QP
3	225.80	-14.04	51.23	37.19	46.00	-8.81	QP
4	338.55	-10.45	53.12	42.67	46.00	-3.33	QP
5	572.87	-5.25	43.56	38.31	46.00	-7.69	QP
6	789.93	-2.25	35.77	33.52	46.00	-12.48	QP

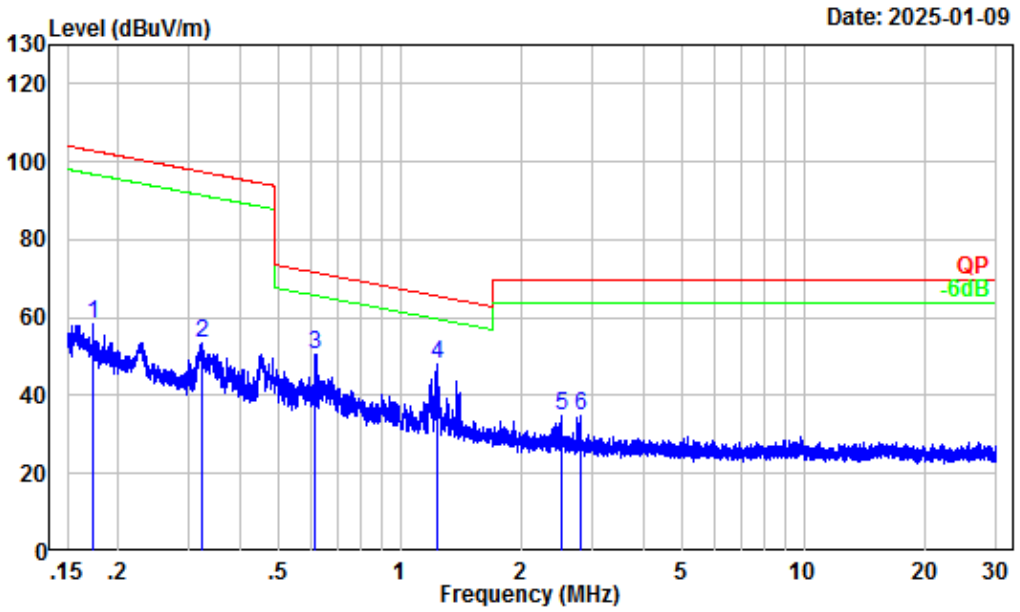
9kHz-150kHz_Ant 1



Site : Chamber A
Condition : 3m
Project Number: 2401A37173E-RF
Test Mode : Transmitting
Setting QP RBW: 0.3KHz VBW: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	32.08	23.51	55.59	126.67	-71.08	Peak
2	0.02	30.90	19.58	50.48	122.80	-72.32	Peak
3	0.03	28.53	19.48	48.01	118.10	-70.09	Peak
4	0.04	27.36	19.72	47.08	115.39	-68.31	Peak
5	0.06	25.59	21.91	47.50	112.33	-64.83	Peak
6	0.12	20.97	26.58	47.55	106.21	-58.66	Peak

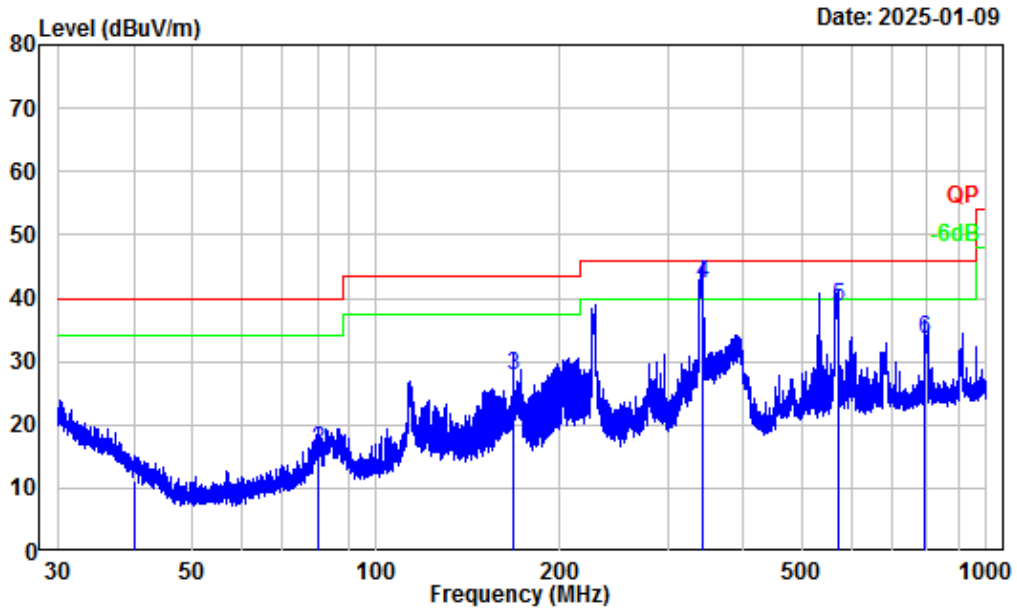
150kHz-30MHz_Ant 1



Site : Chamber A
Condition : 3m
Project Number: 2401A37173E-RF
Test Mode : Transmitting
Setting QP RBW: 10KHz VBW:30KHz
Tester : Jack Liu

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.17	17.66	40.58	58.24	102.81	-44.57	Peak
2	0.32	9.77	43.57	53.34	97.43	-44.09	Peak
3	0.62	4.94	45.82	50.76	71.74	-20.98	Peak
4	1.23	0.54	47.55	48.09	65.60	-17.51	Peak
5	2.51	-1.88	36.86	34.98	69.54	-34.56	Peak
6	2.80	-2.04	36.93	34.89	69.54	-34.65	Peak

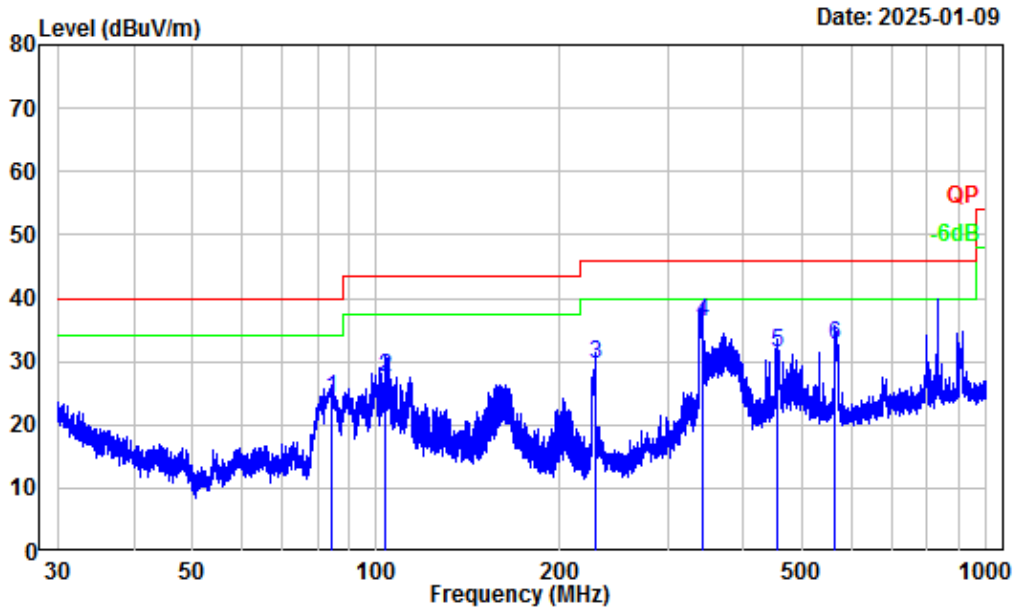
30MHz-1GHz_Horizontal_Ant 1



Site : Chamber A
Condition : 3m Horizontal
Project Number: 2401A37173E-RF
Test Mode : Transmitting
Setting QP RBW: 120KHz
Tester : Jack Liu

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	40.10	-12.44	23.48	11.04	40.00	-28.96	QP
2	80.22	-17.92	33.81	15.89	40.00	-24.11	QP
3	167.31	-13.01	40.90	27.89	43.50	-15.61	QP
4	343.31	-10.32	52.70	42.38	46.00	-3.62	QP
5	572.11	-5.25	43.80	38.55	46.00	-7.45	QP
6	789.93	-2.25	35.76	33.51	46.00	-12.49	QP

30MHz-1GHz_Vertical_Ant 1



Site : Chamber A
Condition : 3m Vertical
Project Number: 2401A37173E-RF
Test Mode : Transmitting
Setting QP RBW: 120KHz
Tester : Jack Liu

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	84.18	-18.08	42.27	24.19	40.00	-15.81	QP
2	103.26	-14.95	42.50	27.55	43.50	-15.95	QP
3	228.89	-13.90	43.39	29.49	46.00	-16.51	QP
4	342.58	-10.34	46.44	36.10	46.00	-9.90	QP
5	452.92	-7.39	38.89	31.50	46.00	-14.50	QP
6	565.88	-5.25	37.94	32.69	46.00	-13.31	QP

Above 1GHz:

5150-5250 MHz

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
Ant 0 802.11a							
Low Channel							
5150	66.10	PK	H	-7.45	58.65	74	-15.35
5150	54.06	AV	H	-7.45	46.61	54	-7.39
5150	65.70	PK	V	-7.45	58.25	74	-15.75
5150	54.51	AV	V	-7.45	47.06	54	-6.94
10360	51.37	PK	H	2.53	53.9	68.20	-14.30
10360	51.45	PK	V	2.53	53.98	68.20	-14.22
Middle Channel							
10400	52.13	PK	H	2.55	54.68	68.20	-13.52
10400	52.49	PK	V	2.55	55.04	68.20	-13.16
High Channel							
5150	65.10	PK	H	-6.74	58.36	74	-15.64
5150	52.25	AV	H	-6.74	45.51	54	-8.49
5150	65.49	PK	V	-6.74	58.75	74	-15.25
5150	52.47	AV	V	-6.74	45.73	54	-8.27
10360	52.40	PK	H	2.25	54.65	68.20	-13.55
10360	52.09	PK	V	2.25	54.34	68.20	-13.86
Ant 1 802.11a							
Low Channel							
5150	66.66	PK	H	-7.45	59.21	74	-14.79
5150	54.39	AV	H	-7.45	46.94	54	-7.06
5150	66.29	PK	V	-7.45	58.84	74	-15.16
5150	54.72	AV	V	-7.45	47.27	54	-6.73
10360	51.88	PK	H	2.53	54.41	68.20	-13.79
10360	51.72	PK	V	2.53	54.25	68.20	-13.95
Middle Channel							
10400	51.94	PK	H	2.55	54.49	68.20	-13.71
10400	51.86	PK	V	2.55	54.41	68.20	-13.79
High Channel							
5350	67.09	PK	H	-6.74	60.35	74	-13.65
5350	54.39	AV	H	-6.74	47.65	54	-6.35
5350	66.50	PK	V	-6.74	59.76	74	-14.24
5350	53.42	AV	V	-6.74	46.68	54	-7.32
10480	52.12	PK	H	2.25	54.37	68.20	-13.83
10480	52.05	PK	V	2.25	54.3	68.20	-13.90

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	PK/Ave					
Ant 0 802.11ac20							
Low Channel							
5150	65.80	PK	H	-7.45	58.35	74	-15.65
5150	53.76	AV	H	-7.45	46.31	54	-7.69
5150	66.13	PK	V	-7.45	58.68	74	-15.32
5150	54.99	AV	V	-7.45	47.54	54	-6.46
10360	52.60	PK	H	2.53	55.13	68.20	-13.07
10360	52.13	PK	V	2.53	54.66	68.20	-13.54
Middle Channel							
10400	52.44	PK	H	2.55	54.99	68.20	-13.21
10400	51.89	PK	V	2.55	54.44	68.20	-13.76
High Channel							
5350	65.95	PK	H	-6.74	59.21	74	-14.79
5350	52.38	AV	H	-6.74	45.64	54	-8.36
5350	65.38	PK	V	-6.74	58.64	74	-15.36
5350	53.06	AV	V	-6.74	46.32	54	-7.68
10480	51.87	PK	H	2.25	54.12	68.2	-14.08
10480	51.90	PK	V	2.25	54.15	68.2	-14.05
Ant 1 802.11ac20							
Low Channel							
5150	68.68	PK	H	-7.45	61.23	74	-12.77
5150	54.63	AV	H	-7.45	47.18	54	-6.82
5150	65.81	PK	V	-7.45	58.36	74	-15.64
5150	54.64	AV	V	-7.45	47.19	54	-6.81
10360	53.03	PK	H	2.53	55.56	68.20	-12.64
10360	51.64	PK	V	2.53	54.17	68.20	-14.03
Middle Channel							
10400	51.91	PK	H	2.55	54.46	68.20	-13.74
10400	51.73	PK	V	2.55	54.28	68.20	-13.92
High Channel							
5350	66.10	PK	H	-6.74	59.36	74	-14.64
5350	53.91	AV	H	-6.74	47.17	54	-6.83
5350	66.39	PK	V	-6.74	59.65	74	-14.35
5350	53.12	AV	V	-6.74	46.38	54	-7.62
10480	51.49	PK	H	2.25	53.74	68.20	-14.46
10480	51.59	PK	V	2.25	53.84	68.20	-14.36

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	PK/Ave					
Ant 0 802.11ac40							
Low Channel							
5150	67.10	PK	H	-7.45	59.65	74	-14.35
5150	54.10	AV	H	-7.45	46.65	54	-7.35
5150	66.40	PK	V	-7.45	58.95	74	-15.05
5150	53.77	AV	V	-7.45	46.32	54	-7.68
10380	52.64	PK	H	2.54	55.18	68.2	-13.02
10380	52.27	PK	V	2.54	54.81	68.2	-13.39
High Channel							
5350	66.28	PK	H	-6.74	59.54	74	-14.46
5350	52.36	AV	H	-6.74	45.62	54	-8.38
5350	65.49	PK	V	-6.74	58.75	74	-15.25
5350	53.41	AV	V	-6.74	46.67	54	-7.33
10460	52.80	PK	H	2.32	55.12	68.2	-13.08
10460	52.27	PK	V	2.32	54.59	68.2	-13.61
Ant 1 802.11ac40							
Low Channel							
5150	67.13	PK	H	-7.45	59.68	74	-14.32
5150	54.91	AV	H	-7.45	47.46	54	-6.54
5150	67.77	PK	V	-7.45	60.32	74	-13.68
5150	55.59	AV	V	-7.45	48.14	54	-5.86
10380	51.85	PK	H	2.54	54.39	68.20	-13.81
10380	51.75	PK	V	2.54	54.29	68.20	-13.91
High Channel							
5350	66.20	PK	H	-6.74	59.46	74	-14.54
5350	53.69	AV	H	-6.74	46.95	54	-7.05
5350	66.38	PK	V	-6.74	59.64	74	-14.36
5350	53.79	AV	V	-6.74	47.05	54	-6.95
10460	52.73	PK	H	2.32	55.05	68.20	-13.15
10460	51.72	PK	V	2.32	54.04	68.20	-14.16

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
ANT0 802.11ac80							
Middle Channel							
5150	65.71	PK	H	-7.45	58.26	74	-15.74
5150	53.77	AV	H	-7.45	46.32	54	-7.68
5150	66.06	PK	V	-7.45	58.61	74	-15.39
5150	54.66	AV	V	-7.45	47.21	54	-6.79
5350	66.10	PK	H	-6.74	59.36	74	-14.64
5350	51.88	AV	H	-6.74	45.14	54	-8.86
5350	65.95	PK	V	-6.74	59.21	74	-14.79
5350	53.35	AV	V	-6.74	46.61	54	-7.39
10420	51.87	PK	H	2.48	54.35	68.2	-13.85
10420	52.71	PK	V	2.48	55.19	68.2	-13.01
Ant 1 802.11ac80							
Middle Channel							
5150	67.60	PK	H	-7.45	60.15	74	-13.85
5150	55.57	AV	H	-7.45	48.12	54	-5.88
5150	67.93	PK	V	-7.45	60.48	74	-13.52
5150	55.09	AV	V	-7.45	47.64	54	-6.36
5350	68.00	PK	H	-6.74	61.26	74	-12.74
5350	53.90	AV	H	-6.74	47.16	54	-6.84
5350	66.38	PK	V	-6.74	59.64	74	-14.36
5350	53.33	AV	V	-6.74	46.59	54	-7.41
10420	52.09	PK	H	2.48	54.57	68.20	-13.63
10420	52.21	PK	V	2.48	54.69	68.20	-13.51

5725-5850MHz

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	PK/Ave					
Ant 0 802.11a							
Low Channel							
5725	72.52	PK	H	-5.49	67.03	122.2	-55.17
5725	68.09	PK	V	-5.49	62.6	122.2	-59.6
5720	66.18	PK	H	-5.53	60.65	110.8	-50.15
5720	68.43	PK	V	-5.53	62.9	110.8	-47.9
5700	66.56	PK	H	-5.72	60.84	105.2	-44.36
5700	66.84	PK	V	-5.72	61.12	105.2	-44.08
5650	66.81	PK	H	-5.86	60.95	68.2	-7.25
5650	67.1	PK	V	-5.86	61.24	68.2	-6.96
11490	52.11	PK	H	3.54	55.65	74	-18.35
11490	40.82	AV	H	3.54	44.36	54	-9.64
11490	52.78	PK	V	3.54	56.32	74	-17.68
11490	41.70	AV	V	3.54	45.24	54	-8.76
Middle Channel							
11570	52.56	PK	H	3.3	55.86	74	-18.14
11570	40.85	AV	H	3.3	44.15	54	-9.85
11570	53.34	PK	V	3.3	56.64	74	-17.36
11570	41.06	AV	V	3.3	44.36	54	-9.64
High Channel							
5850	64.81	PK	H	-4.68	60.13	122.2	-62.07
5850	64.89	PK	V	-4.68	60.21	122.2	-61.99
5855	65.78	PK	H	-4.65	61.13	110.8	-49.67
5855	66.00	PK	V	-4.65	61.35	110.8	-49.45
5875	65.89	PK	H	-4.57	61.32	105.2	-43.88
5875	66.92	PK	V	-4.57	62.35	105.2	-42.85
5925	64.80	PK	H	-4.45	60.35	68.2	-7.85
5925	65.61	PK	V	-4.45	61.16	68.2	-7.04
11650	53.79	PK	H	3.42	57.21	74	-16.79
11650	42.23	AV	H	3.42	45.65	54	-8.35
11650	52.79	PK	V	3.42	56.21	74	-17.79
11650	41.94	AV	V	3.42	45.36	54	-8.64

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	PK/Ave					
Ant 1 802.11a							
Low Channel							
5725	71.11	PK	H	-5.49	65.62	122.2	-56.58
5725	68.6	PK	V	-5.49	63.11	122.2	-59.09
5720	67.48	PK	H	-5.53	61.95	110.8	-48.85
5720	68.18	PK	V	-5.53	62.65	110.8	-48.15
5700	68.18	PK	H	-5.72	62.46	105.2	-42.74
5700	65.97	PK	V	-5.72	60.25	105.2	-44.95
5650	67.49	PK	H	-5.86	61.63	68.2	-6.57
5650	66.25	PK	V	-5.86	60.39	68.2	-7.81
11490	53.62	PK	H	3.54	57.16	74	-16.84
11490	41.62	AV	H	3.54	45.16	54	-8.84
11490	52.71	PK	V	3.54	56.25	74	-17.75
11490	42.94	AV	V	3.54	46.48	54	-7.52
Middle Channel							
11570	53.28	PK	H	3.3	56.58	74	-17.42
11570	40.86	AV	H	3.3	44.16	54	-9.84
11570	52.45	PK	V	3.3	55.75	74	-18.25
11570	41.96	AV	V	3.3	45.26	54	-8.74
High Channel							
5850	67.07	PK	H	-4.68	62.39	122.2	-59.81
5850	66.84	PK	V	-4.68	62.16	122.2	-60.04
5855	66.13	PK	H	-4.65	61.48	110.8	-49.32
5855	66.3	PK	V	-4.65	61.65	110.8	-49.15
5875	67.06	PK	H	-4.57	62.49	105.2	-42.71
5875	66.86	PK	V	-4.57	62.29	105.2	-42.91
5925	65.21	PK	H	-4.45	60.76	68.2	-7.44
5925	65.09	PK	V	-4.45	60.64	68.2	-7.56
11650	53.36	PK	H	3.42	56.78	74	-17.22
11650	41.14	AV	H	3.42	44.56	54	-9.44
11650	54.04	PK	V	3.42	57.46	74	-16.54
11650	40.53	AV	V	3.42	43.95	54	-10.05

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
Ant 0 802.11ac20							
Low Channel							
5725	68.05	PK	H	-5.49	62.56	122.2	-59.64
5725	71.89	PK	V	-5.49	66.4	122.2	-55.8
5720	67.88	PK	H	-5.53	62.35	110.8	-48.45
5720	67.74	PK	V	-5.53	62.21	110.8	-48.59
5700	67.93	PK	H	-5.72	62.21	105.2	-42.99
5700	66.93	PK	V	-5.72	61.21	105.2	-43.99
5650	67.18	PK	H	-5.86	61.32	68.2	-6.88
5650	66.11	PK	V	-5.86	60.25	68.2	-7.95
11490	52.78	PK	H	3.54	56.32	74	-17.68
11490	41.77	AV	H	3.54	45.31	54	-8.69
11490	51.67	PK	V	3.54	55.21	74	-18.79
11490	42.78	AV	V	3.54	46.32	54	-7.68
Middle Channel							
11570	53.15	PK	H	3.3	56.45	74	-17.55
11570	40.98	AV	H	3.3	44.28	54	-9.72
11570	51.86	PK	V	3.3	55.16	74	-18.84
11570	40.82	AV	V	3.3	44.12	54	-9.88
High Channel							
5850	65.94	PK	H	-4.68	61.26	122.2	-60.94
5850	64.84	PK	V	-4.68	60.16	122.2	-62.04
5855	66.3	PK	H	-4.65	61.65	110.8	-49.15
5855	67.3	PK	V	-4.65	62.65	110.8	-48.15
5875	66.52	PK	H	-4.57	61.95	105.2	-43.25
5875	67.04	PK	V	-4.57	62.47	105.2	-42.73
5925	65.1	PK	H	-4.45	60.65	68.2	-7.55
5925	64.62	PK	V	-4.45	60.17	68.2	-8.03
11650	52.99	PK	H	3.42	56.41	74	-17.59
11650	41.74	AV	H	3.42	45.16	54	-8.84
11650	52.44	PK	V	3.42	55.86	74	-18.14
11650	40.34	AV	V	3.42	43.76	54	-10.24

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
Ant 1 802.11ac20							
Low Channel							
5725	69.65	PK	H	-5.49	64.16	122.2	-58.04
5725	68.94	PK	V	-5.49	63.45	122.2	-58.75
5720	67.71	PK	H	-5.53	62.18	110.8	-48.62
5720	67.69	PK	V	-5.53	62.16	110.8	-48.64
5700	68.5	PK	H	-5.72	62.78	105.2	-42.42
5700	66.21	PK	V	-5.72	60.49	105.2	-44.71
5650	66.51	PK	H	-5.86	60.65	68.2	-7.55
5650	66.89	PK	V	-5.86	61.03	68.2	-7.17
11490	55.05	PK	H	3.54	58.59	74	-15.41
11490	42.61	AV	H	3.54	46.15	54	-7.85
11490	54.05	PK	V	3.54	57.59	74	-16.41
11490	42.15	AV	V	3.54	45.69	54	-8.31
Middle Channel							
11570	54.29	PK	H	3.3	57.59	74	-16.41
11570	41.96	AV	H	3.3	45.26	54	-8.74
11570	53.18	PK	V	3.3	56.48	74	-17.52
11570	42.32	AV	V	3.3	45.62	54	-8.38
High Channel							
5850	69.37	PK	H	-4.68	64.69	122.2	-57.51
5850	67.14	PK	V	-4.68	62.46	122.2	-59.74
5855	67.83	PK	H	-4.65	63.18	110.8	-47.62
5855	66.43	PK	V	-4.65	61.78	110.8	-49.02
5875	67.42	PK	H	-4.57	62.85	105.2	-42.35
5875	66.02	PK	V	-4.57	61.45	105.2	-43.75
5925	65.4	PK	H	-4.45	60.95	68.2	-7.25
5925	64.6	PK	V	-4.45	60.15	68.2	-8.05
11650	54.23	PK	H	3.42	57.65	74	-16.35
11650	41.81	AV	H	3.42	45.23	54	-8.77
11650	54.47	PK	V	3.42	57.89	74	-16.11
11650	42.04	AV	V	3.42	45.46	54	-8.54

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
Ant 0 802.11ac40							
Low Channel							
5725	68.95	PK	H	-5.49	63.46	122.2	-58.74
5725	67.99	PK	V	-5.49	62.5	122.2	-59.7
5720	66.72	PK	H	-5.53	61.19	110.8	-49.61
5720	68.18	PK	V	-5.53	62.65	110.8	-48.15
5700	66.97	PK	H	-5.72	61.25	105.2	-43.95
5700	66.36	PK	V	-5.72	60.64	105.2	-44.56
5650	67.61	PK	H	-5.86	61.75	68.2	-6.45
5650	66.22	PK	V	-5.86	60.36	68.2	-7.84
11510	53.06	PK	H	3.53	56.59	74	-17.41
11510	41.14	AV	H	3.53	44.67	54	-9.33
11510	51.93	PK	V	3.53	55.46	74	-18.54
11510	40.79	AV	V	3.53	44.32	54	-9.68
High Channel							
5850	67.02	PK	H	-4.68	62.34	122.2	-59.86
5850	66.32	PK	V	-4.68	61.64	122.2	-60.56
5855	66.12	PK	H	-4.65	61.47	110.8	-49.33
5855	65.93	PK	V	-4.65	61.28	110.8	-49.52
5875	66.72	PK	H	-4.57	62.15	105.2	-43.05
5875	67.85	PK	V	-4.57	63.28	105.2	-41.92
5925	65.23	PK	H	-4.45	60.78	68.2	-7.42
5925	64.8	PK	V	-4.45	60.35	68.2	-7.85
11590	53.95	PK	H	3.21	57.16	74	-16.84
11590	42.44	AV	H	3.21	45.65	54	-8.35
11590	53.04	PK	V	3.21	56.25	74	-17.75
11590	41.73	AV	V	3.21	44.94	54	-9.06

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
Ant 1 802.11ac40							
Low Channel							
5725	70.62	PK	H	-5.49	65.13	122.2	-57.07
5725	70.33	PK	V	-5.49	64.84	122.2	-57.36
5720	68.16	PK	H	-5.53	62.63	110.8	-48.17
5720	69.01	PK	V	-5.53	63.48	110.8	-47.32
5700	67.88	PK	H	-5.72	62.16	105.2	-43.04
5700	66.51	PK	V	-5.72	60.79	105.2	-44.41
5650	66.52	PK	H	-5.86	60.66	68.2	-7.54
5650	67.00	PK	V	-5.86	61.14	68.2	-7.06
11510	54.03	PK	H	3.53	57.56	74	-16.44
11510	41.63	AV	H	3.53	45.16	54	-8.84
11510	52.72	PK	V	3.53	56.25	74	-17.75
11510	41.64	AV	V	3.53	45.17	54	-8.83
High Channel							
5850	68.84	PK	H	-4.68	64.16	122.2	-58.04
5850	68.25	PK	V	-4.68	63.57	122.2	-58.63
5855	68.34	PK	H	-4.65	63.69	110.8	-47.11
5855	67.29	PK	V	-4.65	62.64	110.8	-48.16
5875	66.73	PK	H	-4.57	62.16	105.2	-43.04
5875	66.19	PK	V	-4.57	61.62	105.2	-43.58
5925	65.48	PK	H	-4.45	61.03	68.2	-7.17
5925	64.93	PK	V	-4.45	60.48	68.2	-7.72
11590	55.35	PK	H	3.21	58.56	74	-15.44
11590	43.27	AV	H	3.21	46.48	54	-7.52
11590	53.77	PK	V	3.21	56.98	74	-17.02
11590	41.87	AV	V	3.21	45.08	54	-8.92

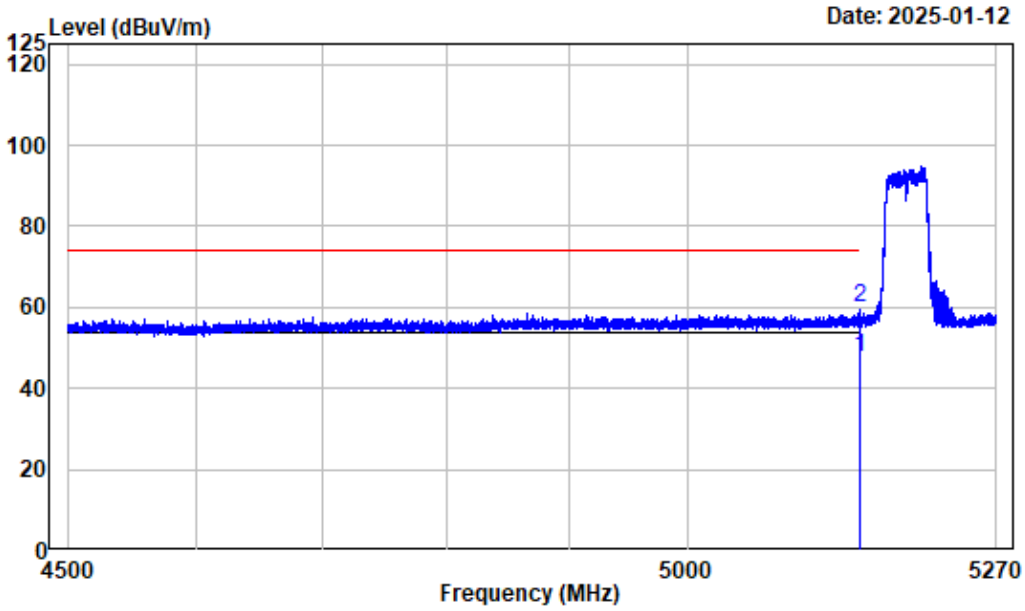
Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
Ant 0 802.11ac80							
Middle Channel							
5725	67.84	PK	H	-5.49	62.35	122.2	-59.85
5725	68.00	PK	V	-5.49	62.51	122.2	-59.69
5720	67.01	PK	H	-5.53	61.48	110.8	-49.32
5720	68.23	PK	V	-5.53	62.7	110.8	-48.1
5700	68.36	PK	H	-5.72	62.64	105.2	-42.56
5700	66.5	PK	V	-5.72	60.78	105.2	-44.42
5650	67.17	PK	H	-5.86	61.31	68.2	-6.89
5650	66.48	PK	V	-5.86	60.62	68.2	-7.58
5850	65.94	PK	H	-4.68	61.26	122.2	-60.94
5850	67.34	PK	V	-4.68	62.66	122.2	-59.54
5855	66.4	PK	H	-4.65	61.75	110.8	-49.05
5855	66.08	PK	V	-4.65	61.43	110.8	-49.37
5875	67.03	PK	H	-4.57	62.46	105.2	-42.74
5875	67.18	PK	V	-4.57	62.61	105.2	-42.59
5925	65.06	PK	H	-4.45	60.61	68.2	-7.59
5925	64.94	PK	V	-4.45	60.49	68.2	-7.71
11550	53.95	PK	H	3.37	57.32	74	-16.68
11550	42.00	AV	H	3.37	45.37	54	-8.63
11550	53.79	PK	V	3.37	57.16	74	-16.84
11550	41.12	AV	V	3.37	44.49	54	-9.51

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
Ant 1 802.11ac80							
Middle Channel							
5725	70.94	PK	H	-5.49	65.45	122.2	-56.75
5725	68.95	PK	V	-5.49	63.46	122.2	-58.74
5720	68.28	PK	H	-5.53	62.75	110.8	-48.05
5720	69.15	PK	V	-5.53	63.62	110.8	-47.18
5700	68.04	PK	H	-5.72	62.32	105.2	-42.88
5700	66.47	PK	V	-5.72	60.75	105.2	-44.45
5650	66.44	PK	H	-5.86	60.58	68.2	-7.62
5650	66.22	PK	V	-5.86	60.36	68.2	-7.84
5850	70.57	PK	H	-4.68	65.89	122.2	-56.31
5850	68.33	PK	V	-4.68	63.65	122.2	-58.55
5855	68.8	PK	H	-4.65	64.15	110.8	-46.65
5855	67.43	PK	V	-4.65	62.78	110.8	-48.02
5875	67.33	PK	H	-4.57	62.76	105.2	-42.44
5875	66.25	PK	V	-4.57	61.68	105.2	-43.52
5925	65.01	PK	H	-4.45	60.56	68.2	-7.64
5925	64.93	PK	V	-4.45	60.48	68.2	-7.72
11550	53.79	PK	H	3.37	57.16	74	-16.84
11550	42.28	AV	H	3.37	45.65	54	-8.35
11550	54.89	PK	V	3.37	58.26	74	-15.74
11550	43.08	AV	V	3.37	46.45	54	-7.55

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: *(Worst Case)*

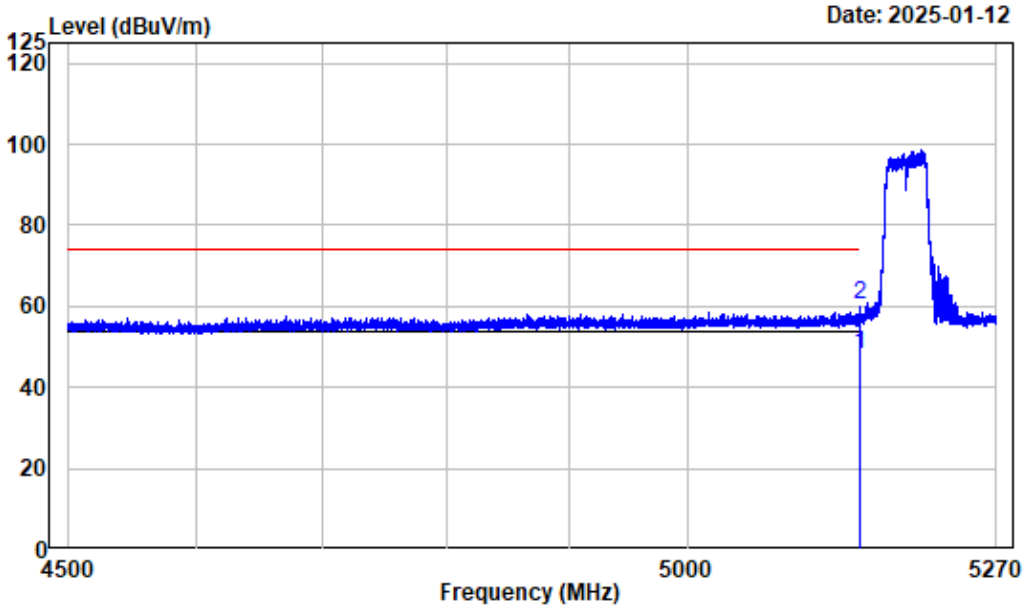
Left Band edge_Horizontal



Condition : Horizontal
Project No.: 2401A37173E-RF
Tester : Dylan Yang
Note : 5GWiFi-Band1-AC40_ANT1-5190

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5150.000	-7.45	54.91	47.46	54.00	-6.54	Average
2	5150.000	-7.45	67.13	59.68	74.00	-14.32	Peak

Left Band edge_Vertical

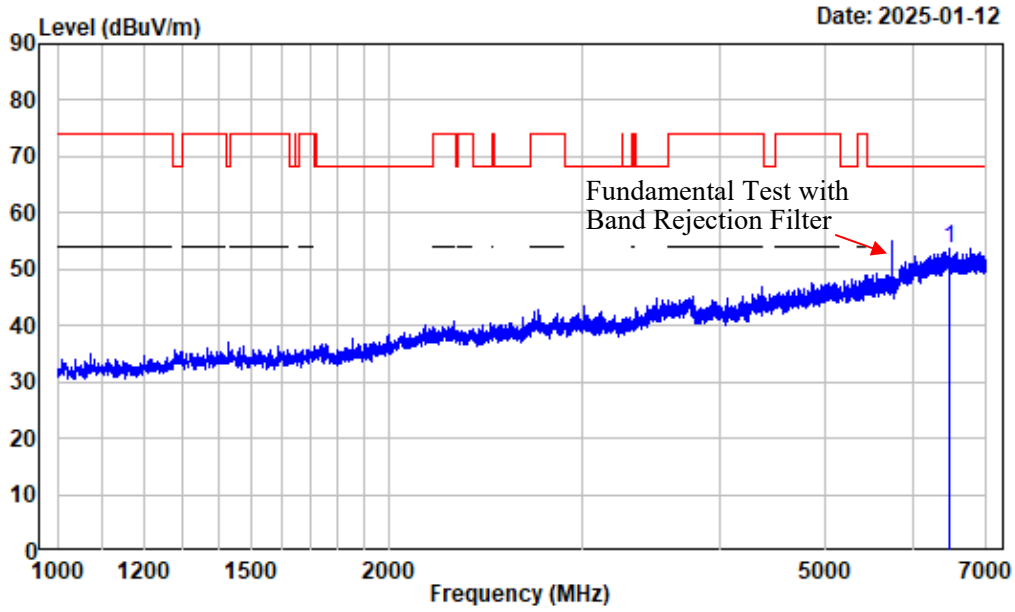


Condition : Vertical
Project No.: 2401A37173E-RF
Tester : Dylan Yang
Note : 5GWiFi-Band1-AC40_ANT1-5190

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5150.000	-7.45	55.59	48.14	54.00	-5.86	Average
2	5150.000	-7.45	67.77	60.32	74.00	-13.68	Peak

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

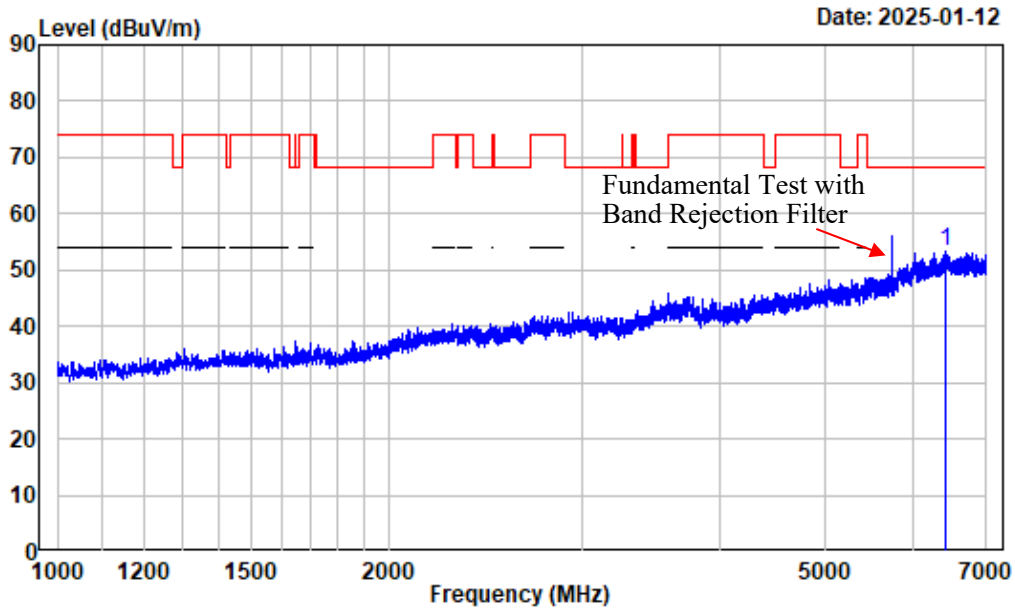
1-7GHz_Horizontal




```
Condition   : Horizontal
Project No.: 2401A37173E-RF
Tester      : Dylan Yang
Note        : 5GWiFi-Band4-A_ANT1-5745
```

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	6483.186	-2.92	56.71	53.79	68.20	-14.41	Peak

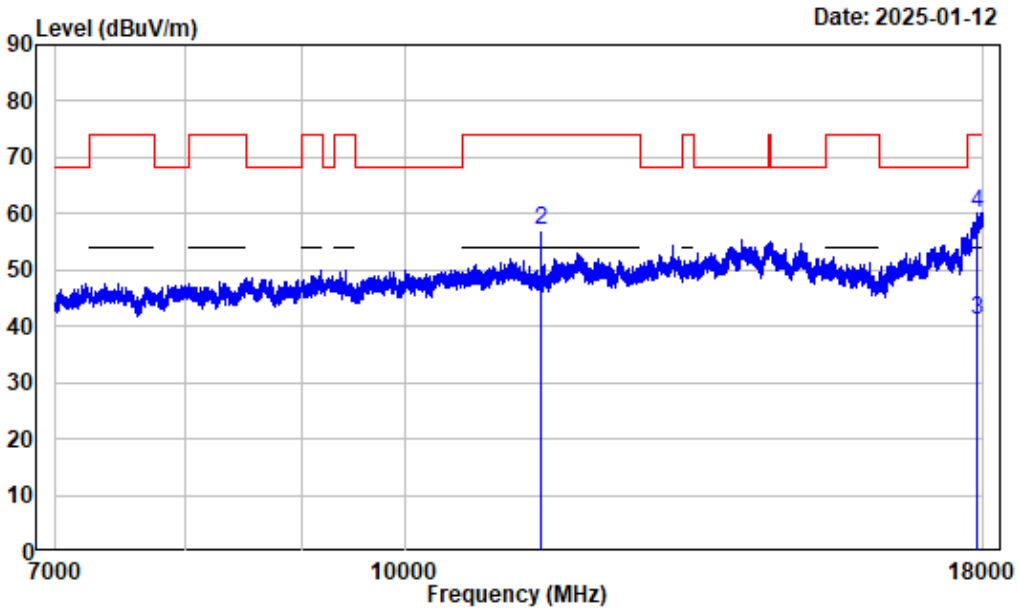
1-7GHz_Vertical



Condition : Vertical
Project No.: 2401A37173E-RF
Tester : Dylan Yang
Note : 5GWiFi-Band4-A_ANT1-5745

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	6438.180	-2.88	56.04	53.16	68.20	-15.04	Peak

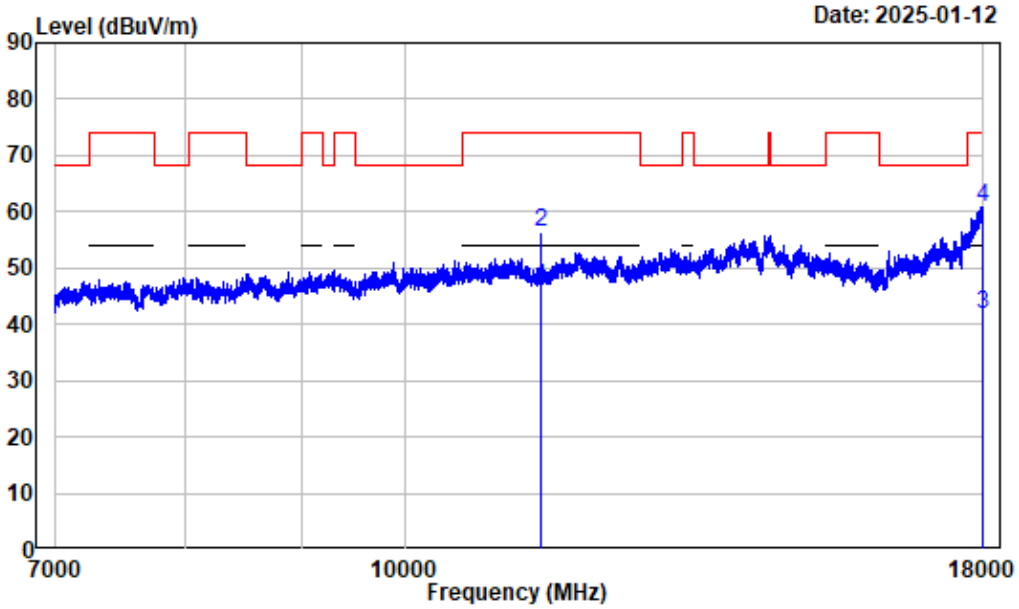
7-18GHz_Horizontal



Condition : Horizontal
Project No.: 2401A37173E-RF
Tester : Dylan Yang
Note : 5GWiFi-Band4-A_ANT1-5745

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	11490.000	3.54	41.62	45.16	54.00	-8.84	Average
2	11490.000	3.54	53.62	57.16	74.00	-16.84	Peak
3	17883.110	12.39	28.78	41.17	54.00	-12.83	Average
4	17883.110	12.39	47.72	60.11	74.00	-13.89	Peak

7-18GHz_Vertical

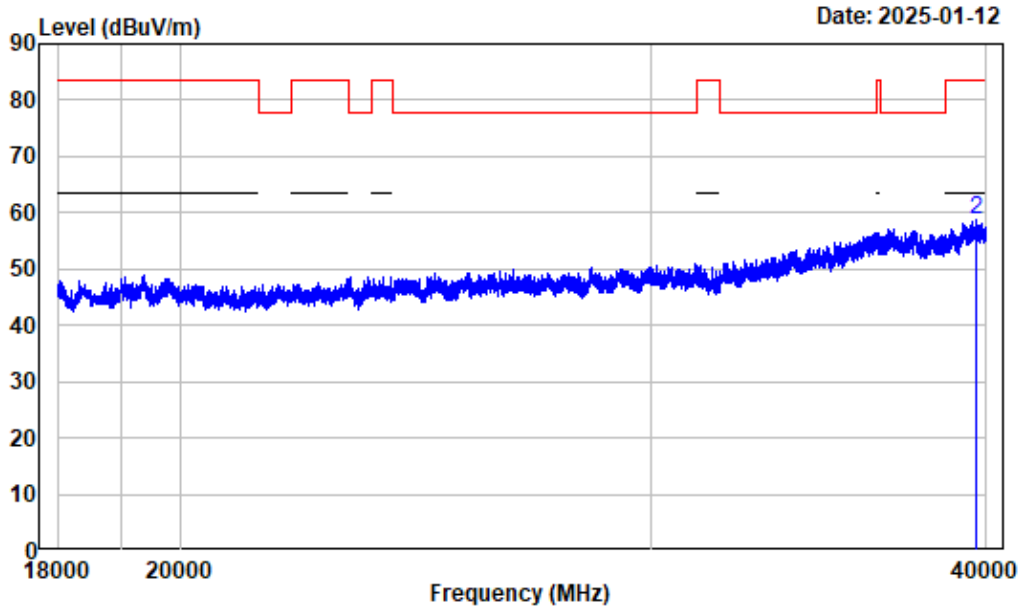


Condition : Vertical
Project No.: 2401A37173E-RF
Tester : Dylan Yang
Note : 5GWiFi-Band4-A_ANT1-5745

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	11490.000	3.54	42.94	46.48	54.00	-7.52	Average
2	11490.000	3.54	52.71	56.25	74.00	-17.75	Peak
3	17996.570	13.20	28.67	41.87	54.00	-12.13	Average
4	17996.570	13.20	47.75	60.95	74.00	-13.05	Peak

18-25GHz (*Only with worst case margin mode plot***):**

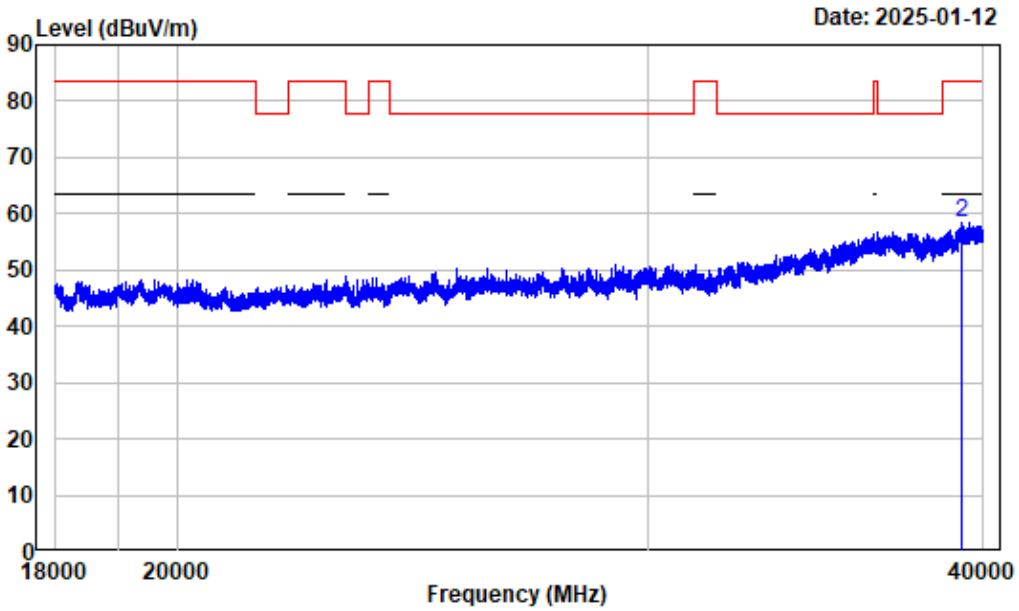
18-40GHz_Horizontal



Condition : Horizontal
Project No.: 2401A37173E-RF
Tester : Dylan Yang
Note : 5GWiFi-Band4-A_ANT1-5745

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	39625.950	22.75	30.97	53.72	63.50	-9.78	Average
2	39625.950	22.75	35.96	58.71	83.50	-24.79	Peak

18-40GHz_Vertical



Condition : Vertical
Project No.: 2401A37173E-RF
Tester : Dylan Yang
Note : 5GWiFi-Band4-A_ANT1-5745

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	39246.410	22.82	30.87	53.69	63.50	-9.81	Average
2	39246.410	22.82	35.68	58.50	83.50	-25.00	Peak

Emission Bandwidth

Test Information:

Sample No.:	2W9C-2	**Test Date:**	2025/01/03~2025/01/04
Test Site:	RF	**Test Mode:**	Transmitting
Tester:	Brian Li	**Test Result:**	Pass

Environmental Conditions:

Temperature: (°C):	21	**Relative Humidity: (%)**	39	**ATM Pressure: (kPa)**	101

Test Data:

26dB Emission Bandwidth

5150-5250MHz

Mode	Antenna	Test Frequency (MHz)	Result (MHz)
802.11a	Chain 0	5180	20.898
		5200	21.151
		5240	21.051
	Chain 1	5180	20.951
		5200	21.208
		5240	21.364
802.11ac20	Chain 0	5180	21.312
		5200	21.259
		5240	21.312
	Chain 1	5180	21.312
		5200	21.156
		5240	21.364
802.11ac40	Chain 0	5190	42.843
		5230	43.043
	Chain 1	5190	42.743
		5230	42.743
802.11ac80	Chain 0	5210	**82.683**
	Chain 1	5210	82.482

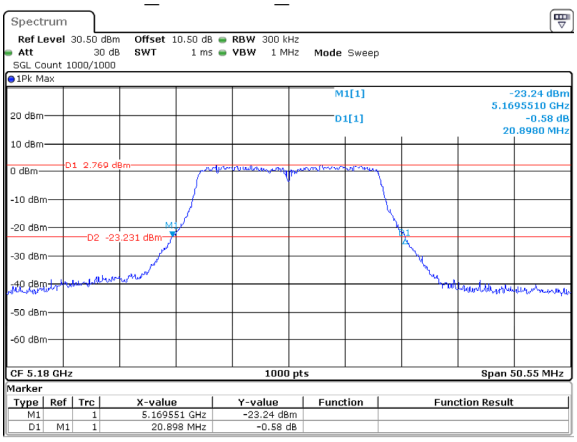
6dB Emission Bandwidth

5725-5850MHz

Mode	Antenna	Test Frequency (MHz)	Result (MHz)	Limit (MHz)	Verdict
802.11a	Chain 0	5745	16.416	0.5	Pass
		5785	16.416	0.5	Pass
		5825	16.416	0.5	Pass
	Chain 1	5745	16.416	0.5	Pass
		5785	16.416	0.5	Pass
		5825	16.416	0.5	Pass
802.11ac20	Chain 0	5745	17.017	0.5	Pass
		5785	17.017	0.5	Pass
		5825	17.017	0.5	Pass
	Chain 1	5745	17.017	0.5	Pass
		5785	17.017	0.5	Pass
		5825	17.017	0.5	Pass
802.11ac40	Chain 0	5755	35.335	0.5	Pass
		5795	35.335	0.5	Pass
	Chain 1	5755	35.335	0.5	Pass
		5795	35.335	0.5	Pass
802.11ac80	Chain 0	5775	**75.475**	0.5	Pass
	Chain 1	5775	**75.475**	0.5	Pass

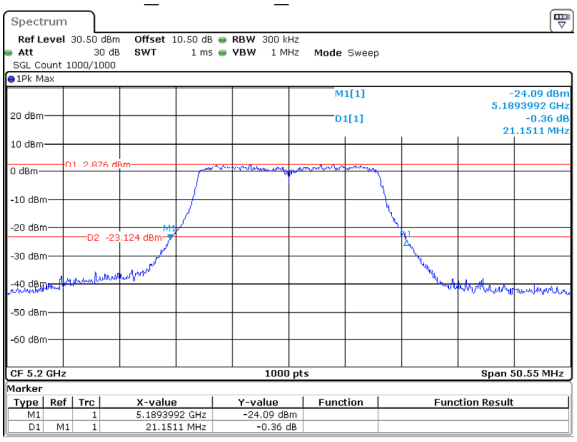
5150-5250MHz

802.11a_5180MHz_Chain 0 20.898MHz



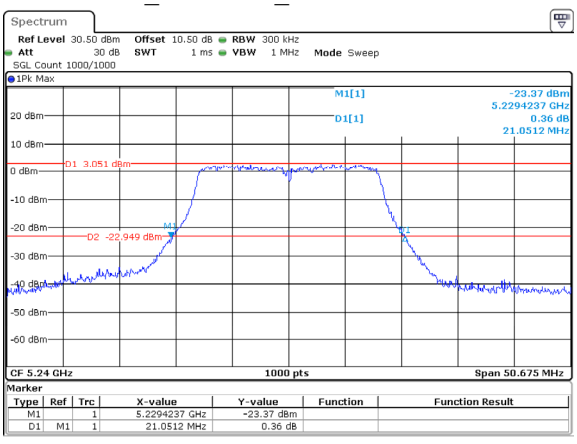
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:17:11

802.11a_5200MHz_Chain 0 21.151MHz



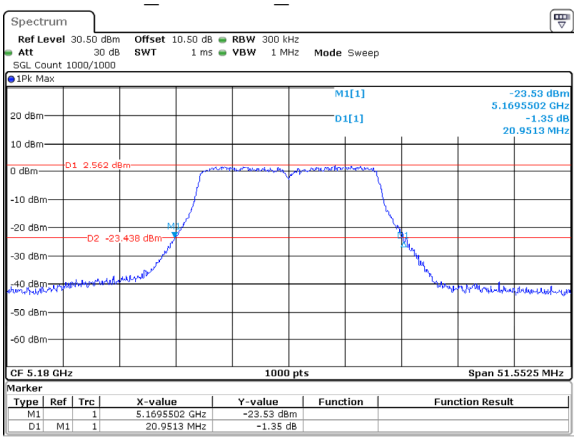
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:19:43

802.11a_5240MHz_Chain 0 21.051MHz



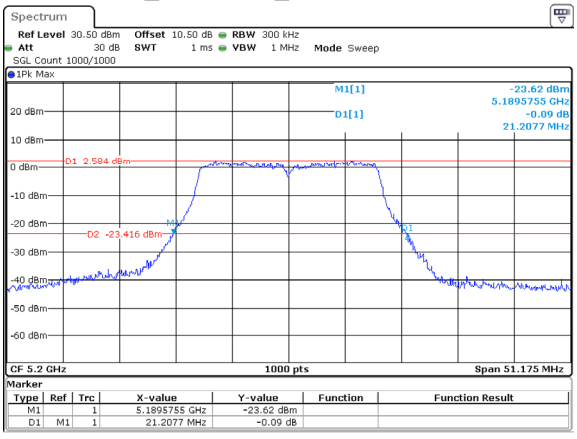
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:22:27

802.11a_5180MHz_Chain 1 20.951MHz



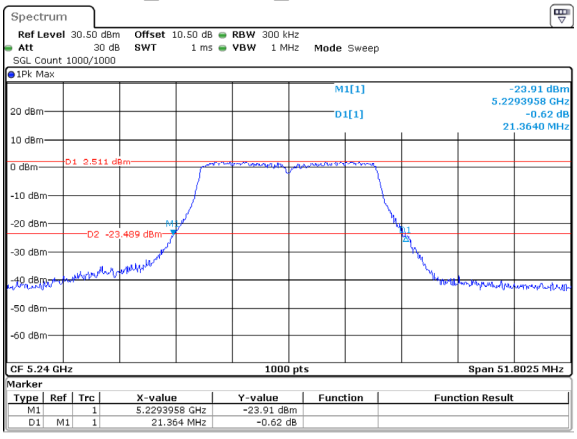
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 23:27:59

802.11a_5200MHz_Chain 1 21.208MHz



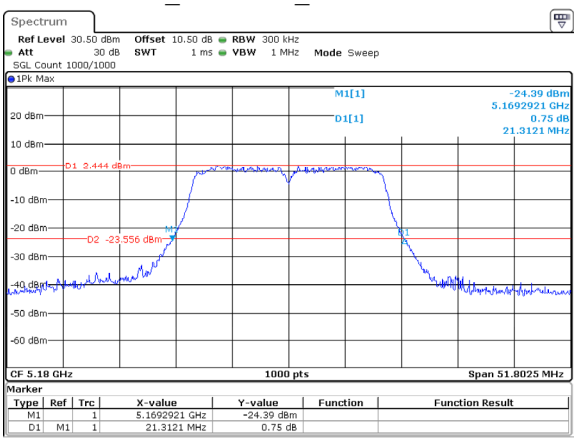
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 23:30:20

802.11a_5240MHz_Chain 1 21.364MHz



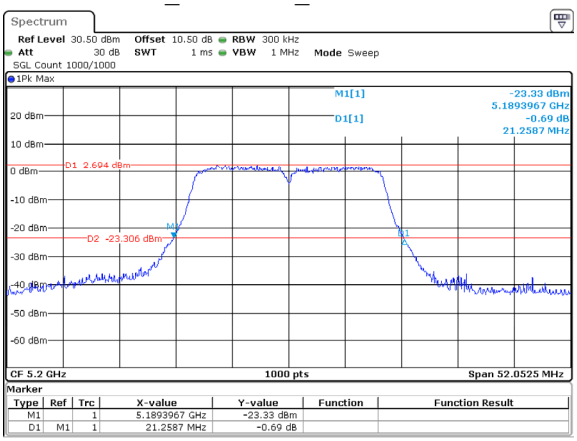
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 23:33:36

802.11ac20_5180MHz_Chain 0 21.312MHz



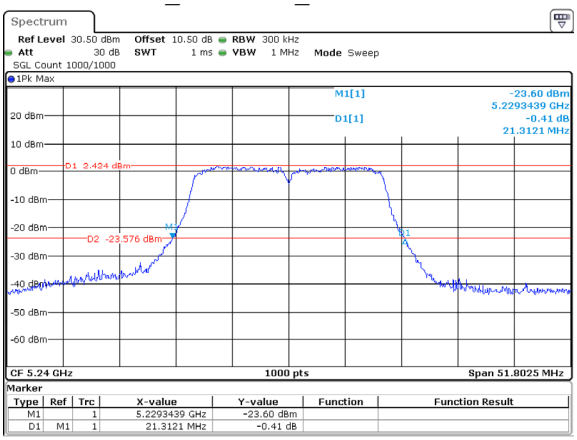
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:24:48

802.11ac20_5200MHz_Chain 0 21.259MHz



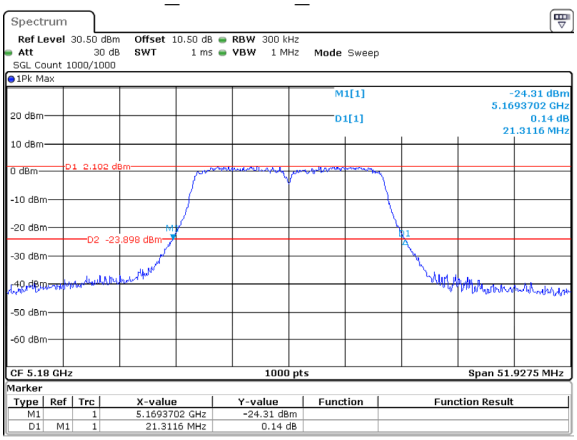
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:26:51

802.11ac20_5240MHz_Chain 0 21.312MHz



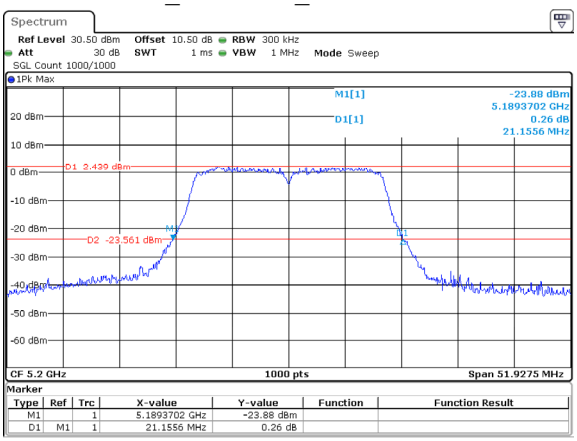
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:29:55

802.11ac20_5180MHz_Chain 1 21.312MHz



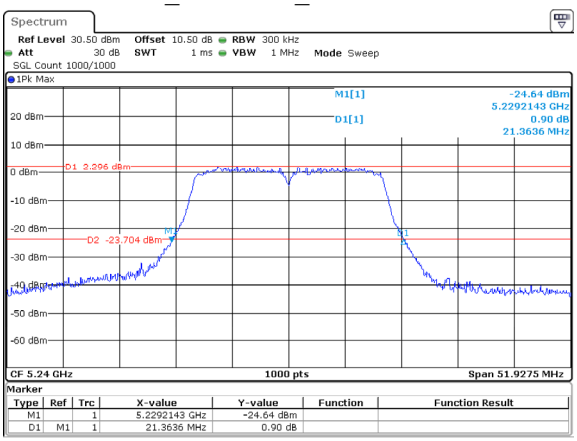
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 23:38:47

802.11ac20_5200MHz_Chain 1 21.156MHz



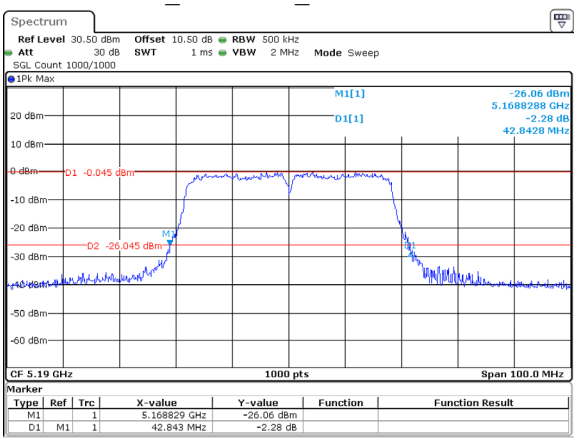
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 23:44:25

802.11ac20_5240MHz_Chain 1 21.364MHz



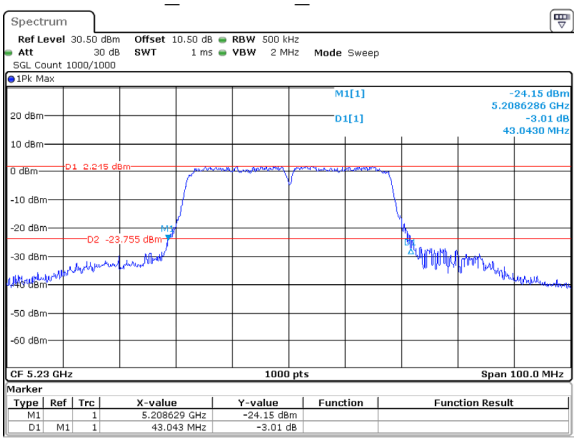
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 23:48:57

802.11ac40_5190MHz_Chain 0 42.843MHz



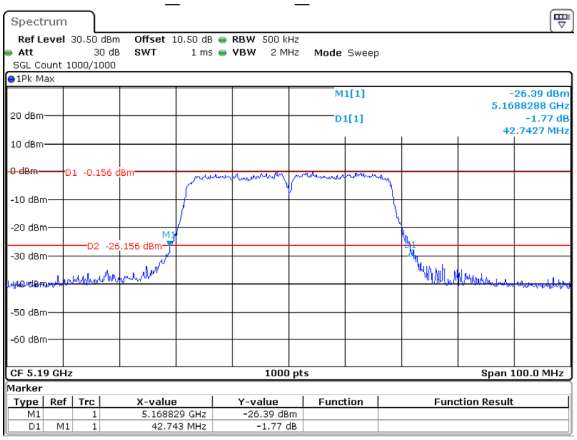
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:33:29

802.11ac40_5230MHz_Chain 0 43.043MHz



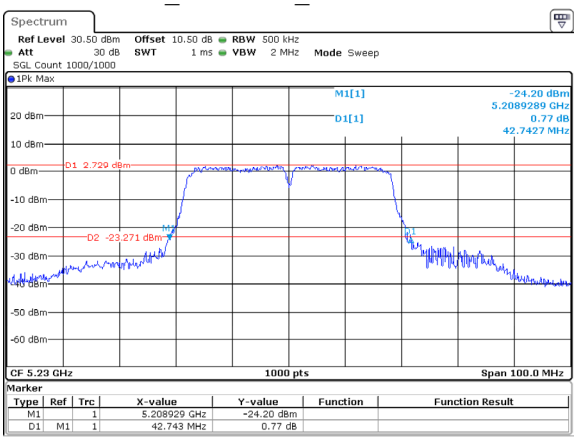
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:37:58

802.11ac40_5190MHz_Chain 1 42.743MHz



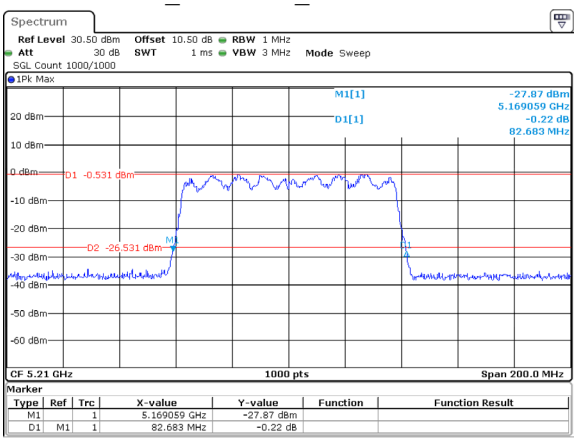
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 23:51:14

802.11ac40_5230MHz_Chain 1 42.743MHz



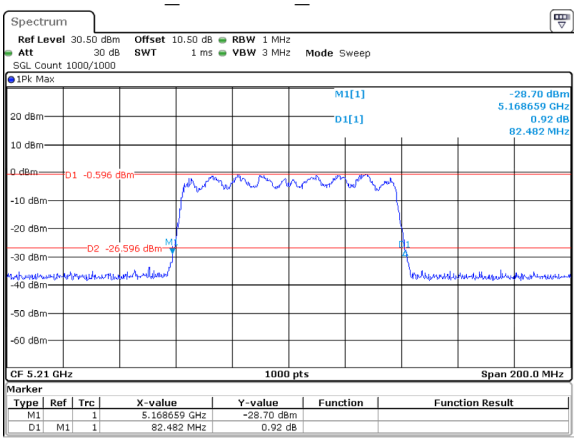
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 23:53:56

802.11ac80_5210MHz_Chain 0 82.683MHz



ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:39:40

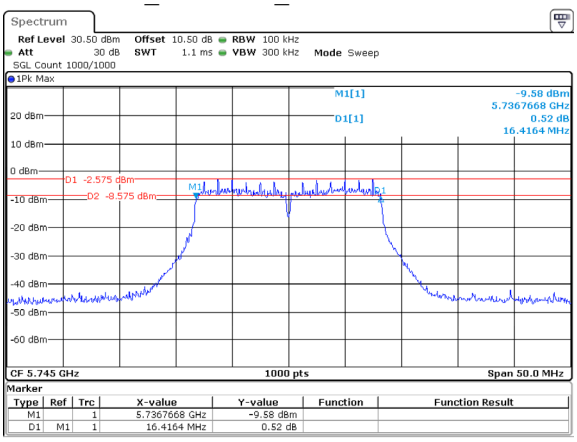
802.11ac80_5210MHz_Chain 1 82.482MHz



ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 23:55:40

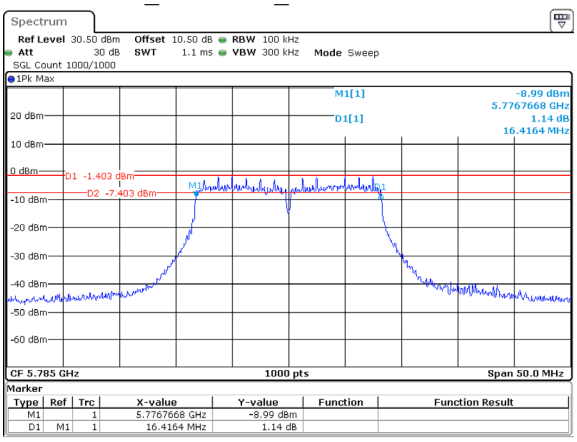
5725-5850MHz

802.11a_5745MHz_Chain 0 16.416MHz



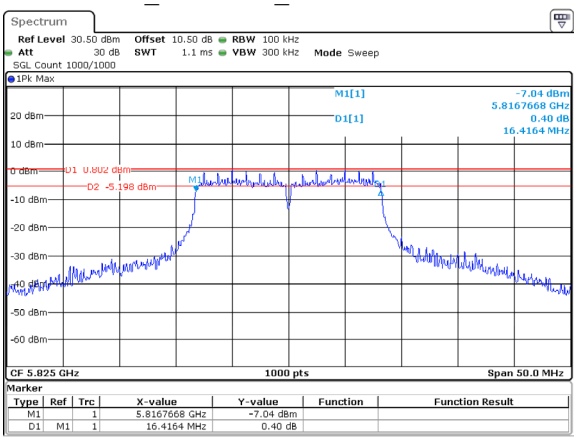
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:41:52

802.11a_5785MHz_Chain 0 16.416MHz



ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:44:53

802.11a_5825MHz_Chain 0 16.416MHz



ProjectNo.:2401A37173E-RF Tester:Brian Li
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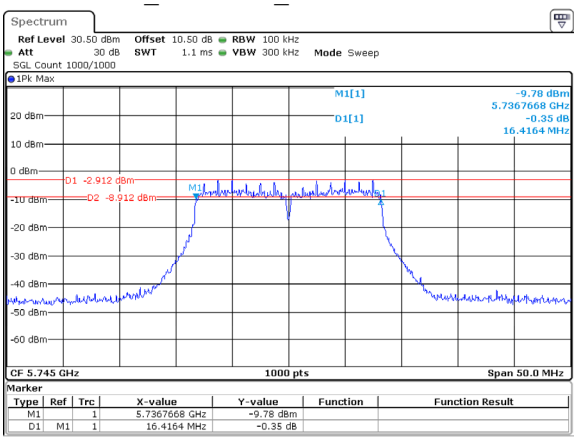
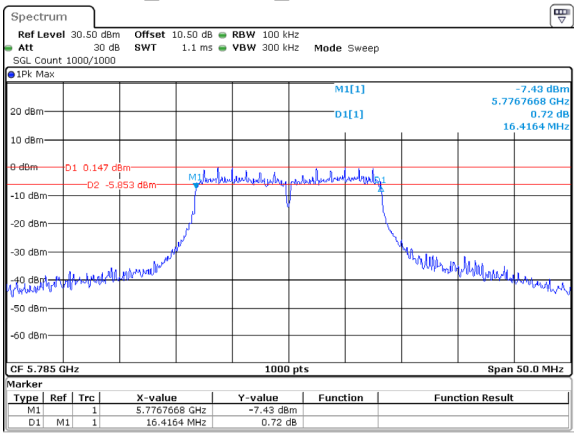
802.11a_5745MHz_Chain 1 16.416MHz



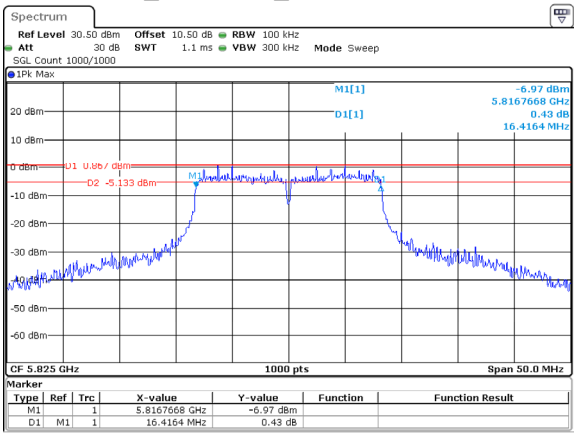
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 23:58:38

802.11a_5785MHz_Chain 1 16.416MHz



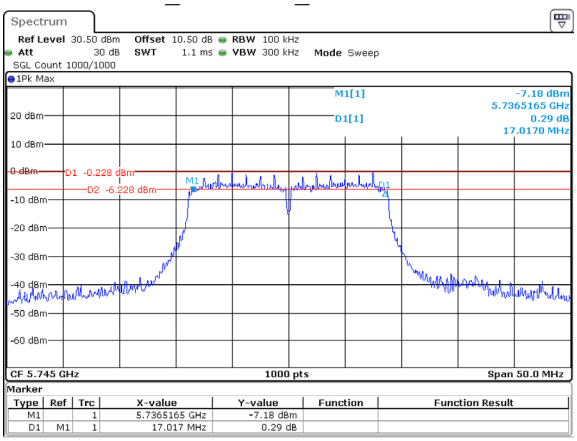
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 4.JAN.2025 00:07:00

802.11a_5825MHz_Chain 1 16.416MHz



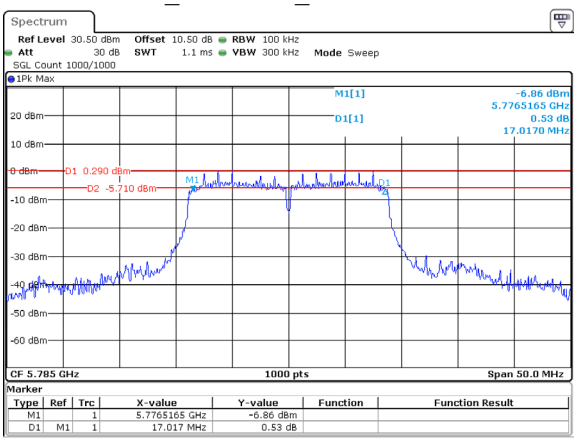
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 4.JAN.2025 00:09:53

802.11ac20_5745MHz_Chain 0 17.017MHz



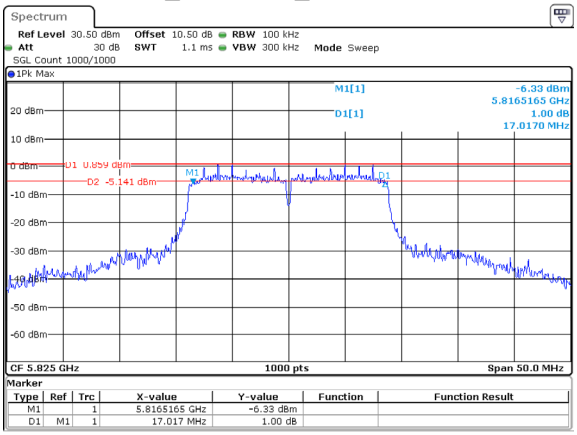
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:49:34

802.11ac20_5785MHz_Chain 0 17.017MHz



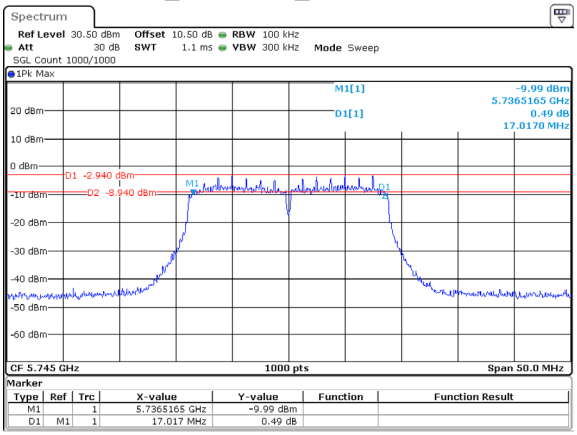
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:52:20

802.11ac20_5825MHz_Chain 0 17.017MHz



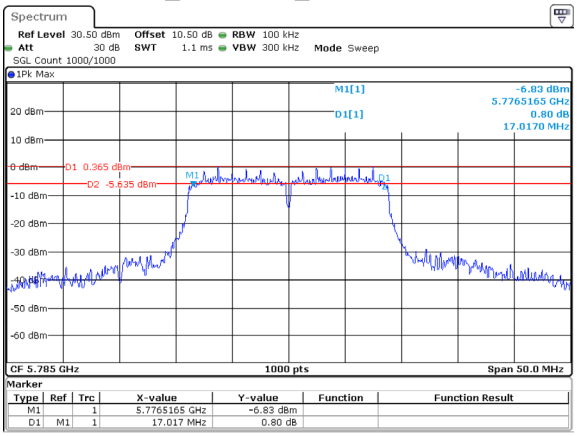
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:54:31

802.11ac20_5745MHz_Chain 1 17.017MHz



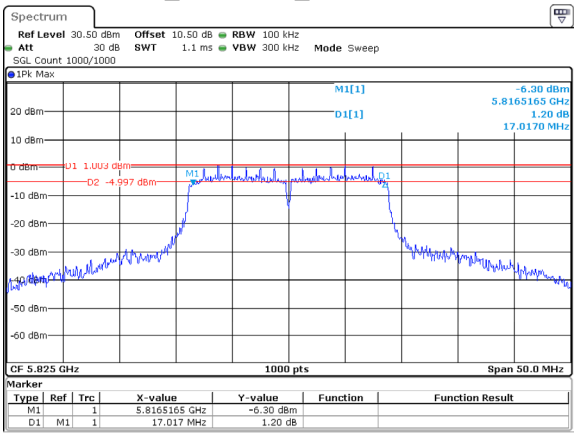
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 4.JAN.2025 00:12:45

802.11ac20_5785MHz_Chain 1 17.017MHz



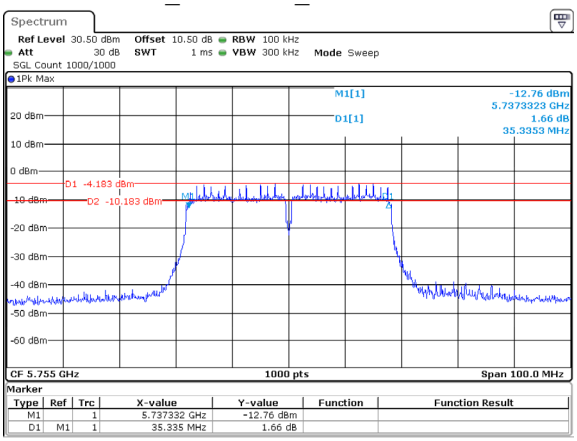
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 4.JAN.2025 00:16:28

802.11ac20_5825MHz_Chain 1 17.017MHz



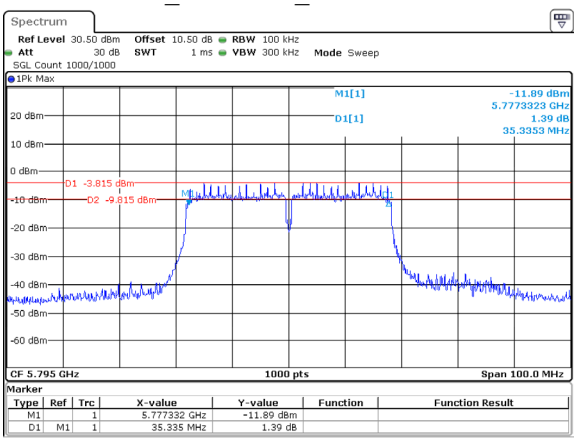
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 4.JAN.2025 00:19:55

802.11ac40_5755MHz_Chain 0 35.335MHz



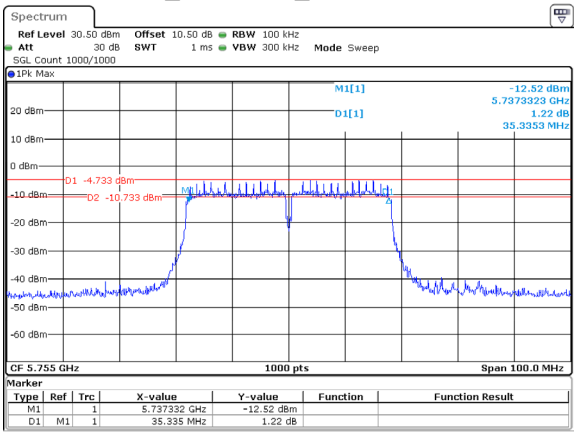
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 22:01:32

802.11ac40_5795MHz_Chain 0 35.335MHz



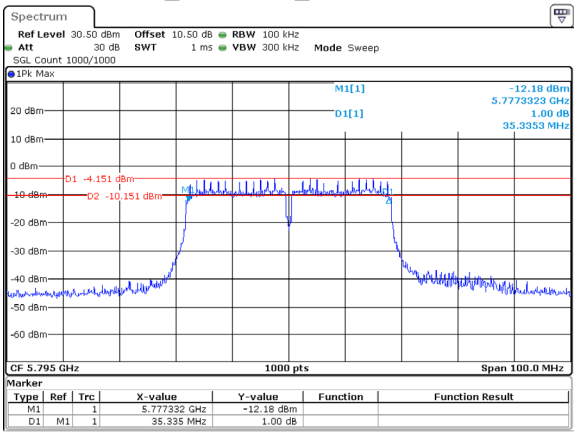
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 22:04:09

802.11ac40_5755MHz_Chain 1 35.335MHz



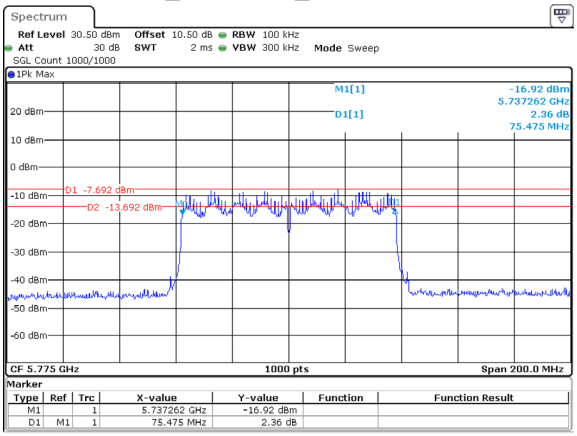
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 4.JAN.2025 00:22:02

802.11ac40_5795MHz_Chain 1 35.335MHz



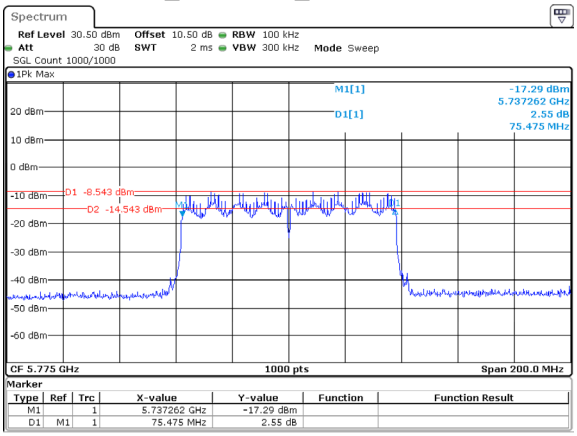
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 4.JAN.2025 00:23:24

802.11ac80_5775MHz_Chain 0 75.475MHz



ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 22:06:55

802.11ac80_5775MHz_Chain 1 75.475MHz



ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 4.JAN.2025 00:25:35

Maximum Conducted Output Power

Test Information:

Sample No.:	2W9C-2	**Test Date:**	2025/01/03~2025/01/04
Test Site:	RF	**Test Mode:**	Transmitting
Tester:	Brian Li	**Test Result:**	Pass

Environmental Conditions:

Temperature: (°C):	21	**Relative Humidity: (%)**	39	**ATM Pressure: (kPa)**	101

Test Data:

5150-5250MHz

Mode	Antenna	Test Frequency (MHz)	Average Output Power(dBm)	Limit (dBm)	Verdict
802.11a	Chain 0	5180	11.5	24	Pass
		5200	11.37	24	Pass
		5240	11.63	24	Pass
	Chain 1	5180	11.4	24	Pass
		5200	11.24	24	Pass
		5240	11.64	24	Pass
802.11ac20	Chain 0	5180	11.76	24	Pass
		5200	11.48	24	Pass
		5240	11.19	24	Pass
	Chain 1	5180	11.08	24	Pass
		5200	11.3	24	Pass
		5240	10.83	24	Pass
802.11ac40	Chain 0	5190	9.19	24	Pass
		5230	**12.76**	24	Pass
	Chain 1	5190	9.38	24	Pass
		5230	12.37	24	Pass
802.11ac80	Chain 0	5210	8.18	24	Pass
	Chain 1	5210	7.13	24	Pass

5725-5850MHz

Mode	Antenna	Test Frequency (MHz)	Average Output Power(dBm)	Limit (dBm)	Verdict
802.11a	Chain 0	5745	8.12	30	Pass
		5785	9.49	30	Pass
		5825	11.82	30	Pass
	Chain 1	5745	7.81	30	Pass
		5785	11.45	30	Pass
		5825	**11.83**	30	Pass
802.11ac20	Chain 0	5745	10.66	30	Pass
		5785	10.97	30	Pass
		5825	11.81	30	Pass
	Chain 1	5745	7.88	30	Pass
		5785	11.33	30	Pass
		5825	**11.83**	30	Pass
802.11ac40	Chain 0	5755	9.51	30	Pass
		5795	9.92	30	Pass
	Chain 1	5755	8.98	30	Pass
		5795	9.54	30	Pass
802.11ac80	Chain 0	5775	6.58	30	Pass
	Chain 1	5775	6.84	30	Pass

Power Spectral Density

Test Information:

Sample No.:	2W9C-2	**Test Date:**	2025/01/03~2025/01/04
Test Site:	RF	**Test Mode:**	Transmitting
Tester:	Brian Li	**Test Result:**	Pass

Environmental Conditions:

Temperature: (°C):	21	**Relative Humidity: (%)**	39	**ATM Pressure: (kPa)**	101

Test Data:

5150-5250MHz

Mode	Antenna	Test Frequency (MHz)	Reading (dBm/MHz)	Duty Cycle Factor (dB)	Result (dBm/MHz)	Limit (dBm/MHz)	Verdict
802.11a	Chain 0	5180	-1.70	2.41	0.71	11	Pass
		5200	-1.38	2.41	1.03	11	Pass
		5240	-1.24	2.41	1.17	11	Pass
	Chain 1	5180	-1.74	2.41	0.67	11	Pass
		5200	-1.89	2.41	0.52	11	Pass
		5240	-1.24	2.41	1.17	11	Pass
802.11ac20	Chain 0	5180	-1.86	2.53	0.67	11	Pass
		5200	-1.77	2.53	0.76	11	Pass
		5240	-2.46	2.53	0.07	11	Pass
	Chain 1	5180	-2.02	2.60	0.58	11	Pass
		5200	-1.81	2.60	0.79	11	Pass
		5240	-2.61	2.60	-0.01	11	Pass
802.11ac40	Chain 0	5190	-7.93	4.14	-3.79	11	Pass
		5230	-5.61	4.14	-1.47	11	Pass
	Chain 1	5190	-7.85	4.23	-3.62	11	Pass
		5230	-5.08	4.23	-0.85	11	Pass
802.11ac80	Chain 0	5210	-12.31	6.30	-6.01	11	Pass
	Chain 1	5210	-14.84	6.36	-8.48	11	Pass

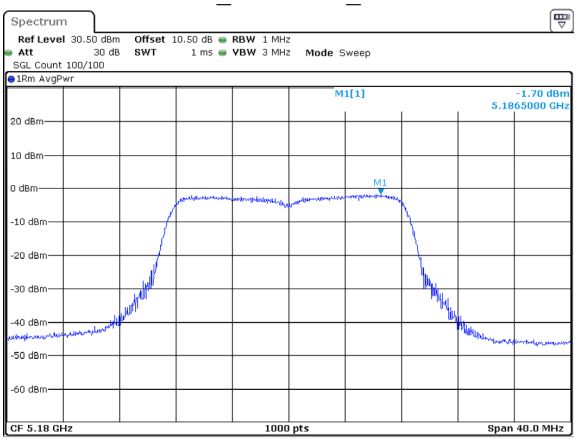
5725-5850MHz

Mode	Antenna	Test Frequency (MHz)	Reading (dBm /500kHz)	Duty Cycle Factor (dB)	Result (dBm /500kHz)	Limit (dBm /500kHz)	Verdict
802.11a	Chain 0	5745	-7.44	2.41	-5.03	30	Pass
		5785	-6.62	2.41	-4.21	30	Pass
		5825	-4.39	2.41	-1.98	30	Pass
	Chain 1	5745	-8.06	2.41	-5.65	30	Pass
		5785	-4.51	2.41	-2.10	30	Pass
		5825	-3.85	2.41	-1.44	30	Pass
802.11ac20	Chain 0	5745	-5.54	2.53	-3.01	30	Pass
		5785	-4.73	2.53	-2.20	30	Pass
		5825	-4.38	2.53	-1.85	30	Pass
	Chain 1	5745	-8.29	2.60	-5.69	30	Pass
		5785	-5.05	2.60	-2.45	30	Pass
		5825	-4.57	2.60	-1.97	30	Pass
802.11ac40	Chain 0	5755	-11.20	4.14	-7.06	30	Pass
		5795	-10.47	4.14	-6.33	30	Pass
	Chain 1	5755	-12.01	4.23	-7.78	30	Pass
		5795	-11.10	4.23	-6.87	30	Pass
802.11ac80	Chain 0	5775	-16.74	6.30	-10.44	30	Pass
	Chain 1	5775	-17.36	6.36	-11.00	30	Pass

Result = Reading + Duty Cycle Factor

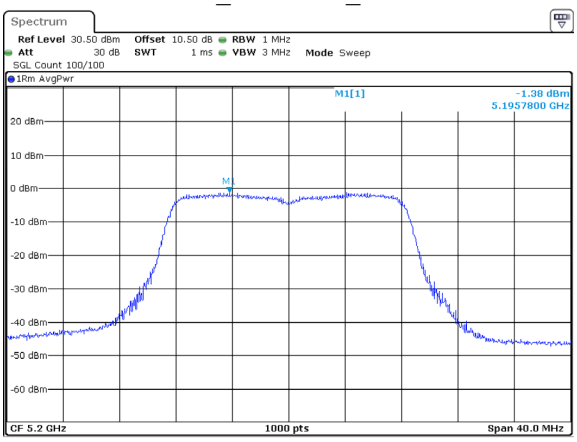
5150-5250MHz

802.11a_5180MHz_Chain 0



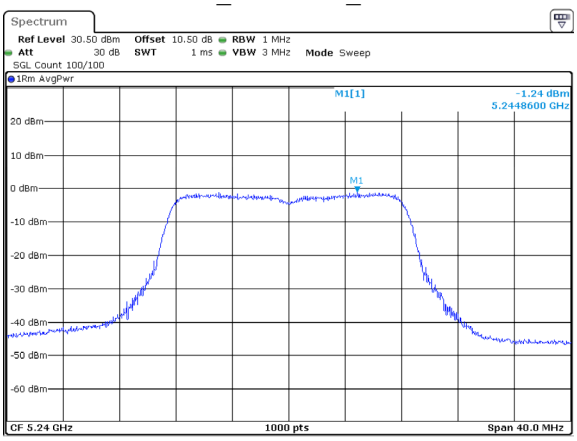
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:18:13

802.11a_5200MHz_Chain 0



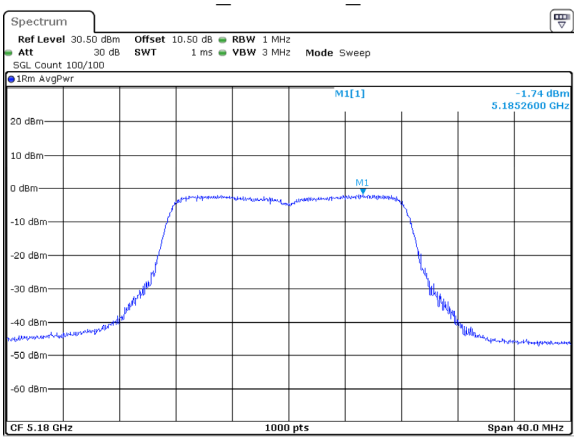
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:20:36

802.11a_5240MHz_Chain 0



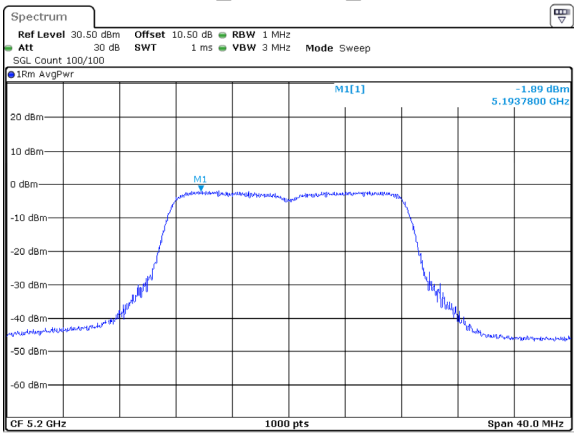
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:23:23

802.11a_5180MHz_Chain 1



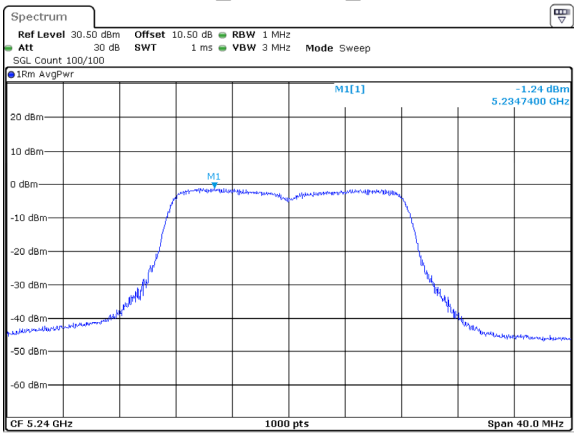
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 23:29:05

802.11a_5200MHz_Chain 1



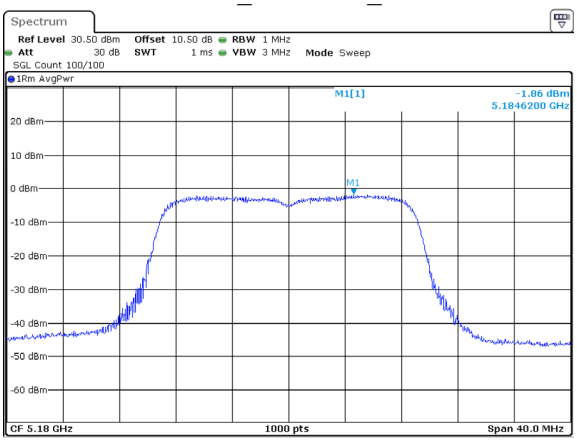
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 23:31:17

802.11a_5240MHz_Chain 1



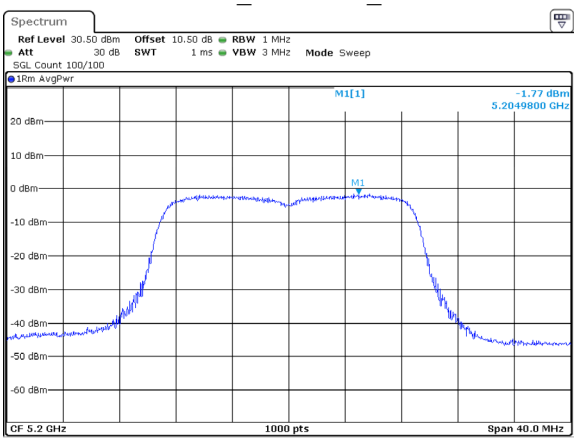
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 23:34:37

802.11ac20_5180MHz_Chain 0



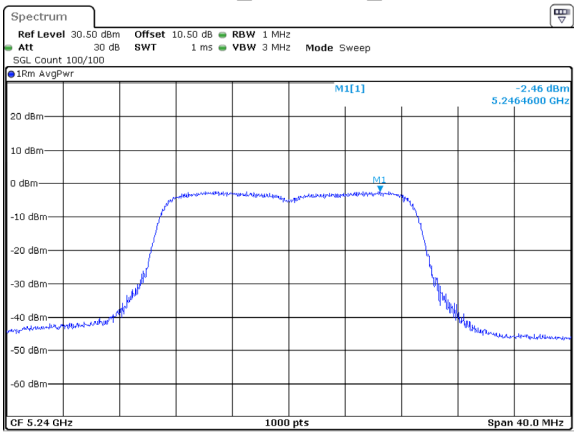
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:25:50

802.11ac20_5200MHz_Chain 0



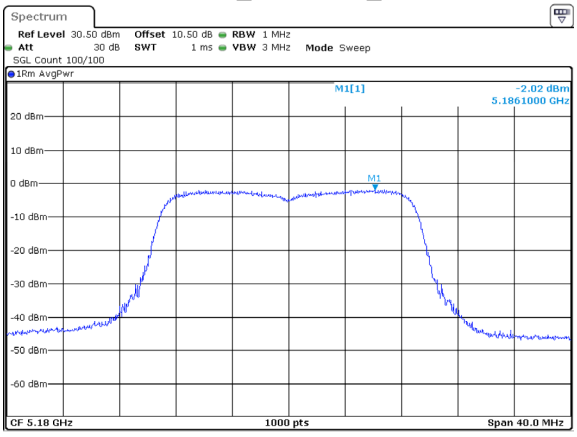
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:27:45

802.11ac20_5240MHz_Chain 0



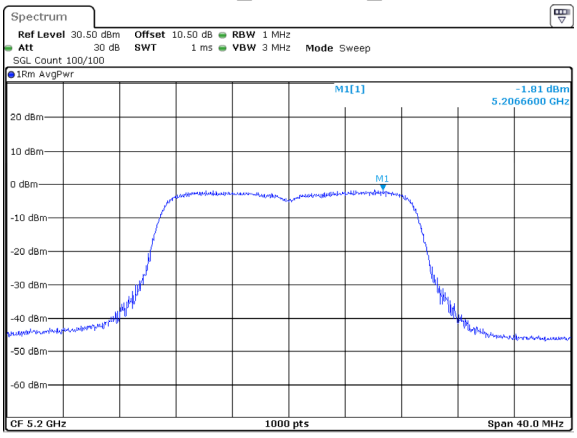
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:30:52

802.11ac20_5180MHz_Chain 1



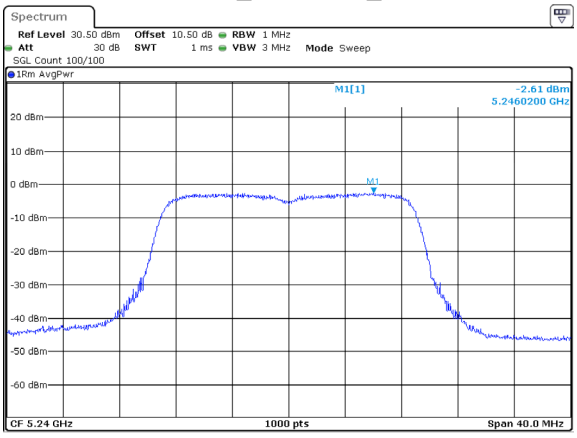
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 23:39:54

802.11ac20_5200MHz_Chain 1



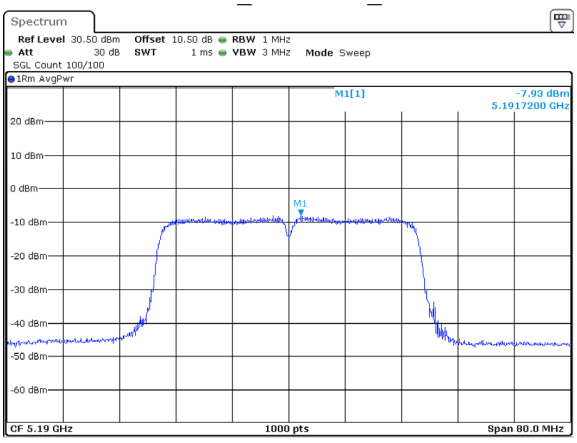
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 23:45:25

802.11ac20_5240MHz_Chain 1



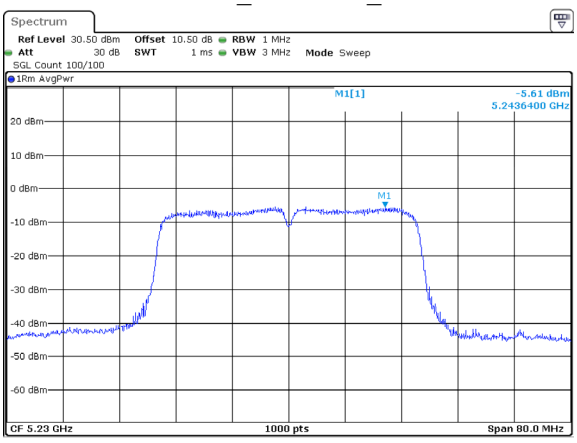
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 23:50:00

802.11ac40_5190MHz_Chain 0



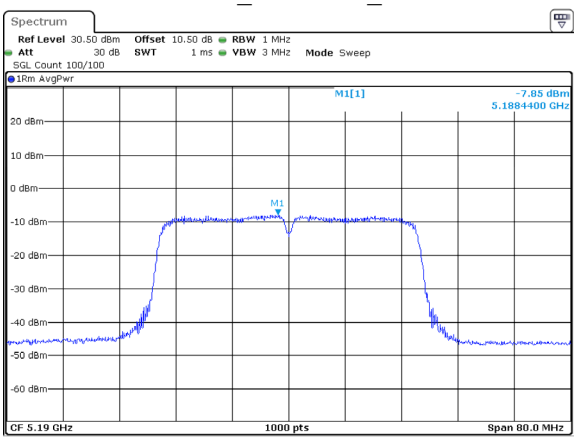
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:34:11

802.11ac40_5230MHz_Chain 0



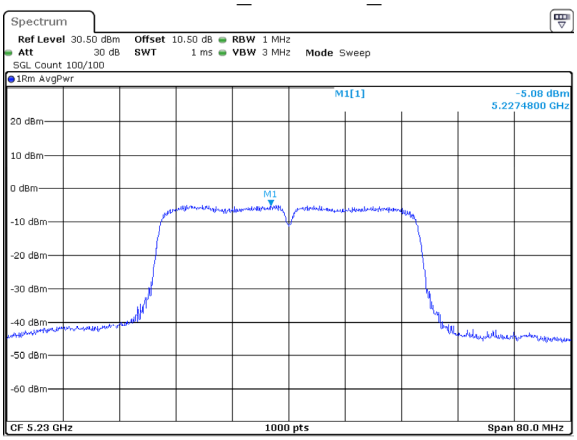
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:38:40

802.11ac40_5190MHz_Chain 1



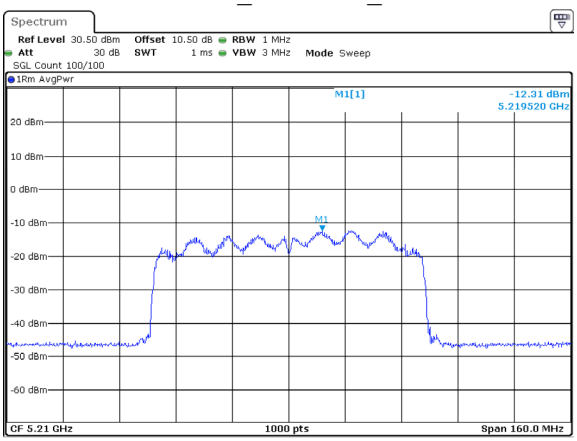
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 23:52:01

802.11ac40_5230MHz_Chain 1



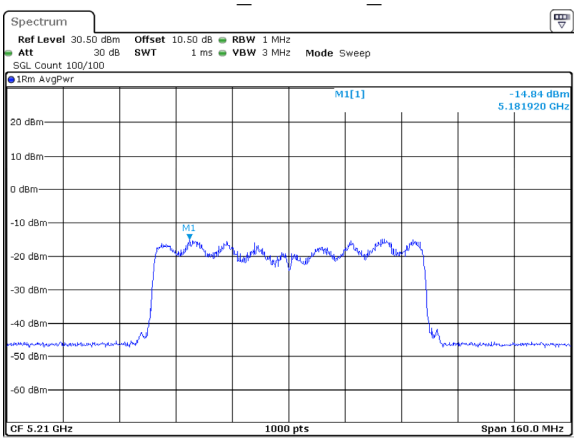
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 23:54:42

802.11ac80_5210MHz_Chain 0



ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:40:26

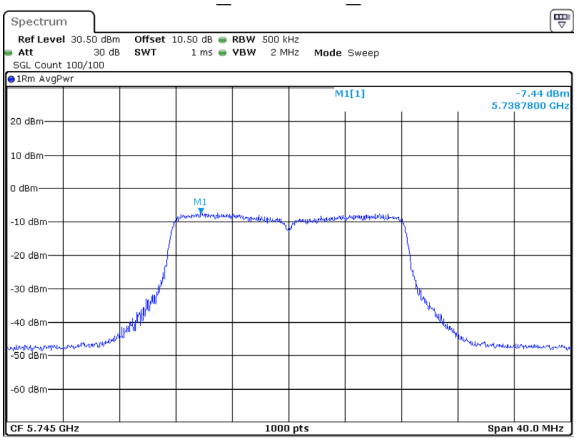
802.11ac80_5210MHz_Chain 1



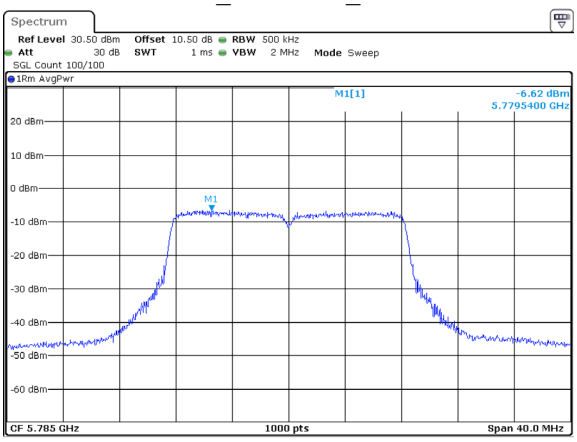
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 23:56:30

5725-5850MHz

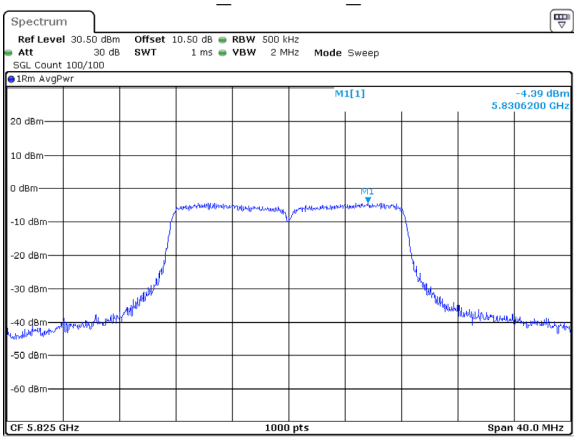
802.11a_5745MHz_Chain 0



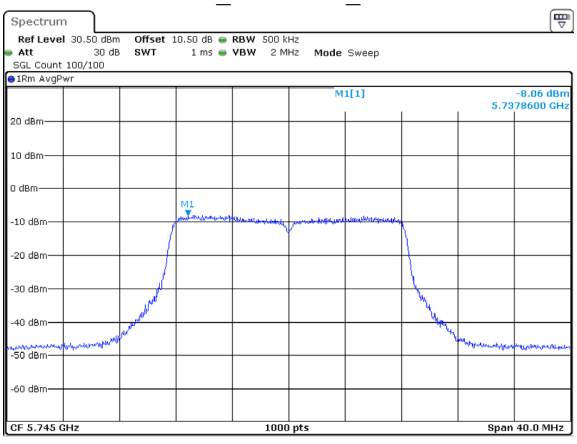
802.11a_5785MHz_Chain 0



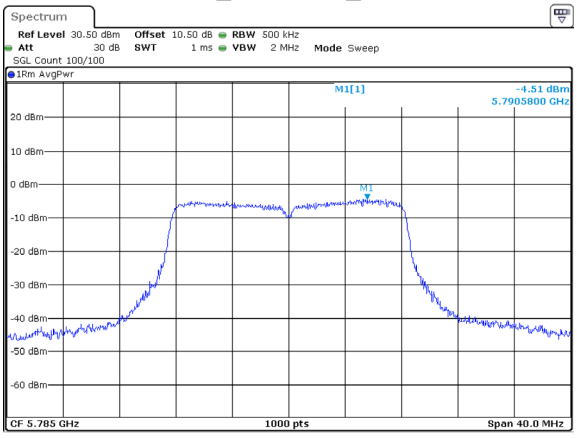
802.11a_5825MHz_Chain 0



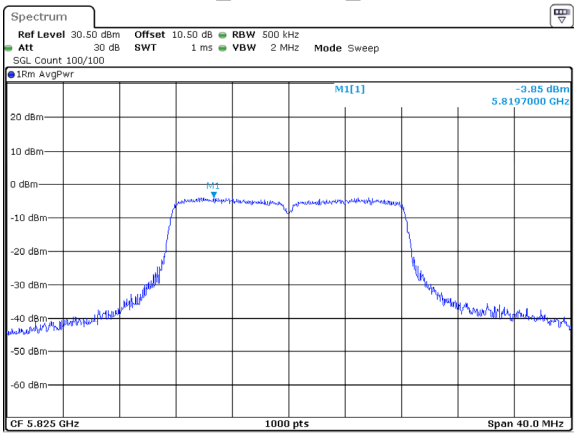
802.11a_5745MHz_Chain 1



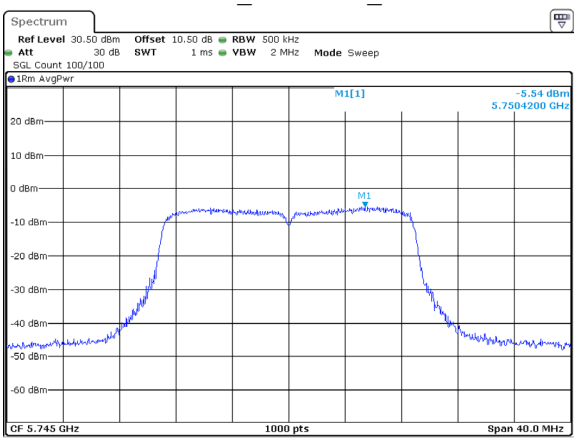
802.11a_5785MHz_Chain 1



802.11a_5825MHz_Chain 1

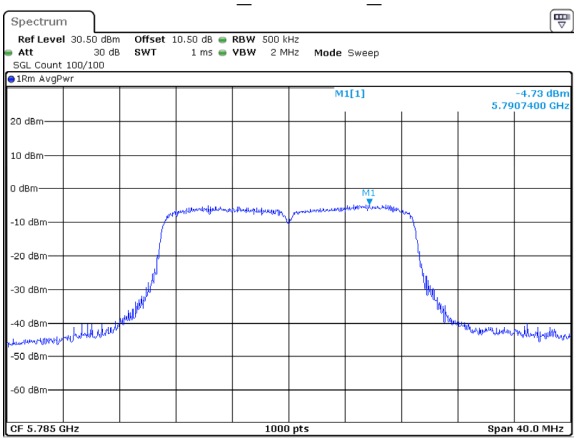


802.11ac20_5745MHz_Chain 0



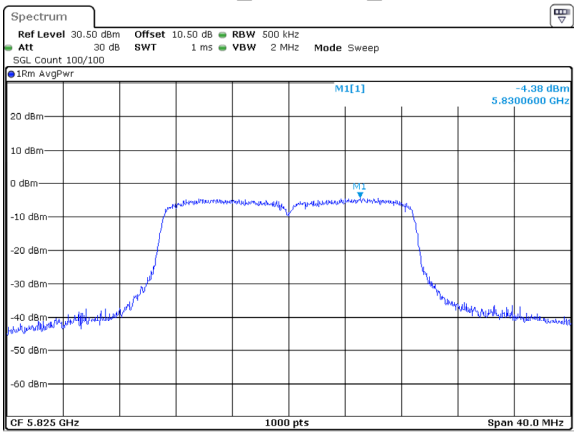
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:50:43

802.11ac20_5785MHz_Chain 0



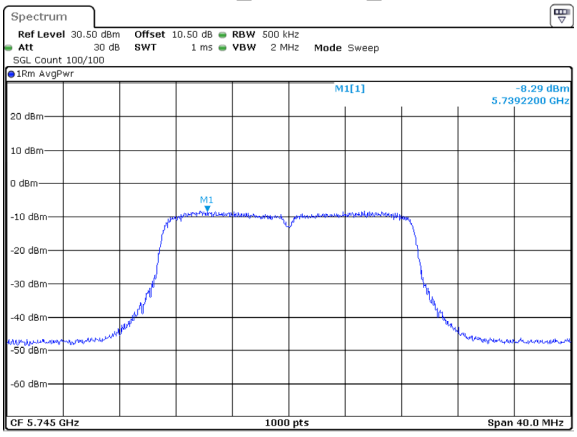
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:53:34

802.11ac20_5825MHz_Chain 0



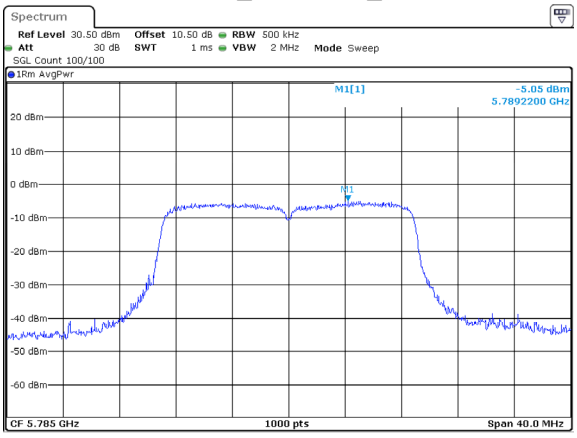
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 21:55:26

802.11ac20_5745MHz_Chain 1



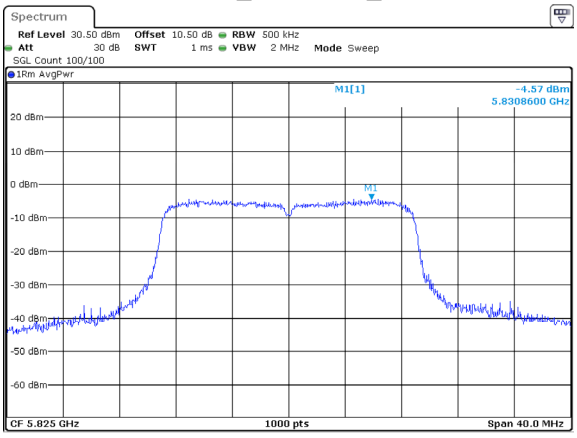
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 4.JAN.2025 00:13:57

802.11ac20_5785MHz_Chain 1



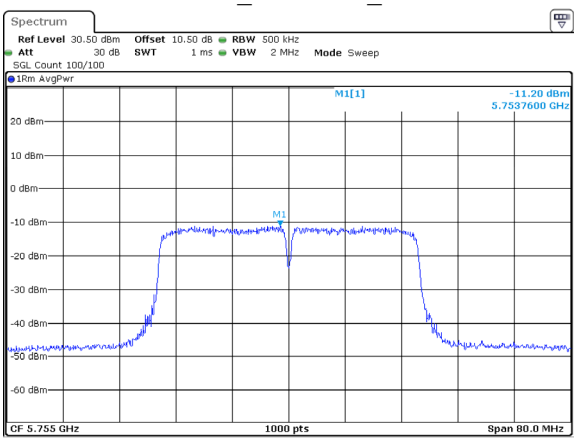
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 4.JAN.2025 00:17:47

802.11ac20_5825MHz_Chain 1



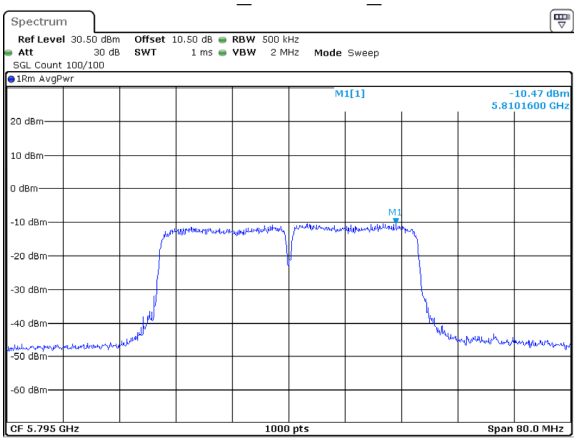
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 4.JAN.2025 00:20:56

802.11ac40_5755MHz_Chain 0



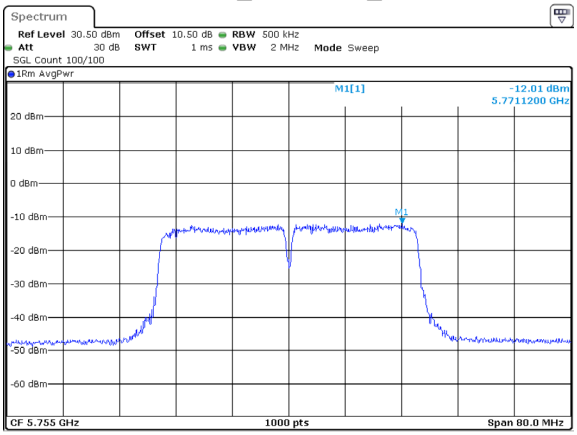
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 22:02:10

802.11ac40_5795MHz_Chain 0



ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 22:04:47

802.11ac40_5755MHz_Chain 1



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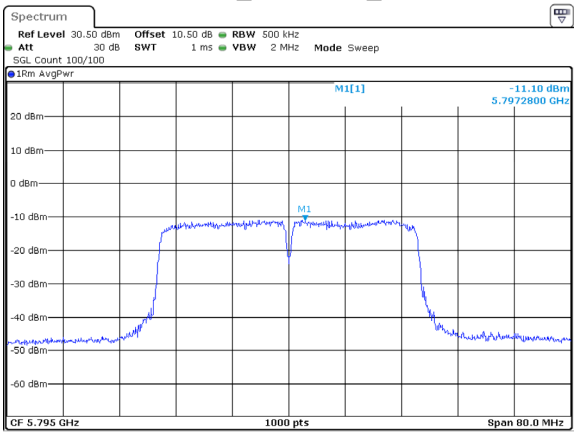
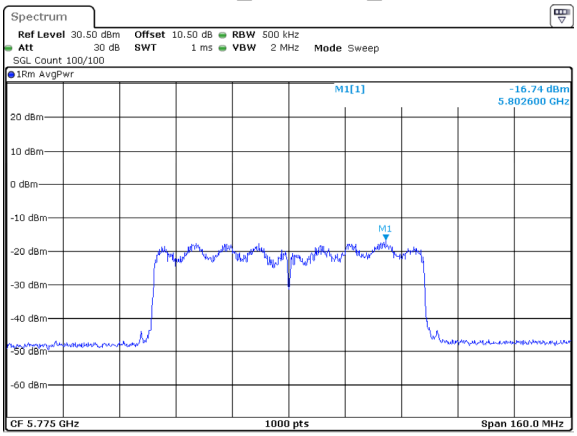
Date: 4.JAN.2025 00:22:42

802.11ac40_5795MHz_Chain 1



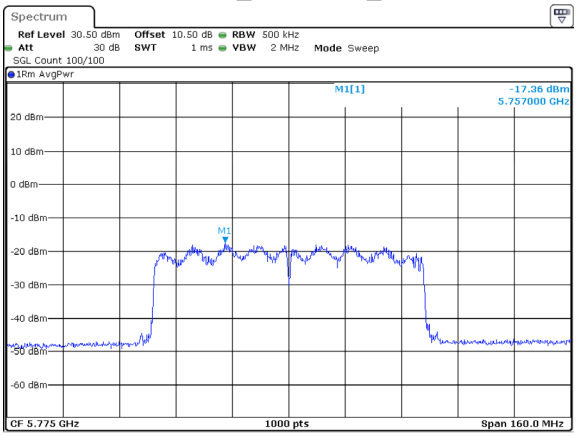
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 4.JAN.2025 00:24:03

802.11ac80_5775MHz_Chain 0



ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 3.JAN.2025 22:07:41

802.11ac80_5775MHz_Chain 1



ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 4.JAN.2025 00:26:22

Duty Cycle

Test Information:

Sample No.:	2W9C-2	**Test Date:**	2025/01/02~2025/01/16
Test Site:	RF	**Test Mode:**	Transmitting
Tester:	Brian Li	**Test Result:**	N/A

Environmental Conditions:

Temperature: (°C):	21	**Relative Humidity: (%)**	39	**ATM Pressure: (kPa)**	101

Test Data:

5150-5250MHz

Chain 0

Mode	Antenna	Test Frequency (MHz)	Ton (ms)	Ton+Toff (ms)	Duty Cycle (%)	Duty Cycle Factor (dB)	1/Ton (Hz)	VBW Setting (kHz)
802.11a	Chain 0	5200	**1.357**	2.364	57.40	2.41	737	1
802.11ac20	Chain 0	5200	1.271	2.278	55.79	2.53	787	1
802.11ac40	Chain 0	5190	0.631	1.638	38.52	4.14	1585	2
802.11ac80	Chain 0	5210	0.309	1.319	23.43	6.30	3236	5

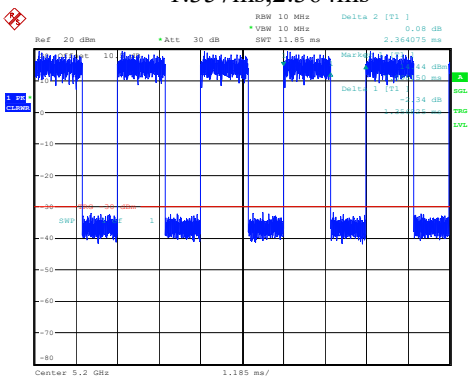
Chain 1

Mode	Antenna	Test Frequency (MHz)	Ton (ms)	Ton+Toff (ms)	Duty Cycle (%)	Duty Cycle Factor (dB)	1/Ton (Hz)	VBW Setting (kHz)
802.11a	Chain 1	5200	1.357	2.364	57.40	2.41	737	1
802.11ac20	Chain 1	5200	1.251	2.276	54.96	2.60	799	1
802.11ac40	Chain 1	5190	0.617	1.636	37.71	4.23	1621	2
802.11ac80	Chain 1	5210	0.303	1.312	23.09	6.36	3300	5

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

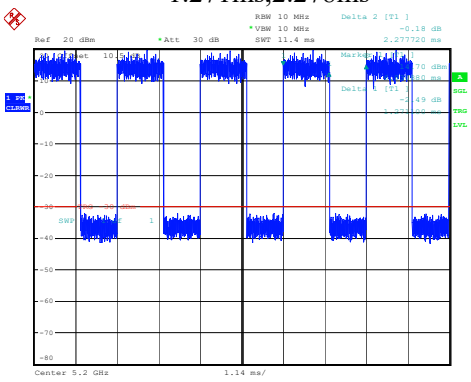
Chain 0

802.11a_5200MHz
1.357ms,2.364ms



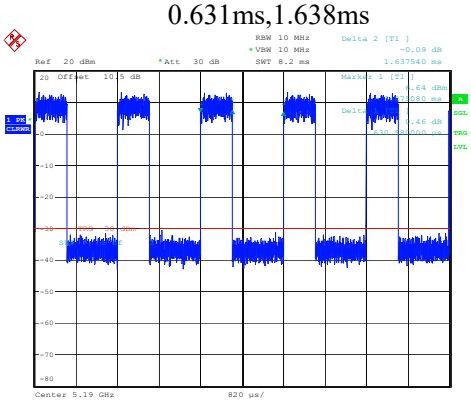
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 2.JAN.2025 14:50:16

802.11ac20_5200MHz
1.271ms,2.278ms



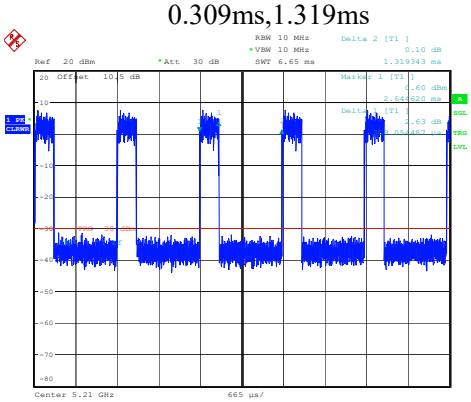
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 2.JAN.2025 14:52:56

802.11ac40_5190MHz
0.631ms,1.638ms



ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 2.JAN.2025 14:56:27

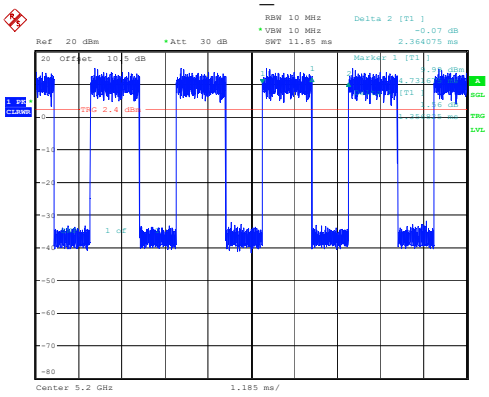
802.11ac80_5210MHz
0.309ms,1.319ms



ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 2.JAN.2025 14:57:31

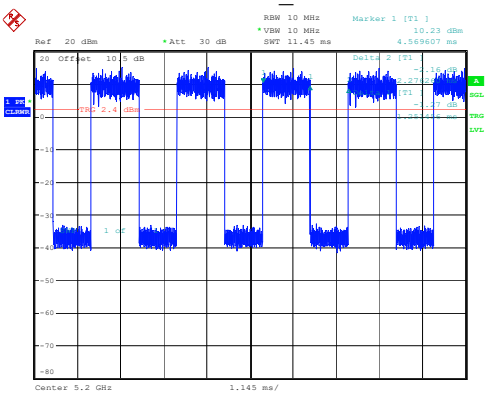
Chain 1

802.11a_5200MHz



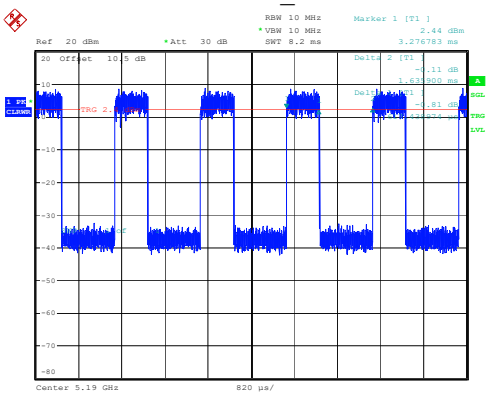
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 16.JAN.2025 17:28:48

802.11ac20_5200MHz



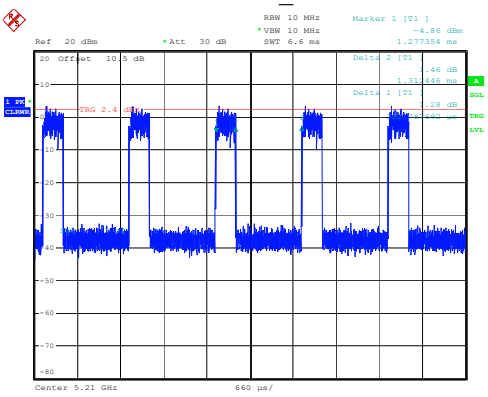
ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 16.JAN.2025 17:36:13

802.11ac40_5190MHz



ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 16.JAN.2025 17:37:26

802.11ac80_5210MHz



ProjectNo.:2401A37173E-RF Tester:Brian Li
Date: 16.JAN.2025 17:39:12

RF EXPOSURE EVALUATION

MPE-Based Exemption

Applicable Standard

According to subpart 15.247 (i) and subpart 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

According to KDB 447498 D04 Interim General RF Exposure Guidance

MPE-Based Exemption:
General frequency and separation-distance dependent MPE-based effective radiated power(ERP) thresholds are in Table B.1 [Table 1 of § 1.1307(b)(3)(i)(C)] to support an exemptionfrom further evaluation from 300 kHz through 100 GHz.

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	1,920 R^2.
1.34-30	3,450 R^2/f^2.
30-300	3.83 R^2.
300-1,500	0.0128 R^2f.
1,500-100,000	19.2R^2.

R is the minimum separation distance in meters
f = frequency in MHz

Result

Mode	Frequency (MHz)	Tune up conducted power#(dBm)	Antenna Gain#		ERP		Evaluation Distance (m)	ERP Limit (W)
			(dBi)	(dBd)	(dBm)	(W)		
BT	2402~2480	7.5	3.00	0.85	8.35	0.01	0.2	0.768
BLE	2402~2480	7.5	3.00	0.85	8.35	0.01	0.2	0.768
2.4G Wi-Fi	2412~2462	22.0	3.00	0.85	22.85	0.19	0.2	0.768
5.2G Wi-Fi	5150-5250	13.0	5.22	3.07	16.07	0.04	0.2	0.768
5.8G Wi-Fi	5725-5850	12.0	5.22	3.07	15.07	0.03	0.2	0.768

Note:
1) The tune up conducted power and antenna gain was declared by the applicant.
2) The BT, 2.4G and 5G Wi-Fi cannot simultaneous transmitting.

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

Result: Compliant

EUT PHOTOGRAPHS

Please refer to the attachment 2401A37173E-RF External photo and 2401A37173E-RF Internal photo.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2401A37173E-RF-00B Test Setup photo.

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