TEST REPORT

Applicant Name:	Loewe Technology GmbH
Address:	Industriestrasse 11, 96317 Kronach, Germany
Report Number:	2401S39342E-RF-00C
FCC ID:	2AZD4-64510D10

Test Standard (s)

FCC PART 15.407

Sample Description

Product Type:	We. BEAM
Model No.:	64510D10
Multiple Model(s) No.:	N/A
Trade Mark:	We. by Loewe.
Date Received:	2024/04/25
Issue Date:	2024/07/12

Test Result:	Pass▲

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

Prepared and Checked By:

Bruce Lin

Bruce Lin
RF Engineer

Approved By:

Nancy Wang

Nancy Wang
RF Supervisor

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

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

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	2401S39342E-RF-00C	Original Report	2024/07/12

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	We. BEAM
Tested Model	64510D10
Multiple Model(s)	N/A
Frequency Range	5G Wi-Fi: 5150-5250MHz; 5250-5350MHz; 5470-5725MHz; 5725-5850MHz
Mode	802.11a/n20/n40/ac20/ac40/ac80
Maximum Conducted Average Output Power	5150-5250MHz: 13.15dBm 5250-5350MHz: 18.61dBm 5470-5725MHz: 16.75dBm 5725-5850MHz: 18.13dBm
Modulation Technique	OFDM
Antenna Specification#	ANT1: 3.19dBi, ANT2: 2.99dBi (provided by the applicant)
Voltage Range	DC 20.0V from adapter
Sample serial number	2KFJ-2 for Conducted and Radiated Emissions Test 2KFJ-1 for RF Conducted Test (Assigned by BACL, Shenzhen)
Sample/EUT Status	Good condition
Adapter Information	Model: P6514I Input: AC 100-240V, 50/60Hz, 1.5A Output: DC 5.0V/9.0V/12.0V/15.0V, 3.0A or 20.0V, 3.25A, 65.0W, Max

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		±5%
RF Frequency		213.55 Hz(k=2, 95% level of confidence)
RF output power, conducted		0.72 dB(k=2, 95% level of confidence)
Unwanted Emission, conducted		1.75 dB(k=2, 95% level of confidence)
AC Power Lines Conducted Emissions	9kHz-150kHz	3.94dB(k=2, 95% level of confidence)
	150kHz-30MHz	3.84dB(k=2, 95% level of confidence)
Radiated Emissions	9kHz - 30MHz	3.30dB(k=2, 95% level of confidence)
	30MHz~200MHz (Horizontal)	4.48dB(k=2, 95% level of confidence)
	30MHz~200MHz (Vertical)	4.55dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Horizontal)	4.85dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Vertical)	5.05dB(k=2, 95% level of confidence)
	1GHz - 6GHz	5.35dB(k=2, 95% level of confidence)
	6GHz - 18GHz	5.44dB(k=2, 95% level of confidence)
	18GHz - 40GHz	5.16dB(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/n20/n40/ac20/ac40/ac80 mode, the n20/n40 mode was reduced test as identical parameter with ac20/ac40 mode.

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 5250-5350MHz Band, 7 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	60	5300
54	5270	62	5310
56	5280	64	5320
58	5290	/	/

For 802.11a/ac20 mode: channel 52, 56, 64 were tested;
For 802.11ac40 mode: channel 54, 62 were tested;
For 802.11ac80 mode, channel 58 was tested.

For 5470-5725MHz Band, 21 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	124	5620
102	5510	126	5630
104	5520	128	5640
106	5530	132	5660
108	5540	134	5670
110	5550	136	5680
112	5560	138	5690
116	5580	140	5700
118	5590	142	5710
120	5600	144	5720
122	5610	/	/

For 802.11a/ac20 mode: channel 100, 116, 140, 144 were tested;
For 802.11ac40 mode: channel 102, 110, 134, 142 were tested;
For 802.11ac80 mode, channel 106, 122, 138 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

"QA Tool_Dbg"[#] software was used and power level as below. The software and power level was provided by the applicant. The device was tested with the worst case was performed as below:

5150-5250 MHz Band:					
Test Modes	**Test Channels**	**Test Frequency (MHz)**	**Data rate**	**Power Level Setting[#]**	
				ANT 1	**ANT 2**
802.11a	Lowest	5180	6Mbps	1A	1A
	Middle	5200	6Mbps	1A	1A
	Highest	5240	6Mbps	1A	1A
802.11ac-VHT20	Lowest	5180	MCS0	16	16
	Middle	5200	MCS0	16	16
	Highest	5240	MCS0	16	16
802.11ac-VHT40	Lowest	5190	MCS0	16	16
	Highest	5230	MCS0	16	16
802.11ac-VHT80	Middle	5210	MCS0	16	16
5250-5350 MHz Band:					
Test Modes	**Test Channels**	**Test Frequency (MHz)**	**Data rate**	**Power Level Setting[#]**	
				ANT 1	**ANT 2**
802.11a	Lowest	5260	6Mbps	20	20
	Middle	5280	6Mbps	20	20
	Highest	5320	6Mbps	20	20
802.11ac-VHT20	Lowest	5260	MCS0	20	20
	Middle	5280	MCS0	20	20
	Highest	5320	MCS0	20	20
802.11ac-VHT40	Lowest	5270	MCS0	1C	1C
	Highest	5310	MCS0	1C	1C
802.11ac-VHT80	Middle	5290	MCS0	18	18

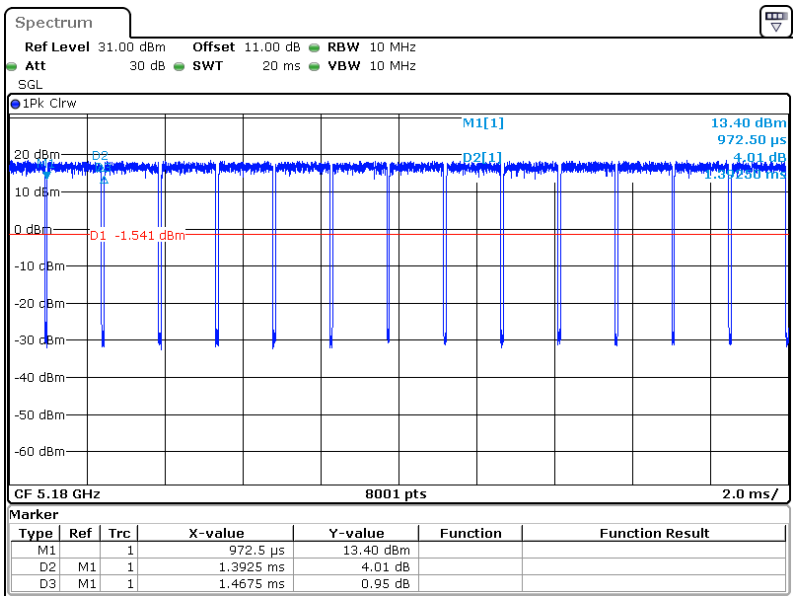
5470-5725 MHz Band:					
Test Modes	**Test Channels**	**Test Frequency (MHz)**	**Data rate**	**Power Level Setting#**	
				ANT 1	**ANT 2**
802.11a	Lowest	5500	6Mbps	1C	1C
	Middle	5580	6Mbps	1C	1C
	Highest	5700	6Mbps	1C	1C
	Cross	5720	6Mbps	1C	1C
802.11ac-VHT20	Lowest	5500	MCS0	1C	1C
	Middle	5580	MCS0	1C	1C
	Highest	5700	MCS0	1C	1C
	Cross	5720	MCS0	1C	1C
802.11ac-VHT40	Lowest	5510	MCS0	1C	1C
	Middle	5550	MCS0	1C	1C
	Highest	5670	MCS0	1C	1C
	Cross	5710	MCS0	1C	1C
802.11ac-VHT80	Lowest	5530	MCS0	1C	1C
	Highest	5610	MCS0	1C	1C
	Cross	5690	MCS0	1C	1C
5725-5850 MHz Band:					
Test Modes	**Test Channels**	**Test Frequency (MHz)**	**Data rate**	**Power Level Setting#**	
				ANT 1	**ANT 2**
802.11a	Lowest	5745	6Mbps	20	20
	Middle	5785	6Mbps	20	20
	Highest	5825	6Mbps	20	20
802.11ac-VHT20	Lowest	5745	MCS0	20	20
	Middle	5785	MCS0	20	20
	Highest	5825	MCS0	20	20
802.11ac-VHT40	Lowest	5755	MCS0	20	20
	Highest	5795	MCS0	20	20
802.11ac-VHT80	Middle	5775	MCS0	20	20

1. The above are the worst-case data rates, which are determined for each mode based upon investigations by measuring the average power and PSD across all data rates, bandwidths, and modulations.
2. For 802.11 a mode, the device only support SISO mode.
3. For 802.11n/ac modes, the device supports SISO and MIMO in all modes, per pretest, the MIMO mode was the worst mode for all the modes.
4. Additional channels cross the band 5470-5725MHz and 5725-5850 MHz, test with the additional channel to compliance with stricter limit of the two bands (5470-5725MHz more stricter)

Duty cycle

Test Modes	Ton (ms)	Ton+off (ms)	Duty cycle (%)	Duty Cycle Factor (dB)	1/T (Hz)	VBW Setting (kHz)
802.11a	1.393	1.468	94.89	0.23	718	1
802.11ac-VHT20	0.680	0.755	90.07	0.45	1471	2
802.11ac-VHT40	0.353	0.424	83.25	0.80	2833	3
802.11ac-VHT80	0.188	0.259	72.59	1.39	5319	10
Note: Test only was performed at ANT 1						

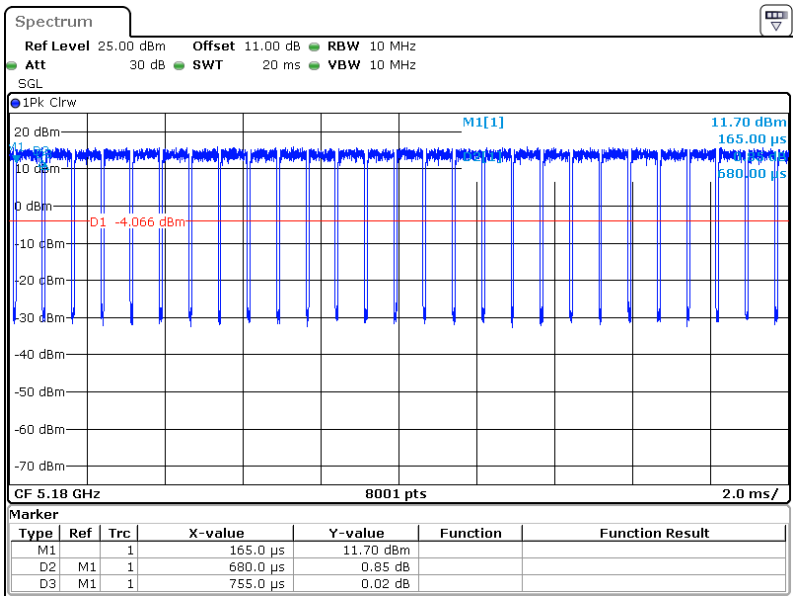
802.11a



ProjectNo.:2401S39342E-RF Tester:Cheeb Huang

Date: 13.MAY.2024 11:51:33

802.11ac 20



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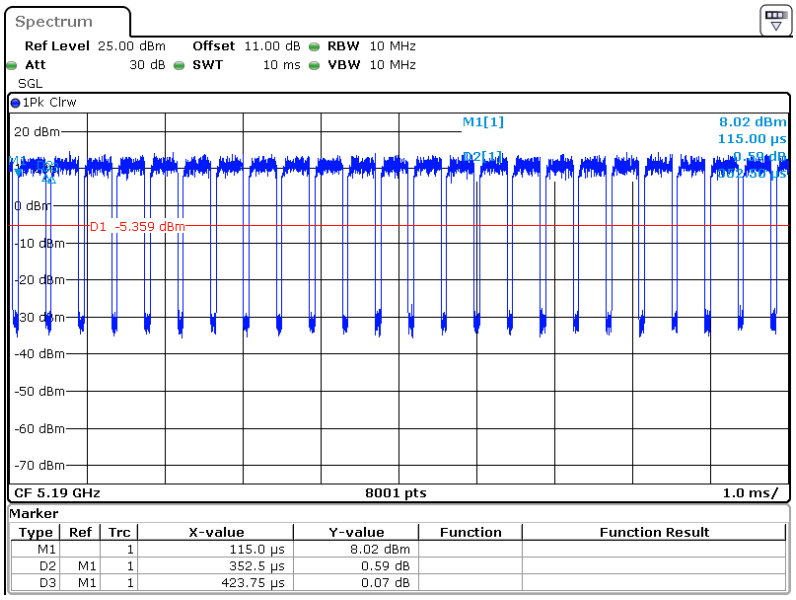
Date: 13.MAY.2024 14:01:04

802.11ac 40



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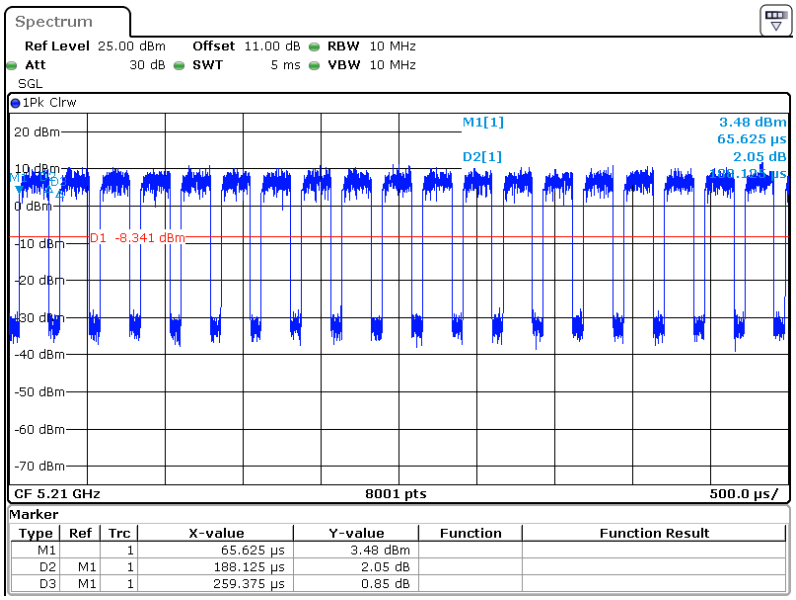
Date: 13.MAY.2024 14:40:41

802.11ac 80



Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

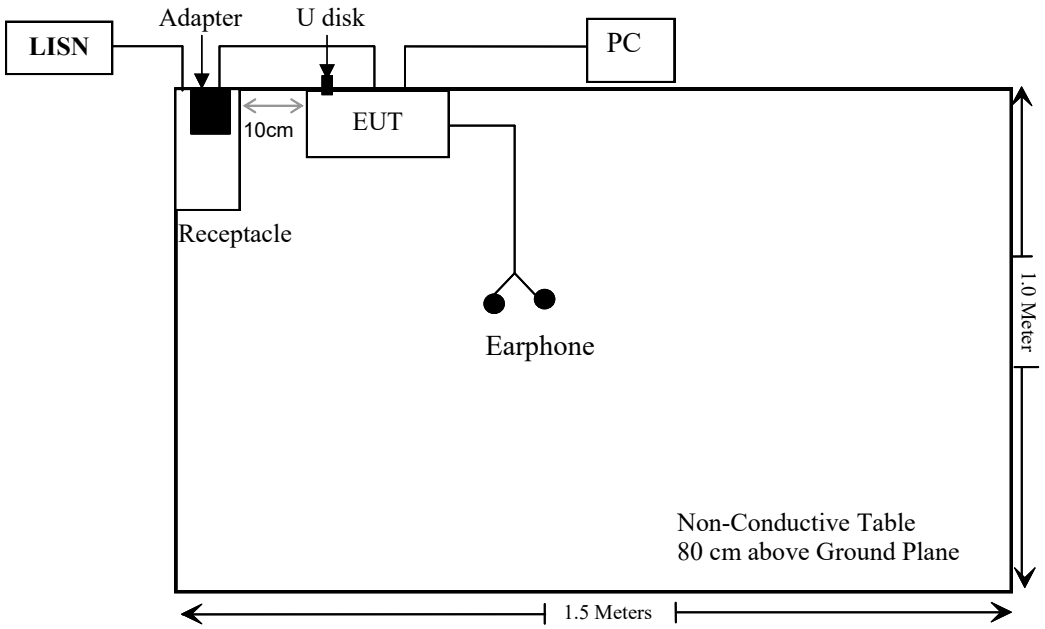
Manufacturer	Description	Model	Serial Number
Xiao mi	Earphone	Unknown	Unknown
Kingston	U disk	Unknown	Unknown
Lenovo	PC	TIANYI510Pro-18ICB	R3NO28B21001

External I/O Cable

Cable Description	Length (m)	From Port	To
Un-shielded Un-Detachable DC Cable	1.0	EUT	Adapter
Un-shielded Detachable HDMI cable	1.6	EUT	PC
Un-shielded Detachable Audio cable	1.2	EUT	Earphone

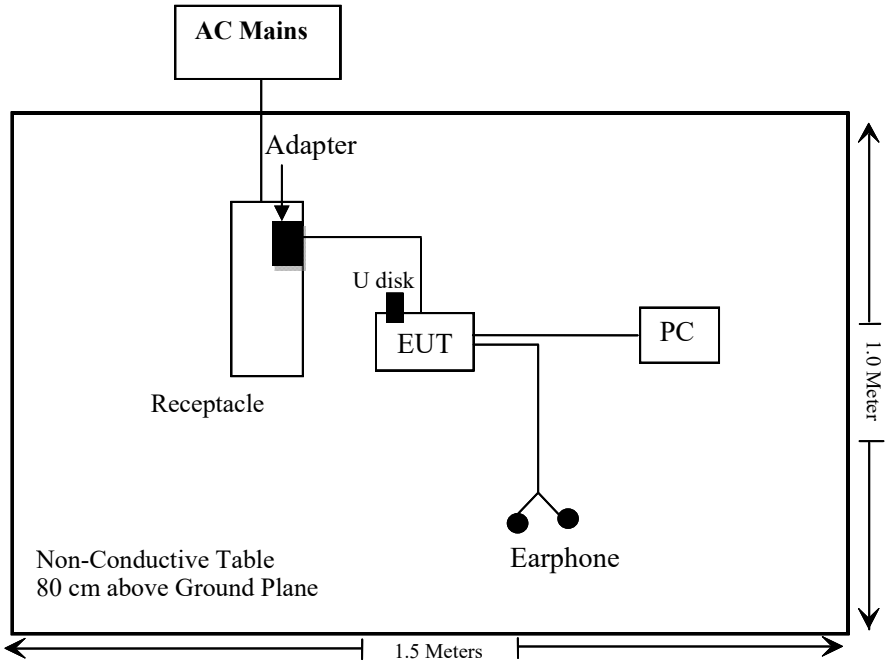
Block Diagram of Test Setup

For conducted emission

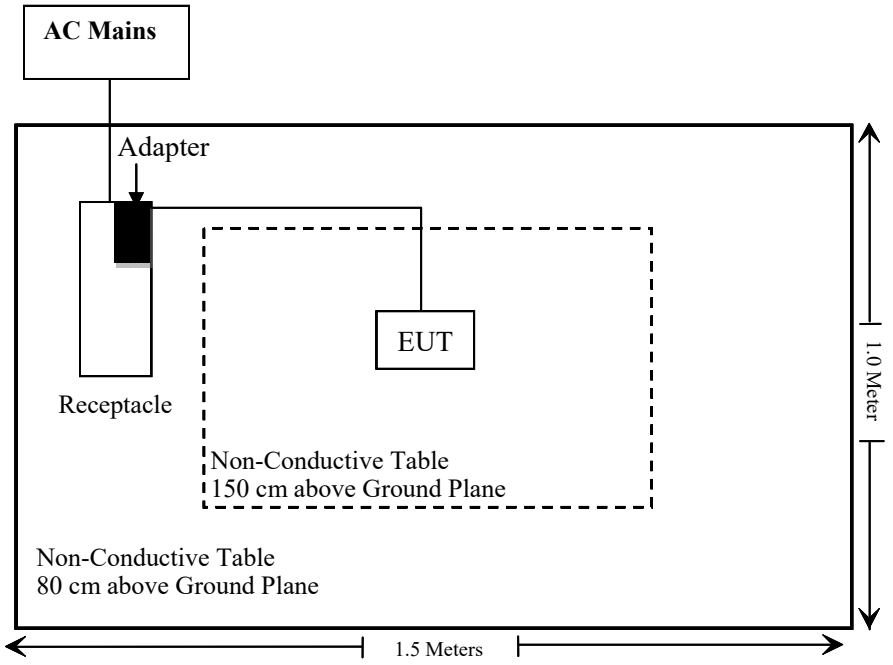


For Radiated Emissions:

Below 1GHz



Above 1GHz


AC Mains
Adapter
EUT
Receptacle
Non-Conductive Table
150 cm above Ground Plane
Non-Conductive Table
80 cm above Ground Plane
1.0 Meter
1.5 Meters

SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307 (b) & §2.1091	MPE-Based Exemption	Compliant
§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)	Compliant*

Compliant*: Please refer to the DFS report 2401S39342E-RF-00D.
Not Applicable: For 5250-5350MHz/5470-5725MHz, the maximum EIRP is 21.80dBm≤27dBm (500mW).

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emissions Test					
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2024/01/16	2025/01/15
Rohde & Schwarz	LISN	ENV216	101613	2024/01/16	2025/01/15
Rohde & Schwarz	Transient Limiter	ESH3Z2	DE25985	2023/08/03	2024/08/02
Unknown	CE Cable	CE Cable	UF A210B-1-0720-504504	2023/08/03	2024/08/02
Audix	EMI Test software	E3	191218(V9)	NCR	NCR
Radiated Emissions Test					
R&S	EMI Test Receiver	ESR3	102455	2024/01/16	2025/01/15
Sonoma instrument	Pre-amplifier	310 N	186238	2023/06/08	2024/06/07
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2026/07/19
BACL	Active Loop Antenna	1313-1A	4031911	2024/03/21	2025/03/20
Unknown	Cable	Chamber Cable 1	F-03-EM236	2023/08/03	2024/08/02
Unknown	Cable	Chamber Cable 4	EC-007	2023/08/03	2024/08/02
Audix	EMI Test software	E3	19821b(V9)	NCR	NCR
Rohde & Schwarz	Spectrum Analyzer	FSV40	101605	2024/03/27	2025/03/26
COM-POWER	Pre-amplifier	PA-122	181919	2023/06/29	2024/06/28
Schwarzbeck	Horn Antenna	BBHA9120D(1201)	1143	2023/07/26	2026/07/25
Unknown	RF Cable	KMSE	0735	2023/10/08	2024/10/07
Unknown	RF Cable	UFA147	219661	2023/10/08	2024/10/07
Unknown	RF Cable	XH750A-N	J-10M	2023/10/08	2024/10/07
JD	Multiplex Switch Test Control Set	DT7220FSU	DQ77926	NCR	NCR
SNSD	5G Band Reject filter	BSF5150-5850MN-0899-004	5G filter	2023/08/03	2024/08/02
A.H.System	Pre-amplifier	PAM-1840VH	190	2023/08/02	2024/08/01
Electro-Mechanics Co	Horn Antenna	3116	9510-2270	2023/09/18	2026/09/17
UTIFLEX	RF Cable	NO. 13	232308-001	2023/08/03	2024/08/02
Audix	EMI Test software	E3	191218(V9)	NCR	NCR

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
R&S	spectrum analyzer	FSV40	101942	2023/12/18	2024/12/17
ANRITSU	Microwave peak power sensor	MA24418A	12622	2023/08/08	2024/08/07
Unknown	10dB Attenuator	Unknown	F-03-EM122	2023/07/04	2024/07/03
Unknown	RF Cable	65475	01670515	2023/07/04	2024/07/03

*** 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).

FCC 1.1307 (B) & §2.1091- MPE-BASED EXEMPTION

Applicable Standard

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

According to KDB 447498 D04 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)(1)(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

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

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

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

Result

Mode	Frequency (MHz)	Tune up conducted power#	Antenna Gain#		ERP		Evaluation Distance (m)	ERP Limit (mW)
		(dBm)	(dBi)	(dBd)	(dBm)	(mW)		
BT	2402-2480	9.5	2.11	-0.04	9.46	8.83	0.2	768
BLE	2402-2480	8.0	2.11	-0.04	7.96	6.25	0.2	768
2.4G Wi-Fi	2412-2462	28.5	2.34	0.19	28.69	739.61	0.2	768
5.2G Wi-Fi	5180-5240	13.5	3.19	1.04	14.54	28.44	0.2	768
5.3G Wi-Fi	5260-5320	19.0	3.19	1.04	20.04	100.93	0.2	768
5.6G Wi-Fi	5500-5720	17.0	3.19	1.04	18.04	63.68	0.2	768
5.8G Wi-Fi	5745-5825	18.5	3.19	1.04	19.54	89.95	0.2	768

Note: 1. The tune up conducted power and antenna gain was declared by the applicant.
2. The BT and Wi-Fi can transmit at same time. The 2.4G and 5G Wi-Fi cannot transmit at same time.
3. 0dBd=2.15dBi

Simultaneous transmitting consideration (worst case):

The ratio=ERP_{BT}/limit+$ERP_{2.4G\ Wi\text{-}Fi}$/limit = 8.83/768+739.61/768 =0.975＜1.0,
so simultaneous exposure is compliant.

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

Result: Compliant.

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to § 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 user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.
c. Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

And according to FCC 47 CFR section 15.407 (a), if the transmitting antennas of directional gain greater than 6dBi are used, the transmit power and power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT has two internal antennas arrangement which were permanently attached and the maximum antenna gain# is below table, fulfill the requirement of this section. Please refer to the EUT photos.

Antenna	Antenna Type	Antenna Gain#	Impedance	Frequency Range
ANT1	FPC	3.19dBi	50Ω	5.15~5.85GHz
ANT2	FPC	2.99dBi	50Ω	5.15~5.85GHz

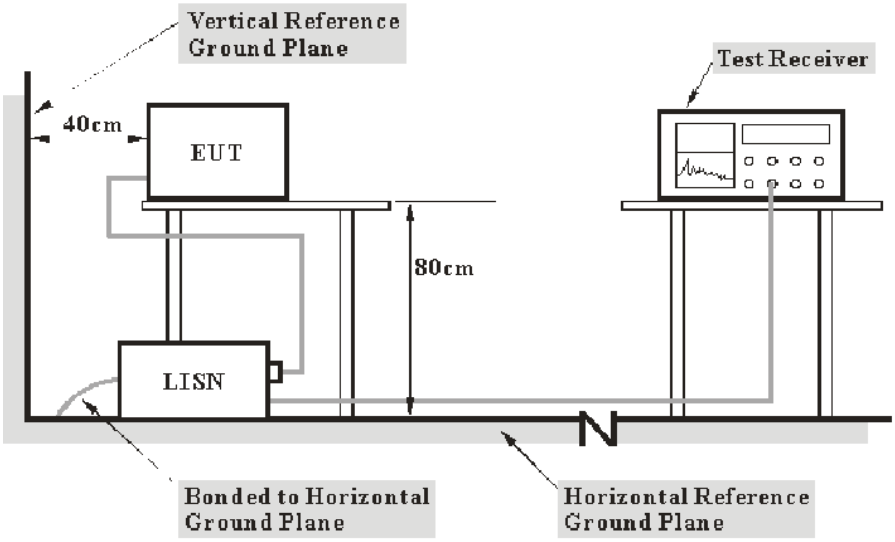
Result: Compliant

FCC §15.407 (b) (6) §15.207 (a) - 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).

Test Data

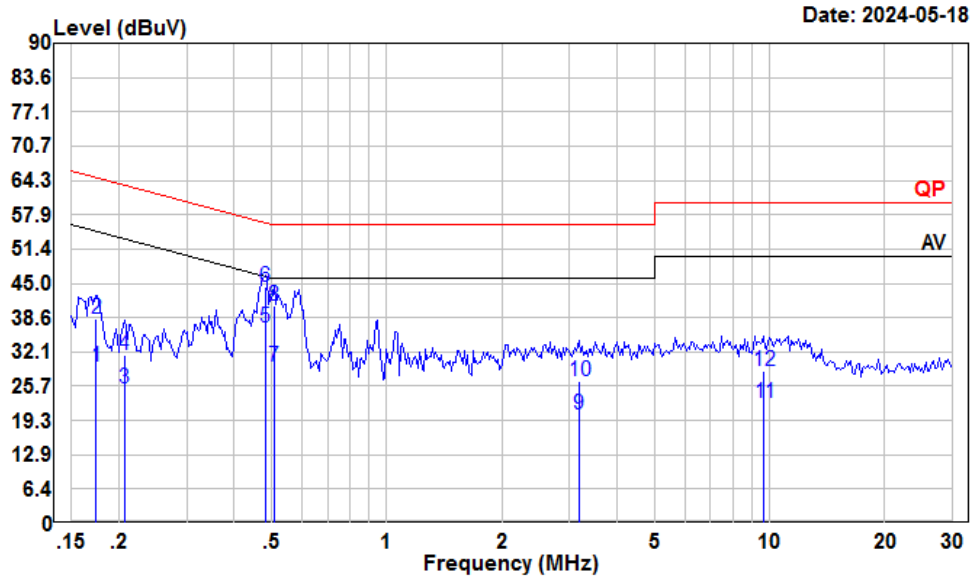
Environmental Conditions

Temperature:	25 °C
Relative Humidity:	62 %
ATM Pressure:	101 kPa

The testing was performed by Macy Shi on 2024-05-18.

EUT operation mode: Transmitting (Maximum output power mode, 802.11ac20 5320MHz)

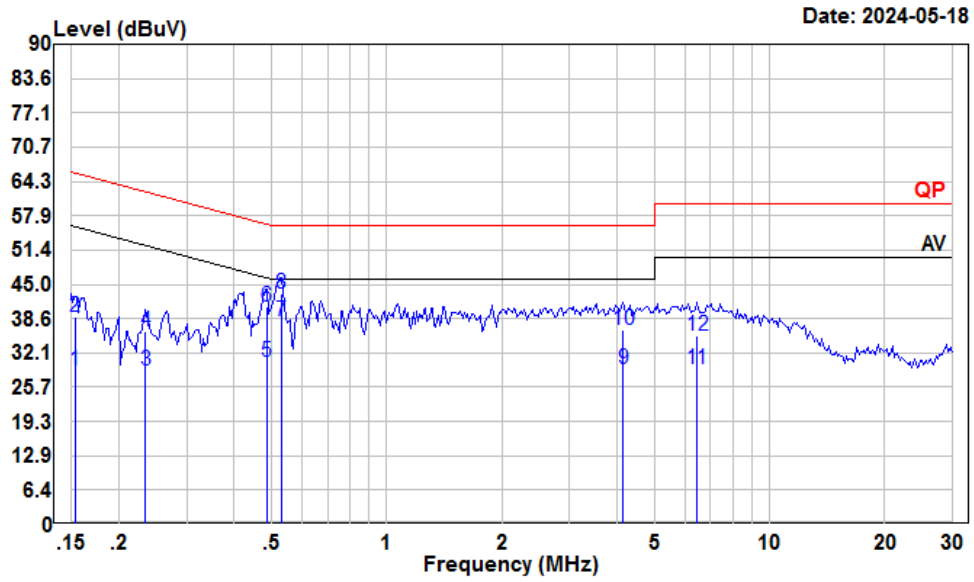
AC 120V/60 Hz, Line



Condition: Line
Project : 2401S39342E-RF
Tester : Macy shi
Note : 5G WIFI

	Freq	Read Level	LISN Level	Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.17	8.47	29.46	10.85	10.14	54.77	-25.31	Average
2	0.17	17.37	38.36	10.85	10.14	64.77	-26.41	QP
3	0.21	4.37	25.26	10.79	10.10	53.36	-28.10	Average
4	0.21	10.62	31.51	10.79	10.10	63.36	-31.85	QP
5	0.48	16.06	36.73	10.51	10.16	46.32	-9.59	Average
6	0.48	23.64	44.31	10.51	10.16	56.32	-12.01	QP
7	0.51	8.74	29.40	10.50	10.16	46.00	-16.60	Average
8	0.51	20.05	40.71	10.50	10.16	56.00	-15.29	QP
9	3.17	-0.28	20.39	10.40	10.27	46.00	-25.61	Average
10	3.17	6.00	26.67	10.40	10.27	56.00	-29.33	QP
11	9.65	1.74	22.59	10.59	10.26	50.00	-27.41	Average
12	9.65	7.58	28.43	10.59	10.26	60.00	-31.57	QP

AC 120V/60 Hz, Neutral



Condition: Neutral
Project : 2401S39342E-RF
Tester : Macy shi
Note : 5G WIFI

	Freq	Read Level	LISN Level	Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.15	8.14	28.88	10.59	10.15	55.82	-26.94	Average
2	0.15	18.17	38.91	10.59	10.15	65.82	-26.91	QP
3	0.23	8.08	28.70	10.45	10.17	52.30	-23.60	Average
4	0.23	15.54	36.16	10.45	10.17	62.30	-26.14	QP
5	0.49	9.62	30.47	10.69	10.16	46.23	-15.76	Average
6	0.49	19.84	40.69	10.69	10.16	56.23	-15.54	QP
7	0.53	17.31	38.18	10.70	10.17	46.00	-7.82	Average
8	0.53	22.41	43.28	10.70	10.17	56.00	-12.72	QP
9	4.14	8.47	29.14	10.42	10.25	46.00	-16.86	Average
10	4.14	15.65	36.32	10.42	10.25	56.00	-19.68	QP
11	6.45	8.26	29.14	10.66	10.22	50.00	-20.86	Average
12	6.45	14.47	35.35	10.66	10.22	60.00	-24.65	QP

§15.205 & §15.209 & §15.407(B) - UNDESIRABLE EMISSION

Applicable Standard

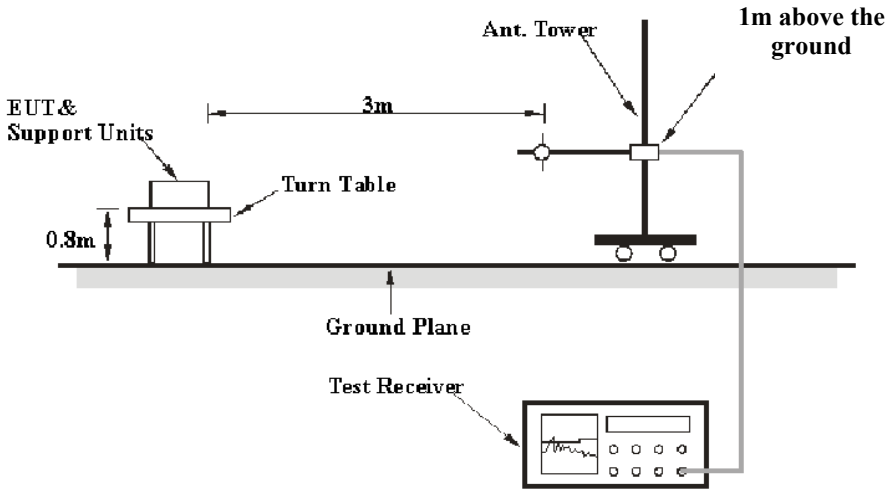
FCC §15.407 (b); §15.209; §15.205;

(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.

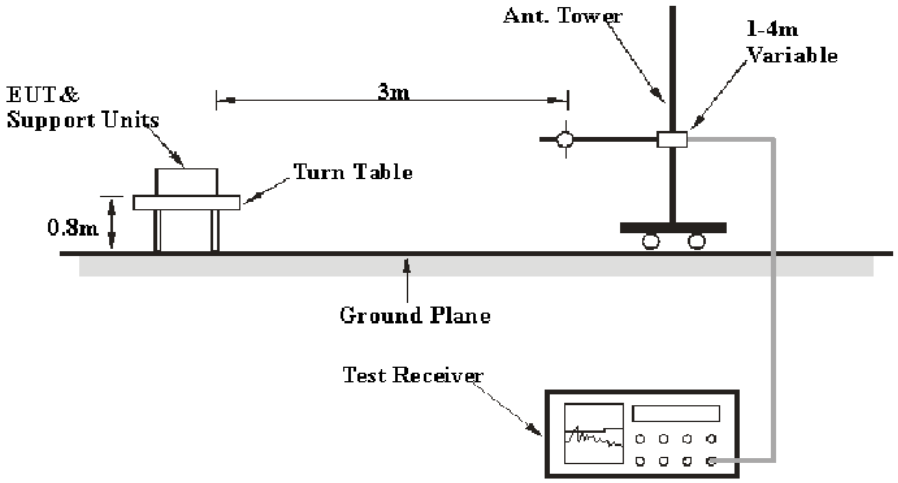
Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

EUT Setup

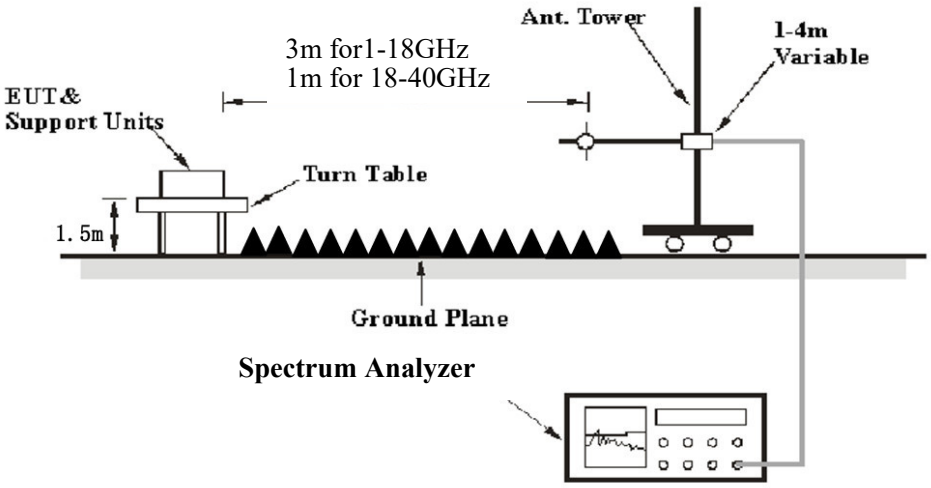
9 kHz-30MHz:



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:

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.

All emissions under the average limit and under the noise floor have not recorded in the report.

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

Test Data

Environmental Conditions

Temperature:	25~25.5 ℃
Relative Humidity:	50~54 %
ATM Pressure:	101 kPa

The testing was performed by Warren Huang on 2024-05-10 for below 1GHz and Zenos Qiao on 2024-05-09 for above 1GHz.

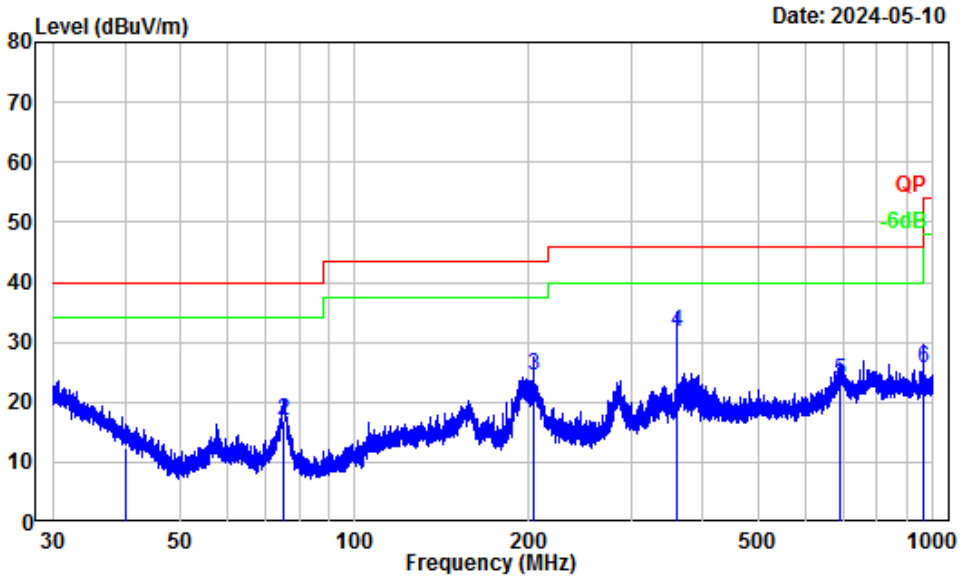
EUT operation mode: Transmitting

9 kHz-30MHz: *(Maximum output power mode, 802.11ac20 5320MHz)*

The amplitude of spurious emissions attenuated more than 20 dB below the limit was not recorded.

30 MHz–1 GHz: *(Maximum output power mode, 802.11ac20 5320MHz)*

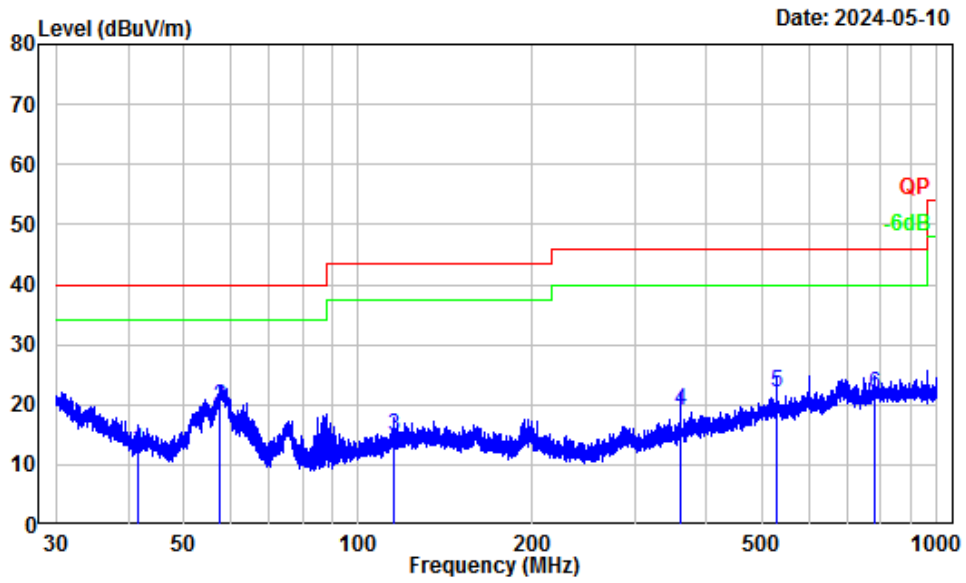
Horizontal



Site : Chamber A
Condition : 3m Horizontal
Project Number: 2401S39342E-RF
Note : 5G WIFI
Tester : Warren Huang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	40.01	-11.53	23.83	12.30	40.00	-27.70	QP
2	75.38	-17.92	34.69	16.77	40.00	-23.23	QP
3	203.97	-13.55	37.91	24.36	43.50	-19.14	QP
4	359.97	-11.71	43.53	31.82	46.00	-14.18	QP
5	688.36	-6.29	29.86	23.57	46.00	-22.43	QP
6	960.48	-4.22	29.80	25.58	54.00	-28.42	QP

Vertical



Site : Chamber A
Condition : 3m Vertical
Project Number: 2401S39342E-RF
Note : 5G WIFI
Tester : Warren Huang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	41.53	-13.89	26.41	12.52	40.00	-27.48	QP
2	57.77	-18.82	38.39	19.57	40.00	-20.43	QP
3	115.52	-13.44	28.15	14.71	43.50	-28.79	QP
4	359.97	-11.99	31.09	19.10	46.00	-26.90	QP
5	528.01	-8.36	30.38	22.02	46.00	-23.98	QP
6	781.66	-5.64	27.27	21.63	46.00	-24.37	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/AV					
802.11a (ANT 1)							
5180MHz							
5147.05	58.54	PK	H	2.70	61.24	74	-12.76
5147.05	43.73	AV	H	2.70	46.43	54	-7.57
5143.04	59.09	PK	V	2.70	61.79	74	-12.21
5143.04	44.15	AV	V	2.70	46.85	54	-7.15
10360.00	47.06	PK	H	13.07	60.13	68.2	-8.07
10360.00	47.32	PK	V	13.07	60.39	68.2	-7.81
5200MHz							
10400.00	47.78	PK	H	13.12	60.90	68.2	-7.30
10400.00	48.05	PK	V	13.12	61.17	68.2	-7.03
5240MHz							
5352.45	55.12	PK	H	3.07	58.19	74	-15.81
5352.45	41.57	AV	H	3.07	44.64	54	-9.36
5354.38	55.35	PK	V	3.07	58.42	74	-15.58
5354.38	41.84	AV	V	3.07	44.91	54	-9.09
10480.00	48.53	PK	H	13.07	61.60	68.2	-6.60
10480.00	48.81	PK	V	13.07	61.88	68.2	-6.32

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	PK/AV					
802.11a (ANT 2)							
5180MHz							
5148.78	62.24	PK	H	2.70	64.94	74	-9.06
5148.78	45.02	AV	H	2.70	47.72	54	-6.28
5149.53	63.78	PK	V	2.70	66.48	74	-7.52
5149.53	45.95	AV	V	2.70	48.65	54	-5.35
10360.00	48.24	PK	H	13.07	61.31	68.2	-6.89
10360.00	48.51	PK	V	13.07	61.58	68.2	-6.62
5200MHz							
10400.00	48.57	PK	H	13.12	61.69	68.2	-6.51
10400.00	48.85	PK	V	13.12	61.97	68.2	-6.23
5240MHz							
5351.56	55.55	PK	H	3.07	58.62	74	-15.38
5351.56	42.27	AV	H	3.07	45.34	54	-8.66
5350.89	55.86	PK	V	3.07	58.93	74	-15.07
5350.89	42.58	AV	V	3.07	45.65	54	-8.35
10480.00	48.89	PK	H	13.07	61.96	68.2	-6.24
10480.00	49.16	PK	V	13.07	62.23	68.2	-5.97

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ac20							
5180MHz							
5146.72	57.54	PK	H	2.71	60.25	74	-13.75
5146.72	44.83	AV	H	2.71	47.54	54	-6.46
5147.69	58.75	PK	V	2.71	61.46	74	-12.54
5147.69	45.69	AV	V	2.71	48.40	54	-5.60
10360.00	47.78	PK	H	13.07	60.85	68.2	-7.35
10360.00	48.63	PK	V	13.07	61.70	68.2	-6.50
5200MHz							
10400.00	48.57	PK	H	13.12	61.69	68.2	-6.51
10400.00	49.42	PK	V	13.12	62.54	68.2	-5.66
5240MHz							
5351.99	55.53	PK	H	3.07	58.60	74	-15.40
5351.99	42.14	AV	H	3.07	45.21	54	-8.79
5352.87	55.86	PK	V	3.07	58.93	74	-15.07
5352.87	42.49	AV	V	3.07	45.56	54	-8.44
10480.00	49.32	PK	H	13.07	62.39	68.2	-5.81
10480.00	50.15	PK	V	13.07	63.22	68.2	-4.98

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	PK/AV					
802.11ac40							
5190MHz							
5148.98	60.94	PK	H	2.71	63.65	74	-10.35
5148.98	46.89	AV	H	2.71	49.60	54	-4.40
5149.45	62.13	PK	V	2.71	64.84	74	-9.16
5149.45	47.65	AV	V	2.71	50.36	54	-3.64
10380.00	46.04	PK	H	13.09	59.13	68.2	-9.07
10380.00	46.73	PK	V	13.09	59.82	68.2	-8.38
5230MHz							
5352.87	55.02	PK	H	3.07	58.09	74	-15.91
5352.87	42.73	AV	H	3.07	45.80	54	-8.20
5350.56	55.25	PK	V	3.07	58.32	74	-15.68
5350.56	43.14	AV	V	3.07	46.21	54	-7.79
10460.00	46.65	PK	H	13.09	59.74	68.2	-8.46
10460.00	47.38	PK	V	13.09	60.47	68.2	-7.73
802.11ac80							
5210MHz							
5149.68	58.31	PK	H	2.71	61.02	74	-12.98
5149.68	47.69	AV	H	2.71	50.40	54	-3.60
5149.53	59.44	PK	V	2.71	62.15	74	-11.85
5149.53	48.25	AV	V	2.71	50.96	54	-3.04
5351.32	55.18	PK	H	3.07	58.25	74	-15.75
5351.32	42.57	AV	H	3.07	45.64	54	-8.36
5350.75	55.41	PK	V	3.07	58.48	74	-15.52
5350.75	42.92	AV	V	3.07	45.99	54	-8.01
10420.00	45.36	PK	H	13.12	58.48	68.2	-9.72
10420.00	45.87	PK	V	13.12	58.99	68.2	-9.21

5250-5350MHz:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	PK/AV					
802.11a (ANT 1)							
5260MHz							
4843.81	55.15	PK	H	1.69	56.84	74	-17.16
4843.81	41.73	AV	H	1.69	43.42	54	-10.58
4830.57	55.38	PK	V	1.69	57.07	74	-16.93
4830.57	41.89	AV	V	1.69	43.58	54	-10.42
10520.00	48.86	PK	H	13.05	61.91	68.2	-6.29
10520.00	49.18	PK	V	13.05	62.23	68.2	-5.97
5280MHz							
10560.00	48.39	PK	H	13.02	61.41	68.2	-6.79
10560.00	48.76	PK	V	13.02	61.78	68.2	-6.42
5320MHz							
5350.99	59.53	PK	H	3.07	62.60	74	-11.40
5350.99	43.48	AV	H	3.07	46.55	54	-7.45
5350.72	59.96	PK	V	3.07	63.03	74	-10.97
5350.72	43.79	AV	V	3.07	46.86	54	-7.14
10640.00	48.07	PK	H	13.19	61.26	74	-12.74
10640.00	34.68	AV	H	13.19	47.87	54	-6.13
10640.00	48.45	PK	V	13.19	61.64	74	-12.36
10640.00	35.13	AV	V	13.19	48.32	54	-5.68

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	PK/AV					
802.11a (ANT 2)							
5260MHz							
4898.75	55.58	PK	H	1.79	57.37	74	-16.63
4898.75	42.09	AV	H	1.79	43.88	54	-10.12
4911.54	55.87	PK	V	1.79	57.66	74	-16.34
4911.54	42.36	AV	V	1.79	44.15	54	-9.85
10520.00	48.47	PK	H	13.05	61.52	68.2	-6.68
10520.00	48.79	PK	V	13.05	61.84	68.2	-6.36
5280MHz							
10560.00	49.24	PK	H	13.02	62.26	68.2	-5.94
10560.00	49.55	PK	V	13.02	62.57	68.2	-5.63
5320MHz							
5350.85	63.08	PK	H	3.07	66.15	74	-7.85
5350.85	45.72	AV	H	3.07	48.79	54	-5.21
5350.68	64.35	PK	V	3.07	67.42	74	-6.58
5350.68	46.63	AV	V	3.07	49.70	54	-4.30
10640.00	50.05	PK	H	13.19	63.24	74	-10.76
10640.00	35.64	AV	H	13.19	48.83	54	-5.17
10640.00	50.52	PK	V	13.19	63.71	74	-10.29
10640.00	36.13	AV	V	13.19	49.32	54	-4.68

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	PK/AV					
802.11ac20							
5260MHz							
5130.45	55.21	PK	H	2.77	57.98	74	-16.02
5130.45	42.39	AV	H	2.77	45.16	54	-8.84
5125.86	55.48	PK	V	2.77	58.25	74	-15.75
5125.86	42.73	AV	V	2.77	45.50	54	-8.50
10520.00	48.94	PK	H	13.05	61.99	68.2	-6.21
10520.00	49.83	PK	V	13.05	62.88	68.2	-5.32
5280MHz							
10560.00	48.63	PK	H	13.02	61.65	68.2	-6.55
10560.00	49.56	PK	V	13.02	62.58	68.2	-5.62
5320MHz							
5351.19	61.05	PK	H	3.07	64.12	74	-9.88
5351.19	45.54	AV	H	3.07	48.61	54	-5.39
5350.58	62.18	PK	V	3.07	65.25	74	-8.75
5350.58	46.69	AV	V	3.07	49.76	54	-4.24
10640.00	48.25	PK	H	13.19	61.44	74	-12.56
10640.00	35.57	AV	H	13.19	48.76	54	-5.24
10640.00	49.32	PK	V	13.19	62.51	74	-11.49
10640.00	36.43	AV	V	13.19	49.62	54	-4.38

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ac40							
5270MHz							
4905.36	54.97	PK	H	1.79	56.76	74	-17.24
4905.36	42.02	AV	H	1.79	43.81	54	-10.19
4872.03	55.24	PK	V	1.69	56.93	74	-17.07
4872.03	42.35	AV	V	1.69	44.04	54	-9.96
10540.00	46.57	PK	H	13.03	59.60	68.2	-8.60
10540.00	47.15	PK	V	13.03	60.18	68.2	-8.02
5310MHz							
5350.95	60.96	PK	H	3.07	64.03	74	-9.97
5350.95	47.15	AV	H	3.07	50.22	54	-3.78
5350.72	61.27	PK	V	3.07	64.34	74	-9.66
5350.72	47.78	AV	V	3.07	50.85	54	-3.15
10620.00	45.93	PK	H	13.09	59.02	74	-14.98
10620.00	33.07	AV	H	13.09	46.16	54	-7.84
10620.00	46.56	PK	V	13.09	59.65	74	-14.35
10620.00	33.61	AV	V	13.09	46.70	54	-7.30
802.11ac80							
5290MHz							
4896.37	54.72	PK	H	1.79	56.51	74	-17.49
4896.37	42.44	AV	H	1.79	44.23	54	-9.77
4864.54	54.95	PK	V	1.69	56.64	74	-17.36
4864.54	42.69	AV	V	1.69	44.38	54	-9.62
5350.65	59.25	PK	H	3.07	62.32	74	-11.68
5350.65	47.36	AV	H	3.07	50.43	54	-3.57
5350.88	60.48	PK	V	3.07	63.55	74	-10.45
5350.88	47.93	AV	V	3.07	51.00	54	-3.00
10580.00	45.24	PK	H	13.00	58.24	68.2	-9.96
10580.00	45.73	PK	V	13.00	58.73	68.2	-9.47

5470-5725MHz:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11a (ANT 1)							
5500MHz							
5466.74	57.21	PK	H	3.59	60.80	68.2	-7.40
5467.36	56.82	PK	V	3.59	60.41	68.2	-7.79
11000.00	45.97	PK	H	13.98	59.95	74	-14.05
11000.00	31.23	AV	H	13.98	45.21	54	-8.79
11000.00	46.19	PK	V	13.98	60.17	74	-13.83
11000.00	31.45	AV	V	13.98	45.43	54	-8.57
5580MHz							
11160.00	46.36	PK	H	13.62	59.98	74	-14.02
11160.00	31.75	AV	H	13.62	45.37	54	-8.63
11160.00	46.64	PK	V	13.62	60.26	74	-13.74
11160.00	32.02	AV	V	13.62	45.64	54	-8.36
5700MHz							
5725.45	60.88	PK	H	4.09	64.97	68.2	-3.23
5725.98	60.07	PK	V	4.09	64.16	68.2	-4.04
11400.00	46.78	PK	H	14.08	60.86	74	-13.14
11400.00	32.36	AV	H	14.08	46.44	54	-7.56
11400.00	47.12	PK	V	14.08	61.20	74	-12.80
11400.00	32.67	AV	V	14.08	46.75	54	-7.25
5720MHz							
11440.00	44.89	PK	H	13.48	58.37	74	-15.63
11440.00	31.79	AV	H	13.48	45.27	54	-8.73
11440.00	45.08	PK	V	13.48	58.56	74	-15.44
11440.00	31.99	AV	V	13.48	45.47	54	-8.53

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	PK/AV					
802.11a (ANT 2)							
5500MHz							
5469.79	58.22	PK	H	3.69	61.91	68.2	-6.29
5468.52	59.05	PK	V	3.69	62.74	68.2	-5.46
11000.00	47.95	PK	H	13.98	61.93	74	-12.07
11000.00	34.18	AV	H	13.98	48.16	54	-5.84
11000.00	48.32	PK	V	13.98	62.30	74	-11.70
11000.00	34.57	AV	V	13.98	48.55	54	-5.45
5580MHz							
11160.00	47.26	PK	H	13.62	60.88	74	-13.12
11160.00	33.18	AV	H	13.62	46.80	54	-7.20
11160.00	47.53	PK	V	13.62	61.15	74	-12.85
11160.00	33.45	AV	V	13.62	47.07	54	-6.93
5700MHz							
5726.08	58.84	PK	H	4.09	62.93	68.2	-5.27
5725.87	59.51	PK	V	4.09	63.60	68.2	-4.60
11400.00	46.49	PK	H	14.08	60.57	74	-13.43
11400.00	32.27	AV	H	14.08	46.35	54	-7.65
11400.00	46.73	PK	V	14.08	60.81	74	-13.19
11400.00	32.54	AV	V	14.08	46.62	54	-7.38
5720MHz							
11440.00	45.63	PK	H	13.48	59.11	74	-14.89
11440.00	31.87	AV	H	13.48	45.35	54	-8.65
11440.00	46.78	PK	V	13.48	60.26	74	-13.74
11440.00	32.31	AV	V	13.48	45.79	54	-8.21

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	PK/AV					
802.11ac20							
5500MHz							
5469.54	57.87	PK	H	3.69	61.56	68.2	-6.64
5469.18	58.35	PK	V	3.69	62.04	68.2	-6.16
11000.00	47.64	PK	H	13.98	61.62	74	-12.38
11000.00	33.45	AV	H	13.98	47.43	54	-6.57
11000.00	47.93	PK	V	13.98	61.91	74	-12.09
11000.00	33.81	AV	V	13.98	47.79	54	-6.21
5580MHz							
11160.00	47.21	PK	H	13.62	60.83	74	-13.17
11160.00	33.02	AV	H	13.62	46.64	54	-7.36
11160.00	47.48	PK	V	13.62	61.10	74	-12.90
11160.00	33.27	AV	V	13.62	46.89	54	-7.11
5700MHz							
5725.16	61.11	PK	H	4.09	65.20	68.2	-3.00
5725.57	60.42	PK	V	4.09	64.51	68.2	-3.69
11400.00	46.89	PK	H	14.08	60.97	74	-13.03
11400.00	32.68	AV	H	14.08	46.76	54	-7.24
11400.00	47.22	PK	V	14.08	61.30	74	-12.70
11400.00	32.96	AV	V	14.08	47.04	54	-6.96
5720MHz							
11440.00	44.89	PK	H	13.48	58.37	74	-15.63
11440.00	32.19	AV	H	13.48	45.67	54	-8.33
11440.00	45.02	PK	V	13.48	58.50	74	-15.50
11440.00	32.35	AV	V	13.48	45.83	54	-8.17

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	PK/AV					
802.11ac40							
5510MHz							
5468.89	60.36	PK	H	3.69	64.05	68.2	-4.15
5469.28	59.85	PK	V	3.69	63.54	68.2	-4.66
11020.00	45.37	PK	H	13.89	59.26	74	-14.74
11020.00	32.04	AV	H	13.89	45.93	54	-8.07
11020.00	45.65	PK	V	13.89	59.54	74	-14.46
11020.00	32.43	AV	V	13.89	46.32	54	-7.68
5550MHz							
11100.00	45.85	PK	H	13.53	59.38	74	-14.62
11100.00	32.32	AV	H	13.53	45.85	54	-8.15
11100.00	46.09	PK	V	13.53	59.62	74	-14.38
11100.00	32.57	AV	V	13.53	46.10	54	-7.90
5670MHz							
5725.53	57.62	PK	H	4.09	61.71	68.2	-6.49
5726.24	57.17	PK	V	4.09	61.26	68.2	-6.94
11340.00	46.24	PK	H	13.99	60.23	74	-13.77
11340.00	32.61	AV	H	13.99	46.60	54	-7.40
11340.00	46.58	PK	V	13.99	60.57	74	-13.43
11340.00	32.96	AV	V	13.99	46.95	54	-7.05
5710MHz							
11420.00	45.32	PK	H	13.48	58.80	74	-15.20
11420.00	32.47	AV	H	13.48	45.95	54	-8.05
11420.00	45.85	PK	V	13.48	59.33	74	-14.67
11420.00	32.63	AV	V	13.48	46.11	54	-7.89

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ac80							
5530MHz							
5469.51	60.84	PK	H	3.69	64.53	68.2	-3.67
5469.99	61.35	PK	V	3.69	65.04	68.2	-3.16
5740.32	53.78	PK	H	4.19	57.97	68.2	-10.23
5729.64	54.65	PK	V	4.09	58.74	68.2	-9.46
11060.00	45.68	PK	H	13.71	59.39	74	-14.61
11060.00	32.31	AV	H	13.71	46.02	54	-7.98
11060.00	45.99	PK	V	13.71	59.70	74	-14.30
11060.00	32.57	AV	V	13.71	46.28	54	-7.72
5610MHz							
5727.38	56.28	PK	H	4.09	60.37	68.2	-7.83
5726.63	56.77	PK	V	4.09	60.86	68.2	-7.34
11220.00	45.95	PK	H	13.73	59.68	74	-14.32
11220.00	32.42	AV	H	13.73	46.15	54	-7.85
11220.00	46.23	PK	V	13.73	59.96	74	-14.04
11220.00	32.69	AV	V	13.73	46.42	54	-7.58
5690MHz							
11380.00	45.08	PK	H	13.38	58.46	74	-15.54
11380.00	32.84	AV	H	13.38	46.22	54	-7.78
11380.00	45.22	PK	V	13.38	58.60	74	-15.40
11380.00	32.91	AV	V	13.38	46.29	54	-7.71

5725-5850 MHz:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	PK/AV					
802.11a (ANT 1)							
5745MHz							
5644.89	56.82	PK	H	3.59	60.41	68.20	-7.79
5691.50	58.45	PK	H	3.69	62.14	105.20	-43.06
5718.68	72.08	PK	H	4.09	76.17	110.80	-34.63
5724.75	79.57	PK	H	4.09	83.66	122.20	-38.54
5645.32	56.43	PK	V	3.59	60.02	68.20	-8.18
5698.45	57.27	PK	V	3.79	61.06	105.20	-44.14
5719.16	70.56	PK	V	4.09	74.65	110.80	-36.15
5724.01	78.04	PK	V	4.09	82.13	122.20	-40.07
11490.00	46.15	PK	H	14.31	60.46	74	-13.54
11490.00	31.63	AV	H	14.31	45.94	54	-8.06
11490.00	46.48	PK	V	14.31	60.79	74	-13.21
11490.00	32.04	AV	V	14.31	46.35	54	-7.65
5785MHz							
11570.00	46.41	PK	H	14.05	60.46	74	-13.54
11570.00	31.84	AV	H	14.05	45.89	54	-8.11
11570.00	46.69	PK	V	14.05	60.74	74	-13.26
11570.00	32.16	AV	V	14.05	46.21	54	-7.79
5825MHz							
5851.51	68.15	PK	H	4.09	72.24	122.20	-49.96
5855.48	61.24	PK	H	4.09	65.33	110.80	-45.47
5893.27	57.87	PK	H	4.19	62.06	105.20	-43.14
5927.36	55.98	PK	H	4.69	60.67	68.20	-7.53
5850.89	66.93	PK	V	4.09	71.02	122.20	-51.18
5851.32	60.05	PK	V	4.09	64.14	110.80	-46.66
5878.68	57.22	PK	V	4.19	61.41	105.20	-43.79
5925.54	55.46	PK	V	4.69	60.15	68.20	-8.05
11650.00	46.72	PK	H	13.83	60.55	74	-13.45
11650.00	32.15	AV	H	13.83	45.98	54	-8.02
11650.00	46.96	PK	V	13.83	60.79	74	-13.21
11650.00	32.37	AV	V	13.83	46.20	54	-7.80

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	PK/AV					
802.11a (ANT 2)							
5745MHz							
5638.54	56.32	PK	H	3.59	59.91	68.20	-8.29
5699.37	57.68	PK	H	3.79	61.47	105.20	-43.73
5719.28	65.55	PK	H	4.09	69.64	110.80	-41.16
5724.73	68.47	PK	H	4.09	72.56	122.20	-49.64
5636.79	56.64	PK	V	3.59	60.23	68.20	-7.97
5695.84	58.91	PK	V	3.69	62.60	105.20	-42.60
5719.67	67.09	PK	V	4.09	71.18	110.80	-39.62
5724.52	79.72	PK	V	4.09	83.81	122.20	-38.39
11490.00	45.69	PK	H	14.31	60.00	74	-14.00
11490.00	31.56	AV	H	14.31	45.87	54	-8.13
11490.00	45.95	PK	V	14.31	60.26	74	-13.74
11490.00	31.87	AV	V	14.31	46.18	54	-7.82
5785MHz							
11570.00	46.01	PK	H	14.05	60.06	74	-13.94
11570.00	32.33	AV	H	14.05	46.38	54	-7.62
11570.00	46.25	PK	V	14.05	60.30	74	-13.70
11570.00	32.58	AV	V	14.05	46.63	54	-7.37
5825MHz							
5850.39	64.89	PK	H	4.09	68.98	122.20	-53.22
5851.18	61.34	PK	H	4.09	65.43	110.80	-45.37
5875.54	57.27	PK	H	4.19	61.46	105.20	-43.74
5926.25	55.56	PK	H	4.69	60.25	68.20	-7.95
5850.93	66.36	PK	V	4.09	70.45	122.20	-51.75
5855.74	62.75	PK	V	4.09	66.84	110.80	-43.96
5888.21	58.12	PK	V	4.19	62.31	105.20	-42.89
5925.48	55.87	PK	V	4.69	60.56	68.20	-7.64
11650.00	46.34	PK	H	13.83	60.17	74	-13.83
11650.00	33.12	AV	H	13.83	46.95	54	-7.05
11650.00	46.63	PK	V	13.83	60.46	74	-13.54
11650.00	33.37	AV	V	13.83	47.20	54	-6.80

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	PK/AV					
802.11ac20							
5745MHz							
5625.68	57.43	PK	H	3.59	61.02	68.20	-7.18
5698.45	59.84	PK	H	3.79	63.63	105.20	-41.57
5718.23	70.92	PK	H	4.09	75.01	110.80	-35.79
5724.78	79.65	PK	H	4.09	83.74	122.20	-38.46
5620.30	57.19	PK	V	3.59	60.78	68.20	-7.42
5696.72	58.75	PK	V	3.79	62.54	105.20	-42.66
5719.96	69.41	PK	V	4.09	73.50	110.80	-37.30
5724.81	78.17	PK	V	4.09	82.26	122.20	-39.94
11490.00	45.86	PK	H	14.31	60.17	74	-13.83
11490.00	31.28	AV	H	14.31	45.59	54	-8.41
11490.00	46.19	PK	V	14.31	60.50	74	-13.50
11490.00	31.55	AV	V	14.31	45.86	54	-8.14
5785MHz							
11570.00	46.24	PK	H	14.05	60.29	74	-13.71
11570.00	32.15	AV	H	14.05	46.20	54	-7.80
11570.00	46.47	PK	V	14.05	60.52	74	-13.48
11570.00	32.39	AV	V	14.05	46.44	54	-7.56
5825MHz							
5851.85	67.54	PK	H	4.09	71.63	122.20	-50.57
5855.30	62.89	PK	H	4.09	66.98	110.80	-43.82
5878.59	58.57	PK	H	4.19	62.76	105.20	-42.44
5925.73	56.15	PK	H	4.69	60.84	68.20	-7.36
5850.76	65.78	PK	V	4.09	69.87	122.20	-52.33
5855.68	61.36	PK	V	4.09	65.45	110.80	-45.35
5876.45	57.29	PK	V	4.19	61.48	105.20	-43.72
5927.94	55.83	PK	V	4.69	60.52	68.20	-7.68
11650.00	46.63	PK	H	13.83	60.46	74	-13.54
11650.00	32.82	AV	H	13.83	46.65	54	-7.35
11650.00	46.91	PK	V	13.83	60.74	74	-13.26
11650.00	33.08	AV	V	13.83	46.91	54	-7.09

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	PK/AV					
802.11ac40							
5755MHz							
5624.54	58.25	PK	H	3.59	61.84	68.20	-6.36
5699.96	61.78	PK	H	3.79	65.57	105.20	-39.63
5719.03	78.14	PK	H	4.09	82.23	110.80	-28.57
5722.27	80.53	PK	H	4.09	84.62	122.20	-37.58
5625.39	57.94	PK	V	3.59	61.53	68.20	-6.67
5699.61	60.47	PK	V	3.79	64.26	105.20	-40.94
5719.45	76.69	PK	V	4.09	80.78	110.80	-30.02
5721.28	79.12	PK	V	4.09	83.21	122.20	-38.99
11510.00	45.96	PK	H	14.29	60.25	74	-13.75
11510.00	31.64	AV	H	14.29	45.93	54	-8.07
11510.00	46.25	PK	V	14.29	60.54	74	-13.46
11510.00	32.01	AV	V	14.29	46.30	54	-7.70
5795MHz							
5851.29	62.07	PK	H	4.09	66.16	122.20	-56.04
5857.64	59.86	PK	H	4.09	63.95	110.80	-46.85
5875.78	57.75	PK	H	4.19	61.94	105.20	-43.26
5929.97	56.54	PK	H	4.69	61.23	68.20	-6.97
5850.65	60.62	PK	V	4.09	64.71	122.20	-57.49
5855.72	58.73	PK	V	4.09	62.82	110.80	-47.98
5878.31	57.36	PK	V	4.19	61.55	105.20	-43.65
5927.48	56.19	PK	V	4.69	60.88	68.20	-7.32
11590.00	46.65	PK	H	13.97	60.62	74	-13.38
11590.00	32.53	AV	H	13.97	46.50	54	-7.50
11590.00	46.96	PK	V	13.97	60.93	74	-13.07
11590.00	32.87	AV	V	13.97	46.84	54	-7.16

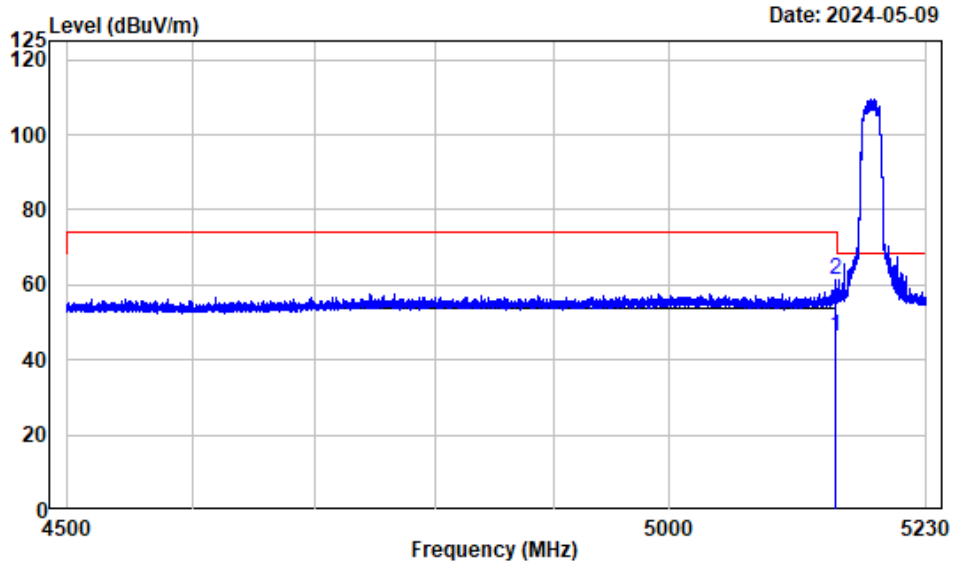
Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	PK/AV					
802.11ac80							
5775MHz							
5648.23	59.64	PK	H	3.59	63.23	68.20	-4.97
5699.94	73.61	PK	H	3.79	77.40	105.20	-27.80
5718.68	78.05	PK	H	4.09	82.14	110.80	-28.66
5723.12	80.53	PK	H	4.09	84.62	122.20	-37.58
5649.57	59.37	PK	V	3.59	62.96	68.20	-5.24
5698.89	72.46	PK	V	3.79	76.25	105.20	-28.95
5719.25	76.95	PK	V	4.09	81.04	110.80	-29.76
5722.64	79.28	PK	V	4.09	83.37	122.20	-38.83
5851.42	73.16	PK	H	4.09	77.25	122.20	-44.95
5856.29	71.69	PK	H	4.09	75.78	110.80	-35.02
5875.51	64.05	PK	H	4.19	68.24	105.20	-36.96
5925.64	57.48	PK	H	4.69	62.17	68.20	-6.03
5850.56	71.99	PK	V	4.09	76.08	122.20	-46.12
5855.95	70.18	PK	V	4.09	74.27	110.80	-36.53
5876.39	62.67	PK	V	4.19	66.86	105.20	-38.34
5926.41	57.25	PK	V	4.69	61.94	68.20	-6.26
11550.00	46.46	PK	H	14.13	60.59	74	-13.41
11550.00	32.58	AV	H	14.13	46.71	54	-7.29
11550.00	46.75	PK	V	14.13	60.88	74	-13.12
11550.00	32.84	AV	V	14.13	46.97	54	-7.03

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 for Band Edge Measurements (Radiated)

5150-5250MHz:

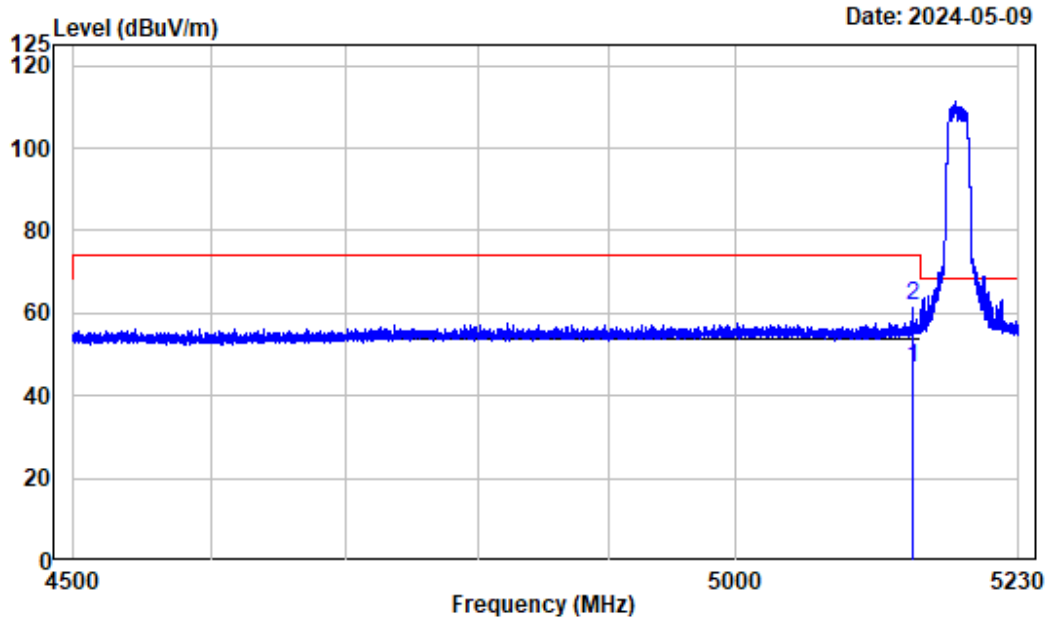
802.11a, ANT1			
Test Channel:	**5180MHz**	**Ant. Polar. :**	**Horizontal**



Condition : Horizontal
Project No.: 2401S39342E-RF
Tester : Zenos Qiao
Note :

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5147.054	2.70	43.73	46.43	54.00	-7.57	Average
2	5147.054	2.70	58.54	61.24	74.00	-12.76	Peak

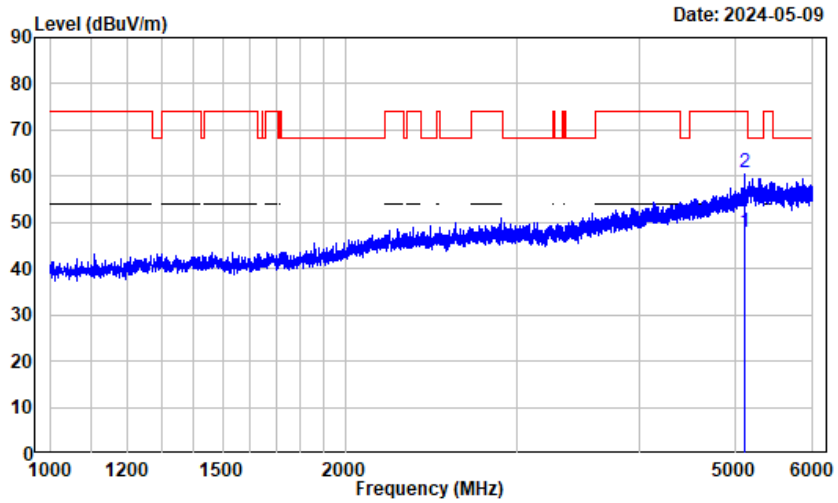
802.11a, ANT1			
Test Channel:	**5180MHz**	**Ant. Polar. :**	**Vertical**



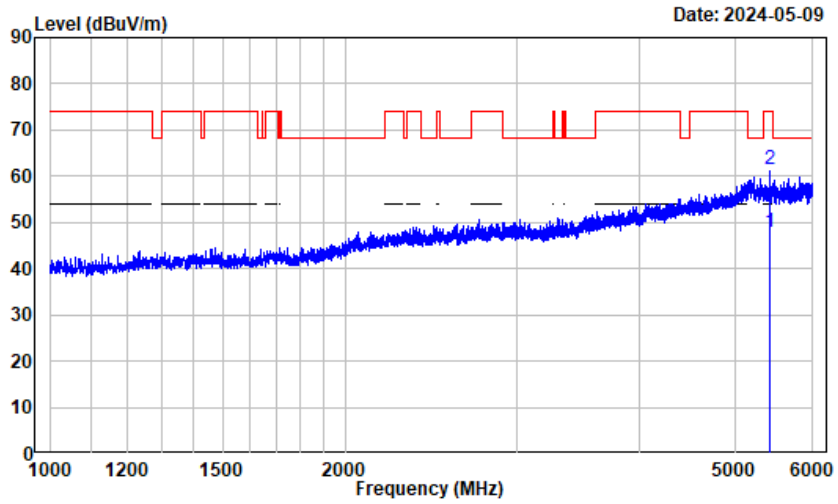
Condition : Vertical
Project No.: 2401S39342E-RF
Tester : Zenos Qiao
Note :

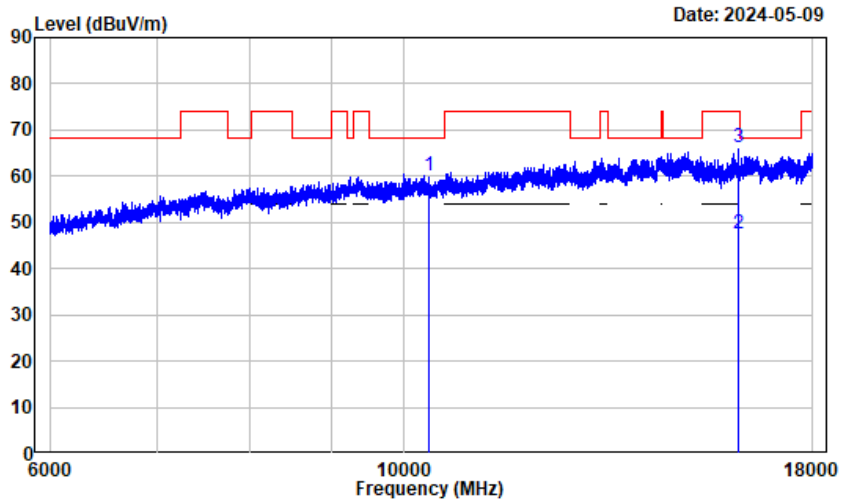
	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5143.039	2.70	44.15	46.85	54.00	-7.15	Average
2	5143.039	2.70	59.09	61.79	74.00	-12.21	Peak

Harmonic and spurious emissions Measurements: 802.11a, ANT1, 5180MHz

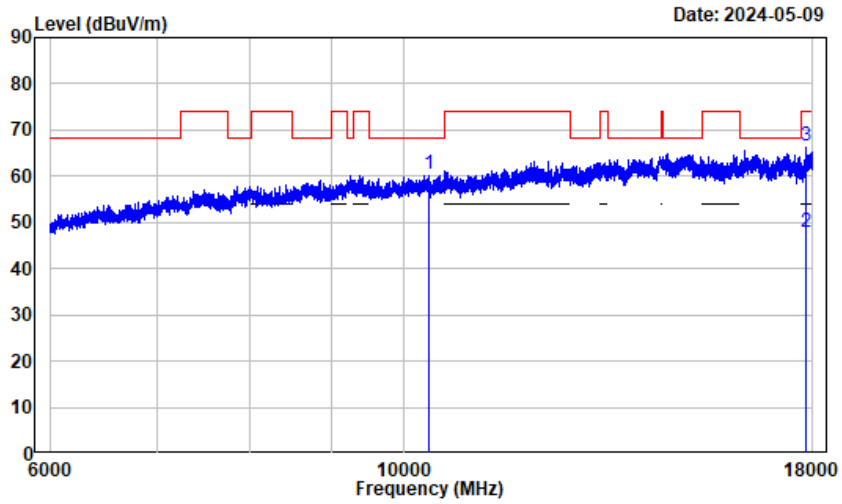
Horizontal	
1-6GHz	 Condition : Horizontal Project No.: 2401S39342E-RF Tester : Zenos Qiao Note :

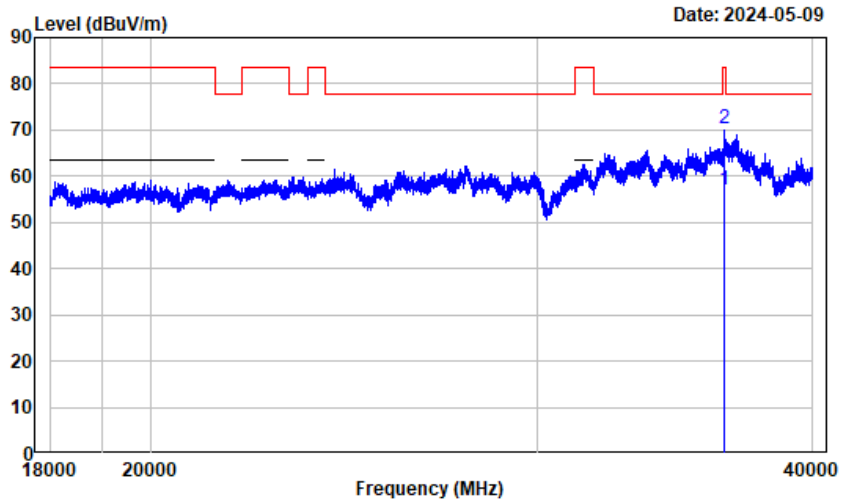
	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	5110.478	2.71	45.02	47.73	54.00	-6.27	Average
2	5110.478	2.71	58.16	60.87	74.00	-13.13	Peak

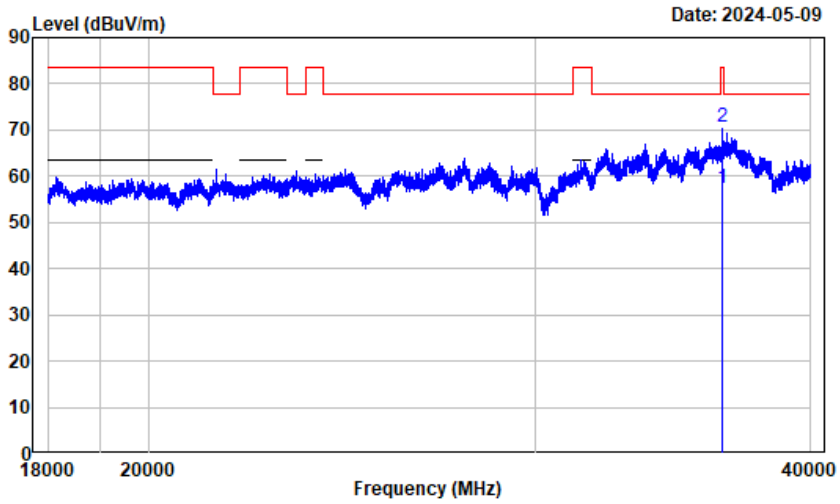
Vertical	
1-6GHz	 Condition : Vertical Project No.: 2401S39342E-RF Tester : Zenos Qiao Note : Freq / Factor / Read Level / Level / Limit Line / Over Limit / Remark MHz / dB/m / dBuV / dBuV/m / dBuV/m / dB 1 5419.875 3.02 44.84 47.86 54.00 -6.14 Average 2 5419.875 3.02 58.45 61.47 74.00 -12.53 Peak

Horizontal	
6-18GHz	 Condition : Horizontal Project No.: 2401S39342E-RF Tester : Zenos Qiao Note :

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	10360.000	13.07	47.06	60.13	68.20	-8.07	Peak
2	16164.000	14.09	33.60	47.69	54.00	-6.31	Average
3	16164.000	14.09	52.18	66.27	74.00	-7.73	Peak

Vertical	
6-18GHz	 Condition : Vertical Project No.: 2401S39342E-RF Tester : Zenos Qiao Note : Freq Factor Read Level Level Limit Line Over Limit Remark MHz dB/m dBuV dBuV/m dBuV/m dB 1 10360.000 13.07 47.32 60.39 68.20 -7.81 Peak 2 17842.500 22.98 24.77 47.75 54.00 -6.25 Average 3 17842.500 22.98 43.69 66.67 74.00 -7.33 Peak

Horizontal	
18-40GHz	 Condition : Horizontal Project No.: 2401S39342E-RF Tester : Zenos Qiao Note : Freq / Factor / Read Level / Level / Limit Line / Over Limit / Remark MHz / dB/m / dBuV / dBuV/m / dBuV/m / dB 1 36477.520 25.31 31.79 57.10 63.50 -6.40 Average 2 36477.520 25.31 45.13 70.44 83.50 -13.06 Peak

Vertical	
18-40GHz	

Condition : Vertical
Project No.: 2401S39342E-RF
Tester : Zenos Qiao
Note :

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	36486.460	25.35	31.94	57.29	63.50	-6.21	Average
2	36486.460	25.35	45.28	70.63	83.50	-12.87	Peak

FCC §15.407(a), (e) - 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%.

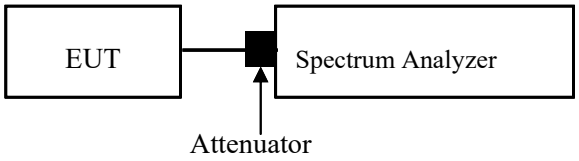
2. Minimum Emission Bandwidth for the band 5.725-5.85 GHz
Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.725-5.85 GHz. The following procedure shall be used for measuring this bandwidth:
a) Set RBW = 100 kHz.
b) Set the video bandwidth (VBW) ≥ 3 × RBW.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



Test Data

Environmental Conditions

Temperature:	25.1 ℃
Relative Humidity:	56 %
ATM Pressure:	101 kPa

The testing was performed by Cheeb Huang on 2024-05-13.

EUT operation mode: Transmitting

Test Result: Compliant.

5150-5250MHz:

Test Modes	Test Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5180	20.560	16.783
	5200	20.500	16.903
	5240	20.760	16.903
802.11ac-VHT20	5180	20.640	17.742
	5200	20.750	17.782
	5240	20.750	17.782
802.11ac-VHT40	5190	41.120	36.204
	5230	41.310	36.204
802.11ac-VHT80	5210	81.940	75.445
Note: 1. The 99% Occupied Bandwidth have not fall into the band 5250-5350MHz, please refer to the test plots of 99% Occupied Bandwidth. 2. Test only was performed at ANT1.			

5250-5350MHz:

Test Modes	Test Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5260	31.280	17.662
	5280	28.960	17.383
	5320	20.560	16.863
802.11ac-VHT20	5260	30.440	18.142
	5280	27.960	18.062
	5320	20.880	17.742
802.11ac-VHT40	5270	42.000	36.364
	5310	41.200	36.204
802.11ac-VHT80	5290	81.920	75.445
Note: Test only was performed at ANT1.			

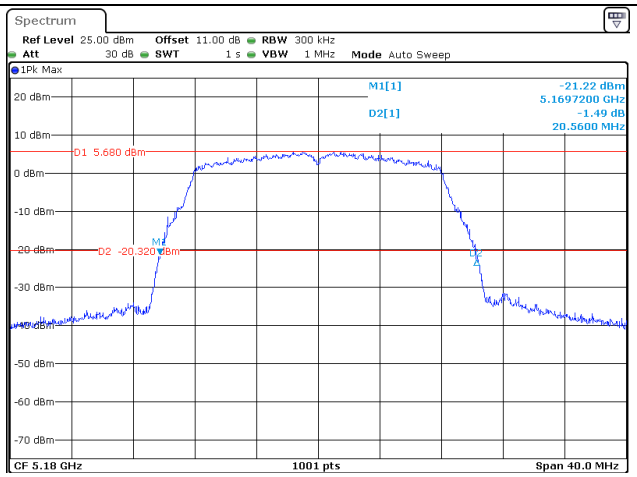
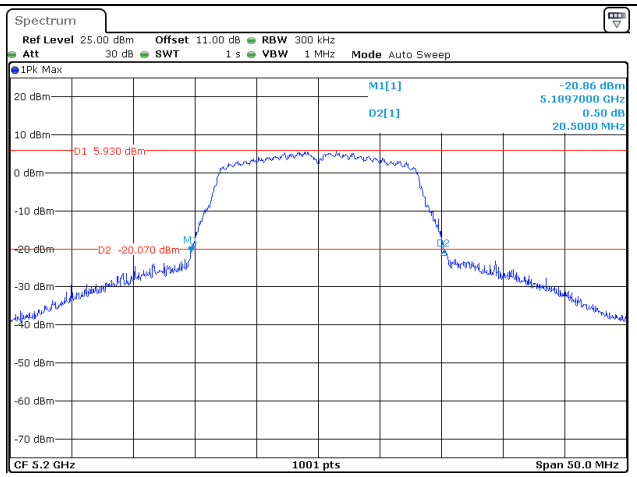
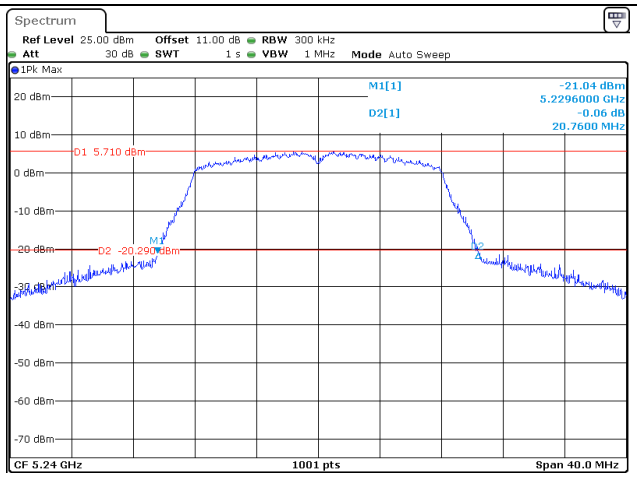
5470-5725MHz:

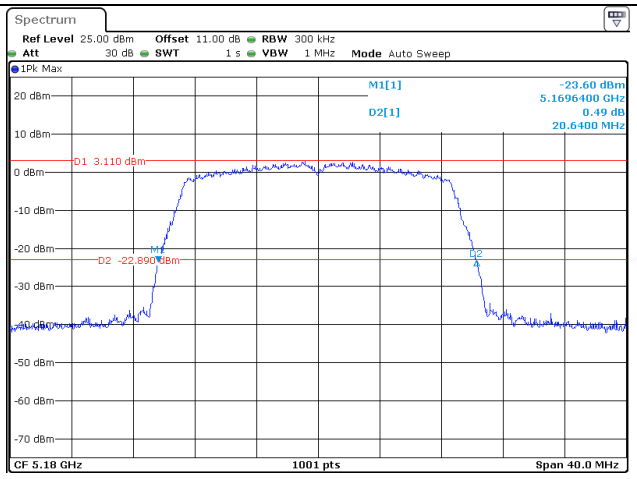
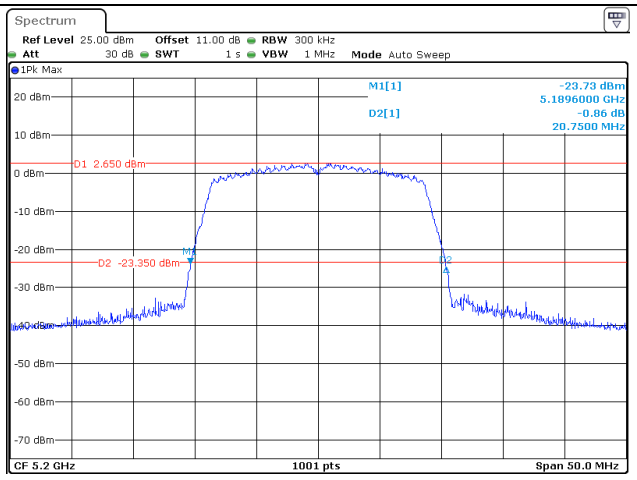
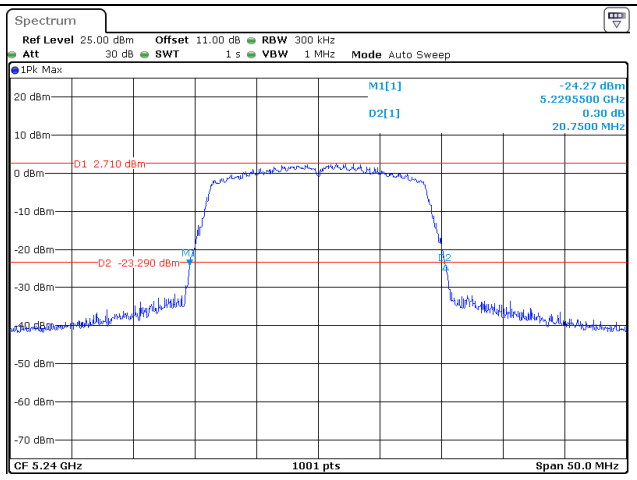
Test Modes	Test Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5500	20.520	16.823
	5580	23.560	17.063
	5700	20.760	16.983
	5720	21.160	16.983
802.11ac-VHT20	5500	20.720	17.742
	5580	22.720	17.902
	5700	20.880	17.862
	5720	21.080	17.862
802.11ac-VHT40	5510	41.120	36.204
	5550	60.400	36.523
	5670	41.680	36.284
	5710	41.600	36.284
802.11ac-VHT80	5530	81.760	75.285
	5610	81.920	75.604
	5690	81.760	75.445
Note: Test only was performed at ANT1.			

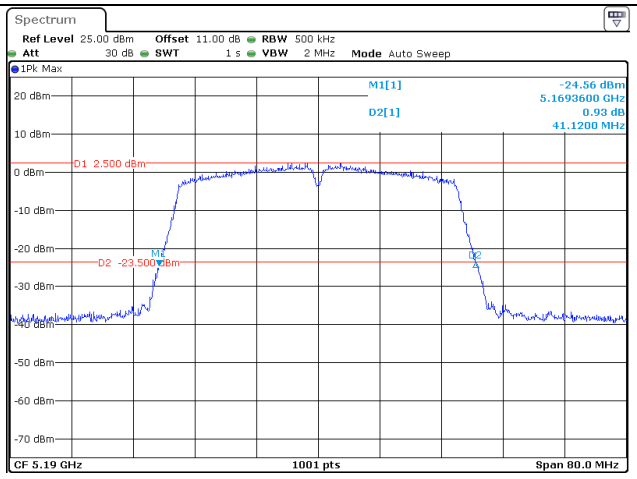
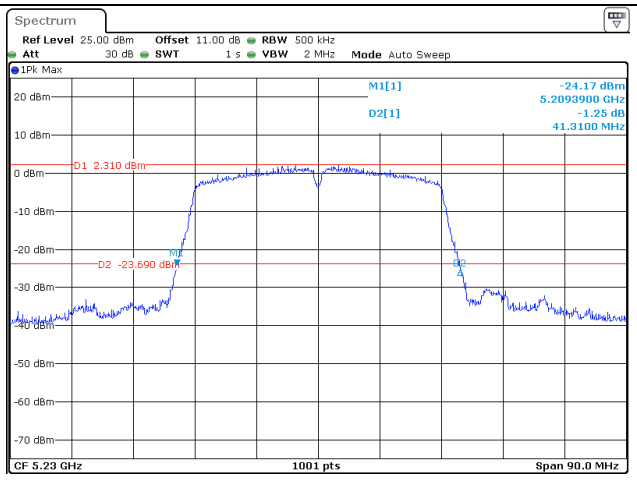
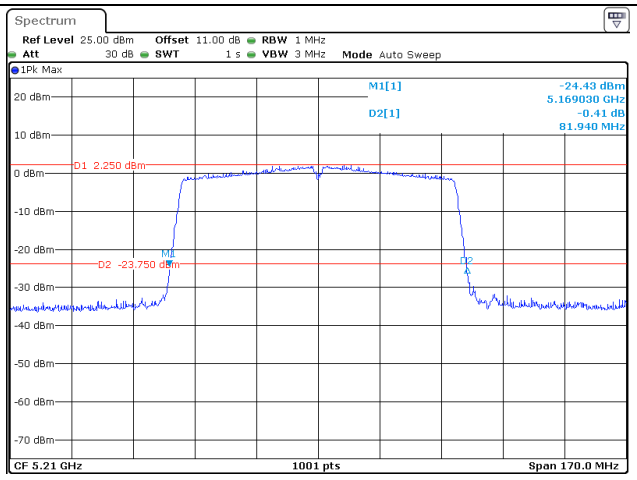
5725-5850MHz:

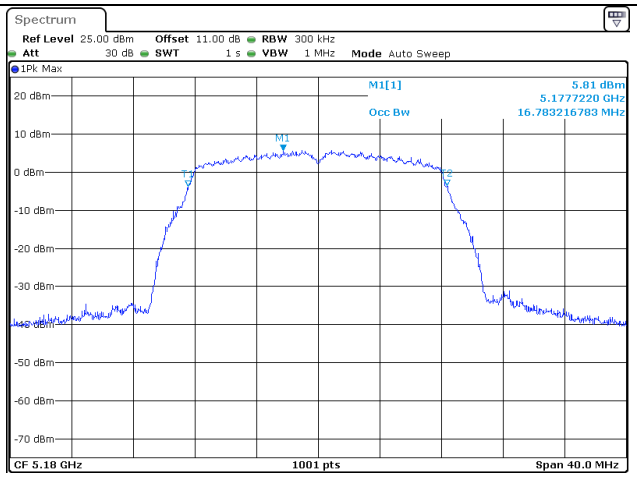
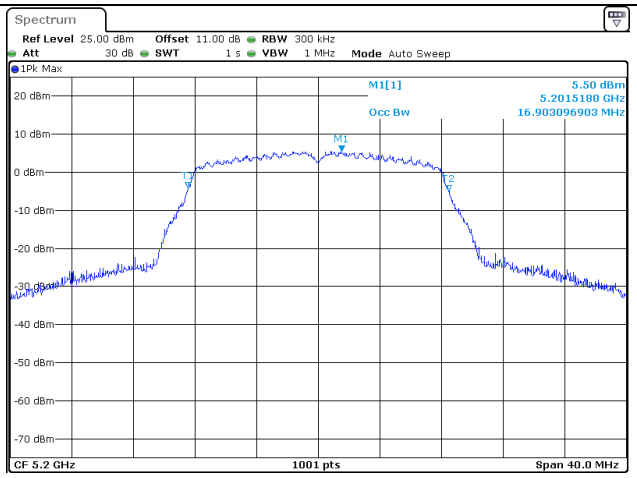
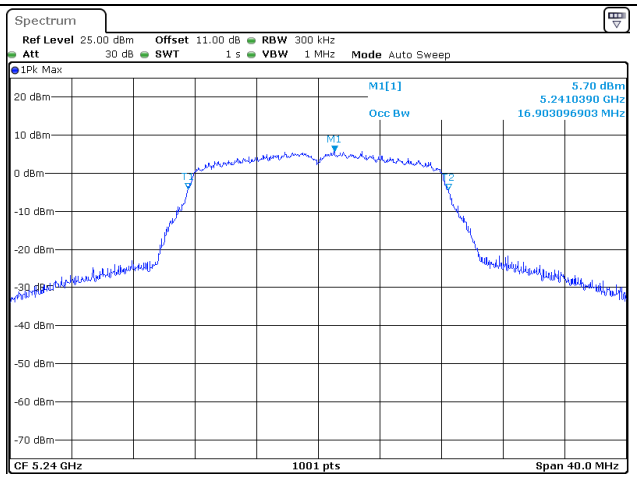
Test Modes	Test Frequency (MHz)	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5745	15.240	18.102
	5785	15.240	18.022
	5825	15.240	17.463
802.11ac-VHT20	5745	15.200	18.302
	5785	15.200	18.342
	5825	15.200	18.102
802.11ac-VHT40	5755	35.280	36.923
	5795	35.280	37.003
802.11ac-VHT80	5775	75.360	76.084
Note: 1. 6dB Emission Bandwidth Limit: ≥0.5MHz. 2. The 99% Occupied Bandwidth have not fall into the band 5470-5725MHz, please refer to the test plots of 99% Occupied Bandwidth. 3. Test only was performed at ANT1.			

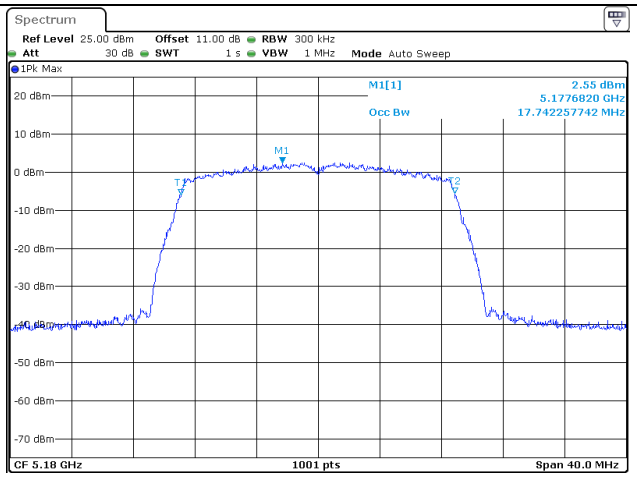
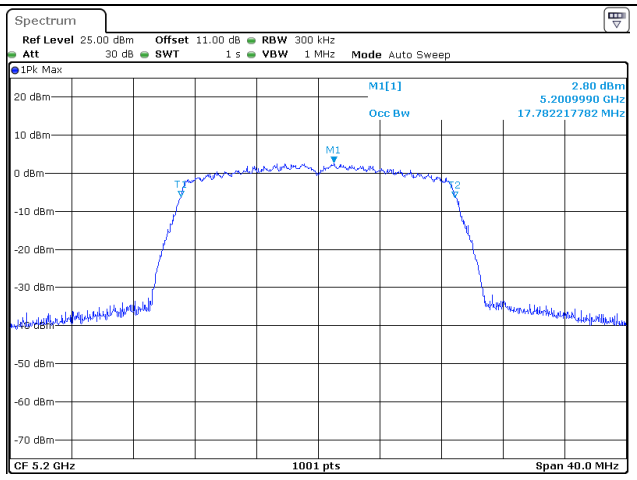
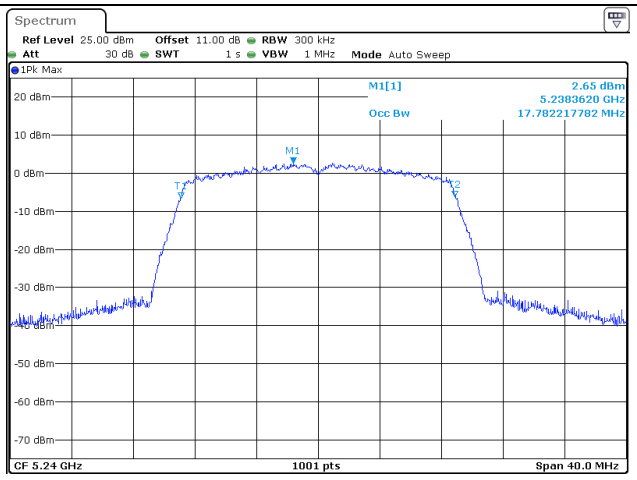
5150-5250MHz:

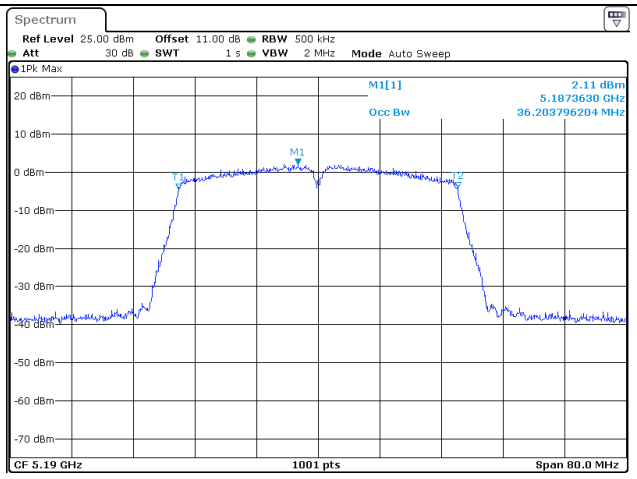
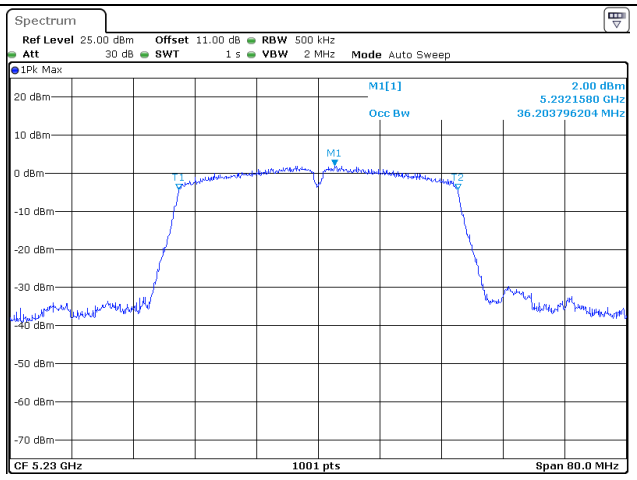
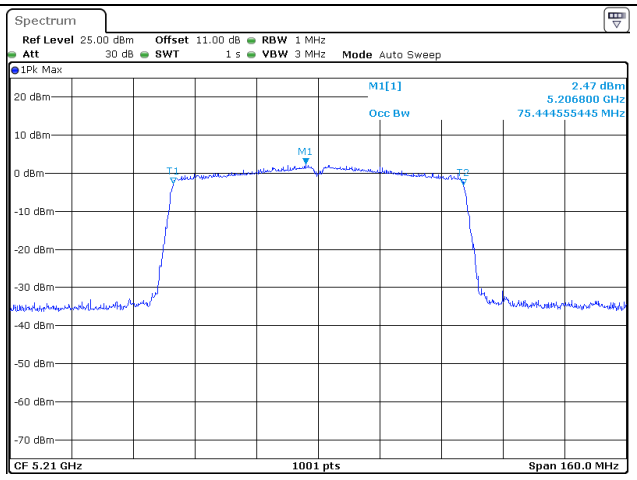
26dB Emission Bandwidth	
802.11a Lowest Channel	
802.11a Middle Channel	
802.11a Highest Channel	

26dB Emission Bandwidth	
802.11ac-VHT20 Lowest Channel	
802.11ac-VHT20 Middle Channel	
802.11ac-VHT20 Highest Channel	

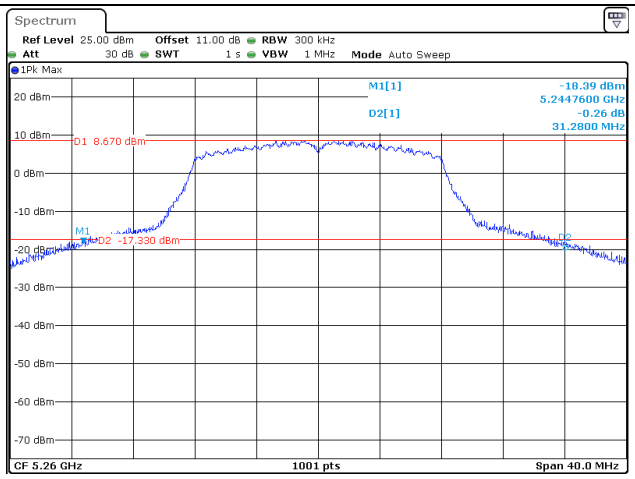
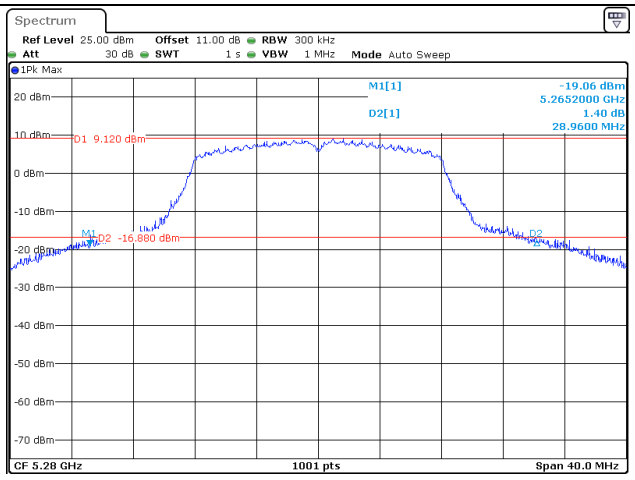
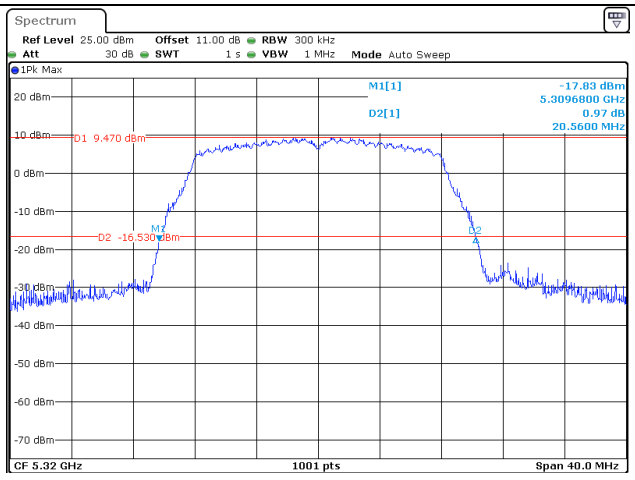
26dB Emission Bandwidth	
802.11ac-VHT40 Lowest Channel	
802.11ac-VHT40 Highest Channel	
802.11ac-VHT80 Middle Channel	

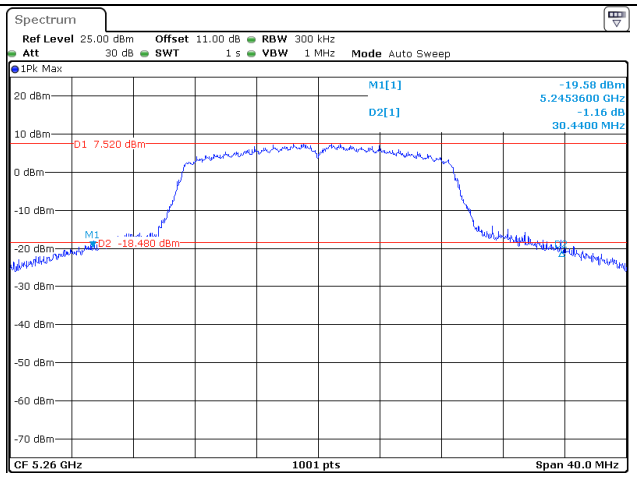
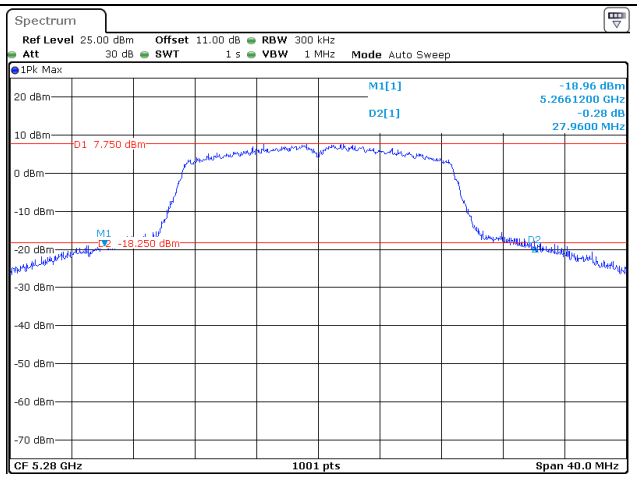
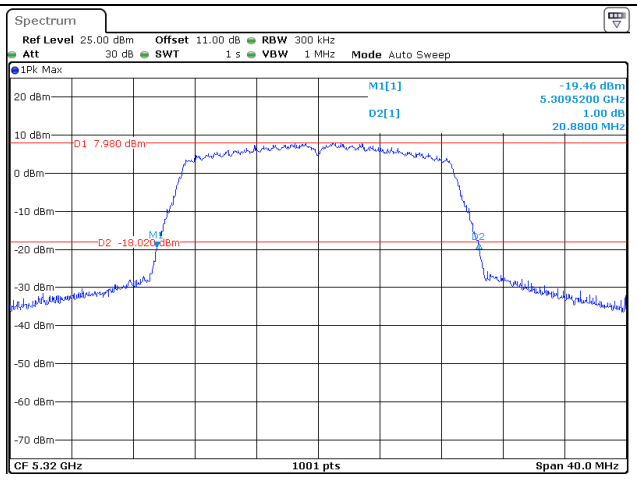
99% Emission Bandwidth	
802.11a Lowest Channel	
802.11a Middle Channel	
802.11a Highest Channel	

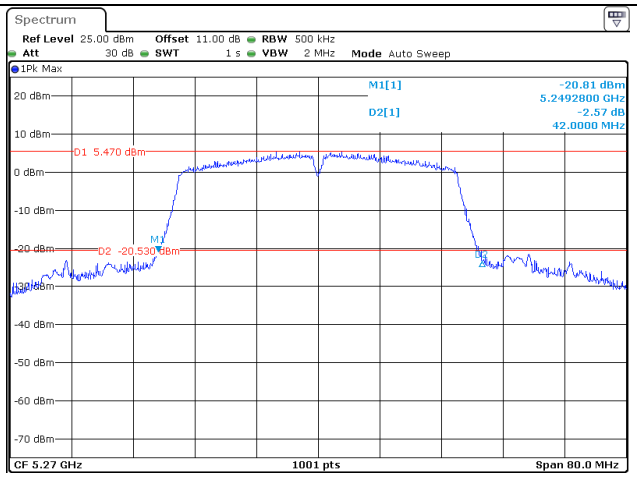
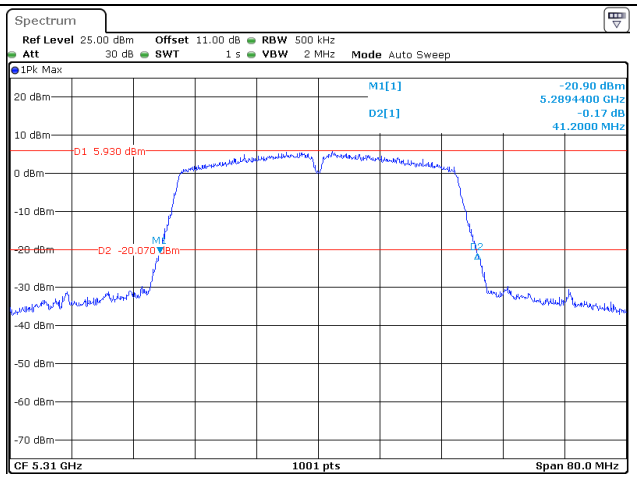
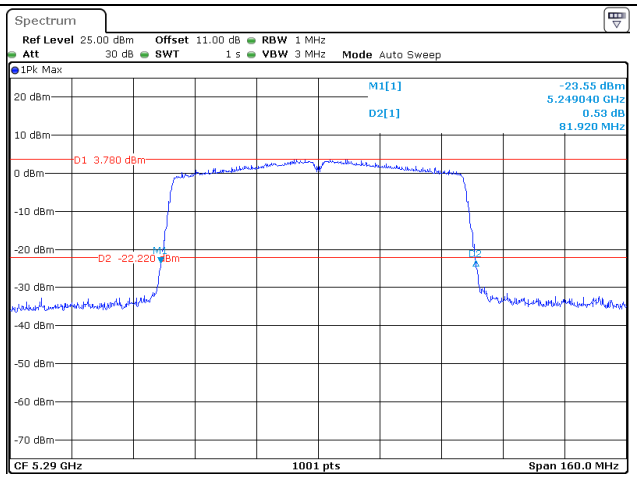
99% Emission Bandwidth	
802.11ac-VHT20 Lowest Channel	
802.11ac-VHT20 Middle Channel	
802.11ac-VHT20 Highest Channel	

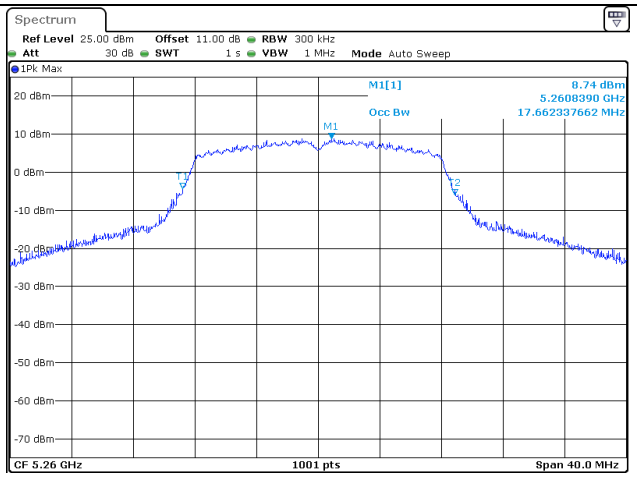
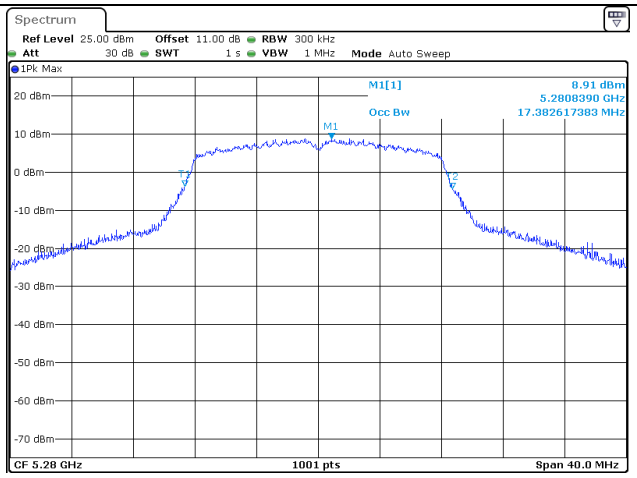
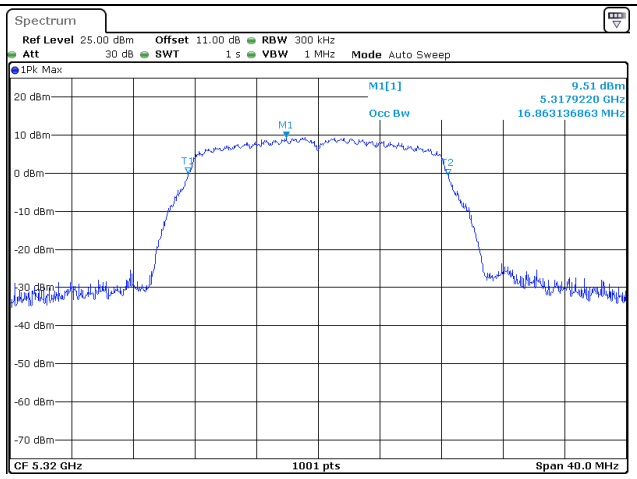
99% Emission Bandwidth	
802.11ac-VHT40 Lowest Channel	
802.11ac-VHT40 Highest Channel	
802.11ac-VHT80 Middle Channel	

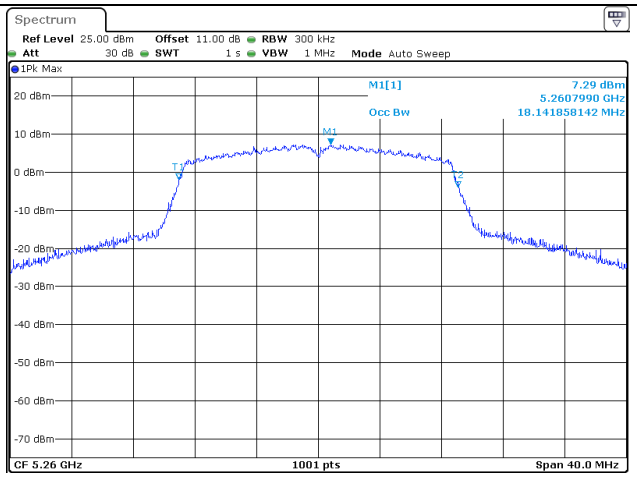
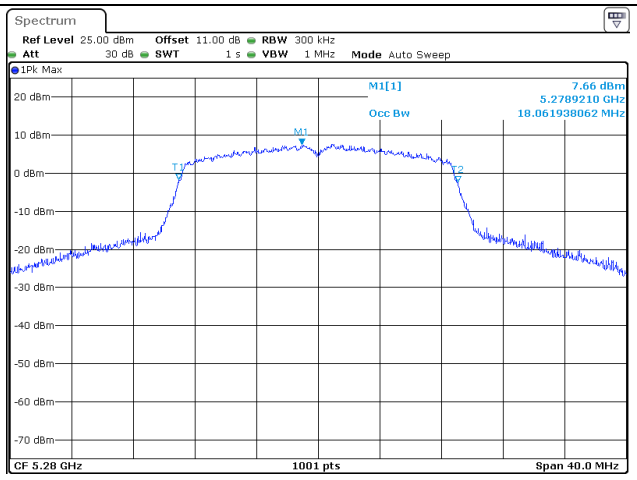
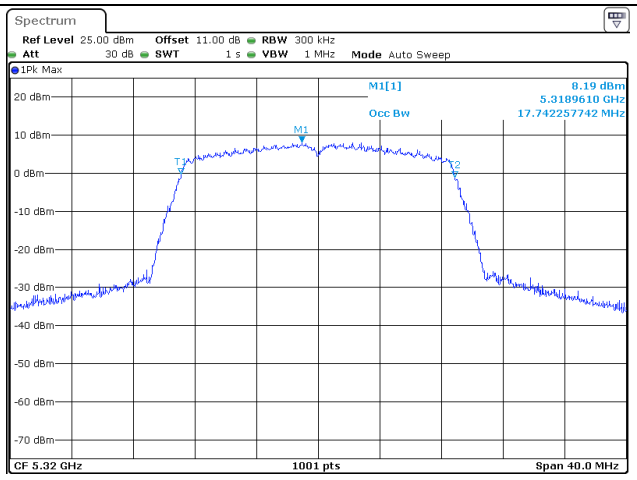
5250-5350MHz:

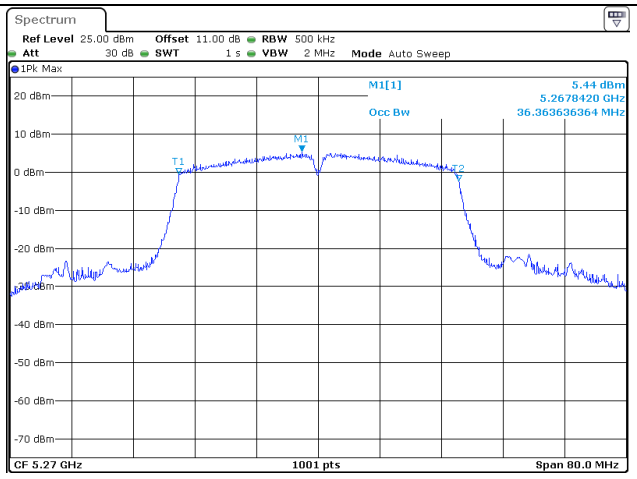
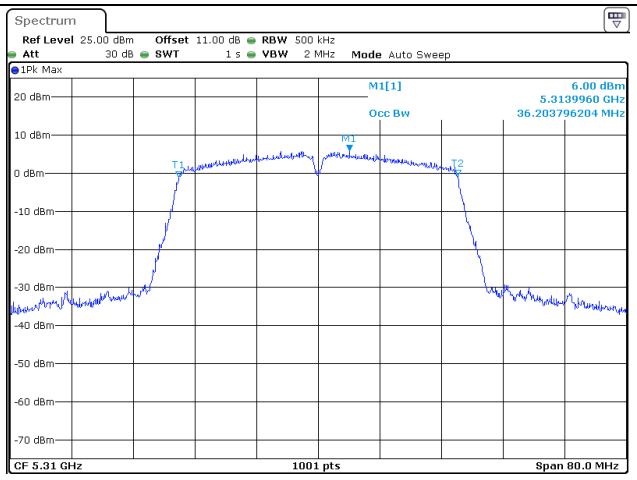
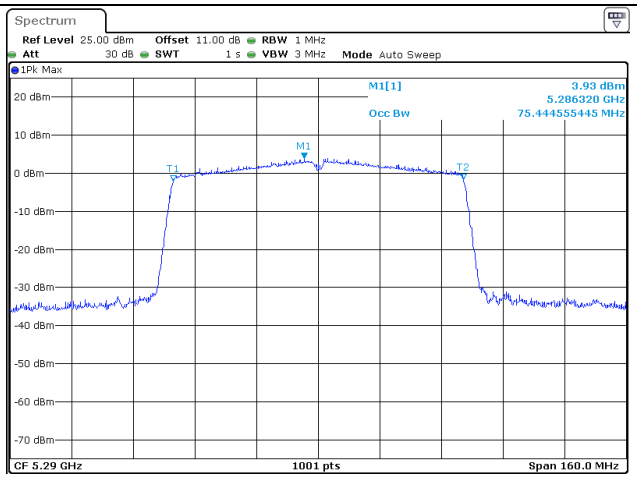
26dB Emission Bandwidth	
802.11a Lowest Channel	
802.11a Middle Channel	
802.11a Highest Channel	

26dB Emission Bandwidth	
802.11ac-VHT20 Lowest Channel	
802.11ac-VHT20 Middle Channel	
802.11ac-VHT20 Highest Channel	

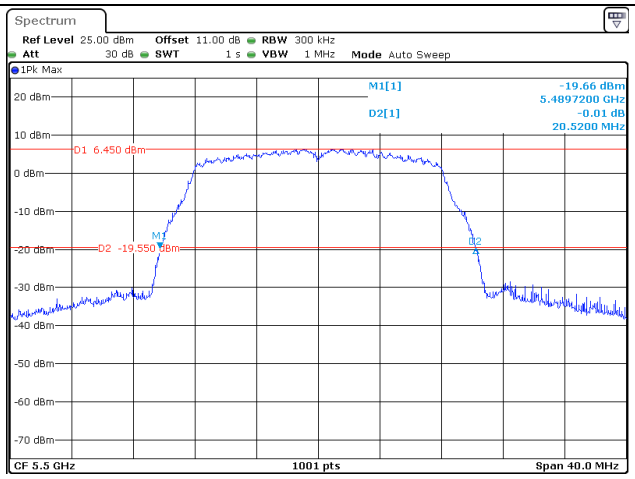
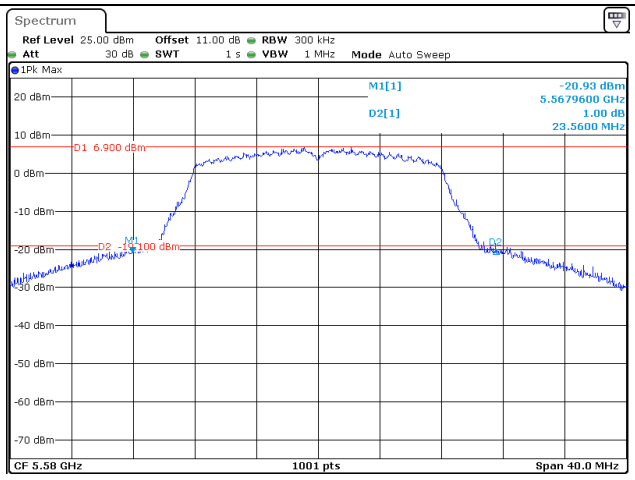
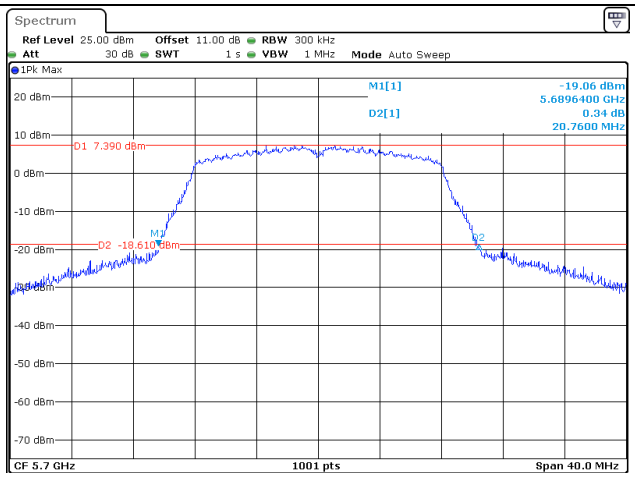
26dB Emission Bandwidth	
802.11ac-VHT40 Lowest Channel	
802.11ac-VHT40 Highest Channel	
802.11ac-VHT80 Middle Channel	

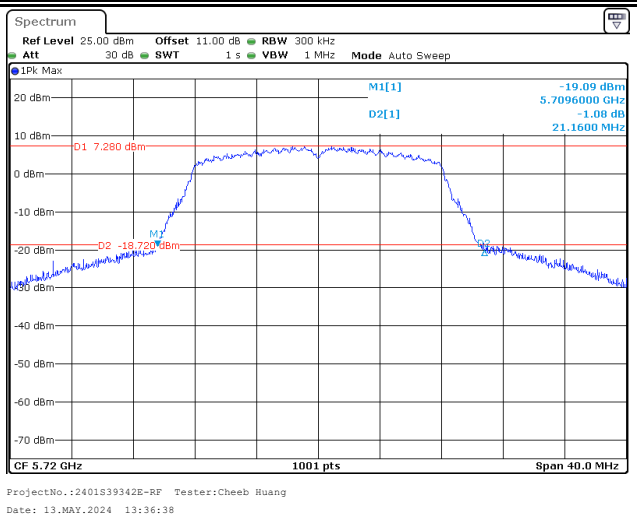
99% Emission Bandwidth	
802.11a Lowest Channel	
802.11a Middle Channel	
802.11a Highest Channel	

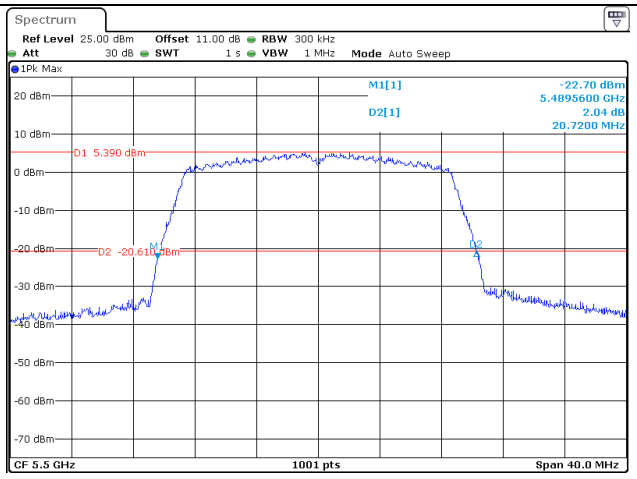
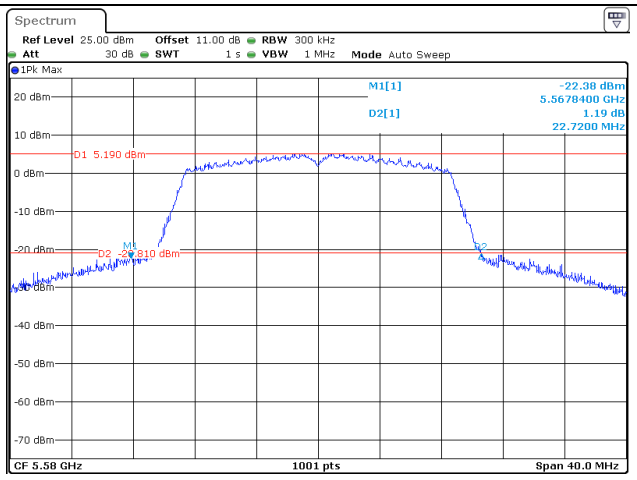
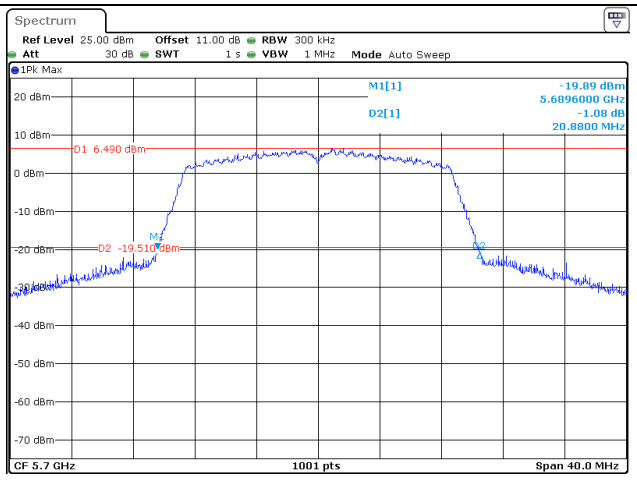
99% Emission Bandwidth	
802.11ac-VHT20 Lowest Channel	
802.11ac-VHT20 Middle Channel	
802.11ac-VHT20 Highest Channel	

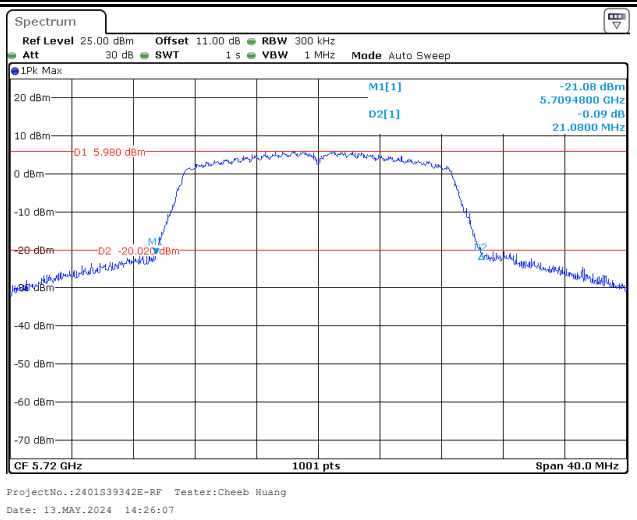
99% Emission Bandwidth	
802.11ac-VHT40 Lowest Channel	
802.11ac-VHT40 Highest Channel	
802.11ac-VHT80 Middle Channel	

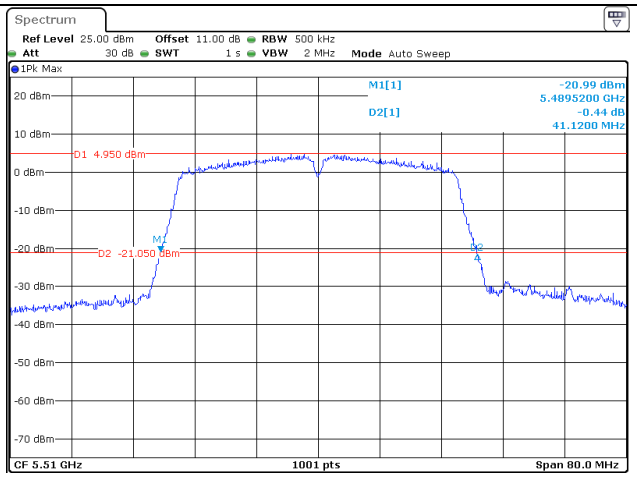
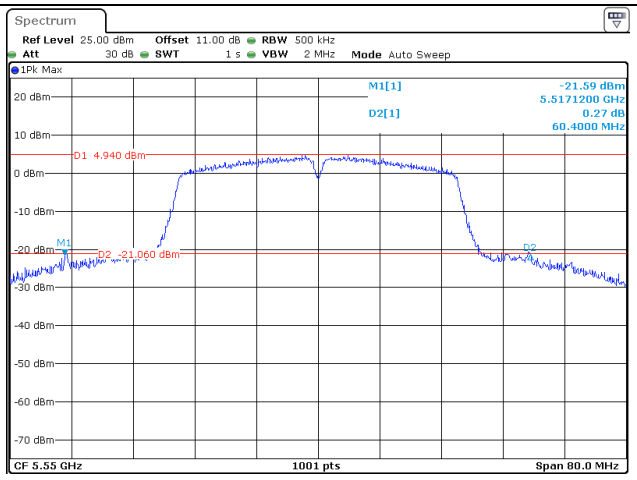
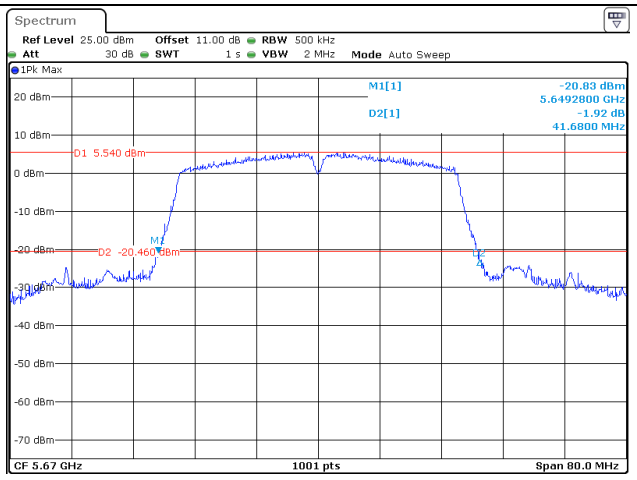
5470-5725MHz:

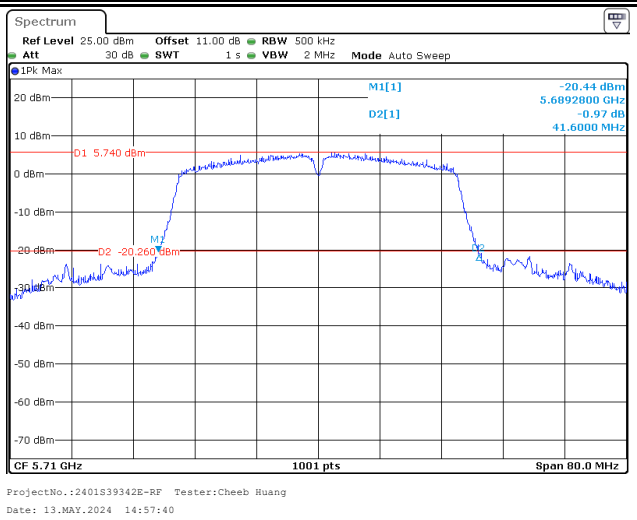
26dB Emission Bandwidth	
802.11a Lowest Channel	
802.11a Middle Channel	
802.11a Highest Channel	

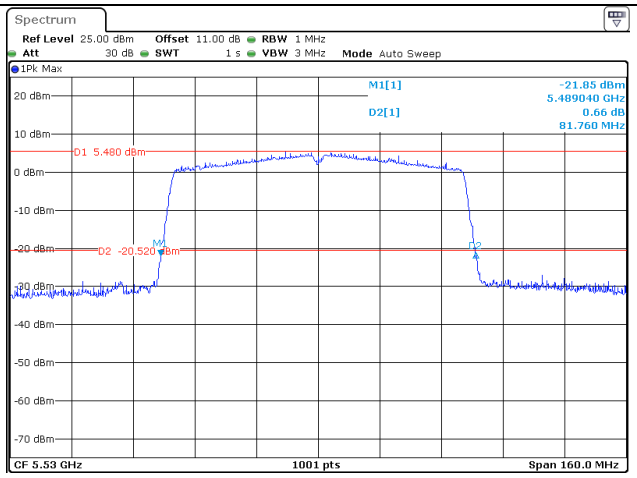
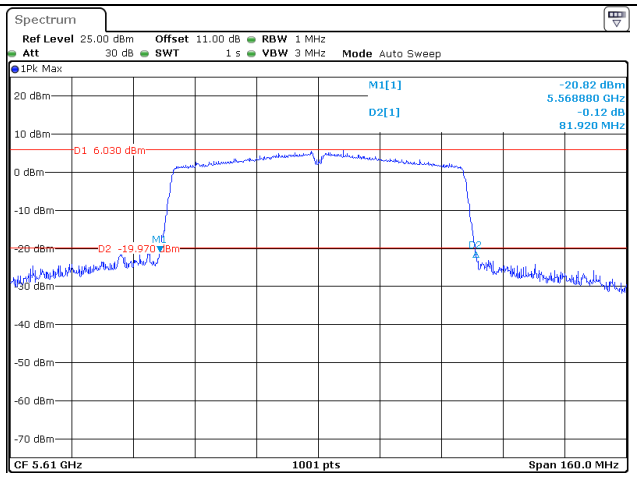
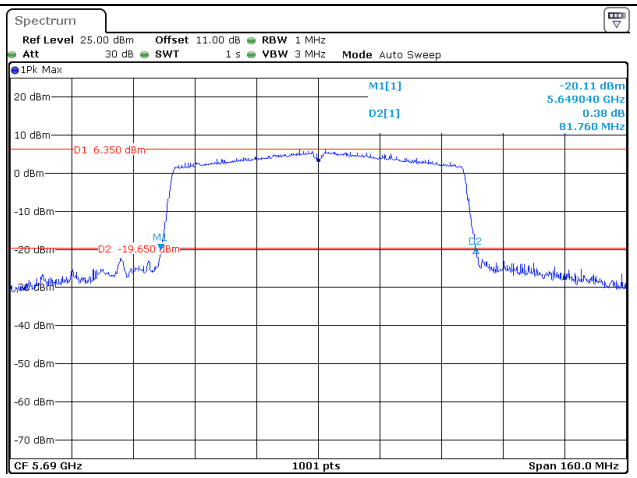
802.11a Cross Channel	

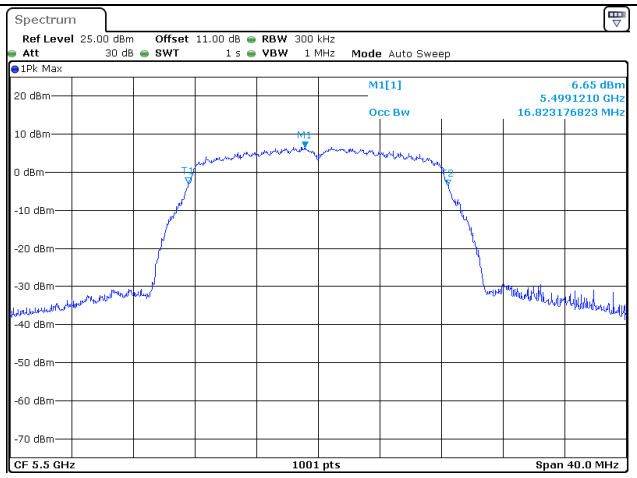
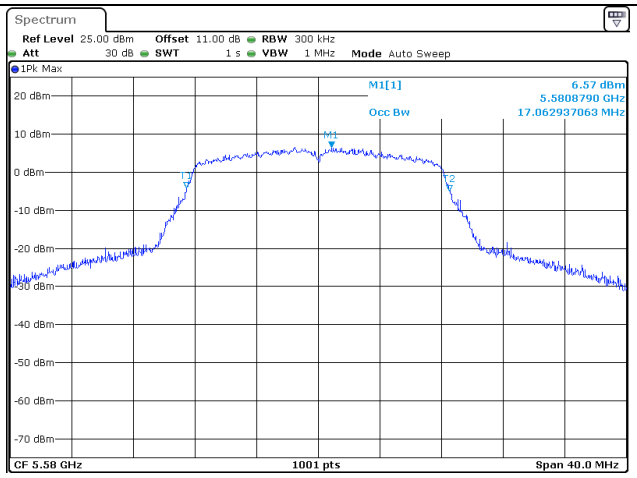
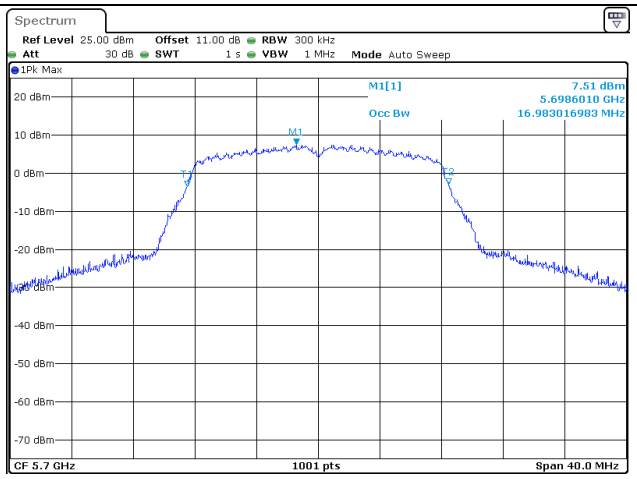
26dB Emission Bandwidth	
802.11ac-VHT20 Lowest Channel	
802.11ac-VHT20 Middle Channel	
802.11ac-VHT20 Highest Channel	

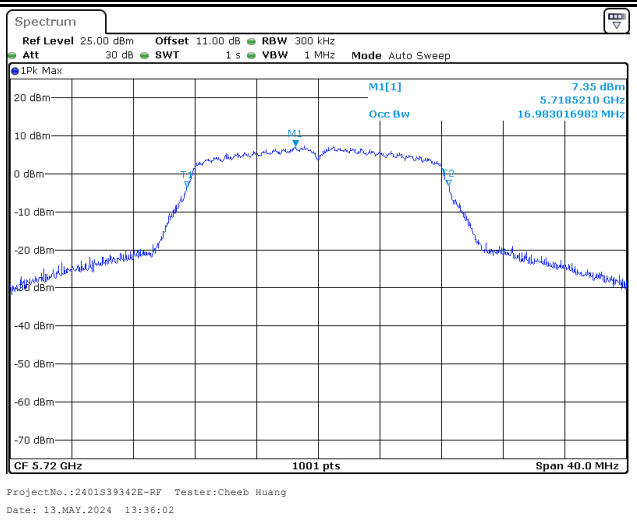
802.11ac-VHT20 Cross Channel	

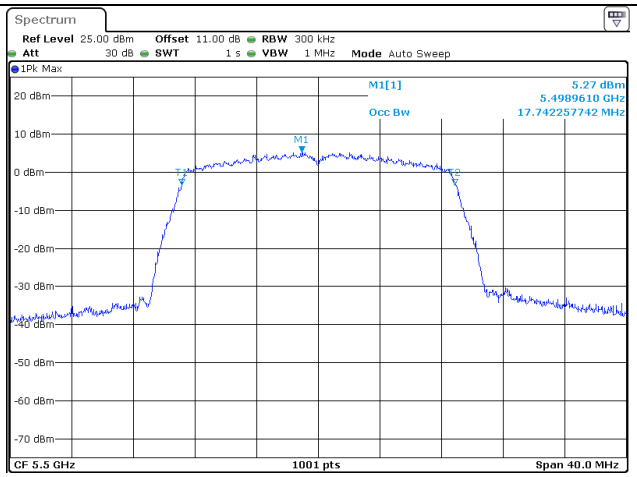
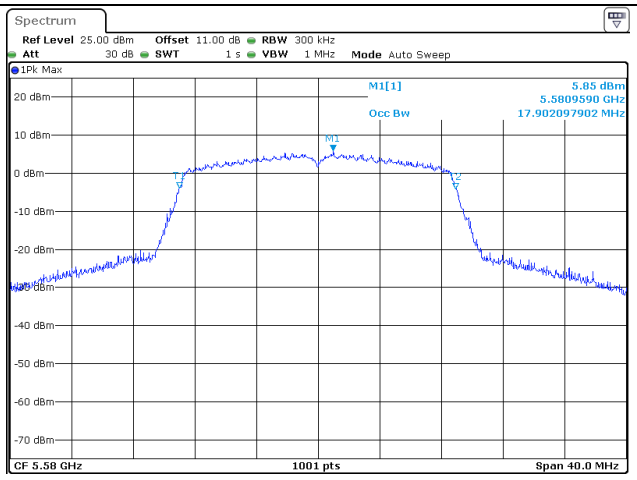
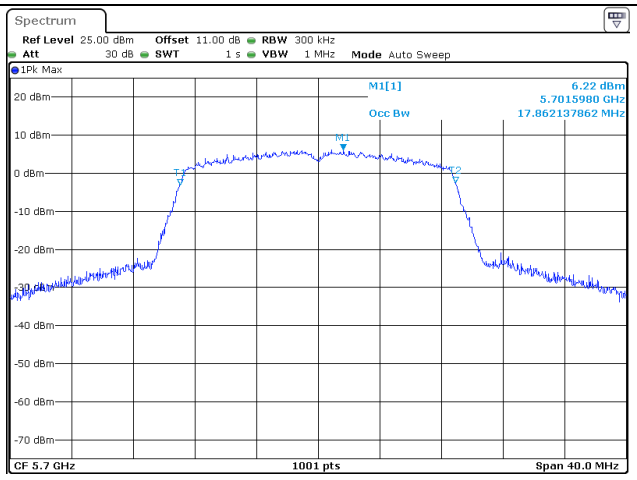
26dB Emission Bandwidth	
802.11ac-VHT40 Lowest Channel	
802.11ac-VHT40 Middle Channel	
802.11ac-VHT40 Highest Channel	

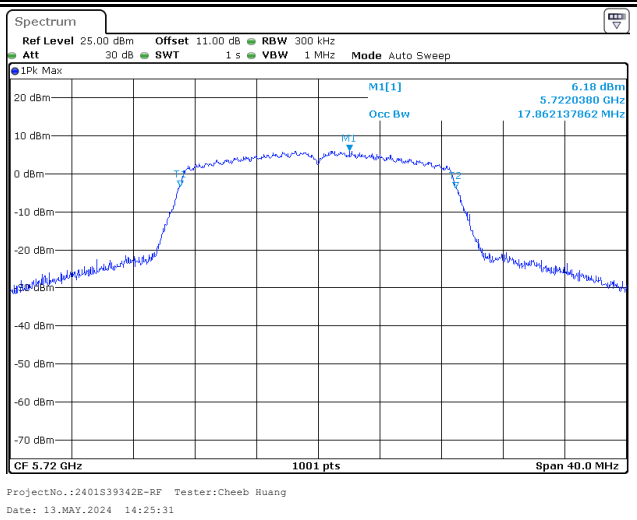
802.11ac-VHT40 Cross Channel	

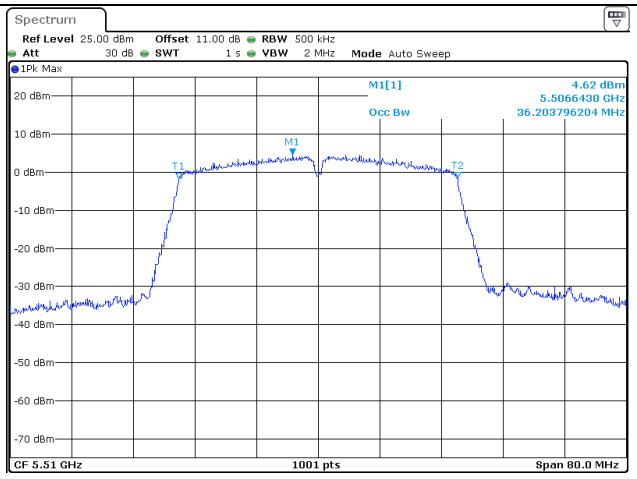
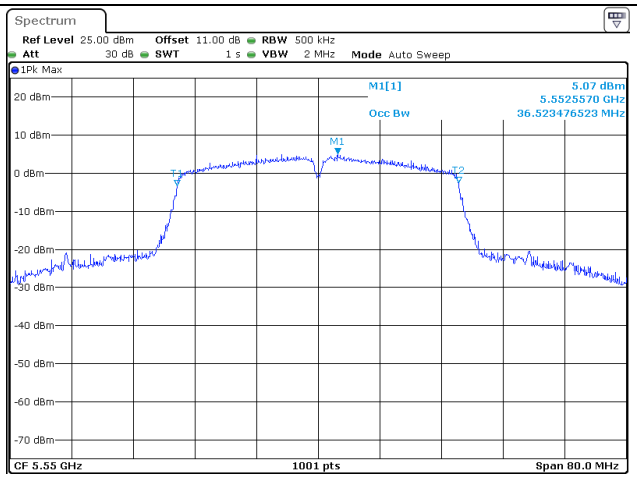
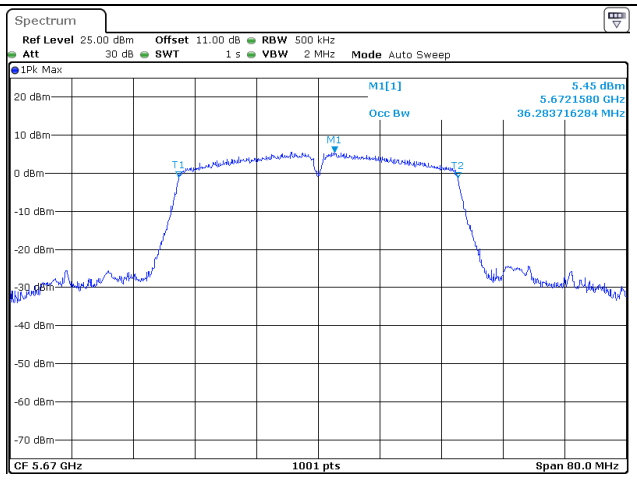
26dB Emission Bandwidth	
802.11ac-VHT80 Lowest Channel	
802.11ac-VHT80 Highest Channel	
802.11ac-VHT80 Cross Channel	

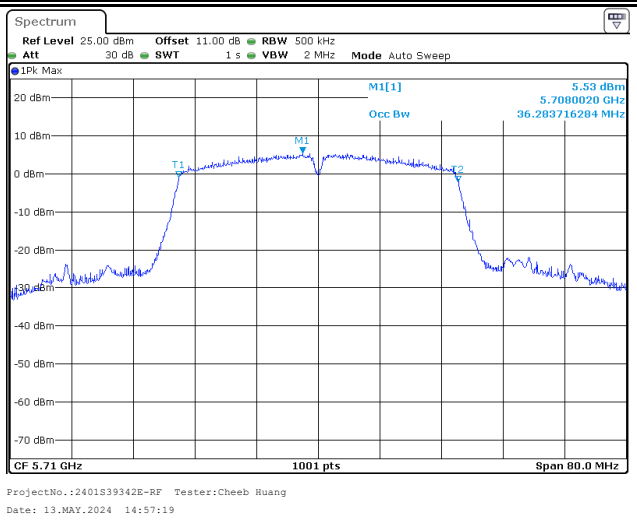
99% Emission Bandwidth	
802.11a Lowest Channel	
802.11a Middle Channel	
802.11a Highest Channel	

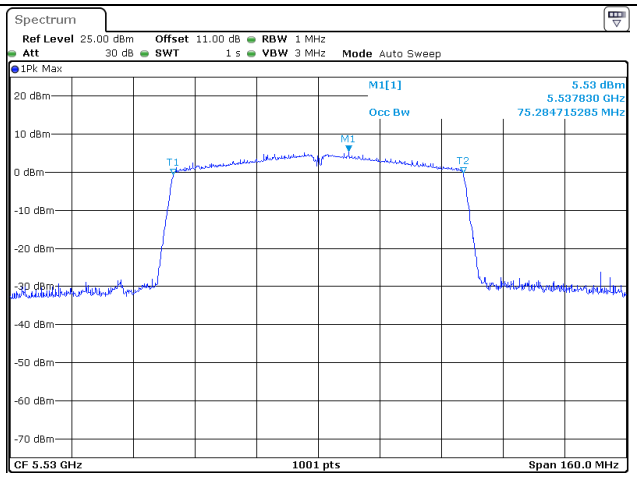
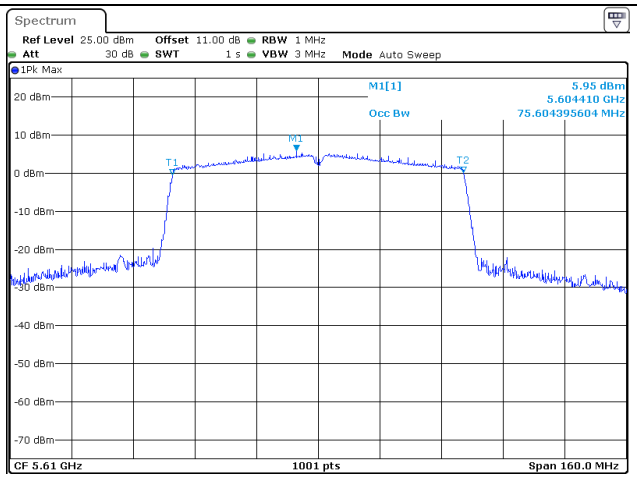
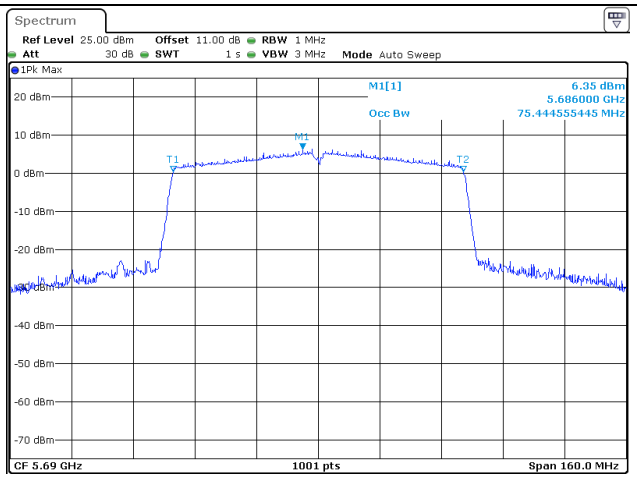
802.11a Cross Channel	

99% Emission Bandwidth	
802.11ac-VHT20 Lowest Channel	
802.11ac-VHT20 Middle Channel	
802.11ac-VHT20 Highest Channel	

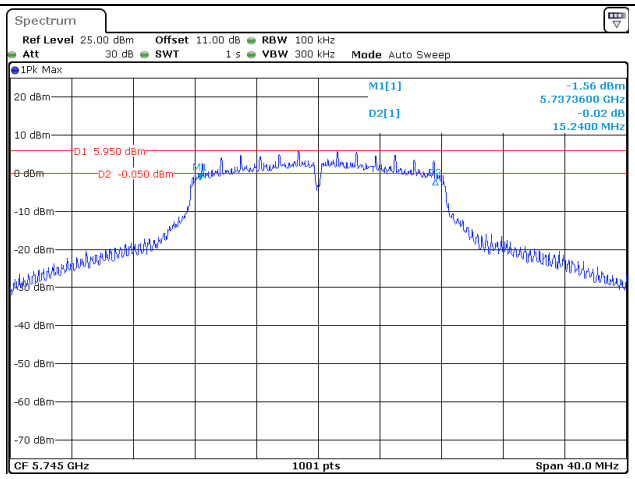
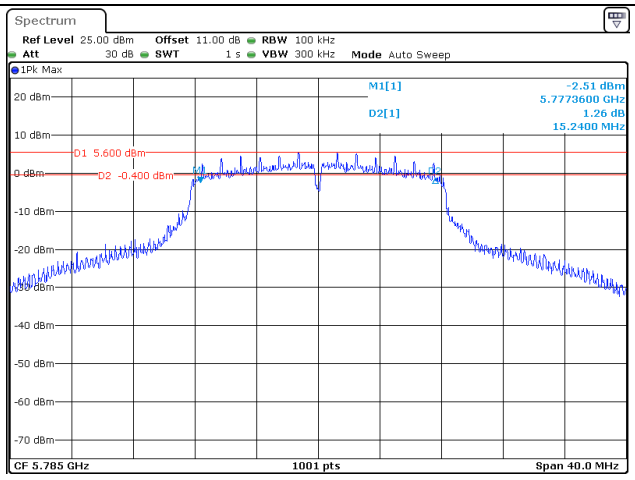
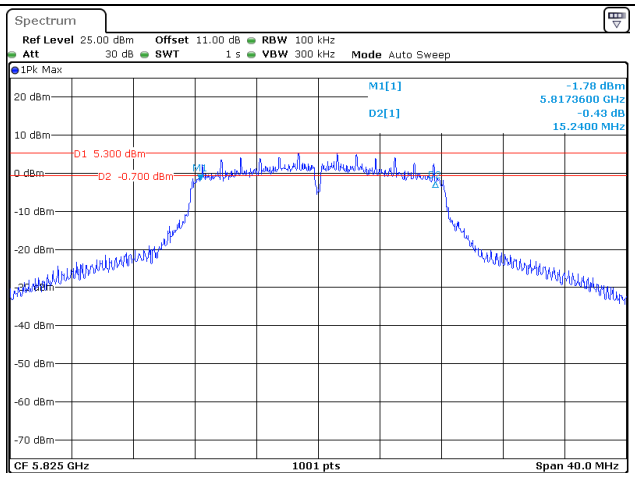
802.11ac-VHT20 Cross Channel	

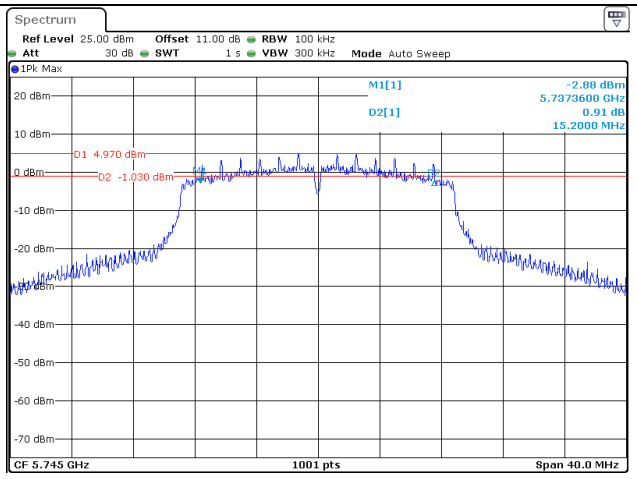
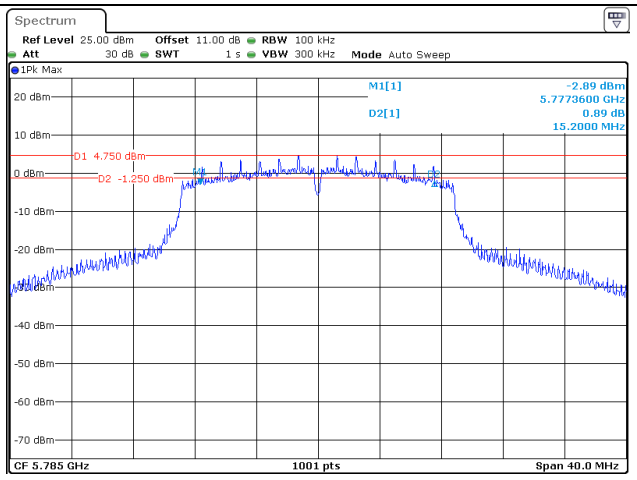
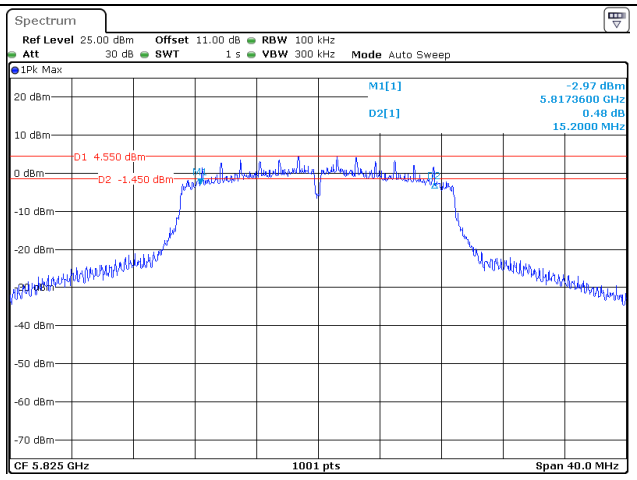
99% Emission Bandwidth	
802.11ac-VHT40 Lowest Channel	
802.11ac-VHT40 Middle Channel	
802.11ac-VHT40 Highest Channel	

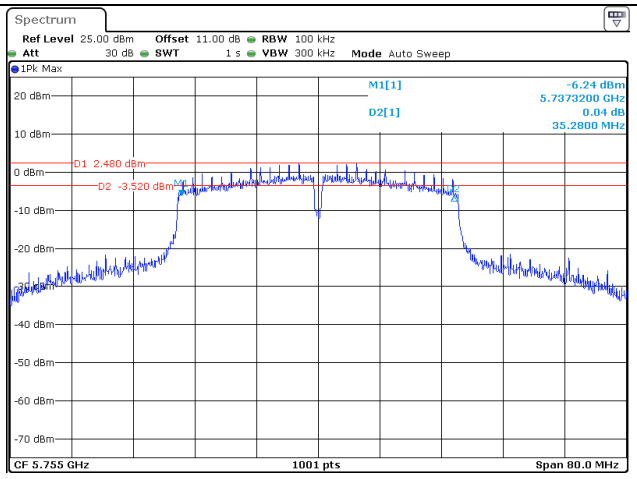
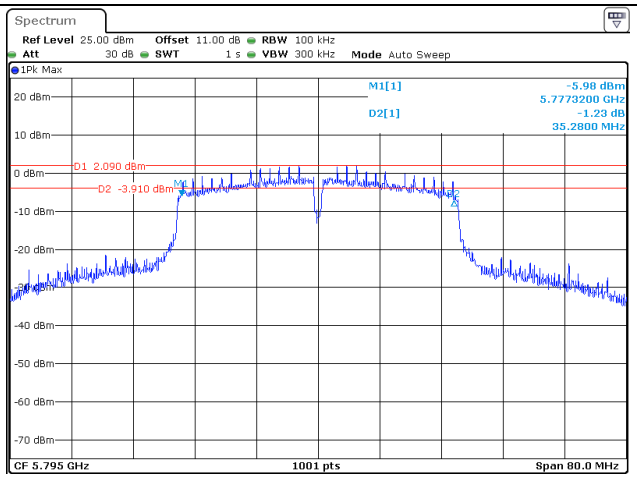
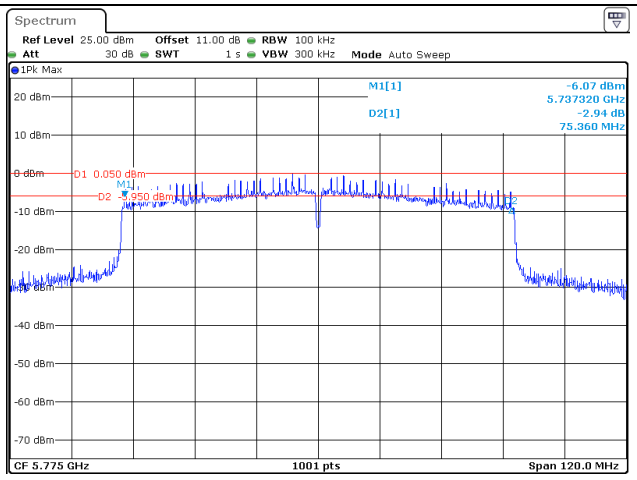
802.11ac-VHT40 Cross Channel	

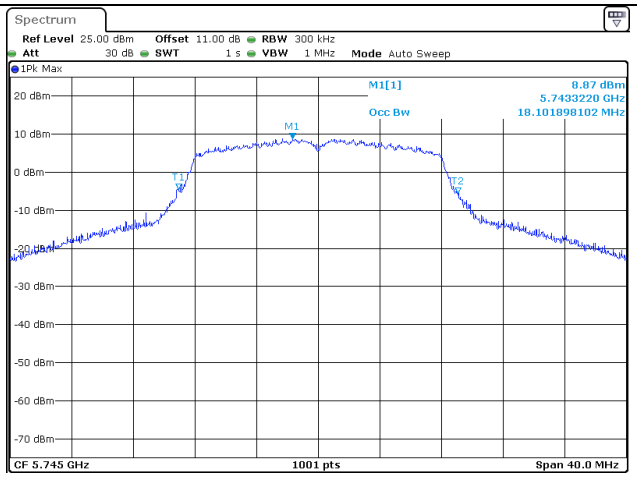
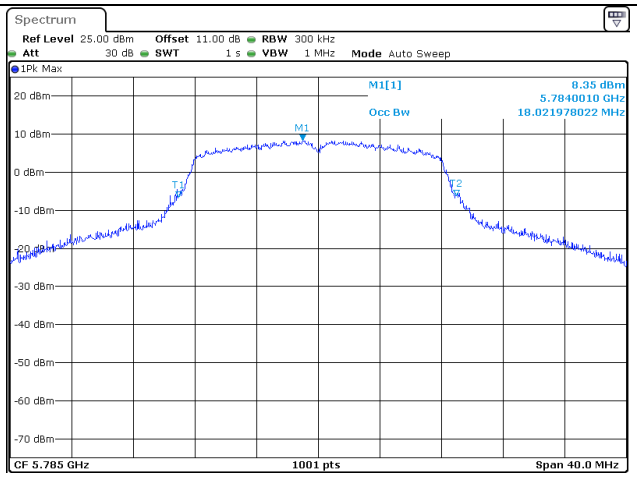
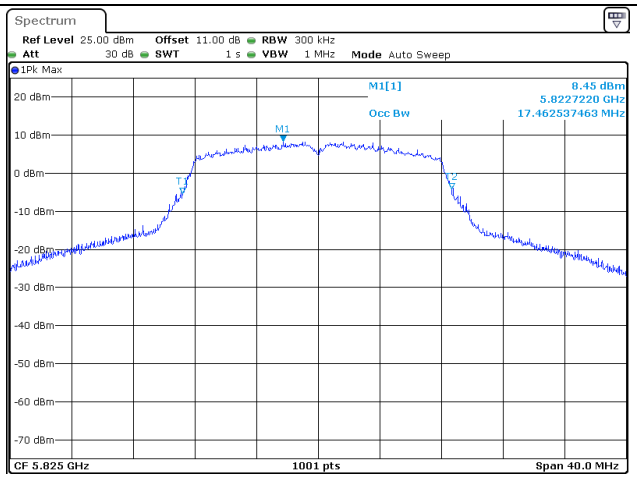
99% Emission Bandwidth	
802.11ac-VHT80 Lowest Channel	
802.11ac-VHT80 Highest Channel	
802.11ac-VHT80 Cross Channel	

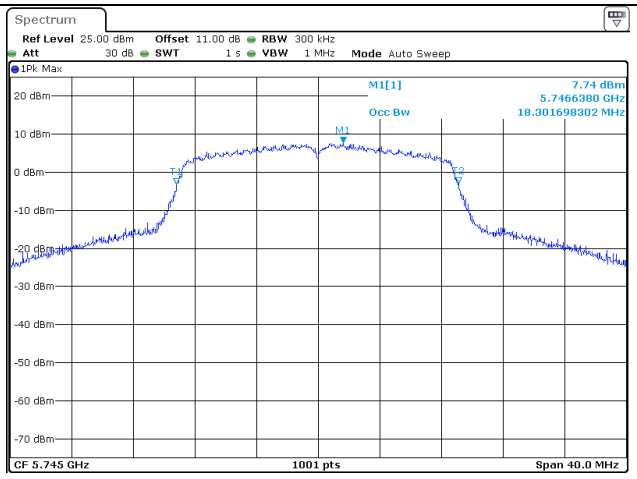
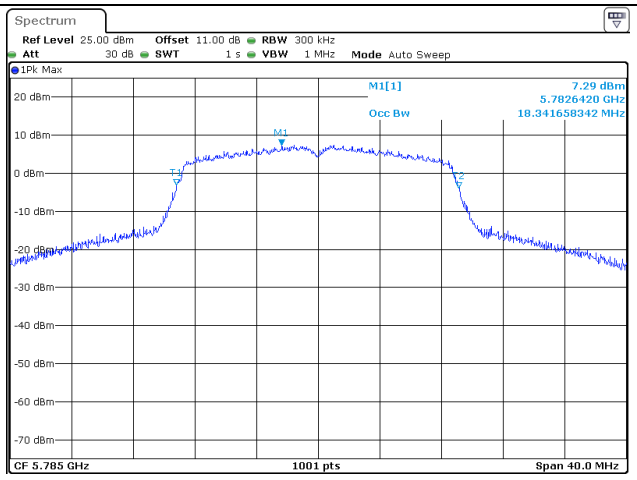
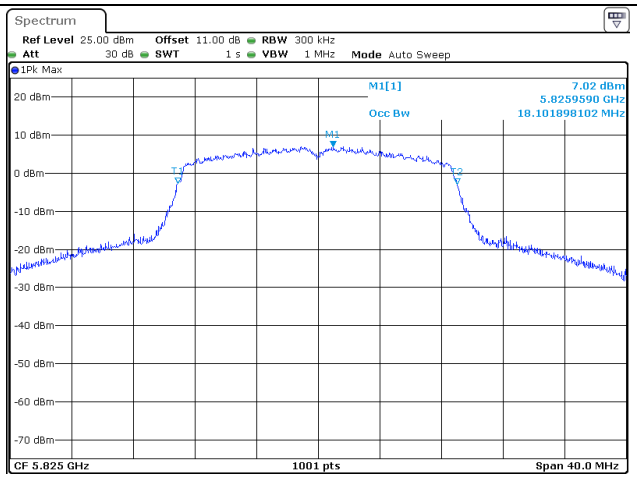
5725-5850MHz:

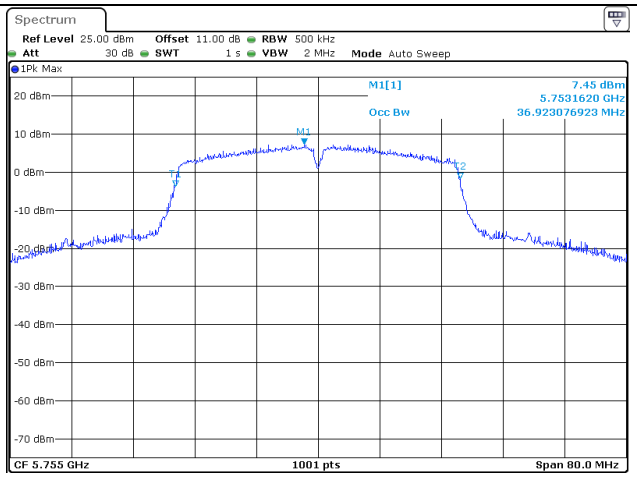
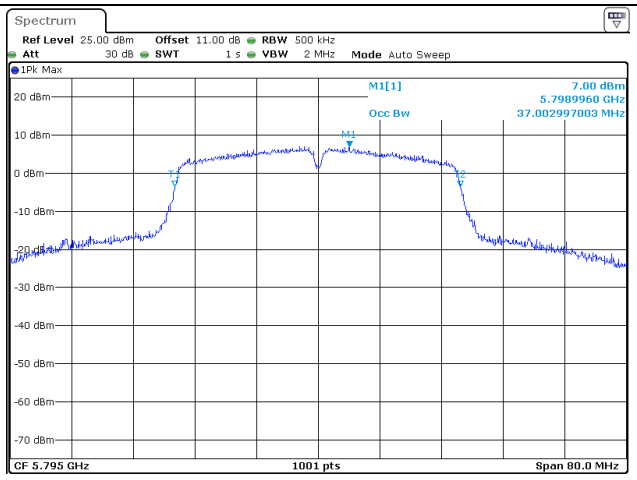
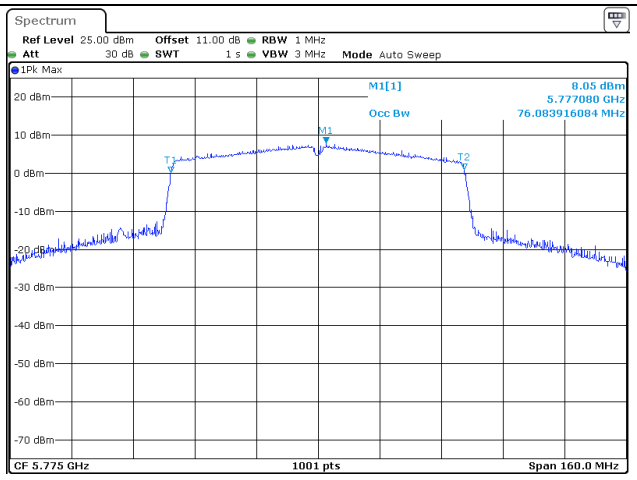
6dB Emission Bandwidth	
802.11a Lowest Channel	
802.11a Middle Channel	
802.11a Highest Channel	

6dB Emission Bandwidth	
802.11ac-VHT20 Lowest Channel	
802.11ac-VHT20 Middle Channel	
802.11ac-VHT20 Highest Channel	

6dB Emission Bandwidth	
802.11ac-VHT40 Lowest Channel	
802.11ac-VHT40 Highest Channel	
802.11ac-VHT80 Middle Channel	

99% Emission Bandwidth	
802.11a Lowest Channel	
802.11a Middle Channel	
802.11a Highest Channel	

99% Emission Bandwidth	
802.11ac-VHT20 Lowest Channel	
802.11ac-VHT20 Middle Channel	
802.11ac-VHT20 Highest Channel	

99% Emission Bandwidth	
802.11ac-VHT40 Lowest Channel	
802.11ac-VHT40 Highest Channel	
802.11ac-VHT80 Middle Channel	

FCC §15.407(a) - 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.

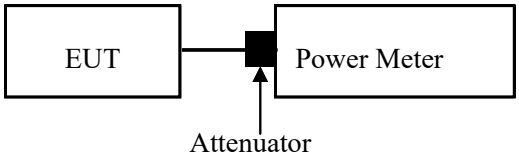
For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11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



Test Data

Environmental Conditions

Temperature:	25.1 ℃
Relative Humidity:	56 %
ATM Pressure:	101 kPa

The testing was performed by Cheeb Huang on 2024-05-13.

EUT operation mode: Transmitting

Test Result: Compliant.

5150-5250 MHz:

Test Modes	Test Frequency (MHz)	Max. Conducted Average Output Power (dBm)			
		ANT 1	ANT 2	Total	Limit
802.11a	5180	**13.15**	12.74	/	24
	5200	12.94	12.57	/	24
	5240	13.12	12.97	/	24
802.11ac-VHT20	5180	10.33	9.59	12.99	24
	5200	10.11	9.58	12.86	24
	5240	10.18	9.75	12.98	24
802.11ac-VHT40	5190	10.20	9.69	12.96	24
	5230	10.22	9.88	13.06	24
802.11ac-VHT80	5210	10.12	9.83	12.99	24
Note: 1. The device is a client unit. 2. The device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power measurements on IEEE 802.11 devices: Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$					
Antenna Gain:	3.19	dBi	Directional gain:	3.19	dBi

5250-5350 MHz:

Test Modes	Test Frequency (MHz)	Max. Conducted Average Output Power (dBm)			
		ANT 1	ANT 2	Total	Limit
802.11a	5260	15.92	15.98	/	24
	5280	16.13	16.22	/	24
	5320	16.68	16.67	/	24
802.11ac-VHT20	5260	15.05	14.90	17.99	24
	5280	15.26	15.20	18.24	24
	5320	15.70	15.49	**18.61**	24
802.11ac-VHT40	5270	13.36	13.30	16.34	24
	5310	13.69	13.57	16.64	24
802.11ac-VHT80	5290	11.47	11.46	14.48	24
Note: The device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power measurements on IEEE 802.11 devices: Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$					
Antenna Gain:	3.19	dBi	Directional gain:	3.19	dBi

5470-5725 MHz:

Test Modes	Test Frequency (MHz)	Max. Conducted Average Output Power (dBm)			
		ANT 1	ANT 2	Total	Limit
802.11a	5500	13.93	13.53	/	24
	5580	13.90	14.06	/	24
	5700	14.75	14.18	/	24
	5720	14.62	13.98	/	24
802.11ac-VHT20	5500	12.81	12.29	15.57	24
	5580	12.91	13.03	15.98	24
	5700	13.70	13.09	16.42	24
	5720	13.55	12.80	16.20	24
802.11ac-VHT40	5510	12.79	12.45	15.63	24
	5550	12.86	13.10	15.99	24
	5670	13.80	13.67	**16.75**	24
	5710	13.76	13.34	16.57	24
802.11ac-VHT80	5530	12.72	12.63	15.69	24
	5610	13.18	13.34	16.27	24
	5690	13.62	13.22	16.43	24
Note: The device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power measurements on IEEE 802.11 devices: Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$					
Antenna Gain:	3.19	dBi	Directional gain:	3.19	dBi

5725-5850 MHz:

Test Modes	Test Frequency (MHz)	Max. Conducted Average Output Power (dBm)			
		ANT 1	ANT 2	Total	Limit
802.11a	5745	16.17	15.60	/	30
	5785	15.89	15.35	/	30
	5825	15.65	15.39	/	30
802.11ac-VHT20	5745	15.23	14.54	17.91	30
	5785	14.93	14.33	17.65	30
	5825	14.76	14.37	17.58	30
802.11ac-VHT40	5755	15.38	14.84	**18.13**	30
	5795	15.16	14.67	17.93	30
802.11ac-VHT80	5775	15.14	14.52	17.85	30
Note: The device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power measurements on IEEE 802.11 devices: Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$					
Antenna Gain:	3.19	dBi	Directional gain:	3.19	dBi

FCC §15.407(a) - 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%

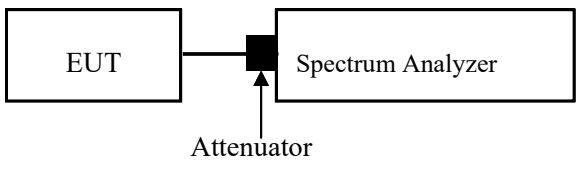
KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Method SA-1 should be applied.

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.



Test Data

Environmental Conditions

Temperature:	25.1 ℃
Relative Humidity:	56 %
ATM Pressure:	101 kPa

The testing was performed by Cheeb Huang on 2024-05-13.

EUT operation mode: Transmitting

Test Result: Compliant.

5150-5250 MHz:

Test Modes	Test Frequency (MHz)	Reading (dBm/MHz)			Duty Cycle Factor (dB)	Maximum Power Spectral Density (dBm/MHz)	
		ANT 1	ANT 2	Total		Result	Limit
802.11a	5180	2.04	1.76	/	0.23	2.27	11
	5200	2.82	1.69	/	0.23	3.05	11
	5240	2.33	2.19	/	0.23	2.56	11
802.11ac-VHT20	5180	-0.63	-1.43	2.00	0.45	2.45	10.81
	5200	-0.84	-1.56	1.83	0.45	2.28	10.81
	5240	-0.45	-0.97	2.31	0.45	2.76	10.81
802.11ac-VHT40	5190	-3.77	-4.1	-0.92	0.80	-0.12	10.81
	5230	-4.39	-4.06	-1.21	0.80	-0.41	10.81
802.11ac-VHT80	5210	-8.03	-7.33	-4.66	1.39	-3.27	10.81

Note:
1. The device is a client device.
2. The device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power spectral density (PSD) measurements on the devices:
Array Gain = 10 $\log(N_{ANT}/N_{SS})$ dB
3. For 802.11a mode, Maximum Power Spectral Density = Max{ANT1, ANT2}+ Duty Cycle Factor
4. For 802.11ac modes, Maximum Power Spectral Density = Total+ Duty Cycle Factor

Antenna Gain:	3.19	dBi	Directional gain:	6.19	dBi

5250-5350 MHz:

Test Modes	Test Frequency (MHz)	Reading (dBm/MHz)			Duty Cycle Factor (dB)	Maximum Power Spectral Density (dBm/MHz)	
		ANT 1	ANT 2	Total		Result	Limit
802.11a	5260	5.40	5.35	/	0.23	5.63	11
	5280	5.50	5.82	/	0.23	6.05	11
	5320	5.90	6.18	/	0.23	6.41	11
802.11ac-VHT20	5260	4.16	3.85	7.02	0.45	7.47	10.81
	5280	5.07	4.17	7.65	0.45	8.10	10.81
	5320	4.71	4.25	7.50	0.45	7.95	10.81
802.11ac-VHT40	5270	-0.94	-0.23	2.44	0.80	3.24	10.81
	5310	0.08	-1.05	2.56	0.80	3.36	10.81
802.11ac-VHT80	5290	-6.58	-5.61	-3.06	1.39	-1.67	10.81

Note:
1. The device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power spectral density (PSD) measurements on the devices:
Array Gain = 10 log(N_{ANT}/N_{SS}) dB
2. For 802.11a mode, Maximum Power Spectral Density = Max{ANT1, ANT2}+ Duty Cycle Factor
3. For 802.11ac modes, Maximum Power Spectral Density = Total+ Duty Cycle Factor

Antenna Gain:	3.19	dBi	Directional gain:	6.19	dBi

5470-5725 MHz:

Test Modes	Test Frequency (MHz)	Reading (dBm/MHz)			Duty Cycle Factor (dB)	Maximum Power Spectral Density (dBm/MHz)	
		ANT 1	ANT 2	Total		Result	Limit
802.11a	5500	2.75	3.18	/	0.23	3.41	11
	5580	3.63	3.12	/	0.23	3.86	11
	5700	4.30	3.99	/	0.23	4.53	11
	5720	4.02	3.20	/	0.23	4.25	11
802.11ac-VHT20	5500	2.27	1.82	5.06	0.45	5.51	10.81
	5580	1.55	2.18	4.89	0.45	5.34	10.81
	5700	2.87	2.44	5.67	0.45	6.12	10.81
	5720	2.92	1.53	5.29	0.45	5.74	10.81
802.11ac-VHT40	5510	-1.36	-2.13	1.28	0.80	2.08	10.81
	5550	-1.48	-1.04	1.76	0.80	2.56	10.81
	5670	0.15	-0.85	2.69	0.80	3.49	10.81
	5710	-0.71	-0.66	2.33	0.80	3.13	10.81
802.11ac-VHT80	5530	-4.85	-4.38	-1.60	1.39	-0.21	10.81
	5610	-4.49	-4.43	-1.45	1.39	-0.06	10.81
	5690	-3.27	-4.22	-0.71	1.39	0.68	10.81

Note:
1. The device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power spectral density (PSD) measurements on the devices:
Array Gain = 10 log(N_{ANT}/N_{SS}) dB
2. For 802.11a mode, Maximum Power Spectral Density = Max{ANT1, ANT2}+ Duty Cycle Factor
3. For 802.11ac modes, Maximum Power Spectral Density = Total+ Duty Cycle Factor

Antenna Gain:	3.19	dBi	Directional gain:	6.19	dBi

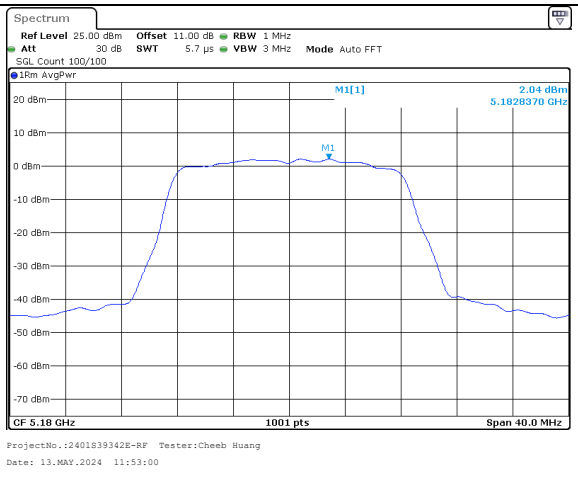
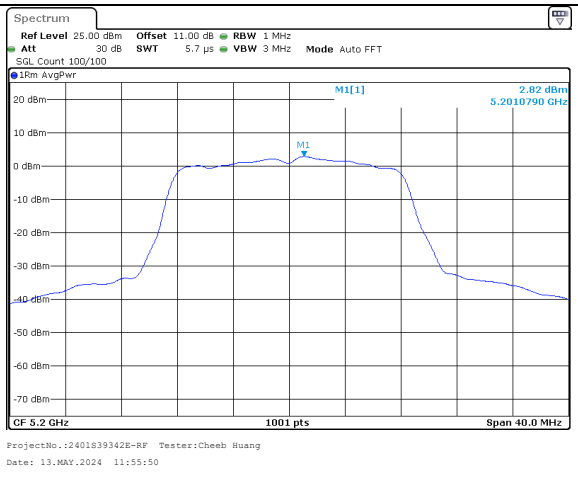
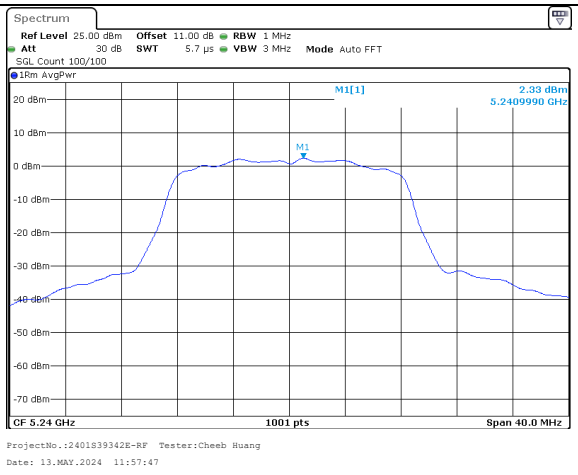
5725-5850 MHz:

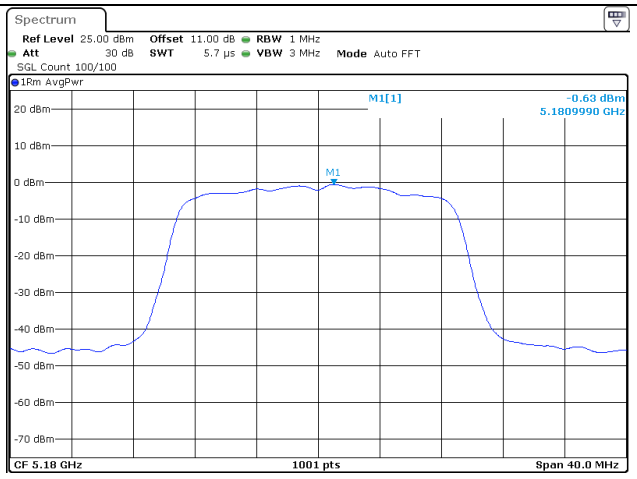
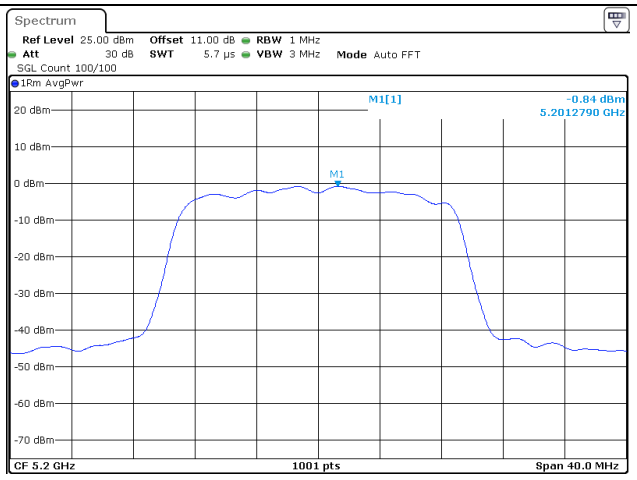
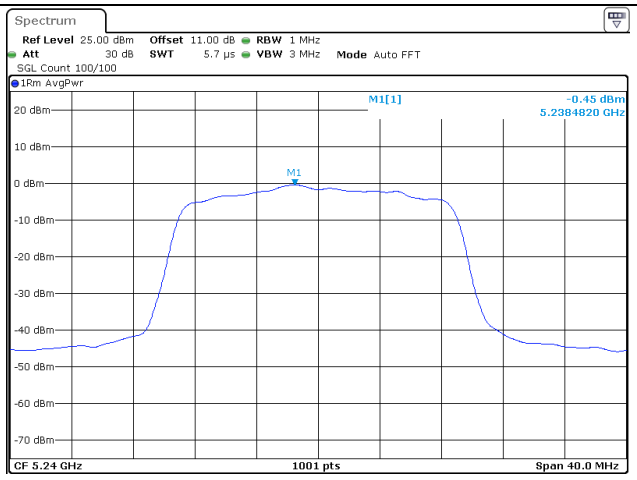
Test Modes	Test Frequency (MHz)	Reading (dBm/500kHz)			Duty Cycle Factor (dB)	Maximum Power Spectral Density (dBm/500kHz)	
		ANT 1	ANT 2	Total		Result	Limit
802.11a	5745	2.99	2.33	/	0.23	3.22	30
	5785	2.68	2.27	/	0.23	2.91	30
	5825	1.92	2.37	/	0.23	2.60	30
802.11ac-VHT20	5745	1.23	0.84	4.05	0.45	4.50	29.81
	5785	0.82	0.81	3.83	0.45	4.28	29.81
	5825	0.63	0.61	3.63	0.45	4.08	29.81
802.11ac-VHT40	5755	-1.45	-2.48	1.08	0.80	1.88	29.81
	5795	-2.39	-2.31	0.66	0.80	1.46	29.81
802.11ac-VHT80	5775	-5.2	-6.31	-2.71	1.39	-1.32	29.81

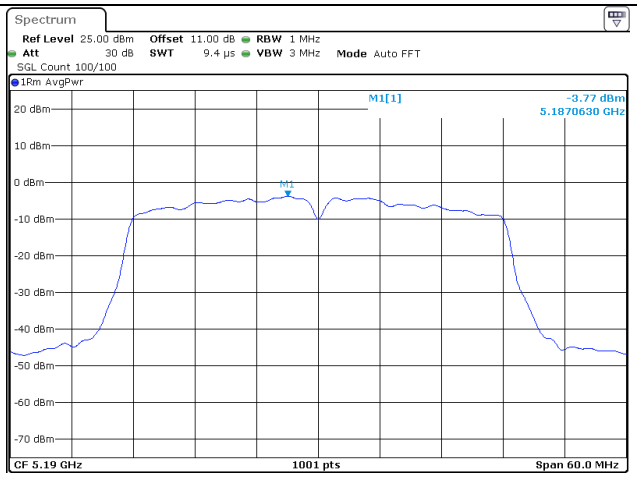
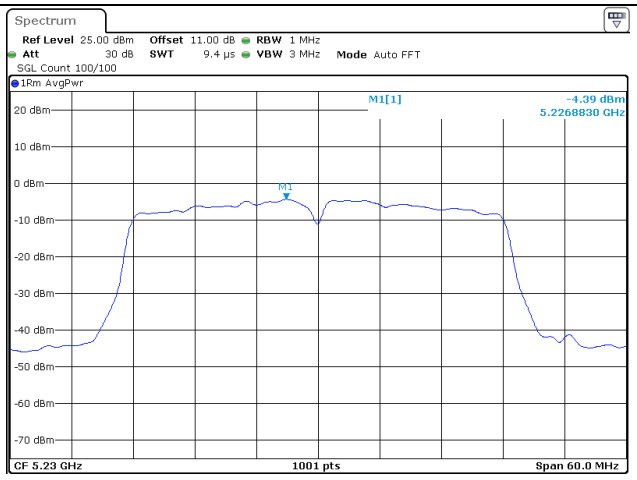
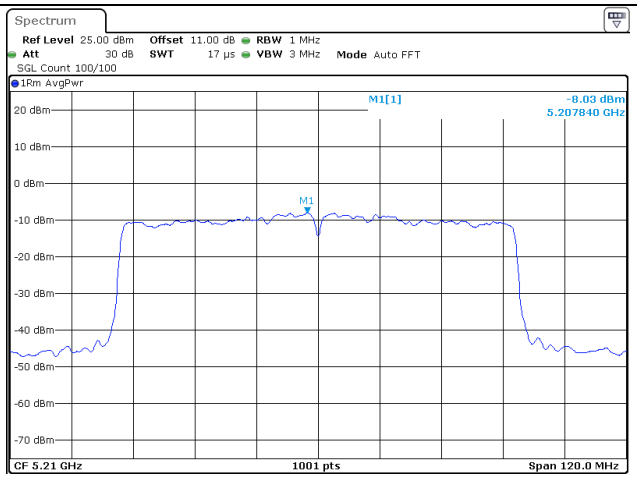
Note:
1. The device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power spectral density (PSD) measurements on the devices:
Array Gain = 10 $\log(N_{ANT}/N_{SS})$ dB
2. For 802.11a mode, Maximum Power Spectral Density = Max{ANT1, ANT2}+ Duty Cycle Factor
3. For 802.11ac modes, Maximum Power Spectral Density = Total+ Duty Cycle Factor

Antenna Gain:	3.19	dBi	Directional gain:	6.19	dBi

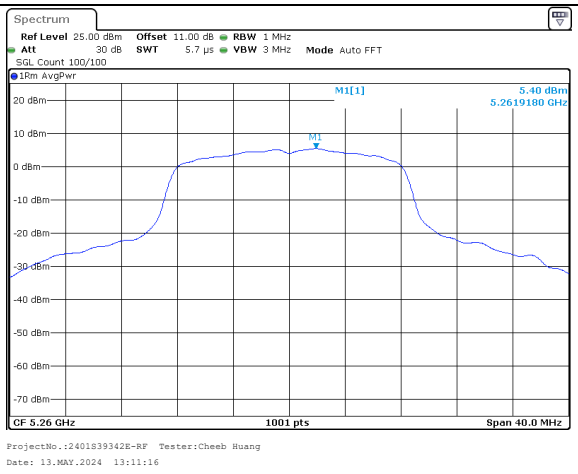
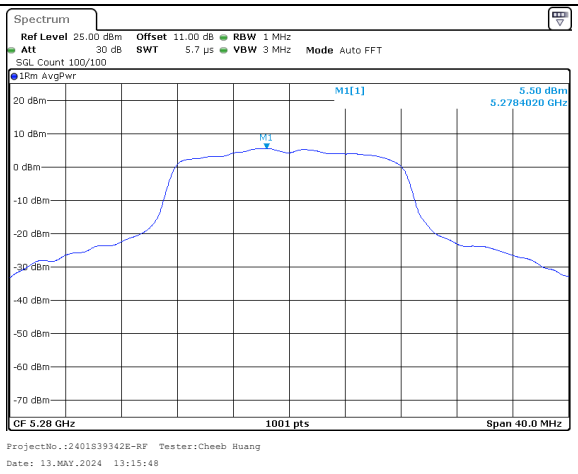
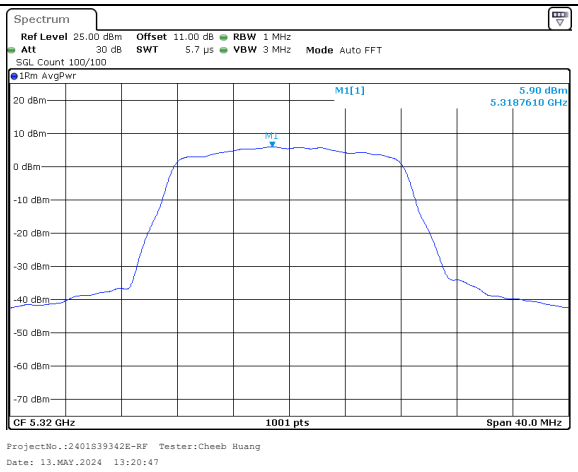
ANT 1
5150-5250MHz:

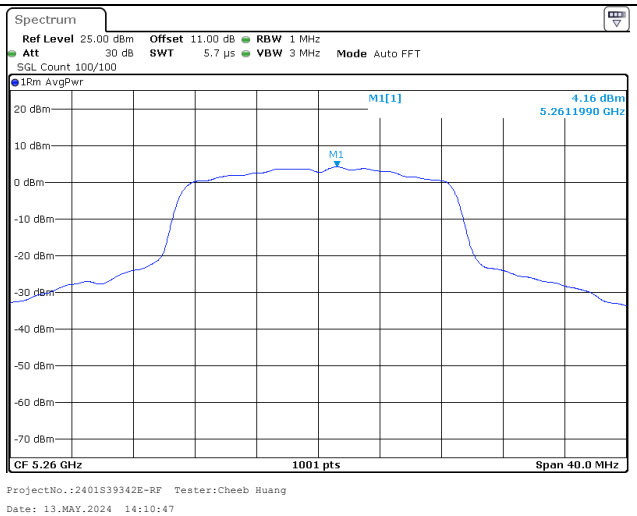
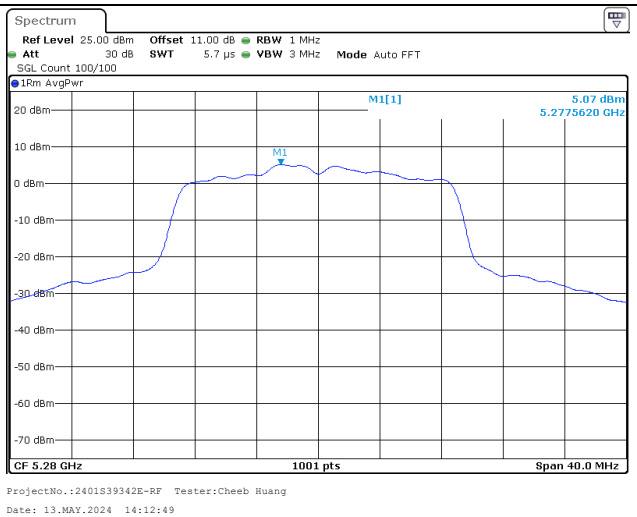
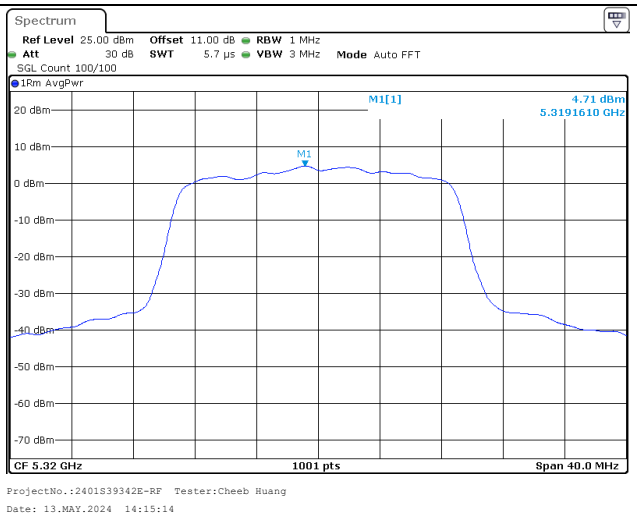
Maximum power spectral density	
802.11a Lowest Channel	
802.11a Middle Channel	
802.11a Highest Channel	

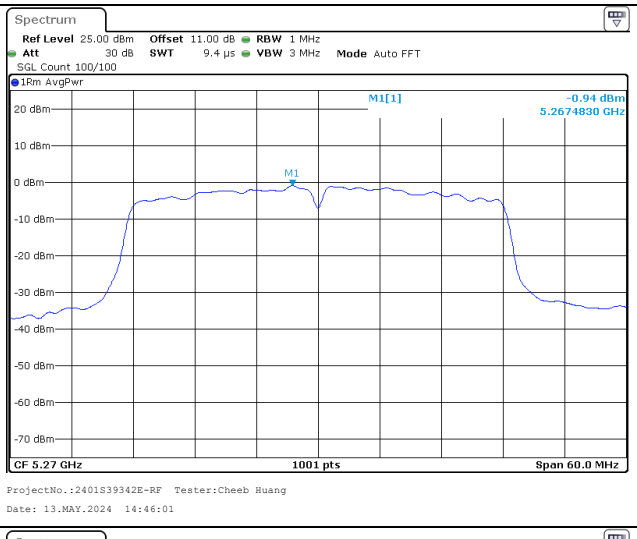
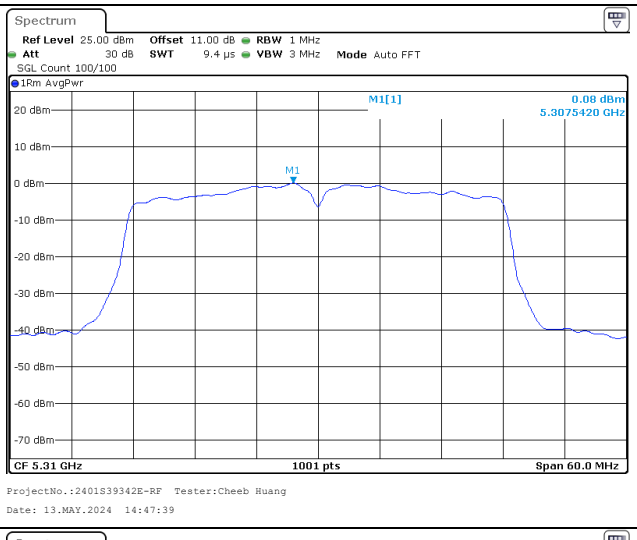
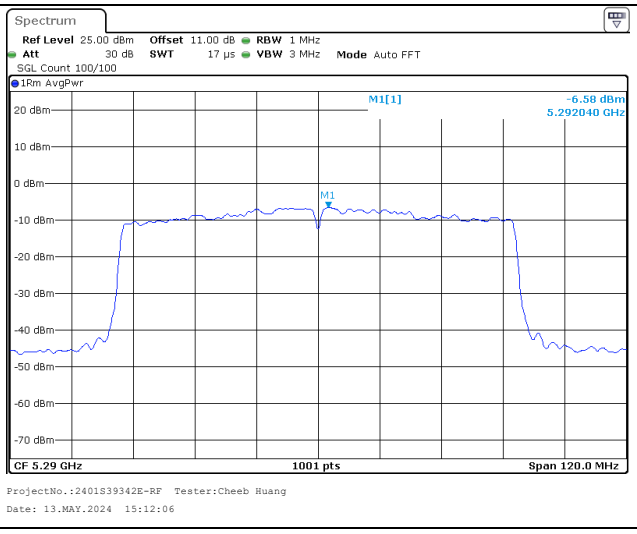
Maximum power spectral density	
802.11ac-VHT20 Lowest Channel	
802.11ac-VHT20 Middle Channel	
802.11ac-VHT20 Highest Channel	

Maximum power spectral density	
802.11ac-VHT40 Lowest Channel	
802.11ac-VHT40 Highest Channel	
802.11ac-VHT80 Middle Channel	

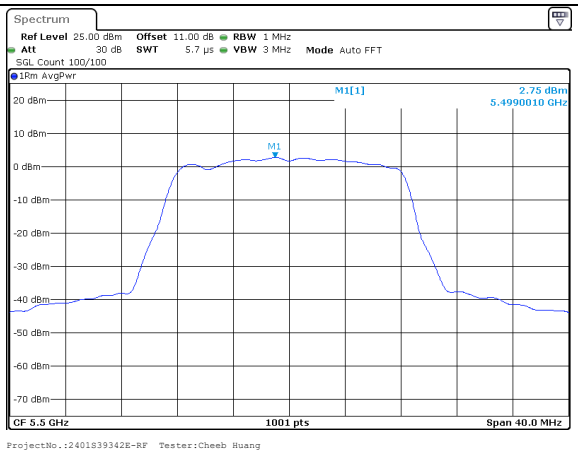
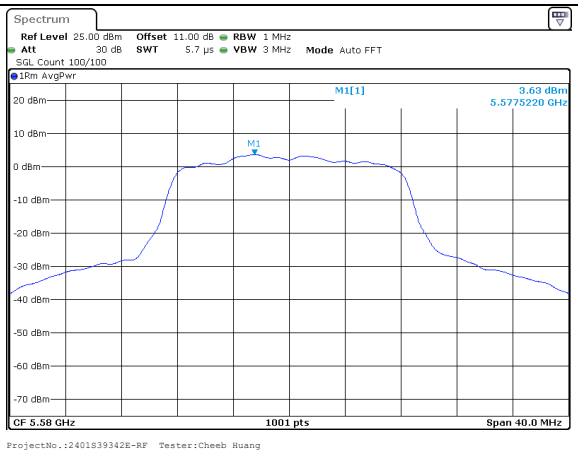
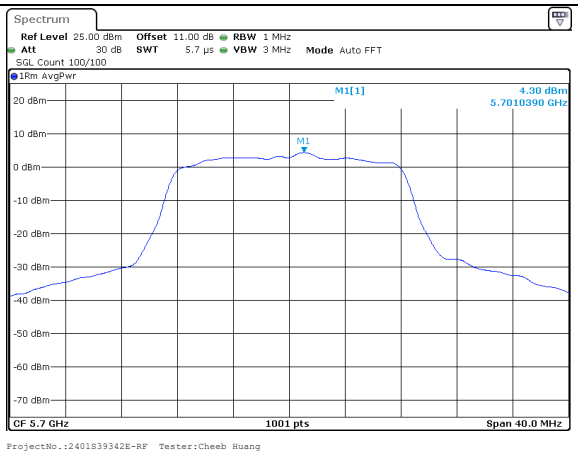
5250-5350MHz:

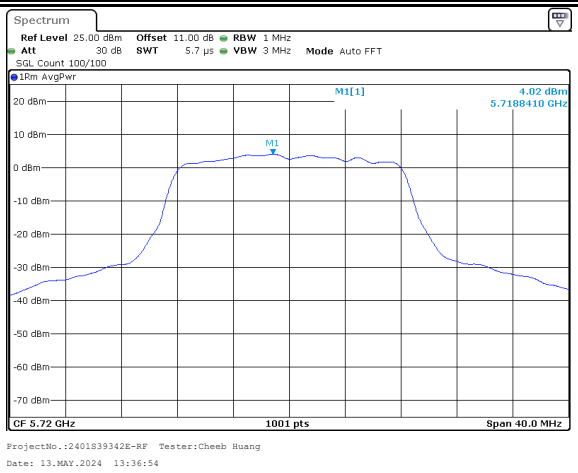
Maximum power spectral density	
802.11a Lowest Channel	
802.11a Middle Channel	
802.11a Highest Channel	

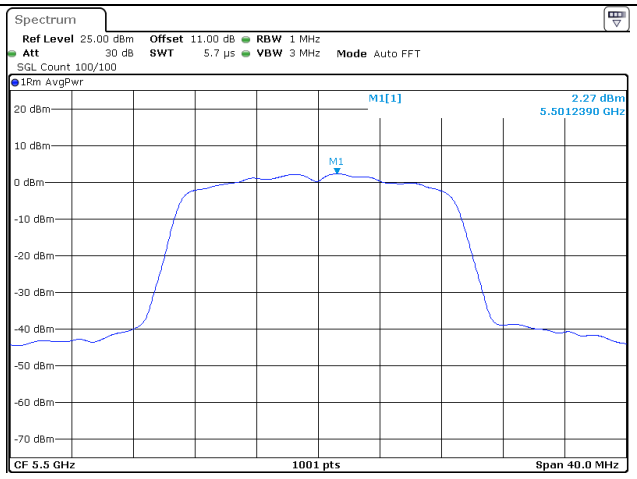
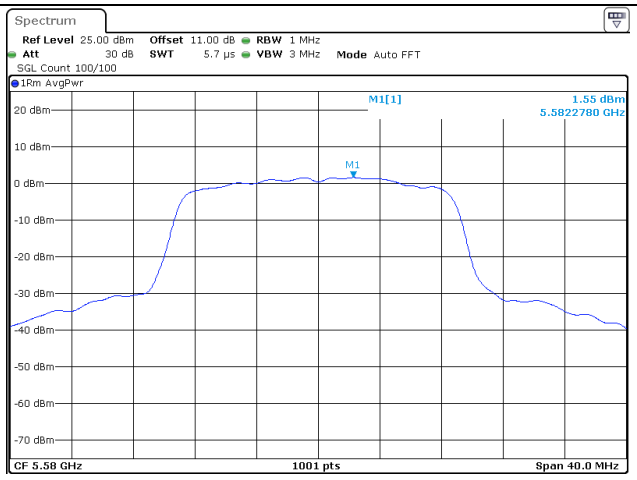
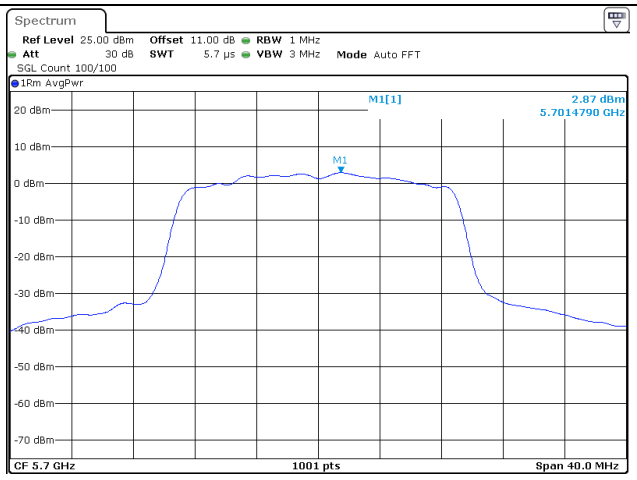
Maximum power spectral density	
802.11ac-VHT20 Lowest Channel	
802.11ac-VHT20 Middle Channel	
802.11ac-VHT20 Highest Channel	

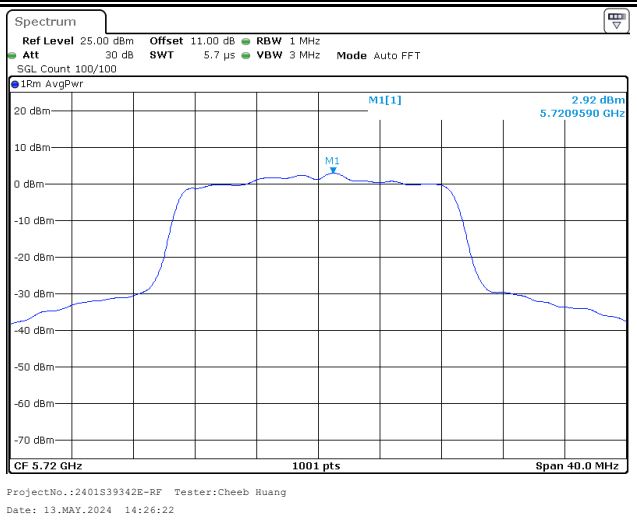
Maximum power spectral density	
802.11ac-VHT40 Lowest Channel	
802.11ac-VHT40 Highest Channel	
802.11ac-VHT80 Middle Channel	

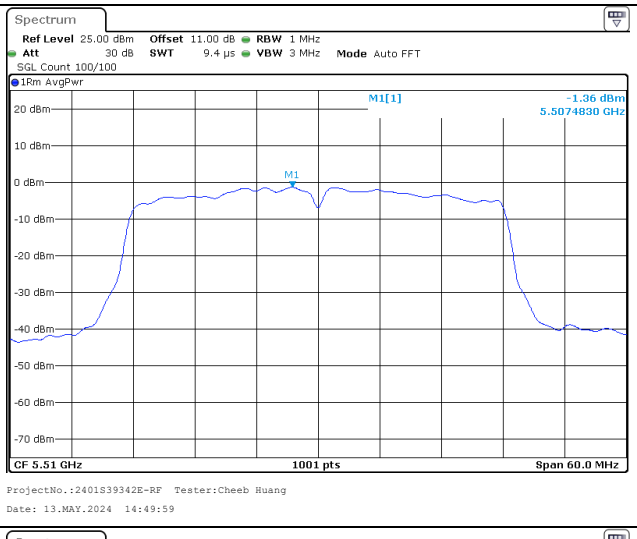
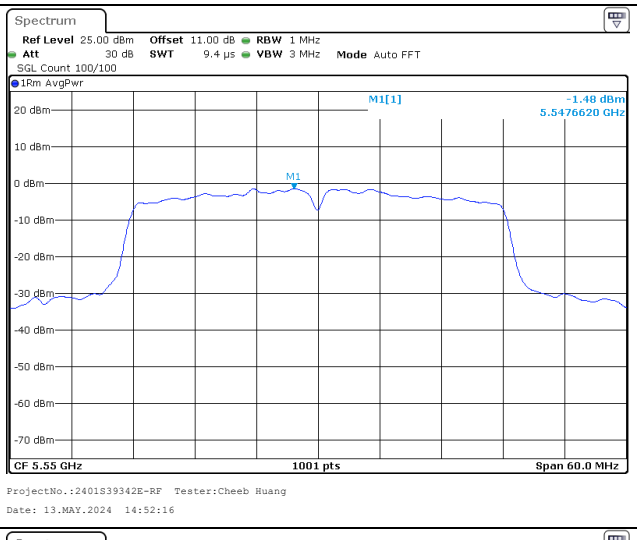
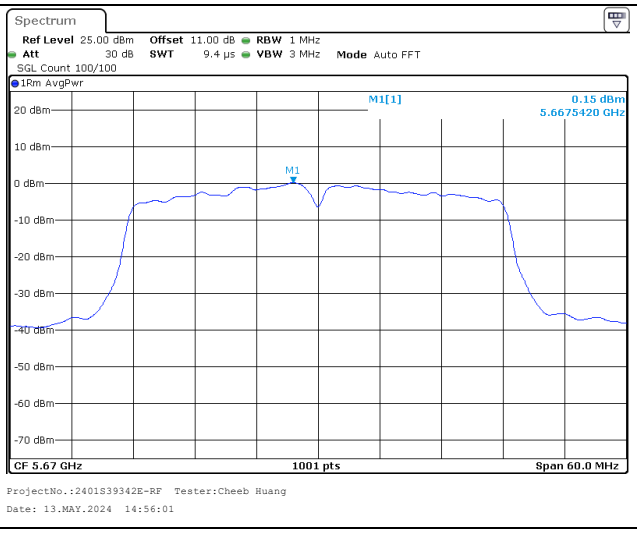
5470-5725MHz:

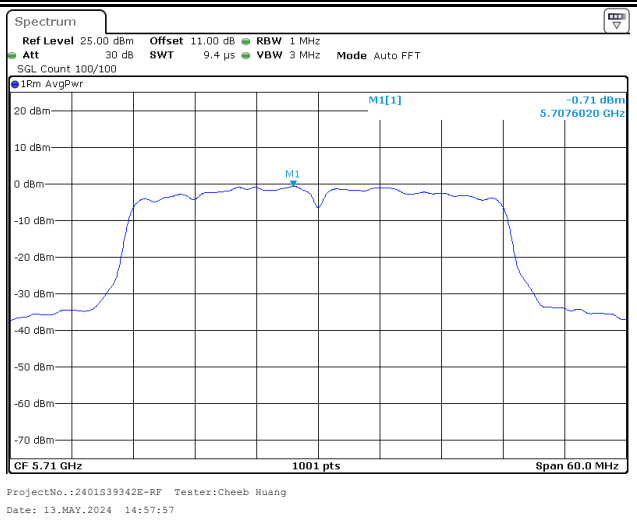
Maximum power spectral density	
802.11a Lowest Channel	
802.11a Middle Channel	
802.11a Highest Channel	

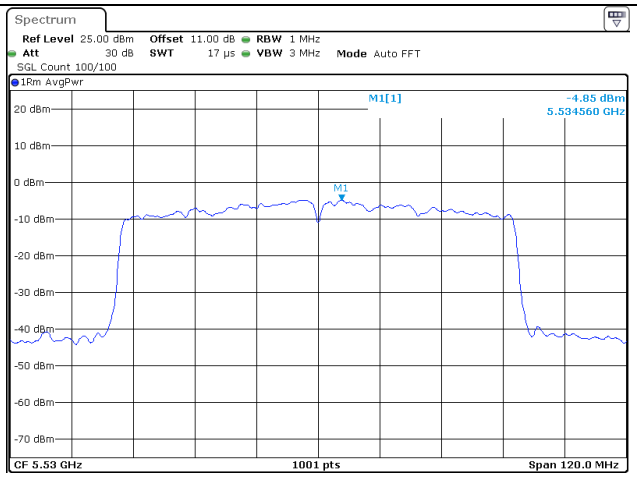
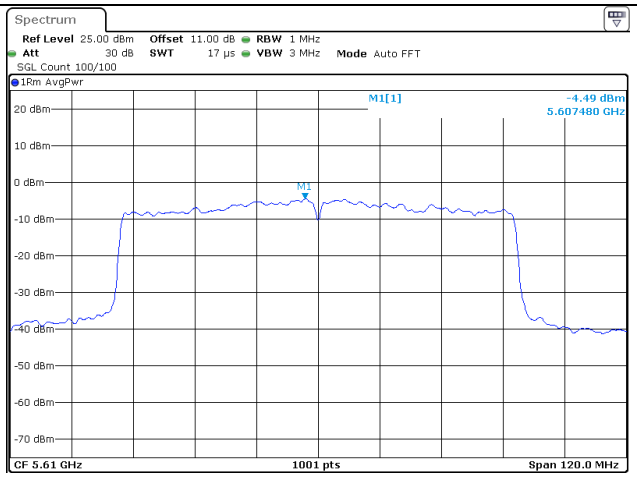
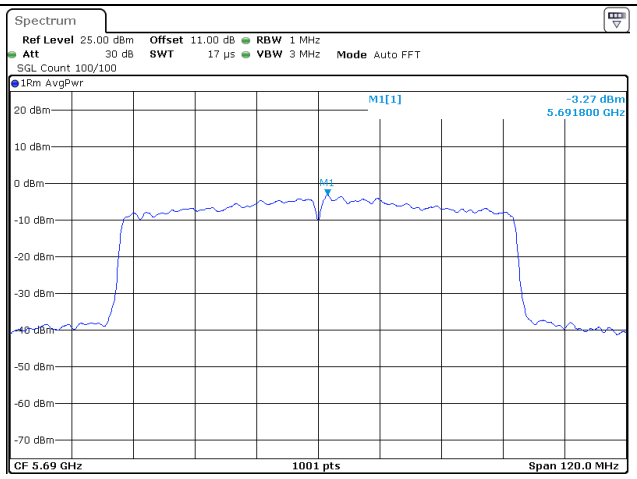
802.11a Cross Channel	

Maximum power spectral density	
802.11ac-VHT20 Lowest Channel	
802.11ac-VHT20 Middle Channel	
802.11ac-VHT20 Highest Channel	

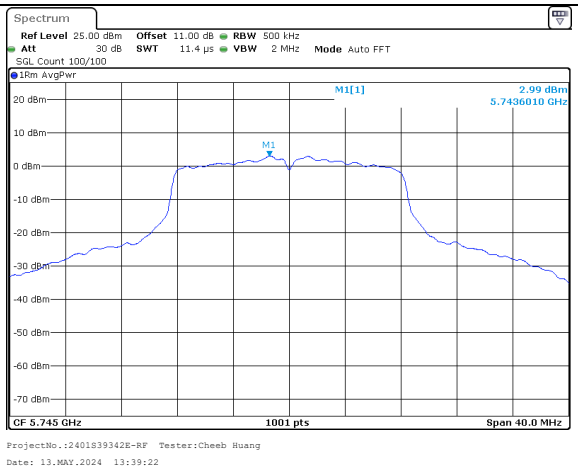
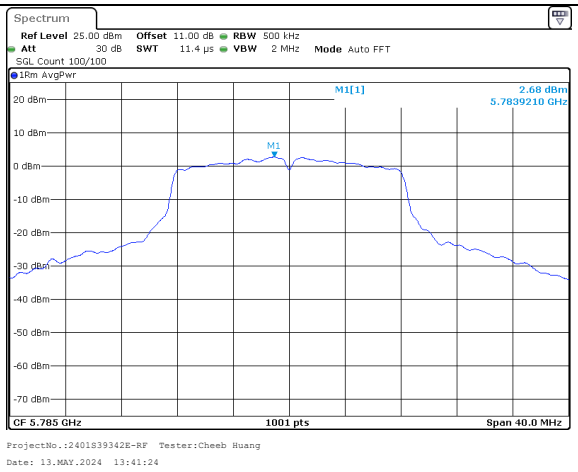
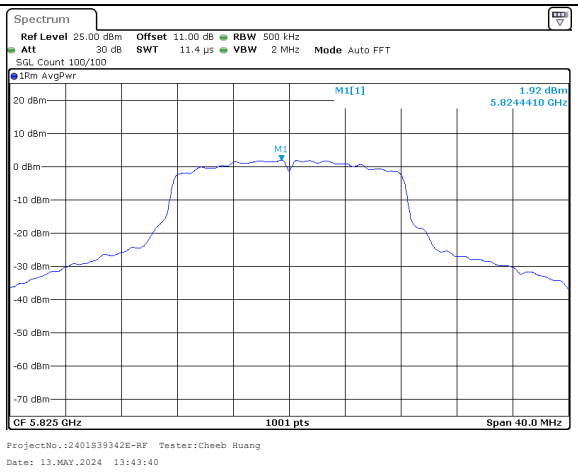
802.11ac-VHT20 Cross Channel	

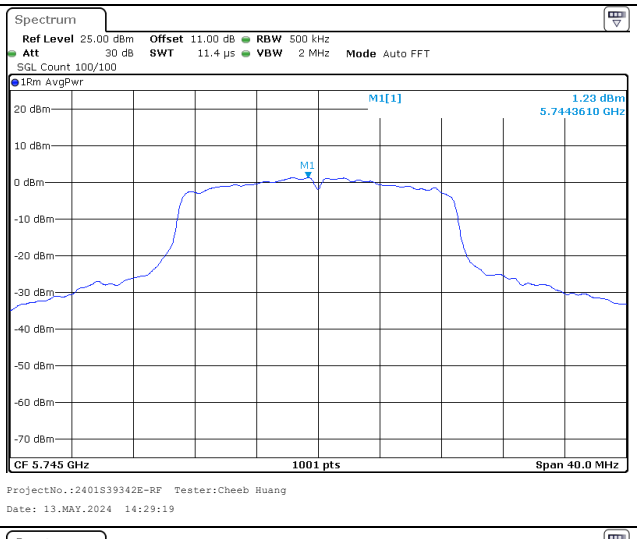
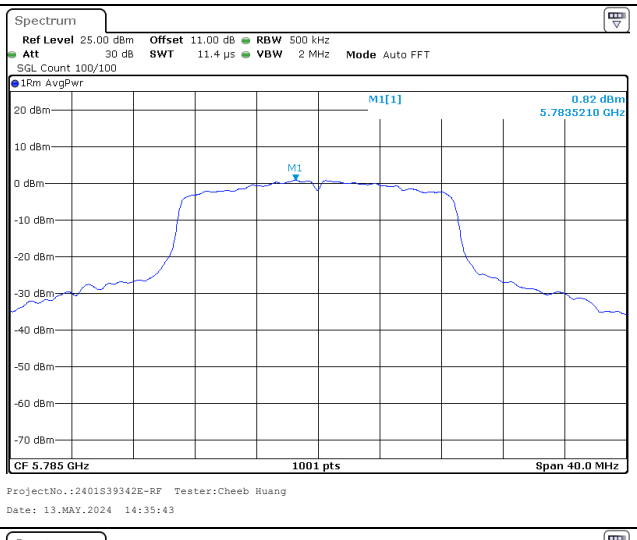
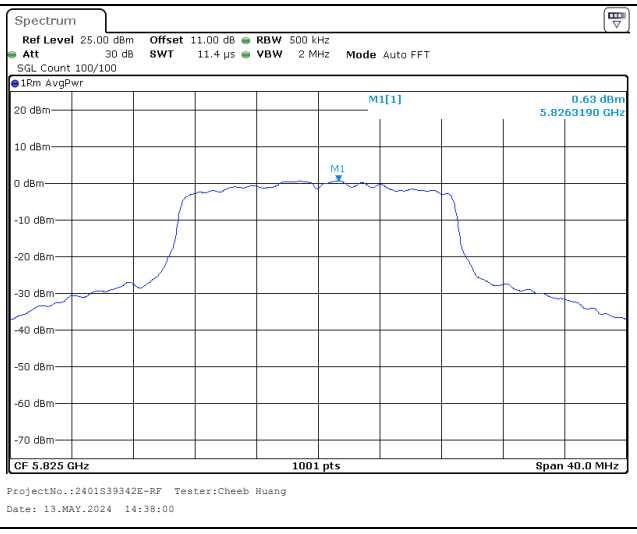
Maximum power spectral density	
802.11ac-VHT40 Lowest Channel	
802.11ac-VHT40 Middle Channel	
802.11ac-VHT40 Highest Channel	

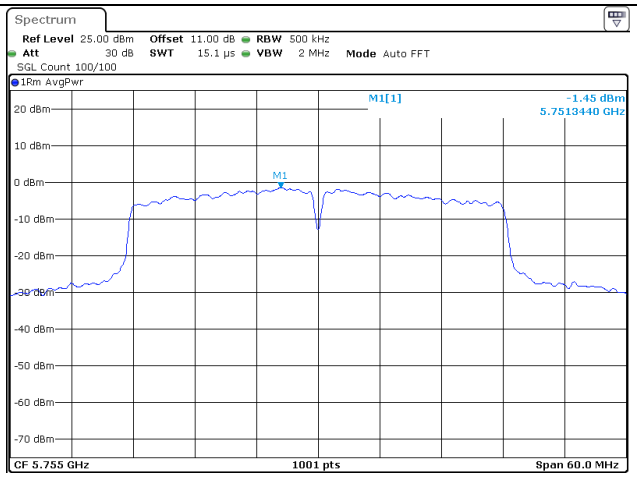
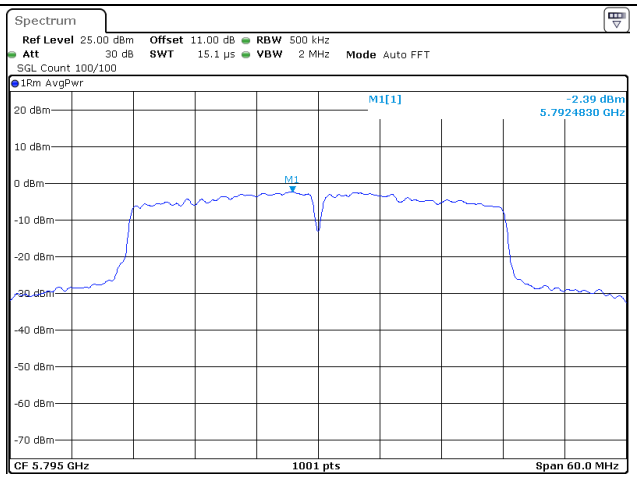
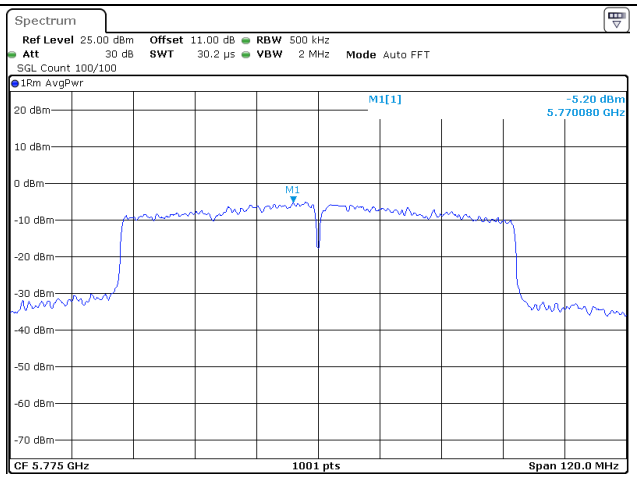
802.11ac-VHT40 Cross Channel	

Maximum power spectral density	
802.11ac-VHT80 Lowest Channel	
802.11ac-VHT80 Highest Channel	
802.11ac-VHT80 Cross Channel	

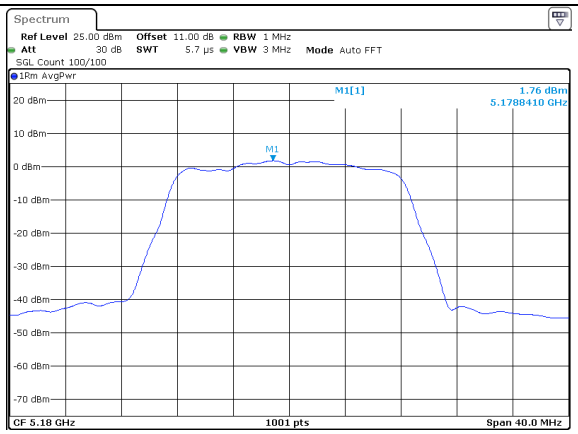
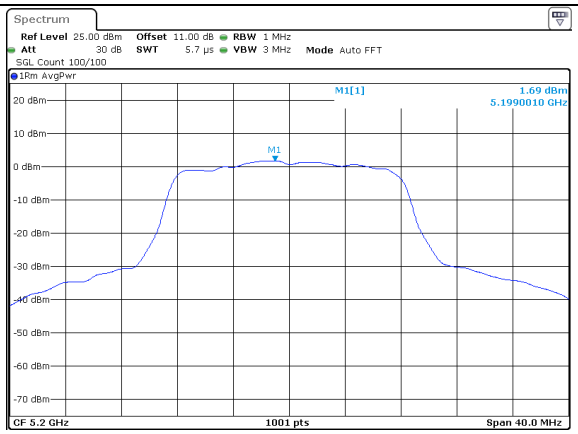
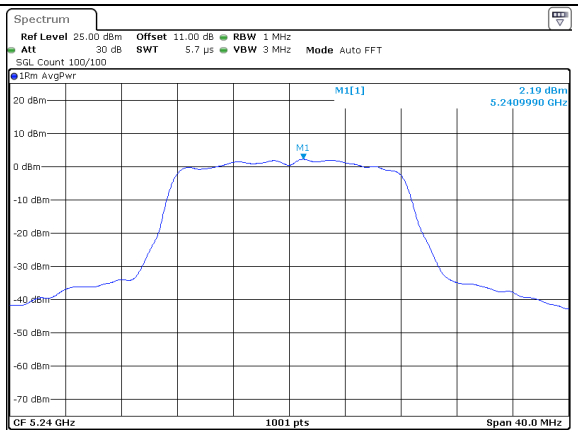
5725-5850MHz:

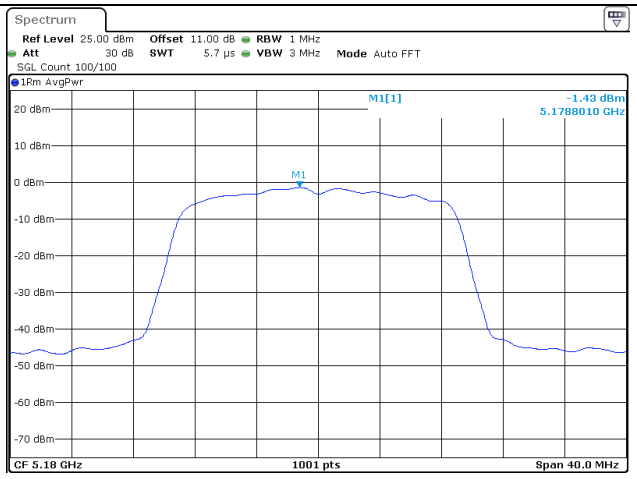
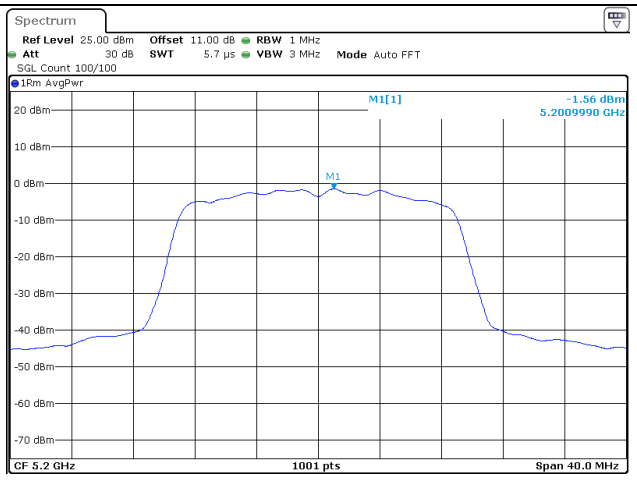
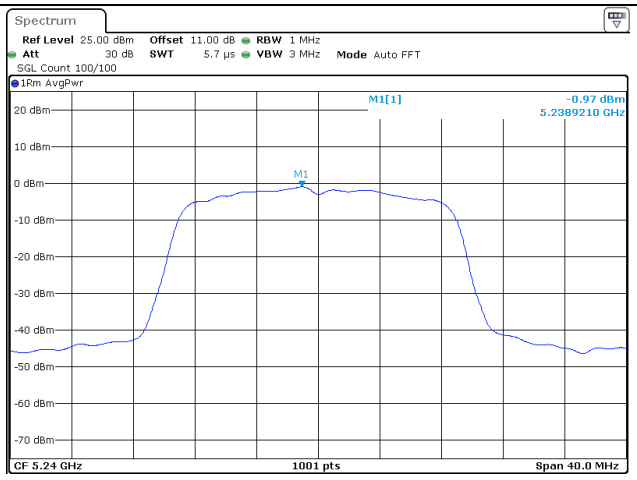
Maximum power spectral density	
802.11a Lowest Channel	
802.11a Middle Channel	
802.11a Highest Channel	

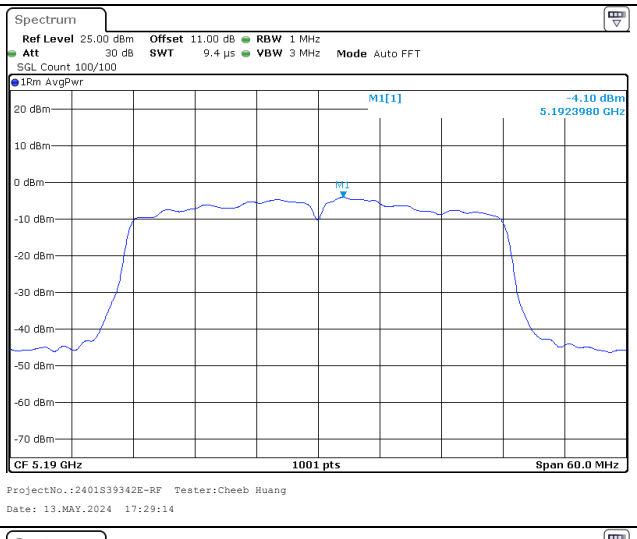
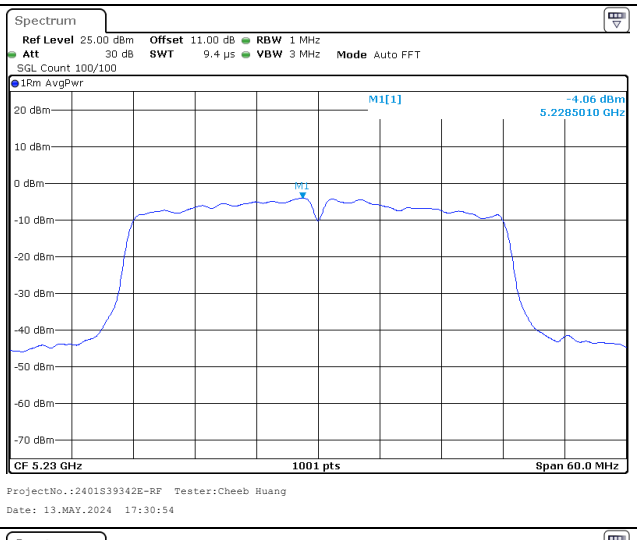
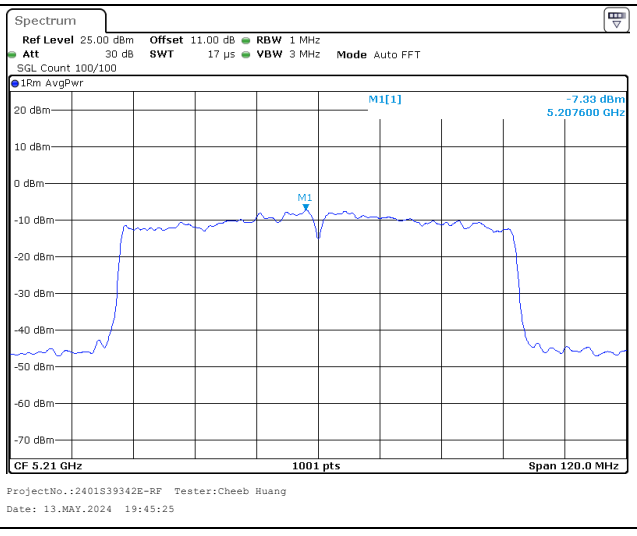
Maximum power spectral density	
802.11ac-VHT20 Lowest Channel	
802.11ac-VHT20 Middle Channel	
802.11ac-VHT20 Highest Channel	

Maximum power spectral density	
802.11ac-VHT40 Lowest Channel	
802.11ac-VHT40 Highest Channel	
802.11ac-VHT80 Middle Channel	

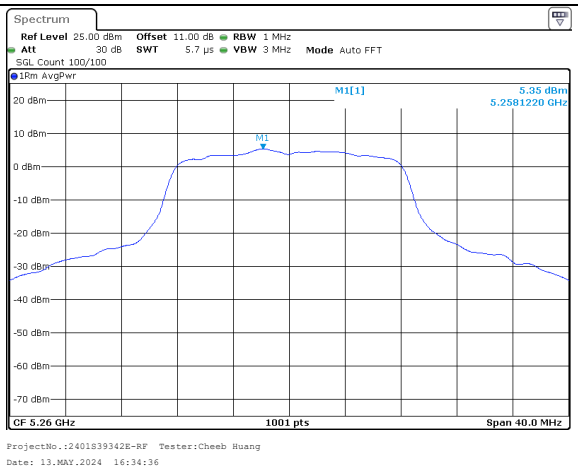
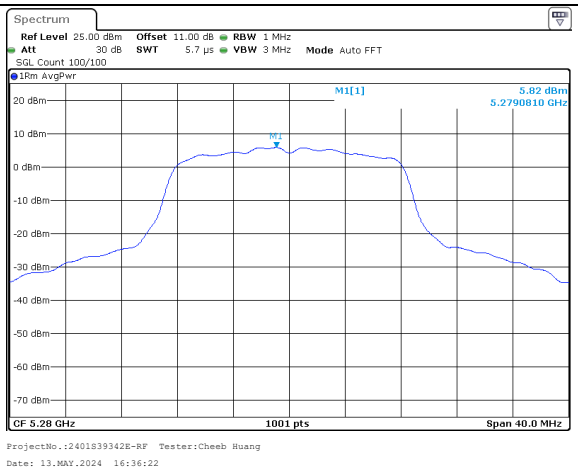
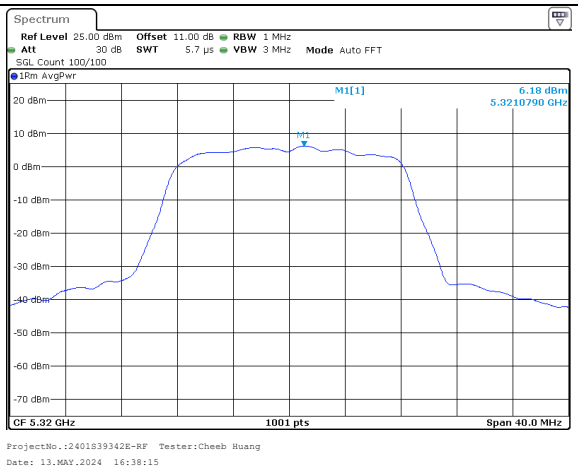
ANT 2
5150-5250MHz:

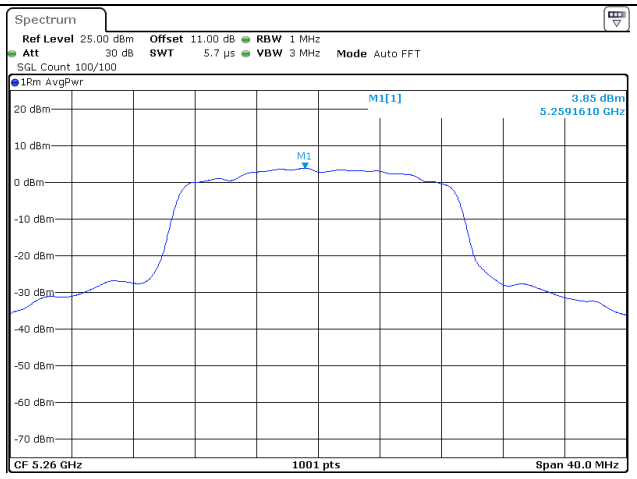
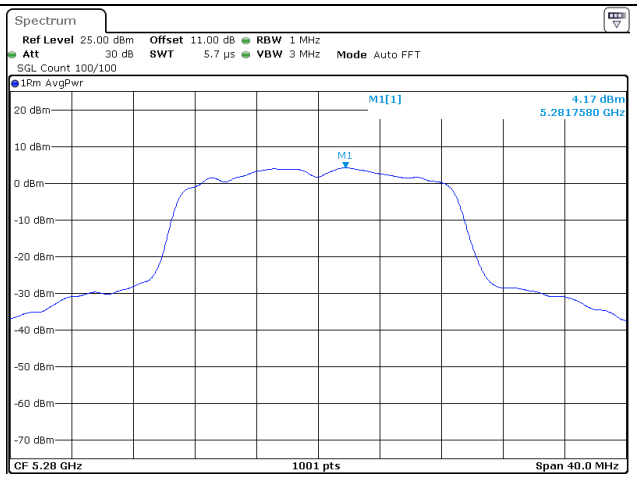
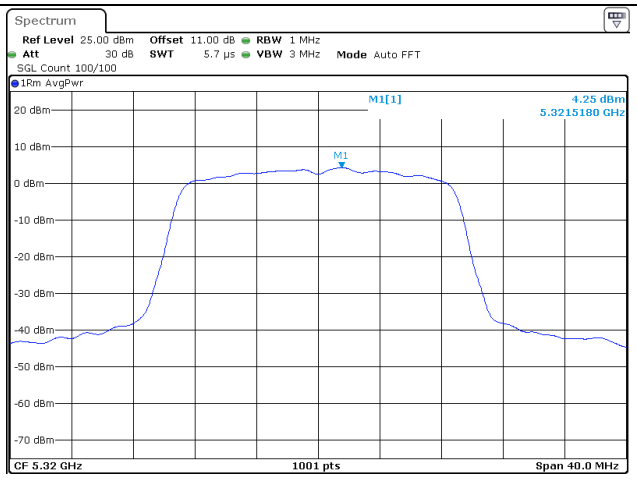
Maximum power spectral density	
802.11a Lowest Channel	
802.11a Middle Channel	
802.11a Highest Channel	

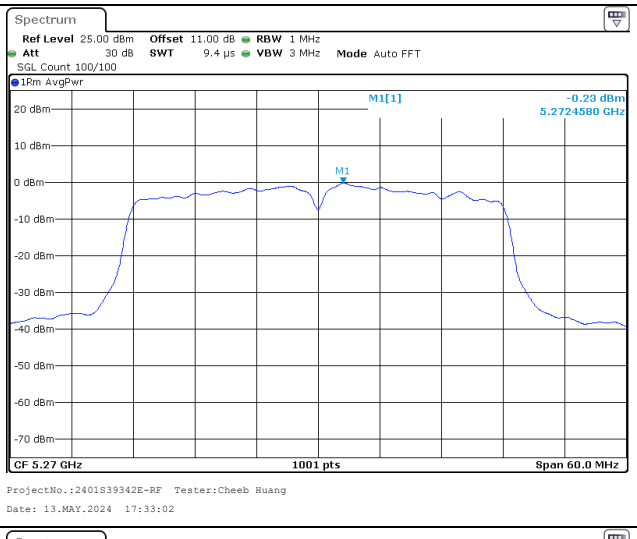
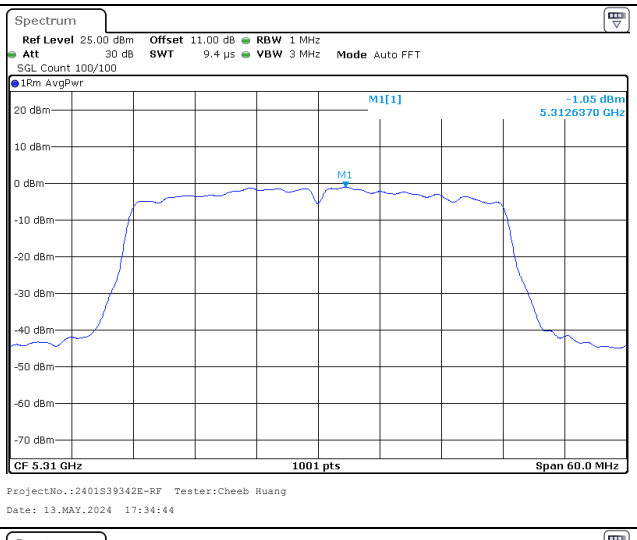
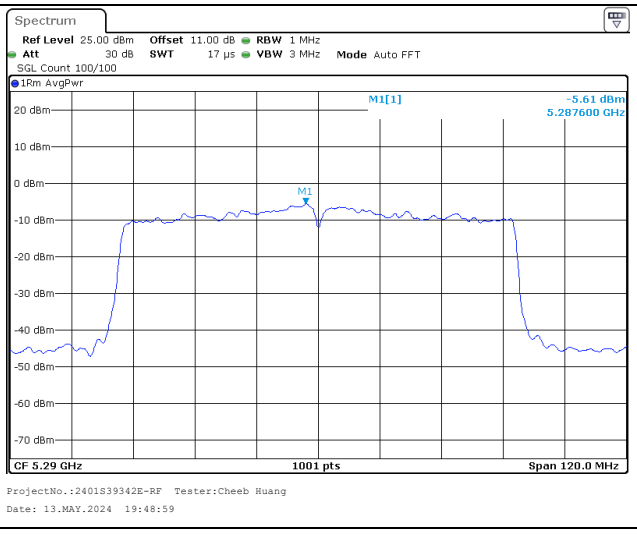
Maximum power spectral density	
802.11ac-VHT20 Lowest Channel	
802.11ac-VHT20 Middle Channel	
802.11ac-VHT20 Highest Channel	

Maximum power spectral density	
802.11ac-VHT40 Lowest Channel	
802.11ac-VHT40 Highest Channel	
802.11ac-VHT80 Middle Channel	

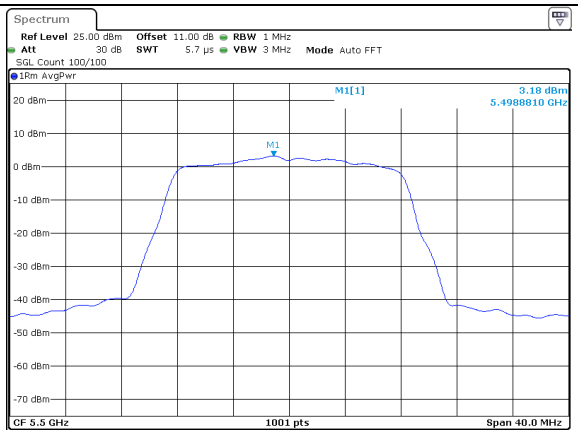
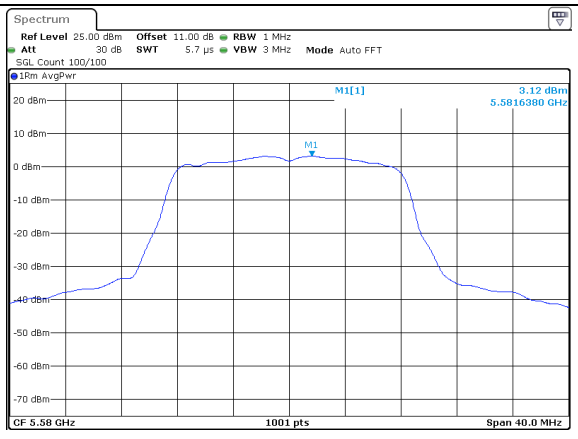
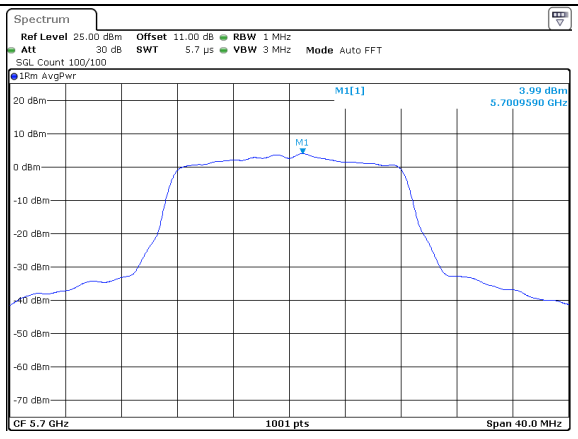
5250-5350MHz:

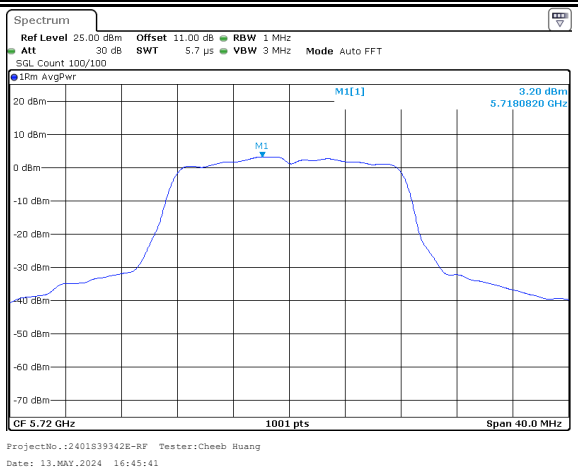
Maximum power spectral density	
802.11a Lowest Channel	
802.11a Middle Channel	
802.11a Highest Channel	

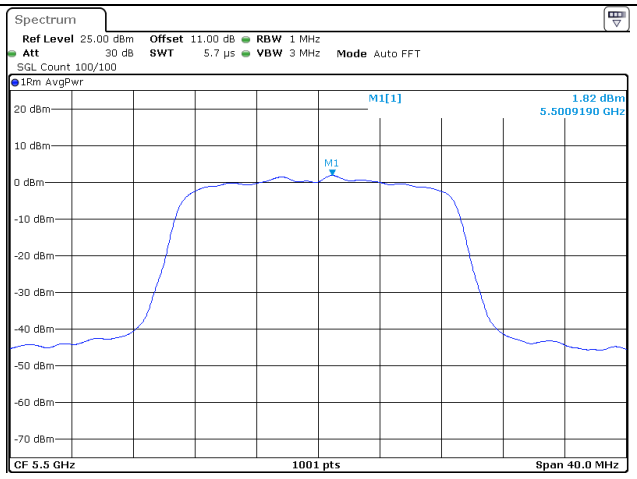
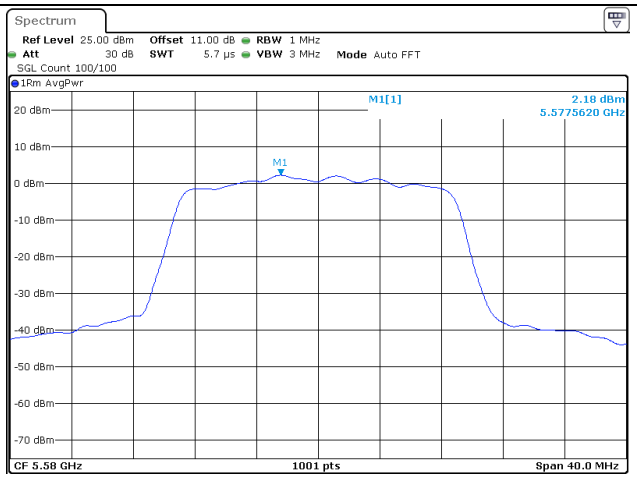
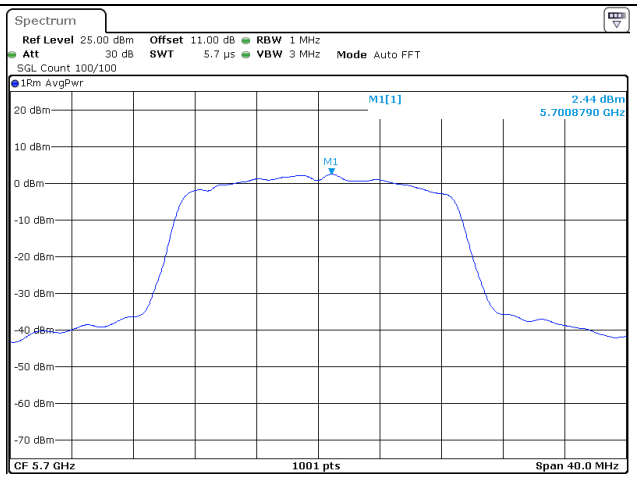
Maximum power spectral density	
802.11ac-VHT20 Lowest Channel	
802.11ac-VHT20 Middle Channel	
802.11ac-VHT20 Highest Channel	

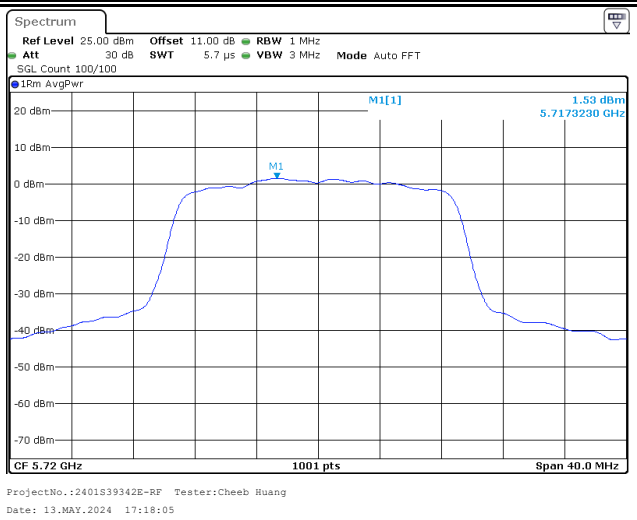
Maximum power spectral density	
802.11ac-VHT40 Lowest Channel	
802.11ac-VHT40 Highest Channel	
802.11ac-VHT80 Middle Channel	

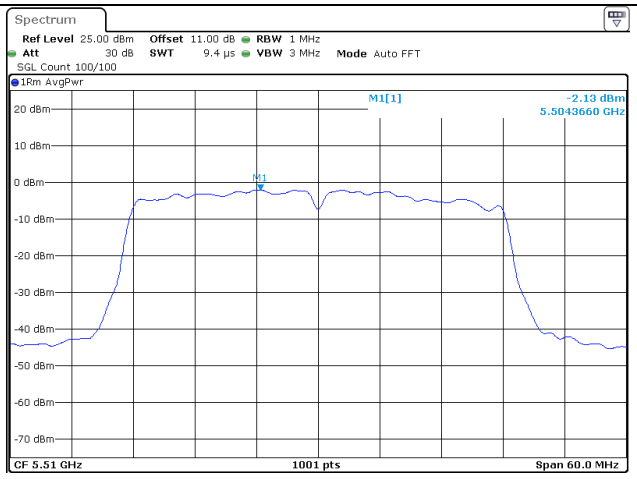
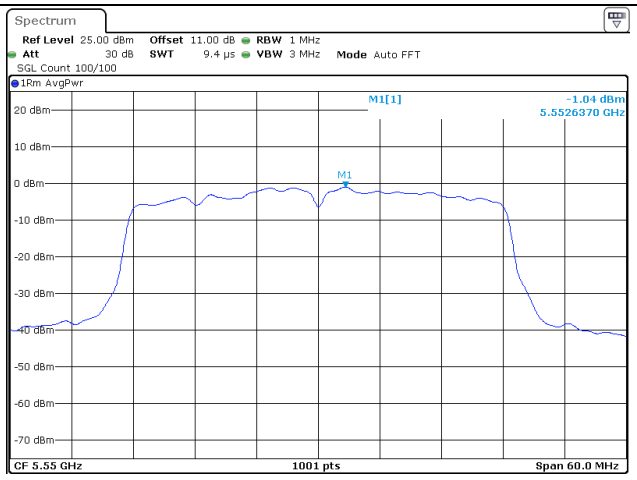
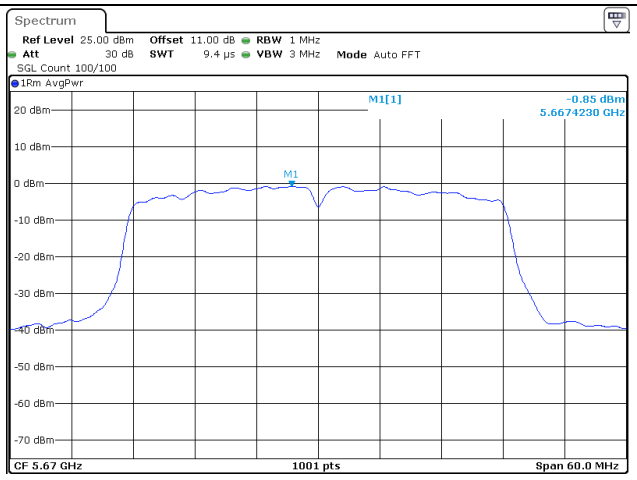
5470-5725MHz:

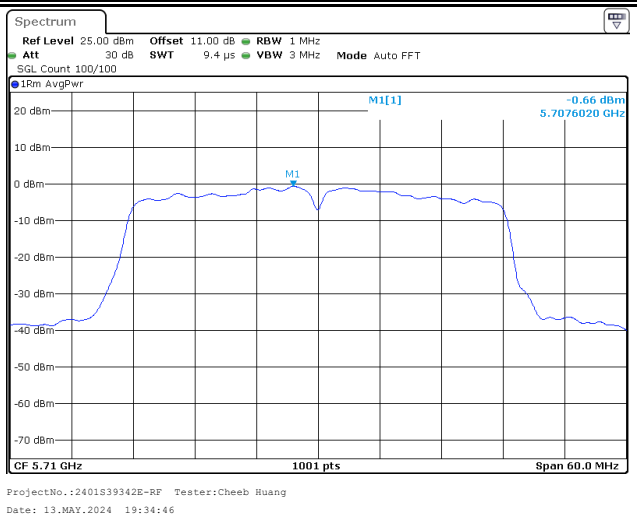
Maximum power spectral density	
802.11a Lowest Channel	
802.11a Middle Channel	
802.11a Highest Channel	

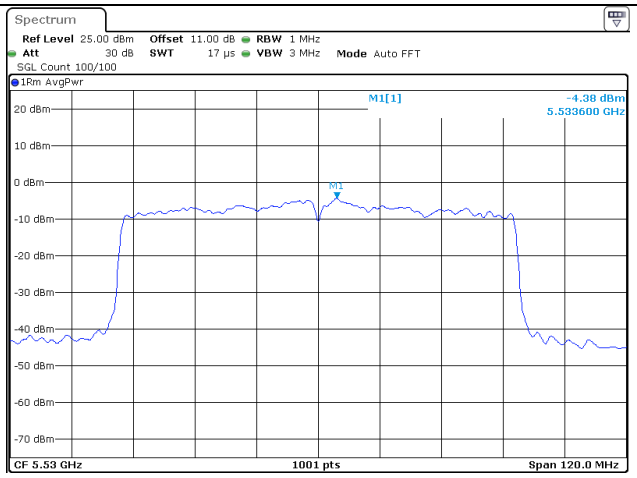
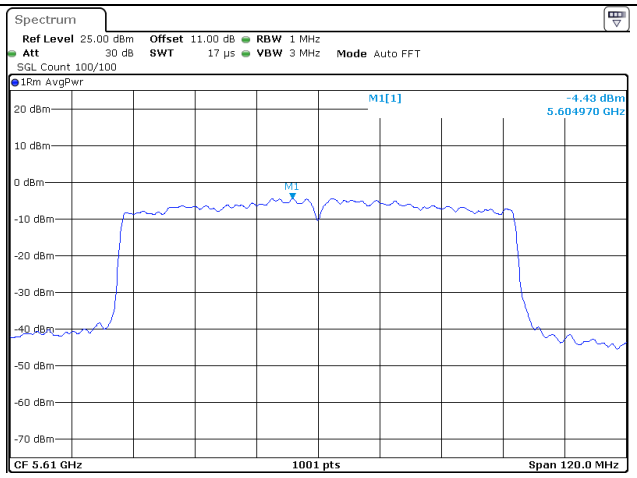
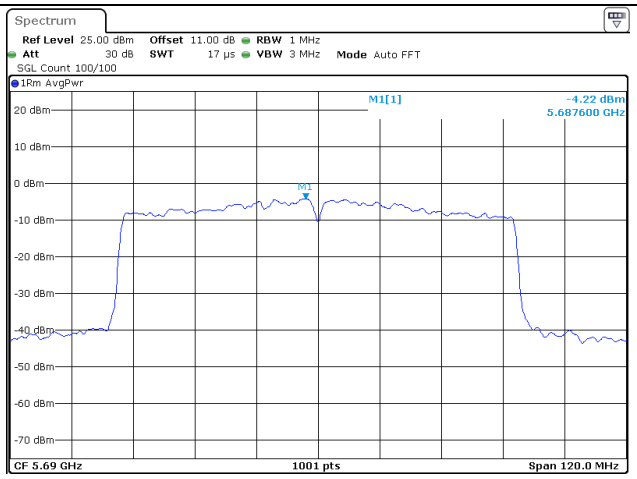
802.11a Cross Channel	

Maximum power spectral density	
802.11ac-VHT20 Lowest Channel	
802.11ac-VHT20 Middle Channel	
802.11ac-VHT20 Highest Channel	

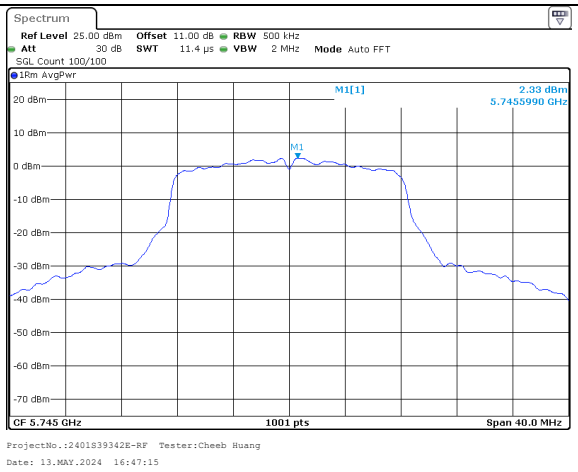
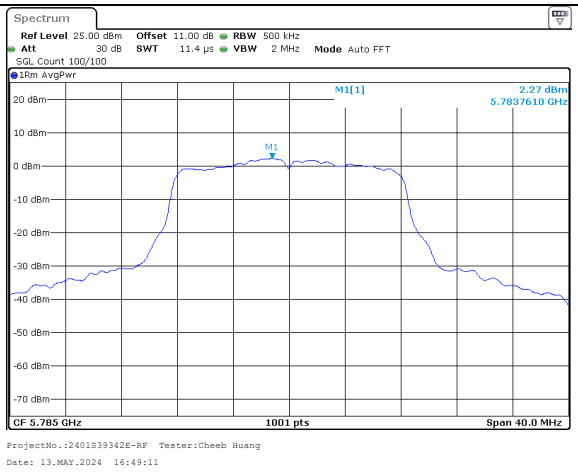
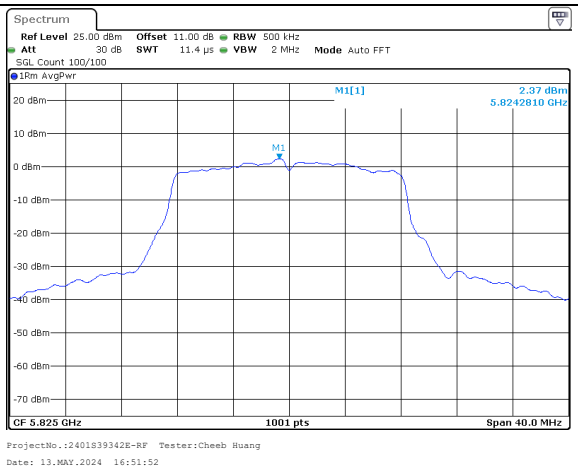
802.11ac-VHT20 Cross Channel	

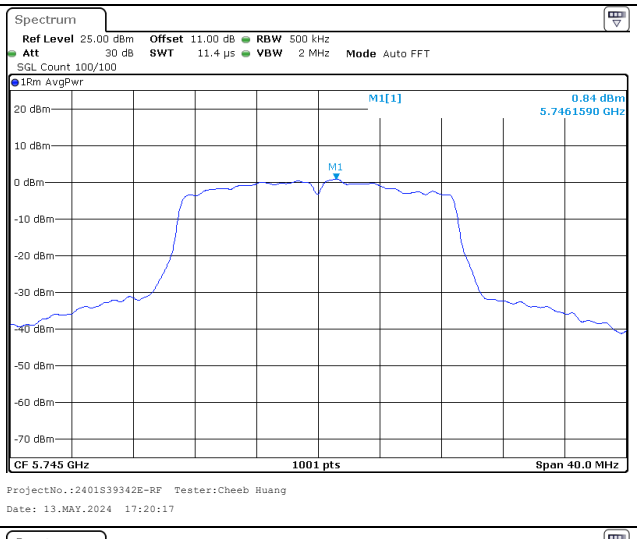
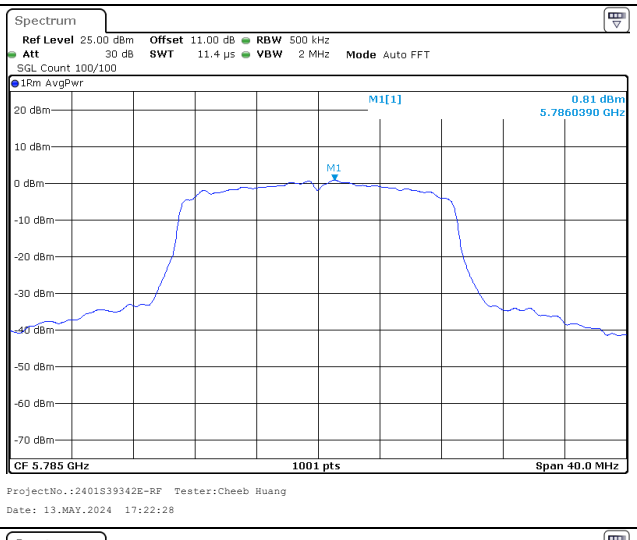
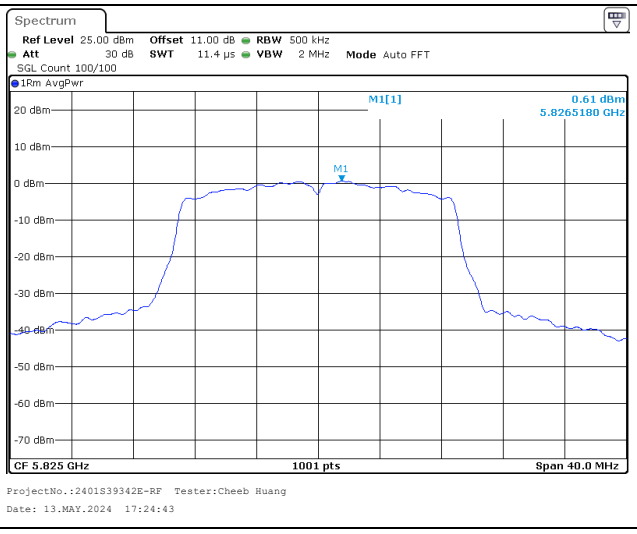
Maximum power spectral density	
802.11ac-VHT40 Lowest Channel	
802.11ac-VHT40 Middle Channel	
802.11ac-VHT40 Highest Channel	

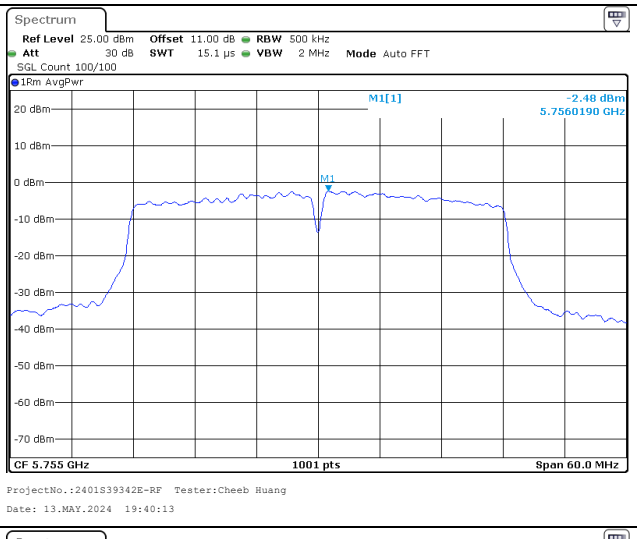
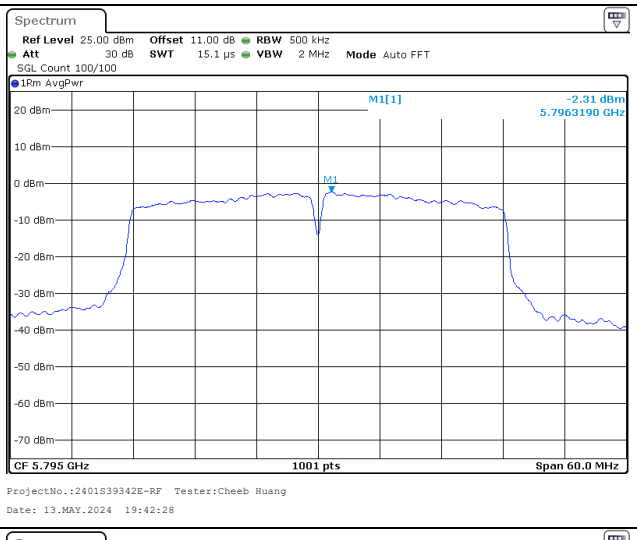
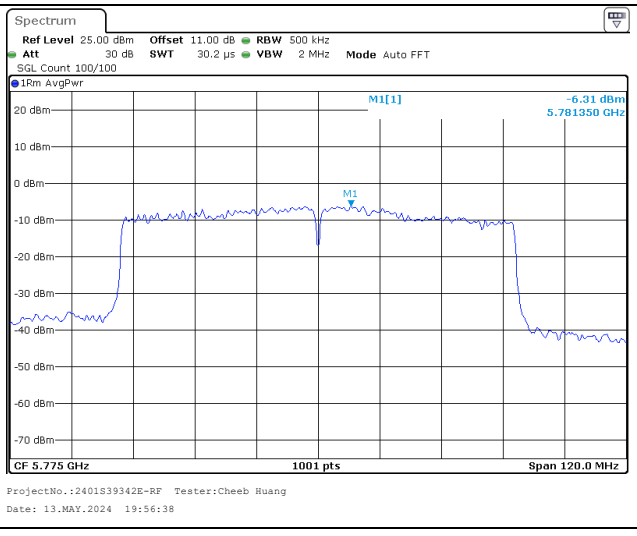
802.11ac-VHT40 Cross Channel	

Maximum power spectral density	
802.11ac-VHT80 Lowest Channel	
802.11ac-VHT80 Highest Channel	
802.11ac-VHT80 Cross Channel	

5725-5850MHz:

Maximum power spectral density	
802.11a Lowest Channel	
802.11a Middle Channel	
802.11a Highest Channel	

Maximum power spectral density	
802.11ac-VHT20 Lowest Channel	
802.11ac-VHT20 Middle Channel	
802.11ac-VHT20 Highest Channel	

Maximum power spectral density	
802.11ac-VHT40 Lowest Channel	
802.11ac-VHT40 Highest Channel	
802.11ac-VHT80 Middle Channel	

EUT PHOTOGRAPHS

Please refer to the attachment 2401S39342E-RF External photo and 2401S39342E-RF Internal photo.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2401S39342E-RFB Test Setup photo.

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