

Project No.: TM-2405000351P
Report No.: TMWK2405001684KR

FCC ID: W2Z-01000016
IC: 7736B-01000016

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CLASS II PERMISSIVE CHANGE

FCC 47 CFR PART 15 SUBPART E

INDUSTRY CANADA RSS-247

Test Standard	FCC Part 15.407 IC RSS-247 issue 3 and IC RSS-GEN issue 5
Product name	Flat Panel Sensor
Brand Name	FUJIFILM
Model	DR-ID 1284SE, DR-ID 1281SE, DR-ID 1282SE, DR-ID 1283SE, DR-ID 1285SE
Test Result	Pass
Statements of Conformity	Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10: 2013 and compliance standards.

The test results of this report relate only to the tested sample (EUT) identified in this report.

The test Report of full or partial shall not copy. Without written approval of Compliance Certification Services Inc.(Wugu Laboratory)

Approved by:



Shawn Wu
Supervisor

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.
除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	July 9, 2024	Initial Issue	ALL	Peggy Tsai



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1. GENERAL INFORMATION

1.1 EUT INFORMATION

Applicant	FCC: Fuji Film Corporation 7-3, AKASAKA 9-CHOME, MINATO-KU, Tokyo, 107-0052 Japan IC: FUJIFILM Corporation 9-7-3 Akasaka Minato-ku Tokyo 107-0052 Japan
Manufacturer	FCC: Fuji Film Corporation 7-3, AKASAKA 9-CHOME, MINATO-KU, Tokyo, 107-0052 Japan IC: FUJIFILM Corporation 9-7-3 Akasaka Minato-ku Tokyo 107-0052 Japan
Equipment	Flat Panel Sensor
Model	DR-ID 1284SE, DR-ID 1281SE, DR-ID 1282SE, DR-ID 1283SE, DR-ID 1285SE
Model Discrepancy	Please see remark as below.
Brand Name	FUJIFILM
Received Date (Original)	January 16, 2024
Received Date (Update)	May 22, 2024
Date of Test (Original)	January 23 ~ March 12, 2024
Date of Test (Update)	May 27 ~ 31, 2024
Power Supply	1. EUT power from power box / power supply unit: 22-25VDC. 2. EUT power from battery: 11.4VDC.
PMN	FLAT PANEL SENSOR
Serial number	SE-V3-01
HW Version	v2
SW Version	v120.253
Class II Permissive Change	Added evaluation of WIFI 5G Band2 and Band3.



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Remark:

1. For more details, please refer to the User's manual of the EUT.
2. Disclaimer: Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.
3. Disclaimer: Variant information between/among model numbers is provided by the applicant, test results of this report are applicable to the sample EUT received of main test model name.
4. Model Discrepancy:

Model	Main	Series Model			
	DR-ID 1284SE	DR-ID 1282SE	DR-ID 1283SE	DR-ID 1281SE	DR-ID 1285SE
Power Consumption	45 W	45 W	40W	40 W	40 W
PCB Layout / Circuit Diagram / Components	has 12 gate ICs	has 12 gate ICs	has 12 gate ICs	has 12 gate ICs	has 7 gate ICs
	has 12 ROICs	has 12 ROICs	has 10 ROICs	has 10 ROICs	has 8 ROICs
Size (Width(mm)* Length (mm)* Height (mm)) / Appearance	460*460*15 / 17'X17'	460*460*15 / 17'X17'	460*383*15 / 14'X17'	460*383*15 / 14'X17'	333*282*15 / 10'X12'
Scintillator	CsI	GOS	CsI	GOS	CsI
Antenna	PC143.54.0515A	PC143.54.0515A	PC143.54.0515A	PC143.54.0515A	PC143.54.0515A & PC143.54.0360A

5. Due to testing under DR-ID 1284SE that is the worst conditions, the results of this test are valid for DR-ID 1281SE, DR-ID 1282SE, DR-ID 1283SE, DR-ID 1285SE.

1.2 EUT CHANNEL INFORMATION

Frequency Range	UNII-1	
	IEEE 802.11a	5180 ~ 5240 MHz
	IEEE 802.11n HT 20	5180 ~ 5240 MHz
	IEEE 802.11n HT 40	5190 ~ 5230 MHz
	IEEE 802.11ac VHT 20	5180 ~ 5240 MHz
	IEEE 802.11ac VHT 40	5190 ~ 5230 MHz
	IEEE 802.11ac VHT 80	5210 MHz
	IEEE 802.11ax HE 20	5180 ~ 5240 MHz
	IEEE 802.11ax HE 40	5190 ~ 5230 MHz
	IEEE 802.11ax HE 80	5210 MHz
	UNII-2a	
	IEEE 802.11a	5260 ~ 5320 MHz
	IEEE 802.11n HT20	5260 ~ 5320 MHz
	IEEE 802.11n HT40	5270 ~ 5310 MHz
	IEEE 802.11ac VHT20	5260 ~ 5320 MHz
	IEEE 802.11ac VHT40	5270 ~ 5310 MHz
	IEEE 802.11ac VHT80	5290 MHz
	IEEE 802.11ax HE 20	5260 ~ 5320 MHz
	IEEE 802.11ax HE 40	5270 ~ 5310 MHz
	IEEE 802.11ax HE 80	5290 MHz
	UNII-2c	
	IEEE 802.11a	5500 ~ 5720 MHz
	IEEE 802.11n HT20	5500 ~ 5720 MHz
	IEEE 802.11n HT40	5510 ~ 5710 MHz
	IEEE 802.11ac VHT20	5500 ~ 5720 MHz
	IEEE 802.11ac VHT40	5510 ~ 5710 MHz
	IEEE 802.11ac VHT80	5530 ~ 5690 MHz
	IEEE 802.11ax HE 20	5500 ~ 5720 MHz
	IEEE 802.11ax HE 40	5510 ~ 5710 MHz
	IEEE 802.11ax HE 80	5530 ~ 5690 MHz
	UNII-3	
	IEEE 802.11a	5745 ~ 5825 MHz
	IEEE 802.11n HT 20	5745 ~ 5825 MHz
	IEEE 802.11n HT 40	5755 ~ 5795 MHz
	IEEE 802.11ac VHT 20	5745 ~ 5825 MHz
	IEEE 802.11ac VHT 40	5755 ~ 5795 MHz
	IEEE 802.11ac VHT 80	5775 MHz
	IEEE 802.11ax HE 20	5745 ~ 5825 MHz
	IEEE 802.11ax HE 40	5755 ~ 5795 MHz
	IEEE 802.11ax HE 80	5775 MHz



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Modulation Type	1. IEEE 802.11a mode: OFDM 2. IEEE 802.11n HT 20 mode: OFDM 3. IEEE 802.11n HT 40 mode: OFDM 4. IEEE 802.11ac VHT 20 mode: OFDM 5. IEEE 802.11ac VHT 40 mode: OFDM 6. IEEE 802.11ac VHT 80 mode: OFDM 7. IEEE 802.11ax HE 20 mode: OFDMA 8. IEEE 802.11ax HE 40 mode: OFDMA 9. IEEE 802.11ax HE 80 mode: OFDMA
-----------------	--

Remark:

1. Refer as ANSI C63.10: 2013 clause 5.6.1 Table 4 for test channels
2. For Canada the EUT Frequency Range 5600~5650MHz will be disabled.

Number of frequencies to be tested		
Frequency range in which device operates	Number of frequencies	Location in frequency range of operation
☐ 1 MHz or less	1	Middle
☐ 1 MHz to 10 MHz	2	1 near top and 1 near bottom
☒ More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom



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1.3 ANTENNA INFORMATION

Antenna Specification	☐ PIFA ☒ PCB ☐ Dipole ☐ Coils
Antenna Gain	Manufacturer:TAOGLAS (1) PC143.54.0515A Gain: -1.62 dBi (2) PC143.54.0360A Gain: 0.64 dBi
Antenna connector	IPEX MHF4L(M)

Notes:

1. Antenna must use a unique type of connector to attach to the EUT. So the EUT complies with the requirements of §15.203 and RSS-GEN 6.8.
2. Power Directional Gain = $10 \cdot \log \{ [10^{(Ant1/20)} + 10^{(Ant2/20)} + \dots + 10^{(Ant N /20)}]^2 / N \text{ ANT} \}$ dBi



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1.4 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	± 2.213 dB
Channel Bandwidth	± 2.7 %
RF output power (Spectrum)	± 2.440 dB
Power Spectral density	± 2.739 dB
Radiated Emission_9kHz-30MHz	± 3.761 dB
Radiated Emission_30MHz-200MHz	± 3.473 dB
Radiated Emission_200MHz-1GHz	± 3.946 dB
Radiated Emission_1GHz-6GHz	± 4.797 dB
Radiated Emission_6GHz-18GHz	± 4.803 dB
Radiated Emission_18GHz-26GHz	± 3.459 dB
Radiated Emission_26GHz-40GHz	± 3.297 dB

Remark:

- 1.This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$
2. ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report.

1.5 FACILITIES AND TEST LOCATION

All measurement facilities used to collect the measurement data are located at

☒ No.11, Wugong 6th Rd., Wugu Dist., New Taipei City, Taiwan.

CAB identifier: TW1309

Test site	Test Engineer		Remark
	Original	Update	
AC Conduction Room	Tony Chao	Czerny Lin	-
Radiation	Ray Li, Tony Chao		-
RF Conducted	Marco Chan		-

Remark: 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. :444940, the FCC Designation No.:TW1309



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1.6 INSTRUMENT CALIBRATION

Original:

Conducted FCC/IC/NCC (All)					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Power Sensor	Anritsu	MA2411B	1911386	2023-07-25	2024-07-24
Power Sensor	Anritsu	MA2411B	1911387	2023-07-25	2024-07-24
Power Meter	Anritsu	ML2496A	2136002	2023-11-16	2024-11-15
EXA Signal Analyzer	Keysight	N9010B	MY55460167	2024-01-03	2025-01-02
Attenuator	Marvelous Microwave Inc	MVE2213-10	08	2023-11-07	2024-11-06
Software	Radio Test Software Ver. 21				

966A Radiated					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Thermo-Hygro Meter	WISEWIND	1206	D07	2023-12-08	2024-12-07
Signal Analyzer	KEYSIGHT	N9010A	MY54200716	2023-10-13	2024-10-12
Bi-Log Antenna	Sunol Sciences	JB3	A030105	2023-08-08	2024-08-07
Preamplifier	EMEC	EM330	060609	2023-02-22	2024-02-21
Cable	Huber+Suhner	104PEA	20995+21000+182330	2023-02-22	2024-02-21
Horn Antenna	ETC	MCTD 1209	DRH13M02003	2023-12-28	2024-12-27
Preamplifier	HP	8449B	3008A00965	2023-12-22	2024-12-21
Cable	EMCI	EMC101G	221213+221011+221012	2023-10-17	2024-10-16
High Pass Filters	Titan Microwave	T04H30001800070S01	22011402-4	2023-06-17	2024-06-16
Horn Antenna	SCHWARZBECK	BBHA9170	1047	2023-12-13	2024-12-12
Pre-Amplifier	EMCI	EMC184045SE	980860	2023-12-12	2024-12-11
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R
Site Validation	CCS	966A	N/A	2023-07-10	2024-07-09
Software	e3 V9-210616c				

Remark:

1. Each piece of equipment is scheduled for calibration once a year.
2. N.C.R. = No Calibration Required.



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AC Mains Conduction					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
EMI Test Receiver	R&S	ESCI	100064	2023-06-07	2024-06-06
LISN	TESEQ	LN2-16N	22012	2023-03-08	2024-03-07
Cable	EMCI	CFD300-NL	CERF	2023-06-27	2024-06-26
Software	e3 V6-110812				

Remark:

1. Each piece of equipment is scheduled for calibration once a year.
2. N.C.R. = No Calibration Required.



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Update:

Conducted					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Power Sensor	Anritsu	MA2411B	1911387	2023-07-25	2024-07-24
Power Meter	Anritsu	ML2496A	2136002	2023-11-16	2024-11-15
Cable	Woken	WC12	CC003	2023-06-27	2024-06-26
Signal Analyzer	KEYSIGHT	N9030B	MY62291089	2023-10-13	2024-10-12
Software	Radio Test Software Ver. 21				

966A_Radiated					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Signal Analyzer	KEYSIGHT	N9010A	MY52220817	2024-03-15	2025-03-14
Thermo-Hygro Meter	WISEWIND	1206	D07	2023-12-08	2024-12-07
Active Loop Antenna	SCHWARZBECK	FMZB 1513-60	1513-60-028	2023-12-13	2024-12-12
Bi-Log Antenna	Sunol Sciences	JB3	A030105	2023-08-08	2024-08-07
Preamplifier	EMEC	EM330	060609	2024-02-21	2025-02-20
Cable	Huber+Suhner	104PEA	20995+21000+182330	2024-02-21	2025-02-20
Horn Antenna	ETC	MCTD 1209	DRH13M02003	2023-12-28	2024-12-27
Preamplifier	HP	8449B	3008A00965	2023-12-22	2024-12-21
Cable	EMCI	EMC101G	221213+221011+221012	2023-10-17	2024-10-16
Attenuator	Mini-Circuits	BW-S9W5	BWS9W5-09-966A-01	2024-02-07	2025-02-06
High Pass Filters	MICRO TRONICS	HPM13195	003	2024-01-23	2025-01-22
Horn Antenna	SCHWARZBECK	BBHA9170	1047	2023-12-13	2024-12-12
Pre-Amplifier	EMCI	EMC184045SE	980860	2023-12-12	2024-12-11
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R
Site Validation	CCS	966A	N/A	2023-07-10	2024-07-09
Software	e3 V9-210616c				

Remark:

1. Each piece of equipment is scheduled for calibration once a year.
2. N.C.R. = No Calibration Required.



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AC Mains Conduction					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
EMI Test Receiver	R&S	ESCI	100064	2023-06-07	2024-06-06
LISN	TESEQ	LN2-16N	22012	2024-02-29	2025-02-27
Cable	EMCI	CFD300-NL	CERF	2023-06-27	2024-06-26
Software	e3 V6-110812				

Remark:

1. Each piece of equipment is scheduled for calibration once a year.
2. N.C.R. = No Calibration Required.



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1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

EUT Accessories Equipment						
No.	Equipment	Brand	Model	Series No.	FCC ID	IC
	N/A					

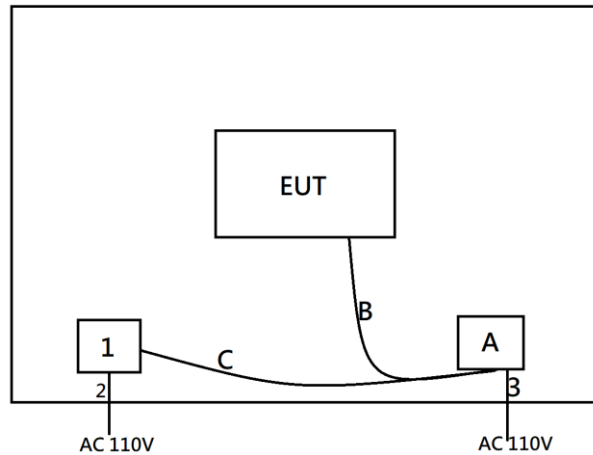
Support Equipment_Conducted						
No.	Equipment	Brand	Model	Series No.	FCC ID	IC
1	NB(B)	Lenovo	T470	N/A	N/A	N/A

Support Equipment_DFS						
No.	Equipment	Brand	Model	Series No.	FCC ID	IC
1	NB	Lenovo	TP00075A	N/A	N/A	N/A
2	NB	Lenovo	TP00096A	N/A	N/A	N/A
3	AP	ASUS	RT-AX88U	N/A	N/A	N/A

Support Equipment_RSE、Conduction						
No.	Equipment	Brand	Model	Series No.	FCC ID	IC
1	NB(D)	Lenovo	ThinkPad X260	N/A	N/A	N/A
2	Adapter	BILLION	BA018-050200HXX	N/A	N/A	N/A
3	AC Power Cable	Foxconn	2.5m	N/A	N/A	N/A
A	Power Supply Unit	Fujifilm	DR-ID 1280 PB	PB-V3-08	N/A	N/A
B	Power Cable	Fujifilm	10m	N/A	N/A	N/A
C	RJ45 cable	I-WIZ	20m	N/A	N/A	N/A

1.8 TEST SET UP DIAGRAM

RSE:



1.9 TEST PROGRAM

This EUT uses " Fujifilm Service Tool v.1.1.0" software and setup command to set the frequency, modulation, and power to allow the sample to continuously transmit.

1.10 TEST METHODOLOGY AND APPLIED STANDARDS

The test methodology, setups and results comply with all requirements in accordance with ANSI C63.10:2013, FCC Part 2, FCC Part 15.407, KDB 789033 D02, KDB 905462 D02, RSS-247 Issue 3 and RSS-GEN Issue 5.



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2. TEST SUMMERY

IC Standard Sec.	FCC Standard Sec.	Chapter	Test Item	Result
RSS-GEN 6.8	15.203	1.3	Antenna Requirement	Pass
RSS-GEN 8.8	15.207(a)	4.1	AC Conducted Emission	Pass
-	15.407(a)	4.2	26dB Bandwidth	Pass
RSS-247(6.2.4.1)	15.407(e)	4.2	6dB Bandwidth	Pass
RSS-GEN 6.7	2.1049	4.2	Occupied Bandwidth (99%)	Pass
RSS-247(6.2.1.1)	15.407(a)	4.3	Output Power Measurement	Pass
RSS-247(6.2.2.1)	15.407(a)	4.4	Power Spectral Density	Pass
RSS-GEN 8.9, 8.10	15.247(d) 15.205, 15.209	4.5	Radiation Band Edge	Pass
RSS-GEN 8.9, 8.10	15.247(d) 15.205, 15.209	4.5	Radiation Spurious Emission	Pass
RSS-247(6.3)	15.407(h)	5	Dynamic Frequency Selection	Pass

3. DESCRIPTION OF TEST MODES

3.1 THE WORST MODE OF OPERATING CONDITION

Operation mode	1. IEEE 802.11a mode: 6Mbps 2. IEEE 802.11n HT 20 mode: MCS0 3. IEEE 802.11n HT 40 mode: MCS0 4. IEEE 802.11ac VHT 20 mode: MCS0 5. IEEE 802.11ac VHT 40 mode: MCS0 6. IEEE 802.11ac VHT 80 mode: MCS0 7. IEEE 802.11ax HE 20 mode: MCS0 8. IEEE 802.11ax HE 40 mode: MCS0 9. IEEE 802.11ax HE 80 mode: MCS0																																																																																	
Operating Frequency Range & Number of Channels	<table><tr><th></th><th>Mode</th><th>Frequency Range (MHz)</th></tr><tr><td rowspan="9">U-NII-1</td><td>IEEE 802.11a</td><td>5180, 5220, 5240</td></tr><tr><td>IEEE 802.11n HT 20</td><td>5180, 5220, 5240</td></tr><tr><td>IEEE 802.11n HT 40</td><td>5190, 5230</td></tr><tr><td>IEEE 802.11ac VHT 20</td><td>5180, 5220, 5240</td></tr><tr><td>IEEE 802.11ac VHT 40</td><td>5190, 5230</td></tr><tr><td>IEEE 802.11ac VHT 80</td><td>5210</td></tr><tr><td>IEEE 802.11ax HE 20</td><td>5180, 5220, 5240</td></tr><tr><td>IEEE 802.11ax HE 40</td><td>5190, 5230</td></tr><tr><td>IEEE 802.11ax HE 80</td><td>5210</td></tr><tr><td rowspan="9">U-NII-2a</td><td>IEEE 802.11a</td><td>5260, 5300, 5320</td></tr><tr><td>IEEE 802.11n HT 20</td><td>5260, 5300, 5320</td></tr><tr><td>IEEE 802.11n HT 40</td><td>5270, 5310</td></tr><tr><td>IEEE 802.11ac VHT 20</td><td>5260, 5300, 5320</td></tr><tr><td>IEEE 802.11ac VHT 40</td><td>5270, 5310</td></tr><tr><td>IEEE 802.11ac VHT 80</td><td>5290</td></tr><tr><td>IEEE 802.11ax HE 20</td><td>5260, 5300, 5320</td></tr><tr><td>IEEE 802.11ax HE 40</td><td>5270, 5310</td></tr><tr><td>IEEE 802.11ax HE 80</td><td>5290</td></tr><tr><td rowspan="9">U-NII-2c</td><td>IEEE 802.11a</td><td>5500, 5580, 5700, 5720</td></tr><tr><td>IEEE 802.11n HT 20</td><td>5500, 5580, 5700, 5720</td></tr><tr><td>IEEE 802.11n HT 40</td><td>5510, 5550, 5670, 5710</td></tr><tr><td>IEEE 802.11ac VHT 20</td><td>5500, 5580, 5700, 5720</td></tr><tr><td>IEEE 802.11ac VHT 40</td><td>5510, 5550, 5670, 5710</td></tr><tr><td>IEEE 802.11ac VHT 80</td><td>5530, 5610, 5690</td></tr><tr><td>IEEE 802.11ax HE 20</td><td>5500, 5580, 5700, 5720</td></tr><tr><td>IEEE 802.11ax HE 40</td><td>5510, 5550, 5670, 5710</td></tr><tr><td>IEEE 802.11ax HE 80</td><td>5530, 5610, 5690</td></tr><tr><td rowspan="9">U-NII-3</td><td>IEEE 802.11a</td><td>5745, 5785, 5825</td></tr><tr><td>IEEE 802.11n HT 20</td><td>5745, 5785, 5825</td></tr><tr><td>IEEE 802.11n HT 40</td><td>5755, 5795</td></tr><tr><td>IEEE 802.11ac VHT 20</td><td>5745, 5785, 5825</td></tr><tr><td>IEEE 802.11ac VHT 40</td><td>5755, 5795</td></tr><tr><td>IEEE 802.11ac VHT 80</td><td>5775</td></tr><tr><td>IEEE 802.11ax HE 20</td><td>5745, 5785, 5825</td></tr><tr><td>IEEE 802.11ax HE 40</td><td>5755, 5795</td></tr><tr><td>IEEE 802.11ax HE 80</td><td>5775</td></tr></table>				Mode	Frequency Range (MHz)	U-NII-1	IEEE 802.11a	5180, 5220, 5240	IEEE 802.11n HT 20	5180, 5220, 5240	IEEE 802.11n HT 40	5190, 5230	IEEE 802.11ac VHT 20	5180, 5220, 5240	IEEE 802.11ac VHT 40	5190, 5230	IEEE 802.11ac VHT 80	5210	IEEE 802.11ax HE 20	5180, 5220, 5240	IEEE 802.11ax HE 40	5190, 5230	IEEE 802.11ax HE 80	5210	U-NII-2a	IEEE 802.11a	5260, 5300, 5320	IEEE 802.11n HT 20	5260, 5300, 5320	IEEE 802.11n HT 40	5270, 5310	IEEE 802.11ac VHT 20	5260, 5300, 5320	IEEE 802.11ac VHT 40	5270, 5310	IEEE 802.11ac VHT 80	5290	IEEE 802.11ax HE 20	5260, 5300, 5320	IEEE 802.11ax HE 40	5270, 5310	IEEE 802.11ax HE 80	5290	U-NII-2c	IEEE 802.11a	5500, 5580, 5700, 5720	IEEE 802.11n HT 20	5500, 5580, 5700, 5720	IEEE 802.11n HT 40	5510, 5550, 5670, 5710	IEEE 802.11ac VHT 20	5500, 5580, 5700, 5720	IEEE 802.11ac VHT 40	5510, 5550, 5670, 5710	IEEE 802.11ac VHT 80	5530, 5610, 5690	IEEE 802.11ax HE 20	5500, 5580, 5700, 5720	IEEE 802.11ax HE 40	5510, 5550, 5670, 5710	IEEE 802.11ax HE 80	5530, 5610, 5690	U-NII-3	IEEE 802.11a	5745, 5785, 5825	IEEE 802.11n HT 20	5745, 5785, 5825	IEEE 802.11n HT 40	5755, 5795	IEEE 802.11ac VHT 20	5745, 5785, 5825	IEEE 802.11ac VHT 40	5755, 5795	IEEE 802.11ac VHT 80	5775	IEEE 802.11ax HE 20	5745, 5785, 5825	IEEE 802.11ax HE 40	5755, 5795	IEEE 802.11ax HE 80	5775
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Remark:

1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.
2. The mode IEEE 802.11n HT20 and HT40 are only different in control messages with IEEE 802.11ac VHT20 and VHT40, and have same power setting. Therefore, the highest power(IEEE 802.11ac VHT20 and VHT40) were test conducted and radiated measurement and recorded in this report.

3.2 THE WORST MODE OF MEASUREMENT

AC Power Line Conducted Emission	
Test Condition	AC Power line conducted emission for line and neutral
Power supply Mode	Mode 1: EUT Power by Power Box (1284SE+10M+1280PB)
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Radiated Emission Measurement Above 1G	
Test Condition	Radiated Emission Above 1G
Power supply Mode	Mode 1: EUT Power by Power Box (1284SE+10M+1280PB)
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4
Worst Position	☐ Placed in fixed position. ☒ Placed in fixed position at X-Plane (E2-Plane) ☐ Placed in fixed position at Y-Plane (E1-Plane) ☐ Placed in fixed position at Z-Plane (H-Plane)

Radiated Emission Measurement Below 1G	
Test Condition	Radiated Emission Below 1G
Power supply Mode	Mode 1: EUT Power by Power Box (1284SE+10M+1280PB) Mode 2: EUT Power by Power Box (1284SE+20M+1280PB) Mode 3: EUT Power by Power Supply(1284SE+10M+1280MP) Mode 4: EUT Power by Power Supply(1284SE +20M+1280MP) Mode 5: EUT Power by Power Box (1285SE+10M+1280PB) Mode 6: EUT Power by Power Box (1283SE+10M+1280PB)
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Remark:

1. The worst mode was record in this test report.
2. AC power line conducted emission and for below 1G radiation emission were performed the EUT transmit at the highest output power channel as worse case.
3. EUT pre-scanned in three axis ,X,Y, Z and two polarity, for radiated measurement. The worst case(X-Plane) were recorded in this report



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3.3 EUT DUTY CYCLE

Original:

Temperature: 16.6 ~ 23.8°C

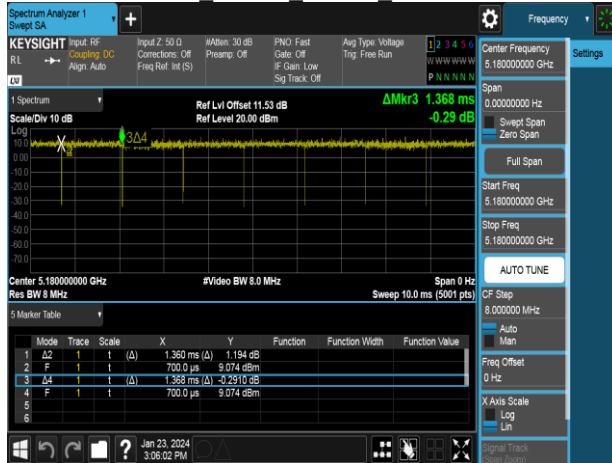
Test date: January 23 ~ March 12, 2024

Humidity: 49 ~ 66% RH

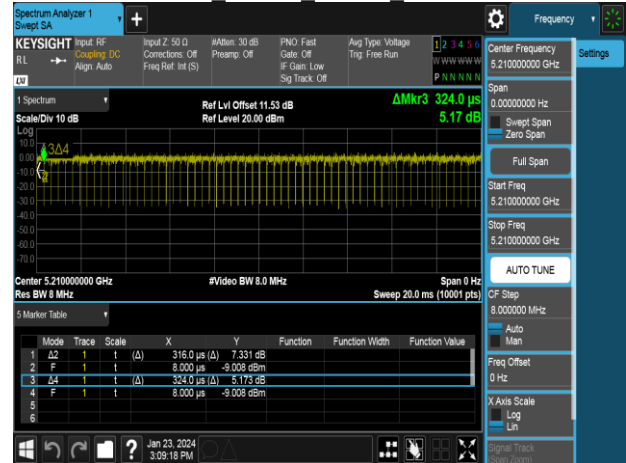
Tested by: Marco Chan

Mode		Duty Cycle (%) =Ton / (Ton+Toff)	Duty Factor (dB) =10*log (1/Duty Cycle)	1/T (kHz)	VBW setting (kHz)
802.11a		99.42	0.03	0.74	0.01
802.11n_20		99.53	0.02	0.78	0.01
802.11ac_20		99.53	0.02	0.78	0.01
802.11n_40		98.76	0.05	1.57	0.01
802.11ac_40		98.76	0.05	1.57	0.01
802.11ac_80		97.53	0.11	3.16	4.00
Mode	RU Config	Duty Cycle (%) =Ton / (Ton+Toff)	Duty Factor (dB) =10*log (1/Duty Cycle)	1/T (kHz)	VBW setting (kHz)
802.11ax_20	Full	99.40	0.03	1.01	0.01
	26 RU	99.93	0.00	0.00	0.01
	52 RU	99.87	0.01	0.22	0.01
	106 RU	99.73	0.01	0.45	0.01
802.11ax_40	Full	98.86	0.05	1.92	0.01
	242 RU	99.40	0.03	1.01	0.01
802.11ax_80	Full	97.22	0.12	3.57	4.00
	484 RU	98.50	0.07	1.91	0.01

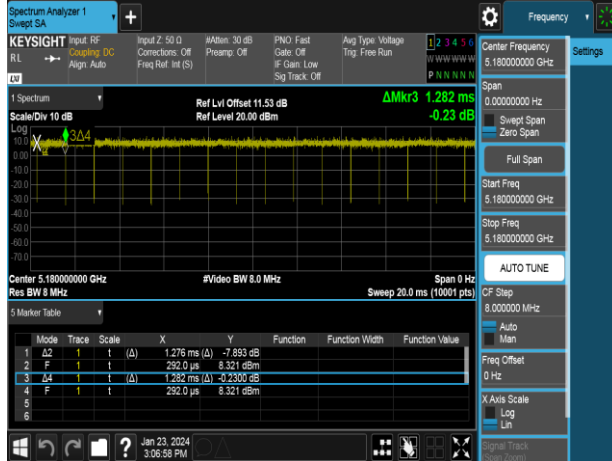
802.11a 20MHz Chain0 5180MHz



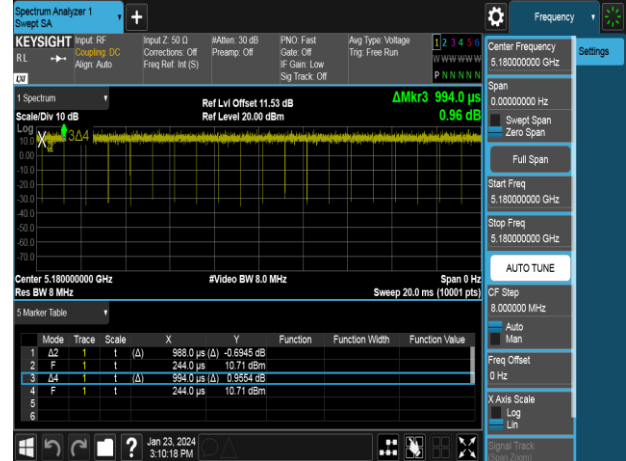
802.11ac 80MHz Chain0 5210MHz



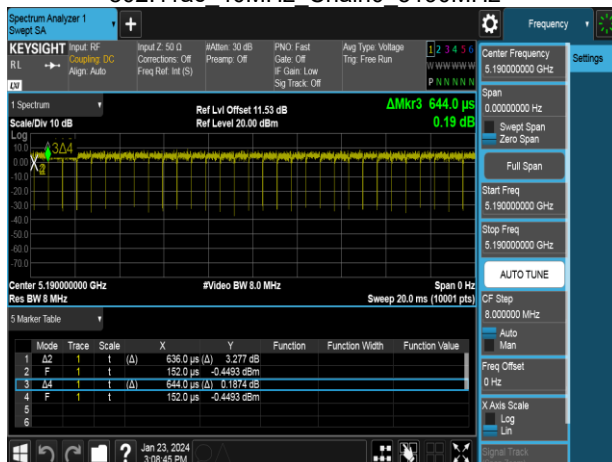
802.11ac 20MHz Chain0 5180MHz



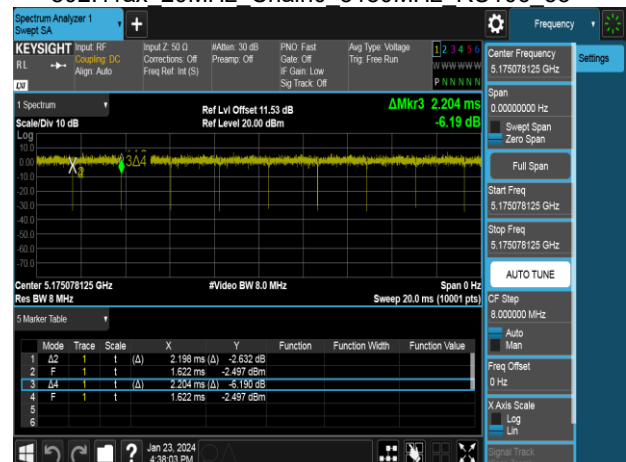
802.11ax 20MHz Chain0 5180MHz



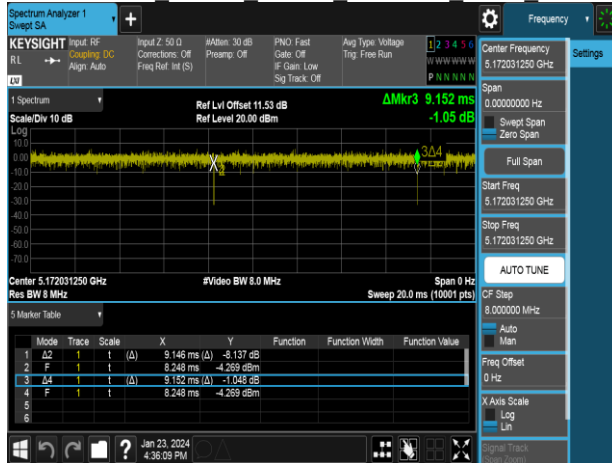
802.11ac 40MHz Chain0 5190MHz



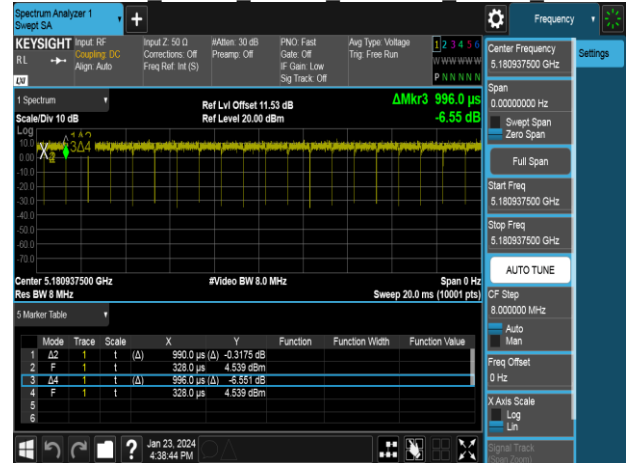
802.11ax 20MHz Chain0 5180MHz RU106_53



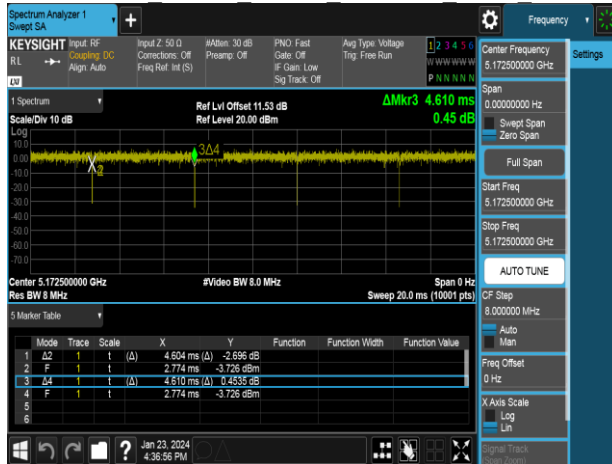
802.11ax 20MHz Chain0 5180MHz RU26_0



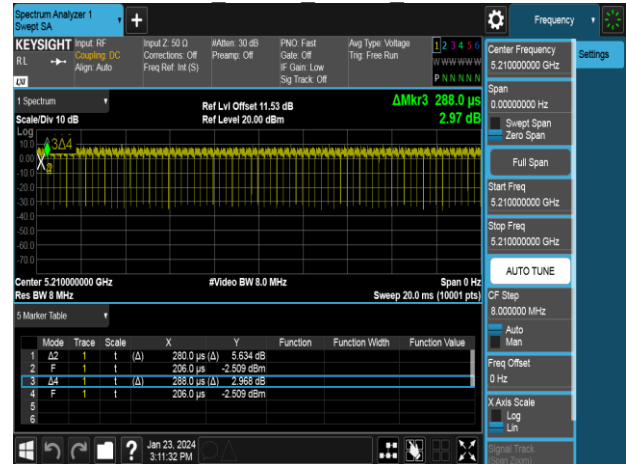
802.11ax 40MHz Chain0 5190MHz RU242_61



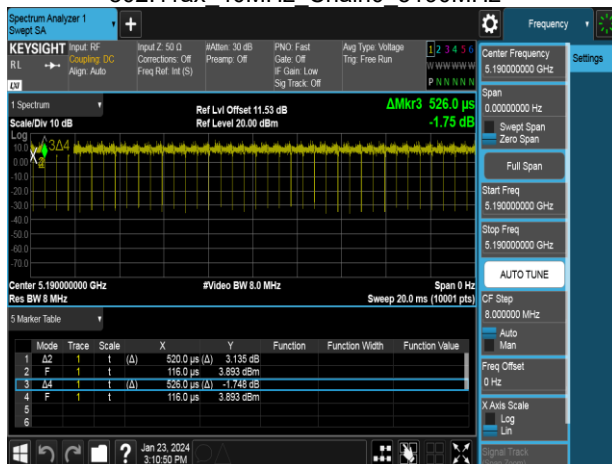
802.11ax 20MHz Chain0 5180MHz RU52_37



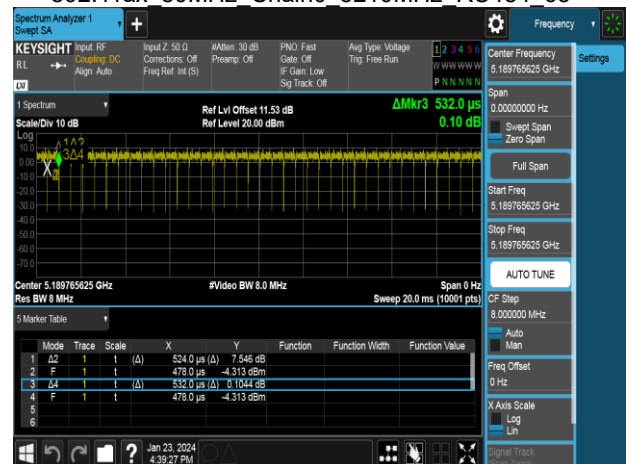
802.11ax 80MHz Chain0 5210MHz



802.11ax 40MHz Chain0 5190MHz



802.11ax 80MHz Chain0 5210MHz RU484_65





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Update:

Temperature: 21.2 ~ 21.5°C

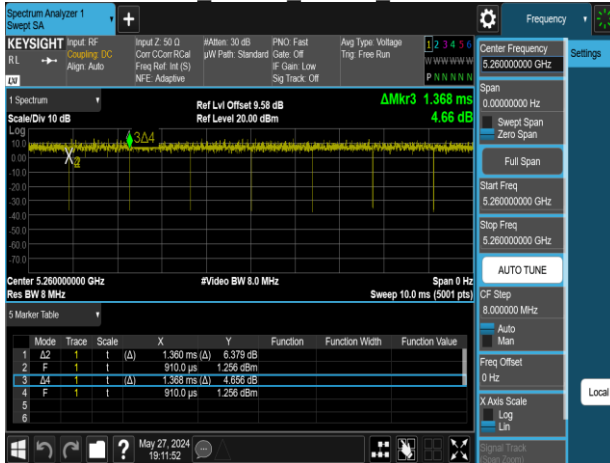
Test date: May 27 ~ 28, 2024

Humidity: 59 ~ 63% RH

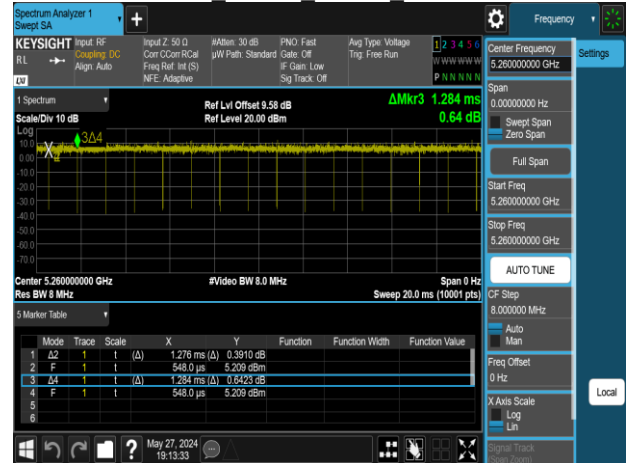
Tested by: Marco Chan

Mode		Duty Cycle (%) =Ton / (Ton+Toff)	Duty Factor (dB) =10*log (1/Duty Cycle)	1/T (kHz)	VBW setting (kHz)
802.11a		99.42	0.03	0.74	0.01
802.11n_20		98.80	0.05	1.52	0.01
802.11ac_20		99.38	0.03	0.78	0.01
802.11n_40		97.70	0.10	2.94	3.00
802.11ac_40		98.76	0.05	1.57	0.01
802.11ac_80		97.53	0.11	3.16	4.00
Mode	RU Config	Duty Cycle (%) =Ton / (Ton+Toff)	Duty Factor (dB) =10*log (1/Duty Cycle)	1/T (kHz)	VBW setting (kHz)
802.11ax_20	Full	99.20	0.03	1.01	0.01
	26 RU	99.93	0.00	0.00	0.01
	52 RU	99.87	0.01	0.22	0.01
	106 RU	99.73	0.01	0.45	0.01
802.11ax_40	Full	98.86	0.05	1.92	0.01
	242 RU	99.20	0.03	1.01	0.01
802.11ax_80	Full	97.22	0.12	3.57	4.00
	484 RU	98.50	0.07	1.91	0.01

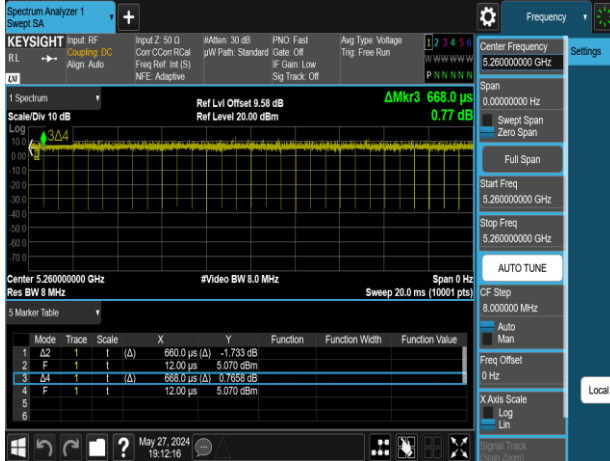
802.11a 20MHz Chain0 5260MHz



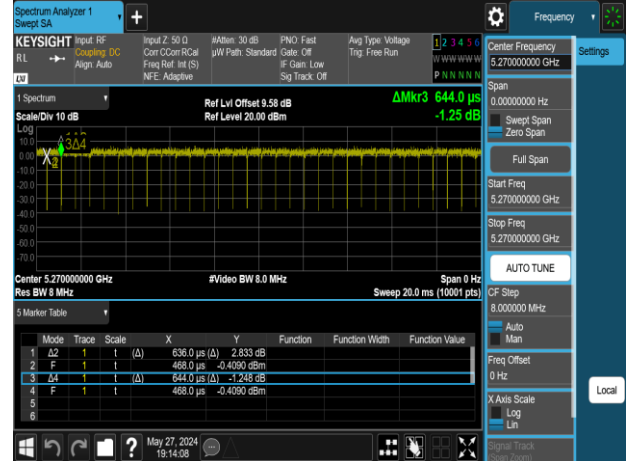
802.11ac 20MHz Chain0 5260MHz



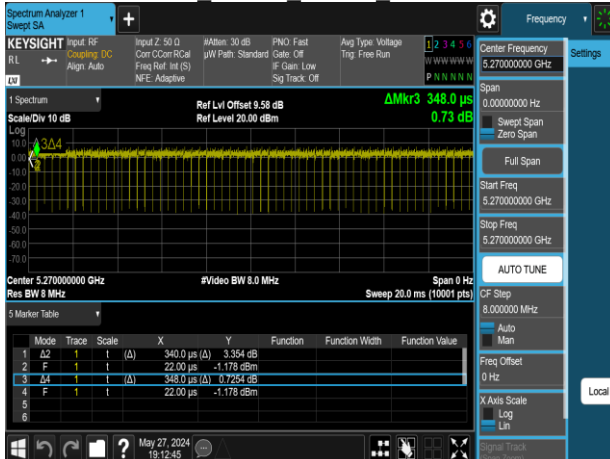
802.11n 20MHz Chain0 5260MHz



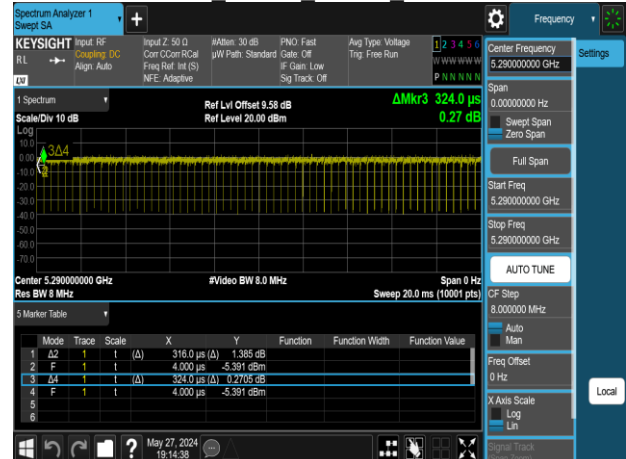
802.11ac 40MHz Chain0 5270MHz



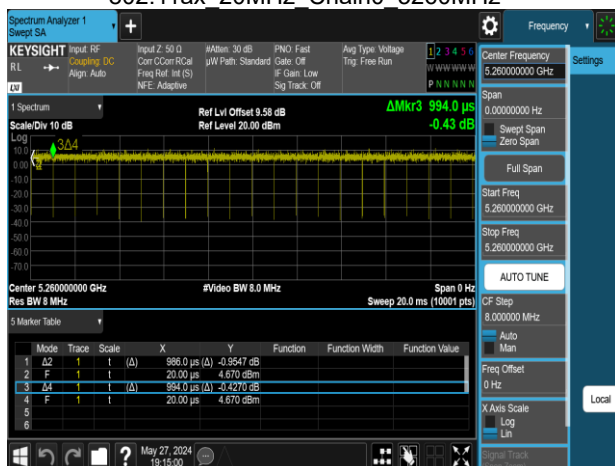
802.11n 40MHz Chain0 5270MHz



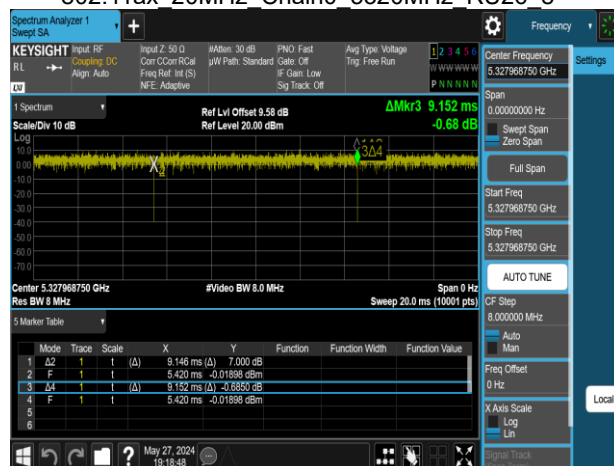
802.11ac 80MHz Chain0 5290MHz



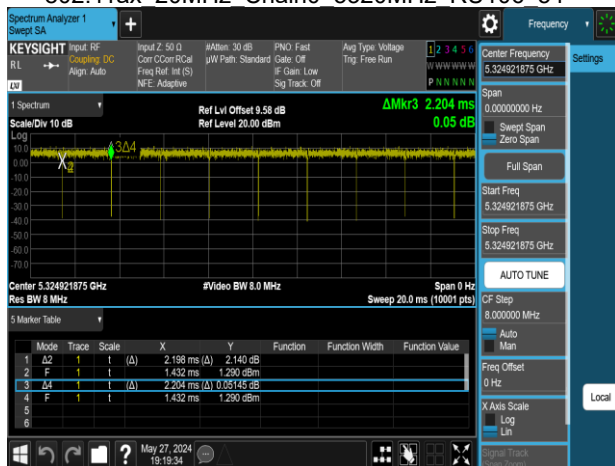
802.11ax 20MHz Chain0 5260MHz



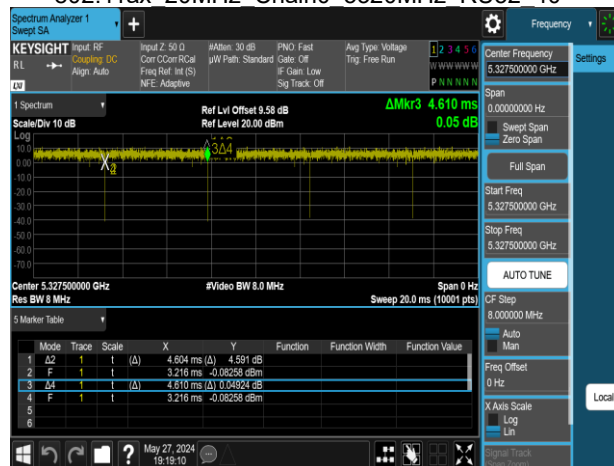
802.11ax 20MHz Chain0 5320MHz RU26 8



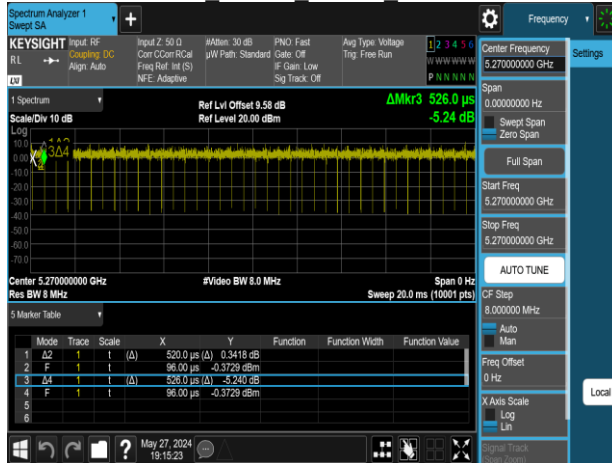
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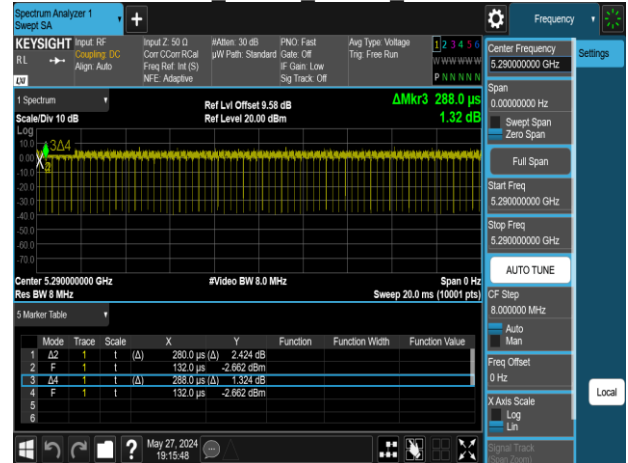
802.11ax 20MHz Chain0 5320MHz RU52 40



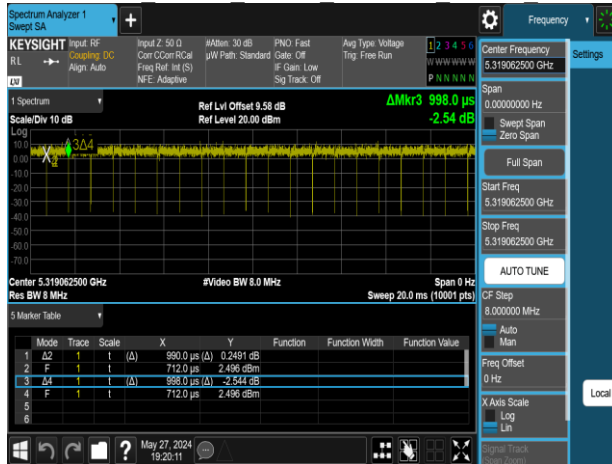
802.11ax 40MHz Chain0 5270MHz



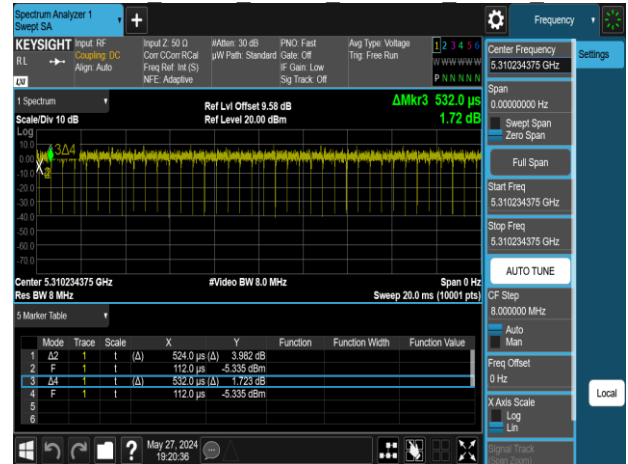
802.11ax 80MHz Chain0 5290MHz



802.11ax 40MHz Chain0 5310MHz RU242 62



802.11ax 80MHz Chain0 5290MHz RU484 66



4. TEST RESULT

4.1 AC POWER LINE CONDUCTED EMISSION

4.1.1 Test Limit

According to §15.207(a) and RSS-GEN section 8.8,

Frequency Range (MHz)	Limits(dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

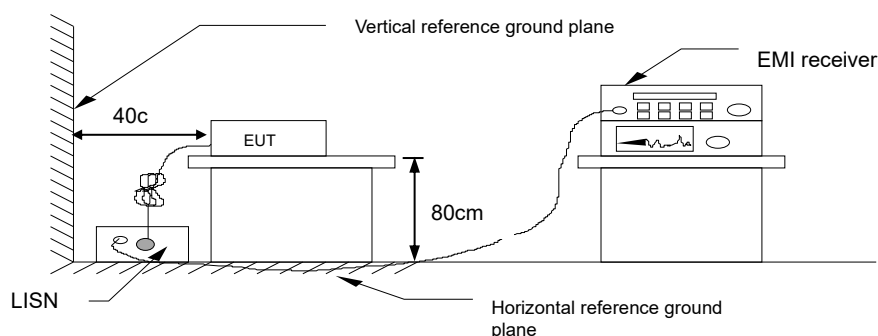
* Decreases with the logarithm of the frequency.

4.1.2 Test Procedure

Test method Refer as ANSI C63.10: 2013 clause 6.2,

1. The EUT was placed on a non-conducted table, which is 0.8m above horizontal ground plane and 0.4m above vertical ground plane.
2. EUT connected to the line impedance stabilization network (LISN)
3. Receiver set RBW of 9kHz and Detector Peak, and note as quasi-peak and average.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. Recorded Line for Neutral and Line.

4.1.3 Test Setup



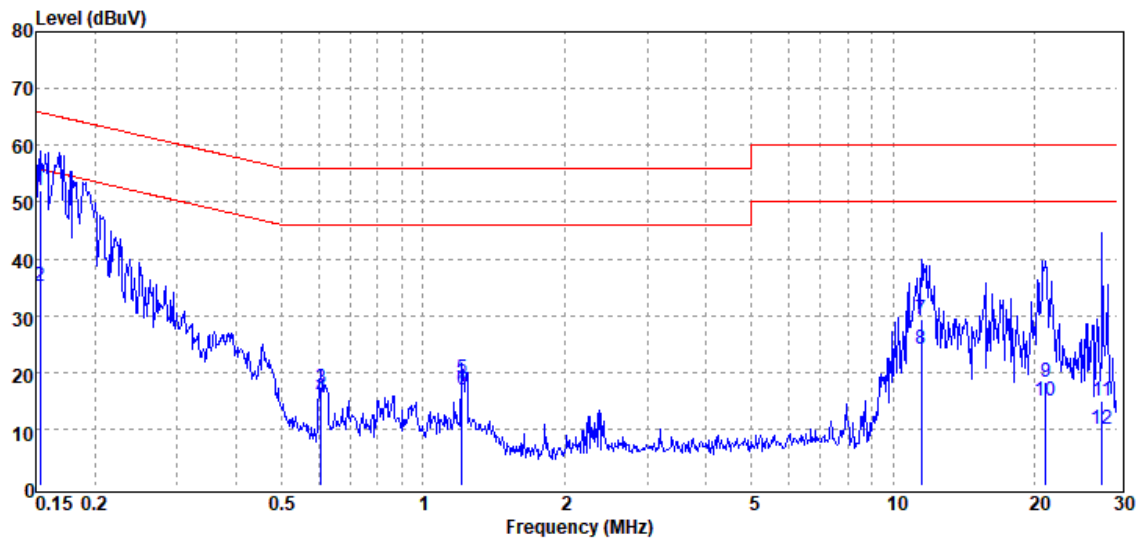
4.1.4 Test Result

Pass.

Test Data

Original:

Project No	: TM-2401000273P	Test Date	: 2024-01-30
Operation Mode	: 5G	Temp./Humi.	: 24.4°C / 57%
Test Chamber	: Conduction	Engineer	: Tony Chao
Probe	: LINE	Test Voltage	: AC 120V/60Hz
Note	:		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV	Limit dBμV	Margin dB
0.153	QP	51.89	0.15	52.04	65.82	-13.78
0.153	Average	35.07	0.15	35.22	55.82	-20.60
0.608	QP	17.09	0.15	17.24	56.00	-38.76
0.608	Average	15.45	0.15	15.60	46.00	-30.40
1.210	QP	18.62	0.18	18.80	56.00	-37.20
1.210	Average	16.78	0.18	16.96	46.00	-29.04
11.498	QP	29.05	0.39	29.44	60.00	-30.56
11.498	Average	23.77	0.39	24.16	50.00	-25.84
21.147	QP	17.69	0.53	18.22	60.00	-41.78
21.147	Average	14.42	0.53	14.95	50.00	-35.05
27.855	QP	14.42	0.63	15.05	60.00	-44.95
27.855	Average	9.23	0.63	9.86	50.00	-40.14

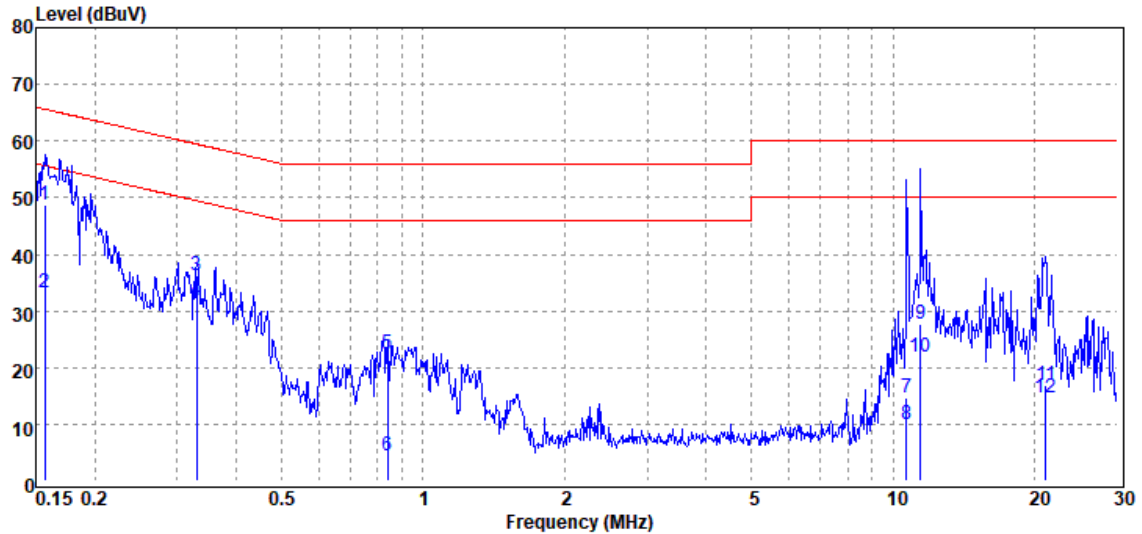
Note: 1. Actual FS= Spectrum Read Level + Factor

Note: 2. Margin= Actual FS - Limit

Report No.: TMWK2405001684KR

Project No : TM-2401000273P
Operation Mode : 5G
Test Chamber : Conduction
Probe : NEUTRAL
Note :

Test Date : 2024-01-30
Temp./Humi. : 24.4°C / 57%
Engineer : Tony Chao
Test Voltage : AC 120V/60Hz



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV	Limit dBμV	Margin dB
0.156	QP	48.43	0.20	48.63	65.65	-17.02
0.156	Average	32.97	0.20	33.17	55.65	-22.48
0.330	QP	36.03	0.19	36.22	59.44	-23.22
0.330	Average	31.68	0.19	31.87	49.44	-17.57
0.839	QP	22.33	0.21	22.54	56.00	-33.46
0.839	Average	4.16	0.21	4.37	46.00	-41.63
10.676	QP	14.32	0.40	14.72	60.00	-45.28
10.676	Average	9.65	0.40	10.05	50.00	-39.95
11.438	QP	27.14	0.42	27.56	60.00	-32.44
11.438	Average	21.44	0.42	21.86	50.00	-28.14
21.147	QP	16.45	0.53	16.98	60.00	-43.02
21.147	Average	14.03	0.53	14.56	50.00	-35.44

Note: 1. Actual FS= Spectrum Read Level + Factor

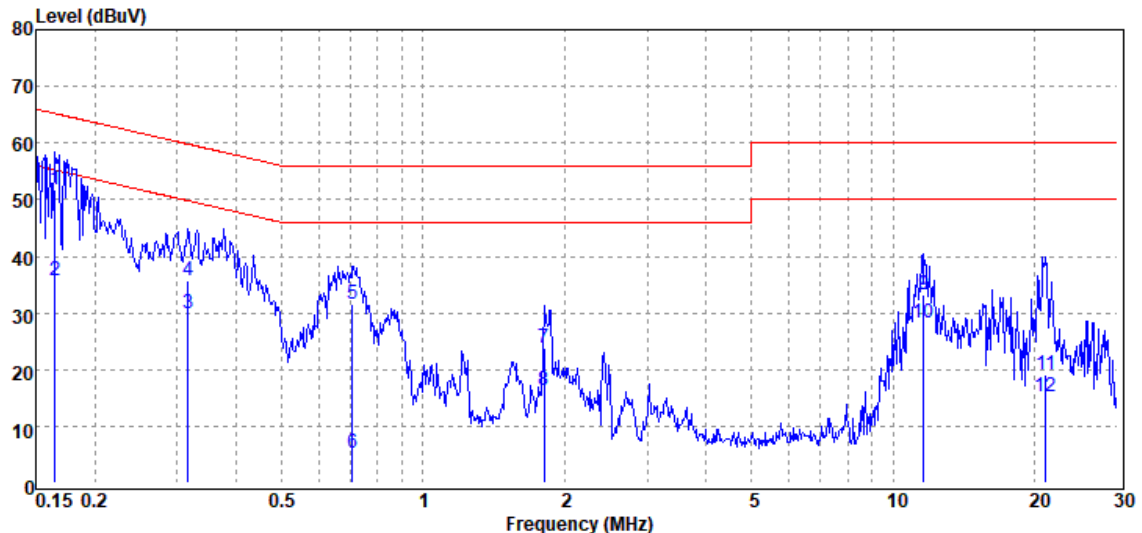
Note: 2. Margin= Actual FS - Limit

Report No.: TMWK2405001684KR

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Project No : TM-2401000273P
Operation Mode : 5G
Test Chamber : Conduction
Probe : LINE
Note :

Test Date : 2024-01-30
Temp./Humi. : 24.4°C / 57%
Engineer : Tony Chao
Test Voltage : AC 230V/50Hz



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV	Limit dBμV	Margin dB
0.165	QP	51.69	0.15	51.84	65.21	-13.37
0.165	Average	35.59	0.15	35.74	55.21	-19.47
0.317	QP	29.69	0.15	29.84	59.80	-29.96
0.317	Average	35.61	0.15	35.76	49.80	-14.04
0.708	QP	31.53	0.16	31.69	56.00	-24.31
0.708	Average	5.18	0.16	5.34	46.00	-40.66
1.810	QP	23.58	0.21	23.79	56.00	-32.21
1.810	Average	16.03	0.21	16.24	46.00	-29.76
11.621	QP	32.88	0.39	33.27	60.00	-26.73
11.621	Average	27.84	0.39	28.23	50.00	-21.77
21.147	QP	18.43	0.53	18.96	60.00	-41.04
21.147	Average	14.57	0.53	15.10	50.00	-34.90

Note: 1. Actual FS= Spectrum Read Level + Factor

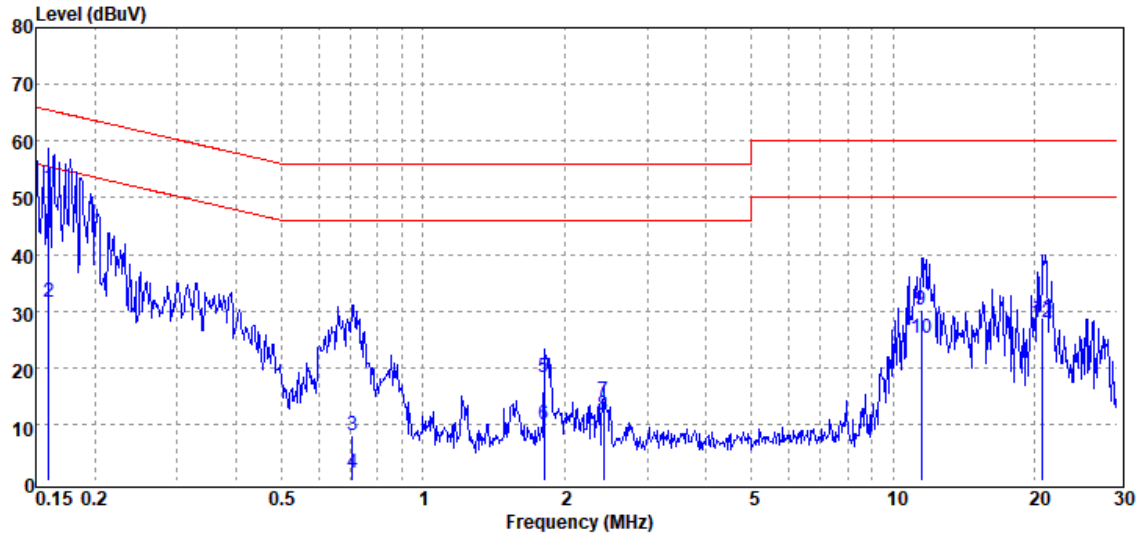
Note: 2. Margin= Actual FS - Limit

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Project No : TM-2401000273P
Operation Mode : 5G
Test Chamber : Conduction
Probe : NEUTRAL
Note :

Test Date : 2024-01-30
Temp./Humi. : 24.4°C / 57%
Engineer : Tony Chao
Test Voltage : AC 230V/50Hz



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV	Limit dBμV	Margin dB
0.160	QP	51.63	0.20	51.83	65.47	-13.64
0.160	Average	31.40	0.20	31.60	55.47	-23.87
0.708	QP	7.86	0.21	8.07	56.00	-47.93
0.708	Average	1.15	0.21	1.36	46.00	-44.64
1.810	QP	18.16	0.25	18.41	56.00	-37.59
1.810	Average	9.83	0.25	10.08	46.00	-35.92
2.422	QP	13.94	0.28	14.22	56.00	-41.78
2.422	Average	11.34	0.28	11.62	46.00	-34.38
11.498	QP	29.83	0.42	30.25	60.00	-29.75
11.498	Average	24.76	0.42	25.18	50.00	-24.82
20.814	QP	28.34	0.53	28.87	60.00	-31.13
20.814	Average	27.49	0.53	28.02	50.00	-21.98

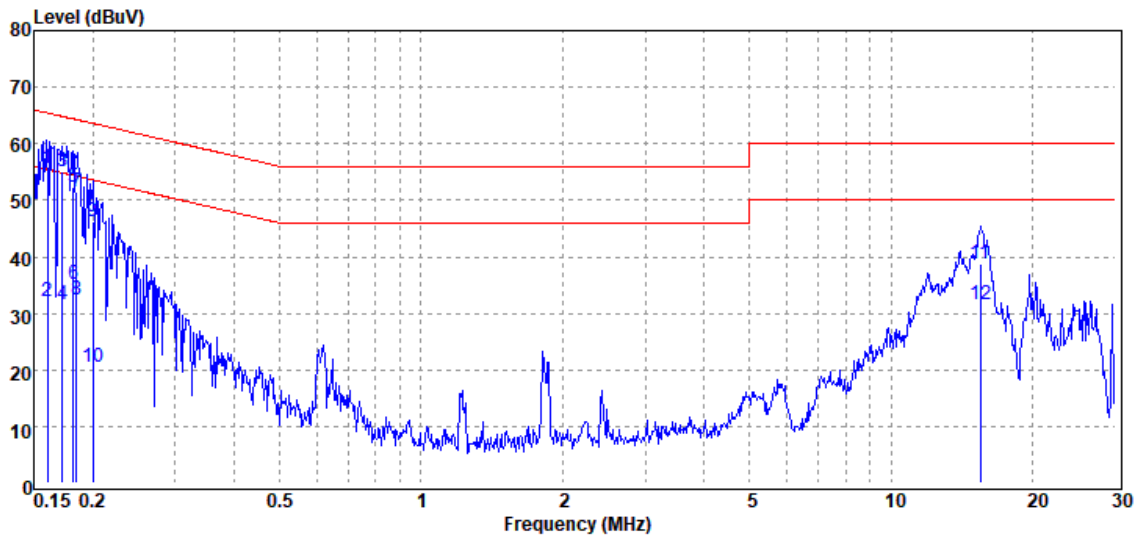
Note: 1. Actual FS= Spectrum Read Level + Factor

Note: 2. Margin= Actual FS - Limit

Update:

Project No : TM-2405000351P
Operation Mode : Wifi 5G
Test Chamber : Conduction
Probe : LINE
Note :

Test Date : 2024-05-31
Temp./Humi. : 23.4°C / 54%
Engineer : Czerny Lin
Test Voltage : AC 120V/60Hz



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV	Limit dBμV	Margin dB
0.160	QP	55.49	0.15	55.64	65.46	-9.82
0.160	Average	31.90	0.15	32.05	55.46	-23.41
0.172	QP	54.89	0.15	55.04	64.85	-9.81
0.172	Average	31.34	0.15	31.49	54.85	-23.36
0.182	QP	52.14	0.15	52.29	64.40	-12.11
0.182	Average	35.10	0.15	35.25	54.40	-19.15
0.185	QP	51.25	0.15	51.40	64.27	-12.87
0.185	Average	32.35	0.15	32.50	54.27	-21.77
0.200	QP	45.98	0.15	46.13	63.60	-17.47
0.200	Average	20.31	0.15	20.46	53.60	-33.14
15.488	QP	38.19	0.45	38.64	60.00	-21.36
15.488	Average	30.97	0.45	31.42	50.00	-18.58

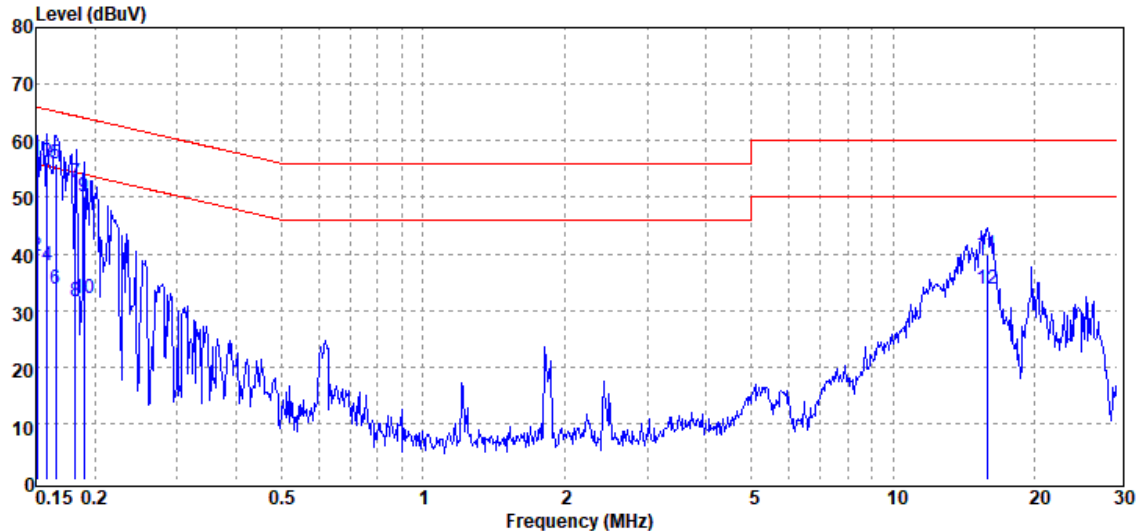
Note: 1. Actual FS= Spectrum Read Level + Factor

Note: 2. Margin= Actual FS - Limit

Report No.: TMWK2405001684KR

Project No : TM-2405000351P
Operation Mode : Wifi 5G
Test Chamber : Conduction
Probe : NEUTRAL
Note :

Test Date : 2024-05-31
Temp./Humi. : 23.4°C / 54%
Engineer : Czerny Lin
Test Voltage : AC 120V/60Hz



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV	Limit dBμV	Margin dB
0.151	QP	56.28	0.20	56.48	65.94	-9.46
0.151	Average	39.33	0.20	39.53	55.94	-16.41
0.159	QP	55.98	0.20	56.18	65.53	-9.35
0.159	Average	37.86	0.20	38.06	55.53	-17.47
0.166	QP	55.63	0.19	55.82	65.18	-9.36
0.166	Average	33.53	0.19	33.72	55.18	-21.46
0.182	QP	52.38	0.20	52.58	64.39	-11.81
0.182	Average	31.29	0.20	31.49	54.39	-22.90
0.190	QP	49.91	0.19	50.10	64.05	-13.95
0.190	Average	32.03	0.19	32.22	54.05	-21.83
15.832	QP	39.49	0.47	39.96	60.00	-20.04
15.832	Average	33.27	0.47	33.74	50.00	-16.26

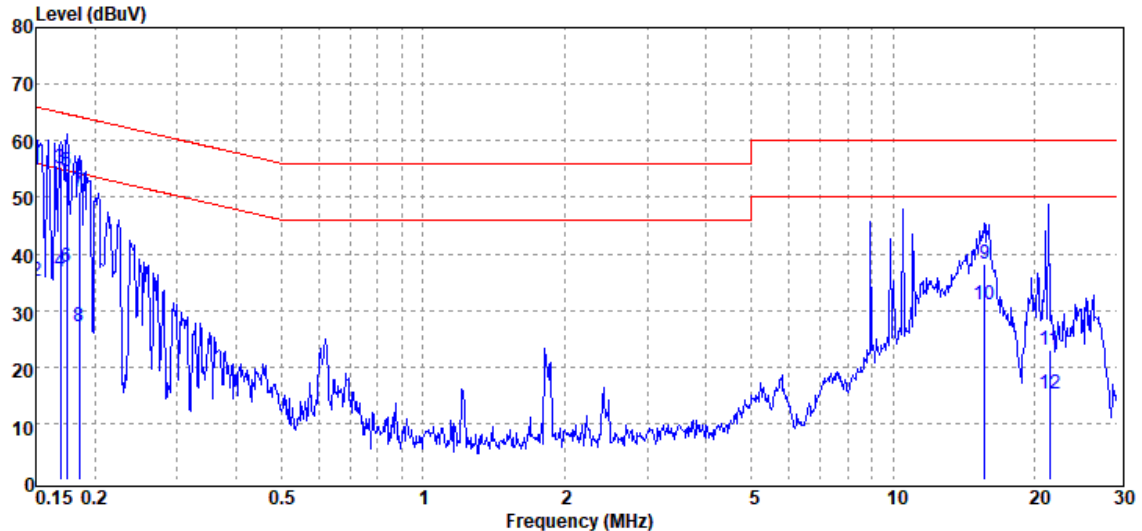
Note: 1. Actual FS= Spectrum Read Level + Factor

Note: 2. Margin= Actual FS - Limit

Report No.: TMWK2405001684KR

Project No : TM-2405000351P
Operation Mode : Wifi 5G
Test Chamber : Conduction
Probe : LINE
Note :

Test Date : 2024-05-31
Temp./Humi. : 23.4°C / 54%
Engineer : Czerny Lin
Test Voltage : AC 230V/50Hz



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV	Limit dBμV	Margin dB
0.150	QP	55.12	0.15	55.27	65.98	-10.71
0.150	Average	35.00	0.15	35.15	55.98	-20.83
0.169	QP	55.06	0.15	55.21	64.99	-9.78
0.169	Average	36.62	0.15	36.77	54.99	-18.22
0.174	QP	54.34	0.15	54.49	64.76	-10.27
0.174	Average	37.36	0.15	37.51	54.76	-17.25
0.185	QP	50.76	0.15	50.91	64.24	-13.33
0.185	Average	27.10	0.15	27.25	54.24	-26.99
15.663	QP	37.81	0.46	38.27	60.00	-21.73
15.663	Average	30.57	0.46	31.03	50.00	-18.97
21.506	QP	22.39	0.53	22.92	60.00	-37.08
21.506	Average	14.74	0.53	15.27	50.00	-34.73

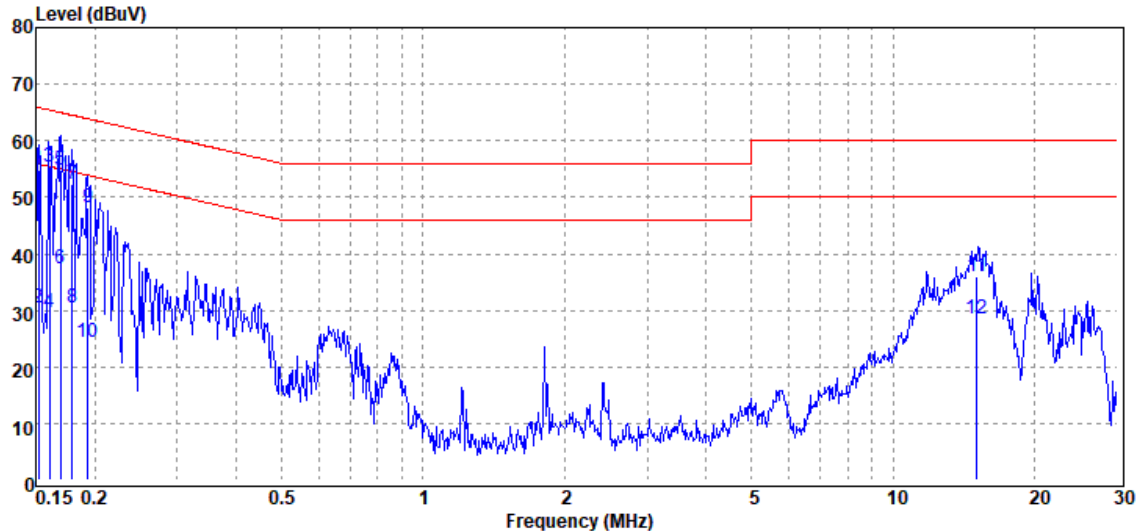
Note: 1. Actual FS= Spectrum Read Level + Factor

Note: 2. Margin= Actual FS - Limit

Report No.: TMWK2405001684KR

Project No : TM-2405000351P
Operation Mode : Wifi 5G
Test Chamber : Conduction
Probe : NEUTRAL
Note :

Test Date : 2024-05-31
Temp./Humi. : 23.4°C / 54%
Engineer : Czerny Lin
Test Voltage : AC 230V/50Hz



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV	Limit dBμV	Margin dB
0.152	QP	54.50	0.20	54.70	65.89	-11.19
0.152	Average	30.24	0.20	30.44	55.89	-25.45
0.161	QP	55.14	0.20	55.34	65.43	-10.09
0.161	Average	29.45	0.20	29.65	55.43	-25.78
0.169	QP	54.58	0.19	54.77	65.00	-10.23
0.169	Average	37.18	0.19	37.37	55.00	-17.63
0.179	QP	52.22	0.20	52.42	64.52	-12.10
0.179	Average	30.31	0.20	30.51	54.52	-24.01
0.194	QP	47.85	0.19	48.04	63.87	-15.83
0.194	Average	24.03	0.19	24.22	53.87	-29.65
15.094	QP	35.40	0.47	35.87	60.00	-24.13
15.094	Average	27.97	0.47	28.44	50.00	-21.56

Note: 1. Actual FS= Spectrum Read Level + Factor

Note: 2. Margin= Actual FS - Limit

4.2 26dB BANDWIDTH, 6dB BANDWIDTH AND OCCUPIED BANDWIDTH(99%)

4.2.1 Test Limit

26 dB Bandwidth : For reporting purposes only.

6 dB Bandwidth : Least 500kHz.

Occupied Bandwidth(99%) : For reporting purposes only.

4.2.2 Test Procedure

26dB

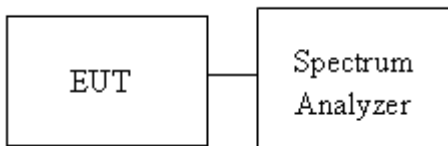
1. This measurement setting are specified in section D of KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
2. Set RBW: approximately 1% of the emission bandwidth.
3. Set the VBW>RBW.
4. Detector = Peak.
5. Trace mode = max hold.
6. Measure the maximum width of the emission that is 26dB down from the peak of the emission. Compare this with the RBW setting of the analyser. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

6dB

1. This measurement setting are specified in section D of KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
2. Set RBW = 100 kHz.
3. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
4. Detector = Peak.
5. Trace mode = max hold.
6. Sweep = auto couple.
7. Allow the trace to stabilize.
8. 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.

99%

1. This measurement setting are specified in section D of KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
2. Set center frequency to the nominal EUT channel center frequency.
3. Set span = 1.5 times to 5.0 times the OBW.
4. Set RBW = 1 % to 5% of the OBW.
5. Set VBW $\geq 3 \times$ RBW

4.2.3 Test Setup



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4.2.4 Test Result

Original:

Temperature: 16.6 ~ 23.8°C

Test date: January 23 ~ March 12, 2024

Humidity: 49 ~ 66% RH

Tested by: Marco Chan

Occupied Bandwidth(99%)

802.11a_Ch0

Frequency (MHz)	99% BW (MHz)	10 Log (B) (dB)
5180	16.343	12.130
5220	16.354	12.140
5240	16.339	12.130

802.11a_Ch1

Frequency (MHz)	99% BW (MHz)	10 Log (B) (dB)
5180	16.347	12.130
5220	16.335	12.130
5240	16.352	12.140

802.11a_Ch0

Frequency (MHz)	99% BW (MHz)	6dB BW (MHz)
5745	16.349	16.34
5785	16.347	16.40
5825	16.346	16.37

802.11a_Ch1

Frequency (MHz)	99% BW (MHz)	6dB BW (MHz)
5745	16.326	16.28
5785	16.330	16.30
5825	16.358	16.31

802.11ac_VHT20_Ch0

Frequency (MHz)	99% BW (MHz)	10 Log (B) (dB)
5180	17.517	12.430
5220	17.521	12.440
5240	17.520	12.440

802.11ac_VHT20_Ch1

Frequency (MHz)	99% BW (MHz)	10 Log (B) (dB)
5180	17.520	12.440
5220	17.523	12.440
5240	17.512	12.430

802.11ac_VHT20_Ch0

Frequency (MHz)	99% BW (MHz)	6dB BW (MHz)
5745	17.526	17.36
5785	17.534	17.37
5825	17.517	17.43

802.11ac_VHT20_Ch1

Frequency (MHz)	99% BW (MHz)	6dB BW (MHz)
5745	17.508	17.47
5785	17.523	17.40
5825	17.523	17.43



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802.11ac_VHT40_Ch0

Frequency (MHz)	99% BW (MHz)	10 Log (B) (dB)
5190	36.028	15.570
5230	36.058	15.570

802.11ac_VHT40_Ch1

Frequency (MHz)	99% BW (MHz)	10 Log (B) (dB)
5190	36.014	15.560
5230	35.999	15.560

802.11ac_VHT40_Ch0

Frequency (MHz)	99% BW (MHz)	6dB BW (MHz)
5755	36.059	36.28
5795	36.057	36.23

802.11ac_VHT40_Ch1

Frequency (MHz)	99% BW (MHz)	6dB BW (MHz)
5755	36.077	36.31
5795	36.028	36.02

802.11ac_VHT80_Ch0

Frequency (MHz)	99% BW (MHz)	10 Log (B) (dB)
5210	76.134	18.820

802.11ac_VHT80_Ch1

Frequency (MHz)	99% BW (MHz)	10 Log (B) (dB)
5210	76.092	18.810

802.11ac_VHT80_Ch0

Frequency (MHz)	99% BW (MHz)	6dB BW (MHz)
5775	76.032	74.16

802.11ac_VHT80_Ch1

Frequency (MHz)	99% BW (MHz)	6dB BW (MHz)
5775	76.168	76.50

802.11ax_HE20_Ch0

Frequency (MHz)	RU config	99% BW (MHz)	10 Log (B) (dB)
5180	full	18.876	12.760
5220	full	18.897	12.760
5240	full	18.890	12.760

802.11ax_HE20_Ch1

Frequency (MHz)	RU config	99% BW (MHz)	10 Log (B) (dB)
5180	full	18.900	12.760
5220	full	18.889	12.760
5240	full	18.866	12.760

802.11ax_HE20_Ch0

Frequency (MHz)	RU config	99% BW (MHz)	6dB BW (MHz)
5745	full	18.903	18.96
5785	full	18.886	18.94
5825	full	18.869	19.00

802.11ax_HE20_Ch1

Frequency (MHz)	RU config	99% BW (MHz)	6dB BW (MHz)
5745	full	18.904	19.01
5785	full	18.882	18.99
5825	full	18.883	18.91

802.11ax_HE40_Ch0

Frequency (MHz)	RU config	99% BW (MHz)	10 Log (B) (dB)
5190	full	37.667	15.760
5230	full	37.637	15.760

802.11ax_HE40_Ch1

Frequency (MHz)	RU config	99% BW (MHz)	10 Log (B) (dB)
5190	full	37.678	15.760
5230	full	37.663	15.760

802.11ax_HE40_Ch0

Frequency (MHz)	RU config	99% BW (MHz)	6dB BW (MHz)
5755	full	37.642	37.79
5795	full	37.619	37.57

802.11ax_HE40_Ch1

Frequency (MHz)	RU config	99% BW (MHz)	6dB BW (MHz)
5755	full	37.705	37.86
5795	full	37.660	37.61

802.11ax_HE80_Ch0

Frequency (MHz)	RU config	99% BW (MHz)	10 Log (B) (dB)
5210	full	77.255	18.880

802.11ax_HE80_Ch1

Frequency (MHz)	RU config	99% BW (MHz)	10 Log (B) (dB)
5210	full	77.218	18.880

802.11ax_HE80_Ch0

Frequency (MHz)	RU config	99% BW (MHz)	6dB BW (MHz)
5775	full	77.235	76.71

802.11ax_HE80_Ch1

Frequency (MHz)	RU config	99% BW (MHz)	6dB BW (MHz)
5775	full	77.377	77.82



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26 dB Bandwidth & 6 dB Bandwidth

802.11a_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	18.18	12.600
5220	18.42	12.650
5240	18.23	12.610

802.11a_Ch1

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	18.33	12.630
5220	18.39	12.650
5240	18.29	12.620

802.11a_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	16.36	12.140
5785	16.34	12.130
5825	16.32	12.130

802.11a_Ch1

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	16.33	12.130
5785	16.30	12.120
5825	16.36	12.140

802.11a_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.156303	< 5250
5745	5736.806830	> 5725

802.11a_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.173891	< 5250
5745	5736.799700	> 5725



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802.11ac_VHT20_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	19.45	12.890
5220	19.39	12.880
5240	19.36	12.870

802.11ac_VHT20_Ch1

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	19.24	12.840
5220	19.30	12.860
5240	19.33	12.860

802.11ac_VHT20_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	16.63	12.210
5785	17.21	12.360
5825	17.19	12.350

802.11ac_VHT20_Ch1

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	17.35	12.390
5785	16.36	12.140
5825	17.14	12.340

802.11ac_VHT20_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.746580	< 5250
5745	5736.197691	> 5725

802.11ac_VHT20_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.743577	< 5250
5745	5736.196166	> 5725



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802.11ac_VHT40_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5190	38.90	15.900
5230	38.98	15.910

802.11ac_VHT40_Ch1

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5190	38.88	15.900
5230	39.01	15.910

802.11ac_VHT40_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5755	35.34	15.480
5795	35.18	15.460

802.11ac_VHT40_Ch1

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5755	35.50	15.500
5795	35.75	15.530

802.11ac_VHT40_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5230	5248.018255	< 5250
5755	5736.963007	> 5725

802.11ac_VHT40_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5230	5248.026215	< 5250
5755	5736.993090	> 5725



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802.11ac_VHT80_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5210	86.54	19.370

802.11ac_VHT80_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5775	74.59	18.730

802.11ac_VHT80_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5210	5248.720470	< 5250
5775	5737.343011	> 5725

802.11ac_VHT80_Ch1

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5210	87.11	19.400

802.11ac_VHT80_Ch1

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5775	75.86	18.800

802.11ac_VHT80_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5210	5248.124715	< 5250
5775	5737.043140	> 5725

802.11ax_HE20_Ch0

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5180	full	20.35	13.090
5220	full	20.37	13.090
5240	full	20.19	13.050

802.11ax_HE20_Ch0

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5745	full	18.44	12.660
5785	full	18.23	12.610
5825	full	18.31	12.630

802.11ax_HE20_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5249.427440	< 5250
5745	5735.535394	> 5725

802.11ax_HE20_Ch1

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5180	full	19.90	12.990
5220	full	20.10	13.030
5240	full	20.26	13.070

802.11ax_HE20_Ch1

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5745	full	17.70	12.480
5785	full	17.51	12.430
5825	full	18.05	12.560

802.11ax_HE20_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5249.422720	< 5250
5745	5735.558139	> 5725



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802.11ax_HE40_Ch0

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5190	full	39.83	16.000
5230	full	39.68	15.990

802.11ax_HE40_Ch1

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5190	full	39.43	15.960
5230	full	39.65	15.980

802.11ax_HE40_Ch0

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5755	full	36.60	15.630
5795	full	36.62	15.640

802.11ax_HE40_Ch1

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5755	full	36.70	15.650
5795	full	36.63	15.640

802.11ax_HE40_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5230	5248.816461	< 5250
5755	5736.169307	> 5725

802.11ax_HE40_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5230	5248.797811	< 5250
5755	5736.144675	> 5725



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802.11ax_HE80_Ch0

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5210	full	80.78	19.070

802.11ax_HE80_Ch1

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5210	full	80.88	19.080

802.11ax_HE80_Ch0

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5775	full	76.38	18.830

802.11ax_HE80_Ch1

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5775	full	77.43	18.890

802.11ax_HE80_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5210	5249.010812	< 5250
5775	5736.512872	> 5725

802.11ax_HE80_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5210	5248.672691	< 5250
5775	5736.288768	> 5725



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Update:

Temperature: 21.2 ~ 21.5°C

Test date: May 27 ~ 28, 2024

Humidity: 59 ~ 63% RH

Tested by: Marco Chan

Occupied Bandwidth(99%)

802.11a_Ch0

Frequency (MHz)	99% BW (MHz)	10 Log (B) (dB)
5260	16.343	12.130
5300	16.342	12.130
5320	16.347	12.130
5500	16.350	12.140
5580	16.336	12.130
5700	16.352	12.140
5720(U-NII 2C)	13.187	11.200
5720(U-NII 3)	3.187	5.030

802.11a_Ch1

Frequency (MHz)	99% BW (MHz)	10 Log (B) (dB)
5260	16.346	12.130
5300	16.353	12.140
5320	16.342	12.130
5500	16.356	12.140
5580	16.347	12.130
5700	16.362	12.140
5720(U-NII 2C)	13.173	11.200
5720(U-NII 3)	3.173	5.010

802.11n_HT20_Ch0

Frequency (MHz)	99% BW (MHz)	10 Log (B) (dB)
5260	17.514	12.430
5300	17.507	12.430
5320	17.504	12.430
5500	17.530	12.440
5580	17.514	12.430
5700	17.516	12.430
5720(U-NII 2C)	13.756	11.380
5720(U-NII 3)	3.756	5.750

802.11n_HT20_Ch1

Frequency (MHz)	99% BW (MHz)	10 Log (B) (dB)
5260	17.542	12.440
5300	17.537	12.440
5320	17.542	12.440
5500	17.523	12.440
5580	17.543	12.440
5700	17.539	12.440
5720(U-NII 2C)	13.775	11.390
5720(U-NII 3)	3.775	5.770



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802.11n_HT40_Ch0

Frequency (MHz)	99% BW (MHz)	10 Log (B) (dB)
5270	36.029	15.570
5310	36.049	15.570
5510	36.035	15.570
5550	36.040	15.570
5670	36.004	15.560
5710(U-NII 2C)	33.008	15.190
5710(U-NII 3)	3.008	4.780

802.11n_HT40_Ch1

Frequency (MHz)	99% BW (MHz)	10 Log (B) (dB)
5270	36.025	15.570
5310	36.015	15.560
5510	36.022	15.570
5550	36.016	15.560
5670	36.026	15.570
5710(U-NII 2C)	33.016	15.190
5710(U-NII 3)	3.016	4.790

802.11ac_VHT80_Ch0

Frequency (MHz)	99% BW (MHz)	10 Log (B) (dB)
5290	75.797	18.800
5530	76.053	18.810
5610	76.135	18.820
5690(U-NII 2C)	72.966	18.630
5690(U-NII 3)	2.966	4.720

802.11ac_VHT80_Ch1

Frequency (MHz)	99% BW (MHz)	10 Log (B) (dB)
5290	76.173	18.820
5530	76.193	18.820
5610	76.152	18.820
5690(U-NII 2C)	73.061	18.640
5690(U-NII 3)	3.061	4.860

802.11ax_HE20_Ch0

Frequency (MHz)	RU config	99% BW (MHz)	10 Log (B) (dB)
5260	full	18.863	12.760
5300	full	18.901	12.760
5320	full	18.886	12.760
5500	full	18.886	12.760
5580	full	18.888	12.760
5700	full	18.882	12.760
5720(U-NII 2C)	full	14.441	11.600
5720(U-NII 3)	full	4.441	6.470

802.11ax_HE20_Ch1

Frequency (MHz)	RU config	99% BW (MHz)	10 Log (B) (dB)
5260	full	18.883	12.760
5300	full	18.902	12.770
5320	full	18.886	12.760
5500	full	18.909	12.770
5580	full	18.868	12.760
5700	full	18.885	12.760
5720(U-NII 2C)	full	14.449	11.600
5720(U-NII 3)	full	4.449	6.480

802.11ax_HE40_Ch0

Frequency (MHz)	RU config	99% BW (MHz)	10 Log (B) (dB)
5270	full	37.593	15.750
5310	full	37.674	15.760
5510	full	37.650	15.760
5550	full	37.678	15.760
5670	full	37.621	15.750
5710(U-NII 2C)	full	33.839	15.290
5710(U-NII 3)	full	3.839	5.840

802.11ax_HE40_Ch1

Frequency (MHz)	RU config	99% BW (MHz)	10 Log (B) (dB)
5270	full	37.622	15.750
5310	full	37.716	15.770
5510	full	37.624	15.750
5550	full	37.621	15.750
5670	full	37.638	15.760
5710(U-NII 2C)	full	33.827	15.290
5710(U-NII 3)	full	3.827	5.830

802.11ax_HE80_Ch0

Frequency (MHz)	RU config	99% BW (MHz)	10 Log (B) (dB)
5290	full	76.932	18.860
5530	full	77.142	18.870
5610	full	77.406	18.890
5690(U-NII 2C)	full	73.571	18.670
5690(U-NII 3)	full	3.571	5.530

802.11ax_HE80_Ch1

Frequency (MHz)	RU config	99% BW (MHz)	10 Log (B) (dB)
5290	full	77.406	18.890
5530	full	77.331	18.880
5610	full	77.408	18.890
5690(U-NII 2C)	full	73.627	18.670
5690(U-NII 3)	full	3.627	5.600

26 dB Bandwidth

802.11a_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5260	18.22	12.610
5300	18.18	12.600
5320	18.12	12.580
5500	18.33	12.630
5580	18.36	12.640
5700	18.32	12.630
5720(U-NII 2C)	14.27	11.540
5720(U-NII 3)	4.27	6.300

802.11a_Ch1

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5260	18.24	12.610
5300	18.15	12.590
5320	18.40	12.650
5500	18.42	12.650
5580	18.25	12.610
5700	18.27	12.620
5720(U-NII 2C)	14.13	11.500
5720(U-NII 3)	4.13	6.160

802.11n_HT20_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5260	19.23	12.840
5300	19.17	12.830
5320	19.38	12.870
5500	19.33	12.860
5580	19.35	12.870
5700	19.37	12.870
5720(U-NII 2C)	14.68	11.670
5720(U-NII 3)	4.68	6.700

802.11n_HT20_Ch1

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5260	19.10	12.810
5300	19.13	12.820
5320	19.21	12.840
5500	19.09	12.810
5580	19.12	12.810
5700	19.17	12.830
5720(U-NII 2C)	14.63	11.650
5720(U-NII 3)	4.63	6.650

802.11n_HT40_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5270	39.21	15.930
5310	39.03	15.910
5510	39.15	15.930
5550	39.20	15.930
5670	39.01	15.910
5710(U-NII 2C)	34.52	15.380
5710(U-NII 3)	4.52	6.560

802.11n_HT40_Ch1

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5270	38.31	15.830
5310	38.51	15.860
5510	38.34	15.840
5550	38.51	15.860
5670	38.40	15.840
5710(U-NII 2C)	34.19	15.340
5710(U-NII 3)	4.19	6.220

802.11ac_VHT80_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5290	85.95	19.340
5530	85.20	19.300
5610	85.72	19.330
5690(U-NII 2C)	78.33	18.940
5690(U-NII 3)	8.33	9.210

802.11ac_VHT80_Ch1

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5290	86.95	19.390
5530	87.55	19.420
5610	86.13	19.350
5690(U-NII 2C)	78.22	18.930
5690(U-NII 3)	8.22	9.150

802.11ax_HE20_Ch0

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5260	full	20.24	13.060
5300	full	20.28	13.070
5320	full	20.31	13.080
5500	full	20.10	13.030
5580	full	20.25	13.060
5700	full	20.27	13.070
5720 (U-NII 2C)	full	15.06	11.780
5720 (U-NII 3)	full	5.06	7.050

802.11ax_HE20_Ch1

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5260	full	20.45	13.110
5300	full	20.12	13.040
5320	full	20.28	13.070
5500	full	20.21	13.060
5580	full	20.29	13.070
5700	full	20.42	13.100
5720 (U-NII 2C)	full	15.25	11.830
5720 (U-NII 3)	full	5.25	7.200

802.11ax_HE40_Ch0

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5270	full	39.73	15.990
5310	full	39.76	15.990
5510	full	39.56	15.970
5550	full	39.45	15.960
5670	full	39.51	15.970
5710 (U-NII 2C)	full	34.84	15.420
5710 (U-NII 3)	full	4.84	6.840

802.11ax_HE40_Ch1

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5270	full	39.46	15.960
5310	full	39.51	15.970
5510	full	39.57	15.970
5550	full	39.51	15.970
5670	full	39.68	15.990
5710 (U-NII 2C)	full	34.77	15.410
5710 (U-NII 3)	full	4.77	6.780



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802.11ax_HE80_Ch0

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5290	full	80.71	19.070
5530	full	80.94	19.080
5610	full	80.64	19.070
5690 (U-NII 2C)	full	75.36	18.770
5690 (U-NII 3)	full	5.36	7.290

802.11ax_HE80_Ch1

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5290	full	80.87	19.080
5530	full	81.08	19.090
5610	full	81.09	19.090
5690 (U-NII 2C)	full	75.05	18.750
5690 (U-NII 3)	full	5.05	7.030

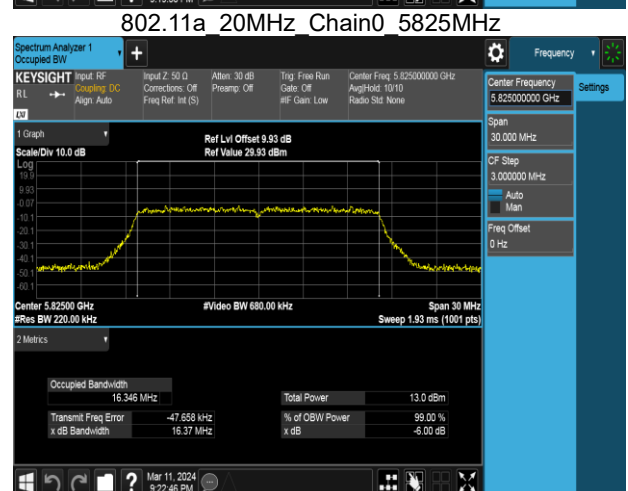
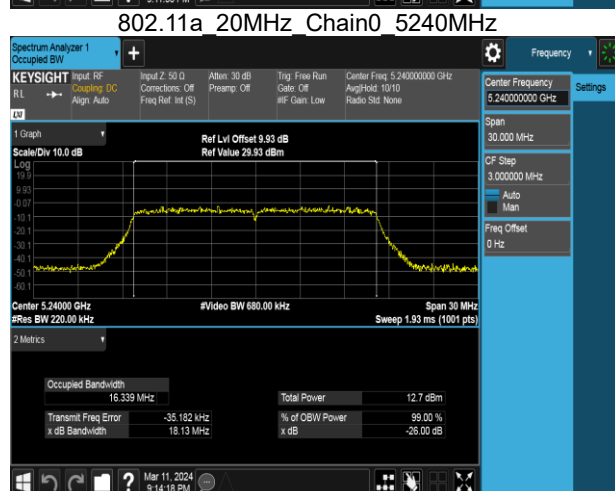
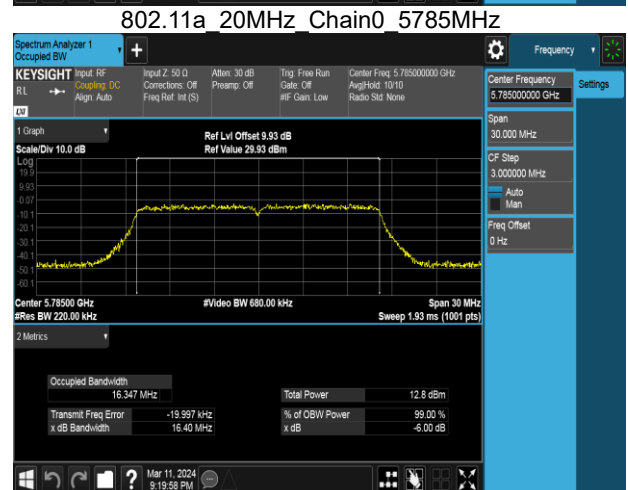
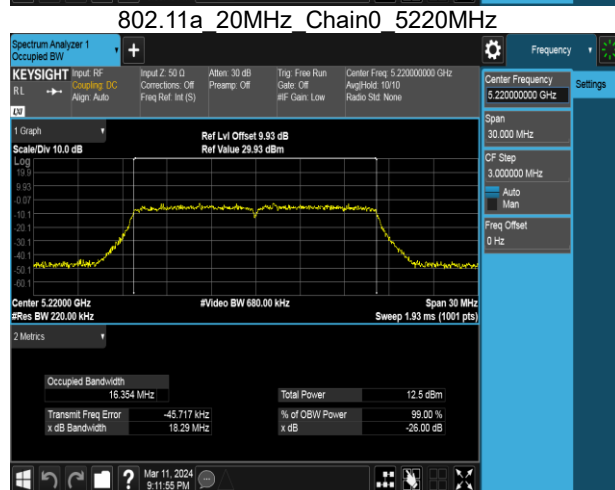
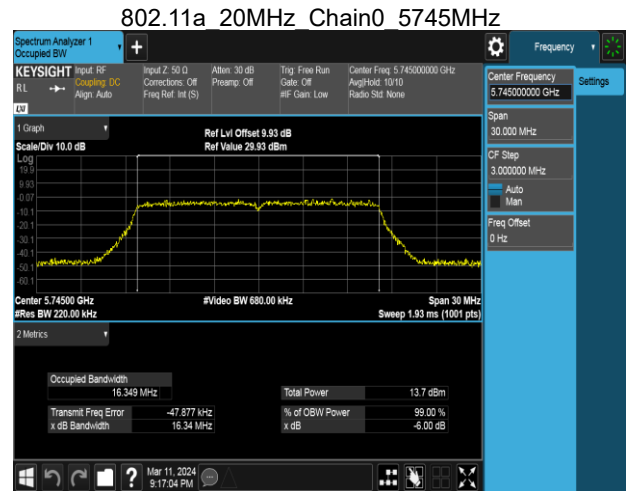
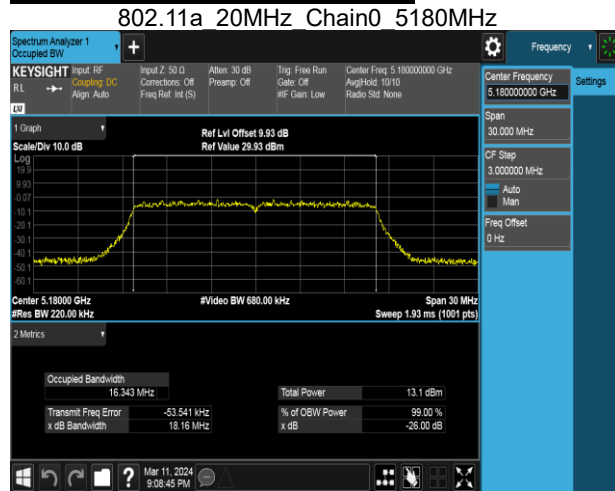


Report No.: TMWK2405001684KR

Test Data

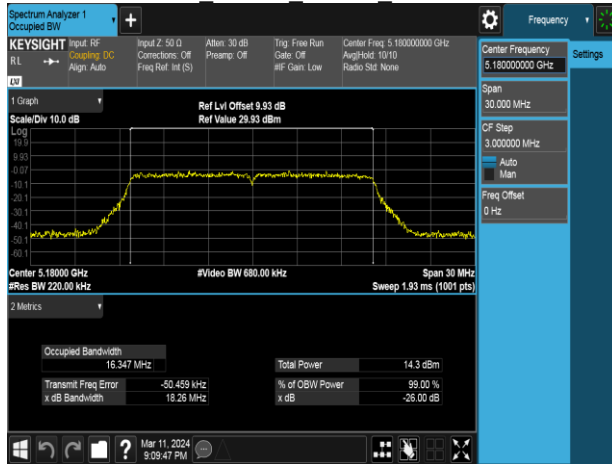
Original:

Occupied Bandwidth(99%)

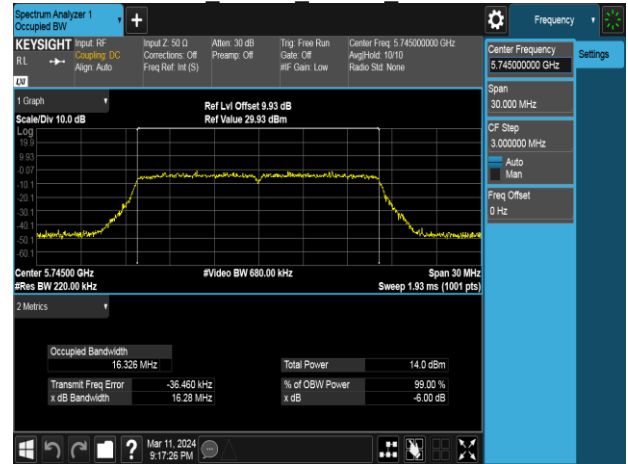


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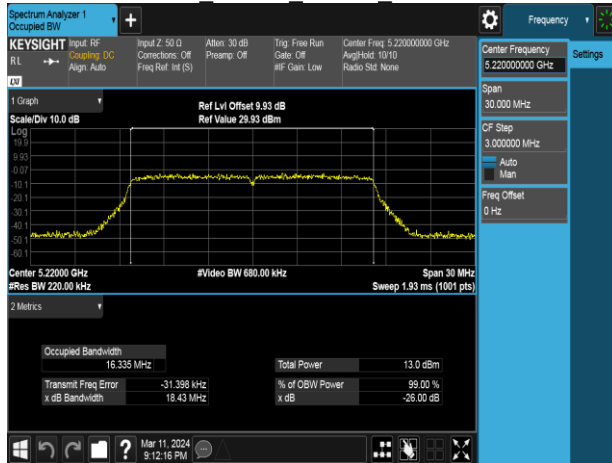
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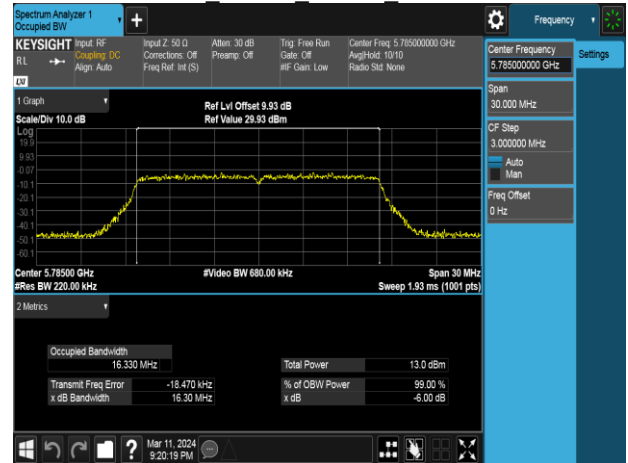
802.11a 20MHz Chain1 5745MHz



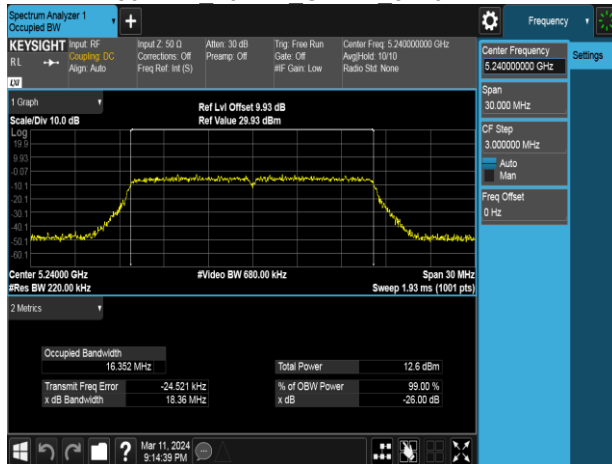
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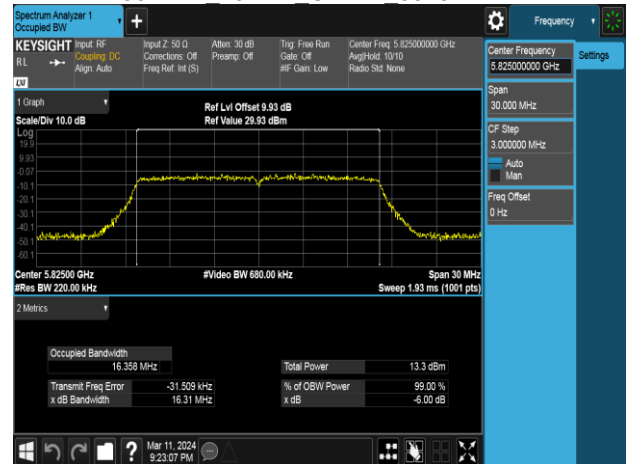
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802.11a 20MHz Chain1 5240MHz



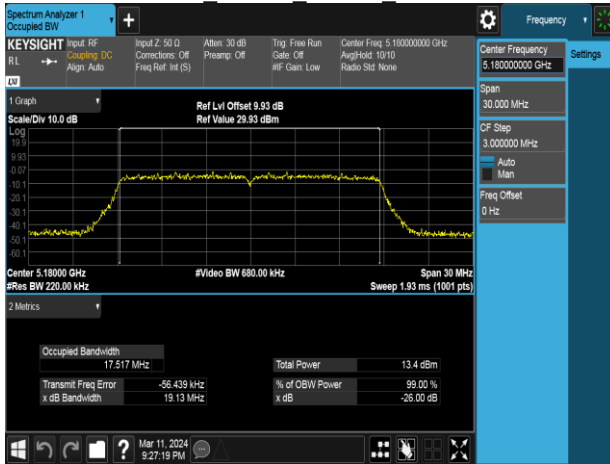
802.11a 20MHz Chain1 5825MHz



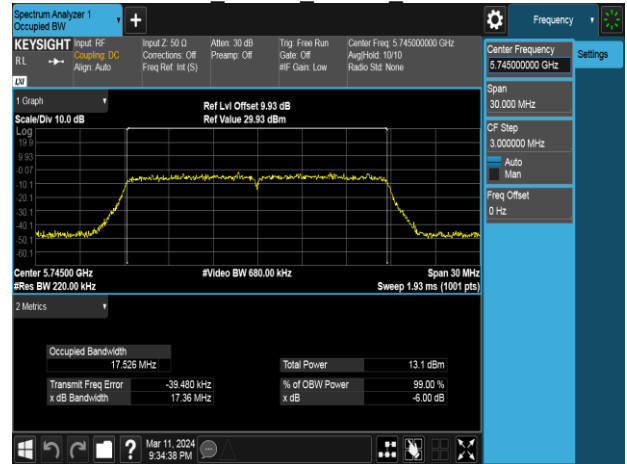


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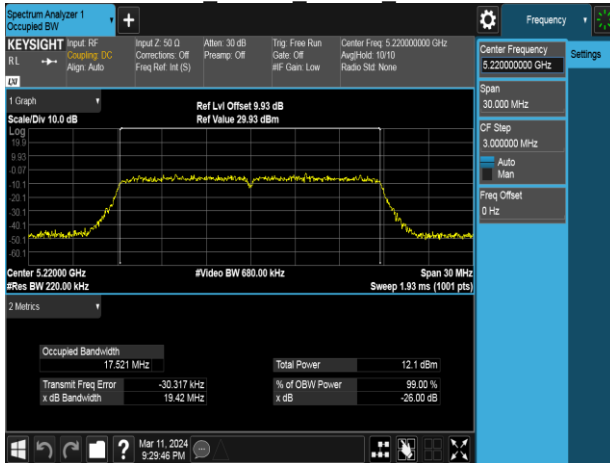
802.11ac 20MHz Chain0 5180MHz



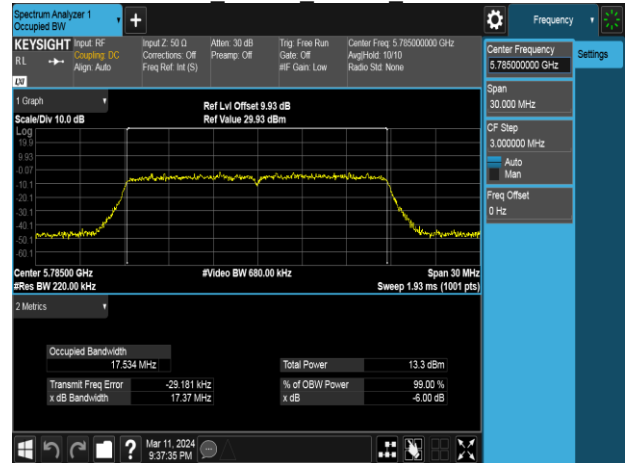
802.11ac 20MHz Chain0 5745MHz



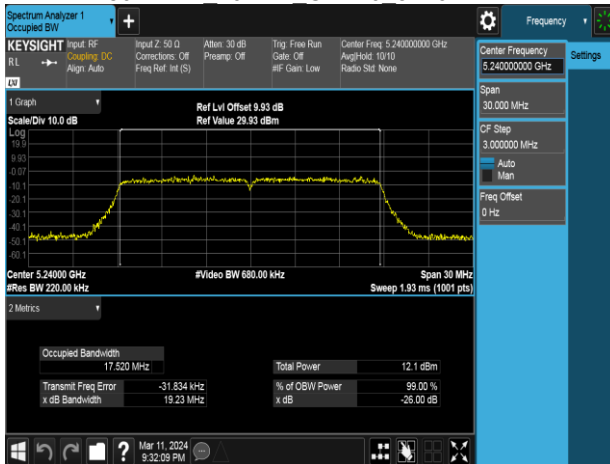
802.11ac 20MHz Chain0 5220MHz



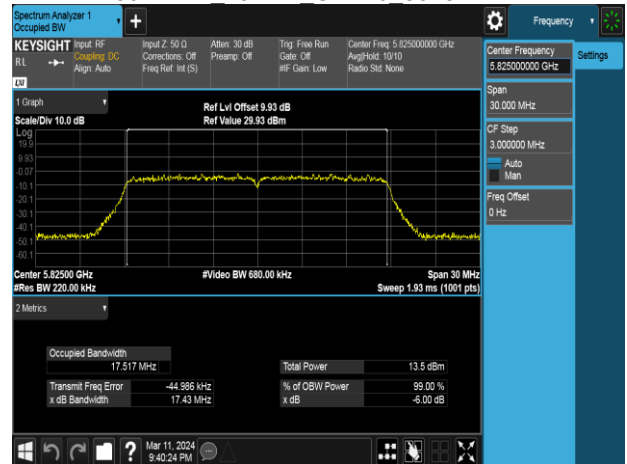
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802.11ac 20MHz Chain0 5240MHz



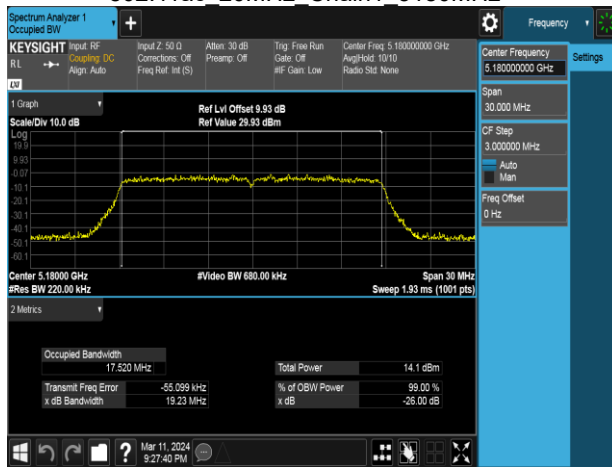
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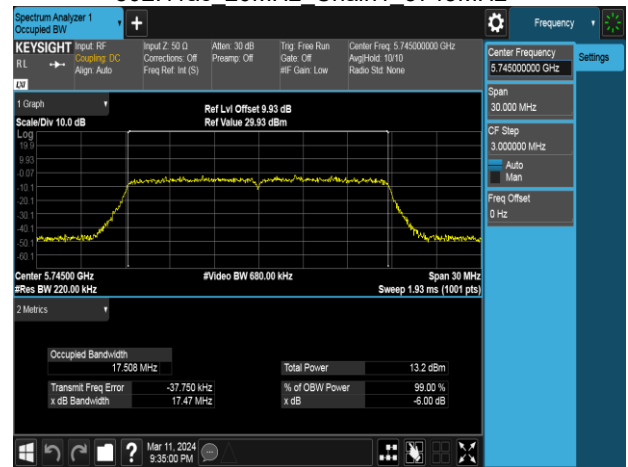


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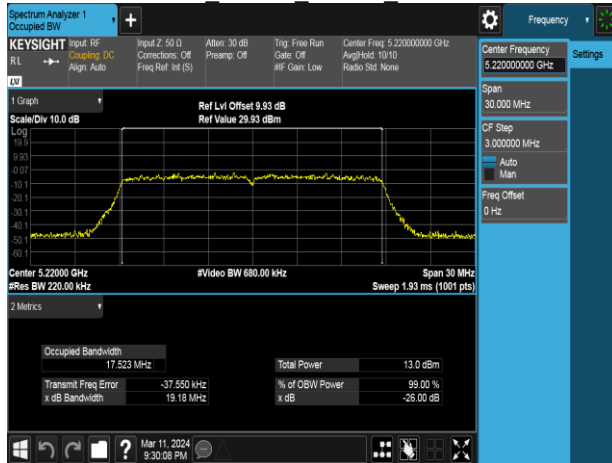
802.11ac 20MHz Chain1 5180MHz



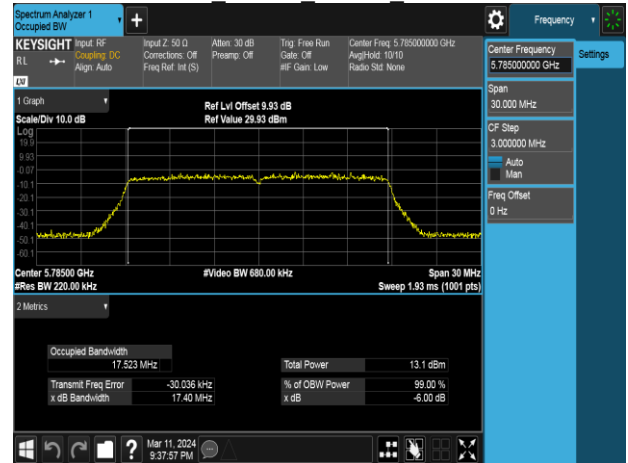
802.11ac 20MHz Chain1 5745MHz



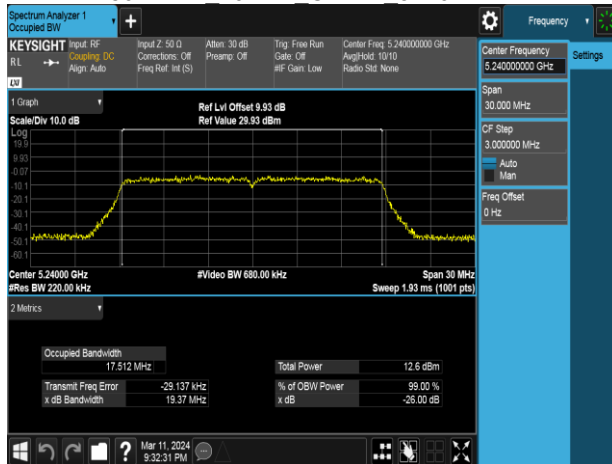
802.11ac 20MHz Chain1 5220MHz



802.11ac 20MHz Chain1 5785MHz



802.11ac 20MHz Chain1 5240MHz



802.11ac 20MHz Chain1 5825MHz

