

Project No: TM-2412000356P
Report No.: TMWK2412004717KR

FCC ID: QPKMBJWCAM5A

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Rev.: 00

RADIO TEST REPORT

FCC 47 CFR PART 15 SUBPART C

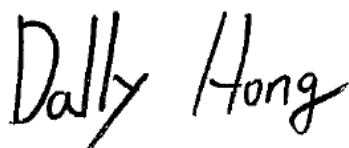
Test Standard	FCC Part 15.247
Product name	SAPPHIRE PULSE(mother board)
Brand Name	Sapphire
Model No.	B650M
Test Result	Pass
Statements of Conformity	Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

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:



Dally Hong
Sr. Engineer

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	April 17, 2025	Initial Issue	ALL	Peggy Tsai

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1. GENERAL INFORMATION

1.1 EUT INFORMATION

Applicant	Sapphire Technology Limited Unit 1910-1919, 19/F., Tower 2, Grand Central Plaza, 138 Shatin Rural Committee Road, Shatin, N.T., HK.
Manufacturer	Sapphire Technology Limited Unit 1910-1919, 19/F., Tower 2, Grand Central Plaza, 138 Shatin Rural Committee Road, Shatin, N.T., HK.
Equipment	SAPPHIRE PULSE(mother board)
Model No.	B650M
Model Discrepancy	N/A
Trade Name	Sapphire
Received Date	December 27, 2024
Date of Test	January 23 ~ February 18, 2025
Power Operation	Powered from AC 120V
HW Version	JAM5MC05 V1.0
FW Version	BIOS AM50D101R3

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.

1.2 EUT CHANNEL INFORMATION

Frequency Range	802.11b/g/n HT 20: 2412MHz ~ 2462MHz 802.11n HT 40: 2422MHz ~ 2452MHz 802.11ax HE 20: 2412MHz ~ 2462MHz 802.11ax HE 40: 2422MHz ~ 2452MHz
Modulation Type	1. IEEE 802.11b mode: CCK 2. IEEE 802.11g mode: OFDM 3. IEEE 802.11n HT 20 MHz mode : OFDM 4. IEEE 802.11n HT 40 MHz mode : OFDM 5. IEEE 802.11ax HE 20 MHz mode : OFDMA 6. IEEE 802.11ax HE 40 MHz mode : OFDMA
Number of channel	1. IEEE 802.11b mode: 11 Channels 2. IEEE 802.11g mode: 11 Channels 3. IEEE 802.11n HT 20 MHz mode : 11 Channels 4. IEEE 802.11n HT 40 MHz mode : 7 Channels 5. IEEE 802.11ax HE 20 MHz mode : 11 Channels 6. IEEE 802.11ax HE 40 MHz mode : 7 Channels

Remark:

Refer as ANSI C63.10: 2013 clause 5.6.1 Table 4 for test channels

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

1.3 ANTENNA INFORMATION

Antenna Type	☐ PIFA ☐ PCB ☒ Dipole ☐ Coils
Antenna Brand / Model Name	South star / 301800008709
Antenna Gain	Gain: 3.83
Antenna Connector	SMA

Notes:

1. The antenna(s) of the EUT are permanently attached and there are no provisions for connection to an external antenna. So the EUT complies with the requirements of §15.203.

1.4 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	+/- 2.21 dB
Channel Bandwidth	+/- 2.79 dB
RF output power (Power Meter + Power sensor)	+/- 0.24 dB
Power Spectral density	+/- 2.74 dB
Conducted Bandedge	+/- 2.74 dB
Conducted Spurious Emission	+/- 2.74 dB
Radiated Emission_9kHz-30MHz	+/- 3.492 dB
Radiated Emission_30MHz-200MHz	+/- 3.62 dB
Radiated Emission_200MHz-1GHz	+/- 3.899 dB
Radiated Emission_1GHz-6GHz	+/- 5.063 dB
Radiated Emission_6GHz-18GHz	+/- 5.122 dB
Radiated Emission_18GHz-26GHz	+/- 3.032 dB
Radiated Emission_26GHz-40GHz	+/- 3.271 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
AC Conduction Room	Ben Yang	-
Radiation	Tony Chao 、 Ben Yang	-
RF Conducted	Jerry Chang	-

Remark: The lab has been recognized as the FCC accredited lab. under the KDB 974614 D01 and is listed in the FCC pubic Access Link (PAL) database, FCC Registration No. :444940, the FCC Designation No.:TW1309

1.6 INSTRUMENT CALIBRATION

Conducted_FCC/IC/NCC (All)					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Cable	Woken	WC12	CC003	2024-06-26	2025-06-25
Cable	Woken	WC12	CC001	2024-06-26	2025-06-25
PXA Signal Analyzer	Keysight	N9030B	MY62291089	2024-10-04	2025-10-03
Power Sensor	Anritsu	MA2411B	1911387	2024-08-30	2025-08-29
Power Sensor	Anritsu	MA2411B	1911386	2024-07-19	2025-07-18
Power Meter	Anritsu	ML2496A	2136002	2024-07-19	2025-07-18
DC Blocks	Marvelous Microwave	MVE6411	MVE-001	2024-08-08	2025-08-07
Attenuator	Marvelous Microwave Inc	MVE2213-10	08	2024-11-07	2025-11-06
Software	Radio Test Software Ver. 21				

Remark:

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

966A_Radiated					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Signal Analyzer	KEYSIGHT	N9010A	MY52220817	2024-03-15	2025-03-14
Active Loop Antenna	SCHWARZBEC K	FMZB 1513-60	1513-60-028	2024-12-11	2025-12-10
Thermo-Hygro Meter	WISEWIND	1206	D07	2024-11-26	2025-11-25
Bi-Log Antenna	Sunol Sciences	JB3	A030105	2024-07-12	2025-07-11
Preamplifier	EMEC	EM330	060609	2024-02-21	2025-02-20
Cable	Huber+Suhner	104PEA	20995+21000+182330	2024-08-07	2025-08-06
Horn Antenna	ETC	MCTD 1209	DRH13M02003	2024-12-20	2025-12-19
Preamplifier	HP	8449B	3008A00965	2024-12-18	2025-12-17
Cable	EMCI	EMC101G	221011+221012+221213	2024-10-11	2025-10-10
Attenuator	Mini-Circuits	BW-S9W5	BWS9W5-09-966A-01	2024-02-07 2025-02-06	2025-02-06 2026-02-05
Site Validation	CCS	966A	N/A	2024-08-03	2025-08-02
High Pass Filters	Titan Microwave	T04H30001800070S01	22011402-4	2024-06-12	2025-06-11
Pre-Amplifier	EMCI	EMC184045SE	980860	2024-12-02	2025-12-01
Horn Antenna	SCHWARZBEC K	BBHA9170	1047	2024-12-06	2025-12-05
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
Software	e3 V9-210616c				

AC Mains Conduction					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
EMI Test Receiver	R&S	ESCI	100064	2024-06-14	2025-06-13
LISN	TESEQ	LN2-16N	22012	2024-02-29	2025-02-27
Cable	Woken	SFL402	185A	2024-07-08	2025-07-07
Software	e3 V6-110812				

Remark:

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

1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

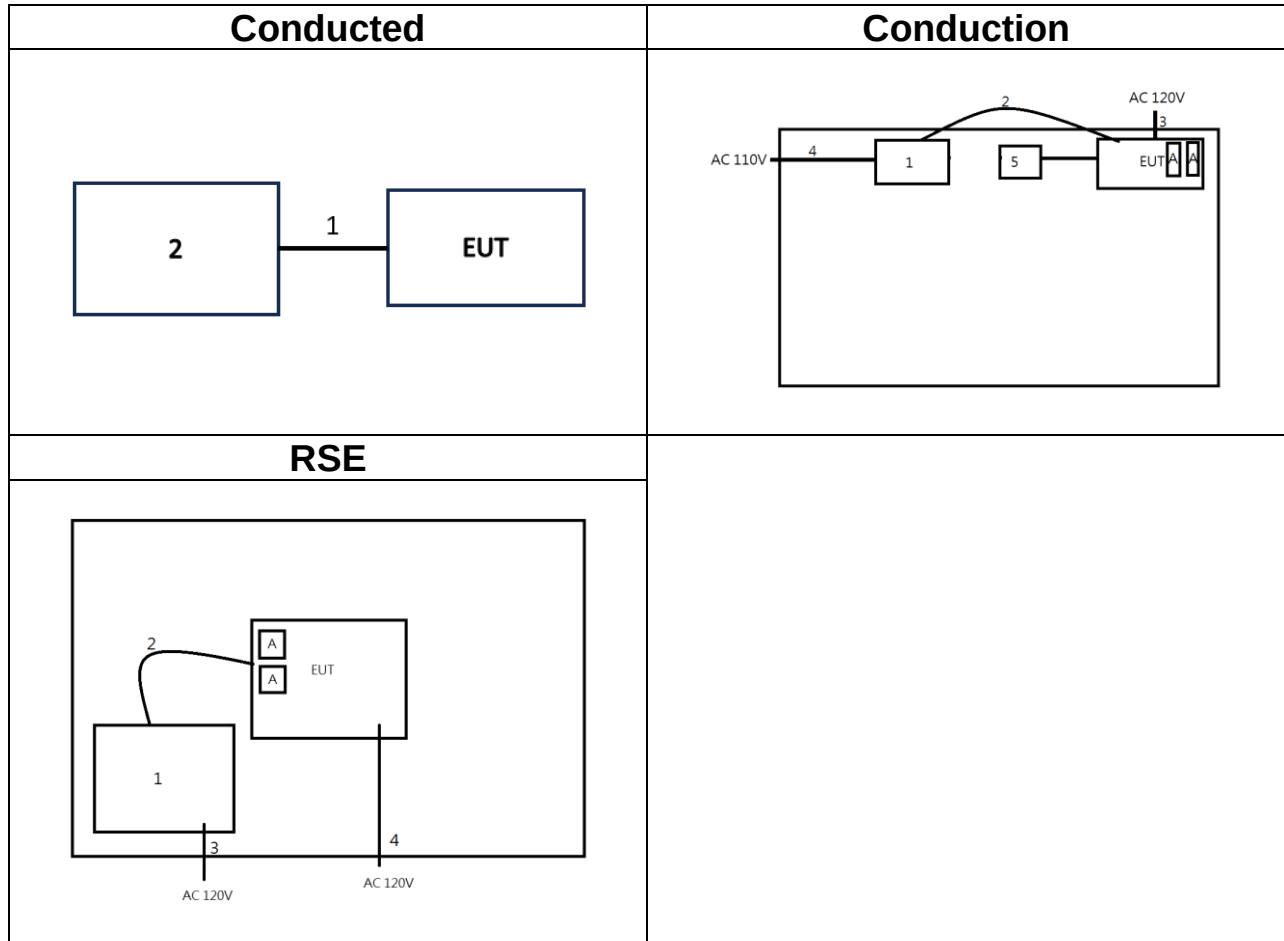
EUT Accessories Equipment						
No.	Equipment	Brand	Model	Series No.	FCC ID	IC
	N/A					

Support Equipment (Conducted)						
No.	Equipment	Brand	Model	Series No.	FCC ID	
1	HDMI Cable	High Speed	E342987	N/A	N/A	
2	LCD Monitor	Lenovo	A20238FT0	N/A	N/A	

Support Equipment (Conduction)						
No.	Equipment	Brand	Model	Series No.	FCC ID	
1	Monitor	Lenovo	A20238FT0	VKPN2606	N/A	
2	HDMI Cable	High Speed	E342987	N/A	N/A	
3	Power Cable	N/A	N/A	N/A	N/A	
4	Power Cable	N/A	N/A	N/A	N/A	
5	Mouse	Lenovo	MO32BOA	4460028	N/A	
A	Dipole Antenna	South star	301800008709	N/A	N/A	

Support Equipment (RSE)						
No.	Equipment	Brand	Model	Series No.	FCC ID	
1	Monitor	Lenovo	A20238FT0	VKPN2606	N/A	
2	HDMI Cable	High Speed	E342987	N/A	N/A	
3	Power Cable	StarTech	5214-PXT101_3-ND	PXT101_3	N/A	
4	Power Cable	StarTech	5214-PXT101_3-ND	PXT101_3	N/A	
A	Dipole Antenna	South star	301800008709	N/A	N/A	

1.8 TEST SET UP DIAGRAM



1.9 TEST PROGRAM

The EUT connection corresponds to the surrounding fixture control board.
This EUT uses MP tool 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 15.247, KDB 558074, KDB 662911.

2. TEST SUMMARY

FCC Standard Section	Report Section	Test Item	Result
15.203	1.3	Antenna Requirement	Pass
15.207(a)	4.1	AC Conducted Emission	Pass
15.247(a)(2)	4.2	6 dB Bandwidth	Pass
-	4.2	Occupied Bandwidth (99%)	Pass
15.247(b)(3)	4.3	Output Power Measurement	Pass
15.247(e)	4.4	Power Spectral Density	Pass
15.247(d)	4.5	Conducted Band Edge	Pass
15.247(d)	4.5	Conducted Emission	Pass
15.247(d) 15.205, 15.209	4.6	Radiation Band Edge	Pass
15.247(d) 15.205, 15.209	4.6	Radiation Spurious Emission	Pass

3. DESCRIPTION OF TEST MODES

3.1 THE WORST MODE OF OPERATING CONDITION

Operation mode	IEEE 802.11b mode :1Mbps IEEE 802.11g mode :6Mbps IEEE 802.11n HT20 mode :MCS0 IEEE 802.11n HT40 mode :MCS0 IEEE 802.11ax HE20 mode :MCS0 IEEE 802.11ax HE40 mode :MCS0
Test Channel Frequencies	IEEE 802.11b mode : 1. Lowest Channel : 2412MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2462MHz IEEE 802.11g mode : 1. Lowest Channel : 2412MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2462MHz IEEE 802.11n HT20 mode : 1. Lowest Channel : 2412MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2462MHz IEEE 802.11n HT40 mode : 1. Lowest Channel : 2422MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2452MHz IEEE 802.11ax HE20 mode : 1. Lowest Channel : 2412MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2462MHz IEEE 802.11ax HE40 mode : 1. Lowest Channel : 2422MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2452MHz
Operation Transmitter	IEEE 802.11b mode :1T1R IEEE 802.11g mode :1T1R IEEE 802.11n HT20 mode : 2T2R IEEE 802.11n HT40 mode : 2T2R IEEE 802.11ax HE20 mode : 2T2R IEEE 802.11ax HE40 mode : 2T2R

Remark:

1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.

3.2 THE WORST MODE OF MEASUREMENT

AC Power Line Conduction Emission	
Test Condition	AC Power line conduction emission for line and neutral
Power supply Mode	Mode 1: EUT Power by AC 120V
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 AC(120V)
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 AC(120V)
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 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(Z-Plane) were recorded in this report

3.3 EUT DUTY CYCLE

Temperature: 19.5 ~ 23.7°C

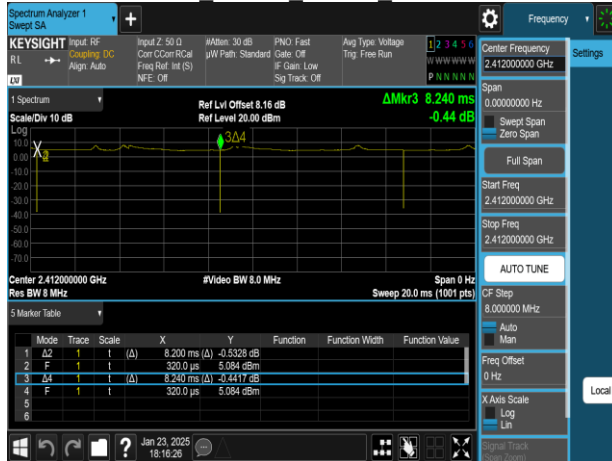
Test date: January 23 ~
February 14, 2025

Humidity: 48 ~ 59% RH

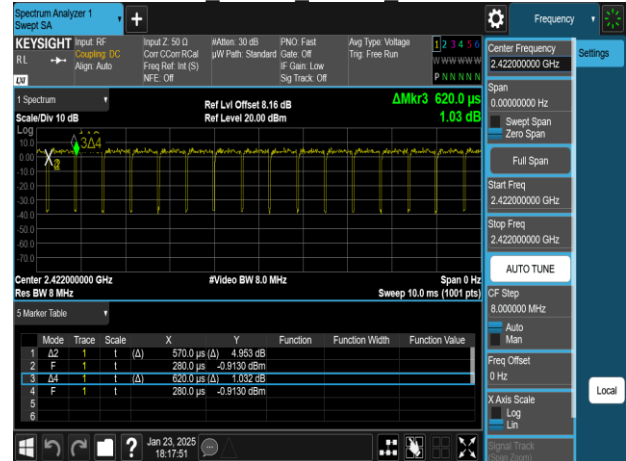
Tested by: Jerry Chang

Mode		Duty Cycle (%) = Ton / (Ton+Toff)	Duty Factor (dB) =10*log (1/Duty Cycle)	1/T (kHz)	VBW setting (kHz)
802.11b		99.51	0.02	0.12	0.01
802.11g		96.45	0.16	0.74	1.00
802.11n_20		95.83	0.18	0.87	1.00
802.11n_40		91.94	0.36	1.75	2.00
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	95.19	0.21	1.01	2.00
802.11ax_40	Full	91.23	0.40	1.92	2.00

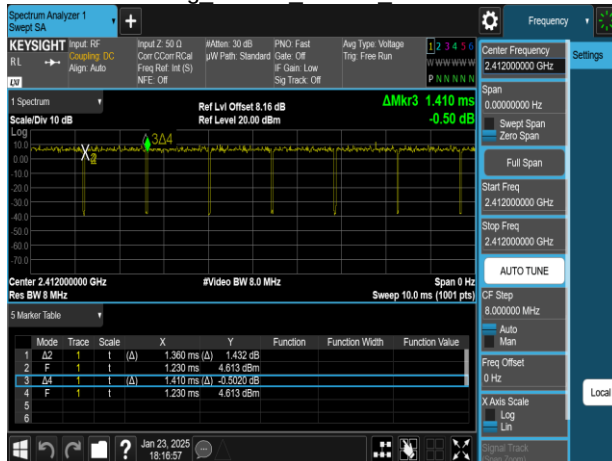
802.11b 20MHz Chain0 2412MHz



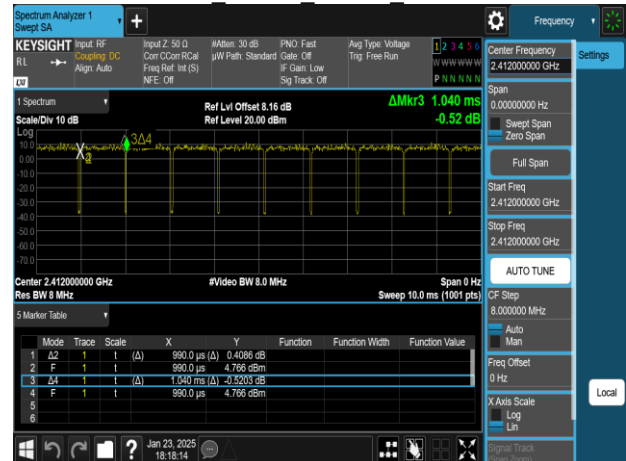
802.11n 40MHz Chain0 2422MHz



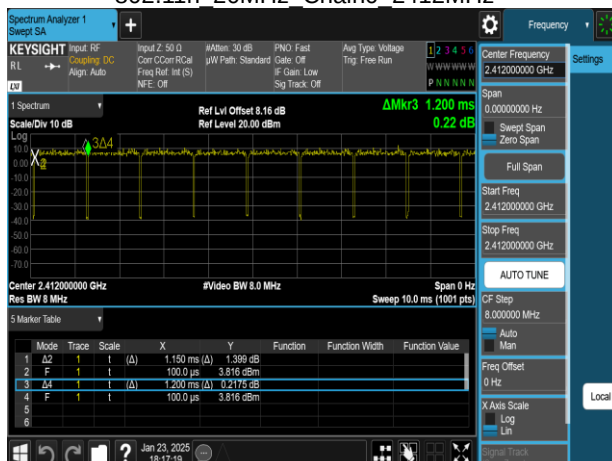
802.11g 20MHz Chain0 2412MHz



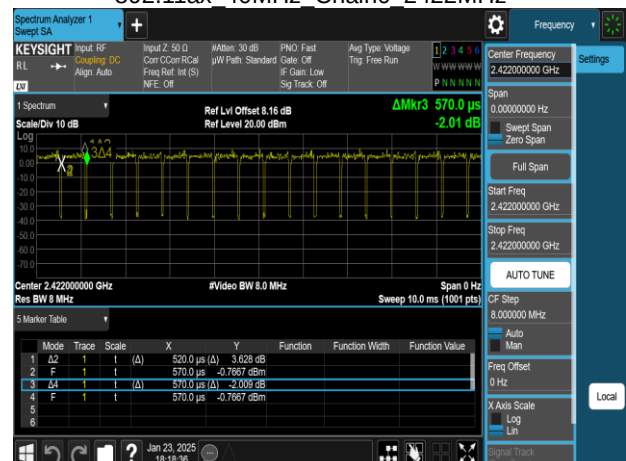
802.11ax 20MHz Chain0 2412MHz



802.11n 20MHz Chain0 2412MHz



802.11ax 40MHz Chain0 2422MHz



4. TEST RESULT

4.1 AC POWER LINE CONDUCTED EMISSION

4.1.1 Test Limit

According to §15.207(a)(2),

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

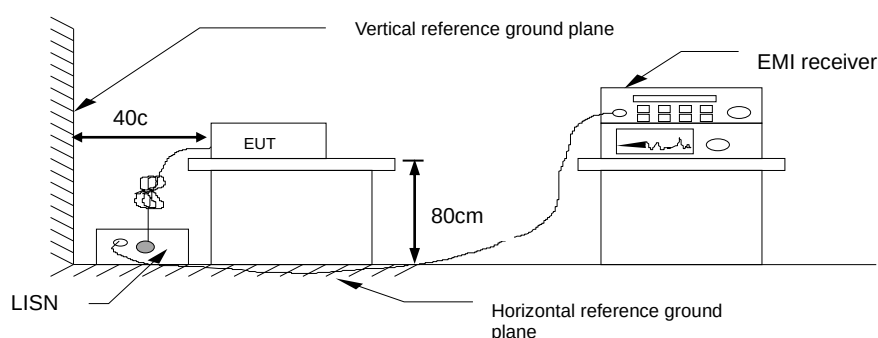
* Decreases with the logarithm of the frequency.

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.

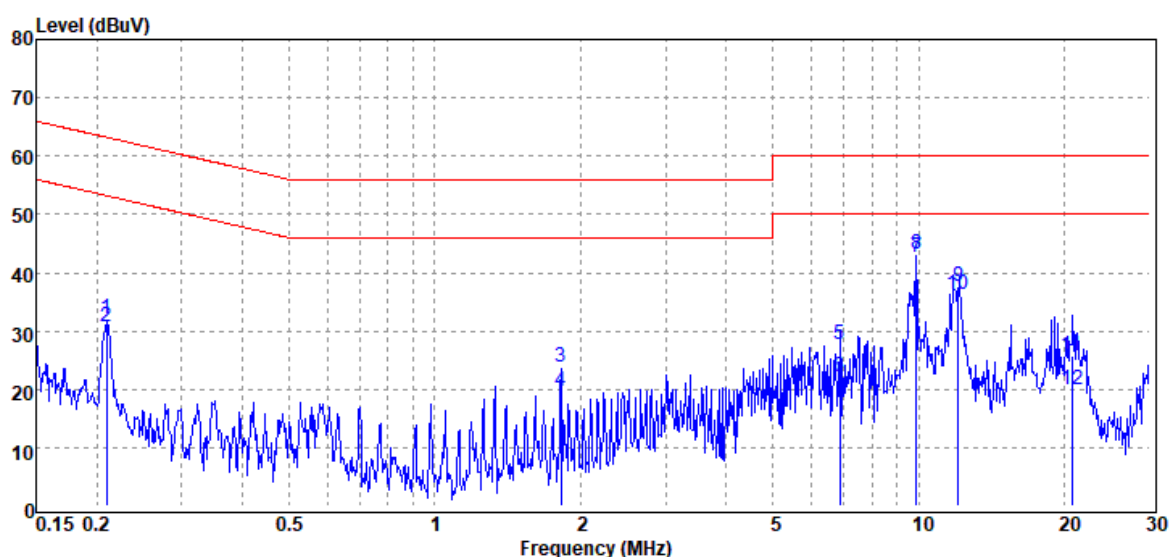
4.1.3 Test Setup



4.1.4 Test Result

Project No : TM-2412000356P
Operation Mode : 2.4G
Test Chamber : Conduction
Probe : LINE
Note :

Test Date : 2025-02-12
Temp./Humi. : 23.4°C / 54%
Engineer : Ben.Yang
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
0.210	QP	31.83	0.39	32.22	63.21	-30.99
0.210	Average	30.27	0.39	30.66	53.21	-22.55
1.820	QP	23.53	0.18	23.71	56.00	-32.29
1.820	Average	19.57	0.18	19.75	46.00	-26.25
6.863	QP	27.27	0.31	27.58	60.00	-32.42
6.863	Average	21.78	0.31	22.09	50.00	-27.91
9.884	QP	42.72	0.36	43.08	60.00	-16.92
9.884	Average	42.40	0.36	42.76	50.00	-7.24
12.080	QP	37.25	0.39	37.64	60.00	-22.36
12.080	Average	35.93	0.39	36.32	50.00	-13.68
20.736	QP	25.13	0.49	25.62	60.00	-34.38
20.736	Average	19.38	0.49	19.87	50.00	-30.13

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

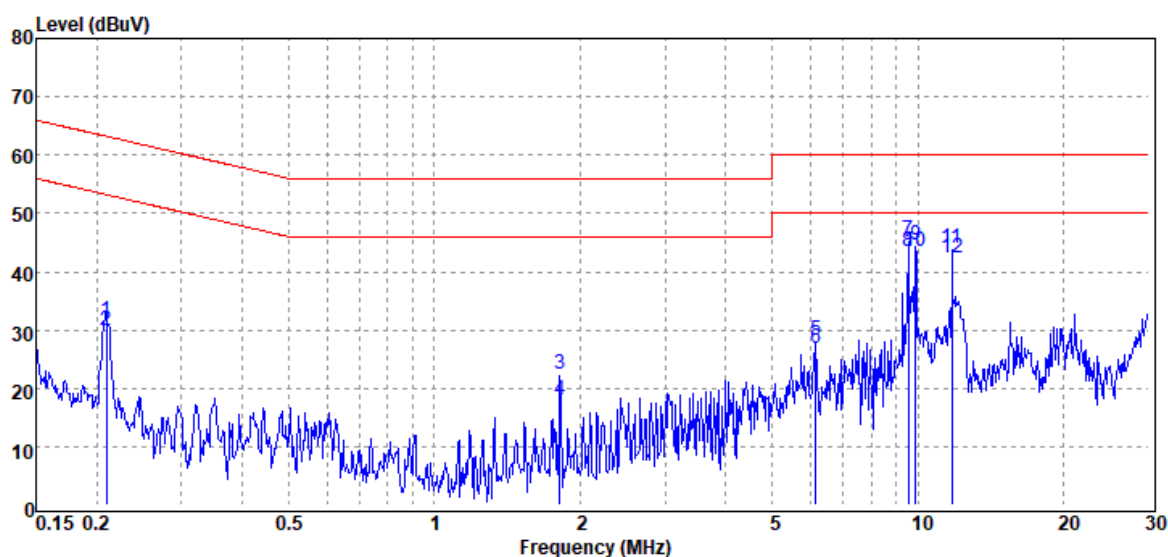
Note: 2. Margin= Actual FS - Limit

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Project No : TM-2412000356P
Operation Mode : 2.4G
Test Chamber : Conduction
Probe : NEUTRAL
Note :

Test Date : 2025-02-12
Temp./Humi. : 23.4°C / 54%
Engineer : Ben.Yang
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
0.210	QP	31.33	0.36	31.69	63.22	-31.53
0.210	Average	29.48	0.36	29.84	53.22	-23.38
1.819	QP	22.22	0.16	22.38	56.00	-33.62
1.819	Average	17.94	0.16	18.10	46.00	-27.90
6.150	QP	28.09	0.27	28.36	60.00	-31.64
6.150	Average	26.50	0.27	26.77	50.00	-23.23
9.555	QP	45.13	0.34	45.47	60.00	-14.53
9.555	Average	43.08	0.34	43.42	50.00	-6.58
9.885	QP	44.21	0.34	44.55	60.00	-15.45
9.885	Average	43.05	0.34	43.39	50.00	-6.61
11.749	QP	43.53	0.36	43.89	60.00	-16.11
11.749	Average	42.06	0.36	42.42	50.00	-7.58

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

Note: 2. Margin= Actual FS - Limit

4.2 6dB BANDWIDTH AND OCCUPIED BANDWIDTH (99%)

4.2.1 Test Limit

According to §15.247(a)(2),

6 dB Bandwidth :

Limit	Shall be at least 500kHz
-------	--------------------------

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

4.2.2 Test Procedure

Test method Refer as KDB 558074 D01 and ANSI C63.10: 2013 clause 6.9.2,

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 100kHz, VBW = 300kHz and Detector = Peak, to measurement 6 dB Bandwidth.
4. SA set RBW = 1% ~ 5% OBW, VBW = three times the RBW and Detector = Peak, to measurement 99% Bandwidth
5. Measure and record the result of 6 dB Bandwidth and 99% Bandwidth. in the test report.

4.2.3 Test Setup

Refer to section 1.8.

4.2.4 Test Result

Temperature: 19.5 ~ 23.7°C

Test date: January 23 ~
February 14, 2025

Humidity: 48 ~ 59% RH

Tested by: Jerry Chang

802.11b Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	11100	≥ 500	PASS
2437	10150	≥ 500	PASS
2462	10150	≥ 500	PASS

802.11g Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	16330	≥ 500	PASS
2437	16340	≥ 500	PASS
2462	16340	≥ 500	PASS

802.11n_HT_20M Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	16790	≥ 500	PASS
2437	16380	≥ 500	PASS
2462	17150	≥ 500	PASS

802.11n_HT_20M Ch1

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	17140	≥ 500	PASS
2437	17380	≥ 500	PASS
2462	17150	≥ 500	PASS

802.11n_HT_40M Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2422	35120	≥ 500	PASS
2437	35800	≥ 500	PASS
2452	35800	≥ 500	PASS

802.11n_HT_40M Ch1

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2422	30350	≥ 500	PASS
2437	36270	≥ 500	PASS
2452	36240	≥ 500	PASS

802.11ax_HE_20M Ch0

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2412	full	15080	≥ 500	PASS
2437	full	18520	≥ 500	PASS
2462	full	18970	≥ 500	PASS

802.11ax_HE_20M Ch1

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2412	full	13900	≥ 500	PASS
2437	full	18960	≥ 500	PASS
2462	full	17150	≥ 500	PASS

802.11ax_HE_40M Ch0

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2422	full	35100	≥ 500	PASS
2437	full	36560	≥ 500	PASS
2452	full	38020	≥ 500	PASS

802.11ax_HE_40M Ch1

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2422	full	31160	≥ 500	PASS
2437	full	38010	≥ 500	PASS
2452	full	36330	≥ 500	PASS

BANDWIDTH 99%

802.11b Ch0

Freq. (MHz)	99% BW (MHz)
2412	14.914
2437	14.927
2462	14.939

802.11g Ch0

Freq. (MHz)	99% BW (MHz)
2412	16.39
2437	16.393
2462	16.395

802.11n_HT20M Ch0

Freq. (MHz)	99% BW (MHz)
2412	17.496
2437	17.485
2462	17.492

802.11n_HT20M Ch1

Freq. (MHz)	99% BW (MHz)
2412	17.495
2437	17.504
2462	17.501

802.11n_HT40M Ch0

Freq. (MHz)	99% BW (MHz)
2422	35.622
2437	35.887
2452	36.036

802.11n_HT40M Ch1

Freq. (MHz)	99% BW (MHz)
2422	36.153
2437	36.157
2452	36.171

802.11ax_HE20M Ch0

Freq. (MHz)	RU Config	99% BW (MHz)
2412	full	18.538
2437	full	18.865
2462	full	18.879

802.11ax_HE20M Ch1

Freq. (MHz)	RU Config	99% BW (MHz)
2412	full	18.51
2437	full	18.887
2462	full	18.862

802.11ax_HE40M Ch0

Freq. (MHz)	RU Config	99% BW (MHz)
2422	full	37.563
2437	full	37.428
2452	full	37.717

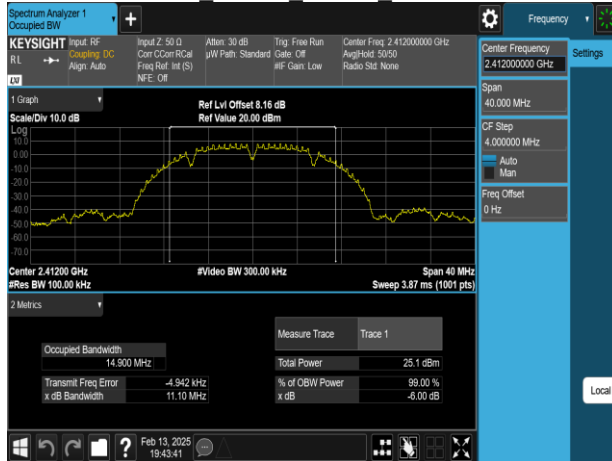
802.11ax_HE40M Ch1

Freq. (MHz)	RU Config	99% BW (MHz)
2422	full	37.695
2437	full	37.723
2452	full	37.503

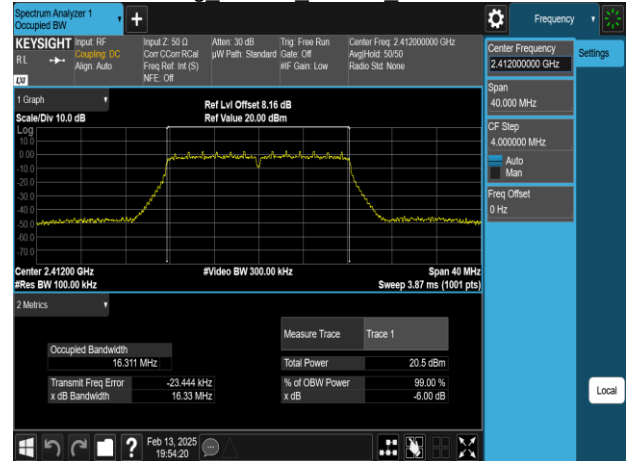
Test Data

6dB BANDWIDTH

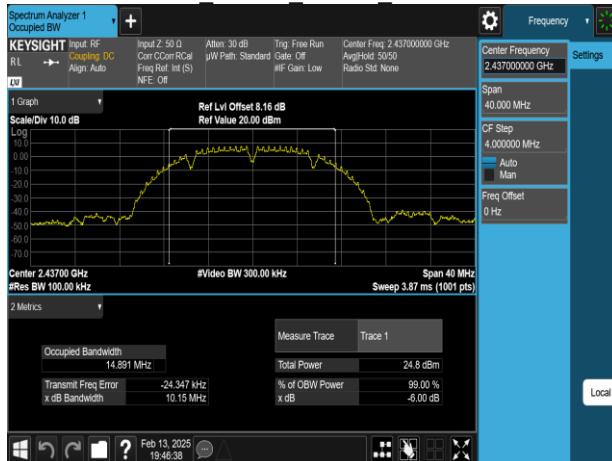
802.11b 20MHz Chain0 2412MHz



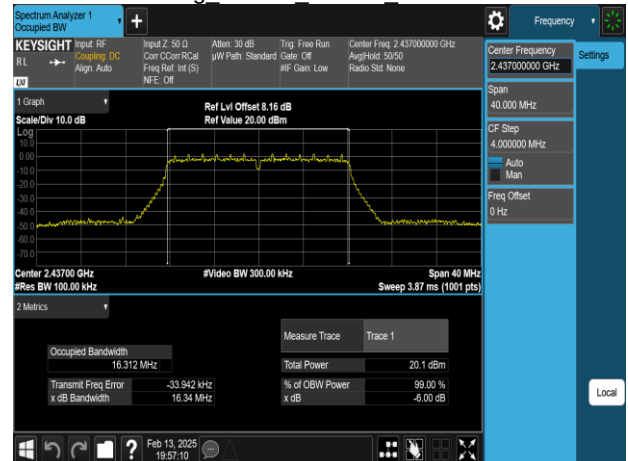
802.11g 20MHz Chain0 2412MHz



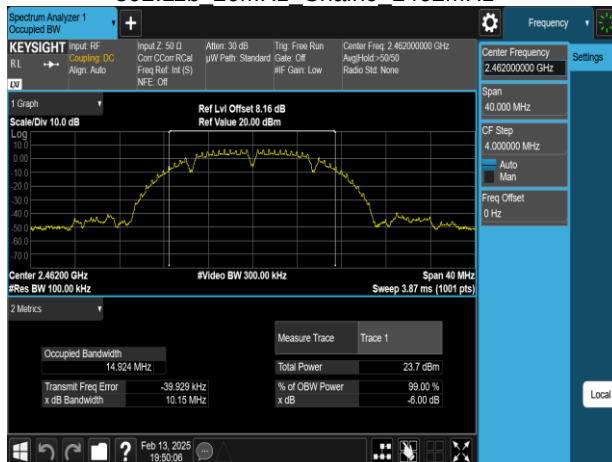
802.11b 20MHz Chain0 2437MHz



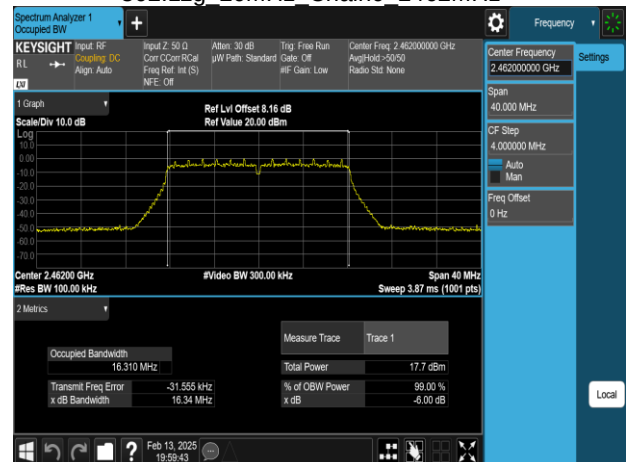
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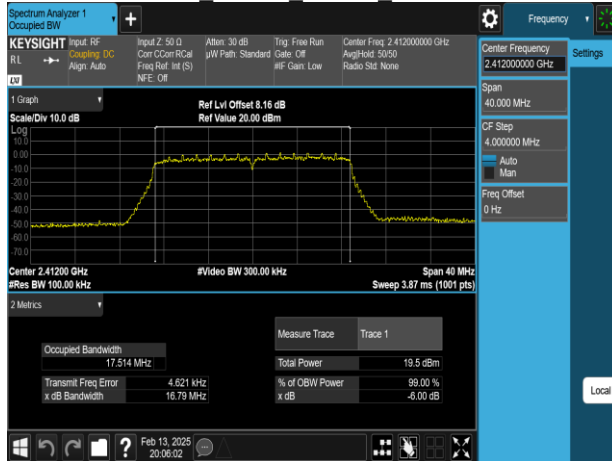
802.11b 20MHz Chain0 2462MHz



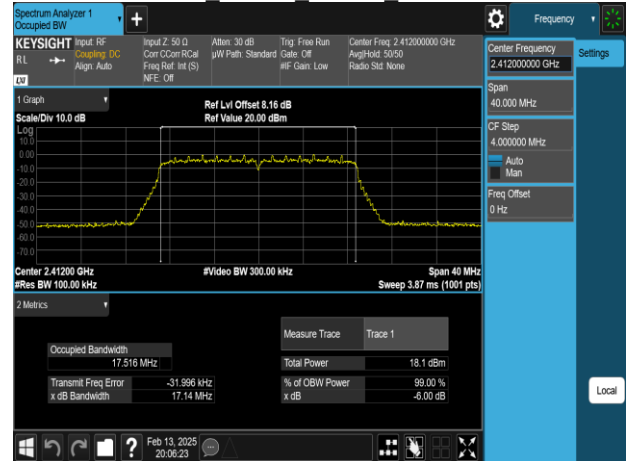
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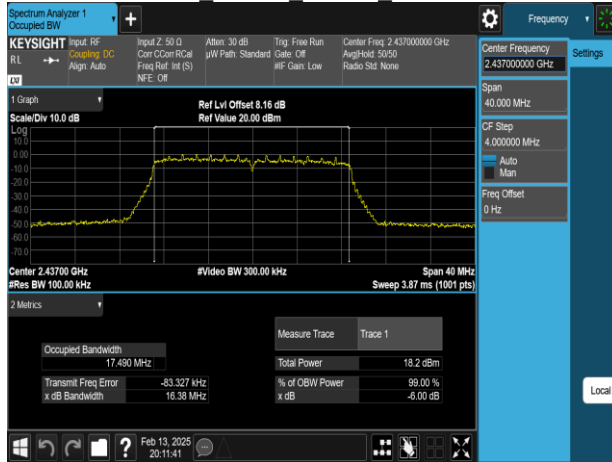
802.11n 20MHz Chain0 2412MHz



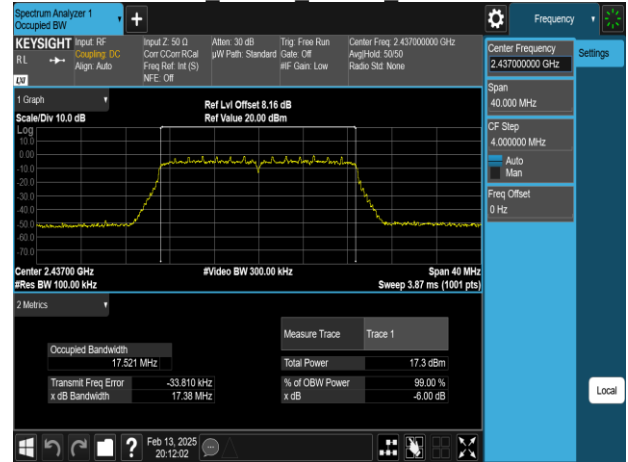
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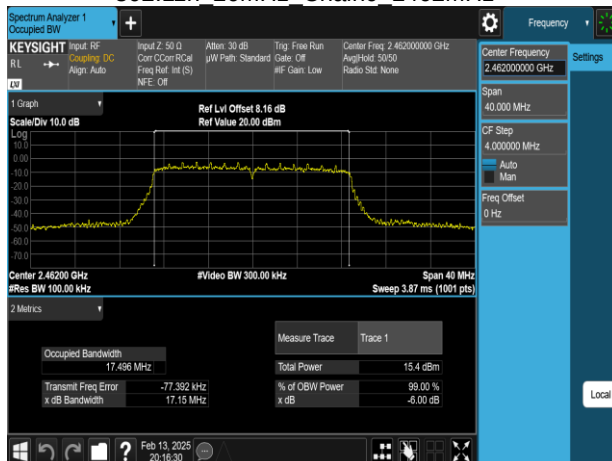
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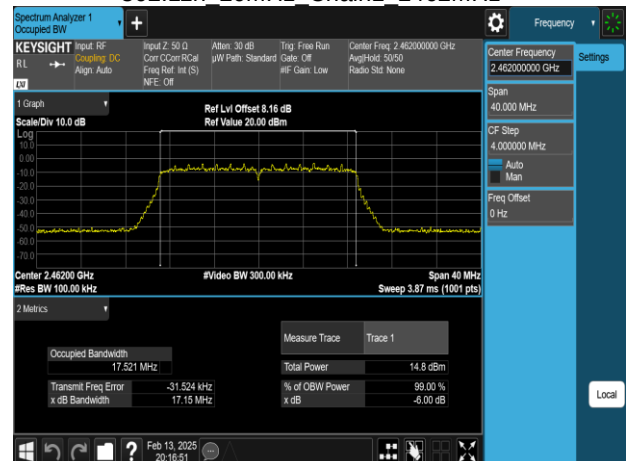
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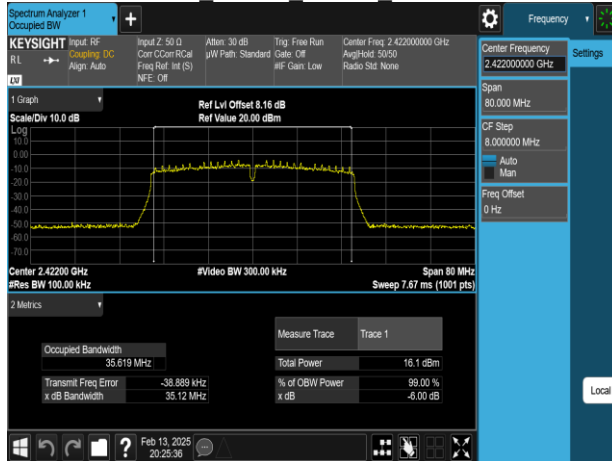
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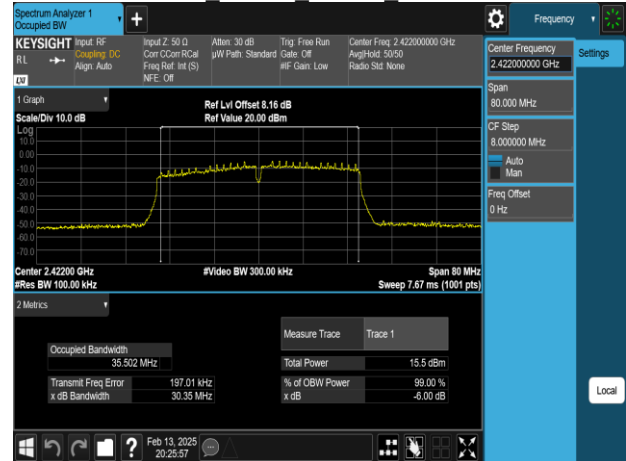
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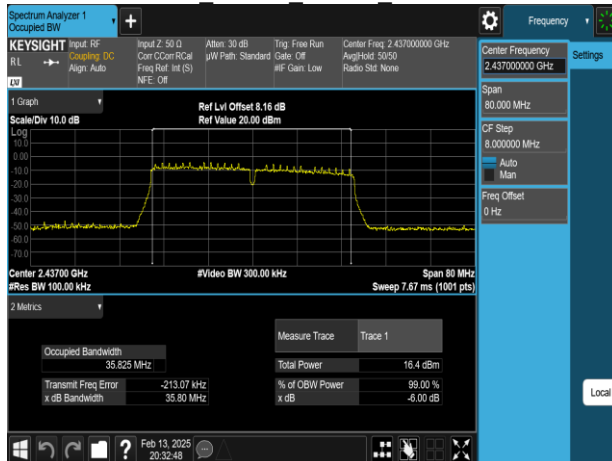
802.11n 40MHz Chain0 2422MHz



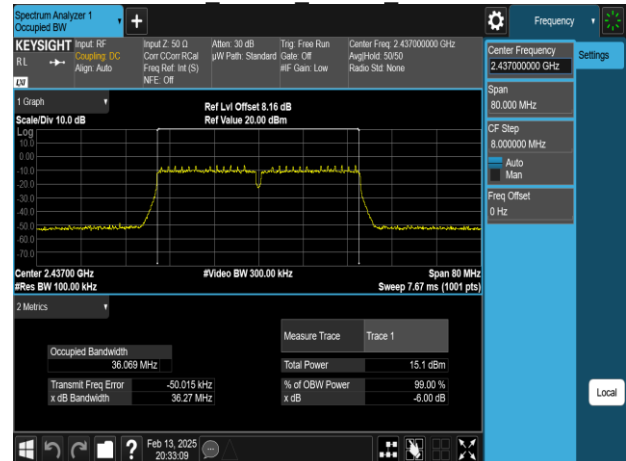
802.11n 40MHz Chain1 2422MHz



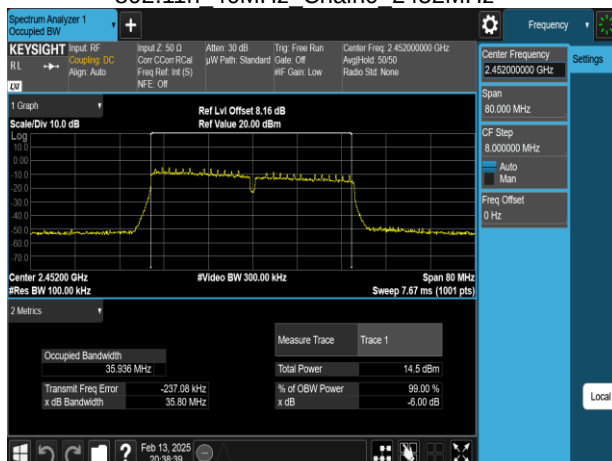
802.11n 40MHz Chain0 2437MHz



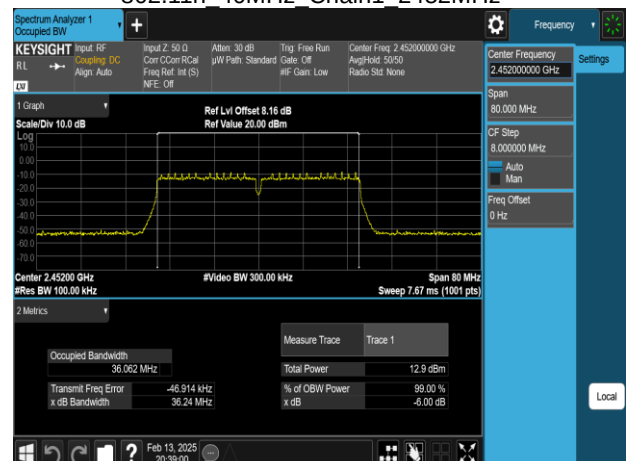
802.11n 40MHz Chain1 2437MHz



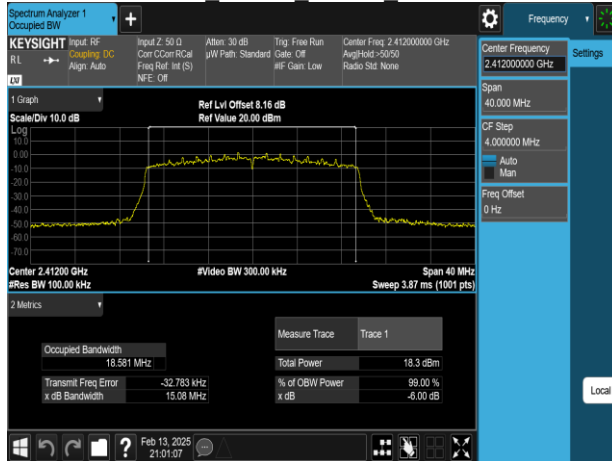
802.11n 40MHz Chain0 2452MHz



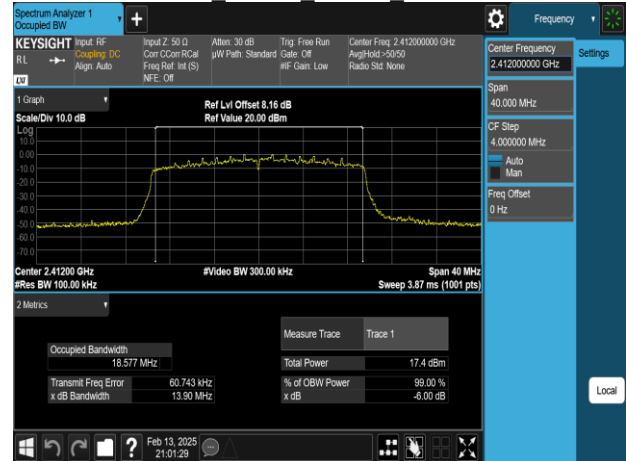
802.11n 40MHz Chain1 2452MHz



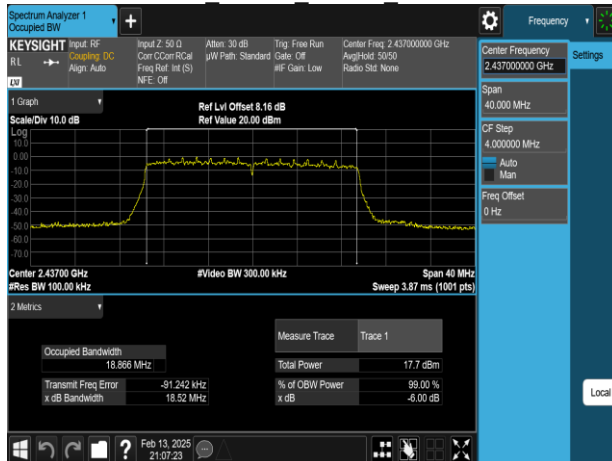
802.11ax 20MHz Chain0 2412MHz



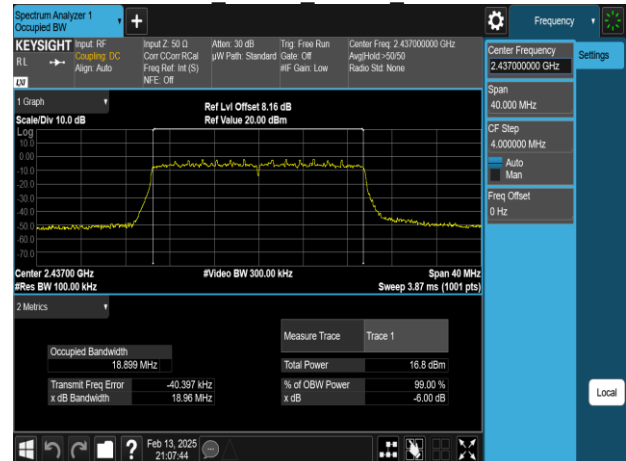
802.11ax 20MHz Chain1 2412MHz



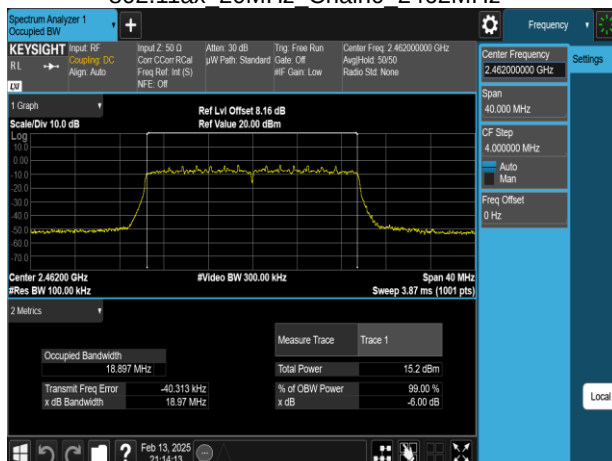
802.11ax 20MHz Chain0 2437MHz



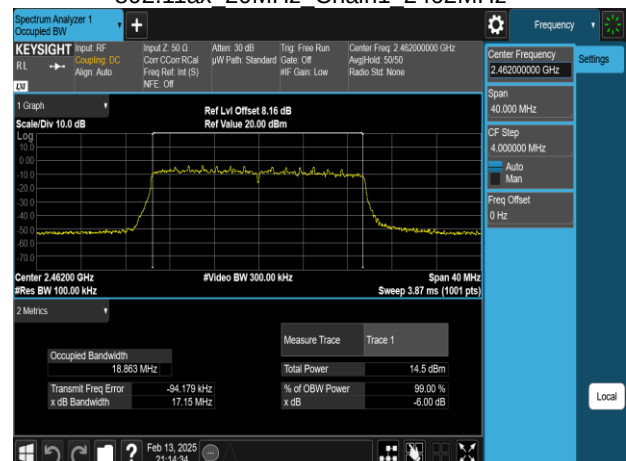
802.11ax 20MHz Chain1 2437MHz



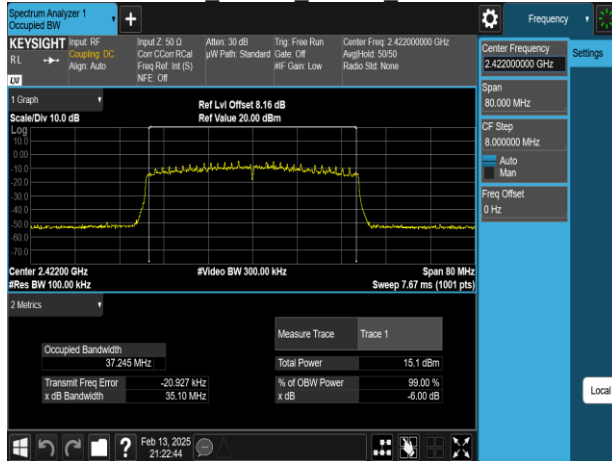
802.11ax 20MHz Chain0 2462MHz



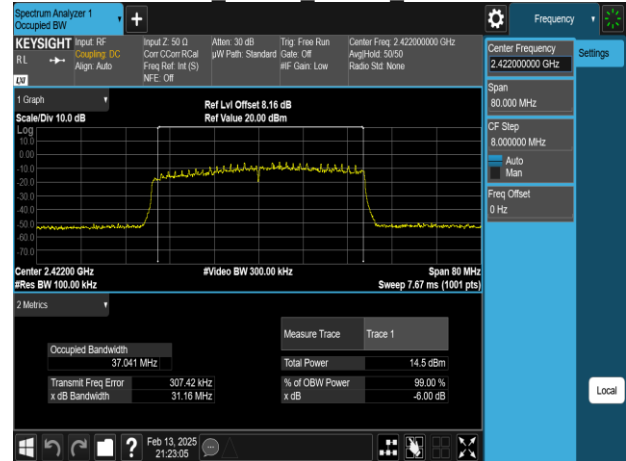
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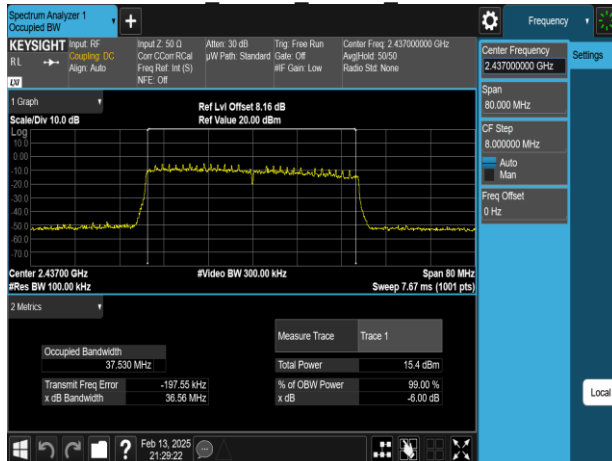
802.11ax 40MHz Chain0 2422MHz



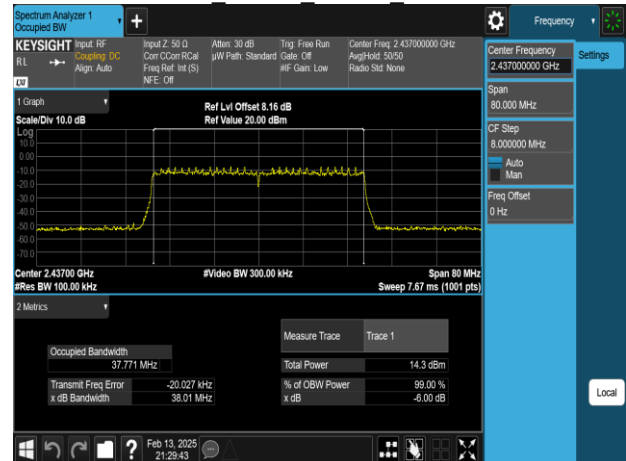
802.11ax 40MHz Chain1 2422MHz



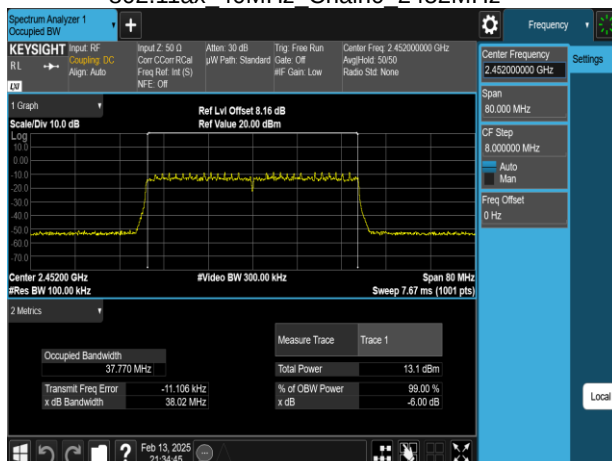
802.11ax 40MHz Chain0 2437MHz



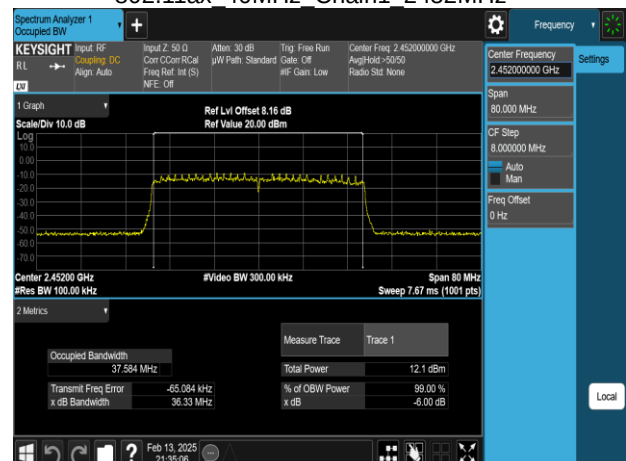
802.11ax 40MHz Chain1 2437MHz



802.11ax 40MHz Chain0 2452MHz



802.11ax 40MHz Chain1 2452MHz

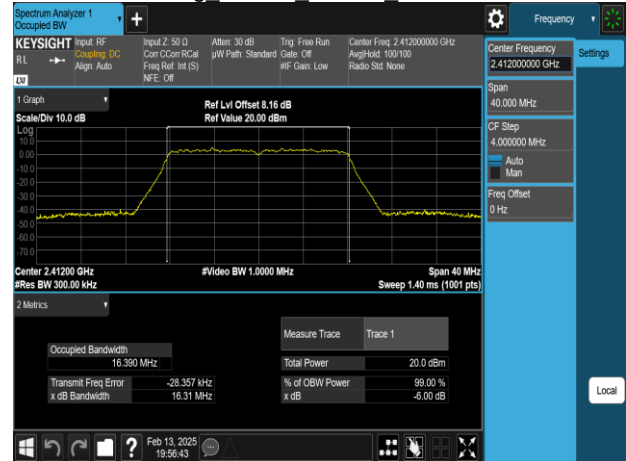


BANDWIDTH 99%

802.11b 20MHz Chain0 2412MHz



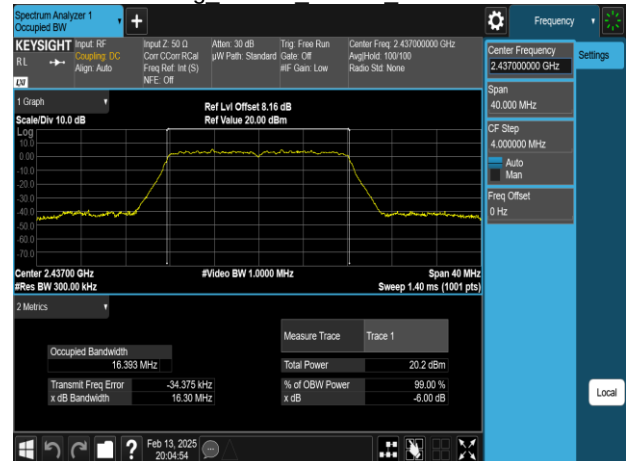
802.11g 20MHz Chain0 2412MHz



802.11b 20MHz Chain0 2437MHz



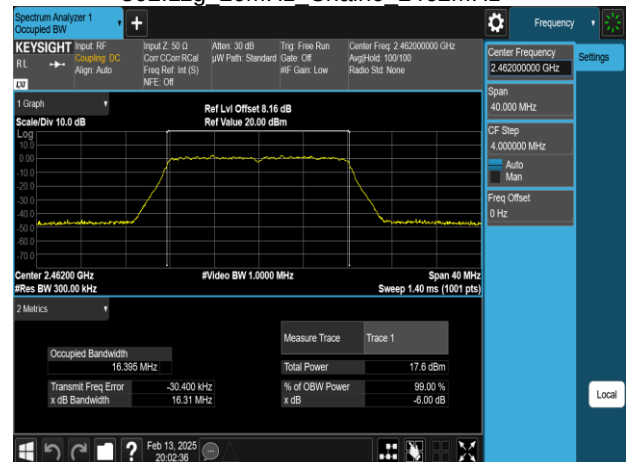
802.11g 20MHz Chain0 2437MHz



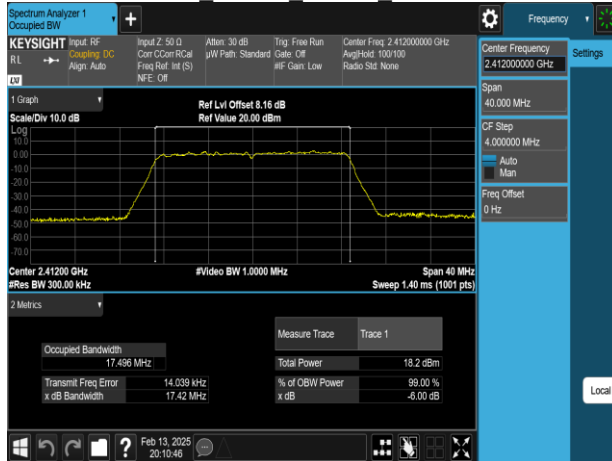
802.11b 20MHz Chain0 2462MHz



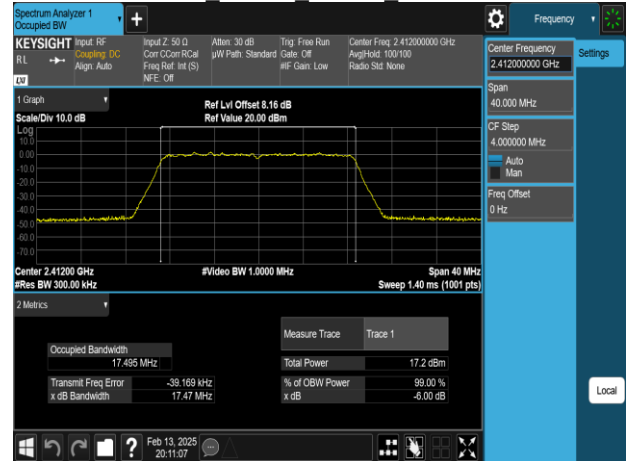
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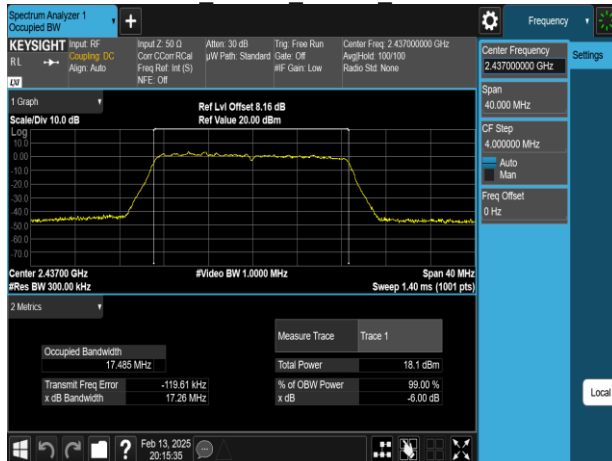
802.11n 20MHz Chain0 2412MHz



802.11n 20MHz Chain1 2412MHz



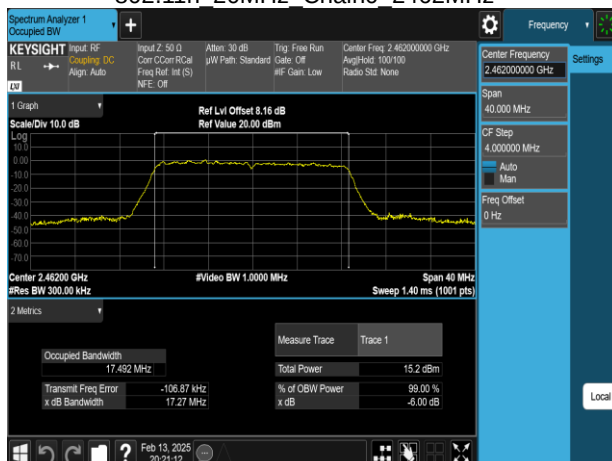
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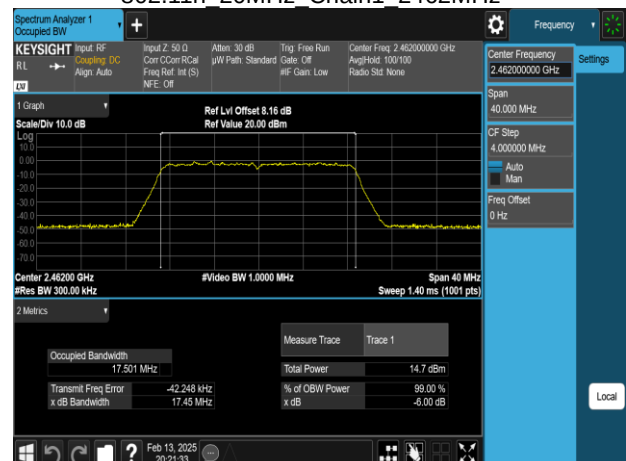
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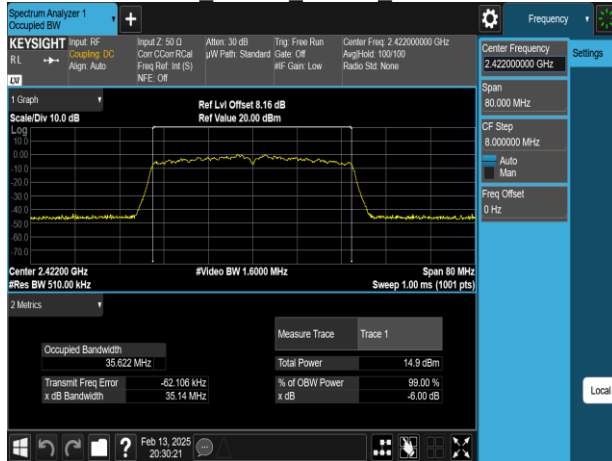
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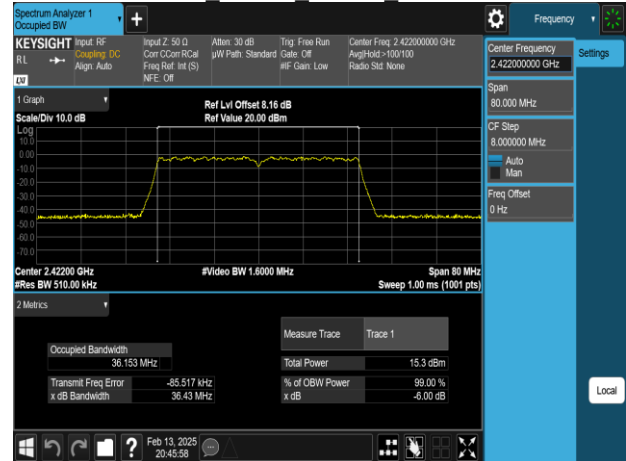
802.11n 20MHz Chain1 2462MHz



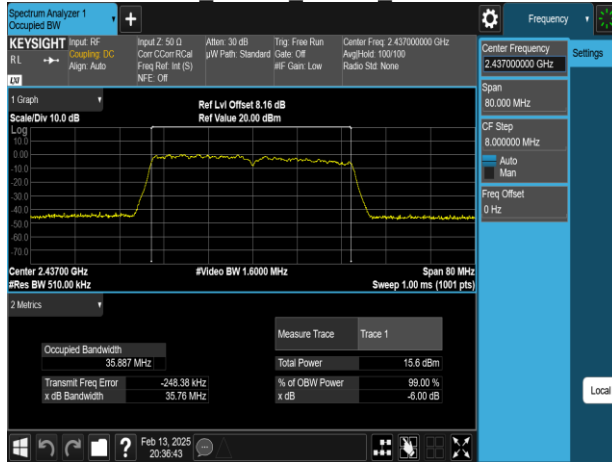
802.11n 40MHz Chain0 2422MHz



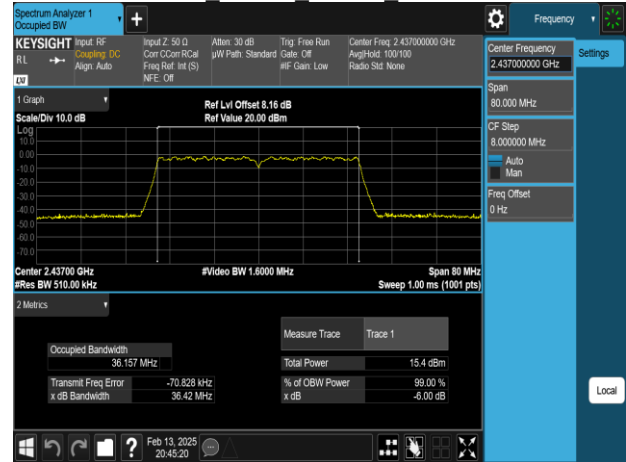
802.11n 40MHz Chain1 2422MHz



802.11n 40MHz Chain0 2437MHz



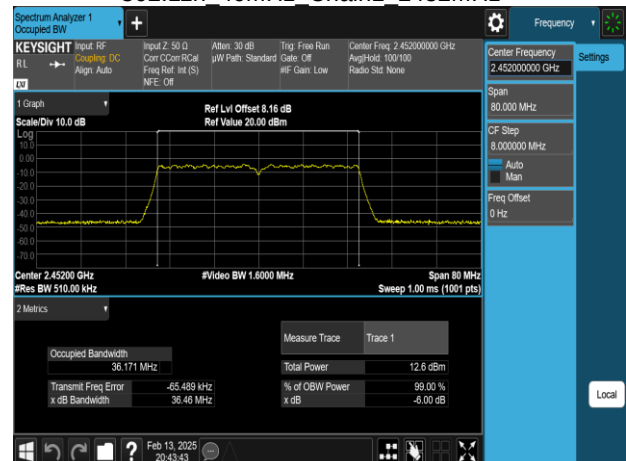
802.11n 40MHz Chain1 2437MHz



802.11n 40MHz Chain0 2452MHz



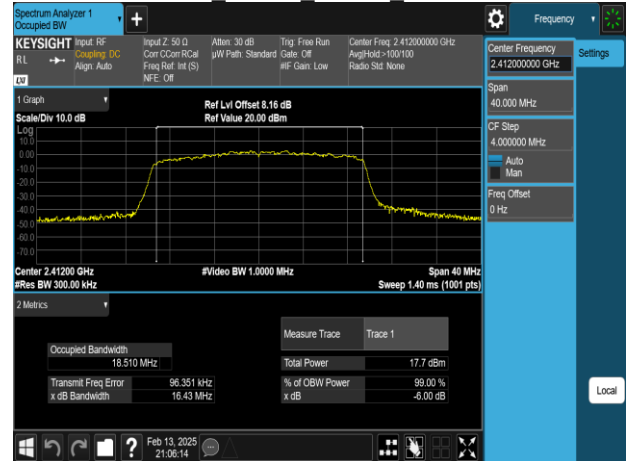
802.11n 40MHz Chain1 2452MHz



802.11ax 20MHz Chain0 2412MHz



802.11ax 20MHz Chain1 2412MHz



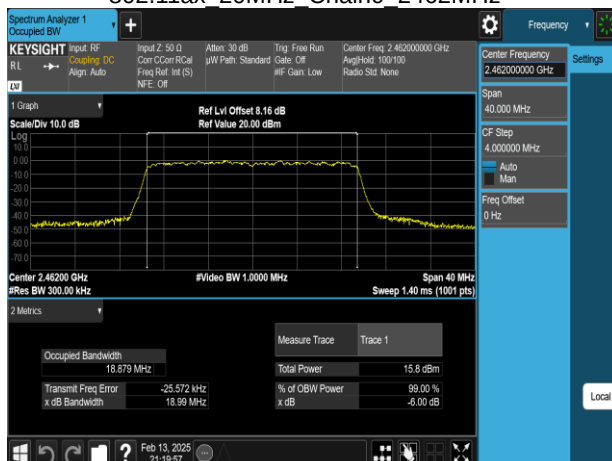
802.11ax 20MHz Chain0 2437MHz



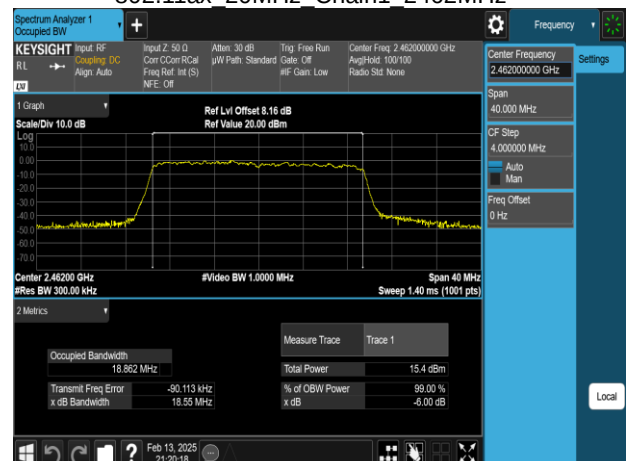
802.11ax 20MHz Chain1 2437MHz



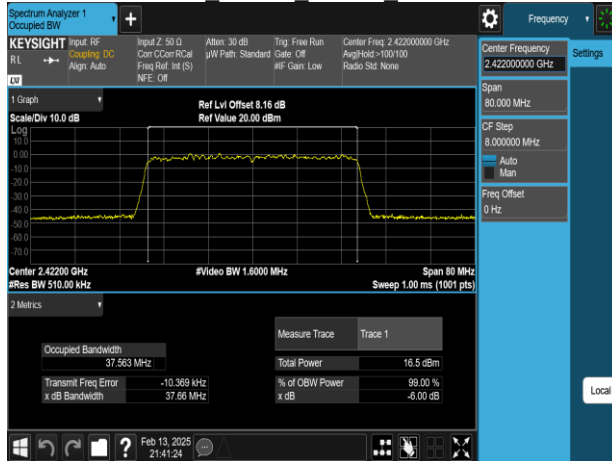
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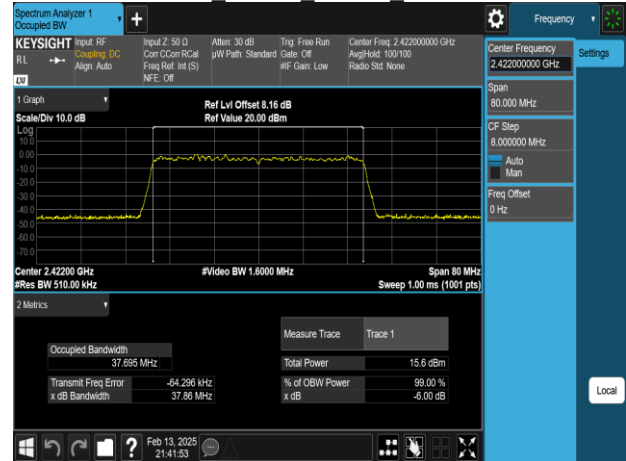
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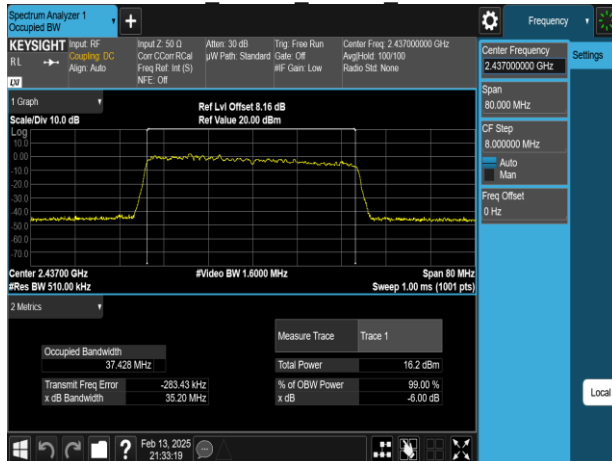
802.11ax 40MHz Chain0 2422MHz



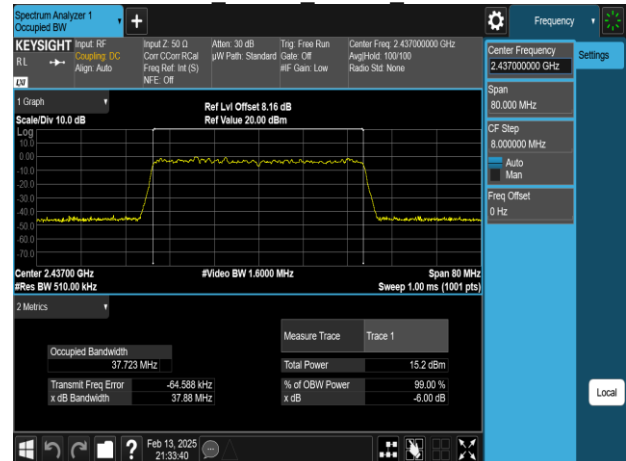
802.11ax 40MHz Chain1 2422MHz



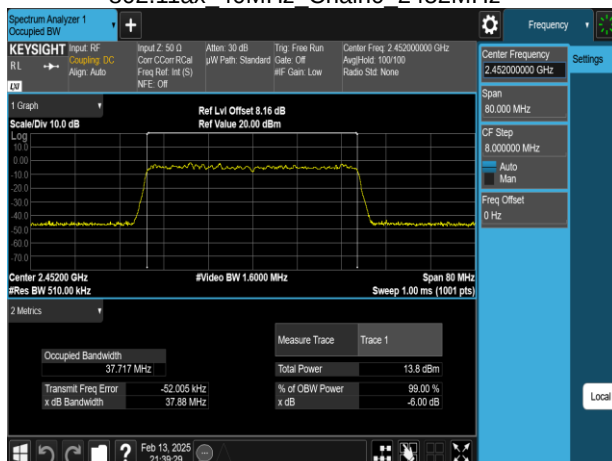
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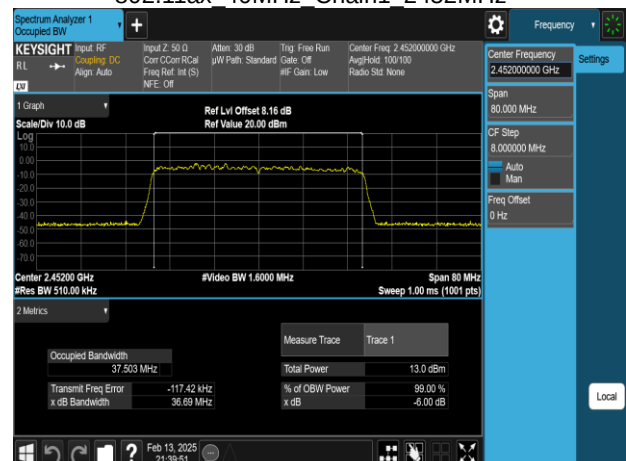
802.11ax 40MHz Chain1 2437MHz



802.11ax 40MHz Chain0 2452MHz



802.11ax 40MHz Chain1 2452MHz



4.3 OUTPUT POWER MEASUREMENT

4.3.1 Test Limit

According to §15.247(b),

FCC

Peak output power :

For systems using digital modulation in the 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt(30 dBm) and the e.i.r.p. shall not exceed 4Watt(36 dBm), base on the use of antennas with directional gain not exceed 6 dBi If transmitting antennas of directional gain greater than 6dBi are used the peak output power the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

Limit	☒ Antenna not exceed 6 dBi : 30dBm ☐ Antenna with DG greater than 6 dBi : [Limit = 30 – (DG – 6)] ☐ Point-to-point operation :
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Average output power : For reporting purposes only.

4.3.2 Test Procedure

Test method Refer as KDB 558074 D01.

1. The EUT RF output connected to the power meter by RF cable.
2. Setting maximum power transmit of EUT.
3. The path loss was compensated to the results for each measurement.
4. Measure and record the result of Peak output power and Average output power. in the test report.

4.3.3 Test Setup

Refer to section 1.8.

4.3.4 Test Result

Temperature: 19.5 ~ 23.7°C

Test date:

January 23 ~
February 14, 2025

Humidity: 48 ~ 59% RH

Tested by:

Jerry Chang

Peak & Average output power :

802.11b Ch0							
CH	Freq. (MHz)	Data Rate	Power Setting	Peak Output Power (mW)	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	1	19	114.29	20.58	30.00	PASS
6	2437	1	19	117.76	20.71	30.00	PASS
11	2462	1	18	87.90	19.44	30.00	PASS
802.11b Ch0							
CH	Freq. (MHz)	Data Rate	Power Setting	Avg. Output Power (mW)	Avg. Output Power (dBm)	Limit (dBm)	RESULT
1	2412	1	19	72.13	18.58	30.00	PASS
6	2437	1	19	74.50	18.72	30.00	PASS
11	2462	1	18	56.51	17.52	30.00	PASS
802.11b Ch1							
CH	Freq. (MHz)	Data Rate	Power Setting	Peak Output Power (mW)	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	1	19	119.12	20.76	30.00	PASS
6	2437	1	19	108.39	20.35	30.00	PASS
11	2462	1	18	74.47	18.72	30.00	PASS
802.11b Ch1							
CH	Freq. (MHz)	Data Rate	Power Setting	Avg. Output Power (mW)	Avg. Output Power (dBm)	Limit (dBm)	RESULT
1	2412	1	19	66.85	18.25	30.00	PASS
6	2437	1	19	67.63	18.30	30.00	PASS
11	2462	1	18	46.47	16.67	30.00	PASS