

Project No: TM-2412000476P
Report No.: TMWK2412004833KR

FCC ID: 2AWUU68B2701
IC: 26271-68B2701

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Rev.: 01

RADIO TEST REPORT

FCC 47 CFR PART 15 SUBPART C

INDUSTRY CANADA RSS-247

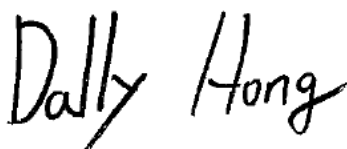
Test Standard	FCC Part 15.247 IC RSS-247 issue 3 and IC RSS-GEN issue 5
Product name	Outdoor Wi-Fi Gateway
Brand Name	Verkada
Model No.	GW31-E-HW
Test Result	Pass
Statements of Conformity	Determination of compliance is based on the results of the compliance measurement, not taking into account measurement 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	February 26, 2025	Initial Issue	ALL	Peggy Tsai
01	March 6, 2025	See the following Note Rev. (01)	P.14	Peggy Tsai

Note:

Rev. (01)

1. Modify the worst mode of measurement in section 3.2.

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1. GENERAL INFORMATION

1.1 EUT INFORMATION

Applicant	FCC: Verkada Inc 405 E. 4th Ave. San Mateo California United States 94401 IC: Verkada, Inc. 405 E. 4th Ave. San Mateo CA 94401 United States Of America (Excluding The States Of Alaska)
Manufacturer	FCC: Verkada Inc 405 E. 4th Ave. San Mateo California United States 94401 IC: Verkada, Inc. 405 E. 4th Ave. San Mateo CA 94401 United States Of America (Excluding The States Of Alaska)
Equipment	Outdoor Wi-Fi Gateway
Model No. / HVIN	GW31-E-HW
Model Discrepancy	N/A
Trade Name	Verkada
Received Date	January 2, 2025
Date of Test	February 5 ~ 10, 2025
Power Operation	1. Powered from Adapter (APD / DA-80A54) I/P: 100-240Vac, 50-60Hz, 1.5A MAX O/P: 54.0Vdc, 1.48A, 79.92W 2. Powered from PoE (EnGenius / PNA90BGS-54-TG) I/P: 100-240Vac, 1.5A, 50-60Hz O/P: 56Vdc, 1.7A 3. Powered from DC 12V
PMN	GW31-E-HW
EUT Serial #	68B2701-DVT01
HW Version	0.1
FW Version	0.1

Remark:

- For more details, please refer to the User's manual of the EUT.
- 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/ac VHT20/ac HE20: 2412MHz ~ 2462MHz 802.11n HT 40/ac VHT40/ac HE40: 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 802.11ac VHT 20 MHz mode : OFDM 6. IEEE 802.11ac VHT 40 MHz mode : OFDM 7. IEEE 802.11ax HE 20 MHz mode : OFDMA 8. 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 802.11ac VHT 20 MHz mode : 11 Channels 6. IEEE 802.11ac VHT 40 MHz mode : 7 Channels 7. IEEE 802.11ax HE 20 MHz mode : 11 Channels 8. IEEE 802.11ax HE 40 MHz mode : 7 Channels

Remark:

Refer as ANSI C63.10: 2013 clause 5.6.1 Table 4 and RSS-GEN Table 1 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	Senao / 7102A1338000
Antenna Gain	Ant 1: Gain 2.79dBi Ant 2: Gain 2.38dBi

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 and RSS-GEN 6.8.

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	David Li	-
Radiation	Tony Chao	-
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
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				

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	2024-11-26	2025-11-25
Active Loop Antenna	SCHWARZBECK	FMZB 1513-60	1513-60-028	2024-12-11	2025-12-10
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
High Pass Filters	Titan Microwave	T04H30001800070S01	22011402-4	2024-06-12	2025-06-11
Horn Antenna	SCHWARZBECK	BBHA9170	1047	2024-12-06	2025-12-05
Pre-Amplifier	EMCI	EMC184045SE	980860	2024-12-02	2025-12-01
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	2024-08-03	2025-08-02
Software	e3 V9-210616c				

Remark:

- Each piece of equipment is scheduled for calibration once a year.
- 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	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:

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

1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

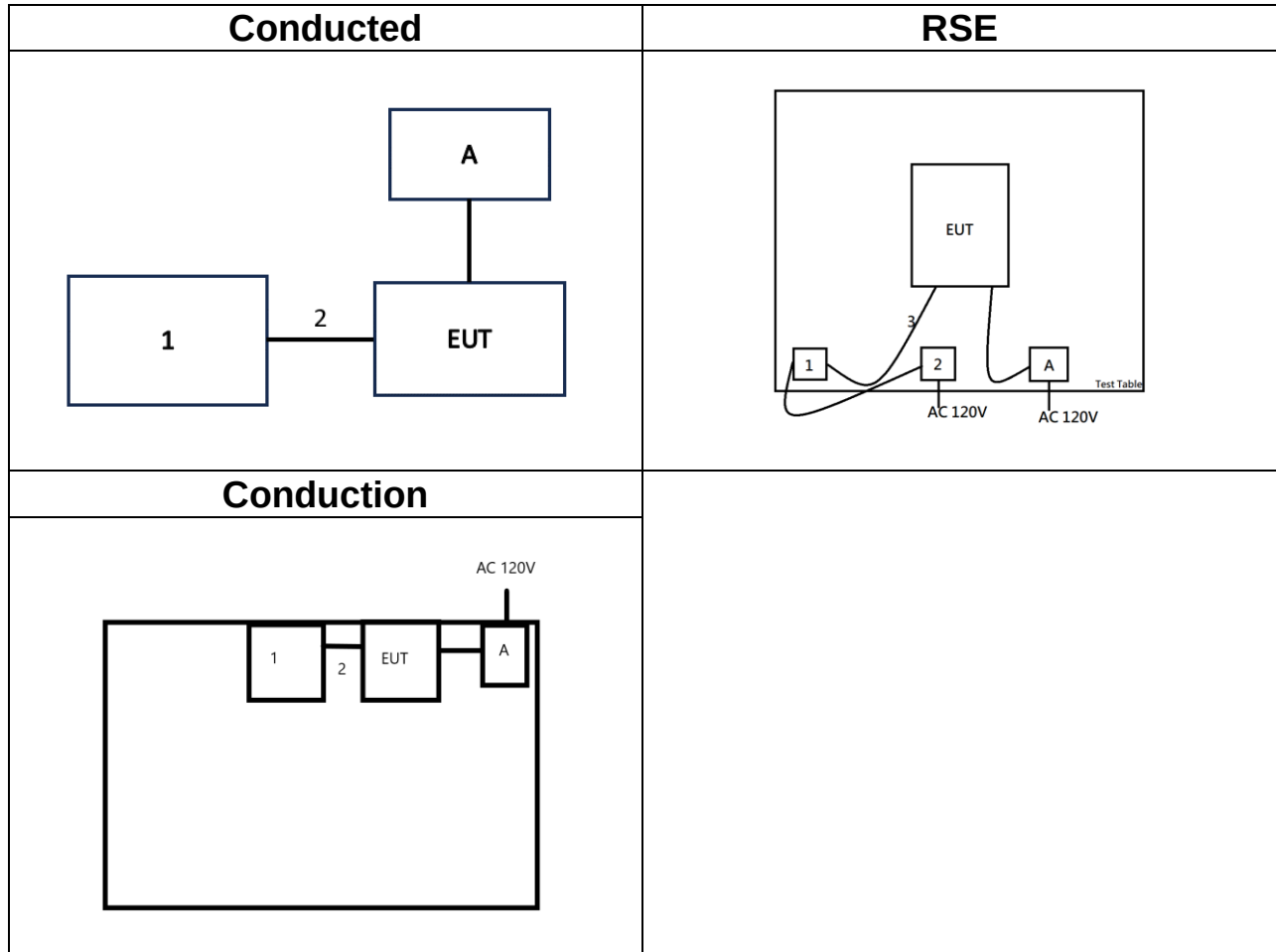
EUT Accessories Equipment						
No.	Equipment	Brand	Model	Series No.	FCC ID	IC
	N/A					

Support Equipment (Conducted)					
No.	Equipment	Brand	Model	Series No.	FCC ID
1	NB(1822)	Lenovo	L480	N/A	N/A
2	Lan Cable	ATAKE	AC6-FL10	N/A	N/A
A	Adapter	APD	DA-80A54	N/A	N/A

Support Equipment (RSE)					
No.	Equipment	Brand	Model	Series No.	FCC ID
1	NB(D)	Lenovo	ThinkPad X260	N/A	N/A
2	Adapter	Lenovo	ADLX45DLC3A	N/A	N/A
3	RJ 45	atake	AC6-FL10	202108270206	N/A
A	Adapter	APD	DA-80A54	S3B01999000025	N/A

Support Equipment (Conduction)					
No.	Equipment	Brand	Model	Series No.	FCC ID
1	NB(D)	Lenovo	ThinkPad X260	N/A	N/A
2	RJ 45	AWM	E189529	N/A	N/A
A	Adapter	APD	DA-80A54	S3B01999000025	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 "Tera Term" setup command and Fleming.cxtt software 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, RSS-247 Issue 3 and RSS-GEN Issue 5.

2. TEST SUMMARY

FCC Standard Section	IC Standard Section	Report Section	Test Item	Result
15.203	RSS-GEN 6.8	1.3	Antenna Requirement	Pass
15.207(a)	RSS-GEN 8.8	4.1	AC Conducted Emission	Pass
15.247(a)(2)	RSS-247(5.2)(a)	4.2	6 dB Bandwidth	Pass
-	RSS-GEN 6.7	4.2	Occupied Bandwidth (99%)	Pass
15.247(b)(3)	RSS-247(5.4)(d)	4.3	Output Power Measurement	Pass
15.247(e)	RSS-247(5.2)(b)	4.4	Power Spectral Density	Pass
15.247(d)	RSS-247(5.5)	4.5	Conducted Band Edge	Pass
15.247(d)	RSS-247(5.5)	4.5	Conducted Emission	Pass
15.247(d) 15.205, 15.209	RSS-GEN 8.9, 8.10	4.6	Radiation Band Edge	Pass
15.247(d) 15.205, 15.209	RSS-GEN 8.9, 8.10	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 802.11ac VHT20 mode :MCS0 IEEE 802.11ac VHT40 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 802.11ac VHT20 mode : 1. Lowest Channel : 2412MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2462MHz IEEE 802.11ac VHT40 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 802.11ac VHT20 mode : 2T2R IEEE 802.11ac VHT40 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.
2. Based on FCC Part 15.31(m) and RSS-Gen 6.9, the laboratory conducts a comprehensive evaluation of ch low, ch middle, and ch high. Other additional channels only evaluate the radiated restricted bands of operation and powers.

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 Adapter
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 Adapter
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 Adapter Mode 2: EUT power by PoE Mode 3: EUT power by DC 12V
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Remark:

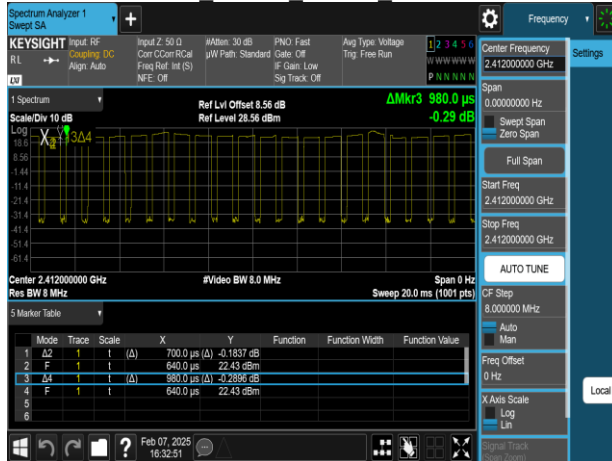
1. The worst mode was record in this test report.
2. AC power line conducted emission were performed the EUT transmit at the highest output power channel as worse case.
3. EUT pre-scanned in three axis ,X,Y, Z and two polarity, for radiated measurement. The worst case(Z-Plane) were recorded in this report

3.3 EUT DUTY CYCLE

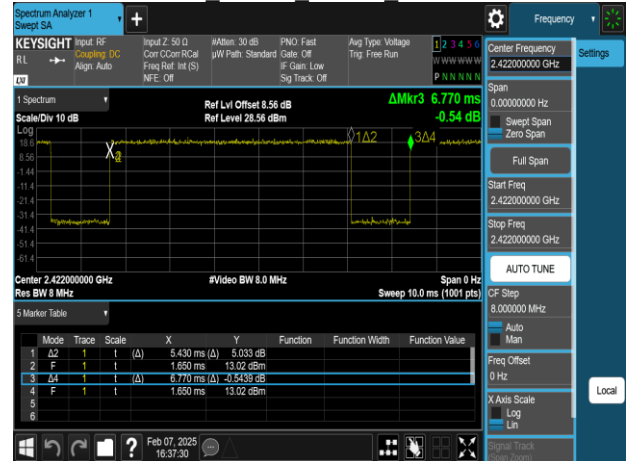
Temperature: 20.6 ~ 22.3°C Test date: February 5 ~ 8, 2025
Humidity: 48 ~ 54% RH Tested by: Jerry Chang

Mode		Duty Cycle (%) = Ton / (Ton+Toff)	Duty Factor (dB) =10*log (1/Duty Cycle)	1/T (kHz)	VBW setting (kHz)
802.11b		71.43	1.46	1.43	2.00
802.11g		93.40	0.30	0.51	1.00
802.11n_20		80.24	0.96	0.18	1.00
802.11n_40		80.18	0.96	0.18	1.00
802.11ac_20		80.44	0.95	0.18	1.00
802.11ac_40		80.44	0.95	0.18	1.00
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	80.24	0.96	0.18	1.00
802.11ax_40	Full	80.24	0.96	0.18	1.00

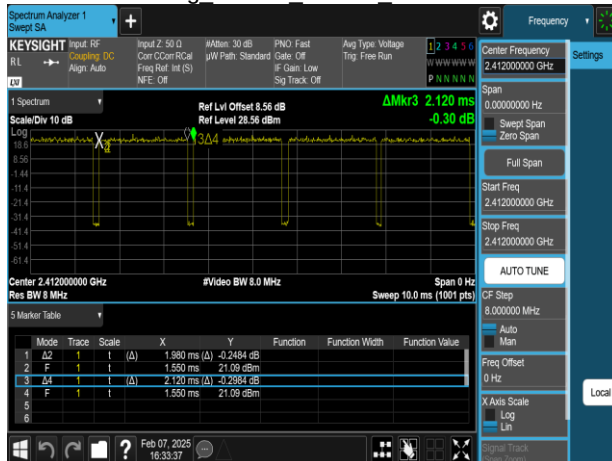
802.11b 20MHz Chain0 2412MHz



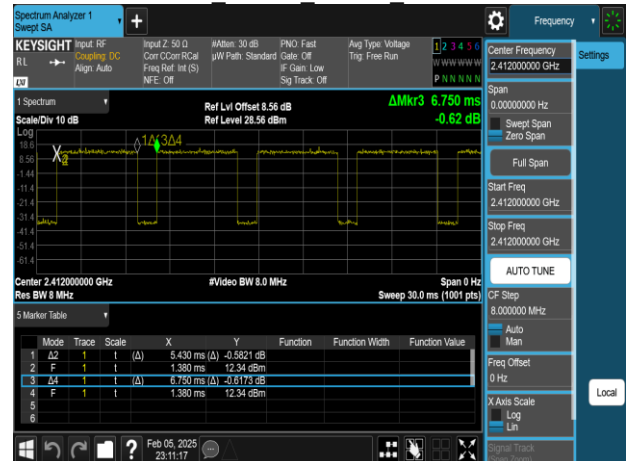
802.11n 40MHz Chain0 2422MHz



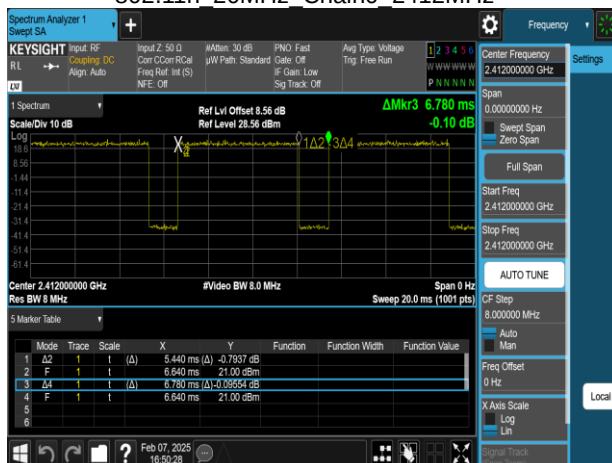
802.11g 20MHz Chain0 2412MHz



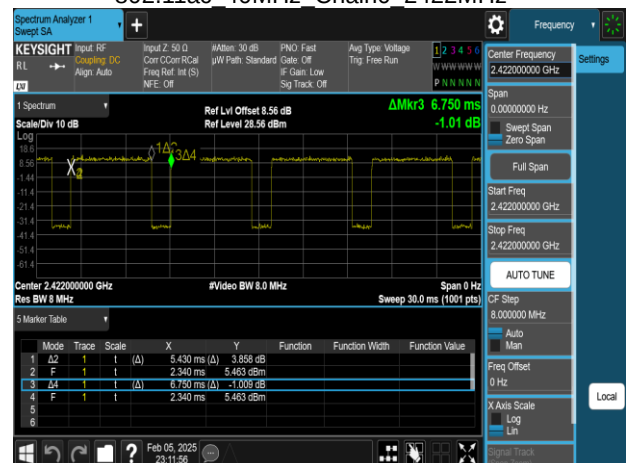
802.11ac 20MHz Chain0 2412MHz



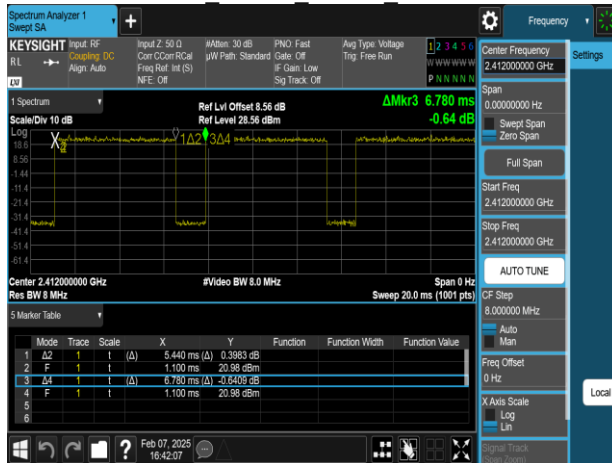
802.11n 20MHz Chain0 2412MHz



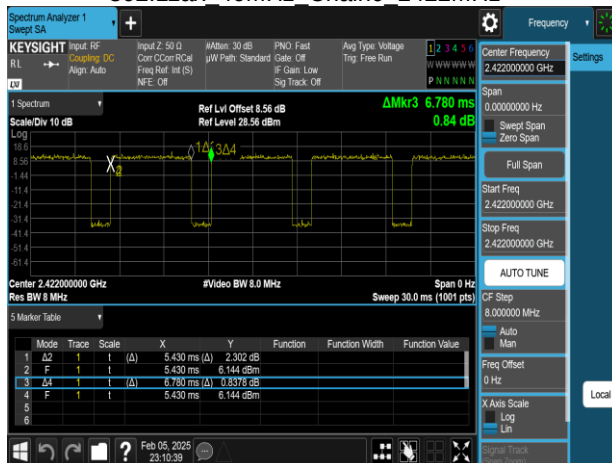
802.11ac 40MHz Chain0 2422MHz



802.11ax 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) 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

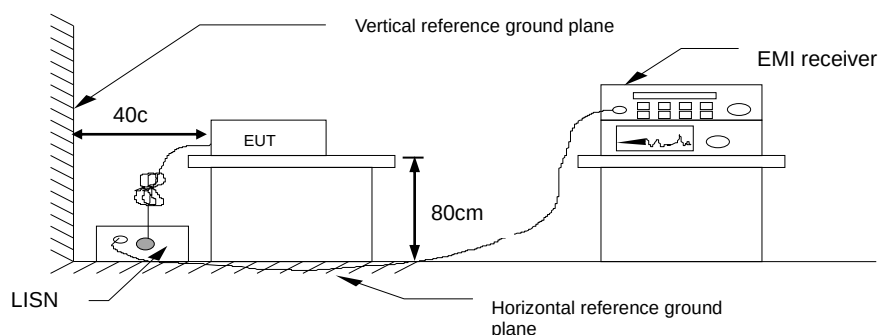
* Decreases with the logarithm of the frequency.

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



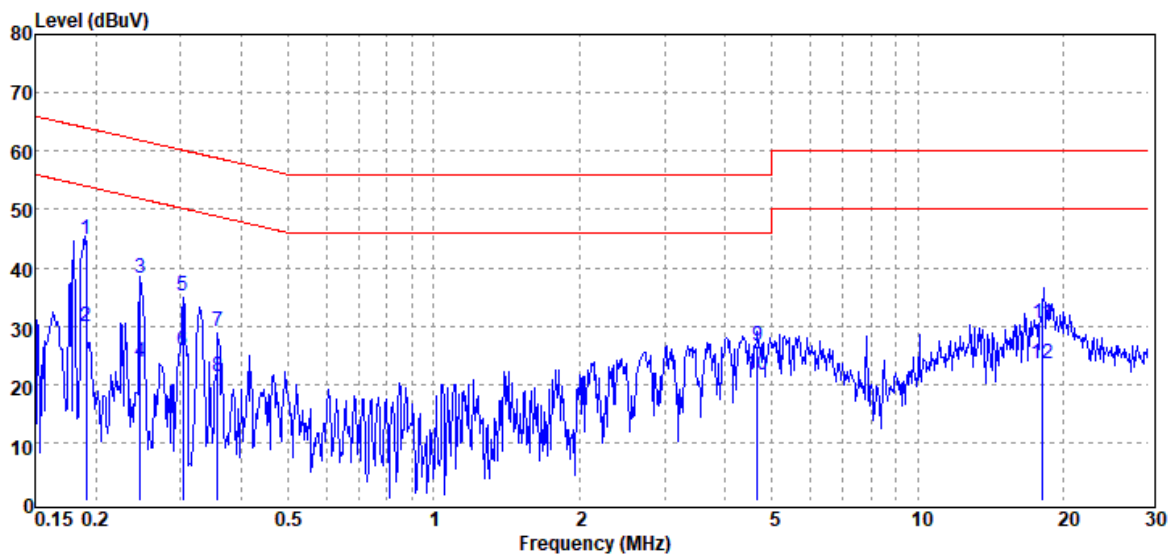
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4.1.4 Test Result

Project No : TM-2412000476P
Operation Mode : 2.4G
Test Chamber : Conduction
Probe : LINE
Note :

Test Date : 2025-02-10
Temp./Humi. : 23.4°C / 54%
Engineer : David Li
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
0.191	QP	44.47	0.35	44.82	63.99	-19.17
0.191	Average	29.67	0.35	30.02	53.99	-23.97
0.247	QP	37.84	0.39	38.23	61.85	-23.62
0.247	Average	23.44	0.39	23.83	51.85	-28.02
0.303	QP	34.69	0.38	35.07	60.17	-25.10
0.303	Average	25.43	0.38	25.81	50.17	-24.36
0.357	QP	28.66	0.38	29.04	58.80	-29.76
0.357	Average	20.86	0.38	21.24	48.80	-27.56
4.667	QP	26.40	0.26	26.66	56.00	-29.34
4.667	Average	21.44	0.26	21.70	46.00	-24.30
18.155	QP	29.99	0.46	30.45	60.00	-29.55
18.155	Average	23.09	0.46	23.55	50.00	-26.45

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

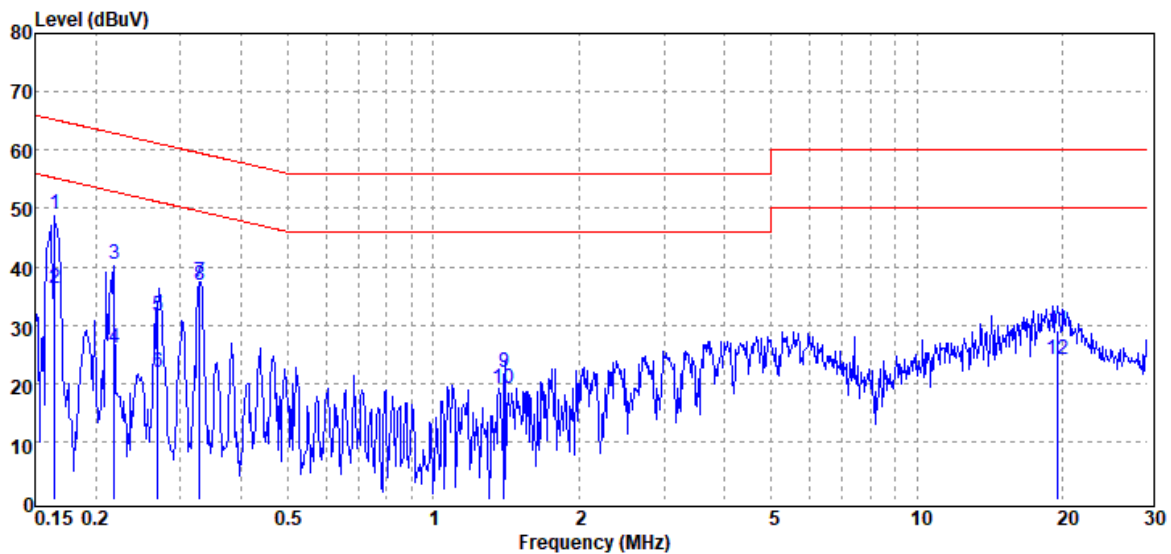
Note: 2. Margin= Actual FS - Limit

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Project No : TM-2412000476P
Operation Mode : 2.4G
Test Chamber : Conduction
Probe : NEUTRAL
Note :

Test Date : 2025-02-10
Temp./Humi. : 23.4°C / 54%
Engineer : David Li
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
0.165	QP	48.92	0.18	49.10	65.23	-16.13
0.165	Average	35.98	0.18	36.16	55.23	-19.07
0.218	QP	40.11	0.36	40.47	62.88	-22.41
0.218	Average	25.61	0.36	25.97	52.88	-26.91
0.269	QP	31.14	0.36	31.50	61.13	-29.63
0.269	Average	21.53	0.36	21.89	51.13	-29.24
0.329	QP	37.13	0.35	37.48	59.49	-22.01
0.329	Average	36.33	0.35	36.68	49.49	-12.81
1.400	QP	21.59	0.14	21.73	56.00	-34.27
1.400	Average	19.09	0.14	19.23	46.00	-26.77
19.561	QP	28.66	0.45	29.11	60.00	-30.89
19.561	Average	23.68	0.45	24.13	50.00	-25.87

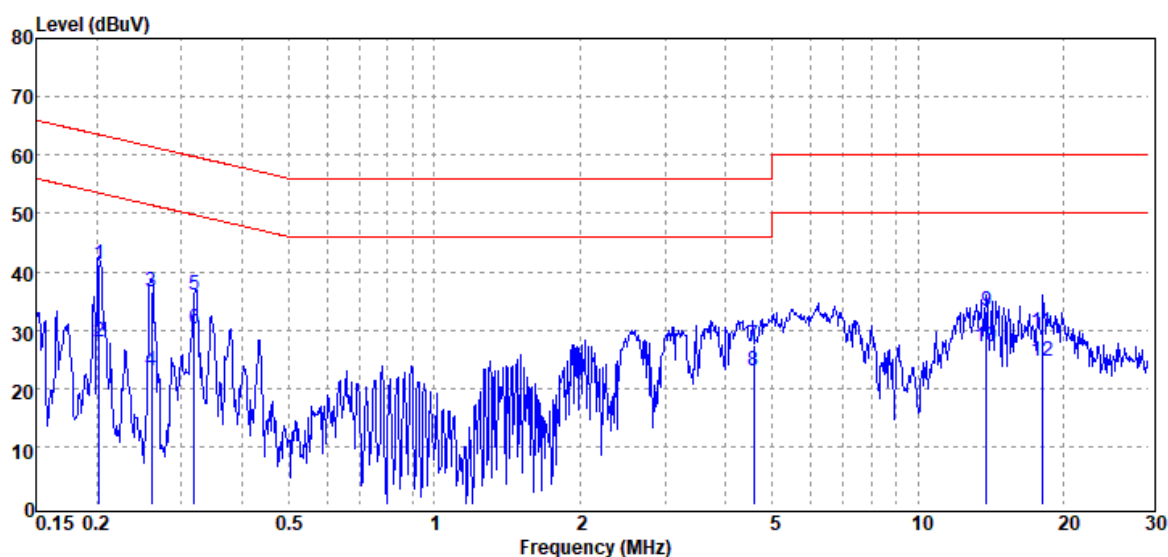
Note: 1. Actual FS= Spectrum Read Level + Factor
Note: 2. Margin= Actual FS - Limit

Project No: TM-2412000476P
Report No.: TMWK2412004833KR

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Rev.: 01

Project No : TM-2412000476P
Operation Mode : 2.4G
Test Chamber : Conduction
Probe : LINE
Note :

Test Date : 2025-02-10
Temp./Humi. : 23.4°C / 54%
Engineer : David Li
Test Voltage : AC 230V/60Hz



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV	Limit dBμV	Margin dB
0.203	QP	40.99	0.39	41.38	63.50	-22.12
0.203	Average	27.55	0.39	27.94	53.50	-25.56
0.260	QP	36.12	0.39	36.51	61.44	-24.93
0.260	Average	22.51	0.39	22.90	51.44	-28.54
0.319	QP	35.69	0.38	36.07	59.73	-23.66
0.319	Average	29.90	0.38	30.28	49.73	-19.45
4.572	QP	27.08	0.26	27.34	56.00	-28.66
4.572	Average	22.66	0.26	22.92	46.00	-23.08
13.849	QP	32.92	0.41	33.33	60.00	-26.67
13.849	Average	26.73	0.41	27.14	50.00	-22.86
18.064	QP	29.23	0.46	29.69	60.00	-30.31
18.064	Average	24.04	0.46	24.50	50.00	-25.50

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

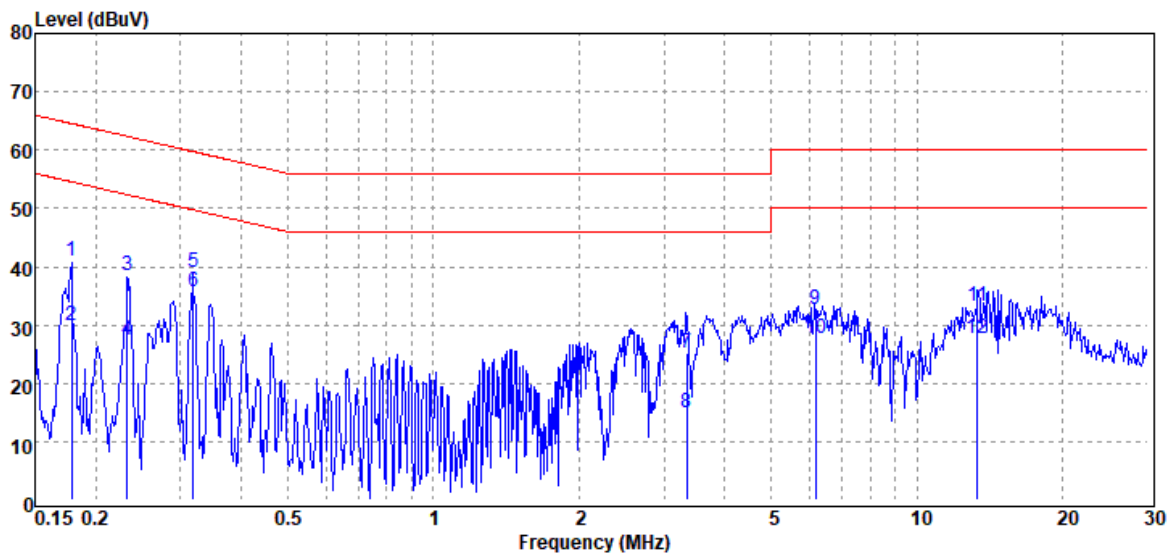
Note: 2. Margin= Actual FS - Limit

Project No: TM-2412000476P
Report No.: TMWK2412004833KR

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Rev.: 01

Project No : TM-2412000476P
Operation Mode : 2.4G
Test Chamber : Conduction
Probe : NEUTRAL
Note :

Test Date : 2025-02-10
Temp./Humi. : 23.4°C / 54%
Engineer : David Li
Test Voltage : AC 230V/60Hz



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV	Limit dBμV	Margin dB
0.179	QP	40.80	0.26	41.06	64.55	-23.49
0.179	Average	29.69	0.26	29.95	54.55	-24.60
0.233	QP	38.17	0.36	38.53	62.34	-23.81
0.233	Average	27.11	0.36	27.47	52.34	-24.87
0.318	QP	38.68	0.35	39.03	59.75	-20.72
0.318	Average	35.49	0.35	35.84	49.75	-13.91
3.337	QP	24.96	0.19	25.15	56.00	-30.85
3.337	Average	14.89	0.19	15.08	46.00	-30.92
6.161	QP	32.32	0.27	32.59	60.00	-27.41
6.161	Average	27.42	0.27	27.69	50.00	-22.31
13.311	QP	32.74	0.38	33.12	60.00	-26.88
13.311	Average	27.35	0.38	27.73	50.00	-22.27

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) and RSS-247 section 5.2(a),

6 dB Bandwidth :

Limit	Shall be at least 500kHz
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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: 20.6 ~ 22.3°C
Humidity: 48 ~ 54% RH

Test date: February 5 ~ 8, 2025
Tested by: Jerry Chang

6dB BANDWIDTH

802.11b Ch1

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	7145	≥ 500	PASS
2437	8089	≥ 500	PASS
2462	7143	≥ 500	PASS

802.11g Ch1

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	15830	≥ 500	PASS
2437	16060	≥ 500	PASS
2462	16060	≥ 500	PASS

802.11n_HT_20M Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	16790	≥ 500	PASS
2437	16940	≥ 500	PASS
2462	16550	≥ 500	PASS

802.11n_HT_20M Ch1

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	16570	≥ 500	PASS
2437	16560	≥ 500	PASS
2462	16580	≥ 500	PASS

802.11n_HT_40M Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2422	35740	≥ 500	PASS
2437	35760	≥ 500	PASS
2452	36120	≥ 500	PASS

802.11n_HT_40M Ch1

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2422	35760	≥ 500	PASS
2437	36000	≥ 500	PASS
2452	35990	≥ 500	PASS

802.11ax_HE_20M Ch0

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2412	full	18490	≥ 500	PASS
2437	full	18450	≥ 500	PASS
2462	full	18080	≥ 500	PASS

802.11ax_HE_20M Ch1

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2412	full	18040	≥ 500	PASS
2437	full	18430	≥ 500	PASS
2462	full	18290	≥ 500	PASS

802.11ax_HE_40M Ch0

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2422	full	37420	≥ 500	PASS
2437	full	37800	≥ 500	PASS
2452	full	37710	≥ 500	PASS

802.11ax_HE_40M Ch1

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2422	full	37470	≥ 500	PASS
2437	full	37400	≥ 500	PASS
2452	full	37460	≥ 500	PASS

BANDWIDTH 99%

802.11b Ch1

Freq. (MHz)	99% BW (MHz)
2412	12.990
2437	13.027
2462	13.041

802.11g Ch0

Freq. (MHz)	99% BW (MHz)
2412	16.440
2437	16.439
2462	16.438

802.11n_HT20M Ch0

Freq. (MHz)	99% BW (MHz)
2412	17.616
2437	17.626
2462	17.615

802.11n_HT20M Ch1

Freq. (MHz)	99% BW (MHz)
2412	17.598
2437	17.622
2462	17.599

802.11n_HT40M Ch0

Freq. (MHz)	99% BW (MHz)
2422	36.084
2437	36.140
2452	36.099

802.11n_HT40M Ch1

Freq. (MHz)	99% BW (MHz)
2422	36.099
2437	36.102
2452	36.108

802.11ax_HE20M Ch0

Freq. (MHz)	RU Config	99% BW (MHz)
2412	full	18.928
2437	full	18.949
2462	full	18.929

802.11ax_HE20M Ch1

Freq. (MHz)	RU Config	99% BW (MHz)
2412	full	18.898
2437	full	18.926
2462	full	18.921

802.11ax_HE40M Ch0

Freq. (MHz)	RU Config	99% BW (MHz)
2422	full	37.727
2437	full	37.739
2452	full	37.770

802.11ax_HE40M Ch1

Freq. (MHz)	RU Config	99% BW (MHz)
2422	full	37.685
2437	full	37.691
2452	full	37.695

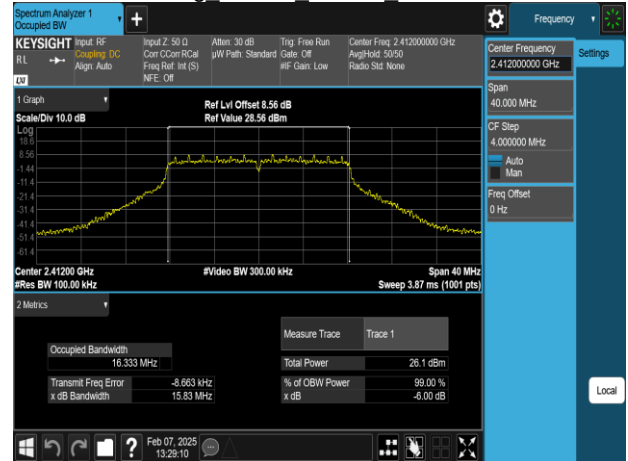
Test Data

6dB BANDWIDTH

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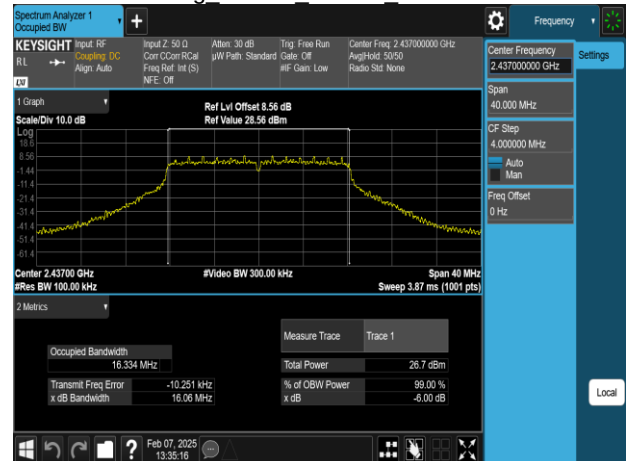
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802.11b 20MHz Chain0 2437MHz



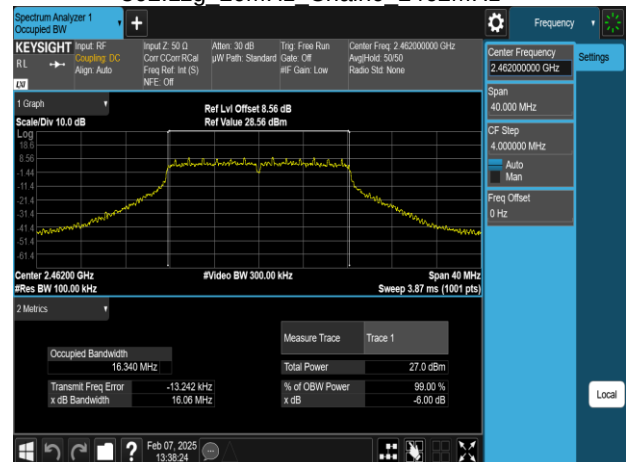
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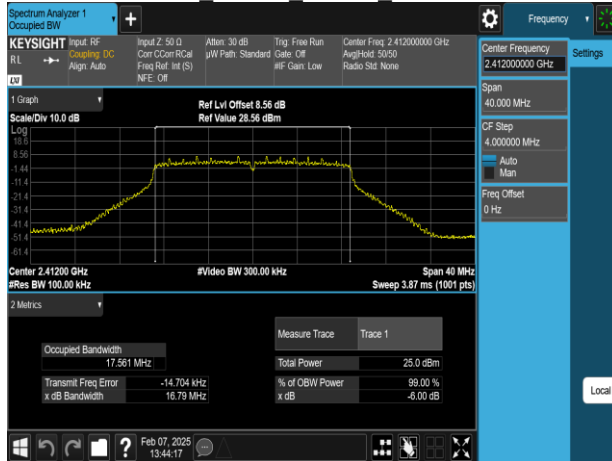
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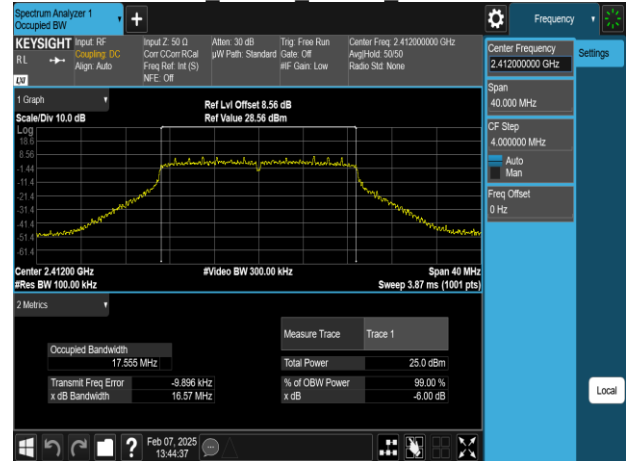
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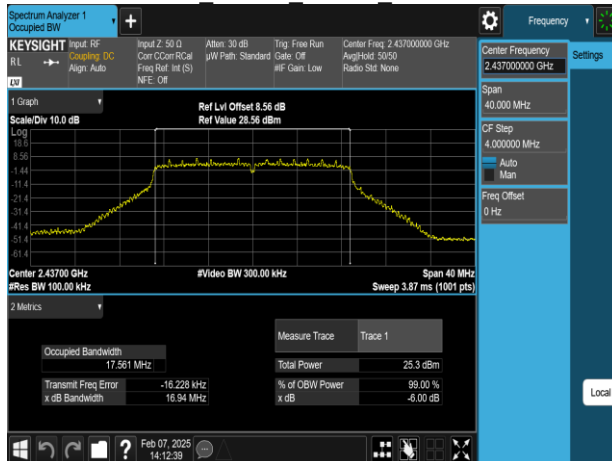
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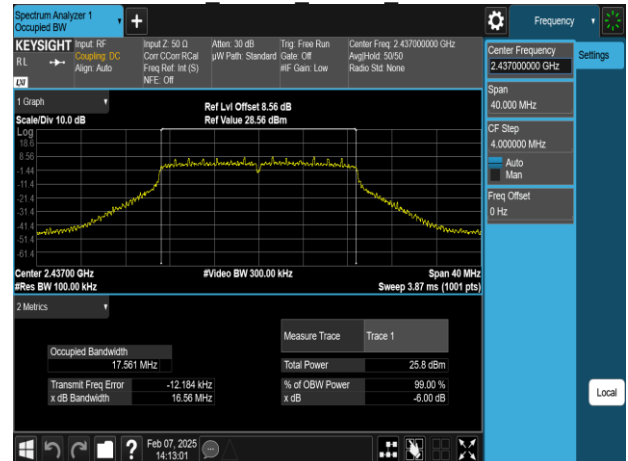
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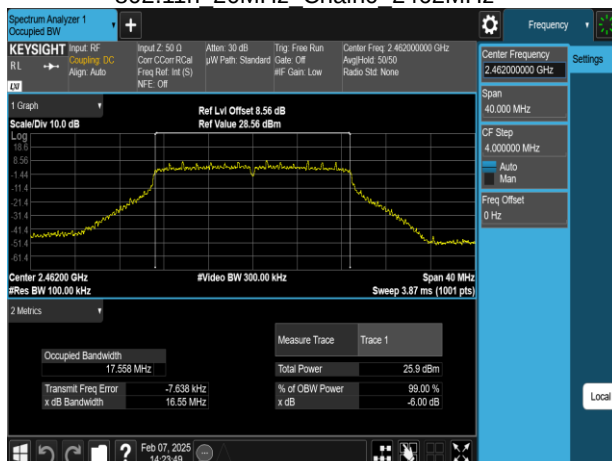
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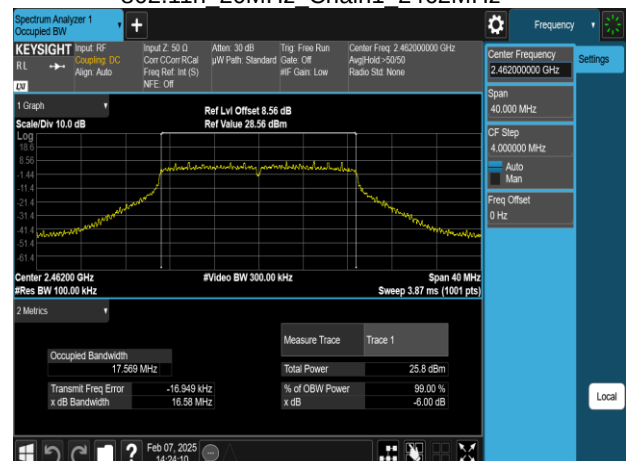
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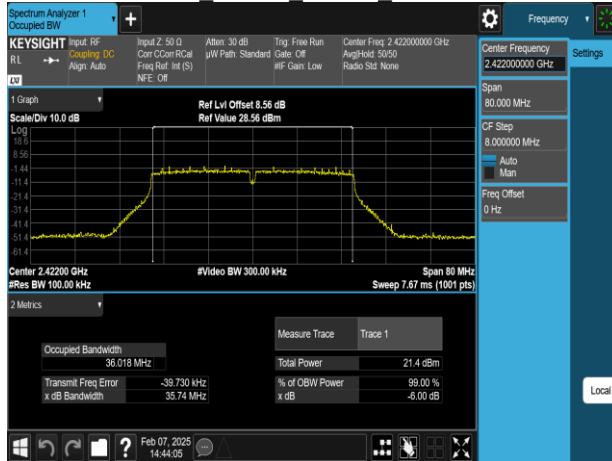
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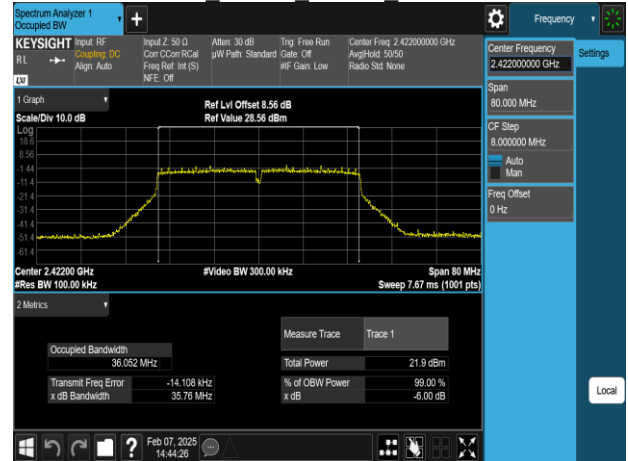
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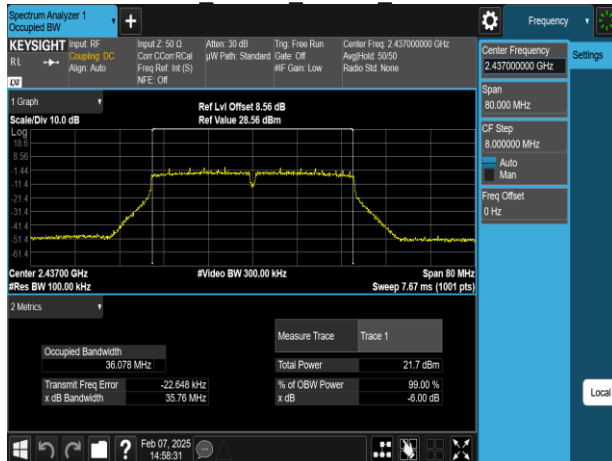
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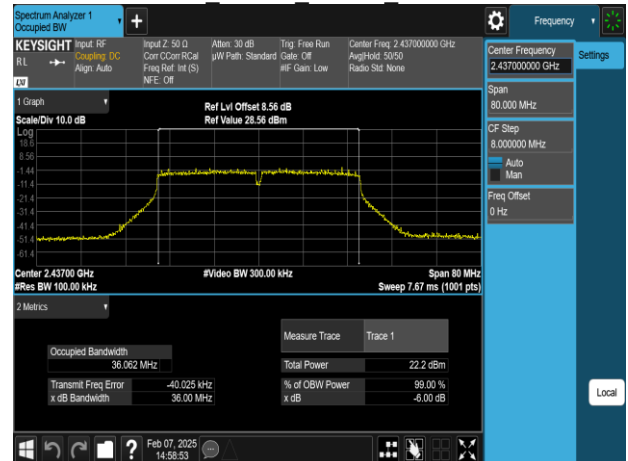
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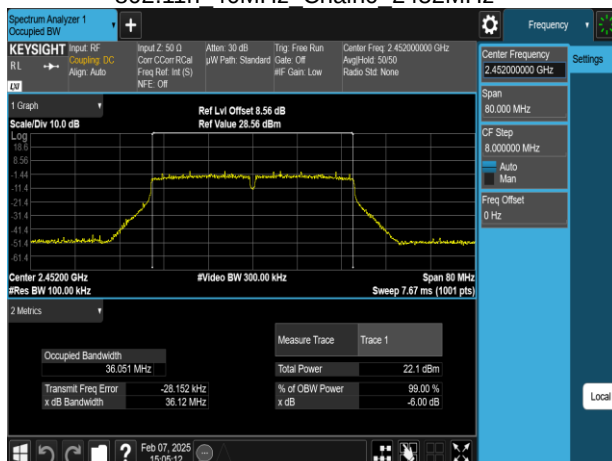
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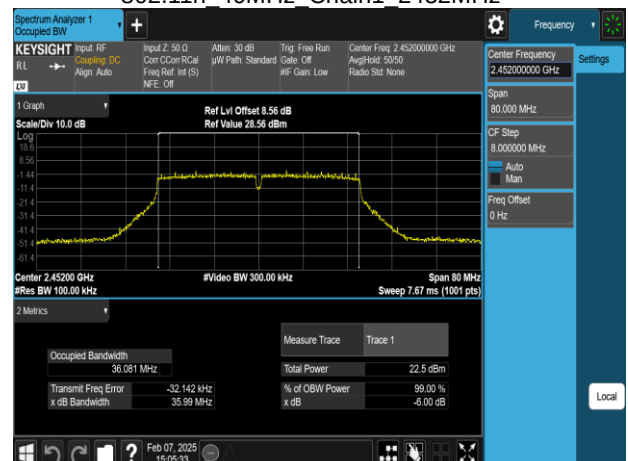
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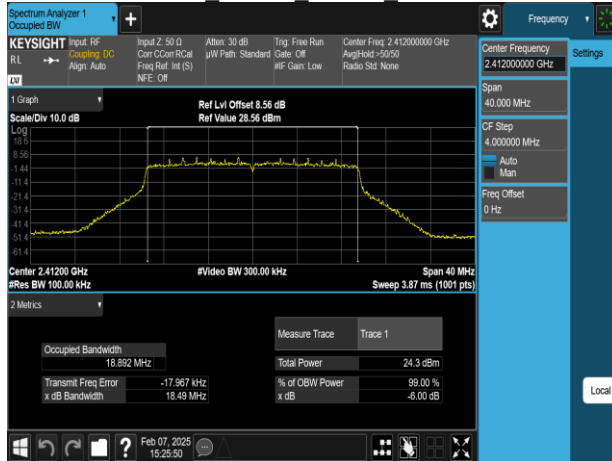
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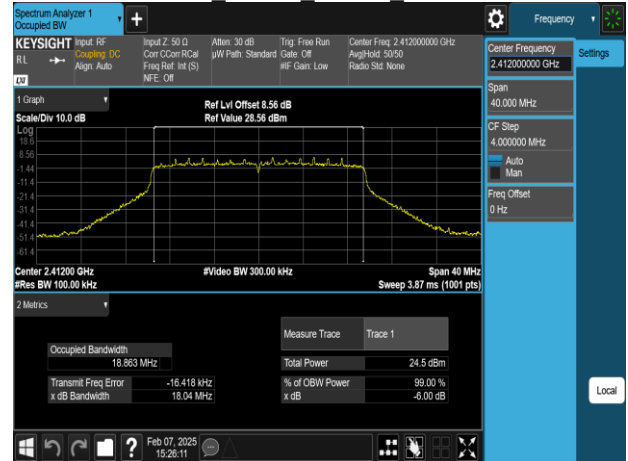
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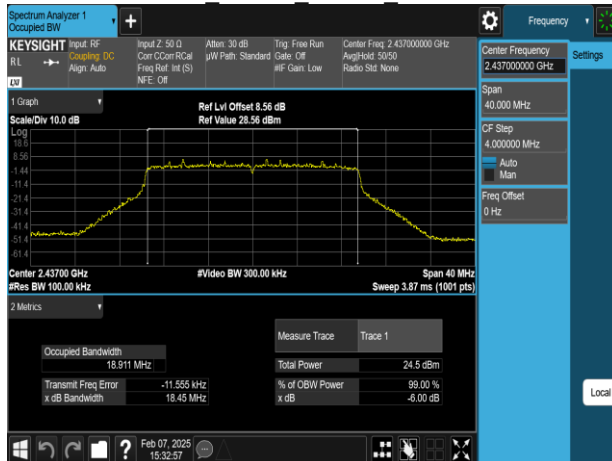
802.11ax 20MHz Chain0 2412MHz



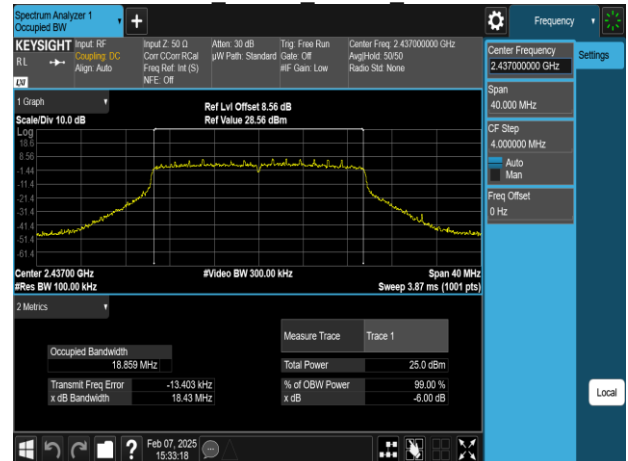
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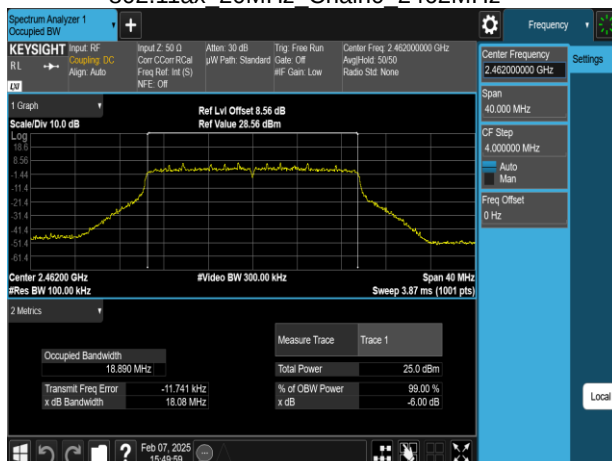
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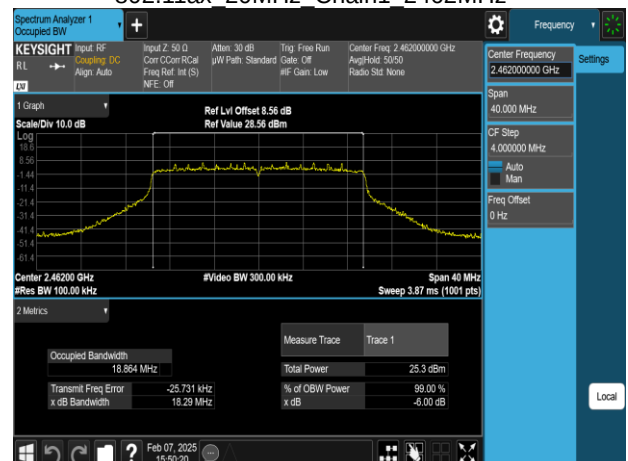
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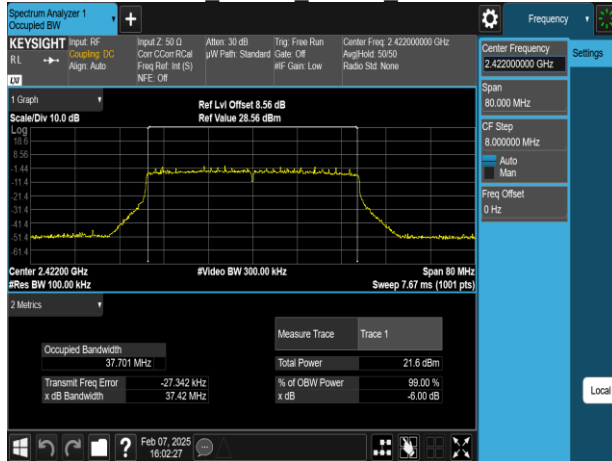
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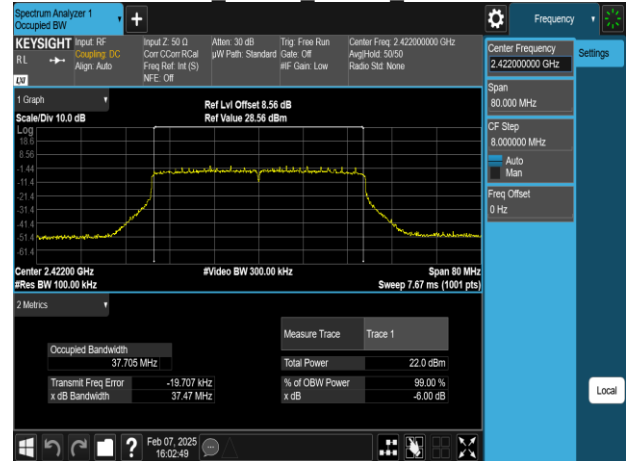
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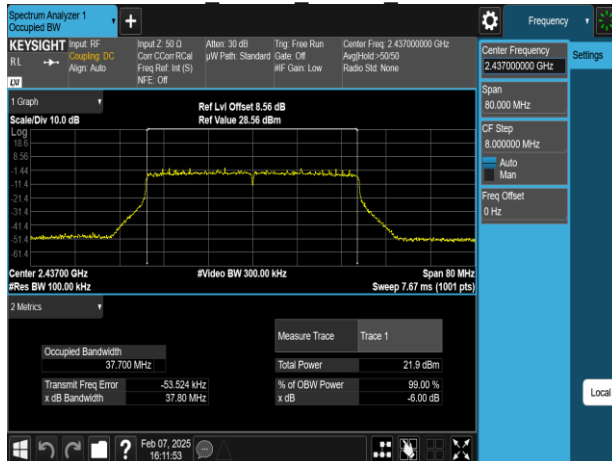
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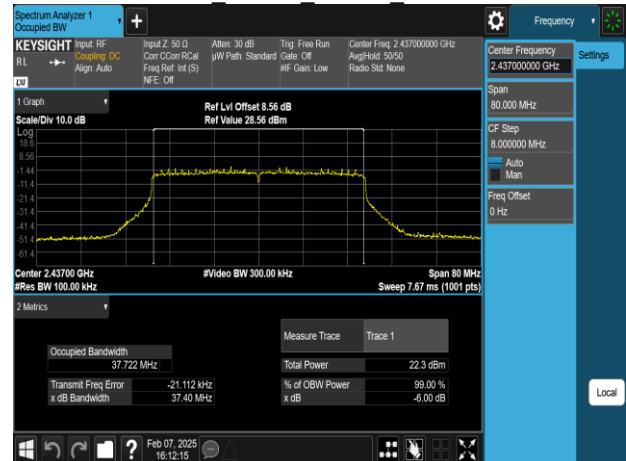
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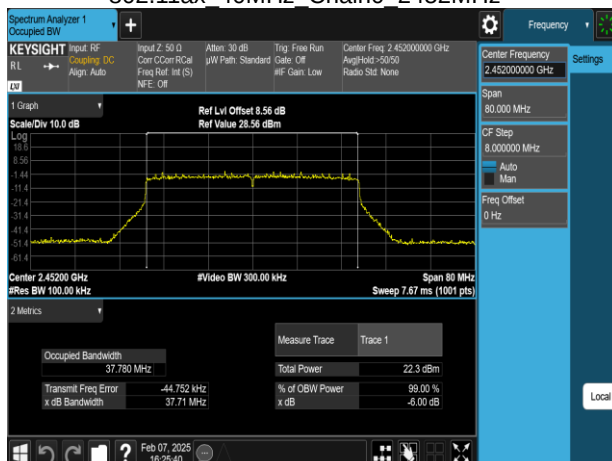
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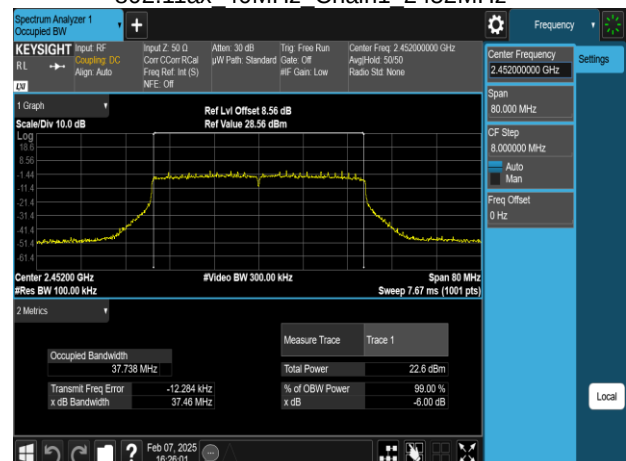
802.11ax 40MHz Chain1 2437MHz



802.11ax 40MHz Chain0 2452MHz

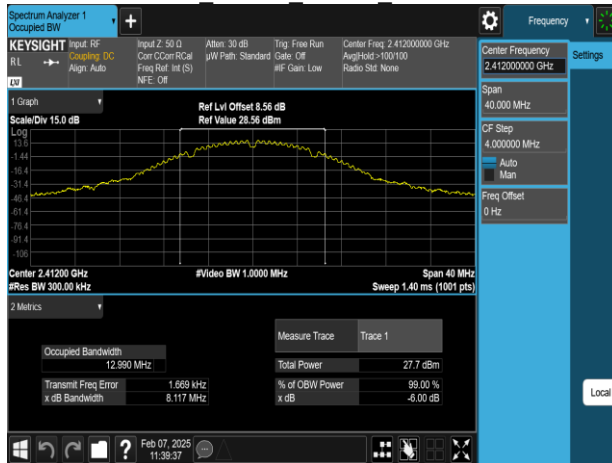


802.11ax 40MHz Chain1 2452MHz



BANDWIDTH 99%

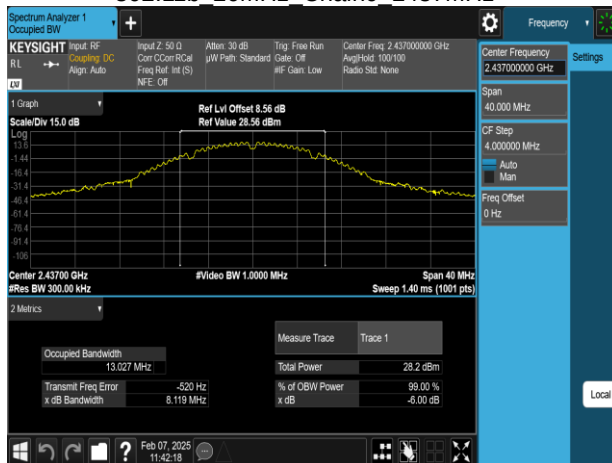
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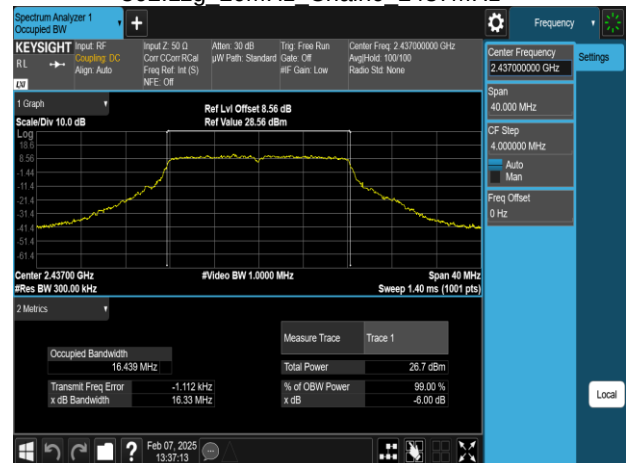
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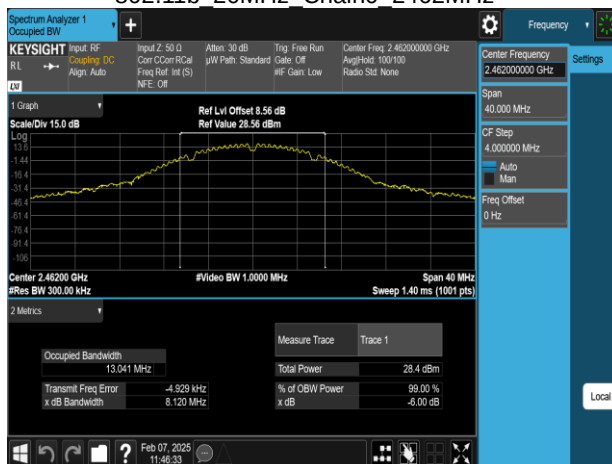
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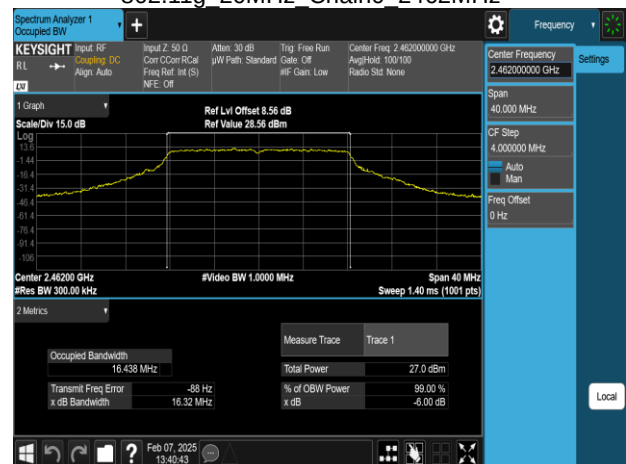
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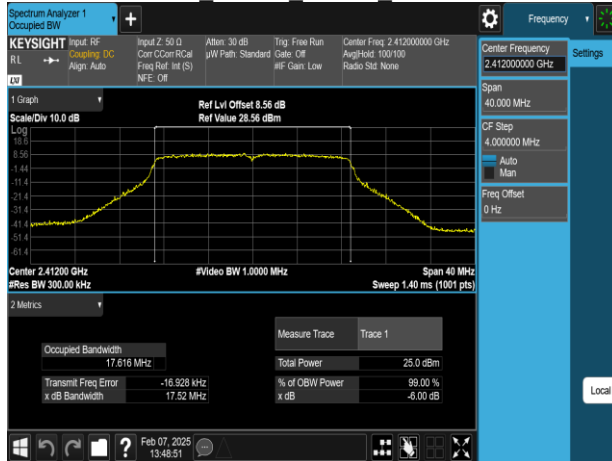
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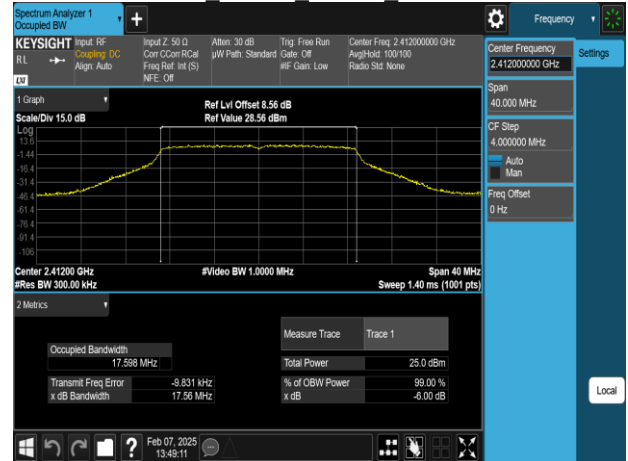
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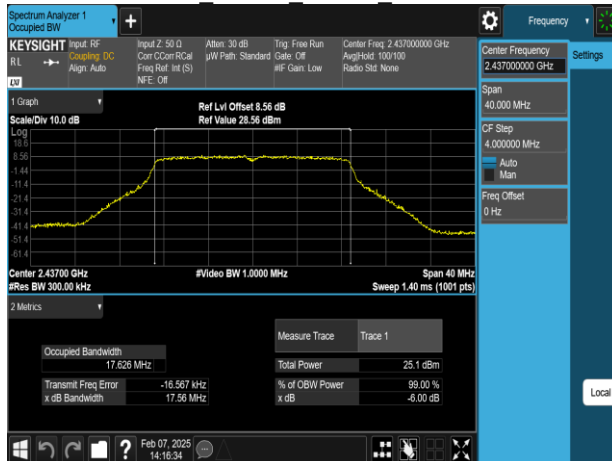
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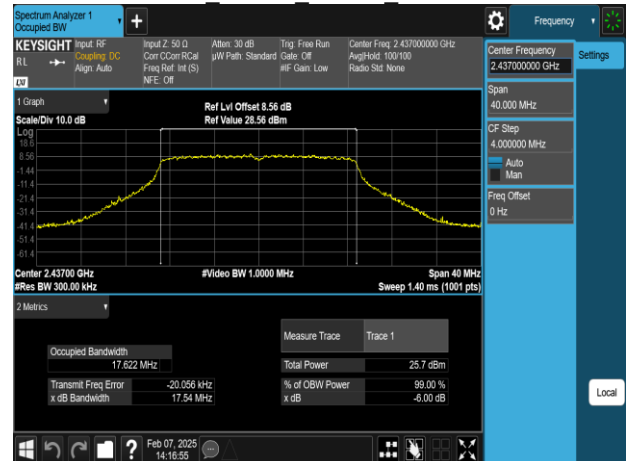
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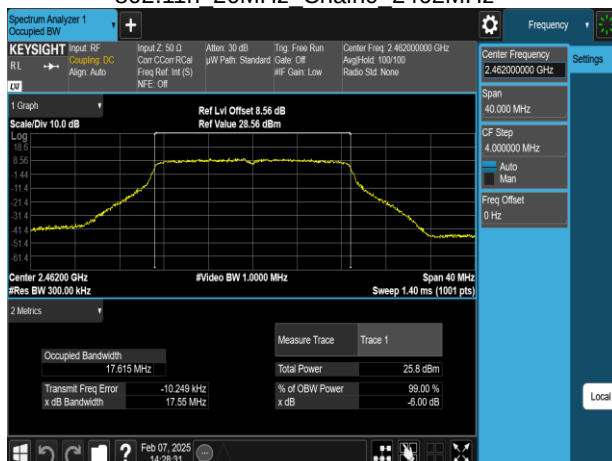
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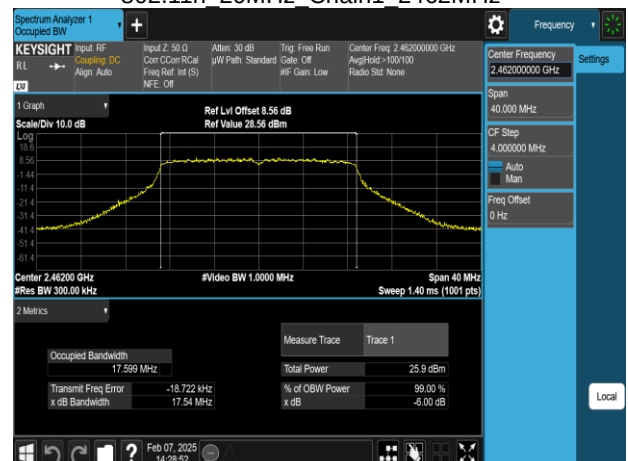
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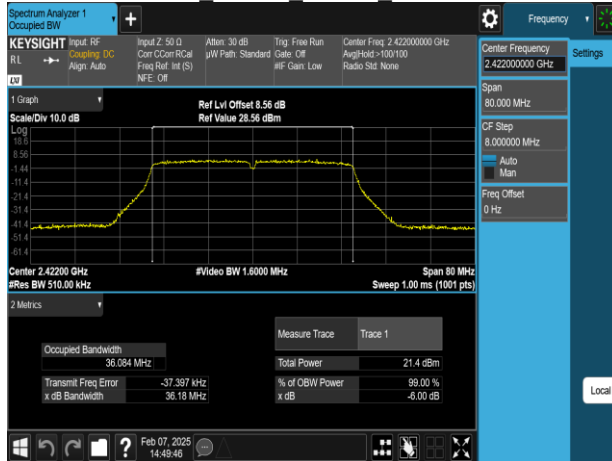
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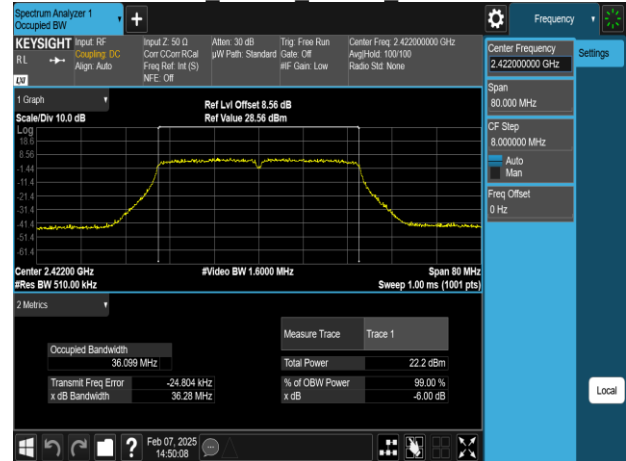
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802.11n 40MHz Chain0 2422MHz



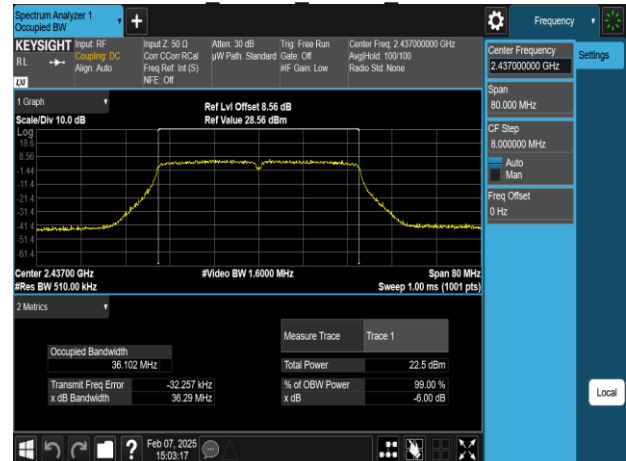
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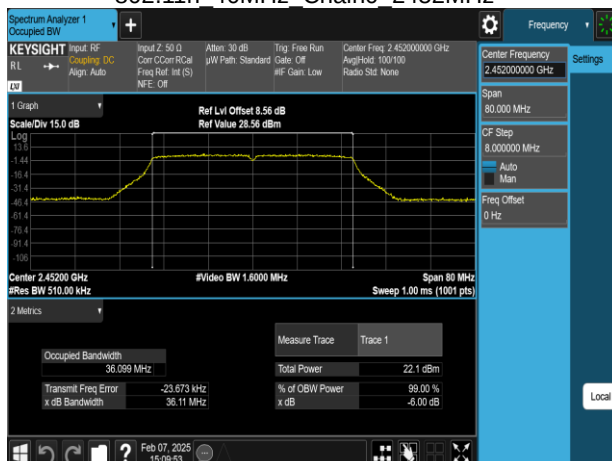
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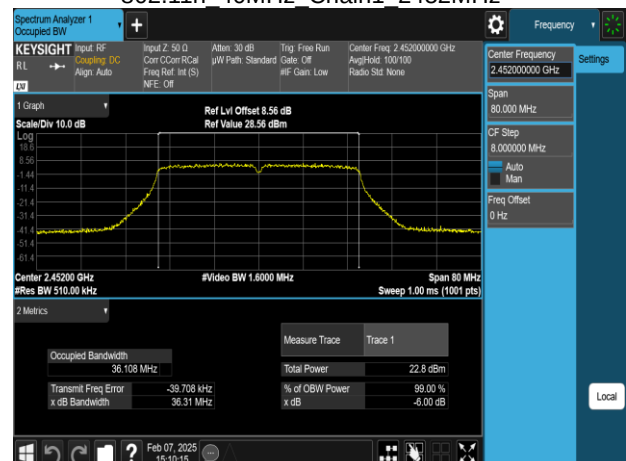
802.11n 40MHz Chain1 2437MHz



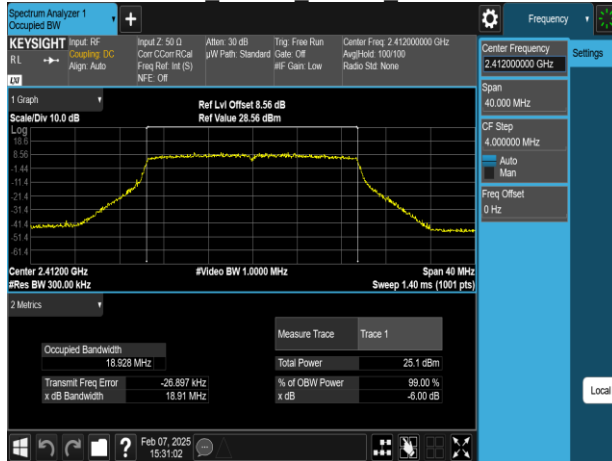
802.11n 40MHz Chain0 2452MHz



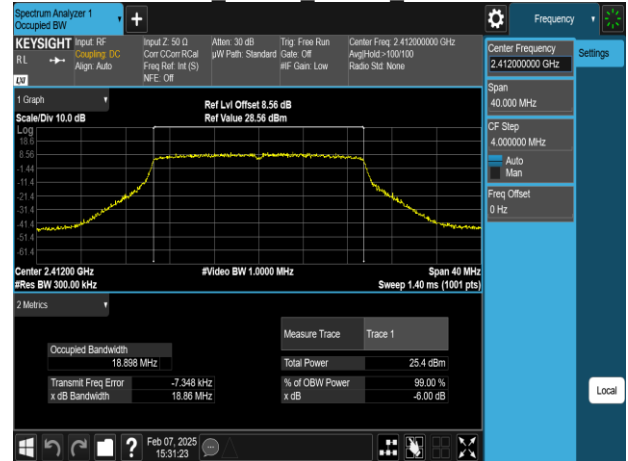
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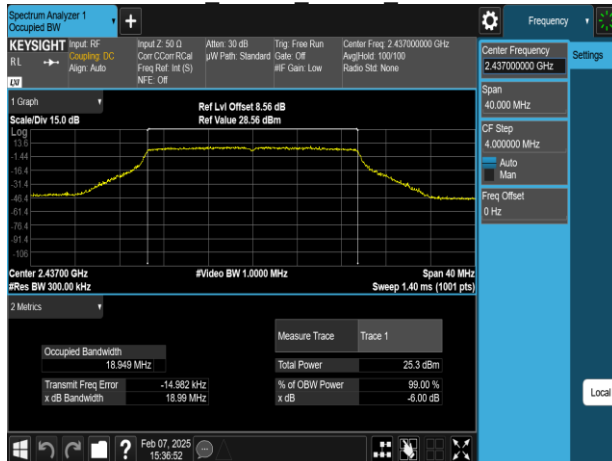
802.11ax 20MHz Chain0 2412MHz



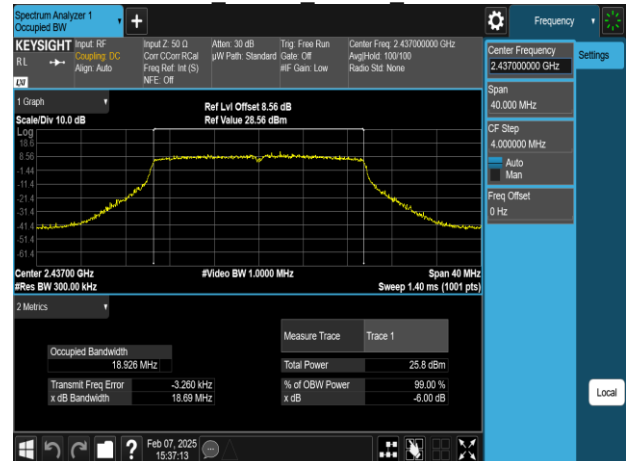
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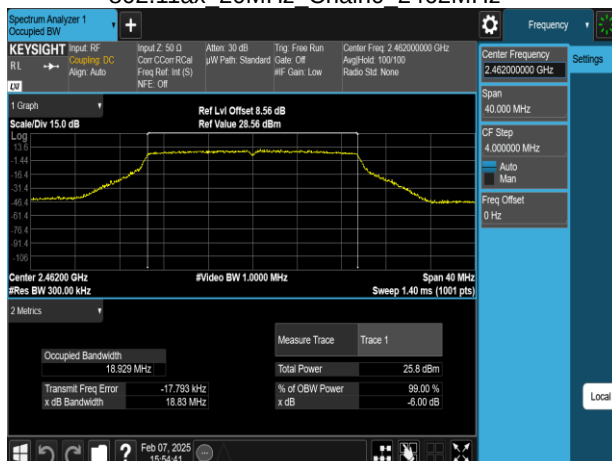
802.11ax 20MHz Chain0 2437MHz



802.11ax 20MHz Chain1 2437MHz



802.11ax 20MHz Chain0 2462MHz



802.11ax 20MHz Chain1 2462MHz

