TEST REPORT

Report Number: 14523771-E4V2

Applicant	:	APPLE, INC. 1 APPLE PARK WAY CUPERTINO, CA 95014, U.S.A.
Model	:	A2849
FCC ID	:	BCG-E8439A
IC	:	579C-E8439A
EUT Description	:	SMARTPHONE
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART C ISED RSS-247 ISSUE 2 ISED RSS-GEN ISSUE 5 + A1 + A2

Date Of Issue:
August 25, 2023

Prepared by:
UL Verification Services Inc.
47173 Benicia Street
Fremont, CA 94538 U.S.A.
TEL: (510) 319-4000
FAX: (510) 661-0888

ACCREDITED
CERT #0751.05

REPORT REVISION HISTORY

Rev.		Issue Date		Revisions		Revised By
V1		8/21/2023		Initial Issue		Chin Pang
V2		8/25/2023		Address TCB's questions sections 8, 9, 10		Chin Pang

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: APPLE INC.
1 APPLE PARK WAY
CUPERTINO, CA 95014, U.S.A

EUT DESCRIPTION : SMARTPHONE

MODEL : A2849

BRAND : APPLE

SERIAL NUMBER: QXYQV96627, FYFYYWKPF7

SAMPLE RECEIPT DATE: FEBRUARY 20, 2023

DATE TESTED: MARCH 13 – AUGUST 26, 2023

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	Complies
ISED RSS-247 Issue 2	Complies
ISED RSS-GEN Issue 5 + A1 + A2	Complies

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not considered unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by A2LA, NIST, any agency of the Federal Government, or any agency of the U.S. government.

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Approved & Released For
UL Verification Services Inc. By:

Chin Pang
Senior Lab Engineer
Consumer Technology Division
UL Verification Services Inc.

Prepared By:

Tony Li
Senior Test Engineer
Consumer Technology Division
UL Verification Services Inc.

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2. TEST RESULTS SUMMARY

This report contains data provided by the customer which can impact the validity of results. UL Verification Services Inc. is only responsible for the validity of results after the integration of the data provided by the customer.

FCC Clause	ISED Clause	Requirement	Result	Comment
See Comment		Duty Cycle	Reporting purposes only	ANSI C63.10 Section 11.6.
-	RSS-GEN 6.7	99% OBW	Reporting purposes only	ANSI C63.10 Section 6.9.3.
15.247 (a) (2)	RSS-247 5.2 (a)	6dB BW	Complies	None.
15.247 (b) (3)	RSS-247 5.4 (d)	Output Power (Average)	Complies	Per ANSI C63.10, Section 11.9.2.3.2..
15.247 (e)	RSS-247 5.2 (b)	PSD	Complies	None.
15.247 (d)	RSS-247 5.5	Conducted Spurious Emissions	Complies	None.
15.209, 15.205	RSS-GEN 8.9, 8.10	Radiated Emissions	Complies	None.
15.207	RSS-Gen 8.8	AC Mains Conducted Emissions	Complies	None.

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with;
- FCC CFR 47 Part 2
- FCC CFR 47 Part 15
- FCC KDB 558074 D01 v05r02 15.247 Meas Guidance
- ANSI C63.10-2013
- RSS-GEN Issue 5 + A1 + A2
- KDB 414788 D01 Radiated Test Site v01r01
- RSS-247 Issue 2

4. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, certification #0751.05, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☐	Building 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	550739
☒	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA			
☒	Building 3: 843 Auburn Court, Fremont, CA 94538 USA			
☒	Building 4: 47658 Kato Rd, Fremont, CA 94538 USA			
☒	Building 5: 47670 Kato Rd, Fremont, CA 94538 USA			

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5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

5.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	U_{LAB}
Conducted Antenna Port Emission Measurement	1.94 dB
Power Spectral Density	2.466 dB
Time Domain Measurements Using SA	3.39 dB
RF Power Measurement Direct Method Using Power Meter	0.450 dB(Peak), 1.3 dB (Ave)
Radio Frequency (Spectrum Analyzer)	141.16 Hz
Occupied Bandwidth	1.2%
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.78 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.87 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.73 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.51 dB

Uncertainty figures are valid to a confidence level of 95%.

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5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:
Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:
Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + LISN Insertion Loss.
36.5 dBuV + 0 dB +10.1 dB+ 0 dB = 46.6 dBuV

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6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The Apple iPhone is a smartphone with multimedia functions (music, application support, and video), cellular GSM, GPRS, EGPRS, UMTS, LTE, 5G, IEEE 802.11a/b/g/n/ac/ax, Bluetooth, Ultra-Wideband, GPS, NFC, NB UNII, 802.15.4, 802.15.4ab-NB and MSS technologies. The rechargeable battery is not user accessible.

6.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
1Tx			
2412 - 2472	802.11b	21.48	140.60
	802.11g	Covered by 802.11n HT20 1TX	
	802.11n HT20	21.46	139.96
	802.11ax HE20	21.45	139.64

2Tx			
2412 - 2472	802.11n HT20 CDD	24.47	279.90
	802.11g SDM/STBC	Covered by 802.11n HT20 2TX CDD	
	802.11ax HE20	24.49	281.19

6.3. DESCRIPTION OF AVAILABLE ANTENNAS

The antenna(s) gain and type, as provided by the manufacturer' are as follows:

Frequency Range (GHz)	ANT 4 (dBi)	ANT 3 (dBi)
2.4	-1.1	-0.9

6.4. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was 23_10_686

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6.5. WORST-CASE CONFIGURATION AND MODE

EUT was investigated in three orthogonal orientations X (Flatbed), Y (Landscape) and Z (Portrait) on ANT 4, ANT 3, and 2TX. It was determined that X (Flatbed) orientation was worst-case orientation for ANT 4, ANT 3, and 2TX.

With same power on Full RU and SU higher data rate, investigation were performed on both bandedge to determine the worst case, and SU mode was determined to be the worst case.

Radiated band edge, harmonic, and spurious emissions from 1GHz to 18GHz were performed with the EUT set to transmit at highest power on Low/Middle/High channels.

Radiated emissions below 1GHz, 18-26GHz and power line conducted emissions were performed with the EUT transmits at the channel with the highest output power as worst-case scenario. There were no emissions found below 30MHz within 20dB of the limit.

For radiated harmonics spurious below 1GHz, 1-18GHz L/M/H channels, 18-26GHz, and power line conducted emissions were performed with the EUT set at the 2TX CDD mode among the CDD/SDM modes and 2TX HE mode with power setting equal or higher than SISO modes as worst-case scenario. G mode is covered by HT20 mode since it has the same power as HT20.

Below 1GHz tests were performed with EUT connected to AC power adapter as the worst case; and for above 1GHz tests, the worst-case configuration reported was with EUT only. For AC line conducted emission, test was investigated with AC power adapter and with laptop.

The output power and psd for the 802.11 ax mode were investigated between all different tones, and we found that SU mode had the highest output power, and the lowest tone had the highest PSD readings. And after investigation, antenna port conducted tests were performed on both SU and lowest tones; radiated spurious emission and radiated band edge tests were performed on SU and lowest tones.

Low data rate was used to test on antenna port conducted tests and radiated spurious emissions since it has the highest maximum power. For radiated bandedge, following are the worst-case data rates set for test:

802.11b mode : 1 Mbps
802.11n HT20mode : MCS7
802.11ax HE20mode: MCS9
802.11ax HE20 RU26 and SU, MCS9

Note: In the Radiated Plots and emissions data, ANT0=ANT4 and ANT1=ANT3.

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6.6. DESCRIPTION OF TEST SETUP

SUPPORT TEST EQUIPMENT						
Description		**Manufacturer**	**Model**	**Serial Number**		**FCC ID/ DoC**
Laptop		Apple	Macbook Pro	C02VD7SAHV22		BCGA1708
Laptop AC/DC adapter		Liteon Technology	A1424	NSW25679		DoC
EUT AC/DC adapter		Apple	A1720	C3D8417A7R93KVPA8		DoC
I/O CABLES (RF CONDUCTED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	Antenna	1	SMA	Un-shielded	0.2	To spectrum Analyzer
2	USB	1	USB	Shielded	1.0	N/A
3	AC	1	AC	Un-shielded	2	N/A
I/O CABLES (RF RADIATED AND AC LINE CONDUCTED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	1	AC	Un-shielded	2	N/A
2	USB	1	USB	Shielded	1	N/A

TEST SETUP

The EUT setup is shown as below. Test software exercised the radio card.

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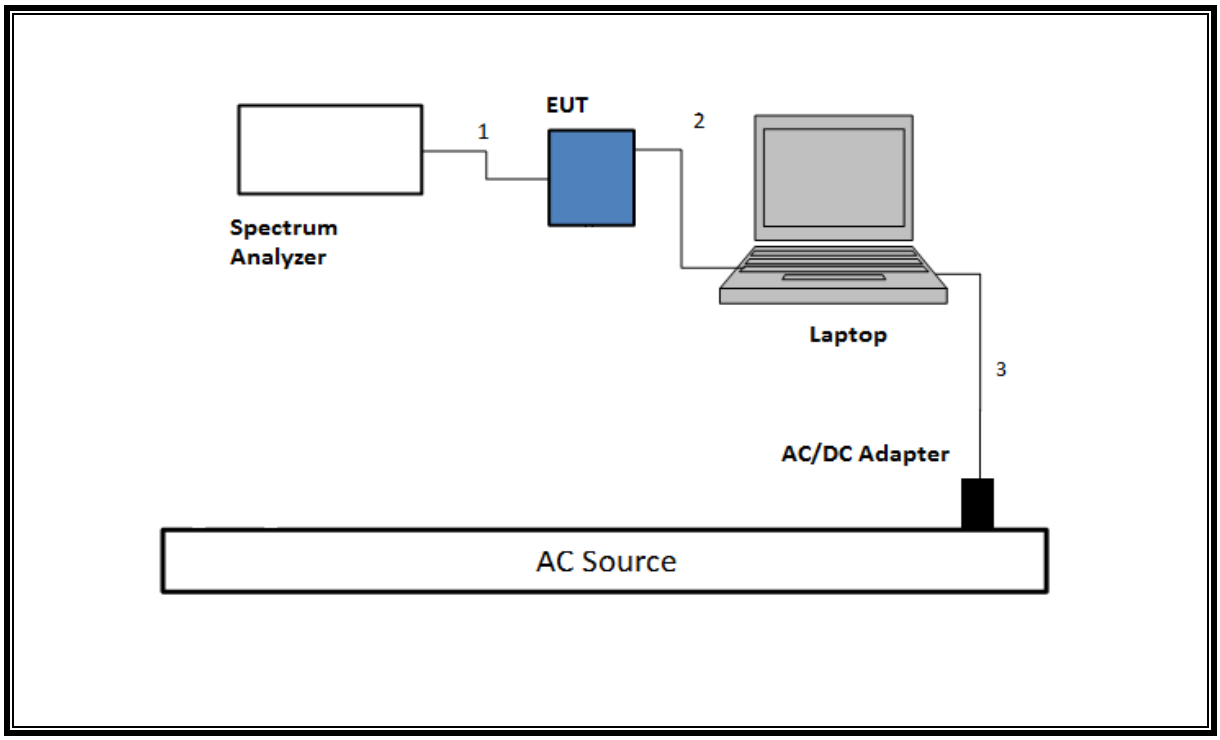
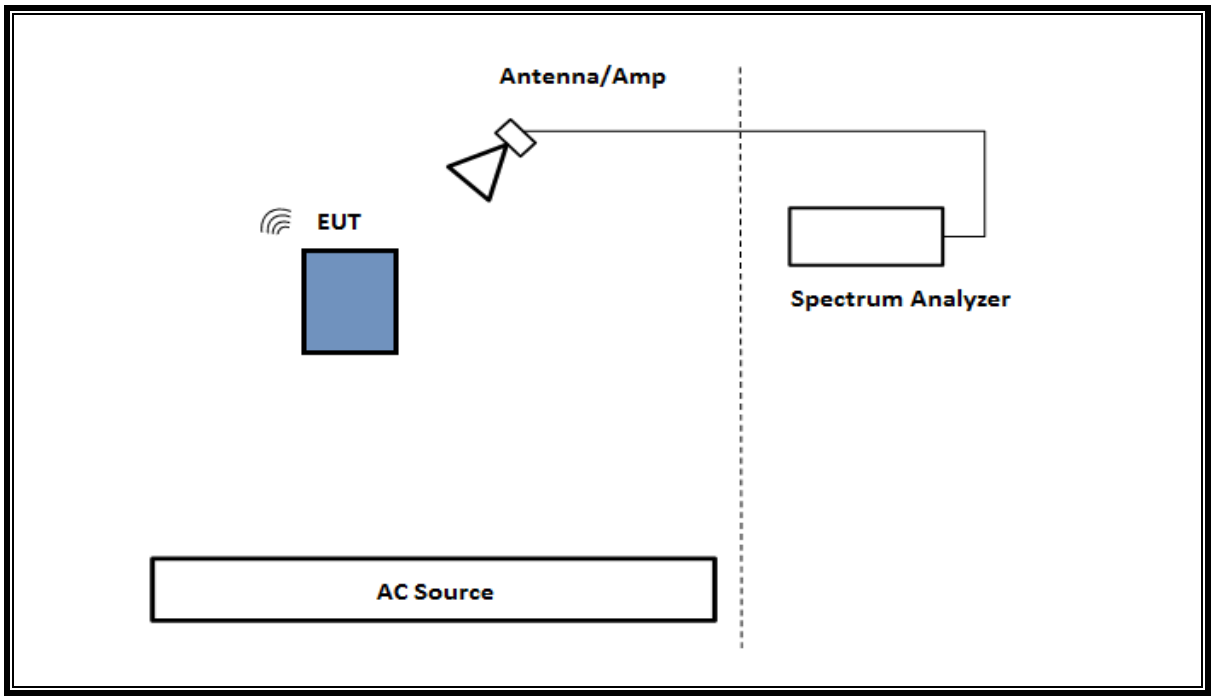
SETUP DIAGRAM FOR CONDUCTED TESTS



SETUP DIAGRAM FOR RADIATED TESTS Above 1 GHz



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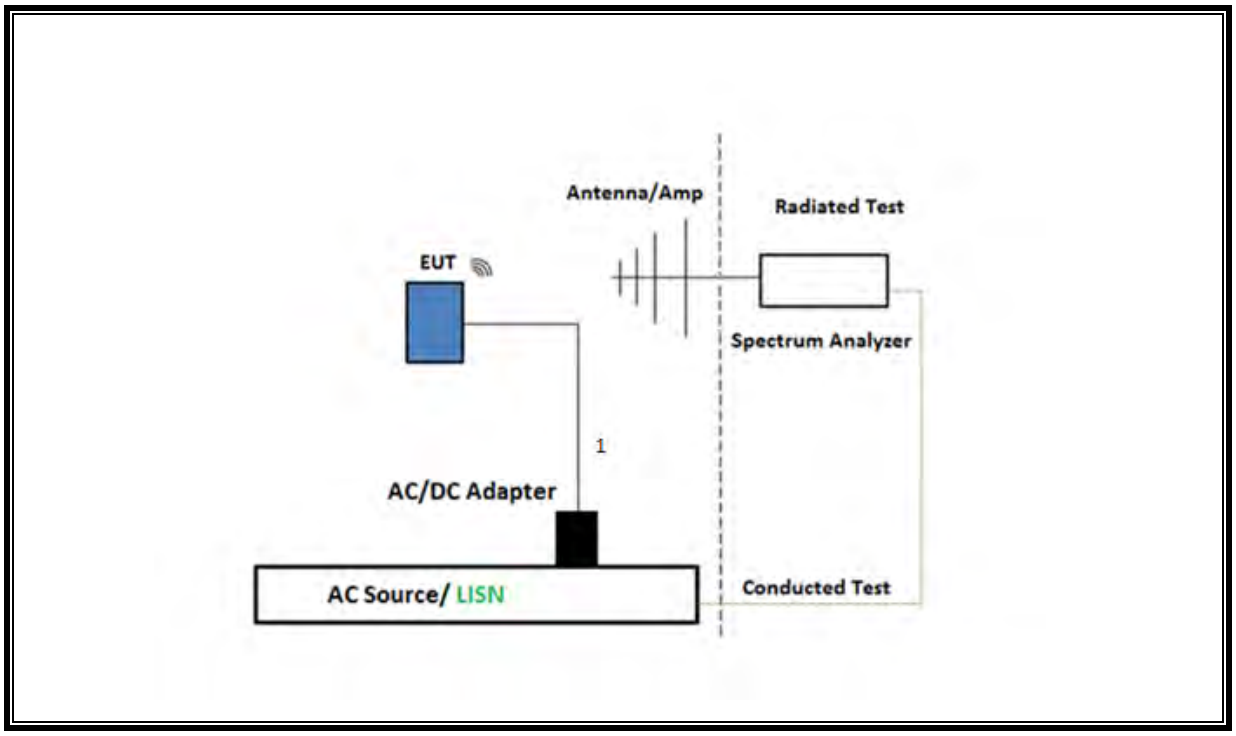
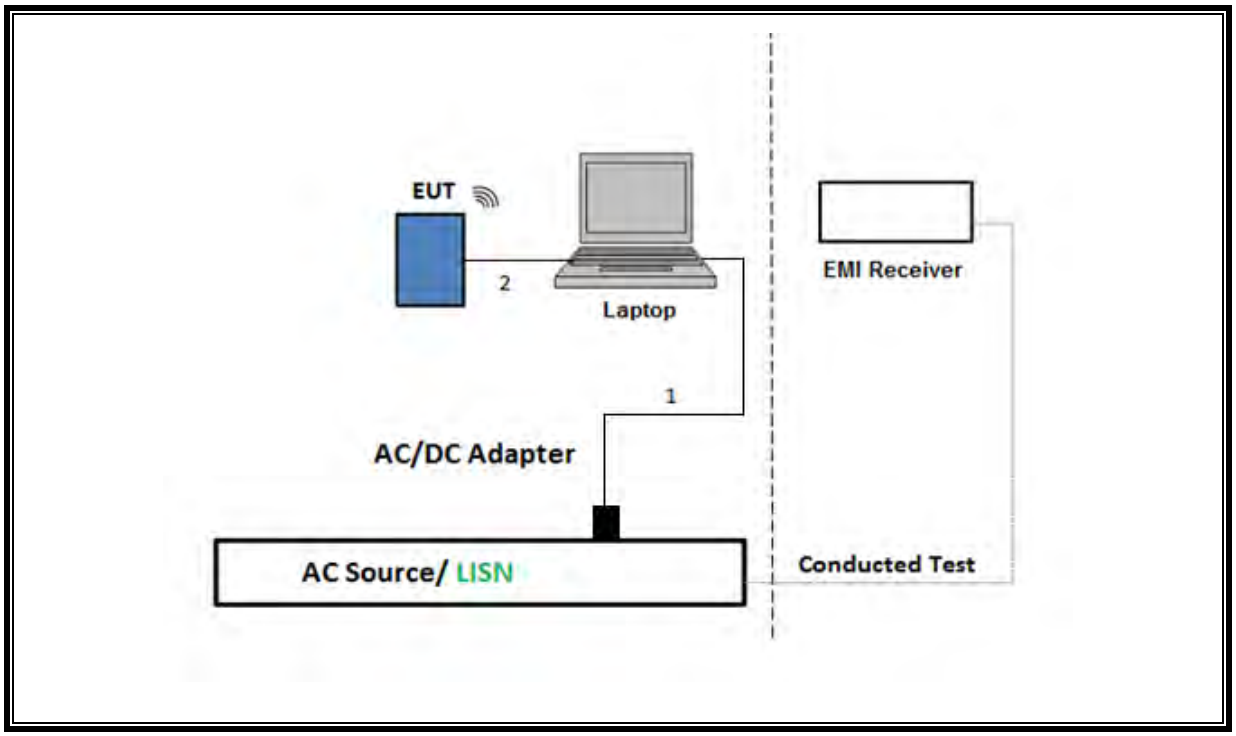
SETUP DIAGRAM FOR Below 1GHz and AC LINE CONDUCTED TEST



TEST SETUP- AC LINE CONDUCTED: LAPTOP CONFIGURATION



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7. MEASUREMENT METHOD

Test Item	Test Method
6 dB BW	ANSI C63.10 Subclause -11.8.1 RBW ≥ DTS BW
99% BW	ANSI C63.10-2013, Subclause 6.9.3.
Output Power	ANSI C63.10 Subclause -11.9.2.3.2 Method AVGPM G (Measurement using an RF average-reading power meter)
PSD	ANSI C63.10 Subclause -11.10.3 Method AVGPSD-1
Radiated emissions non-restricted frequency bands	ANSI C63.10 Subclause -11.11 & Clause 13
Radiated emissions restricted frequency bands	ANSI C63.10 Subclause -11.12.1 & Clause 13
Conducted emissions in restricted frequency bands	ANSI C63.10 Subclause -11.12.2
Band-edge	ANSI C63.10 Subclause -11.13.3.2 & Clause 13: Integration method -Peak detection
Band-edge	ANSI C63.10 Subclause -11.13.3.3 & Clause 13: Integration method -Trace averaging with continuous transmission at full power
Radiated Spurious Emissions Below 30MHz	ANSI C63.10-2013 Subclause 6.4 & Clause 13
AC Power Line Conducted Emissions	ANSI C63.10-2013, Subclause 6.2

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8. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST					
Description	**Manufacturer**	**Model**	**ID Num**	**Cal Due**	**Last Cal**
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	200897	03/312024	03/31/2023
RF Filter Box, 1-18GHz	UL-FR1	NA	173528	12/23/2023	12/23/2022
EMI TEST RECEIVER,	Rohde & Schwarz	ESW44	169937	02/29/2024	02/29/2023
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	222740	08/31/2023	08/31/2022
RF Filter Box, 1-18GHz, 12 Port.	UL-FR1	Frankenstein	230878	02/29/2024	02/29/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	191428	02/29/2024	02/29/2023
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	226671	01/09/2024	01/09/2023
RF Filter Box, 1-18GHz, 12 Port.	UL-FR1	Frankenstein	231874	04/19/2024	04/19/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	PRE0179372	02/29/2024	02/29/2023
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	230300	01/12/2024	01/12/2023
RF Filter Box, 1-18GHz, 12 Port.	UL-FR1	Frankenstein	231875	02/27/2024	02/27/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	170063	02/29/2024	02/29/2023
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	84797	09/20/2023	09/20/2022
RF Filter Box, 1-18GHz	UL-FR1	N/A	171389	05/31/2024	05/31/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	201497	02/29/2024	02/29/2023
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	200807	02/28/2024	02/28/2023
RF Filter Box, 1-18GHz, 12 Port.	UL-FR1	Frankenstein	231249	02/29/2024	02/29/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	201499	02/29/2024	02/29/2023
*Antenna, Horn 1-18GHz	ETS-Lindgren	3117	80404	08/08/2023	08/08/2022
RF Filter Box, 1-18GHz, 12 Port	UL-FR1	Frankenstein	216812	09/17/2023	9/17/2022
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	230548	02/29/2024	02/29/2023
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	81887	03/31/2024	03/31/2023
RF Filter Box, 1-18GHz, 17 Ports	UL-FR1	RATS 2	225474	03/31/2024	03/312023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	201502	02/29/2024	02/29/2023
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	230299	01/12/2024	01/12/2023
RF Filter Box, 1-18GHz, 17 Ports	UL-FR1	RATS 2	225575	03/31/2024	03/31/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	223461	02/29/2024	02/29/2023
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences Corp.	JB3	80714	10/06/2023	10/06/2022
*Amplifier, 10KHz to 1GHz, 32dB	Sonoma	310N	89831	08/10/2023	08/10/2022
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	226672	01/09/2024	01/09/2023
10dB Fixed Attenuator, 2 Watts Up to 26.5 GHz	Pasternack Enterprises	PE7024-10	236358	Verified/Characterized before use.	
10dB Fixed Attenuator, 2 Watts Up to 26.5 GHz	Pasternack Enterprises	PE7024-10	236355	Verified/Characterized before use.	
Spectrum Analyzer, PSA, 3Hz to 26.5GHz	Keysight Technologies Inc	E4440A	81311	02/29/2024	02/29/2023
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight Technologies Inc	N9030A	80397	02/28/2024	02/28/2023
*Conducted Switch Box	N/A	CSB	221008	06/21/2023	06/21/2022

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TEST EQUIPMENT LIST					
Description	**Manufacturer**	**Model**	**ID Num**	**Cal Due**	**Last Cal**
Power Meter, P-series single channel	Keysight Technologies Inc	N1911A	90756	01/31/2024	01/31/2023
Power Sensor, P - series, 50MHz to 18GHz, Wideband	Keysight Technologies Inc	N1921A	90389	01/31/2024	01/31/2023
*Antenna, Passive Loop 30Hz to 1MHz	Electro-Metrics	EM-6871	170013	07/28/2023	07/28/2022
*Antenna, Passive Loop 100KHz - 30MHz	ELECTRO-METRICS	EM-6872	170015	07/28/2023	07/28/2022
Antenna, Horn 18 to 26.5GHz	A.R.A.	MWH-1826/B	199658	12/06/2023	12/06/2022
RF Amplifier Assembly, 18-26.5GHz, 60dB Gain	AMPLICAL	AMP18G26.5-60	171583	02/29/2024	02/29/2023

AC Line Conducted					
EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESR	93091	02/29/2024	02/29/2023
LISN for Conducted Emissions CISPR-16	FISCHER CUSTOM COMMUNICATIONS	FCC-LISN-50/250-25-2-01-480V	175765	01/31/2024	01/31/2023
*Transient Limiter	TE	TBFL1	207996	07/15/2023	07/15/2022
UL AUTOMATION SOFTWARE					
Radiated Software	UL	UL EMC	Ver 9.5, Mar 6, 2020		
Conducted Software	UL	UL EMC	2020.2.26		
AC Line Conducted Software	UL	UL EMC	Ver 9.5, February 21, 2020		

*Testing is completed before equipment expiration date.

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9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.

Test Engineer:	32181
Test Date:	03/28/2023

ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
2.4GHz Band						
802.11b	24.840	24.860	0.999	99.92%	0.00	0.010
802.11n HT20 MCS0	1.920	1.941	0.989	98.92%	0.00	0.010
802.11n HT20 MCS7	0.228	0.250	0.9142	91.42%	0.39	4.384
802.11ax HE20, RU26 MCS0	3.994	4.039	0.989	98.89%	0.00	0.010
802.11ax HE20 RU26 MCS9	0.360	0.395	0.913	91.33%	0.39	2.775
802.11ax HE20 SU MCS0	1.487	1.509	0.985	98.54%	0.00	0.010
802.11ax HE20 SU MCS9	0.168	0.190	0.884	88.42%	0.53	5.952

Note: Duty cycle 2TX is the same as 1TX.

DUTY CYCLE PLOTS

DUTY CYCLE 802.11n HT20 MODE

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9.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Only Mid channel plot is reported to show setting parameter complies with testing method/procedure.

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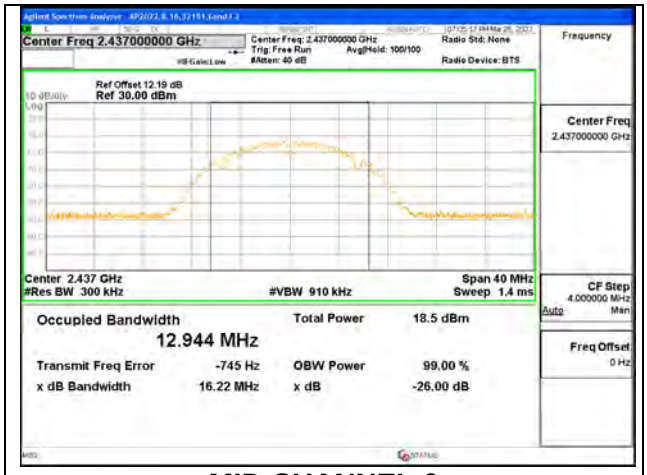
9.2.1. 802.11b MODE 1TX

1TX ANT 4 MODE

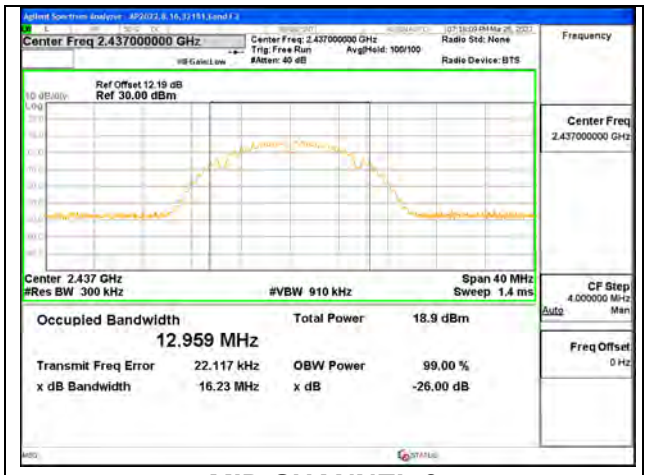
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low 1	2412	12.954
Mid 6	2437	12.944
High 11	2462	12.984
High 12	2467	12.968
High 13	2472	12.733



MID CHANNEL 6

1TX ANT 3 MODE

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low 1	2412	12.91
Mid 6	2437	12.959
High 11	2462	12.936
High 12	2467	12.962
High 13	2472	12.913



MID CHANNEL 6

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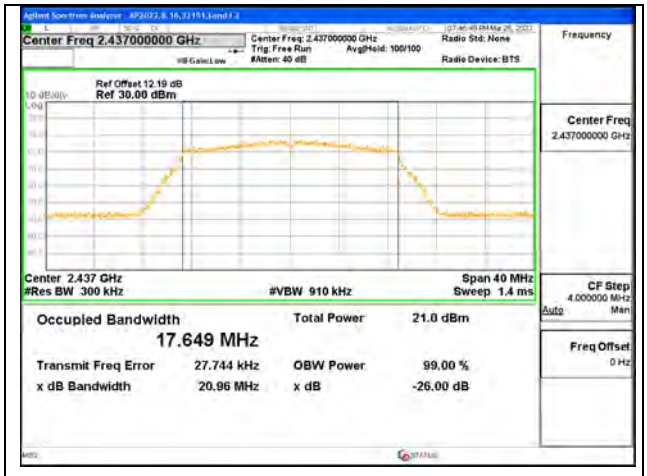
9.2.2. 802.11n HT20 MODE

1TX ANT 4 MODE

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low 1	2412	17.782
Low 2	2417	17.781
Mid 6	2437	17.649
High 10	2457	17.766
High 11	2462	17.763
High 12	2467	17.741
High 13	2472	17.762



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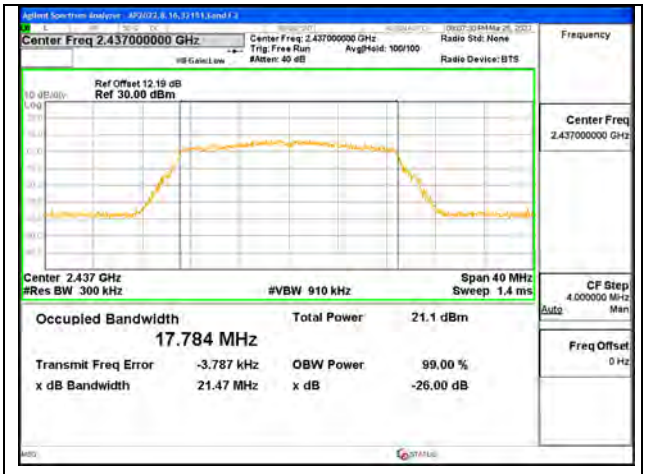
1TX ANT 3 MODE

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low 1	2412	17.782
Low 2	2417	17.67
Mid 6	2437	17.784
High 10	2457	17.729
High 11	2462	17.781
High 12	2467	17.746
High 13	2472	17.82



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9.2.3. 802.11n HT20 CDD MODE

ANT 4 + ANT 3 2TX MODE

Channel	Frequency (MHz)	99% Bandwidth (MHz) ANT 4	99% Bandwidth (MHz) ANT 3
Low 1	2412	17.77	17.723
Low 2	2417	17.771	17.715
Low 3	2422	17.719	17.691
Mid 6	2437	17.683	17.727
High 9	2452	17.776	17.764
High 10	2457	17.77	17.655
High 11	2462	17.733	17.616
High 12	2467	17.665	17.624
High 13	2472	17.749	17.774

MID CHANNEL 6 ANT 4

MID CHANNEL 6 ANT 3

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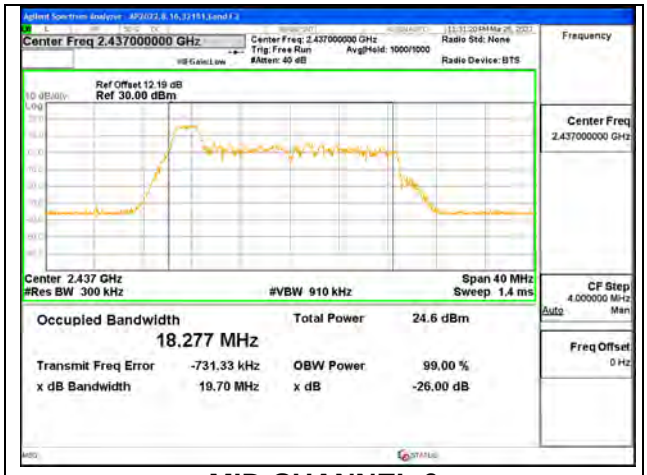
9.2.4. 802.11ax HE20 MODE

ANT 4 SISO MODE: 26-Tones, RU Index 0

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low 1	2412	18.4337
Mid 6	2437	18.277
High 11	2462	18.2128
High 12	2467	18.2268
High 13	2472	18



MID CHANNEL 6

ANT 4 SISO MODE: 26-Tones, RU Index 4

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low 1	2412	16.76
Mid 6	2437	16.672
High 11	2462	16.7811
High 12	2467	16.8094
High 13	2472	16.424

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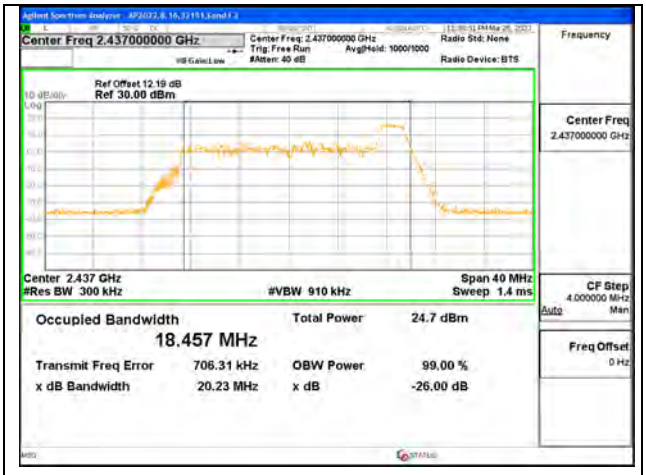
ANT 4 SISO MODE: 26-Tones, RU Index 8

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low 1	2412	18.201
Mid 6	2437	18.457
High 11	2462	18.497
High 12	2467	18.523
High 13	2472	18.574



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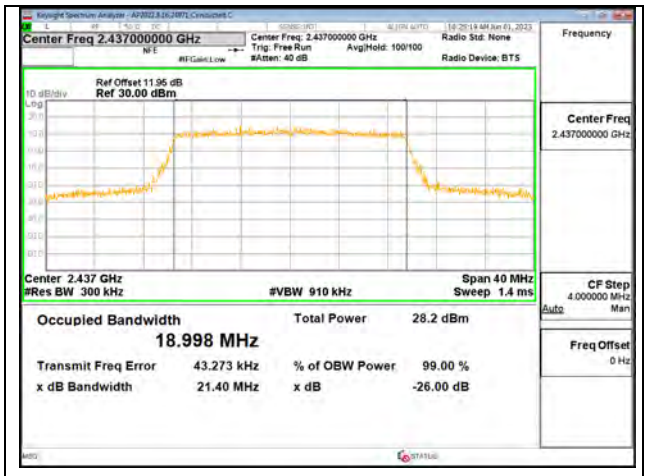
ANT 4 SISO MODE: SU Mode

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low 1	2412	19.050
Low 2	2417	18.993
Low 3	2422	19.017
Mid 6	2437	18.998
High 9	2452	19.042
High 10	2457	19.016
High 11	2462	19.027
High 12	2467	19.030
High 13	2472	18.898



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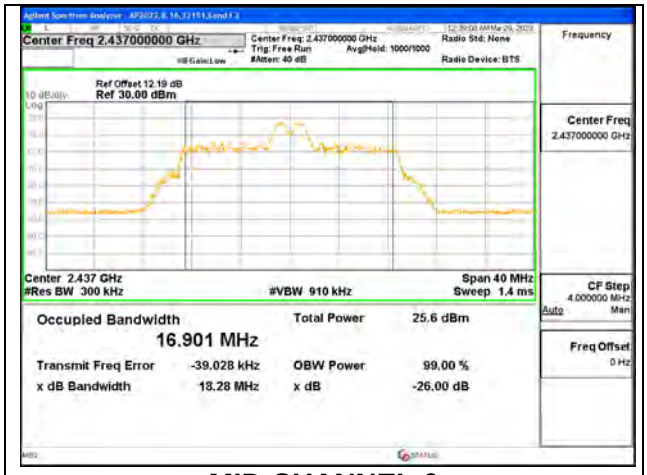
ANT 3 SISO MODE: 26-Tones, RU Index 0

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low 1	2412	18.412
Mid 6	2437	18.332
High 11	2462	18.096
High 12	2467	18.234
High 13	2472	18.151

MID CHANNEL 6

ANT 3 SISO MODE: 26-Tones, RU Index 4

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low 1	2412	16.701
Mid 6	2437	16.901
High 11	2462	16.838
High 12	2467	16.737
High 13	2472	16.864



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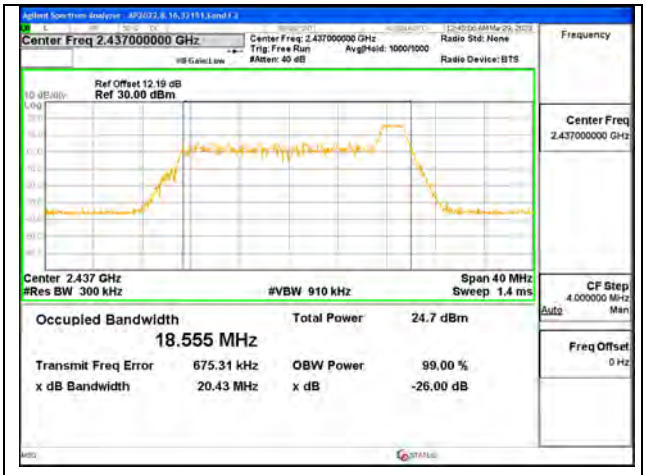
ANT 3 SISO MODE: 26-Tones, RU Index 8

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low 1	2412	18.244
Mid 6	2437	18.555
High 11	2462	18.482
High 12	2467	18.563
High 13	2472	18.590



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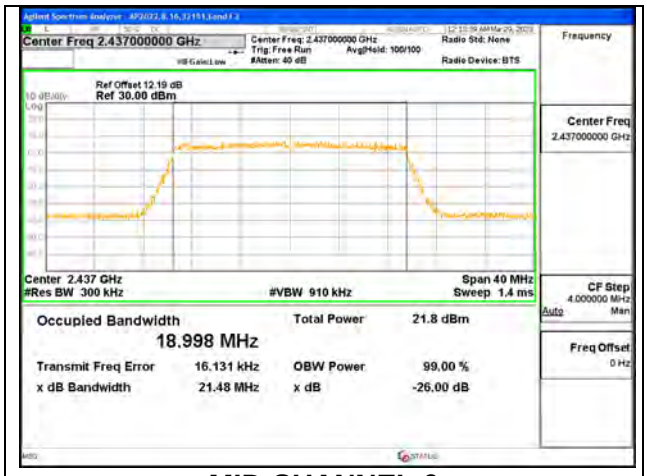
ANT 3 SISO MODE: SU Mode

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low 1	2412	18.967
Low 2	2417	18.941
Low 3	2422	19.006
Mid 6	2437	18.998
High 9	2452	19.029
High 10	2457	18.952
High 11	2462	19.009
High 12	2467	18.983
High 13	2472	18.994



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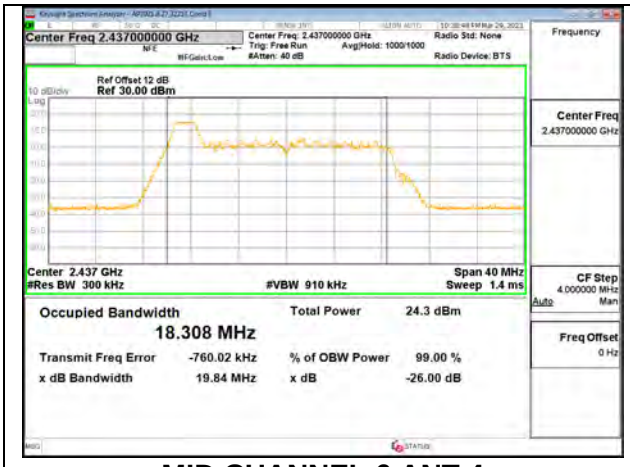
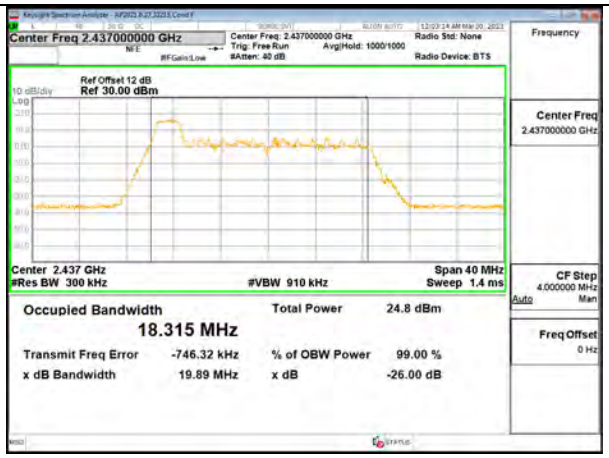
9.2.5. 802.11ax HE20 OFDMA MODE 2TX

ANT 4 + ANT 3 2TX MODE: 26-Tones, RU Index 0

Channel	Frequency (MHz)	99% Bandwidth (MHz) ANT 4	99% Bandwidth (MHz) ANT 3
Low 1	2412	18.369	18.446
Mid 6	2437	18.308	18.315
High 11	2462	18.271	18.091
High 12	2467	18.191	18.184
High 13	2472	18.048	18.019



MID CHANNEL 6 ANT 4



MID CHANNEL 6 ANT 3

ANT 4 + ANT 3 2TX MODE: 26-Tones, RU Index 4

Channel	Frequency (MHz)	99% Bandwidth (MHz) ANT 4	99% Bandwidth (MHz) ANT 3
Low 1	2412	17.010	16.651
Mid 6	2437	16.670	16.937
High 11	2462	16.793	16.481
High 12	2467	16.929	16.699
High 13	2472	16.508	16.622

MID CHANNEL 6 ANT 4

MID CHANNEL 6 ANT 3

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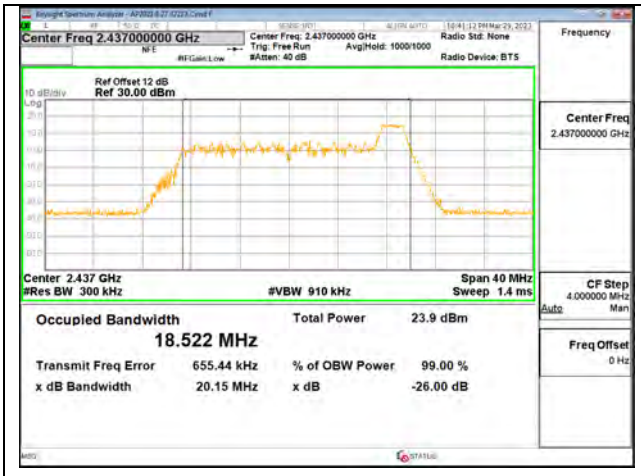
ANT 4 + ANT 3 2TX MODE: 26-Tones, RU Index 8

Channel	Frequency (MHz)	99% Bandwidth (MHz) ANT 4	99% Bandwidth (MHz) ANT 3
Low 1	2412	18.456	18.135
Mid 6	2437	18.522	18.462
High 11	2462	18.607	18.337
High 12	2467	18.595	18.354
High 13	2472	18.59	18.331



MID CHANNEL 6 ANT 4

MID CHANNEL 6 ANT 3

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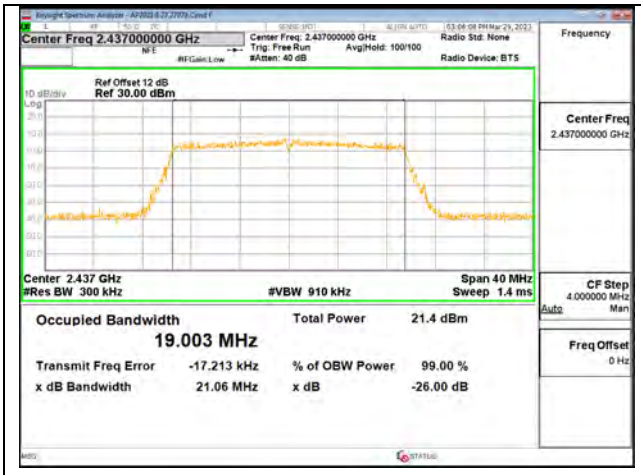
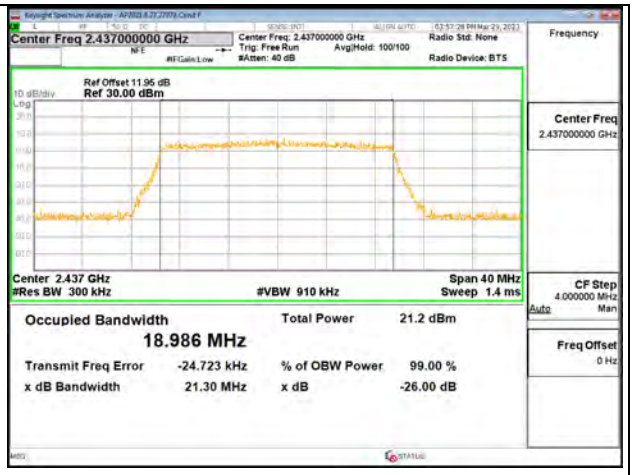
ANT 4 + ANT 3 2TX MODE: SU Mode

Channel	Frequency (MHz)	99% Bandwidth (MHz) ANT 4	99% Bandwidth (MHz) ANT 3
Low 1	2412	19.004	18.986
Low 2	2417	18.948	18.975
Low 3	2422	19.028	19.019
Mid 6	2437	19.003	18.986
High 8	2447	19.009	19.107
High 9	2452	18.996	19.01
High 10	2457	19.016	18.973
High 11	2462	19.042	18.987
High 12	2467	18.996	18.978
High 13	2472	18.891	18.978



MID CHANNEL 6 ANT 4



MID CHANNEL 6 ANT 3

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9.3. 6dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

RSS-247 5.2 (a)

The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

The 6dB bandwidth was measured for the narrowest bandwidth mode, b Mode and ax HE20 Mode 26-Tones as worst case to demonstrate compliance with the minimum required bandwidth of 500 kHz to cover all OFDMA modes.

Only Mid channel plot is reported to show setting parameter complies with testing method/procedure.

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9.3.1. 802.11b MODE 1TX

1TX ANT 4 MODE

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	7.16	0.5
Mid 6	2437	7.76	0.5
High 11	2462	7.72	0.5
High 12	2467	7.24	0.5
High 13	2472	7.68	0.5

MID CHANNEL 6

1TX ANT 3 MODE

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	7.12	0.5
Mid 6	2437	7.12	0.5
High 11	2462	7.72	0.5
High 12	2467	7.72	0.5
High 13	2472	7.72	0.5

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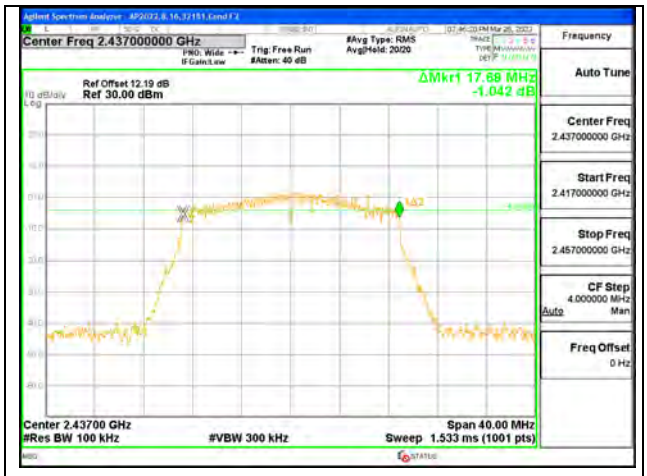
9.3.2. 802.11n HT20 MODE

1TX ANT 4 MODE

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	17.6	0.5
Low 2	2417	17.64	0.5
Mid 6	2437	17.68	0.5
High 10	2457	17.04	0.5
High 11	2462	17.28	0.5
High 12	2467	17	0.5
High 13	2472	17.44	0.5



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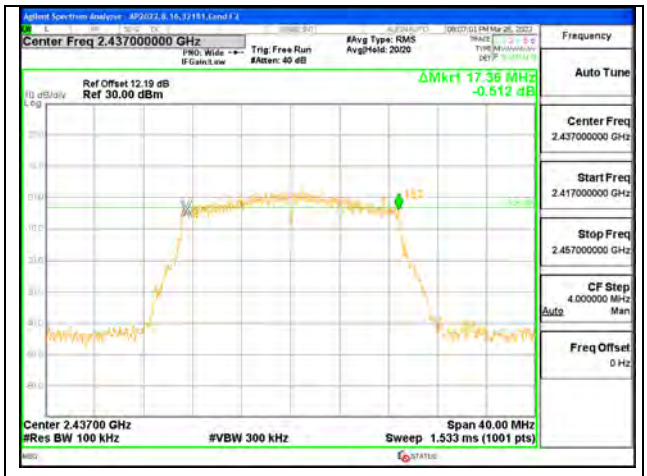
1TX ANT 3 MODE

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	17.24	0.5
Low 2	2417	17.48	0.5
Mid 6	2437	17.36	0.5
High 10	2457	17	0.5
High 11	2462	17	0.5
High 12	2467	16.4	0.5
High 13	2472	17.68	0.5



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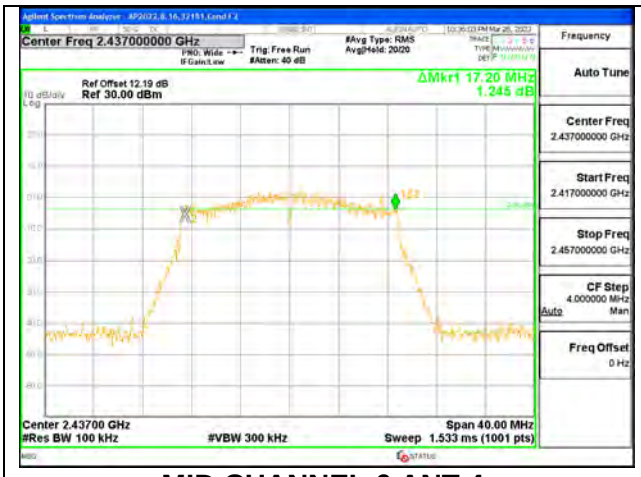
9.3.3. 802.11n HT20 CDD MODE 2TX

ANT 4 + ANT3 2TX MODE

Channel	Frequency (MHz)	6dB Bandwidth ANT 4 (MHz)	6dB Bandwidth ANT 3 (MHz)	Minimum Limit (MHz)
Low 1	2412	17.40	17.24	0.5
Low 2	2417	17.64	17.36	0.5
Low 3	2422	17.04	17.64	0.5
Mid 6	2437	17.20	17.12	0.5
High 9	2452	17.36	17.36	0.5
High 10	2457	17.40	17.60	0.5
High 11	2462	17.28	17.00	0.5
High 12	2467	17.00	16.64	0.5
High 13	2472	17.68	17.00	0.5



MID CHANNEL 6 ANT 4

MID CHANNEL 6 ANT 3

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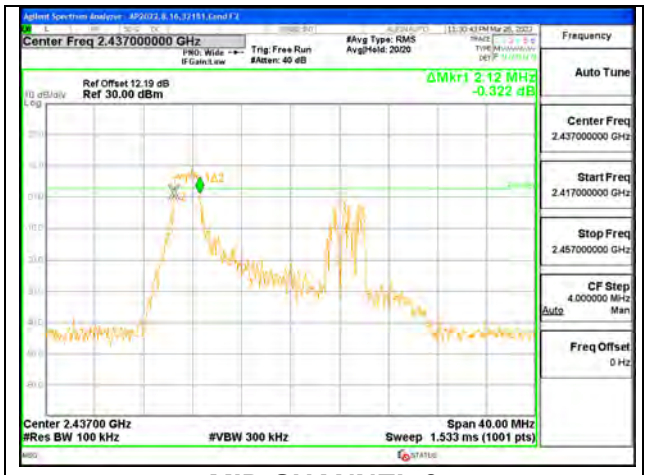
9.3.4. 802.11ax HE20 MODE

ANT 4 SISO MODE: 26-Tones, RU Index 0

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	2.08	0.5
Mid 6	2437	2.12	0.5
High 11	2462	2.12	0.5
High 12	2467	2.16	0.5
High 13	2472	2.04	0.5



MID CHANNEL 6

ANT 4 SISO MODE: 26-Tones, RU Index 4

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	2.64	0.5
Mid 6	2437	2.68	0.5
High 11	2462	2.72	0.5
High 12	2467	2.64	0.5
High 13	2472	2.68	0.5

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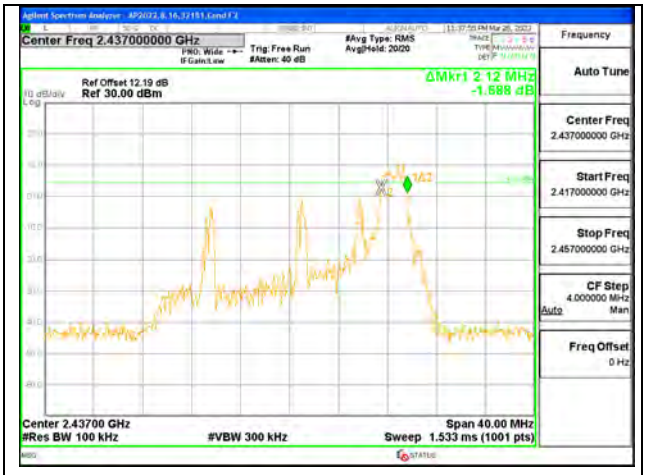
ANT 4 SISO MODE: 26-Tones, RU Index 8

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	2.12	0.5
Mid 6	2437	2.12	0.5
High 11	2462	2.12	0.5
High 12	2467	2.12	0.5
High 13	2472	2.12	0.5



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ANT 4 SISO MODE: SU Mode

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	18.96	0.5
Low 2	2417	18.00	0.5
Low 3	2422	19.12	0.5
Mid 6	2437	18.32	0.5
High 9	2452	19.00	0.5
High 10	2457	19.08	0.5
High 11	2462	18.96	0.5
High 12	2467	18.60	0.5
High 13	2472	18.68	0.5

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ANT 3 SISO MODE: 26-Tones, RU Index 0

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	2.08	0.5
Mid 6	2437	2.16	0.5
High 11	2462	2.00	0.5
High 12	2467	2.12	0.5
High 13	2472	2.08	0.5

MID CHANNEL 6

ANT 3 SISO MODE: 26-Tones, RU Index 4

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	2.68	0.5
Mid 6	2437	2.68	0.5
High 11	2462	2.64	0.5
High 12	2467	2.64	0.5
High 13	2472	2.60	0.5

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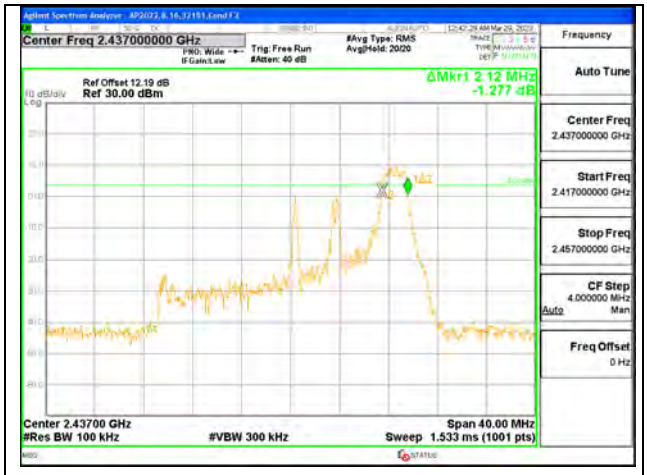
ANT 3 SISO MODE: 26-Tones, RU Index 8

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	2.16	0.5
Mid 6	2437	2.12	0.5
High 11	2462	2.24	0.5
High 12	2467	2.16	0.5
High 13	2472	2.04	0.5



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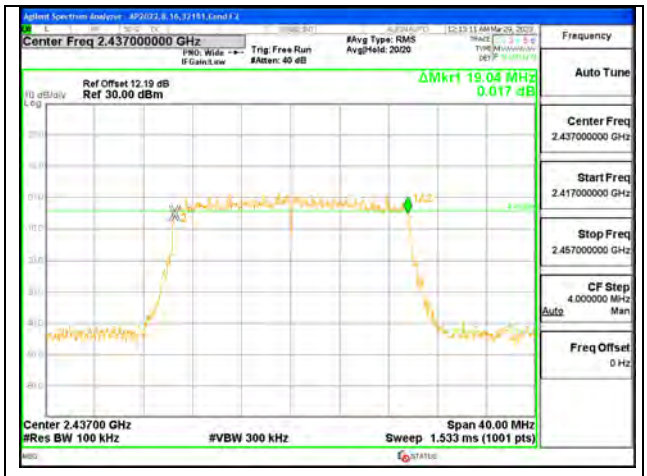
ANT 3 SISO MODE: SU Mode

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	18.76	0.5
Low 2	2417	18.24	0.5
Low 3	2422	18.04	0.5
Mid 6	2437	19.04	0.5
High 9	2452	19.20	0.5
High 10	2457	18.84	0.5
High 11	2462	18.72	0.5
High 12	2467	18.92	0.5
High 13	2472	18.88	0.5



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9.3.5. 802.11ax HE20 OFDMA MODE 2TX

ANT 4 + ANT 3 2TX MODE : 26-Tones, RU Index 0

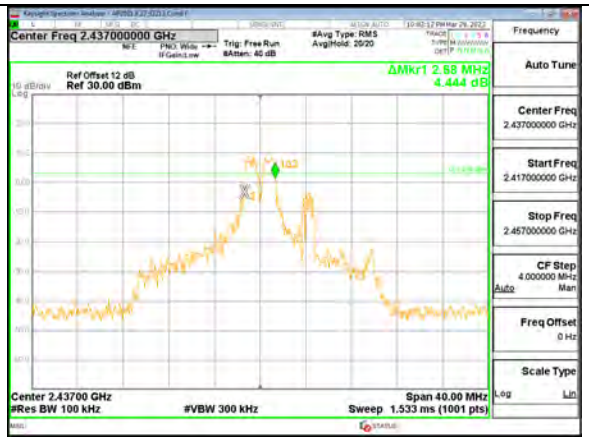
Channel	Frequency (MHz)	6dB BW(MHz) ANT 4	6dB BW (MHz) ANT 3	Minimum Limit (MHz)
Low 1	2412	2.12	2.08	0.5
Mid 6	2437	2.16	2.12	0.5
High 11	2462	2.12	2.20	0.5
High 12	2467	2.16	2.12	0.5
High 13	2472	2.12	2.20	0.5

MID CHANNEL 6 ANT 4

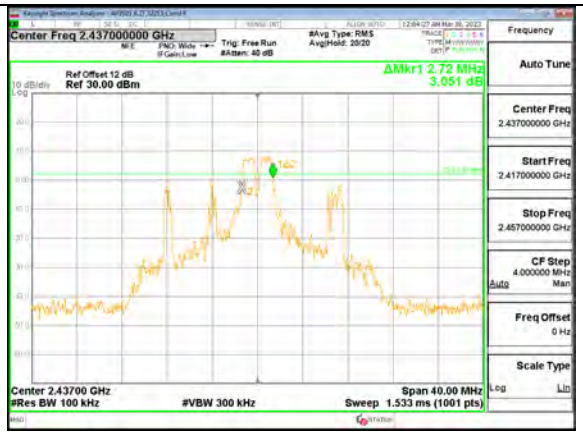
MID CHANNEL 6 ANT 3

ANT 4 + ANT 3 2TX MODE : 26-Tones, RU Index 4

Channel	Frequency (MHz)	6dB BW(MHz) ANT 4	6dB BW (MHz) ANT 3	Minimum Limit (MHz)
Low 1	2412	2.68	2.68	0.5
Mid 6	2437	2.68	2.72	0.5
High 11	2462	2.68	2.72	0.5
High 12	2467	2.64	2.76	0.5
High 13	2472	2.64	2.68	0.5



MID CHANNEL 6 ANT 4



MID CHANNEL 6 ANT 3

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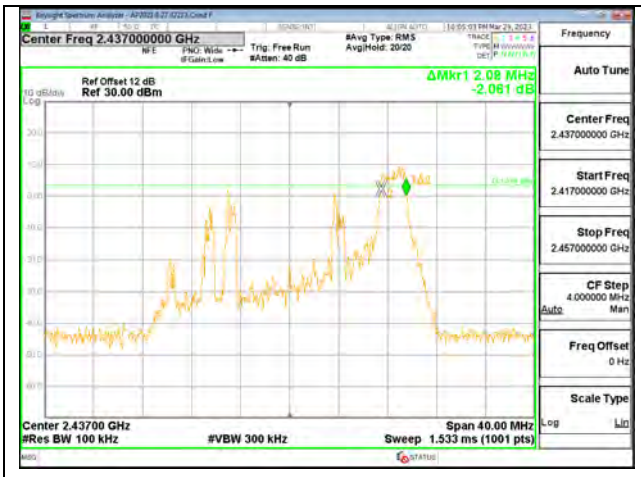
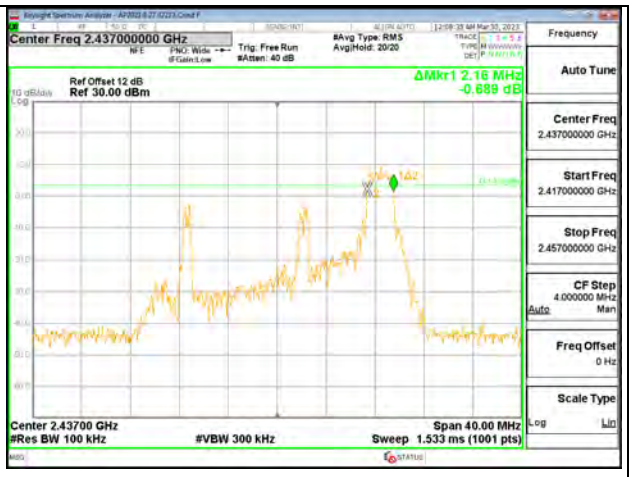
ANT 4 + ANT 3 2TX MODE: 26-Tones, RU Index 8

Channel	Frequency (MHz)	6dB BW(MHz) ANT 4	6dB BW (MHz) ANT 3	Minimum Limit (MHz)
Low 1	2412	2.08	2.16	0.5
Mid 6	2437	2.08	2.16	0.5
High 11	2462	2.12	2.12	0.5
High 12	2467	2.12	2.04	0.5
High 13	2472	2.16	2.12	0.5



MID CHANNEL 6 ANT 4



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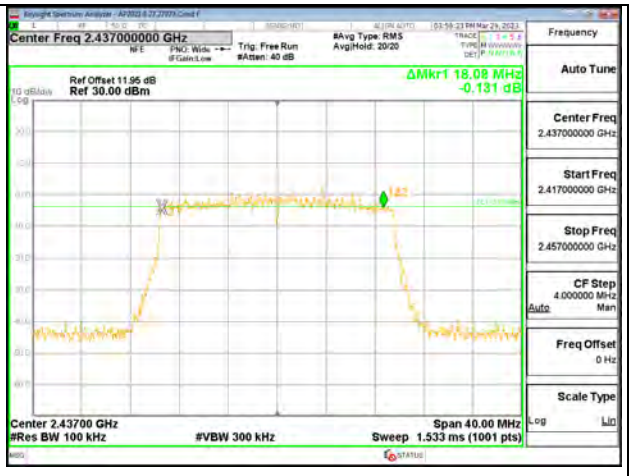
ANT 4 + ANT 3 2TX MODE: SU Mode

Channel	Frequency (MHz)	6dB BW(MHz) ANT 4	6dB BW (MHz) ANT 3	Minimum Limit (MHz)
Low 1	2412	18.48	19.00	0.5
Low 2	2417	19.00	18.68	0.5
Low 3	2422	18.24	19.12	0.5
Mid 6	2437	18.88	18.08	0.5
High 8	2447	18.68	19.12	0.5
High 9	2452	18.28	18.12	0.5
High 10	2457	19.08	18.52	0.5
High 11	2462	18.64	18.44	0.5
High 12	2467	18.28	18.28	0.5
High 13	2472	18.84	18.91	0.5

MID CHANNEL 6 ANT 4



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9.4. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

RSS-247 5.4 (d)

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, 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.

TEST PROCEDURE

Measurements performed using a wideband RF power meter.

The power output was measured on the EUT antenna port using SMA cable with 10dB attenuator connected to a power meter. Gated average output power was read directly from the power meter.

DIRECTIONAL ANTENNA GAIN

For 1 TX:
There is only one transmitter output therefore the directional gain is equal to the antenna gain.

For 2 TX:

Tx chains are uncorrelated for power and correlated for PSD due to the device supporting CDD in all MIMO modes. The directional gains are as follows:

Band (GHz)	ANT 4 Antenna Gain (dBi)	ANT 3 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)	Correlated Chains Directional Gain (dBi)
2.4	-1.1	-0.9	-1.0	2.0

RESULTS

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DIRECTIONAL GAIN CALCULATION:

ANSI C63.10-2013 section 14.4.3

Uncorrelated directional gain=10*LOG((10^(Ant1/10)+10^(Ant2/10))/2)
Correlated directional Gain=10*LOG(((10^(Ant1/20)+10^(Ant2/20))^2)/2)

Sample Calculation:

Ant4=-1.1, Ant3=-0.9

Uncorrelated Antenna gain=10log[(10^(-1.1/10)+10^(-0.9/10))/2]=-1.0dBi

Correlated Antenna gain=10log[(10^(-1.1/20)+10^(-0.9/20))^2)/2]=2.0dBi

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9.4.1. 802.11b MODE 1TX

Test Engineer:	26118
Test Date:	04/18/2023

1TX ANT 4 MODE

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-1.1	30.00	30	36	30.00
Mid 6	2437	-1.1	30.00	30	36	30.00
High 11	2462	-1.1	30.00	30	36	30.00
High 12	2467	-1.1	30.00	30	36	30.00
High 13	2472	-1.1	30.00	30	36	30.00

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd Power**

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	21.44	21.44	30.00	-8.56
Mid 6	2437	21.47	21.47	30.00	-8.53
High 11	2462	21.48	21.48	30.00	-8.52
High 12	2467	21.46	21.46	30.00	-8.54
High 13	2472	20.49	20.49	30.00	-9.51

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1TX ANT 3 MODE

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-0.9	30.00	30	36	30.00
Mid 6	2437	-0.9	30.00	30	36	30.00
High 11	2462	-0.9	30.00	30	36	30.00
High 12	2467	-0.9	30.00	30	36	30.00
High 13	2472	-0.9	30.00	30	36	30.00

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd Power**

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	21.45	21.45	30.00	-8.55
Mid 6	2437	21.42	21.42	30.00	-8.58
High 11	2462	21.45	21.45	30.00	-8.55
High 12	2467	21.47	21.47	30.00	-8.53
High 13	2472	20.49	20.49	30.00	-9.51

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9.4.2. 802.11n HT20 MODE

Test Engineer:	26118
Test Date:	04/18/2023

1TX ANT 4 MODE

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-1.1	30.00	30	36	30.00
Low 2	2417	-1.1	30.00	30	36	30.00
Mid 6	2437	-1.1	30.00	30	36	30.00
High 10	2457	-1.1	30.00	30	36	30.00
High 11	2462	-1.1	30.00	30	36	30.00
High 12	2467	-1.1	30.00	30	36	30.00
High 13	2472	-1.1	30.00	30	36	30.00

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd Power**

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	17.46	17.46	30.00	-12.54
Low 2	2417	20.48	20.48	30.00	-9.52
Mid 6	2437	21.46	21.46	30.00	-8.54
High 10	2457	20.45	20.45	30.00	-9.55
High 11	2462	18.47	18.47	30.00	-11.53
High 12	2467	16.46	16.46	30.00	-13.54
High 13	2472	14.94	14.94	30.00	-15.06

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1TX ANT 3 MODE

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-0.9	30.00	30	36	30.00
Low 2	2417	-0.9	30.00	30	36	30.00
Mid 6	2437	-0.9	30.00	30	36	30.00
High 10	2457	-0.9	30.00	30	36	30.00
High 11	2462	-0.9	30.00	30	36	30.00
High 12	2467	-0.9	30.00	30	36	30.00
High 13	2472	-0.9	30.00	30	36	30.00

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd Power**

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	17.47	17.47	30.00	-12.53
Low 2	2417	20.49	20.49	30.00	-9.51
Mid 6	2437	21.44	21.44	30.00	-8.56
High 10	2457	20.47	20.47	30.00	-9.53
High 11	2462	18.44	18.44	30.00	-11.56
High 12	2467	16.47	16.47	30.00	-13.53
High 13	2472	14.97	14.97	30.00	-15.03

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9.4.3. 802.11n HT20 CDD MODE 2TX

ANT 4 + ANT3 2TX MODE

Test Engineer:	26118
Test Date:	05/09/2023

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-1.0	30.00	36	30.00
Low 2	2417	-1.0	30.00	36	30.00
Low 3	2422	-1.0	30.00	36	30.00
Mid 6	2437	-1.0	30.00	36	30.00
High 9	2452	-1.0	30.00	36	30.00
High 10	2457	-1.0	30.00	36	30.00
High 11	2462	-1.0	30.00	36	30.00
High 12	2467	-1.0	30.00	36	30.00
High 13	2472	-1.0	30.00	36	30.00

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd Power**

Results

Channel	Frequency (MHz)	ANT 4 Meas Power (dBm)	ANT 3 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	16.94	16.95	19.96	30.00	-10.04
Low 2	2417	19.45	19.47	22.47	30.00	-7.53
Low 3	2422	20.97	20.99	23.99	30.00	-6.01
Mid 6	2437	21.45	21.47	24.47	30.00	-5.53
High 9	2452	20.44	20.47	23.47	30.00	-6.53
High 10	2457	19.45	19.47	22.47	30.00	-7.53
High 11	2462	17.47	17.46	20.48	30.00	-9.52
High 12	2467	14.99	14.97	17.99	30.00	-12.01
High 13	2472	14.48	14.45	17.48	30.00	-12.52

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9.4.4. 802.11ax HE20 MODE

Test Engineer:	24971
Test Date:	06/01/2023

1TX ANT 4 MODE: 26-Tones, RU Index 0

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-1.1	30.00	30	36	30.00
Mid 6	2437	-1.1	30.00	30	36	30.00
High 11	2462	-1.1	30.00	30	36	30.00
High 12	2467	-1.1	30.00	30	36	30.00
High 13	2472	-1.1	30.00	30	36	30.00

Duty Cycle CF (dB)	0.0	**Included in Calculations of Corr'd Power**

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	13.43	13.43	30.00	-16.57
Mid 6	2437	13.49	13.49	30.00	-16.51
High 11	2462	13.44	13.44	30.00	-16.56
High 12	2467	13.47	13.47	30.00	-16.53
High 13	2472	0.98	0.98	30.00	-29.02

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1TX ANT 4 MODE: 26-Tones, RU Index 4

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-1.1	30.00	30	36	30.00
Mid 6	2437	-1.1	30.00	30	36	30.00
High 11	2462	-1.1	30.00	30	36	30.00
High 12	2467	-1.1	30.00	30	36	30.00
High 13	2472	-1.1	30.00	30	36	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	13.41	13.41	30.00	-16.59
Mid 6	2437	13.46	13.46	30.00	-16.54
High 11	2462	13.47	13.47	30.00	-16.53
High 12	2467	13.49	13.49	30.00	-16.51
High 13	2472	0.97	0.97	30.00	-29.03

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1TX ANT 4 MODE: 26-Tones, RU Index 8

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-1.1	30.00	30	36	30.00
Mid 6	2437	-1.1	30.00	30	36	30.00
High 11	2462	-1.1	30.00	30	36	30.00
High 12	2467	-1.1	30.00	30	36	30.00
High 13	2472	-1.1	30.00	30	36	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	13.44	13.44	30.00	-16.56
Mid 6	2437	13.49	13.49	30.00	-16.51
High 11	2462	13.47	13.47	30.00	-16.53
High 12	2467	13.49	13.49	30.00	-16.51
High 13	2472	0.96	0.96	30.00	-29.04

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1TX ANT 4 MODE: SU Mode

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-1.1	30.00	30	36	30.00
Low 2	2417	-1.1	30.00	30	36	30.00
Low 3	2422	-1.1	30.00	30	36	30.00
Mid 6	2437	-1.1	30.00	30	36	30.00
High 9	2452	-1.1	30.00	30	36	30.00
High 10	2457	-1.1	30.00	30	36	30.00
High 11	2462	-1.1	30.00	30	36	30.00
High 12	2467	-1.1	30.00	30	36	30.00
High 13	2472	-1.1	30.00	30	36	30.00

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd Power**

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	16.97	16.97	30.00	-13.03
Low 2	2417	18.97	18.97	30.00	-11.03
Low 3	2422	20.94	20.94	30.00	-9.06
Mid 6	2437	21.45	21.45	30.00	-8.55
High 9	2452	20.97	20.97	30.00	-9.03
High 10	2457	18.97	18.97	30.00	-11.03
High 11	2462	16.95	16.95	30.00	-13.05
High 12	2467	14.94	14.94	30.00	-15.06
High 13	2472	9.97	9.97	30.00	-20.03

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1TX ANT 3 MODE: 26-Tones, RU Index 0

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-0.9	30.00	30	36	30.00
Mid 6	2437	-0.9	30.00	30	36	30.00
High 11	2462	-0.9	30.00	30	36	30.00
High 12	2467	-0.9	30.00	30	36	30.00
High 13	2472	-0.9	30.00	30	36	30.00

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd Power**

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	13.41	13.41	30.00	-16.59
Mid 6	2437	13.45	13.45	30.00	-16.55
High 11	2462	13.40	13.40	30.00	-16.60
High 12	2467	13.48	13.48	30.00	-16.52
High 13	2472	0.93	0.93	30.00	-29.07

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1TX ANT 3 MODE: 26-Tones, RU Index 4

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-0.9	30.00	30	36	30.00
Mid 6	2437	-0.9	30.00	30	36	30.00
High 11	2462	-0.9	30.00	30	36	30.00
High 12	2467	-0.9	30.00	30	36	30.00
High 13	2472	-0.9	30.00	30	36	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	13.49	13.49	30.00	-16.51
Mid 6	2437	13.47	13.47	30.00	-16.53
High 11	2462	13.48	13.48	30.00	-16.52
High 12	2467	13.40	13.40	30.00	-16.60
High 13	2472	0.95	0.95	30.00	-29.05

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1TX ANT 3 MODE: 26-Tones, RU Index 8

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-0.9	30.00	30	36	30.00
Mid 6	2437	-0.9	30.00	30	36	30.00
High 11	2462	-0.9	30.00	30	36	30.00
High 12	2467	-0.9	30.00	30	36	30.00
High 13	2472	-0.9	30.00	30	36	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	13.42	13.42	30.00	-16.58
Mid 6	2437	13.47	13.47	30.00	-16.53
High 11	2462	13.49	13.49	30.00	-16.51
High 12	2467	13.43	13.43	30.00	-16.57
High 13	2472	0.96	0.96	30.00	-29.04

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1TX ANT 3 MODE: SU Mode

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-0.9	30.00	30	36	30.00
Low 2	2417	-0.9	30.00	30	36	30.00
Low 3	2422	-0.9	30.00	30	36	30.00
Mid 6	2437	-0.9	30.00	30	36	30.00
High 9	2452	-0.9	30.00	30	36	30.00
High 10	2457	-0.9	30.00	30	36	30.00
High 11	2462	-0.9	30.00	30	36	30.00
High 12	2467	-0.9	30.00	30	36	30.00
High 13	2472	-0.9	30.00	30	36	30.00

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd Power**

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	16.97	16.97	30.00	-13.03
Low 2	2417	18.95	18.95	30.00	-11.05
Low 3	2422	20.97	20.97	30.00	-9.03
Mid 6	2437	21.44	21.44	30.00	-8.56
High 9	2452	20.95	20.95	30.00	-9.05
High 10	2457	18.92	18.92	30.00	-11.08
High 11	2462	16.95	16.95	30.00	-13.05
High 12	2467	14.97	14.97	30.00	-15.03
High 13	2472	9.95	9.95	30.00	-20.05

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9.4.5. 802.11ax HE20 OFDMA MODE 2TX

Test Engineer:	26118
Test Date:	4/25/2023

ANT 4 + ANT 3 2TX MODE: 26-Tones, RU Index 0

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-1.0	30.00	36	30.00
Mid 6	2437	-1.0	30.00	36	30.00
High 11	2462	-1.0	30.00	36	30.00
High 12	2467	-1.0	30.00	36	30.00
High 13	2472	-1.0	30.00	36	30.00

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd Power**

Results

Channel	Frequency (MHz)	ANT 4 Meas Power (dBm)	ANT 3 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	13.45	13.48	16.48	30.00	-13.52
Mid 6	2437	13.48	13.43	16.47	30.00	-13.53
High 11	2462	13.46	13.49	16.49	30.00	-13.51
High 12	2467	12.43	12.45	15.45	30.00	-14.55
High 13	2472	-0.05	-0.03	2.97	30.00	-27.03

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ANT 4 + ANT 3 2TX MODE: 26-Tones, RU Index 4

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-1.0	30.00	36	30.00
Mid 6	2437	-1.0	30.00	36	30.00
High 11	2462	-1.0	30.00	36	30.00
High 12	2467	-1.0	30.00	36	30.00
High 13	2472	-1.0	30.00	36	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power

Results

Channel	Frequency (MHz)	ANT 4 Meas Power (dBm)	ANT 3 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	13.44	13.49	16.48	30.00	-13.52
Mid 6	2437	13.48	13.43	16.47	30.00	-13.53
High 11	2462	13.46	13.47	16.48	30.00	-13.52
High 12	2467	12.48	12.46	15.48	30.00	-14.52
High 13	2472	-0.02	-0.04	2.98	30.00	-27.02

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ANT 4 + ANT 3 2TX MODE: 26-Tones, RU Index 8

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-1.0	30.00	36	30.00
Mid 6	2437	-1.0	30.00	36	30.00
High 11	2462	-1.0	30.00	36	30.00
High 12	2467	-1.0	30.00	36	30.00
High 13	2472	-1.0	30.00	36	30.00

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd Power**

Results

Channel	Frequency (MHz)	ANT 4 Meas Power (dBm)	ANT 3 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	13.48	13.46	16.48	30.00	-13.52
Mid 6	2437	13.49	13.47	16.49	30.00	-13.51
High 11	2462	13.45	13.47	16.47	30.00	-13.53
High 12	2467	12.48	12.43	15.47	30.00	-14.53
High 13	2472	-0.02	-0.04	2.98	30.00	-27.02

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ANT 4 + ANT 3 2TX MODE: SU Mode

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-1.0	30.00	36	30.00
Low 2	2417	-1.0	30.00	36	30.00
Low 3	2422	-1.0	30.00	36	30.00
Mid 6	2437	-1.0	30.00	36	30.00
High 8	2447	-1.0	30.00	36	30.00
High 9	2452	-1.0	30.00	36	30.00
High 10	2457	-1.0	30.00	36	30.00
High 11	2462	-1.0	30.00	36	30.00
High 12	2467	-1.0	30.00	36	30.00
High 13	2472	-1.0	30.00	36	30.00

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd Power**

Results

Channel	Frequency (MHz)	ANT 4 Meas Power (dBm)	ANT 3 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	15.97	15.99	18.99	30.00	-11.01
Low 2	2417	17.98	17.95	20.98	30.00	-9.02
Low 3	2422	19.95	19.97	22.97	30.00	-7.03
Mid 6	2437	21.49	21.47	24.49	30.00	-5.51
High 8	2447	21.47	21.45	24.47	30.00	-5.53
High 9	2452	19.47	19.44	22.47	30.00	-7.53
High 10	2457	17.97	17.95	20.97	30.00	-9.03
High 11	2462	15.94	15.97	18.97	30.00	-11.03
High 12	2467	13.47	13.45	16.47	30.00	-13.53
High 13	2472	8.99	8.94	11.98	30.00	-18.02

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9.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

RSS-247 (5.2) (b)

The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS

Only Mid channel plot is reported to show setting parameter complies with testing method/procedure.

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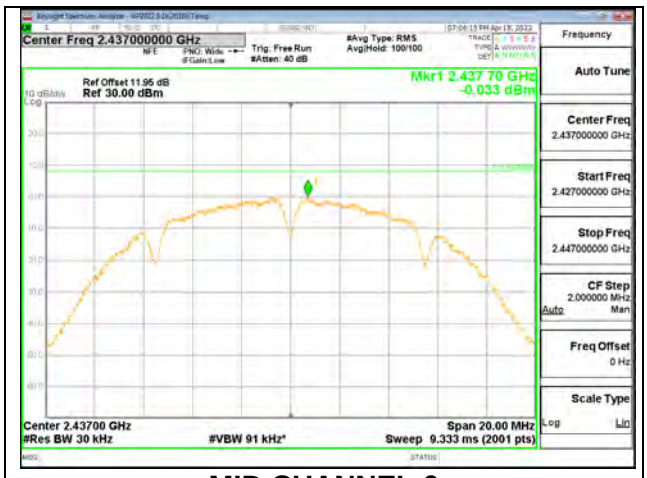
9.5.1. 802.11b MODE 1TX

1TX ANT 4 MODE

Duty Cycle CF (dB)		0.00	Included in Calculations of Corr'd PSD		
Channel	Frequency (MHz)	Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-0.067	-0.067	8.0	-8.1
Mid 6	2437	-0.033	-0.033	8.0	-8.0
High 11	2462	-0.278	-0.278	8.0	-8.3
High 12	2467	-0.177	-0.177	8.0	-8.2
High 13	2472	-0.731	-0.731	8.0	-8.7



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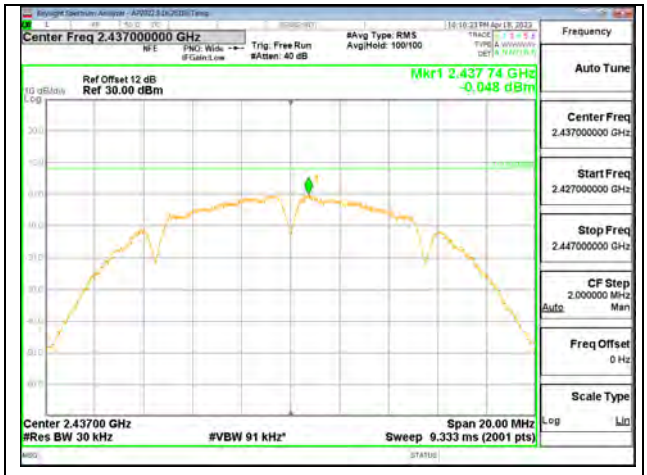
1TX ANT 3 MODE

Duty Cycle CF (dB)		0.00	Included in Calculations of Corr'd PSD		
Channel	Frequency (MHz)	Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-0.123	-0.123	8.0	-8.1
Mid 6	2437	-0.048	-0.048	8.0	-8.0
High 11	2462	-0.193	-0.193	8.0	-8.2
High 12	2467	-0.135	-0.135	8.0	-8.1
High 13	2472	-0.961	-0.961	8.0	-9.0



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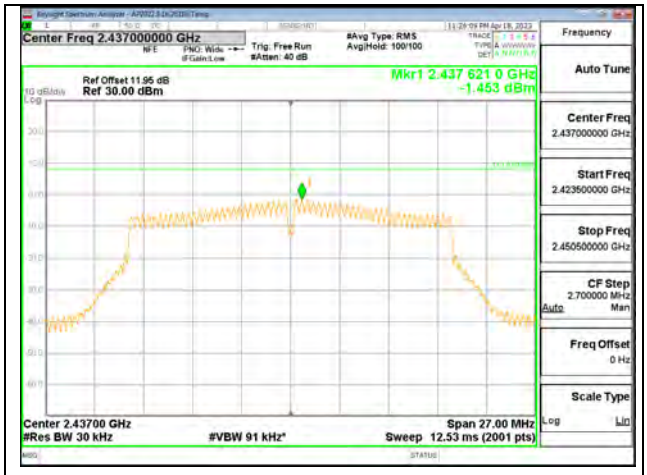
9.5.2. 802.11n HT20 MODE

1TX ANT 4 MODE

Duty Cycle CF (dB)		0.00	Included in Calculations of Corr'd PSD		
Channel	Frequency (MHz)	Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-5.285	-5.285	8.0	-13.3
Low 2	2417	-2.458	-2.458	8.0	-10.5
Mid 6	2437	-1.453	-1.453	8.0	-9.5
High 10	2457	-2.261	-2.261	8.0	-10.3
High 11	2462	-4.574	-4.574	8.0	-12.6
High 12	2467	-6.192	-6.192	8.0	-14.2
High 13	2472	-8.003	-8.003	8.0	-16.0



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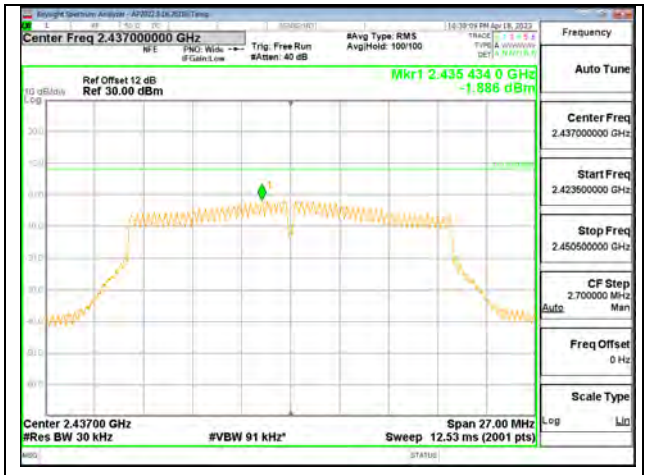
1TX ANT 3 MODE

Duty Cycle CF (dB)		0.00	Included in Calculations of Corr'd PSD		
Channel	Frequency (MHz)	Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-5.400	-5.400	8.0	-13.4
Low 2	2417	-2.603	-2.603	8.0	-10.6
Mid 6	2437	-1.886	-1.886	8.0	-9.9
High 10	2457	-2.308	-2.308	8.0	-10.3
High 11	2462	-4.157	-4.157	8.0	-12.2
High 12	2467	-6.285	-6.285	8.0	-14.3
High 13	2472	-8.289	-8.289	8.0	-16.3



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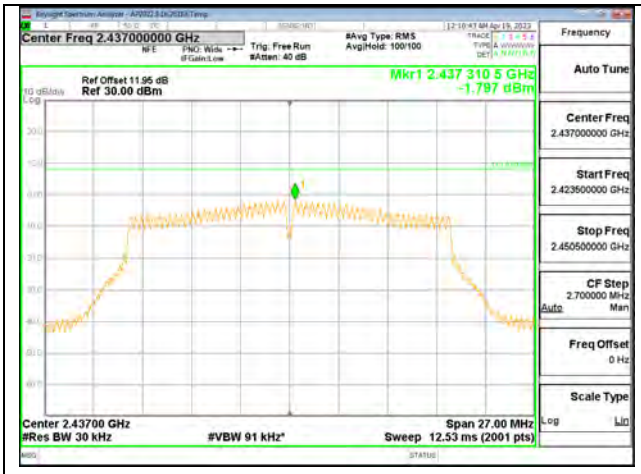
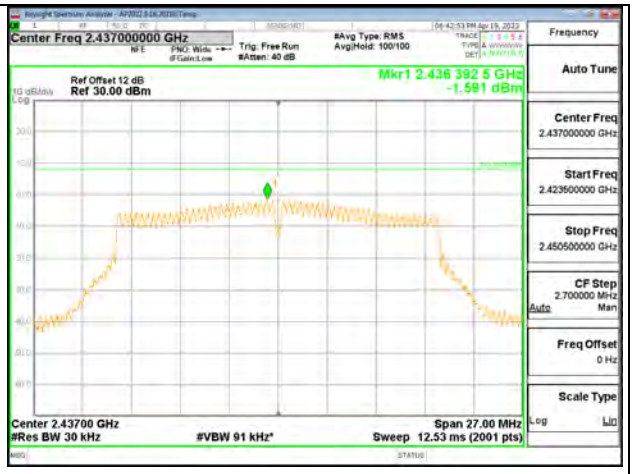
9.5.3. 802.11n HT20 CDD MODE 2TX

ANT 4 + ANT3 2TX MODE

Duty Cycle CF (dB)		0.00	Included in Calculations of Corr'd PSD			
Channel	Frequency (MHz)	ANT 4 Meas (dBm/ 3kHz)	ANT 3 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-5.671	-5.806	-2.73	8.0	-10.7
Low 2	2417	-3.541	-3.481	-0.50	8.0	-8.5
Low 3	2422	-2.314	-2.233	0.74	8.0	-7.3
Mid 6	2437	-1.797	-1.591	1.32	8.0	-6.7
High 9	2452	-2.713	-2.342	0.49	8.0	-7.5
High 10	2457	-3.226	-3.417	-0.31	8.0	-8.3
High 11	2462	-5.484	-5.261	-2.36	8.0	-10.4
High 12	2467	-7.470	-7.860	-4.65	8.0	-12.7
High 13	2472	-8.930	-8.947	-5.93	8.0	-13.9



MID CHANNEL 6 ANT 4



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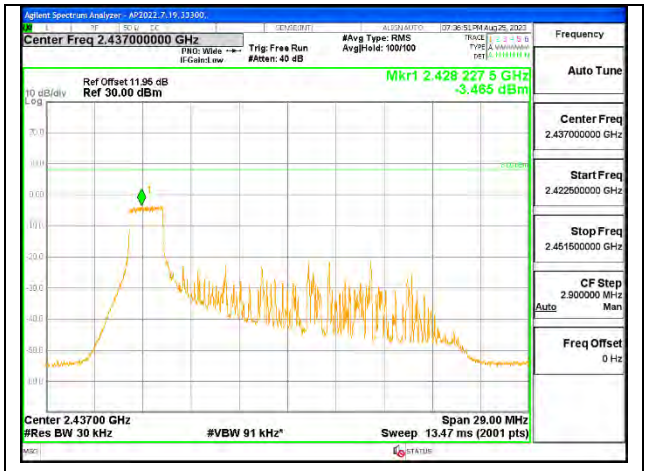
9.5.4. 802.11ax HE20 MODE

1TX ANT 4 MODE: 26-Tone RU Index 0

Duty Cycle CF (dB)		0.00	Included in Calculations of Corr'd PSD		
Channel	Frequency (MHz)	Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-3.450	-3.45	8.0	-11.5
Mid 6	2437	-3.465	-3.47	8.0	-11.5
High 11	2462	-3.588	-3.59	8.0	-11.6
High 12	2467	-3.601	-3.60	8.0	-11.6
High 13	2472	-15.900	-15.90	8.0	-23.9



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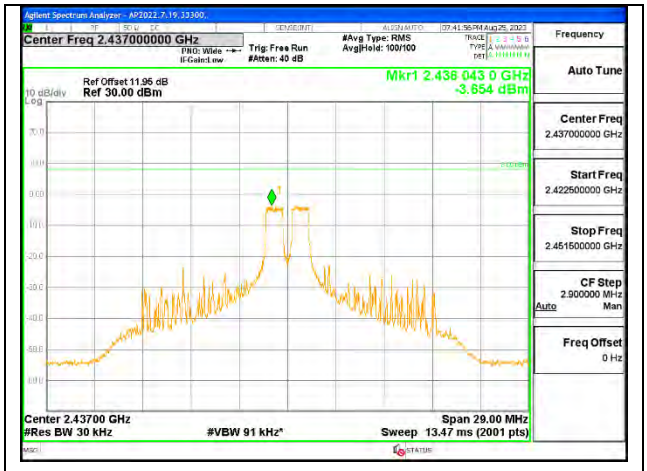
1TX ANT 4 MODE: 26-Tone RU Index 4

Duty Cycle CF (dB)		0.00	Included in Calculations of Corr'd PSD		
Channel	Frequency (MHz)	Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-3.364	-3.364	8.0	-11.4
Mid 6	2437	-3.654	-3.654	8.0	-11.7
High 11	2462	-3.750	-3.750	8.0	-11.8
High 12	2467	-3.528	-3.528	8.0	-11.5
High 13	2472	-16.182	-16.182	8.0	-24.2



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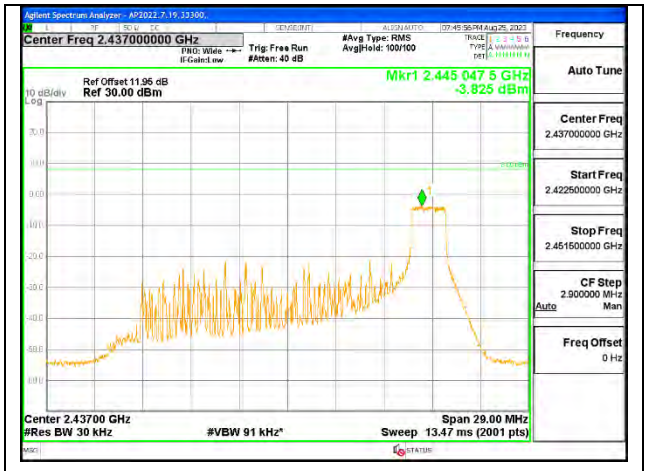
1TX ANT 4 MODE: 26-Tone RU Index 8

Duty Cycle CF (dB)		0.00	Included in Calculations of Corr'd PSD		
Channel	Frequency (MHz)	Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-3.737	-3.737	8.0	-11.7
Mid 6	2437	-3.825	-3.825	8.0	-11.8
High 11	2462	-4.707	-4.707	8.0	-12.7
High 12	2467	-3.933	-3.933	8.0	-11.9
High 13	2472	-15.668	-15.668	8.0	-23.7



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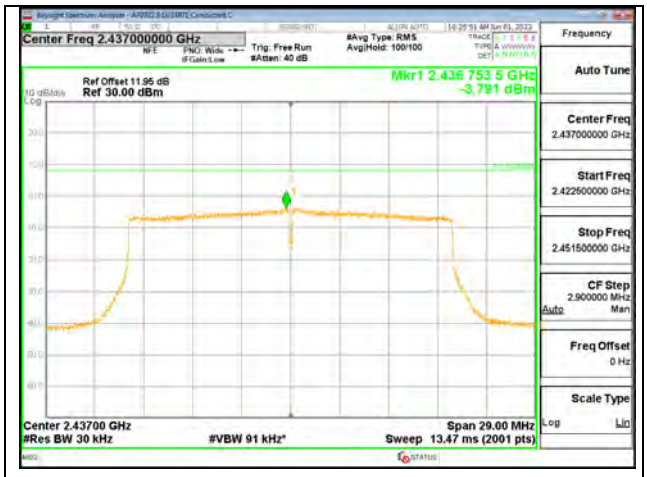
1TX ANT 4 MODE: SU Mode

Duty Cycle CF (dB)		0.00	Included in Calculations of Corr'd PSD		
Channel	Frequency (MHz)	Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-8.390	-8.390	8.0	-16.4
Low 2	2417	-6.352	-6.352	8.0	-14.4
Low 3	2422	-3.954	-3.954	8.0	-12.0
Mid 6	2437	-3.791	-3.791	8.0	-11.8
High 9	2452	-3.850	-3.850	8.0	-11.9
High 10	2457	-6.154	-6.154	8.0	-14.2
High 11	2462	-8.225	-8.225	8.0	-16.2
High 12	2467	-10.426	-10.426	8.0	-18.4
High 13	2472	-15.721	-15.721	8.0	-23.7



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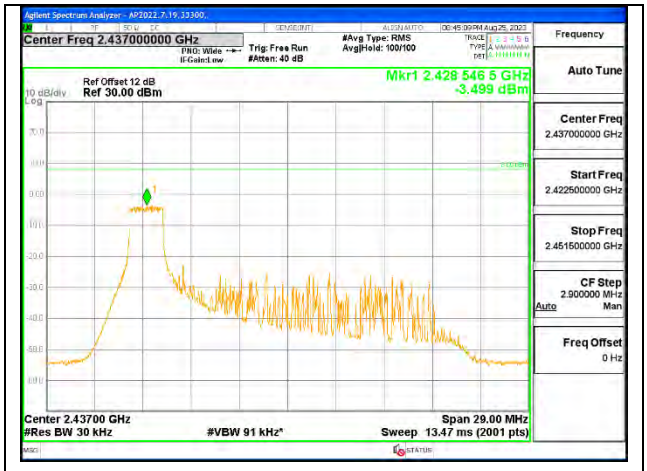
1TX ANT 3 MODE: 26-Tone RU Index 0

Duty Cycle CF (dB)		0.00	Included in Calculations of Corr'd PSD		
Channel	Frequency (MHz)	Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-3.487	-3.487	8.0	-11.5
Mid 6	2437	-3.499	-3.499	8.0	-11.5
High 11	2462	-3.356	-3.356	8.0	-11.4
High 12	2467	-3.721	-3.721	8.0	-11.7
High 13	2472	-16.300	-16.300	8.0	-24.3



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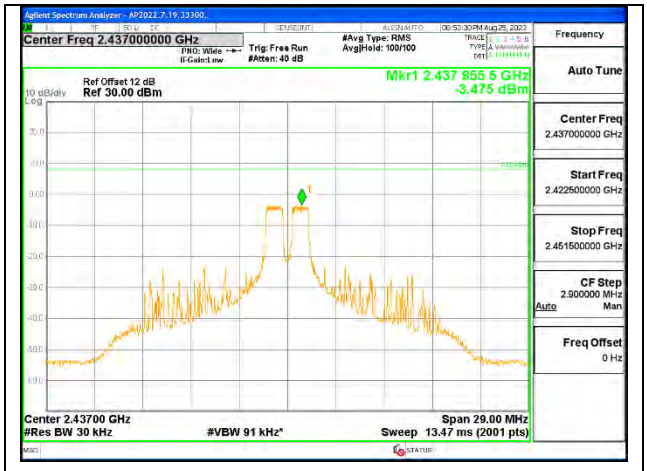
1TX ANT 3 MODE: 26-Tone RU Index 4

Duty Cycle CF (dB)		0.00	Included in Calculations of Corr'd PSD		
Channel	Frequency (MHz)	Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-3.626	-3.626	8.0	-11.6
Mid 6	2437	-3.475	-3.475	8.0	-11.5
High 11	2462	-3.469	-3.469	8.0	-11.5
High 12	2467	-3.521	-3.521	8.0	-11.5
High 13	2472	-15.611	-15.611	8.0	-23.6



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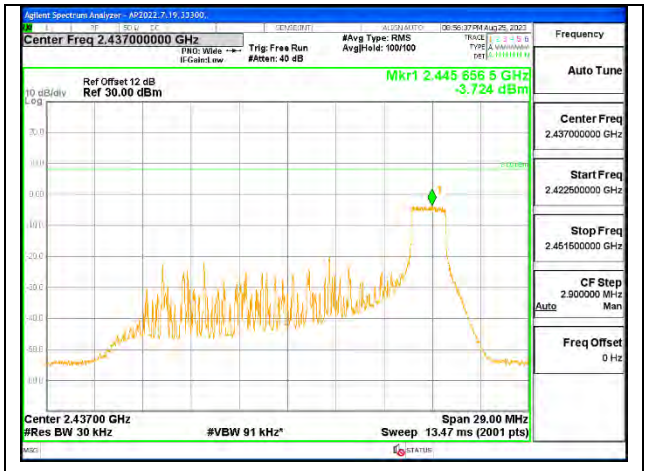
1TX ANT 3 MODE: 26-Tone RU Index 8

Duty Cycle CF (dB)		0.00	Included in Calculations of Corr'd PSD		
Channel	Frequency (MHz)	Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-3.648	-3.648	8.0	-11.6
Mid 6	2437	-3.724	-3.724	8.0	-11.7
High 11	2462	-3.686	-3.686	8.0	-11.7
High 12	2467	-3.399	-3.399	8.0	-11.4
High 13	2472	-15.587	-15.587	8.0	-23.6



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1TX ANT 3 MODE: SU Mode

Duty Cycle CF (dB)		0.00	Included in Calculations of Corr'd PSD		
Channel	Frequency (MHz)	Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-7.733	-7.733	8.0	-15.7
Low 2	2417	-6.347	-6.347	8.0	-14.3
Low 3	2422	-4.223	-4.223	8.0	-12.2
Mid 6	2437	-3.892	-3.892	8.0	-11.9
High 9	2452	-4.682	-4.682	8.0	-12.7
High 10	2457	-6.160	-6.160	8.0	-14.2
High 11	2462	-8.097	-8.097	8.0	-16.1
High 12	2467	-10.284	-10.284	8.0	-18.3
High 13	2472	-15.701	-15.701	8.0	-23.7

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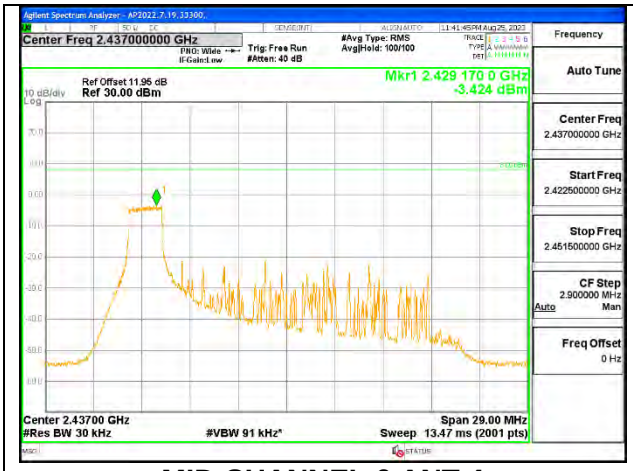
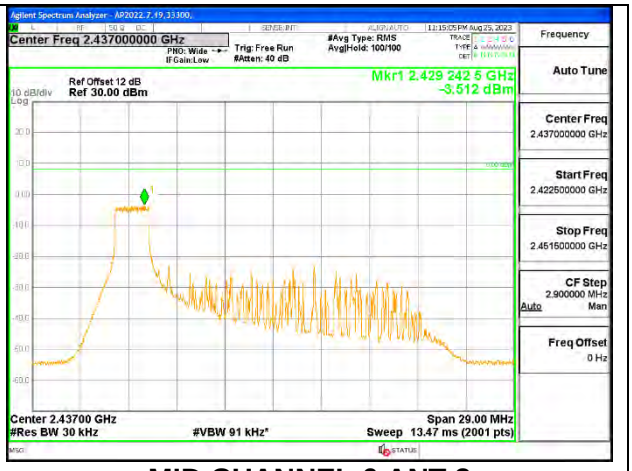
9.5.5. 802.11ax HE20 OFDMA MODE 2TX

ANT 4 + ANT 3 2TX MODE: 26-Tones, RU Index 0

Duty Cycle CF (dB)		0.00	Included in Calculations of Corr'd PSD			
Channel	Frequency (MHz)	ANT 4 Meas (dBm/ 3kHz)	ANT 3 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-3.706	-3.432	-0.557	8.0	-8.6
Mid 6	2437	-3.424	-3.512	-0.457	8.0	-8.5
High 11	2462	-3.612	-3.543	-0.567	8.0	-8.6
High 12	2467	-4.329	-4.548	-1.427	8.0	-9.4
High 13	2472	-17.500	-17.200	-14.337	8.0	-22.3



MID CHANNEL 6 ANT 4



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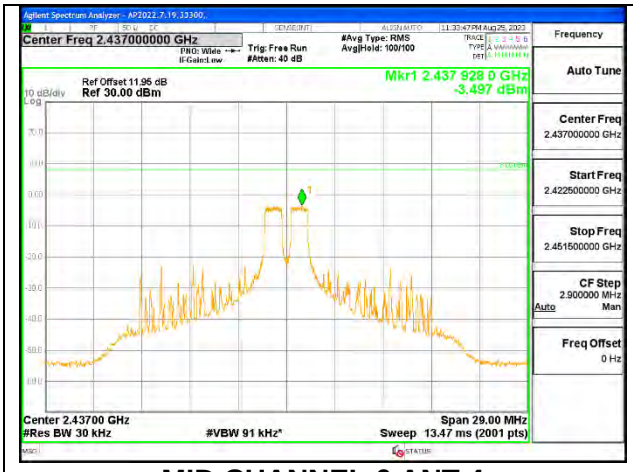
ANT 4 + ANT 3 2TX MODE: 26-Tones, RU Index 4

Duty Cycle CF (dB)		0.00	Included in Calculations of Corr'd PSD			
Channel	Frequency (MHz)	ANT 4 Meas (dBm/ 3kHz)	ANT 3 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-3.702	-3.757	-0.719	8.0	-8.7
Mid 6	2437	-3.497	-3.537	-0.507	8.0	-8.5
High 11	2462	-3.556	-3.701	-0.618	8.0	-8.6
High 12	2467	-4.821	-4.731	-1.765	8.0	-9.8
High 13	2472	-17.205	-16.960	-14.070	8.0	-22.1



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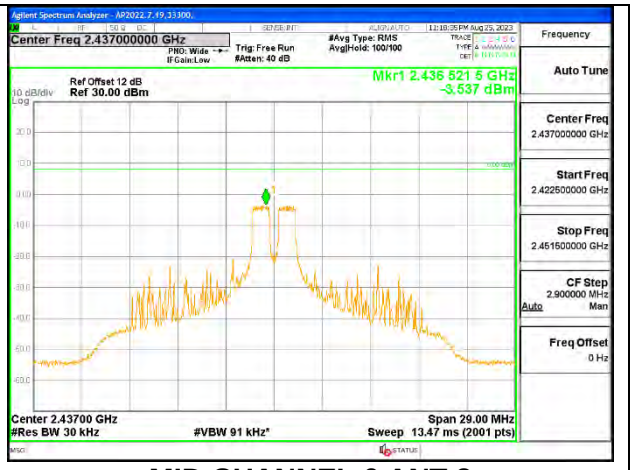

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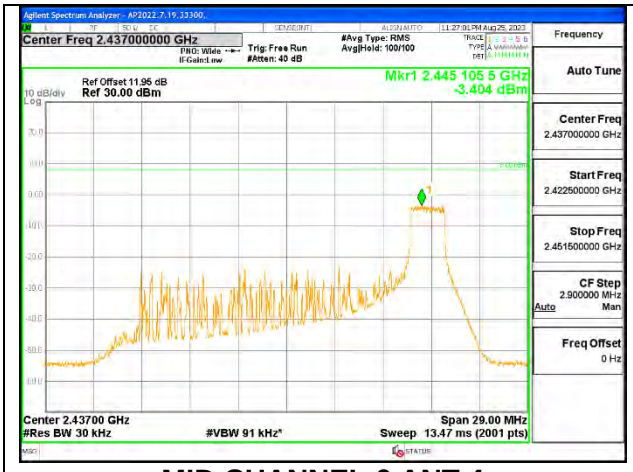
ANT 4 + ANT 3 2TX MODE: 26-Tones, RU Index 8

Duty Cycle CF (dB)		0.00	Included in Calculations of Corr'd PSD			
Channel	Frequency (MHz)	ANT 4 Meas (dBm/ 3kHz)	ANT 3 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-3.717	-3.480	-0.587	8.0	-8.6
Mid 6	2437	-3.404	-3.622	-0.501	8.0	-8.5
High 11	2462	-3.789	-3.500	-0.632	8.0	-8.6
High 12	2467	-4.414	-4.639	-1.515	8.0	-9.5
High 13	2472	-16.677	-16.881	-13.768	8.0	-21.8



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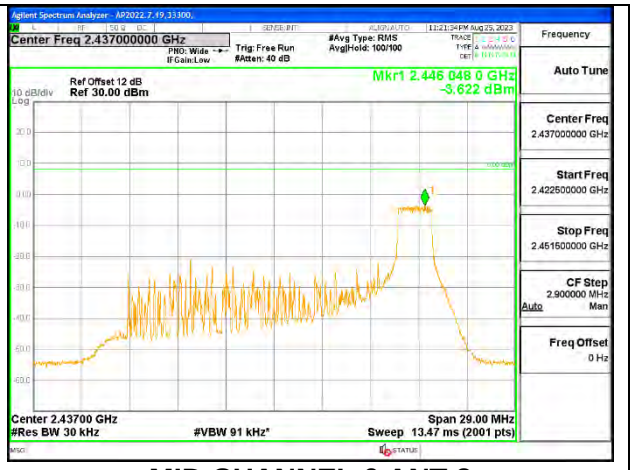

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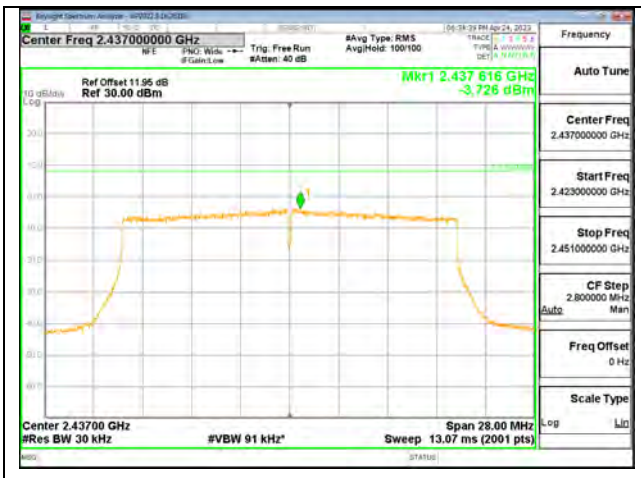
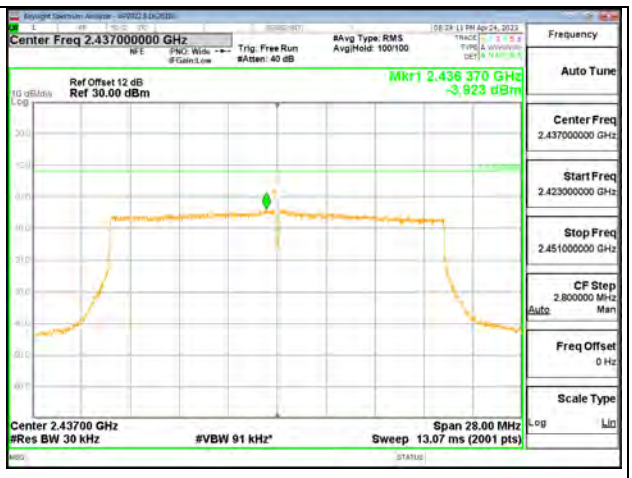
ANT 4 + ANT 3 2TX MODE: SU Mode

Duty Cycle CF (dB)		0.00	Included in Calculations of Corr'd PSD			
Channel	Frequency (MHz)	Ant 4 Meas (dBm/ 3kHz)	ANT 3 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-9.201	-8.834	-6.003	8.0	-14.0
Low 2	2417	-7.223	-7.507	-4.352	8.0	-12.4
Low 3	2422	-5.017	-5.193	-2.094	8.0	-10.1
Mid 6	2437	-3.726	-3.923	-0.813	8.0	-8.8
High 8	2447	-3.699	-3.941	-0.808	8.0	-8.8
High 9	2452	-5.697	-5.913	-2.793	8.0	-10.8
High 10	2457	-6.747	-7.085	-3.902	8.0	-11.9
High 11	2462	-9.008	-9.066	-6.027	8.0	-14.0
High 12	2467	-11.753	-11.791	-8.762	8.0	-16.8
High 13	2472	-16.677	-16.883	-13.768	8.0	-21.8



MID CHANNEL 6 ANT 4



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9.6. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

RSS-247 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

RESULTS

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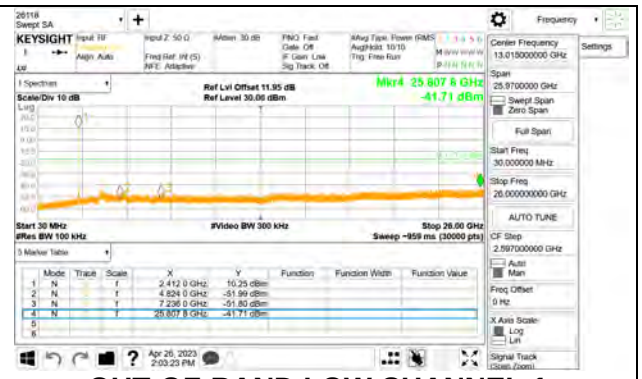
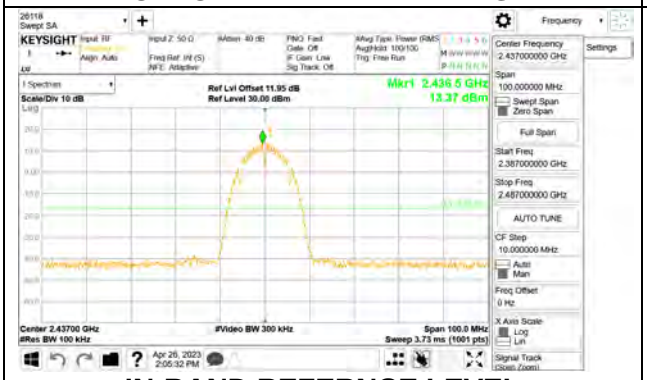
9.6.1. 802.11b MODE 1TX

1TX ANT 4 MODE

LOW CHANNEL 1 BANDEDGE

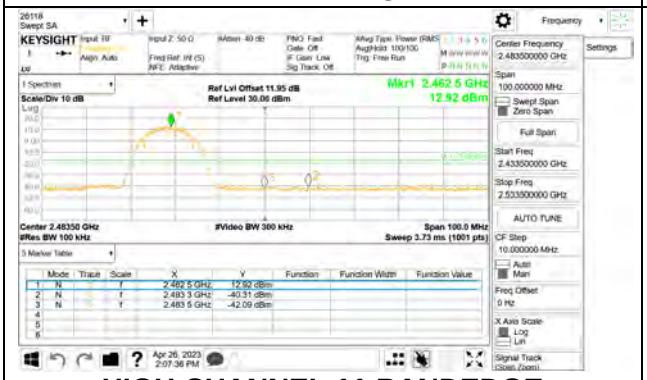


OUT-OF-BAND LOW CHANNEL 1



IN-BAND REFERNCE LEVEL

OUT-OF-BAND MID CHANNEL



HIGH CHANNEL 11 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 11

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HIGH CHANNEL 12 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 12

HIGH CHANNEL 13 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 13

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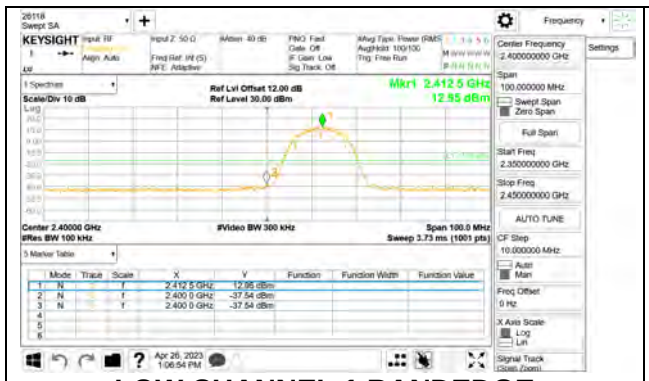
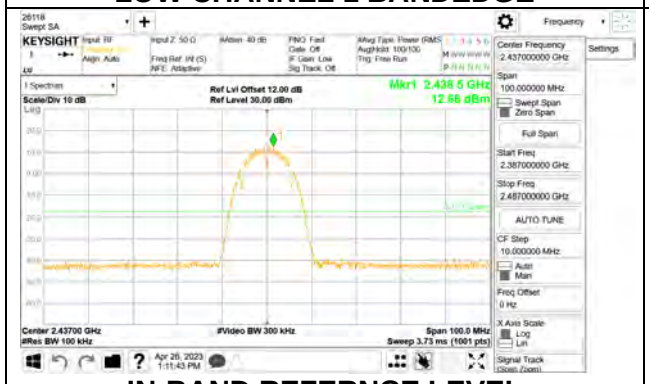
1TX ANT 3 MODE

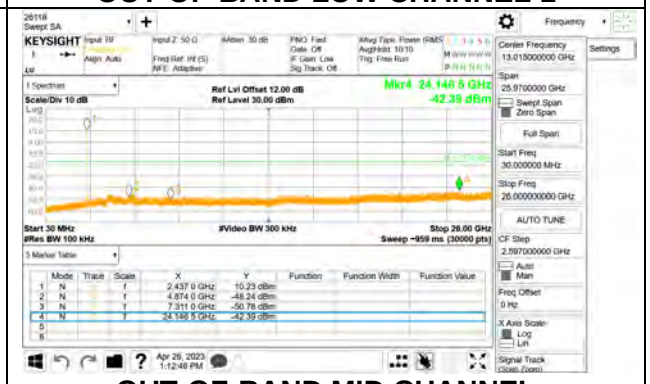


LOW CHANNEL 1 BANDEDGE

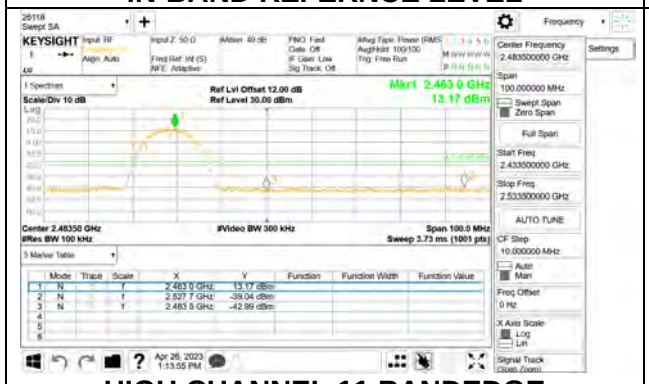
OUT-OF-BAND LOW CHANNEL 1



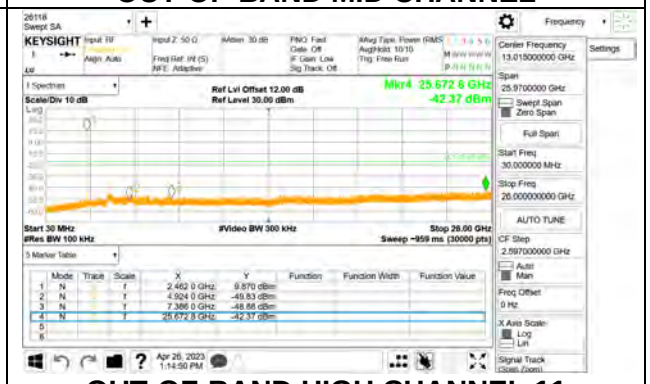
IN-BAND REFERNCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL 11 BANDEDGE



OUT-OF-BAND HIGH CHANNEL 11

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HIGH CHANNEL 12 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 12

HIGH CHANNEL 13 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 13

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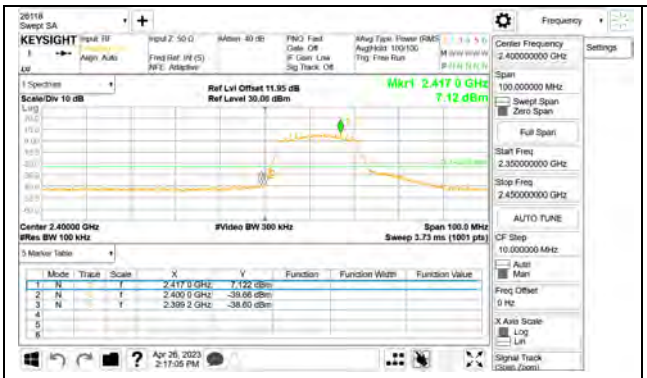
9.6.2. 802.11n HT20 MODE

1TX ANT 4 MODE

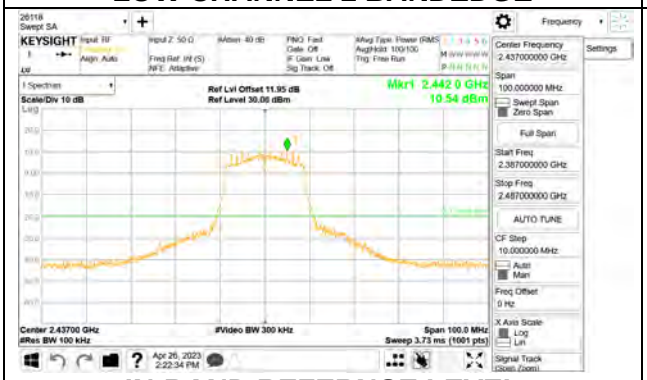


LOW CHANNEL 1 BANDEDGE

OUT-OF-BAND LOW CHANNEL 1

LOW CHANNEL 2 BANDEDGE

OUT-OF-BAND LOW CHANNEL 2



IN-BAND REFERNCE LEVEL

OUT-OF-BAND MID CHANNEL

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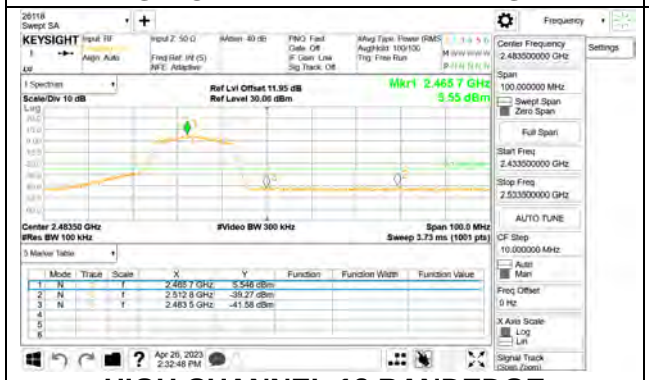
HIGH CHANNEL 10 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 10

HIGH CHANNEL 11 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 11



HIGH CHANNEL 12 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 12

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HIGH CHANNEL 13 BANDEDGE

OUT OF-BAND HIGH CHANNEL 13

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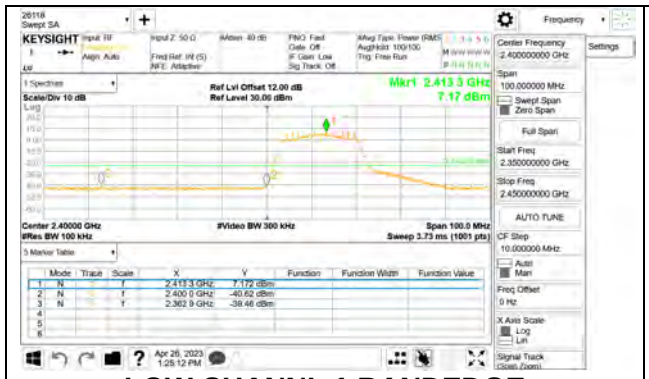
1TX ANT 3 MODE

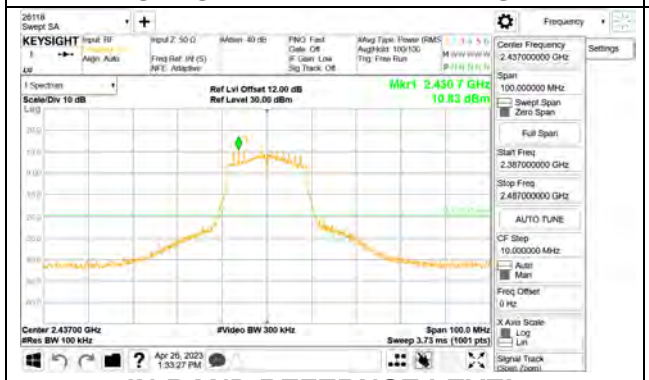


LOW CHANNL 1 BANDEDGE

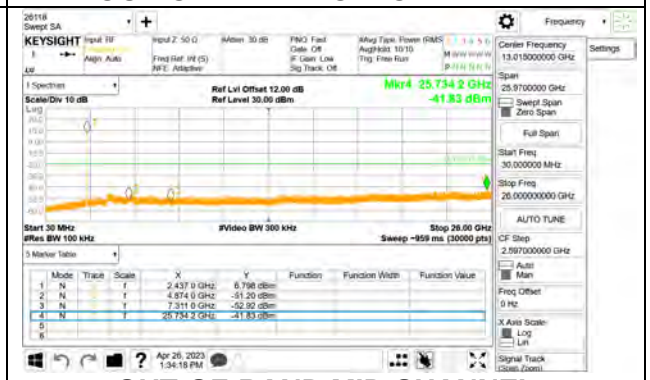
OUT-OF-BAND LOW CHANNEL 1

LOW CHANNEL 2 BANDEDGE

OUT-OF-BAND LOW CHANNEL 2



IN-BAND REFERNCE LEVEL



OUT-OF-BAND MID CHANNEL

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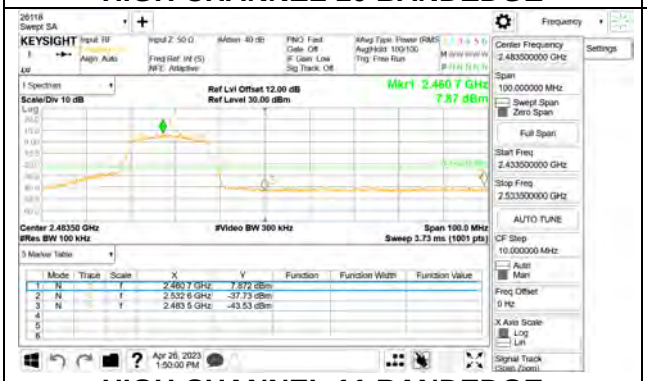
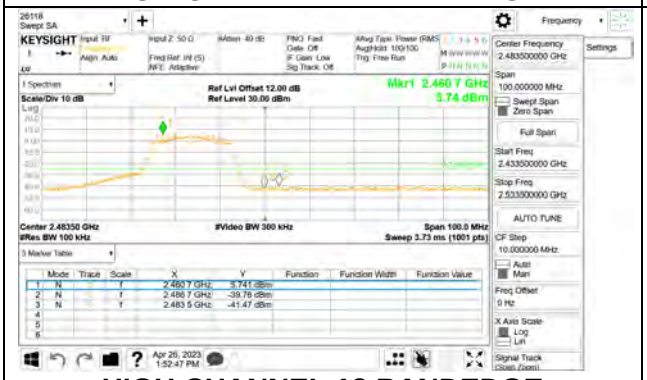
HIGH CHANNEL 10 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 10



HIGH CHANNEL 11 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 11



HIGH CHANNEL 12 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 12

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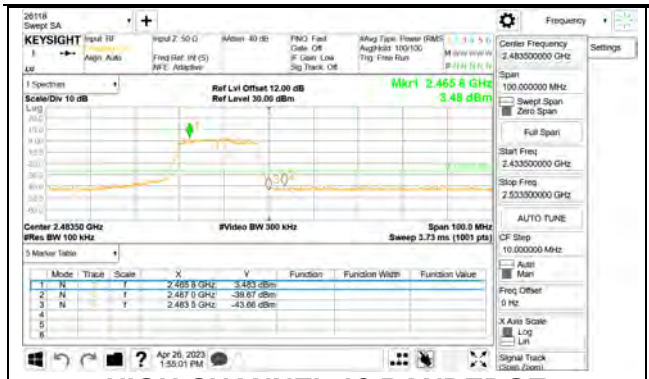

HIGH CHANNEL 13 BANDEDGE

OUT OF-BAND HIGH CHANNEL 13

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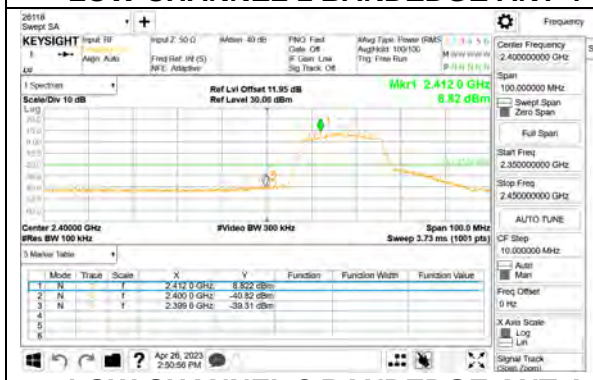
9.6.3. 802.11n HT20 MODE 2TX

ANT 4 + ANT 3 2TX MODE

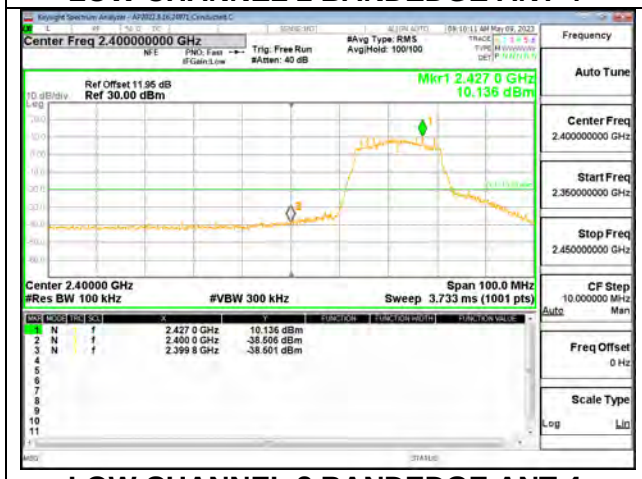
LOW CHANNEL 1 BANDEDGE ANT 4

OUT-OF-BAND LOW CHANNEL 1 ANT 4

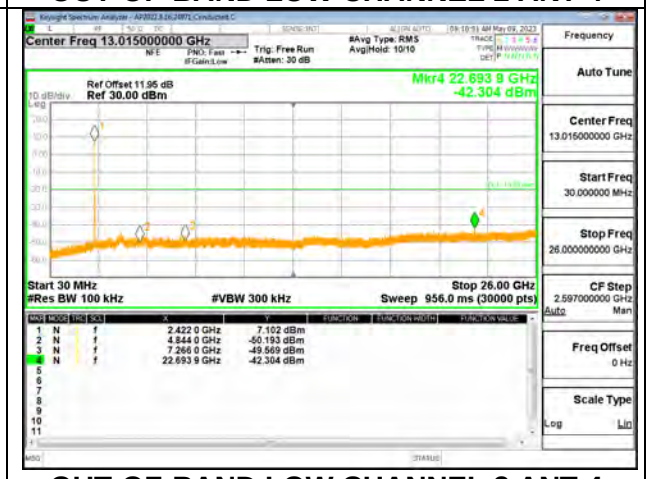


LOW CHANNEL 2 BANDEDGE ANT 4

OUT-OF-BAND LOW CHANNEL 2 ANT 4



LOW CHANNEL 3 BANDEDGE ANT 4



OUT-OF-BAND LOW CHANNEL 3 ANT 4

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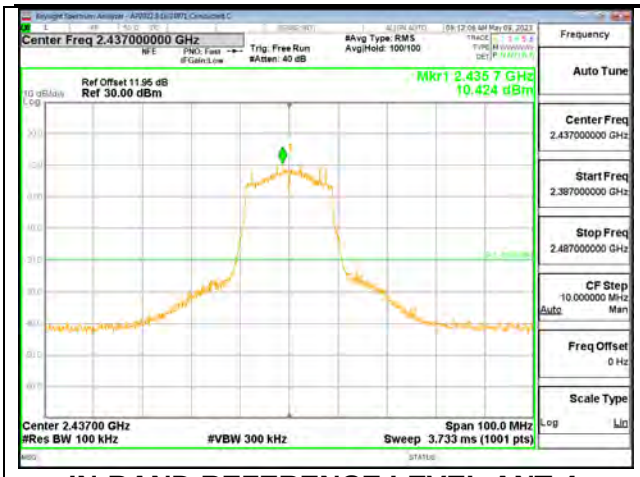
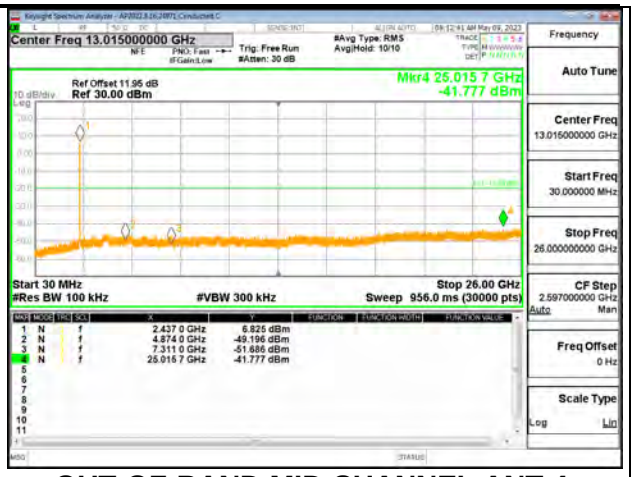
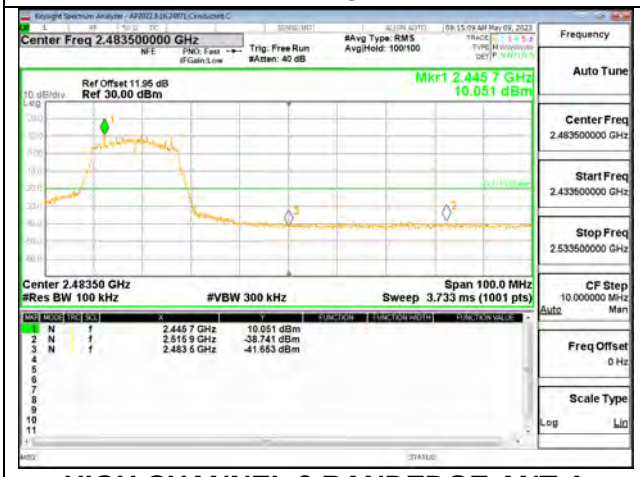


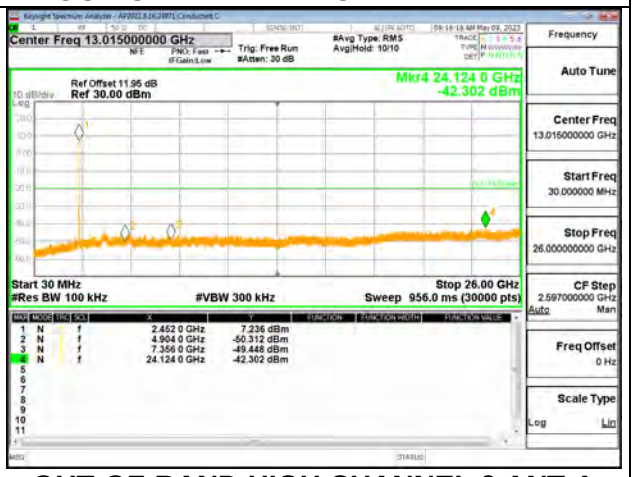
IN-BAND REFERENCE LEVEL ANT 4



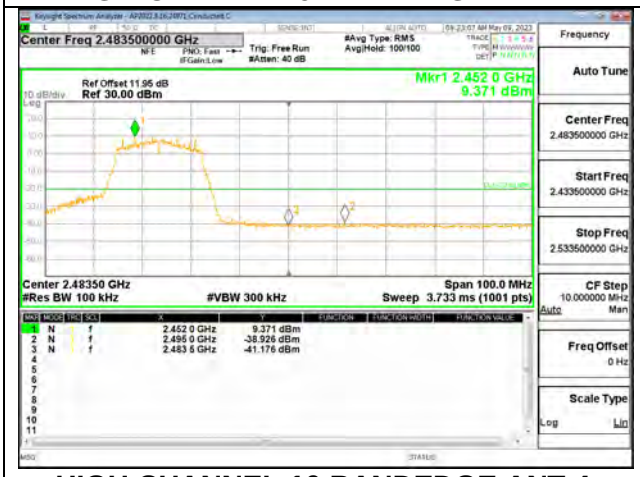
OUT-OF-BAND MID CHANNEL ANT 4



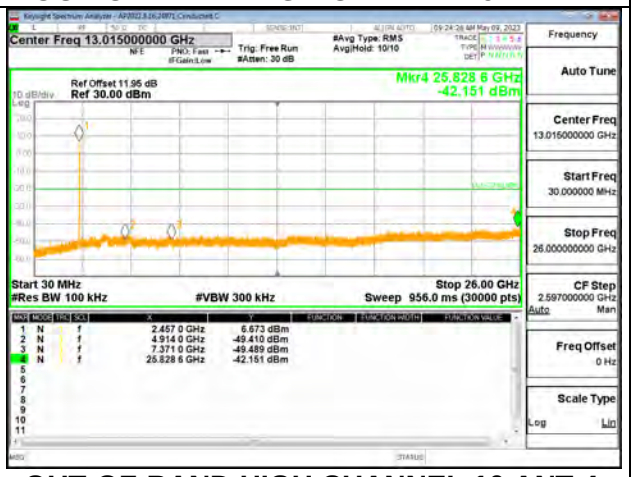
HIGH CHANNEL 9 BANDEDGE ANT 4



OUT-OF-BAND HIGH CHANNEL 9 ANT 4



HIGH CHANNEL 10 BANDEDGE ANT 4



OUT-OF-BAND HIGH CHANNEL 10 ANT 4

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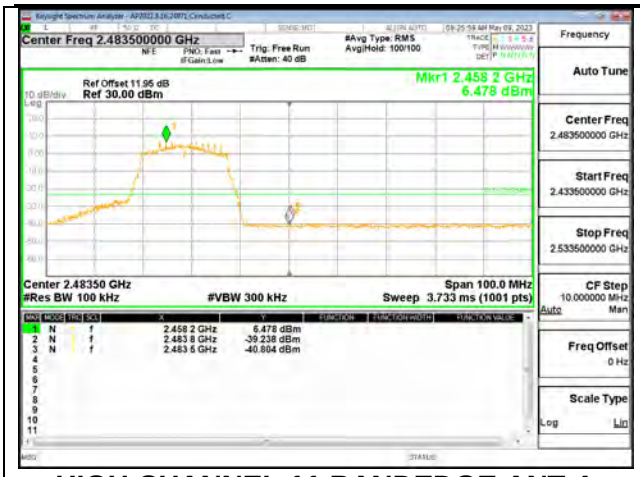
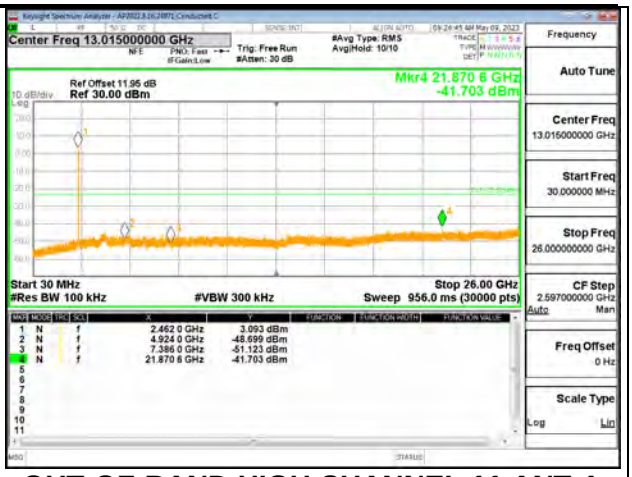
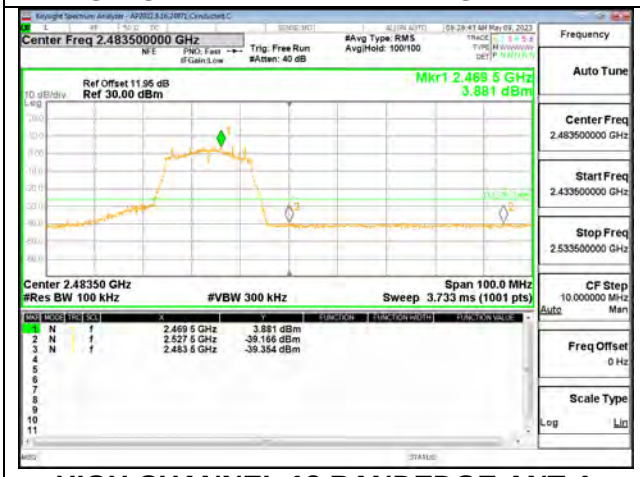


HIGH CHANNEL 11 BANDEDGE ANT 4

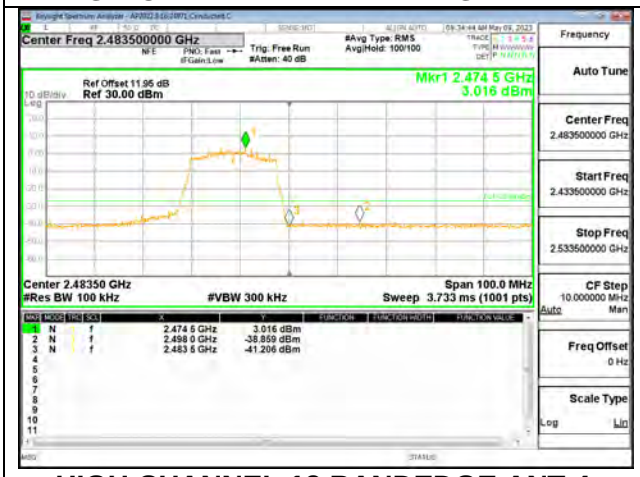


OUT-OF-BAND HIGH CHANNEL 11 ANT 4

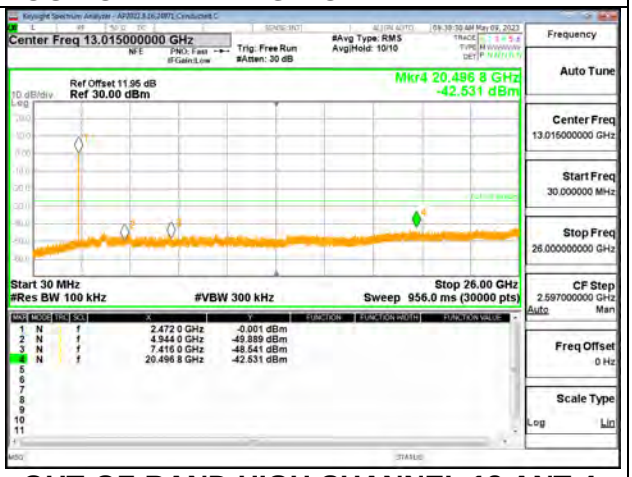


HIGH CHANNEL 12 BANDEDGE ANT 4

OUT-OF-BAND HIGH CHANNEL 12 ANT 4



HIGH CHANNEL 13 BANDEDGE ANT 4



OUT-OF-BAND HIGH CHANNEL 13 ANT 4

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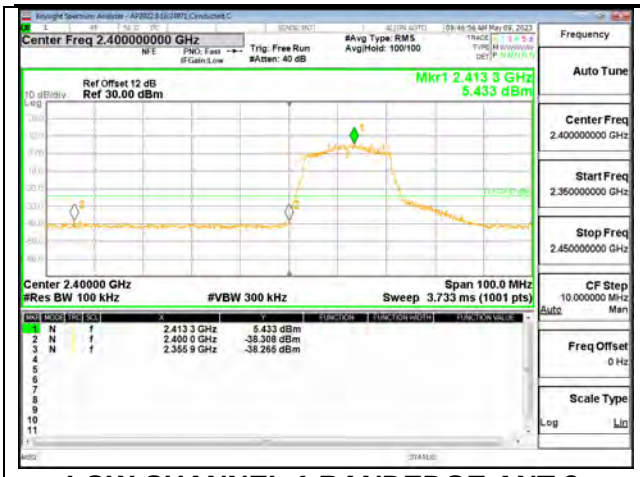
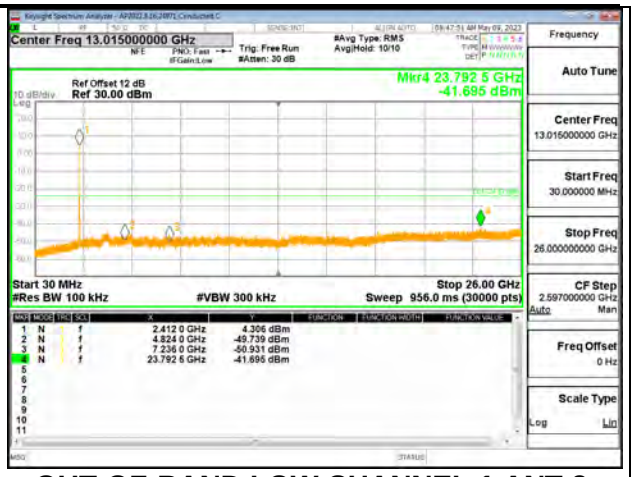
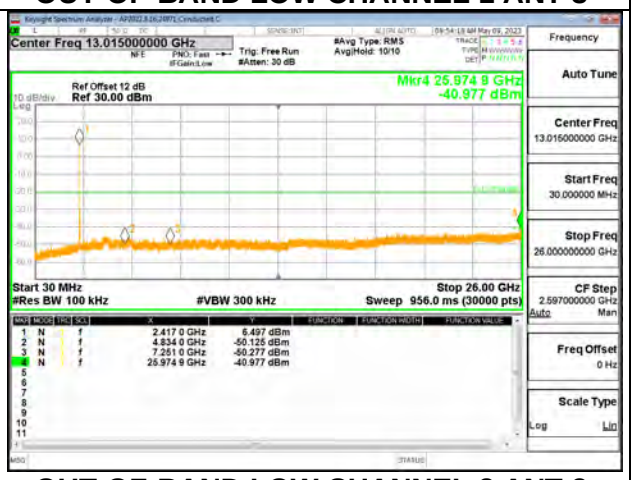


LOW CHANNEL 1 BANDEDGE ANT 3

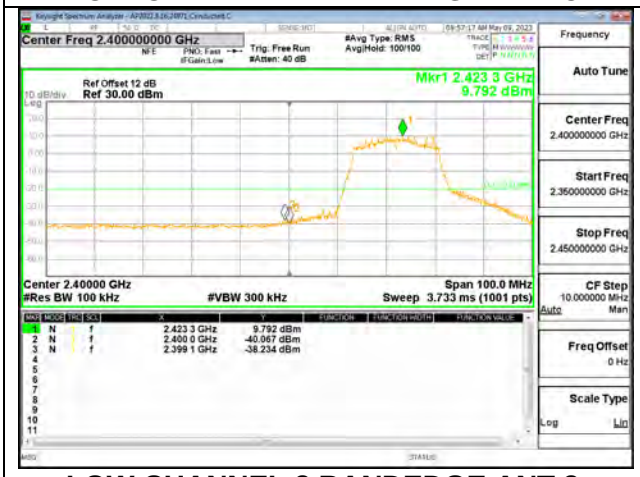


OUT-OF-BAND LOW CHANNEL 1 ANT 3

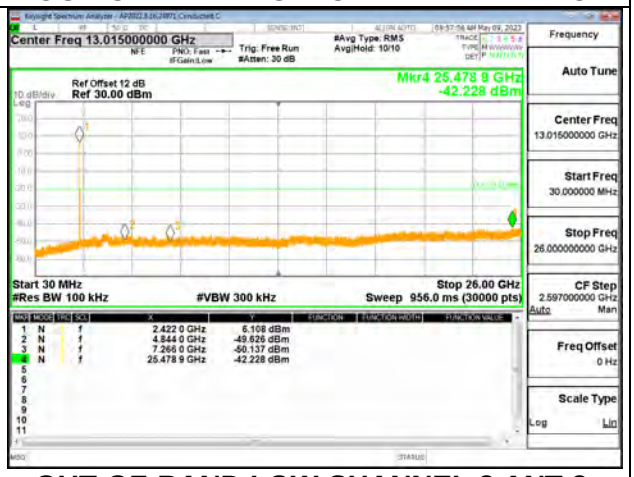
LOW CHANNEL 2 BANDEDGE ANT 3



OUT-OF-BAND LOW CHANNEL 2 ANT 3



LOW CHANNEL 3 BANDEDGE ANT 3



OUT-OF-BAND LOW CHANNEL 3 ANT 3

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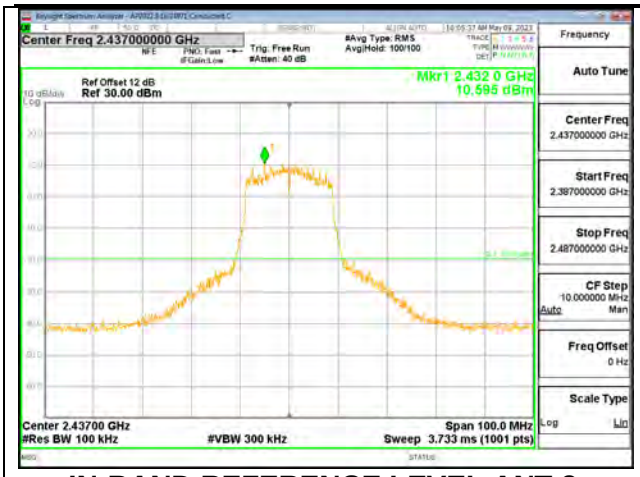
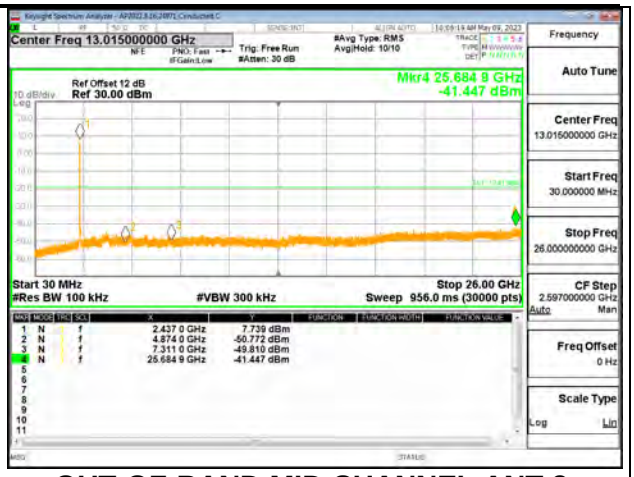
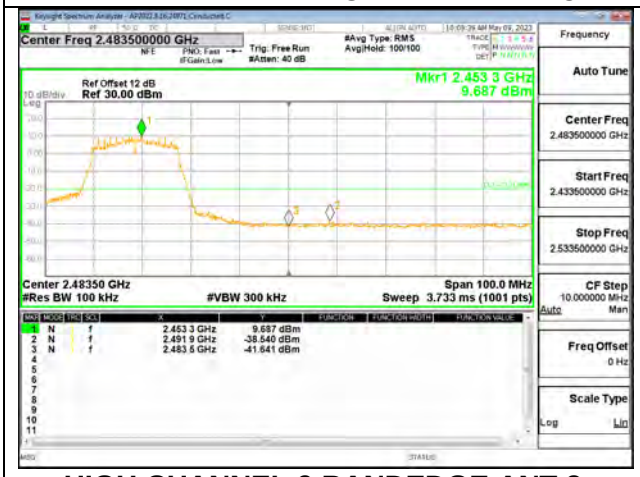


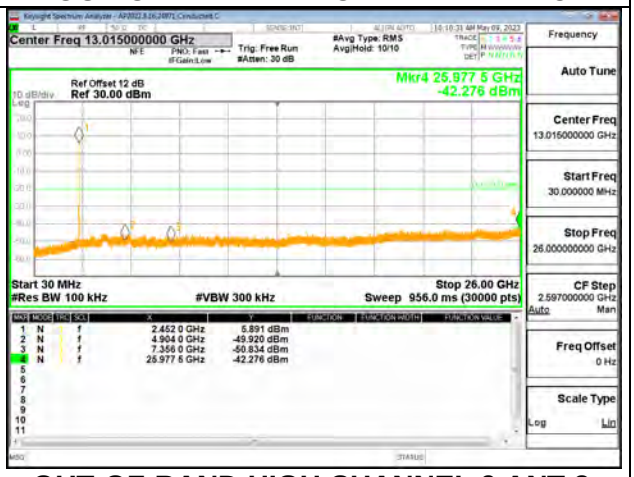
IN-BAND REFERENCE LEVEL ANT 3



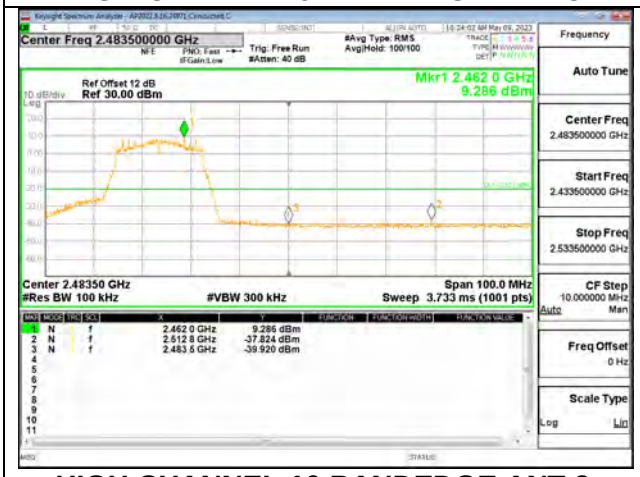
OUT-OF-BAND MID CHANNEL ANT 3



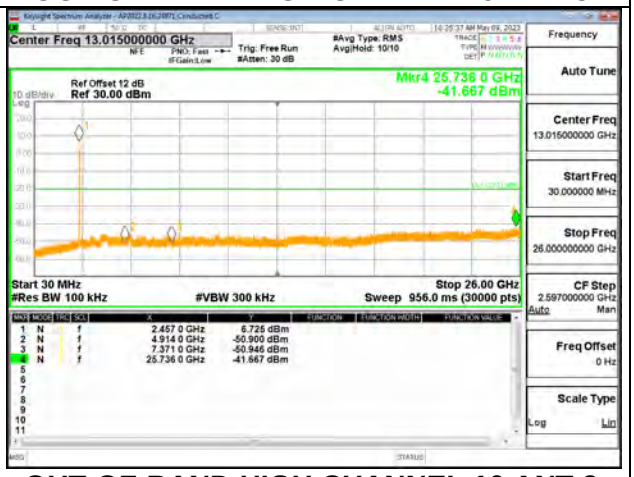
HIGH CHANNEL 9 BANDEDGE ANT 3



OUT-OF-BAND HIGH CHANNEL 9 ANT 3



HIGH CHANNEL 10 BANDEDGE ANT 3



OUT-OF-BAND HIGH CHANNEL 10 ANT 3

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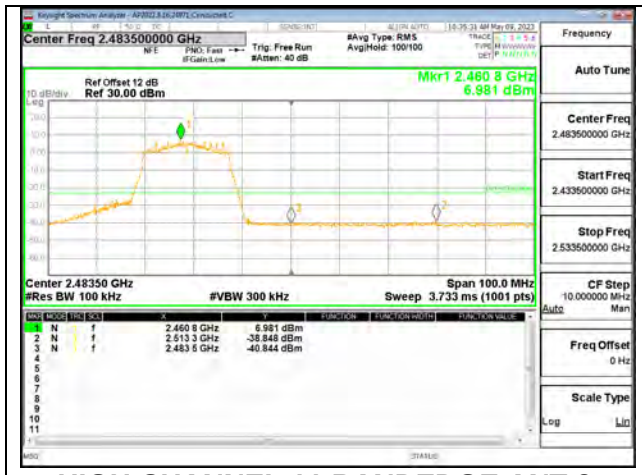
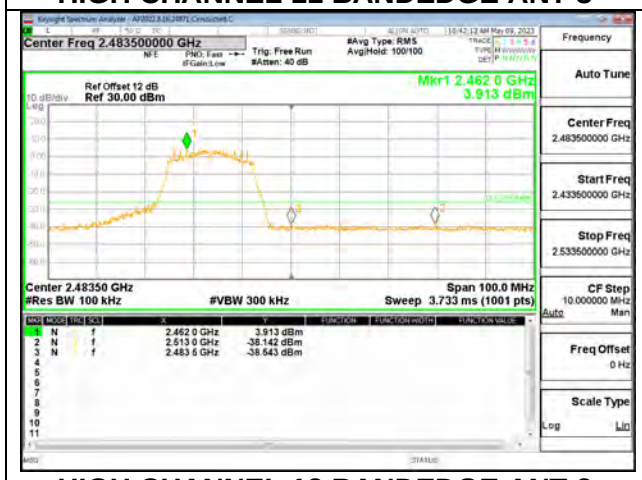
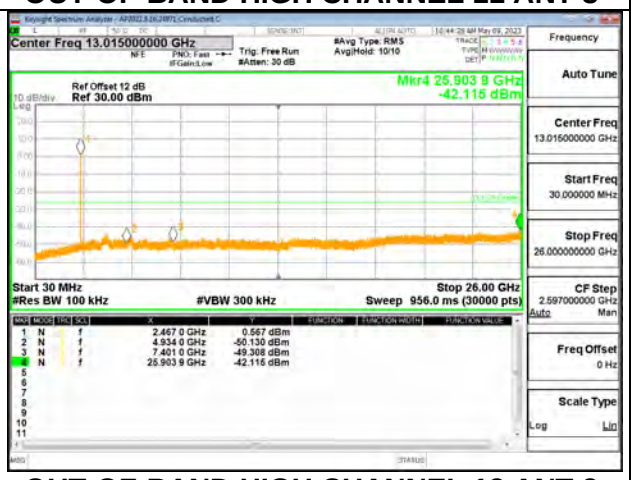


HIGH CHANNEL 11 BANDEDGE ANT 3

OUT-OF-BAND HIGH CHANNEL 11 ANT 3



HIGH CHANNEL 12 BANDEDGE ANT 3



OUT-OF-BAND HIGH CHANNEL 12 ANT 3

HIGH CHANNEL 13 BANDEDGE ANT 3

OUT-OF-BAND HIGH CHANNEL 13 ANT 3

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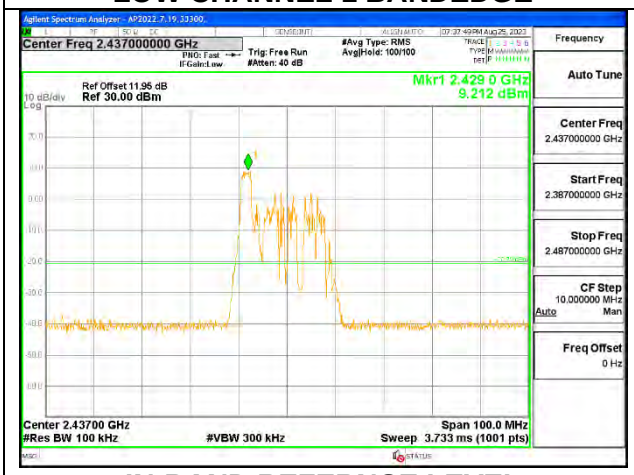
9.6.4. 802.11ax HE20 MODE

1TX ANT 4 MODE, 26-Tone RU Index 0

LOW CHANNEL 1 BANDEDGE

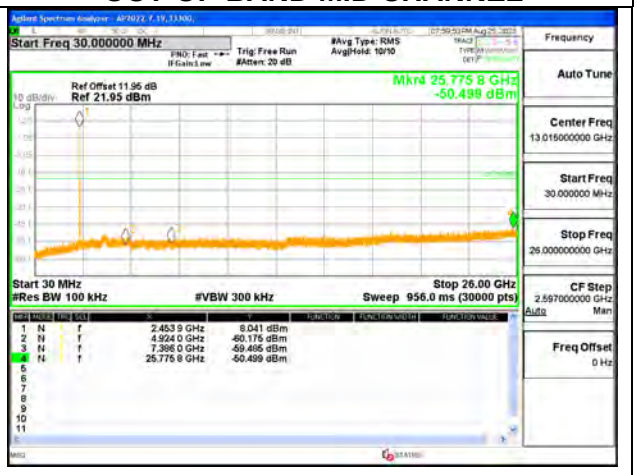
OUT-OF-BAND LOW CHANNEL 1



IN-BAND REFERNCE LEVEL

OUT-OF-BAND MID CHANNEL

HIGH CHANNEL 11 BANDEDGE



OUT-OF-BAND HIGH CHANNEL 11

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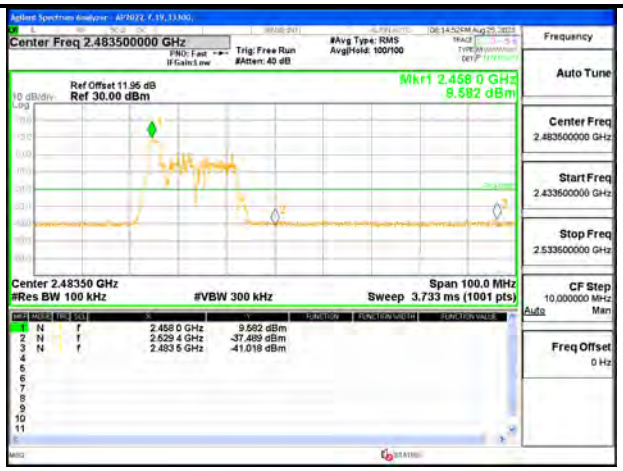

HIGH CHANNEL 12 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 12

HIGH CHANNEL 13 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 13

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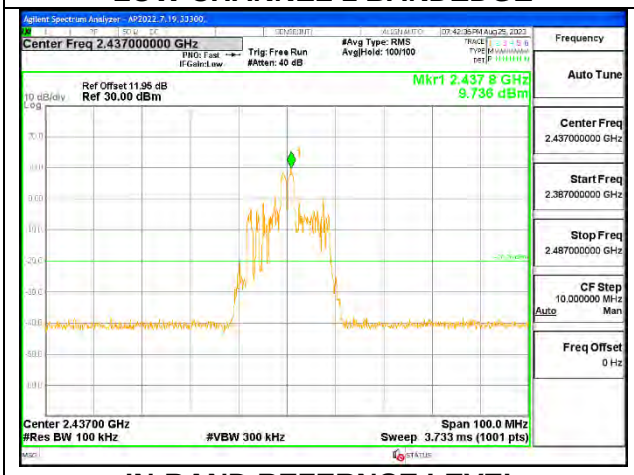
1TX ANT 4 MODE, 26-Tone RU Index 4

LOW CHANNEL 1 BANDEDGE

OUT-OF-BAND LOW CHANNEL 1



IN-BAND REFERNCE LEVEL

OUT-OF-BAND MID CHANNEL

HIGH CHANNEL 11 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 11

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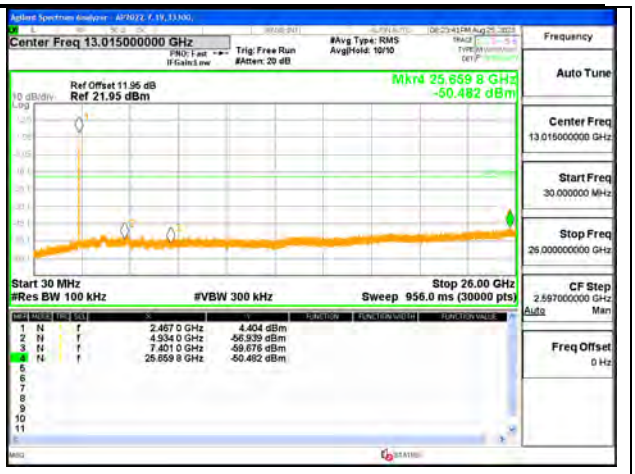
HIGH CHANNEL 12 BANDEDGE



OUT-OF-BAND HIGH CHANNEL 12

HIGH CHANNEL 13 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 13

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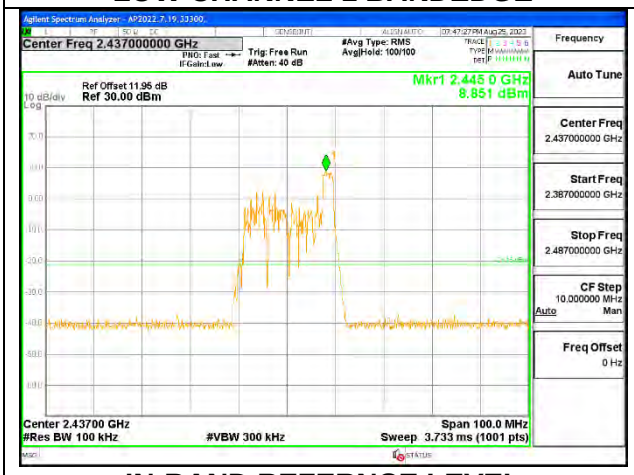
1TX ANT 4 MODE, 26-Tone RU Index 8

LOW CHANNEL 1 BANDEDGE

OUT-OF-BAND LOW CHANNEL 1



IN-BAND REFERNCE LEVEL

OUT-OF-BAND MID CHANNEL

HIGH CHANNEL 11 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 11

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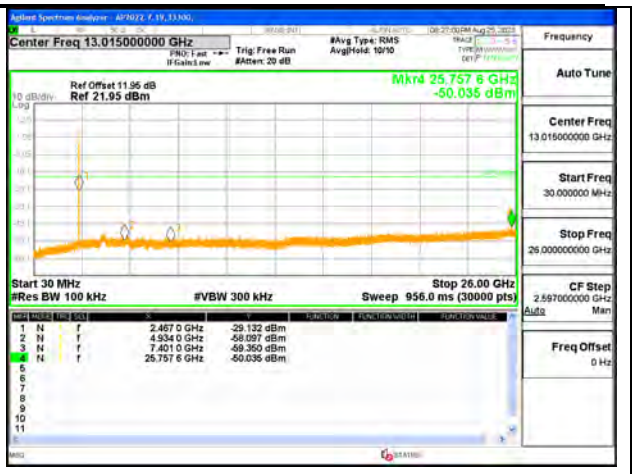
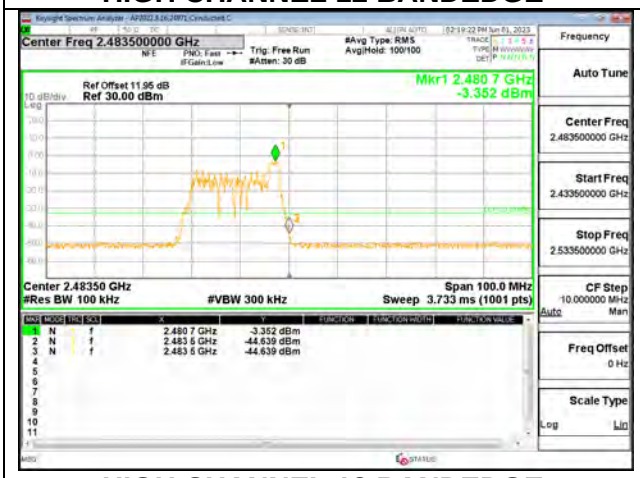
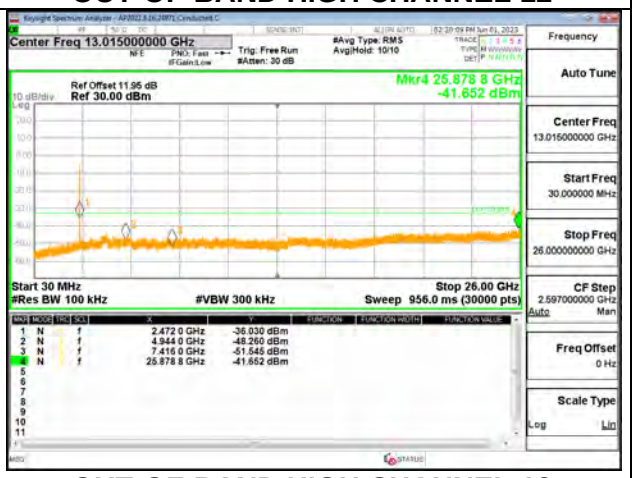
HIGH CHANNEL 12 BANDEDGE



OUT-OF-BAND HIGH CHANNEL 12



HIGH CHANNEL 13 BANDEDGE



OUT-OF-BAND HIGH CHANNEL 13

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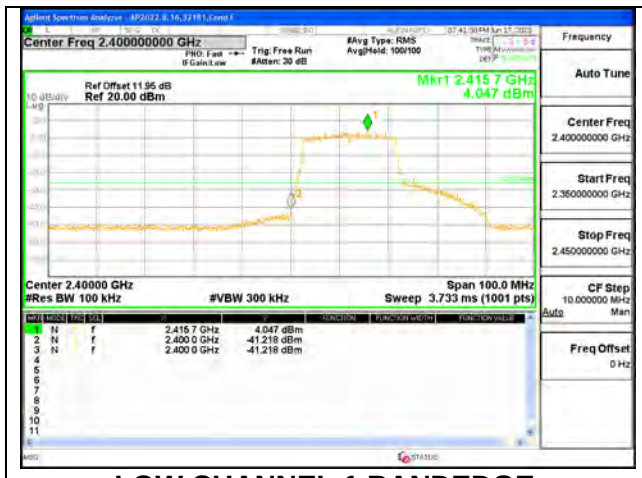
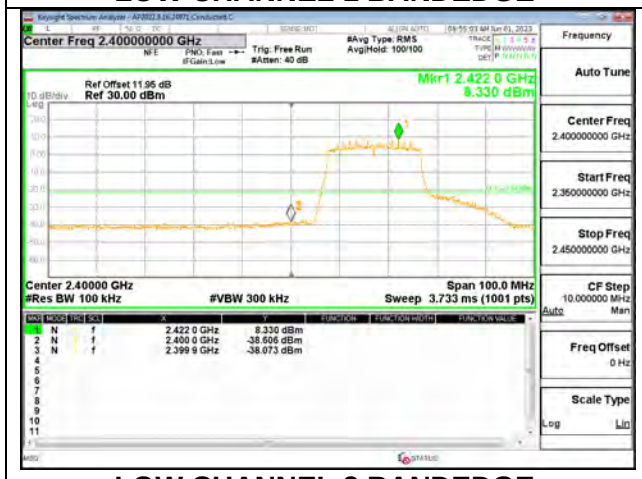
1TX ANT 4 MODE, SU Mode

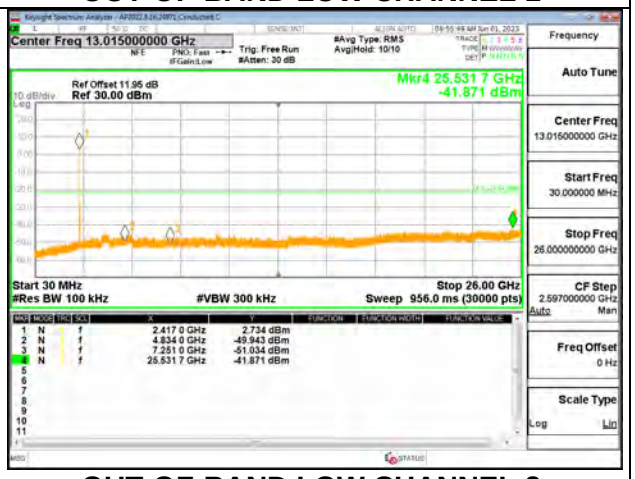


LOW CHANNEL 1 BANDEDGE

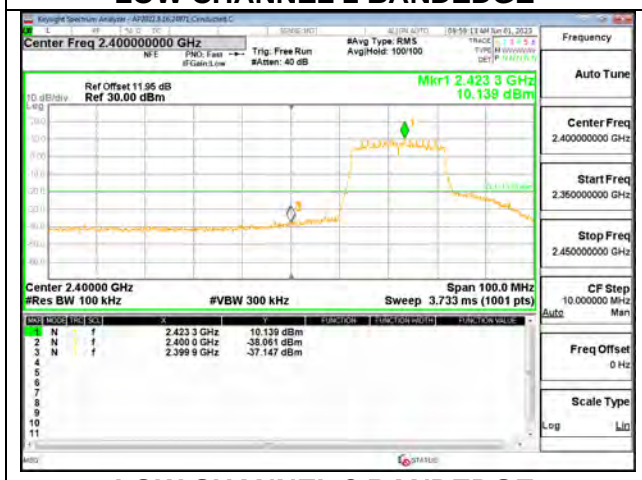
OUT-OF-BAND LOW CHANNEL 1



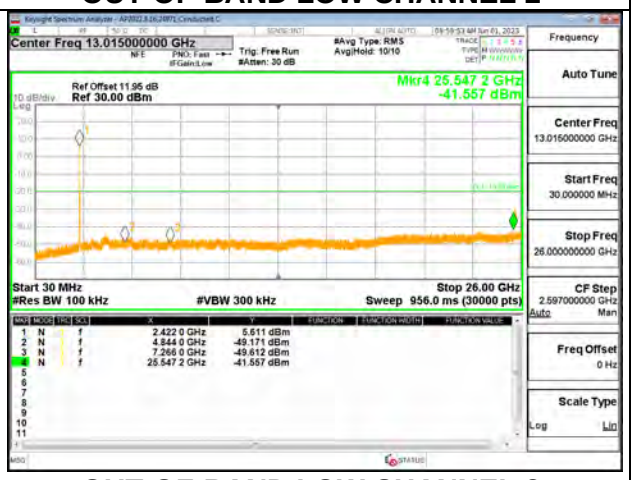
LOW CHANNEL 2 BANDEDGE



OUT-OF-BAND LOW CHANNEL 2



LOW CHANNEL 3 BANDEDGE



OUT-OF-BAND LOW CHANNEL 3

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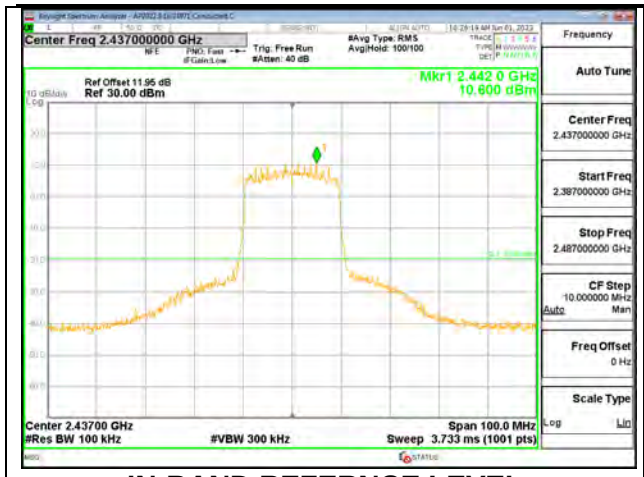
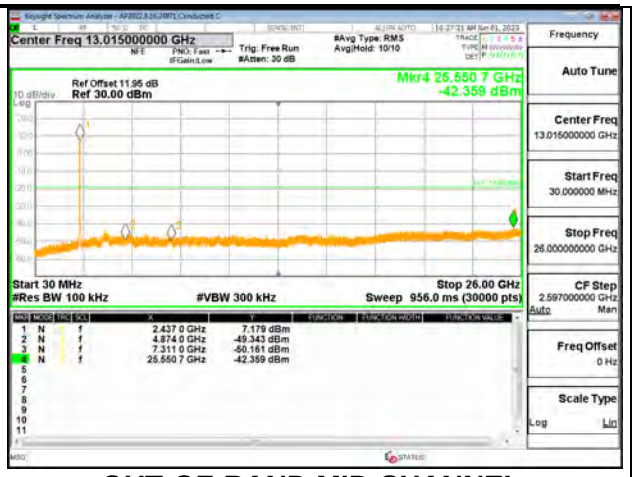
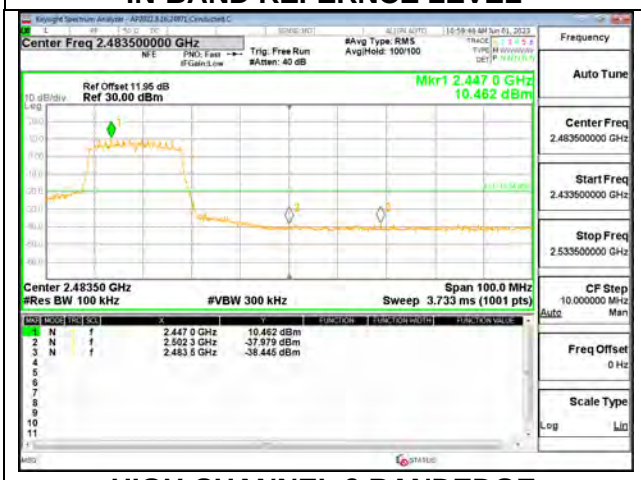


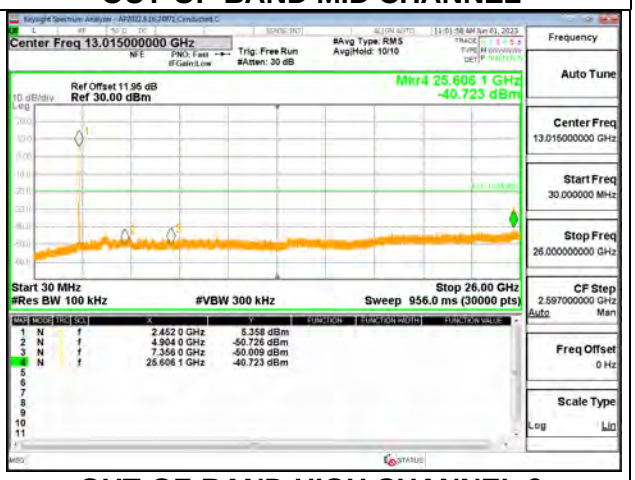
IN-BAND REFERNCE LEVEL



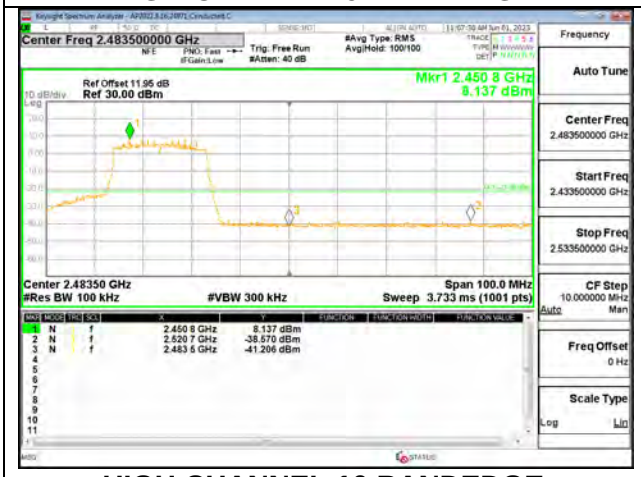
OUT-OF-BAND MID CHANNEL



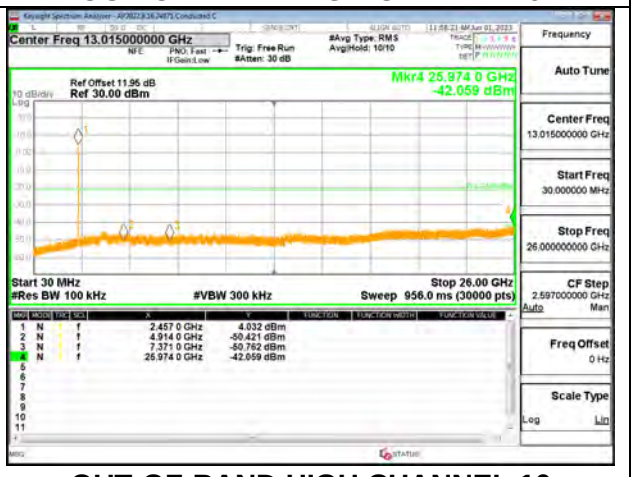
HIGH CHANNEL 9 BANDEDGE



OUT-OF-BAND HIGH CHANNEL 9



HIGH CHANNEL 10 BANDEDGE



OUT-OF-BAND HIGH CHANNEL 10

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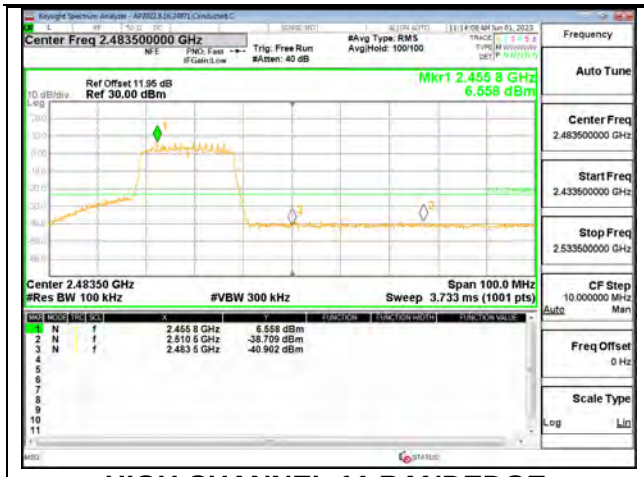
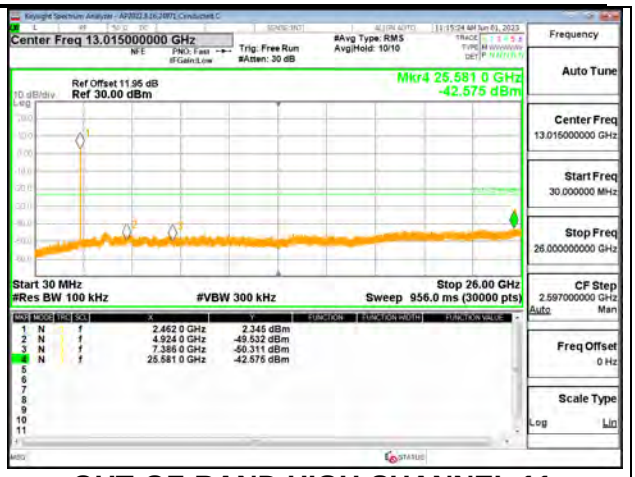
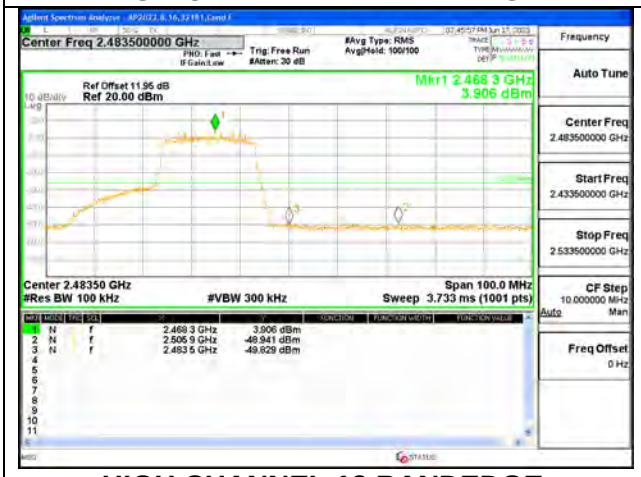


HIGH CHANNEL 11 BANDEDGE

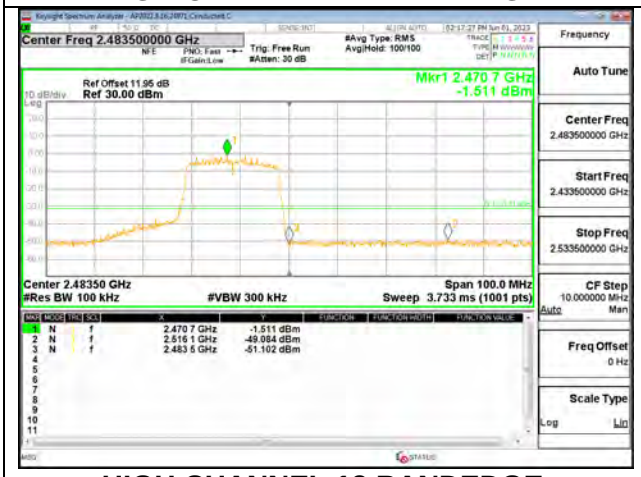


OUT-OF-BAND HIGH CHANNEL 11



HIGH CHANNEL 12 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 12



HIGH CHANNEL 13 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 13

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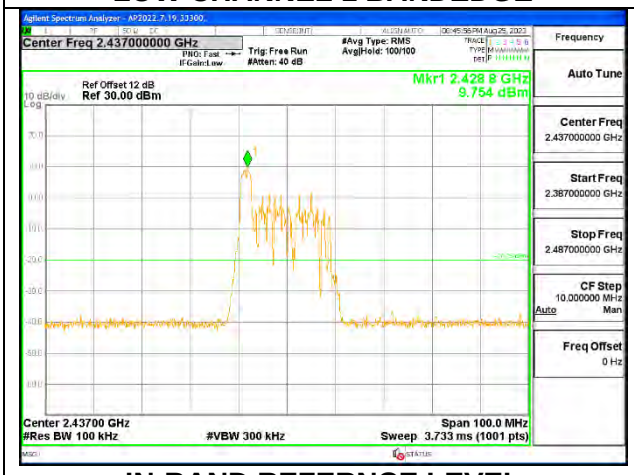
1TX ANT 3 MODE, 26-Tone RU Index 0

LOW CHANNEL 1 BANDEDGE

OUT-OF-BAND LOW CHANNEL 1



IN-BAND REFERNCE LEVEL

OUT-OF-BAND MID CHANNEL

HIGH CHANNEL 11 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 11

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HIGH CHANNEL 12 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 12

HIGH CHANNEL 13 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 13

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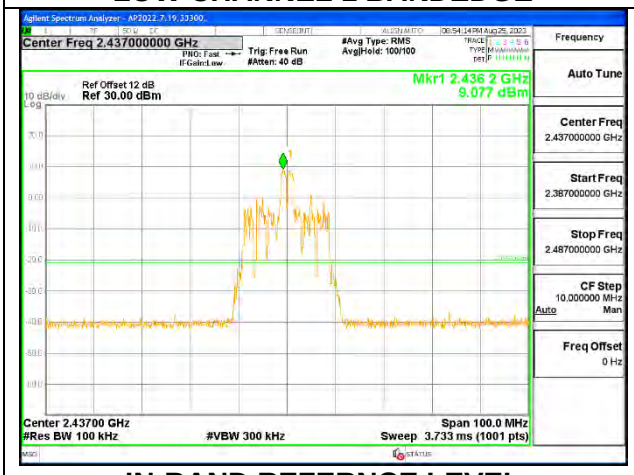
1TX ANT 3 MODE, 26-Tone RU Index 4

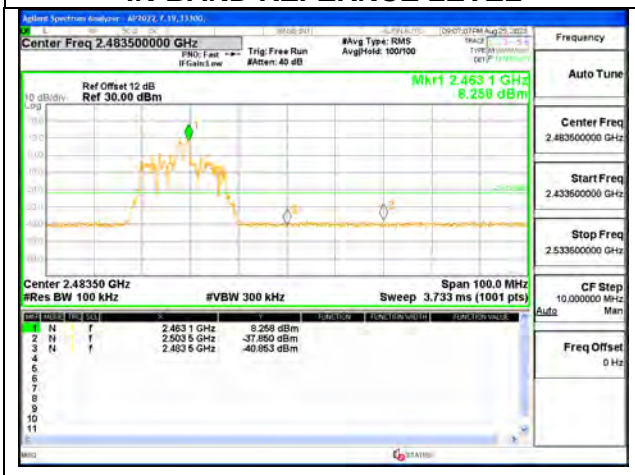
LOW CHANNEL 1 BANDEDGE

OUT-OF-BAND LOW CHANNEL 1



IN-BAND REFERNCE LEVEL

OUT-OF-BAND MID CHANNEL



HIGH CHANNEL 11 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 11

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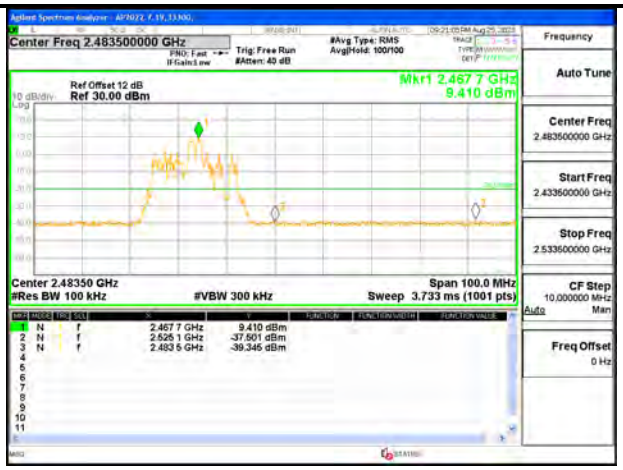

HIGH CHANNEL 12 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 12

HIGH CHANNEL 13 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 13

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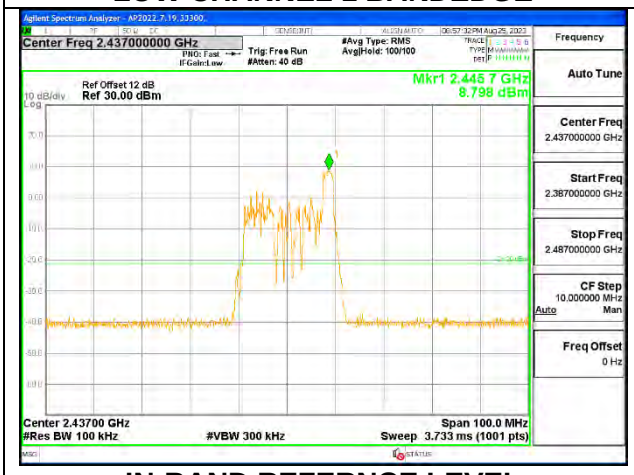
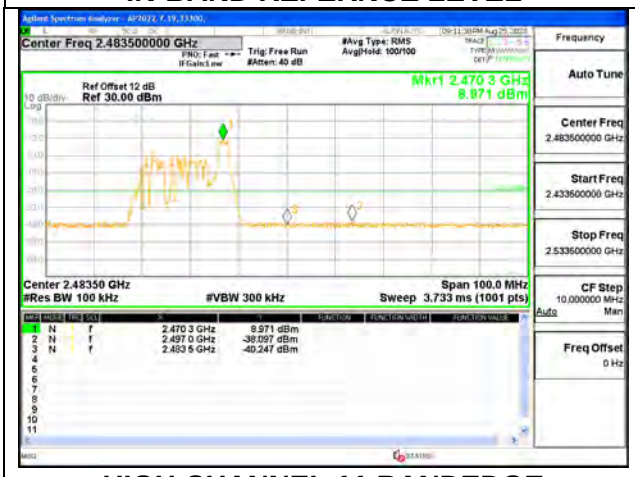
LOW CHANNEL 1 BANDEDGE

OUT-OF-BAND LOW CHANNEL 1



IN-BAND REFERNCE LEVEL

OUT-OF-BAND MID CHANNEL



HIGH CHANNEL 11 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 11

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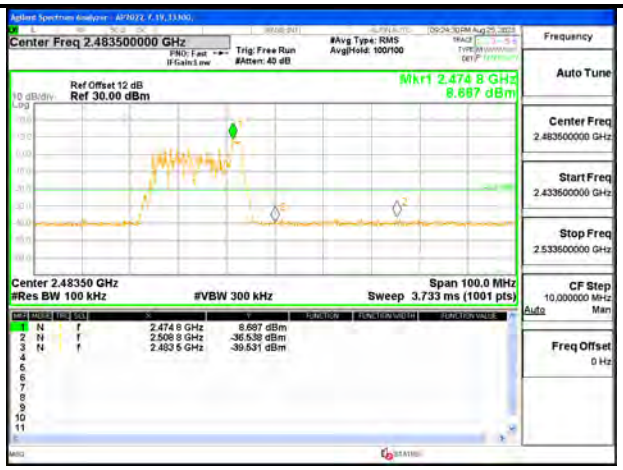

HIGH CHANNEL 12 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 12

HIGH CHANNEL 13 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 13

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LOW CHANNEL 1 BANDEDGE

OUT-OF-BAND LOW CHANNEL 1

LOW CHANNEL 2 BANDEDGE

OUT-OF-BAND LOW CHANNEL 2

LOW CHANNEL 3 BANDEDGE

OUT-OF-BAND LOW CHANNEL 3

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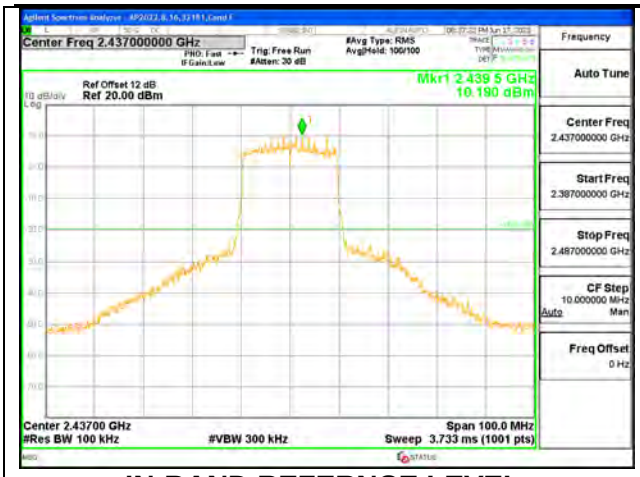

IN-BAND REFERNCE LEVEL

OUT-OF-BAND MID CHANNEL

HIGH CHANNEL 9 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 9

HIGH CHANNEL 10 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 10

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