

TEST REPORT



CTK Co., Ltd.
(Ho-dong), 113, Yejik-ro, Cheoin-gu,
Yongin-si, Gyeonggi-do, Korea
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Fax: +82-31-624-9501

Report No.:
CTK-2023-01325
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1. Applicant

- Name : Samsung Electronics Co Ltd
- Address : 19 Chapin Rd, Building D. Pine Brook, New Jersey, United States
- Date of Receipt : 2023-03-20

2. Manufacturer

- Name : Samsung Electronics Co., Ltd.
- Address : 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Republic of Korea

3. Factory

- Name #1: CHEMTRONICS CO.,LTD.
- Address #1: 35, Buk-ri, Namsa-myeon, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea
- Name #2: Chengdu Xuguang Technology Co., Ltd.
- Address #2: No.86 2nd Section, Park Road, Longquanyi District, Chengdu City, Sichuan Province, P.R.China
- Name #3: CHEMTROVINA COMPANY LIMITED
- Address #3: Nhon Trach 2 - Loc Khang IZ, Hiep Phuoc Town, Nhon Trach District, Dong Nai Province, Vietnam

4. Use of Report : For FCC Conformance

5. Test Sample / Model: Wi-Fi/BT Transceiver / WCC941M

6. Date of Test : 2023-04-10 to 2023-06-08

7. Test Standard(method) used : FCC 47 CFR part 15 subpart C 15.247

8. Testing Environment: Temp.: (23 ± 1) °C, Humidity: (36 ± 3) % R.H.

9. Test Results : Compliance

10. Location of Test : Permanent Testing Lab On Site Testing

(Address : (Unhak-Dong) 5, Dongbu-ro 221beon-gil, Cheoin-gu, Yong-in-si, Gyeonggi-do, Korea)



The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

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Approval	Tested by  Ji-Hye, Kim: (Signature)	Technical Manager  Won-Jae, Hwang: (Signature)
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Remark. This report is not related to KOLAS accreditation and relevant regulation.

2023-06-14

CTK Co., Ltd.



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REPORT REVISION HISTORY

Date	Revision	Page No
2023-06-14	Issued (CTK-2023-01325)	all

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1. General Product Description

1.1 Applicant Information

Company	Samsung Electronics Co., Ltd.
Contact Point	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Republic of Korea
Contact Person	Name : Minhyung Cho E-mail : mh719.cho@samsung.com Tel : +82-31-277-2688 Fax : -

1.2 Product Information

FCC ID	A3LWCC941M
Product Description	Wi-Fi/BT Transceiver
Model name	WCC941M
Variant Model name	-
Operating Frequency	2 412 MHz – 2 472 MHz (20 MHz_BW) 2 422 MHz – 2 462 MHz (40 MHz_BW)
RF Output Power	802.11b : 20.52 dBm (112.72 mW) 802.11g : 15.76 dBm (37.67 mW) 802.11n_HT20 : 16.76 dBm (47.42 mW) 802.11n_HT40 : 18.21 dBm (66.22 mW) 802.11ax_HE20 : 18.40 dBm (69.18 mW) 802.11ax_HE40 : 21.00 dBm (125.89 mW)
Antenna Specification	Antenna type : Metal Antenna Peak Gain : 1.85 dBi (ANT L), 0.01 dBi (ANT R)
Antenna Configurations	802.11b : SISO(ANT L, ANT R) 802.11g : SISO(ANT L, ANT R) 802.11n : SISO(ANT L, ANT R), MIMO(ANT L+ANT R) 802.11ax : SISO(ANT L, ANT R), MIMO(ANT L+ANT R)
Number of channels	13 (802.11b/g/n_HT20/ax_HE20) 9 (802.11n_HT40/ax_HE40)
Type of Modulation	802.11b : DSSS 802.11g/n : OFDM 802.11ax : OFDMA
Data Rate	802.11b : 11 / 5.5 / 2 / 1 Mbps 802.11g : 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6 Mbps 802.11n : up to 300 Mbps 802.11ax : up to 573 Mbps
Power Source	DC 5 V
Hardware Rev	V2.1
Software Rev	FC 3



RF Power setting in Test SW

Mode		Frequency	Power Setting Value
802.11b		2 412 MHz	17.0
		2 417 MHz - 2 467 MHz	16.0
		2 472 MHz	15.0
802.11g		2 412 MHz – 2 472 MHz	12.5
802.11n_HT20		2 412 MHz – 2 472 MHz	11.5
802.11n_HT40		2 422 MHz – 2 462 MHz	14.0
802.11ax_HE20	26T	2 412 MHz – 2 462 MHz	14.0
		2 472 MHz	4.5
	52T	2 412 MHz – 2 462 MHz	13.0
		2 472 MHz	7.0
	106T	2 412 MHz – 2 462 MHz	13.0
		2 472 MHz	7.0
	242T	2 412 MHz – 2 472 MHz	13.0
	802.11ax_HE40	26T	2 422 MHz – 2 457 MHz
2 462 MHz			3.5
52T		2 422 MHz – 2 457 MHz	15.0
		2 462 MHz	3.0
106T		2 422 MHz – 2 457 MHz	14.0
		2 462 MHz	3.0
242T		2 422 MHz – 2 457 MHz	12.0
		2 462 MHz	11.0
484T		2 422 MHz – 2 462 MHz	12.0

1.3 Peripheral Devices

Device	Manufacturer	Model No.	Serial No.
Note Computer	HP	15-bs563TU	CND7253R6N
AC/DC Adapter	HP	HSTNN-LA40	-
Note Computer	Samsung Electronics Co., Ltd.	NT-RC530-WS55	HPFG91EC300116B
AC/DC Adapter	Samsung Electronics Co., Ltd.	PA-1600-66	-

1.4 Model Differences

Not applicable



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2. Accreditations

2.1 Laboratory Accreditations and Listings

Country	Agency	Registration Number
USA	FCC	805871
CANADA	ISED	8737A
KOREA	NRRA	KR0025

2.2 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less. All test equipment calibrations are traceable to the Korea Research Institute of Standards and Science (KRISS), therefore, all test data recorded in this report is traceable to KRISS.



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3. Test Specifications

3.1 Standards

FCC Part Section(s)	Requirement(s)	Status (Note 1)	Test Condition
15.247(a)	6 dB Bandwidth	C	Conducted
15.247(b)	Maximum Output Power	C	
15.247(d)	Conducted Spurious emission	C	
15.247(d)	Unwanted Emission(Conducted)	C	
15.247(e)	Transmitter Power Spectral Density	C	
15.209	Radiated Emissions	C	Radiated
15.207	AC Conducted Emissions	C	Line Conducted
<i>Note 1:</i> C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable			
<i>Note 2:</i> The data in this test report are traceable to the national or international standards.			
<i>Note 3:</i> The sample was tested according to the following specification: FCC Part 15.247			
<i>Note 4:</i> The tests were performed according to the method of measurements prescribed in KDB No.558074, ANSI C63.10-2013			



3.2 Mode of operation during the test

The EUT is operated in a manner representative of the typical of the equipments. During at testing, system components were manipulated within the confines of typical usage to maximize each emission. All modulation modes were tests. The results are only attached worst cases.

The Output power and Power Spectral Density for the 802.11 ax mode were investigated between all different tones, and we found that the highest tone had the highest output power and lowest tone had the highest PSD readings. Therefore, full testing was performed on both the highest and lowest tones.

Test Frequency & Bandwidth

802.11b

Bandwidth	Lowest channel 1	Lowest channel 2	Middle channel	Highest channel 1	Highest channel 2
20 MHz	2 412 MHz	2 417 MHz	2 442 MHz	2 467 MHz	2 472 MHz

The other

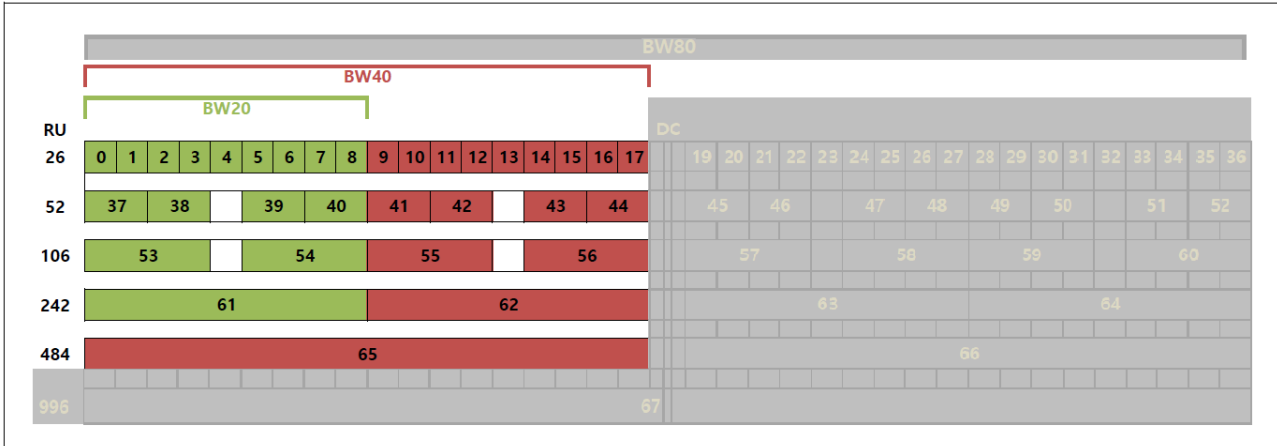
Bandwidth	Lowest channel	Middle channel	Highest channel
20 MHz	2 412 MHz	2 442 MHz	2 472 MHz
40 MHz	2 422 MHz	2 442 MHz	2 462 MHz

Test mode & Worst case

Test mode	Modulation	Data rate (Worst case)	Duty Cycle	Duty Cycle Factor
802.11b	DSSS	1 Mbps	99.6 %	0.00 dB
802.11g	OFDM	6 Mbps	97.2 %	0.12 dB
802.11n_HT20	OFDM	MCS 0	96.9 %	0.14 dB
802.11n_HT40		MCS 0	94.1 %	0.27 dB
802.11ax_HE20_26T	OFDMA	MCS 0	95.4 %	0.20 dB
802.11ax_HE20_52T			95.2 %	0.21 dB
802.11ax_HE20_106T			95.1 %	0.22 dB
802.11ax_HE20_242T			94.0 %	0.27 dB
802.11ax_HE40_26T		MCS 0	95.7 %	0.19 dB
802.11ax_HE40_52T			97.5 %	0.11 dB
802.11ax_HE40_106T			94.7 %	0.24 dB
802.11ax_HE40_242T			94.2 %	0.26 dB
802.11ax_HE40_484T			94.1 %	0.26 dB



802.11ax RU Locations



Test RU Index for Tones

Mode	Tones	RU Index	
		Low	High
802.11ax_HE20	26T	Low	0
		Mid	4
		High	8
	52T	Low	37
		Mid	39
		High	40
	106T	Low	53
		Mid	-
		High	54
242T / SU	61 / NA	61 / NA	
802.11ax_HE40	26T	Low	0
		Mid	9
		High	17
	52T	Low	37
		Mid	41
		High	44
	106T	Low	53
		Mid	55
		High	56
	242T	Low	61
		Mid	-
		High	62
484T / SU	65	65	

Full RU(Resource Unit) and SU(Single Unit) mode have no difference in physical waveform. This Report has been reported the Full RU(Resource Unit) with worst output power.



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3.3 Device Modifications

The following modifications were necessary for compliance:

Not applicable

3.4 Maximum Measurement Uncertainty

The value of the measurement uncertainty for the measurement of each parameter.

Coverage factor $k = 2$, Confidence levels of 95 %

Description	Uncertainty
Conducted RF Output Power	1.5 dB (C.L.: Approx. 95 %, $k = 2$)
Power Spectral Density	1.5 dB (C.L.: Approx. 95 %, $k = 2$)
Occupied Bandwidth	0.1 MHz (C.L.: Approx. 95 %, $k = 2$)
Unwanted Emission(conducted)	3.0 dB (C.L.: Approx. 95 %, $k = 2$)
Radiated Emissions ($f \leq 1$ GHz)	3.88 dB (C.L.: Approx. 95 %, $k = 2$)
Radiated Emissions ($f > 1$ GHz)	4.50 dB (C.L.: Approx. 95 %, $k = 2$)
Line Conducted Emission	2.08 dB (C.L.: Approx. 95 %, $k = 2$)

3.5 Test Software

Conducted Test	Ics Pro Ver. 6.0.3
Radiated Test	EP5RE Ver. 6.0.1.0, ES10 Ver. 10.001
Line Conducted Test	EMC32 Ver. 10.50.00



4. Technical Characteristic Test

4.1 6dB Bandwidth

Test Procedures

KDB 558074 - Section 8.2
ANSI C63.10-2013 - Section 11.8.2

Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Test Procedures

ANSI C63.10-2013 - Section 6.9

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.

Use the 99% power bandwidth function of the instrument and report the measured bandwidth.

Test Settings :

Center frequency = the highest, middle and the lowest channels

- a) RBW = 100 kHz
- b) VBW $\geq 3 \times$ RBW
- c) Detector = peak
- d) Trace mode = Max hold
- e) Sweep = auto couple
- f) Allow trace to fully stabilize
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Minimum Standard :

6 dB Bandwidth > 500kHz



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Test Data :

ANT L

Mode	6 dB Bandwidth and 99 % Bandwidth (MHz)							
	802.11b		802.11g		802.11n_HT20		802.11ax_HE20_242T	
Frequency	6 dB	99 %	6 dB	99 %	6 dB	99 %	6 dB	99 %
2 412 MHz	8.12	12.57	15.16	16.33	15.16	17.50	18.06	18.75
2 417 MHz	8.11	12.63	-	-	-	-	-	-
2 442 MHz	8.09	12.54	15.37	16.58	15.20	17.77	18.50	18.96
2 467 MHz	8.10	12.55	-	-	-	-	-	-
2 472 MHz	8.09	12.48	15.16	16.34	15.17	17.51	18.33	18.77

Mode		6 dB Bandwidth and 99 % Bandwidth (MHz)	
		802.11ax_HE20_26T	
Frequency	RU Index	6 dB	99 %
2 412 MHz	Low	2.14	18.05
	Mid	2.72	16.95
	High	2.11	18.02
2 442 MHz	Low	2.18	18.73
	Mid	2.71	17.03
	High	2.17	18.55
2 472 MHz	Low	2.16	17.97
	Mid	2.73	16.97
	High	2.12	18.03



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Mode	6 dB Bandwidth and 99 % Bandwidth (MHz)			
	802.11n_HT40		802.11ax_HE40_484T	
Frequency	6 dB	99 %	6 dB	99 %
2 422 MHz	35.16	35.79	37.04	37.51
2 442 MHz	35.16	35.79	37.51	37.52
2 462 MHz	35.15	35.78	37.40	37.46

Mode		6 dB Bandwidth and 99 % Bandwidth (MHz)	
		802.11ax_HE40_26T	
Frequency	RU Index	6 dB	99 %
2 422 MHz	Low	2.13	17.65
	Mid	2.18	19.42
	High	2.15	17.63
2 442 MHz	Low	2.15	17.64
	Mid	2.14	19.27
	High	2.14	17.60
2 462 MHz	Low	2.15	17.64
	Mid	2.11	19.42
	High	2.16	17.71



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ANT R

Mode	6 dB Bandwidth and 99 % Bandwidth (MHz)							
	802.11b		802.11g		802.11n_HT20		802.11ax_HE20_242T	
Frequency	6 dB	99 %	6 dB	99 %	6 dB	99 %	6 dB	99 %
2 412 MHz	8.10	12.59	15.17	16.34	15.17	17.51	18.55	18.78
2 417 MHz	8.10	12.55	-	-	-	-	-	-
2 442 MHz	8.05	12.53	15.82	16.57	17.19	17.72	18.63	18.92
2 467 MHz	8.09	12.51	-	-	-	-	-	-
2 472 MHz	8.11	12.73	15.16	16.34	15.15	17.51	18.56	8.77

Mode		6 dB Bandwidth and 99 % Bandwidth (MHz)	
		802.11ax_HE20_26T	
Frequency	RU Index	6 dB	99 %
2 412 MHz	Low	2.13	17.91
	Mid	2.68	16.91
	High	2.14	18.02
2 442 MHz	Low	2.16	18.42
	Mid	2.68	17.05
	High	2.17	18.45
2 472 MHz	Low	2.15	18.03
	Mid	2.69	16.90
	High	2.16	17.93



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Mode	6 dB Bandwidth and 99 % Bandwidth (MHz)			
	802.11n_HT40		802.11ax_HE40_484T	
Frequency	6 dB	99 %	6 dB	99 %
2 422 MHz	35.14	35.79	37.41	37.52
2 442 MHz	35.14	35.79	37.26	37.52
2 462 MHz	35.14	35.78	37.25	37.47

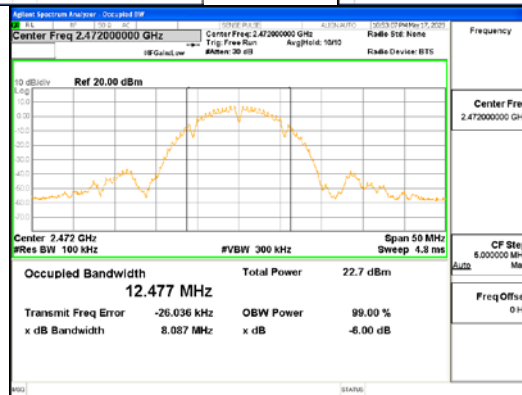
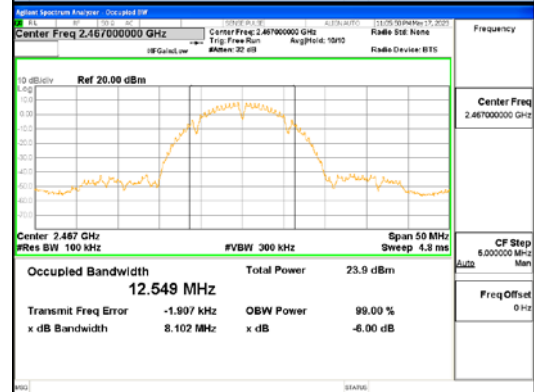
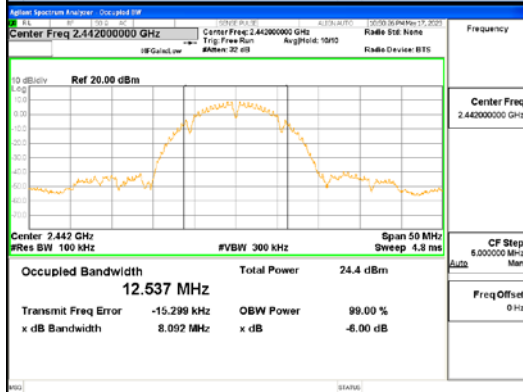
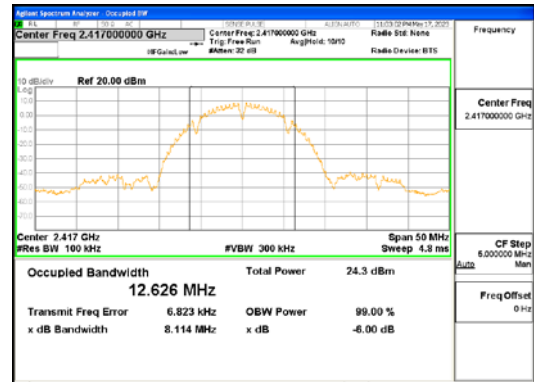
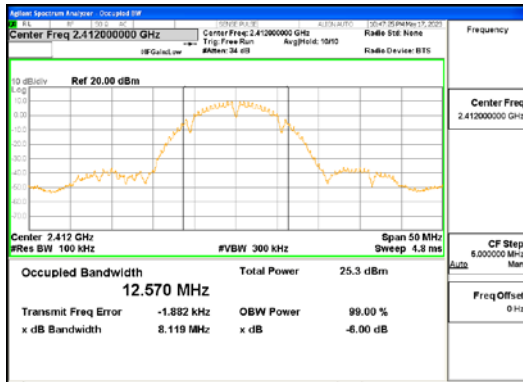
Mode		6 dB Bandwidth and 99 % Bandwidth (MHz)	
		802.11ax_HE40_26T	
Frequency	RU Index	6 dB	99 %
2 422 MHz	Low	2.14	17.51
	Mid	2.12	18.86
	High	2.13	17.60
2 442 MHz	Low	2.13	17.57
	Mid	2.15	18.94
	High	2.16	17.49
2 462 MHz	Low	2.16	17.57
	Mid	2.18	18.91
	High	2.14	17.60

See next pages for actual measured spectrum plots.



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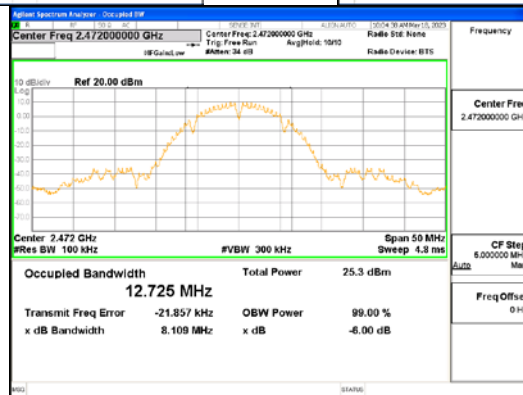
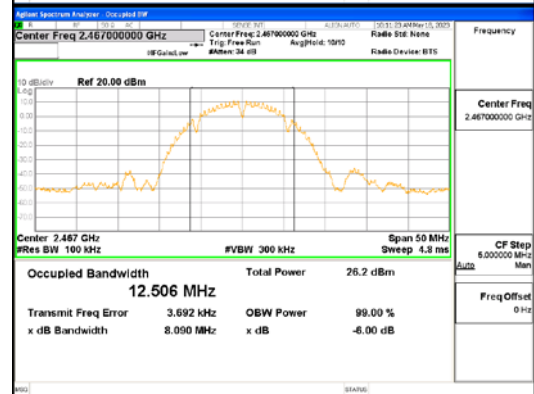
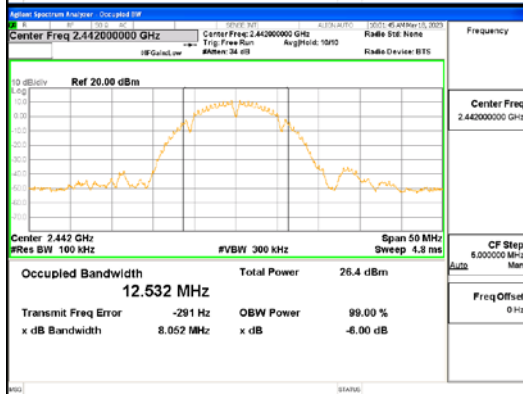
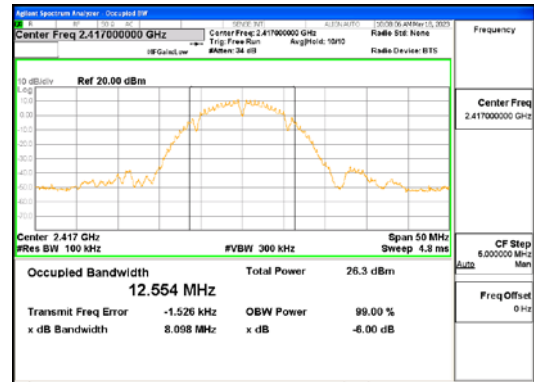
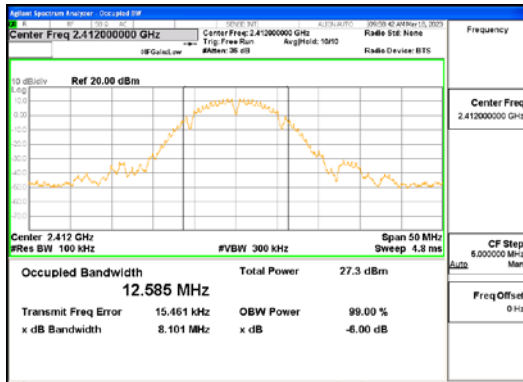


ANT L, 802.11b

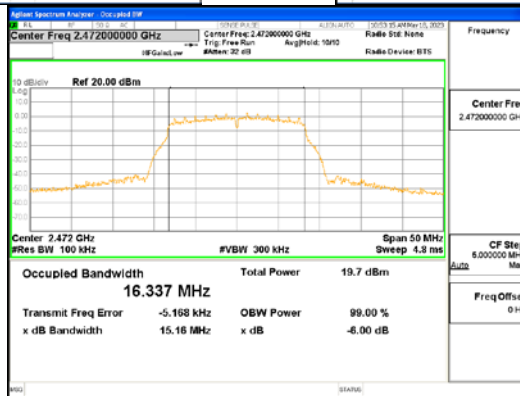
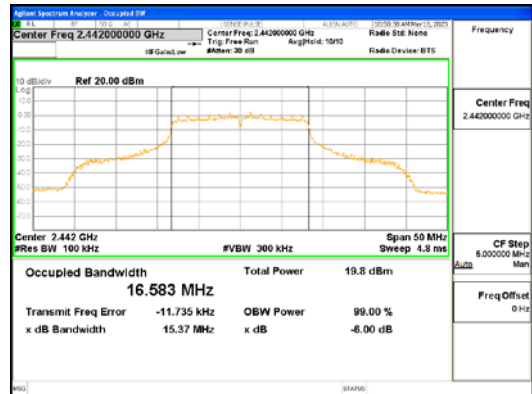
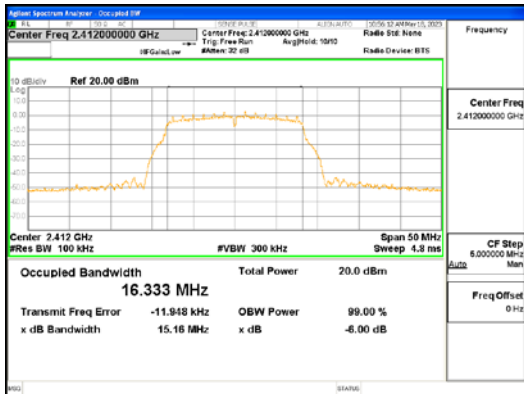


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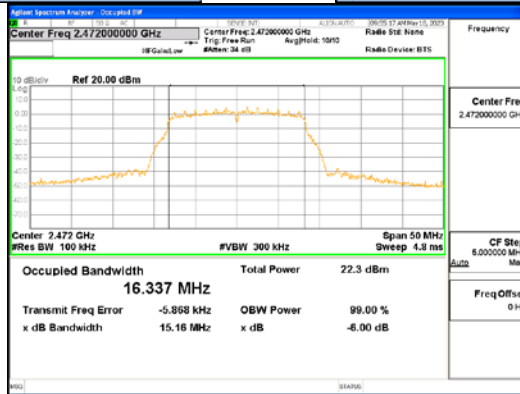
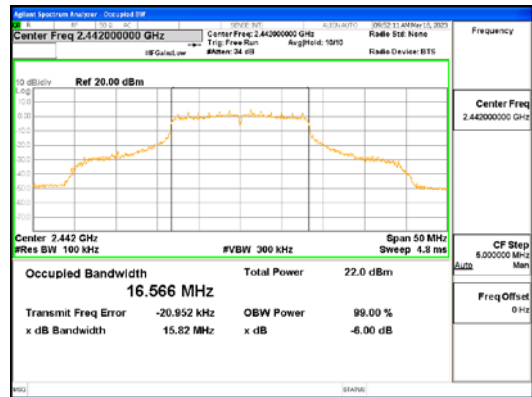
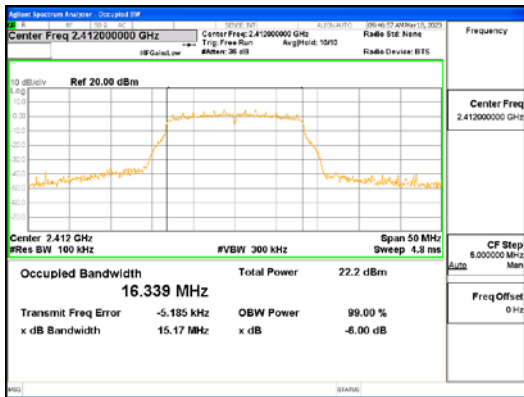
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ANT R, 802.11b



ANT L, 802.11g

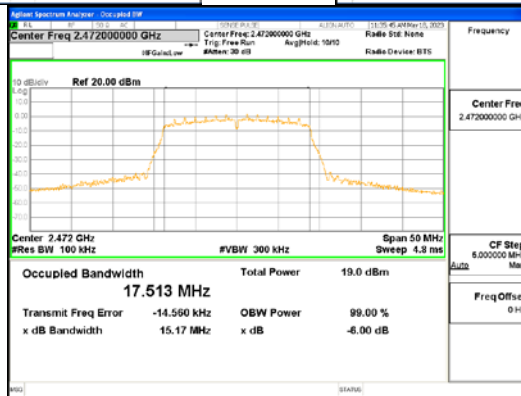
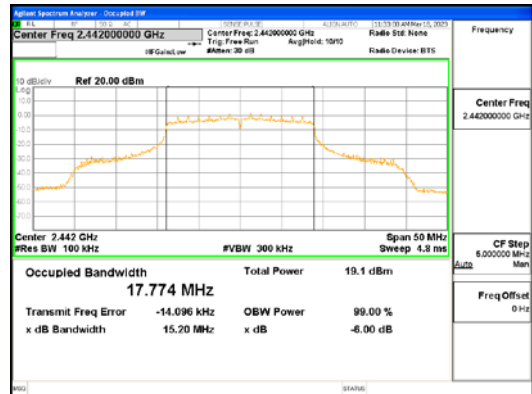
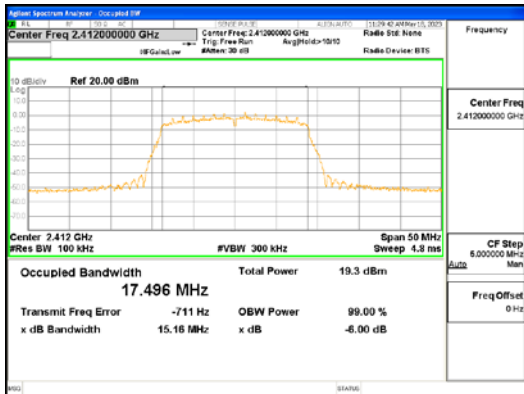


ANT R, 802.11g

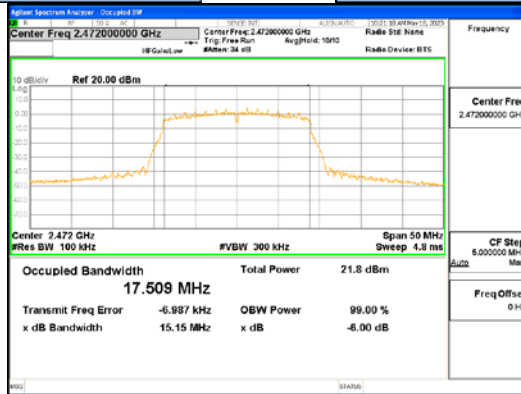
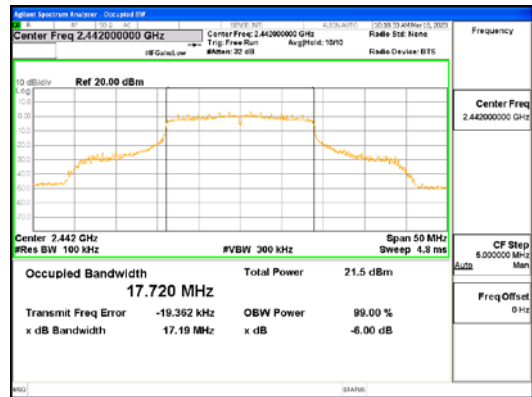
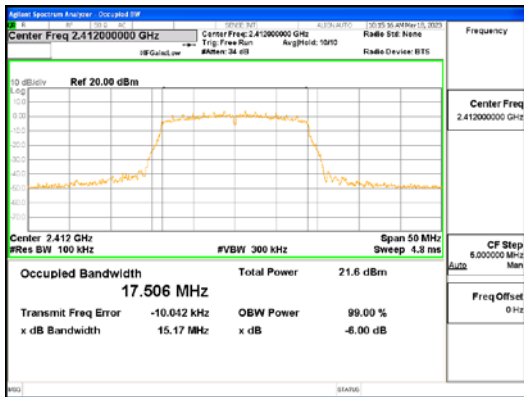


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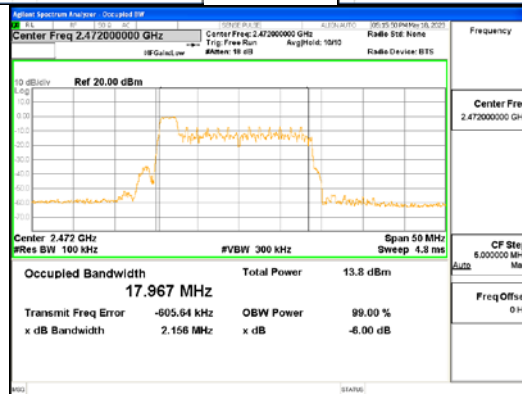
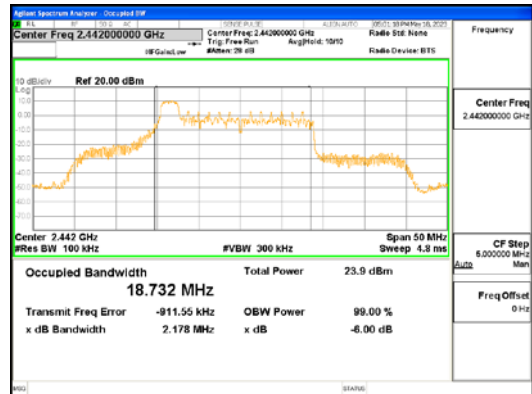
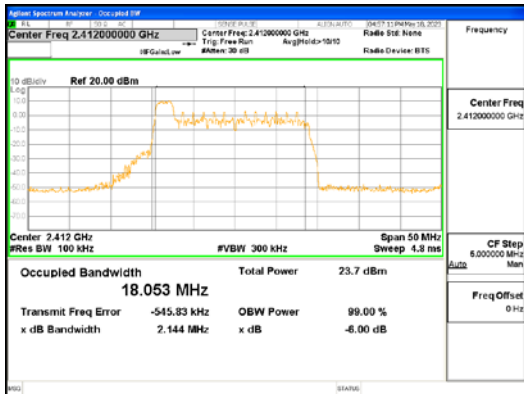
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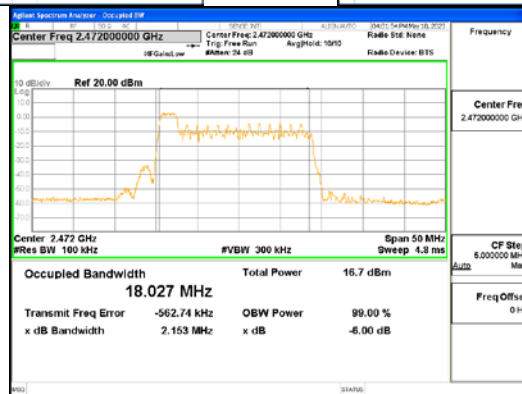
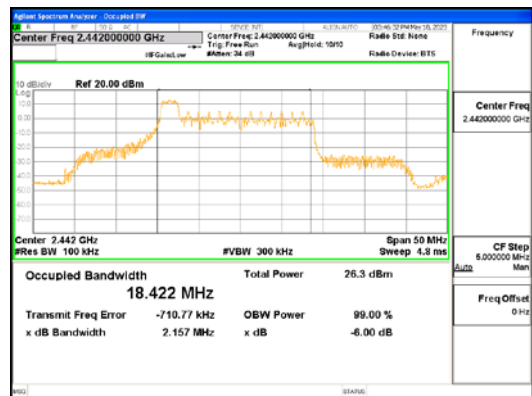
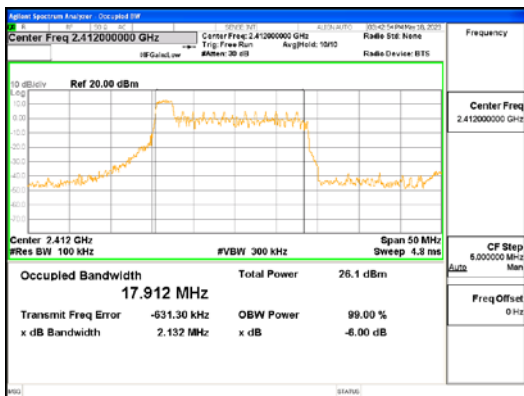
ANT L, 802.11n_HT20



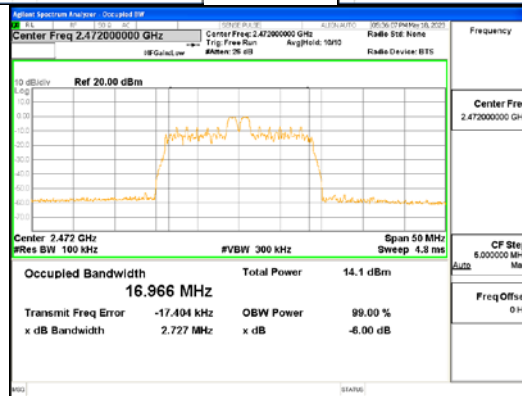
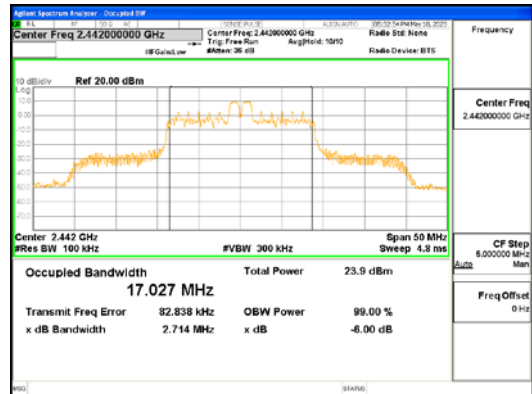
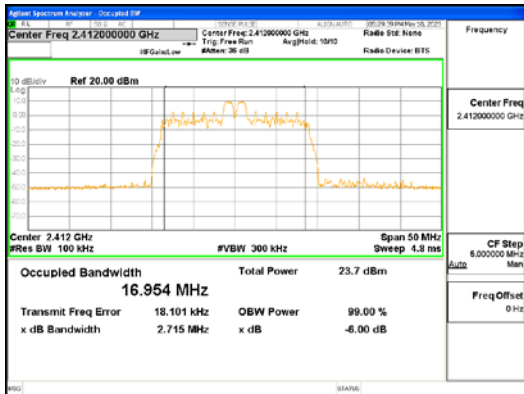
ANT R, 802.11n_HT20



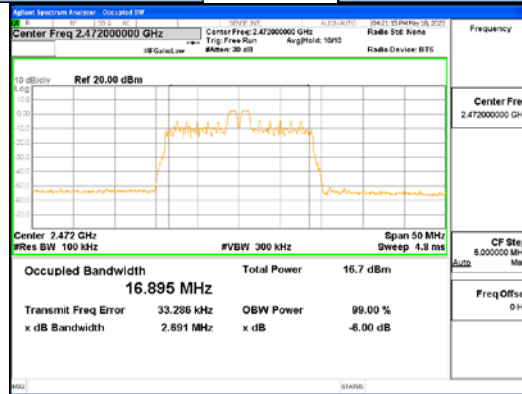
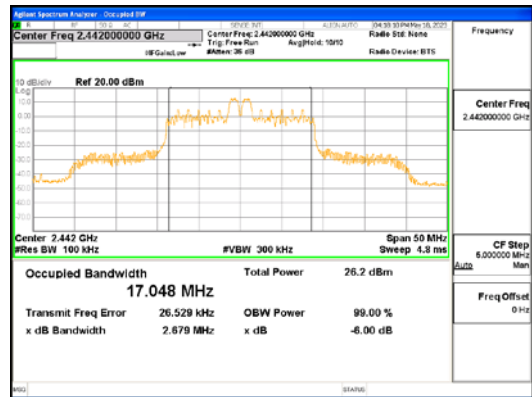
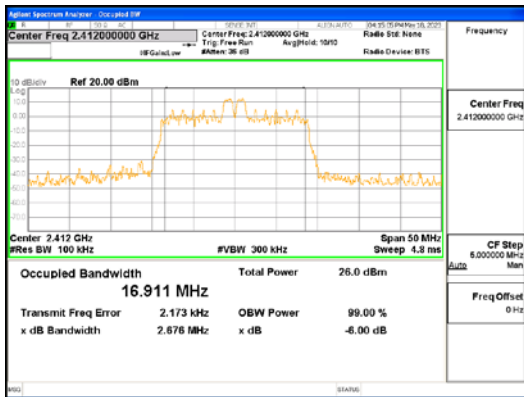
ANT L, 802.11ax_HE20_26T_Low



ANT R, 802.11ax_HE20_26T_Low



ANT L, 802.11ax_HE20_26T_Mid

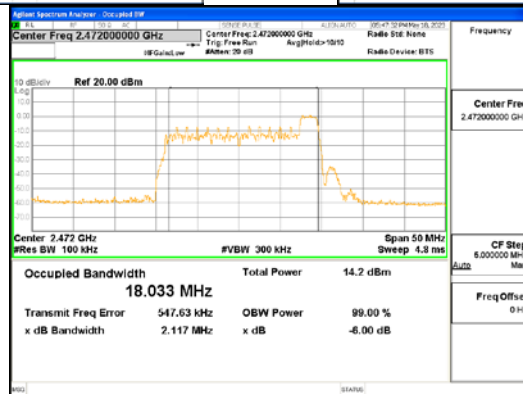
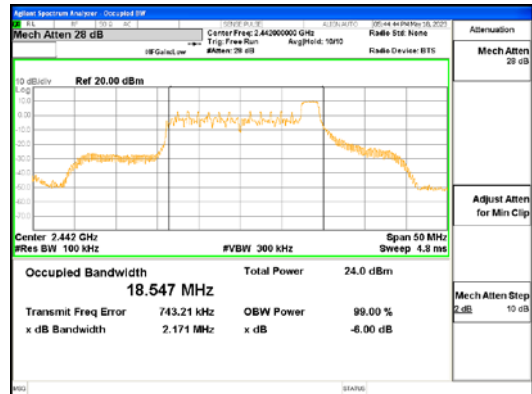
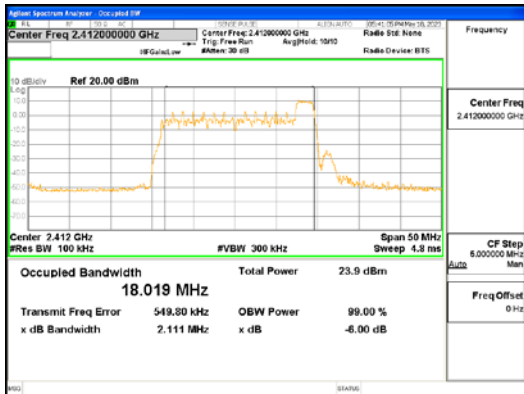


ANT R, 802.11ax_HE20_26T_Mid

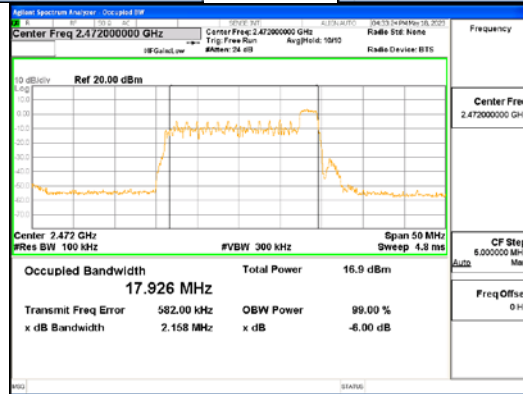
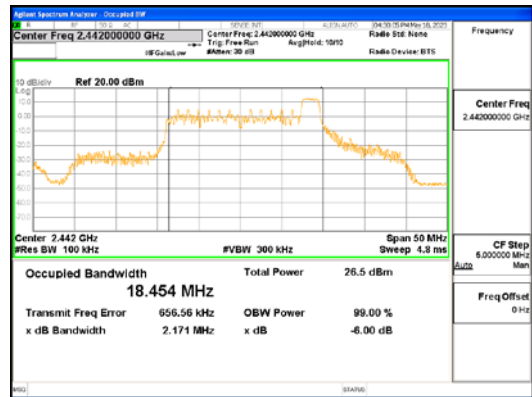
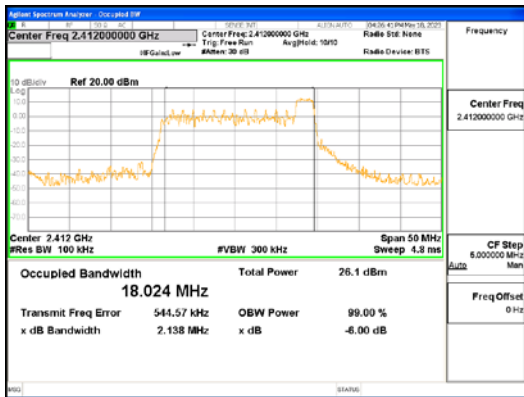


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ANT L, 802.11ax_HE20_26T_High

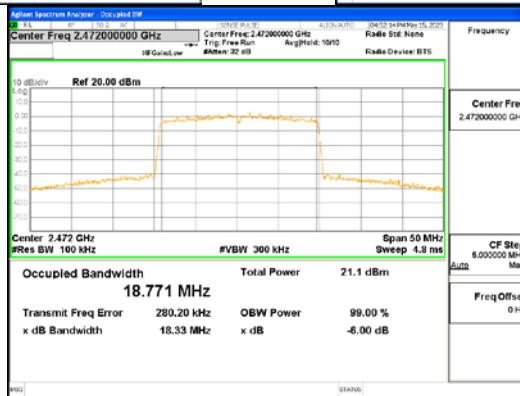
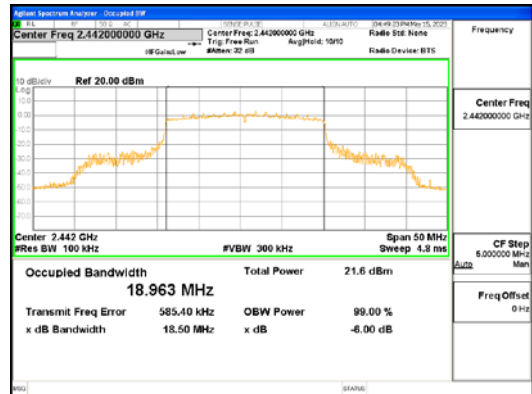
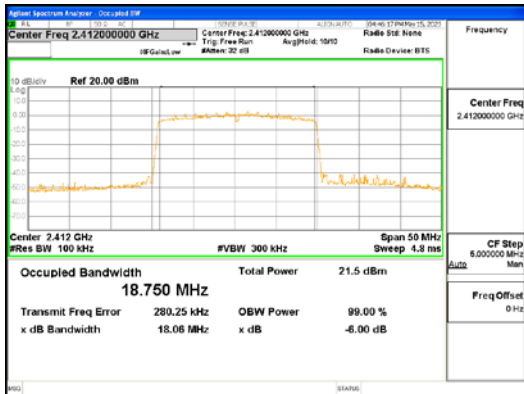


ANT R, 802.11ax_HE20_26T_High

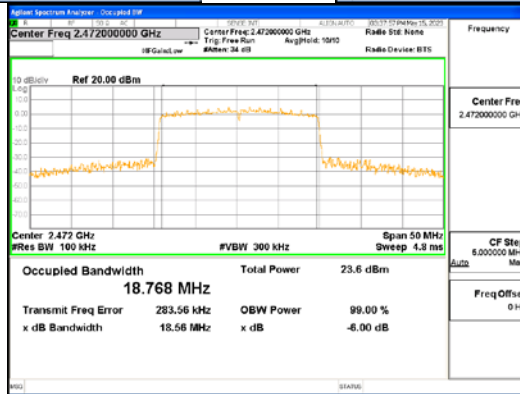
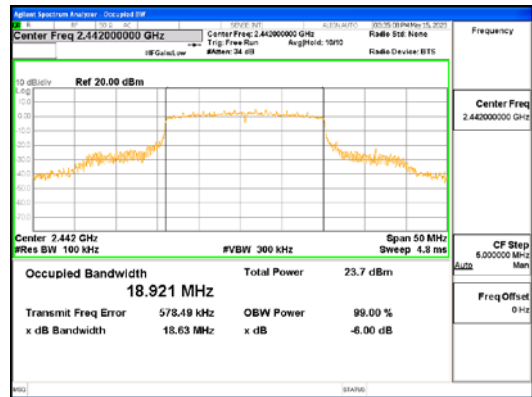
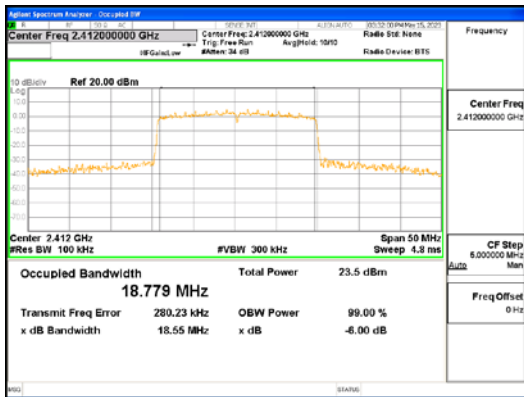


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ANT L, 802.11ax_HE20_242T

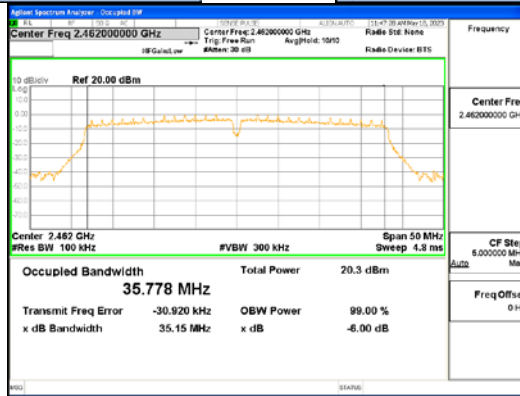
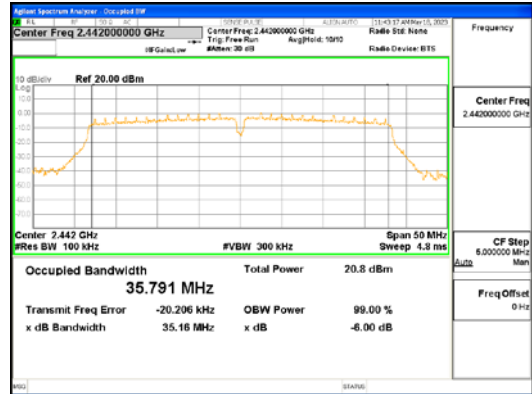
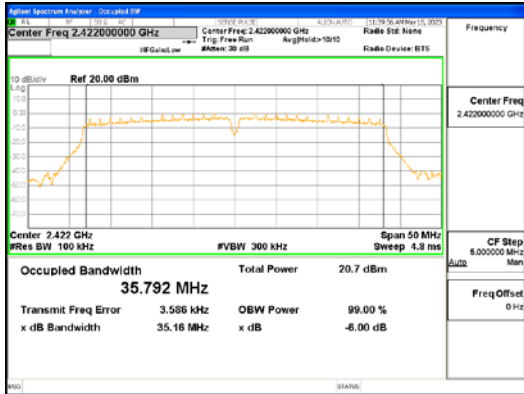


ANT R, 802.11ax_HE20_242T

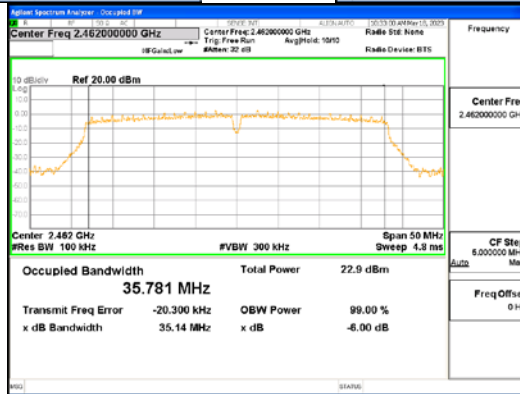
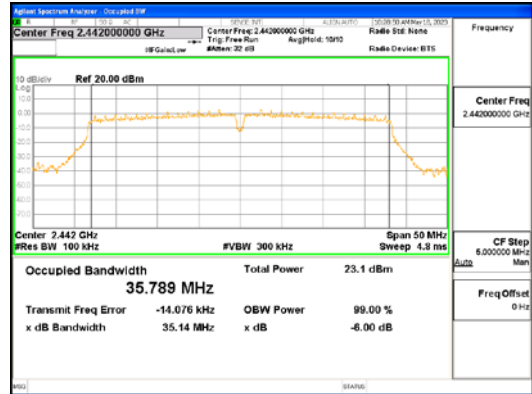
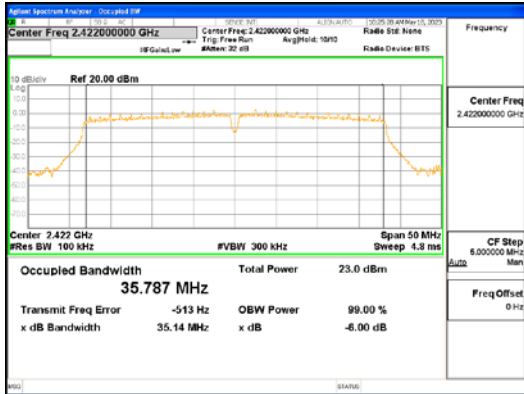


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ANT L, 802.11n_HT40

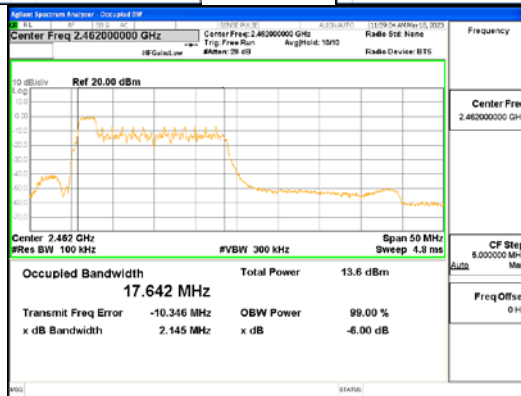
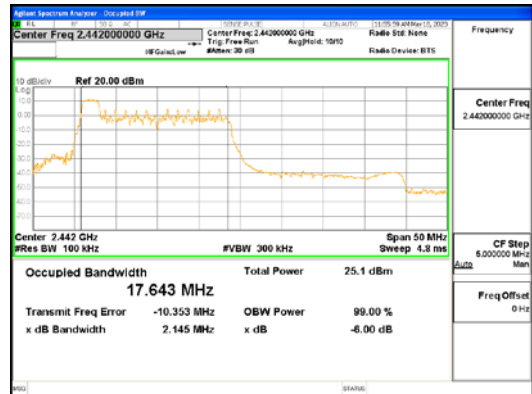
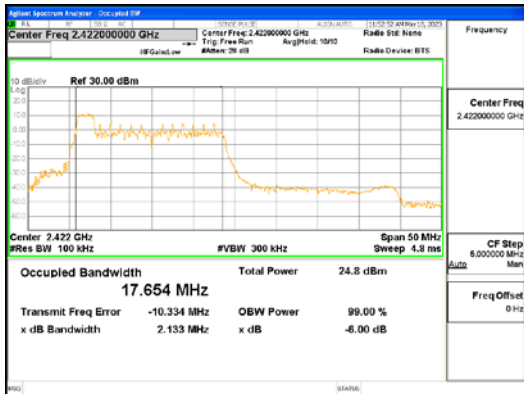


ANT R, 802.11n_HT40

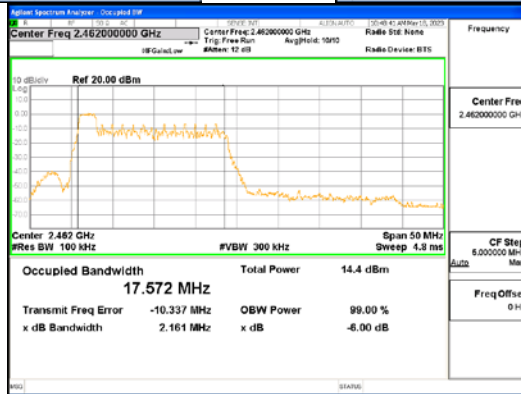
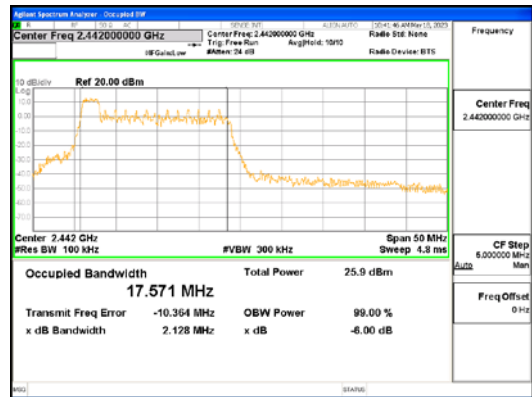
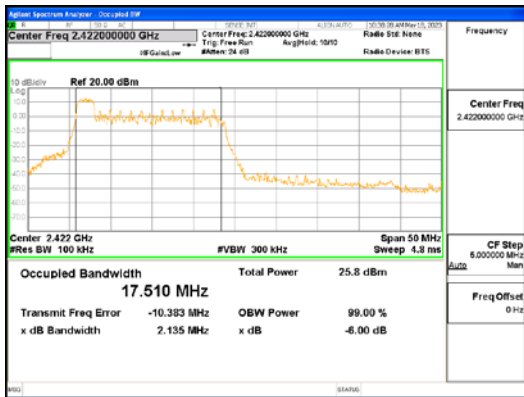


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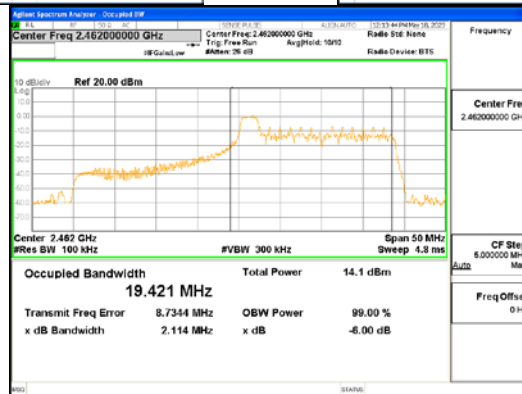
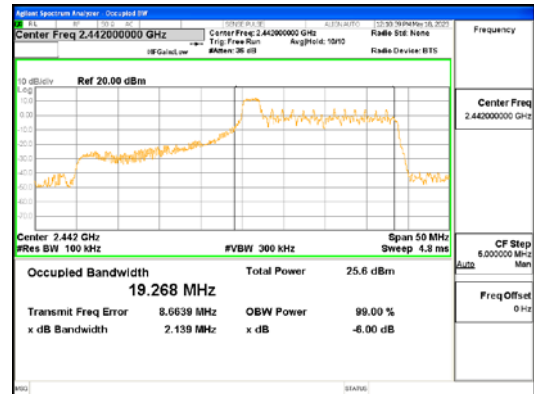
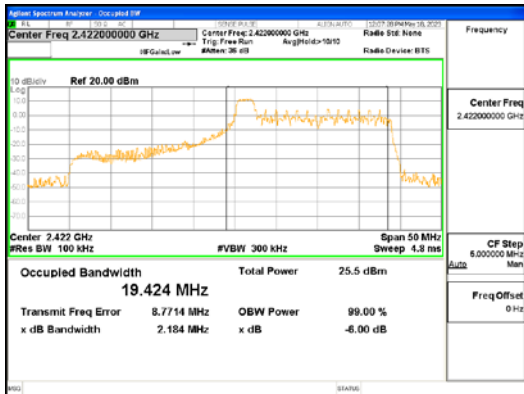
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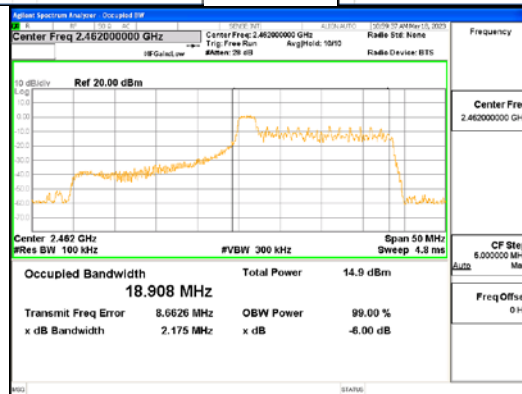
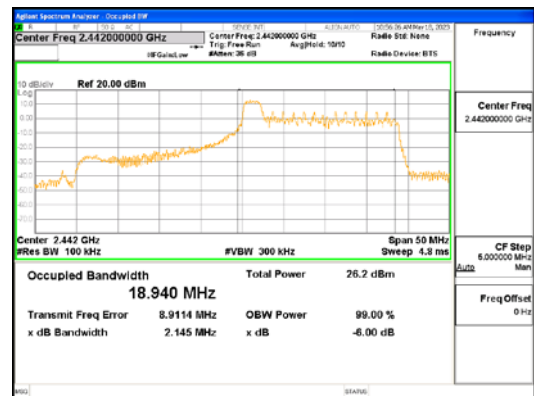
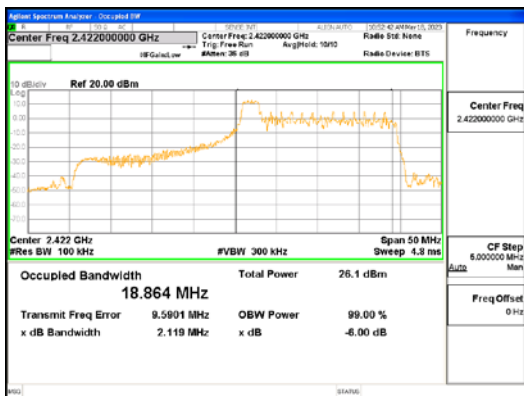
ANT L, 802.11ax_HE40_26T_Low



ANT R, 802.11ax_HE40_26T_Low



ANT L, 802.11ax_HE40_26T_Mid

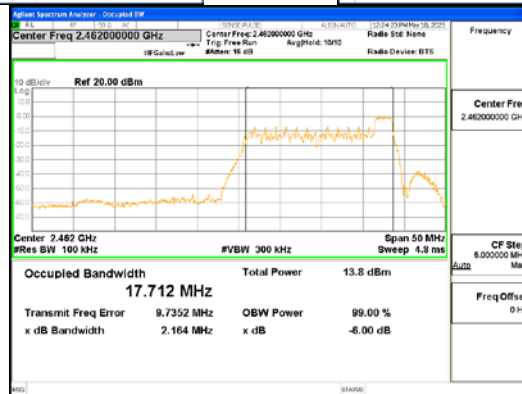
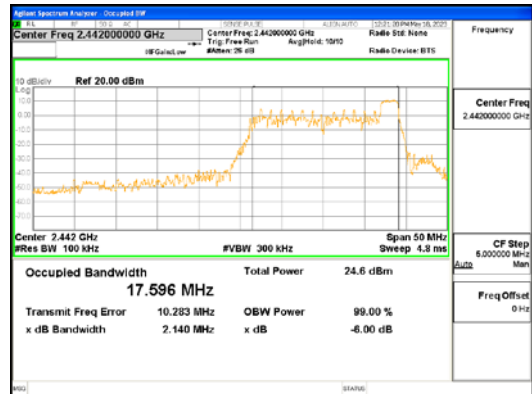
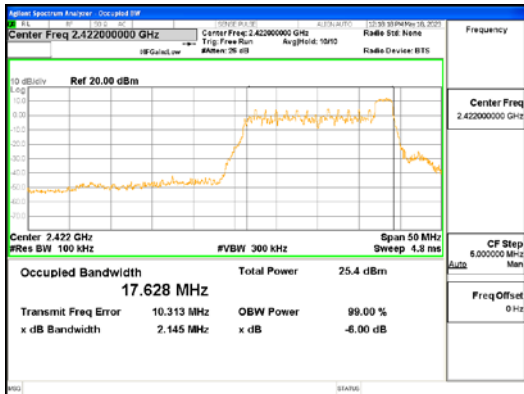


ANT R, 802.11ax_HE40_26T_Mid

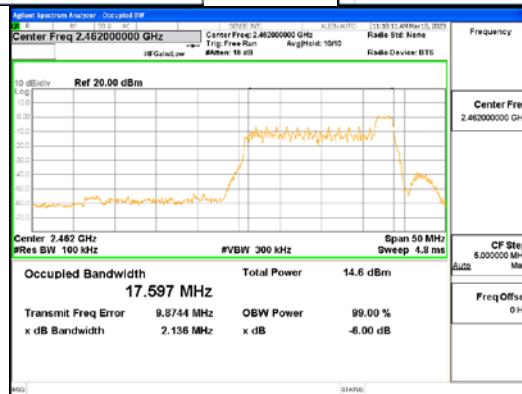
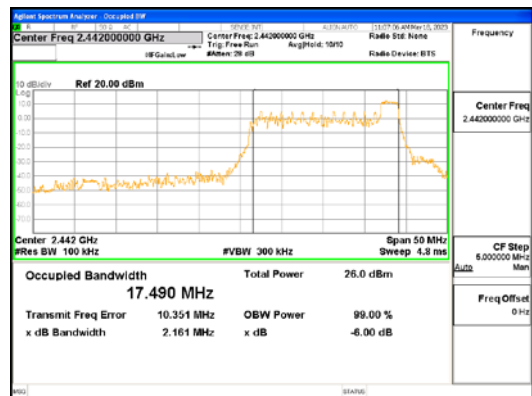
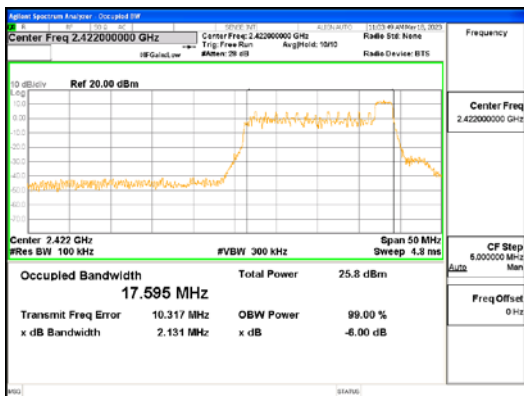


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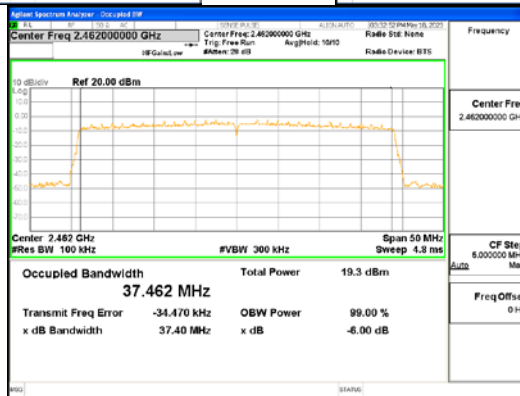
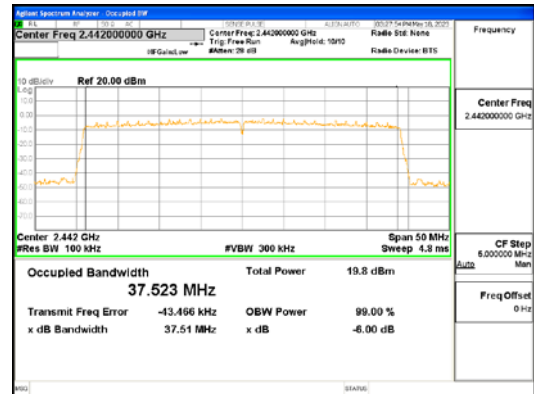
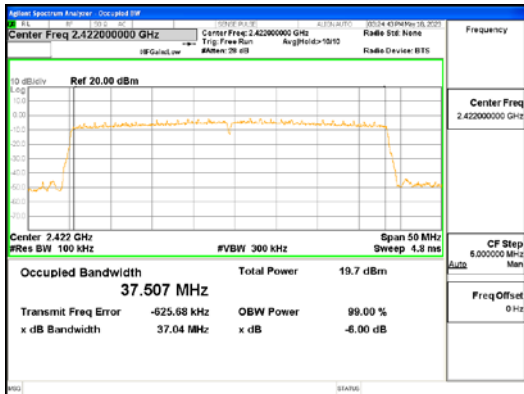
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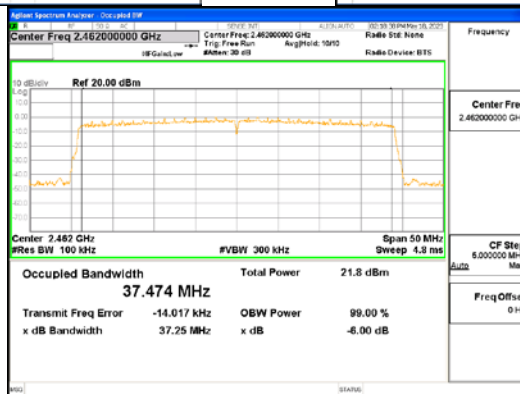
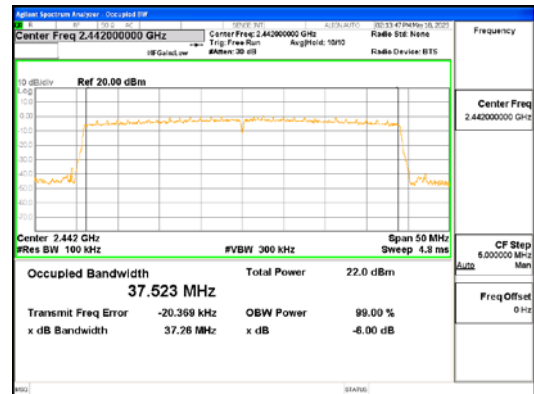
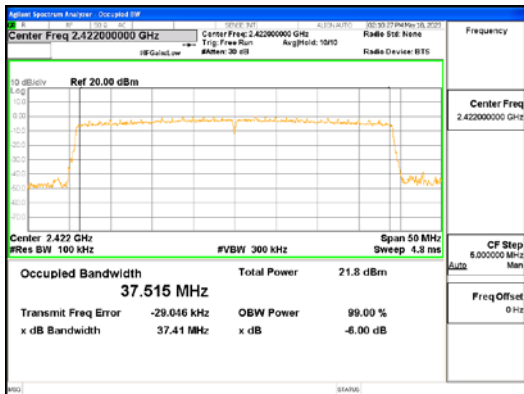
ANT L, 802.11ax_HE40_26T_High



ANT R, 802.11ax_HE40_26T_High



ANT L, 802.11ax_HE40_484T



ANT R, 802.11ax_HE40_484T

4.2 OUTPUT POWER

Test Procedures

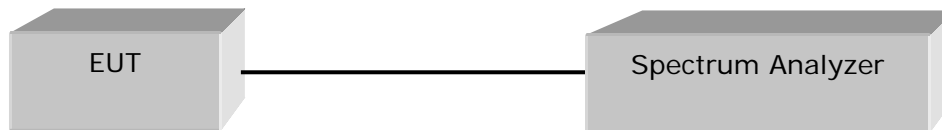
<802.11b/g/n mode>

KDB 558074 - Section 8.3.2.2 (Average Power)

ANSI C63.10-2013 - Section 11.9.2.2

KDB 662911 D01, D02 (Multiple Transmitter Output)

The transmitter output is connected to a spectrum analyzer and the analyzer's internal channel power integration function is used to integrate the power over a bandwidth greater than or equal to the 99% bandwidth.



Test Settings:

Center frequency = the highest, middle and the lowest channels

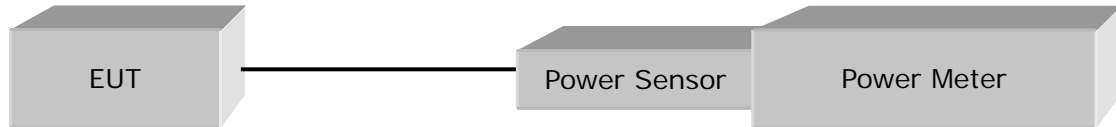
- a) span $\geq 1.5 \times$ OBW
- b) RBW = 1 MHz
- c) VBW $\geq 3 \times$ RBW
- d) Sweep time = auto
- e) Detector = RMS
- f) average at least 100
- g) Duty cycle factor = $10\log(1/x)$

Test mode	Duty Cycle Factor
802.11b	0.00 dB
802.11g	0.12 dB
802.11n_HT20	0.14 dB
802.11n_HT40	0.27 dB

< 802.11ax mode >

KDB 558074 - Section 8.3.2.3
ANSI C63.10-2013 - Section 11.9.2.3
KDB 662911 D01, D02 (Multiple Transmitter Output)

The transmitter output is connected to a average power meter.



Test Settings :

Center frequency = the highest, middle and the lowest channels

- a) Measure the average power of the transmitter.
- b) Duty cycle factor = 10log(1/x)

Test mode	Duty Cycle Factor
802.11ax_HE20_26T	0.20 dB
802.11ax_HE20_52T	0.21 dB
802.11ax_HE20_106T	0.22 dB
802.11ax_HE20_242T	0.27 dB
802.11ax_HE40_26T	0.19 dB
802.11ax_HE40_52T	0.11 dB
802.11ax_HE40_106T	0.24 dB
802.11ax_HE40_242T	0.26 dB
802.11ax_HE40_484T	0.26 dB

Limit

Operating Mode	Mode	ANT Configuration	ANT Gain (dBi)	Limit (dBm)
SISO	802.11b/g/n/ax	ANT L	1.85	30.00
SISO	802.11b/g/n/ax	ANT R	0.01	30.00
MIMO (2Tx)	802.11n/ax	ANT L + ANT R	3.99	30.00

Note :

Per KDB 662911, the MIMO directional gain is calculated using the following formula, Where G_N is the gain of the nth antenna and N_{ANT} , the total number of antennas used.

$$\text{Directional gain} = 10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] \text{ dBi}$$



Test Data :

ANT L (SISO)

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11b	2 412	18.44	0.00	18.44	30.00	11.56
	2 417	17.48	0.00	17.48	30.00	12.52
	2 442	17.53	0.00	17.53	30.00	12.47
	2 467	16.99	0.00	16.99	30.00	13.01
	2 472	15.81	0.00	15.81	30.00	14.19
802.11g	2 412	13.26	0.12	13.38	30.00	16.62
	2 442	12.97	0.12	13.09	30.00	16.91
	2 472	12.86	0.12	12.98	30.00	17.02
802.11n _HT20	2 412	12.41	0.14	12.55	30.00	17.45
	2 442	12.24	0.14	12.38	30.00	17.62
	2 472	12.09	0.14	12.23	30.00	17.77
802.11n _HT40	2 422	13.64	0.27	13.91	30.00	16.09
	2 442	13.71	0.27	13.98	30.00	16.02
	2 462	13.28	0.27	13.55	30.00	16.45

Test Mode	Frequency (MHz)	RU Index	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11ax _HE20 _26T	2 412	Low	15.03	0.20	15.23	30.00	14.77
		Mid	15.39	0.20	15.59	30.00	14.41
		High	15.30	0.20	15.50	30.00	14.50
	2 442	Low	15.12	0.20	15.32	30.00	14.68
		Mid	15.14	0.20	15.34	30.00	14.66
		High	15.19	0.20	15.39	30.00	14.61
	2 472	Low	5.18	0.20	5.38	30.00	24.62
		Mid	5.75	0.20	5.95	30.00	24.05
		High	5.79	0.20	5.99	30.00	24.01



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802.11ax _HE20 _52T	2 412	Low	14.28	0.21	14.49	30.00	15.51
		Mid	14.21	0.21	14.42	30.00	15.58
		High	14.19	0.21	14.40	30.00	15.60
	2 442	Low	14.16	0.21	14.37	30.00	15.63
		Mid	14.36	0.21	14.57	30.00	15.43
		High	14.28	0.21	14.49	30.00	15.51
	2 472	Low	7.89	0.21	8.10	30.00	21.90
		Mid	8.25	0.21	8.46	30.00	21.54
		High	8.35	0.21	8.56	30.00	21.44
802.11ax _HE20 _106T	2 412	Low	14.41	0.22	14.63	30.00	15.37
		Mid	-				
		High	14.37	0.22	14.59	30.00	15.41
	2 442	Low	14.07	0.22	14.29	30.00	15.71
		Mid	-				
		High	14.27	0.22	14.49	30.00	15.51
	2 472	Low	8.07	0.22	8.29	30.00	21.71
		Mid	-				
		High	8.45	0.22	8.67	30.00	21.33
802.11ax _HE20 _242T	2 412	-	13.73	0.27	14.00	30.00	16.00
	2 442	-	13.79	0.27	14.06	30.00	15.94
	2 472	-	13.66	0.27	13.93	30.00	16.07
802.11ax _HE40 _26T	2 422	Low	15.25	0.19	15.44	30.00	14.56
		Mid	17.07	0.19	17.26	30.00	12.74
		High	16.96	0.19	17.15	30.00	12.85
	2 442	Low	16.75	0.19	16.94	30.00	13.06
		Mid	17.16	0.19	17.35	30.00	12.65
		High	17.00	0.19	17.19	30.00	12.81
	2 462	Low	5.65	0.19	5.84	30.00	24.16
		Mid	4.44	0.19	4.63	30.00	25.37
		High	5.53	0.19	5.72	30.00	24.28



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802.11ax _HE40 _52T	2 422	Low	16.80	0.11	16.91	30.00	13.09
		Mid	18.42	0.11	18.53	30.00	11.47
		High	17.04	0.11	17.15	30.00	12.85
	2 442	Low	16.69	0.11	16.80	30.00	13.20
		Mid	17.21	0.11	17.32	30.00	12.68
		High	17.16	0.11	17.27	30.00	12.73
	2 462	Low	3.52	0.11	3.63	30.00	26.37
		Mid	5.51	0.11	5.62	30.00	24.38
		High	3.87	0.11	3.98	30.00	26.02
802.11ax _HE40 _106T	2 422	Low	17.51	0.24	17.75	30.00	12.25
		Mid	16.15	0.24	16.39	30.00	13.61
		High	16.05	0.24	16.29	30.00	13.71
	2 442	Low	16.03	0.24	16.27	30.00	13.73
		Mid	16.12	0.24	16.36	30.00	13.64
		High	16.15	0.24	16.39	30.00	13.61
	2 462	Low	5.42	0.24	5.66	30.00	24.34
		Mid	3.57	0.24	3.81	30.00	26.19
		High	5.35	0.24	5.59	30.00	24.41
802.11ax _HE40 _242T	2 422	Low	13.83	0.26	14.09	30.00	15.91
		Mid	-				
		High	13.97	0.26	14.23	30.00	15.77
	2 442	Low	13.91	0.26	14.17	30.00	15.83
		Mid	-				
		High	13.91	0.26	14.17	30.00	15.83
	2 462	Low	11.23	0.26	11.49	30.00	18.51
		Mid	-				
		High	13.08	0.26	13.34	30.00	16.66
802.11ax _HE40 _484T	2 422	-	11.91	0.26	12.17	30.00	17.83
	2 442	-	12.12	0.26	12.38	30.00	17.62
	2 462	-	11.63	0.26	11.89	30.00	18.11



ANT R (SISO)

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11b	2 412	20.52	0.00	20.52	30.00	9.48
	2 417	19.55	0.00	19.55	30.00	10.45
	2 442	19.66	0.00	19.66	30.00	10.34
	2 467	19.42	0.00	19.42	30.00	10.58
	2 472	18.50	0.00	18.50	30.00	11.50
802.11g	2 412	15.57	0.12	15.69	30.00	14.31
	2 442	15.32	0.12	15.44	30.00	14.56
	2 472	15.64	0.12	15.76	30.00	14.24
802.11n _HT20	2 412	14.55	0.14	14.69	30.00	15.31
	2 442	14.39	0.14	14.53	30.00	15.47
	2 472	14.73	0.14	14.87	30.00	15.13
802.11n _HT40	2 422	15.78	0.27	16.05	30.00	13.95
	2 442	15.88	0.27	16.15	30.00	13.85
	2 462	15.67	0.27	15.94	30.00	14.06

Test Mode	Frequency (MHz)	RU Index	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11ax _HE20 _26T	2 412	Low	15.01	0.20	15.21	30.00	14.79
		Mid	14.97	0.20	15.17	30.00	14.83
		High	14.68	0.20	14.88	30.00	15.12
	2 442	Low	14.87	0.20	15.07	30.00	14.93
		Mid	14.89	0.20	15.09	30.00	14.91
		High	14.85	0.20	15.05	30.00	14.95
	2 472	Low	5.47	0.20	5.67	30.00	24.33
		Mid	6.27	0.20	6.47	30.00	23.53
		High	6.06	0.20	6.26	30.00	23.74



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802.11ax _HE20 _52T	2 412	Low	13.78	0.21	13.99	30.00	16.01
		Mid	13.88	0.21	14.09	30.00	15.91
		High	13.84	0.21	14.05	30.00	15.95
	2 442	Low	13.82	0.21	14.03	30.00	15.97
		Mid	14.01	0.21	14.22	30.00	15.78
		High	13.82	0.21	14.03	30.00	15.97
	2 472	Low	8.56	0.21	8.77	30.00	21.23
		Mid	8.21	0.21	8.42	30.00	21.58
		High	8.27	0.21	8.48	30.00	21.52
802.11ax _HE20 _106T	2 412	Low	13.89	0.22	14.11	30.00	15.89
		Mid	-				
		High	14.04	0.22	14.26	30.00	15.74
	2 442	Low	13.78	0.22	14.00	30.00	16.00
		Mid	-				
		High	13.85	0.22	14.07	30.00	15.93
	2 472	Low	8.29	0.22	8.51	30.00	21.49
		Mid	-				
		High	8.19	0.22	8.41	30.00	21.59
802.11ax _HE20 _242T	2 412	-	13.62	0.27	13.89	30.00	16.11
	2 442	-	13.57	0.27	13.84	30.00	16.16
	2 472	-	13.86	0.27	14.13	30.00	15.87
802.11ax _HE40 _26T	2 422	Low	16.96	0.19	17.15	30.00	12.85
		Mid	17.04	0.19	17.23	30.00	12.77
		High	17.01	0.19	17.20	30.00	12.80
	2 442	Low	17.05	0.19	17.24	30.00	12.76
		Mid	17.26	0.19	17.45	30.00	12.55
		High	17.16	0.19	17.35	30.00	12.65
	2 462	Low	5.49	0.19	5.68	30.00	24.32
		Mid	6.05	0.19	6.24	30.00	23.76
		High	5.87	0.19	6.06	30.00	23.94



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802.11ax _HE40 _52T	2 422	Low	16.83	0.11	16.94	30.00	13.06
		Mid	17.26	0.11	17.37	30.00	12.63
		High	17.01	0.11	17.12	30.00	12.88
	2 442	Low	16.94	0.11	17.05	30.00	12.95
		Mid	17.08	0.11	17.19	30.00	12.81
		High	17.10	0.11	17.21	30.00	12.79
	2 462	Low	5.31	0.11	5.42	30.00	24.58
		Mid	5.63	0.11	5.74	30.00	24.26
		High	5.48	0.11	5.59	30.00	24.41
802.11ax _HE40 _106T	2 422	Low	15.83	0.24	16.07	30.00	13.93
		Mid	16.10	0.24	16.34	30.00	13.66
		High	16.18	0.24	16.42	30.00	13.58
	2 442	Low	16.01	0.24	16.25	30.00	13.75
		Mid	16.41	0.24	16.65	30.00	13.35
		High	16.25	0.24	16.49	30.00	13.51
	2 462	Low	5.33	0.24	5.57	30.00	24.43
		Mid	5.36	0.24	5.60	30.00	24.40
		High	5.37	0.24	5.61	30.00	24.39
802.11ax _HE40 _242T	2 422	Low	14.11	0.26	14.37	30.00	15.63
		Mid	-				
		High	14.06	0.26	14.32	30.00	15.68
	2 442	Low	14.19	0.26	14.45	30.00	15.55
		Mid	-				
		High	14.15	0.26	14.41	30.00	15.59
	2 462	Low	13.11	0.26	13.37	30.00	16.63
		Mid	-				
		High	13.19	0.26	13.45	30.00	16.55
802.11ax _HE40 _484T	2 422	-	11.81	0.26	12.07	30.00	17.93
	2 442	-	11.74	0.26	12.00	30.00	18.00
	2 462	-	11.85	0.26	12.11	30.00	17.89



ANT L + ANT R (MIMO)

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11n _HT20	2 412	16.62	0.14	16.76	30.00	13.24
	2 442	16.46	0.14	16.60	30.00	13.40
	2 472	16.62	0.14	16.76	30.00	13.24
802.11n _HT40	2 422	17.85	0.27	18.12	30.00	11.88
	2 442	17.94	0.27	18.21	30.00	11.79
	2 462	17.65	0.27	17.92	30.00	12.08

Test Mode	Frequency (MHz)	RU Index	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11ax _HE20 _26T	2 412	Low	18.03	0.20	18.23	30.00	11.77
		Mid	18.20	0.20	18.40	30.00	11.60
		High	18.01	0.20	18.21	30.00	11.79
	2 442	Low	18.01	0.2	18.21	30.00	11.79
		Mid	18.03	0.2	18.23	30.00	11.77
		High	18.03	0.2	18.23	30.00	11.77
	2 472	Low	8.34	0.20	8.54	30.00	21.46
		Mid	9.03	0.20	9.23	30.00	20.77
		High	8.94	0.20	9.14	30.00	20.86
802.11ax _HE20 _52T	2 412	Low	17.05	0.21	17.26	30.00	12.74
		Mid	17.06	0.21	17.27	30.00	12.73
		High	17.03	0.21	17.24	30.00	12.76
	2 442	Low	17.00	0.21	17.21	30.00	12.79
		Mid	17.20	0.21	17.41	30.00	12.59
		High	17.07	0.21	17.28	30.00	12.72
	2 472	Low	11.25	0.21	11.46	30.00	18.54
		Mid	11.24	0.21	11.45	30.00	18.55
		High	11.32	0.21	11.53	30.00	18.47



802.11ax _HE20 _106T	2 412	Low	17.17	0.22	17.39	30.00	12.61
		Mid	-				
		High	17.22	0.22	17.44	30.00	12.56
	2 442	Low	16.94	0.22	17.16	30.00	12.84
		Mid	-				
		High	17.08	0.22	17.30	30.00	12.70
	2 472	Low	11.19	0.22	11.41	30.00	18.59
		Mid	-				
		High	11.33	0.22	11.55	30.00	18.45
802.11ax _HE20 _242T	2 412	-	16.69	0.27	16.96	30.00	13.04
	2 442	-	16.69	0.27	16.96	30.00	13.04
	2 472	-	16.77	0.27	17.04	30.00	12.96
802.11ax _HE40 _26T	2 422	Low	19.20	0.19	19.39	30.00	10.61
		Mid	20.07	0.19	20.26	30.00	9.74
		High	20.00	0.19	20.19	30.00	9.81
	2 442	Low	19.91	0.19	20.10	30.00	9.90
		Mid	20.22	0.19	20.41	30.00	9.59
		High	20.09	0.19	20.28	30.00	9.72
	2 462	Low	8.58	0.19	8.77	30.00	21.23
		Mid	8.33	0.19	8.52	30.00	21.48
		High	8.71	0.19	8.90	30.00	21.10
802.11ax _HE40 _52T	2 422	Low	19.83	0.11	19.94	30.00	10.06
		Mid	20.89	0.11	21.00	30.00	9.00
		High	20.04	0.11	20.15	30.00	9.85
	2 442	Low	19.83	0.11	19.94	30.00	10.06
		Mid	20.16	0.11	20.27	30.00	9.73
		High	20.14	0.11	20.25	30.00	9.75
	2 462	Low	7.52	0.11	7.63	30.00	22.37
		Mid	8.58	0.11	8.69	30.00	21.31
		High	7.76	0.11	7.87	30.00	22.13



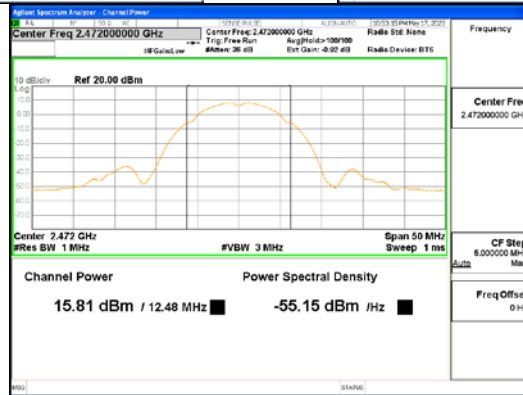
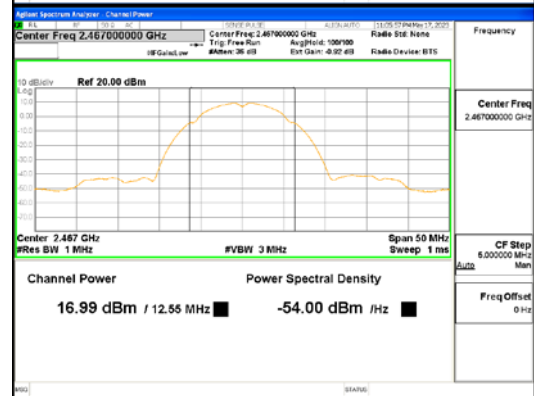
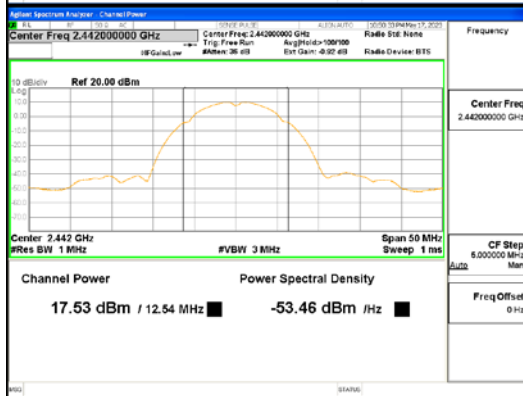
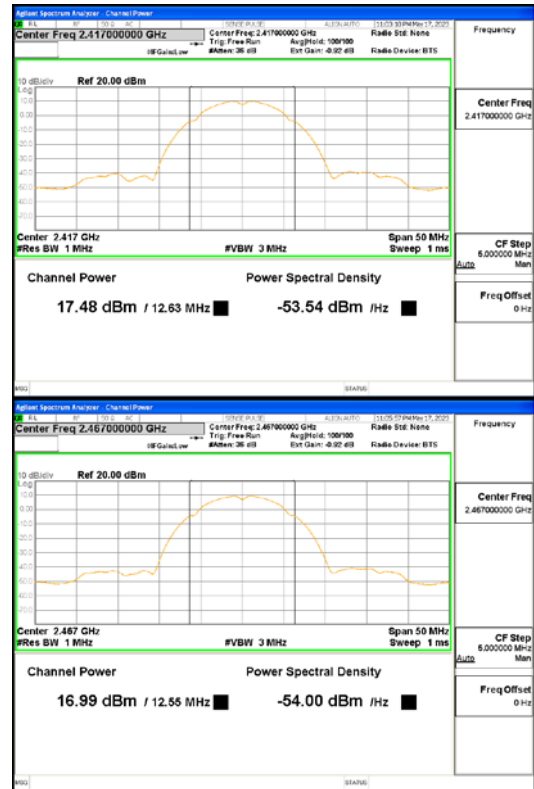
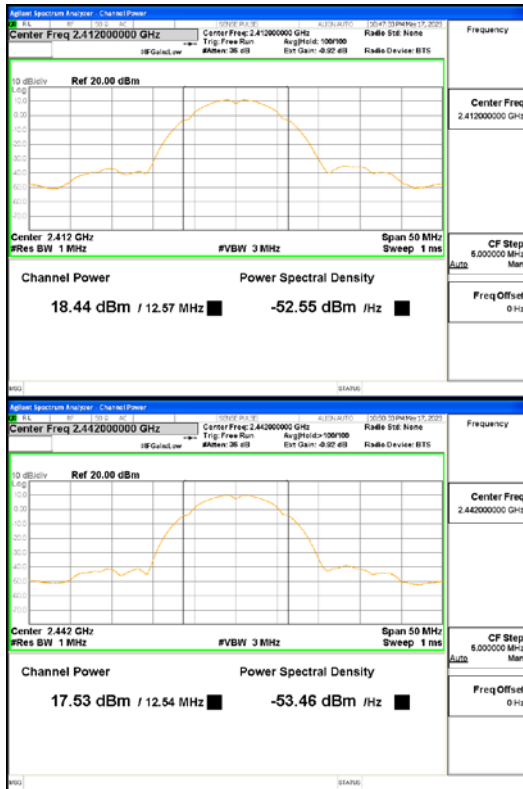
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		Mid	19.14	0.24	19.38	30.00	10.62
		High	19.13	0.24	19.37	30.00	10.63
	2 442	Low	19.03	0.24	19.27	30.00	10.73
		Mid	19.28	0.24	19.52	30.00	10.48
		High	19.21	0.24	19.45	30.00	10.55
	2 462	Low	8.39	0.24	8.63	30.00	21.37
		Mid	7.57	0.24	7.81	30.00	22.19
		High	8.37	0.24	8.61	30.00	21.39
802.11ax _HE40 _242T	2 422	Low	16.98	0.26	17.24	30.00	12.76
		Mid	-				
		High	17.03	0.26	17.29	30.00	12.71
	2 442	Low	17.06	0.26	17.32	30.00	12.68
		Mid	-				
		High	17.04	0.26	17.30	30.00	12.70
	2 462	Low	15.28	0.26	15.54	30.00	14.46
		Mid	-				
		High	16.15	0.26	16.41	30.00	13.59
802.11ax _HE40 _484T	2 422	-	14.87	0.26	15.13	30.00	14.87
	2 442	-	14.94	0.26	15.20	30.00	14.80
	2 462	-	14.75	0.26	15.01	30.00	14.99

See next pages for actual measured spectrum plots.

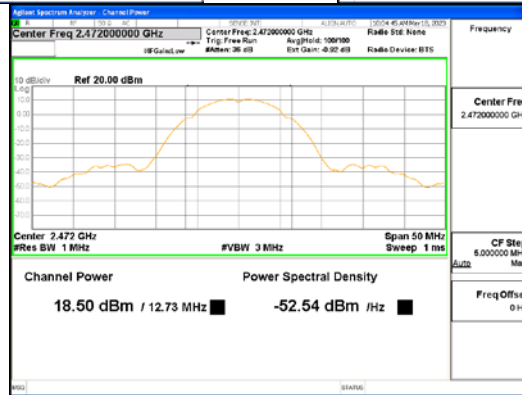
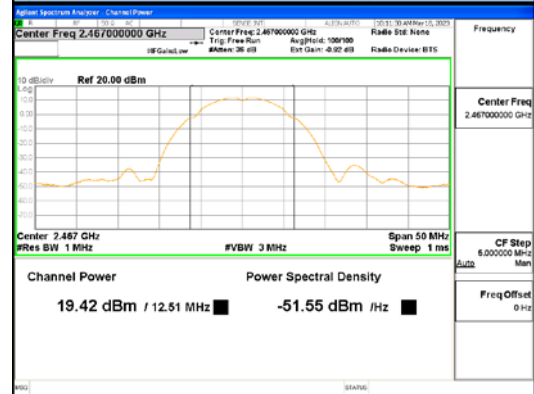
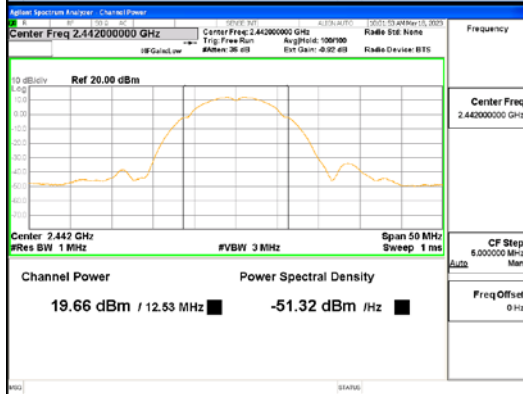
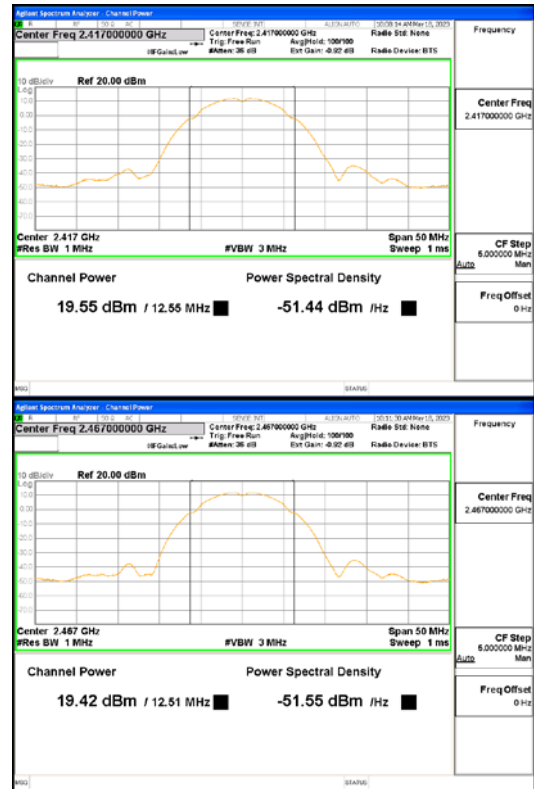
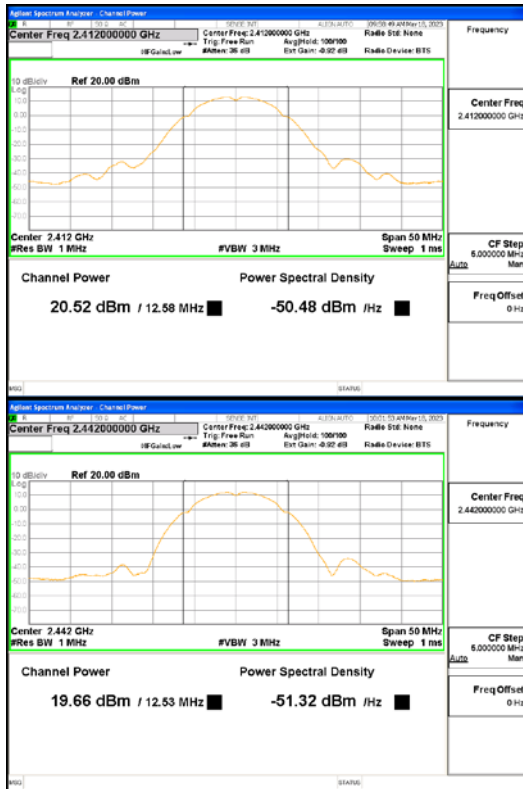


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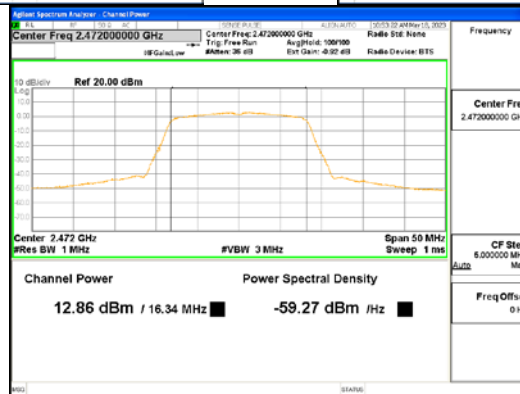
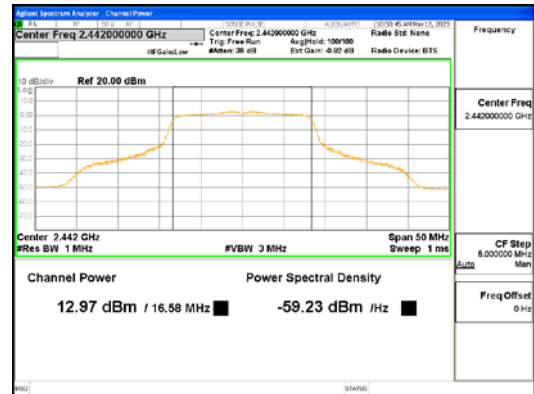
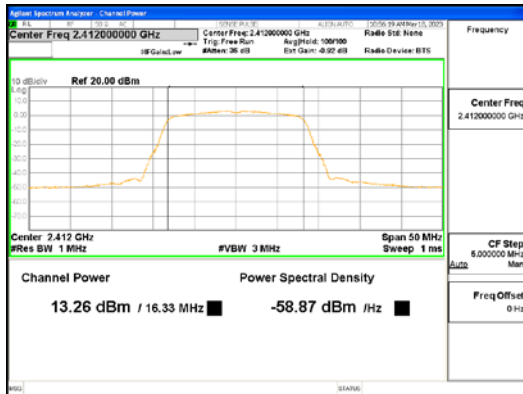
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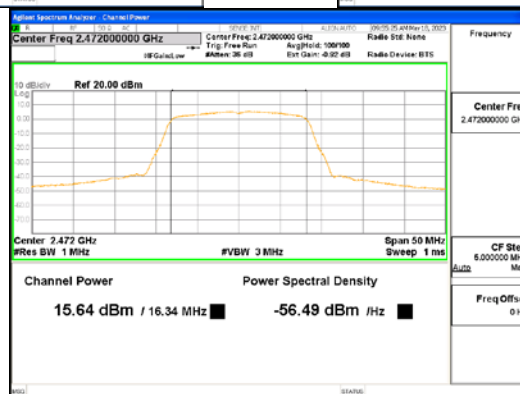
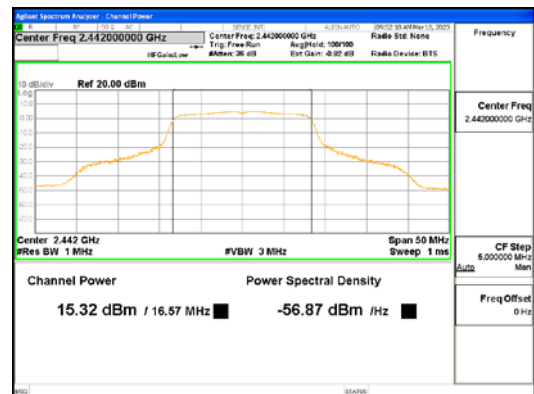
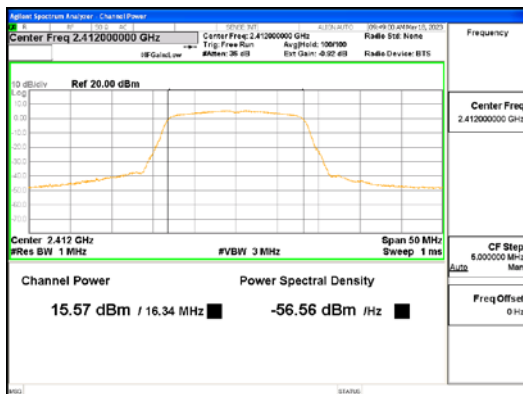
ANT L, 802.11b



ANT R, 802.11b



ANT L, 802.11g

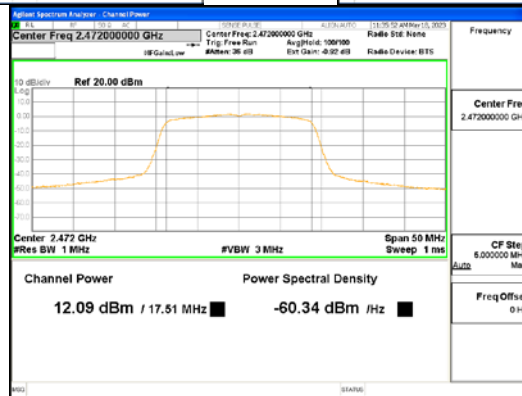
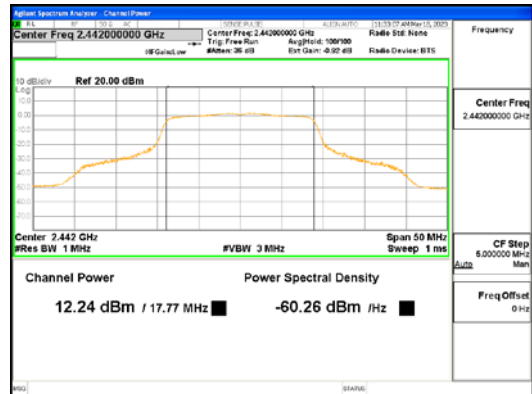
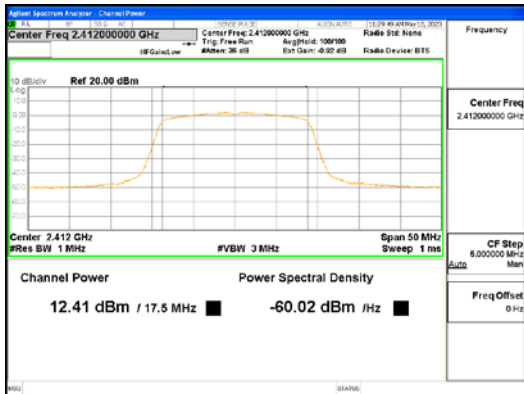


ANT R, 802.11g

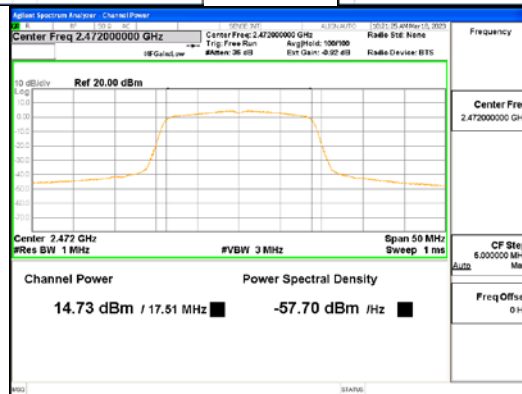
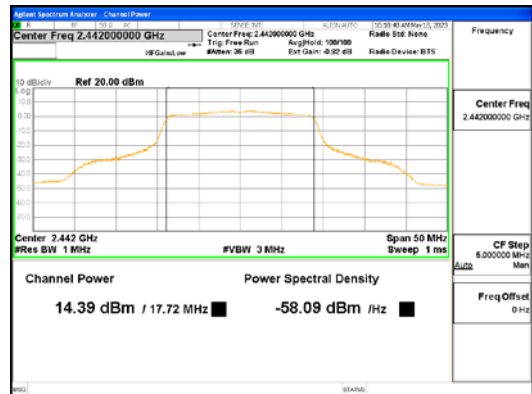
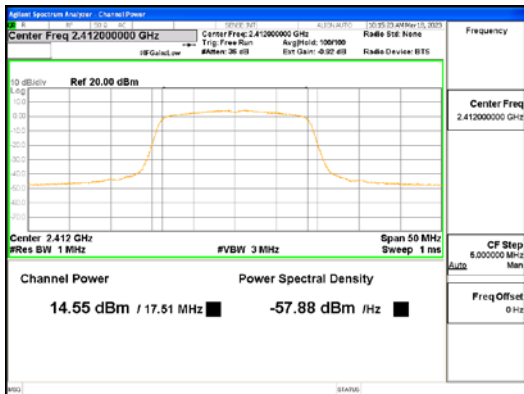


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ANT L, 802.11n_HT20

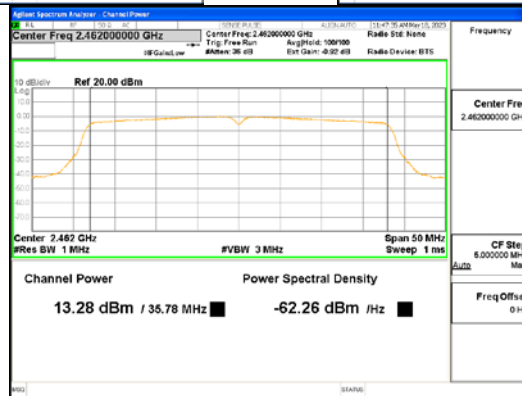
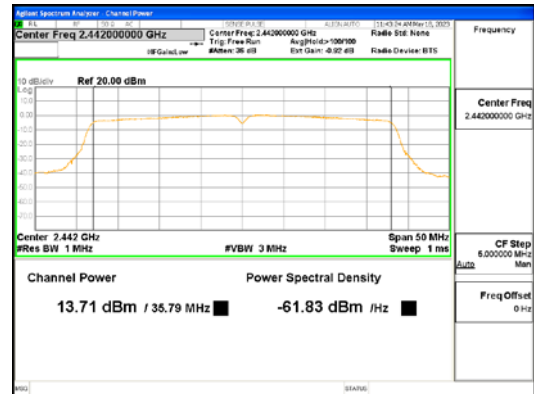
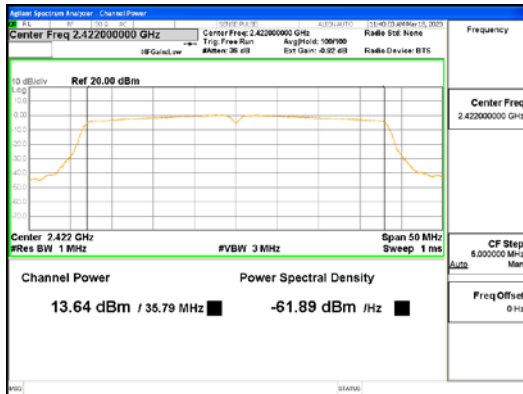


ANT R, 802.11n_HT20

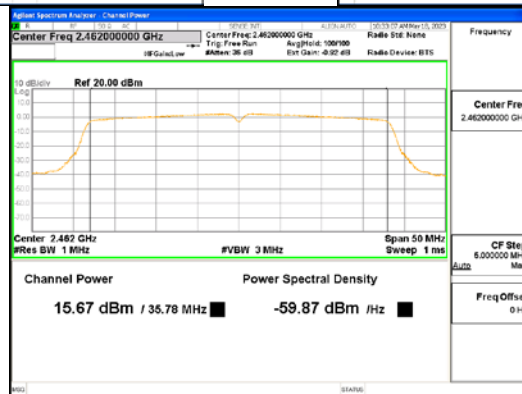
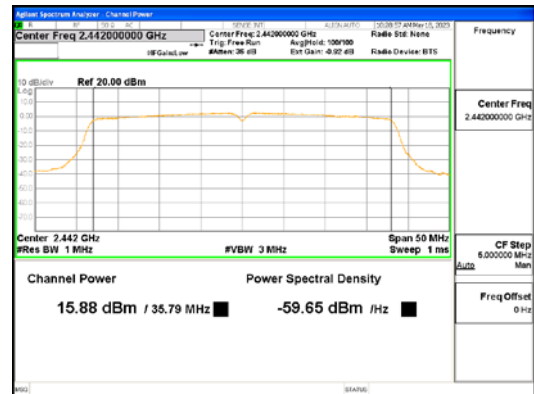
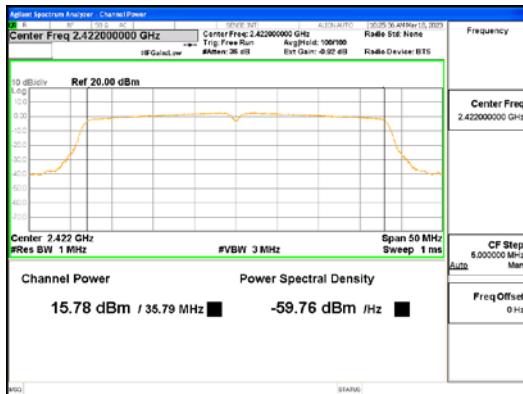


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ANT L, 802.11n_HT40



ANT R, 802.11n_HT40

4.3 Transmitter Power Spectral Density

Test Procedures

KDB 558074 - Section 8.4
ANSI C63.10-2013 - Section 11.10.2
KDB 662911 D01, D02 (Multiple Transmitter Output)

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance.

Test Settings:

Center frequency = the highest, middle and the lowest channels

- a) RBW : 3 kHz ≤ RBW ≤ 100 kHz
- b) VBW ≥ 3 x RBW
- c) span ≥ 1.5 x DTS bandwidth
- d) Sweep time = auto couple
- e) Detector = peak
- f) Trace mode = max hold
- g) Allow trace to fully stabilize
- h) Use the peak marker function to determine the maximum amplitude level within the RBW.

Limit

Operating Mode	Mode	ANT Configuration	ANT Gain (dBi)	Limit (dBm)
SISO	802.11b/g/n/ax	ANT L	1.85	8.00
SISO	802.11b/g/n/ax	ANT R	0.01	8.00
MIMO (2Tx)	802.11n/ax	ANT L + ANT R	3.99	8.00

Note :

Per KDB 662911, the MIMO directional gain is calculated using the following formula, Where G_N is the gain of the nth antenna and N_{ANT} , the total number of antennas used.

$$\text{Directional gain} = 10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] \text{ dBi}$$

Test Data

ANT L (SISO)

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Limit (dBm)	Margin(dB)
802.11b	2 412	-3.52	8.00	11.52
	2 417	-4.36	8.00	12.36
	2 442	-4.67	8.00	12.67
	2 467	-4.65	8.00	12.65
	2 472	-5.25	8.00	13.25
802.11g	2 412	-10.49	8.00	18.49
	2 442	-12.20	8.00	20.20
	2 472	-10.86	8.00	18.86
802.11n _HT20	2 412	-11.14	8.00	19.14
	2 442	-11.62	8.00	19.62
	2 472	-12.20	8.00	20.20
802.11n _HT40	2 422	-13.01	8.00	21.01
	2 442	-13.28	8.00	21.28
	2 462	-12.99	8.00	20.99

Test Mode	Frequency (MHz)	RU Index	Measured Power Density (dBm)	Limit (dBm)	Margin(dB)
802.11ax_HE20 _26T	2 412	Low	-2.15	8.00	10.15
		Mid	-1.16	8.00	9.16
		High	-2.41	8.00	10.41
	2 442	Low	-2.14	8.00	10.14
		Mid	-2.39	8.00	10.39
		High	-2.36	8.00	10.36
	2 472	Low	-11.46	8.00	19.46
		Mid	-11.58	8.00	19.58
		High	-10.57	8.00	18.57
802.11ax_HE20 _52T	2 412	Low	-5.47	8.00	13.47
		Mid	-4.91	8.00	12.91
		High	-4.92	8.00	12.92
	2 442	Low	-6.15	8.00	14.15
		Mid	-4.89	8.00	12.89
		High	-6.12	8.00	14.12
	2 472	Low	-14.56	8.00	22.56
		Mid	-13.31	8.00	21.31



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		High	-14.82	8.00	22.82
802.11ax_HE20 _106T	2 412	Low	-7.73	8.00	15.73
		Mid	-	-	-
		High	-8.09	8.00	16.09
	2 442	Low	-8.35	8.00	16.35
		Mid	-	-	-
		High	-7.34	8.00	15.34
	2 472	Low	-16.06	8.00	24.06
		Mid	-	-	-
		High	-16.18	8.00	24.18
802.11ax_HE20 _242T	2 412	-	-10.92	8.00	18.92
	2 442	-	-11.97	8.00	19.97
	2 472	-	-12.01	8.00	20.01

Test Mode	Frequency (MHz)	RU Index	Measured Power Density (dBm)	Limit (dBm)	Margin(dB)
802.11ax_HE40 _26T	2 422	Low	0.26	8.00	7.74
		Mid	0.02	8.00	7.98
		High	-0.36	8.00	8.36
	2 442	Low	-1.78	8.00	9.78
		Mid	-0.42	8.00	8.42
		High	-0.85	8.00	8.85
	2 462	Low	-12.25	8.00	20.25
		Mid	-11.67	8.00	19.67
		High	-12.29	8.00	20.29
802.11ax_HE40 _52T	2 422	Low	-3.09	8.00	11.09
		Mid	-2.75	8.00	10.75
		High	-2.84	8.00	10.84
	2 442	Low	-2.26	8.00	10.26
		Mid	-2.39	8.00	10.39
		High	-2.13	8.00	10.13
	2 462	Low	-14.50	8.00	22.50
		Mid	-14.04	8.00	22.04
		High	-13.88	8.00	21.88
802.11ax_HE40 _106T	2 422	Low	-7.14	8.00	15.14
		Mid	-6.56	8.00	14.56
		High	-7.26	8.00	15.26
	2 442	Low	-6.44	8.00	14.44
		Mid	-6.25	8.00	14.25
		High	-6.25	8.00	14.25



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	2 462	Low	-16.59	8.00	24.59
		Mid	-17.21	8.00	25.21
		High	-16.47	8.00	24.47
802.11ax_HE40 _242T	2 422	Low	-11.77	8.00	19.77
		Mid	-	-	-
		High	-12.23	8.00	20.23
	2 442	Low	-11.99	8.00	19.99
		Mid	-	-	-
		High	-11.88	8.00	19.88
	2 462	Low	-13.57	8.00	21.57
		Mid	-	-	-
		High	-12.16	8.00	20.16
802.11ax_HE40 _484T	2 422	-	-15.77	8.00	23.77
	2 442	-	-15.26	8.00	23.26
	2 462	-	-16.02	8.00	24.02



ANT R (SISO)

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Limit (dBm)	Margin(dB)
802.11b	2 412	-0.72	8.00	8.72
	2 417	-1.49	8.00	9.49
	2 442	-1.62	8.00	9.62
	2 467	-2.55	8.00	10.55
	2 472	-3.36	8.00	11.36
802.11g	2 412	-7.81	8.00	15.81
	2 442	-7.63	8.00	15.63
	2 472	-7.32	8.00	15.32
802.11n _HT20	2 412	-9.50	8.00	17.50
	2 442	-9.88	8.00	17.88
	2 472	-8.46	8.00	16.46
802.11n _HT40	2 422	-10.73	8.00	18.73
	2 442	-10.34	8.00	18.34
	2 462	-10.89	8.00	18.89

Test Mode	Frequency (MHz)	RU Index	Measured Power Density (dBm)	Limit (dBm)	Margin(dB)
802.11ax_HE20 _26T	2 412	Low	-0.31	8.00	8.31
		Mid	1.11	8.00	6.89
		High	0.95	8.00	7.05
	2 442	Low	-0.56	8.00	8.56
		Mid	2.44	8.00	5.56
		High	0.35	8.00	7.65
	2 472	Low	-9.13	8.00	17.13
		Mid	-8.82	8.00	16.82
		High	-9.23	8.00	17.23
802.11ax_HE20 _52T	2 412	Low	-3.76	8.00	11.76
		Mid	-3.10	8.00	11.10
		High	-3.58	8.00	11.58
	2 442	Low	-2.47	8.00	10.47
		Mid	-2.25	8.00	10.25
		High	-2.64	8.00	10.64
	2 472	Low	-8.37	8.00	16.37
		Mid	-8.48	8.00	16.48
		High	-9.62	8.00	17.62



802.11ax_HE20 _106T	2 412	Low	-5.60	8.00	13.60
		Mid	-	-	-
		High	-5.28	8.00	13.28
	2 442	Low	-5.13	8.00	13.13
		Mid	-	-	-
		High	-5.36	8.00	13.36
	2 472	Low	-11.19	8.00	19.19
		Mid	-	-	-
		High	-9.24	8.00	17.24
802.11ax_HE20 _242T	2 412	-	-7.47	8.00	15.47
	2 442	-	-8.02	8.00	16.02
	2 472	-	-8.68	8.00	16.68

Test Mode	Frequency (MHz)	RU Index	Measured Power Density (dBm)	Limit (dBm)	Margin(dB)
802.11ax_HE40 _26T	2 422	Low	-0.07	8.00	8.07
		Mid	-0.26	8.00	8.26
		High	1.50	8.00	6.50
	2 442	Low	0.61	8.00	7.39
		Mid	1.58	8.00	6.42
		High	-0.36	8.00	8.36
	2 462	Low	-10.99	8.00	18.99
		Mid	-10.76	8.00	18.76
		High	-12.03	8.00	20.03
802.11ax_HE40 _52T	2 422	Low	-1.62	8.00	9.62
		Mid	-1.90	8.00	9.90
		High	-2.02	8.00	10.02
	2 442	Low	-2.92	8.00	10.92
		Mid	-1.69	8.00	9.69
		High	-1.99	8.00	9.99
	2 462	Low	-14.25	8.00	22.25
		Mid	-13.95	8.00	21.95
		High	-14.01	8.00	22.01
802.11ax_HE40 _106T	2 422	Low	-6.52	8.00	14.52
		Mid	-6.44	8.00	14.44
		High	-5.87	8.00	13.87
	2 442	Low	-6.15	8.00	14.15
		Mid	-5.81	8.00	13.81
		High	-6.60	8.00	14.60
	2 462	Low	-16.99	8.00	24.99



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		Mid	-17.55	8.00	25.55
		High	-17.72	8.00	25.72
802.11ax_HE40 _242T	2 422	Low	-10.88	8.00	18.88
		Mid	-	-	-
		High	-11.32	8.00	19.32
	2 442	Low	-10.90	8.00	18.90
		Mid	-	-	-
		High	-11.17	8.00	19.17
	2 462	Low	-11.33	8.00	19.33
		Mid	-	-	-
		High	-10.31	8.00	18.31
802.11ax_HE40 _484T	2 422	-	-13.50	8.00	21.50
	2 442	-	-12.60	8.00	20.60
	2 462	-	-13.43	8.00	21.43

ANT L + ANT R (MIMO)

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Limit (dBm)	Margin(dB)
802.11n _HT20	2 412	-7.23	8.00	15.23
	2 437	-7.65	8.00	15.65
	2 462	-6.93	8.00	14.93
802.11n _HT40	2 422	-8.71	8.00	16.71
	2 437	-8.56	8.00	16.56
	2 452	-8.80	8.00	16.80

Test Mode	Frequency (MHz)	RU Index	Measured Power Density (dBm)	Limit (dBm)	Margin(dB)
802.11ax_HE20 _26T	2 412	Low	1.88	8.00	6.12
		Mid	3.13	8.00	4.87
		High	2.60	8.00	5.40
	2 442	Low	1.73	8.00	6.27
		Mid	3.67	8.00	4.33
		High	2.21	8.00	5.79
	2 472	Low	-7.13	8.00	15.13
		Mid	-6.97	8.00	14.97
		High	-6.84	8.00	14.84
802.11ax_HE20 _52T	2 412	Low	-1.52	8.00	9.52
		Mid	-0.90	8.00	8.90
		High	-1.19	8.00	9.19
	2 442	Low	-0.92	8.00	8.92
		Mid	-0.36	8.00	8.36
		High	-1.03	8.00	9.03
	2 472	Low	-7.43	8.00	15.43
		Mid	-7.25	8.00	15.25
		High	-8.47	8.00	16.47
802.11ax_HE20 _106T	2 412	Low	-3.53	8.00	11.53
		Mid	-	-	-
		High	-3.45	8.00	11.45
	2 442	Low	-3.44	8.00	11.44
		Mid	-	-	-
		High	-3.23	8.00	11.23
	2 472	Low	-9.97	8.00	17.97
		Mid	-	-	-
		High	-8.44	8.00	16.44



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802.11ax_HE20 _242T	2 412	-	-5.85	8.00	13.85
	2 442	-	-6.55	8.00	14.55
	2 472	-	-7.02	8.00	15.02

Test Mode	Frequency (MHz)	RU Index	Measured Power Density (dBm)	Limit (dBm)	Margin(dB)
802.11ax_HE40 _26T	2 422	Low	3.11	8.00	4.89
		Mid	2.89	8.00	5.11
		High	3.68	8.00	4.32
	2 442	Low	2.59	8.00	5.41
		Mid	3.70	8.00	4.30
		High	2.41	8.00	5.59
	2 462	Low	-8.56	8.00	16.56
		Mid	-8.18	8.00	16.18
		High	-9.15	8.00	17.15
802.11ax_HE40 _52T	2 422	Low	0.72	8.00	7.28
		Mid	0.71	8.00	7.29
		High	0.60	8.00	7.40
	2 442	Low	0.43	8.00	7.57
		Mid	0.98	8.00	7.02
		High	0.95	8.00	7.05
	2 462	Low	-11.36	8.00	19.36
		Mid	-10.98	8.00	18.98
		High	-10.93	8.00	18.93
802.11ax_HE40 _106T	2 422	Low	-3.81	8.00	11.81
		Mid	-3.49	8.00	11.49
		High	-3.50	8.00	11.50
	2 442	Low	-3.28	8.00	11.28
		Mid	-3.01	8.00	11.01
		High	-3.41	8.00	11.41
	2 462	Low	-13.78	8.00	21.78
		Mid	-14.37	8.00	22.37
		High	-14.04	8.00	22.04
802.11ax_HE40 _242T	2 422	Low	-8.29	8.00	16.29
		Mid	-	-	-
		High	-8.74	8.00	16.74
	2 442	Low	-8.40	8.00	16.40
		Mid	-	-	-
		High	-8.50	8.00	16.50
	2 462	Low	-9.30	8.00	17.30

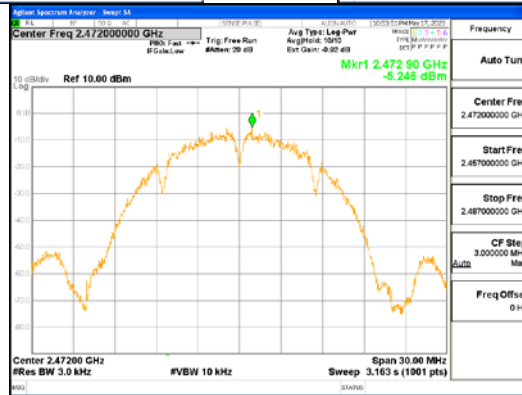
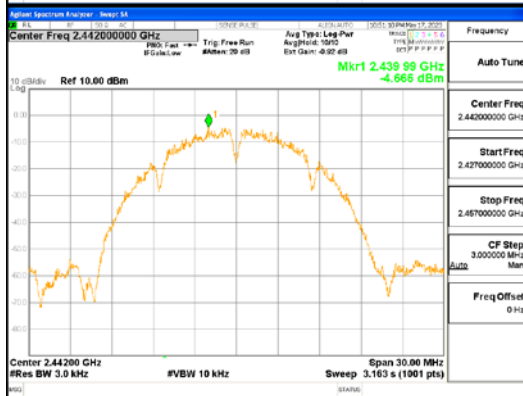
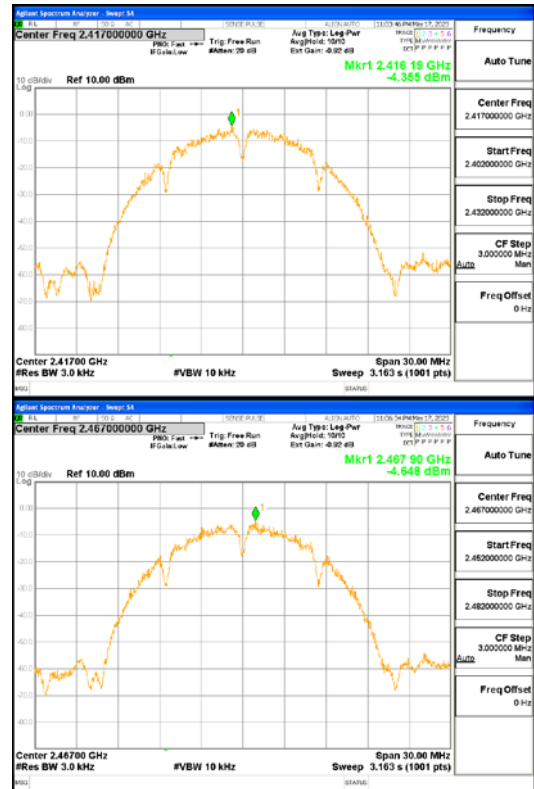
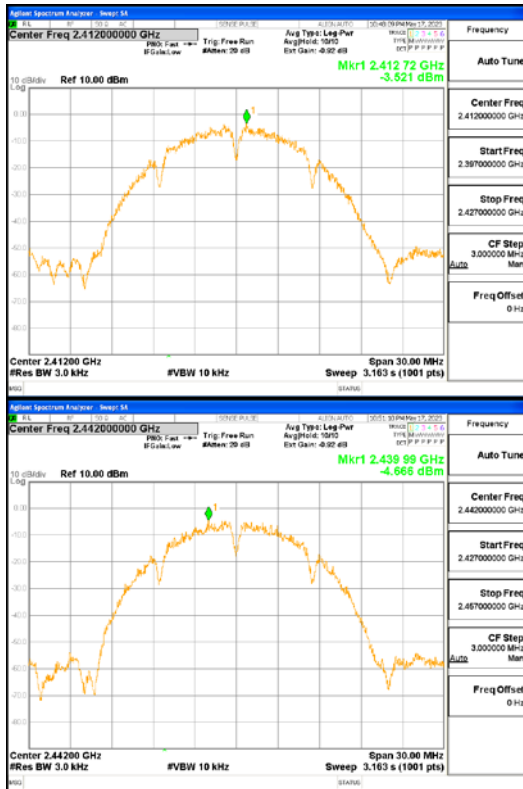


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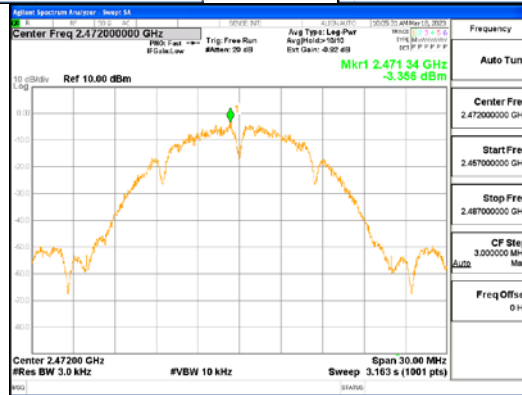
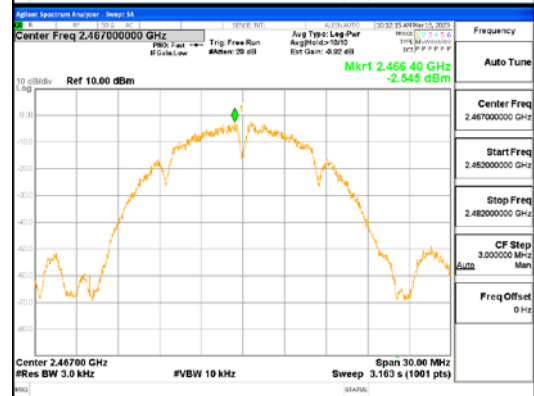
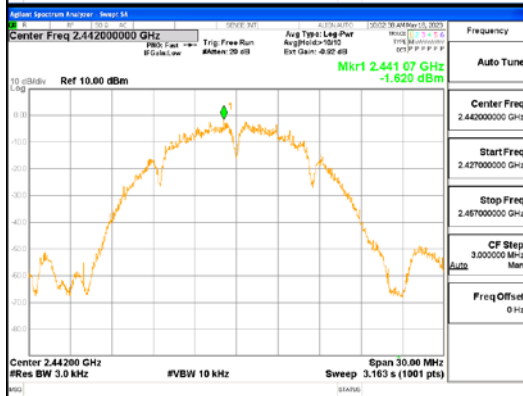
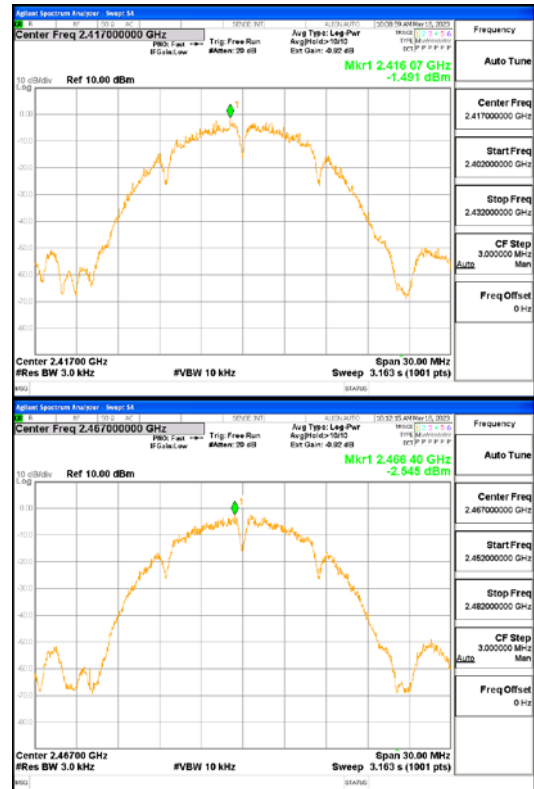
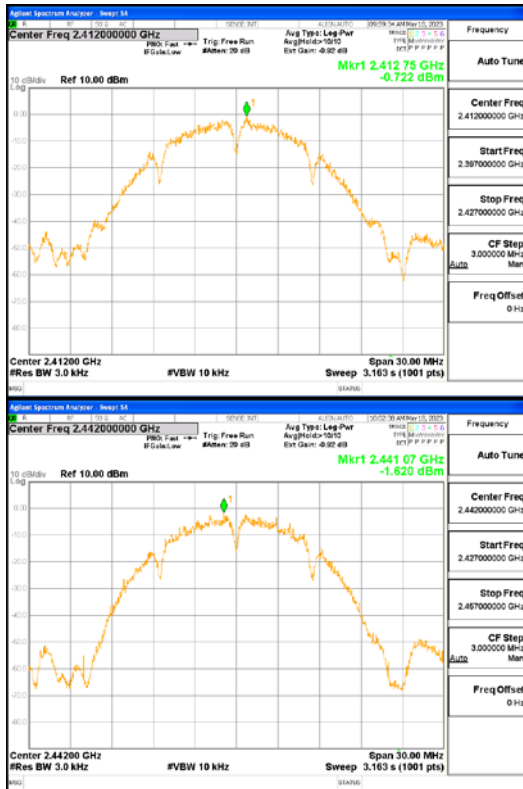
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		Mid	-	-	-
		High	-8.13	8.00	16.13
802.11ax_HE40 _484T	2 422	-	-11.48	8.00	19.48
	2 442	-	-10.72	8.00	18.72
	2 462	-	-11.52	8.00	19.52

See next pages for actual measured spectrum plots.



ANT L, 802.11b



ANT R, 802.11b