ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

FCC Applicant:	NEC Platforms,Ltd. 2-3, tsukasa-machi, kanda, chiyoda-ku, Tokyo, 101-8532, Japan
FCC Manufacturer:	NEC Platforms,Ltd. 2-3, tsukasa-machi, kanda, chiyoda-ku, Tokyo, 101-8532, Japan
Product Name:	Mobile Router
Brand Name:	NEC Platforms
Model No.:	KMP8S3AB1-1A, KMP8S3AA1-1A
Model Difference:	N/A
Report Number:	TERF2204000394E2
FCC ID	2AA5WKMP8S3AB
Date of EUT Received:	April 21, 2022
Date of Test:	May 5, 2022~May 16, 2022
Issue Date:	July 1, 2022

Approved By _____

Jay Lin

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Central RF Lab The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10:2013 and the energy emitted by the sample EUT comply with FCC rule part §15.247.

The results of this report relate only to the sample identified in this report.

Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
TERF2204000394E2	00	Original	July 1, 2022	Candice Li	

Note:

1、The remark "*" indicates modification of the report upon requests from certification body.

2、Variant information of model numbers is provided by the applicant, test results of this report are applicable to the sample EUT(s) received.

Table of Contents

1 GENERAL INFORMATION

1.1 Product Description

Product Name:	Mobile Router
Brand Name:	NEC Platforms
Model No.:	KMP8S3AB1-1A, KMP8S3AA1-1A
Model Difference:	N/A
Hardware Version:	1
Firmware Version:	1
EUT Series No.:	359798890030510
Power Supply:	3.8Vdc
Test Software (Name/Version)	Dut labtool/v2.0.0.75

1.2 RF Specification

Wi-Fi	Frequency Range	Channels	Rated Power in dBm (Peak)	Modulation Technology
802.11b	2412~2462	11	16.50	DSSS
802.11g	2412~2462	11	21.84	OFDM
802.11n20	2412~2462	11	24.80	OFDM
802.11n40	2422~2452	7	25.01	OFDM
802.11ax20	2412~2462	11	24.76	OFDMA
802.11ax40	2422~2452	7	25.00	OFDMA
Modulation type:		CCK, DQPSK, DBPSK for DSSS		
		256 QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM		
		1024 QAM, 256 QAM , 64QAM, 16QAM, QPSK, BPSK for OFDMA		
Data Rate:		802.11 b: 1/2/5.5/11 Mbps		
		802.11 g: 6/9/12/18/24/36/48/54 Mbps		
		802.11 n_20MHz:up to 144.4Mbps		
		802.11 n_40MHz:up to 300Mbps		
		802.11 ax_20MHz:up to 286.8Mbps		
		802.11 ax_40MHz:up to 573.6Mbps		

1.3 Antenna Designation

Antenna Type	Freq.(MHz)	Antenna Port	Peak Gain (dBi)	Direction Gain(dBi)
Inverted L	2412-2462	7	-0.4	2.92
Inverted L	2412-2462	8	0.2	2.92

Note:

1. Pre-scanned was done on the above antennas, measurements were demonstrated by using the antenna with the highest gain as the worst case scenarios.
2. Antenna information is provided by the applicant.

1.4 Test Methodology of Applied Standards

FCC Part 15, Subpart C §15.247
FCC KDB 558074 D01 15.247 Meas Guidance v05r02
FCC KDB 662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10:2013

1.5 Test Facility

Laboratory	Test Site Address	Test Site Name	FCC Designation number	IC CAB identifier
SGS Taiwan Ltd. Central RF Lab. (TAF code 3702)	No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan.	SAC 1	TW0027	TW3702
		SAC 3		
		Conduction 1		
		Conducted 1		
		Conducted 2		
		Conducted 3		
		Conducted 4		
		Conducted 5		
		Conducted 6		
	No.2, Keji 1st Rd., Guishan District, Taoyuan City, Taiwan 333	Conduction C	TW0028	
		SAC C		
		SAC D		
		SAC G		
		Conducted A		
		Conducted B		
		Conducted C		
		Conducted D		
		Conducted E		
		Conducted F		
		Conducted G		

Note: Test site name is remarked on the equipment list in each section of this report as an indication where measurements occurred in specific test site and address.

1.6 Special Accessories

There are no special accessories used while test was conducted.

1.7 Equipment Modifications

There was no modification incorporated into the EUT.

2 SYSTEM TEST CONFIGURATION

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

An engineering test mode (software/firmware) that applicant provided was utilized to manipulate the EUT into transmit, selection of the test channel, and modulation scheme.

2.3 Test Procedure

2.3.1 Conducted Emissions

The EUT is a placed on a table which is 0.8 m above ground plane. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz. The CISPR Quasi-Peak and Average detector mode is employed. The two LISNs provide 50uH/50 ohm of coupling impedance for the measuring instrument. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

2.3.2 Conducted Test (RF)

The active antenna port of the unlicensed wireless device is connected to the spectrum analyzer with attenuator to protect the instrumentation. If a second antenna port is available, it is tested at one operating frequency, with other port(s) appropriately terminated, to verify it has similar output characteristics as the fully tested port.

2.3.3 Radiated Emissions

The EUT is a placed on a turn table. For emissions testing at or below 1 GHz, the table height shall be 0.8 m above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made “while keeping the antenna in the ‘cone of radiation’ from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response.” is still within the 3dB illumination BW of the measurement antenna.

2.4 Measurement Results Explanation Example

2.4.1 Radiated Emission Test Sites For Measurements From 9 kHz To 30 MHz

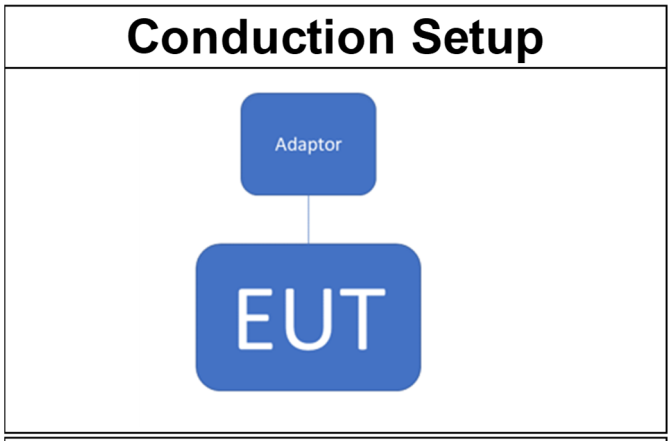
Radiated emission below 30MHz is measured in a 9m*6m*6m semi-anechoic chamber, the measurements correspond to those obtained at an open-field test site.

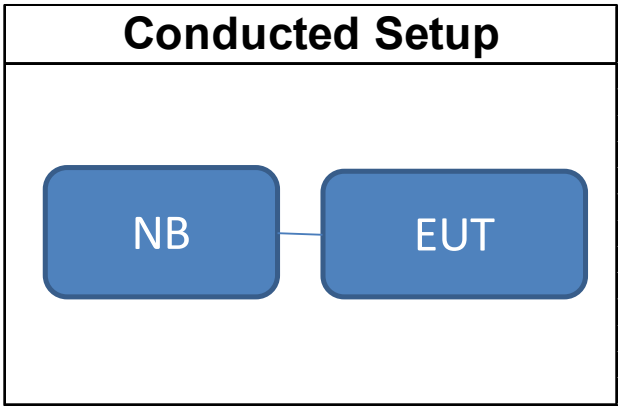
There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

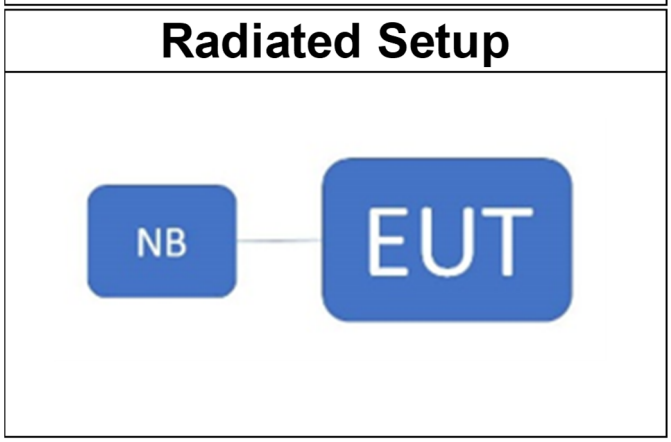
2.4.2 For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuation factor between EUT conducted port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly EUT RF output level.

2.5 Test Configuration







2.6 Control Unit(s)

AC Power-Line Conducted Emission Test Site: Conduction C					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Adapter	HOSIDEN	CBC2078	N/A	N.C.R	N.C.R
Cable	AMAZFIT	A2171	N/A	N.C.R	N.C.R

Conducted Emission Test Site: Conducted E					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Cable	AMAZFIT	A2171	N/A	N.C.R	N.C.R
Notebook	Lenovo	L590	TP00097C	N.C.R	N.C.R

Radiated Emission Test Site: SAC C					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Notebook	Lenovo	L590	TP00097C	N.C.R	N.C.R

NOTE: *N.C.R refers to Not Calibrated Required.*

3 SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§15.207(a)	AC Power Line Conducted Emission	Compliant
§15.247(b) (3)	Peak Output Power	Compliant
§15.247(a)(2)	Emission Bandwidth	Compliant
§15.205 §15.209 §15.247(d)	Radiated & Conducted Band Edge and Spurious Emission	Compliant
§15.247(e)	Power Spectral Density	Compliant
§15.203	Antenna Requirement	Compliant

4 DESCRIPTION OF TEST MODES

4.1 Operatin Frequencies

Modulation of 20MHz nominal bandwidth

CHANNEL	FREQUENCY (MHz)
1	2412
2	2417
3	2422
4	2427
5	2432
6	2437
7	2442
8	2447
9	2452
10	2457
11	2462

Modulation of 40MHz nominal bandwidth

CHANNEL	FREQUENCY (MHz)
3	2422
4	2427
5	2432
6	2437
7	2442
8	2447
9	2452

4.2 The Worst Test Modes and Channel Details

1. The EUT has been tested under operating condition.
2. Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.
3. Investigation has been done on all the possible configurations for searching the worst case.

   The gevin UE is pre-scanned among below modes.

Modulation	Transmission Chain				Single Transmission Spatial	Multiple Transmission Spatial
☒ 802.11 b	☒ Ch0	☒ Ch1	☐ Ch2	☐ Ch3	☒ 1TX	☐ 2TX
☒ 802.11 g	☒ Ch0	☒ Ch1	☐ Ch2	☐ Ch3	☒ 1TX	☐ 2TX
☒ 802.11 n	☒ Ch0	☒ Ch1	☐ Ch2	☐ Ch3	☐ SISO	☒ MIMO
☒ 802.11 ax	☒ Ch0	☒ Ch1	☐ Ch2	☐ Ch3	☐ SISO	☒ MIMO

4. Therefore, below summary is the modes of test configuration that yield the highest reading and generate the highest emission chosen to carry out the relevantly mandatory test items.

Conducted					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT
802.11b	1 to 11	1,6,11	DSSS	1	ch0
802.11g	1 to 11	1,6,11	OFDM	6	ch0
802.11n (HT20)	1 to 11	1,6,11	OFDM	MCS8	MIMO
802.11n (HT40)	3 to 9	3,6,9	OFDM	MCS8	MIMO
802.11ax (HE20)	1 to 11	1,6,11	OFDMA	MCS0	MIMO
802.11ax (HE40)	3 to 9	3,6,9	OFDMA	MCS0	MIMO

RADIATED EMISSION TEST (BELOW 1 GHz)					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT
802.11g	1 to 11	6	OFDM	6	ch0
802.11n (HT40)	3 to 9	6	OFDM	MCS8	MIMO

RADIATED EMISSION TEST (ABOVE 1 GHz)					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT
802.11b	1 to 11	1,6,11	DSSS	1	ch0
802.11g	1 to 11	1,6,11	OFDM	6	ch0
802.11n (HT20)	1 to 11	1,6,11	OFDM	MCS8	MIMO
802.11n (HT40)	3 to 9	3,6,9	OFDM	MCS8	MIMO
802.11ax (HE20)	1 to 11	1,6,11	OFDMA	MCS0	MIMO
802.11ax (HE40)	3 to 9	3,6,9	OFDMA	MCS0	MIMO

Note:

The field strength of radiated emission was measured as the EUT positioned in different orthogonal planes (E1/E2/H) based on actual usage of the EUT to pre-scan the emissions for determining the worst case scenario.

5 MEASUREMENT UNCERTAINTY

Test Items	Uncertainty		
AC Power Line Conducted Emission	+/-	2.34	dB
Output Power measurement	+/-	1	dB
Emission Bandwidth	+/-	1.53	Hz
Undesignable radiated emission measurement	+/-	1.68	dB
Peak Power Density	+/-	1.62	dB
Temperature	+/-	0.4	°C
Humidity	+/-	3.5	%
DC / AC Power Source	+/-	1	%

Radiated Spurious Emission Measurement Uncertainty				
Polarization: Vertical	**+/-**	**2.57**	**dB**	9kHz~30MHz
	+/-	**4.85**	**dB**	30MHz - 1000MHz
	+/-	**4.45**	**dB**	1GHz - 18GHz
	+/-	**4.24**	**dB**	18GHz - 40GHz
Polarization: Horizontal	**+/-**	**2.57**	**dB**	9kHz~30MHz
	+/-	**4.37**	**dB**	30MHz - 1000MHz
	+/-	**4.45**	**dB**	1GHz - 18GHz
	+/-	**4.24**	**dB**	18GHz - 40GHz

Note:

1. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
2. The conformity assessment statement in this report is based solely on the test results, measurement uncertainty is excluded.

6 MEASUREMENT EQUIPMENT USED

6.1 Emission from AC power line

AC Power-Line Conducted Emission Test Site: Conduction C					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
LISN	SCHWARZBECK Mess-Elektronik	NSLK8127	973	04/13/2022	04/12/2023
EMI Test Receiver	R&S	ESCI	101342	04/25/2022	04/24/2023
Coaxial Cable	EC Lab	RF-HY-CAB-250	RF-HY-CAB-250-01	03/27/2022	03/26/2023
Pulse Limiter	EC Lab	VTSD 9561F-N	485	03/27/2022	03/26/2023
Test Software	audix	e3	E3 20923 SGS Ver.9 (C)	N.C.R	N.C.R

6.2 Condcuted Measurement

Conducted Emission Test Site: Conducted E					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	KEYSIGHT	N9010A	MY51440113	07/13/2021	07/12/2022
Attenuator	Marvelous	MVE2213-10	RF06	11/18/2021	11/17/2022
DC Block	PASTERNACK	PE8210	RF158	11/18/2021	11/17/2022
Test Software	SGS Taiwan	Radio Test Software	Ver.21	N.C.R	N.C.R
Power Meter	Anritsu	ML2496A	1512003	07/27/2021	07/26/2022
Power Sensor	Anritsu	MA2411B	1339378	07/27/2021	07/26/2022
Power Sensor	Anritsu	MA2411B	1339379	07/27/2021	07/26/2022

6.3 Radiated Measurement

Radiated Emission Test Site: SAC C					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Broadband Antenna	SCHWARZBECK	VULB 9168	9168-300	10/19/2021	10/18/2022
Horn Antenna	SCHWARZBECK	BBHA9170	185	08/06/2021	08/05/2022
Horn Antenna	SCHWARZBECK	BBHA9120D	1187	01/06/2022	01/05/2023
Loop Antenna	ETS.LINDGREN	6502	148045	09/29/2021	09/28/2022
EMI Test Receiver	R&S	ESU 40	100363	04/28/2022	04/27/2023
Pre-Amplifier	EMC Instruments	EMC330	980096	11/18/2021	11/17/2022
Pre-Amplifier	EMC Instruments	EMC0011830	980199	11/18/2021	11/17/2022
Pre-Amplifier	EMC Instruments	EMC184045B	980135	10/27/2021	10/26/2022
Attenuator	Marvelous	WATT-218FS-10	RF20	11/18/2021	11/17/2022
Coaxial Cable	Huber Suhner	SUCOFLEX 104	MY17388/4	11/18/2021	11/17/2022
Coaxial Cable	Huber Suhner	RG 214/U	W22.03	11/18/2021	11/17/2022
Test Software	audix	e3	20923 sgs Ver.9	N.C.R	N.C.R

NOTE: *N.C.R refers to Not Calibrated Required.*

7 CONDUCTED EMISSION TEST

7.1 Standard Applicable

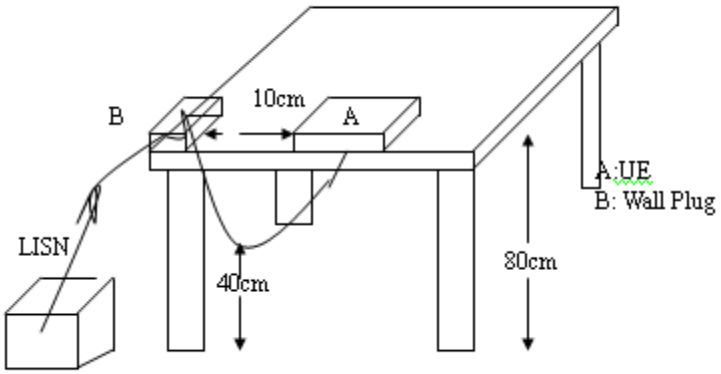
Frequency range within 150kHz to 30MHz shall not exceed the Limit table as below.

Frequency range MHz	Limits (dBuV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50
Note 1.The lower limit shall apply at the transition frequencies 2.The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.		

7.2 EUT Setup

1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.10:2013.
2. The AC/DC Power adaptor of EUT was plug-in LISN. The EUT was placed flushed with the rear of the table.
3. The LISN was connected with 120Vac/60Hz power source.

7.3 Test Setup



7.4 Measurement Procedure

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all phases of power being supplied by given UE are completed

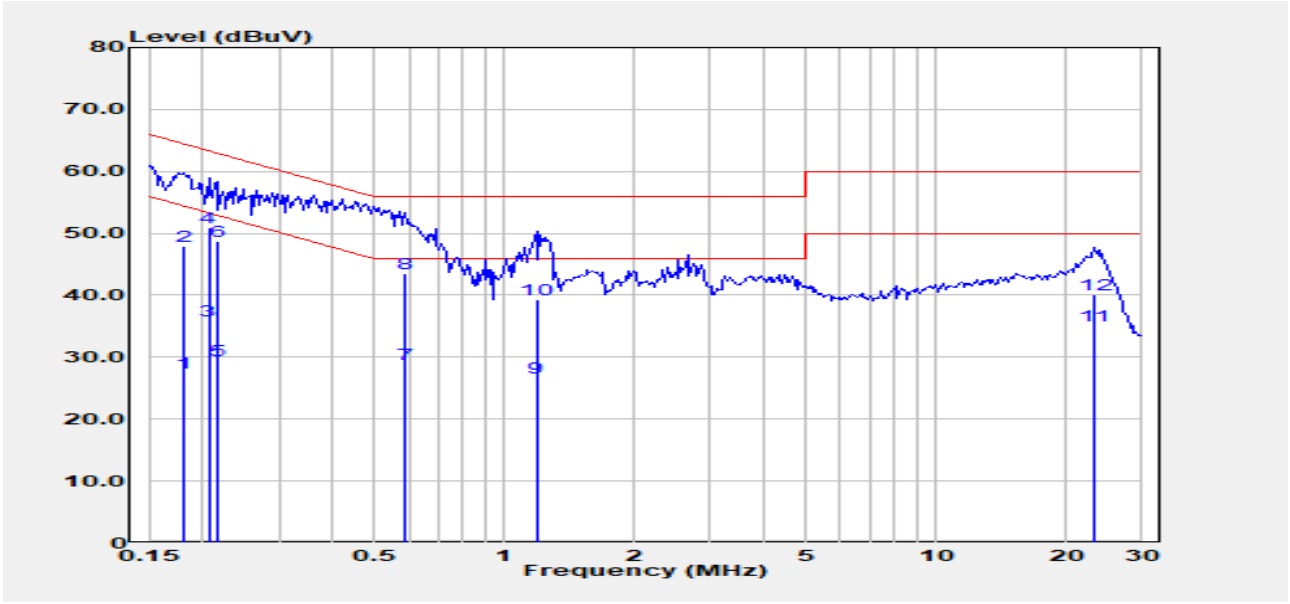
7.5 Measurement Result

Note: Refer to next page for measurement data and plots.

Note2: The * reveals the worst-case results that closet to the limit.

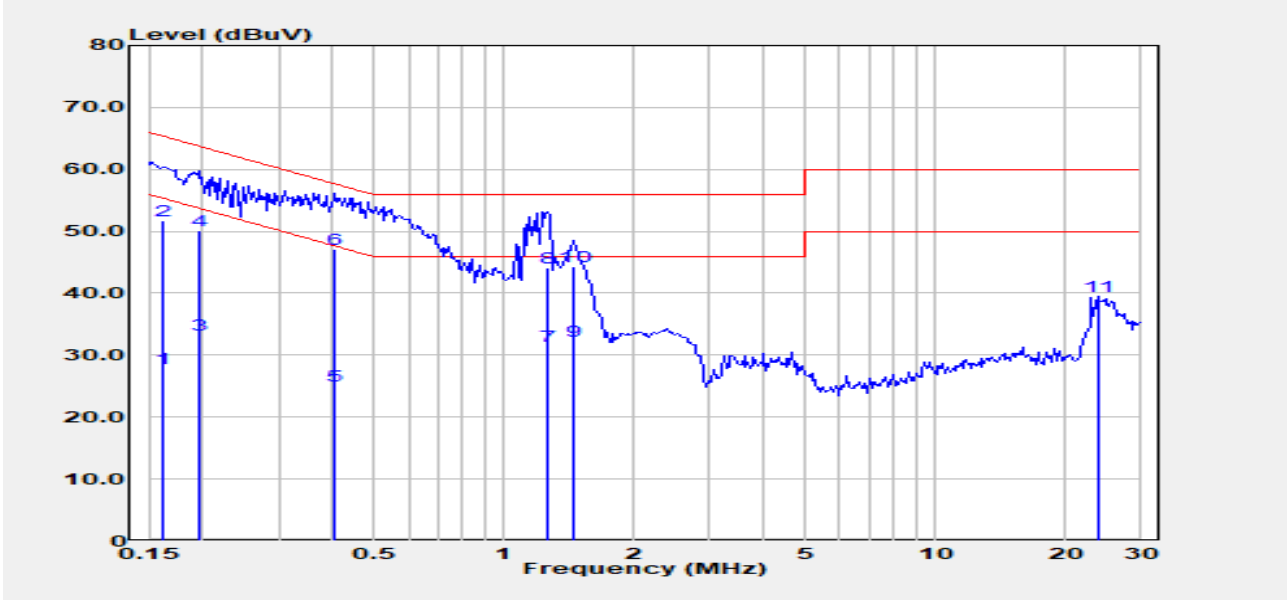
AC POWER LINE CONDUCTED EMISSION TEST DATA

Report Number	:TERF2204000394E2	Test Site	:Conduction C
Test Mode	:2.4G	Test Date	:2022-05-13
Power	:120v/60Hz	Temp./Humi.	:21.8/62
Probe	:L1	Engineer	:Andy Wang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV	dBµV	dB
0.182	Average	17.10	10.27	27.37	54.42	-27.05
0.182	QP	37.60	10.27	47.87	64.42	-16.55
0.206	Average	25.70	10.27	35.97	53.36	-17.39
0.206	QP	40.60	10.27	50.87	63.36	-12.49
0.215	Average	19.30	10.27	29.57	53.01	-23.43
0.215	QP	38.50	10.27	48.77	63.01	-14.23
0.589	Average	18.50	10.33	28.83	46.00	-17.17
0.589	QP	33.10	10.33	43.43	56.00	-12.57
1.184	Average	16.00	10.57	26.57	46.00	-19.43
1.184	QP	28.80	10.57	39.37	56.00	-16.63
23.263	Average	24.10	10.96	35.06	50.00	-14.94
23.263	QP	29.20	10.96	40.16	60.00	-19.84

Report Number	:TERF2204000394E2	Test Site	:Conduction C
Test Mode	:2.4G	Test Date	:2022-05-13
Power	:120v/60Hz	Temp./Humi.	:21.8/62
Probe	:N	Engineer	:Andy Wang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV	dBµV	dB
0.162	Average	17.50	10.28	27.78	55.38	-27.61
0.162	QP	41.40	10.28	51.68	65.38	-13.71
0.195	Average	23.00	10.27	33.27	53.80	-20.53
0.195	QP	39.90	10.27	50.17	63.80	-13.63
0.406	Average	14.80	10.30	25.10	47.73	-22.63
0.406	QP	36.90	10.30	47.20	57.73	-10.53
1.262	Average	20.90	10.61	31.51	46.00	-14.49
1.262	QP	33.50	10.61	44.11	56.00	-11.89
1.449	Average	21.50	10.77	32.27	46.00	-13.73
1.449	QP	33.60	10.77	44.37	56.00	-11.63
23.762	Peak	28.45	10.96	39.41	60.00	-20.59

8 PEAK OUTPUT POWER MEASUREMENT

8.1 Standard Applicable

8.2 Duty Cycle

Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle.

All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage.

8.3 Output Power

For systems using digital modulation in the 2400-2483.5 MHz bands, the limit for peak output power is 1Watt.

If the transmitting antenna of directional gain greater than 6dBi are used the peak output power form the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the Antenna exceeds 6dBi.

In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of Antenna exceeds 6dBi.

Note:

As per section F. 2). e). (ii) of FCC KDB 662911 D01

If antenna gains are not equal and each transmit antenna is driven by only one spatial stream, directional gain may be calculated by either of the following formulas.

- $$DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$$

where

Each antenna is driven by no more than one spatial stream;

NSS = the number of independent spatial streams of data;

NANT = the total number of antennas

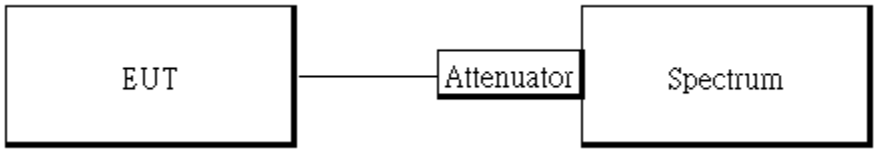
$g_{j,k}$ = $10^{Gk/20}$ if the kth antenna is being fed by spatial stream j, or zero if it is not;

G_k is the gain in dBi of the kth antenna.

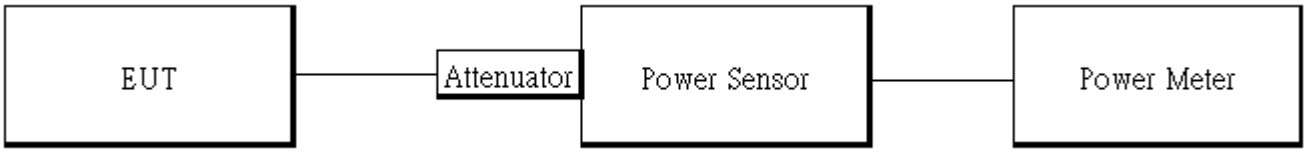
The antenna gain is not greater than 6 dBi. Therefore, reduction of power is not required.

8.4 Test Setup

8.4.1 Duty Cycle



8.4.2 Output Power:



8.5 Measurement Procedure

8.5.1 Duty Cycle:

1. Set span = Zero
2. RBW = 8MHz
3. VBW = 8MHz,
4. Detector = Peak

8.5.2 Output Power

1. Place the EUT on the table and set it in transmitting mode.
2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter.
   Power Meter:
   It is used as the auxiliary test equipment to conduct the output power measurement.
4. Record the max. Reading as observed from Spectrum or Power Meter.
5. MIMO mode: offset is set with “measure and add 10 Log (N)” to measurement for MIMO mode. Offset = cable loss + 10 log (N), where N is number of transmitting antenna, cable loss is specified below.

**** Note: The duty cycle factor** and below **is compensated to obtain the maximum value of measurement in average.***

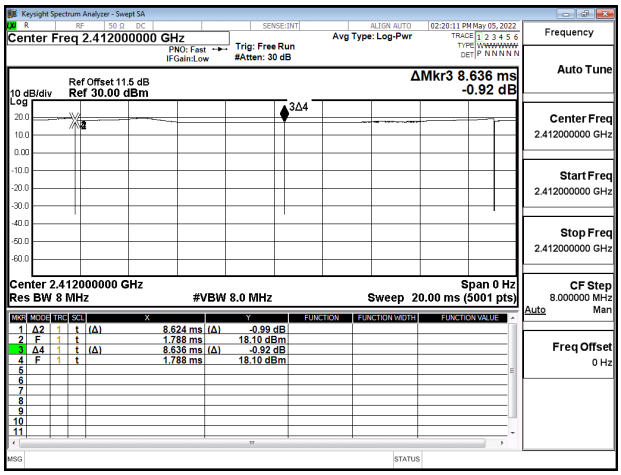
8.6 Measurement Result

8.6.1 Duty Cycle:

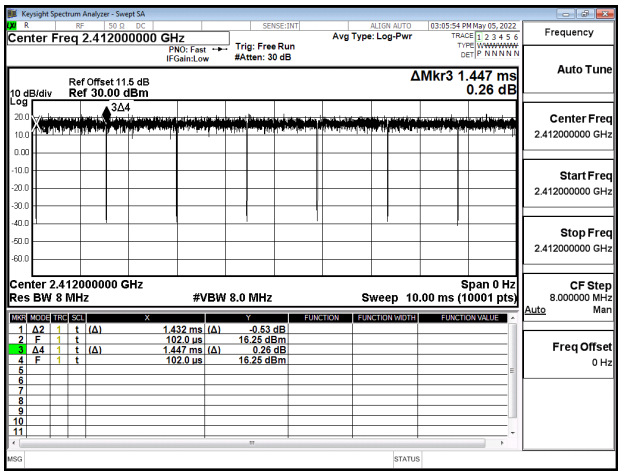
	Duty Cycle (%) = Ton / (Ton+Toff)	Duty Factor (dB) =10*log (1/Duty Cycle)	1/T (kHz)	VBW setting (kHz)
802.11b	99.86	0.01	0.12	0.01
802.11g	98.96	0.05	0.70	0.01
802.11n_20	97.88	0.09	1.45	2.00
802.11n_40	95.96	0.18	2.81	3.00
802.11ac_20	98.90	0.05	0.74	0.01
802.11ac_40	97.82	0.10	1.49	2.00
802.11ax_20	98.58	0.06	0.96	0.01
802.11ax_40	97.35	0.12	1.81	2.00

8.6.2 Duty Cycle test plots

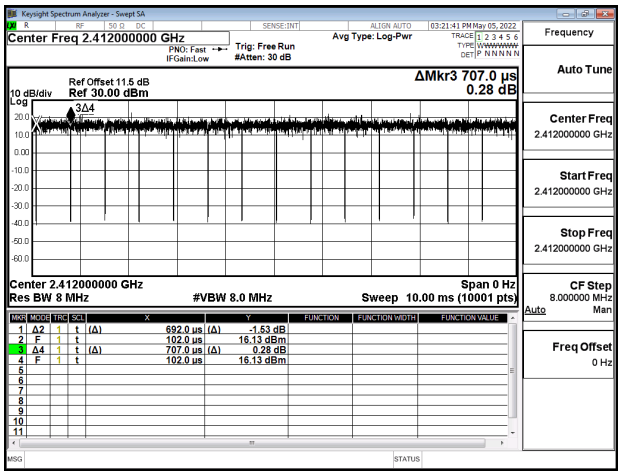
802.11b_20MHz_Chain0_2412MHz



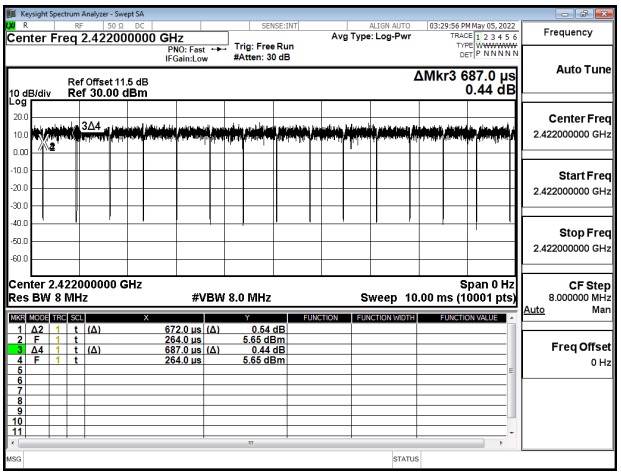
802.11g_20MHz_Chain0_2412MHz



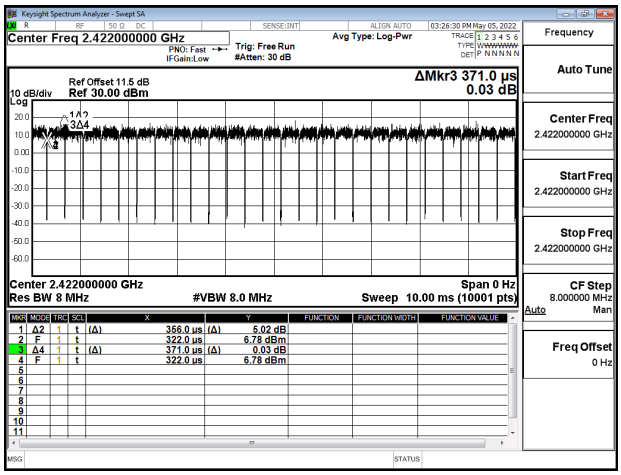
802.11n_20MHz_Chain0_2412MHz



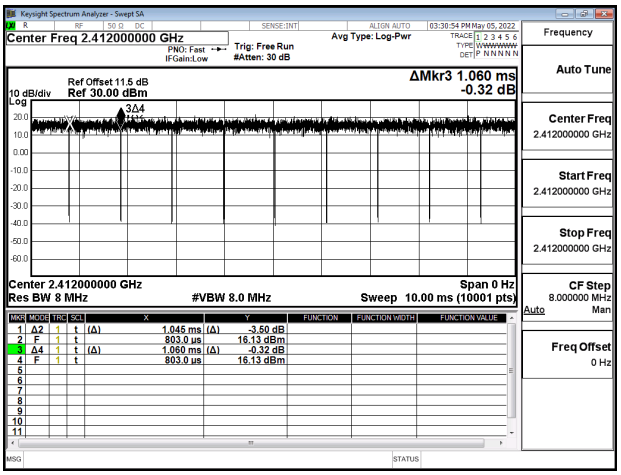
802.11ac_40MHz_Chain0_2422MHz



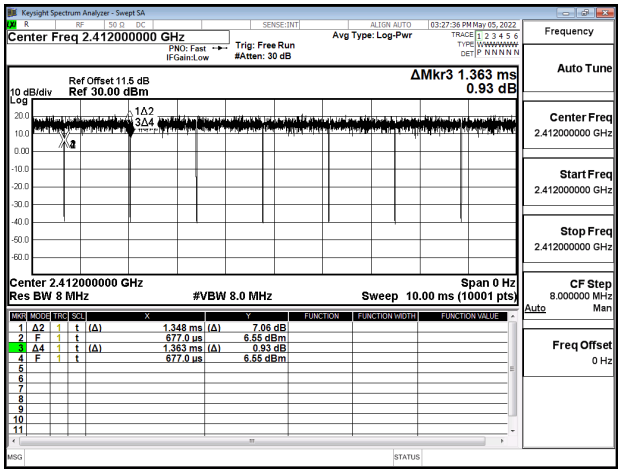
802.11n_40MHz_Chain0_2422MHz



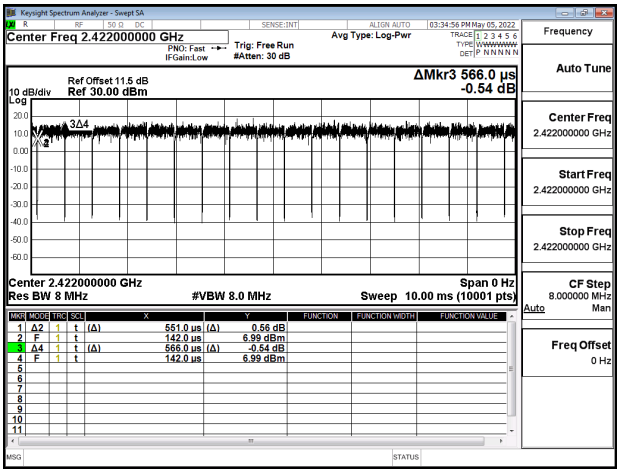
802.11ax_20MHz_Chain0_2412MHz



802.11ac_20MHz_Chain0_2412MHz



802.11ax_40MHz_Chain0_2422MHz



8.6.3 Output Power

802.11b Ch0						
CH	Freq. (MHz)	Data Rate	Power set	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	1	13.5	**16.50**	30.00	PASS
6	2437	1	13.5	16.42	30.00	PASS
11	2462	1	13.5	16.37	30.00	PASS
802.11b Ch0						
CH	Freq. (MHz)	Data Rate	Power set	Max. Avg. Output include tune up tolerance Power (dBm)	Limit (dBm)	RESULT
1	2412	1	13.5	**13.98**	30.00	PASS
6	2437	1	13.5	13.86	30.00	PASS
11	2462	1	13.5	13.85	30.00	PASS

802.11b Ch1						
CH	Freq. (MHz)	Data Rate	Power set	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	1	13.5	16.42	30.00	PASS
6	2437	1	13.5	16.35	30.00	PASS
11	2462	1	13.5	16.28	30.00	PASS
802.11b Ch1						
CH	Freq. (MHz)	Data Rate	Power set	Max. Avg. Output include tune up tolerance Power (dBm)	Limit (dBm)	RESULT
1	2412	1	13.5	13.89	30.00	PASS
6	2437	1	13.5	13.82	30.00	PASS
11	2462	1	13.5	13.77	30.00	PASS

802.11g Ch0						
CH	Freq. (MHz)	Data Rate	Power set	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	6	12	**21.84**	30.00	PASS
6	2437	6	12	21.79	30.00	PASS
11	2462	6	12	21.76	30.00	PASS
802.11g Ch0						
CH	Freq. (MHz)	Data Rate	Power set	Max. Avg. Output include tune up tolerance Power (dBm)	Limit (dBm)	RESULT
1	2412	6	12	12.95	30.00	PASS
6	2437	6	12	12.98	30.00	PASS
11	2462	6	12	12.96	30.00	PASS

802.11g Ch1						
CH	Freq. (MHz)	Data Rate	Power set	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	6	12.5	21.73	30.00	PASS
6	2437	6	12.5	21.70	30.00	PASS
11	2462	6	12.5	21.67	30.00	PASS
802.11g Ch1						
CH	Freq. (MHz)	Data Rate	Power set	Max. Avg. Output include tune up tolerance Power (dBm)	Limit (dBm)	RESULT
1	2412	6	12.5	12.78	30.00	PASS
6	2437	6	12.5	12.76	30.00	PASS
11	2462	6	12.5	12.80	30.00	PASS

802.11nHT_20M Ch0						
CH	Freq. (MHz)	Data Rate	Power set	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	MCS0	12	21.77	30.00	PASS
6	2437	MCS0	12	21.82	30.00	PASS
11	2462	MCS0	12	21.85	30.00	PASS
802.11nHT_20M Ch0						
CH	Freq. (MHz)	Data Rate	Power set	Max. Avg. Output include tune up tolerance Power (dBm)	Limit (dBm)	RESULT
1	2412	MCS0	12	12.99	30.00	PASS
6	2437	MCS0	12	12.96	30.00	PASS
11	2462	MCS0	12	12.98	30.00	PASS

802.11nHT_20M Ch1						
CH	Freq. (MHz)	Data Rate	Power set	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	MCS0	12	21.76	30.00	PASS
6	2437	MCS0	12	21.77	30.00	PASS
11	2462	MCS0	12	21.82	30.00	PASS
802.11nHT_20M Ch1						
CH	Freq. (MHz)	Data Rate	Power set	Max. Avg. Output include tune up tolerance Power (dBm)	Limit (dBm)	RESULT
1	2412	MCS0	12	12.84	30.00	PASS
6	2437	MCS0	12	12.87	30.00	PASS
11	2462	MCS0	12	12.89	30.00	PASS

802.11n_HT20M MIMO								
CH	Freq. (MHz)	Data Rate	Power set	Peak Output Power		Total Peak Output Power (dBm)	Limit (dBm)	RESULT
				CH 0	CH 1			
1	2412	MCS8	13	21.82	21.75	**24.80**	30.00	PASS
6	2437	MCS8	13.5	20.85	22.43	24.72	30.00	PASS
11	2462	MCS8	13.5	21.65	21.34	24.51	30.00	PASS
802.11n_HT20M MIMO								
CH	Freq. (MHz)	Data Rate	Power set	Avg. Output Power (dBm)		Max. Avg. Output include tune up tolerance Power (dBm)	Limit (dBm)	RESULT
				CH 0	CH 1			
1	2412	MCS8	13	13.21	12.48	15.96	30.00	PASS
6	2437	MCS8	13.5	12.35	13.35	**15.98**	30.00	PASS
11	2462	MCS8	13.5	13.42	12.25	15.97	30.00	PASS

802.11nHT_40M Ch0						
CH	Freq. (MHz)	Data Rate	Power set	Peak Output Power (dBm)	Limit (dBm)	RESULT
3	2422	MCS0	12.5	21.63	30.00	PASS
6	2437	MCS0	12.5	21.57	30.00	PASS
9	2452	MCS0	10.5	19.13	30.00	PASS
802.11nHT_40M Ch0						
CH	Freq. (MHz)	Data Rate	Power set	Max. Avg. Output include tune up tolerance Power (dBm)	Limit (dBm)	RESULT
3	2422	MCS0	12.5	12.96	30.00	PASS
6	2437	MCS0	12.5	12.94	30.00	PASS
9	2452	MCS0	10.5	11.00	30.00	PASS

802.11nHT_40M Ch1						
CH	Freq. (MHz)	Data Rate	Power set	Peak Output Power (dBm)	Limit (dBm)	RESULT
3	2422	MCS0	12.5	21.57	30.00	PASS
6	2437	MCS0	12.5	21.52	30.00	PASS
9	2452	MCS0	10.5	19.07	30.00	PASS
802.11nHT_40M Ch1						
CH	Freq. (MHz)	Data Rate	Power set	Max. Avg. Output include tune up tolerance Power (dBm)	Limit (dBm)	RESULT
3	2422	MCS0	12.5	12.90	30.00	PASS
6	2437	MCS0	12.5	12.88	30.00	PASS
9	2452	MCS0	10.5	10.98	30.00	PASS

802.11n_HT40M MIMO								
CH	Freq. (MHz)	Data Rate	Power set	Peak Output Power		Total Peak Output Power (dBm)	Limit (dBm)	RESULT
				CH 0	CH 1			
3	2422	MCS8	13.5	21.99	21.54	24.78	30.00	PASS
6	2437	MCS8	13.5	21.15	22.71	**25.01**	30.00	PASS
9	2452	MCS8	10.5	18.00	19.61	21.89	30.00	PASS
802.11n_HT40M MIMO								
CH	Freq. (MHz)	Data Rate	Power set	Avg. Output Power (dBm)		Max. Avg. Output include tune up tolerance Power (dBm)	Limit (dBm)	RESULT
				CH 0	CH 1			
3	2422	MCS8	13.5	12.99	12.57	**15.98**	30.00	PASS
6	2437	MCS8	13.5	12.40	13.11	15.96	30.00	PASS
9	2452	MCS8	10.5	9.99	11.45	13.97	30.00	PASS

802.11ax_HE_20M Ch0							
CH	Freq. (MHz)	Data Rate	RU Config	Power set	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	MCS0	full	12	21.64	30.00	PASS
6	2437	MCS0	full	12	21.62	30.00	PASS
11	2462	MCS0	full	12	21.68	30.00	PASS
802.11ax_HE_20M Ch0							
CH	Freq. (MHz)	Data Rate	RU Config	Power set	Max. Avg. Output include tune up tolerance Power (dBm)	Limit (dBm)	RESULT
1	2412	MCS0	full	12	12.99	30.00	PASS
6	2437	MCS0	full	12	12.96	30.00	PASS
11	2462	MCS0	full	12	12.98	30.00	PASS

802.11ax_HE_20M Ch1							
CH	Freq. (MHz)	Data Rate	RU Config	Power set	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	MCS0	full	12	21.57	30.00	PASS
6	2437	MCS0	full	12	21.53	30.00	PASS
11	2462	MCS0	full	12	21.59	30.00	PASS
802.11ax_HE_20M Ch1							
CH	Freq. (MHz)	Data Rate	RU Config	Power set	Max. Avg. Output include tune up tolerance Power (dBm)	Limit (dBm)	RESULT
1	2412	MCS0	full	12	12.81	30.00	PASS
6	2437	MCS0	full	12	12.87	30.00	PASS
11	2462	MCS0	full	12	12.89	30.00	PASS

802.11ax_HE20M MIMO									
CH	Freq. (MHz)	Data Rate	RU Config	Power set	Peak Output Power		Total Peak Output Power (dBm)	Limit (dBm)	RESULT
					CH 0	CH 1			
1	2412	MCS0	full	13	21.79	21.70	**24.76**	30.00	PASS
6	2437	MCS0	full	13.5	20.85	22.43	24.72	30.00	PASS
11	2462	MCS0	full	13	21.81	21.17	24.51	30.00	PASS
802.11ax_HE20M MIMO									
CH	Freq. (MHz)	Data Rate	RU Config	Power set	Avg. Output Power (dBm)		Max. Avg. Output include tune up tolerance Power (dBm)	Limit (dBm)	RESULT
					CH 0	CH 1			
1	2412	MCS0	full	13	13.29	12.46	15.97	30.00	PASS
6	2437	MCS0	full	13.5	12.37	13.39	**15.98**	30.00	PASS
11	2462	MCS0	full	13	13.38	12.26	15.93	30.00	PASS

802.11ax_HE_40M Ch0							
CH	Freq. (MHz)	Data Rate	RU Config	Power set	Peak Output Power (dBm)	Limit (dBm)	RESULT
3	2422	MCS0	full	12.5	21.52	30.00	PASS
6	2437	MCS0	full	12.5	21.48	30.00	PASS
9	2452	MCS0	full	10	19.43	30.00	PASS
802.11ax_HE_40M Ch0							
CH	Freq. (MHz)	Data Rate	RU Config	Power set	Max. Avg. Output include tune up tolerance Power (dBm)	Limit (dBm)	RESULT
3	2422	MCS0	full	12.5	12.96	30.00	PASS
6	2437	MCS0	full	12.5	12.94	30.00	PASS
9	2452	MCS0	full	10	10.98	30.00	PASS

802.11ax_HE_40M Ch1							
CH	Freq. (MHz)	Data Rate	RU Config	Power set	Peak Output Power (dBm)	Limit (dBm)	RESULT
3	2422	MCS0	full	12	21.34	30.00	PASS
6	2437	MCS0	full	12	21.40	30.00	PASS
9	2452	MCS0	full	10	19.35	30.00	PASS
802.11ax_HE_40M Ch1							
CH	Freq. (MHz)	Data Rate	RU Config	Power set	Max. Avg. Output include tune up tolerance Power (dBm)	Limit (dBm)	RESULT
3	2422	MCS0	full	12	12.84	30.00	PASS
6	2437	MCS0	full	12	12.91	30.00	PASS
9	2452	MCS0	full	10	10.94	30.00	PASS

802.11ax_HE40M MIMO									
CH	Freq. (MHz)	Data Rate	RU Config	Power set	Peak Output Power		Total Peak Output Power (dBm)	Limit (dBm)	RESULT
					CH 0	CH 1			
3	2422	MCS0	full	13	21.69	21.61	24.66	30.00	PASS
6	2437	MCS0	full	13	21.12	22.72	**25.00**	30.00	PASS
9	2452	MCS0	full	10.5	17.85	19.02	21.48	30.00	PASS
802.11ax_HE40M MIMO									
CH	Freq. (MHz)	Data Rate	RU Config	Power set	Avg. Output Power (dBm)		Max. Avg. Output include tune up tolerance Power (dBm)	Limit (dBm)	RESULT
					CH 0	CH 1			
3	2422	MCS0	full	13	13.06	12.63	**15.98**	30.00	PASS
6	2437	MCS0	full	13	12.53	13.07	15.94	30.00	PASS
9	2452	MCS0	full	10.5	10.21	10.52	13.50	30.00	PASS

802.11b Ch0							
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	RESULT
1	2412	1	13.98	-0.40	13.58	36	PASS
6	2437	1	13.86	-0.40	13.46	36	PASS
11	2462	1	13.85	-0.40	13.45	36	PASS

802.11b Ch1							
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	RESULT
1	2412	1	13.89	0.20	**14.09**	36	PASS
6	2437	1	13.82	0.20	14.02	36	PASS
11	2462	1	13.77	0.20	13.97	36	PASS

802.11g Ch0							
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	RESULT
1	2412	6	12.95	-0.40	12.55	36	PASS
6	2437	6	12.98	-0.40	12.58	36	PASS
11	2462	6	12.96	-0.40	12.56	36	PASS

802.11g Ch1							
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	RESULT
1	2412	6	12.78	0.20	12.98	36	PASS
6	2437	6	12.76	0.20	12.96	36	PASS
11	2462	6	12.80	0.20	13.00	36	PASS

802.11nHT_20M Ch0							
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	RESULT
1	2412	MCS0	12.99	-0.40	12.59	36	PASS
6	2437	MCS0	12.96	-0.40	12.56	36	PASS
11	2462	MCS0	12.98	-0.40	12.58	36	PASS

802.11nHT_20M Ch1							
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	RESULT
1	2412	MCS0	12.84	0.20	13.04	36	PASS
6	2437	MCS0	12.87	0.20	13.07	36	PASS
11	2462	MCS0	12.89	0.20	13.09	36	PASS

802.11n_HT20M MIMO									
CH	Freq. (MHz)	Data Rate	Avg. Output Power		Total Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	RESULT
			CH 0	CH 1					
1	2412	MCS8	13.21	12.48	15.96	2.92	18.88	36	PASS
6	2437	MCS8	12.35	13.35	15.98	2.92	**18.90**	36	PASS
11	2462	MCS8	13.42	12.25	15.97	2.92	18.89	36	PASS

802.11nHT_40M Ch0							
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	RESULT
3	2422	MCS0	12.96	-0.40	12.56	36	PASS
6	2437	MCS0	12.94	-0.40	12.54	36	PASS
9	2452	MCS0	11.00	-0.40	10.60	36	PASS

802.11nHT_40M Ch1							
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	RESULT
3	2422	MCS0	12.90	0.20	13.10	36	PASS
6	2437	MCS0	12.88	0.20	13.08	36	PASS
9	2452	MCS0	10.98	0.20	11.18	36	PASS

802.11n_HT40M MIMO									
CH	Freq. (MHz)	Data Rate	Avg. Output Power		Total Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	RESULT
			CH 0	CH 1					
3	2422	MCS8	12.99	12.57	15.98	2.92	**18.90**	36	PASS
6	2437	MCS8	12.40	13.11	15.96	2.92	18.88	36	PASS
9	2452	MCS8	9.99	11.45	13.97	2.92	16.89	36	PASS

802.11ax_HE_20M Ch0								
CH	Freq. (MHz)	Data Rate	RU Config	Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit	RESULT
1	2412	MCS0	full	12.99	-0.40	12.59	36	PASS
6	2437	MCS0	full	12.96	-0.40	12.56	36	PASS
11	2462	MCS0	full	12.98	-0.40	12.58	36	PASS

802.11ax_HE_20M Ch1								
CH	Freq. (MHz)	Data Rate	RU Config	Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit	RESULT
1	2412	MCS0	full	12.81	0.20	13.01	36	PASS
6	2437	MCS0	full	12.87	0.20	13.07	36	PASS
11	2462	MCS0	full	12.89	0.20	13.09	36	PASS

802.11ax_HE20M MIMO										
CH	Freq. (MHz)	Data Rate	RU Config	Avg. Output Power		Total Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit	RESULT
				CH 0	CH 1					
1	2412	MCS0	full	13.29	12.46	15.97	2.92	18.89	36	PASS
6	2437	MCS0	full	12.37	13.39	15.98	2.92	**18.90**	36	PASS
11	2462	MCS0	full	13.38	12.26	15.93	2.92	18.85	36	PASS

802.11ax_HE_40M Ch0								
CH	Freq. (MHz)	Data Rate	RU Config	Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit	RESULT
3	2422	MCS0	full	12.96	-0.40	12.56	36	PASS
6	2437	MCS0	full	12.94	-0.40	12.54	36	PASS
9	2452	MCS0	full	10.98	-0.40	10.58	36	PASS

802.11ax_HE_40M Ch1								
CH	Freq. (MHz)	Data Rate	RU Config	Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit	RESULT
3	2422	MCS0	full	12.84	0.20	13.04	36	PASS
6	2437	MCS0	full	12.91	0.20	13.11	36	PASS
9	2452	MCS0	full	10.94	0.20	11.14	36	PASS

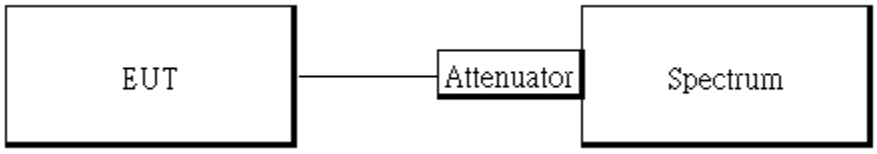
802.11ax_HE40M MIMO										
CH	Freq. (MHz)	Data Rate	RU Config	Avg. Output Power		Total Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit	RESULT
				CH 0	CH 1					
3	2422	MCS0	full	13.06	12.63	15.98	2.92	**18.90**	36	PASS
6	2437	MCS0	full	12.53	13.07	15.94	2.92	18.86	36	PASS
9	2452	MCS0	full	10.21	10.52	13.50	2.92	16.42	36	PASS

9 EMISSION BANDWIDTH MEASUREMENT

9.1 Standard Applicable

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

9.2 Test Setup



9.3 Measurement Procedure

1. Place the EUT on the table and set it in transmitting mode.
2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
4. Set the spectrum analyzer as
   RBW= 100kHz ,
   VBW = 3 X RBW,
   Span= 2 to 5 times of the OBW,
   Sweep=auto,
   Detector = Peak, and Max hold for -6dB Bandwidth test.
5. Repeat above procedures until all test default channel is completed

9.4 6dB Bandwidth

802.11b Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	10090.00	≧ 500	PASS
2437	**10100.00**	≧ 500	PASS
2462	10070.00	≧ 500	PASS

802.11b Ch1

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	10080.00	≧ 500	PASS
2437	**10100.00**	≧ 500	PASS
2462	10070.00	≧ 500	PASS

802.11g Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	16380.00	≧ 500	PASS
2437	**16430.00**	≧ 500	PASS
2462	16370.00	≧ 500	PASS

802.11g Ch1

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	16380.00	≧ 500	PASS
2437	16370.00	≧ 500	PASS
2462	**16400.00**	≧ 500	PASS

802.11nHT_20M Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	17120.00	≧ 500	PASS
2437	**17560.00**	≧ 500	PASS
2462	17300.00	≧ 500	PASS

802.11nHT_20M Ch1

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	**17340.00**	≧ 500	PASS
2437	17160.00	≧ 500	PASS
2462	**17340.00**	≧ 500	PASS

802.11nHT_40M Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2422	35530.00	≧ 500	PASS
2437	**35750.00**	≧ 500	PASS
2452	35450.00	≧ 500	PASS

802.11nHT_40M Ch1

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2422	35190.00	≧ 500	PASS
2437	**35740.00**	≧ 500	PASS
2452	35710.00	≧ 500	PASS

802.11ax_HE_20M Ch0

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2412	full	18360.00	≧ 500	PASS
2437	full	**18460.00**	≧ 500	PASS
2462	full	18450.00	≧ 500	PASS

802.11ax_HE_20M Ch1

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2412	full	17970.00	≧ 500	PASS
2437	full	18260.00	≧ 500	PASS
2462	full	**18300.00**	≧ 500	PASS

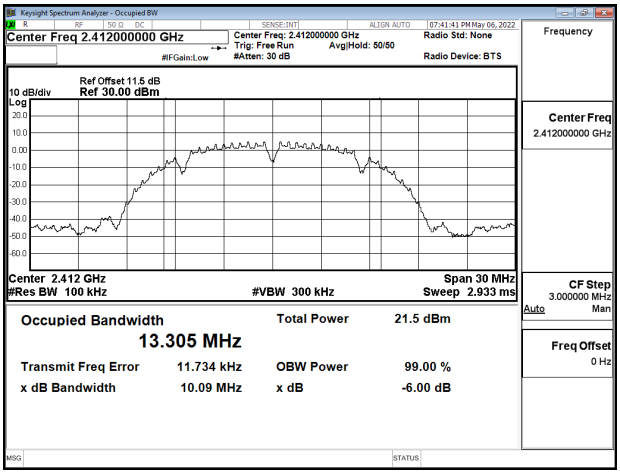
802.11ax_HE_40M Ch0

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2422	full	36400.00	≧ 500	PASS
2437	full	**37280.00**	≧ 500	PASS
2452	full	36500.00	≧ 500	PASS

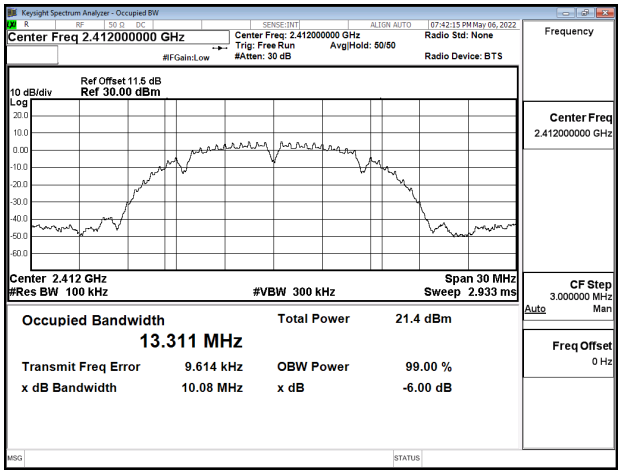
802.11ax_HE_40M Ch1

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2422	full	35660.00	≧ 500	PASS
2437	full	36500.00	≧ 500	PASS
2452	full	**37670.00**	≧ 500	PASS

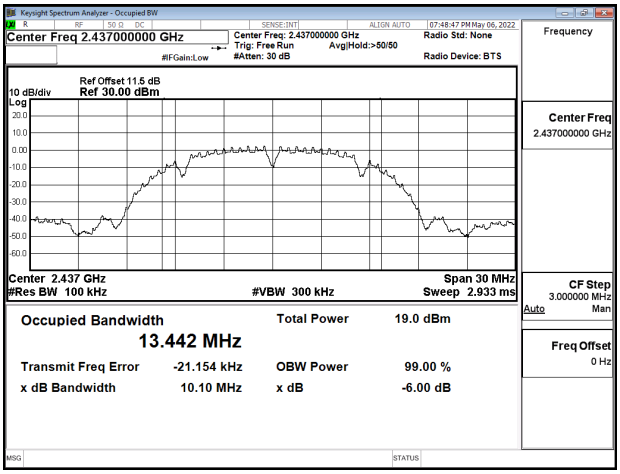
802.11b_20MHz_Chain0_2412MHz



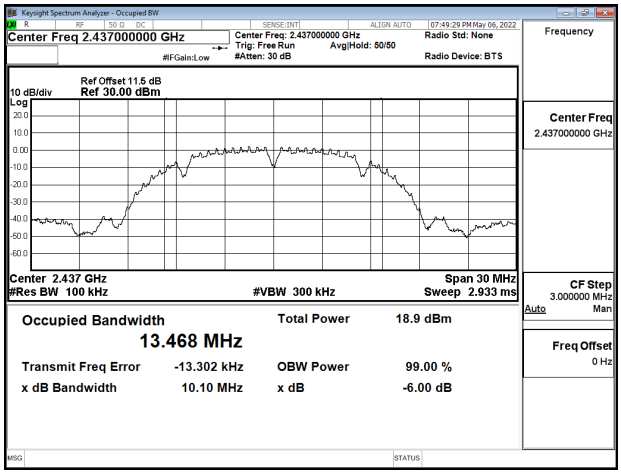
802.11b_20MHz_Chain1_2412MHz



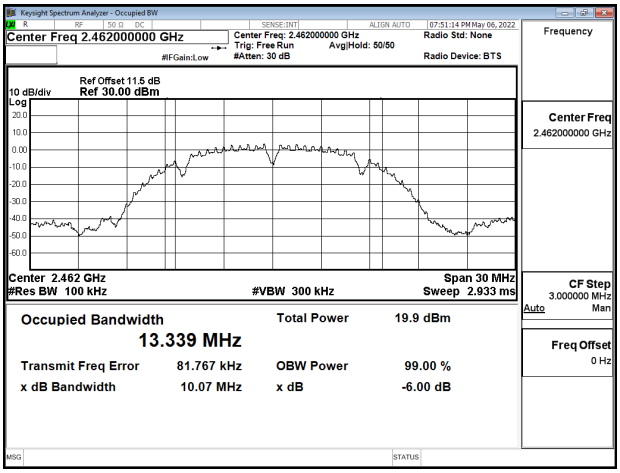
802.11b_20MHz_Chain0_2437MHz



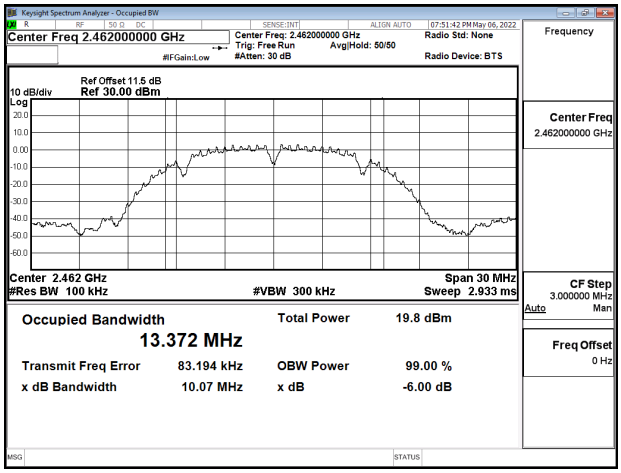
802.11b_20MHz_Chain1_2437MHz



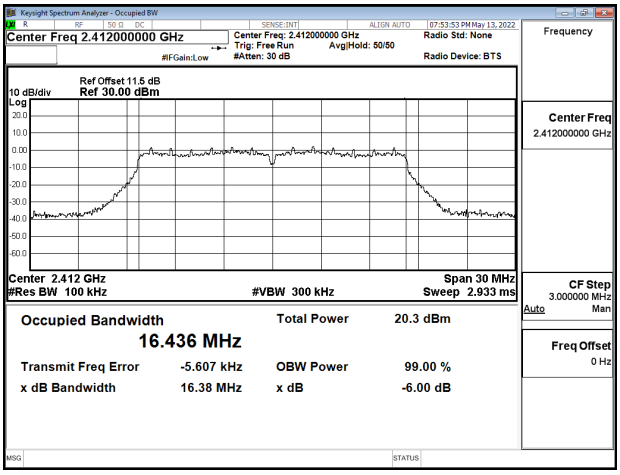
802.11b_20MHz_Chain0_2462MHz



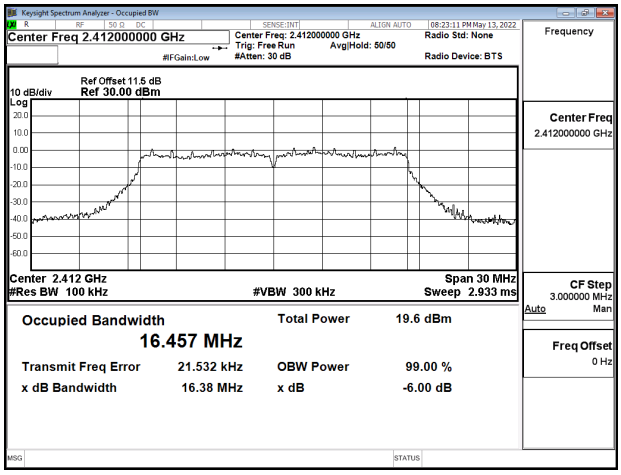
802.11b_20MHz_Chain1_2462MHz



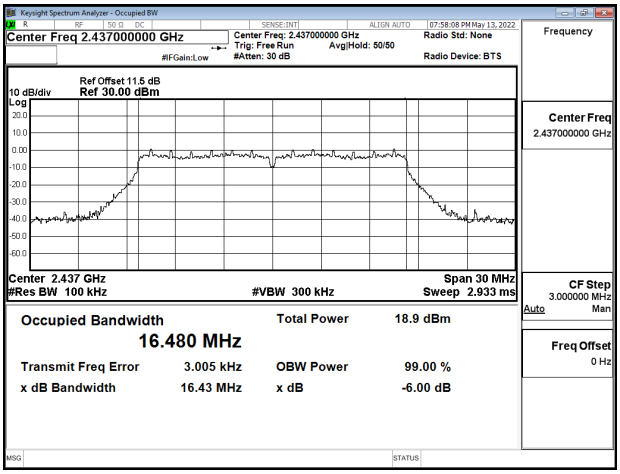
802.11g_20MHz_Chain0_2412MHz



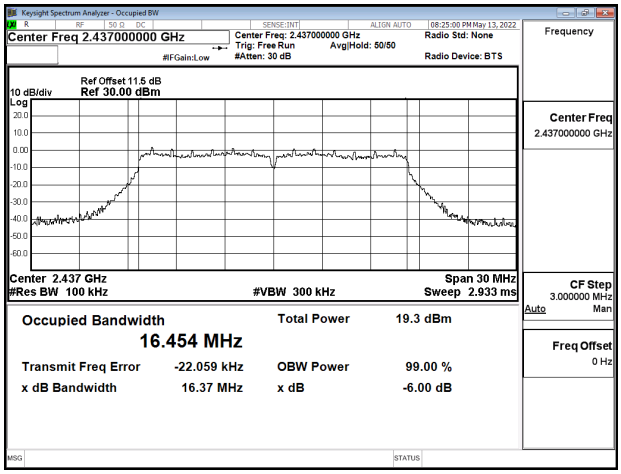
802.11g_20MHz_Chain1_2412MHz



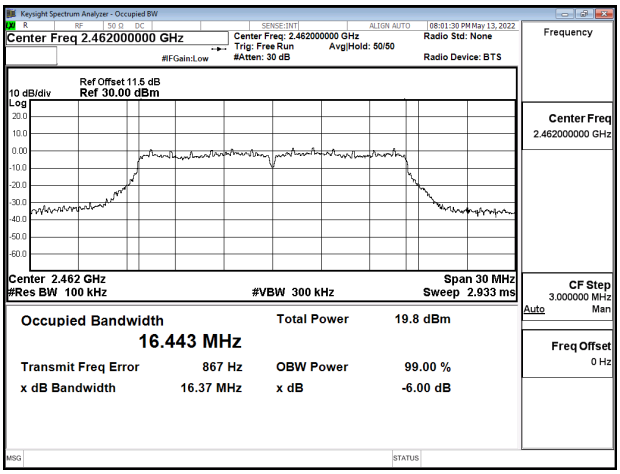
802.11g_20MHz_Chain0_2437MHz



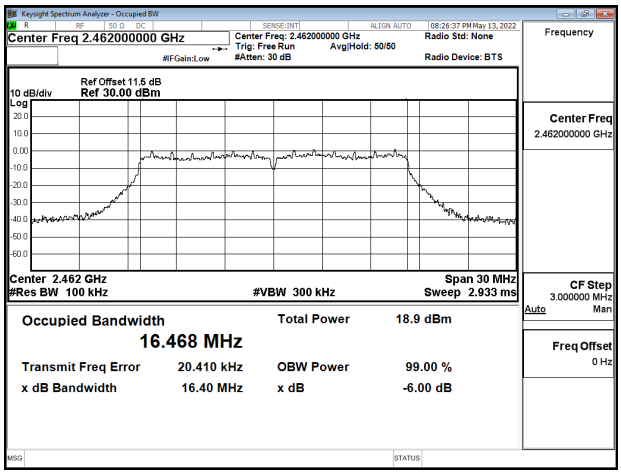
802.11g_20MHz_Chain1_2437MHz



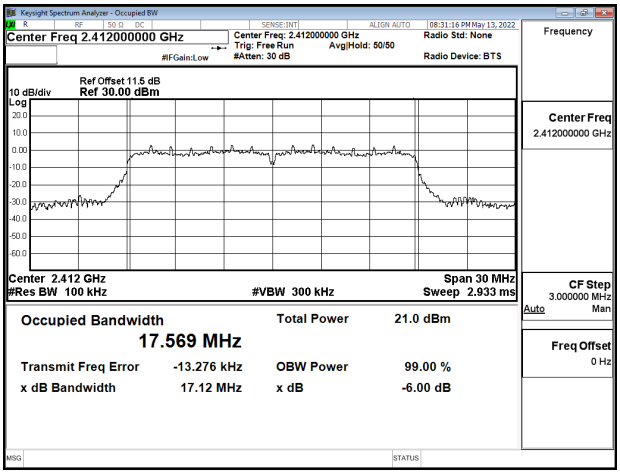
802.11g_20MHz_Chain0_2462MHz



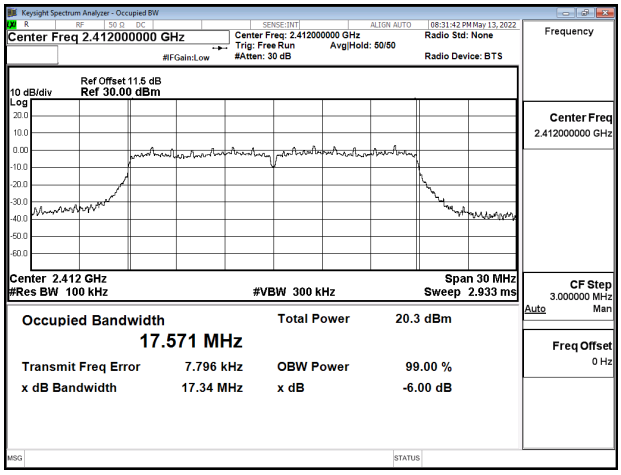
802.11g_20MHz_Chain1_2462MHz



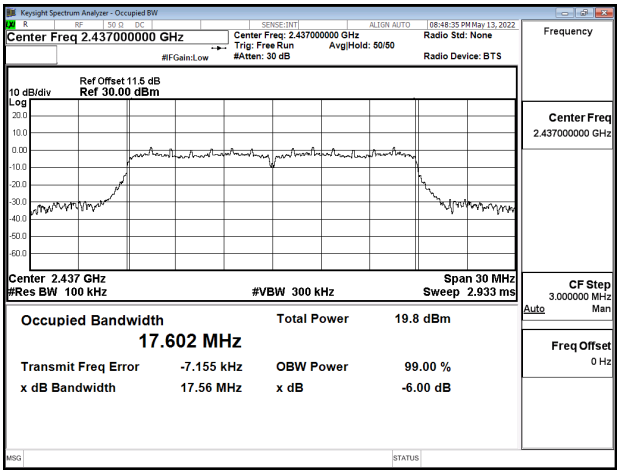
802.11n_20MHz_Chain0_2412MHz



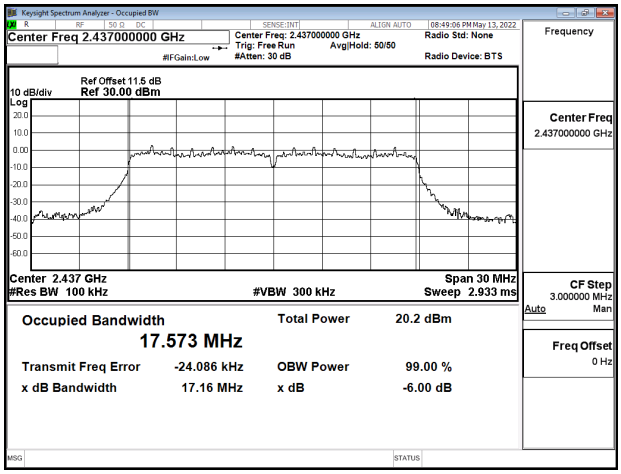
802.11n_20MHz_Chain1_2412MHz



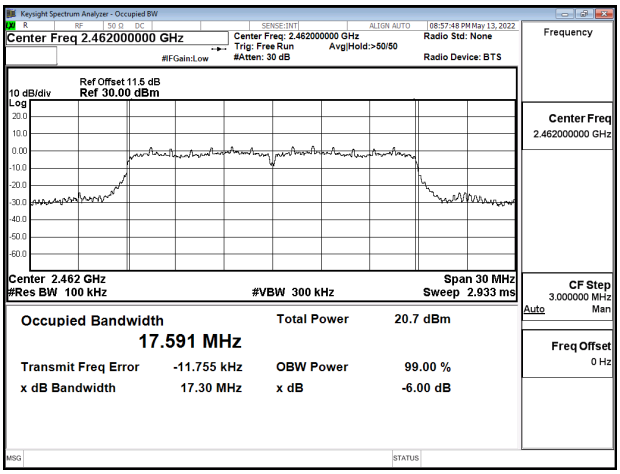
802.11n_20MHz_Chain0_2437MHz



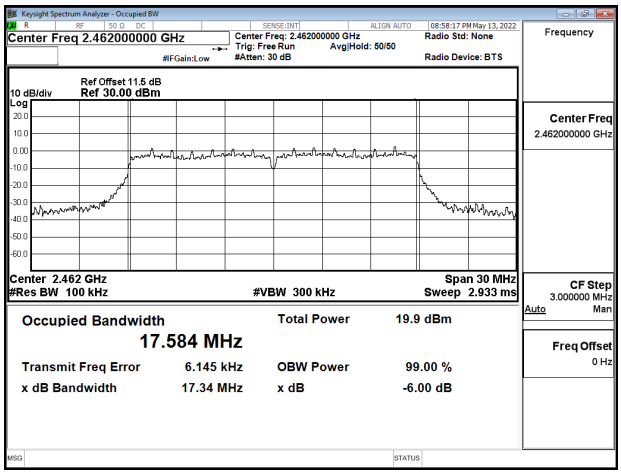
802.11n_20MHz_Chain1_2437MHz



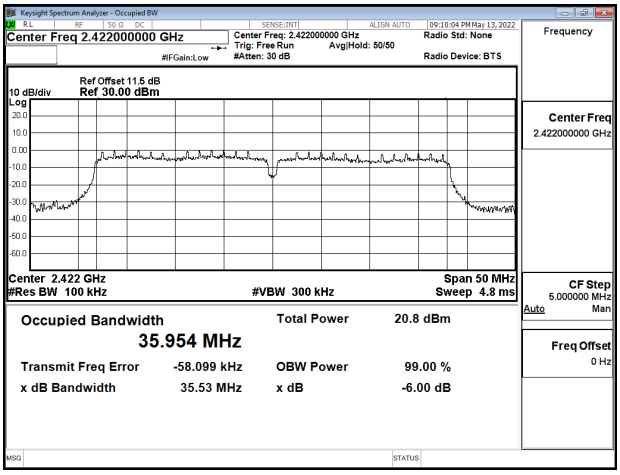
802.11n_20MHz_Chain0_2462MHz



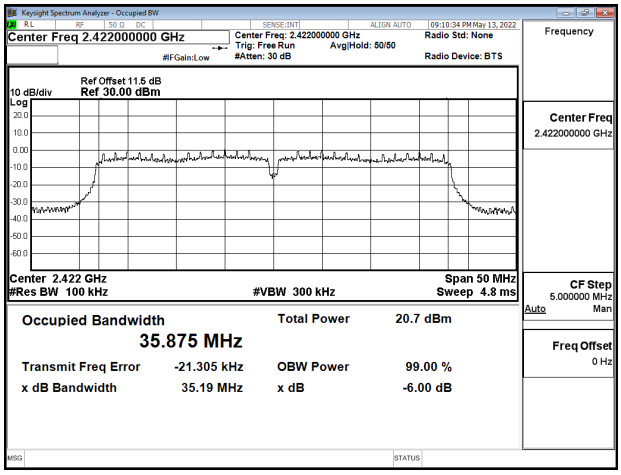
802.11n_20MHz_Chain1_2462MHz



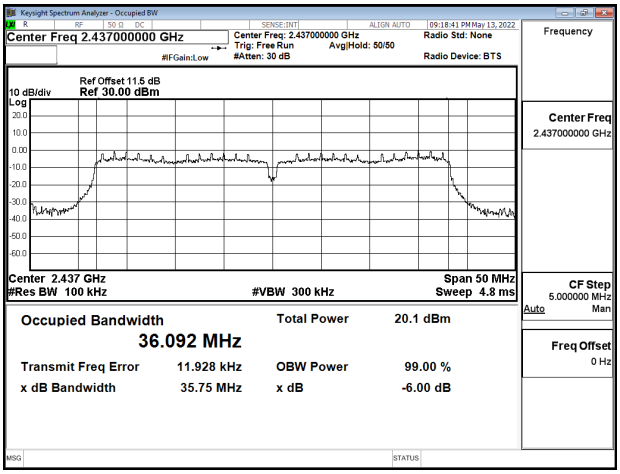
802.11n_40MHz_Chain0_2422MHz



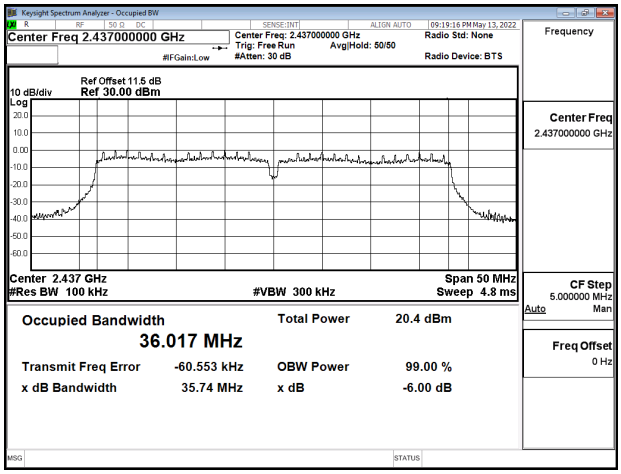
802.11n_40MHz_Chain1_2422MHz



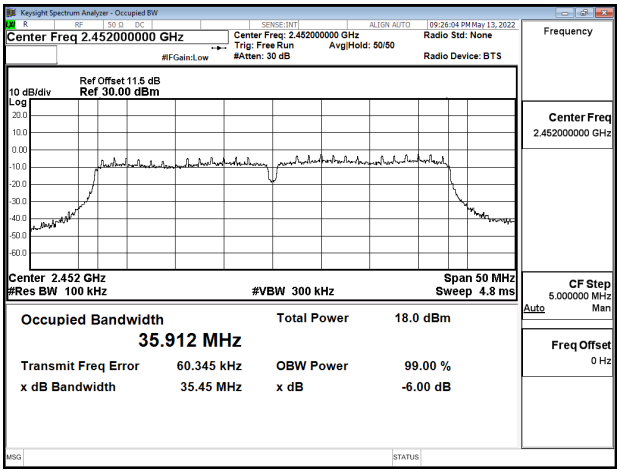
802.11n_40MHz_Chain0_2437MHz



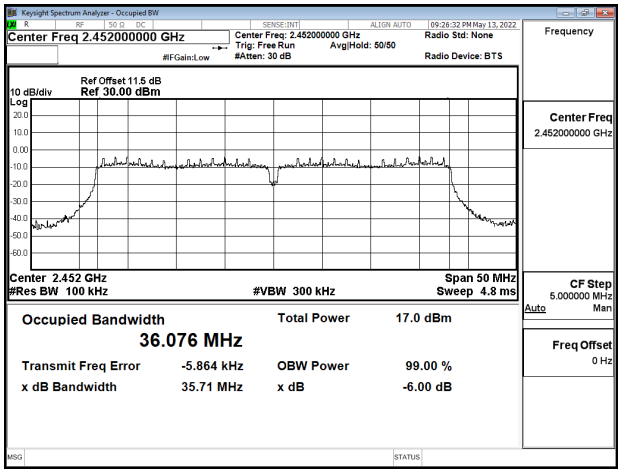
802.11n_40MHz_Chain1_2437MHz



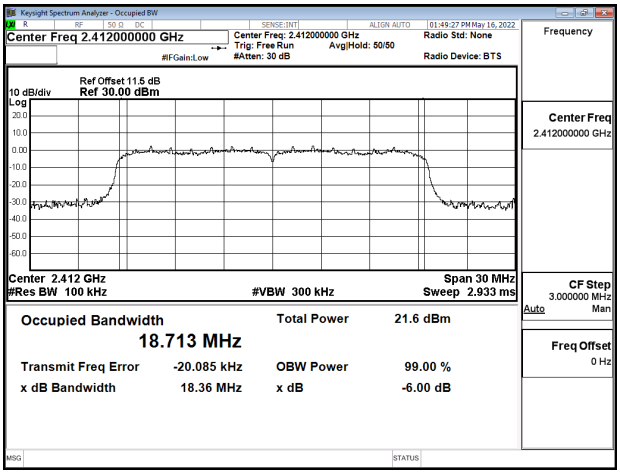
802.11n_40MHz_Chain0_2452MHz



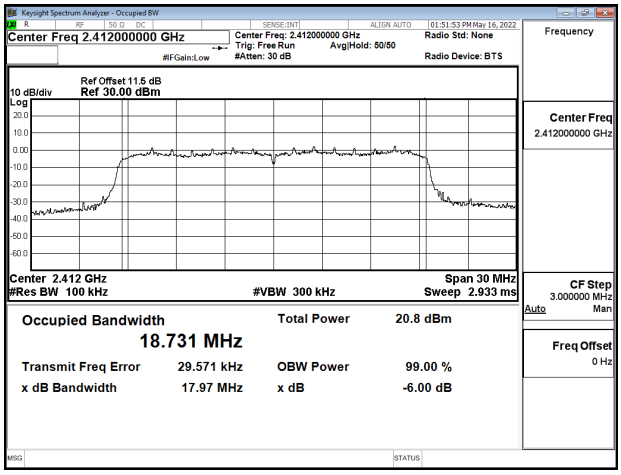
802.11n_40MHz_Chain1_2452MHz



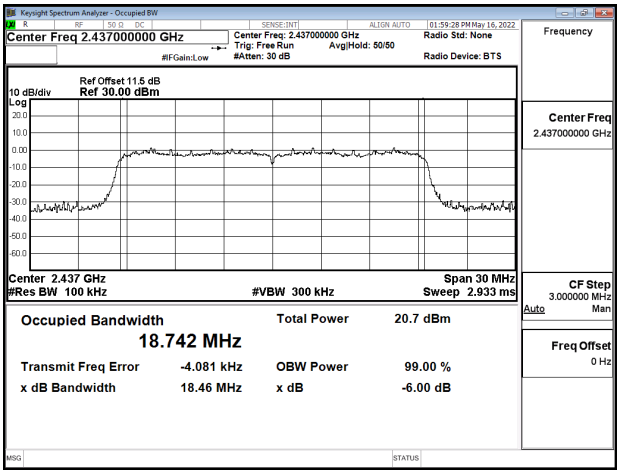
802.11ax_20MHz_Chain0_2412MHz



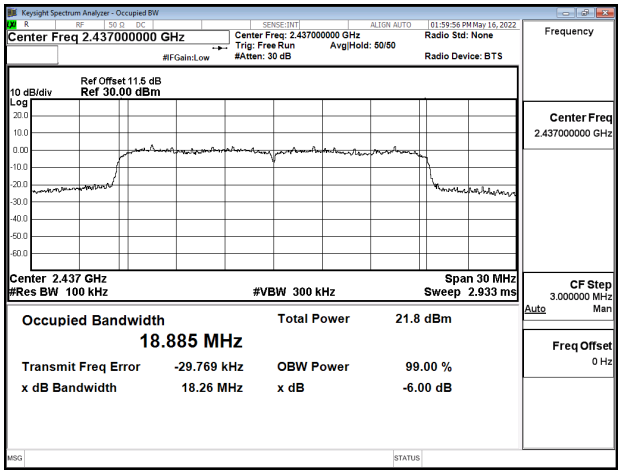
802.11ax_20MHz_Chain1_2412MHz



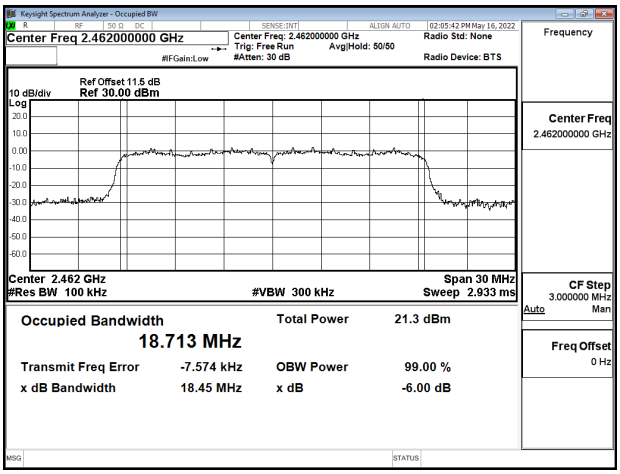
802.11ax_20MHz_Chain0_2437MHz



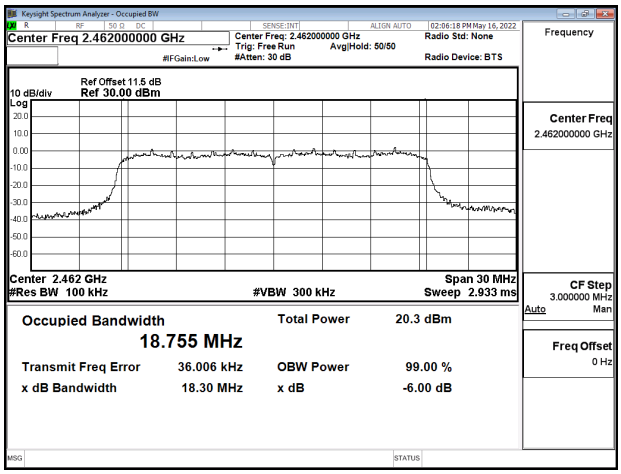
802.11ax_20MHz_Chain1_2437MHz



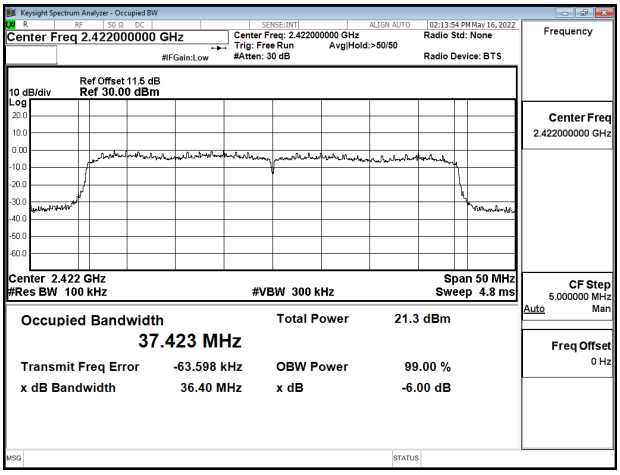
802.11ax_20MHz_Chain0_2462MHz



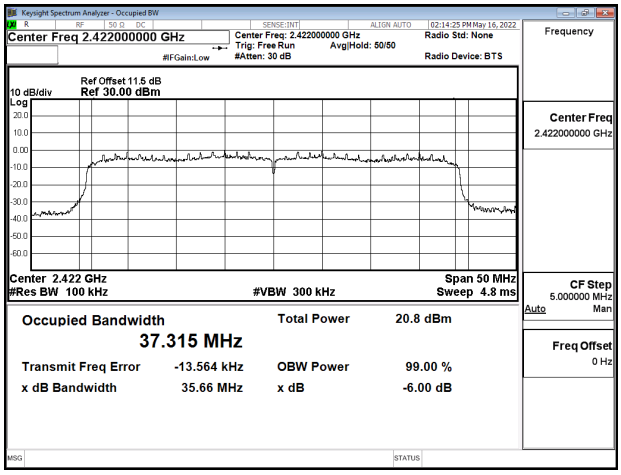
802.11ax_20MHz_Chain1_2462MHz



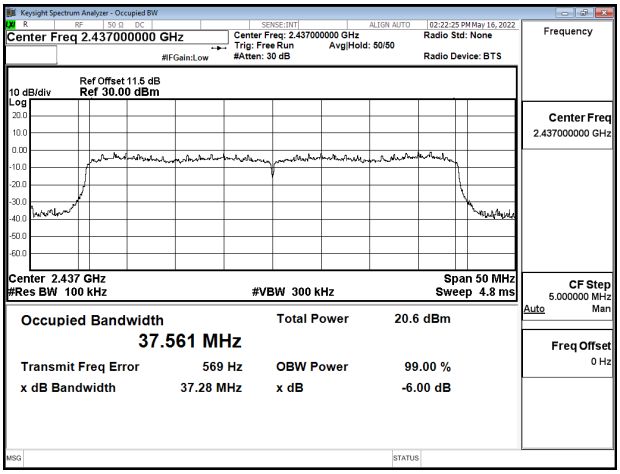
802.11ax_40MHz_Chain0_2422MHz



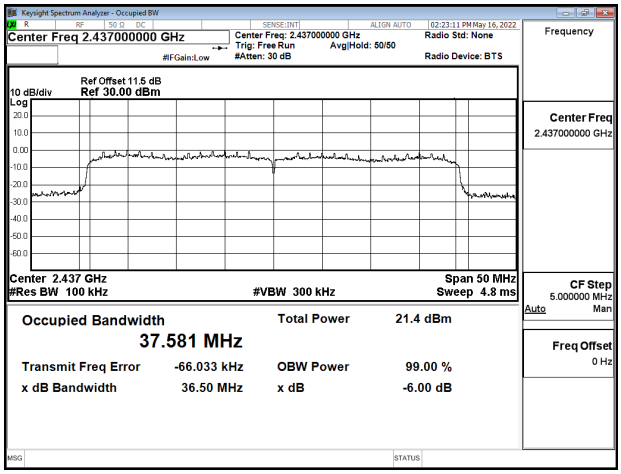
802.11ax_40MHz_Chain1_2422MHz



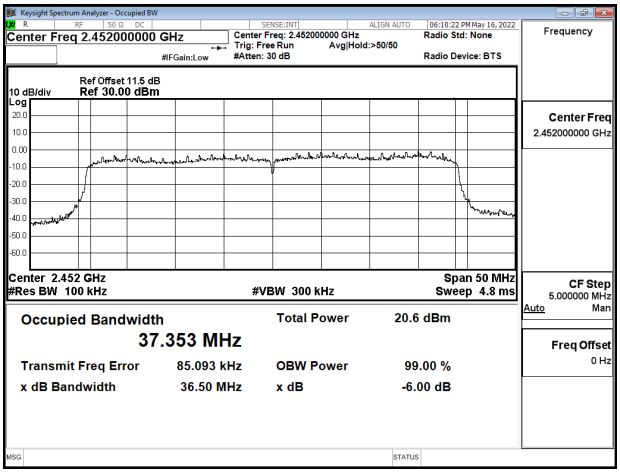
802.11ax_40MHz_Chain0_2437MHz



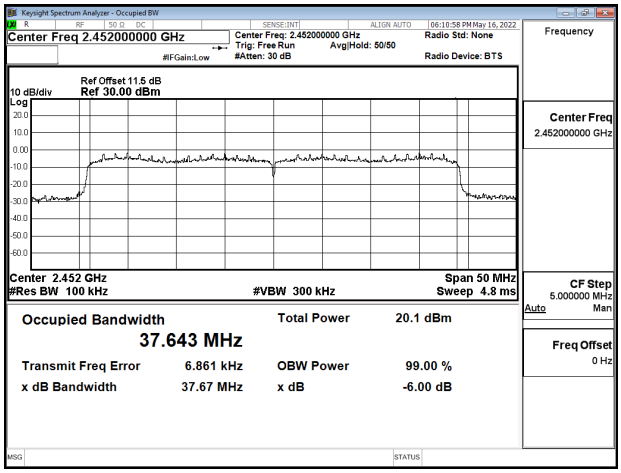
802.11ax_40MHz_Chain1_2437MHz



802.11ax_40MHz_Chain0_2452MHz



802.11ax_40MHz_Chain1_2452MHz

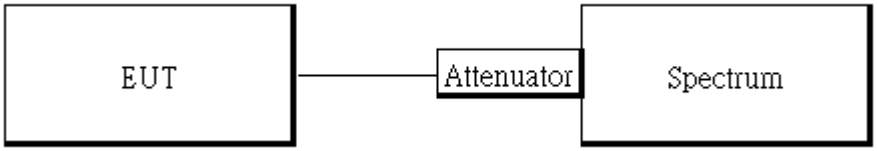


10 CONDUCTED BAND EDGES AND SPURIOUS EMISSION MEASUREMENT

10.1 Standard Applicable

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.
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).

10.2 Test Setup



10.3 Measurement Procedure

10.3.1 Reference Level of Emission Limit:

1. Set analyzer center frequency to DTS channel center frequency.
2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
3. Set the span to 1.5 times the DTS channel bandwidth.
4. Set the RBW = 100kHz & VBW = 300 kHz.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. MIMO mode: offset is set following “measure and add 10 Log (N)” on spectrum to measure for MIMO mode. Offset = cable loss + 10 log (N), where N is number of transmitting antenna.

10.3.2 Conducted Band Edge:

1. To connect Antenna Port of EUT to Spectrum.
2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
4. Set start to edge frequency, and stop frequency of spectrum analyzer so as to encompass the spectrum to be examined.
5. Set the spectrum analyzer as RBW=100 kHz, VBW=300 kHz, Detector = Peak, Sweep = auto
6. Mark the highest reading of the emission as the reference level measurement.
7. Set DL as the limit = reading on marker of reference level measurement – 20dBm
8. Mark the highest readings of the emissions outside of 2400MHz~2483.5MHz.
9. Repeat above procedures until all default test channel (low, middle, and high) was complete.
10. MIMO mode: offset is set following “measure and add 10 Log (N)” on spectrum to measure for MIMO mode. Offset = cable loss + 10 log (N), where N is number of transmitting antenna.

Conducted Spurious Emission:

1. To connect Antenna Port of EUT to Spectrum
2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
3. Set RBW = 100 kHz & VBW= 300 kHz, Detector =Peak, Sweep = Auto.
4. Allow trace to fully stabilize.
5. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.
6. Repeat above procedures until all default test channel measured were complete.
7. MIMO mode: offset is set following “measure and add 10 Log (N)” on spectrum to measure for MIMO mode. Offset = cable loss + 10 log (N), where N is number of transmitting antenna.

Note:

For test of MIMO mode, the highest emission of worst case employing Measure and add 10 log (N) technical is reported on this report after the comparison between Main Antenna at single transmitting mode and Aux that yields the higher value. The MIMO transmitting mode produces higher value of outcome.

10.4 Measurement Result

802.11b Ch0

Reference Level of Limit		
Freq. (MHz)	PSD (dBm)	Reference Level of Limit (dBm)
2412	4.75	-15.25
2437	4.65	-15.35
2462	4.08	-15.92

802.11b Ch1

Reference Level of Limit		
Freq. (MHz)	PSD (dBm)	Reference Level of Limit (dBm)
2412	3.62	-16.38
2437	4.46	-15.54
2462	2.90	-17.10

802.11g Ch0

Reference Level of Limit 802.11g mode		
Freq. (MHz)	PSD (dBm)	Reference Level of Limit (dBm)
2412	2.15	-17.85
2437	0.72	-19.28
2462	1.67	-18.33

802.11g Ch1

Reference Level of Limit 802.11g mode		
Freq. (MHz)	PSD (dBm)	Reference Level of Limit (dBm)
2412	2.04	-17.96
2437	2.45	-17.55
2462	1.42	-18.58

802.11nHT_20M Ch0

Reference Level of Limit 802.11n20 MODE		
Freq. (MHz)	PSD (dBm)	Reference Level of Limit (dBm)
2412	2.75	-17.25
2437	1.71	-18.29
2462	2.71	-17.29

802.11nHT_20M Ch1

Reference Level of Limit 802.11ac20 MODE		
Freq. (MHz)	PSD (dBm)	Reference Level of Limit (dBm)
2412	2.74	-17.26
2437	2.87	-17.13
2462	2.40	-17.60

802.11nHT_40M Ch0

Reference Level of Limit 802.11n40 MODE		
Freq. (MHz)	PSD (dBm)	Reference Level of Limit (dBm)
2422	0.04	-19.96
2437	-0.42	-20.42
2452	-2.49	-22.49

802.11nHT_40M Ch1

Reference Level of Limit 802.11ac40 MODE		
Freq. (MHz)	PSD (dBm)	Reference Level of Limit (dBm)
2422	0.287	-19.71
2437	-0.15	-20.15
2452	-3.56	-23.56

802.11ax_HE_20M Ch0

Reference Level of Limit 802.11ax20 mode		
Freq. (MHz)	PSD (dBm)	Reference Level of Limit (dBm)
2412	2.31	-17.69
2437	1.52	-18.48
2462	2.06	-17.94

802.11ax_HE_20M Ch1

Reference Level of Limit 802.11ax20 mode		
Freq. (MHz)	PSD (dBm)	Reference Level of Limit (dBm)
2412	2.42	-17.58
2437	3.18	-16.82
2462	1.84	-18.16

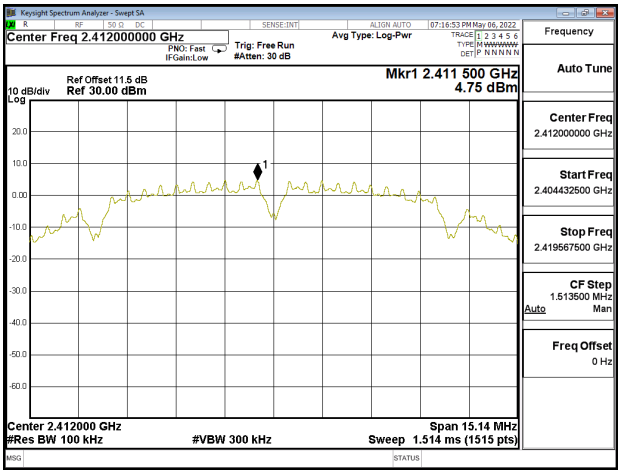
802.11ax_HE_40M Ch0

Reference Level of Limit 802.11ax40 MODE		
Freq. (MHz)	PSD (dBm)	Reference Level of Limit (dBm)
2422	-0.47	-20.47
2437	-0.94	-20.94
2452	-1.02	-21.02

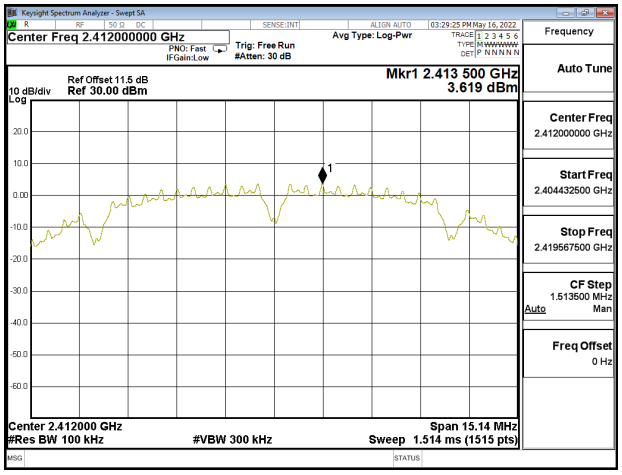
802.11ax_HE_40M Ch1

Reference Level of Limit 802.11ax40 MODE		
Freq. (MHz)	PSD (dBm)	Reference Level of Limit (dBm)
2422	-0.46	-20.46
2437	-0.03	-20.03
2452	-1.77	-21.77

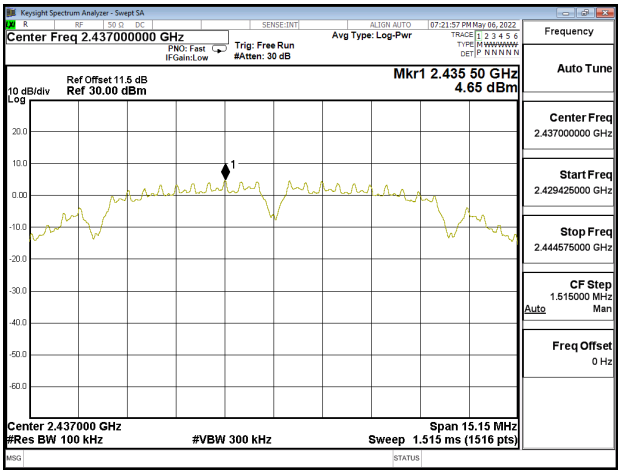
802.11b_20MHz_Chain0_2412MHz



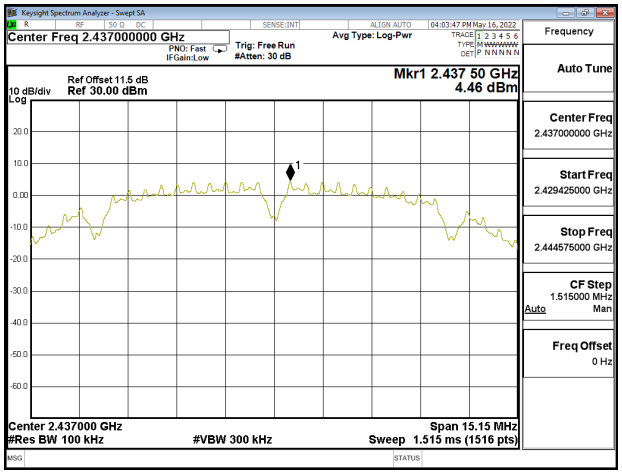
802.11b_20MHz_Chain1_2412MHz



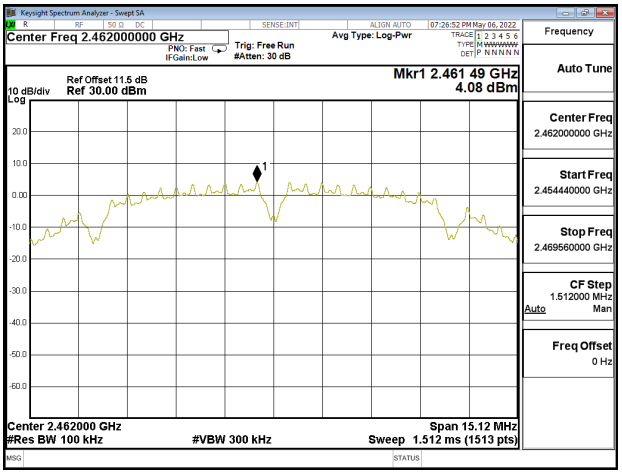
802.11b_20MHz_Chain0_2437MHz



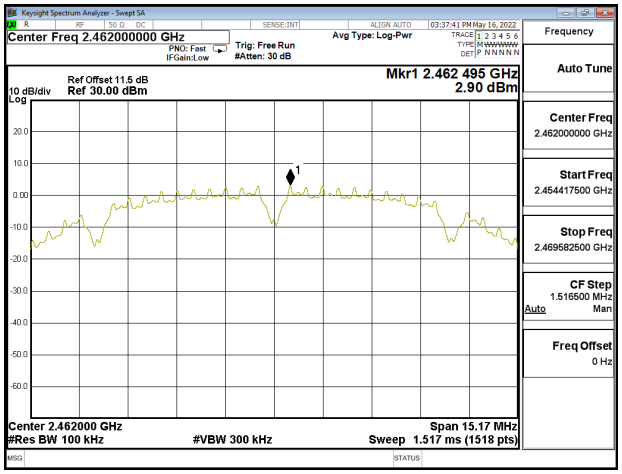
802.11b_20MHz_Chain1_2437MHz



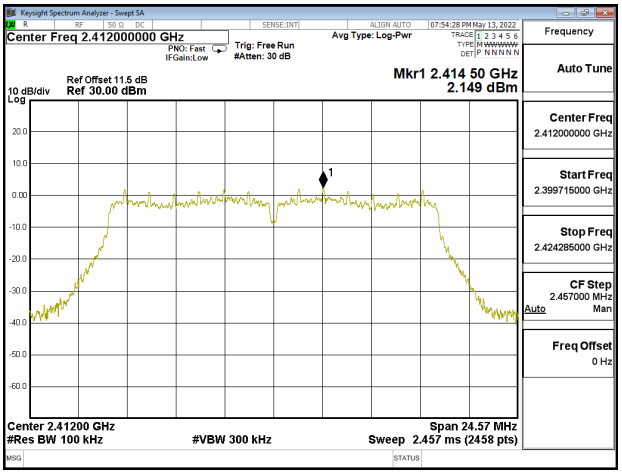
802.11b_20MHz_Chain0_2462MHz



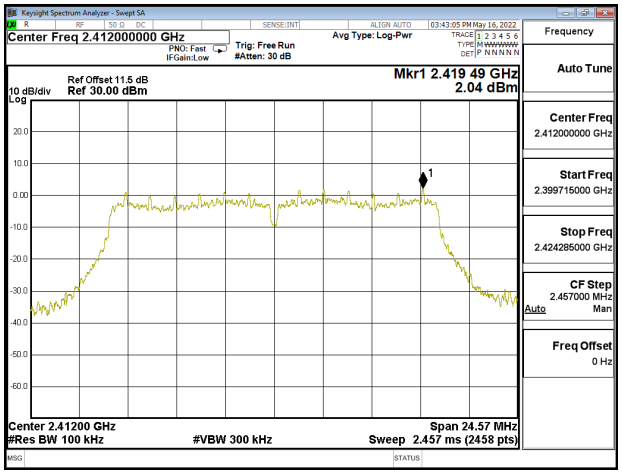
802.11b_20MHz_Chain1_2462MHz



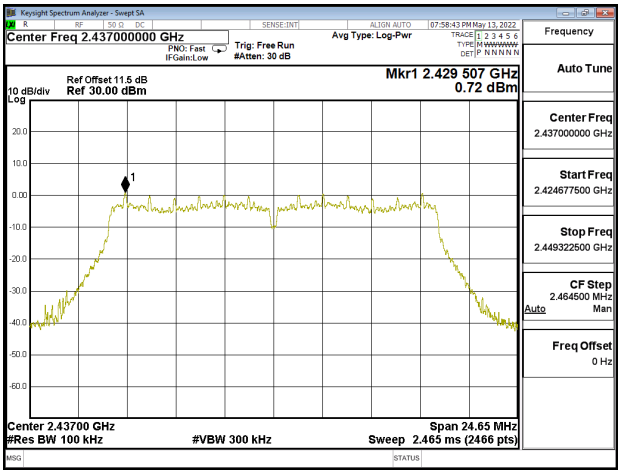
802.11g_20MHz_Chain0_2412MHz



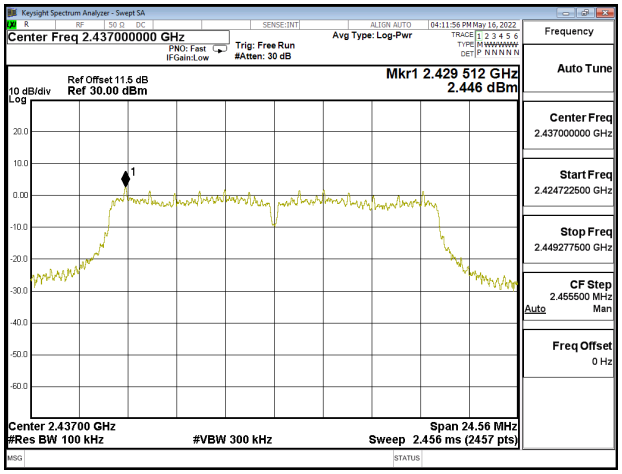
802.11g_20MHz_Chain1_2412MHz



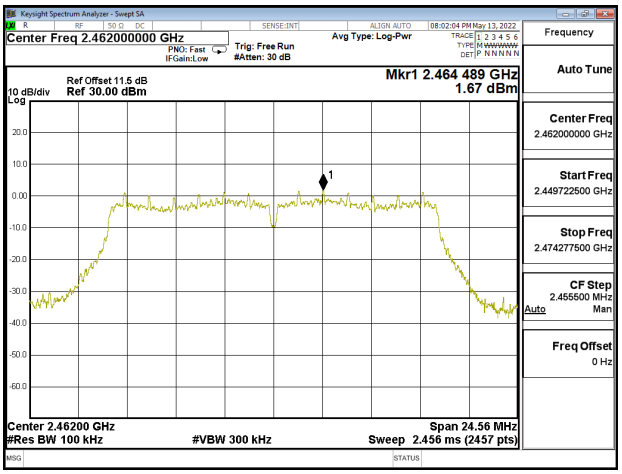
802.11g_20MHz_Chain0_2437MHz



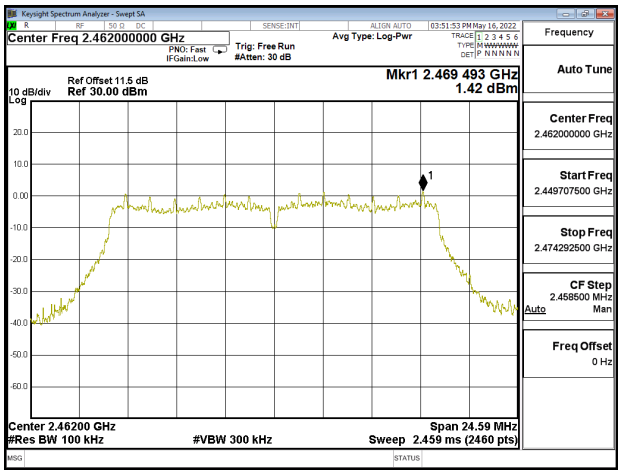
802.11g_20MHz_Chain1_2437MHz



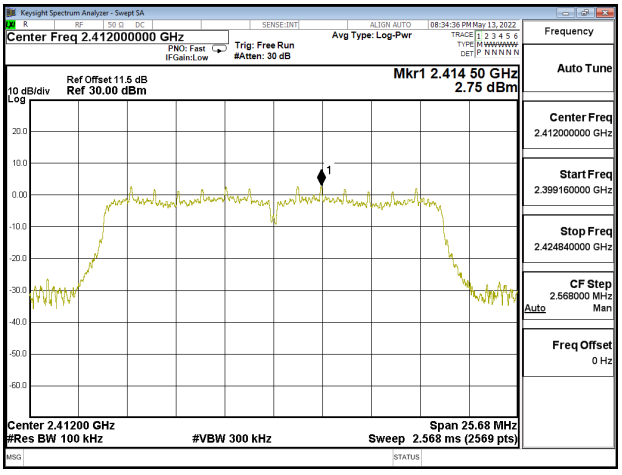
802.11g_20MHz_Chain0_2462MHz



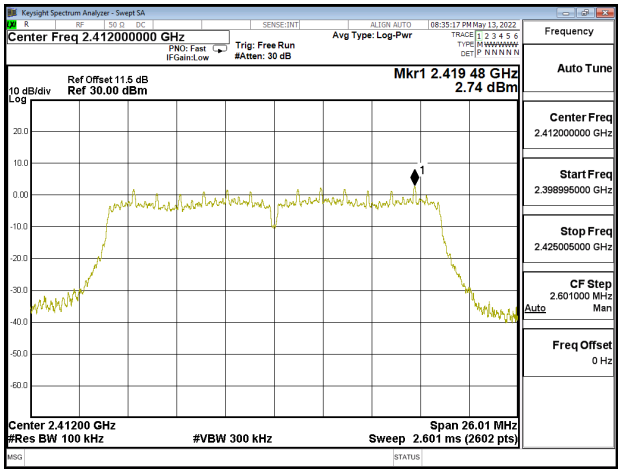
802.11g_20MHz_Chain1_2462MHz



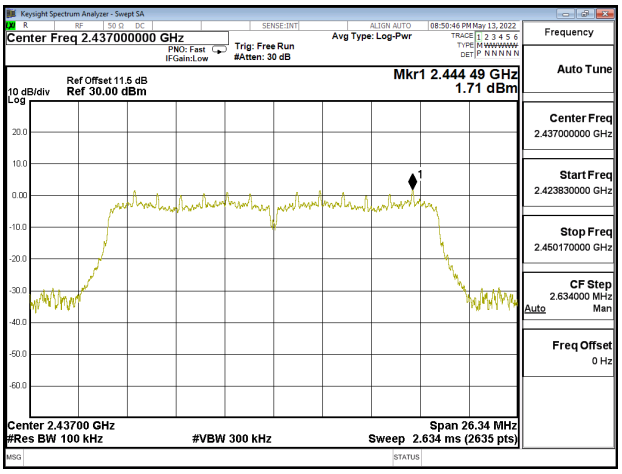
802.11n_20MHz_Chain0_2412MHz



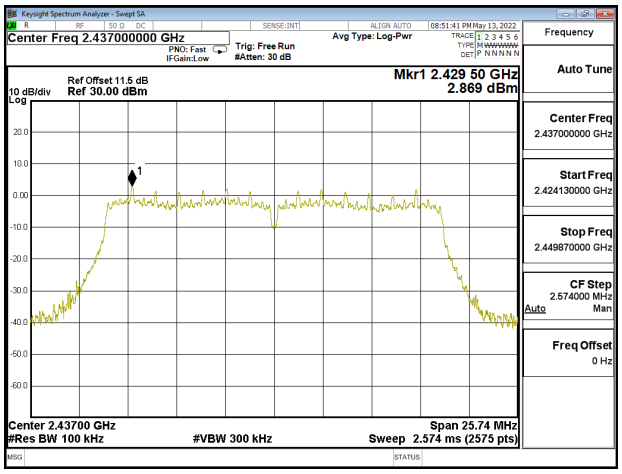
802.11n_20MHz_Chain1_2412MHz



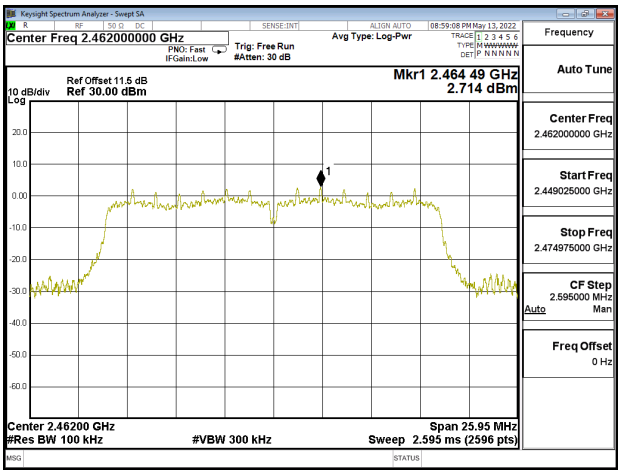
802.11n_20MHz_Chain0_2437MHz



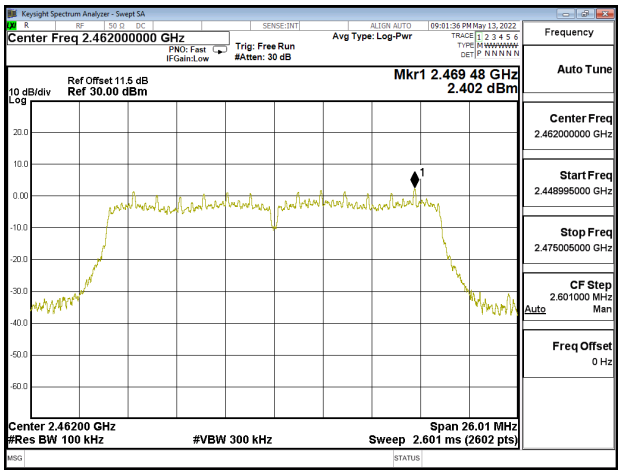
802.11n_20MHz_Chain1_2437MHz



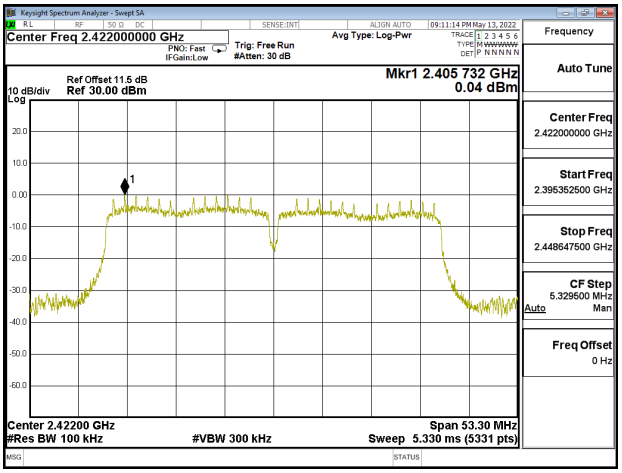
802.11n_20MHz_Chain0_2462MHz



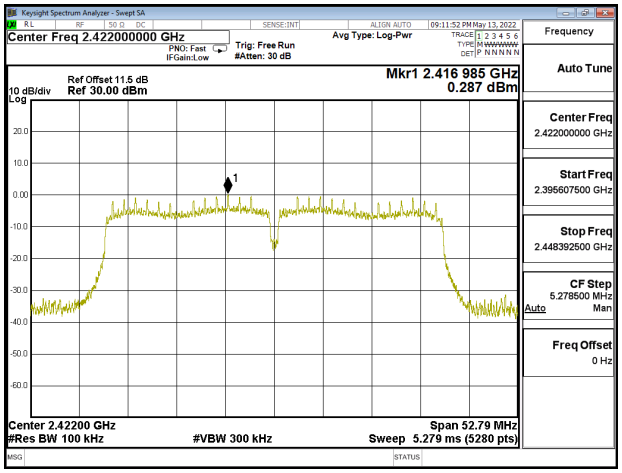
802.11n_20MHz_Chain1_2462MHz



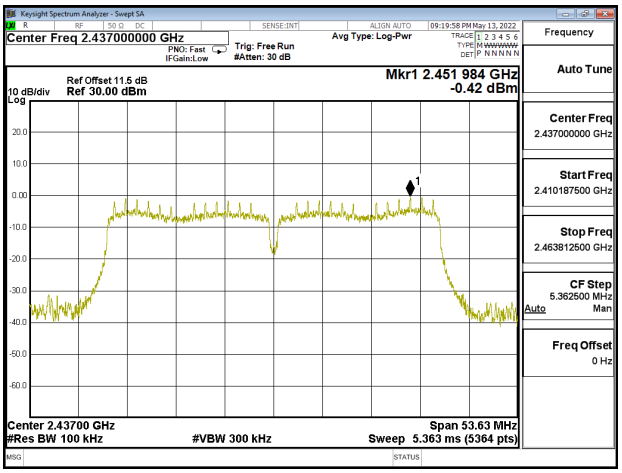
802.11n_40MHz_Chain0_2422MHz



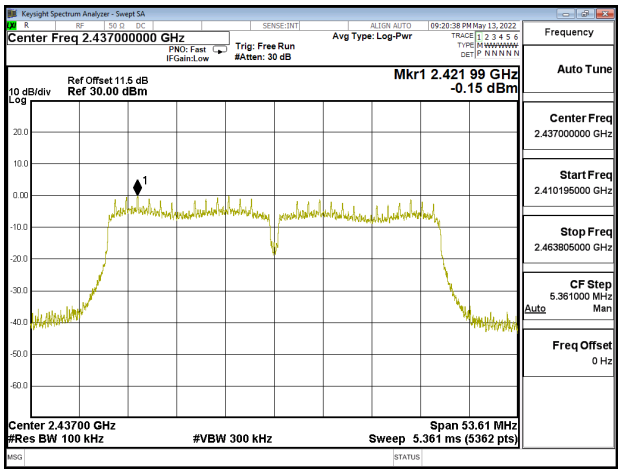
802.11n_40MHz_Chain1_2422MHz



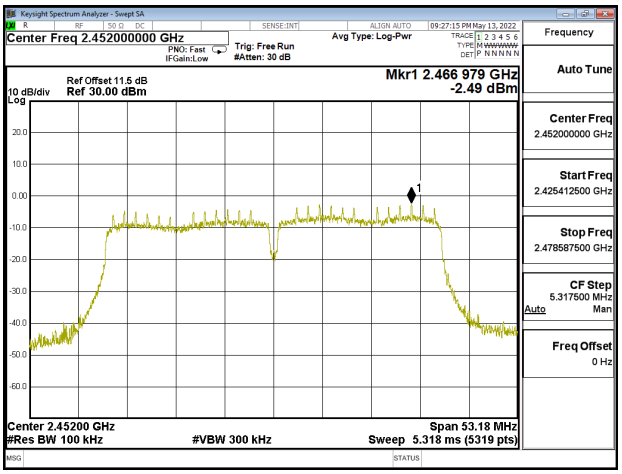
802.11n_40MHz_Chain0_2437MHz



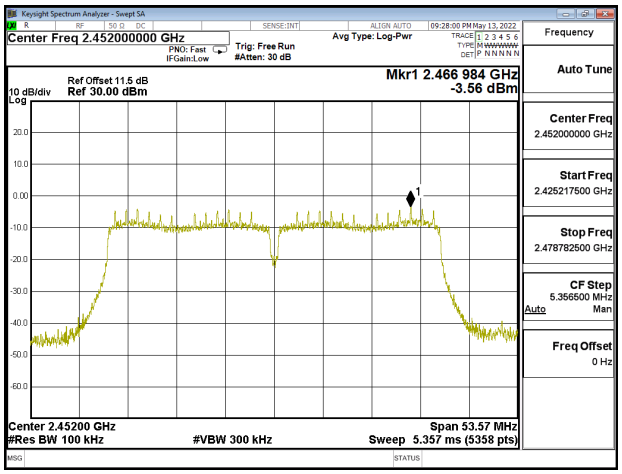
802.11n_40MHz_Chain1_2437MHz



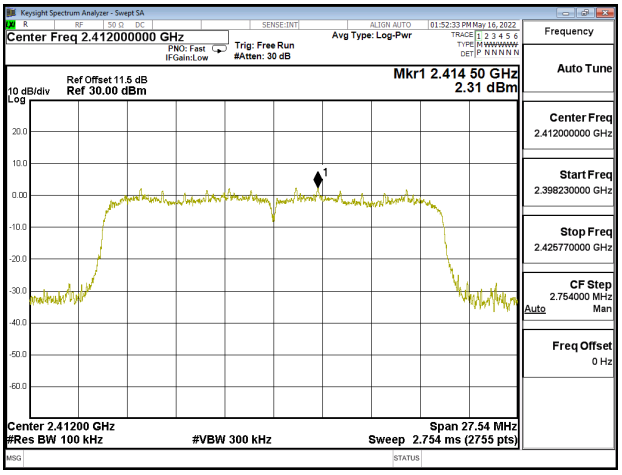
802.11n_40MHz_Chain0_2452MHz



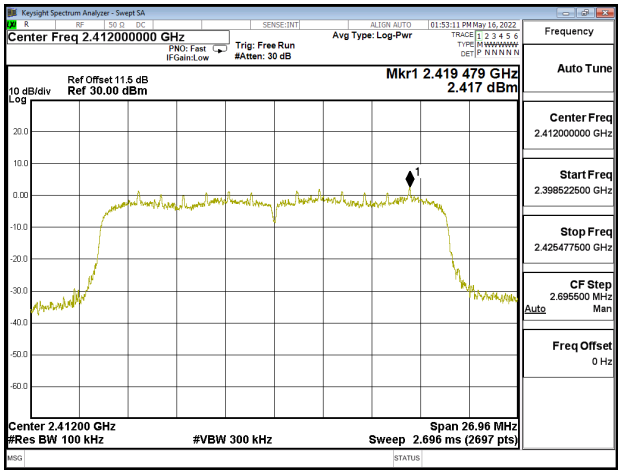
802.11n_40MHz_Chain1_2452MHz



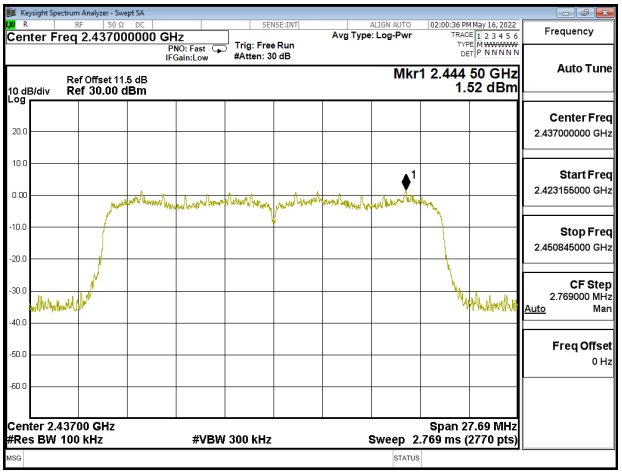
802.11ax_20MHz_Chain0_2412MHz



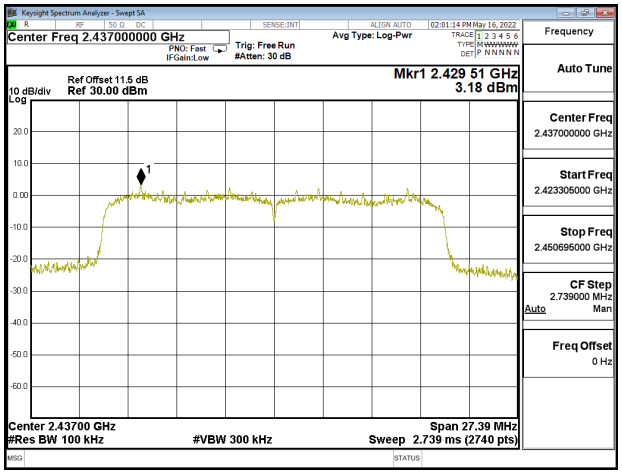
802.11ax_20MHz_Chain1_2412MHz



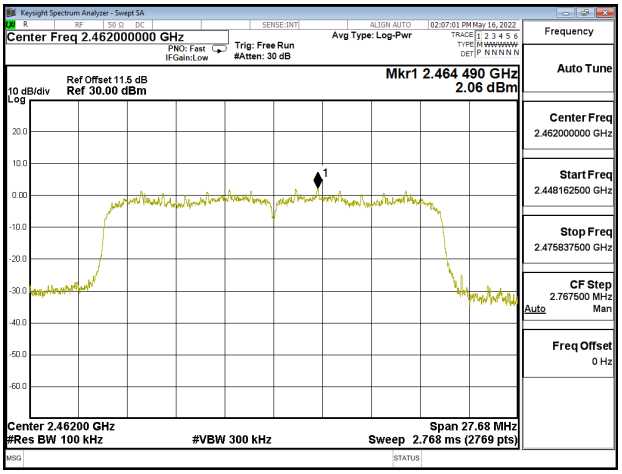
802.11ax_20MHz_Chain0_2437MHz



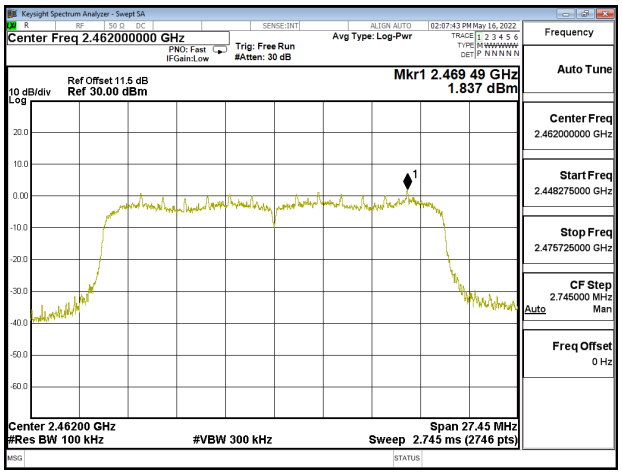
802.11ax_20MHz_Chain1_2437MHz



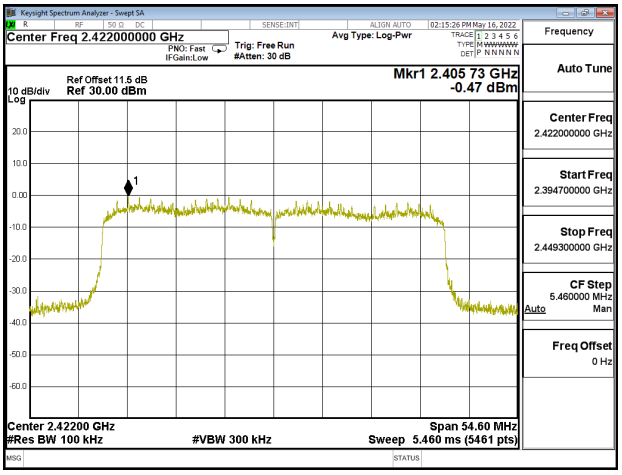
802.11ax_20MHz_Chain0_2462MHz



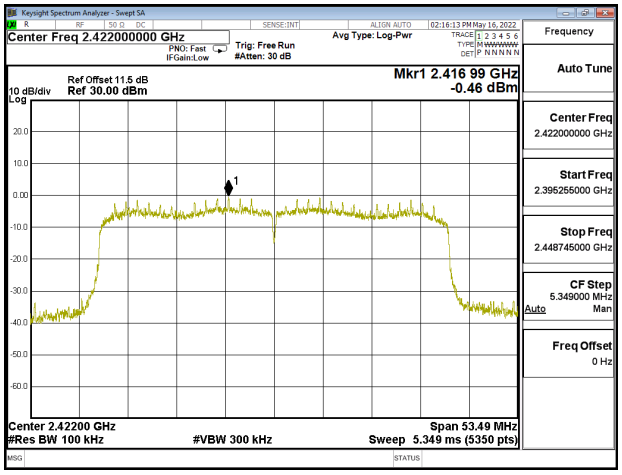
802.11ax_20MHz_Chain1_2462MHz



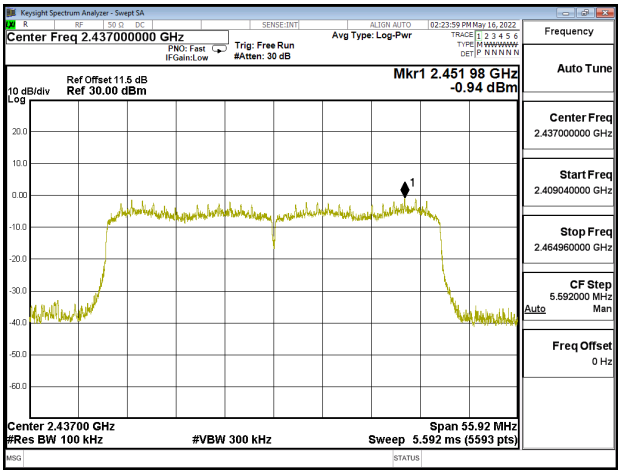
802.11ax_40MHz_Chain0_2422MHz



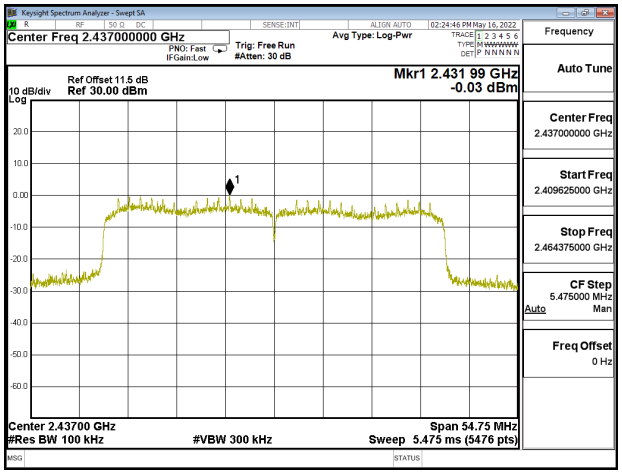
802.11ax_40MHz_Chain1_2422MHz



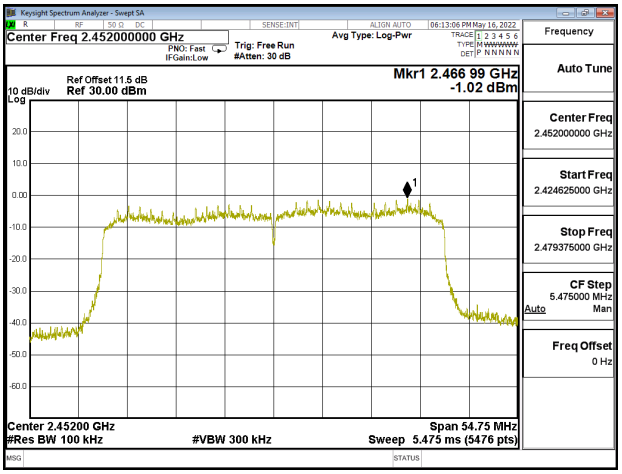
802.11ax_40MHz_Chain0_2437MHz



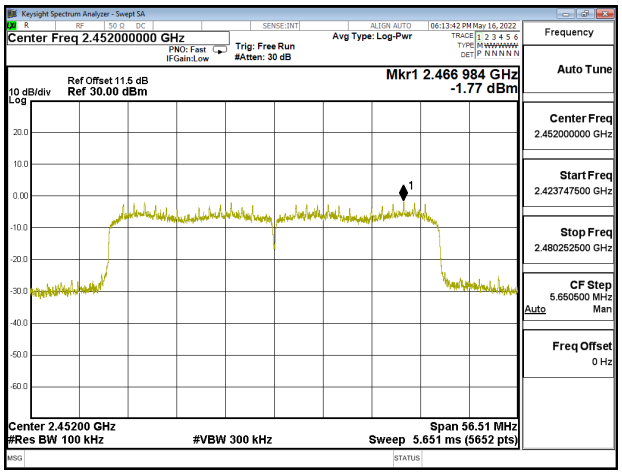
802.11ax_40MHz_Chain1_2437MHz



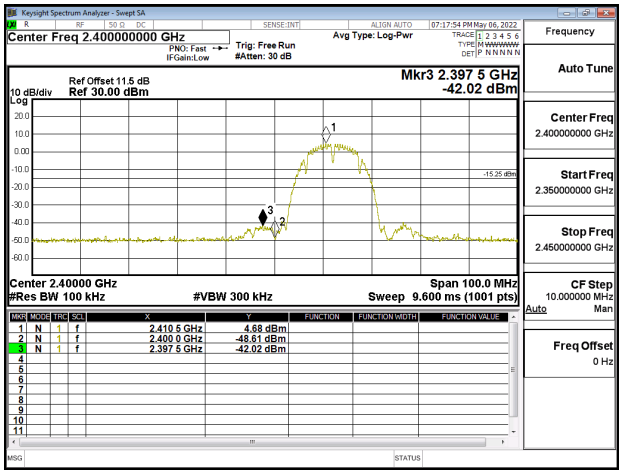
802.11ax_40MHz_Chain0_2452MHz



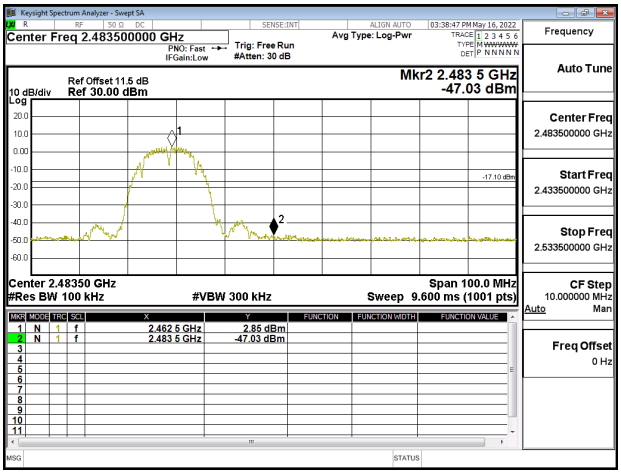
802.11ax_40MHz_Chain1_2452MHz



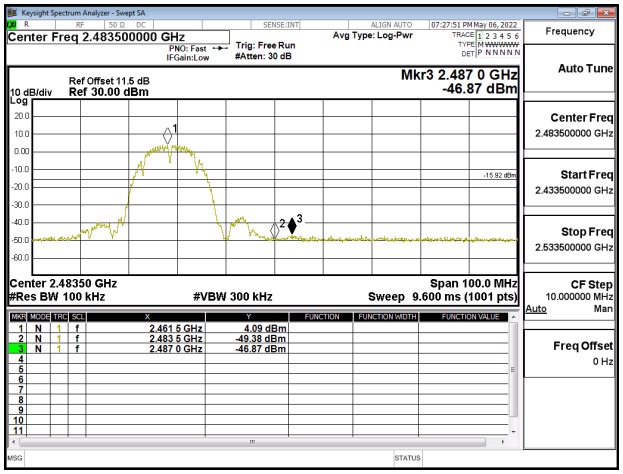
802.11b_20MHz_Chain0_2412MHz



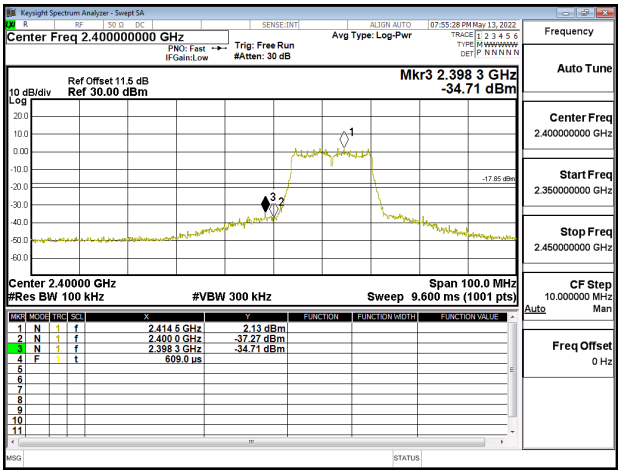
802.11b_20MHz_Chain1_2462MHz



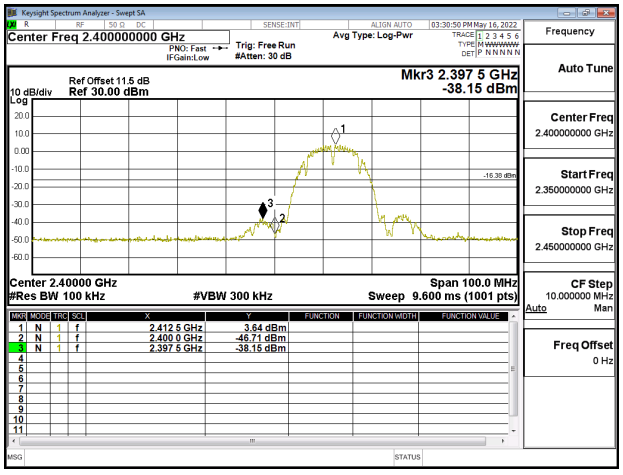
802.11b_20MHz_Chain0_2462MHz



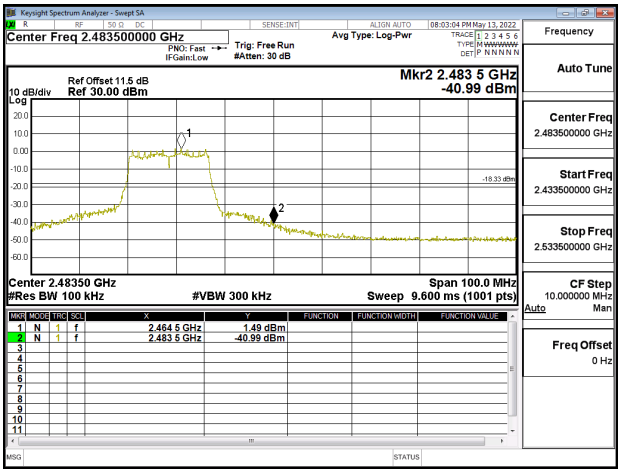
802.11g_20MHz_Chain0_2412MHz



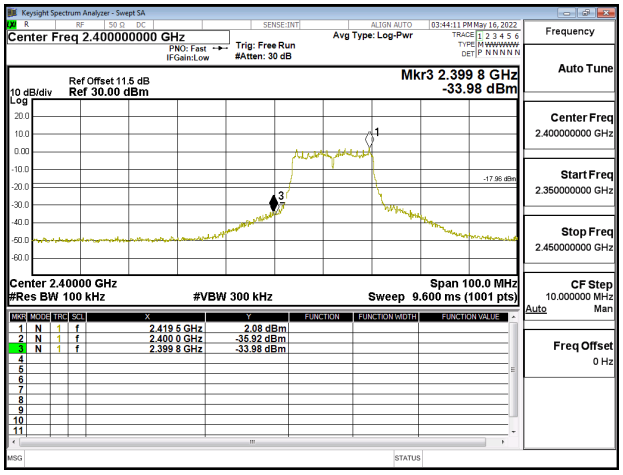
802.11b_20MHz_Chain1_2412MHz



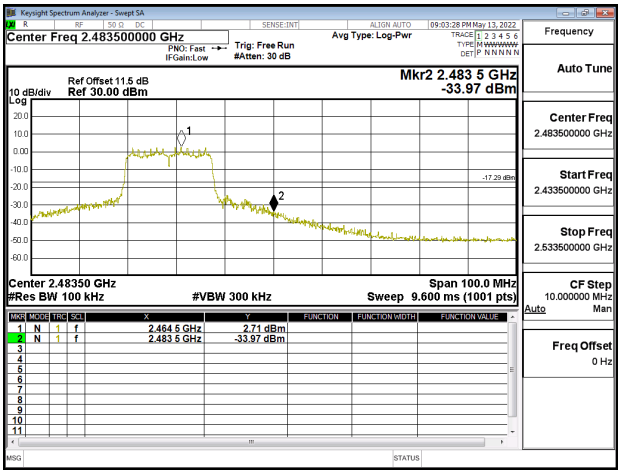
802.11g_20MHz_Chain0_2462MHz



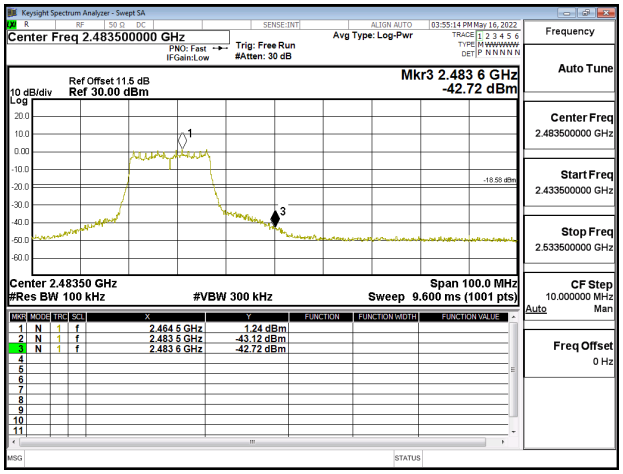
802.11g_20MHz_Chain1_2412MHz



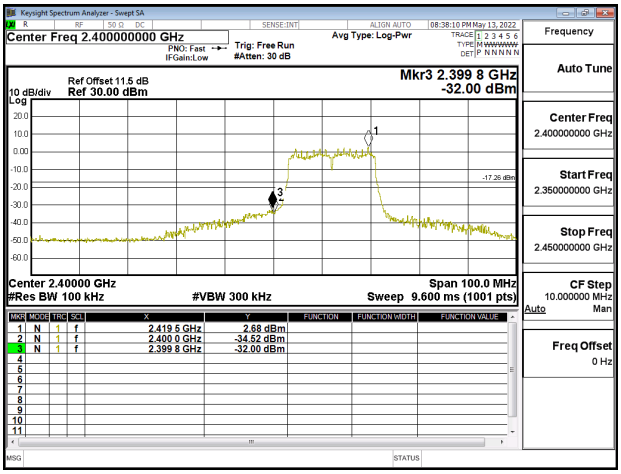
802.11n_20MHz_Chain0_2462MHz



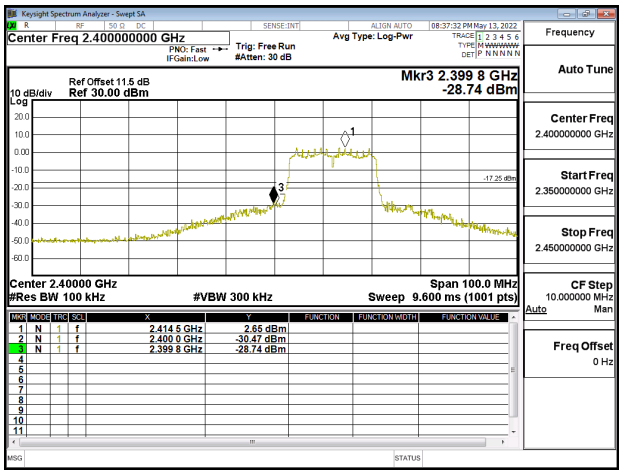
802.11g_20MHz_Chain1_2462MHz



802.11n_20MHz_Chain1_2412MHz



802.11n_20MHz_Chain0_2412MHz



802.11n_20MHz_Chain1_2462MHz