

**ELECTROMAGNETIC EMISSIONS  
COMPLIANCE REPORT**

**Applicant:** Askey Computer Corporation  
10F, No. 119, Jiankang Rd., Zhonghe Dist., New Taipei City,  
Taiwan

**Manufacturer:** Askey Computer Corporation  
10F, No. 119, Jiankang Rd., Zhonghe Dist., New Taipei City,  
Taiwan

**Product Name:** 5G NR Sub 6 WiFi 7 Router

**Brand Name:** Verizon

**Model No.:** ASK-NCM1100E

**Model Difference:** N/A

**Report Number:** TERF2310002501E2

**FCC ID** H8N-ASK-NCM1100E

**Date of EUT Received:** October 4, 2023

**Date of Test:** October 4, 2023~December 4, 2023

**Issue Date:** January 12, 2024

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.

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Revision History					
Report Number	Revision	Description	Issue Date	Revised By	Remark
TERF2310002501E2	00	Original.	December 13, 2023	Susan Lin	
TERF2310002501E2	01	Update beamforming radiated bandedge data	January 12, 2024	Susan Lin	*

**Note:**

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

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# 1 GENERAL INFORMATION

## 1.1 Product Description

Product Name:	5G NR Sub 6 WiFi 7 Router
Brand Name:	Verizon
Model No.:	ASK-NCM1100E
Model Difference:	N/A
Hardware Version:	Rev4
Firmware Version:	SDK 2.0.6
EUT Series No.:	ACC33200089
Power Supply:	12V
Test Software (Name/Version):	MT7990 QA 0.0.2.99

## 1.2 RF Specification

Mode: CDD

WLAN 2.4GHz

Wi-Fi	Frequency Range	Channels	Rated Power (dBm)	Modulation Technology
			Avg	
802.11b	2412~2462	11	29.94	DSSS
802.11g	2412~2462	11	29.99	OFDM
802.11n20	2412~2462	11	29.87	OFDM
802.11n40	2422~2452	7	29.86	OFDM
802.11be20	2412~2462	11	29.81	OFDMA
802.11be40	2422~2452	7	29.89	OFDMA
Modulation type:		CCK, DQPSK, DBPSK for DSSS		
		64QAM, 16QAM, QPSK, BPSK for OFDM		
		4096 QAM, 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 288.8Mbps		
		802.11 n_40MHz:up to 600Mbps		
		802.11 ax_20MHz:up to 573.6Mbps		
		802.11 ax_40MHz:up to 1147.2Mbps		
		802.11 be_20MHz:up to 688.2Mbps		
		802.11 be_40MHz:up to 1376.5Mbps		

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Mode: Beamforming

WLAN 2.4GHz

Wi-Fi	Frequency Range	Channels	Rated Power (dBm)	Modulation Technology
			Avg.	
802.11n20	2412~2462	11	29.65	OFDM
802.11n40	2422~2452	7	29.84	OFDM
802.11be20	2412~2462	11	29.76	OFDMA
802.11be40	2422~2452	7	29.60	OFDMA
Modulation type:		64QAM, 16QAM, QPSK, BPSK for OFDM		
		4096 QAM, 1024 QAM, 256 QAM , 64QAM, 16QAM, QPSK, BPSK for OFDMA		
Data Rate:		802.11 n_20MHz:up to 288.8Mbps		
		802.11 n_40MHz:up to 600Mbps		
		802.11 ax_20MHz:up to 573.6Mbps		
		802.11 ax_40MHz:up to 1147.2Mbps		
		802.11 be_20MHz:up to 688.2Mbps		
		802.11 be_40MHz:up to 1376.5Mbps		

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Spot Check

Mode: CDD

WLAN 2.4GHz

Wi-Fi	Frequency Range	Channels	Rated Power (dBm)	Modulation Technology
			Avg.	
802.11b	2412~2462	11	29.86	DSSS
802.11g	2412~2462	11	29.65	OFDM
802.11n20	2412~2462	11	29.84	OFDM
802.11n40	2422~2452	7	29.72	OFDM
802.11be20	2412~2462	11	29.76	OFDMA
802.11be40	2422~2452	7	29.56	OFDMA
Modulation type:		CCK, DQPSK, DBPSK for DSSS		
		64QAM, 16QAM, QPSK, BPSK for OFDM		
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 288.8Mbps		
		802.11 n_40MHz: up to 600Mbps		
		802.11 be_20MHz: up to 688.2Mbps		
		802.11 be_40MHz: up to 1376.5Mbps		

1.3 Antenna Designation

Antenna Type	Antenna No.	Freq. (MHz)	Peak Antenna Gain (dBi)	Directional Gain (dBi)
PCB	Antenna 11	2412~2462	2.66	5.81
	Antenna 12	2412~2462	4.49	5.81
	Antenna 13	2412~2462	3.49	5.81
	Antenna 14	2412~2462	3.24	5.81

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.

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### 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	
		SAC 2		
		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.

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## 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.

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## 2.4 Measurement Results Explanation Example

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

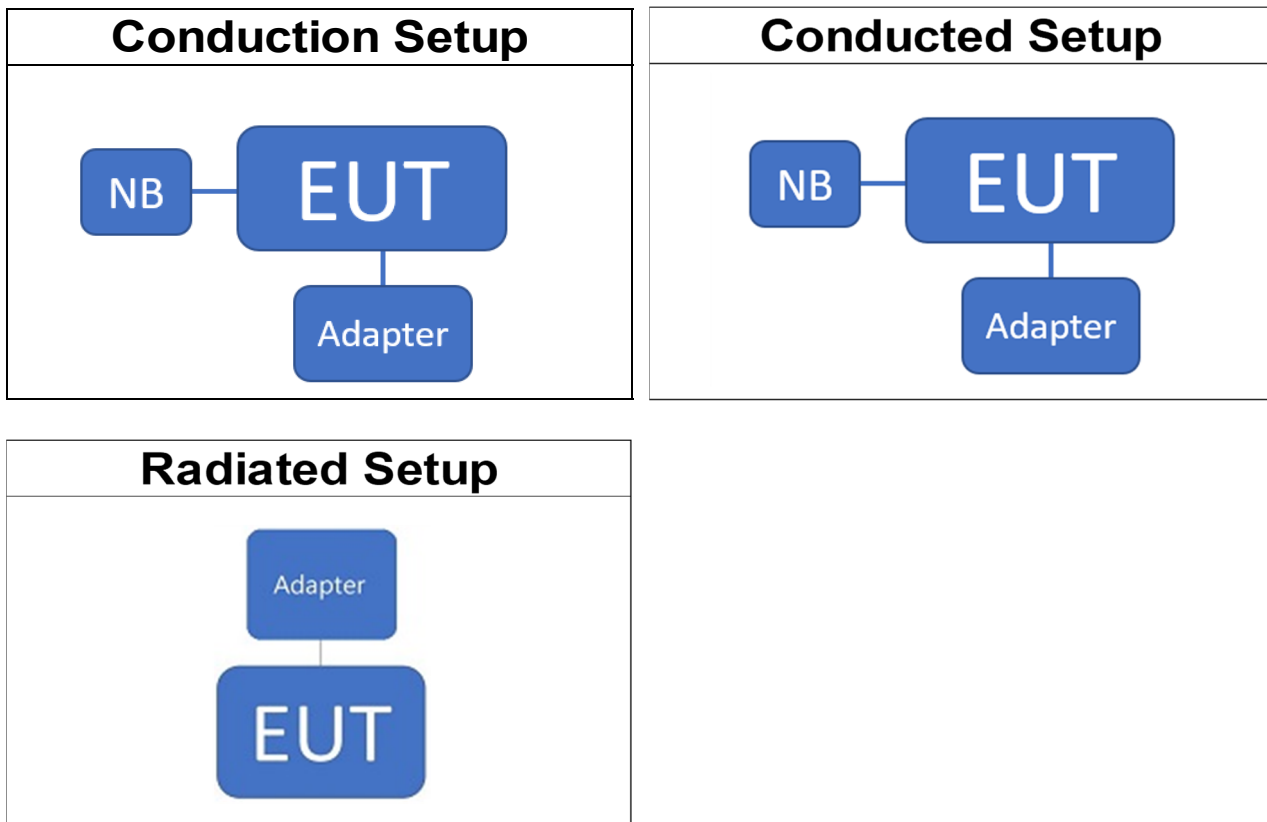
Radiated emission below 30MHz is measured in a 9m\*6m\*6m semi-anechoic chamber, the measurements correspond to those obtained at an open-field test site.

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

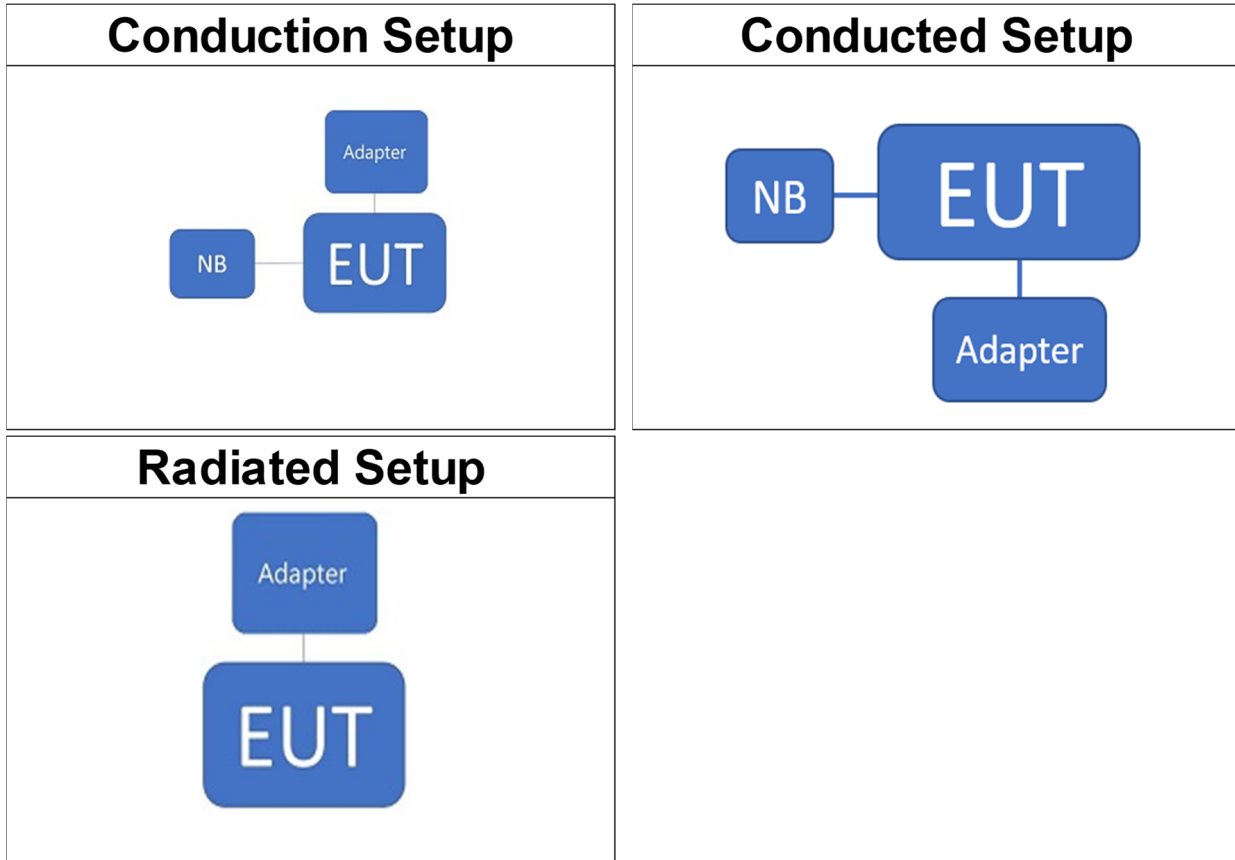


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2.6 Control Unit(s)

AC Power-Line Conducted Emission Test Site: Conduction C					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Notebook	Lenovo	T470	P0001293	N/A	N/A

Conducted Emission Test Site: Conducted F					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Notebook	Lenovo	L480	P0002332	N/A	N/A

Radiated Emission Test Site: SAC G					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Adapter	MASS POWER	S065-1B120500VU	N/A	N/A	N/A
Notebook	Lenovo	T440p	P0000665	N/A	N/A

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**Spot Check**

AC Power-Line Conducted Emission Test Site: Conduction C					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Notebook	Lenovo	L480	P0002332	N/A	N/A

Conducted Emission Test Site: Conducted F					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Notebook	Lenovo	L480	P0002332	N/A	N/A

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### 3 SUMMARY OF TEST RESULTS

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

**Note**

1. N/S Indicates whether item(s) being newly tested [N] or spot checked [S].
2. Items other than newly tested [N] are leveraged from test report TERF2308001922E2, FCC ID: H8N-ASK-NCM1100.
3. Summary of the spot check:

Frequency Bnad	Original FCC ID: H8N-ASK-NCM1100 (dBm)	Variant FCC ID: H8N-ASK-NCM1100E (dBm)	Deviation <=25%
WIFI 2.4G	29.99	29.86	-3%

Frequency	Standard Limit (CdB)	Ref max data (RdB)	Var max data (VdB)	Comparison deviation (DdB)	DdB Threshold
2412 n20	74	-2.2	-0.91	1.29	<6.81 or not exceed 6
2462 n20	54	-0.2	-1.71	-1.51	<5.71 or not exceed 6
2422 be40	54	-0.59	-1.87	-1.28	<5.7295 or not exceed 6
2452 be40	54	-0.71	-1.4	-0.69	<5.7355 or not exceed 6

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## 4 DESCRIPTION OF TEST MODES

### 4.1 Operating Frequencies

#### 2400~2483.5 MHz

20MHz		40MHz	
CH	Freq. (MHz)	CH	Freq. (MHz)
1	2412	3	2422
2	2417	4	2427
3	2422	5	2432
4	2427	6	2437
5	2432	7	2442
6	2437	8	2447
7	2442	9	2452
8	2447		
9	2452		
10	2457		
11	2462		

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#### 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 given UE is pre-scanned among below modes.

##### Mode: CDD

Modulation		Transmission Chain								Single Transmission Spatial		Multi Transmission Spatial	
v	802.11 b	v	Ch0	v	Ch1	v	Ch2	v	Ch3		1TX	v	4TX
v	802.11 g	v	Ch0	v	Ch1	v	Ch2	v	Ch3		1TX	v	4TX
v	802.11 n	v	Ch0	v	Ch1	v	Ch2	v	Ch3		1TX	v	4TX
	802.11 ac		Ch0		Ch1		Ch2		Ch3		1TX		4TX
v	802.11 ax	v	Ch0	v	Ch1	v	Ch2	v	Ch3		1TX	v	4TX
v	802.11 be	v	Ch0	v	Ch1	v	Ch2	v	Ch3		1TX	v	4TX

##### Mode: Beamforming

Modulation		Transmission Chain								Single Transmission Spatial		Multi Transmission Spatial	
	802.11 b		Ch0		Ch1		Ch2		Ch3		1TX		4TX
	802.11 g		Ch0		Ch1		Ch2		Ch3		1TX		4TX
v	802.11 n	v	Ch0	v	Ch1	v	Ch2	v	Ch3		1TX	v	4TX
	802.11 ac		Ch0		Ch1		Ch2		Ch3		1TX		4TX
v	802.11 ax	v	Ch0	v	Ch1	v	Ch2	v	Ch3		1TX	v	4TX
v	802.11 be	v	Ch0	v	Ch1	v	Ch2	v	Ch3		1TX	v	4TX

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**Spot Check**

**Mode: CDD**

Modulation		Transmission Chain								Single Transmission Spatial		Multi Transmission Spatial	
v	802.11 b	v	Ch0	v	Ch1	v	Ch2	v	Ch3		1TX	v	4TX
v	802.11 g	v	Ch0	v	Ch1	v	Ch2	v	Ch3		1TX	v	4TX
v	802.11 n	v	Ch0	v	Ch1	v	Ch2	v	Ch3		1TX	v	4TX
	802.11 ac		Ch0		Ch1		Ch2		Ch3		1TX		4TX
v	802.11 ax	v	Ch0	v	Ch1	v	Ch2	v	Ch3	v	1TX		4TX
v	802.11 be	v	Ch0	v	Ch1	v	Ch2	v	Ch3		1TX	v	4TX

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.

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Mode: CDD

Conducted					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT
802.11b	1 to 11	1,6,11	DSSS	1	4TX
802.11g	1 to 11	1,6,11	OFDM	6	4TX
802.11n (HT20)	1 to 11	1,6,11	OFDM	MCS0	4TX
802.11n (HT40)	3 to 9	3,6,9	OFDM	MCS0	4TX
802.11be (EHT20)	1 to 11	1,6,11	OFDMA	MCS0	4TX
802.11be (EHT40)	3 to 9	3,6,9	OFDMA	MCS0	4TX

TRANSMIT 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	4TX
802.11be (EHT40)	3 to 9	6	OFDMA	MCS0	4TX

TRANSMIT 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	4TX
802.11g	1 to 11	1,6,11	OFDM	6	4TX
802.11n (HT20)	1 to 11	1,6,11	OFDM	MCS0	4TX
802.11n (HT40)	3 to 9	3,6,9	OFDM	MCS0	4TX
802.11be (EHT20)	1 to 11	1,6,11	OFDMA	MCS0	4TX
802.11be (EHT40)	3 to 9	3,6,9	OFDMA	MCS0	4TX

**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.

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**Mode: Beamforming**

Conducted					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT
802.11n (HT20)	1 to 11	1,6,11	OFDM	MCS0	4TX
802.11n (HT40)	3 to 9	3,6,9	OFDM	MCS0	4TX
802.11be (EHT20)	1 to 11	1,6,11	OFDMA	MCS0	4TX
802.11be (EHT40)	3 to 9	3,6,9	OFDMA	MCS0	4TX

TRANSMIT RADIATED EMISSION TEST (BELOW 1 GHz)					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT
802.11n (HT20)	6	6	OFDM	MCS0	4TX
802.11be (EHT40)	6	6	OFDMA	MCS0	4TX

TRANSMIT RADIATED EMISSION TEST (ABOVE 1 GHz)					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT
802.11n (HT20)	1 to 11	1,6,11	OFDM	MCS0	4TX
802.11n (HT40)	3 to 9	3,6,9	OFDM	MCS0	4TX
802.11be (EHT20)	1 to 11	1,6,11	OFDMA	MCS0	4TX
802.11be (EHT40)	3 to 9	3,6,9	OFDMA	MCS0	4TX

**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.

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**Spot Check**

**Mode: CDD**

Conducted						
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	RU CONFIGURATION	DATA RATE (Mbps)	ANTENNA PORT
802.11b	1 to 11	1,6,11	DSSS	N/A	1	4TX
802.11g	1 to 11	1,6,11	OFDM	N/A	6	4TX
802.11n (HT20)	1 to 11	1,6,11	OFDM	N/A	MCS0	4TX
802.11n (HT40)	3 to 9	3,6,9	OFDM	N/A	MCS0	4TX
802.11be (EHT20)	1 to 11	1,6,11	OFDMA	FULL RU	MCS0	4TX
802.11be (EHT40)	3 to 9	3,6,9	OFDMA	FULL RU	MCS0	4TX

TRANSMIT RADIATED EMISSION TEST (ABOVE 1 GHz)						
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	RU CONFIGURATION	DATA RATE (Mbps)	ANTENNA PORT
802.11b	1 to 11	1	DSSS	N/A	1	4TX
802.11g	1 to 11	1	OFDM	N/A	6	4TX
802.11n_HT20	1 to 11	1	OFDM	N/A	MCS0	4TX
802.11n_HT40	3 to 9	6	OFDM	N/A	MCS0	4TX
802.11be_EHT20	1 to 11	1	OFDMA	FULL RU	MCS0	4TX
802.11be_EHT40	3 to 9	9	OFDMA	FULL RU	MCS0	4TX

**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.

**Mode: Beamforming**

TRANSMIT RADIATED EMISSION TEST (ABOVE 1 GHz)						
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	RU CONFIGURATION	DATA RATE (Mbps)	ANTENNA PORT
802.11n_HT20	1 to 11	1,11	OFDM	N/A	MCS0	4TX
802.11be_EHT40	3 to 9	3,9	OFDMA	FULL RU	MCS0	4TX

**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.

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## 5 MEASUREMENT UNCERTAINTY

Test Items	Uncertainty
AC Power Line Conducted Emission	+/- 2.32 dB
Output Power measurement	+/- 1 dB
Emission Bandwidth	+/- 1.53 Hz
Undesignable radiated emission measurement	+/- 1.68 dB
Peak Power Density	+/- 2.16 dB
Temperature	+/- 0.7 °C
Humidity	+/- 3 %
DC / AC Power Source	+/- 1 %

Radiated Spurious Emission Measurement Uncertainty			
Polarization: Vertical	+/-	2.8 dB	9kHz~30MHz
	+/-	4.82 dB	30MHz - 1000MHz
	+/-	4.37 dB	1GHz - 18GHz
	+/-	4.21 dB	18GHz - 40GHz
Polarization: Horizontal	+/-	2.8 dB	9kHz~30MHz
	+/-	4.54 dB	30MHz - 1000MHz
	+/-	4.37 dB	1GHz - 18GHz
	+/-	4.21 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.

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## 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	974	06/19/2023	06/18/2024
EMI Test Receiver	R&S	ESCI	101342	04/24/2023	04/23/2024
Coaxial Cable	EC Lab	RF-HY-CAB-250	RF-HY-CAB-250-01	03/27/2023	03/26/2024
Pulse Limiter	EC Lab	VTSD 9561F-N	485	03/27/2023	03/26/2024
Test Software	audix	e3	E3 20923 SGS Ver.9 ( C )	N.C.R	N.C.R

### Spot Check

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	974	06/19/2023	06/18/2024
EMI Test Receiver	R&S	ESCI	101342	04/24/2023	04/23/2024
Coaxial Cable	EC Lab	RF-HY-CAB-250	RF-HY-CAB-250-01	03/27/2023	03/26/2024
Pulse Limiter	EC Lab	VTSD 9561F-N	485	03/27/2023	03/26/2024
Test Software	audix	e3	E3 20923 SGS Ver.9 ( C )	N.C.R	N.C.R

### 6.2 Conducted Measurement

Conducted Emission Test Site: Conducted F					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	KEYSIGHT	N9010B	MY59071574	06/29/2023	06/28/2024
Power Meter	Anritsu	ML2496A	1326001	08/22/2023	08/21/2024
Power Sensor	Anritsu	MA2411B	1315048	08/22/2023	08/21/2024
Power Sensor	Anritsu	MA2411B	1315049	08/22/2023	08/21/2024
Power Meter	Anritsu	ML2496A	2138005	09/25/2023	09/24/2024
Power Sensor	Anritsu	MA2411B	1911395	09/25/2023	09/24/2024
Power Sensor	Anritsu	MA2411B	1911396	09/25/2023	09/24/2024
Test Software	SGS Taiwan	Radio Test Software	Ver.21	N.C.R	N.C.R
Attenuator	Marvelous	MVE2213-10	RF06	11/16/2022	11/15/2023
Attenuator	Woken	WATT-218FS-10	RF16	11/16/2022	11/15/2023
Attenuator	Woken	WATT-218FS-10	RF22	11/16/2022	11/15/2023
Attenuator	Woken	WATT-218FS-10	RF23	11/16/2022	11/15/2023
DC Block	PASTERNAK	PE8210	RF153	11/16/2022	11/15/2023
Coaxial Cables	Woken	00100A1F2A196C	RF53	11/16/2022	11/15/2023

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**Spot Check**

Conducted Emission Test Site: Conducted F					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	KEYSIGHT	N9010B	MY59071574	06/29/2023	06/28/2024
Power Meter	Anritsu	ML2496A	1804002	04/26/2023	04/25/2024
Power Sensor	Anritsu	MA2411B	1726105	04/26/2023	04/25/2024
Power Sensor	Anritsu	MA2411B	1726106	04/26/2023	04/25/2024
Power Meter	Anritsu	ML2496A	1326001	08/22/2023	08/21/2024
Power Sensor	Anritsu	MA2411B	1315048	08/22/2023	08/21/2024
Power Sensor	Anritsu	MA2411B	1315049	08/22/2023	08/21/2024
Test Software	SGS Taiwan	Radio Test Software	Ver.21	N.C.R	N.C.R
Attenuator	Marvelous	MVE2213-10	RF06	11/15/2023	11/14/2024
Attenuator	Marvelous	MVE2213-10	RF12	11/15/2023	11/14/2024
Attenuator	Woken	WATT-218FS-10	RF22	11/15/2023	11/14/2024
Attenuator	Woken	WATT-218FS-10	RF23	11/15/2023	11/14/2024
DC Block	PASTERNAK	PE8210	RF153	11/15/2023	11/14/2024

**6.3 Radiated Measurement**

Radiated Emission Test Site:					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Broadband Antenna	SCHWARZBECK	VULB 9168	1206	01/17/2023	01/16/2024
Horn Antenna	Schwarzbeck	BBHA9170	184	12/30/2022	12/29/2023
Horn Antenna	Schwarzbeck	BBHA9170	185	08/21/2023	08/20/2024
Horn Antenna	RF SPIN	DRH18-E	210105A18E	04/18/2023	04/17/2024
Loop Antenna	ETS.LINDGREN	6502	14303	05/23/2023	05/22/2024
3m Site NSA	SGS	966 chamber G	N/A	03/30/2023	03/29/2024
Spectrum Analyzer	KEYSIGHT	N9010A	MY51440113	07/17/2023	07/16/2024
Pre-Amplifier	EMC Instruments	EMC330N	980781	03/15/2023	03/14/2024
Pre-Amplifier	EMC Instruments	EMC118A45SE	980815	03/15/2023	03/14/2024
Coaxial Cable	EMC Instruments	EMCCFD400-NM-NM-8000-5000-2000	210216、 210217、210218	03/15/2023	03/14/2024
Coaxial Cable	EMC Instruments	EMC104-SM-SM-8000-5000-5000	210219、 210220、210221	03/15/2023	03/14/2024

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**Spot Check**

Radiated Emission Test Site: SAC G					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Horn Antenna	Schwarzbeck	BBHA9170	184	12/30/2022	12/29/2023
Horn Antenna	RF SPIN	DRH18-E	210105A18E	04/18/2023	04/17/2024
3m Site NSA	SGS	966 chamber G	N/A	03/30/2023	03/29/2024
Spectrum Analyzer	KEYSIGHT	N9010A	MY51440113	07/17/2023	07/16/2024
Pre-Amplifier	EMC Instruments	EMC118A45SE	980815	03/15/2023	03/14/2024
Pre-Amplifier	EMC Instruments	EMC184945SEE	980938	11/15/2023	11/14/2024
Coaxial Cable	EMC Instruments	EMC104-SM-SM-8000-5000-5000	210219 、 210220 、210221	03/15/2023	03/14/2024

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

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## 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

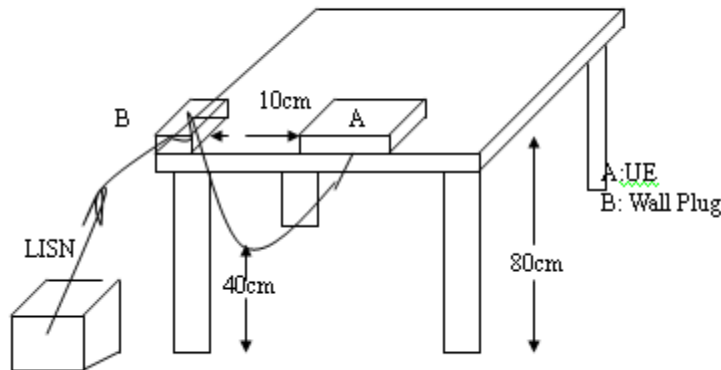
Note

- The lower limit shall apply at the transition frequencies
- The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

### 7.2 EUT Setup:

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

### 7.3 Test Setup



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## 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 closest to the limit.

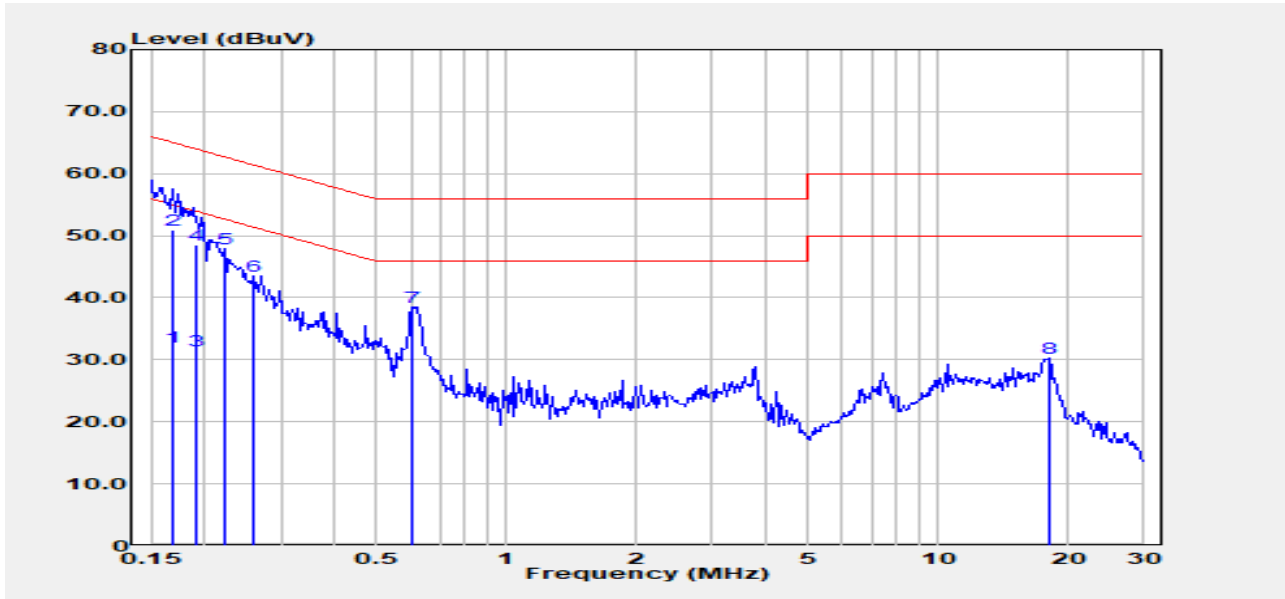
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### AC POWER LINE CONDUCTED EMISSION TEST DATA

Report Number	:TERF2308001922E2	Test Site	:Conduction C
Test Mode	:2.4G	Test Date	:2023-10-11
Power	:120V60Hz	Temp./Humi.	:22.5°C/54%
Probe	:L1	Engineer	:Temo Chen



Freq. MHz	Detector Mode	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V	Limit dB $\mu$ V	Margin dB
0.168	Average	21.90	10.28	32.18	55.08	-22.90
0.168	QP	40.60	10.28	50.88	65.08	-14.20
0.190	Average	21.20	10.28	31.48	54.03	-22.55
0.190	QP	38.20	10.28	48.48	64.03	-15.55
0.222	Peak	37.71	10.28	47.99	62.76	-14.77
0.260	Peak	33.27	10.29	43.56	61.42	-17.85
0.604	Peak	28.24	10.33	38.57	56.00	-17.43
18.025	Peak	19.46	10.77	30.24	60.00	-29.76

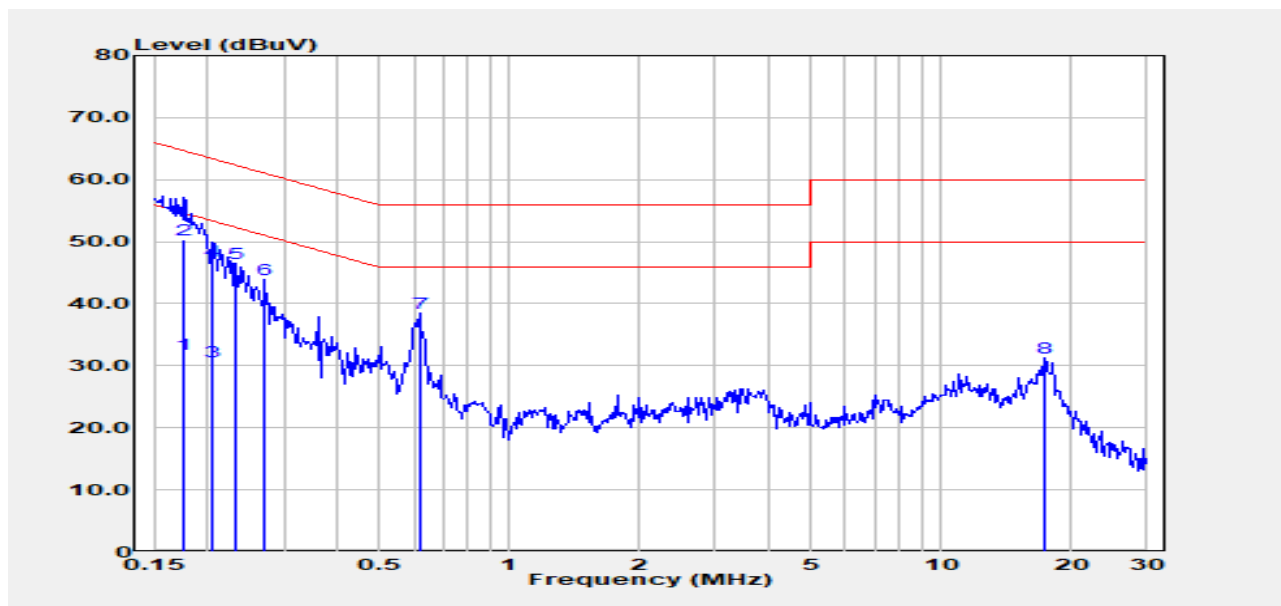
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Report Number :TERF2308001922E2  
 Test Mode :2.4G  
 Power :120V60Hz  
 Probe :N

Test Site :Conduction C  
 Test Date :2023-10-11  
 Temp./Humi. :22.5°C/54%  
 Engineer :Temo Chen



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V	Limit dB $\mu$ V	Margin dB
0.175	Average	21.20	10.65	31.85	54.73	-22.88
0.175	QP	39.60	10.65	50.25	64.73	-14.48
0.205	Average	20.00	10.65	30.65	53.39	-22.74
0.205	QP	36.20	10.65	46.85	63.39	-16.54
0.233	Peak	35.87	10.64	46.51	62.33	-15.82
0.272	Peak	33.32	10.63	43.95	61.06	-17.11
0.619	Peak	27.96	10.62	38.58	56.00	-17.42
17.276	Peak	20.10	11.12	31.22	60.00	-28.78

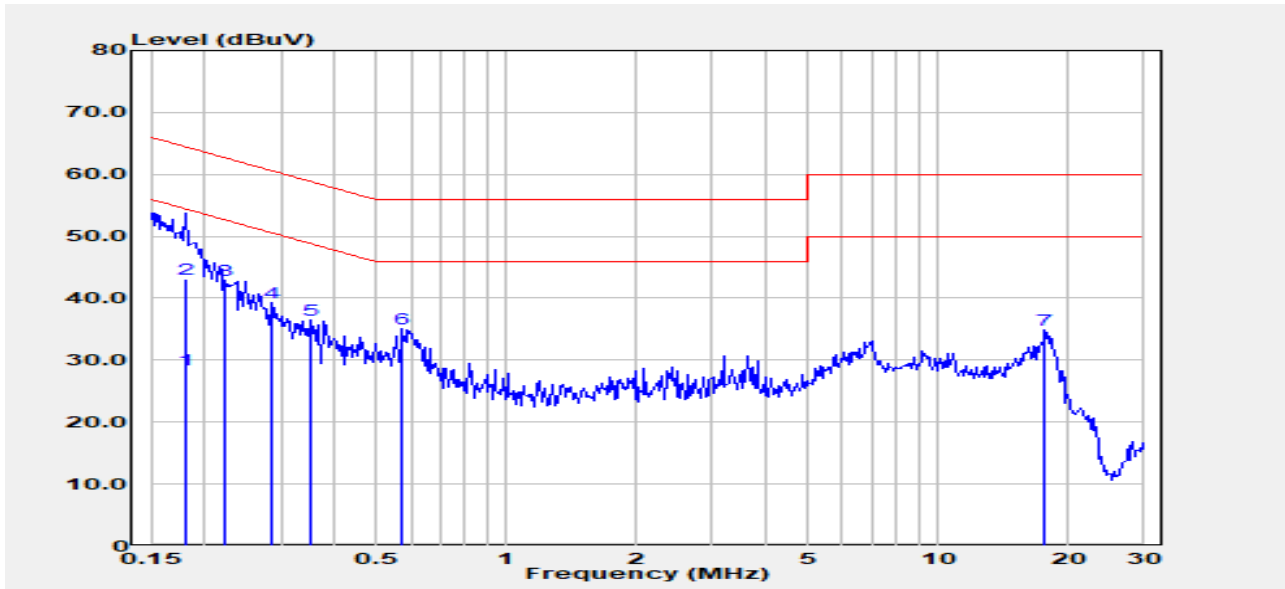
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### Spot Check

Report Number	:TERF2310002501E2	Test Site	:Conduction C
Test Mode	:2.4G	Test Date	:2023-12-04
Power	:120/60Hz	Temp./Humi.	:22.6/70
Probe	:L1	Engineer	:Temo Chen



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV	Limit dBuV	Margin dB
0.181	Average	18.10	10.28	28.38	54.45	-26.07
0.181	QP	32.90	10.28	43.18	64.45	-21.27
0.224	Peak	32.53	10.28	42.81	62.69	-19.87
0.286	Peak	29.07	10.29	39.37	60.64	-21.27
0.351	Peak	26.19	10.30	36.49	58.95	-22.45
0.574	Peak	24.78	10.32	35.10	56.00	-20.90
17.721	Peak	24.10	10.77	34.87	60.00	-25.13

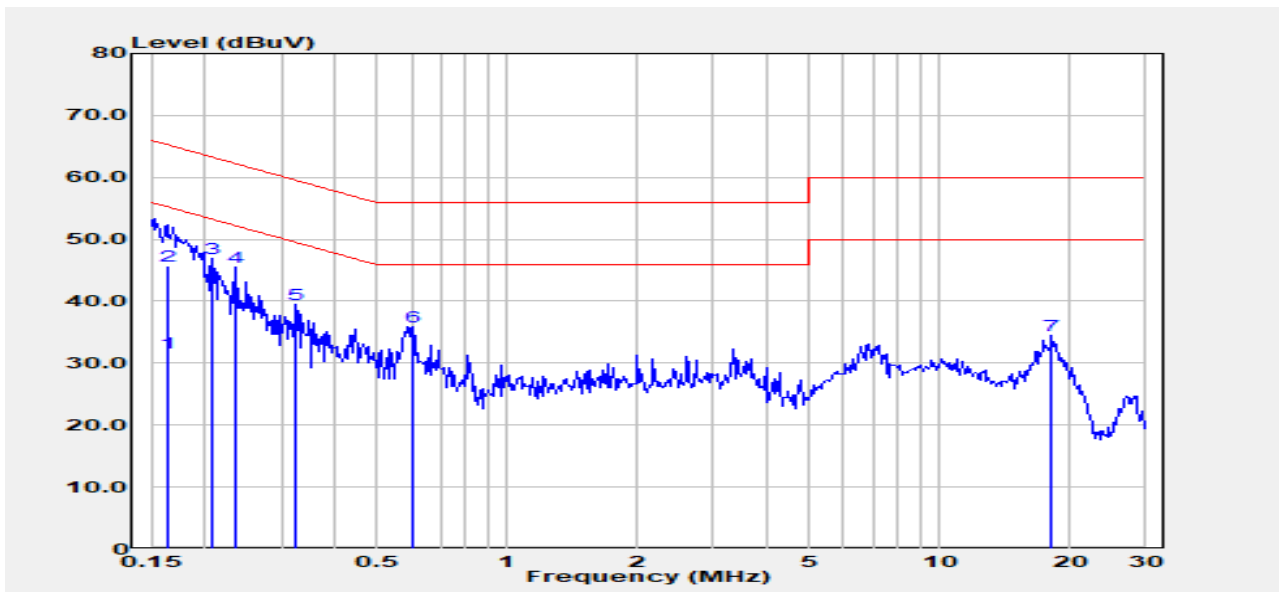
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SGS Taiwan Ltd. No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號

Report Number	:TERF2310002501E2	Test Site	:Conduction C
Test Mode	:2.4G	Test Date	:2023-12-04
Power	:120/60Hz	Temp./Humi.	:22.6/70
Probe	:N	Engineer	:Temo Chen



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV	Limit dBuV	Margin dB
0.163	Average	21.30	10.29	31.59	55.29	-23.71
0.163	QP	35.50	10.29	45.79	65.29	-19.51
0.207	Peak	36.59	10.28	46.88	63.32	-16.44
0.235	Peak	35.31	10.28	45.59	62.26	-16.67
0.325	Peak	29.25	10.29	39.54	59.58	-20.05
0.604	Peak	25.52	10.31	35.84	56.00	-20.16
18.178	Peak	23.71	10.77	34.48	60.00	-25.52

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## 8 OUTPUT POWER MEASUREMENT

### 8.1 Standard Applicable

#### 8.1.1 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.

#### 8.1.2 FCC

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 from 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.

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

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

$g_{j,k} = 10^{G_k/20}$  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.

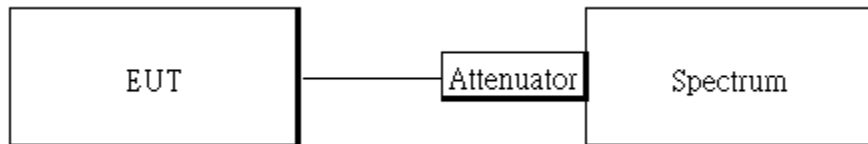
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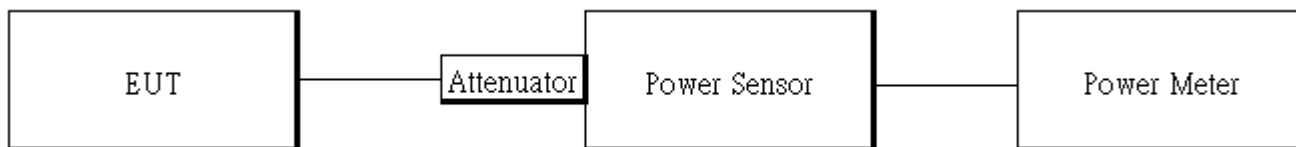
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## 8.2 Test Setup

### 8.2.1 Duty Cycle



### 8.2.2 Output Power:



## 8.3 Measurement Procedure

### 8.3.1 Duty Cycle:

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

### 8.3.2 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 and C63.10 section 11.9.1 for Maximum peak conducted output power or section 11.9.2 Maximum conducted (average) output power
3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter or spectrum analyzer

#### 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.**

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## 8.4 Measurement Result

### 8.4.1 Duty Cycle:

Mode: CDD

	Duty Cycle (%) = Ton / (Ton+Toff)	Duty Factor (dB) =10*log ( 1/Duty Cycle )	1/T (kHz)	VBW setting (kHz)
802.11b	98.26	0.08	0.23	0.01
802.11g	98.13	0.08	0.37	0.01
802.11n_20	98.75	0.05	0.24	0.01
802.11n_40	98.75	0.05	0.24	0.01
802.11be_20	98.73	0.06	0.25	0.01
802.11be_40	98.73	0.06	0.25	0.01

Mode: Beamforming

	Duty Cycle (%) = Ton / (Ton+Toff)	Duty Factor (dB) =10*log ( 1/Duty Cycle )	1/T (kHz)	VBW setting (kHz)
802.11n_20	98.97	0.04	0.20	0.01
802.11n_40	98.25	0.08	0.41	0.01
802.11be_20	98.66	0.06	0.26	0.01
802.11be_40	97.78	0.10	0.52	1.00

### Spot Check

Mode: CDD

	Duty Cycle (%) = Ton / (Ton+Toff)	Duty Factor (dB) =10*log ( 1/Duty Cycle )	1/T (kHz)	VBW setting (kHz)
802.11b	98.26	0.08	0.23	0.01
802.11g	98.13	0.08	0.37	0.01
802.11n_20	98.77	0.05	0.24	0.01
802.11n_40	98.77	0.05	0.24	0.01
802.11be_20	98.73	0.06	0.25	0.01
802.11be_40	98.51	0.07	0.25	0.01

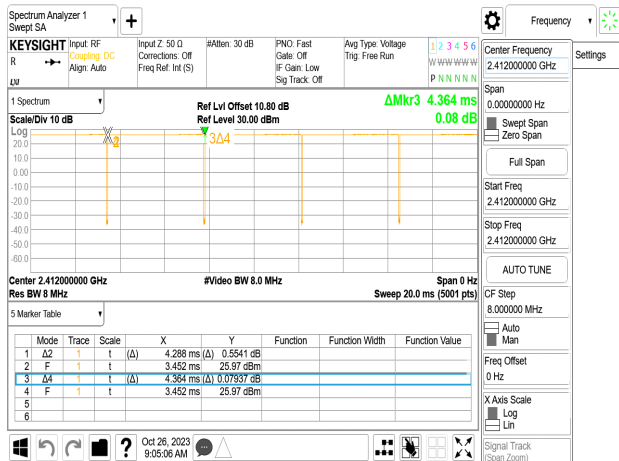
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### 8.4.2 Duty Cycle test plots

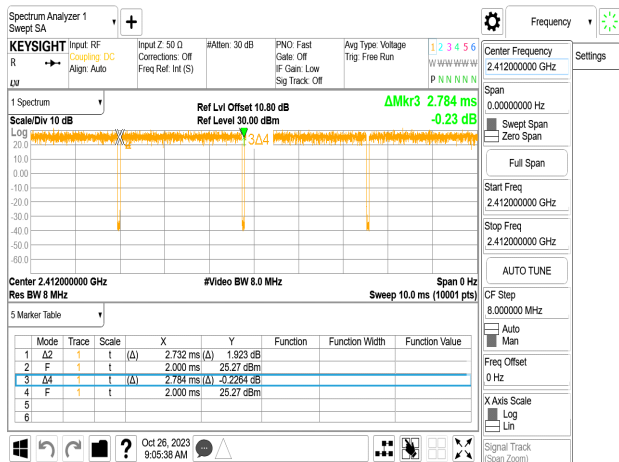
CDD\_802.11b\_20MHz\_Chain0\_2412MHz



802.11n\_40MHz\_Chain0\_2422MHz



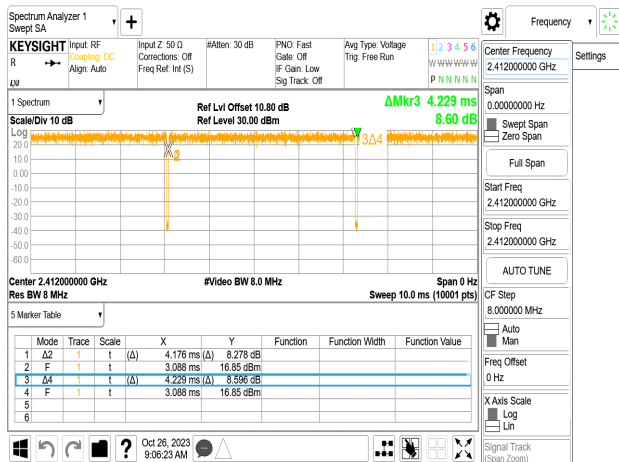
802.11g\_20MHz\_Chain0\_2412MHz



802.11be\_20MHz\_Chain0\_2412MHz



802.11n\_20MHz\_Chain0\_2412MHz



802.11be\_40MHz\_Chain0\_2422MHz



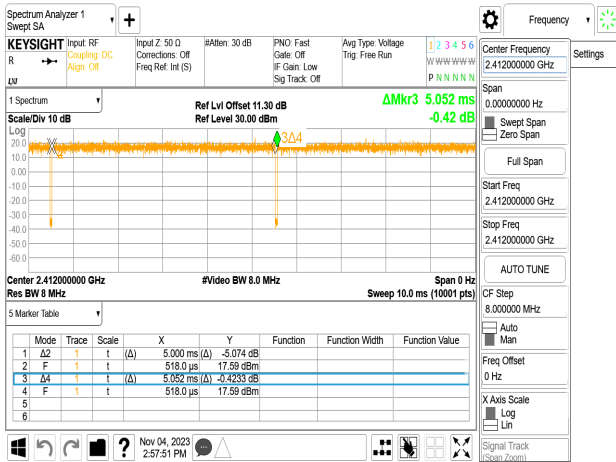
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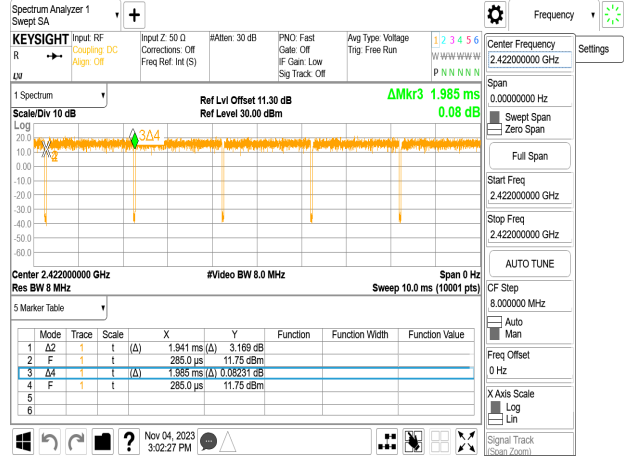
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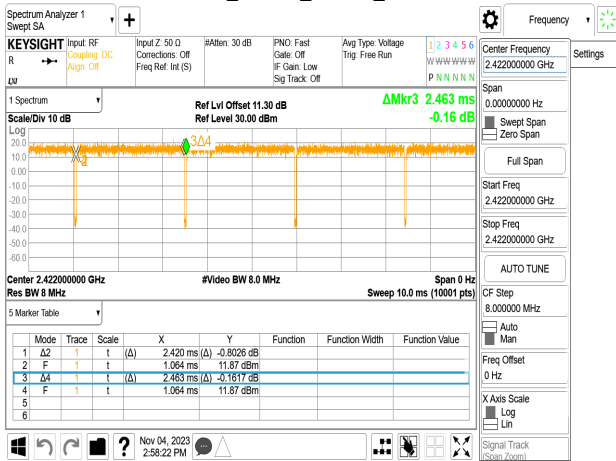
## Beamforming\_802.11n\_20MHz\_Chain0\_2412MHz



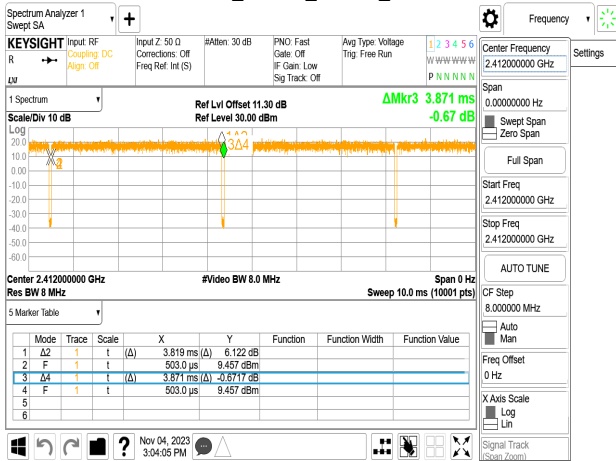
## 802.11be\_40MHz\_Chain0\_2422MHz



## 802.11n\_40MHz\_Chain0\_2422MHz



## 802.11be\_20MHz\_Chain0\_2412MHz

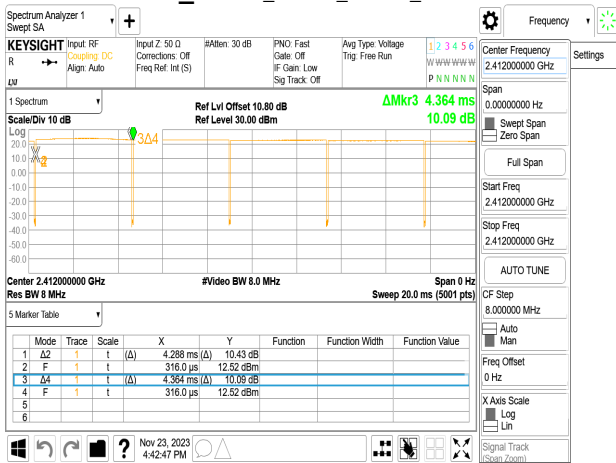


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CDD\_802.11b\_20MHz\_Chain0\_2412MHz



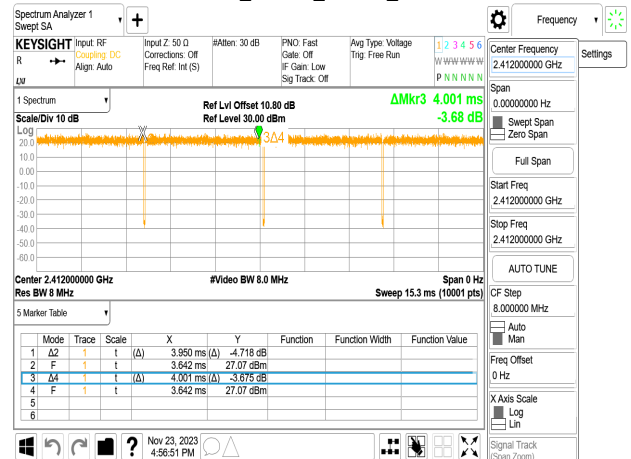
802.11n\_40MHz\_Chain0\_2422MHz



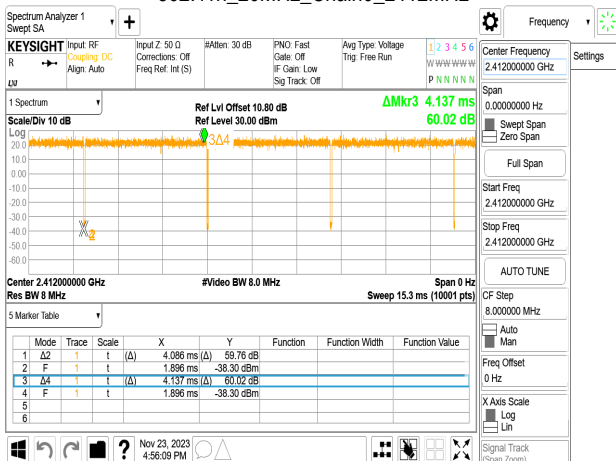
802.11g\_20MHz\_Chain0\_2412MHz



802.11be\_20MHz\_Chain0\_2412MHz



802.11n\_20MHz\_Chain0\_2412MHz



802.11be\_40MHz\_Chain0\_2422MHz



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## 8.4.3 Output Power

Mode: CDD

802.11b_4TX									
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)				Total Avg. Output Power (dBm)	Limit (dBm)	RESULT
			Ch0	Ch1	Ch2	Ch3			
1	2412	1	23.63	24.40	22.36	24.03	29.69	30.00	PASS
6	2437	1	24.30	24.53	23.46	23.25	<b>29.94</b>	30.00	PASS
11	2462	1	23.72	24.35	22.85	23.20	29.58	30.00	PASS

802.11g_4TX									
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)				Total Avg. Output Power (dBm)	Limit (dBm)	RESULT
			Ch0	Ch1	Ch2	Ch3			
1	2412	6	24.05	24.35	23.04	24.31	<b>29.99</b>	30.00	PASS
6	2437	6	24.26	23.90	23.46	23.35	29.78	30.00	PASS
11	2462	6	23.83	24.19	23.34	23.51	29.75	30.00	PASS

802.11n_HT20M_4TX									
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)				Total Avg. Output Power (dBm)	Limit (dBm)	RESULT
			Ch0	Ch1	Ch2	Ch3			
1	2412	MCS0	23.82	24.45	22.61	24.27	<b>29.87</b>	30.00	PASS
6	2437	MCS0	24.00	24.13	23.15	23.17	29.66	30.00	PASS
11	2462	MCS0	23.75	24.30	23.02	23.36	29.66	30.00	PASS

802.11n_HT40M_4TX									
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)				Total Avg. Output Power (dBm)	Limit (dBm)	RESULT
			Ch0	Ch1	Ch2	Ch3			
3	2422	MCS0	23.94	24.53	22.59	23.86	29.81	30.00	PASS
6	2437	MCS0	24.27	24.45	23.17	23.30	<b>29.86</b>	30.00	PASS
9	2452	MCS0	24.01	24.16	23.05	23.20	29.66	30.00	PASS

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**802.11be\_EHT20M\_4TX**

CH	Freq. (MHz)	Data Rate	RU Config	Avg. Output Power (dBm)				Total Avg. Output Power (dBm)	Limit (dBm)	RESULT
				Ch0	Ch1	Ch2	Ch3			
1	2412	MCS0	full	23.63	24.28	22.42	23.93	29.64	30.00	PASS
6	2437	MCS0	full	24.13	24.29	23.28	23.38	<b>29.81</b>	30.00	PASS
11	2462	MCS0	full	23.81	24.42	23.24	23.61	29.81	30.00	PASS

**802.11be\_EHT40M\_4TX**

CH	Freq. (MHz)	Data Rate	RU Config	Avg. Output Power (dBm)				Total Avg. Output Power (dBm)	Limit (dBm)	RESULT
				Ch0	Ch1	Ch2	Ch3			
3	2422	MCS0	full	23.72	24.23	22.39	23.64	29.56	30.00	PASS
6	2437	MCS0	full	24.06	24.23	22.89	23.04	29.61	30.00	PASS
9	2452	MCS0	full	24.24	24.41	23.31	23.41	<b>29.89</b>	30.00	PASS

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**Mode: Beamforming**

802.11n_HT20M_4TX										
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)				Total Avg. Output Power (dBm)	Limit (dBm)	RESULT	
			Ch0	Ch1	Ch2	Ch3				
1	2412	MCS0	23.39	24.07	22.68	24.06	29.61	30.00	PASS	
6	2437	MCS0	23.78	23.85	23.49	23.36	<b>29.65</b>	30.00	PASS	
11	2462	MCS0	23.52	23.75	23.54	23.68	29.65	30.00	PASS	
802.11n_HT40M_4TX										
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)				Total Avg. Output Power (dBm)	Limit (dBm)	RESULT	
			Ch0	Ch1	Ch2	Ch3				
3	2422	MCS0	22.46	23.00	21.88	22.27	28.44	30.00	PASS	
6	2437	MCS0	24.06	24.20	23.43	23.55	<b>29.84</b>	30.00	PASS	
9	2452	MCS0	23.81	23.99	23.30	23.40	29.65	30.00	PASS	
802.11be_EHT20M_4TX										
CH	Freq. (MHz)	Data Rate	RU Config	Avg. Output Power (dBm)				Total Avg. Output Power (dBm)	Limit (dBm)	RESULT
				Ch0	Ch1	Ch2	Ch3			
1	2412	MCS0	full	23.11	22.97	23.27	23.20	29.16	30.00	PASS
6	2437	MCS0	full	23.65	23.84	22.98	23.08	29.42	30.00	PASS
11	2462	MCS0	full	23.67	24.21	23.35	23.70	<b>29.76</b>	30.00	PASS
802.11be_EHT40M_4TX										
CH	Freq. (MHz)	Data Rate	RU Config	Avg. Output Power (dBm)				Total Avg. Output Power (dBm)	Limit (dBm)	RESULT
				Ch0	Ch1	Ch2	Ch3			
3	2422	MCS0	full	23.00	23.55	22.42	22.70	28.95	30.00	PASS
6	2437	MCS0	full	23.66	24.02	23.21	23.39	<b>29.60</b>	30.00	PASS
9	2452	MCS0	full	23.71	24.07	22.93	23.23	29.53	30.00	PASS

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Spot Check

Mode: CDD

802.11b_4TX										
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)				Total Avg. Output Power (dBm)	Limit (dBm)	RESULT	
			Ch0	Ch1	Ch2	Ch3				
1	2412	1	23.56	23.70	23.60	23.66	29.65	30.00	PASS	
6	2437	1	23.64	24.14	23.89	23.69	<b>29.86</b>	30.00	PASS	
11	2462	1	23.44	23.56	23.64	23.43	29.54	30.00	PASS	
802.11g_4TX										
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)				Total Avg. Output Power (dBm)	Limit (dBm)	RESULT	
			Ch0	Ch1	Ch2	Ch3				
1	2412	6	23.41	23.78	23.47	23.84	<b>29.65</b>	30.00	PASS	
6	2437	6	23.52	23.72	23.51	23.45	29.57	30.00	PASS	
11	2462	6	23.39	23.53	23.63	23.46	29.53	30.00	PASS	
802.11n_HT20M_4TX										
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)				Total Avg. Output Power (dBm)	Limit (dBm)	RESULT	
			Ch0	Ch1	Ch2	Ch3				
1	2412	MCS0	23.68	24.02	23.70	23.85	<b>29.84</b>	30.00	PASS	
6	2437	MCS0	23.52	23.70	23.61	23.56	29.62	30.00	PASS	
11	2462	MCS0	23.34	23.54	23.63	23.46	29.52	30.00	PASS	
802.11n_HT40M_4TX										
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)				Total Avg. Output Power (dBm)	Limit (dBm)	RESULT	
			Ch0	Ch1	Ch2	Ch3				
3	2422	MCS0	23.62	23.88	23.74	23.53	<b>29.72</b>	30.00	PASS	
6	2437	MCS0	23.48	23.66	23.43	23.46	29.53	30.00	PASS	
9	2452	MCS0	23.66	23.51	23.36	23.55	29.55	30.00	PASS	
802.11be_EHT20M_4TX										
CH	Freq. (MHz)	Data Rate	RU Config	Avg. Output Power (dBm)				Total Avg. Output Power (dBm)	Limit (dBm)	RESULT
				Ch0	Ch1	Ch2	Ch3			
1	2412	MCS0	full	23.59	23.67	23.34	23.54	29.55	30.00	PASS
6	2437	MCS0	full	23.41	23.72	23.45	23.53	29.55	30.00	PASS
11	2462	MCS0	full	23.62	23.90	23.73	23.72	<b>29.76</b>	30.00	PASS

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802.11be_EHT40M_4TX										
CH	Freq. (MHz)	Data Rate	RU Config	Avg. Output Power (dBm)				Total Avg. Output Power (dBm)	Limit (dBm)	RESULT
				Ch0	Ch1	Ch2	Ch3			
3	2422	MCS0	full	23.32	23.60	23.48	23.17	29.41	30.00	PASS
6	2437	MCS0	full	23.50	23.71	23.35	23.49	29.53	30.00	PASS
9	2452	MCS0	full	23.48	23.80	23.26	23.61	<b>29.56</b>	30.00	PASS

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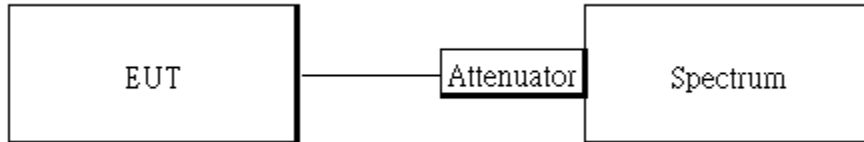
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## 9 EMISSION BANDWIDTH MEASUREMENT

### 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. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

#### 9.3.1 6dB BW measurements

1. The testing follows the Measurement Procedure of the KDB 558074 D01.
2. Set the spectrum analyzer as  
RBW= 100 kHz ,  
VBW = 3 X RBW,  
Span= 2 to 5 times of the OBW,  
Sweep=auto, Detector = Peak, and Max hold.
3. Mark the upper and lower frequencies of -6dB.
4. Repeat above procedures until all test default channel is completed.

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## 9.4 Measurement Result:

### 9.4.1 6dB BW measurements

Mode: CDD

#### 802.11b Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	<b>8080.00</b>	≥ 500	PASS
2437	8064.00	≥ 500	PASS
2462	7133.00	≥ 500	PASS

#### 802.11b Ch1

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	7598.00	≥ 500	PASS
2437	8071.00	≥ 500	PASS
2462	<b>8073.00</b>	≥ 500	PASS

#### 802.11b Ch2

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	<b>8078.00</b>	≥ 500	PASS
2437	8070.00	≥ 500	PASS
2462	7604.00	≥ 500	PASS

#### 802.11b Ch3

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	7609.00	≥ 500	PASS
2437	<b>8067.00</b>	≥ 500	PASS
2462	7594.00	≥ 500	PASS

#### 802.11g Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	15350.00	≥ 500	PASS
2437	15350.00	≥ 500	PASS
2462	<b>15500.00</b>	≥ 500	PASS

#### 802.11g Ch1

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	<b>15160.00</b>	≥ 500	PASS
2437	15150.00	≥ 500	PASS
2462	15130.00	≥ 500	PASS

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802.11g Ch2

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	15180.00	≥ 500	PASS
2437	15360.00	≥ 500	PASS
2462	<b>15450.00</b>	≥ 500	PASS

802.11g Ch3

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	<b>15150.00</b>	≥ 500	PASS
2437	15140.00	≥ 500	PASS
2462	15130.00	≥ 500	PASS

802.11n\_HT\_20M Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	15110.00	≥ 500	PASS
2437	15130.00	≥ 500	PASS
2462	<b>15460.00</b>	≥ 500	PASS

802.11n\_HT\_20M Ch1

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	16320.00	≥ 500	PASS
2437	15740.00	≥ 500	PASS
2462	<b>16540.00</b>	≥ 500	PASS

802.11n\_HT\_20M Ch2

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	15690.00	≥ 500	PASS
2437	15300.00	≥ 500	PASS
2462	<b>15730.00</b>	≥ 500	PASS

802.11n\_HT\_20M Ch3

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	<b>15720.00</b>	≥ 500	PASS
2437	15120.00	≥ 500	PASS
2462	15100.00	≥ 500	PASS

802.11n\_HT\_40M Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2422	31380.00	≥ 500	PASS
2437	<b>35050.00</b>	≥ 500	PASS
2452	32700.00	≥ 500	PASS

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## 802.11n\_HT\_40M Ch1

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2422	35070.00	≥ 500	PASS
2437	34990.00	≥ 500	PASS
2452	<b>35100.00</b>	≥ 500	PASS

## 802.11n\_HT\_40M Ch2

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2422	<b>33870.00</b>	≥ 500	PASS
2437	31320.00	≥ 500	PASS
2452	32540.00	≥ 500	PASS

## 802.11n\_HT\_40M Ch3

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2422	31340.00	≥ 500	PASS
2437	<b>35090.00</b>	≥ 500	PASS
2452	31330.00	≥ 500	PASS

## 802.11be\_EHT\_20M Ch0

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2412	full	16610.00	≥ 500	PASS
2437	full	<b>17070.00</b>	≥ 500	PASS
2462	full	16720.00	≥ 500	PASS

## 802.11be\_EHT\_20M Ch1

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2412	full	<b>15180.00</b>	≥ 500	PASS
2437	full	15170.00	≥ 500	PASS
2462	full	15140.00	≥ 500	PASS

## 802.11be\_EHT\_20M Ch2

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2412	full	15790.00	≥ 500	PASS
2437	full	15200.00	≥ 500	PASS
2462	full	<b>16670.00</b>	≥ 500	PASS

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802.11be\_EHT\_20M Ch3

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2412	full	15860.00	≥ 500	PASS
2437	full	<b>17370.00</b>	≥ 500	PASS
2462	full	16300.00	≥ 500	PASS

802.11be\_EHT\_40M Ch0

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2422	full	<b>35080.00</b>	≥ 500	PASS
2437	full	35060.00	≥ 500	PASS
2452	full	<b>35080.00</b>	≥ 500	PASS

802.11be\_EHT\_40M Ch1

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2422	full	<b>35080.00</b>	≥ 500	PASS
2437	full	35070.00	≥ 500	PASS
2452	full	33840.00	≥ 500	PASS

802.11be\_EHT\_40M Ch2

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2422	full	<b>35080.00</b>	≥ 500	PASS
2437	full	33880.00	≥ 500	PASS
2452	full	32580.00	≥ 500	PASS

802.11be\_EHT\_40M Ch3

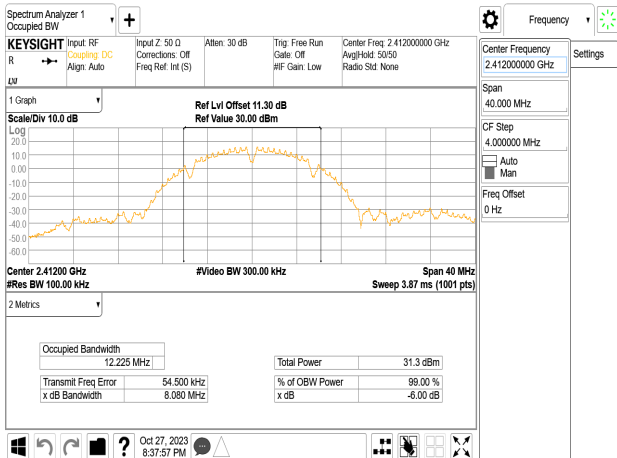
Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2422	full	30130.00	≥ 500	PASS
2437	full	<b>35090.00</b>	≥ 500	PASS
2452	full	32610.00	≥ 500	PASS

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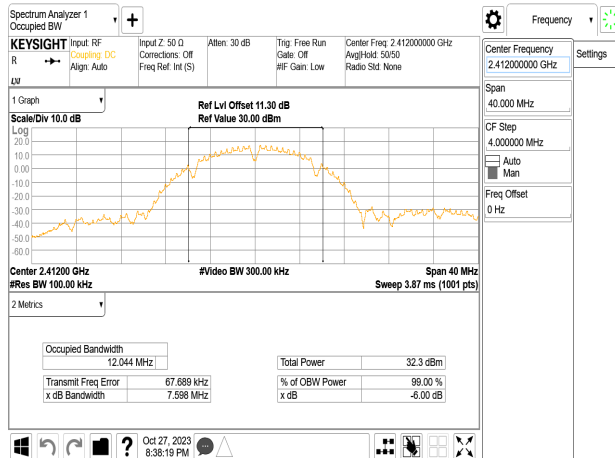
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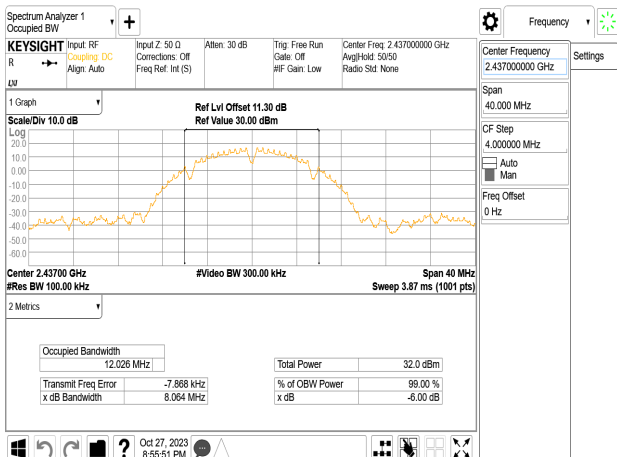
CDD\_802.11b\_20MHz\_Chain0\_2412MHz



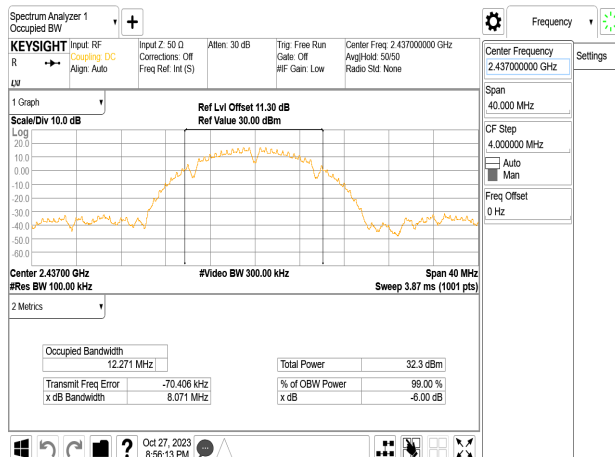
802.11b\_20MHz\_Chain1\_2412MHz



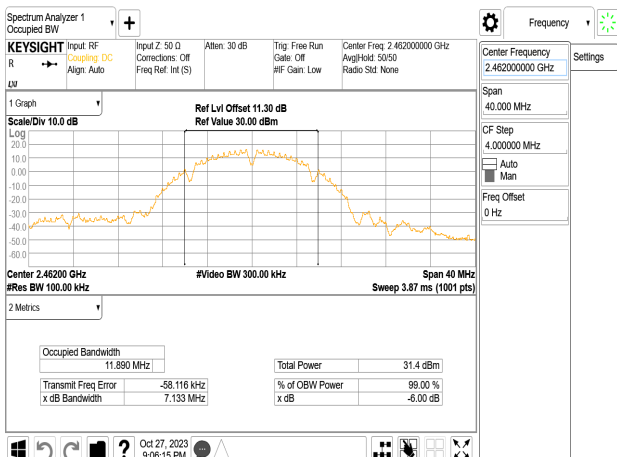
802.11b\_20MHz\_Chain0\_2437MHz



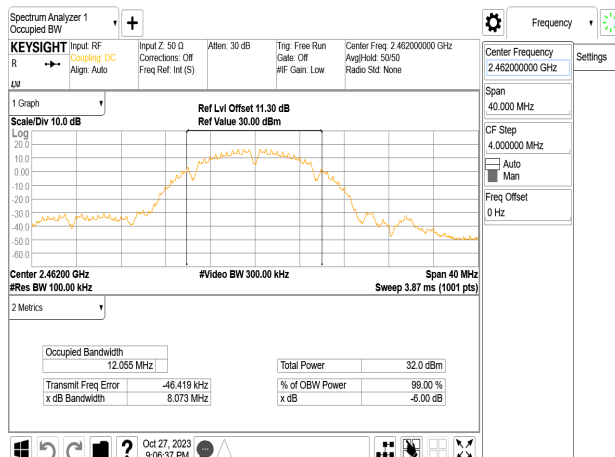
802.11b\_20MHz\_Chain1\_2437MHz



802.11b\_20MHz\_Chain0\_2462MHz



802.11b\_20MHz\_Chain1\_2462MHz

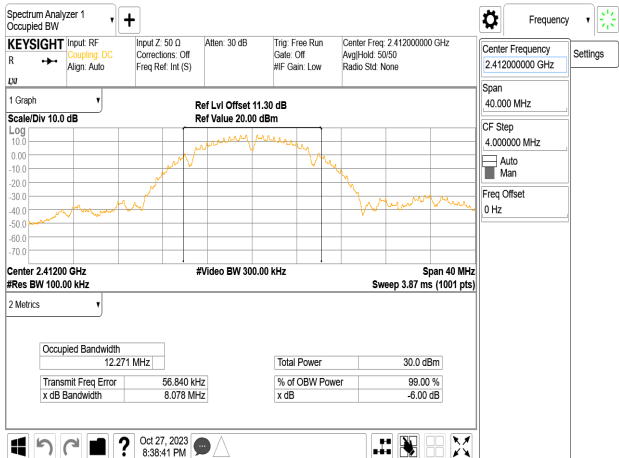


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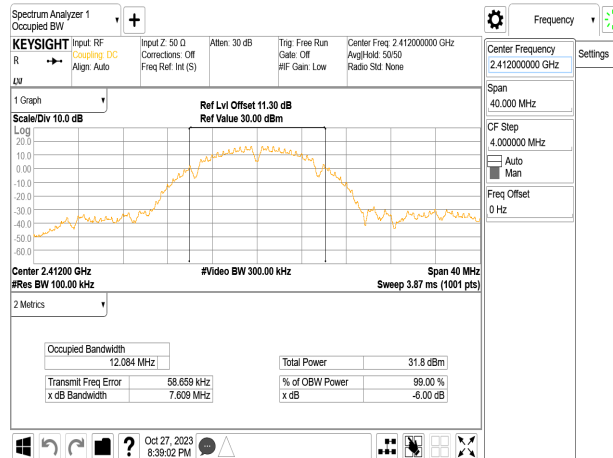
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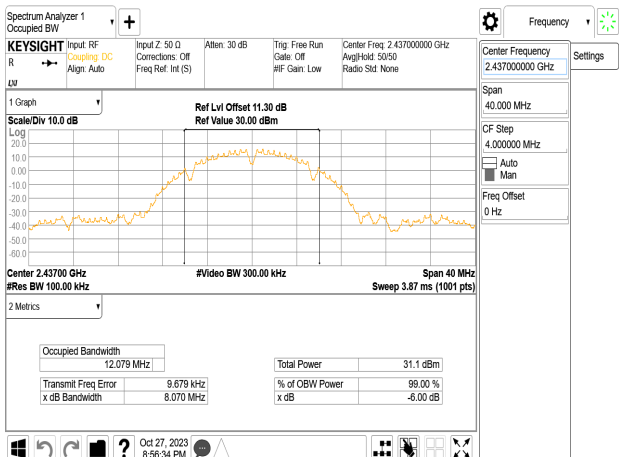
802.11b\_20MHz\_Chain2\_2412MHz



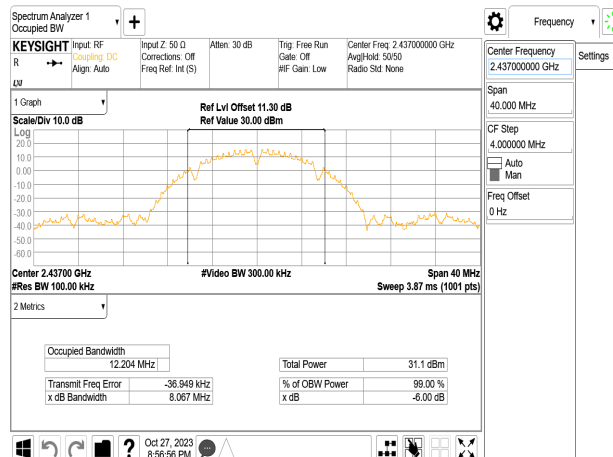
802.11b\_20MHz\_Chain3\_2412MHz



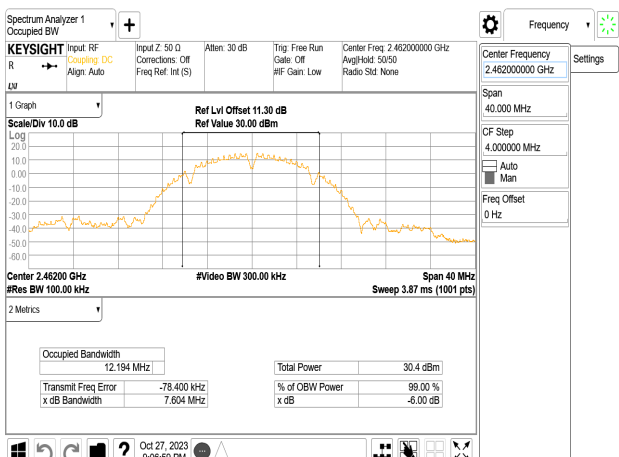
802.11b\_20MHz\_Chain2\_2437MHz



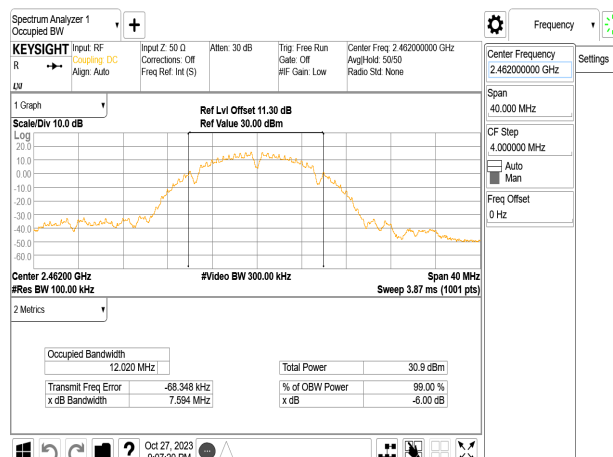
802.11b\_20MHz\_Chain3\_2437MHz



802.11b\_20MHz\_Chain2\_2462MHz



802.11b\_20MHz\_Chain3\_2462MHz

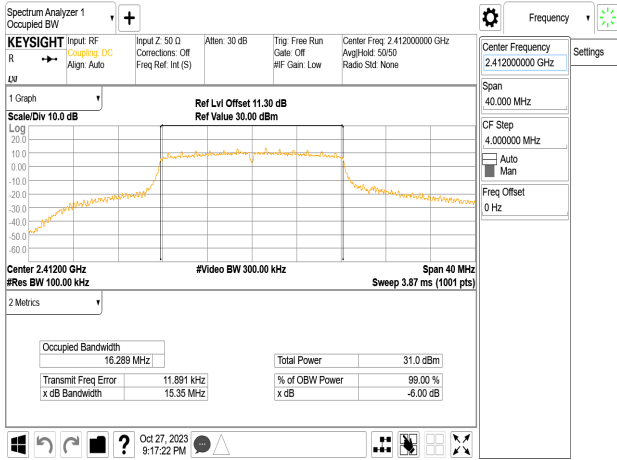


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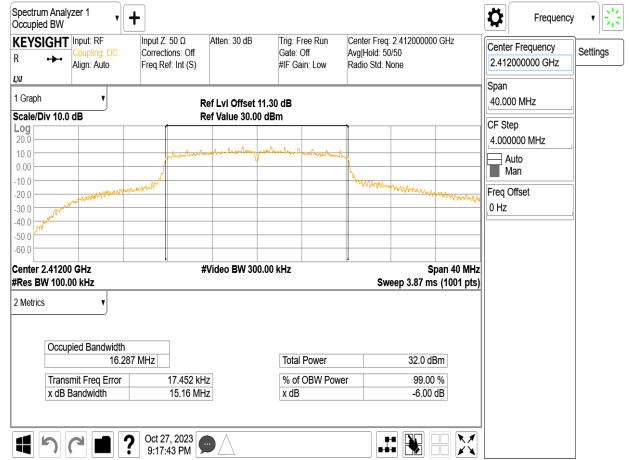
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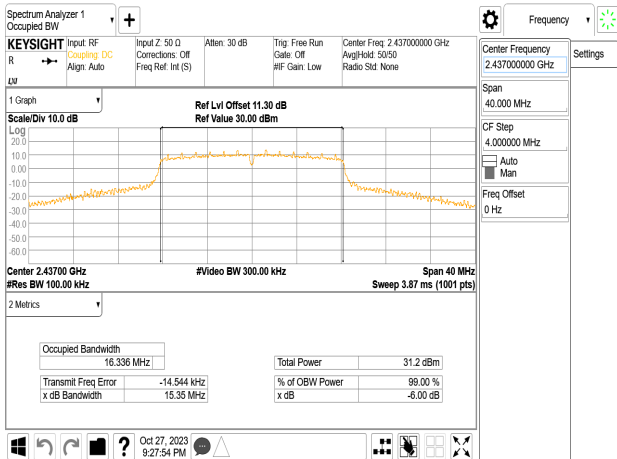
802.11g\_20MHz\_Chain0\_2412MHz



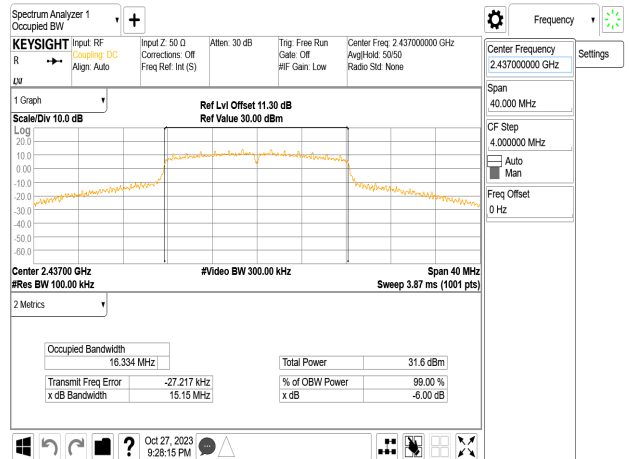
802.11g\_20MHz\_Chain1\_2412MHz



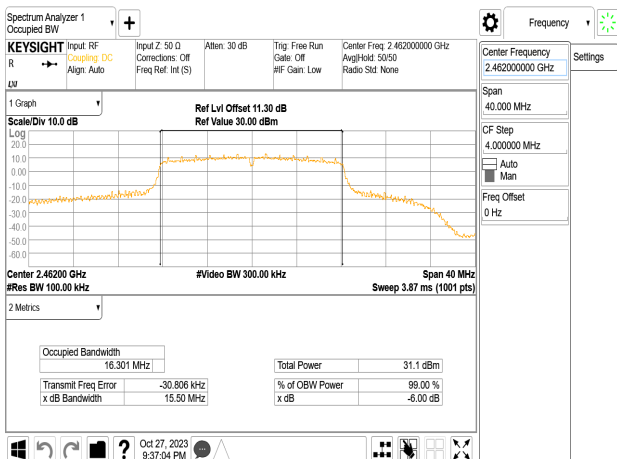
802.11g\_20MHz\_Chain0\_2437MHz



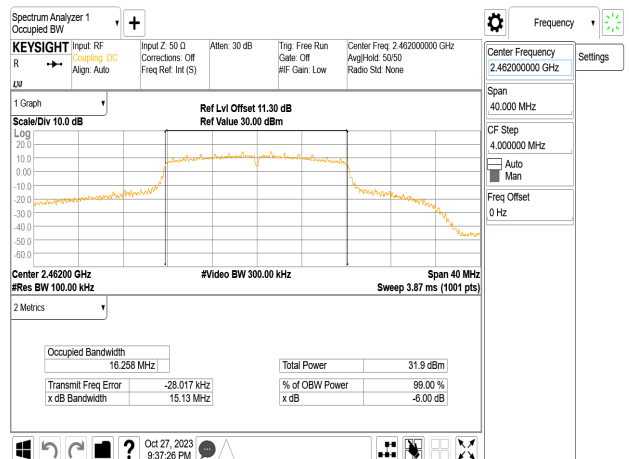
802.11g\_20MHz\_Chain1\_2437MHz



802.11g\_20MHz\_Chain0\_2462MHz



802.11g\_20MHz\_Chain1\_2462MHz

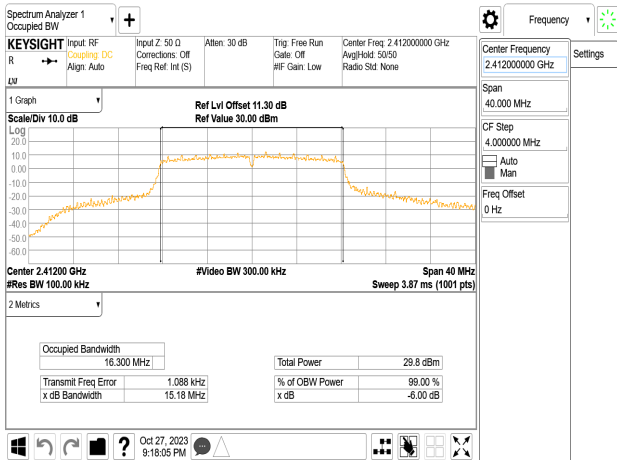


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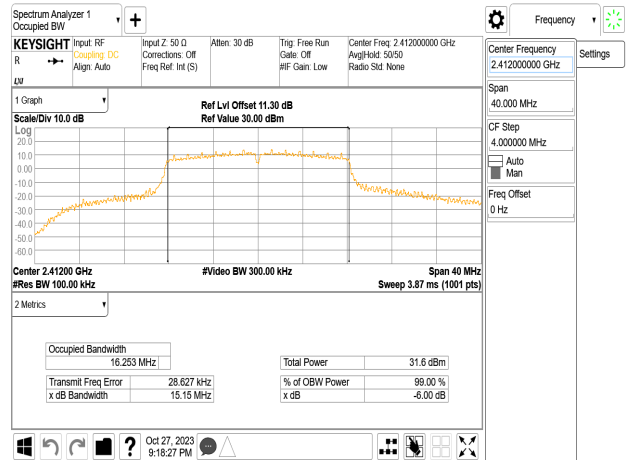
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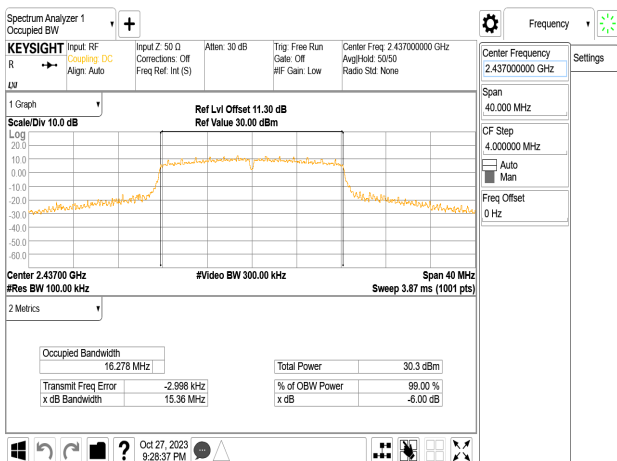
802.11g\_20MHz\_Chain2\_2412MHz



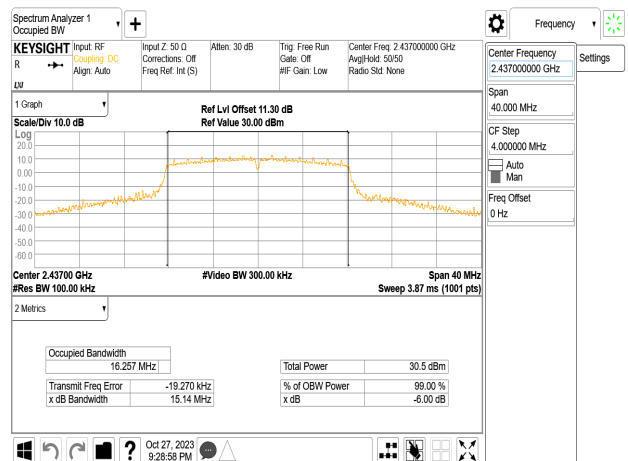
802.11g\_20MHz\_Chain3\_2412MHz



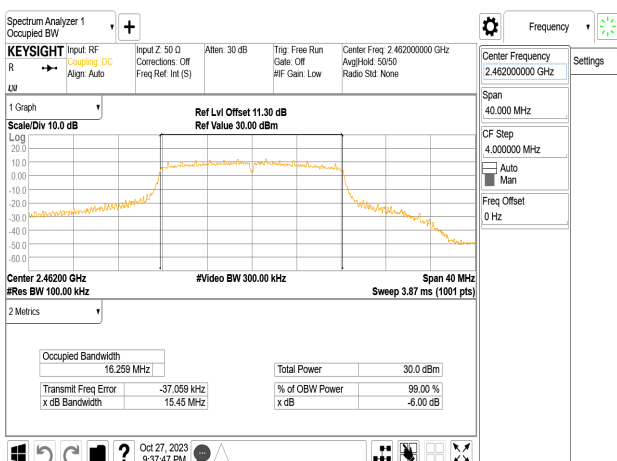
802.11g\_20MHz\_Chain2\_2437MHz



802.11g\_20MHz\_Chain3\_2437MHz



802.11g\_20MHz\_Chain2\_2462MHz



802.11g\_20MHz\_Chain3\_2462MHz



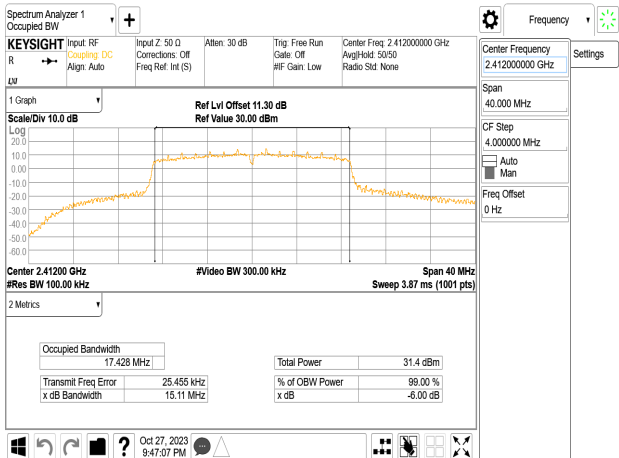
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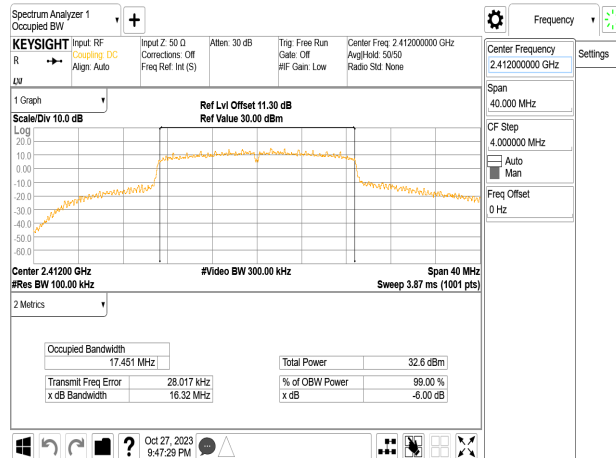
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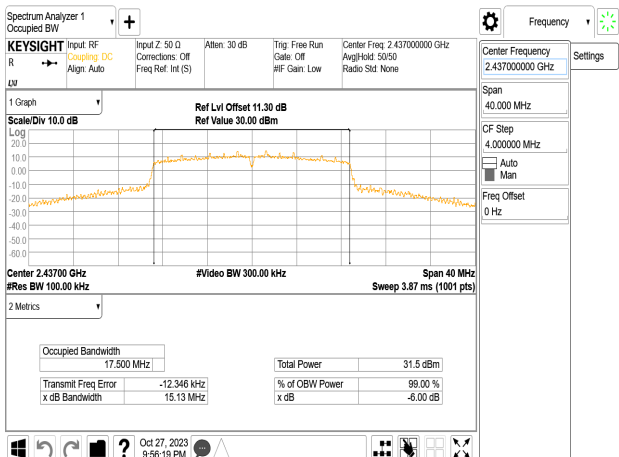
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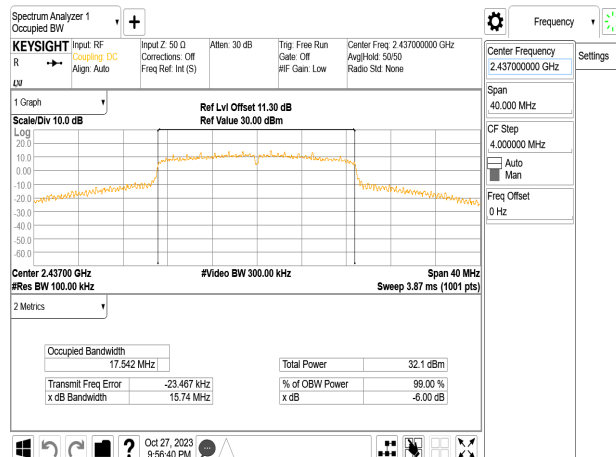
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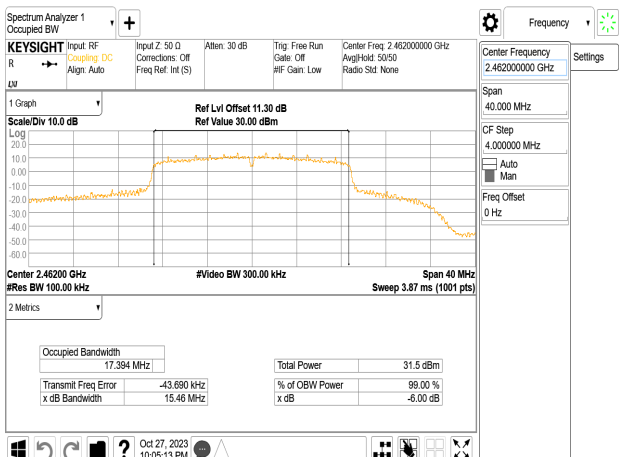
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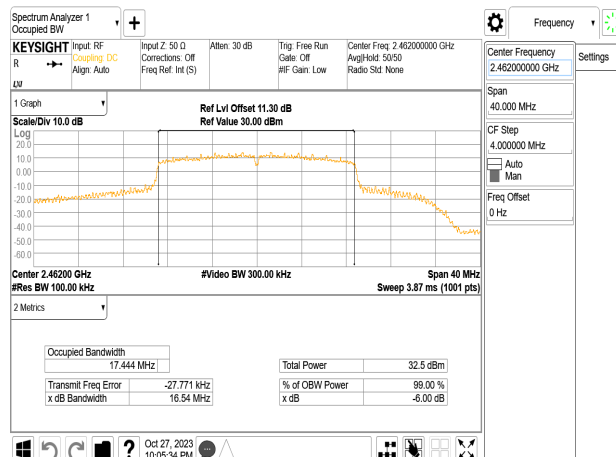
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802.11n\_20MHz\_Chain0\_2462MHz



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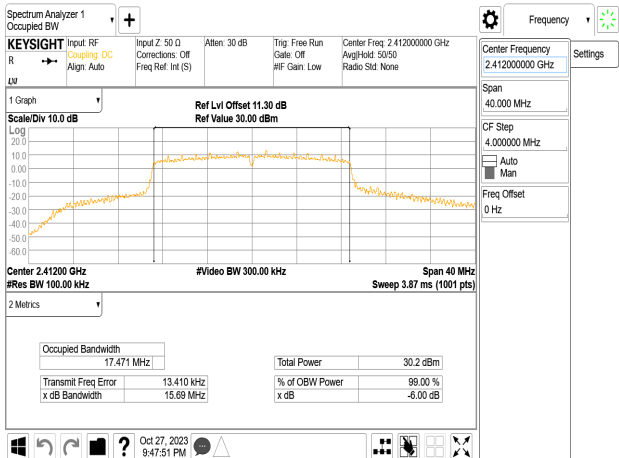


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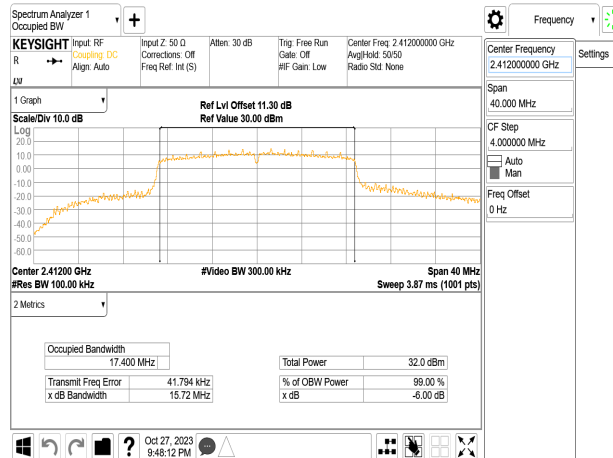
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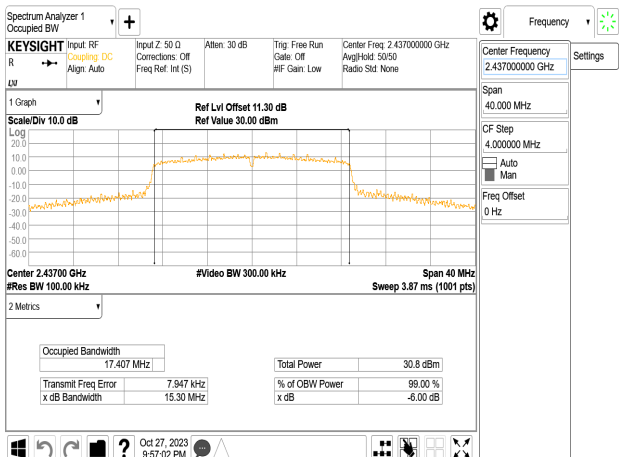
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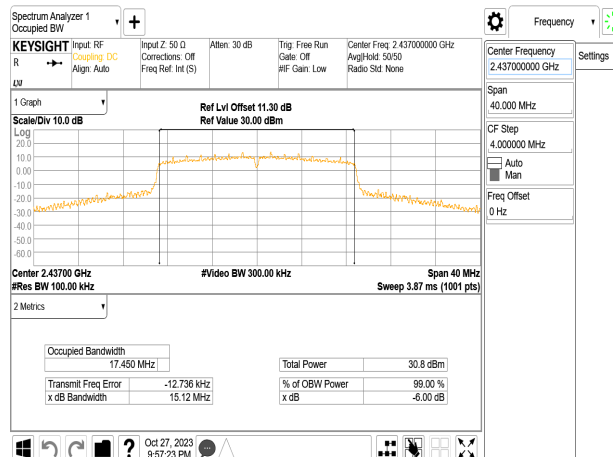
802.11n\_20MHz\_Chain3\_2412MHz



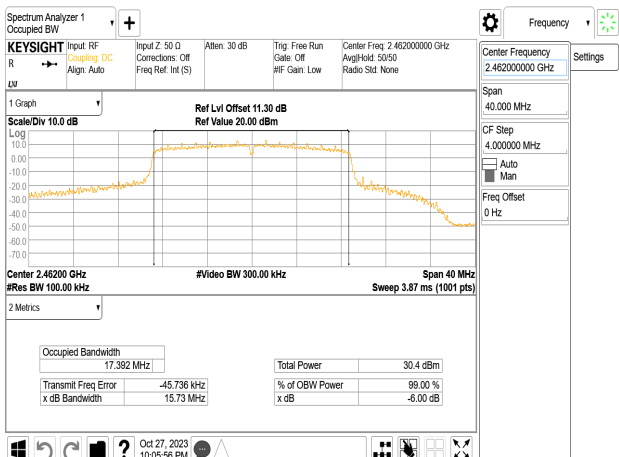
802.11n\_20MHz\_Chain2\_2437MHz



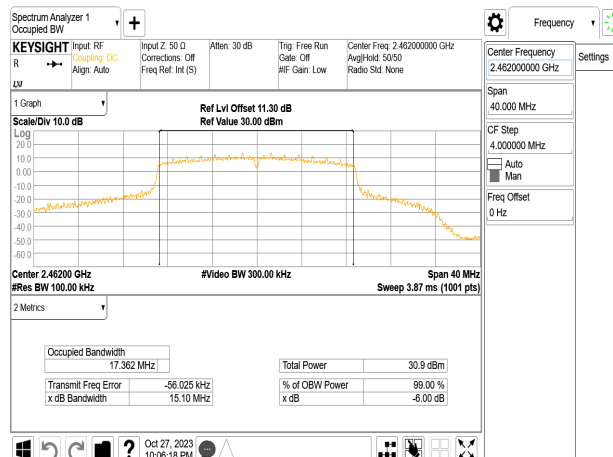
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802.11n\_20MHz\_Chain2\_2462MHz



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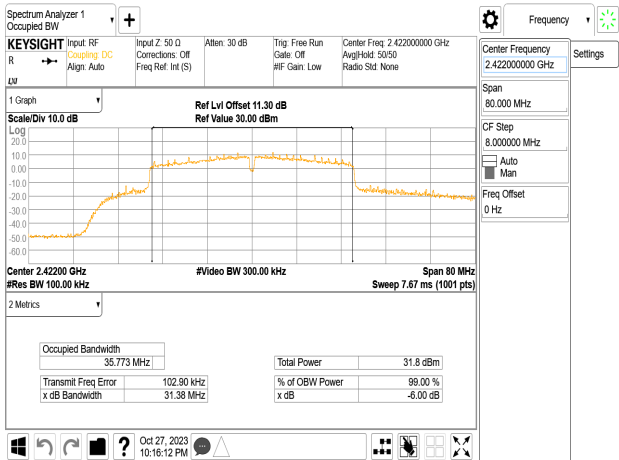


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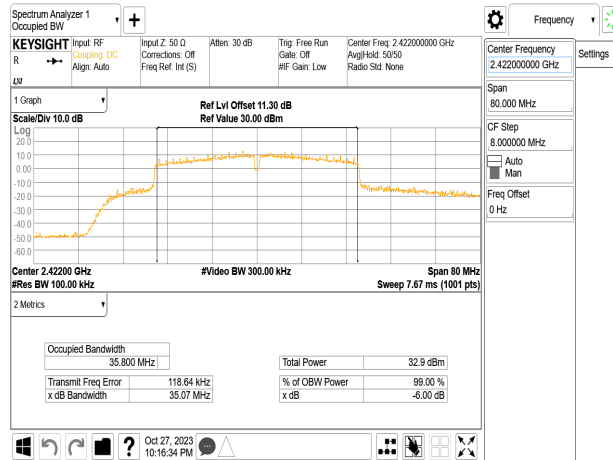
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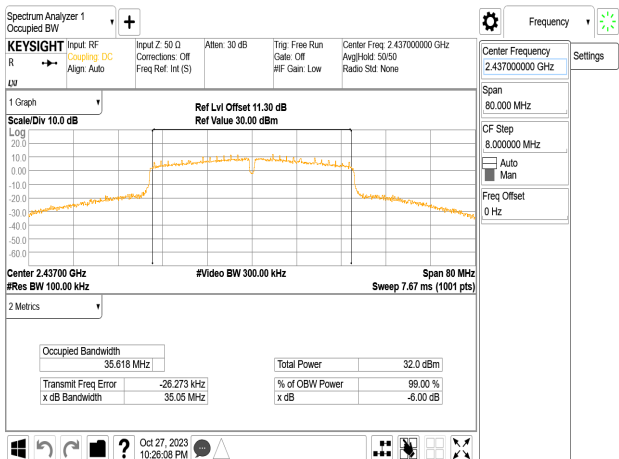
802.11n\_40MHz\_Chain0\_2422MHz



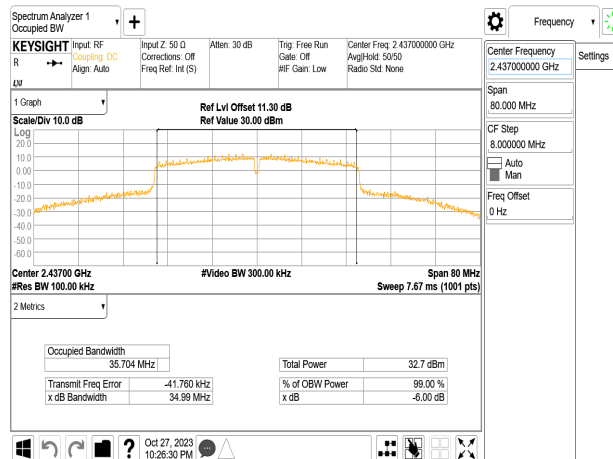
802.11n\_40MHz\_Chain1\_2422MHz



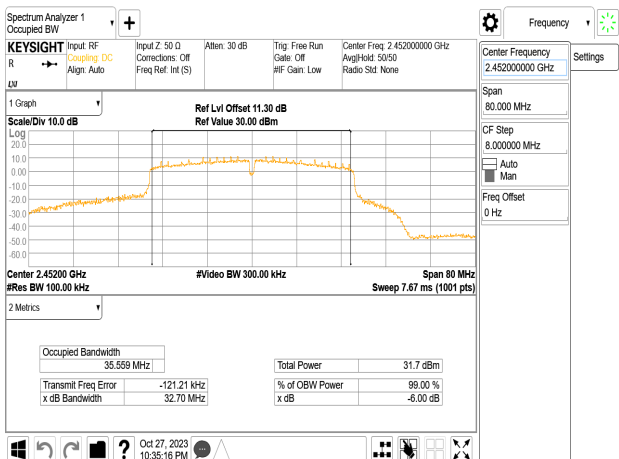
802.11n\_40MHz\_Chain0\_2437MHz



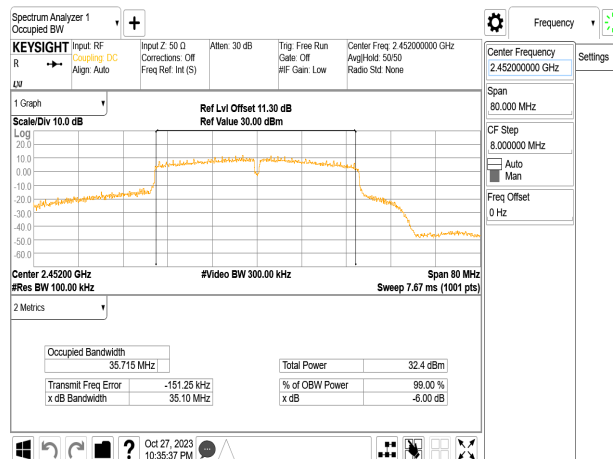
802.11n\_40MHz\_Chain1\_2437MHz



802.11n\_40MHz\_Chain0\_2452MHz



802.11n\_40MHz\_Chain1\_2452MHz



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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