

# TEST REPORT



**Dt&C Co., Ltd.**

42, Yurim-ro, 154Beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea, 17042  
Tel : 031-321-2664, Fax : 031-321-1664

1. Report No : DRTFCC2307-0088

2. Customer

- Name (FCC) : Point Mobile Co., LTD. / Name (IC) : POINTMOBILE CO.,LTD
- Address (FCC) : B-9F Kabul Great Valley, 32, Digital-ro 9-gil, Geumcheon-gu, Seoul, South Korea, 08512  
Address (IC) : B-9F Kabul Great Valley, 32, Digital-ro 9-gil, Geumcheon-gu Seoul Korea (Republic Of)

3. Use of Report : FCC & IC Certification

4. Product Name / Model Name : MOBILE COMPUTER / PM86  
FCC ID : V2X-PM86  
IC : 10664A-PM86

5. FCC Regulation(s): Part 15.247  
IC Standard(s): RSS-247 Issue 2, RSS-Gen Issue 5  
Test Method used: ANSI C63.10-2013, KDB789033 D02v02r01, KDB662911 D01v02r01

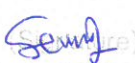

6. Date of Test : 2023.05.12 ~ 2023.06.19

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

8. Testing Environment : See appended test report.

9. Test Result : Refer to the attached test result.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.  
This test report is not related to KOLAS accreditation.

Affirmation	Tested by	Technical Manager
	Name : SeungMin Gil 	Name : JaeJin Lee 

2023 . 07 . 17 .

**Dt&C Co., Ltd.**

If this report is required to confirmation of authenticity, please contact to [report@dtnc.net](mailto:report@dtnc.net)

## Test Report Version

Test Report No.	Date	Description	Revised by	Reviewed by
DRTFCC2307-0088	Jul, 17. 2023	Initial issue	SeungMin Gil	JaeJin Lee

# Table of Contents

<b>1. General Information</b>	<b>4</b>
1.1. Description of EUT	4
1.2. Declaration by the applicant / manufacturer	4
1.3. Testing Laboratory	5
1.4. Testing Environment	5
1.5. Measurement Uncertainty	5
1.6. Test Equipment List	6
<b>2. Test Methodology</b>	<b>7</b>
2.1. EUT Configuration	7
2.2. EUT Exercise	7
2.3. General Test Procedures	7
2.4. Instrument Calibration	7
2.5. Description of Test Modes	8
<b>3. Antenna Requirements</b>	<b>10</b>
<b>4. Summary of Test Result</b>	<b>11</b>
<b>5. Test Result</b>	<b>12</b>
5.1. Maximum Peak Output Power	12
5.1.1. Test Setup	12
5.1.2. Test Procedures	12
5.1.3. Test Results	12
5.2. 6 dB Bandwidth	14
5.2.1. Test Setup	14
5.2.2. Test Procedures	14
5.2.3. Test Results	15
5.3. Power Spectral Density	20
5.3.1. Test Setup	20
5.3.2. Test Procedures	20
5.3.3. Test Results	21
5.4. Unwanted Emissions (Conducted)	26
5.4.1. Test Setup	26
5.4.2. Test Procedures	26
5.4.3. Test Results	27
5.5. Unwanted Emissions (Radiated)	59
5.5.1. Test Setup	61
5.5.2. Test Procedures	61
5.5.3. Test Results	62
5.6. AC Power-Line Conducted Emissions	64
5.6.1. Test Setup	64
5.6.2. Test Procedures	64
5.6.3. Test Results	64
5.7. Occupied Bandwidth	67
5.7.1. Test Setup	67
5.7.2. Test Procedures	67
5.7.3. Test Results	67
<b>APPENDIX I</b>	<b>72</b>
<b>APPENDIX II</b>	<b>73</b>
<b>APPENDIX III</b>	<b>76</b>

## 1. General Information

### 1.1. Description of EUT

<b>Equipment Class</b>	Digital Transmission System (DTS)
<b>Product Name</b>	MOBILE COMPUTER
<b>Model Name</b>	PM86
<b>Add Model Name</b>	-
<b>Firmware Version Identification Number</b>	86.00
<b>EUT Serial Number</b>	Conducted: 23070A0067, Radiated: 23070A0126
<b>Power Supply</b>	DC 3.8 V
<b>Modulation Technique</b>	▪ 802.11ax: OFDM, OFDMA
<b>Antenna Specification</b>	Antenna type: LDS Antenna Antenna gain: Refer to the clause 3 in test report.

Band	Mode	Tx. frequency(MHz)	Max. conducted power(dBm)	Antenna gain(dBi)	Max. e.i.r.p (dBm)
2.4 GHz	802.11ax	2 412 ~ 2 462	25.14	6.60	31.74

Note:  $e.i.r.p = P_{cond} + G_{EUT}$

$P_{cond}$  = measured power at feedpoint of the EUT antenna, in dBm (Peak Conducted Output Power)

$G_{EUT}$  = gain of the EUT radiating element (antenna), in dBi

### 1.2. Declaration by the applicant / manufacturer

N/A

### 1.3. Testing Laboratory

<b>Dt&amp;C Co., Ltd.</b>	
The 3 m test site and conducted measurement facility used to collect the radiated data are located at the 42, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea 17042.	
The test site complies with the requirements of Part 2.948 according to ANSI C63.4-2014.	
- FCC & IC MRA Designation No. : KR0034	
- ISED#: 5740A	
<a href="http://www.dtnc.net">www.dtnc.net</a>	
Telephone	: + 82-31-321-2664
FAX	: + 82-31-321-1664

### 1.4. Testing Environment

Ambient Condition	
▪ Temperature	+21 °C ~ +24 °C
▪ Relative Humidity	+40 % ~ +43 %

### 1.5. Measurement Uncertainty

The measurement uncertainties shown below were calculated in accordance with requirements of ANSI C63.4-2014 and ANSI C63.10-2013. All measurement uncertainty values are shown with a coverage factor of  $k = 2$  to indicate a 95 % level of confidence.

Parameter	Measurement uncertainty
Antenna-port conducted emission	1.1 dB (The confidence level is about 95 %, $k = 2$ )
AC power-line conducted emission	3.4 dB (The confidence level is about 95 %, $k = 2$ )
Radiated emission (1 GHz Below)	4.8 dB (The confidence level is about 95 %, $k = 2$ )
Radiated emission (1 GHz ~ 18 GHz)	5.0 dB (The confidence level is about 95 %, $k = 2$ )
Radiated emission (18 GHz Above)	5.2 dB (The confidence level is about 95 %, $k = 2$ )

## 1.6. Test Equipment List

Type	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal.Date (yy/mm/dd)	S/N
Spectrum Analyzer	Agilent Technologies	N9020A	22/06/24	23/06/24	MY46471622
Spectrum Analyzer	KEYSIGHT	N9020A	22/12/16	23/12/16	MY53290984
Spectrum Analyzer	Agilent Technologies	N9020A	22/12/16	23/12/16	MY48011700
Spectrum Analyzer	Agilent Technologies	N9020A	22/06/24	23/06/24	US47360812
DC Power Supply	Agilent Technologies	66332A	22/06/24	23/06/24	US37473422
Multimeter	FLUKE	17B+	22/12/16	23/12/16	36390701WS
Signal Generator	Rohde Schwarz	SMBV100A	22/12/16	23/12/16	255571
Signal Generator	ANRITSU	MG3695C	22/12/16	23/12/16	173501
Thermohygro meter	BODYCOM	BJ5478	22/12/16	23/12/16	120612-1
Thermohygro meter	BODYCOM	BJ5478	22/12/16	23/12/16	120612-2
Thermohygro meter	BODYCOM	BJ5478	22/06/24	23/06/24	N/A
Loop Antenna	ETS-Lindgren	6502	22/04/22	24/04/22	00203480
Hybrid Antenna	Schwarzbeck	VULB 9160	22/12/16	23/12/16	3362
Horn Antenna	ETS-Lindgren	3117	22/06/24	23/06/24	00143278
Horn Antenna	A.H.Systems Inc.	SAS-574	22/06/24	23/06/24	155
PreAmplifier	tsj	MLA-0118-B01-40	22/12/16	23/12/16	1852267
PreAmplifier	tsj	MLA-1840-J02-45	22/06/24	23/06/24	16966-10728
PreAmplifier	H.P	8447D	22/12/16	23/12/16	2944A07774
High Pass Filter	Wainwright Instruments	WHKX12-935-1000-15000-40SS	22/06/24	23/06/24	8
High Pass Filter	Wainwright Instruments	WHKX10-2838-3300-18000-60SS	22/06/24	23/06/24	1
High Pass Filter	Wainwright Instruments	WHNX8.0/26.5-6SS	22/06/24	23/06/24	3
Attenuator	Hefei Shunze	SS5T2.92-10-40	22/06/24	23/06/24	16012202
Attenuator	Aeroflex/Weinschel	56-3	22/06/24	23/06/24	Y2370
Attenuator	SMAJK	SMAJK-2-3	22/06/24	23/06/24	3
Attenuator	SMAJK	SMAJK-2-3	22/06/24	23/06/24	2
Attenuator	Aeroflex/Weinschel	86-10-11	22/06/24	23/06/24	408
Power Meter & Wide Bandwidth Sensor	Anritsu	ML2496A MA2411B	22/12/16	23/12/16	1338004 1911481
EMI Test Receiver	ROHDE&SCHWARZ	ESC17	23/01/31	24/01/31	100910
PULSE LIMITER	Rohde Schwarz	ESH3-Z2	22/08/22	23/08/22	101333
LISN	SCHWARZBECK	NSLK 8128 RC	22/10/26	23/10/26	8128 RC-387
Thermo Hygro Meter	TESTO	608-H1	23/01/13	24/01/13	45084791
Cable	Dt&C	Cable	23/01/04	24/01/04	G-2
Cable	HUBER+SUHNER	SUCOFLEX 100	23/01/04	24/01/04	G-3
Cable	Dt&C	Cable	23/01/04	24/01/04	G-4
Cable	OMT	YSS21S	23/01/04	24/01/04	G-5
Cable	Junkosha	MWX241	23/01/03	24/01/03	mmW-1
Cable	Junkosha	MWX241	23/01/03	24/01/03	mmW-4
Cable	HUBER+SUHNER	SUCOFLEX100	23/01/04	24/01/04	M-01
Cable	HUBER+SUHNER	SUCOFLEX100	23/01/04	24/01/04	M-02
Cable	JUNKOSHA	MWX241/B	23/01/04	24/01/04	M-03
Cable	JUNKOSHA	J12J101757-00	23/01/04	24/01/04	M-07
Cable	HUBER+SUHNER	SUCOFLEX106	23/01/04	24/01/04	M-09
Cable	Dt&C	Cable	23/01/04	24/01/04	RFC-69
Test Software	tsj	Radiated Emission Measurement	NA	NA	Version 2.00.0147
Test Software	tsj	Noise Terminal Measurement	NA	NA	Version 2.00.0185

Note1: The measurement antennas were calibrated in accordance to the requirements of ANSI C63.5-2017.

Note2: The cable is not a regular calibration item, so it has been calibrated by Dt&C itself.

## 2. Test Methodology

The measurement procedures described in the ANSI C63.10-2013 and the guidance provided in KDB558074 D01v05r02 were used in measurement of the EUT.

The EUT was tested per the guidance of KDB558074 D01v05r02. And ANSI C63.10-2013 was used to reference appropriate EUT setup and maximizing procedures of radiated spurious emission and AC line conducted emission testing.

### 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 that intends to maximize its emission characteristics in a continuous normal application.

### 2.2. EUT Exercise

The EUT was operated in the test mode to fix the TX frequency that was for the purpose of the measurements. According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.247 under the FCC Rules Part 15 Subpart C.

### 2.3. General Test Procedures

#### Conducted Emissions

The power-line conducted emission test procedure is not described on the KDB558074 D01v05r02.

So this test was fulfilled with the requirements in Section 6.2 of ANSI C63.10-2013.

The EUT is placed on the wooden table, which is 0.8 m above ground plane and the conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-peak and Average detector.

#### Radiated Emissions

Basically the radiated tests were performed with KDB558074 D01v05r02. But some requirements and procedures like test site requirements, EUT setup and maximizing procedure were fulfilled with the requirements in Section 5 and 6 of the ANSI C63.10-2013 as stated on section 12.1 of the KDB558074 D01v05r02.

The EUT is placed on a non-conductive table. For emission measurements at or below 1 GHz, the table height is 80 cm. For emission measurements above 1 GHz, the table height is 1.5 m. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3 m away from the receiving antenna, which varied from 1 m to 4 m 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.

### 2.4. Instrument Calibration

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

## 2.5. Description of Test Modes

The EUT has been tested with the operating condition for maximizing the emission characteristics. A test program is used to control the EUT for staying in continuous transmitting.

### Transmitting Configuration of EUT

Mode	SISO		MIMO(CDD)	MIMO(SDM)
	Ant 1	Ant 2	Ant 1 & 2	Ant 1 & 2
	Data rate			
802.11ax(HE20)	MCS 0 ~ 9(1SS)	MCS 0 ~ 9(1SS)	MCS 0 ~ 9(1SS)	MCS 0 ~ 9(2SS)

Note1: SDM = Spatial Diversity Multiplexing, CDD = Cycle Delay Diversity, SS = Spatial Streams

### Test Mode

Test mode	Worst case data rate	Tested Frequency (MHz)		
TM 1	802.11ax(HE20) OFDM_MCS 0 (CDD Multiple transmitting)	2 412	2 437	2 462

Note1: The worst case data rate was determined according to the power measurements.

### EUT Operation test setup

- **Test Software:** Using the adb command
- **Power setting:** Refer to the table below.



**Tested frequency and power setting**

Tones(RU Index)	802.11ax(HE20)		
	Channel	Frequency (MHz)	Power Setting
			MCS 0 ~ MCS 9
26(0, 4, 8)	1	2 412	15
	6	2 437	15
	11	2 462	12
52(37, 38, 40)	1	2 412	15
	6	2 437	15
	11	2 462	13
106(53, 54)	1	2 412	14
	6	2 437	15
	11	2 462	12

Tones(RU Index)	802.11ax(HE20)		
	Channel	Frequency (MHz)	Power Setting
			MCS 0 ~ MCS 11
242(61)	1	2 412	11
	6	2 437	15
	11	2 462	10
SU	1	2 412	12
	6	2 437	15
	11	2 462	10

### 3. Antenna Requirements

■ According to Part 15.203

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.”

**The antenna is attached on the device by means of unique coupling method.  
Therefore this E.U.T complies with the requirement of Part 15.203**

#### Directional antenna gain:

Bands	SISO		MIMO (CDD) <sup>Note 1.</sup>	MIMO (SDM) <sup>Note 2</sup>
	ANT 1 [dBi]	ANT 2 [dBi]	Directional Gain[dBi]	Directional Gain[dBi]
2.4 GHz	3.900	3.270	<b>6.600</b>	3.600

Note 1. Directional gain(correlated signal with unequal antenna gain and equal transmit power)

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

Note 2. Directional gain(completely uncorrelated signal with unequal antenna gain and equal transmit power)

$$10 \log [ ( 10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10} ) / N^{ANT} ] \text{ dBi}$$

#### 4. Summary of Test Result

FCC part section(s)	RSS section(s)	Test Description	Limit	Test Condition	Status Note 1
15.247(a)	RSS-247[5.2]	6 dB Bandwidth	> 500 kHz	Conducted	C
15.247(b)	RSS-247[5.4]	Maximum Peak Output Power	< 1 Watt (conducted), FCC & IC < 4 Watt (e.i.r.p), IC		C
15.247(d)	RSS-247[5.5]	Unwanted Emissions(Conducted)	20 dBc in any 100 kHz BW		C
15.247(e)	RSS-247[5.3]	Power Spectral Density	< 8 dBm / 3 kHz		C
-	RSS-Gen[6.7]	Occupied Bandwidth (99 %)	NA		C
15.247(d) 15.205 15.209	RSS-247[5.5] RSS-Gen[8.9] RSS-Gen[8.10]	Unwanted Emissions(Radiated)	Part 15.209 limits (Refer to section 5.5)	Radiated	C Note 3
15.207	RSS-Gen[8.8]	AC Power-Line Conducted Emissions	Part 15.207 limits (Refer to section 5.6)	AC Line Conducted	C
15.203	-	Antenna Requirements	Part 15.203 (Refer to section 3)	-	C

Note 1: **C**=Comply    **NC**=Not Comply    **NT**=Not Tested    **NA**=Not Applicable  
 Note 2: For radiated emission tests below 30 MHz were performed on semi-anechoic chamber which is correlated with OATS.  
 Note 3: This test item was performed in three orthogonal EUT positions and the worst case data was reported.

## 5. Test Result

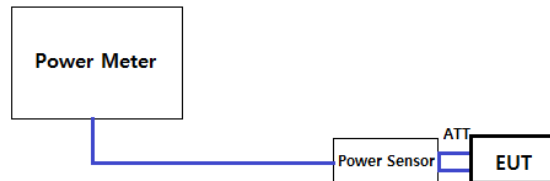
### 5.1. Maximum Peak Output Power

#### ■ Test Requirements and limit, Part 15.247(b) & RSS-247 [5.4]

The maximum permissible conducted output power is 1 Watt.

The e.i.r.p. shall not exceed 4 W, except as provided in section 5.4(e) of RSS-247.

#### 5.1.1. Test Setup



#### 5.1.2. Test Procedures

- KDB558074 D01v05r02 - Section 8.3.1.3
- ANSI C63.10-2013 – Section 11.9.1.3

##### RBW ≥ DTSPKPM1 Peak-reading power meter method

The maximum conducted output powers were measured using a broadband peak RF power meter which has greater video bandwidth than DUT's DTS bandwidth and utilize a fast-responding diode detector.

- KDB558074 D01v05r02 - Section 8.3.2.3
- ANSI C63.10-2013 – Section 11.9.2.3

##### Method AVGPM-G

The average conducted output powers were measured using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since this measurement is made only during the ON time of the transmitter, no duty cycle correction is required.

#### 5.1.3. Test Results

- Refer to the next page

ANT	Tones	RU Index	Det.	Maximum Peak Conducted Output Power (dBm) for <u>802.11ax</u>					
				Freq.(MHz)					
				CDD			SDM		
				2 412	2 437	2 462	2 412	2 437	2 462
ANT 1	26	0	PK	21.34	21.56	20.51	21.29	21.50	20.42
			AV	14.13	14.12	12.09	14.08	14.03	12.01
		4	PK	21.58	21.34	21.20	21.53	21.25	21.12
			AV	15.14	14.36	12.81	15.08	14.28	12.76
		8	PK	21.90	21.23	21.00	21.85	21.17	20.94
			AV	15.29	14.82	12.56	15.23	14.74	12.51
	52	37	PK	21.30	21.16	21.02	21.21	21.08	20.96
			AV	14.10	14.04	13.12	14.04	13.96	13.03
		38	PK	21.46	21.37	21.06	21.41	21.27	20.96
			AV	14.69	14.38	13.13	14.63	14.28	13.08
		40	PK	21.62	21.29	20.94	21.57	21.24	20.86
			AV	15.07	14.55	13.28	15.00	14.47	13.22
	106	53	PK	21.03	21.14	20.58	20.93	21.09	20.51
			AV	13.88	14.04	12.25	13.80	13.96	12.16
		54	PK	21.44	21.06	20.88	21.37	20.97	20.78
			AV	14.42	14.29	12.76	14.42	14.20	12.67
	242	61	PK	20.37	21.29	20.06	20.29	21.20	19.99
			AV	11.82	14.28	10.72	11.72	14.20	10.64
	SU		PK	21.08	21.22	20.06	20.98	21.14	19.98
	SU		AV	12.80	14.37	10.93	12.75	14.27	10.84
ANT 2	26	0	PK	22.57	21.54	22.02	22.48	21.47	21.93
			AV	15.49	14.04	13.99	15.44	13.95	13.99
		4	PK	22.32	21.72	22.25	22.22	21.66	22.19
			AV	14.94	14.56	13.84	14.86	14.51	13.79
		8	PK	21.81	22.31	21.29	21.75	22.22	21.24
			AV	14.05	15.95	12.67	13.97	15.90	12.60
	52	37	PK	22.52	21.51	22.71	22.43	21.45	22.65
			AV	15.10	14.08	14.98	15.00	14.00	14.88
		38	PK	22.71	21.39	22.63	22.63	21.34	22.55
			AV	15.23	14.06	14.99	15.18	14.01	14.93
		40	PK	21.98	22.27	22.23	21.91	22.18	22.14
			AV	14.02	15.75	13.76	13.97	15.68	13.70
	106	53	PK	22.05	21.26	21.55	21.95	21.20	21.46
			AV	14.45	14.04	13.84	14.48	13.94	13.78
		54	PK	21.84	22.06	21.03	21.79	21.99	20.96
			AV	13.60	15.28	12.96	13.52	15.22	12.91
	242	61	PK	19.86	21.65	20.22	19.79	21.60	20.16
			AV	11.74	14.63	11.80	11.67	14.54	11.75
	SU		PK	21.74	21.53	21.13	21.66	21.47	21.07
	SU		AV	12.78	14.55	11.94	12.73	14.47	11.86
Sum (ANT 1+2)	26	0	PK	25.01	24.56	24.34	24.94	24.50	24.25
		4	PK	24.98	24.54	24.77	24.90	24.47	24.70
		8	PK	24.87	24.81	24.16	24.81	24.74	24.10
	52	37	PK	24.96	24.35	24.96	24.87	24.28	24.90
		38	PK	<b>25.14</b>	24.39	24.93	25.07	24.32	24.84
		40	PK	24.81	24.82	24.64	24.75	24.75	24.56
	106	53	PK	24.58	24.21	24.10	24.48	24.16	24.02
		54	PK	24.65	24.60	23.97	24.60	24.52	23.88
	242	61	PK	23.13	24.48	23.15	23.06	24.41	23.09
	SU		PK	24.43	24.39	23.64	24.34	24.32	23.57

## 5.2. 6 dB Bandwidth

### ■ Test Requirements and limit, Part 15.247(a) & RSS-247 [5.2]

The bandwidth at 6 dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the EUT's antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies.

**The minimum permissible 6 dB bandwidth is 500 kHz.**

#### 5.2.1. Test Setup

Refer to the APPENDIX I.

#### 5.2.2. Test Procedures

- **KDB558074 D01v05r02 - Section 8.2**
  - **ANSI C63.10-2013 – Section 11.8.2**
1. Set resolution bandwidth (RBW) = 100 kHz
  2. Set the video bandwidth (VBW)  $\geq 3 \times$  RBW.
  3. Detector = **Peak**.
  4. Trace mode = **max hold**.
  5. Sweep = **auto couple**.
  6. Allow the trace to stabilize.
  7. Option 1 - Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.  
Option 2 - The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described above (i.e., RBW = 100 kHz, VBW  $\geq 3 \times$  RBW, peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be  $\geq 6$  dB.

### 5.2.3. Test Results

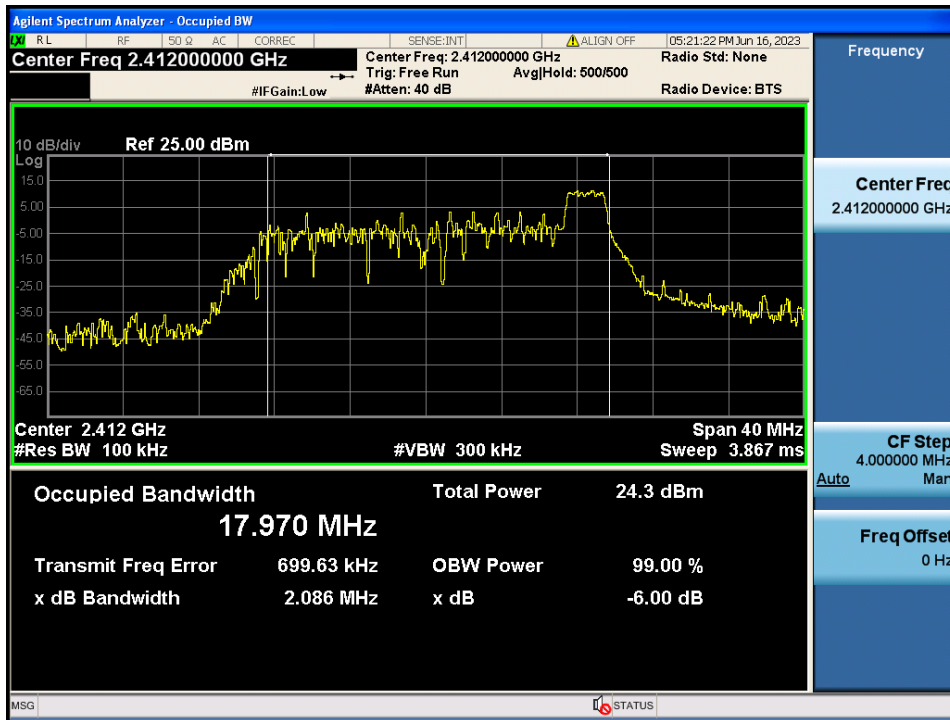
#### TM 1

ANT	Tones	RU Index	Test Results[MHz]		
			2 412	2 437	2 462
ANT 1	26	0	2.10	<b>2.09</b>	2.11
		4	2.63	2.61	2.71
		8	<b>2.09</b>	<b>2.09</b>	<b>2.10</b>
	242	61	19.11	18.99	19.06
	SU			18.70	18.75
ANT 2	26	0	<b>2.12</b>	<b>2.04</b>	<b>2.09</b>
		4	2.68	2.68	2.64
		8	2.14	2.14	14.58
	242	61	19.04	19.07	18.94
	SU			18.17	17.07

Note 1: The worst-case plots(Minimum 6dB Bandwidth) were attached to the next page.

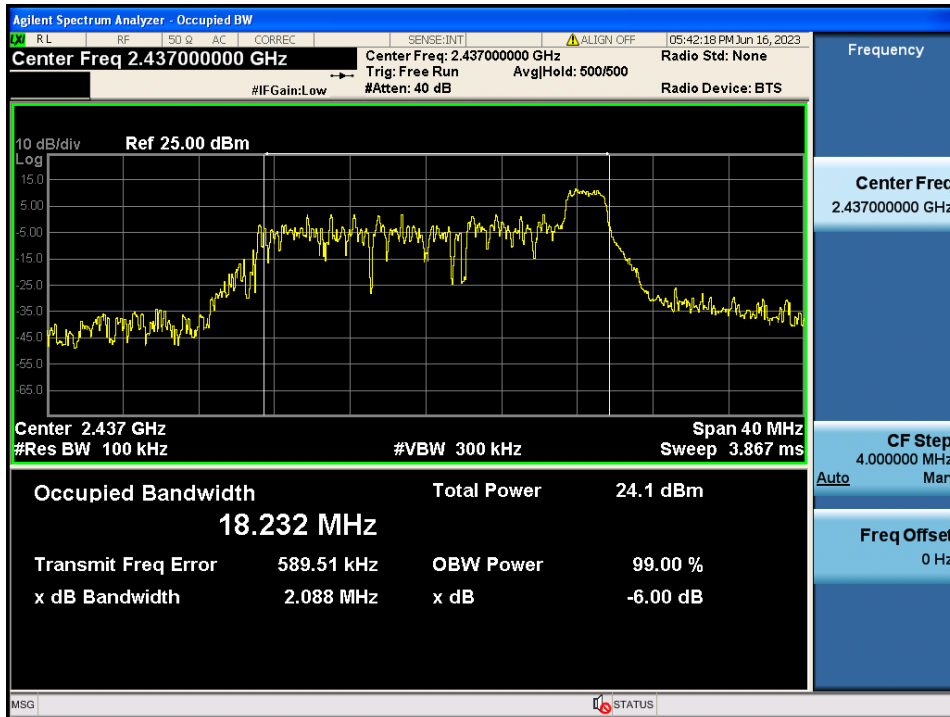
6 dB Bandwidth

TM 1 & ANT 1 & 26 Tone & 8 RU & 2 412



6 dB Bandwidth

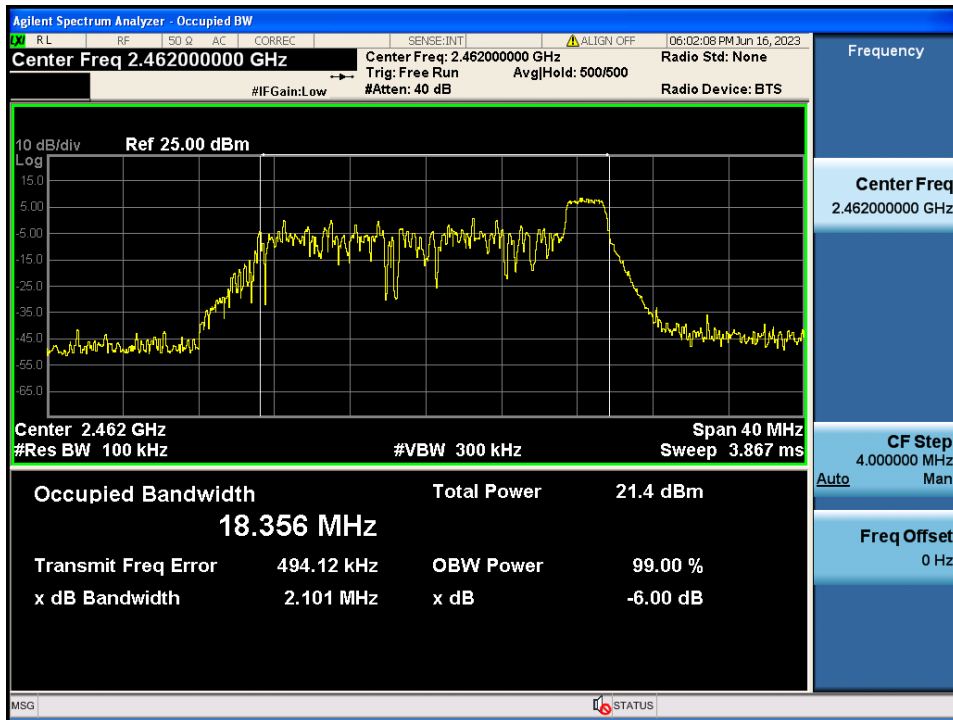
TM 1 & ANT 1 & 26 Tone & 8 RU & 2 437





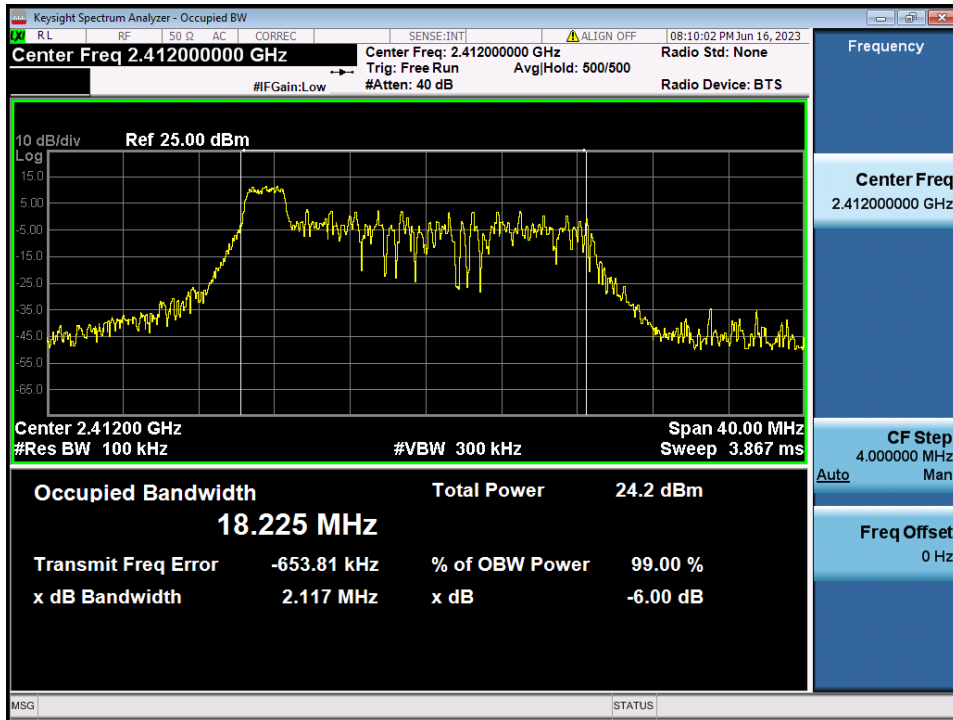
6 dB Bandwidth

TM 1 & ANT 1 & 26 Tone & 8 RU & 2 462



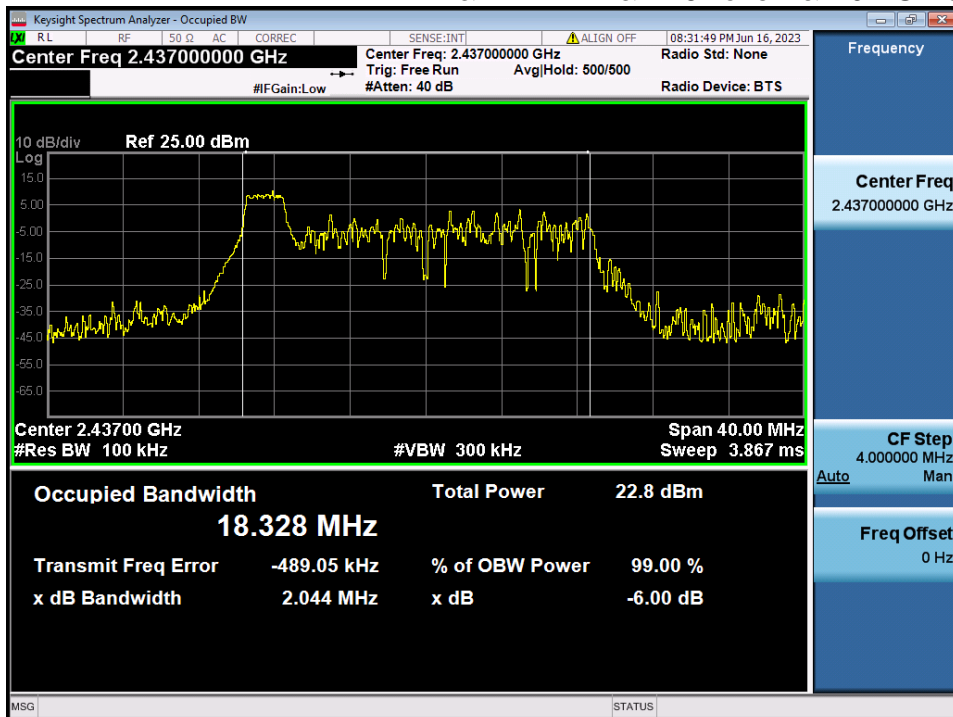
6 dB Bandwidth

TM 1 & ANT 2 & 26 Tone & 0 RU & 2 412



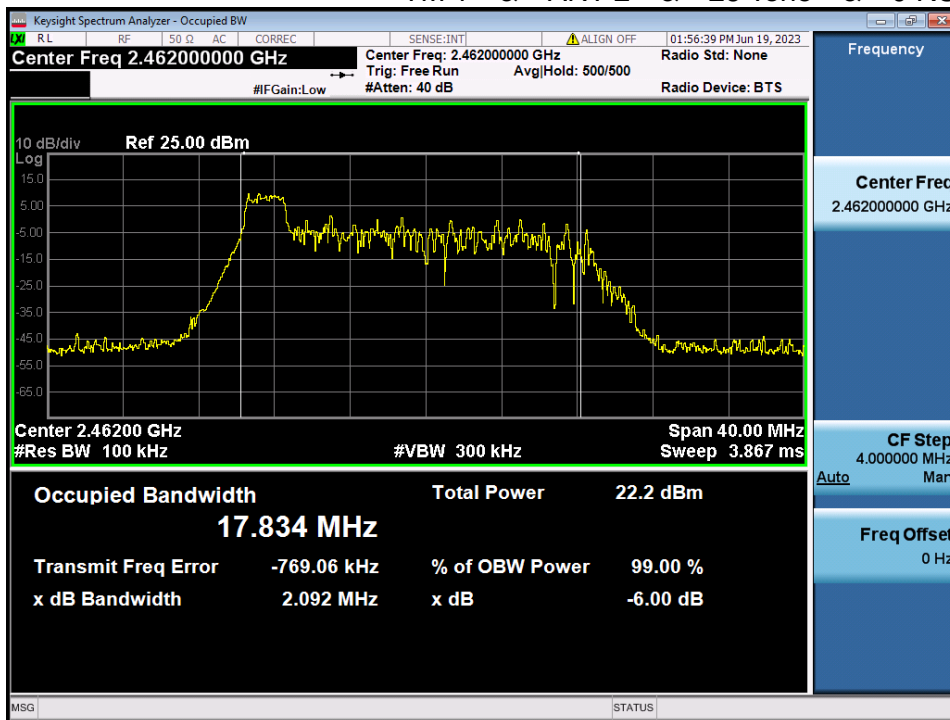
6 dB Bandwidth

TM 1 & ANT 2 & 26 Tone & 0 RU & 2 437



6 dB Bandwidth

TM 1 & ANT 2 & 26 Tone & 0 RU & 2 462



### 5.3. Power Spectral Density

#### ■ Test requirements and limit, Part 15.247(e) & RSS-247 [5.2]

The peak power density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies.

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

#### 5.3.1. Test Setup

Refer to the APPENDIX I.

#### 5.3.2. Test Procedures

- KDB558074 D01v05r02 - Section 8.4
- ANSI C63.10-2013 – Section 11.10.2

#### Method PKPSD (peak PSD)

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to **1.5 times** the DTS bandwidth.
3. Set the RBW : **3 kHz ≤ RBW ≤ 100 kHz**.
4. Set the VBW ≥ **3 x RBW**.
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 within the RBW.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

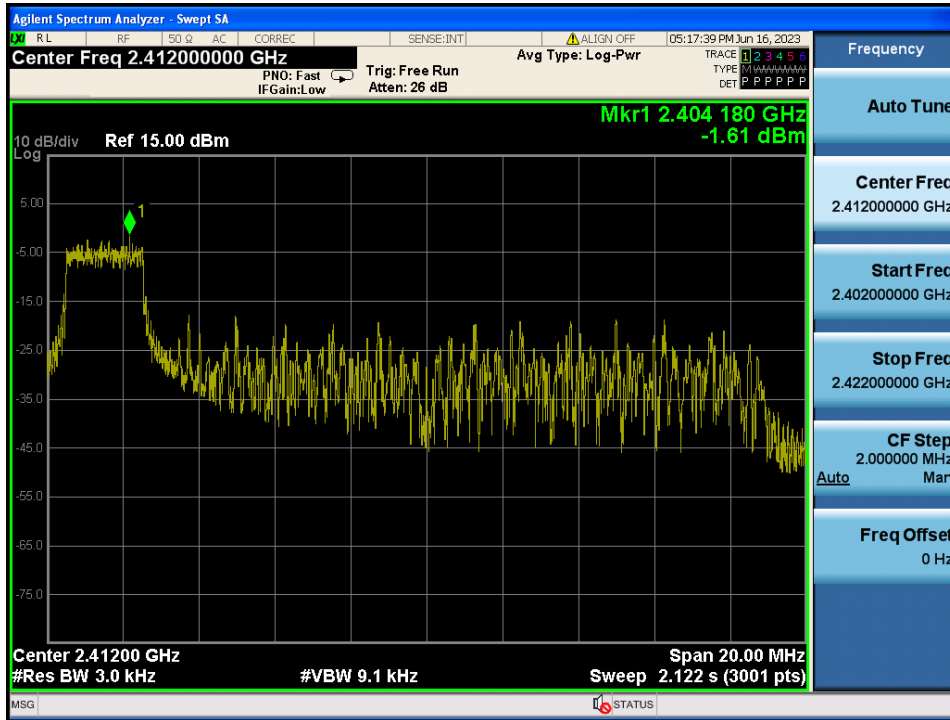
### 5.3.3. Test Results

ANT	Tones	RU Index	RBW	Power Spectral Density (dBm) for <u>802.11ax</u>			
				2 412 MHz	2 437 MHz	2 462 MHz	Limit (dBm / 3 kHz)
ANT 1	26	0	3 kHz	<b>-1.61</b>	-3.00	<b>-4.79</b>	8.00
		4	3 kHz	-2.20	-2.66	-4.98	8.00
		8	3 kHz	-1.25	<b>-1.42</b>	-4.30	8.00
	242	61	3 kHz	-13.97	-10.22	-13.92	8.00
	SU		3 kHz	-11.15	-10.02	-13.42	8.00
ANT 2	26	0	3 kHz	<b>-1.52</b>	-3.21	<b>-2.43</b>	8.00
		4	3 kHz	-1.25	-2.52	-3.44	8.00
		8	3 kHz	-2.70	<b>-0.90</b>	-5.15	8.00
	242	61	3 kHz	-14.44	-10.52	-14.07	8.00
	SU		3 kHz	-10.32	-9.08	-12.86	8.00
Sum (ANT 1+2)	26	0	3 kHz	<b>1.45</b>	-0.09	<b>-0.44</b>	7.40
		4	3 kHz	1.31	0.42	-1.13	7.40
		8	3 kHz	1.10	<b>1.86</b>	-1.69	7.40
	242	61	3 kHz	-11.19	-7.36	-10.98	7.40
	SU		3 kHz	-7.70	-6.51	-10.12	7.40

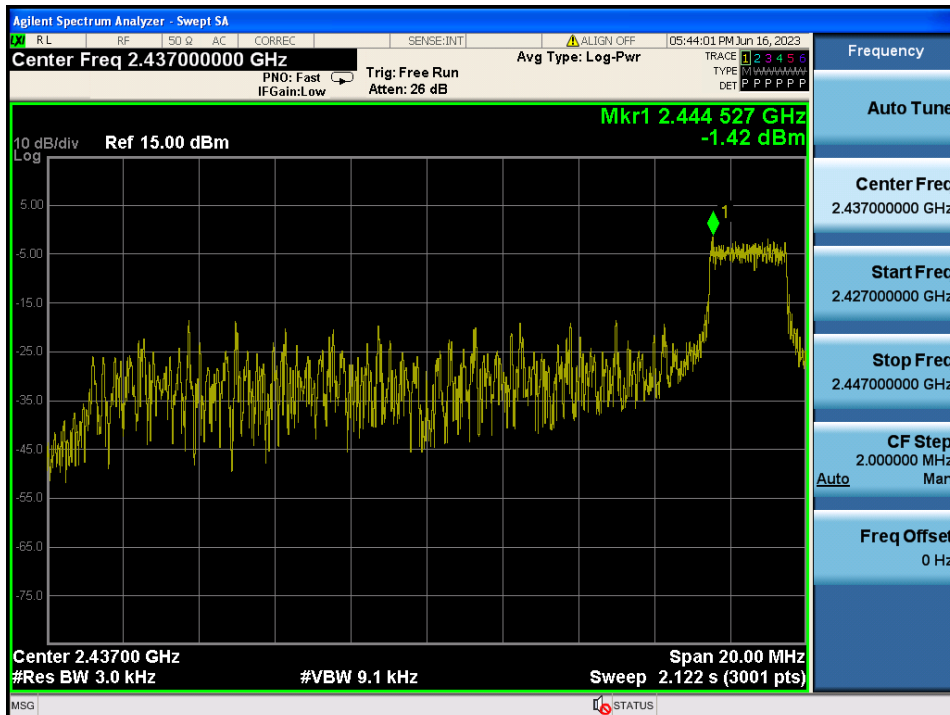
Note 1: The worst-case plots were attached to the next page.

Note 2: The limit is reduced by the amount of dB above which the antenna gain exceeds 6 dBi.

Power Spectral Density TM 1 & ANT 1 & 26 Tone & 0 RU & 2 412

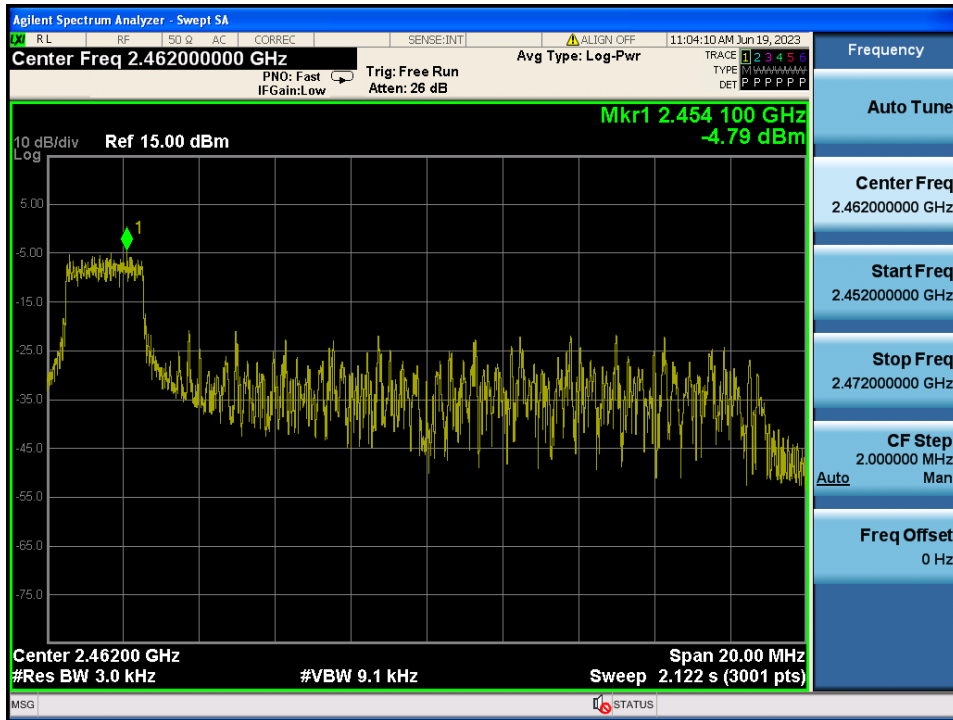


Power Spectral Density TM 1 & ANT 1 & 26 Tone & 8 RU & 2 437



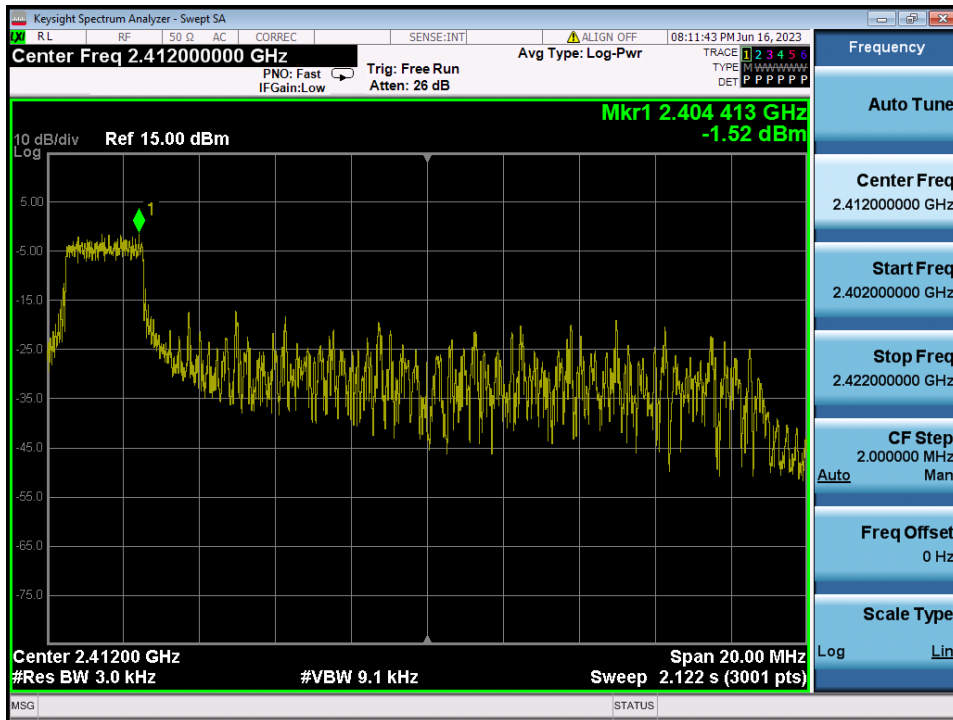
Power Spectral Density

TM 1 & ANT 1 & 26 Tone & 0 RU & 2 462



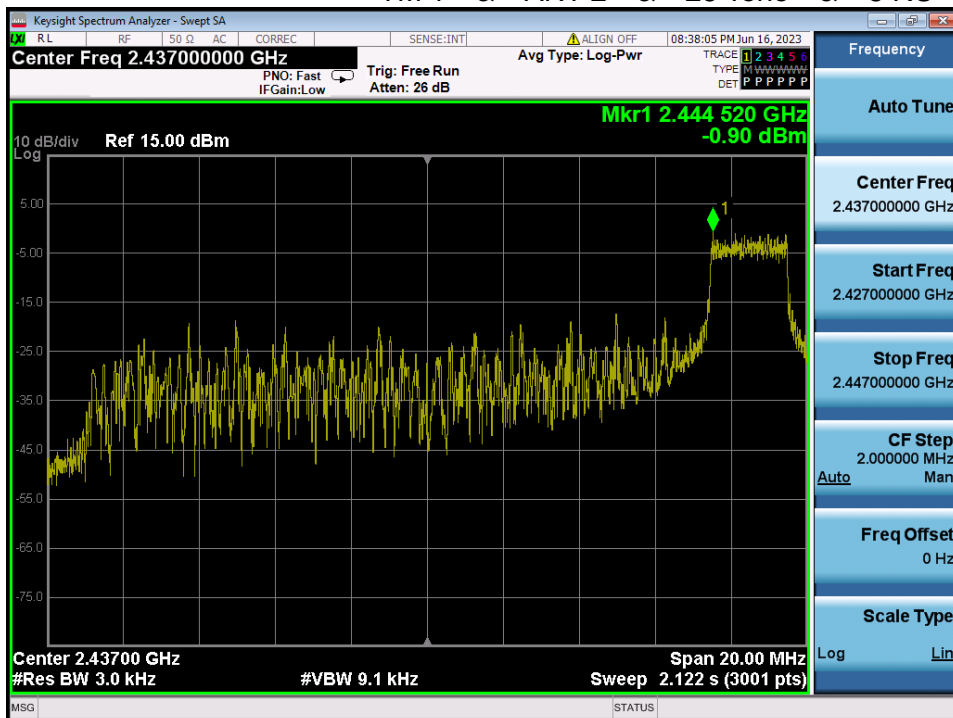
Power Spectral Density

TM 1 & ANT 2 & 26 Tone & 0 RU & 2 412



Power Spectral Density

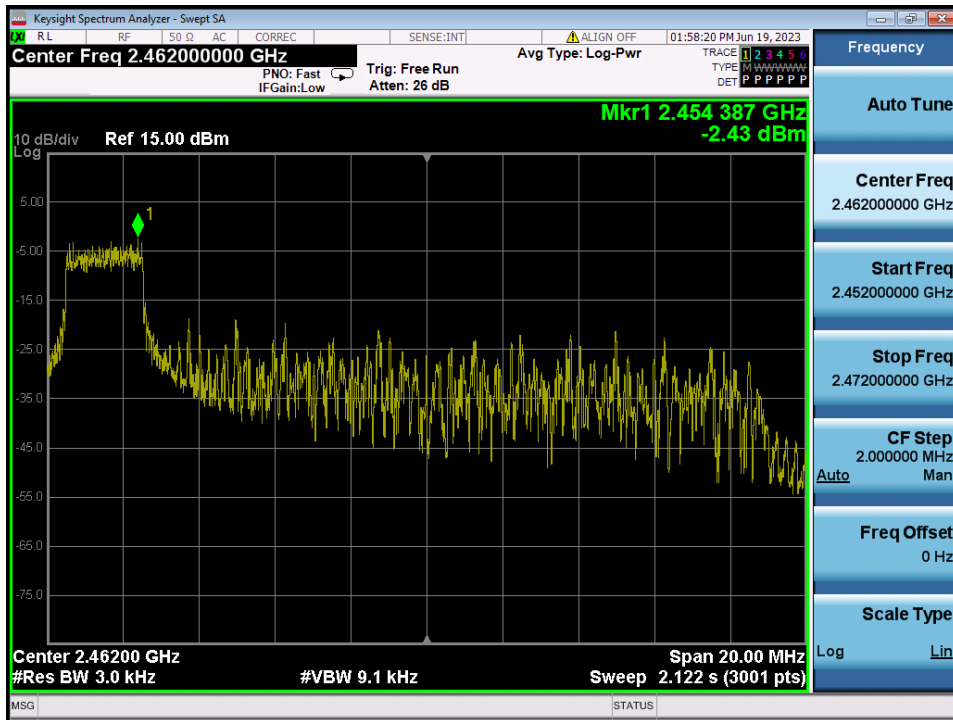
TM 1 & ANT 2 & 26 Tone & 8 RU & 2 437





Power Spectral Density

TM 1 & ANT 2 & 26 Tone & 0 RU & 2 462



## 5.4. Unwanted Emissions (Conducted)

### ■ Test requirements and limit, Part 15.247(d) & RSS-247 [5.5]

In any 100 kHz bandwidth outside of the authorized frequency band, the power shall be attenuated according to the following conditions :

If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to 15.247(b)(3) requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.

If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to 15.247(b)(3) requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured inband average PSD level.

In either case, attenuation to levels below the general emission limits specified in §15.209(a) is not required.

### 5.4.1. Test Setup

Refer to the APPENDIX I including path loss

### 5.4.2. Test Procedures

- KDB558074 D01v05r02 - Section 8.5
- ANSI C63.10-2013 – Section 11.11

#### Reference level measurement

1. Set instrument center frequency to DTS channel center frequency.
2. Set the span to  $\geq 1.5$  times the DTS bandwidth.
3. Set the RBW = 100 kHz.
4. Set the VBW  $\geq 3 \times$  RBW.
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 PSD level  
**LIMIT LINE = 20 dB below of the reference level.**

#### Emission level measurement

1. Set the center frequency and span to encompass frequency range to be measured.
2. Set the RBW = 100 kHz.(Actual 1 MHz , See below note)
3. Set the VBW  $\geq 3 \times$  RBW.(Actual 3 MHz, See below note)
4. Detector = peak.
5. Ensure that the number of measurement points  $\geq$  span / RBW
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow the trace to stabilize (this may take some time, depending on the extent of the span).
9. Use the peak marker function to determine the maximum amplitude level.

**Note:** The unwanted emission(conducted) was tested with below settings.

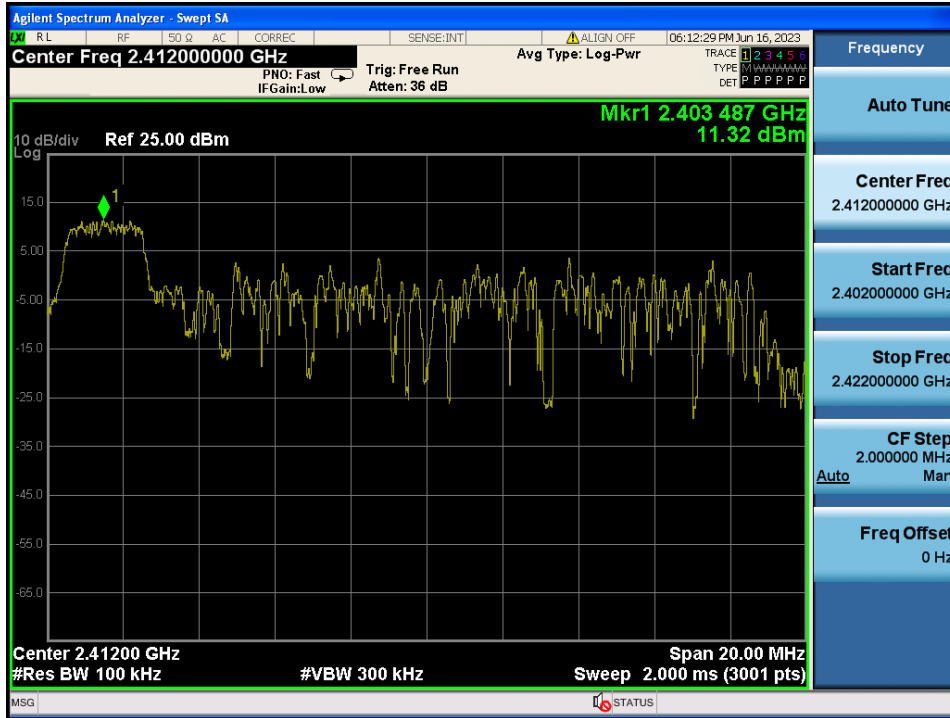
Frequency range	RBW	VBW	Detector	Trace	Sweep Point
9 kHz ~ 30 MHz	100 kHz	300 kHz	Peak	Max Hold	40 001
30 MHz ~ 10 GHz	1 MHz	3 MHz			
10 GHz ~ 25 GHz	1 MHz	3 MHz			

If the emission level with above setting was close to the limit (ie, less than 3 dB margin) then zoom scan is required using RBW = 100 kHz, VBW = 300 kHz, SPAN = 100 MHz and BINS = 2 001 to get accurate emission level within 100 kHz BW.

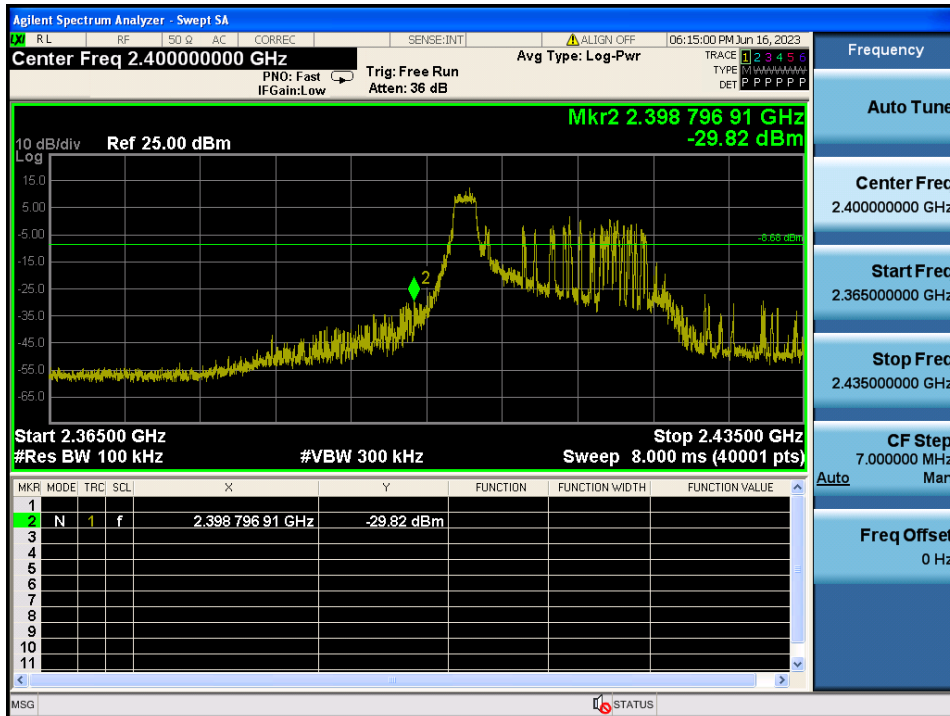
5.4.3. Test Results

TM 1 & ANT 1 & 26 Tone & 0 RU & 2 412

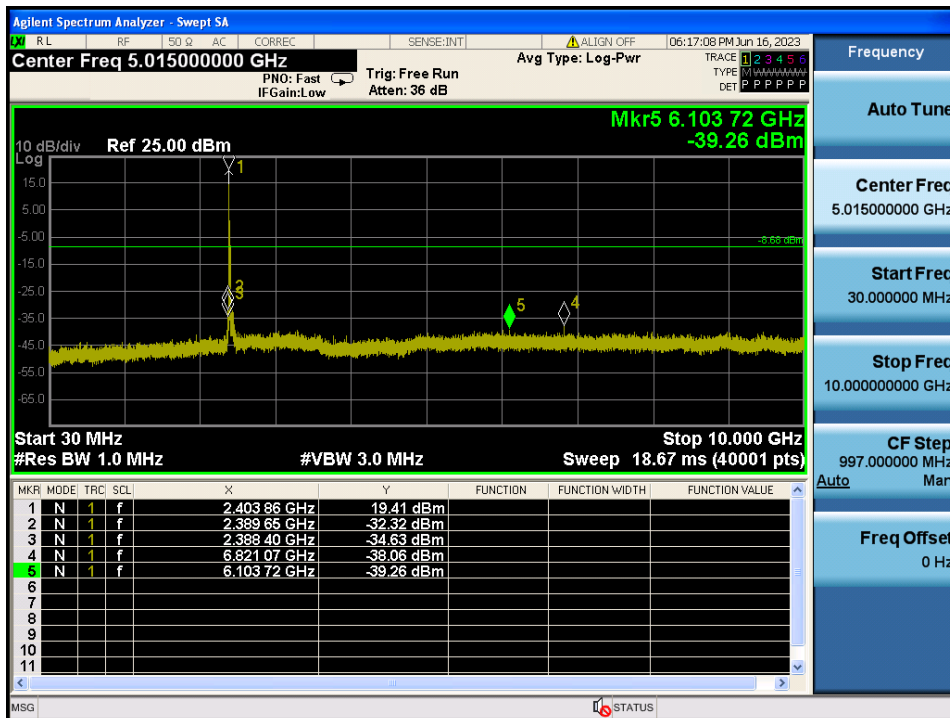
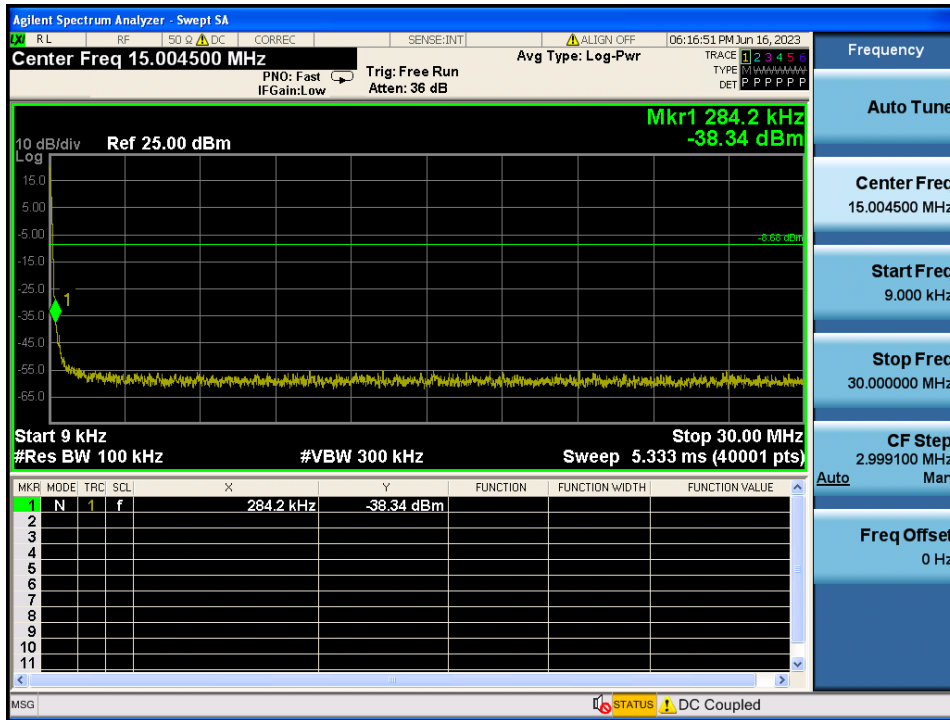
Reference



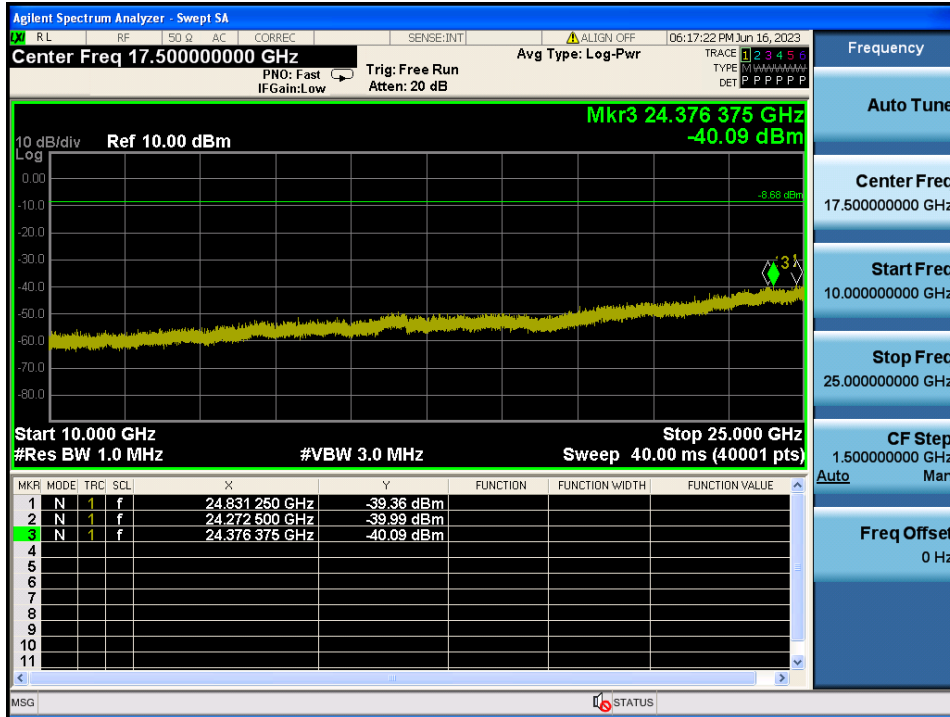
Low Band-edge



### Conducted Spurious Emissions

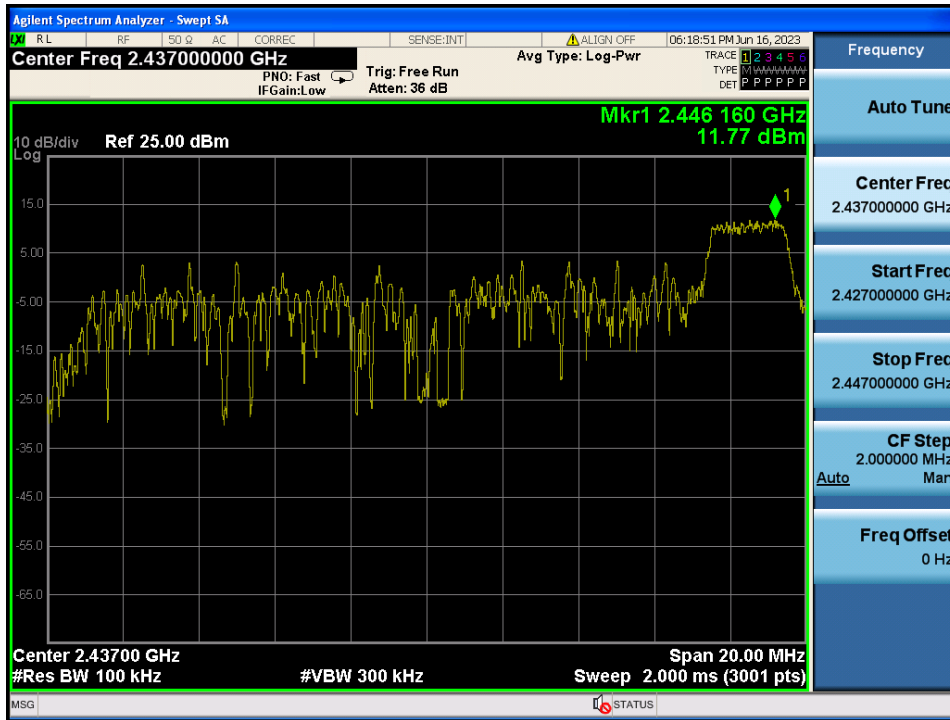


### Conducted Spurious Emissions

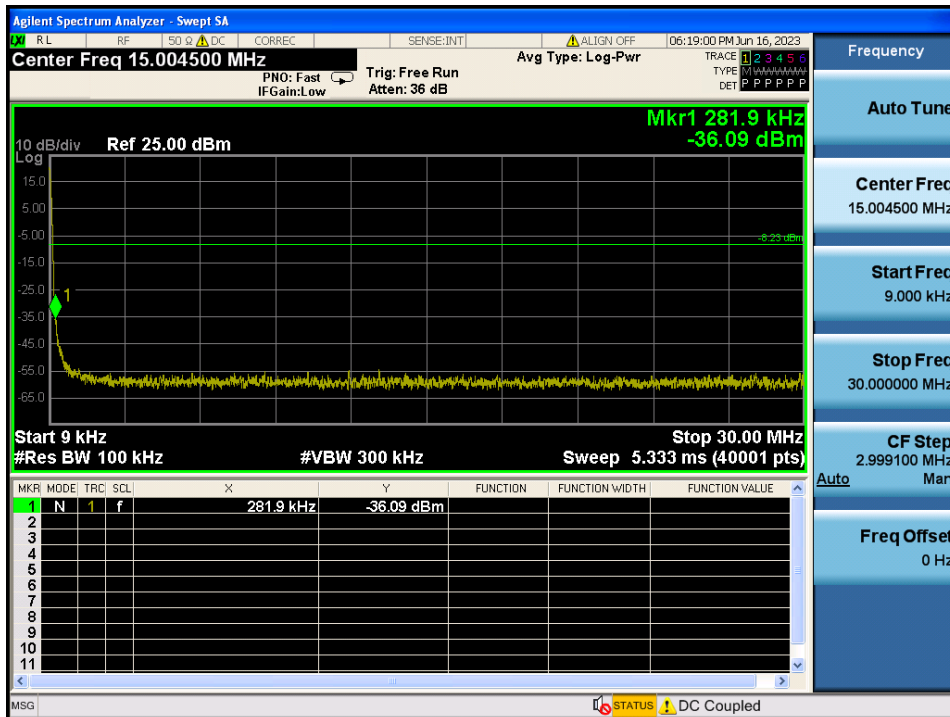


TM 1 & ANT 1 & 26 Tone & 8 RU & 2 437

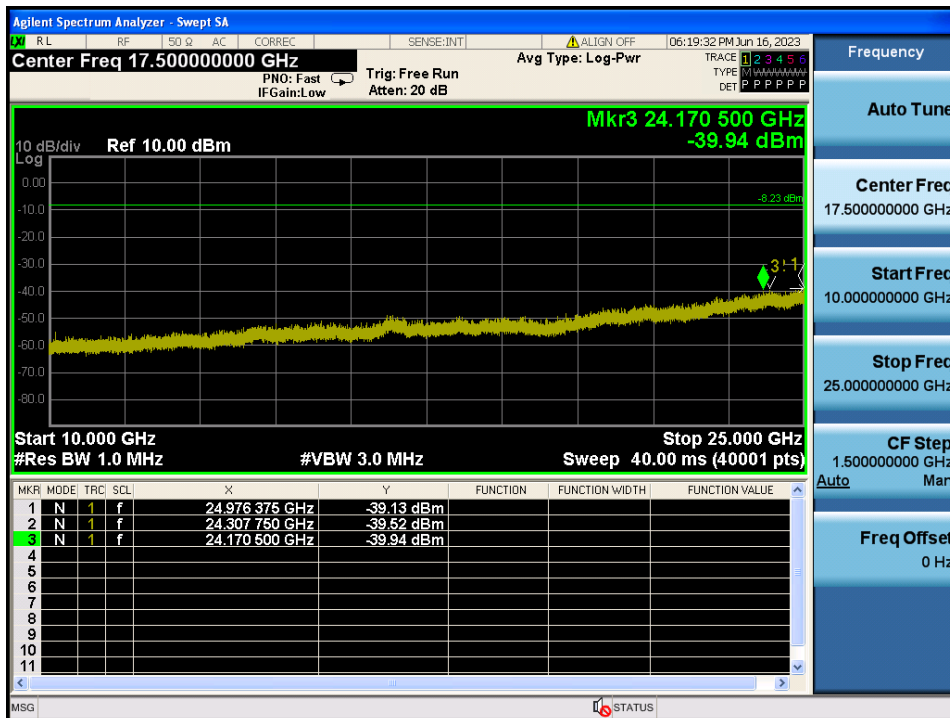
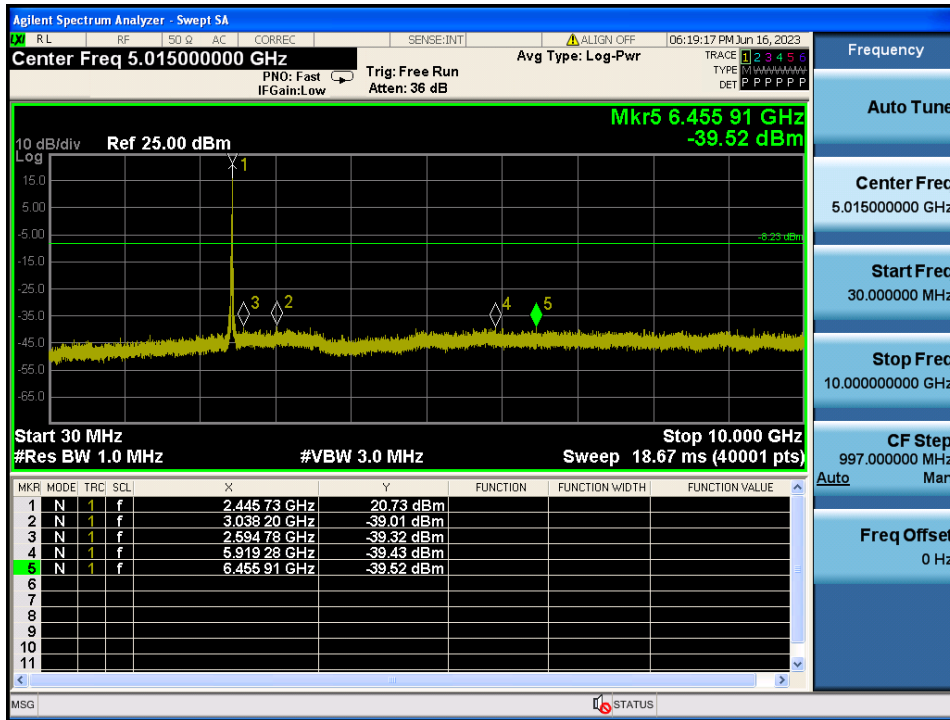
Reference



Conducted Spurious Emissions

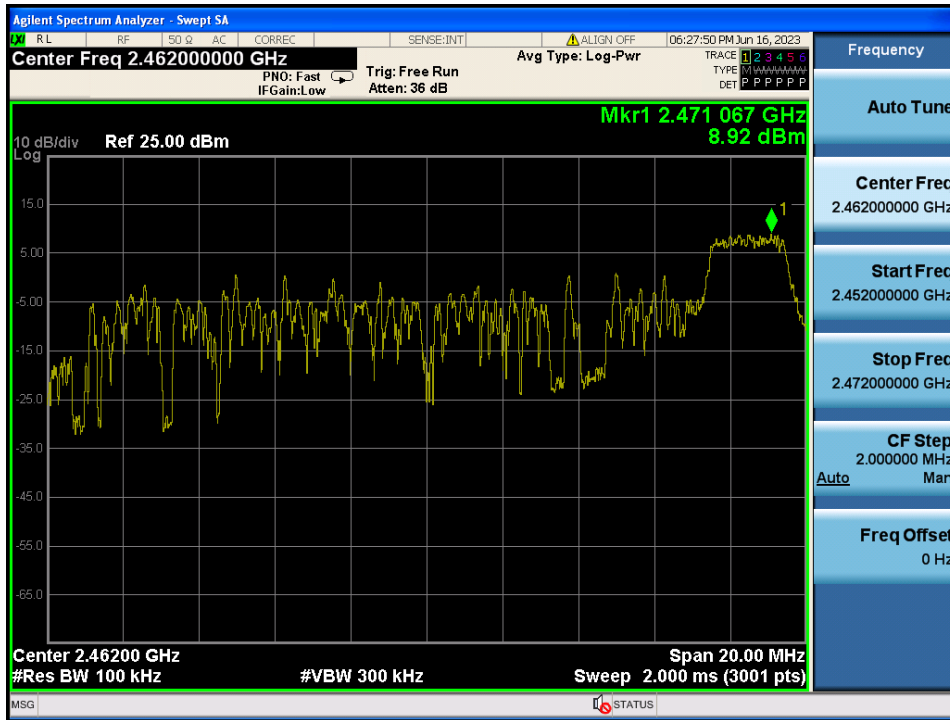


### Conducted Spurious Emissions

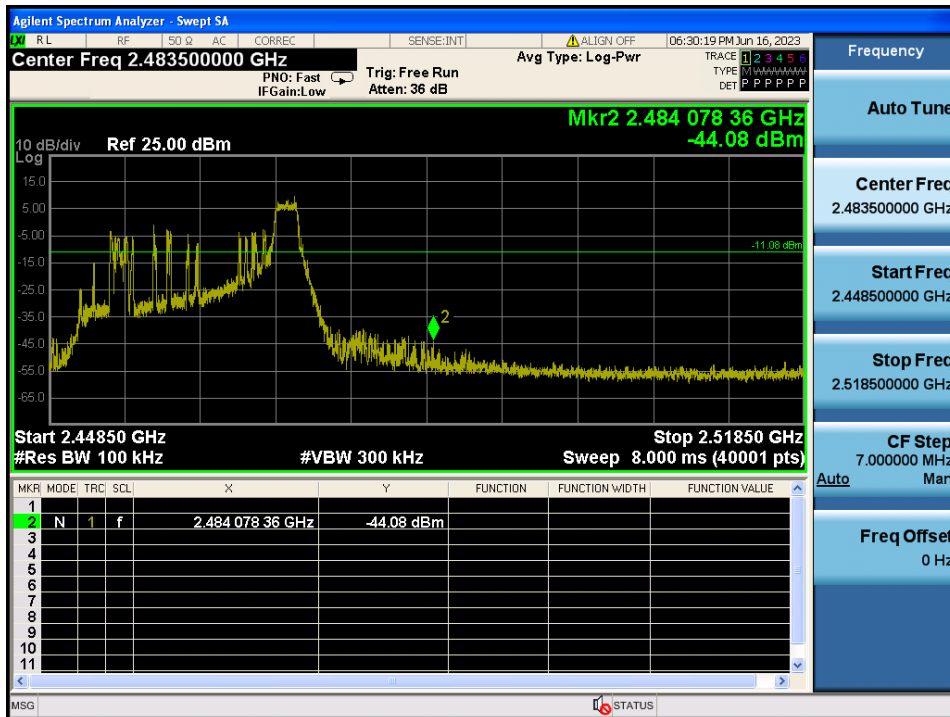


TM 1 & ANT 1 & 26 Tone & 8 RU & 2 462

Reference

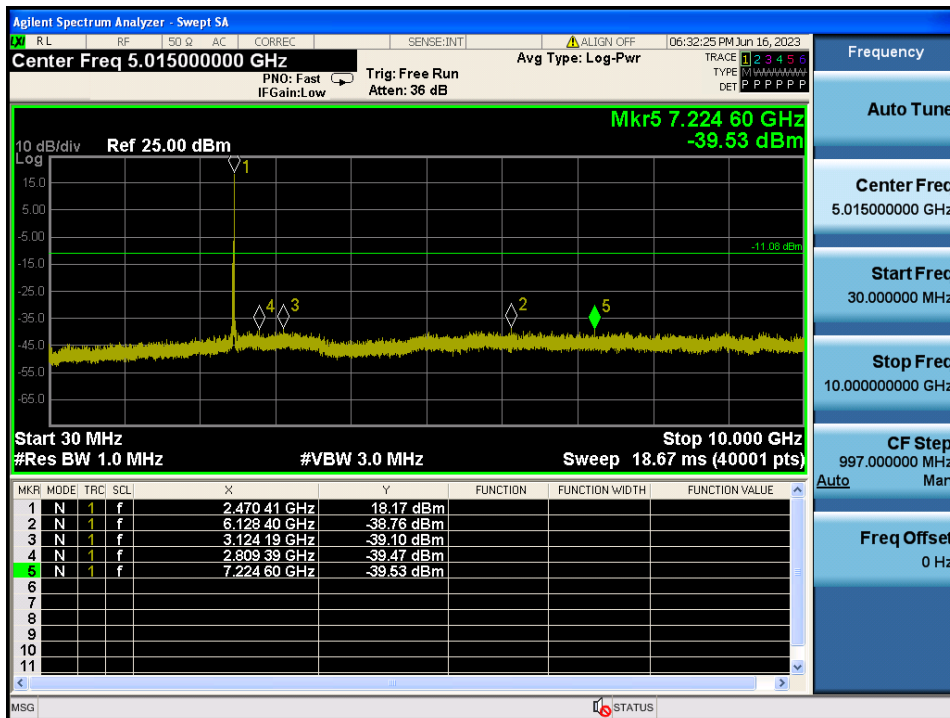
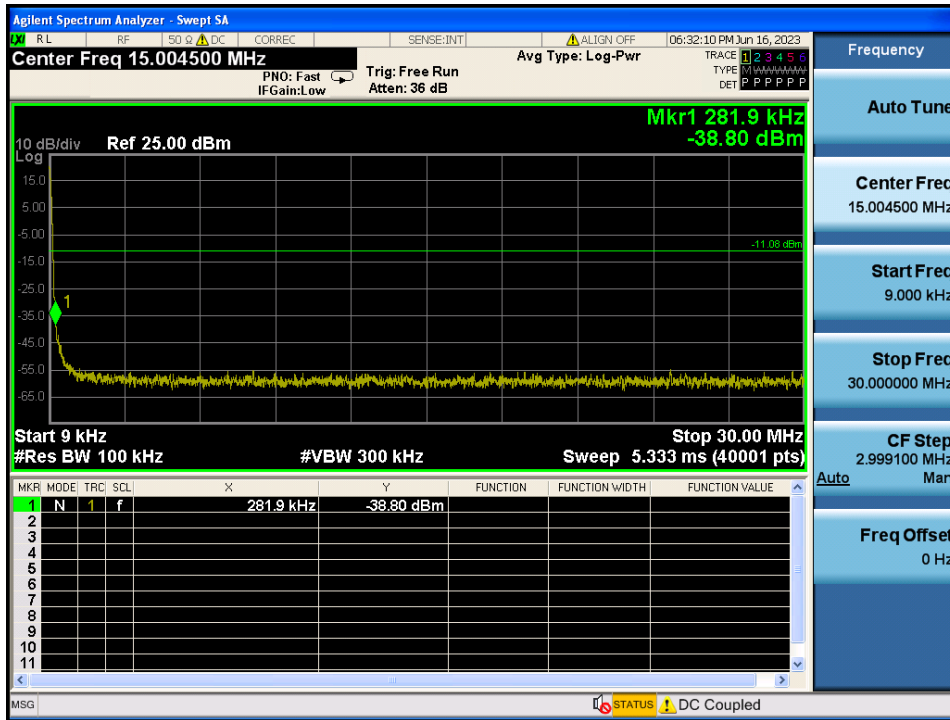


High Band-edge

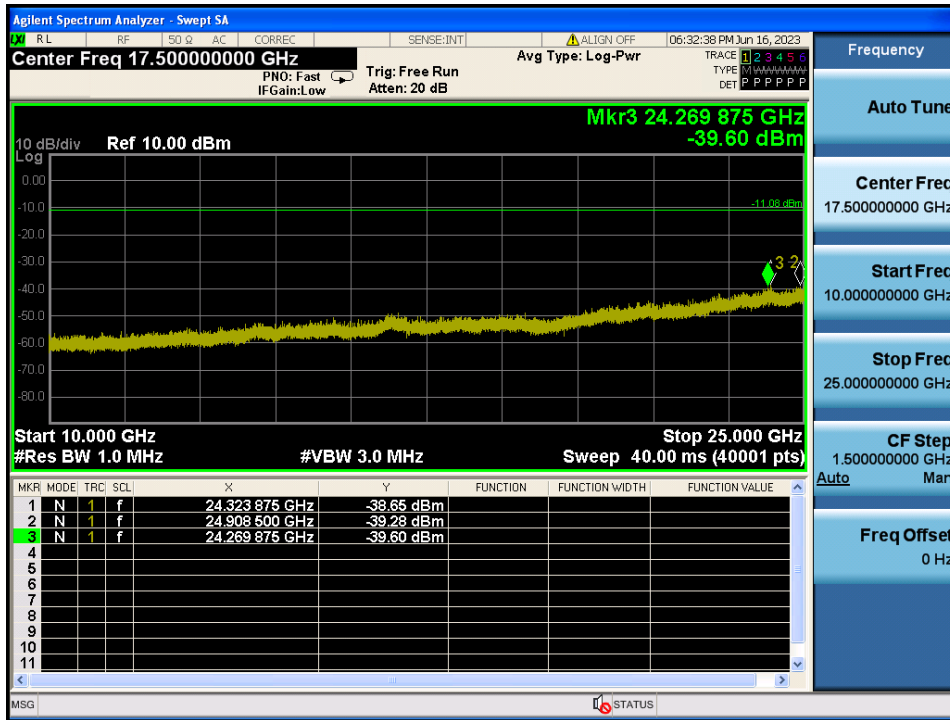




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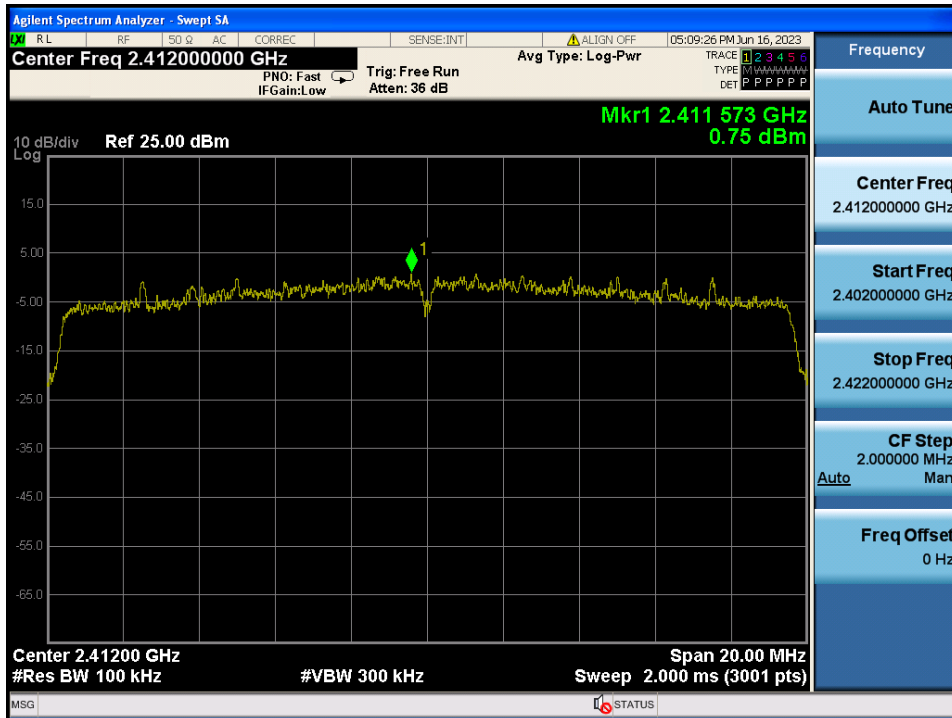


### Conducted Spurious Emissions

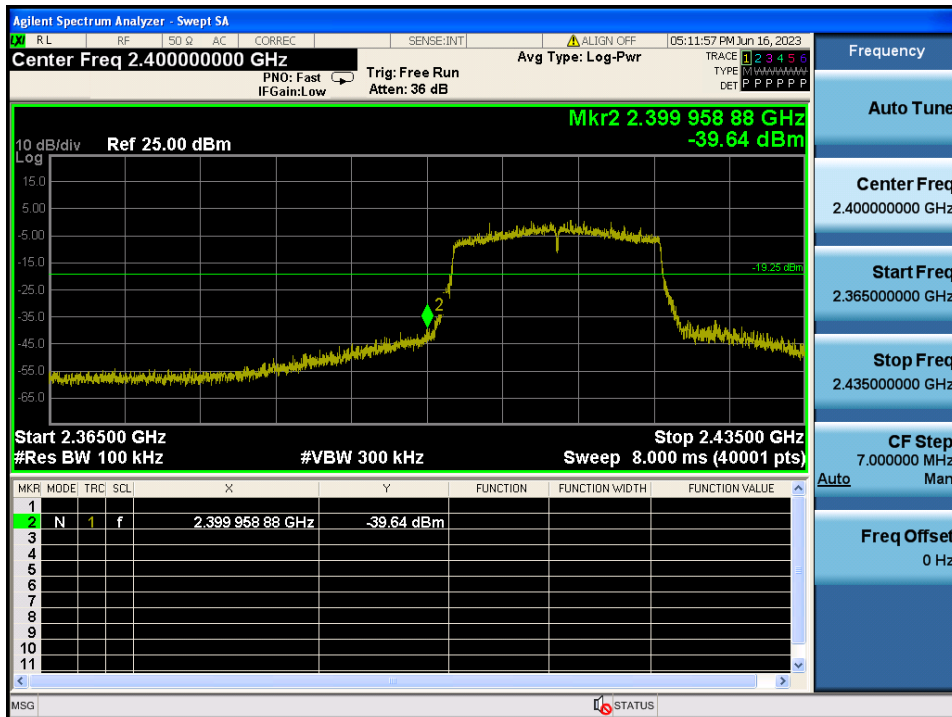


TM 1 & ANT 1 & SU & 2 412

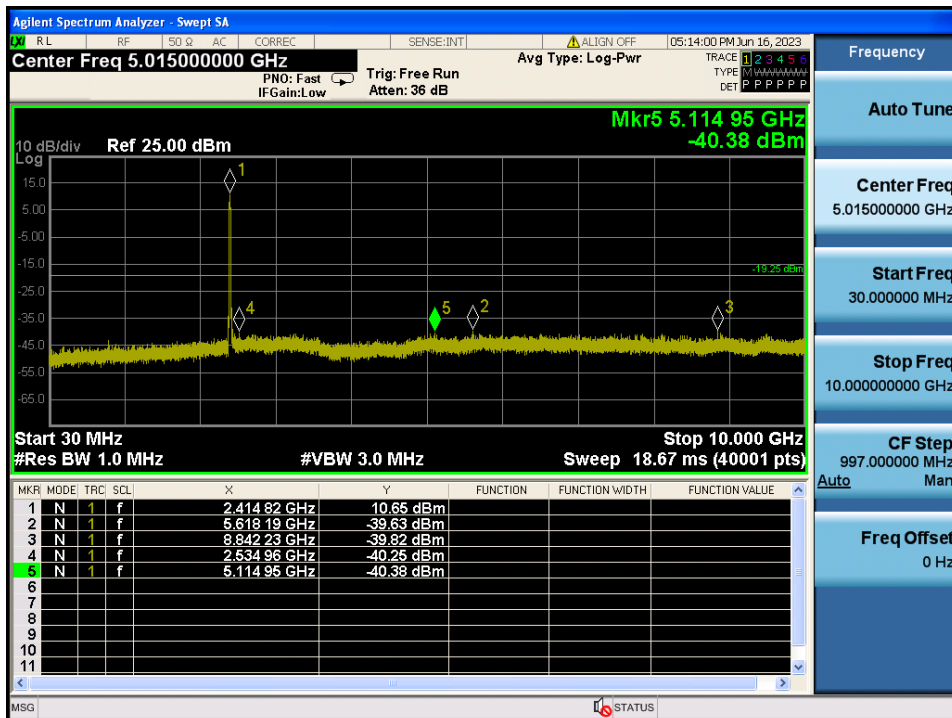
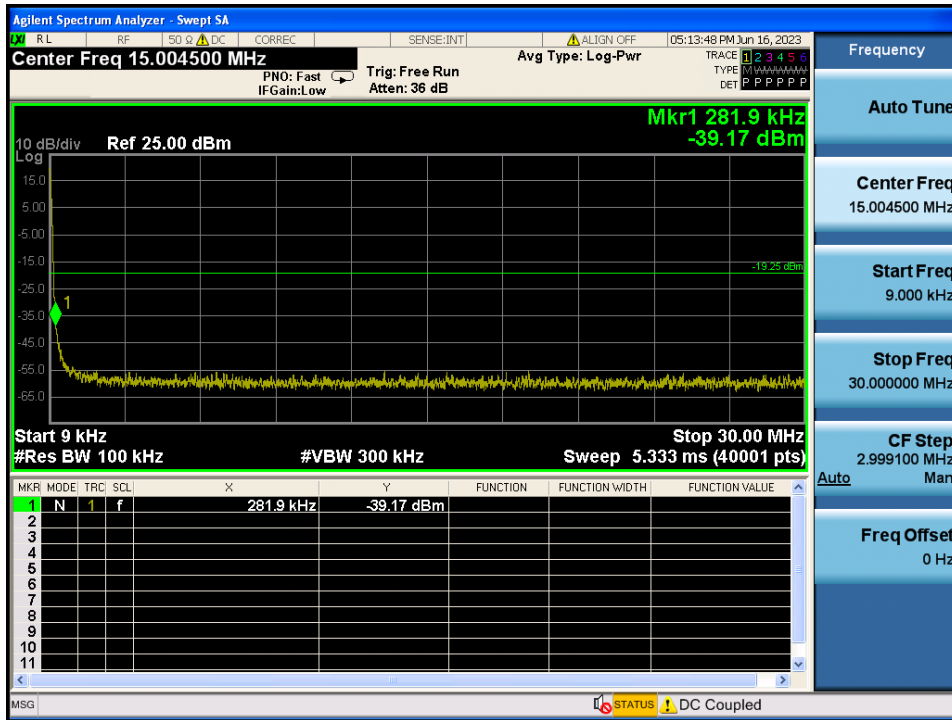
Reference



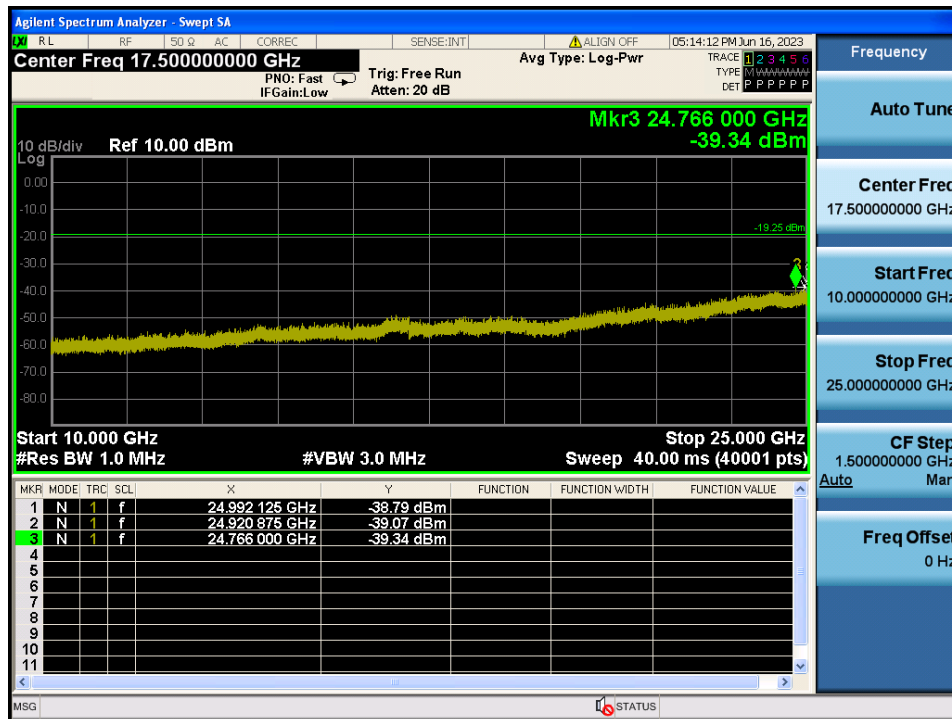
Low Band-edge



### Conducted Spurious Emissions

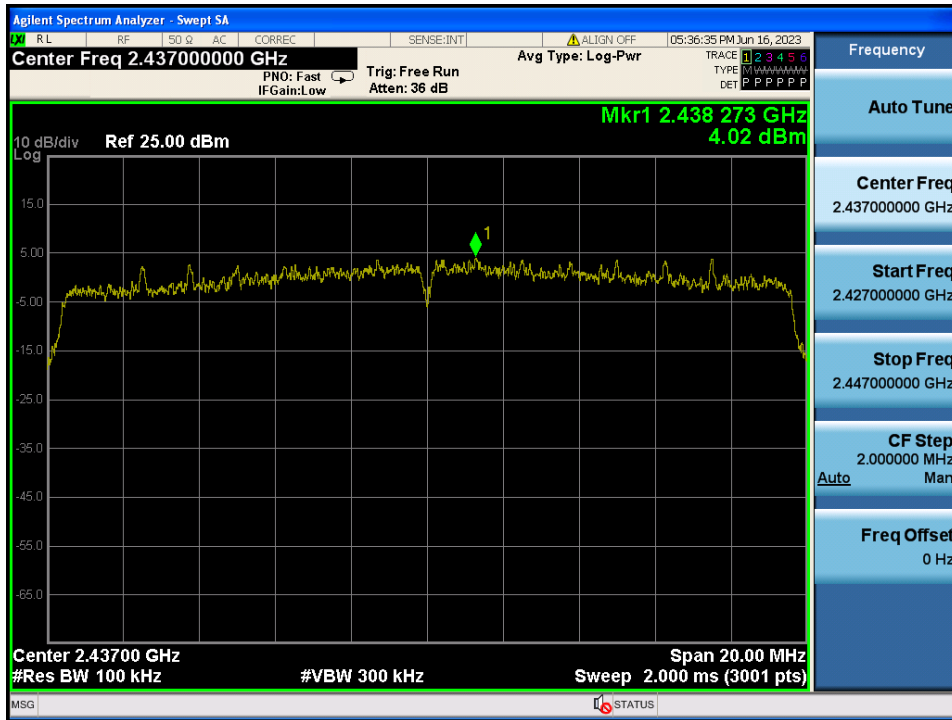


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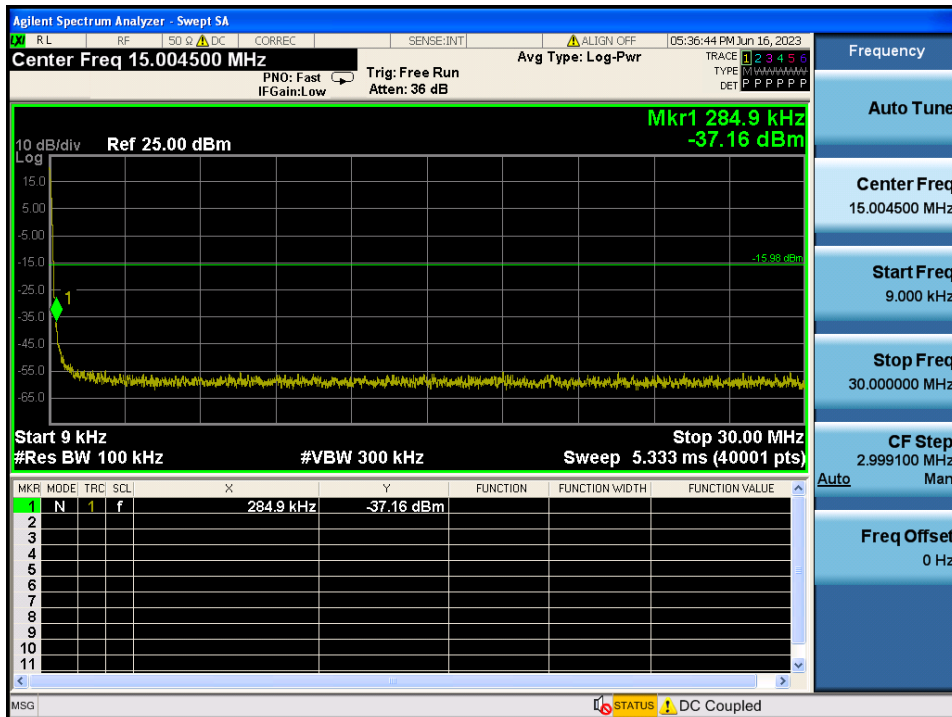


TM 1 & ANT 1 & SU & 2 437

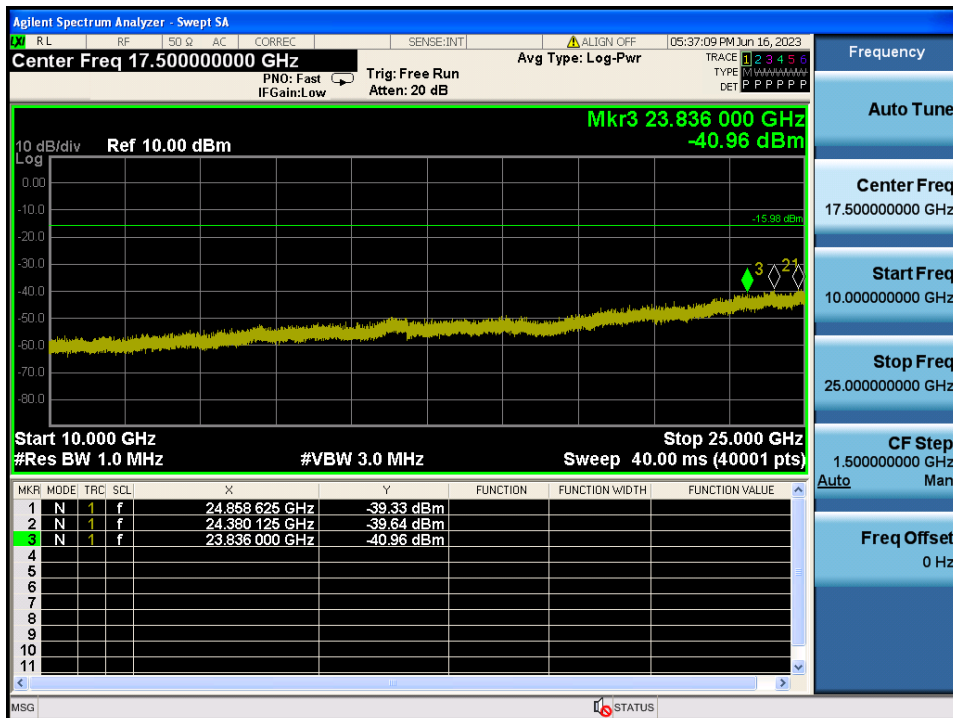
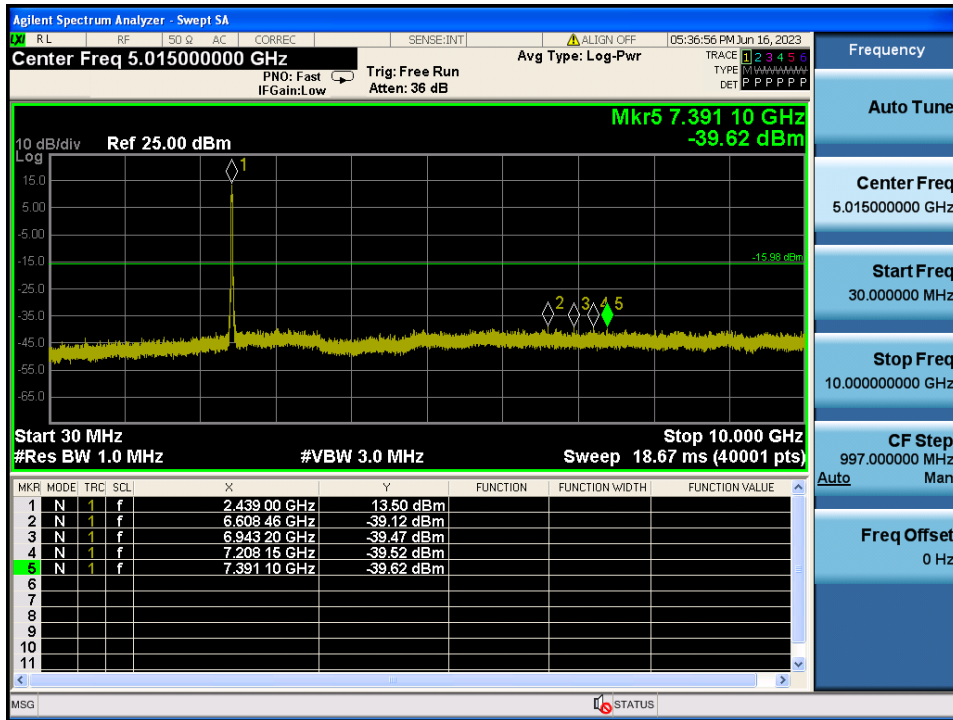
Reference



Conducted Spurious Emissions

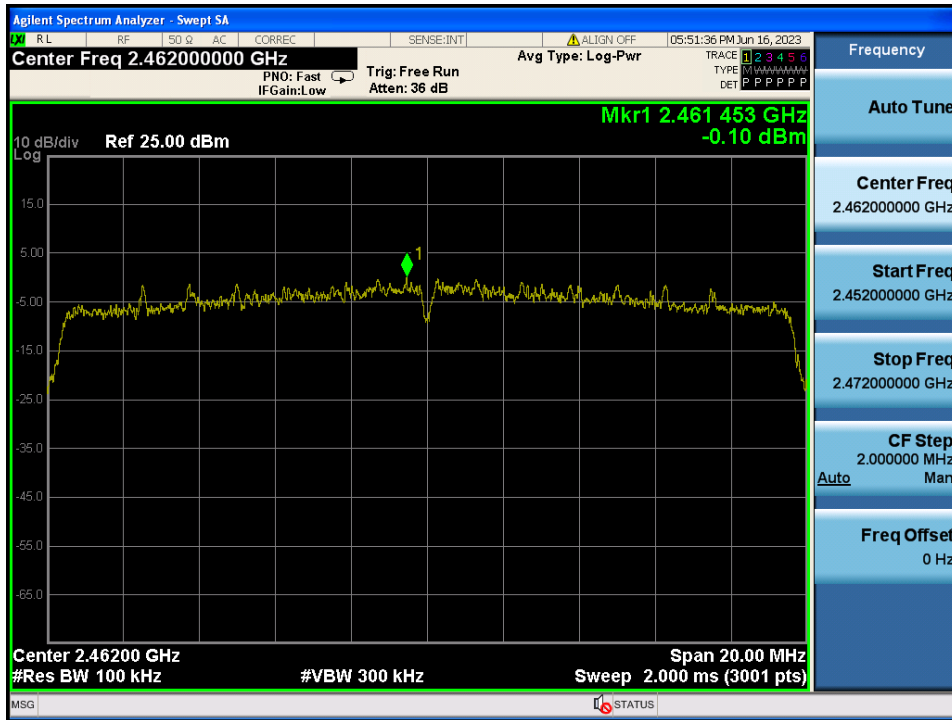


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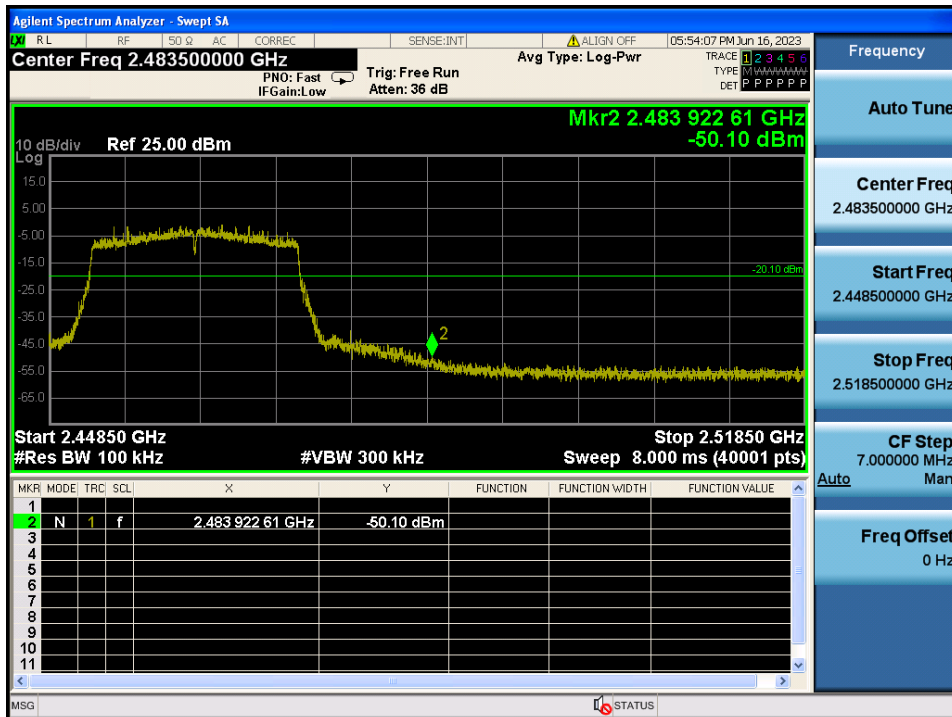


TM 1 & ANT 1 & SU & 2 462

Reference

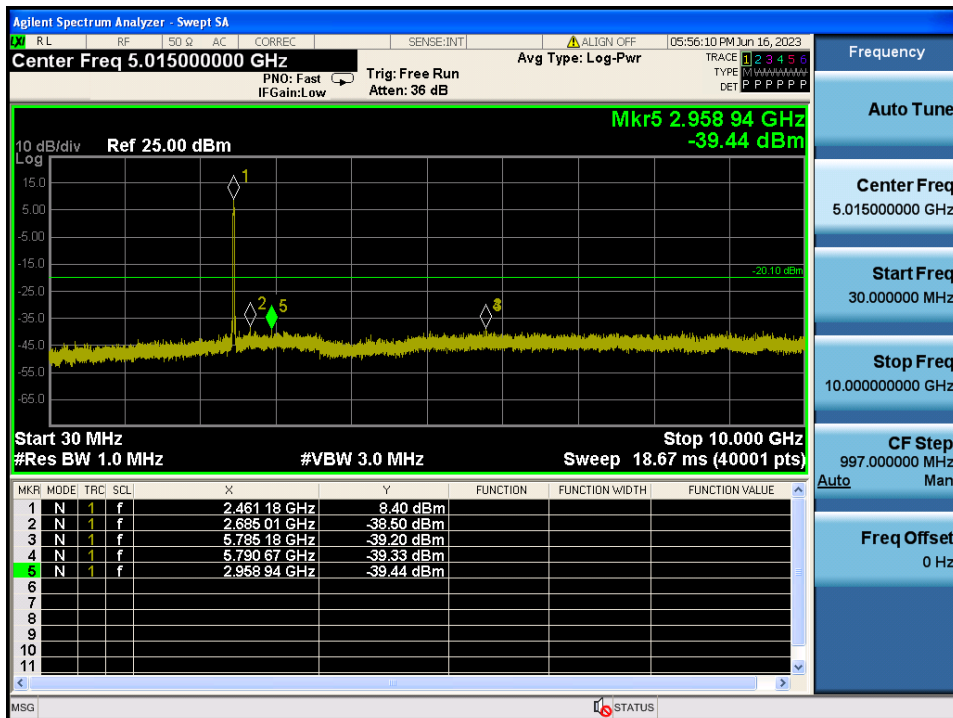
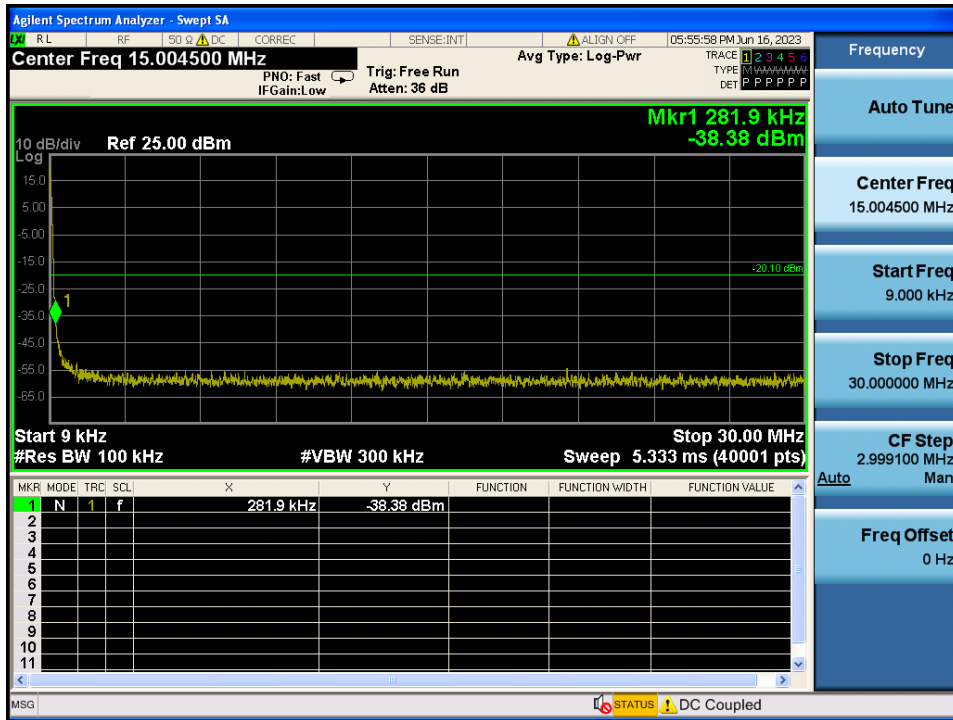


High Band-edge

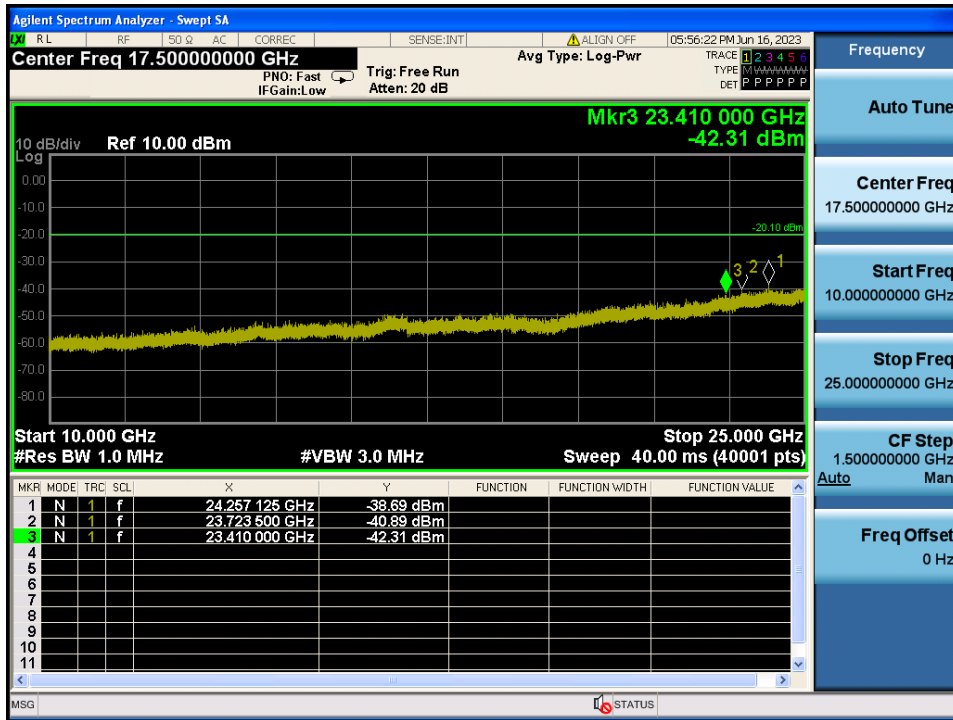




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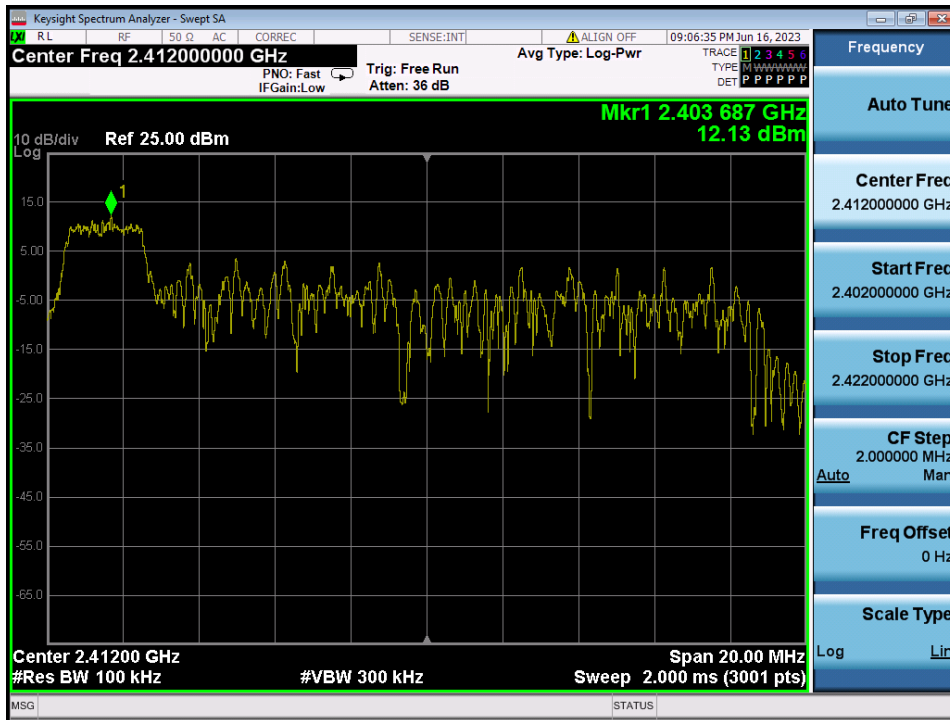


### Conducted Spurious Emissions

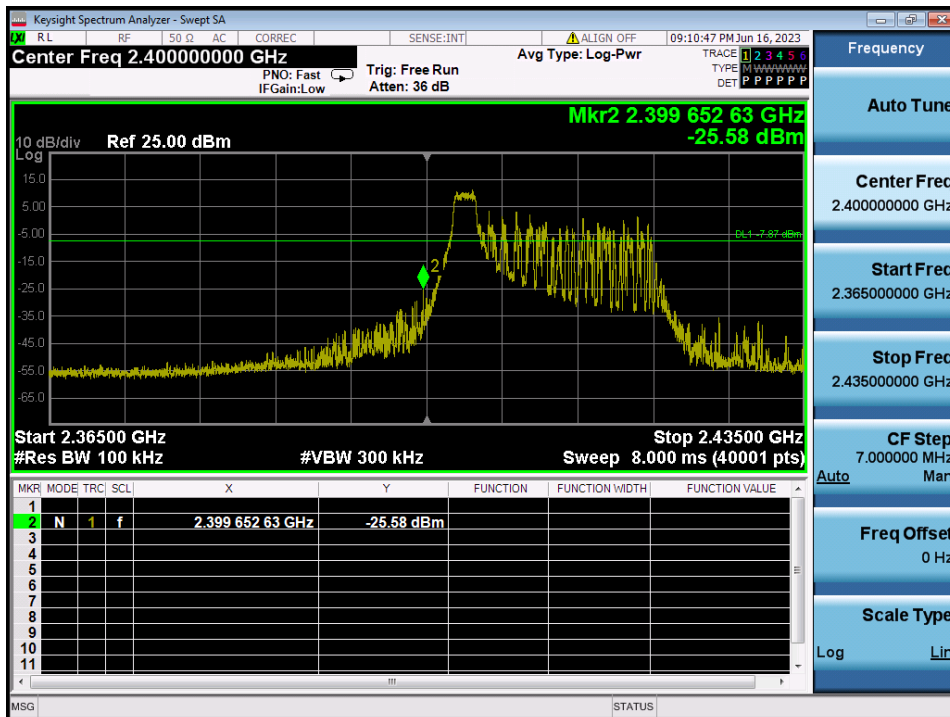


TM 1 & ANT 2 & 26 Tone & 0 RU & 2 412

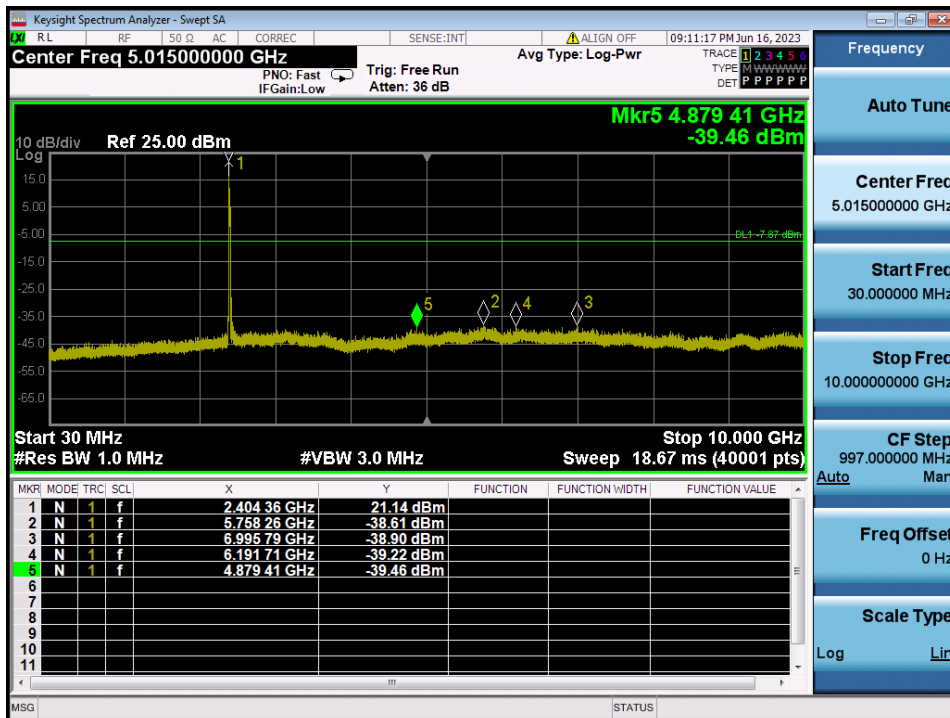
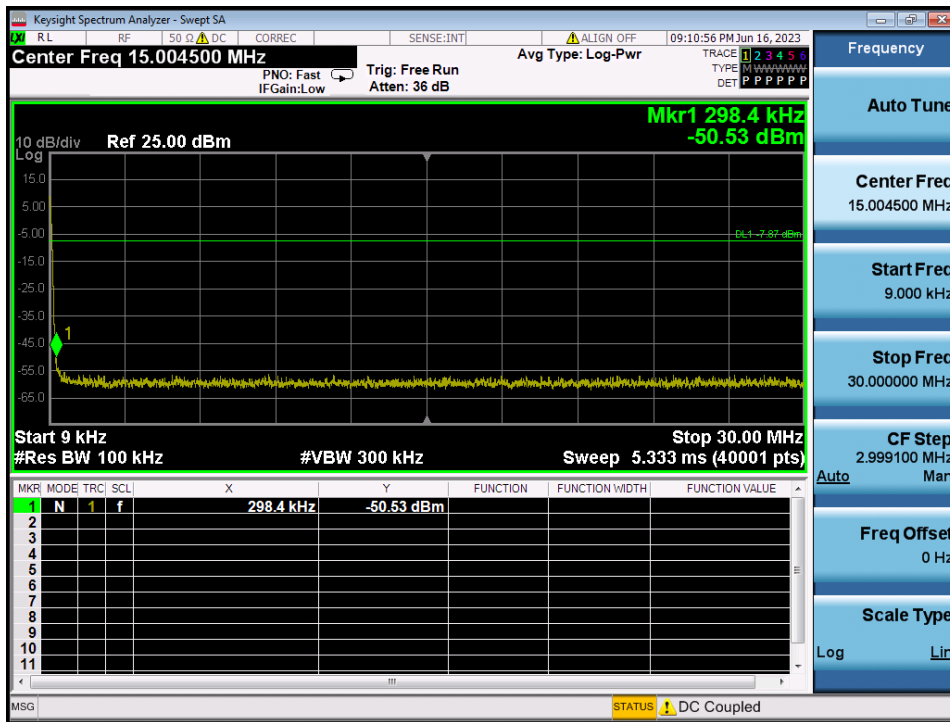
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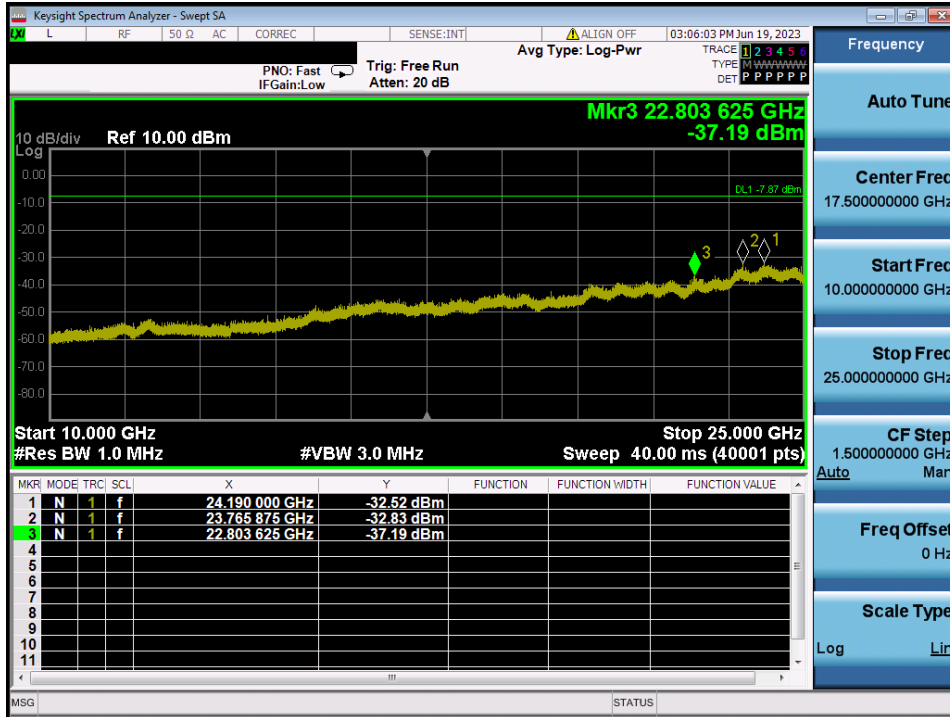
Low Band-edge



### Conducted Spurious Emissions

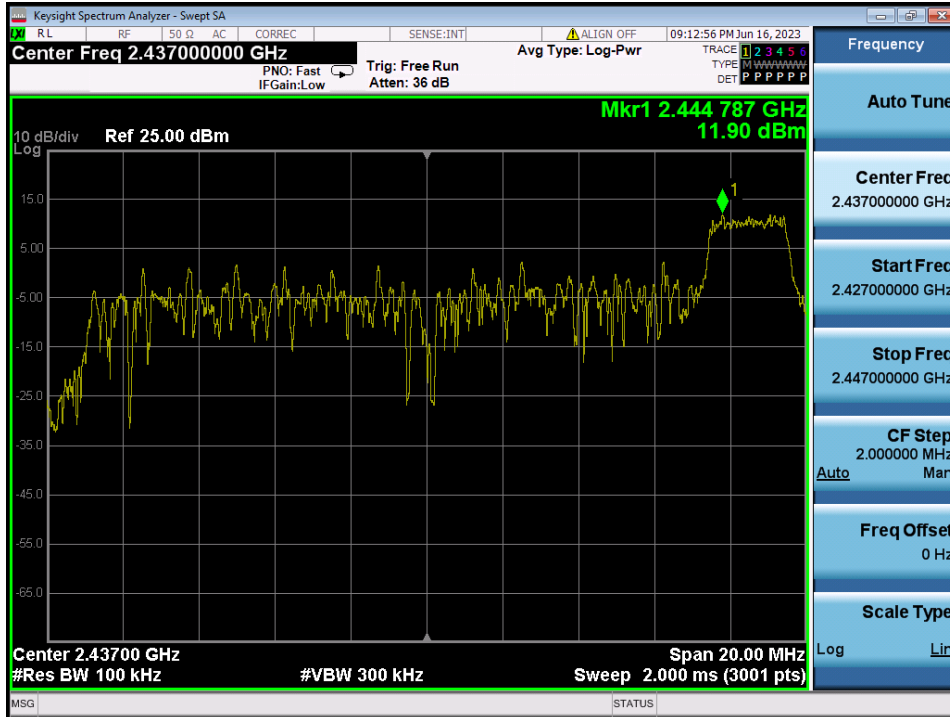


### Conducted Spurious Emissions

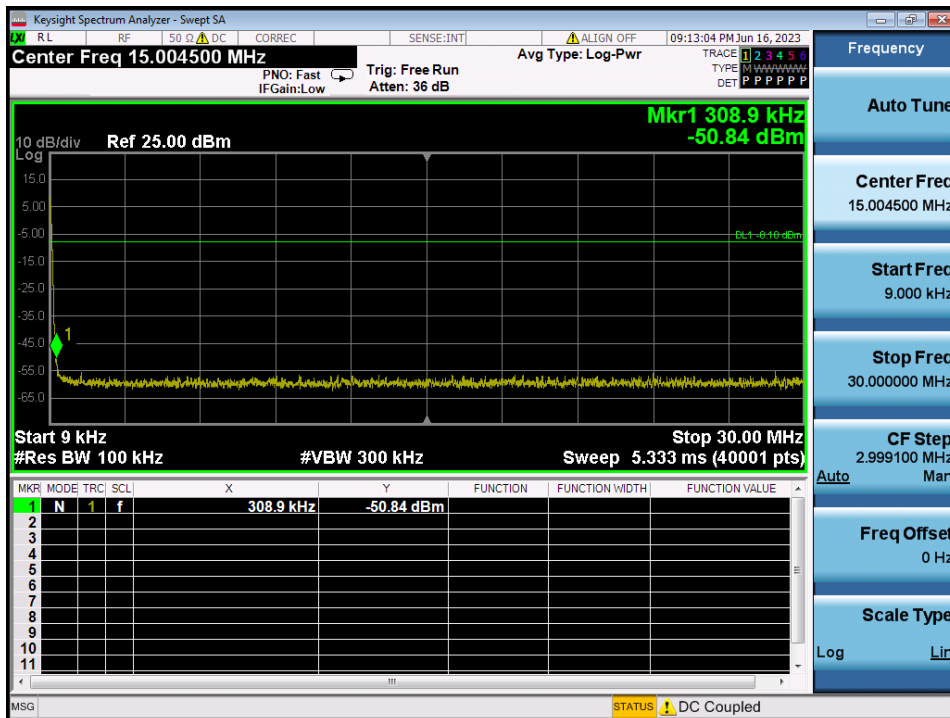


TM 1 & ANT 2 & 26 Tone & 8 RU & 2 437

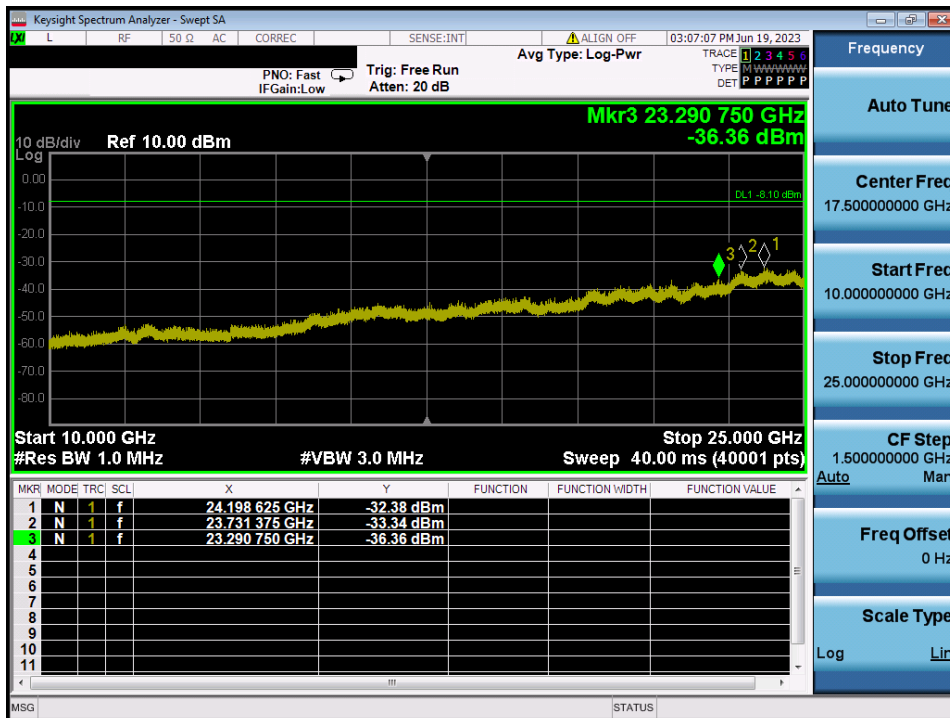
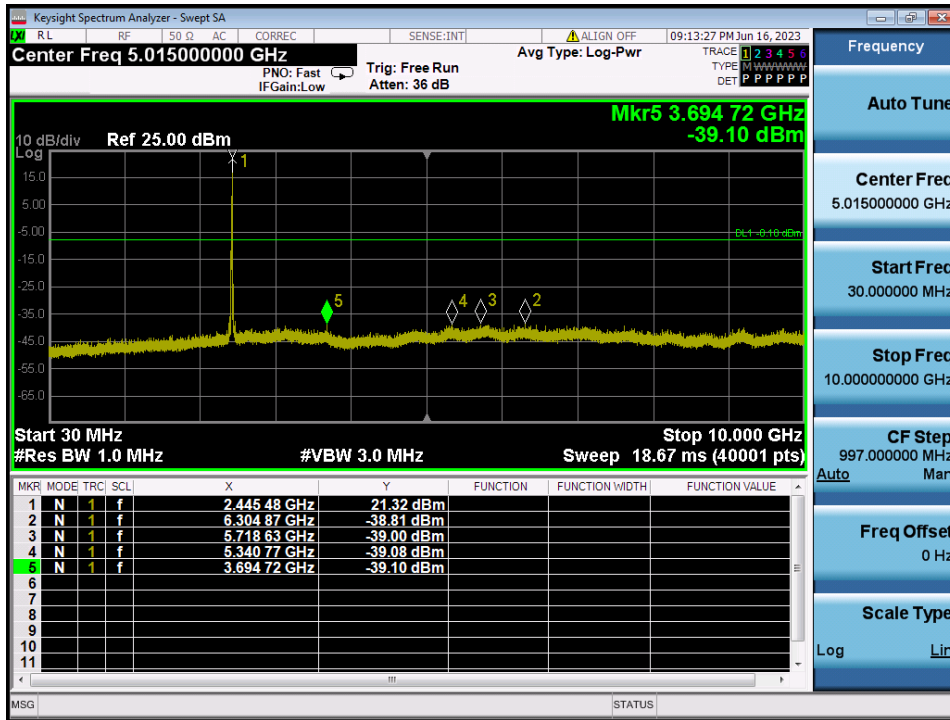
Reference



Conducted Spurious Emissions

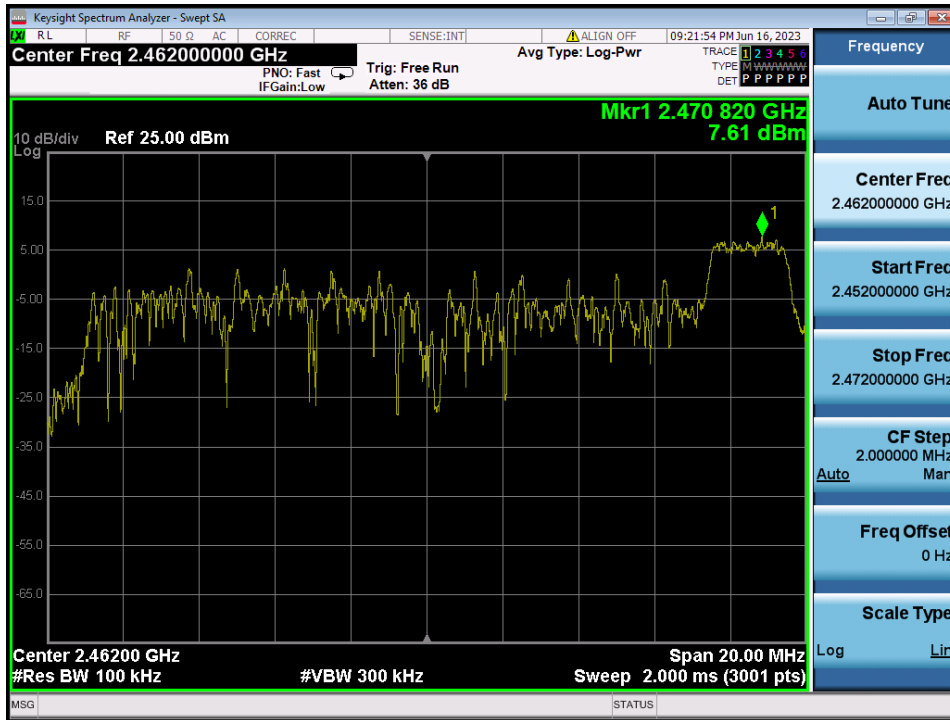


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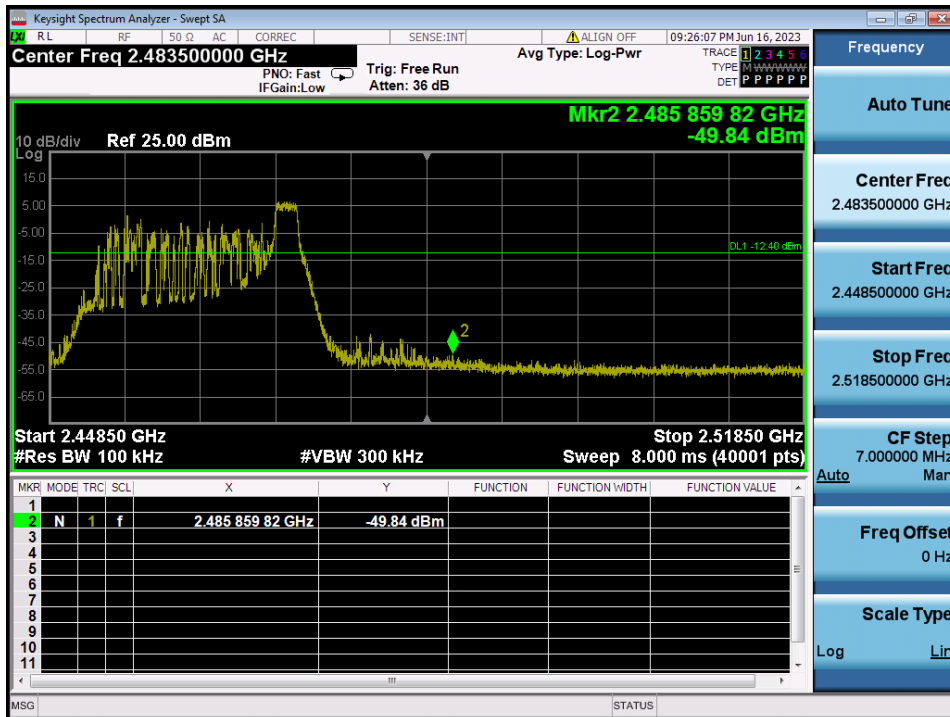


TM 1 & ANT 2 & 26 Tone & 8 RU & 2 462

Reference

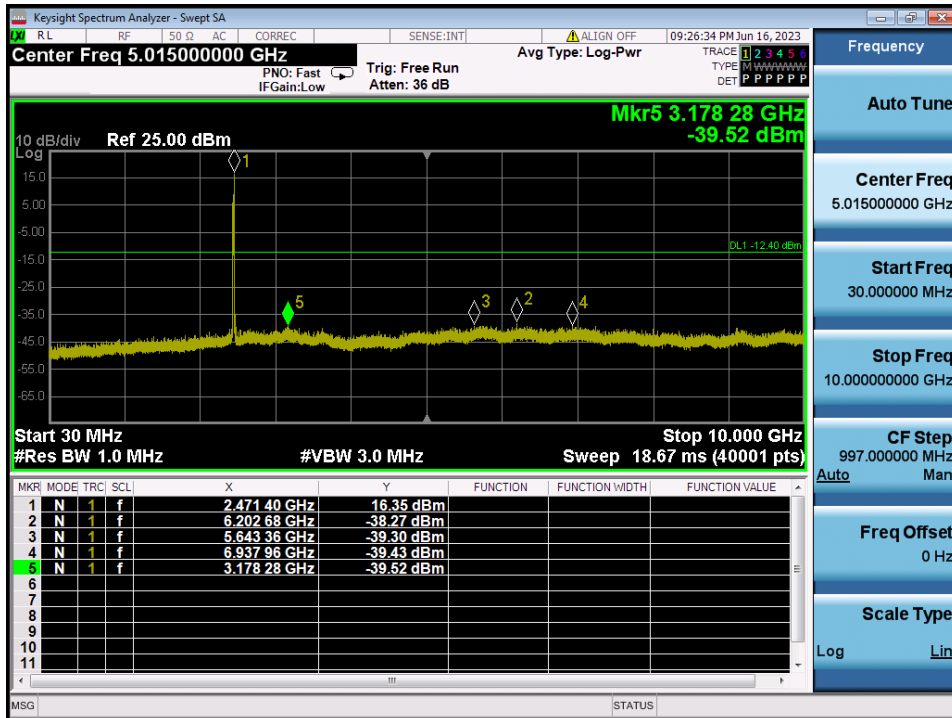
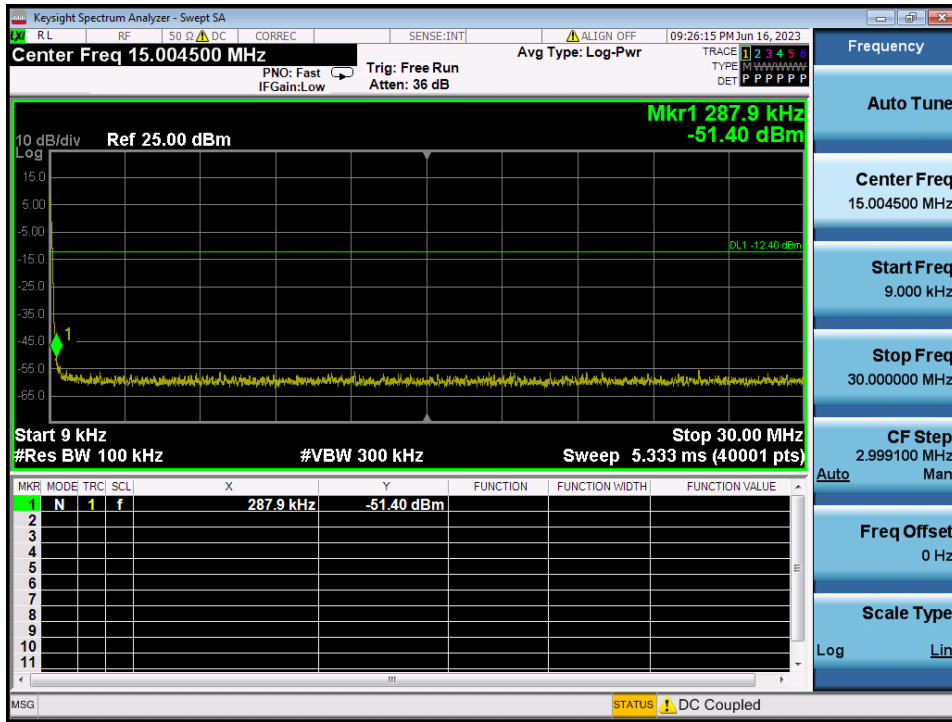


High Band-edge

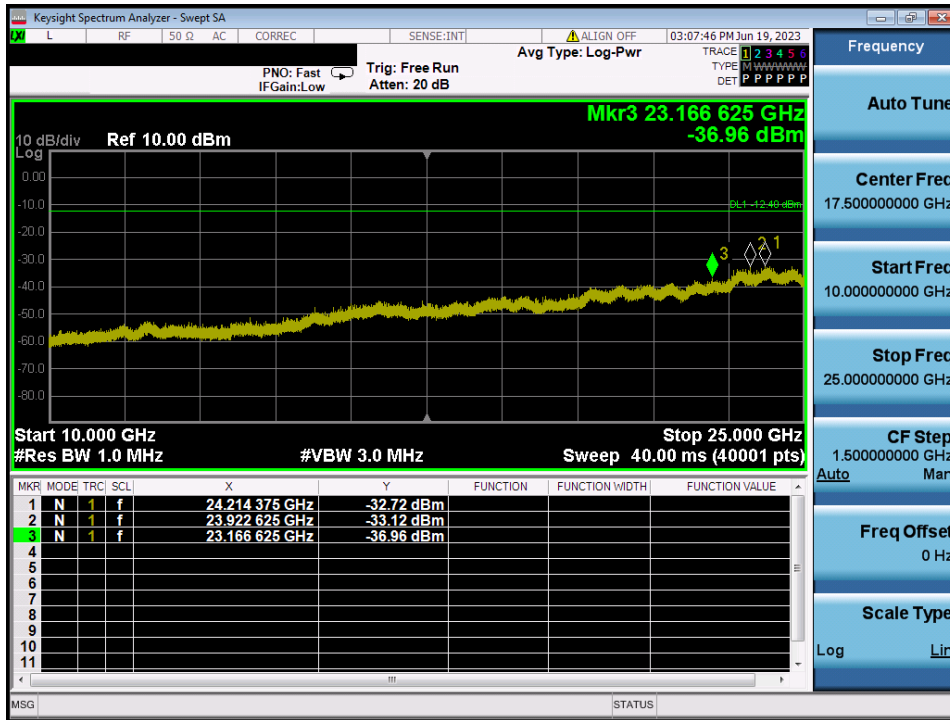




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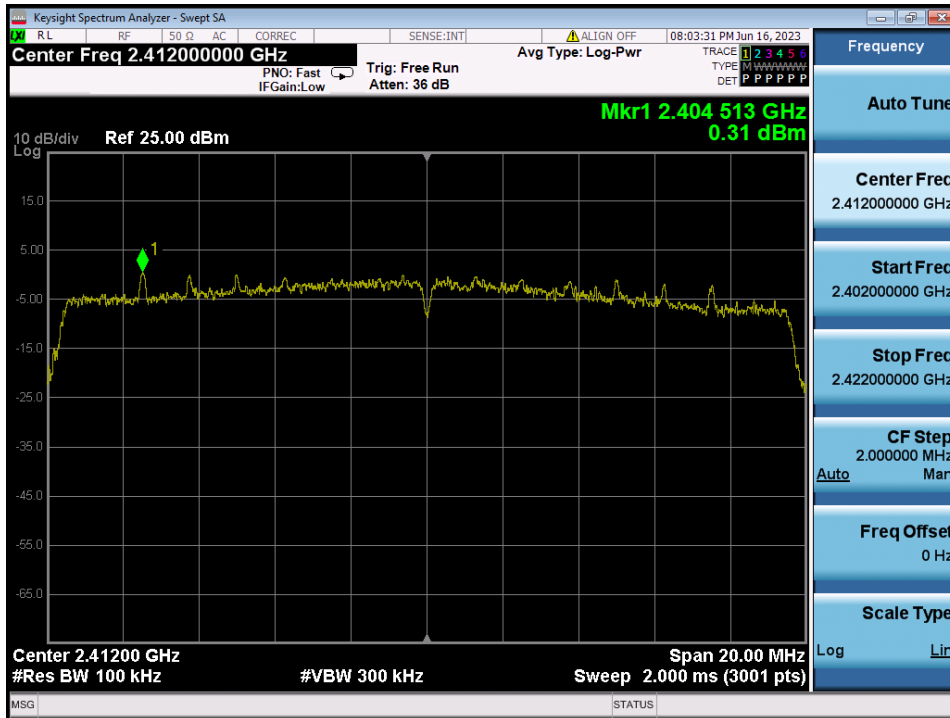


### Conducted Spurious Emissions

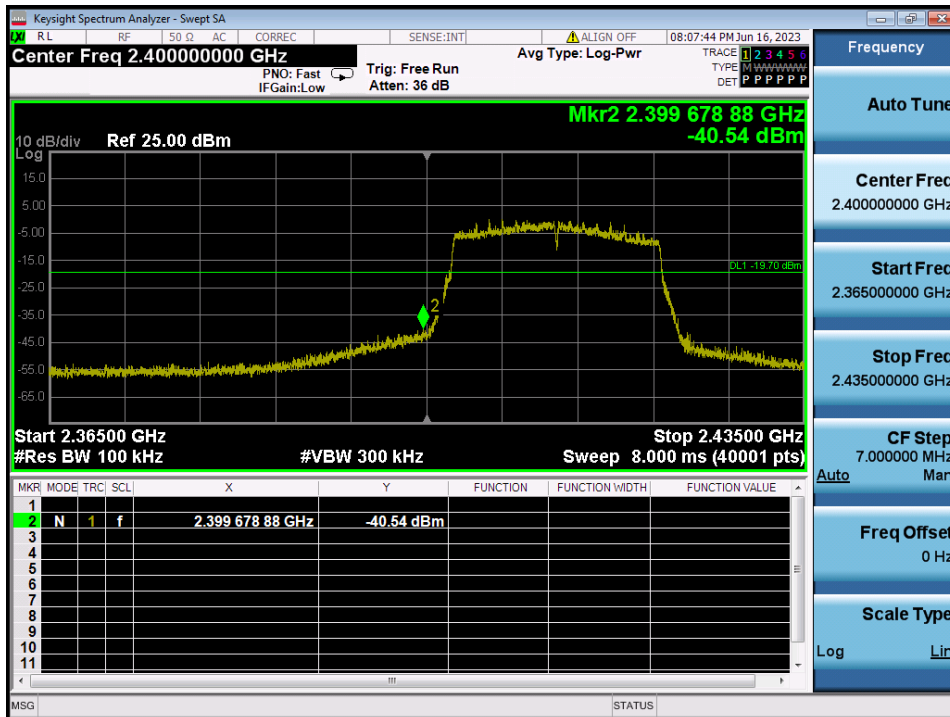


TM 1 & ANT 2 & SU & 2 412

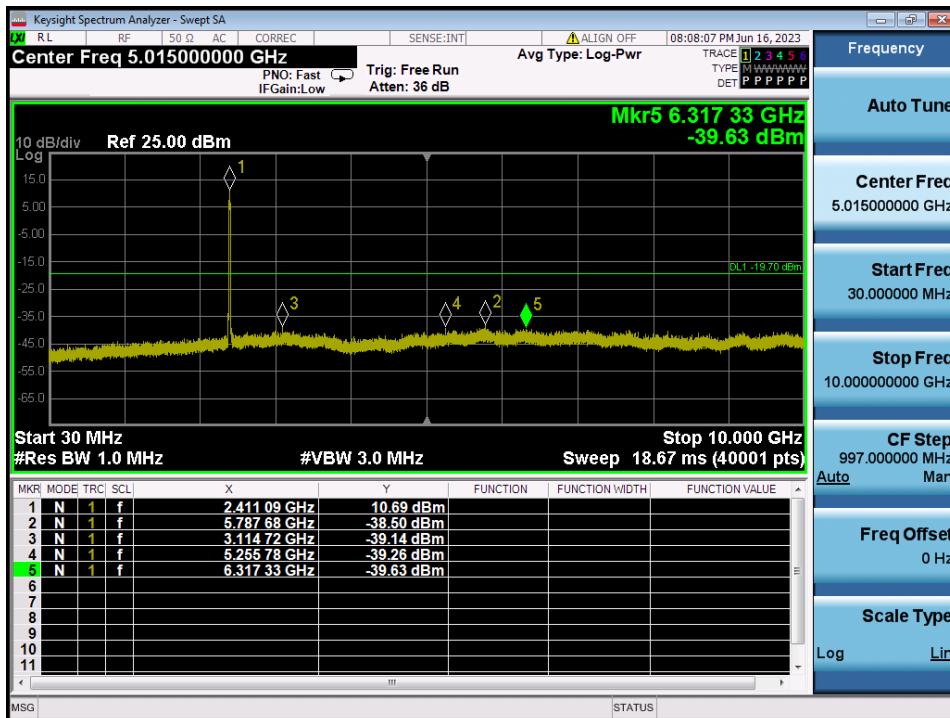
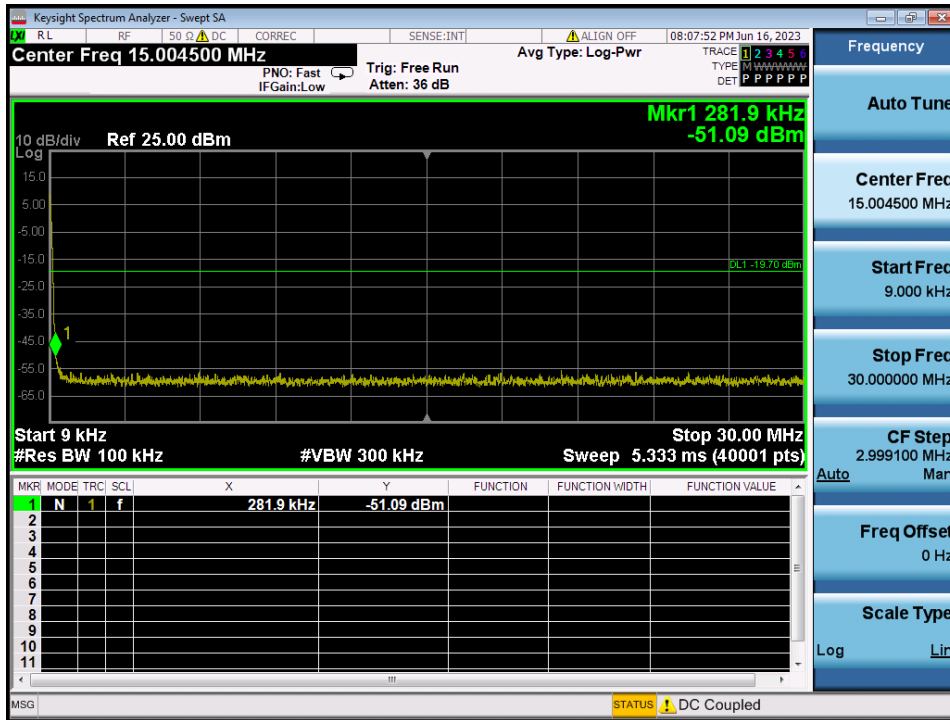
Reference



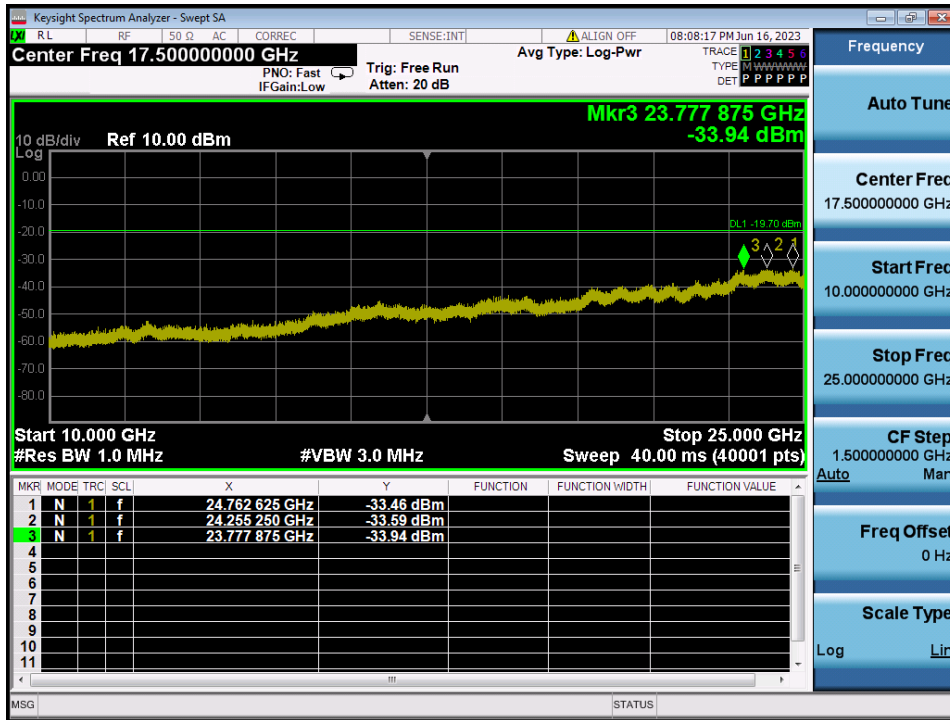
Low Band-edge



### Conducted Spurious Emissions

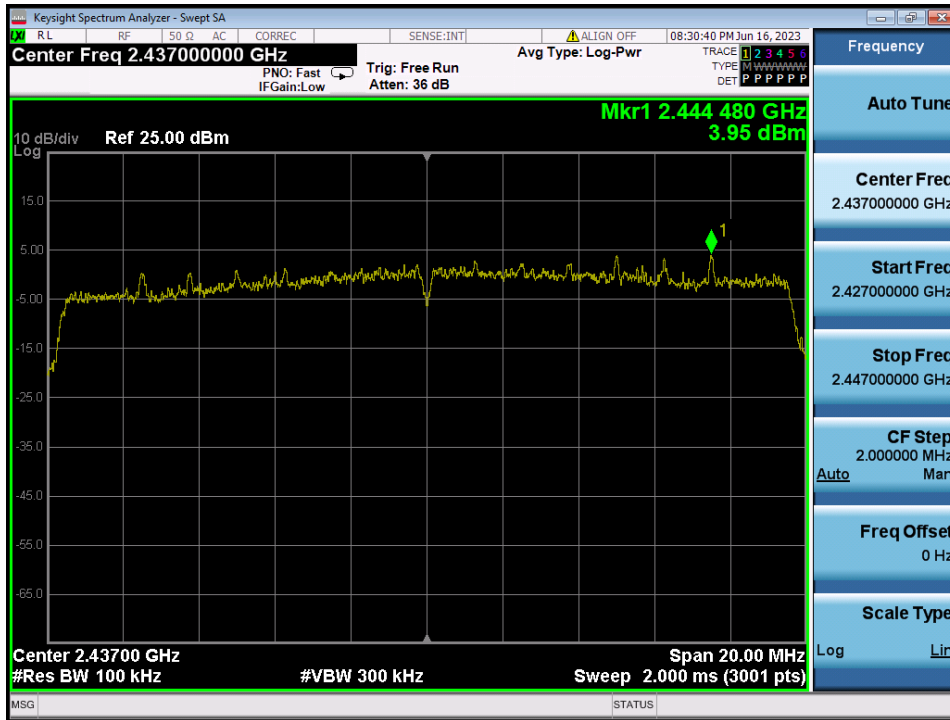


### Conducted Spurious Emissions

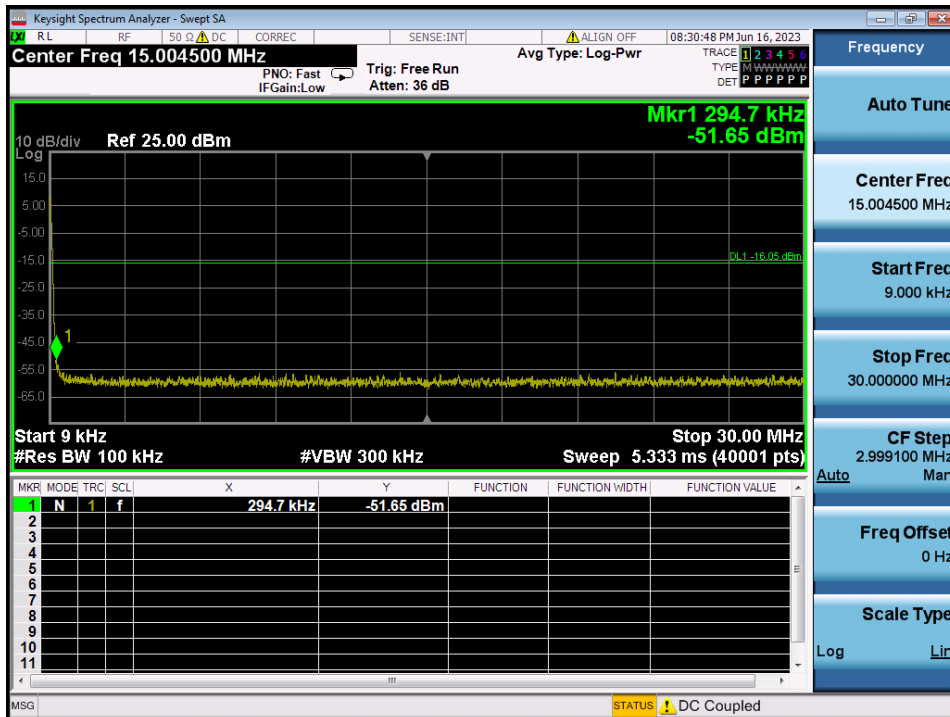


TM 1 & ANT 2 & SU & 2 437

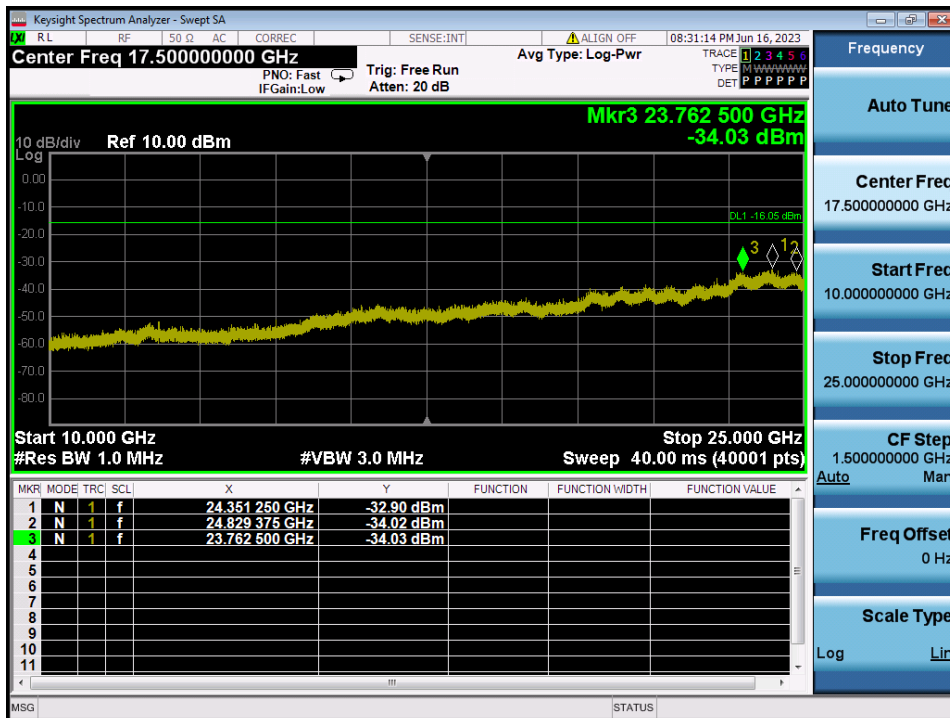
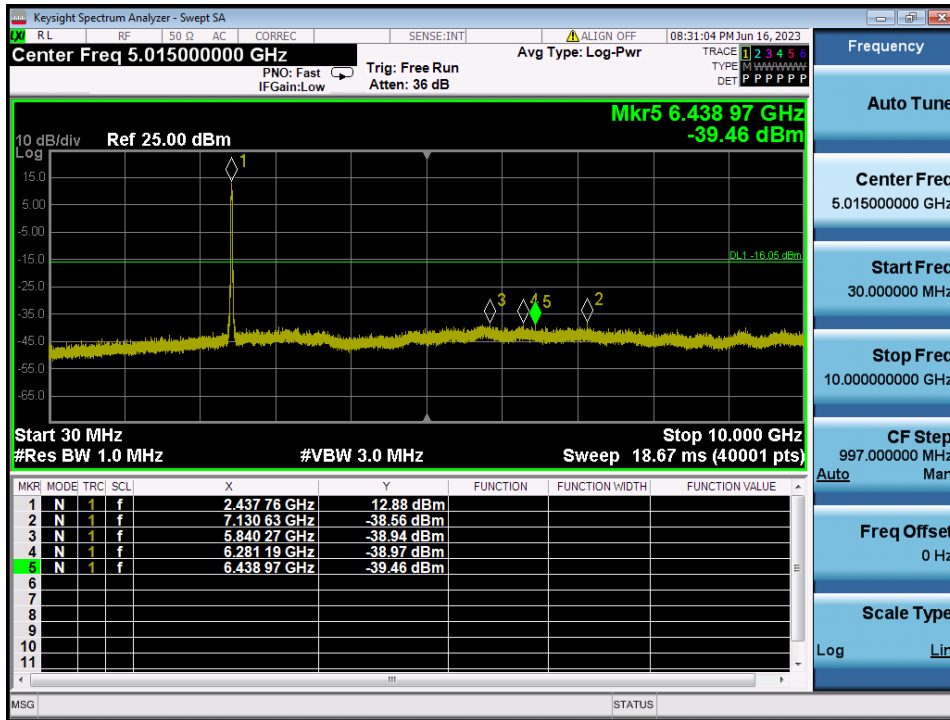
Reference



Conducted Spurious Emissions

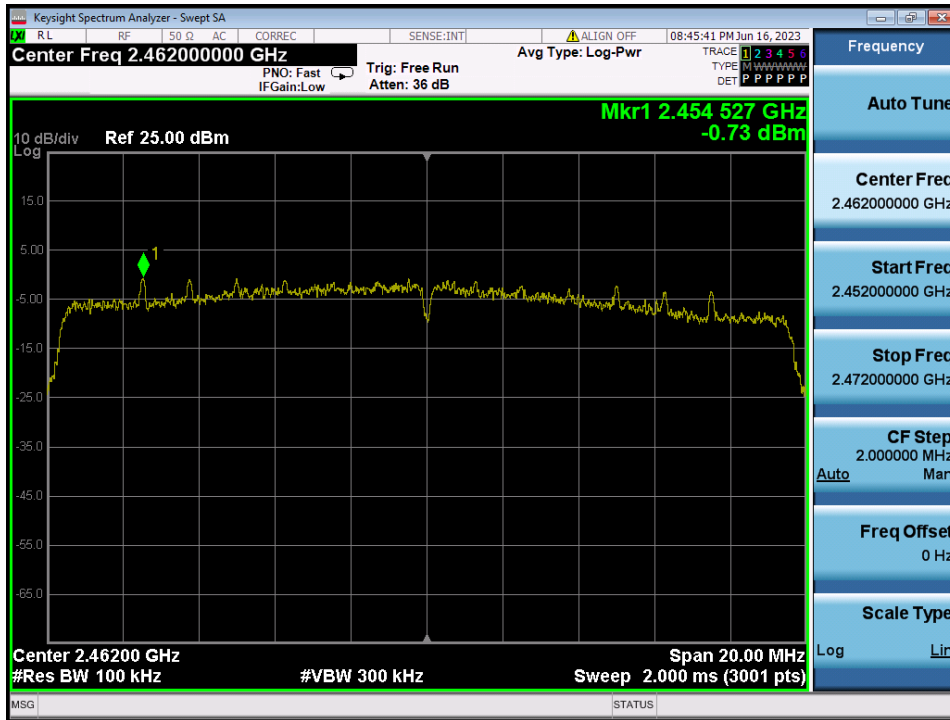


### Conducted Spurious Emissions

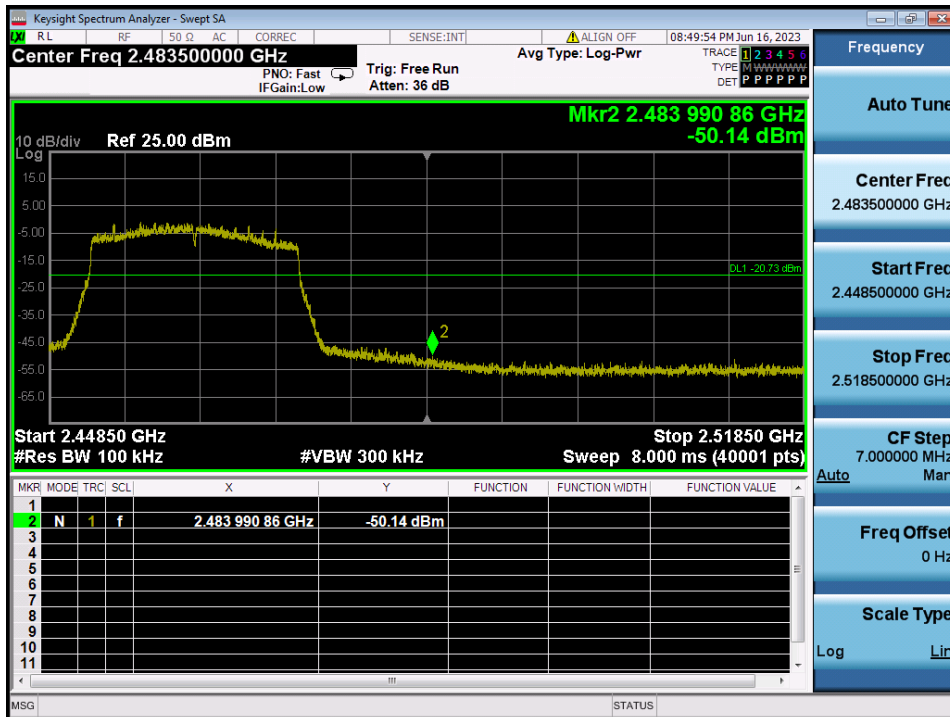


TM 1 & ANT 2 & SU & 2 462

Reference

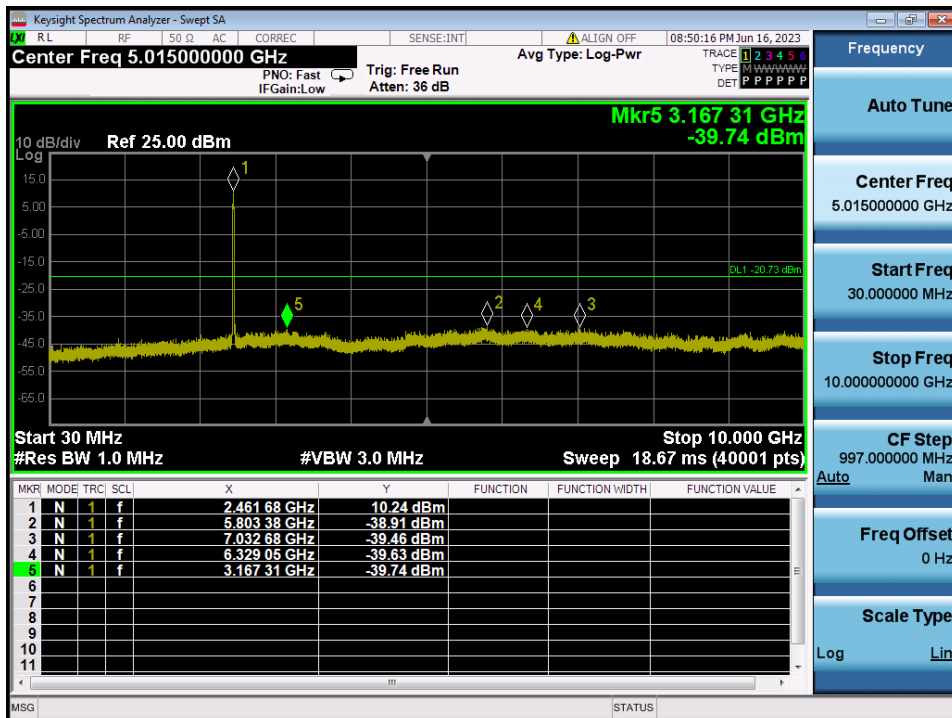
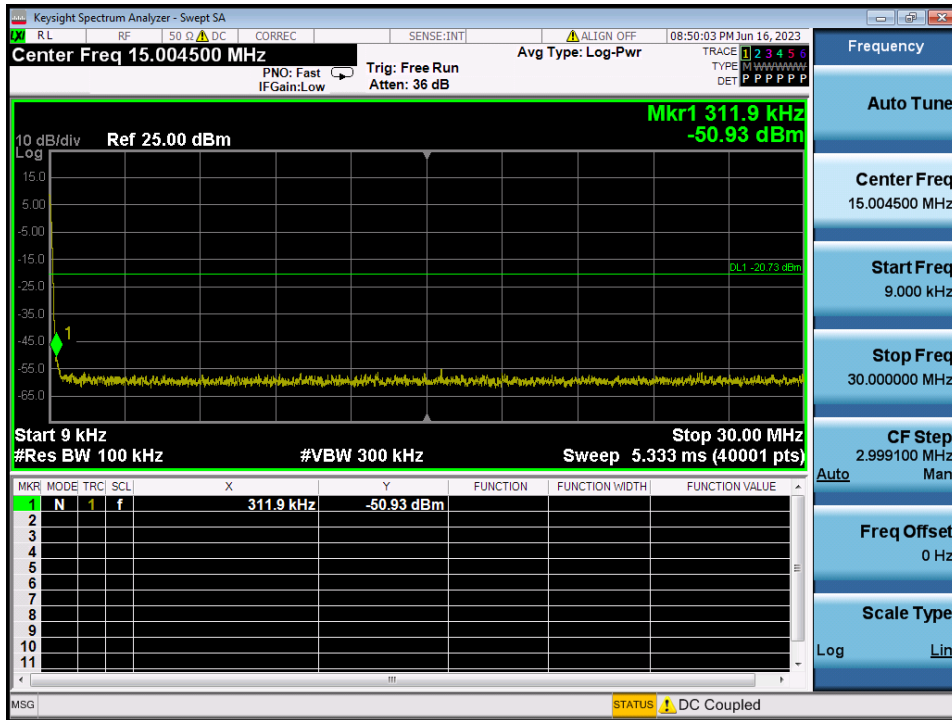


High Band-edge

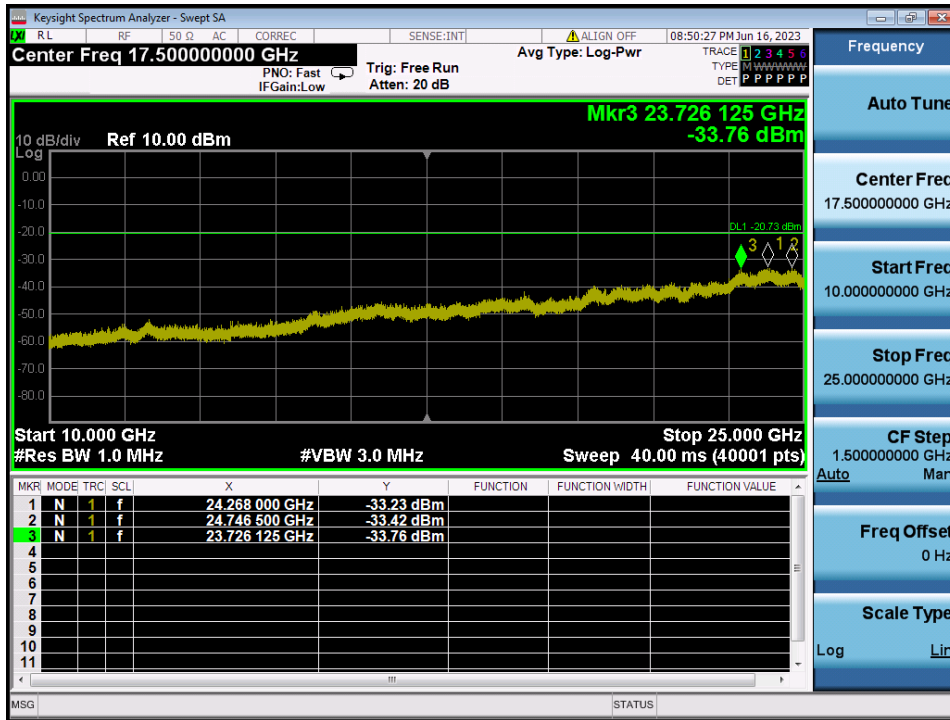




### Conducted Spurious Emissions



### Conducted Spurious Emissions



## 5.5. Unwanted Emissions (Radiated)

### ▣ Test Requirements and limit,

#### Part 15.247(d), Part 15.205, Part 15.209 & RSS-247 [5.5], RSS-Gen [8.9], RSS-Gen [8.10]

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of Part 15.247 the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

#### - Part 15.209 & RSS-Gen[8.9]: General requirement

Frequency (MHz)	FCC Limit (uV/m)	IC Limit (µA/m)	Measurement Distance (m)
0.009 – 0.490	2 400 / F (kHz)	6.37/F (F in kHz)	300
0.490 – 1.705	24 000 / F (kHz)	63.7/F (F in kHz)	30
1.705 – 30.0	30	0.08	30

Frequency (MHz)	FCC Limit (uV/m)	IC Limit (uV/m)	Measurement Distance (m)
30 ~ 88	100 **	100	3
88 ~ 216	150 **	150	3
216 ~ 960	200 **	200	3
Above 960	500	500	3

\*\*Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§15.231 and 15.241.

**- Part 15.205(a): Restricted band of operation**

MHz	MHz	MHz	MHz	GHz	GHz
0.009 ~ 0.110	8.414 25 ~ 8.414 75	108 ~ 121.94	1 300 ~ 1 427	4.5 ~ 5.15	14.47 ~ 14.5
0.495 ~ 0.505	12.29 ~ 12.293	123 ~ 138	1 435 ~ 1 626.5	5.35 ~ 5.46	15.35 ~ 16.2
2.173 5 ~ 2.190 5	12.519 75 ~ 12.520 25	149.9 ~ 150.05	1 645.5 ~ 1 646.5	7.25 ~ 7.75	17.7 ~ 21.4
4.125 ~ 4.128	12.576 75 ~ 12.577 25	156.524 75 ~ 156.525 25	1 660 ~ 1 710	8.025 ~ 8.5	22.01 ~ 23.12
4.177 25 ~ 4.177 75	13.36 ~ 13.41	156.7 ~ 156.9	1 718.8 ~ 1 722.2	9.0 ~ 9.2	23.6 ~ 24.0
4.207 25 ~ 4.207 75	16.42 ~ 16.423	162.012 5 ~ 167.17	2 200 ~ 2 300	9.3 ~ 9.5	31.2 ~ 31.8
6.215 ~ 6.218	16.694 75 ~ 16.695 25	167.72 ~ 173.2	2 310 ~ 2 390	10.6 ~ 12.7	36.43 ~ 36.5
6.267 75 ~ 6.268 25	16.804 25 ~ 16.804 75	240 ~ 285	2 483.5 ~ 2 500	13.25 ~ 13.4	Above 38.6
6.311 75 ~ 6.312 25	25.5 ~ 25.67	322 ~ 335.4	2 655 ~ 2 900		
8.291 ~ 8.294	37.5 ~ 38.25	399.90 ~ 410	3 260 ~ 3 267		
8.362 ~ 8.366	73 ~ 74.6	608 ~ 614	3 332 ~ 3 339		
8.376 25 ~ 8.386 75	74.8 ~ 75.2	960 ~ 1 240	3 345.8 ~ 3 358		
			3 600 ~ 4 400		

**- RSS-Gen[8.10]: Restricted frequency bands**

MHz	MHz	MHz	MHz	MHz	GHz
0.090 ~ 0.110	8.362 ~ 8.366	73 ~ 74.6	608 ~ 614	3 345.8 ~ 3 358	9.0 ~ 9.2
0.495 ~ 0.505	8.376 25 ~ 8.386 75	74.8 ~ 75.2	960 ~ 1 427	3 500 ~ 4 400	9.3 ~ 9.5
2.173 5 ~ 2.190 5	8.414 25 ~ 8.414 75	108 ~ 138	1 435 ~ 1 626.5	4 500 ~ 5 150	10.6 ~ 12.7
3.020 ~ 3.026	12.29 ~ 12.293	149.9 ~ 150.05	1 645.5 ~ 1 646.5	5 350 ~ 5 460	13.25 ~ 13.4
4.125 ~ 4.128	12.519 75 ~ 12.520 25	156.524 75 ~	1 660 ~ 1 710	7 250 ~ 7 750	14.47 ~ 14.5
4.177 25 ~ 4.177 75	12.576 75 ~ 12.577 25	156.525 25	1 718.8 ~ 1 722.2	8 025 ~ 8 500	15.35 ~ 16.2
4.207 25 ~ 4.207 75	13.36 ~ 13.41	156.7 ~ 156.9	2 200 ~ 2 300		17.7 ~ 21.4
5.677 ~ 5.683	16.42 ~ 16.423	162.01 25 ~ 167.17	2 310 ~ 2 390		22.01 ~ 23.12
6.215 ~ 6.218	16.694 75 ~ 16.695 25	167.72 ~ 173.2	2 483.5 ~ 2 500		23.6 ~ 24.0
6.267 75 ~ 6.268 25	16.804 25 ~ 16.804 75	240 ~ 285	2 655 ~ 2 900		31.2 ~ 31.8
6.311 75 ~ 6.312 25	25.5 ~ 25.67	322 ~ 335.4	3 260 ~ 3 267		36.43 ~ 36.5
8.291 ~ 8.294	37.5 ~ 38.25	399.90 ~ 410	3 332 ~ 3 339		Above 38.6

### 5.5.1. Test Setup

Refer to the APPENDIX I.

### 5.5.2. Test Procedures

1. The EUT is placed on a non-conductive table. For emission measurements at or below 1 GHz, the table height is 80 cm. For emission measurements above 1 GHz, the table height is 1.5 m.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3 m away from the receiving antenna, which is varied from 1 m to 4 m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.

#### Note: Measurement Instrument Setting for Radiated Emission Measurements.

- KDB558074 D01v05r02 - Section 8.6
- ANSI C63.10-2013 – Section 11.12

#### 1. Frequency Range Below 1 GHz

RBW = 100 or 120 kHz, VBW = 3 x RBW, Detector = Peak or Quasi Peak

#### 2. Frequency Range > 1 GHz

Peak Measurement > 1 GHz

RBW = 1 MHz, VBW = 3 MHz, Detector = Peak, Sweep time = Auto, Trace mode = Max Hold until the trace stabilizes

Average Measurement > 1 GHz

1. RBW = 1 MHz (unless otherwise specified).
2. VBW  $\geq$  3 x RBW.
3. Detector = RMS (Number of points  $\geq$  2 x Span / RBW)
4. Averaging type = power (i.e., RMS).
5. Sweep time = auto.
6. Perform a trace average of at least 100 traces.
7. A correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle. The correction factor is computed as follows:
  - 1) If power averaging (RMS) mode was used in step 4, then the applicable correction factor is  $10 \log(1 / D)$ , where D is the duty cycle.
  - 2) If linear voltage averaging mode was used in step 4, then the applicable correction factor is  $20 \log(1 / D)$ , where D is the duty cycle.
  - 3) If a specific emission is demonstrated to be continuous ( $\geq$  98 percent duty cycle) rather than turning on and off with the transmit cycle, then no duty cycle correction is required for that emission.

**Duty Cycle Correction factor**

Mode	Tone	Date rate	T <sub>on</sub> (ms)	T <sub>on+off</sub> (ms)	D = T <sub>on</sub> / (T <sub>on+off</sub> )	DCCF = 10 log(1/D) (dB)
802.11ax(HE20) CDD	26 Tone	MCS 0	5.172	5.232	0.989	N/A
	52 Tone	MCS 0	2.625	2.667	0.984	N/A
	106 Tone	MCS 0	0.323	0.473	0.683	1.66
	242 Tone	MCS 0	3.942	4.956	0.795	0.99
	SU	MCS 0	1.017	1.125	0.904	0.44

Note1: Where, T= Transmission duration / D= Duty cycle

Note2: Please refer to the appendix II for duty cycle plots.

**5.5.3. Test Results**
**- Test Notes**

1. The radiated emissions were investigated 9 kHz to 25 GHz. And no other spurious and harmonic emissions were found below listed frequencies.
2. Information of Distance Correction Factor  
 For finding emissions, measurements may be performed at a distance closer than that specified in the regulations.  
 In this case, the distance factor is applied to the result.  
 - Calculation of distance correction factor  
 At frequencies below 30 MHz = 40 log( tested distance / specified distance )  
 At frequencies at or above 30 MHz = 20 log( tested distance / specified distance )  
 When distance factor is "N/A", the measurements were performed at the specified distance and distance factor is not applied.
3. Sample Calculation.  
 $Margin = Limit - Result$  /  $Result = Reading + TF + DCCF + DCF$  /  $TF = AF + CL + HL + AL - AG$   
 Where, TF = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain, HL = High pass filter Loss, AL = Attenuator Loss,  
 DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor

**Radiated Spurious Emissions data(9 kHz ~ 25 GHz) : TM 1**

Tested Frequency (MHz)	Tone	RU	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	TF (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
2 412	26	0	2 389.79	H	X	PK	66.59	4.60	N/A	N/A	71.19	74.00	2.81
	26	0	2 388.29	H	X	AV	46.15	4.60	N/A	N/A	50.75	54.00	3.25
	26	4	4 823.88	H	X	PK	50.53	2.34	N/A	N/A	52.87	74.00	21.13
	26	4	4 824.11	H	X	AV	40.53	2.34	N/A	N/A	42.87	54.00	11.13
	52	37	2 388.03	H	X	PK	66.60	4.61	N/A	N/A	71.21	74.00	2.79
	52	37	2 389.54	H	X	AV	45.73	4.60	N/A	N/A	50.33	54.00	3.67
	106	53	2 389.13	H	X	PK	61.02	4.60	N/A	N/A	65.62	74.00	8.38
	106	53	2 389.58	H	X	AV	44.79	4.60	1.66	N/A	51.05	54.00	2.95
	242	61	2 388.75	H	X	PK	58.53	4.60	N/A	N/A	63.13	74.00	10.87
	242	61	2 389.87	H	X	AV	45.11	4.60	0.99	N/A	50.70	54.00	3.30
	242	61	4 824.44	H	X	PK	49.48	2.34	N/A	N/A	51.82	74.00	22.18
	242	61	4 823.98	H	X	AV	38.87	2.34	0.99	N/A	42.20	54.00	11.80
	SU	NA	2 389.75	H	X	PK	58.52	4.60	N/A	N/A	63.12	74.00	10.88
	SU	NA	2 389.66	H	X	AV	45.17	4.60	0.44	N/A	50.21	54.00	3.79
	SU	NA	4 825.12	H	X	PK	50.44	2.34	N/A	N/A	52.78	74.00	21.22
	SU	NA	4 825.50	H	X	AV	39.97	2.34	0.44	N/A	42.75	54.00	11.25
2 437	26	4	4 874.08	H	X	PK	50.70	2.18	N/A	N/A	52.88	74.00	21.12
	26	4	4 873.92	H	X	AV	39.37	2.18	N/A	N/A	41.55	54.00	12.45
	242	61	4 873.30	H	X	PK	50.14	2.18	N/A	N/A	52.32	74.00	21.68
	242	61	4 874.05	H	X	AV	39.77	2.18	0.99	N/A	42.94	54.00	11.06
	SU	NA	4 874.09	H	X	PK	49.91	2.18	N/A	N/A	52.09	74.00	21.91
	SU	NA	4 874.09	H	X	AV	39.72	2.18	0.44	N/A	42.34	54.00	11.66
2 462	26	8	2 484.66	H	X	PK	64.20	5.63	N/A	N/A	69.83	74.00	4.17
	26	8	2 485.00	H	X	AV	44.19	5.64	N/A	N/A	49.83	54.00	4.17
	26	4	4 923.29	H	X	PK	48.51	2.57	N/A	N/A	51.08	74.00	22.92
	26	4	4 924.39	H	X	AV	38.71	2.57	N/A	N/A	41.28	54.00	12.72
	52	40	2 484.00	H	X	PK	61.79	5.62	N/A	N/A	67.41	74.00	6.59
	52	40	2 484.20	H	X	AV	45.38	5.63	N/A	N/A	51.01	54.00	2.99
	106	54	2 483.54	H	X	PK	62.08	5.62	N/A	N/A	67.70	74.00	6.30
	106	54	2 483.75	H	X	AV	43.00	5.62	1.66	N/A	50.28	54.00	3.72
	242	61	2 484.14	H	X	PK	61.03	5.62	N/A	N/A	66.65	74.00	7.35
	242	61	2 483.81	H	X	AV	45.26	5.62	0.99	N/A	51.87	54.00	2.13
	242	61	4 923.54	H	X	PK	49.86	2.57	N/A	N/A	52.43	74.00	21.57
	242	61	4 923.91	H	X	AV	39.27	2.57	0.99	N/A	42.83	54.00	11.17
	SU	NA	2 484.14	H	X	PK	59.89	5.62	N/A	N/A	65.51	74.00	8.49
	SU	NA	2 483.88	H	X	AV	45.59	5.62	0.44	N/A	51.65	54.00	2.35
	SU	NA	4 923.76	H	X	PK	49.55	2.57	N/A	N/A	52.12	74.00	21.88
SU	NA	4 923.27	H	X	AV	39.39	2.57	0.44	N/A	42.40	54.00	11.60	

## 5.6. AC Power-Line Conducted Emissions

### ■ Test Requirements and limit, Part 15.207 & RSS-Gen [8.8]

An intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 uH/50 ohm line impedance stabilization network (LISN).

Compliance with the provision of this paragraph shall on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower applies at the boundary between the frequency ranges.

Frequency Range (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15 ~ 0.5	66 to 56 *	56 to 46 *
0.5 ~ 5.0	56	46
5 ~ 30	60	50

\* Decreases with the logarithm of the frequency

### 5.6.1. Test Setup

See test photographs for the actual connections between EUT and support equipment.

### 5.6.2. Test Procedures

Conducted emissions from the EUT were measured according to the ANSI C63.10-2013.

1. The test procedure is performed in a 6.5 m × 3.5 m × 3.5 m (L × W × H) shielded room. The EUT along with its peripherals were placed on a 1.0 m (W) × 1.5 m (L) and 0.8 m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane.
2. The EUT was connected to power mains through a line impedance stabilization network (LISN) which provides 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room.
3. All peripherals were connected to the second LISN and the chassis ground also bounded to the horizontal ground plane of shielded room.
4. The excess power cable between the EUT and the LISN was bundled. The power cables of peripherals were unbundled. All connecting cables of EUT and peripherals were moved to find the maximum emission.

### 5.6.3. Test Results

Refer to the next page. (The worst case data was reported. The worst data is TM 1 & Lowest)



AC Power-Line Conducted Emissions (Graph)

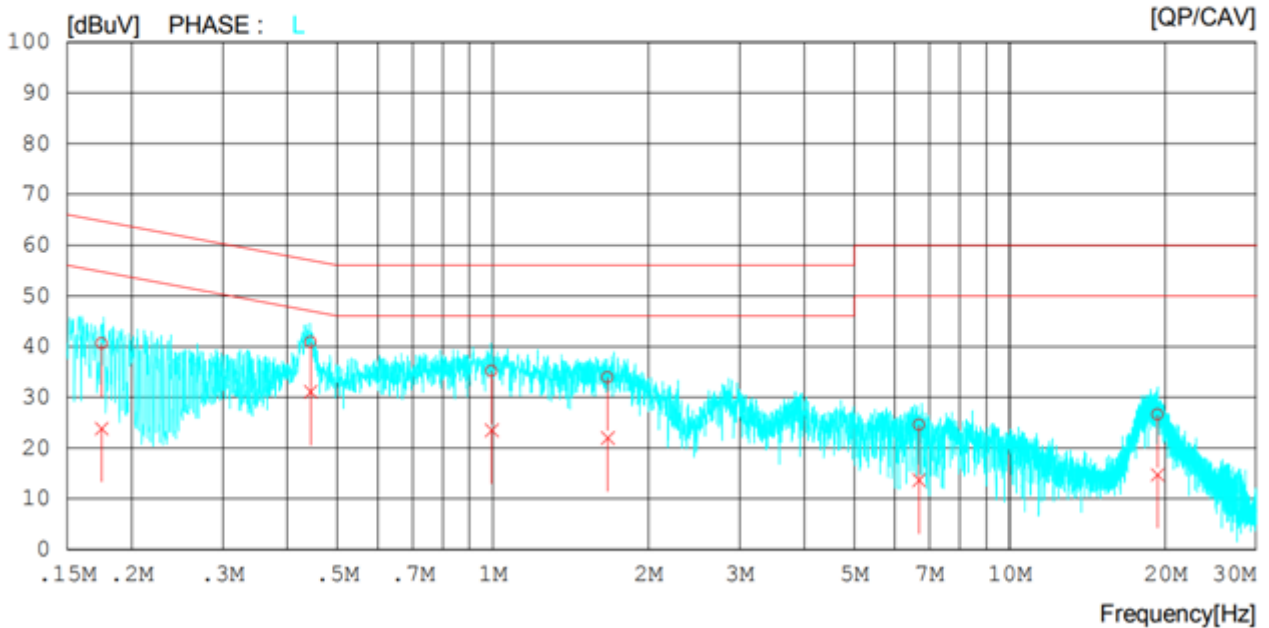
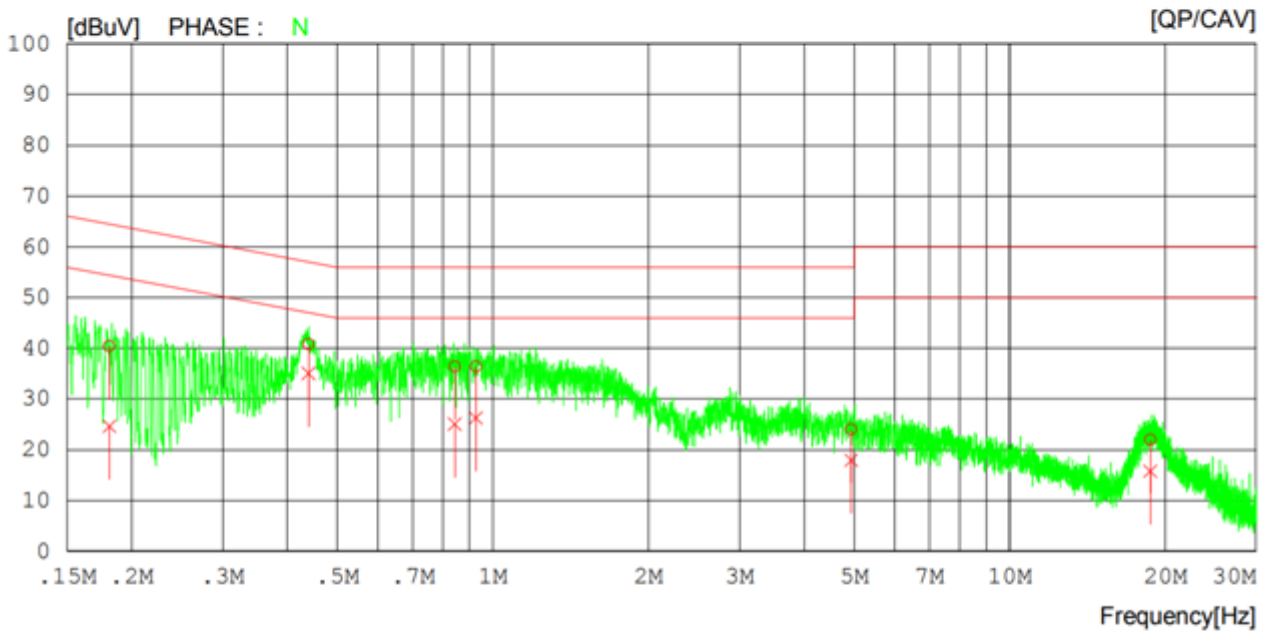
Results of Conducted Emission

DTNC

Date 2023-05-12

Order No.		Reference No.	
Model No.	PM86	Power Supply	
Serial No.		Temp/Humi.	21 'C / 41 %
Test Condition	WLAN 2.4G	Operator	S.M.Gil
Memo	ax_2412		

LIMIT : FCC P15.207 AV  
FCC P15.207 QP



## AC Power-Line Conducted Emissions (List)

### Results of Conducted Emission

DTNC

Date 2023-05-12

Order No.		Reference No.	
Model No.	PM86	Power Supply	
Serial No.		Temp/Humi.	21 °C / 41 %
Test Condition	WLAN 2.4G	Operator	S.M.Gil
Memo	ax_2412		

 LIMIT : FCC P15.207 AV  
 FCC P15.207 QP

NO	FREQ [MHz]	READING		C. FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	CAV [dBuV]		QP [dBuV]	CAV [dBuV]	QP [dBuV]	CAV [dBuV]			
1	0.18114	30.47	14.65	9.99	40.46	24.64	64.43	54.43	23.97	29.79	N
2	0.43977	30.74	24.99	10.00	40.74	34.99	57.07	47.07	16.33	12.08	N
3	0.84339	26.41	15.10	10.00	36.41	25.10	56.00	46.00	19.59	20.90	N
4	0.92700	26.40	16.26	10.01	36.41	26.27	56.00	46.00	19.59	19.73	N
5	4.93340	13.81	7.73	10.19	24.00	17.92	56.00	46.00	32.00	28.08	N
6	18.70200	11.42	5.24	10.56	21.98	15.80	60.00	50.00	38.02	34.20	N
7	0.17501	30.73	13.93	9.89	40.62	23.82	64.72	54.72	24.10	30.90	L
8	0.44399	30.97	21.20	9.90	40.87	31.10	56.99	46.99	16.12	15.89	L
9	0.99369	25.21	13.51	10.00	35.21	23.51	56.00	46.00	20.79	22.49	L
10	1.66820	23.94	11.92	10.03	33.97	21.95	56.00	46.00	22.03	24.05	L
11	6.67580	14.37	3.51	10.14	24.51	13.65	60.00	50.00	35.49	36.35	L
12	19.32880	16.25	4.37	10.35	26.60	14.72	60.00	50.00	33.40	35.28	L