

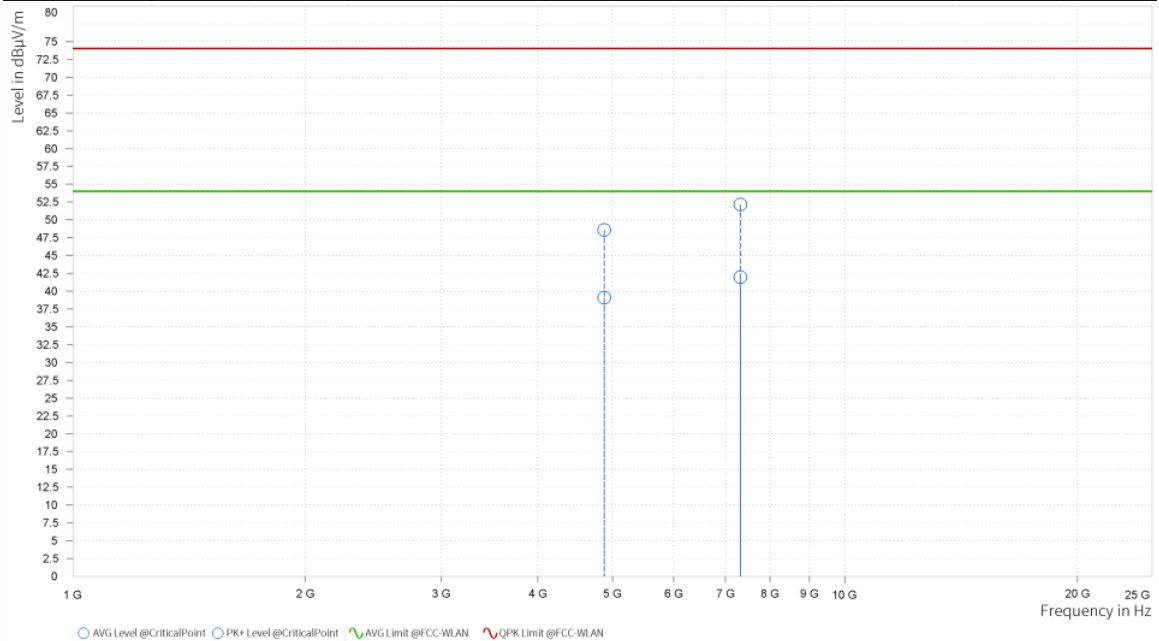


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Test Report No.: PSU-QBJ2408220111RF05

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

Rg	Frequency [MHz]	PK+ Level [dBμV/m]	PK+: QPK Limit [dBμV/m]	PK+ Margin [dB]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	4,880.000	48.58	74.0	25.42	39.1	54.0	14.9	13.72	V	359	1.0
3	7,320.000	52.15	74.0	21.85	41.96	54.0	12.04	17.86	V	359	2.0



**REMARKS:**

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Limit value–Emission level.
2. 2440MHz: Fundamental frequency.



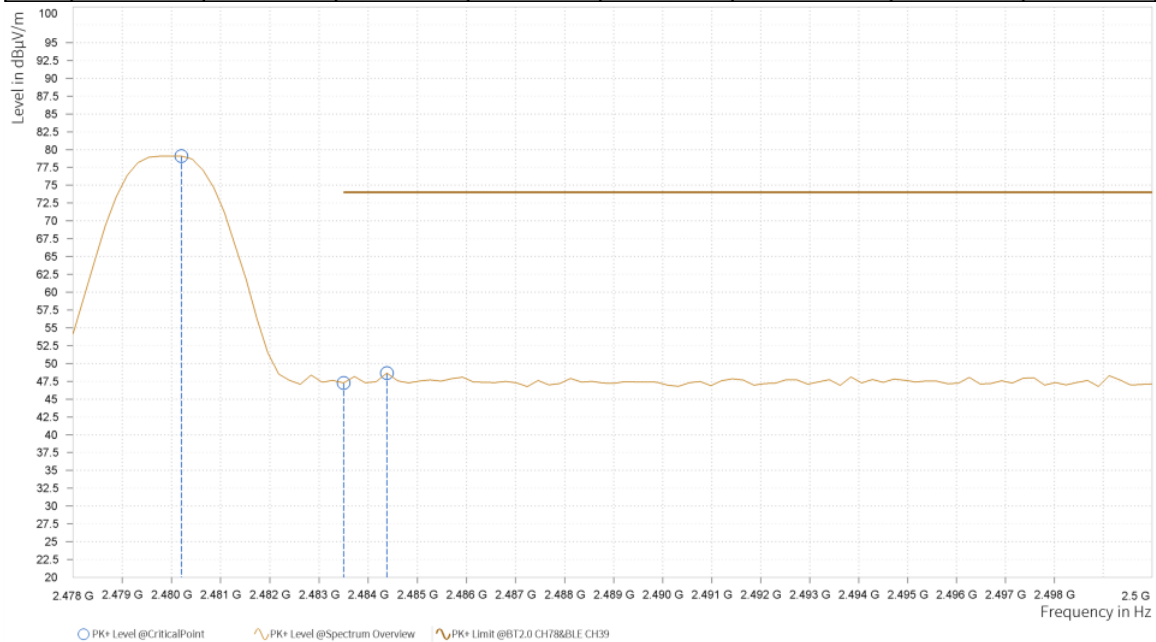
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VERITAS

Test Report No.: PSU-QBJ2408220111RF05

CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBμV/m]	PK+ Limit [dBμV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
6	2,480.200	79.1			9.07	H	339.5	1.0
6	2,483.500	47.27	74.0	26.73	9.11	H	339.5	1.0
6	2,484.380	48.65	74.0	25.35	9.12	H	358.1	1.0



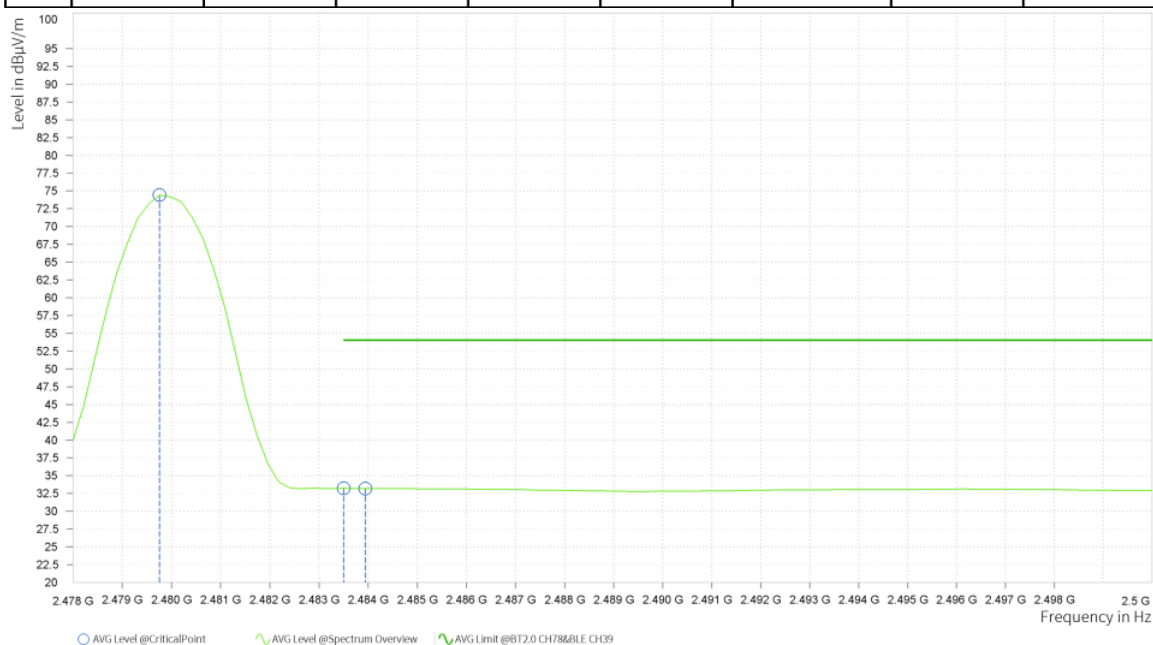


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VERITAS

Test Report No.: PSU-QBJ2408220111RF05

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
6	2,479.760	74.42			9.07	H	355.5	2.0
6	2,483.500	33.21	54.0	20.79	9.11	H	1.0	1.0
6	2,483.940	33.2	54.0	20.8	9.12	H	95.2	2.0



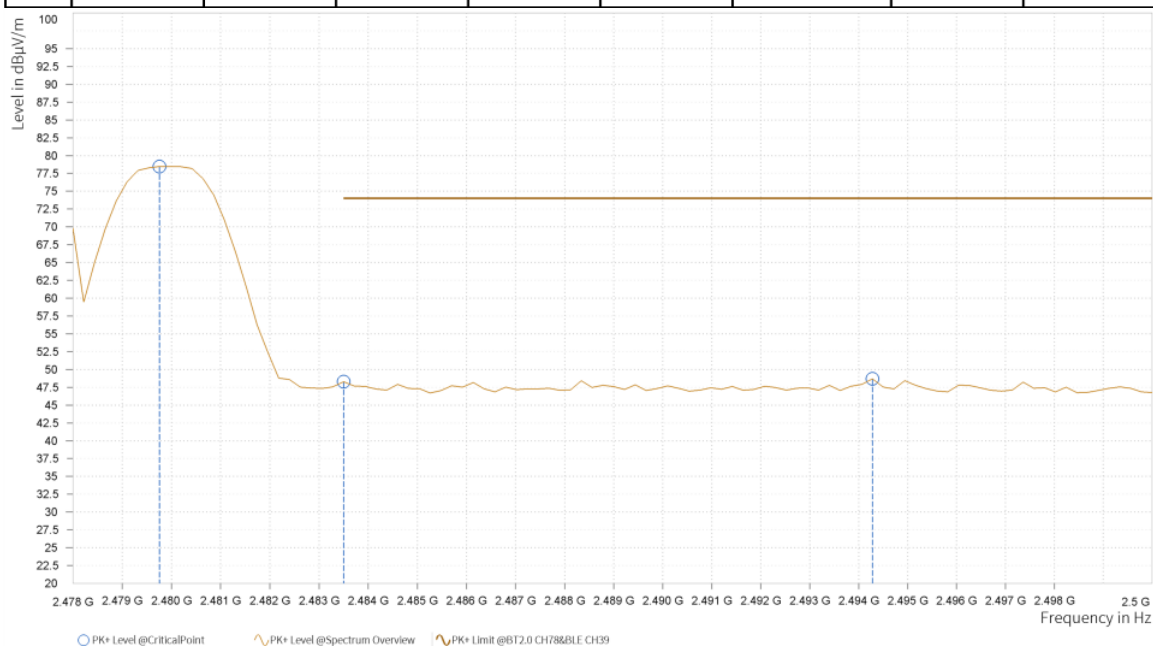


BUREAU  
VERITAS

Test Report No.: PSU-QBJ2408220111RF05

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBμV/m]	PK+ Limit [dBμV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
6	2,479.760	78.47			9.07	V	5.1	1.0
6	2,483.500	48.28	74.0	25.72	9.11	V	144.1	1.0
6	2,494.280	48.68	74.0	25.32	9.24	V	244.6	1.0



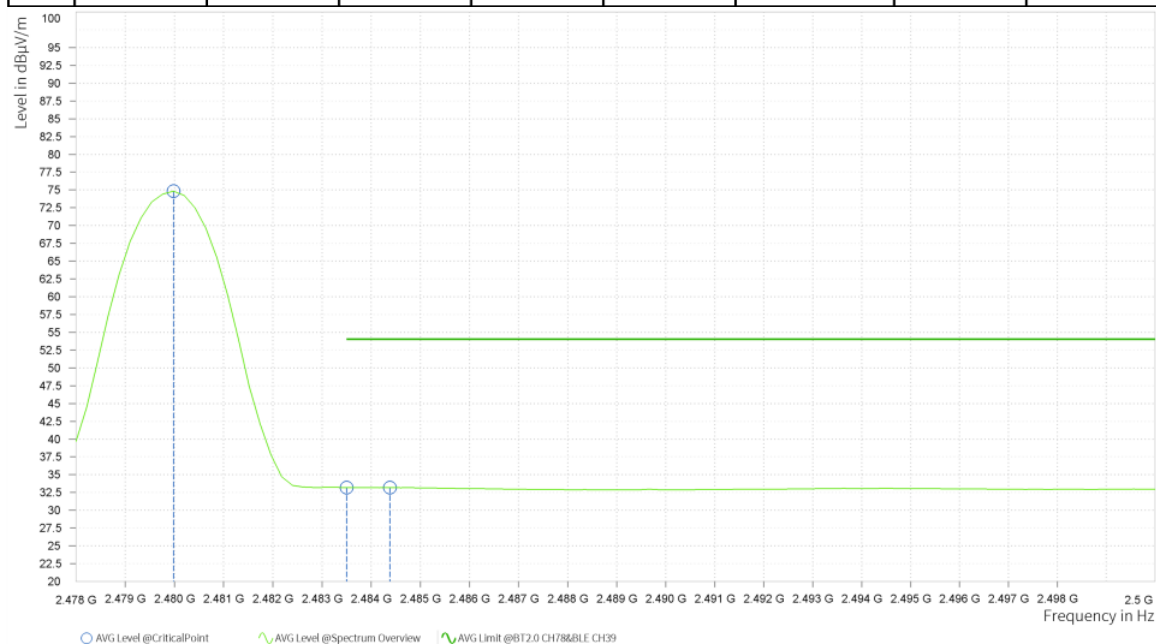


**BUREAU  
VERITAS**

Test Report No.: PSU-QBJ2408220111RF05

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

Rg	Frequency [MHz]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
6	2,479.980	74.83			9.07	V	86.8	2.0
6	2,483.500	33.2	54.0	20.8	9.11	V	86.8	2.0
6	2,484.380	33.19	54.0	20.81	9.12	V	86.8	2.0



**REMARKS:**

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Limit value–Emission level.
- 2480MHz: Fundamental frequency.



## 3.2 6 dB BANDWIDTH MEASUREMENT

### 3.2.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum 6dB Bandwidth Measurement is 0.5 MHz.

### 3.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	R&S	ESW 44	101973	Mar.28,24	Mar.27,26
Open Switch and Control Unit	R&S	OSP-B157W8	100836	N/A	N/A
Vector Signal Generator	R&S	SMBV100B	102176	Mar.29,24	Mar.28,26
Signal Generator	R&S	SMB100A03	182185	Mar.29,24	Mar.28,26
WIDEBANDRADIO COMMUNICATION TESTER	R&S	CMW500	169399	Jun.19,24	Jun.18,26
Hygrothermograph	DELI	20210528	SZ015	Sep.06,22	Sep.05,24
Hygrothermograph	DELI	20210528	SZ015	Sep.05,24	Sep.04,26
PC	LENOVO	E14	HRSW0024	N/A	N/A
CABLE	R&S	J12J103539-00-1	SEP-03-20-069	Apr.27,24	Apr.26,25
CABLE	R&S	J12J103539-00-1	SEP-03-20-070	Apr.27,24	Apr.26,25
Test Software	EMC32	EMC32	N/A	N/A	N/A
Temperature Chamber	votsch	VT4002	58566078100050	May.30,24	May.29,26
Power Meter	R&S	NRX	102380	Mar.28,24	Mar.27,26
Power Meter probe	R&S	NRP6A	102942	Mar.28,24	Mar.27,26

#### NOTE:

1. The calibration interval of the above test instruments is 12/ 24 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
2. The test was performed in RF Oven room.



### 3.2.3 TEST PROCEDURE

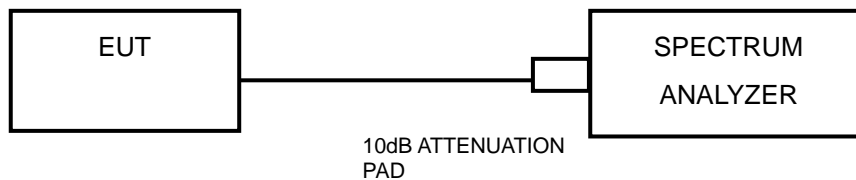
1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW)  $\geq 3$  RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.



### 3.2.4 DEVIATION FROM TEST STANDARD

No deviation.

### 3.2.5 TEST SETUP



### 3.2.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.





**BUREAU VERITAS** Test Report No.: PSU-QBJ2408220111RF05

### 3.2.7 TEST RESULTS

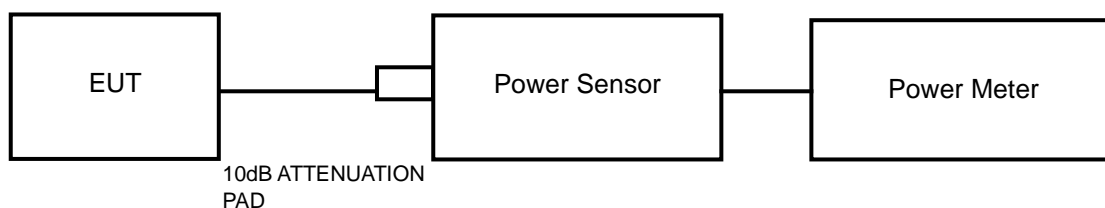
Please Refer to Appendix Of this test report..

### 3.3 CONDUCTED OUTPUT POWER

#### 3.3.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

For systems using digital modulation in the 2400–2483.5 MHz band: 1 Watt (30dBm)

#### 3.3.2 TEST SETUP



#### 3.3.3 TEST INSTRUMENTS

Refer to section 3.3.2 to get information of above instrument.

#### 3.3.4 TEST PROCEDURES

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

#### 3.3.5 DEVIATION FROM TEST STANDARD

No deviation.

#### 3.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.



Test Report No.: PSU-QBJ2408220111RF05

### 3.3.7 TEST RESULTS

#### 3.4.7.1 MAXIMUM PEAK OUTPUT POWER

Please Refer to Appendix Of this test report.



**Test Report No.: PSU-QBJ2408220111RF05**

#### 3.4.7.2 AVERAGE OUTPUT POWER (FOR REFERENCE)

The average power sensor was used on the output port of the EUT. A power meter was used to read the response of the power sensor. Record the power level.

Please Refer to Appendix Of this test report.

### 3.4 POWER SPECTRAL DENSITY MEASUREMENT

#### 3.4.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm/3KHz.

#### 3.4.2 TEST SETUP



#### 3.4.3 TEST INSTRUMENTS

Refer to section 3.3.2 to get information of above instrument.

#### 3.4.4 TEST PROCEDURE

1. Set the span to 1.5 times the DTS bandwidth
2. Set the RBW = 3 kHz, VBW  $\geq 3 \times$  RBW, Detector = peak.
3. Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.
4. Use the peak marker function to determine the maximum amplitude level.

#### 3.4.5 DEVIATION FROM TEST STANDARD

No deviation.

#### 3.4.6 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.



Test Report No.: PSU-QBJ2408220111RF05

### 3.4.7 TEST RESULTS

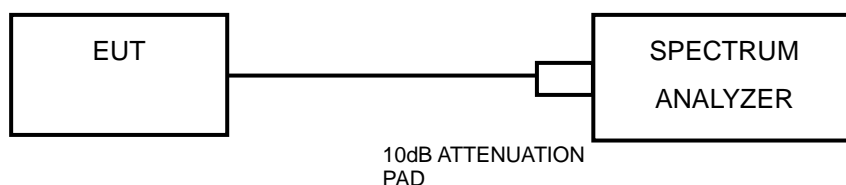
Please Refer to Appendix Of this test report.

### 3.5 OUT OF BAND EMISSION MEASUREMENT

#### 3.5.1 LIMITS OF OUT OF BAND EMISSION MEASUREMENT

Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

#### 3.5.2 TEST SETUP



#### 3.5.3 TEST INSTRUMENTS

Refer to section 3.3.2 to get information of above instrument.

#### 3.5.4 TEST PROCEDURE

##### MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW  $\geq$  300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.



## **MEASUREMENT PROCEDURE OOB**

1. Set RBW = 100 kHz.
2. Set VBW  $\geq$  300 kHz.
3. Set span to encompass the spectrum to be examined
4. Detector = peak.
5. Trace Mode = max hold.
6. Sweep = auto couple.

### **3.5.5 DEVIATION FROM TEST STANDARD**

No deviation.

### **3.5.6 EUT OPERATING CONDITION**

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

### **3.5.7 TEST RESULTS**

The spectrum plots are attached on the following images. D1 line indicates the highest level. D2 line indicates the 20dB offset below D1. It shows compliance to the requirement.

Please Refer to Appendix Of this test report.





### **3.6 ANTENNA REQUIREMENTS**

#### **3.6.1 STANDARD APPLICABLE**

If transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **3.6.2 ANTENNA CONNECTED CONSTRUCTION**

An embedded-in antenna design is used.

#### **3.6.3 ANTENNA GAIN**

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit and PSD limit.



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## 4 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).



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## 5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.



## 6 Appendix

### WLAN

#### DTS BANDWIDTH

#### TEST RESULT

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.920	2407.440	2416.360	0.5	PASS
		2437	9.360	2432.000	2441.360	0.5	PASS
		2462	9.320	2456.960	2466.280	0.5	PASS
11G	Ant1	2412	16.360	2403.800	2420.160	0.5	PASS
		2437	16.320	2428.840	2445.160	0.5	PASS
		2462	16.320	2453.840	2470.160	0.5	PASS
11N20SISO	Ant1	2412	17.000	2403.480	2420.480	0.5	PASS
		2437	16.920	2428.560	2445.480	0.5	PASS
		2462	16.720	2453.760	2470.480	0.5	PASS
11N40SISO	Ant1	2422	31.840	2406.080	2437.920	0.5	PASS
		2437	31.680	2421.320	2453.000	0.5	PASS
		2452	31.680	2436.320	2468.000	0.5	PASS

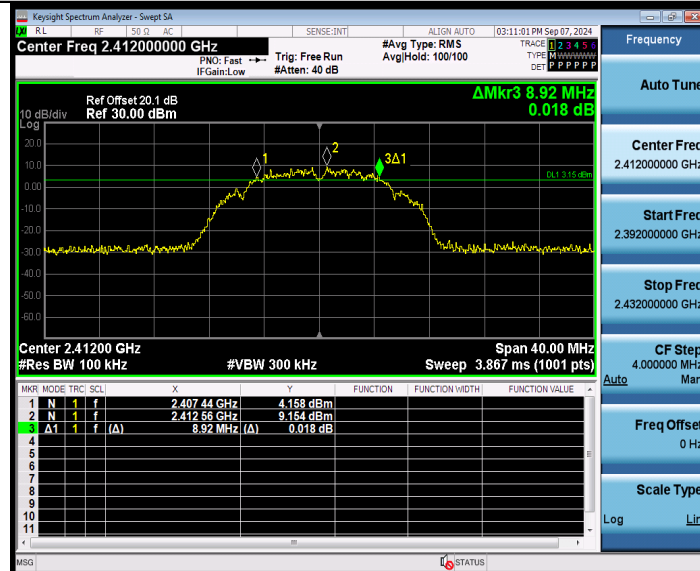


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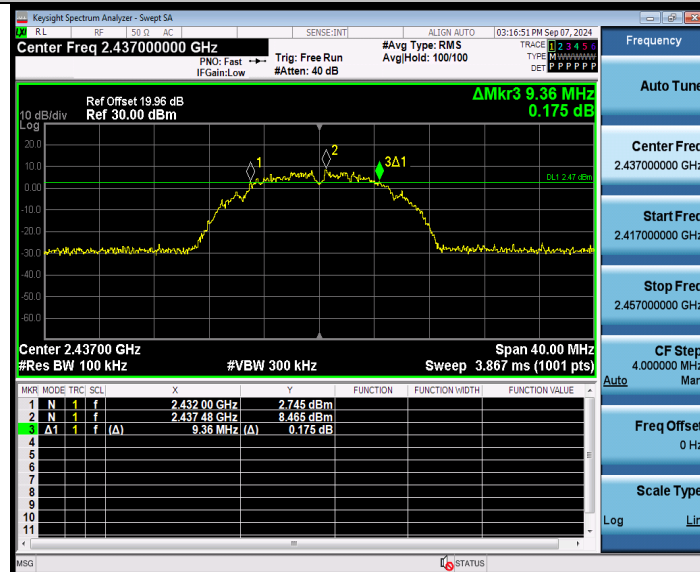
Test Report No.: PSU-QBJ2408220111RF05

## TEST GRAPHS

11B\_Ant1\_2412



11B\_Ant1\_2437

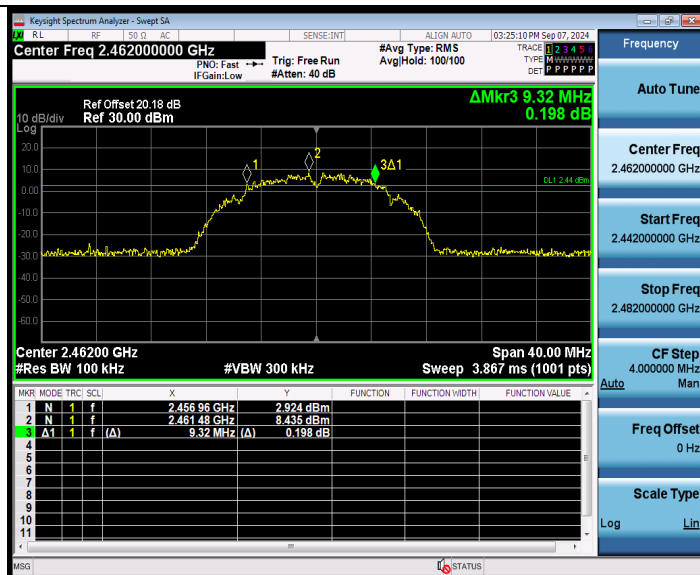


11B\_Ant1\_2462

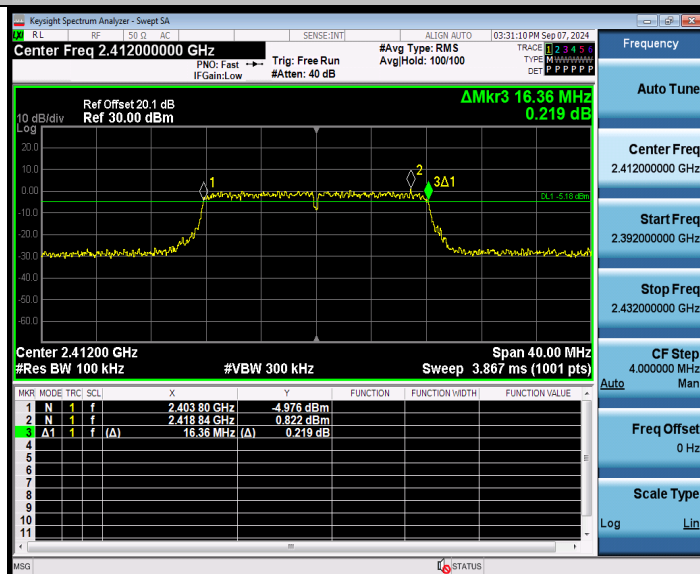


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11G\_Ant1\_2412

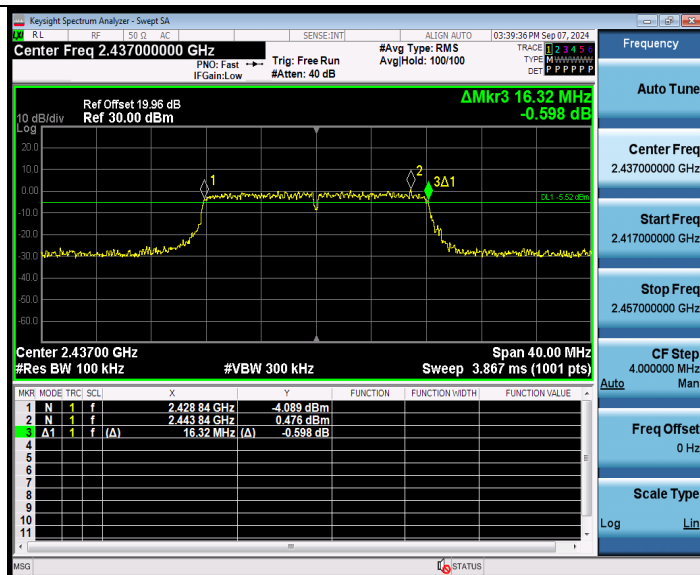


11G\_Ant1\_2437

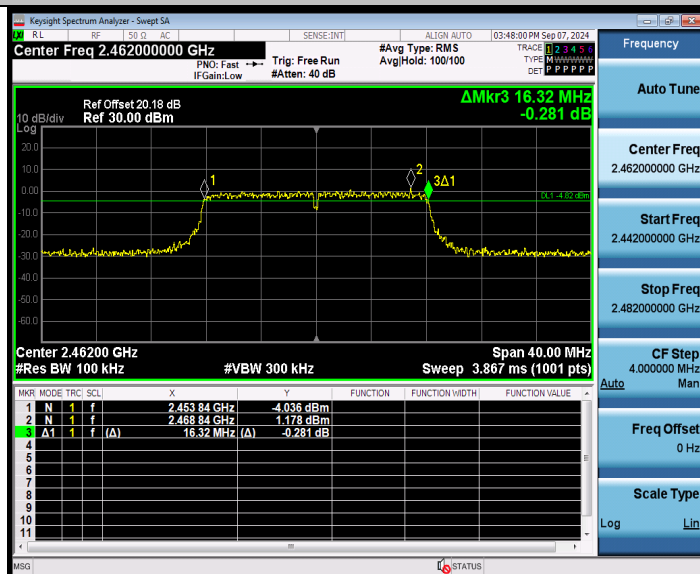


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# Test Report No.: PSU-QBJ2408220111RF05



11G\_Ant1\_2462

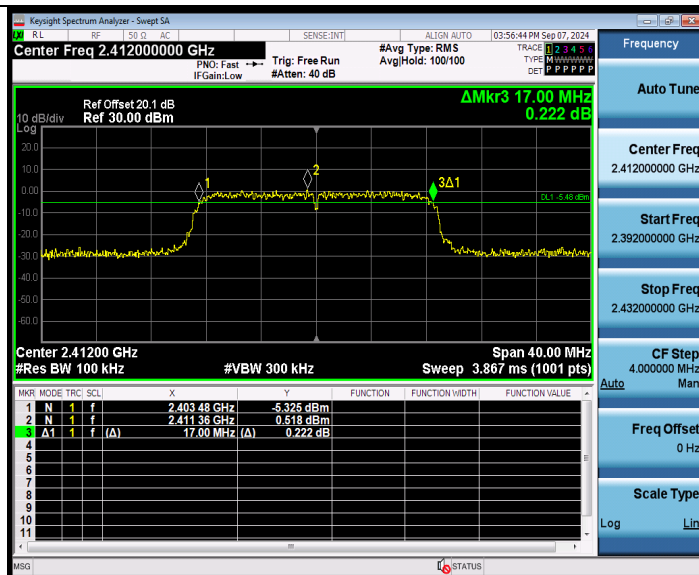


11N20SISO\_Ant1\_2412

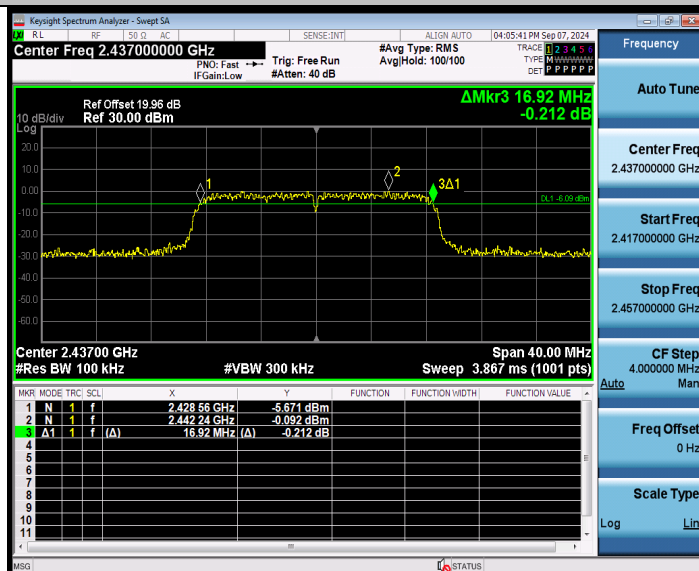


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# Test Report No.: PSU-QBJ2408220111RF05



11N20SISO\_Ant1\_2437



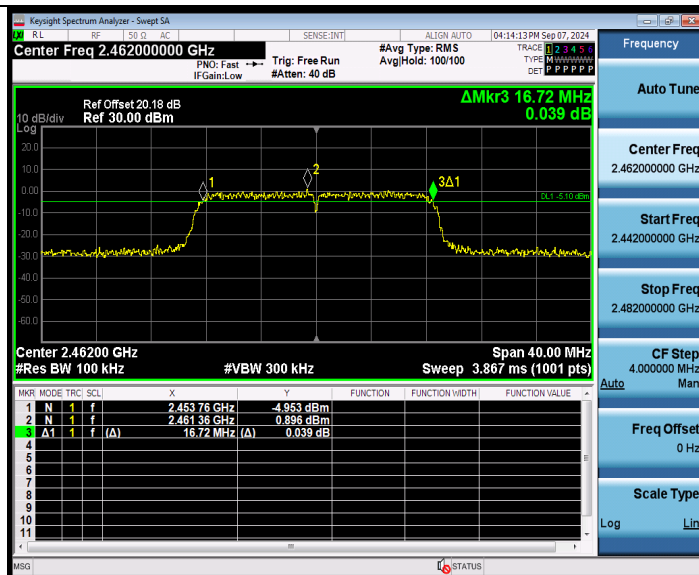
11N20SISO\_Ant1\_2462



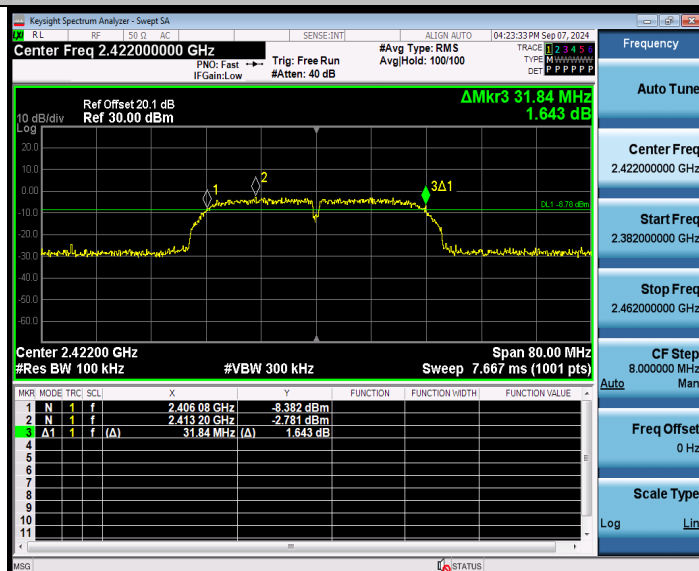


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# Test Report No.: PSU-QBJ2408220111RF05



11N40SISO\_Ant1\_2422

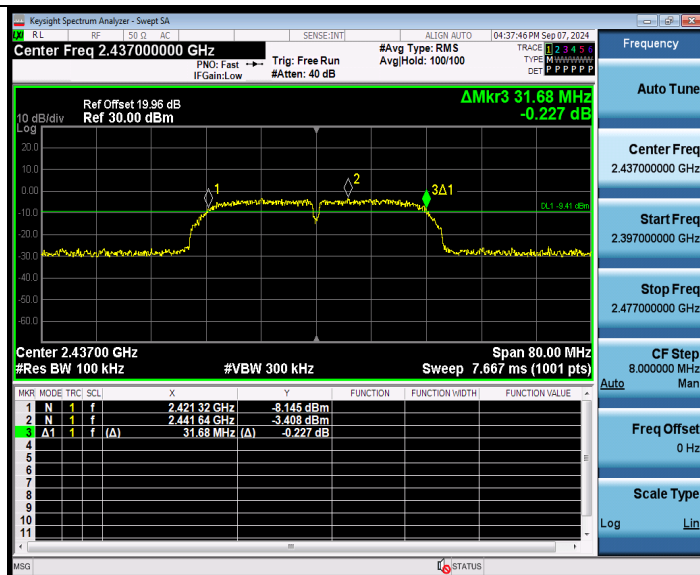


11N40SISO\_Ant1\_2437

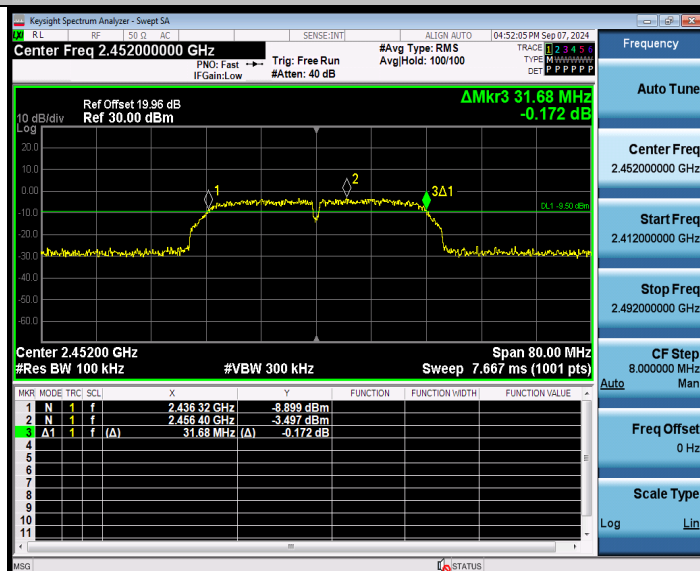


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# Test Report No.: PSU-QBJ2408220111RF05



11N40SISO\_Ant1\_2452



**OCCUPIED CHANNEL BANDWIDTH****TEST RESULT**

TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	13.390	2405.1994	2418.5894	---	---
		2437	13.392	2430.2075	2443.5995	---	---
		2462	13.385	2455.2267	2468.6117	---	---
11G	Ant1	2412	16.545	2403.7435	2420.2885	---	---
		2437	16.581	2428.7153	2445.2963	---	---
		2462	16.615	2453.6982	2470.3132	---	---
11N20SISO	Ant1	2412	17.319	2403.3147	2420.6337	---	---
		2437	17.347	2428.3125	2445.6595	---	---
		2462	17.331	2453.3420	2470.6730	---	---
11N40SISO	Ant1	2422	34.809	2404.6260	2439.4350	---	---
		2437	34.785	2419.6181	2454.4031	---	---
		2452	34.866	2434.6252	2469.4912	---	---

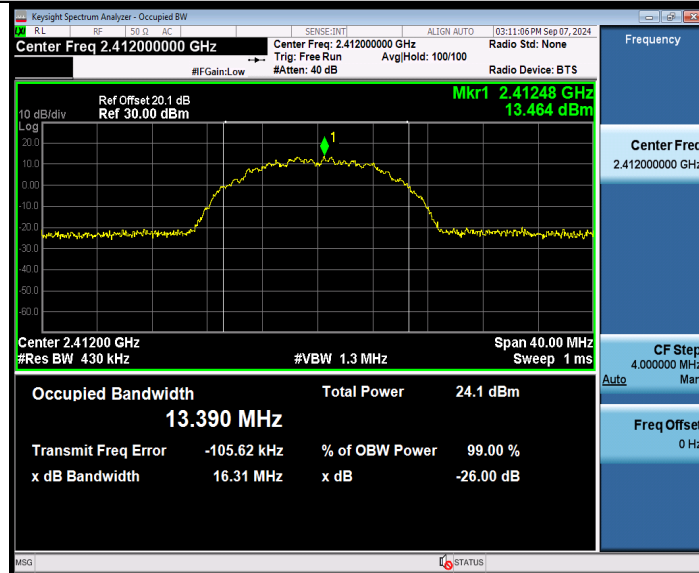


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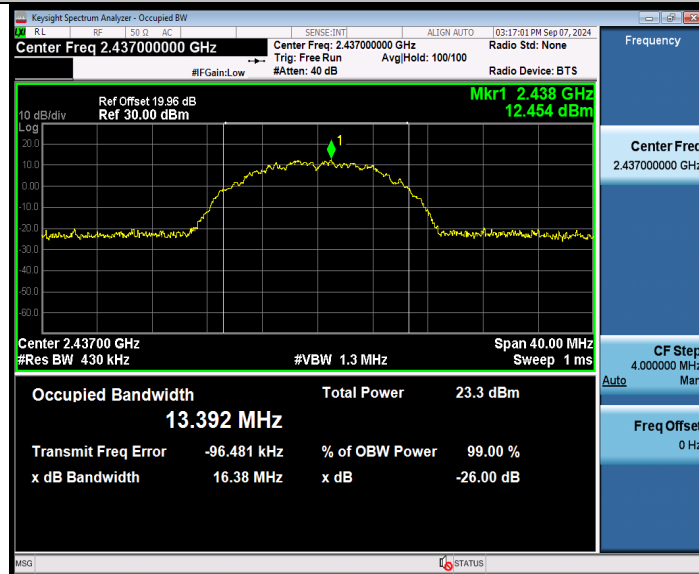
Test Report No.: PSU-QBJ2408220111RF05

## TEST GRAPHS

11B\_Ant1\_2412



11B\_Ant1\_2437



11B\_Ant1\_2462

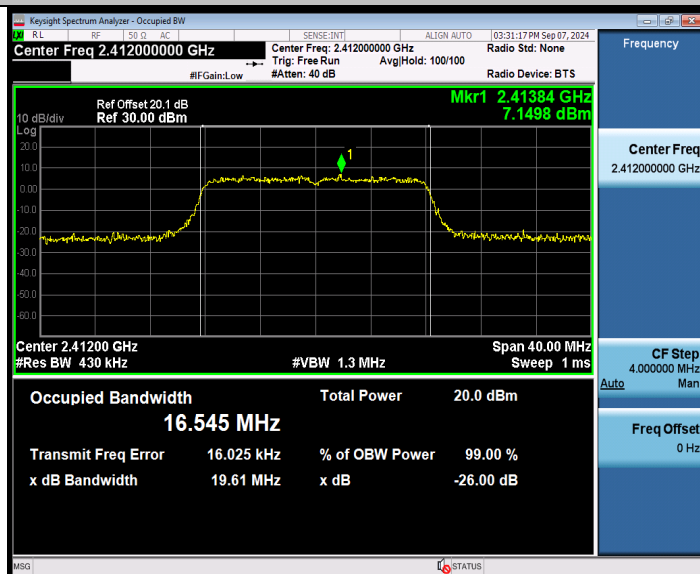


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## Test Report No.: PSU-QBJ2408220111RF05



11G\_Ant1\_2412

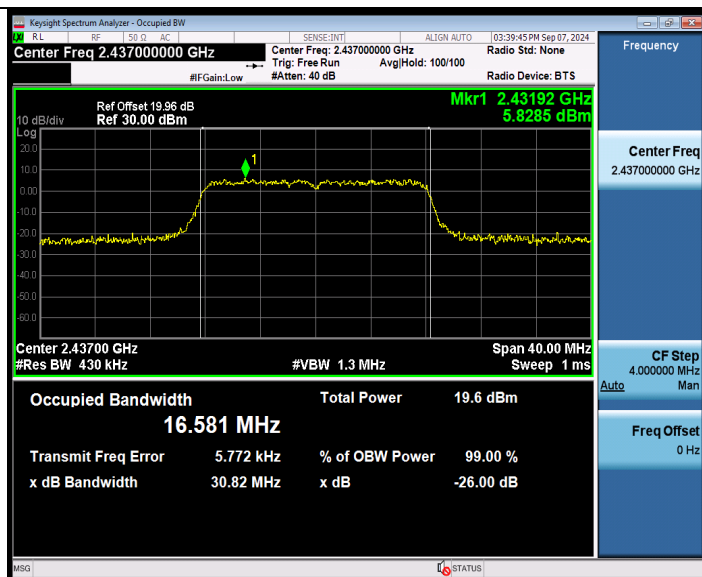


11G\_Ant1\_2437

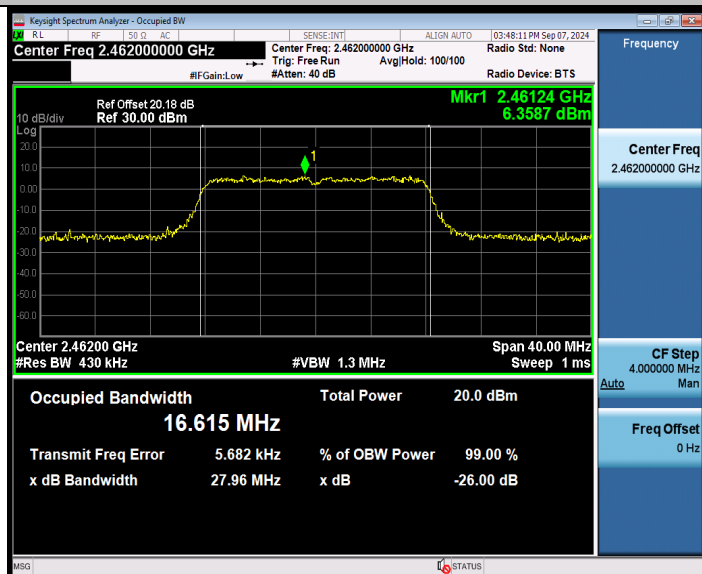


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Test Report No.: PSU-QBJ2408220111RF05



11G\_Ant1\_2462

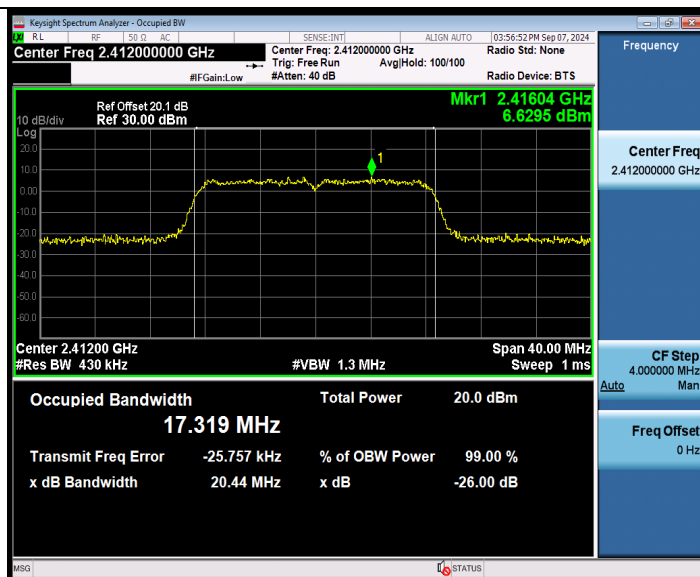


11N20SISO\_Ant1\_2412

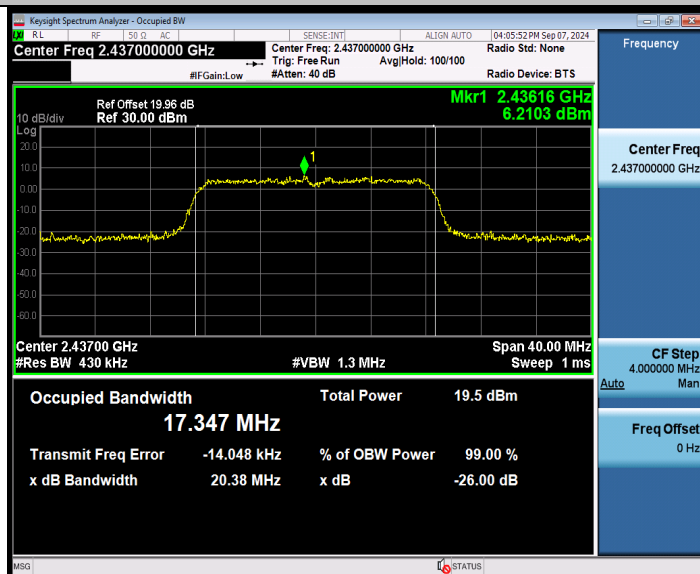


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Test Report No.: PSU-QBJ2408220111RF05



11N20SISO\_Ant1\_2437

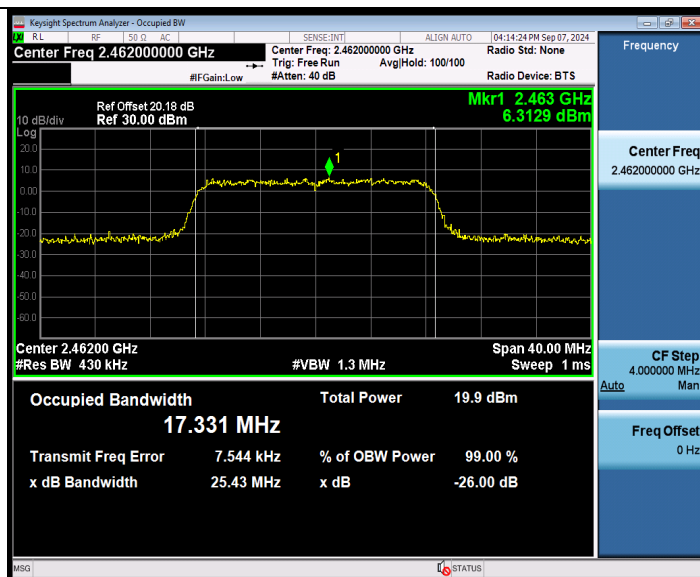


11N20SISO\_Ant1\_2462

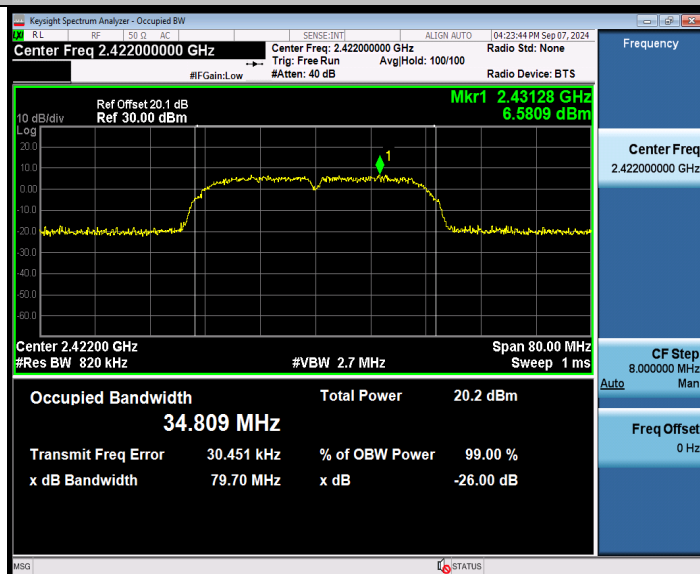


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VERITAS

## Test Report No.: PSU-QBJ2408220111RF05



11N40SISO\_Ant1\_2422



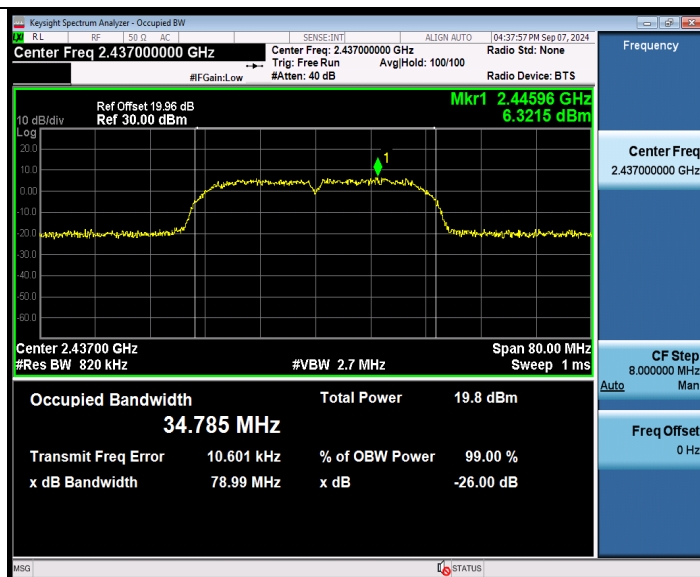
11N40SISO\_Ant1\_2437



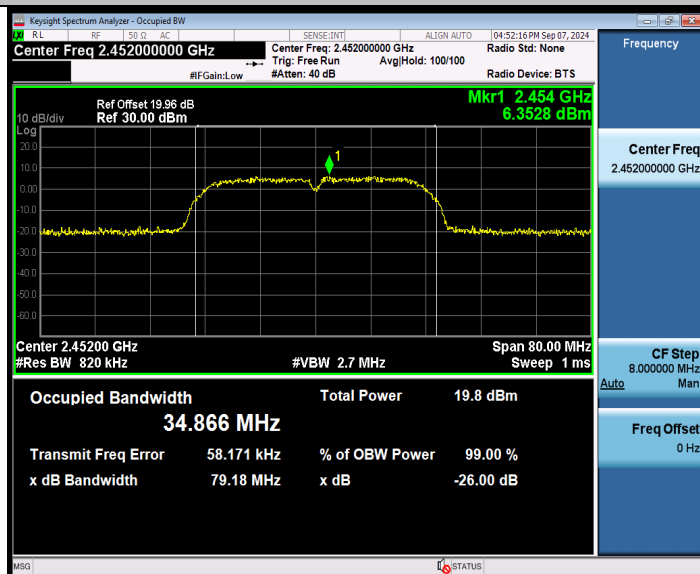


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VERITAS

Test Report No.: PSU-QBJ2408220111RF05



11N40SISO\_Ant1\_2452



**MAXIMUM CONDUCTED OUTPUT POWER****TEST RESULT**

Test Mode	TX Mod.	Freq. [MHz]	Ant.	Average power [dBm]	Peak power [dBm]	Peak power [mw]	Conducted Power Limit [dBm]	EIRP power [dBm]	EIRP power [mw]	EIRP Limit [dBm]	Verdict	Power Setting
11B	SISO	2412	ANT1	6.91	10.70	11.75	≤30.00	10.87	12.22	≤36.00	PASS	41
		2437	ANT1	8.47	12.26	16.81	≤30.00	12.43	17.50	≤36.00	PASS	41
		2462	ANT1	9.78	13.53	22.55	≤30.00	13.70	23.44	≤36.00	PASS	41
11G	SISO	2412	ANT1	13.87	19.84	96.38	≤30.00	20.01	100.23	≤36.00	PASS	8
		2437	ANT1	13.91	19.86	96.83	≤30.00	20.03	100.69	≤36.00	PASS	8
		2462	ANT1	13.89	19.75	94.41	≤30.00	19.92	98.17	≤36.00	PASS	8
11N20	SISO	2412	ANT1	13.71	20.29	106.91	≤30.00	20.46	111.17	≤36.00	PASS	8
		2437	ANT1	13.61	20.19	104.47	≤30.00	20.36	108.64	≤36.00	PASS	8
		2462	ANT1	13.55	20.13	103.04	≤30.00	20.30	107.15	≤36.00	PASS	8
11N40	SISO	2422	ANT1	13.31	19.74	94.19	≤30.00	19.91	97.95	≤36.00	PASS	8
		2437	ANT1	13.1	19.42	87.50	≤30.00	19.59	90.99	≤36.00	PASS	8
		2452	ANT1	13.04	19.39	86.90	≤30.00	19.56	90.36	≤36.00	PASS	8

Note: The Average power with duty cycle factor.

**MAXIMUM POWER SPECTRAL DENSITY****TEST RESULT**

TestMode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-12.92	≤8.00	PASS
		2437	-13.14	≤8.00	PASS
		2462	-12.77	≤8.00	PASS
11G	Ant1	2412	-14.14	≤8.00	PASS
		2437	-14.44	≤8.00	PASS
		2462	-14.16	≤8.00	PASS

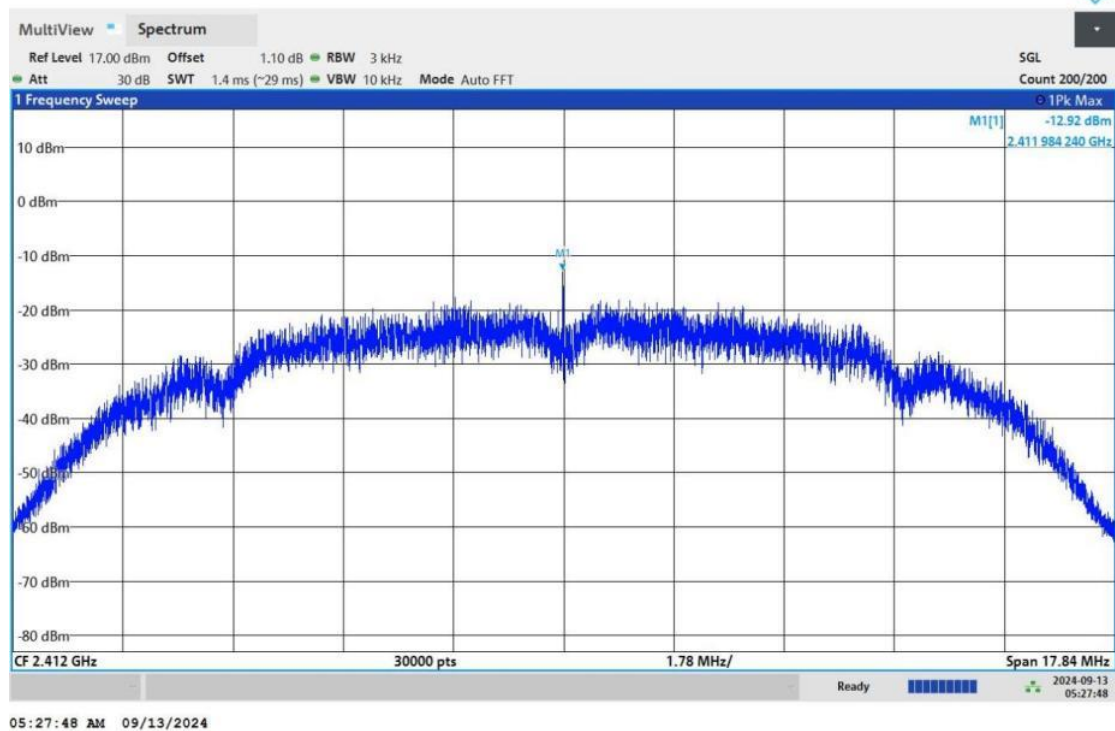
**Test Report No.: PSU-QBJ2408220111RF05**

11N20SISO	Ant1	2412	-13.94	$\leq 8.00$	PASS
		2437	-14.18	$\leq 8.00$	PASS
		2462	-13.76	$\leq 8.00$	PASS
11N40SISO	Ant1	2422	-15.02	$\leq 8.00$	PASS
		2437	-15.39	$\leq 8.00$	PASS
		2452	-15.30	$\leq 8.00$	PASS



## TEST GRAPHS

11B\_Ant1\_2412

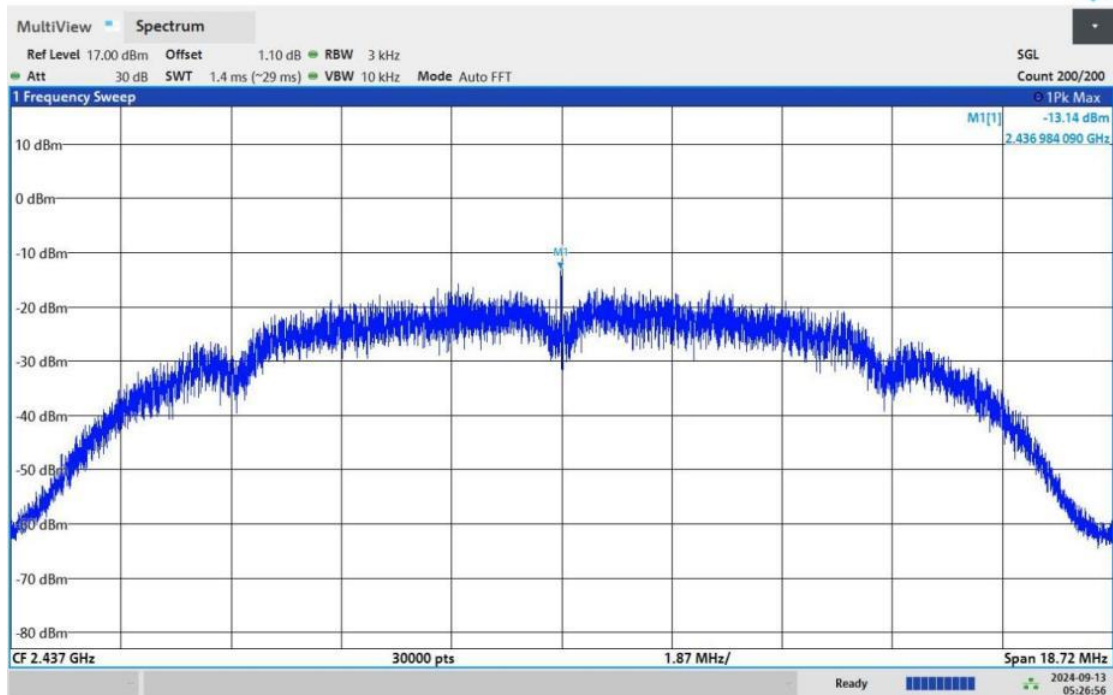


11B\_Ant1\_2437

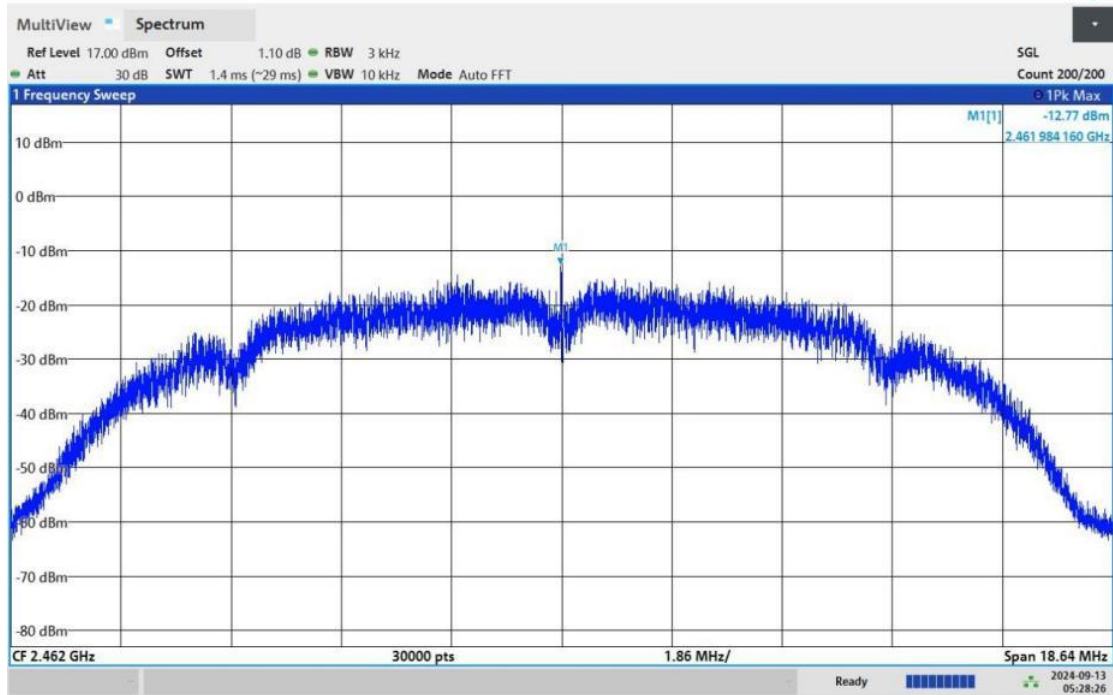


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Test Report No.: PSU-QBJ2408220111RF05



11B\_Ant1\_2462

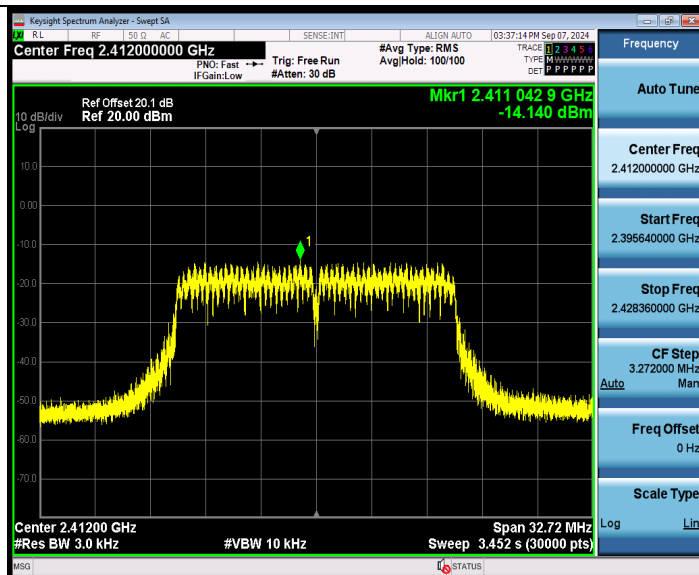


11G\_Ant1\_2412

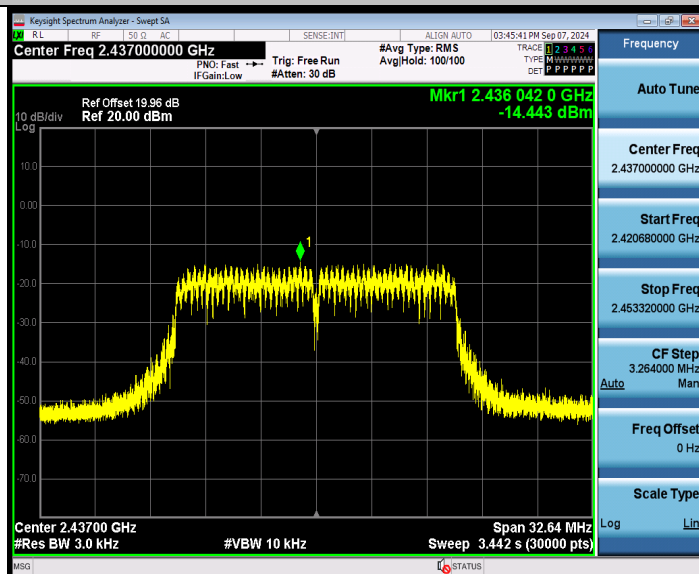


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Test Report No.: PSU-QBJ2408220111RF05



11G\_Ant1\_2437

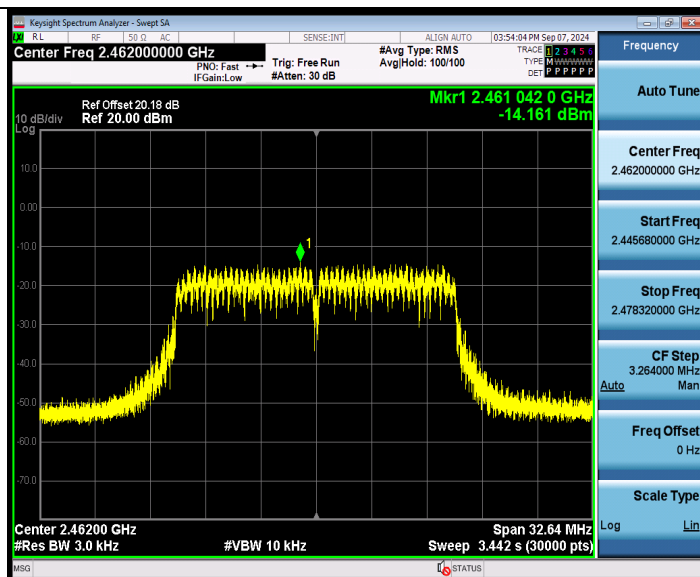


11G\_Ant1\_2462

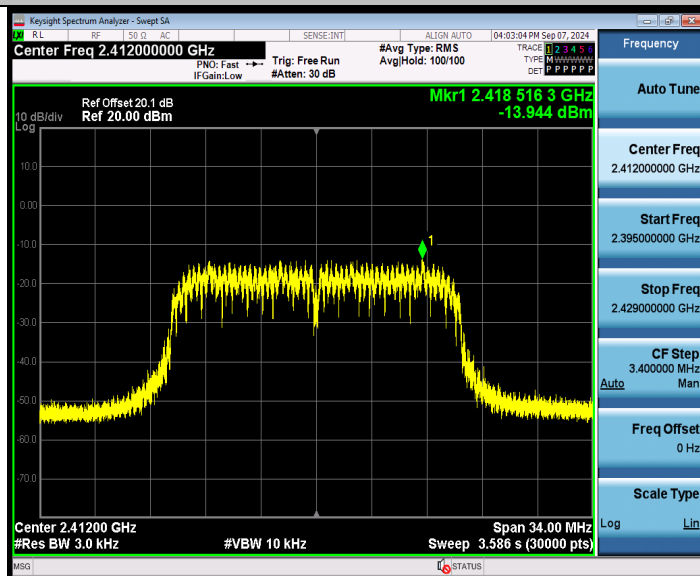


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# Test Report No.: PSU-QBJ2408220111RF05



11N20SISO\_Ant1\_2412

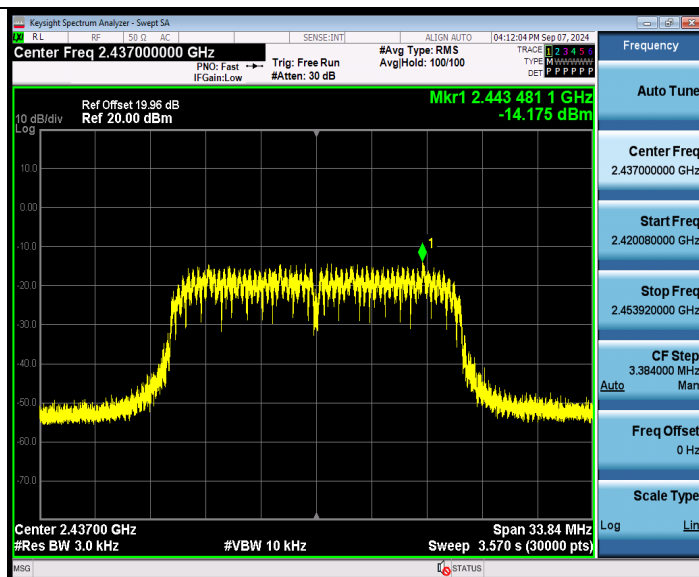


11N20SISO\_Ant1\_2437

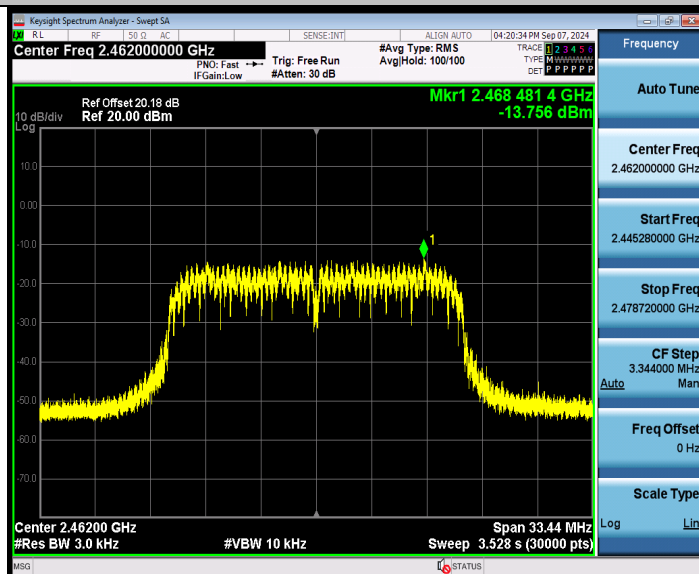


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# Test Report No.: PSU-QBJ2408220111RF05



11N20SISO\_Ant1\_2462



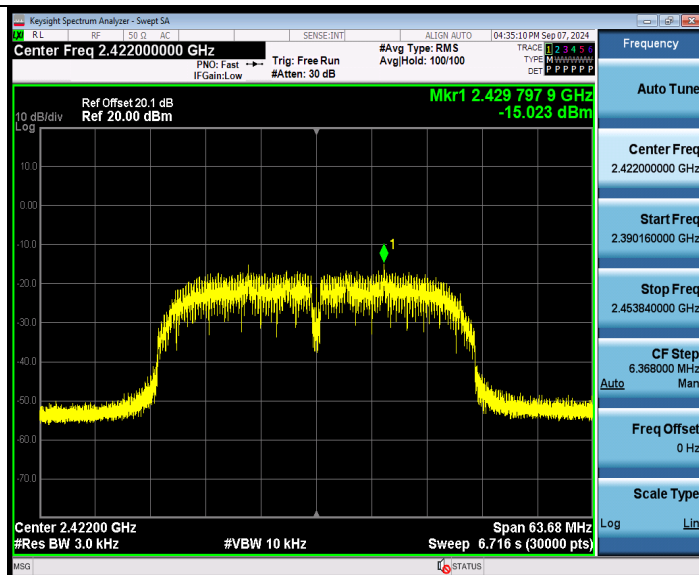
11N40SISO\_Ant1\_2422



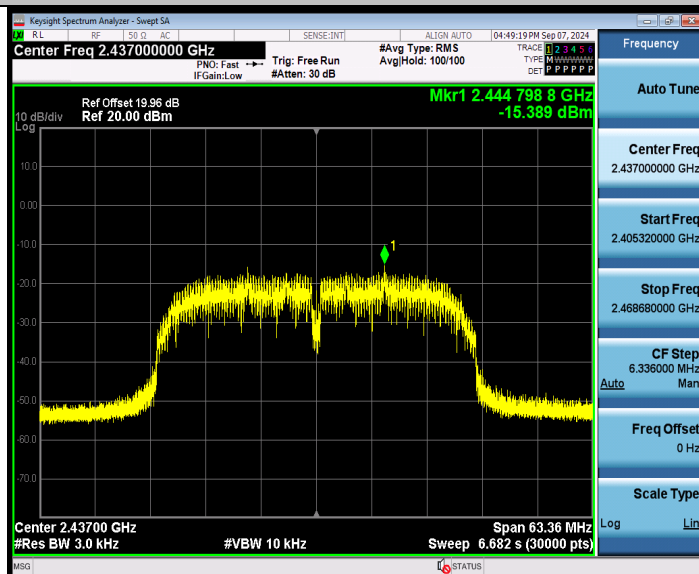


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Test Report No.: PSU-QBJ2408220111RF05



11N40SISO\_Ant1\_2437

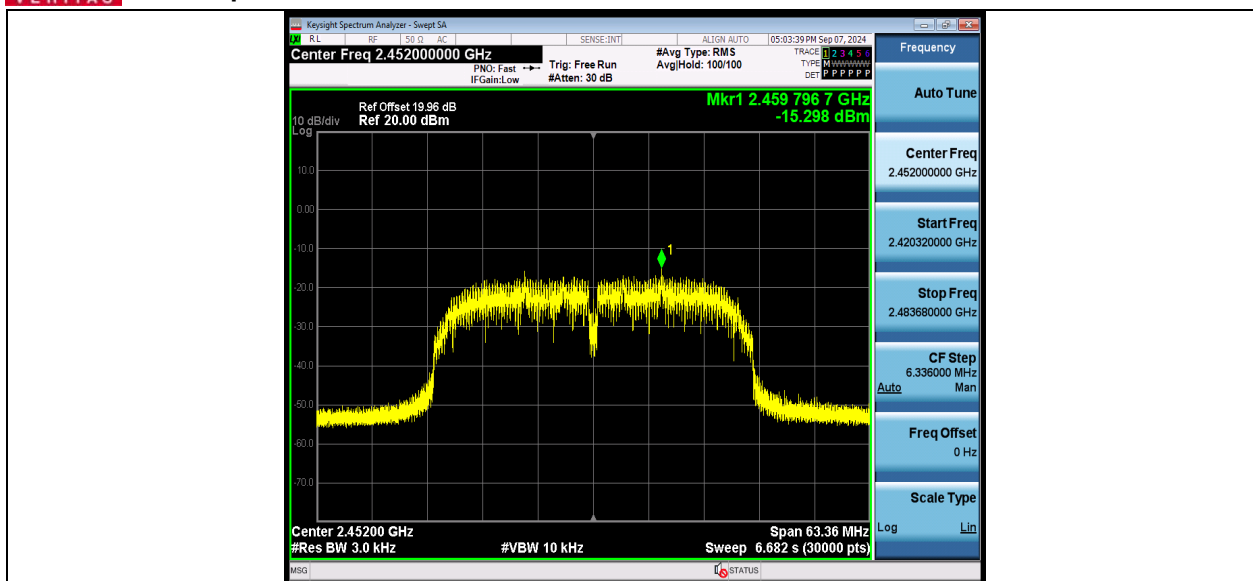


11N40SISO\_Ant1\_2452



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Test Report No.: PSU-QBJ2408220111RF05



**BAND EDGE MEASUREMENTS****TEST RESULT**

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	8.78	-32.85	$\leq -11.22$	PASS
		High	2462	8.89	-35.07	$\leq -11.12$	PASS
11G	Ant1	Low	2412	0.85	-35.15	$\leq -19.15$	PASS
		High	2462	0.28	-34.65	$\leq -19.72$	PASS
11N20SISO	Ant1	Low	2412	0.06	-34.42	$\leq -19.94$	PASS
		High	2462	0.39	-34.15	$\leq -19.61$	PASS
11N40SISO	Ant1	Low	2422	-2.62	-35.31	$\leq -22.62$	PASS
		High	2452	-3.27	-35.41	$\leq -23.27$	PASS

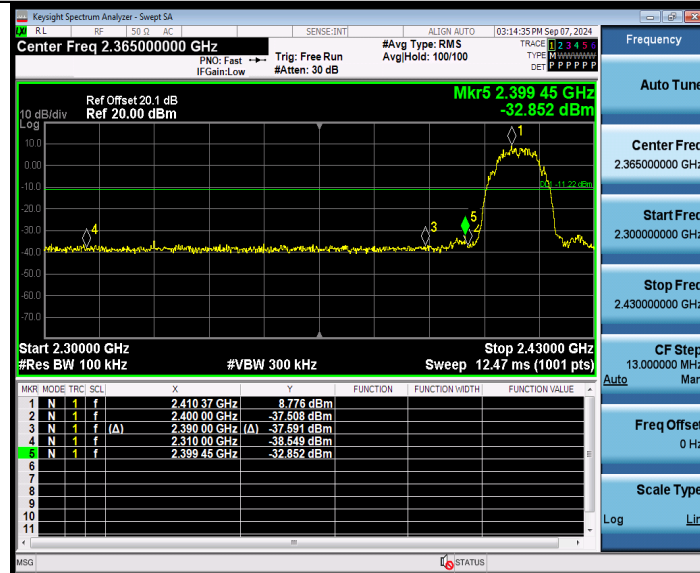


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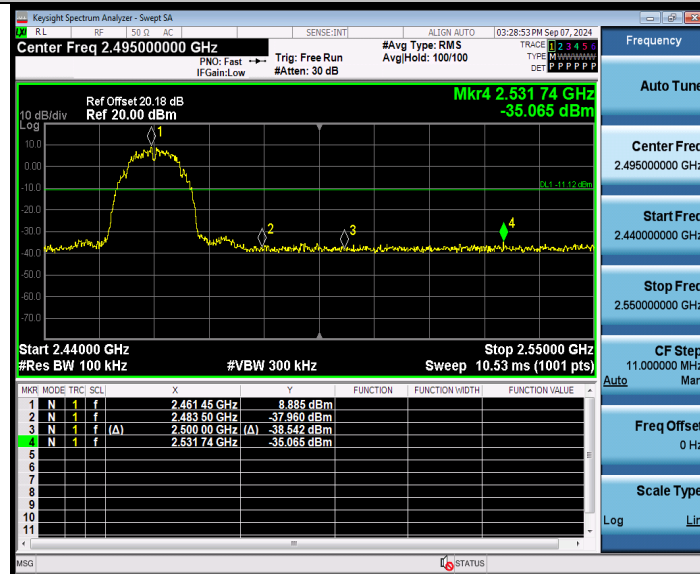
Test Report No.: PSU-QBJ2408220111RF05

## TEST GRAPHS

11B\_Ant1\_Low\_2412



11B\_Ant1\_High\_2462

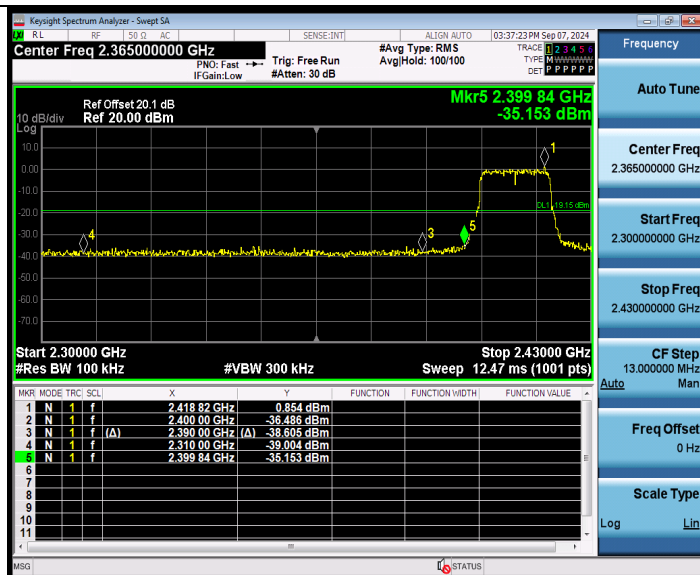


11G\_Ant1\_Low\_2412

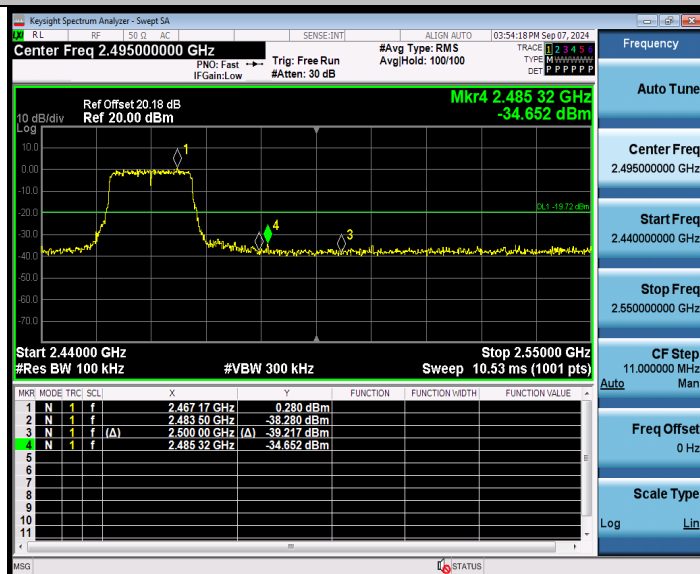


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Test Report No.: PSU-QBJ2408220111RF05



11G\_Ant1\_High\_2462

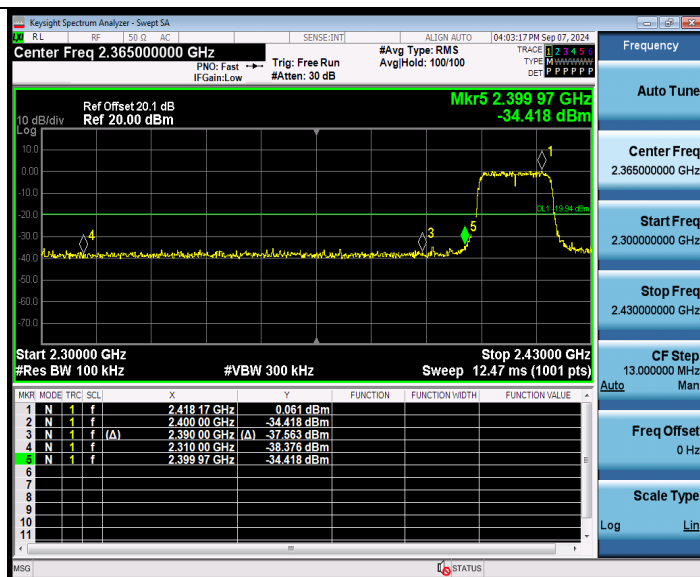


11N20SISO\_Ant1\_Low\_2412

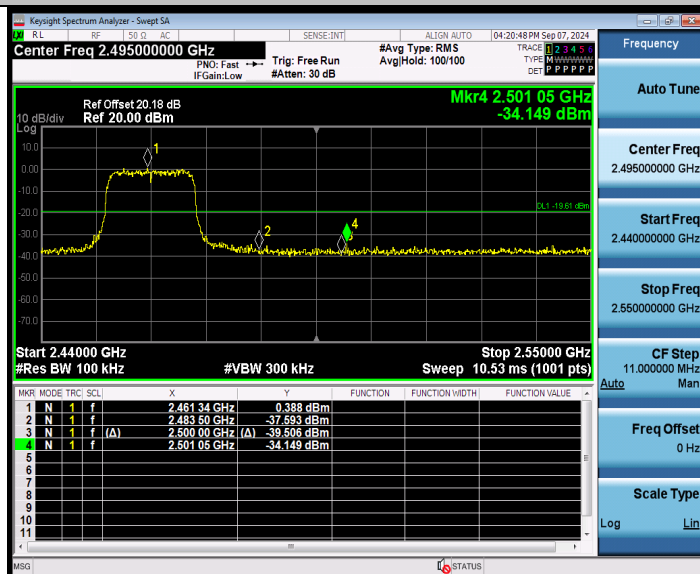


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Test Report No.: PSU-QBJ2408220111RF05



11N20SISO\_Ant1\_High\_2462

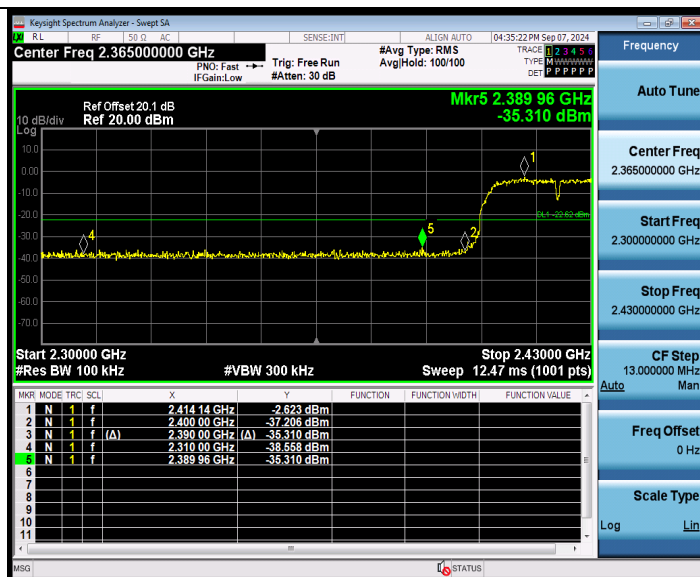


11N40SISO\_Ant1\_Low\_2422



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Test Report No.: PSU-QBJ2408220111RF05



11N40SISO\_Ant1\_High\_2452



**CONDUCTED SPURIOUS EMISSION****TEST RESULT**

TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	7.03	7.03	---	PASS
			30~1000	7.03	-52.98	$\leq -12.97$	PASS
			1000~26500	7.03	-23.19	$\leq -12.97$	PASS
		2437	Reference	8.02	8.02	---	PASS
			30~1000	8.02	-52.26	$\leq -11.98$	PASS
			1000~26500	8.02	-24.43	$\leq -11.98$	PASS
		2462	Reference	8.04	8.04	---	PASS
			30~1000	8.04	-53.04	$\leq -11.96$	PASS
			1000~26500	8.04	-22.64	$\leq -11.96$	PASS
11G	Ant1	2412	Reference	-0.84	-0.84	---	PASS
			30~1000	-0.84	-53.94	$\leq -20.84$	PASS
			1000~26500	-0.84	-35.2	$\leq -20.84$	PASS
		2437	Reference	-1.08	-1.08	---	PASS
			30~1000	-1.08	-54.24	$\leq -21.08$	PASS
			1000~26500	-1.08	-35.34	$\leq -21.08$	PASS
		2462	Reference	-0.48	-0.48	---	PASS
			30~1000	-0.48	-54.04	$\leq -20.48$	PASS
			1000~26500	-0.48	-34.73	$\leq -20.48$	PASS
11N20SISO	Ant1	2412	Reference	0.00	0.00	---	PASS
			30~1000	0.00	-54.5	$\leq -20$	PASS
			1000~26500	0.00	-34.9	$\leq -20$	PASS
		2437	Reference	0.06	0.06	---	PASS
			30~1000	0.06	-54.01	$\leq -19.94$	PASS
			1000~26500	0.06	-35.95	$\leq -19.94$	PASS
		2462	Reference	-0.14	-0.14	---	PASS
			30~1000	-0.14	-53.32	$\leq -20.14$	PASS
			1000~26500	-0.14	-35.23	$\leq -20.14$	PASS
11N40SISO	Ant1	2422	Reference	-3.57	-3.57	---	PASS
			30~1000	-3.57	-53.4	$\leq -23.57$	PASS
			1000~26500	-3.57	-35.84	$\leq -23.57$	PASS





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**Test Report No.: PSU-QBJ2408220111RF05**

		2437	Reference	-3.68	-3.68	---	PASS
			30~1000	-3.68	-53.81	$\leq -23.68$	PASS
			1000~26500	-3.68	-34.55	$\leq -23.68$	PASS
		2452	Reference	-3.84	-3.84	---	PASS
			30~1000	-3.84	-53.39	$\leq -23.84$	PASS
			1000~26500	-3.84	-35.63	$\leq -23.84$	PASS



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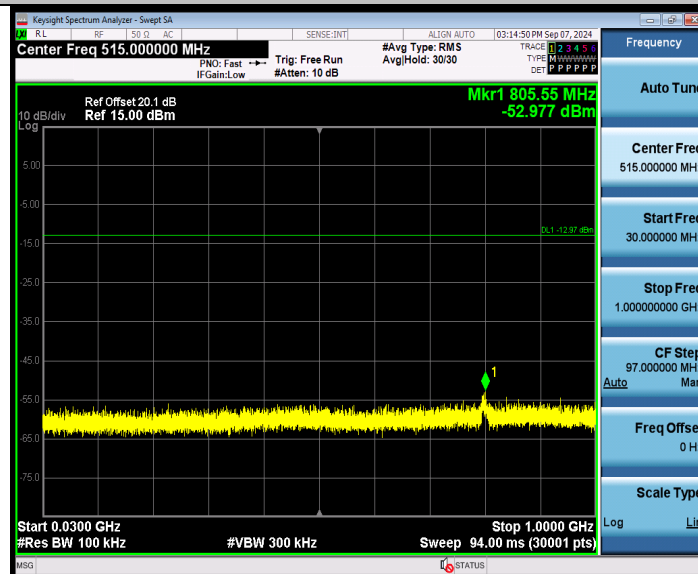
Test Report No.: PSU-QBJ2408220111RF05

## TEST GRAPHS

11B\_Ant1\_2412\_0~Reference



11B\_Ant1\_2412\_30~1000

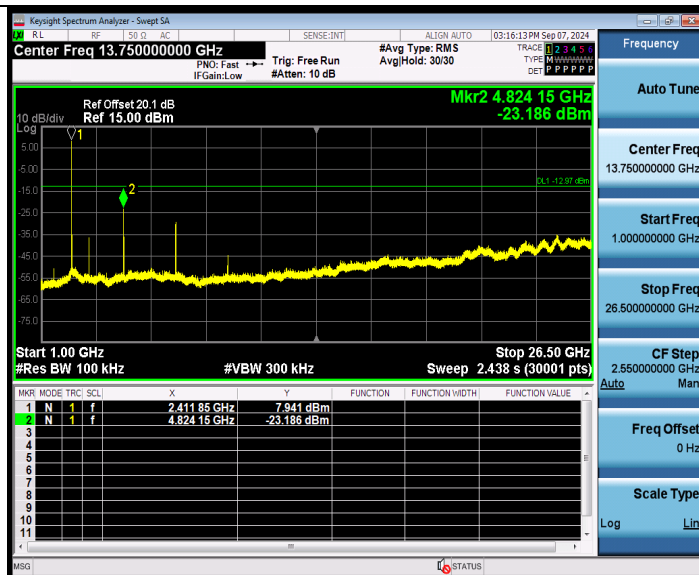


11B\_Ant1\_2412\_1000~26500



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# Test Report No.: PSU-QBJ2408220111RF05



11B\_Ant1\_2437\_0~Reference

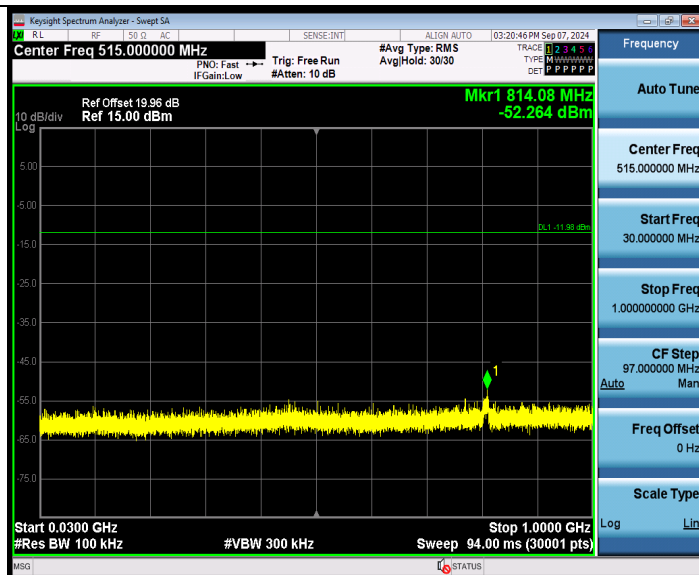


11B\_Ant1\_2437\_30~1000

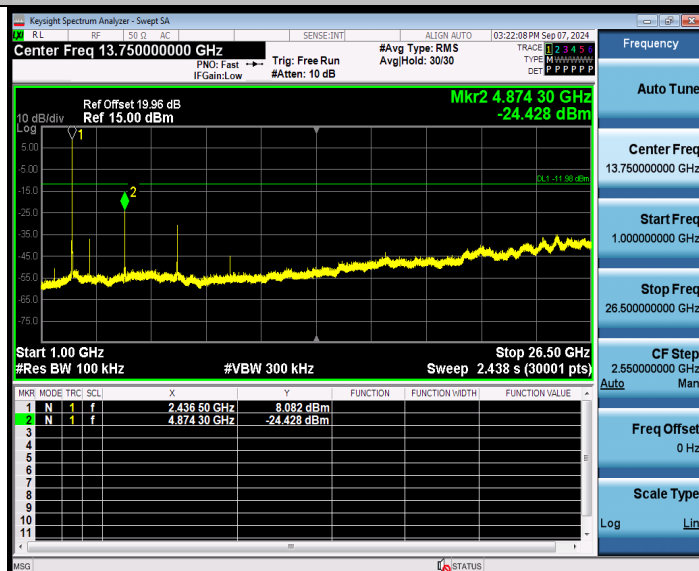


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# Test Report No.: PSU-QBJ2408220111RF05



11B\_Ant1\_2437\_1000~26500



11B\_Ant1\_2462\_0~Reference

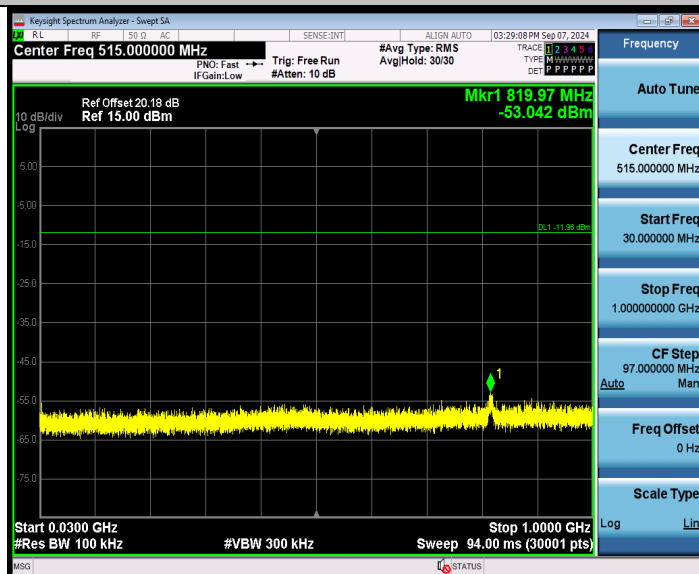


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## Test Report No.: PSU-QBJ2408220111RF05



11B\_Ant1\_2462\_30~1000

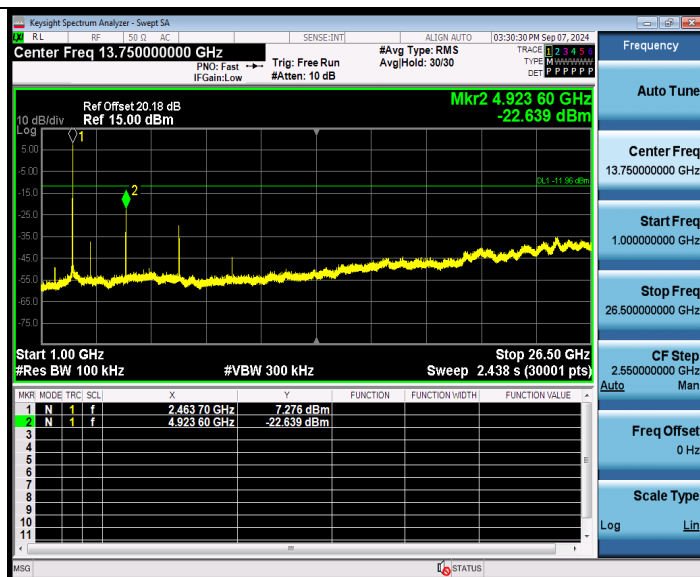


11B\_Ant1\_2462\_1000~26500

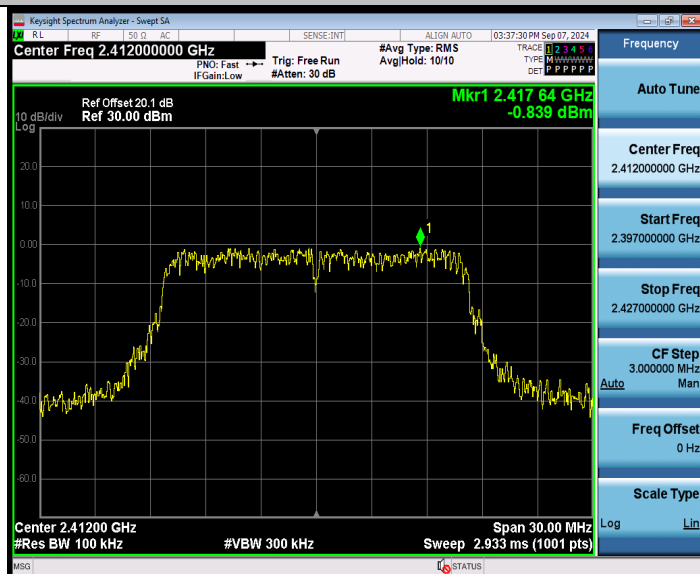


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Test Report No.: PSU-QBJ2408220111RF05



11G\_Ant1\_2412\_0~Reference

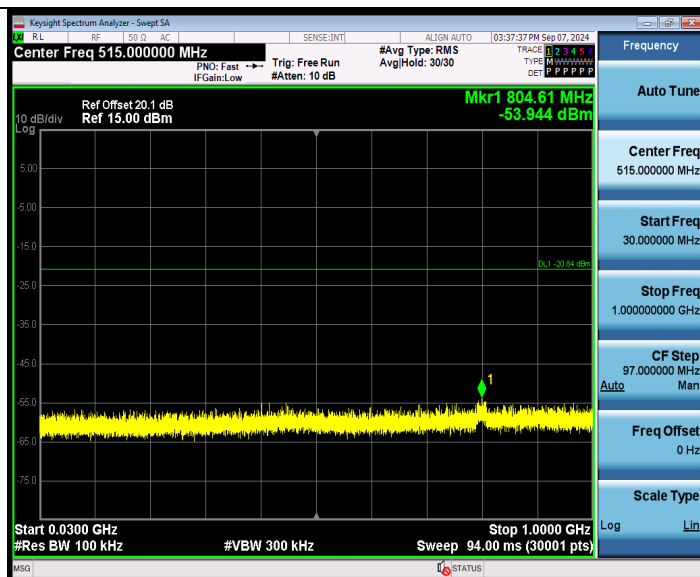


11G\_Ant1\_2412\_30~1000



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# Test Report No.: PSU-QBJ2408220111RF05



11G\_Ant1\_2412\_1000~26500



11G\_Ant1\_2437\_0~Reference

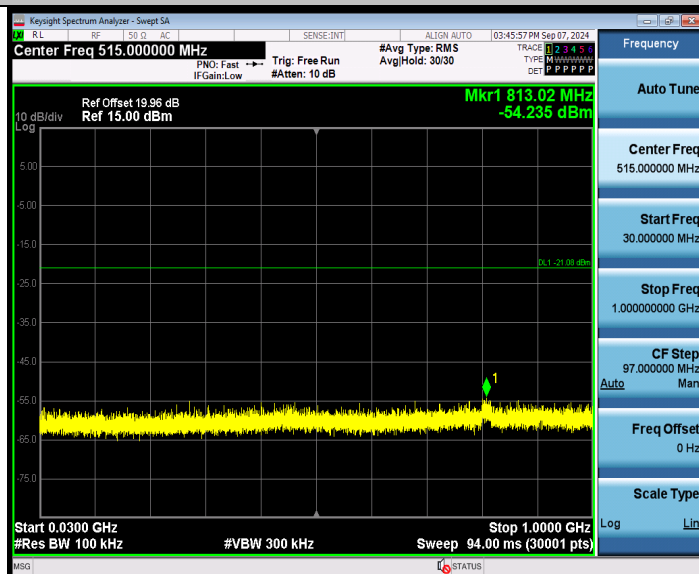


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## Test Report No.: PSU-QBJ2408220111RF05



11G\_Ant1\_2437\_30~1000



11G\_Ant1\_2437\_1000~26500



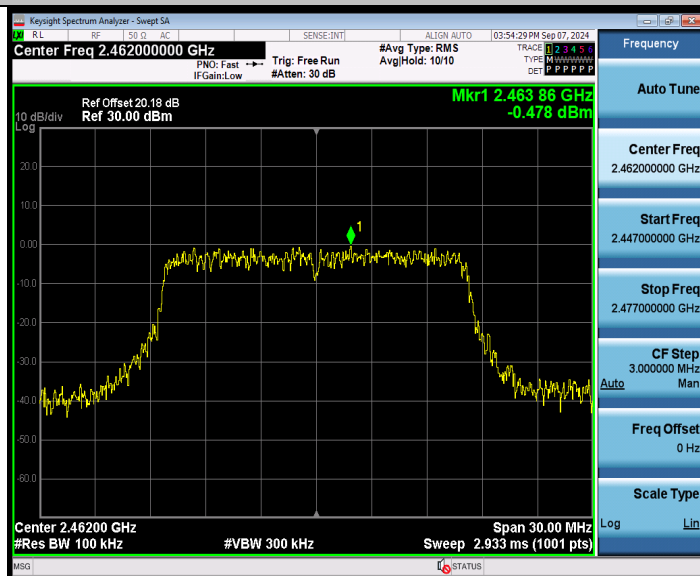


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11G\_Ant1\_2462\_0~Reference

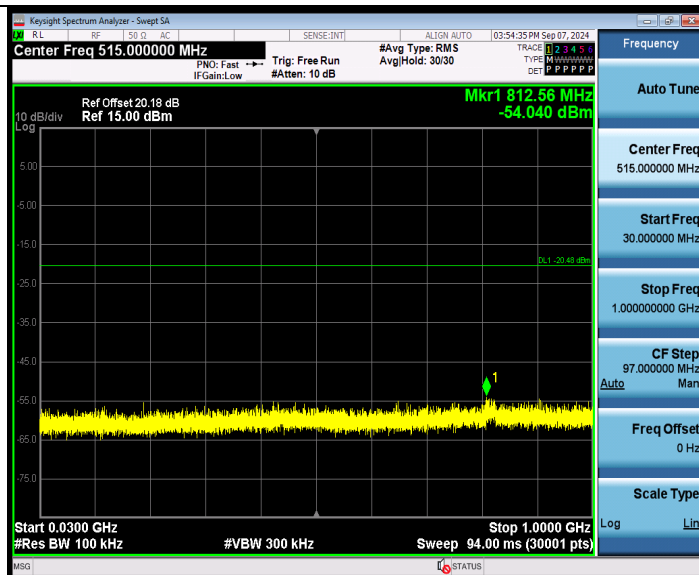


11G\_Ant1\_2462\_30~1000

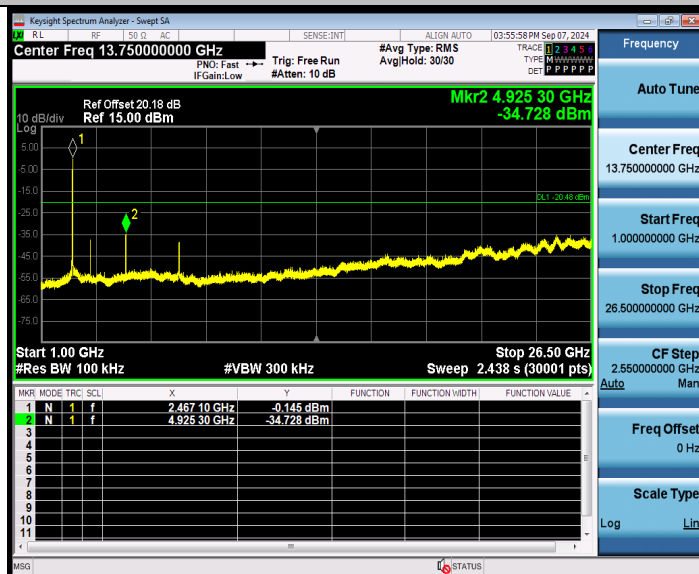


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# Test Report No.: PSU-QBJ2408220111RF05



11G\_Ant1\_2462\_1000~26500

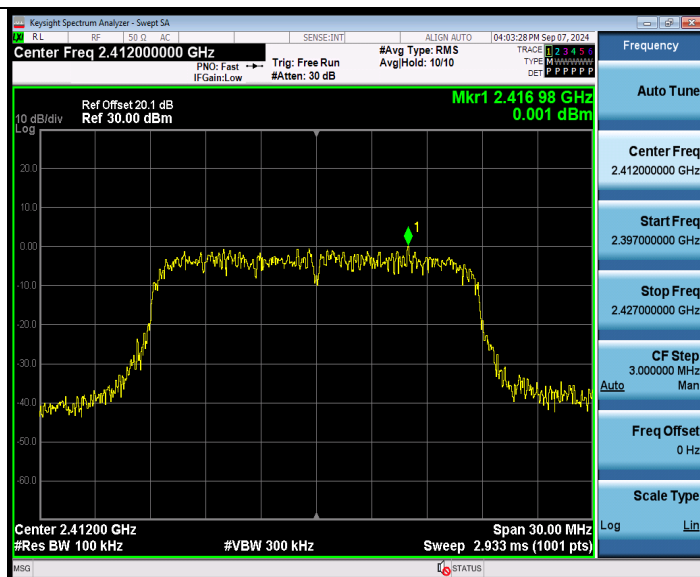


11N20SISO\_Ant1\_2412\_0~Reference

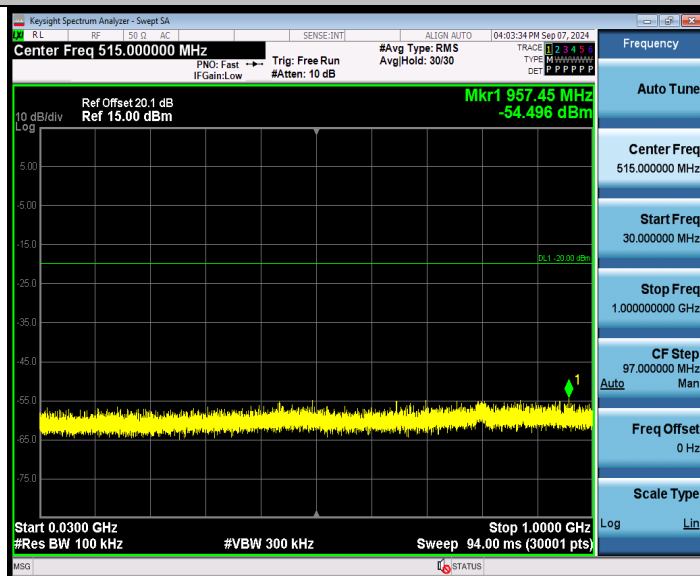


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# Test Report No.: PSU-QBJ2408220111RF05



11N20SISO\_Ant1\_2412\_30~1000

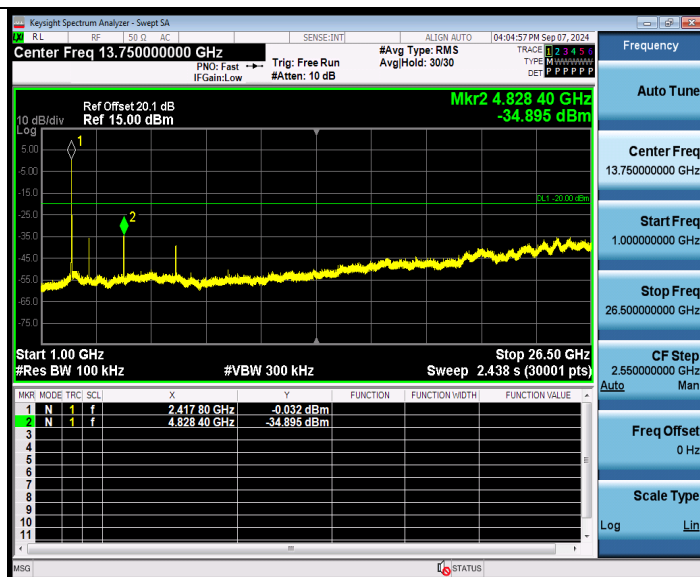


11N20SISO\_Ant1\_2412\_1000~26500



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Test Report No.: PSU-QBJ2408220111RF05



11N20SISO\_Ant1\_2437\_0~Reference

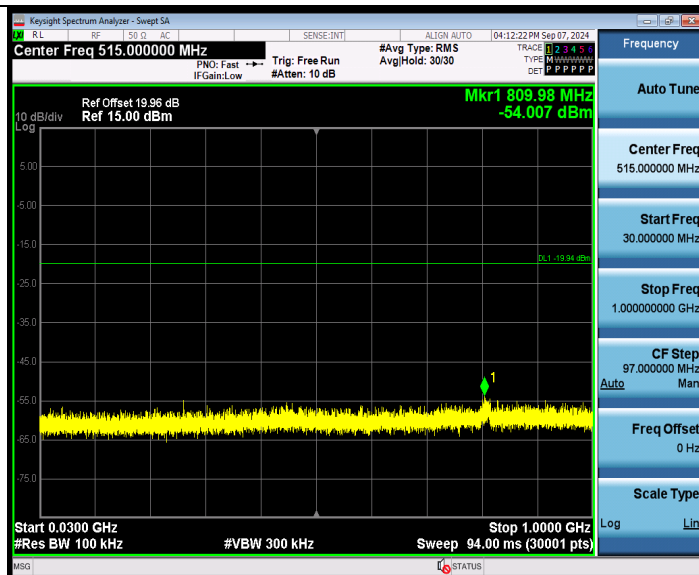


11N20SISO\_Ant1\_2437\_30~1000



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# Test Report No.: PSU-QBJ2408220111RF05



11N20SISO\_Ant1\_2437\_1000~26500

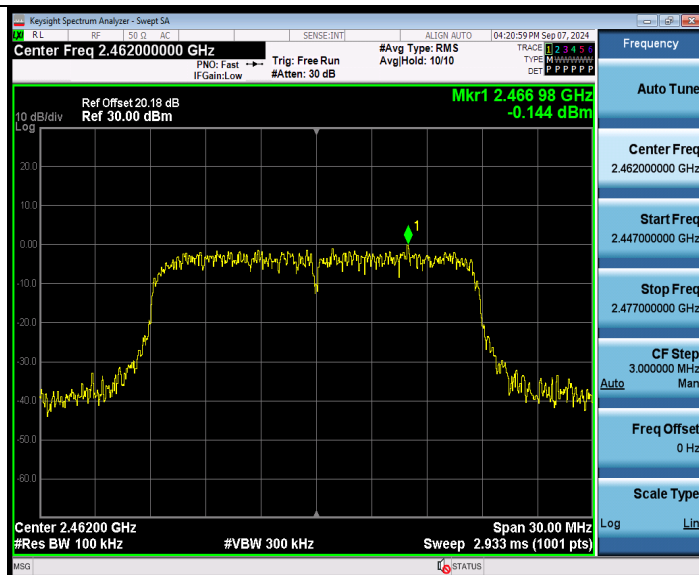


11N20SISO\_Ant1\_2462\_0~Reference

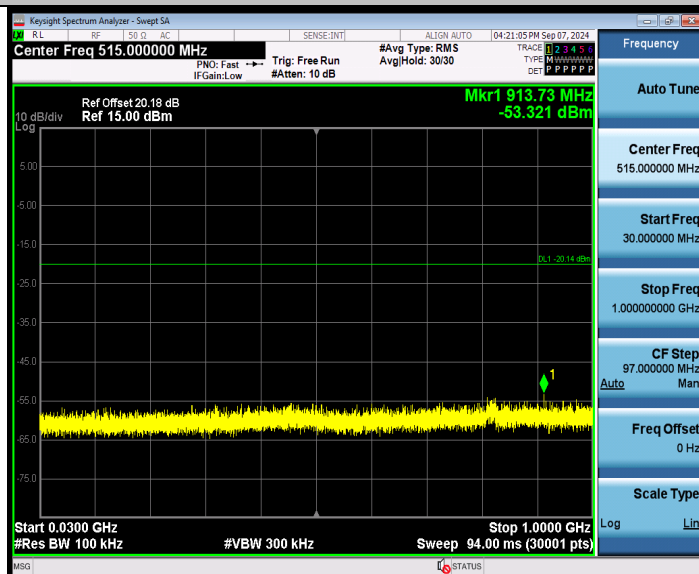


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# Test Report No.: PSU-QBJ2408220111RF05



11N20SISO\_Ant1\_2462\_30~1000



11N20SISO\_Ant1\_2462\_1000~26500



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# Test Report No.: PSU-QBJ2408220111RF05



11N40SISO\_Ant1\_2422\_0~Reference

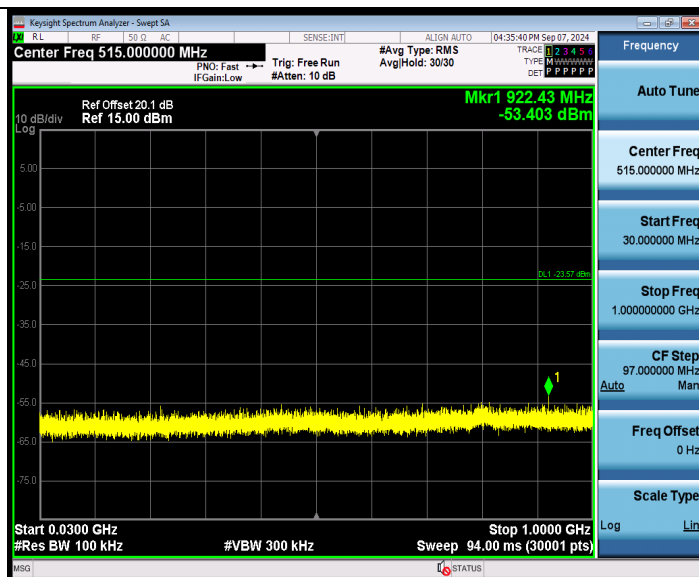


11N40SISO\_Ant1\_2422\_30~1000



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# Test Report No.: PSU-QBJ2408220111RF05



11N40SISO\_Ant1\_2422\_1000~26500



11N40SISO\_Ant1\_2437\_0~Reference



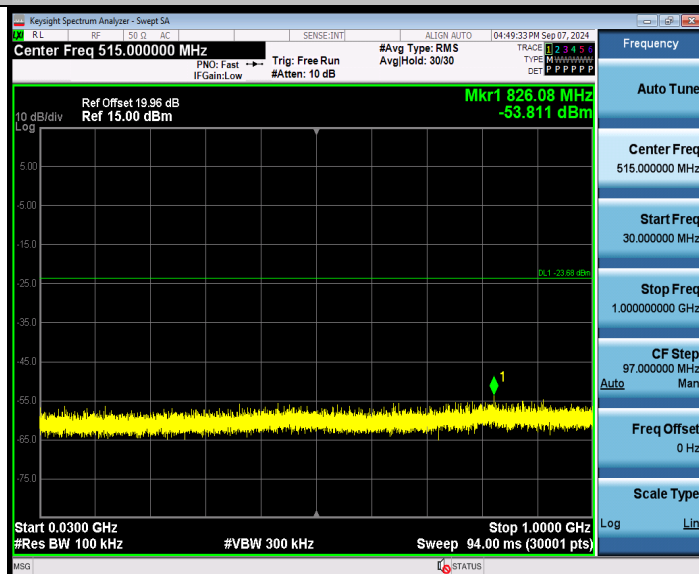


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## Test Report No.: PSU-QBJ2408220111RF05



11N40SISO\_Ant1\_2437\_30~1000



11N40SISO\_Ant1\_2437\_1000~26500



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Test Report No.: PSU-QBJ2408220111RF05



11N40SISO\_Ant1\_2452\_0~Reference

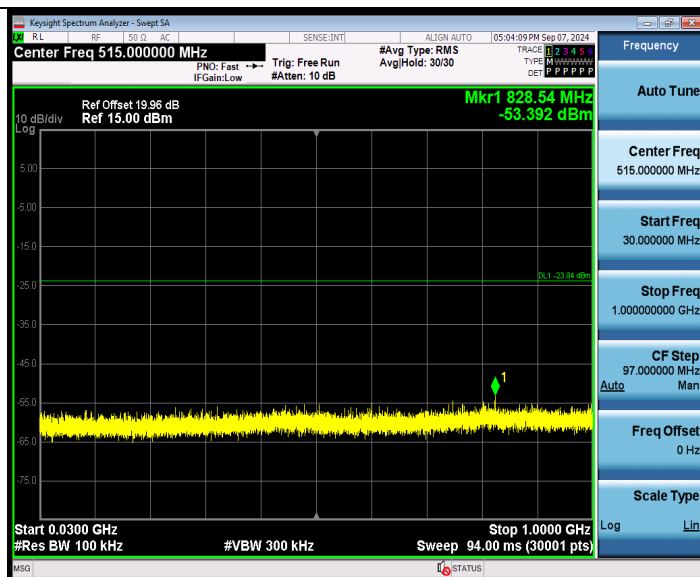


11N40SISO\_Ant1\_2452\_30~1000



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# Test Report No.: PSU-QBJ2408220111RF05



11N40SISO\_Ant1\_2452\_1000~26500





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Test Report No.: PSU-QBJ2408220111RF05

## DUTY CYCLE

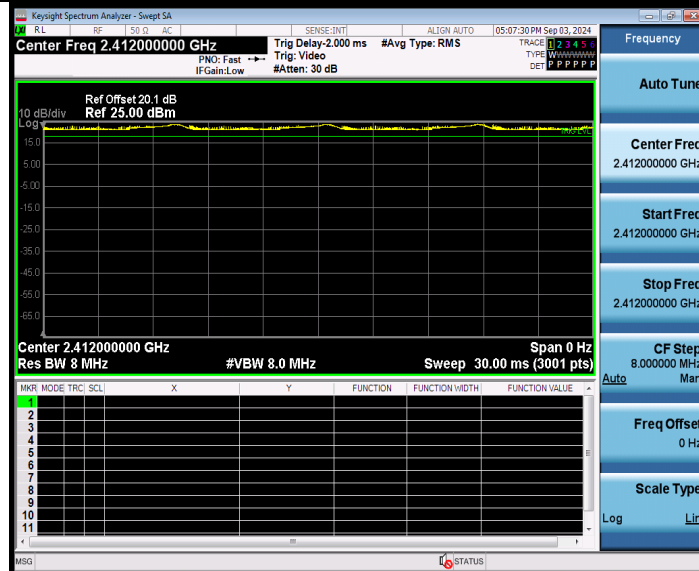
## TEST RESULT

TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Factor
11B	Ant1	2412	30.00	30.00	100.00	0.00
		2437	100.00	100.00	100.00	0.00
		2462	100.00	100.00	100.00	0.00
11G	Ant1	2412	100.00	100.00	100.00	0.00
		2437	100.00	100.00	100.00	0.00
		2462	100.00	100.00	100.00	0.00
11N20SISO	Ant1	2412	100.00	100.00	100.00	0.00
		2437	100.00	100.00	100.00	0.00
		2462	100.00	100.00	100.00	0.00
11N40SISO	Ant1	2422	100.00	100.00	100.00	0.00
		2437	100.00	100.00	100.00	0.00
		2452	100.00	100.00	100.00	0.00

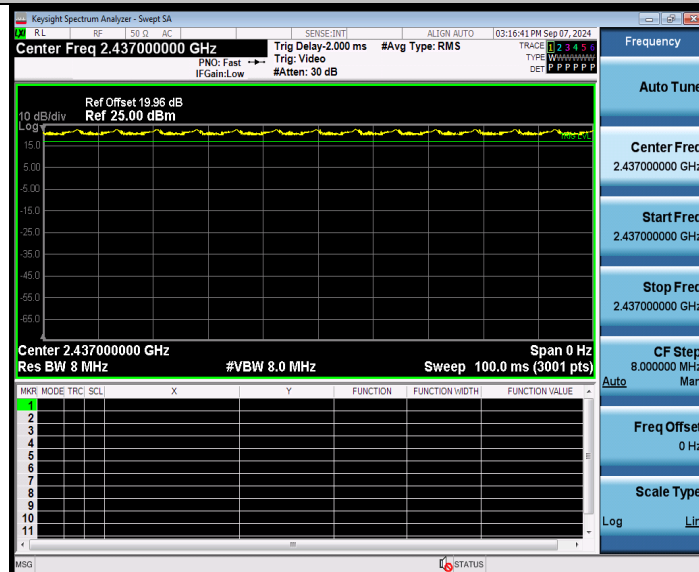


## TEST GRAPHS

11B\_Ant1\_2412



11B\_Ant1\_2437

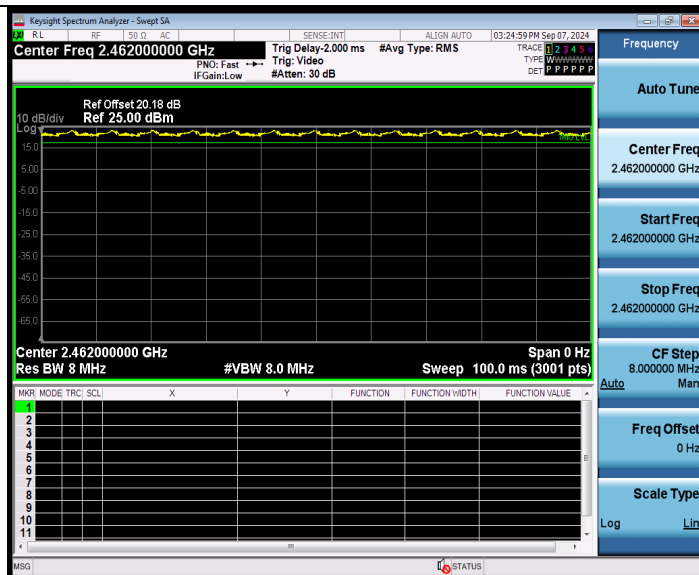


11B\_Ant1\_2462

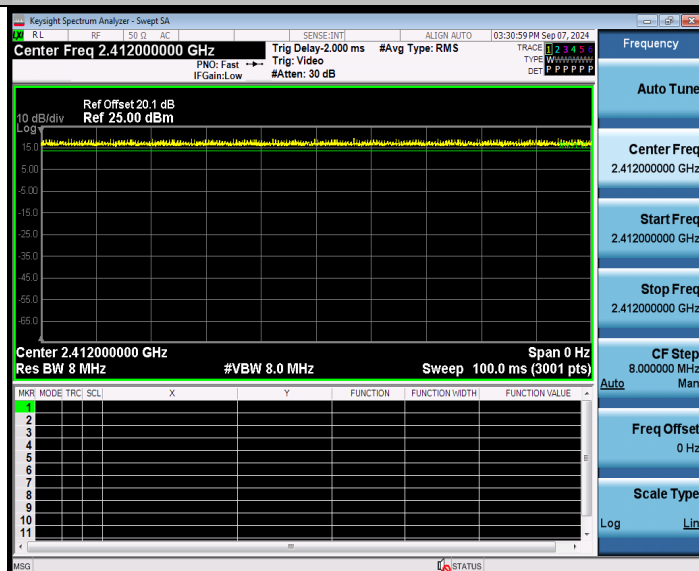


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Test Report No.: PSU-QBJ2408220111RF05



11G\_Ant1\_2412

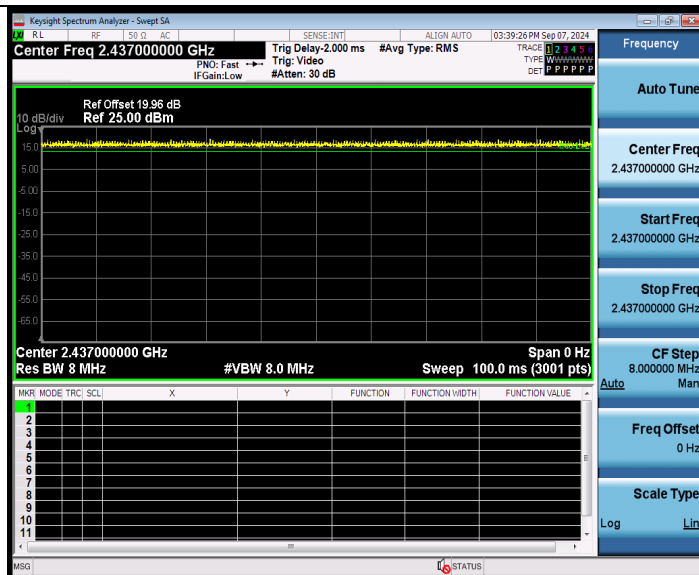


11G\_Ant1\_2437

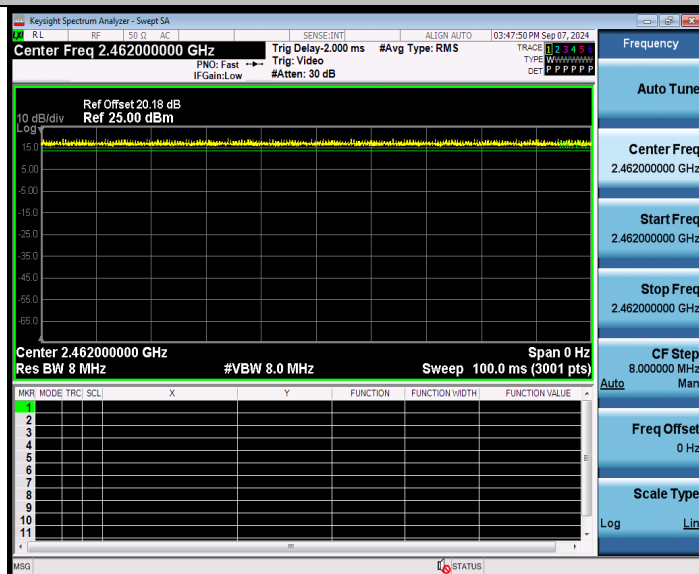


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Test Report No.: PSU-QBJ2408220111RF05



11G\_Ant1\_2462

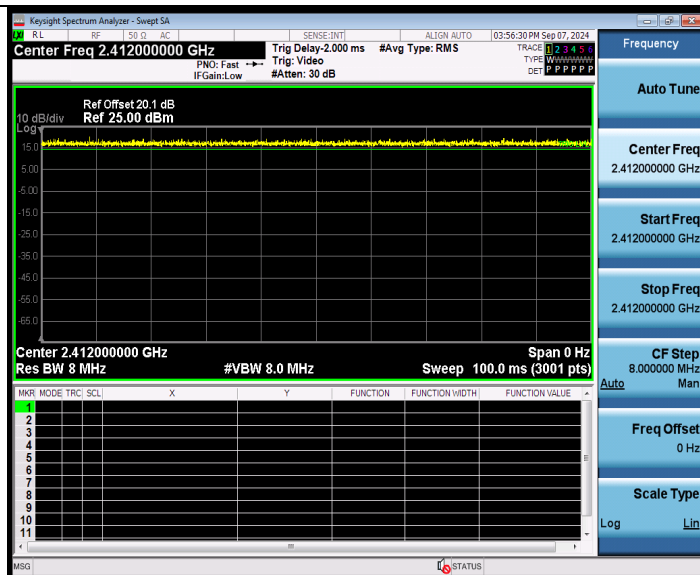


11N20SISO\_Ant1\_2412

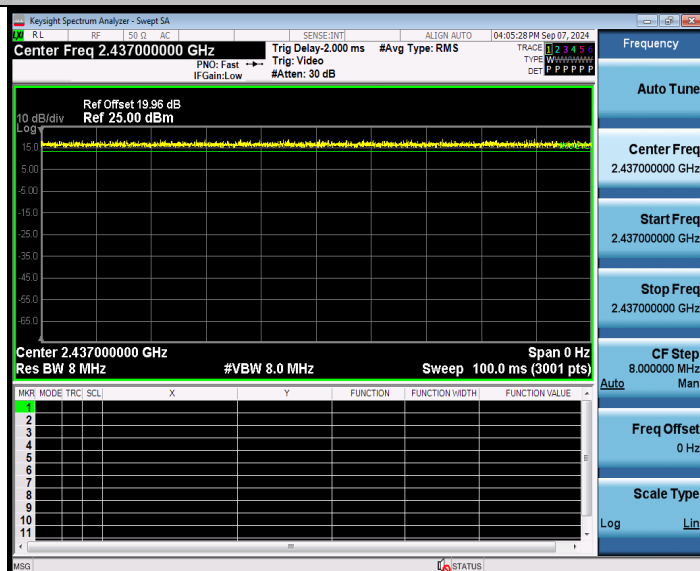


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Test Report No.: PSU-QBJ2408220111RF05



11N20SISO\_Ant1\_2437



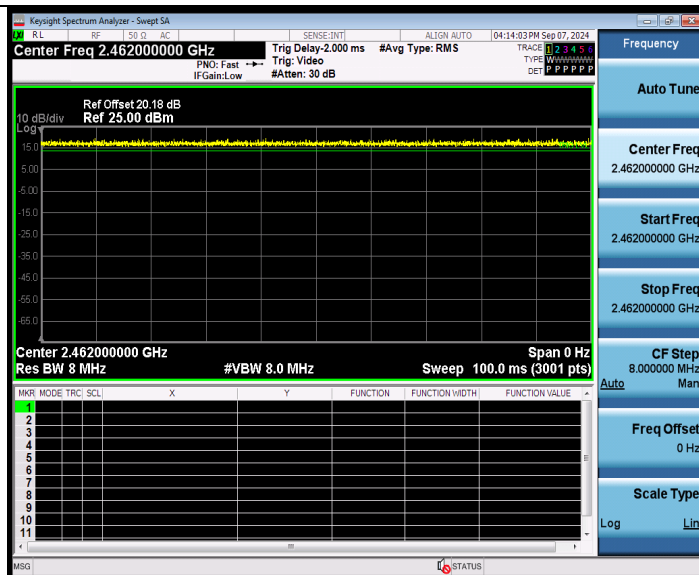
11N20SISO\_Ant1\_2462



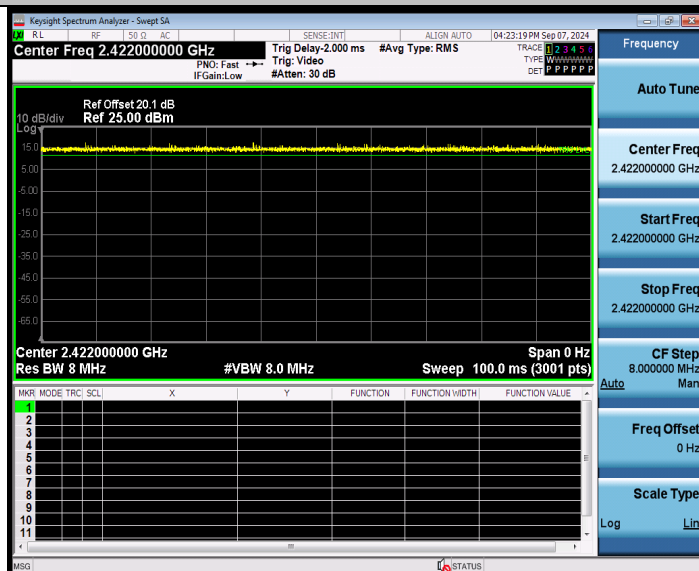


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Test Report No.: PSU-QBJ2408220111RF05



11N40SISO\_Ant1\_2422

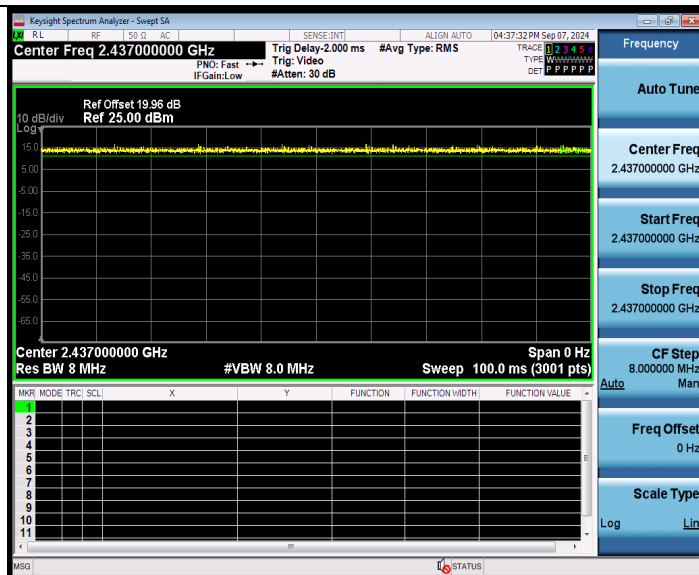


11N40SISO\_Ant1\_2437

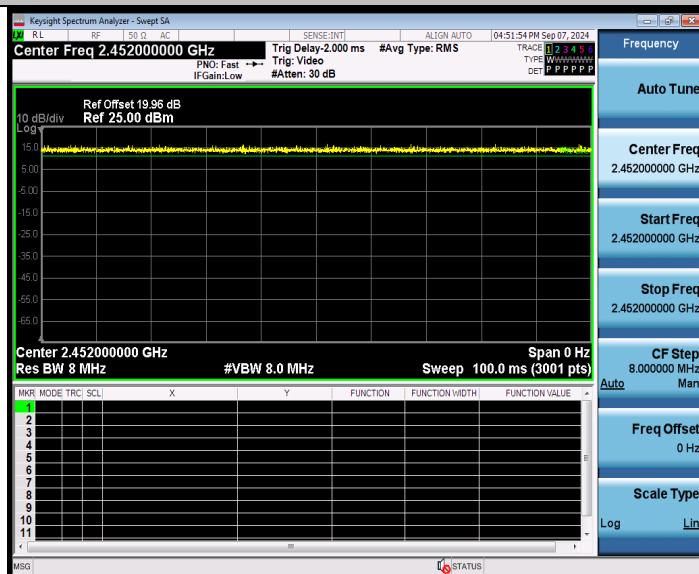


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Test Report No.: PSU-QBJ2408220111RF05



11N40SISO\_Ant1\_2452





**Test Report No.: PSU-QBJ2408220111RF05**

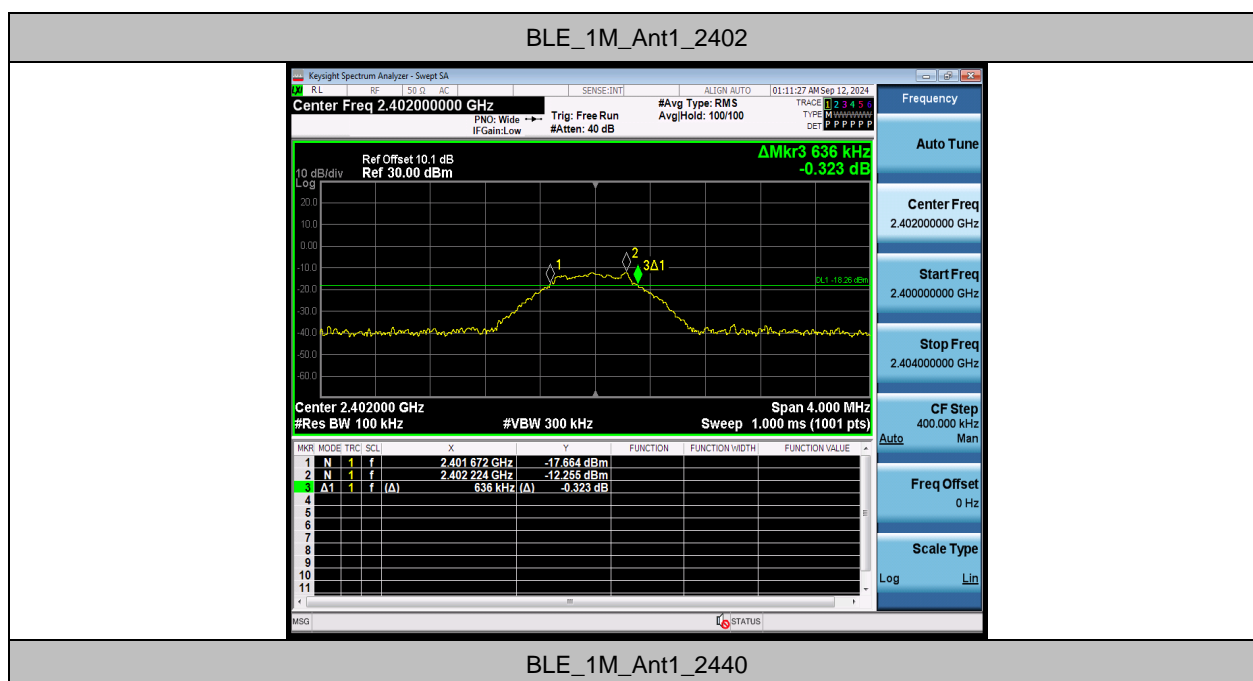
## BLE

## DTS BANDWIDTH

## TEST RESULT

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.636	2401.672	2402.308	0.5	PASS
		2440	0.652	2439.660	2440.312	0.5	PASS
		2480	0.664	2479.660	2480.324	0.5	PASS

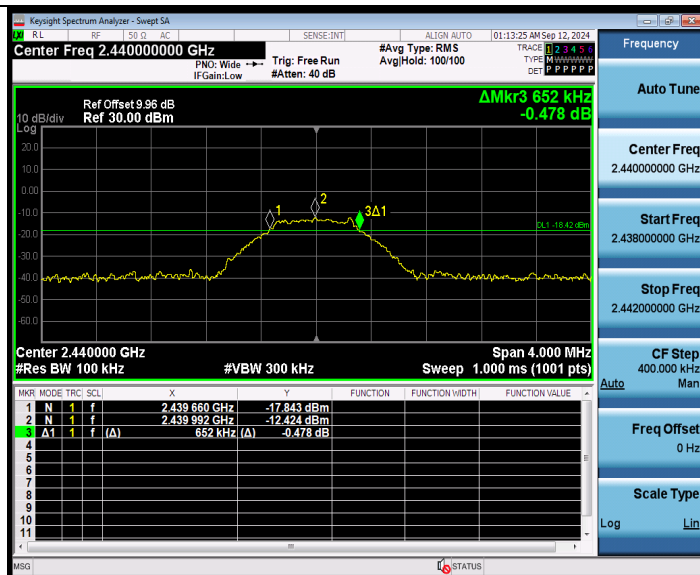
## TEST GRAPHS



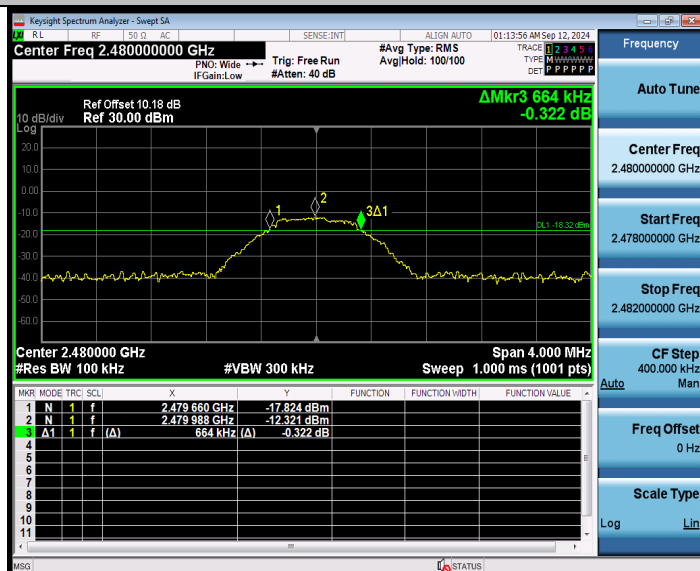


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# Test Report No.: PSU-QBJ2408220111RF05



BLE\_1M\_Ant1\_2480





## OCCUPIED CHANNEL BANDWIDTH

### TEST RESULT

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0020	2401.4803	2402.4823	---	---
		2440	1.0150	2439.4737	2440.4887	---	---
		2480	1.0124	2479.4744	2480.4868	---	---

### TEST GRAPHS





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BLE\_1M\_Ant1\_2480





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## MAXIMUM CONDUCTED OUTPUT POWER

### TEST RESULT

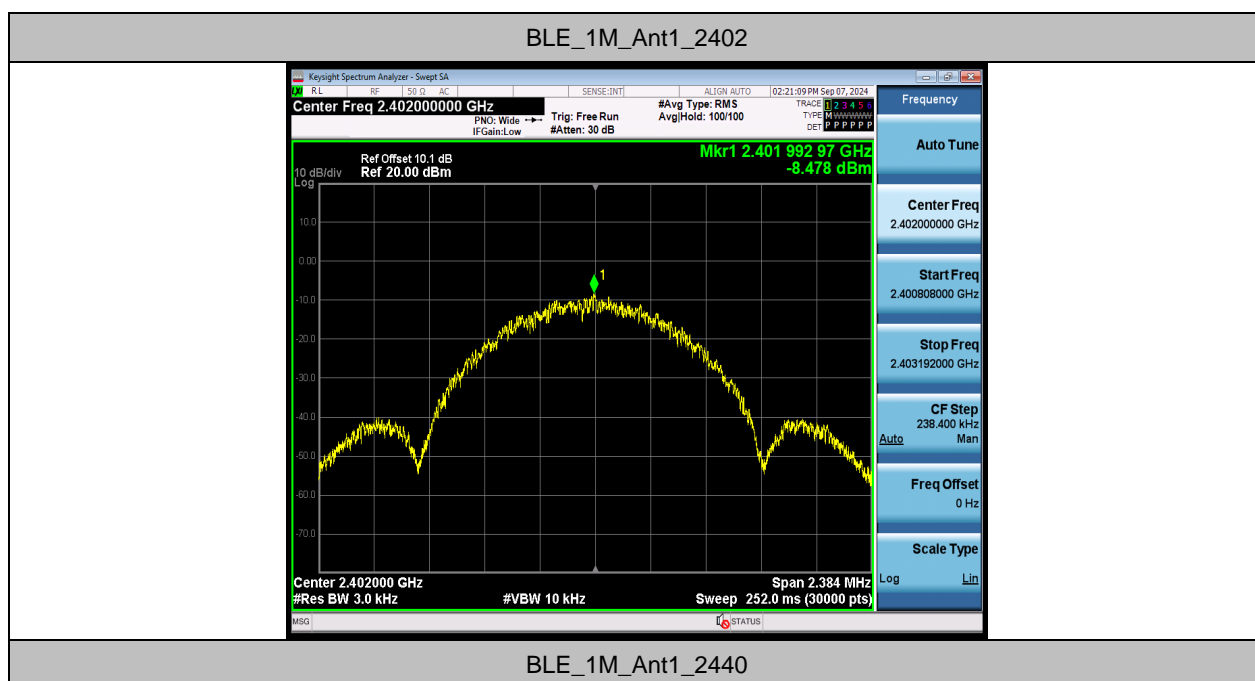
TestMode	Antenna	Channel	Average power [dBm]	Peak power [dBm]	Peak power [mw]	Conducted Limit [dBm]	EIRP [dBm]	EIRP [mw]	EIRP Limit [dBm]	Verdict	Power Setting
BLE_1M	Ant1	2402	7.40	7.51	5.64	≤30	7.68	5.86	≤36	PASS	Default
		2440	7.51	7.55	5.69	≤30	7.72	5.92	≤36	PASS	Default
		2480	7.61	7.66	5.83	≤30	7.83	6.07	≤36	PASS	Default
Note:EIRP=Peak Power+Gain											

## MAXIMUM POWER SPECTRAL DENSITY

### TEST RESULT

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-8.48	≤8.00	PASS
		2440	-8.84	≤8.00	PASS
		2480	-8.63	≤8.00	PASS

### TEST GRAPHS





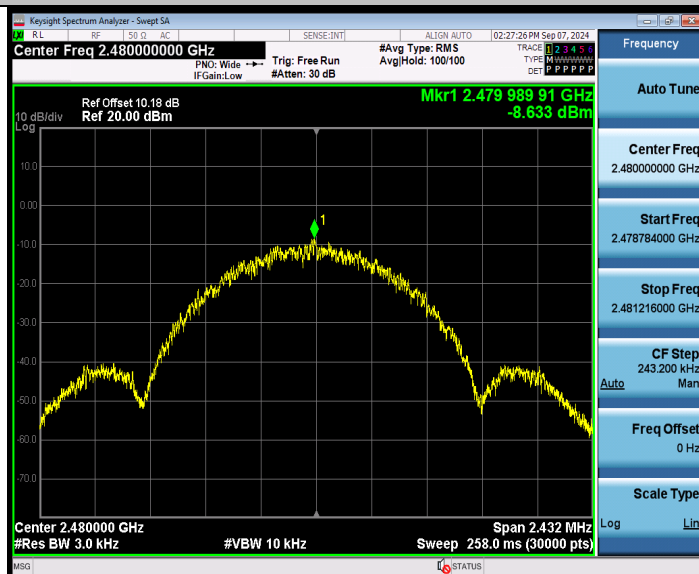


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BLE\_1M\_Ant1\_2480



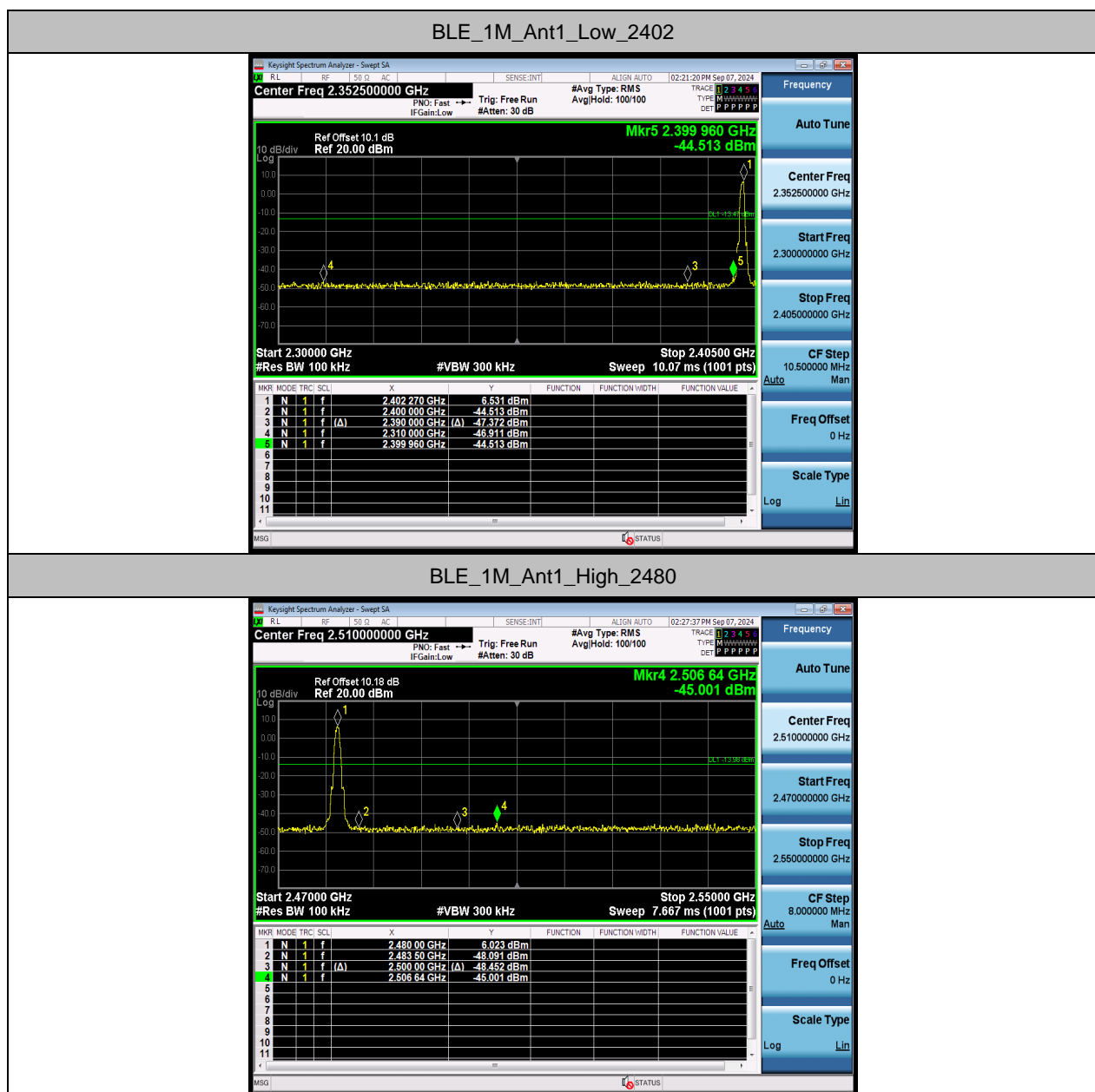


## BAND EDGE MEASUREMENTS

## TEST RESULT

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	6.53	-44.51	≤-13.47	PASS
		High	2480	6.02	-45	≤-13.98	PASS

## TEST GRAPHS



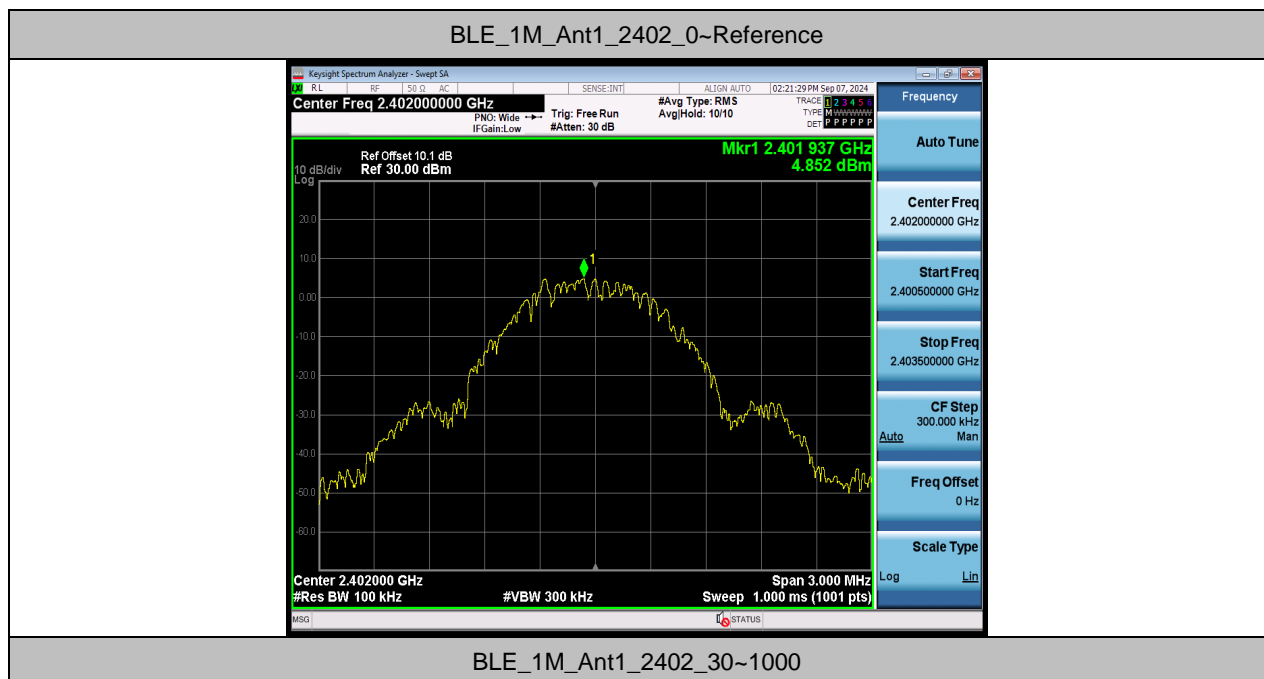


## CONDUCTED SPURIOUS EMISSION

### TEST RESULT

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	4.85	4.85	---	PASS
			30~1000	4.85	-50.06	≤-15.15	PASS
			1000~26500	4.85	-32.31	≤-15.15	PASS
		2440	Reference	4.32	4.32	---	PASS
			30~1000	4.32	-50.65	≤-15.68	PASS
			1000~26500	4.32	-33.68	≤-15.68	PASS
		2480	Reference	5.09	5.09	---	PASS
			30~1000	5.09	-50.52	≤-14.91	PASS
			1000~26500	5.09	-32.35	≤-14.91	PASS

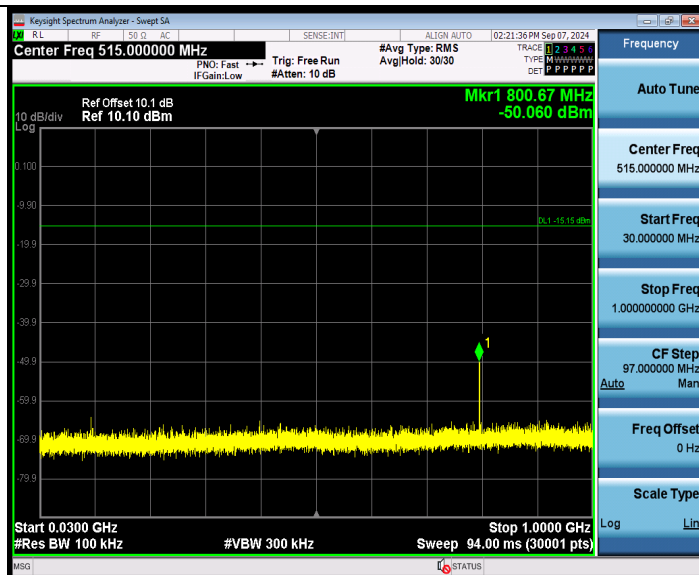
### TEST GRAPHS



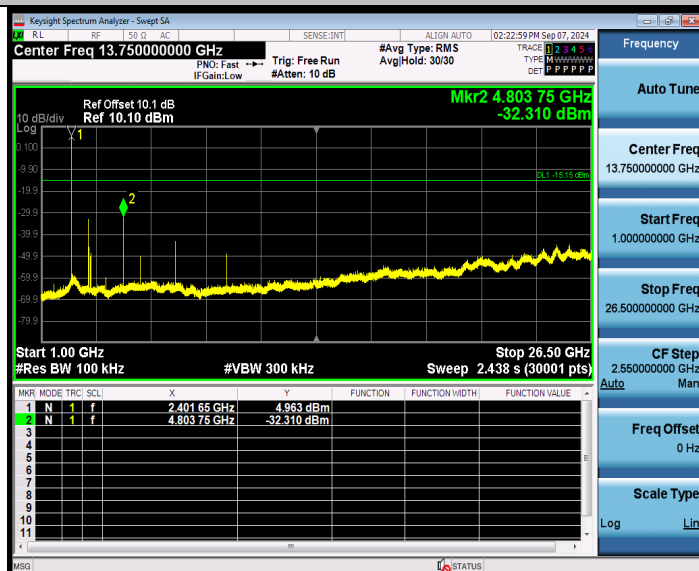


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BLE\_1M\_Ant1\_2402\_1000~26500



BLE\_1M\_Ant1\_2440\_0~Reference

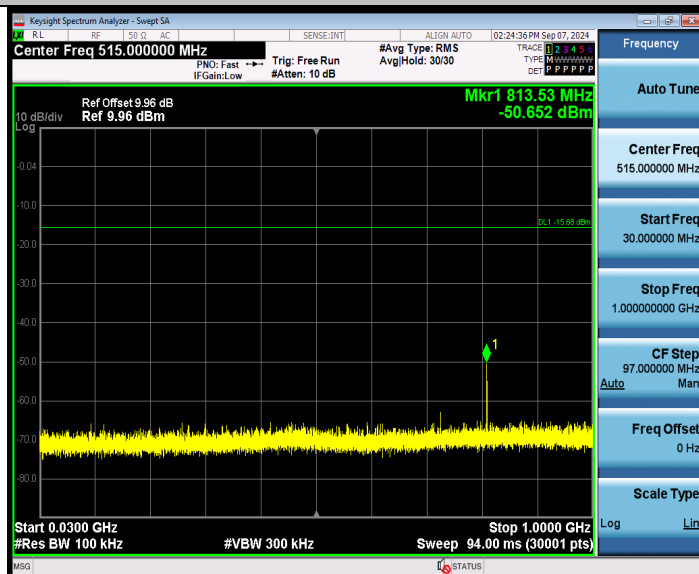


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## Test Report No.: PSU-QBJ2408220111RF05



BLE\_1M\_Ant1\_2440\_30~1000

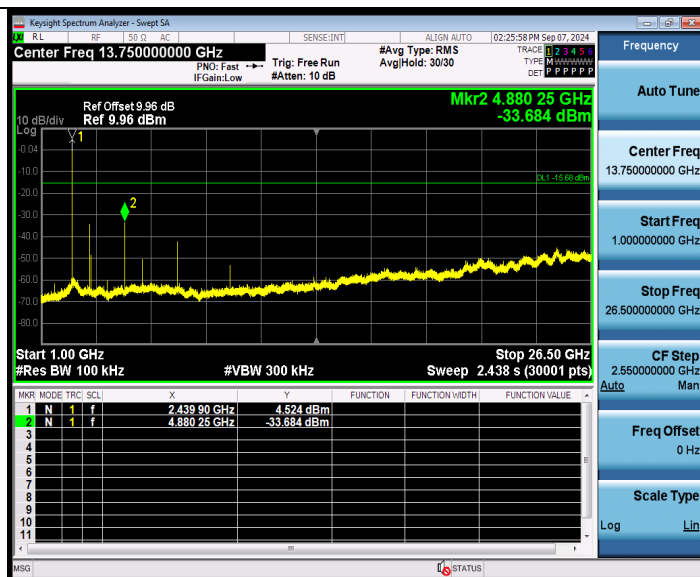


BLE\_1M\_Ant1\_2440\_1000~26500



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Test Report No.: PSU-QBJ2408220111RF05



BLE\_1M\_Ant1\_2480\_0~Reference

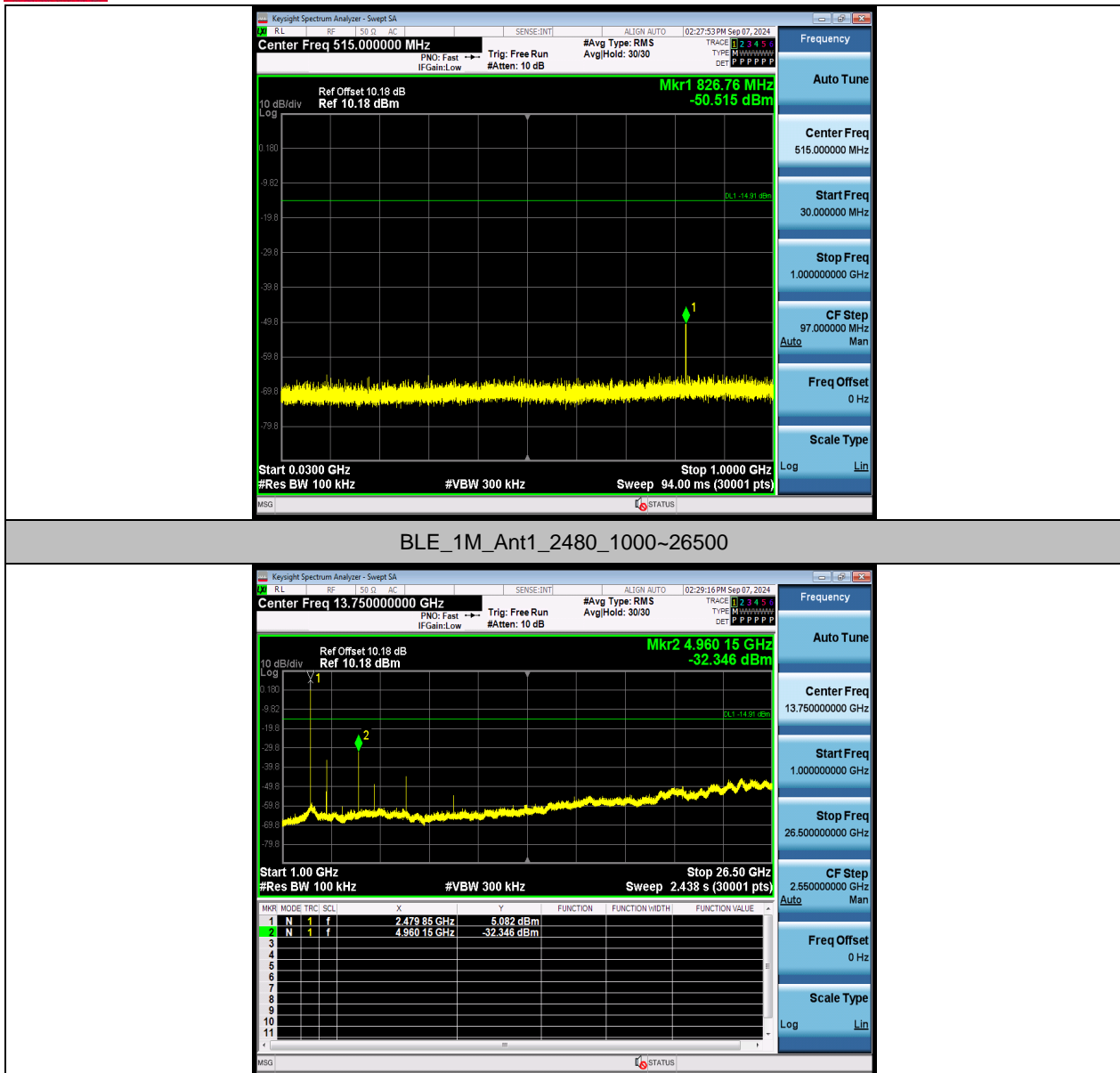


BLE\_1M\_Ant1\_2480\_30~1000



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## DUTY CYCLE

## TEST RESULT

TestMode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
BLE_1M	Ant1	2402	2.09	3.13	66.77	1.75
		2440	2.10	3.13	67.09	1.73
		2480	2.09	2.50	83.60	0.78

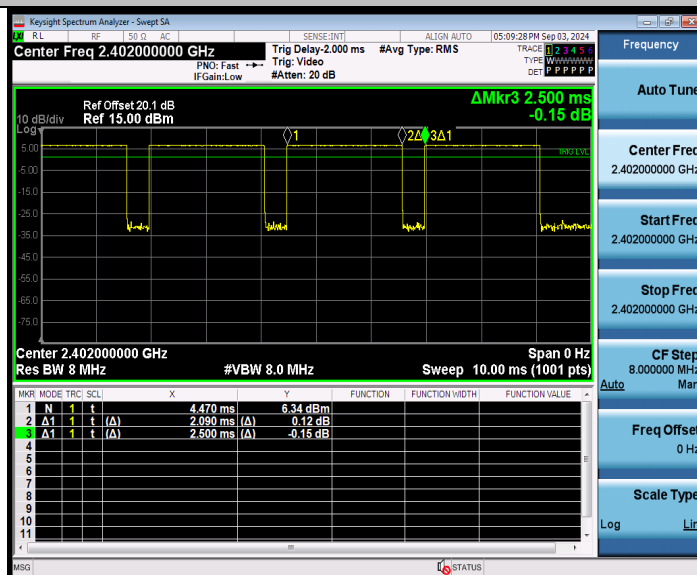


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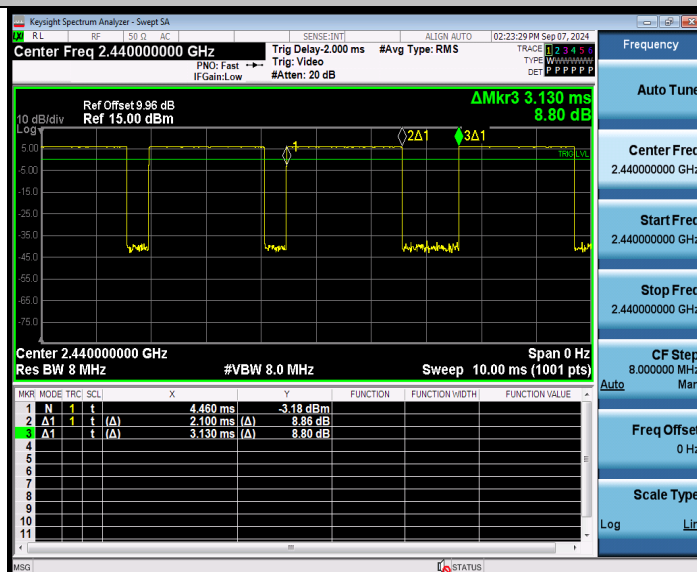
Test Report No.: PSU-QBJ2408220111RF05

## TEST GRAPHS

BLE\_1M\_Ant1\_2402



BLE\_1M\_Ant1\_2440



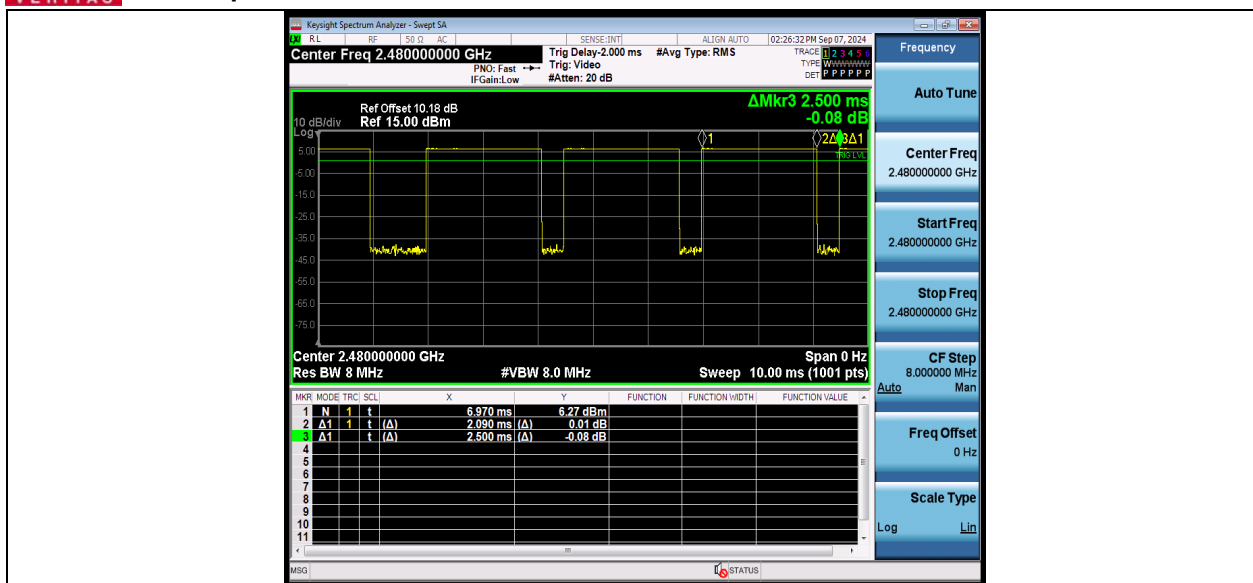
BLE\_1M\_Ant1\_2480





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Test Report No.: PSU-QBJ2408220111RF05



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