

# TEST REPORT

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<p>1. Customer</p> <ul style="list-style-type: none"><li>• Name : LG Electronics USA, Inc.</li><li>• Address : 1000 Sylvan Avenue, Englewood Cliffs, New Jersey 07632</li></ul> <p>2. Use of Report : FCC &amp; IC Original Grant</p> <p>3. Product Name (FCC ID / IC): RF Module (BEJLGSWFAC73 / 2703H-LGSWFAC73)</p> <p>4. Date of Test : 2016-06-22 ~ 2016-07-21</p> <p>5. Test Method Used : FCC Part 15 Subpart C 247 RSS-247 Issue 1 (2015-05), RSS-GEN Issue 4 (2014-11)</p> <p>6. Testing Environment : See appended test report</p> <p>7. Test Result : <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail</p> <p>The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This Test Report cannot be reproduced, except in full.</p>		
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<p style="text-align: center;"><b>2016 . 07 . 22 .</b></p> <p style="text-align: center;"><b>DT&amp;C Co., Ltd.</b></p>		

\* If this test 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
DRTFCC1607-0103	Jul. 22, 2016	Initial issue

# Table of Contents

- 1. EUT DESCRIPTION ..... 4**
- 2. INFORMATION ABOUT TESTING ..... 5**
  - 2.1 Test mode..... 5
  - 2.2 Auxiliary equipment ..... 5
  - 2.3 Tested environment ..... 5
  - 2.4 EMI suppression Device(s) / Modifications ..... 5
- 3. SUMMARY OF TESTS ..... 6**
- 4. TEST METHODOLOGY ..... 7**
  - 4.1 EUT configuration ..... 7
  - 4.2 EUT exercise ..... 7
  - 4.3 General test procedures ..... 7
  - 4.4 Description of test modes ..... 7
- 5. INSTRUMENT CALIBRATION ..... 8**
- 6. FACILITIES AND ACCREDITATIONS ..... 8**
  - 6.1 Facilities ..... 8
  - 6.2 Equipment ..... 8
- 7. ANTENNA REQUIREMENTS ..... 8**
- 8. TEST RESULT ..... 9**
  - 8.1 6dB bandwidth ..... 9
  - 8.2 Maximum peak conducted output power..... 22
  - 8.3 Maximum power spectral density ..... 26
  - 8.4 Out of band emissions at the band edge / conducted spurious emissions..... 39
  - 8.5 Radiated spurious emissions..... 88
  - 8.6 Power-line conducted emissions ..... 94
  - 8.7 Occupied Bandwidth..... 97
- 9. LIST OF TEST EQUIPMENT ..... 110**
- APPENDIX I ..... 111**
- APPENDIX II ..... 113**

## 1. EUT DESCRIPTION

<b>FCC Equipment Class</b>	Digital Transmission System(DTS)
<b>Product</b>	RF Module
<b>Model Name</b>	LGSWFAC73
<b>Add Model Name</b>	N/A
<b>Software version</b>	1.0
<b>Hardware version</b>	1.0
<b>Serial Number</b>	Identical prototype
<b>Power Supply</b>	DC 3.3 V
<b>Frequency Range</b>	▪ 802.11b/g/n(20 MHz) : 2412 MHz ~ 2462 MHz
<b>Modulation Type</b>	▪ 802.11b: CCK, DSSS ▪ 802.11g/n: OFDM
<b>Transmissions category</b>	Completely uncorrelated signal
<b>Antenna Specification</b>	<p><b>Antenna type:</b> FPCB wireless Antenna</p> <p><b>Antenna gain</b></p> <ul style="list-style-type: none"> <li>▪ 2.4 GHz Band: ANT 1 : 1.200 dBi &amp; ANT 2 : 3.170 dBi</li> </ul> <p><b>Antenna configuration</b></p> <ul style="list-style-type: none"> <li>▪ 802.11b/g: Single Transmitting (ANT 1 or ANT 2)</li> <li>▪ 802.11g: Multiple Transmitting (ANT 1 and ANT 2)</li> <li>▪ 802.11n(MCS 0 ~ 7): Single Transmitting (ANT 1 or ANT 2)</li> <li>▪ 802.11n(MCS 8 ~ 15): Multiple Transmitting (ANT 1 and ANT 2)</li> </ul>

## 2. INFORMATION ABOUT TESTING

### 2.1 Test mode

Test mode	Worst case data rate	Tested Frequency(MHz)		
		Lowest	Middle	Highest
TM 1	802.11b 1 Mbps (Single transmitting)	2412	2437	2462
TM 2	802.11g 6 Mbps (Multiple transmitting)	2412	2437	2462
TM 3	802.11n(HT20) MCS 8 (Multiple transmitting)	2412	2437	2462

Note 1: The worst case data rate is determined as above test mode according to the power measurements. And radiated spurious emission was performed at the worst case data rate.

Note 2: In case of radiated test, we have done all tx case. We attached the result of Ant1(Worst case) for 802.11b SISO mode. And in case of 802.11g/n mode, we attached the result of only MIMO mode(Worst case).

### 2.2 Auxiliary equipment

Equipment	Model No.	Serial No.	Manufacturer	Note
Laptop	20135	OB05651368	Lenov	-
-	-	-	-	-

### 2.3 Tested environment

Temperature	: 22 ~ 25 °C
Relative humidity content	: 41 ~ 47 % R.H..
Details of power supply	: DC 3.3 V

### 2.4 EMI suppression Device(s) / Modifications

EMI suppression device(s) added and/or modifications made during testing  
→ None

### 3. SUMMARY OF TESTS

FCC Part Section(s)	Parameter	Limit	Test Condition	Status Note 1
15.247(a)	6 dB Bandwidth	> 500 kHz	Conducted	C
15.247(b)	Transmitter Output Power	< 1 Watt		C
15.247(d)	Out of Band Emissions / Band Edge	20 dBc in any 100 kHz BW		C
15.247(e)	Transmitter Power Spectral Density	< 8 dBm / 3 kHz		C
15.205 15.209	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	FCC 15.209 limits	Radiated	C <sup>Note 2</sup>
15.207	AC Conducted Emissions	FCC 15.207 limits	AC Line Conducted	C
15.203	Antenna Requirements	FCC 15.203 limits	-	C
<p>Note 1: <b>C</b>=Comply    <b>NC</b>=Not Comply    <b>NT</b>=Not Tested    <b>NA</b>=Not Applicable</p> <p>Note 2: This test item was performed in each axis and the worst case data was reported.</p>				

## 4. TEST METHODOLOGY

Generally the tests were performed according to the KDB558074 v03r05, KDB662911 D01 v02r01 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

### 4.1 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.

### 4.2 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.

### 4.3 General test procedures

#### Conducted Emissions

The power-line conducted emission test procedure is not described on the KDB 558074. So this test was fulfilled with the requirements in Section 6.2 of ANSI C63.10.

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 KDB 558074. 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 as stated on section 12.1 of the KDB 558074.

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. In order to find out the highest emission, the relative positions of the EUT were rotated through three orthogonal axes.

### 4.4 Description of test modes

The EUT has been tested with all modes of operating conditions to determine the worst case emission characteristics. A test program is used to control the EUT for staying in continuous transmitting mode.

## 5. 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 equipments, which is traceable to recognized national standards.

## 6. FACILITIES AND ACCREDITATIONS

### 6.1 Facilities

The open area test site(OATS) or semi anechoic chamber and conducted measurement facility used to collect the radiated and conducted test data are located at the 42, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea 449-935. The site is constructed in conformance with the requirements.

**- Semi anechoic chamber registration Number: 165783(FCC) & 5740A-3(IC)**

### 6.2 Equipment

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, loop, horn. Spectrum analyzers with pre-selectors and peak, quasi-peak detectors are used to perform radiated measurements. Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers. Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

## 7. ANTENNA REQUIREMENTS

### 7.1 According to FCC 47 CFR §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 EUT used two unique antennas.**

**Therefore this module complies with the requirement of §15.203.**

### 7.2 Directional antenna gain(worst case):

Bands	ANT 1 [dBi]	ANT 2 [dBi]	Directional Gain [dBi]
2.4 GHz	1.200	3.170	5.251 <sup>Note 1.</sup>

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

$$10 \log [ ( 10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20} )^2 / N^{ANT} ] \text{ dBi}$$

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

$$10 \log [ ( 10^{G_1/10} + 10^{G_2/10} + \dots + 10^{G_N/10} ) / N^{ANT} ] \text{ dBi}$$

Note 3. Directional gain(spatial multiplexing)

$$G_{ANT \text{ MAX}} + 10 \log ( N_{ANT} / N_{SS} ) \text{ dBi}$$

## 8. TEST RESULT

### 8.1 6dB bandwidth

■ **Test Requirements and limit, §15.247(a)**

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

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

■ **Test Configuration**

Refer to the APPENDIX I.

■ **Test Procedure:**

The transmitter output is connected to the Spectrum Analyzer and used following test procedure of **KDB558074**

1. Set resolution bandwidth (RBW) = 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 x RBW.  
**(RBW : 100 kHz / VBW : 300 kHz)**
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) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

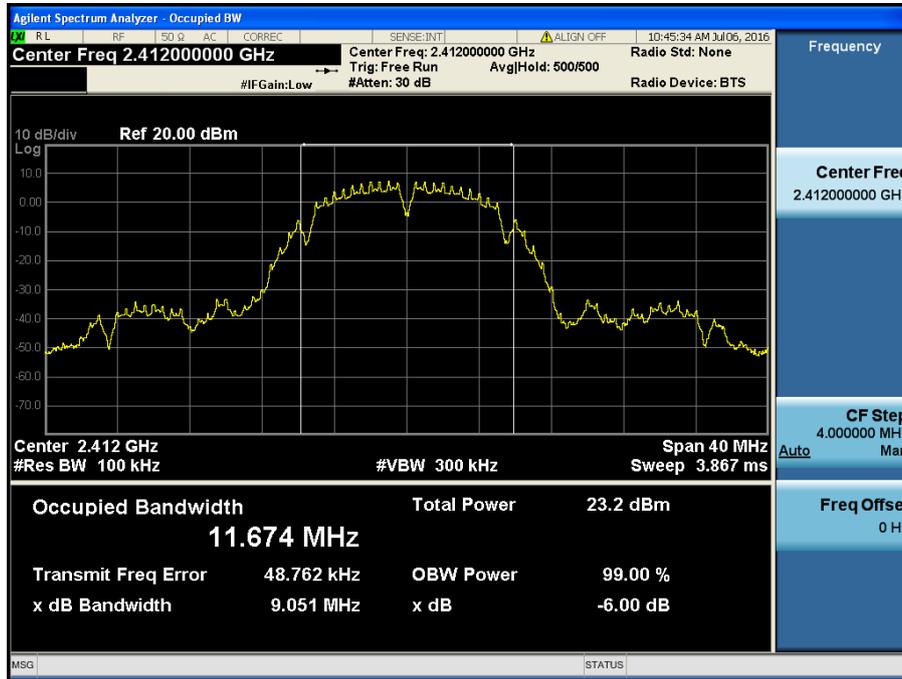
■ **Test Results: Comply**

Test Mode	Frequency	Test Results[MHz]	
		ANT 1	ANT 2
TM 1	Lowest	9.051	9.114
	Middle	9.062	9.109
	Highest	9.063	9.061
TM 2	Lowest	16.410	16.380
	Middle	16.370	16.400
	Highest	16.430	16.400
TM 3	Lowest	17.620	17.610
	Middle	17.630	17.600
	Highest	17.600	17.620

RESULT PLOTS

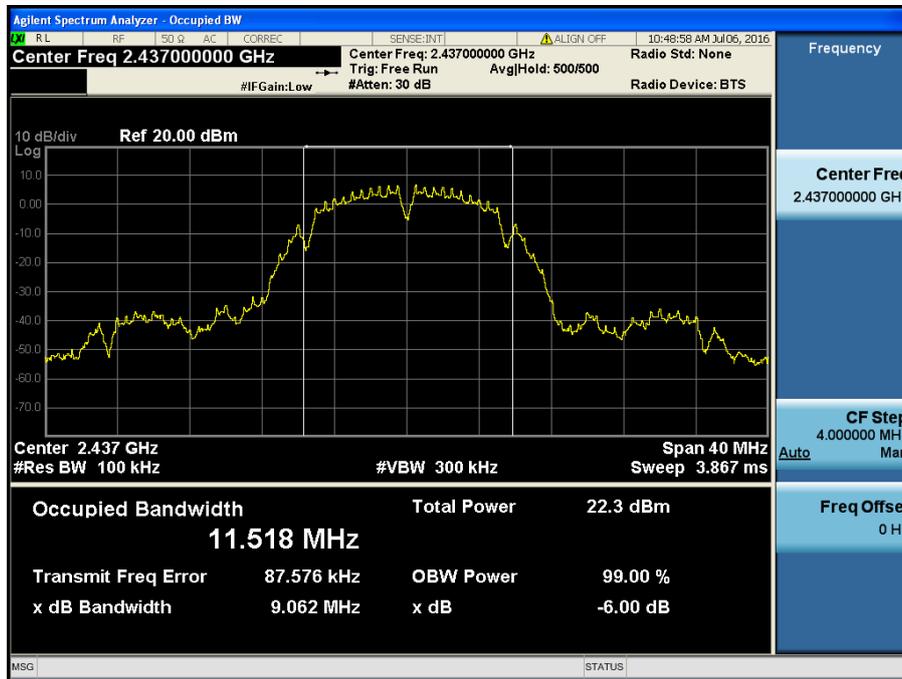
6 dB Bandwidth

TM 1 & ANT 1 & Lowest



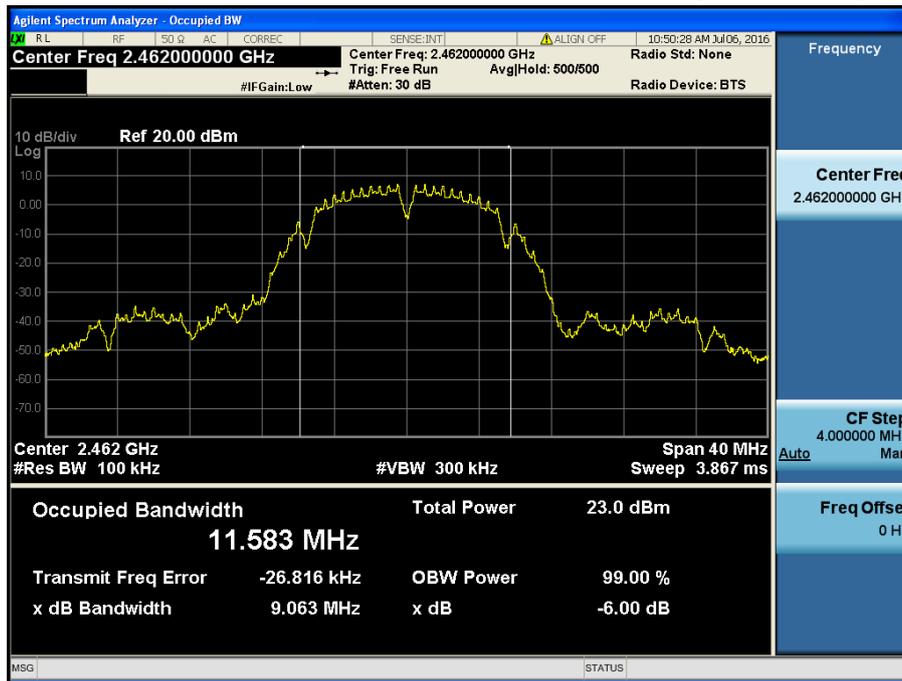
6 dB Bandwidth

TM 1 & ANT 1 & Middle



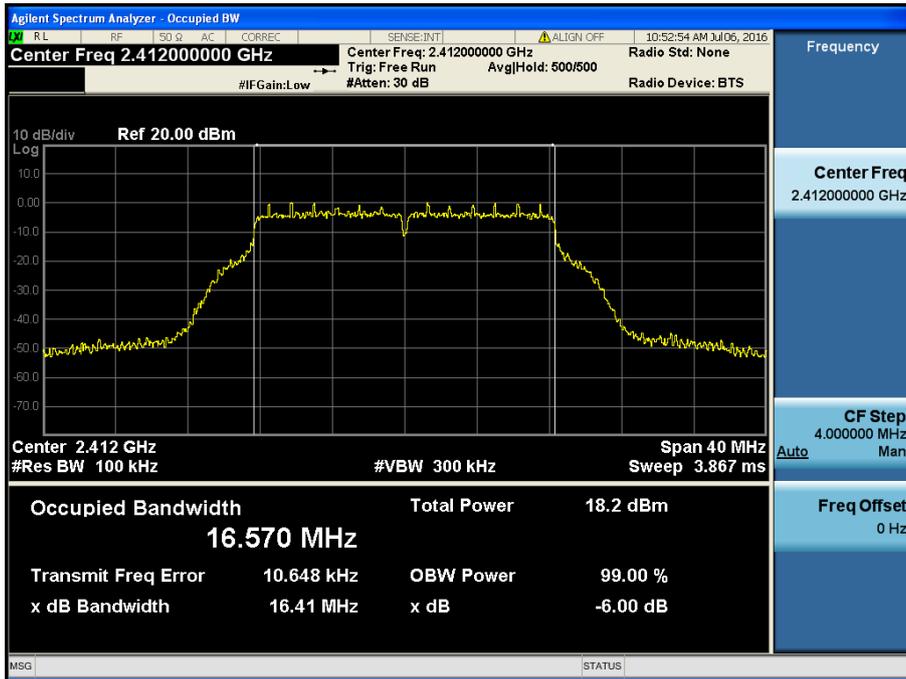
6 dB Bandwidth

TM 1 & ANT 1 & Highest



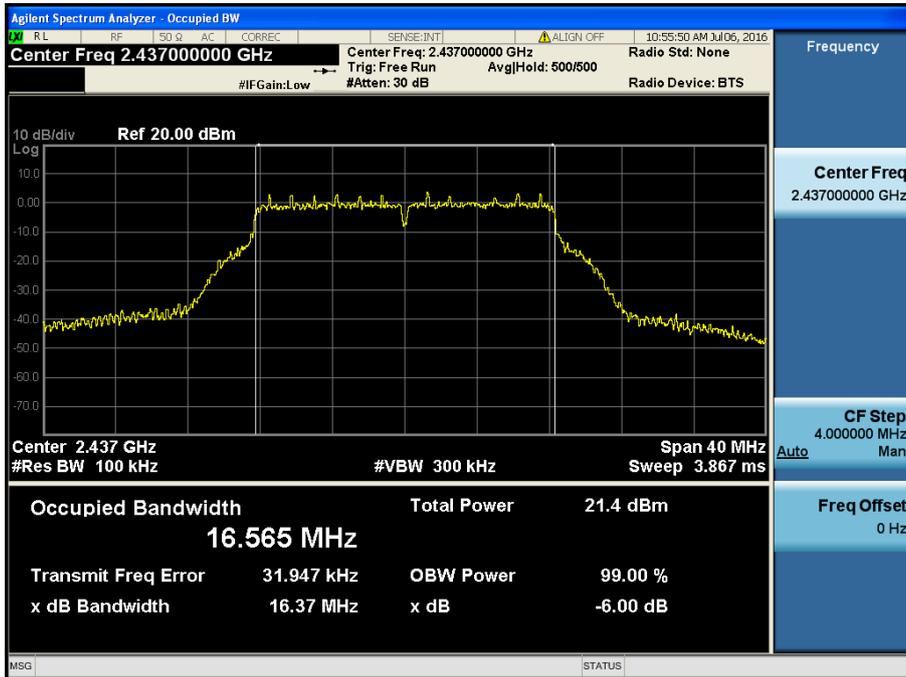
6 dB Bandwidth

TM 2 & ANT 1 & Lowest



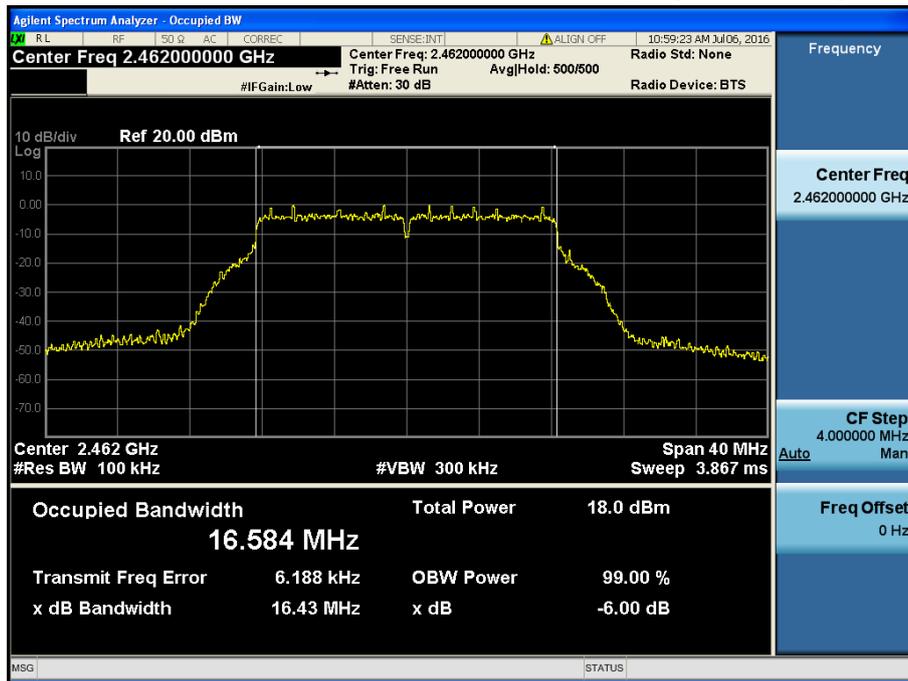
6 dB Bandwidth

TM 2 & ANT 1 & Middle



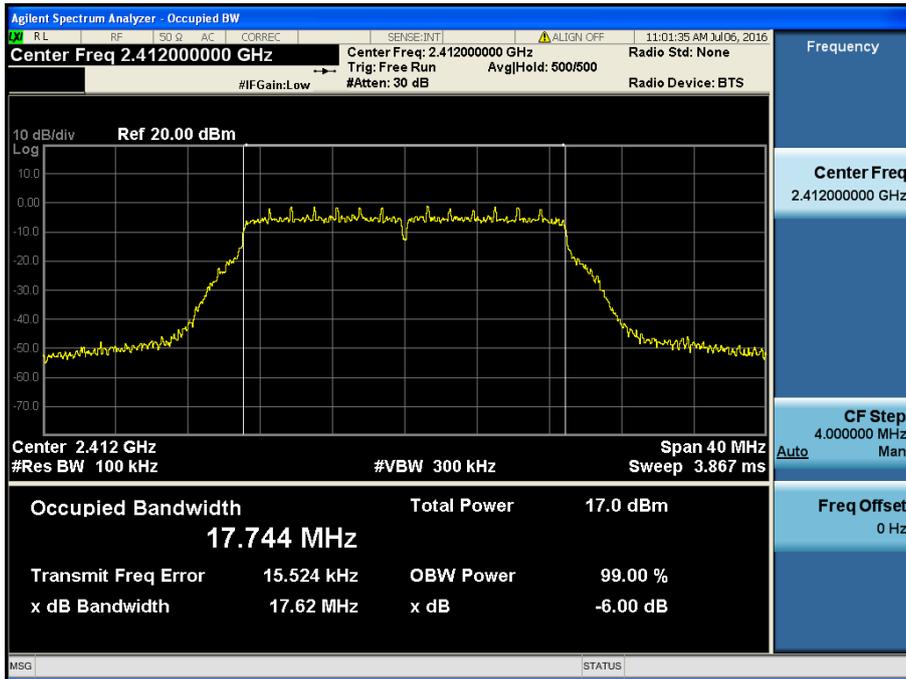
6 dB Bandwidth

TM 2 & ANT 1 & Highest



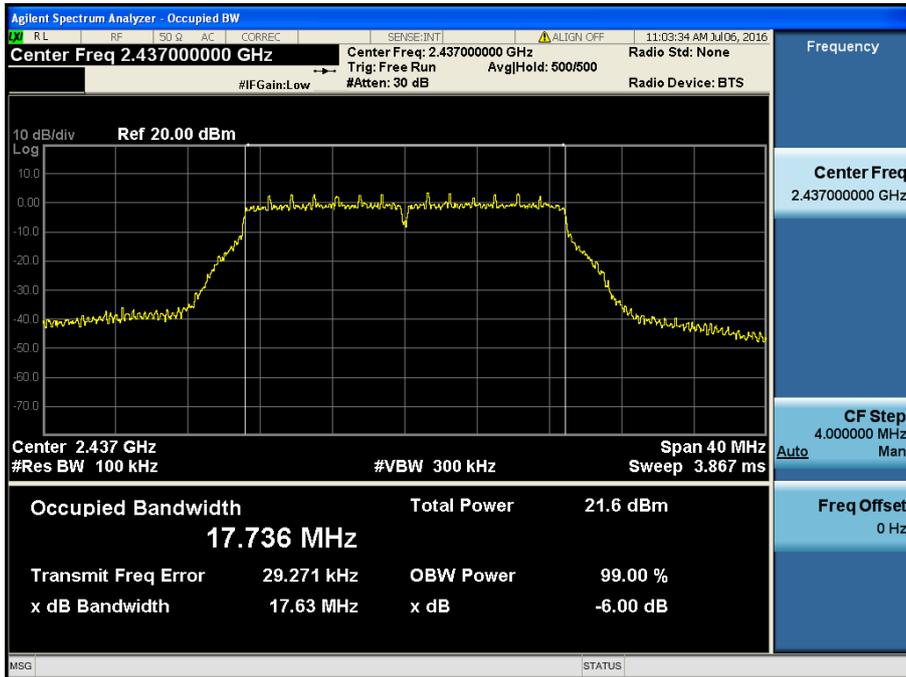
6 dB Bandwidth

TM 3 & ANT 1 & Lowest



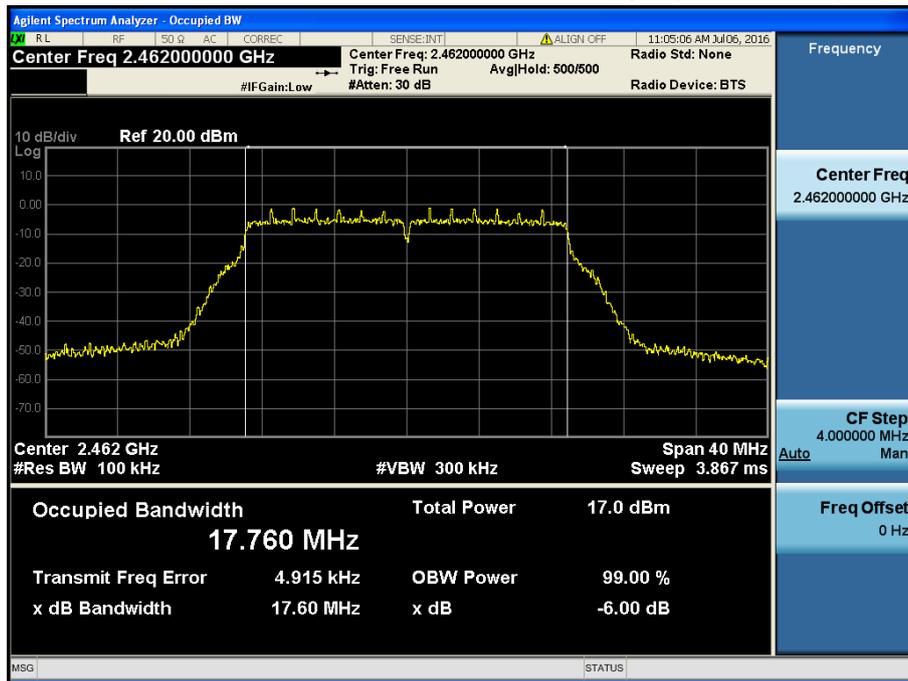
6 dB Bandwidth

TM 3 & ANT 1 & Middle



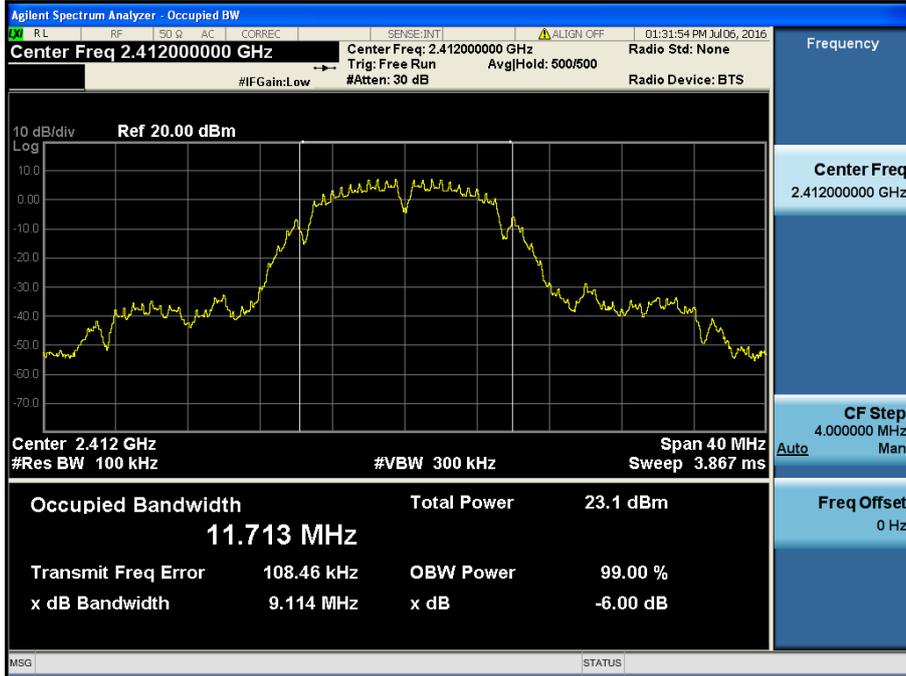
6 dB Bandwidth

TM 3 & ANT 1 & Highest



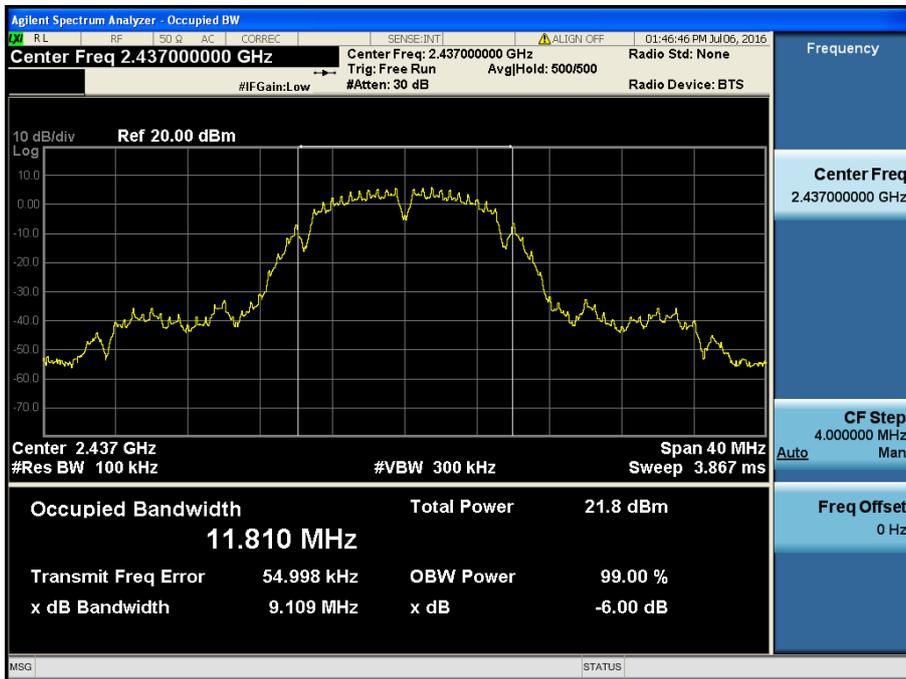
6 dB Bandwidth

TM 1 & ANT 2 & Lowest



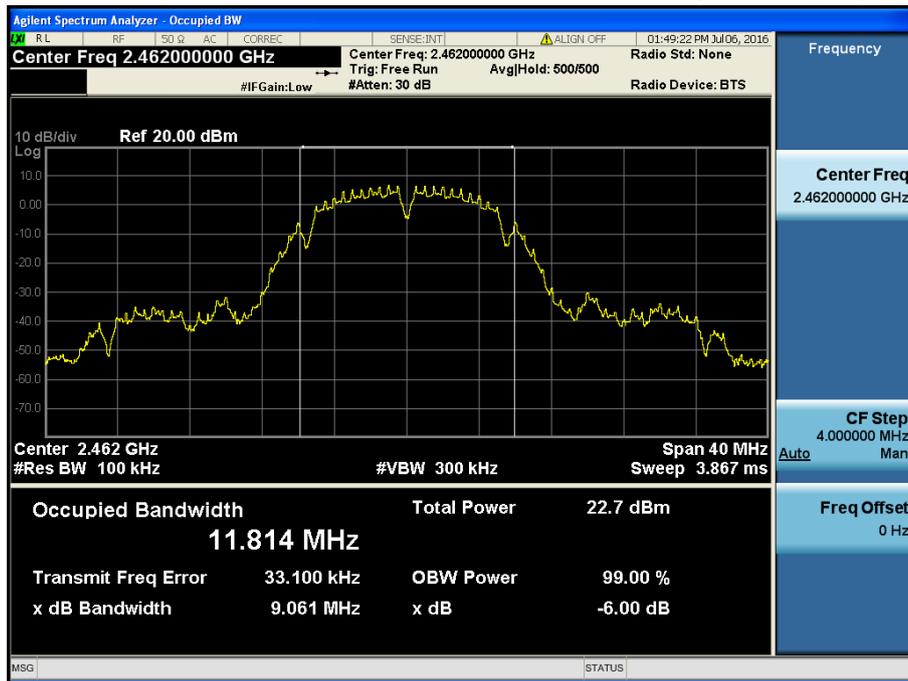
6 dB Bandwidth

TM 1 & ANT 2 & Middle



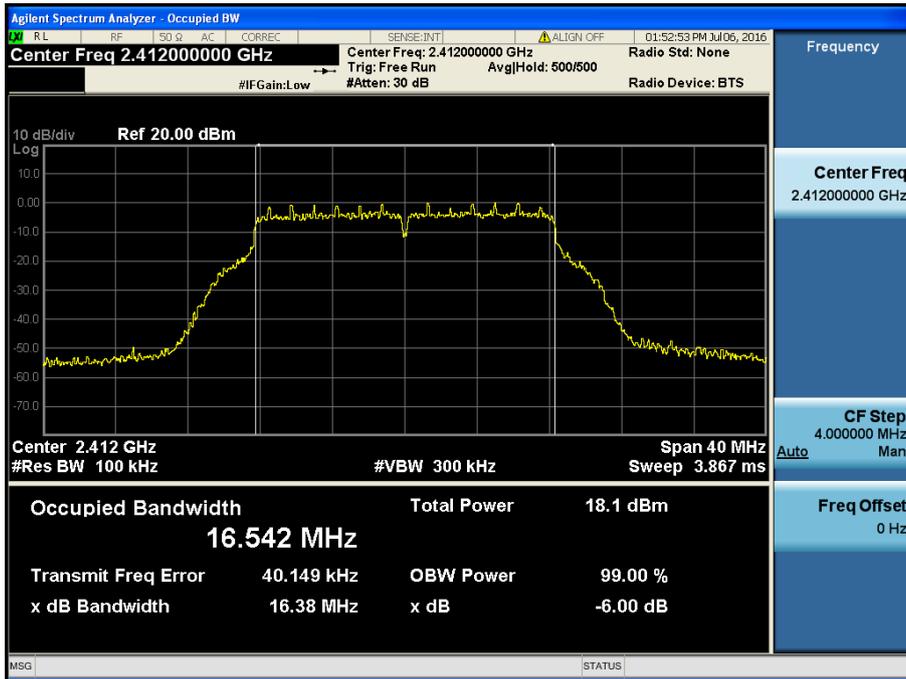
6 dB Bandwidth

TM 1 & ANT 2 & Highest



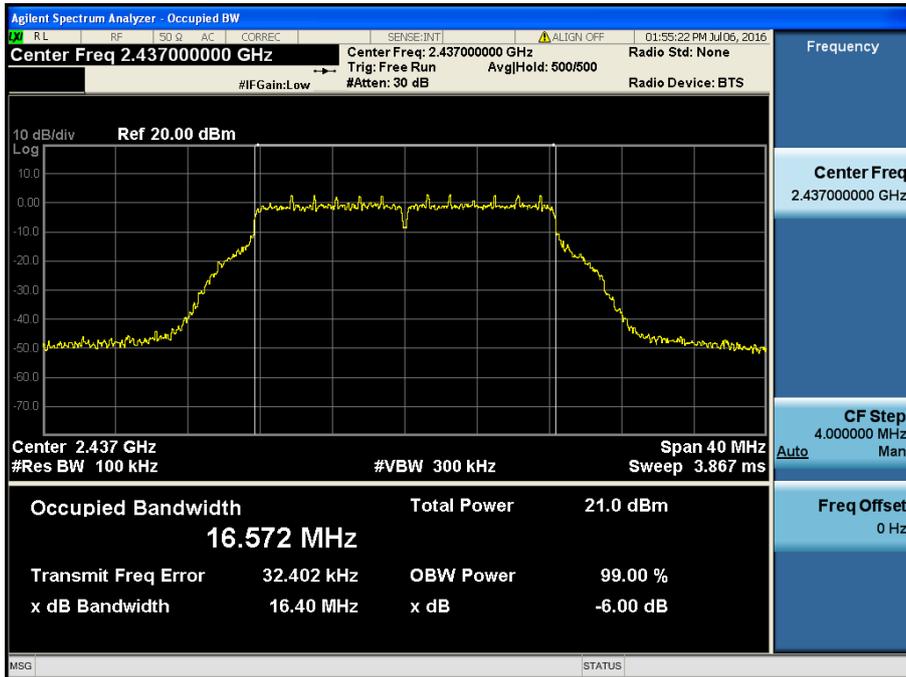
6 dB Bandwidth

TM 2 & ANT 2 & Lowest



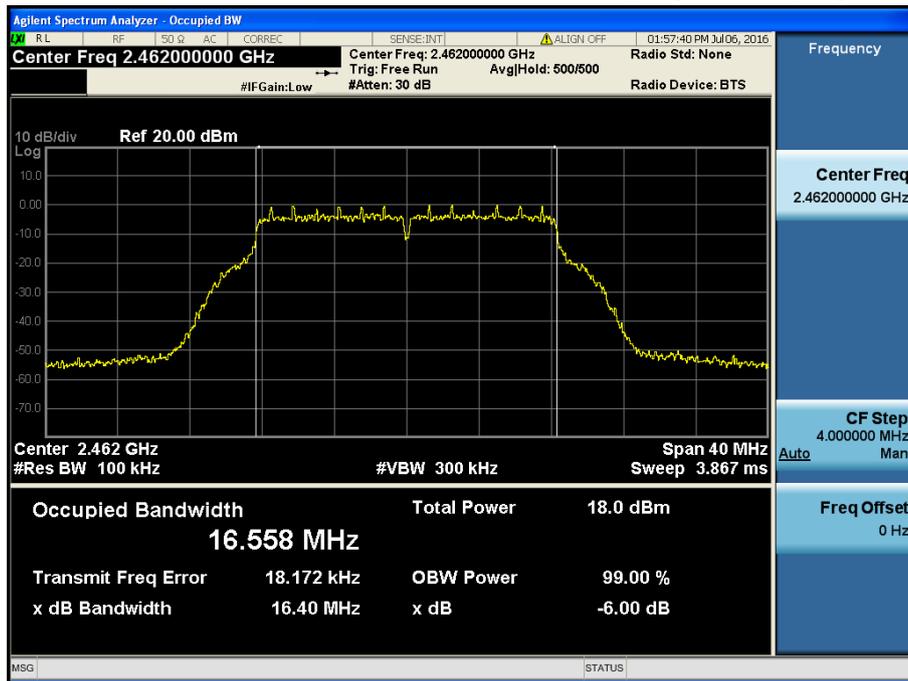
6 dB Bandwidth

TM 2 & ANT 2 & Middle



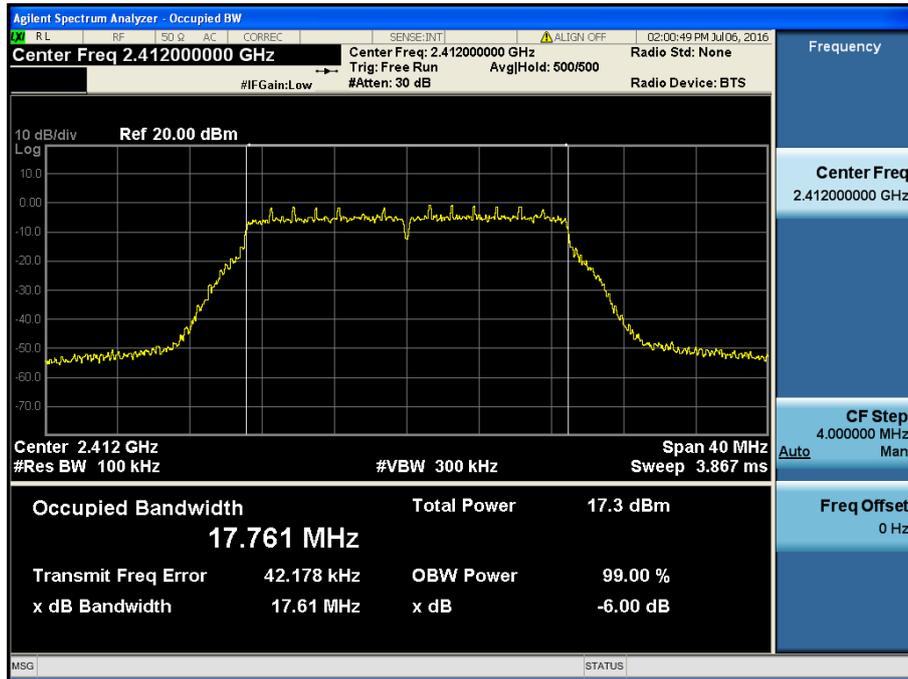
6 dB Bandwidth

TM 2 & ANT 2 & Highest



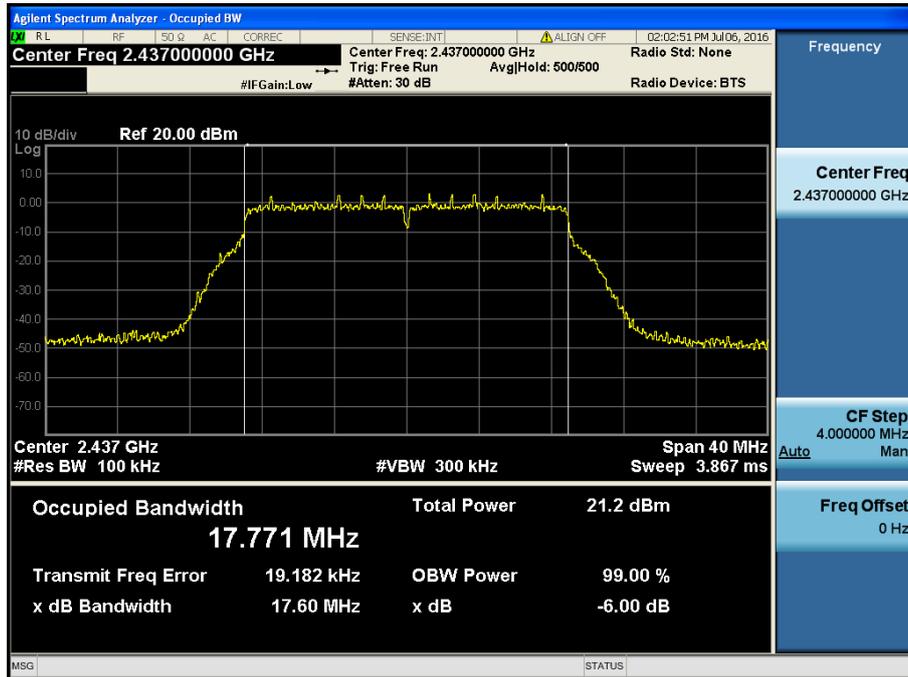
6 dB Bandwidth

TM 3 & ANT 2 & Lowest



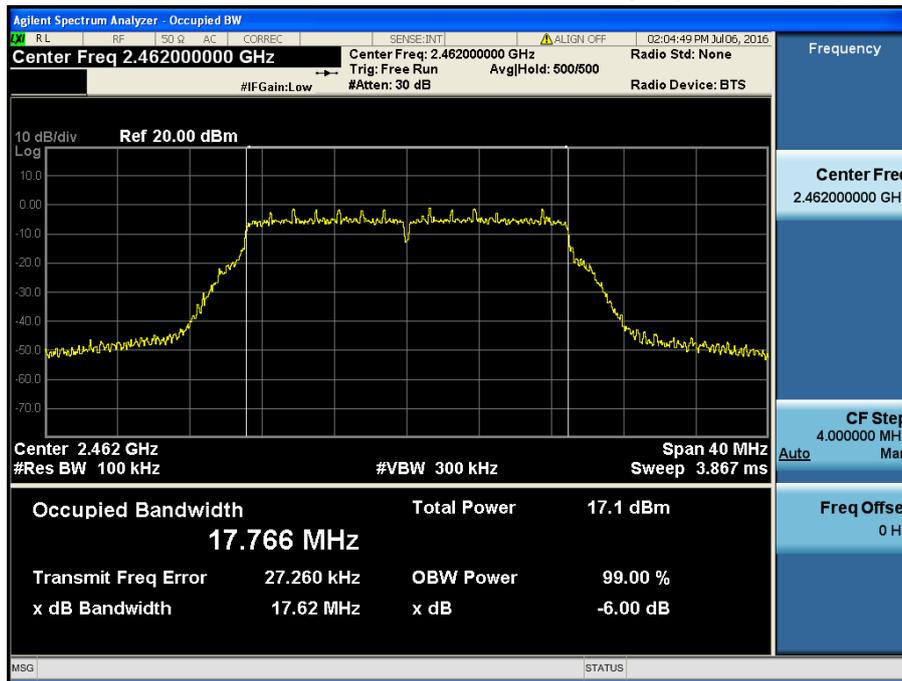
6 dB Bandwidth

TM 3 & ANT 2 & Middle



6 dB Bandwidth

TM 3 & ANT 2 & Highest

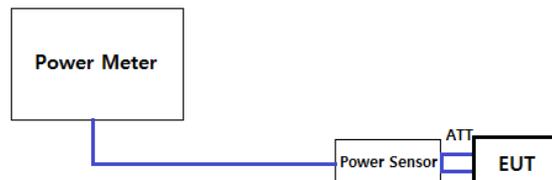


## 8.2 Maximum peak conducted output power

### ■ Test Requirements and limit, §15.247(b)

The maximum permissible conducted output power is **1 Watt**.

### ■ Test Configuration



### ■ Test Procedure

#### 1. PKPM1 Peak power meter method of KDB558074

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.

#### 2. Method AVGPM-G (Measurement using a gated RF average power meter) of KDB558074

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.

Note: The measure-and-sum technique is used for test mode with multiple transmitting.

■ Test Results: **Comply**

▪ Single transmitting mode

▪ Single transmitting

ANT	Freq. (MHz)	Det.	Maximum Peak Conducted Output Power (dBm) for <b>802.11b</b>			
			Data Rate [Mbps]			
			1	2	5.5	11
ANT 1	2412	PK	19.640	19.610	19.550	19.530
		AV	16.410	16.380	16.330	16.310
	2437	PK	18.780	18.750	18.740	18.700
		AV	15.470	15.440	15.430	15.400
	2462	PK	<b>19.840</b>	19.820	19.760	19.750
		AV	16.490	16.480	16.470	16.440
ANT 2	2412	PK	<b>19.370</b>	19.330	19.310	19.300
		AV	15.930	15.920	15.900	15.880
	2437	PK	18.040	18.020	17.940	17.900
		AV	14.610	14.580	14.570	14.530
	2462	PK	19.040	19.010	18.990	18.950
		AV	15.650	15.640	15.610	15.600



▪ Multiple transmitting

ANT	Freq. (MHz)	Det.	Maximum Peak Conducted Output Power (dBm) for <u>802.11g</u>							
			Data Rate [Mbps]							
			6	9	12	18	24	36	48	54
ANT 1	2412	PK	18.350	18.320	18.280	18.260	18.240	18.210	18.200	18.180
		AV	11.790	11.760	11.730	11.710	11.670	11.640	11.620	11.610
	2437	PK	<b>21.530</b>	21.510	21.490	21.490	21.470	21.430	21.420	21.410
		AV	14.750	14.740	14.710	14.710	14.670	14.630	14.600	14.590
	2462	PK	18.360	18.340	18.330	18.330	18.310	18.300	18.270	18.250
		AV	11.820	11.800	11.770	11.740	11.710	11.690	11.680	11.660
ANT 2	2412	PK	17.980	17.970	17.930	17.930	17.900	17.890	17.870	17.840
		AV	11.430	11.400	11.380	11.350	11.330	11.300	11.260	11.240
	2437	PK	<b>20.980</b>	20.960	20.920	20.910	20.900	20.890	20.890	20.880
		AV	14.220	14.210	14.200	14.190	14.150	14.100	14.070	14.060
	2462	PK	18.090	18.070	18.040	18.000	17.960	17.930	17.910	17.890
		AV	11.510	11.500	11.480	11.480	11.450	11.400	11.360	11.360
Sum (ANT 1+2)	2412	PK	21.180	21.159	21.119	21.109	21.084	21.064	21.049	21.024
	2437	PK	<b>24.275</b>	24.255	24.225	24.220	24.205	24.179	24.174	24.164
	2462	PK	21.238	21.218	21.198	21.179	21.149	21.130	21.105	21.085

ANT	Freq. (MHz)	Det.	Maximum Peak Conducted Output Power (dBm) for <u>802.11n(HT20)</u>							
			Data Rate [MCS]							
			0	1	2	3	4	5	6	7
ANT 1	2412	PK	14.410	14.410	14.390	14.350	14.340	14.340	14.320	14.300
		AV	10.530	10.530	10.510	10.510	10.450	10.420	10.410	10.380
	2437	PK	<b>21.580</b>	21.540	21.520	21.480	21.420	21.420	21.390	21.330
		AV	14.700	14.690	14.690	14.660	14.600	14.580	14.580	14.550
	2462	PK	17.810	17.780	17.780	17.740	17.740	17.700	17.690	17.680
		AV	10.620	10.590	10.550	10.520	10.510	10.500	10.480	10.470
ANT 2	2412	PK	17.240	17.210	17.190	17.150	17.100	17.090	17.080	17.050
		AV	10.360	10.320	10.300	10.290	10.250	10.220	10.190	10.150
	2437	PK	<b>21.910</b>	21.900	21.890	21.850	21.790	21.780	21.770	21.740
		AV	14.060	14.050	14.030	14.010	13.960	13.940	13.930	13.910
	2462	PK	17.060	17.050	17.030	17.020	17.000	16.990	16.980	16.970
		AV	10.270	10.250	10.220	10.210	10.180	10.170	10.140	10.110

ANT	Freq. (MHz)	Det.	Maximum Peak Conducted Output Power (dBm) for <u>802.11n(HT20)</u>							
			Data Rate [MCS]							
			8	9	10	11	12	13	14	15
ANT 1	2412	PK	17.420	14.390	14.370	14.340	14.330	14.280	14.250	14.240
		AV	10.540	10.520	10.510	10.480	10.470	10.450	10.410	10.410
	2437	PK	<b>21.590</b>	21.570	21.550	21.540	21.510	21.490	21.450	21.430
		AV	14.710	14.700	14.680	14.650	14.600	14.600	14.570	14.540
	2462	PK	17.820	17.800	17.790	17.770	17.740	17.710	17.670	17.660
		AV	10.640	10.620	10.620	10.610	10.570	10.530	10.500	10.480
ANT 2	2412	PK	17.250	17.220	17.180	17.160	17.150	17.120	17.120	17.100
		AV	10.380	10.360	10.330	10.300	10.280	10.250	10.250	10.220
	2437	PK	<b>21.920</b>	21.910	21.890	21.870	21.830	21.800	21.760	21.750
		AV	14.070	14.060	14.050	14.040	14.030	14.000	13.970	13.950
	2462	PK	17.080	17.050	17.040	17.040	17.010	16.970	16.960	16.940
		AV	10.300	10.290	10.270	10.260	10.210	10.170	10.160	10.130
Sum (ANT 1+2)	2412	PK	20.347	19.042	19.009	18.986	18.976	18.939	18.929	18.912
	2437	PK	<b>24.769</b>	24.754	24.734	24.719	24.684	24.659	24.619	24.604
	2462	PK	20.477	20.452	20.442	20.431	20.401	20.367	20.340	20.326

### 8.3 Maximum power spectral density

#### ■ Test requirements and limit, §15.247(e)

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.

#### ■ Test Configuration

Refer to the APPENDIX I.

#### ■ Test Procedure

Method PKPSD of KDB558074 is used.

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 to : **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.

#### ■ Test Results: **Comply**

Test Mode	Frequency	RBW	PKPSD [dBm]		
			ANT 1	ANT 2	SUM (ANT 1 + ANT 2)
TM 1	Lowest	3 kHz	-6.670	-6.990	-
	Middle	3 kHz	-8.270	-8.570	-
	Highest	3 kHz	-6.530	-7.480	-
TM 2	Lowest	3 kHz	-13.790	-13.540	-10.653
	Middle	3 kHz	-10.220	-10.810	-7.495
	Highest	3 kHz	-13.160	-15.270	-11.078
TM 3	Lowest	3 kHz	-16.070	-15.570	-12.803
	Middle	3 kHz	-11.970	-11.040	-8.470
	Highest	3 kHz	-15.750	-15.190	-12.451

RESULT PLOTS

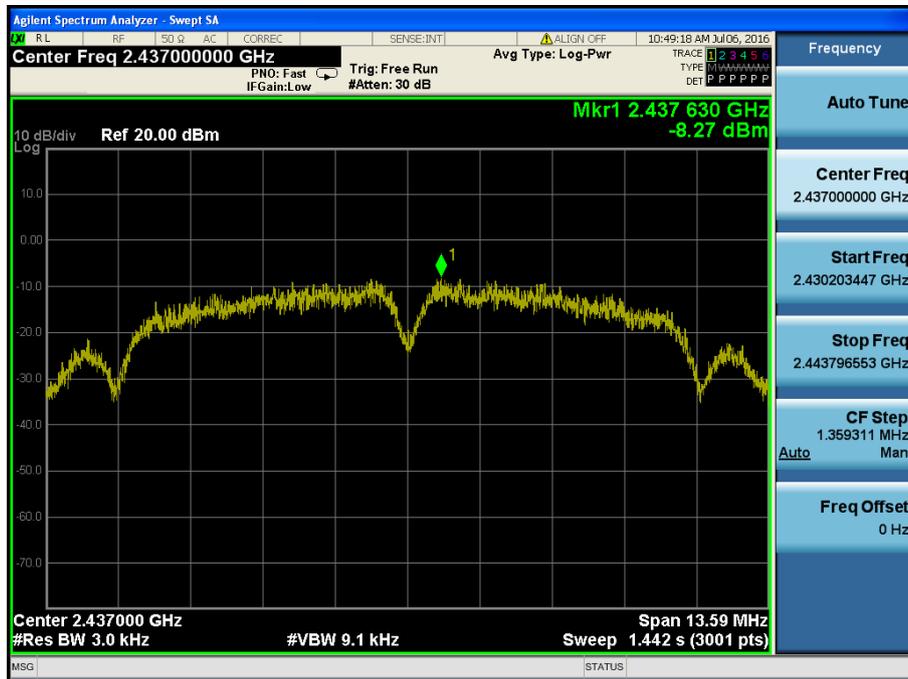
Maximum PPSD

TM 1 & ANT 1 & Lowest



Maximum PPSD

TM 1 & ANT 1 & Middle



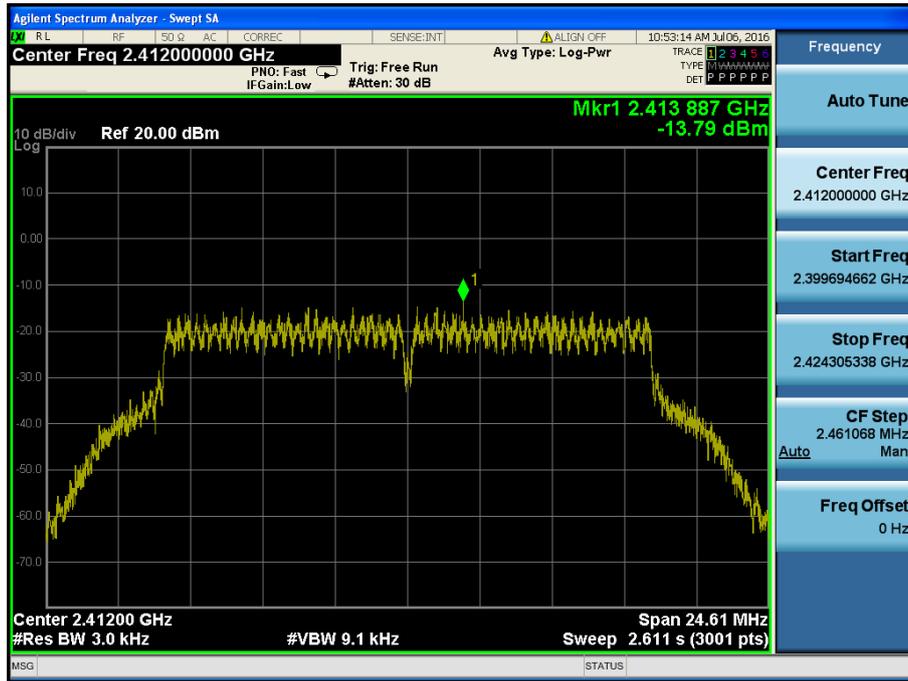
### Maximum PPSD

TM 1 & ANT 1 & Highest



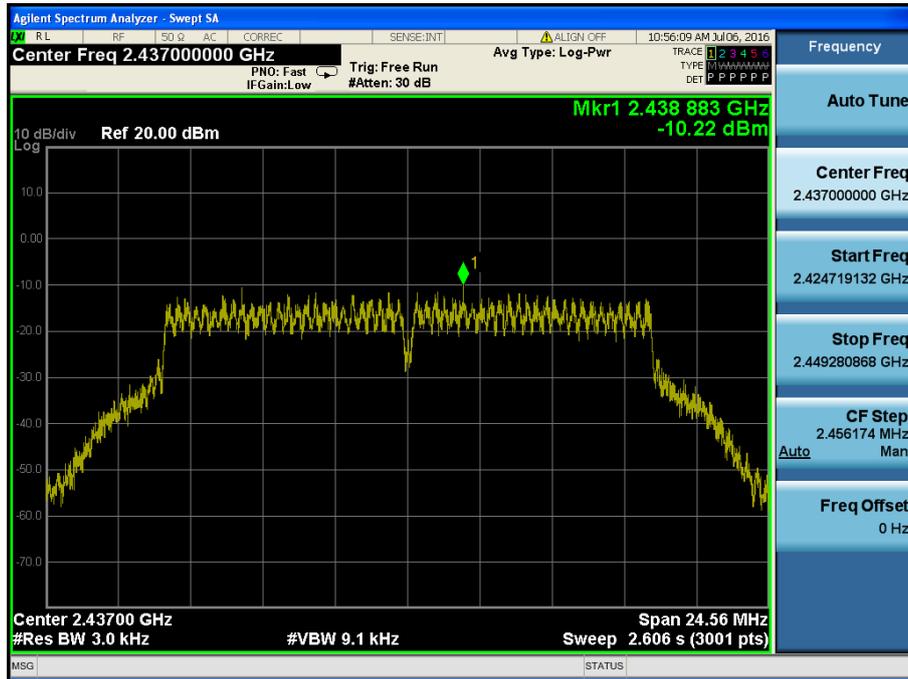
Maximum PPSD

TM 2 & ANT 1 & Lowest



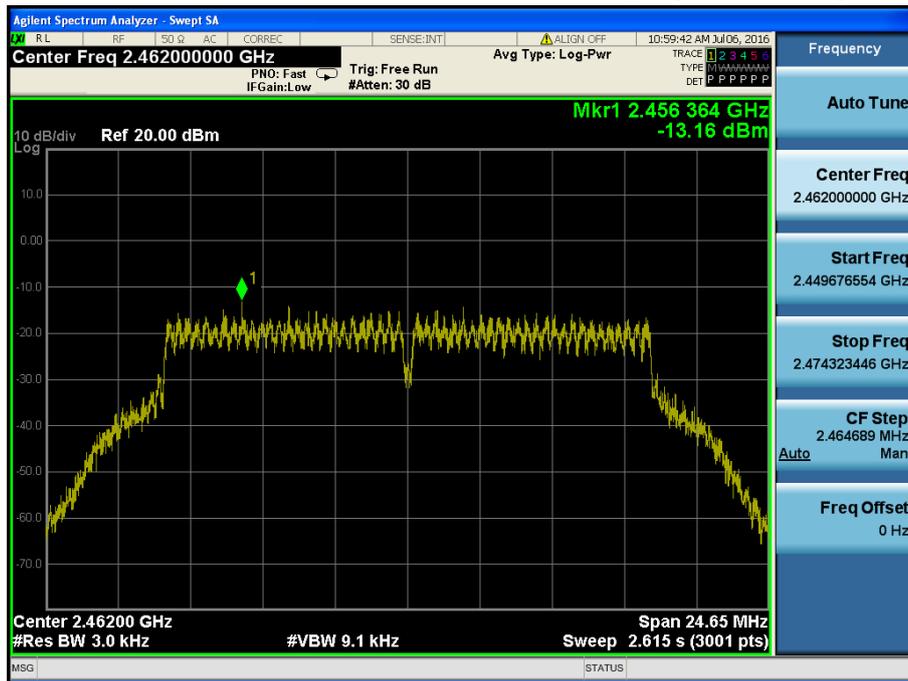
Maximum PPSD

TM 2 & ANT 1 & Middle



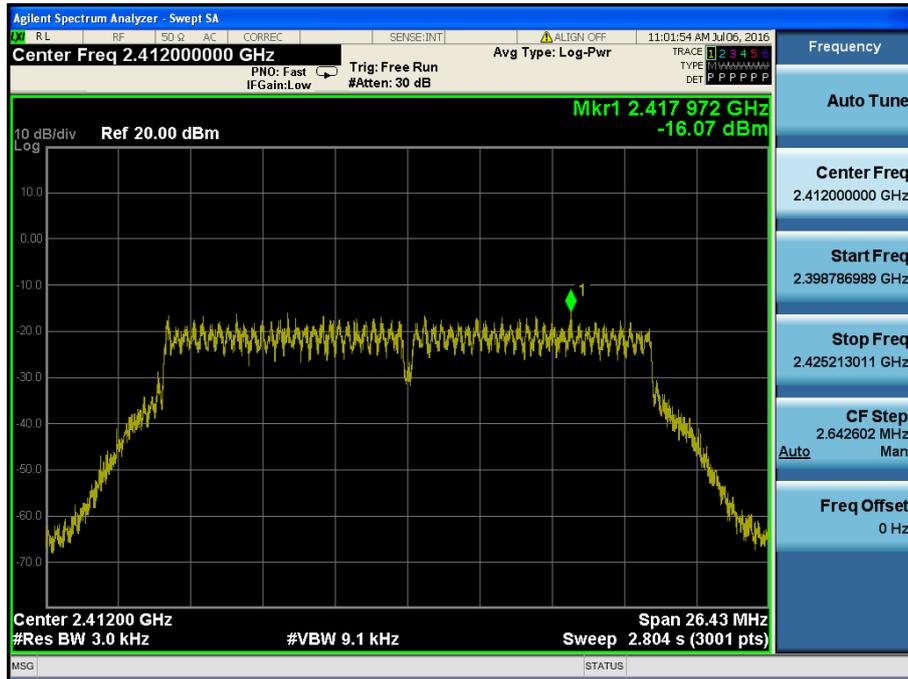
Maximum PPSD

TM 2 & ANT 1 & Highest



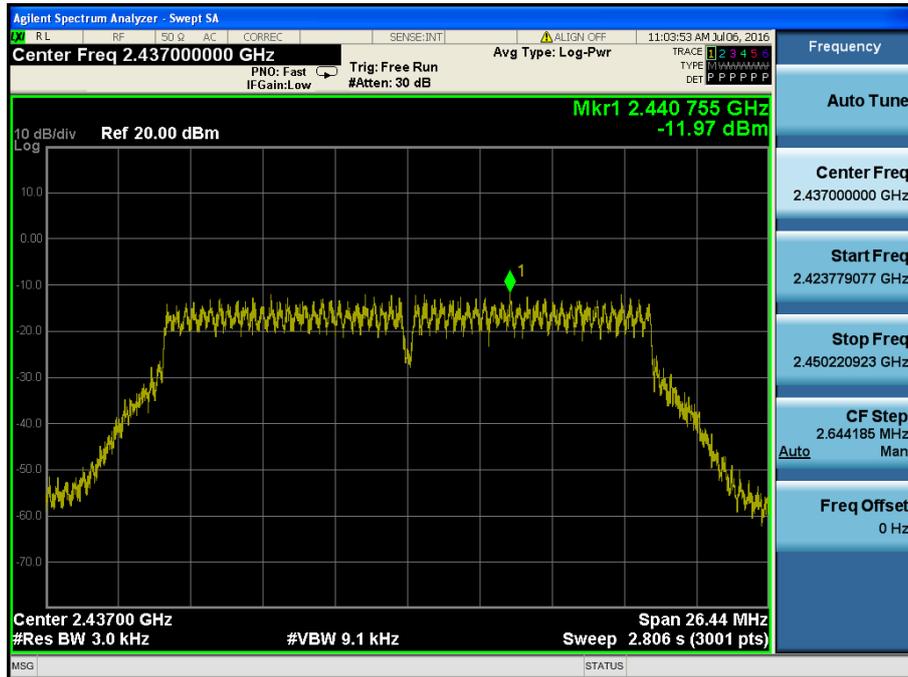
Maximum PPSD

TM 3 & ANT 1 & Lowest



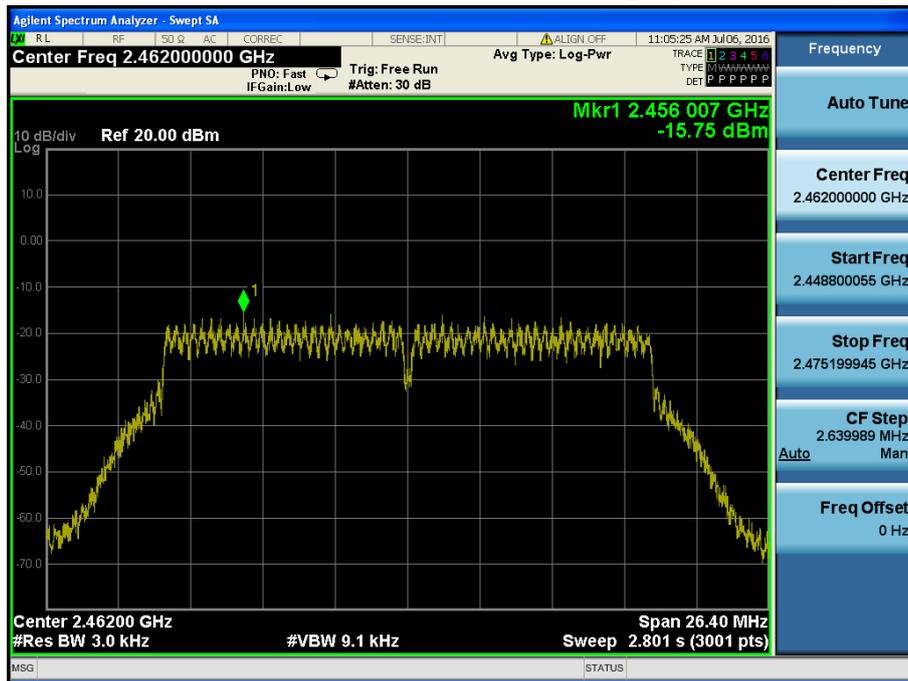
Maximum PPSD

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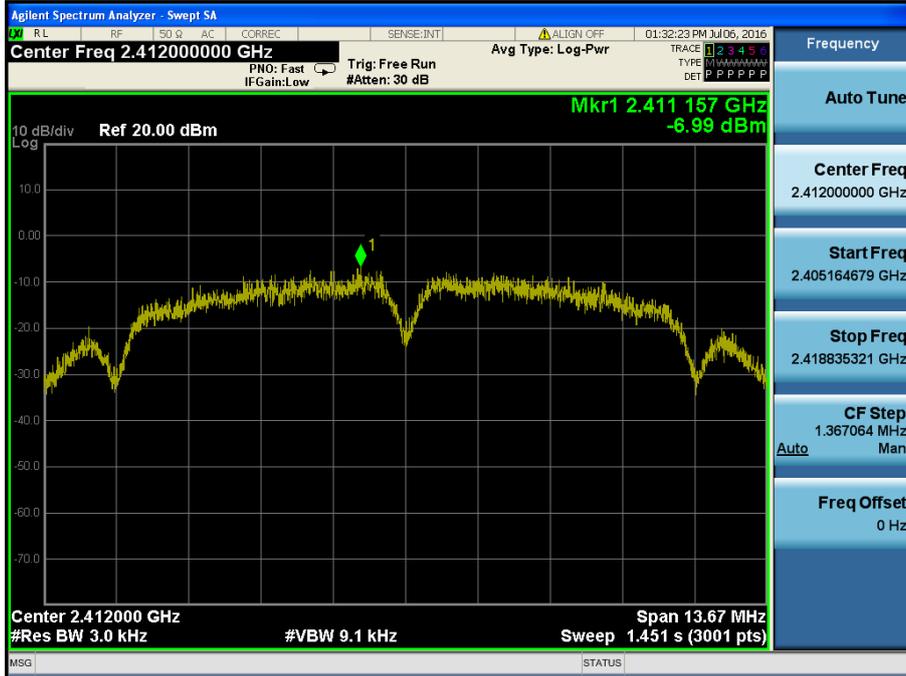
Maximum PPSD

TM 3 & ANT 1 & Highest



Maximum PPSD

TM 1 & ANT 2 & Lowest



Maximum PPSD

TM 1 & ANT 2 & Middle



### Maximum PPSD

TM 1 & ANT 2 & Highest



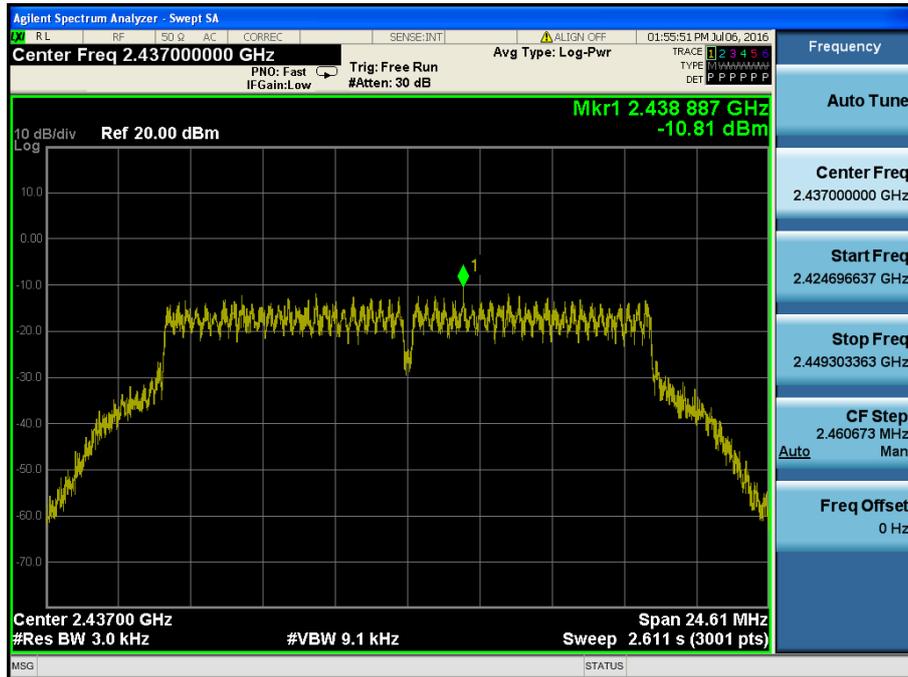
Maximum PPSD

TM 2 & ANT 2 & Lowest



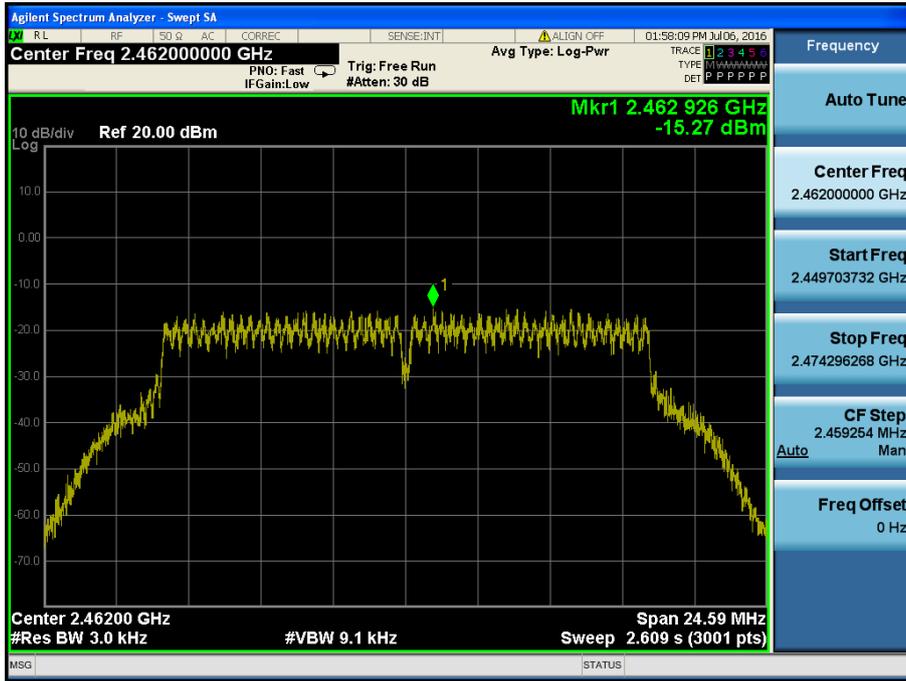
Maximum PPSD

TM 2 & ANT 2 & Middle



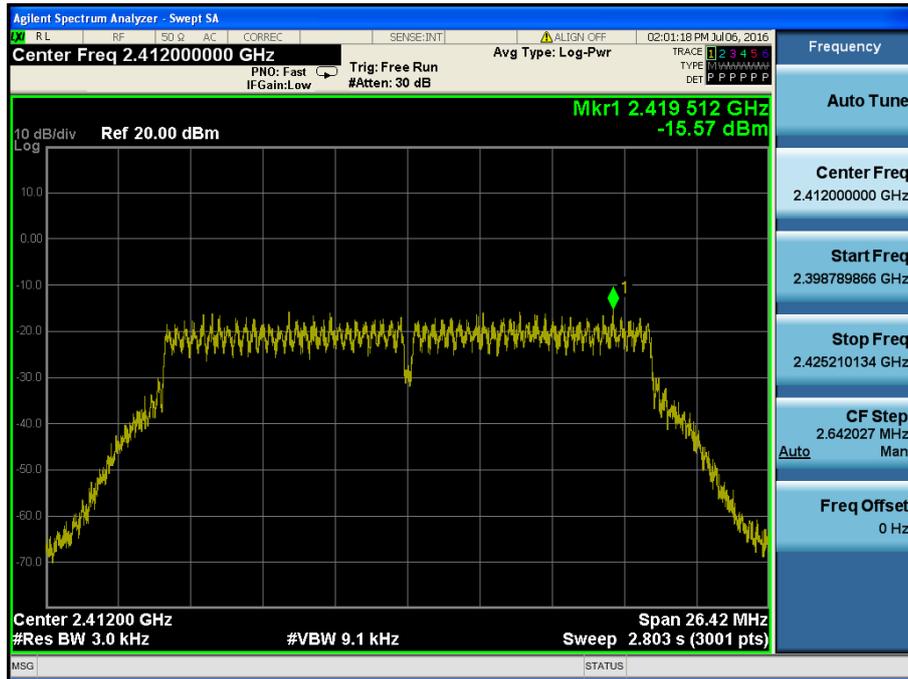
Maximum PPSD

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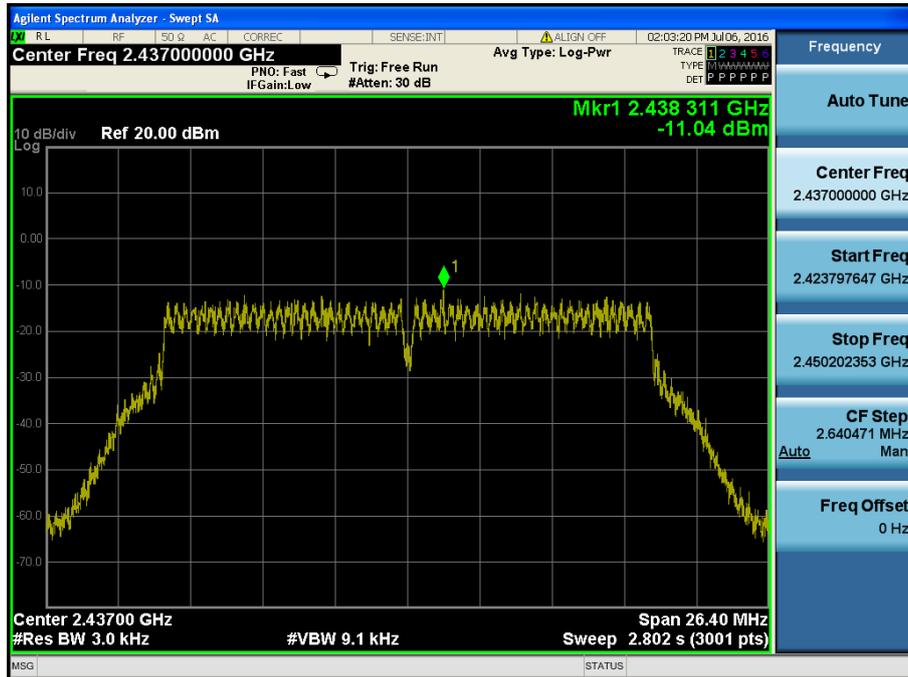
Maximum PPSD

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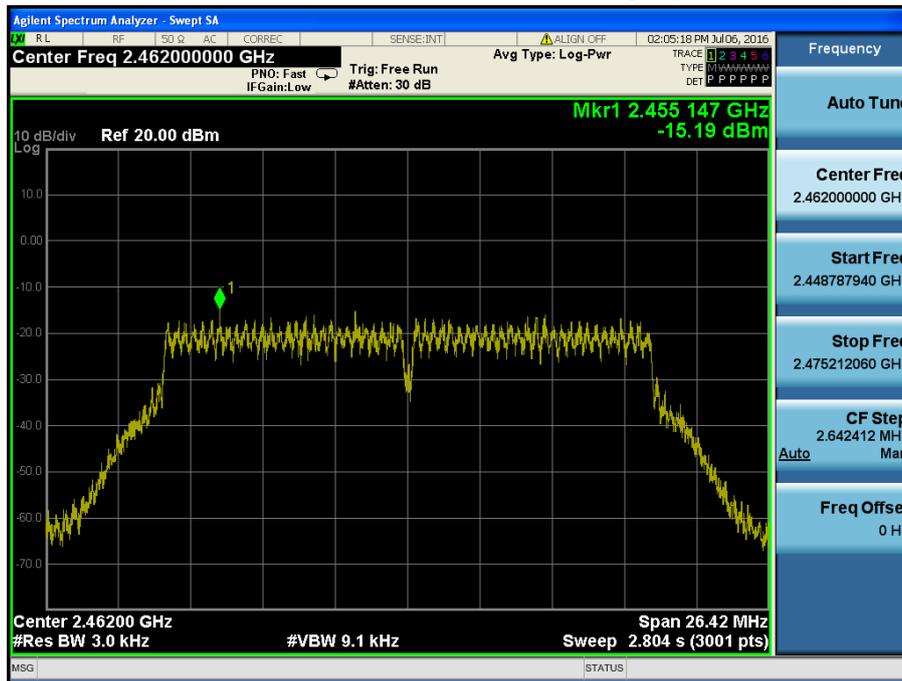
Maximum PPSD

TM 3 & ANT 2 & Middle



### Maximum PPSD

TM 3 & ANT 2 & Highest



## 8.4 Out of band emissions at the band edge / conducted spurious emissions

### ■ Test requirements and limit, §15.247(d)

§15.247(d) specifies that 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 in band average PSD level.

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

### ■ Test Configuration

Refer to the APPENDIX I.

### ■ Test Procedure

The transmitter output is connected to a spectrum analyzer.

#### - Measurement Procedure 1 – Reference Level

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.

#### - Measurement Procedure 2 - Unwanted Emissions

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 conducted spurious emission was tested with below settings.

**Frequency range: 9 kHz ~ 30 MHz**

**RBW = 100 kHz, VBW = 300 kHz, SWEEP TIME = AUTO, DETECTOR = PEAK, TRACE = MAX HOLD, SWEEP POINT : 40001**

**Frequency range: 30 MHz ~ 10 GHz, 10 GHz ~25 GHz**

**RBW = 1 MHz, VBW = 3 MHz, SWEEP TIME = AUTO, DETECTOR = PEAK, TRACE = MAX HOLD, SWEEP POINT : 40001**

**LIMIT LINE = 20 dB below of the reference level of above measurement procedure Step 2. (RBW = 100 kHz, VBW = 300 kHz)**

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 = 2001 to get accurate emission level within 100 kHz BW.

Also the path loss for conducted measurement setup was used as described on the Appendix I of this test report.

RESULT PLOTS

TM 1 & ANT 1 & Lowest

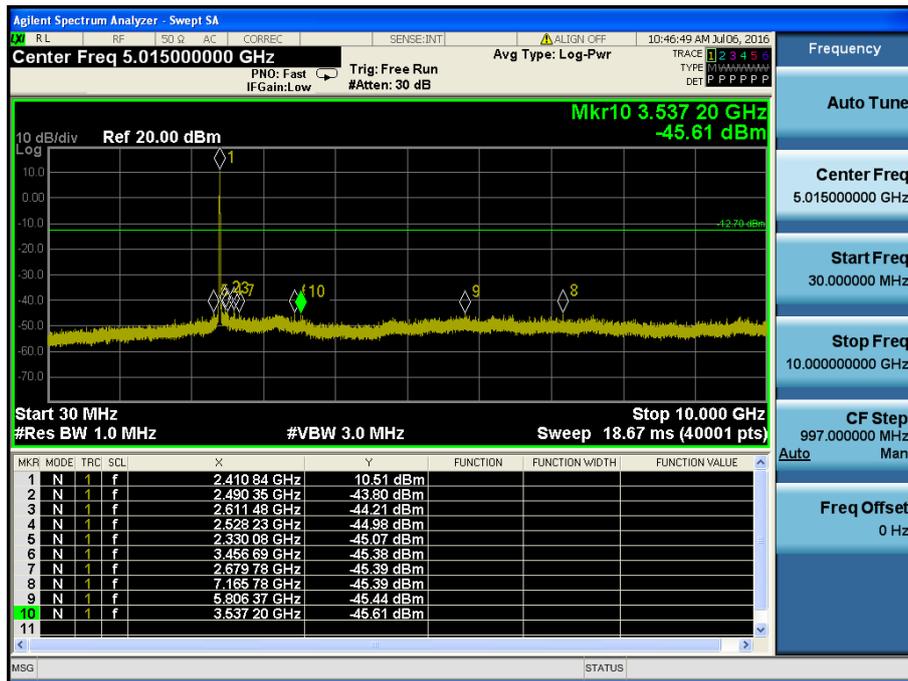
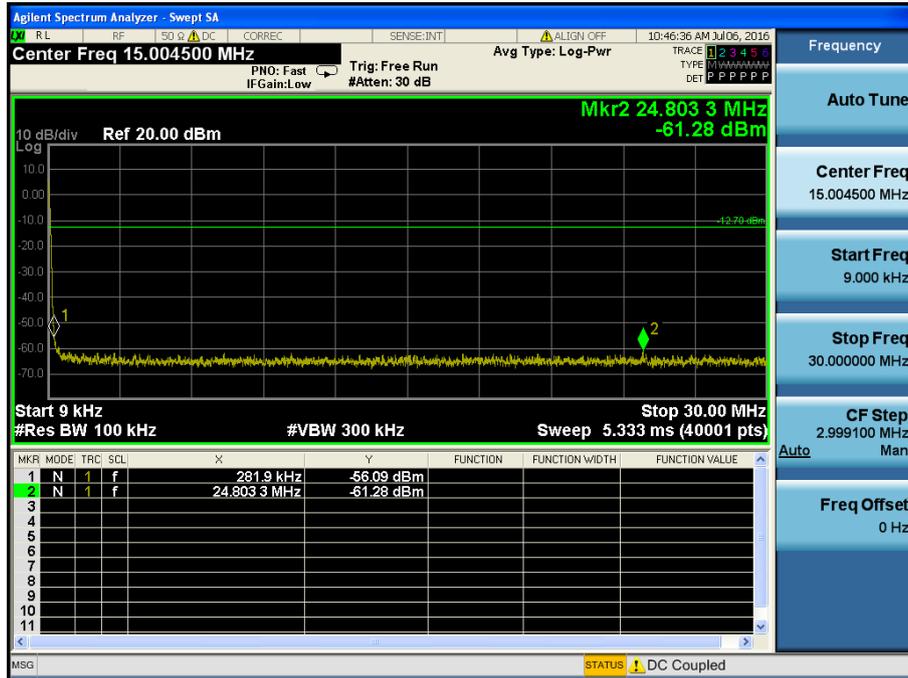
Reference



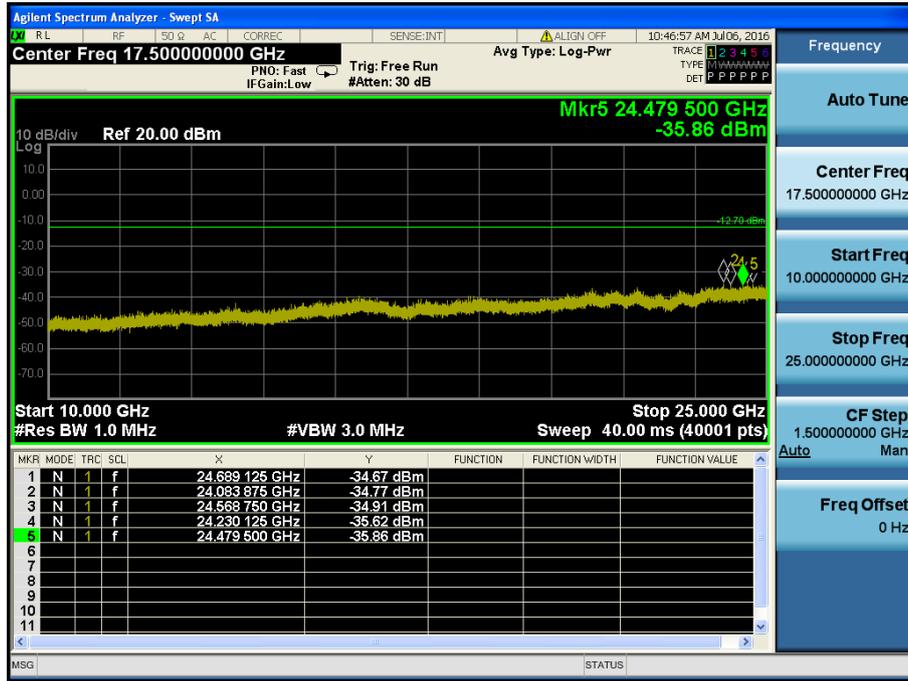
Low Band-edge



### Conducted Spurious Emissions



### Conducted Spurious Emissions

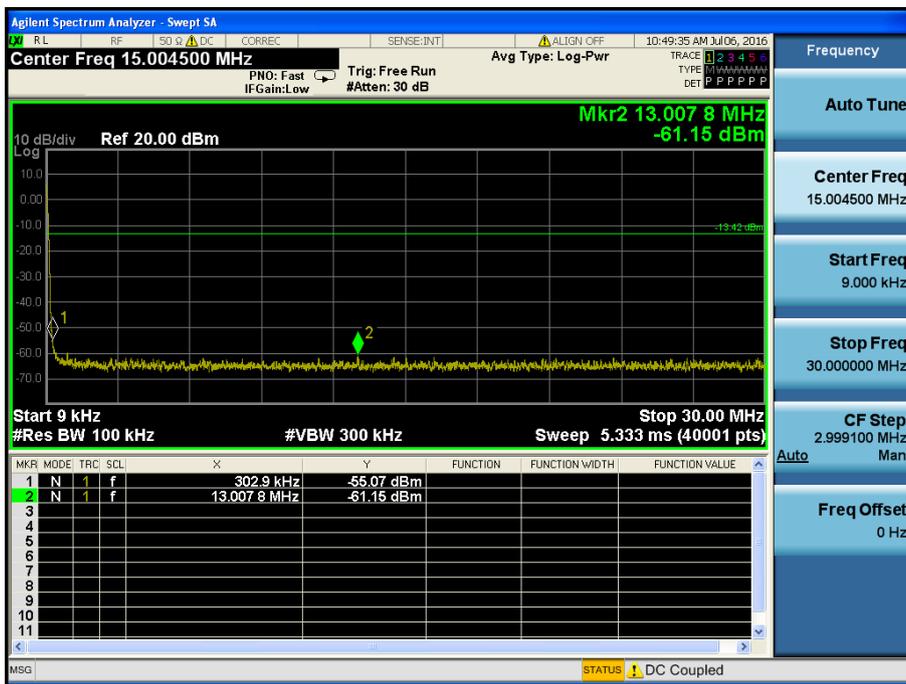


**TM 1 & ANT 1 & Middle**

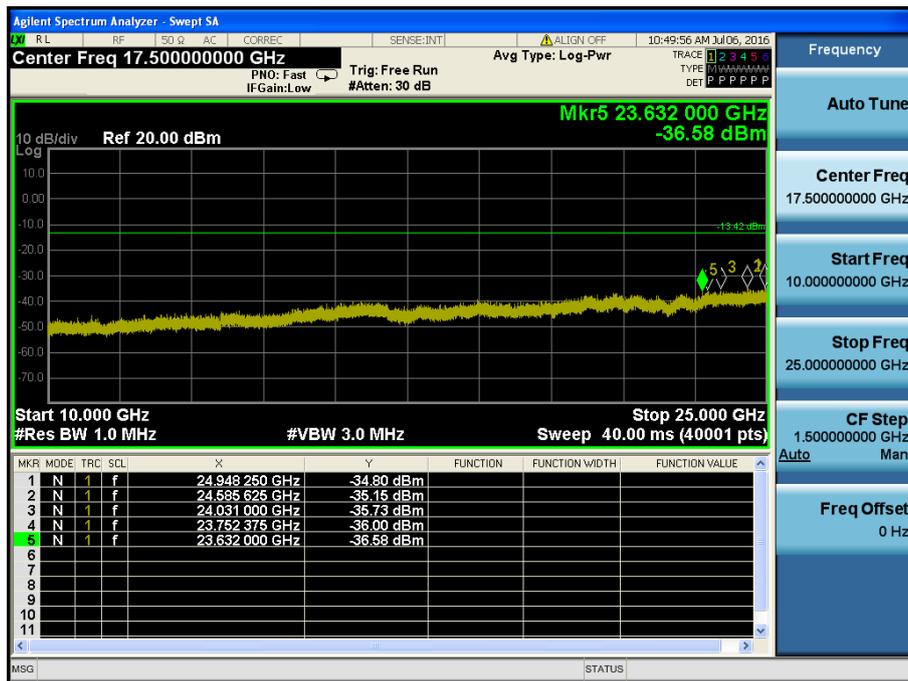
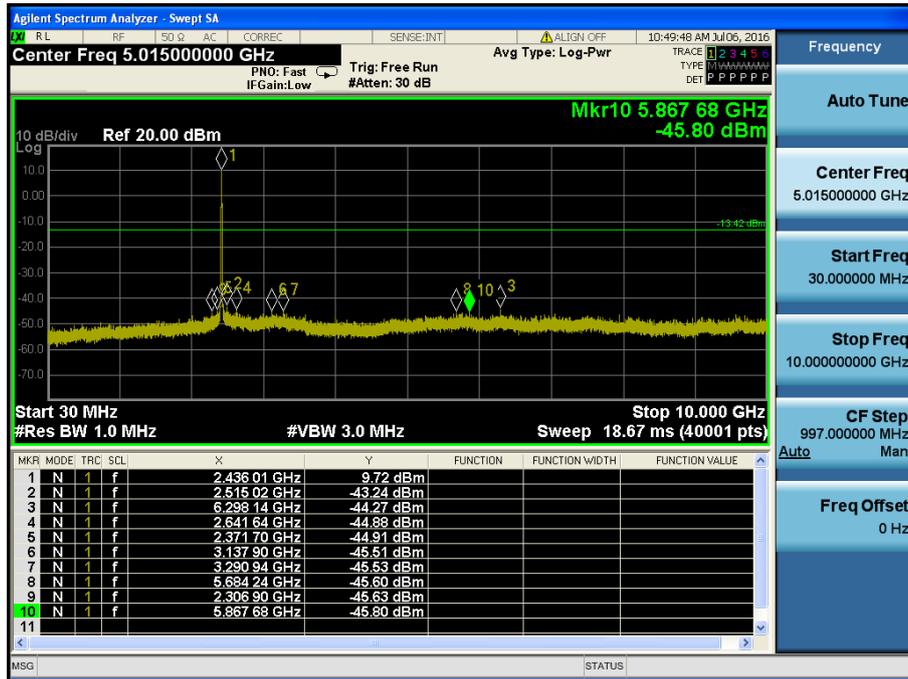
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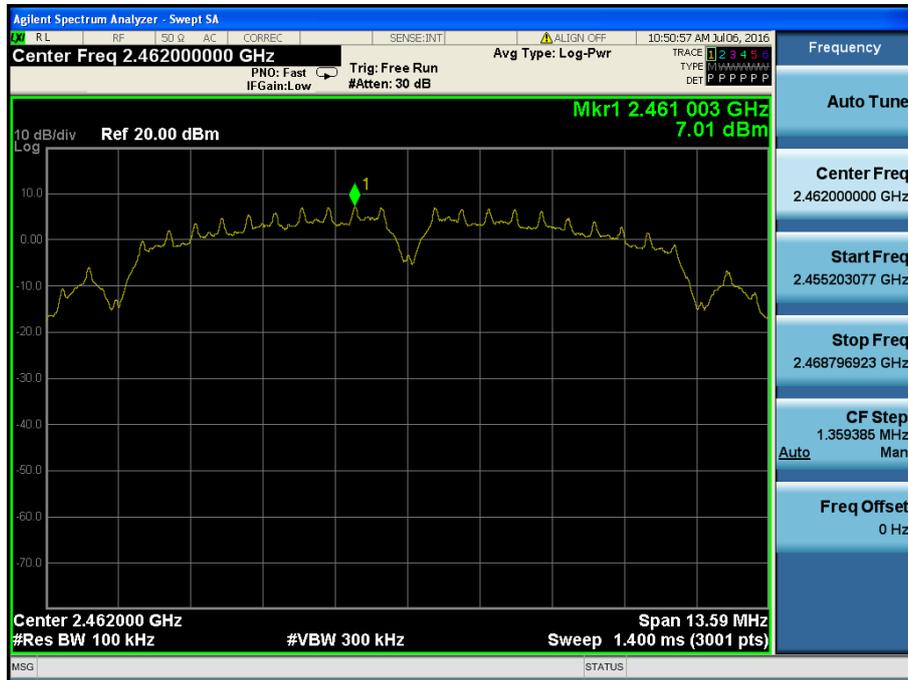
**Conducted Spurious Emissions**



### Conducted Spurious Emissions



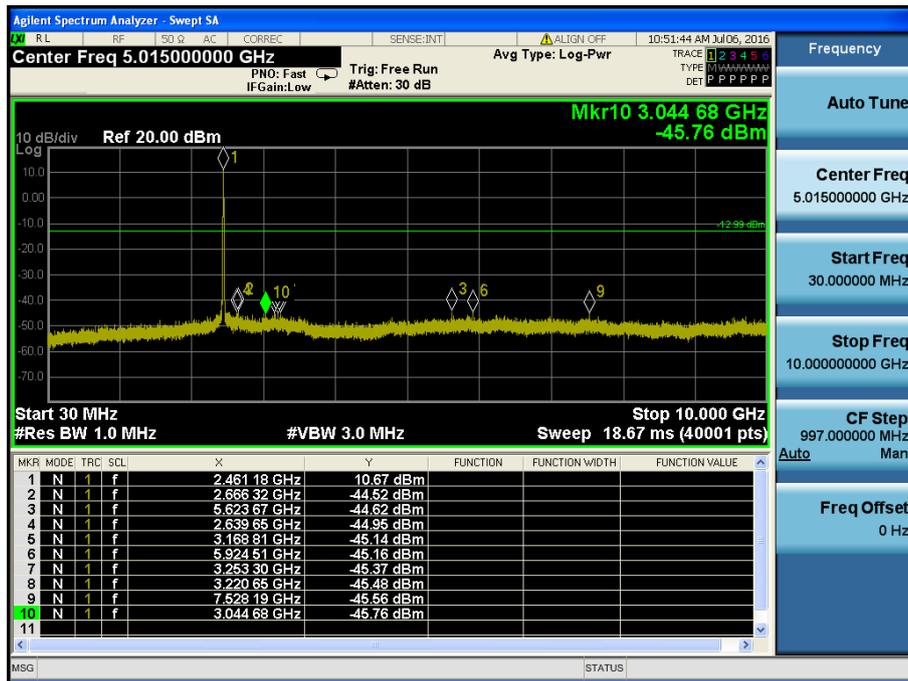
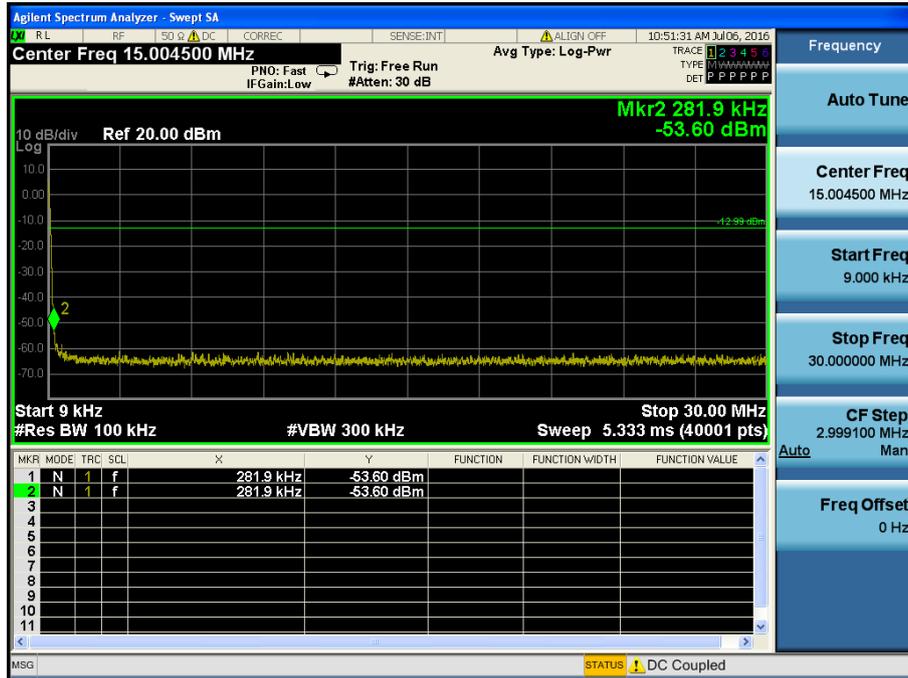
**TM 1 & ANT 1 & Highest Reference**



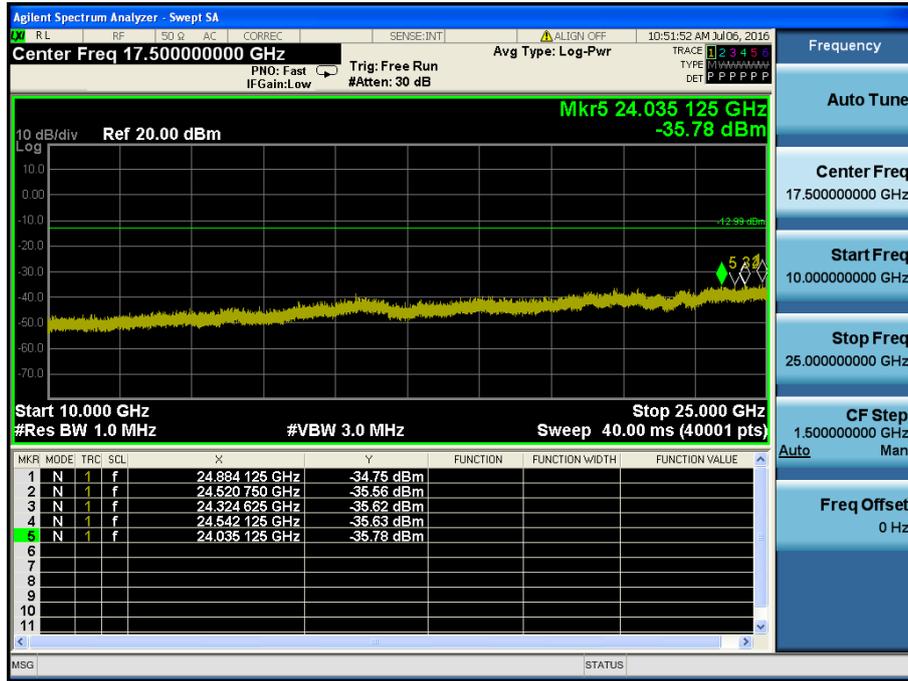
**High Band-edge**



### Conducted Spurious Emissions



### Conducted Spurious Emissions

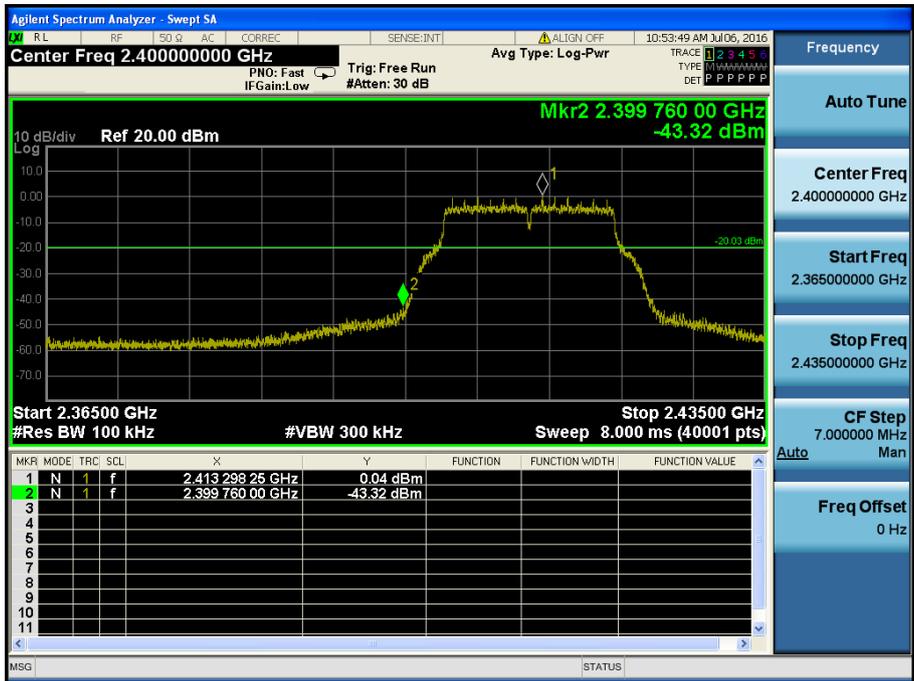


**TM 2 & ANT 1 & Lowest**

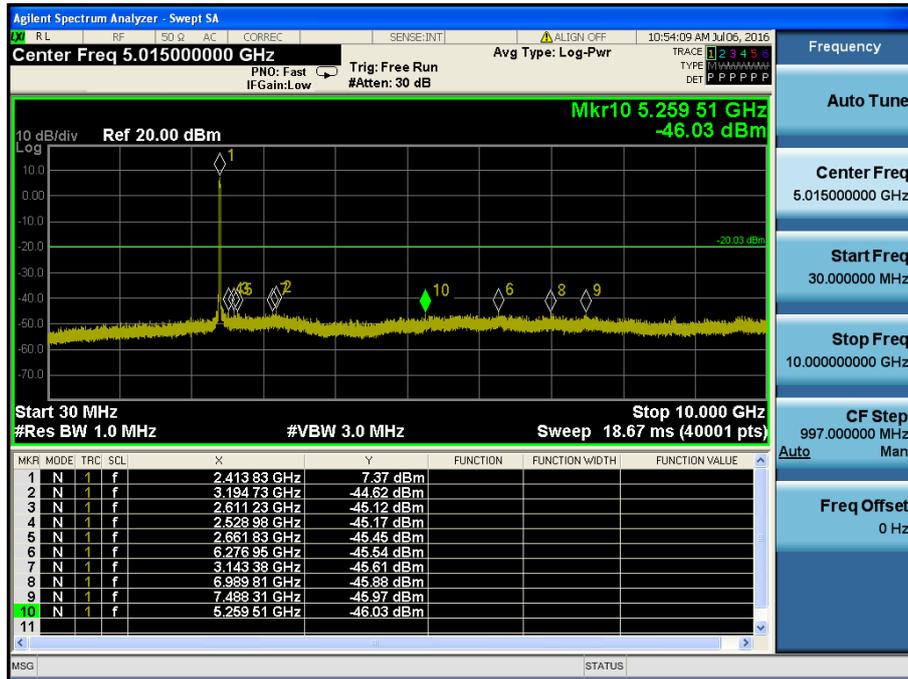
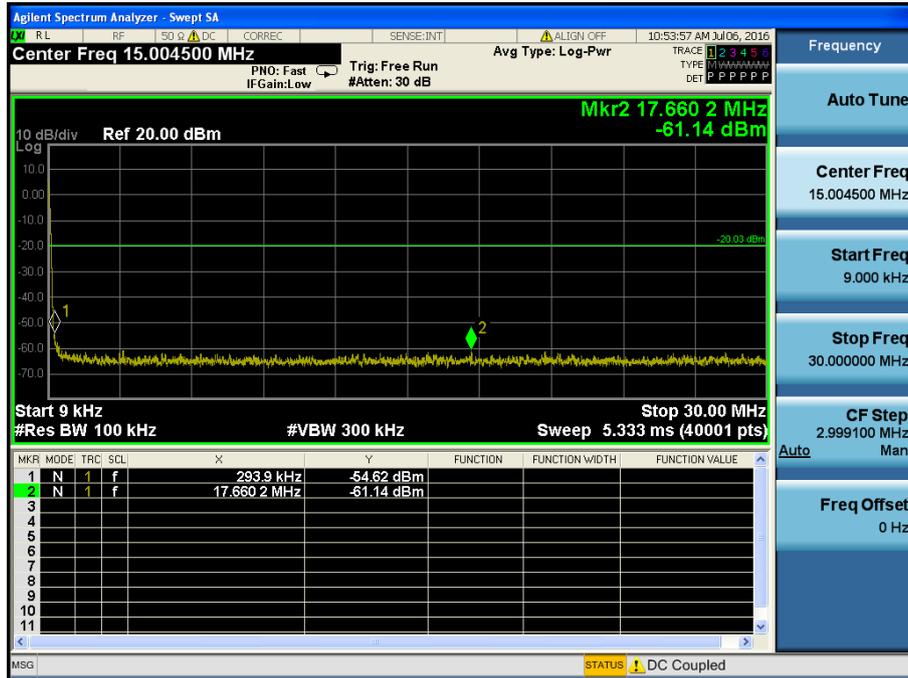
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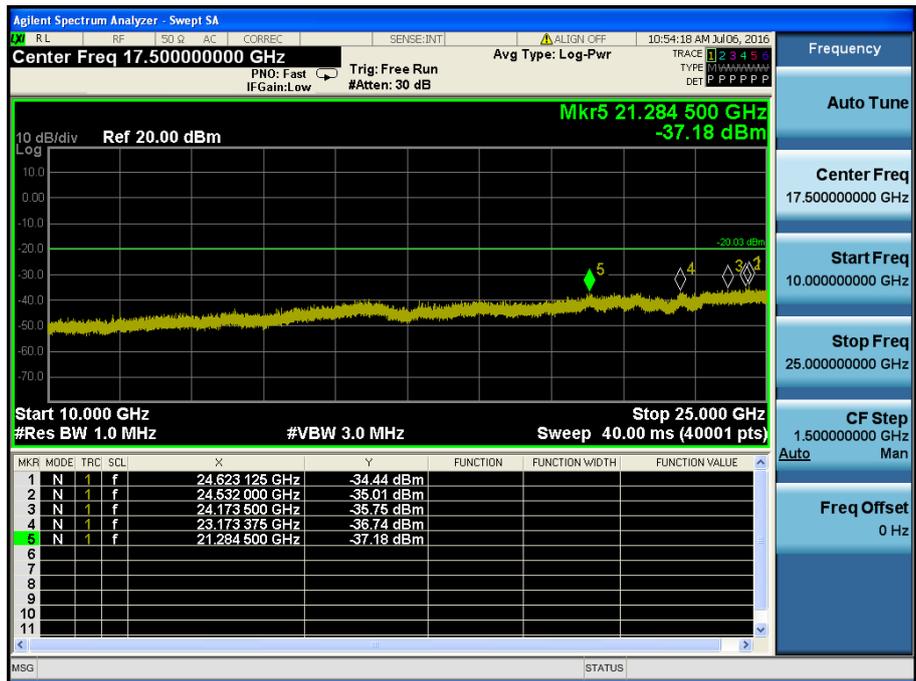
**Low Band-edge**



### Conducted Spurious Emissions



### Conducted Spurious Emissions

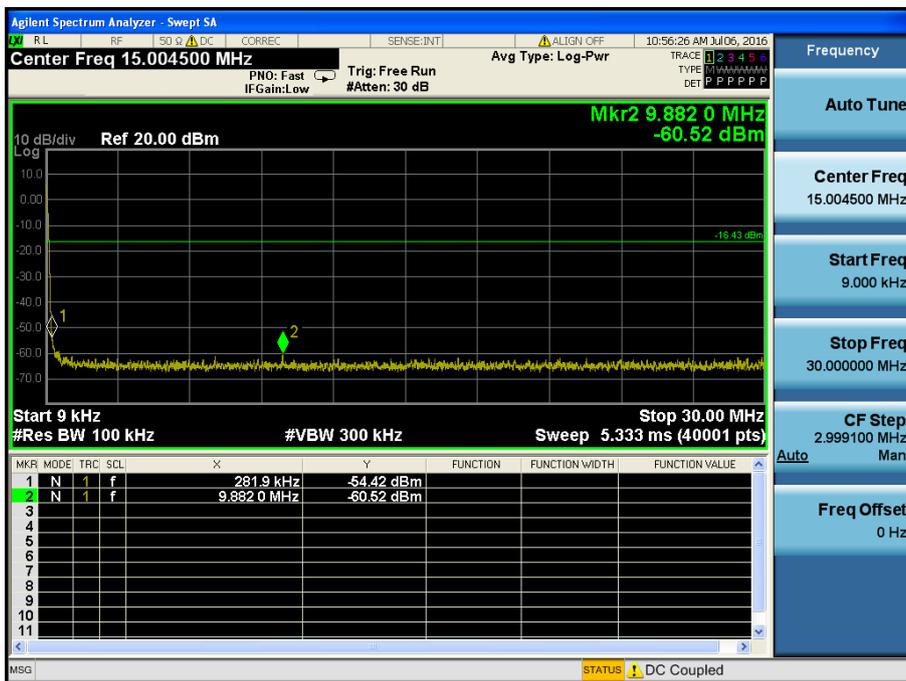


**TM 2 & ANT 1 & Middle**

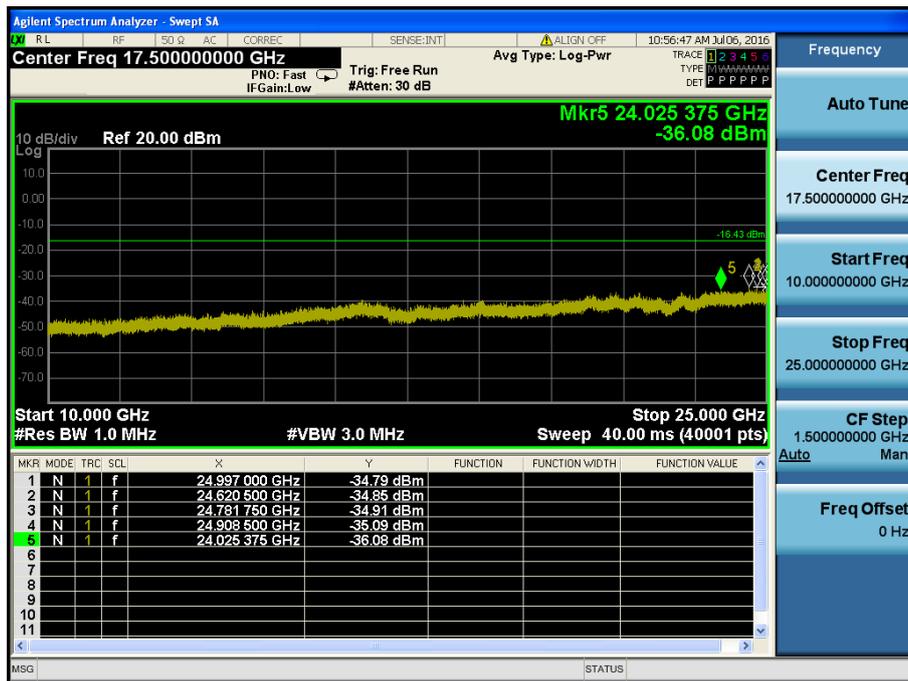
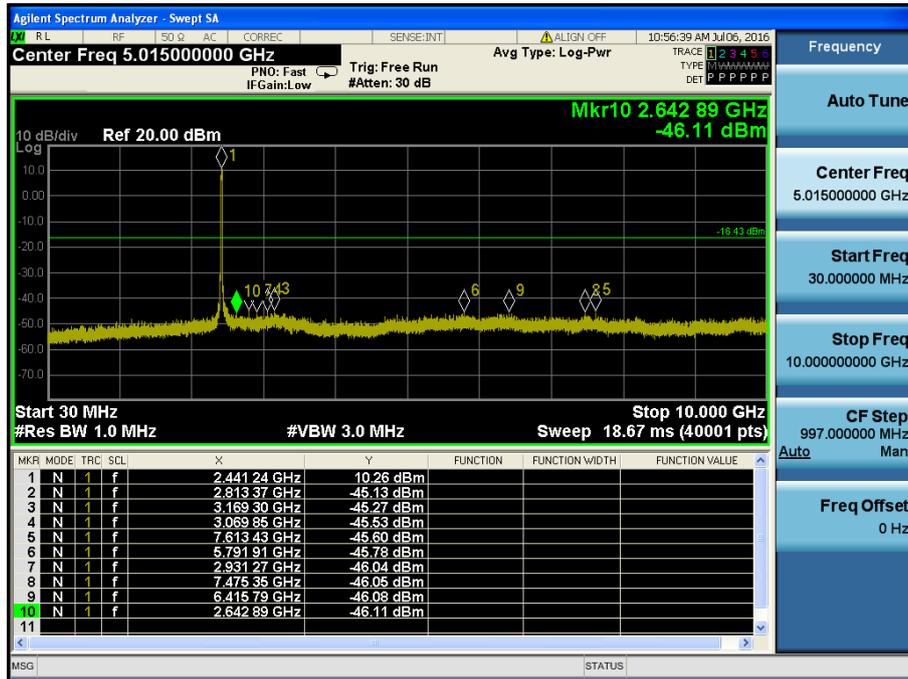
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**Conducted Spurious Emissions**



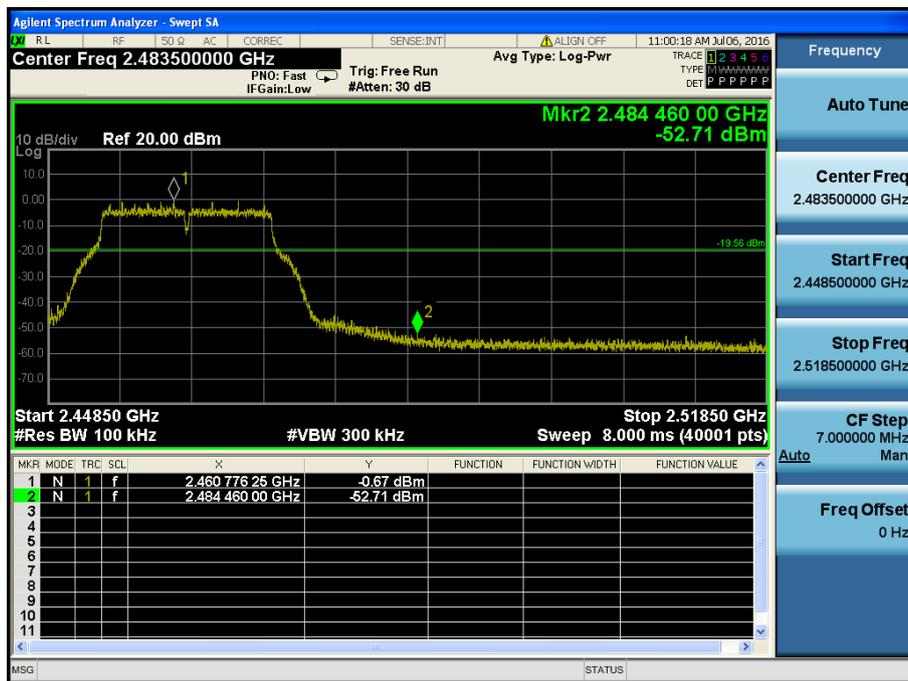
### Conducted Spurious Emissions



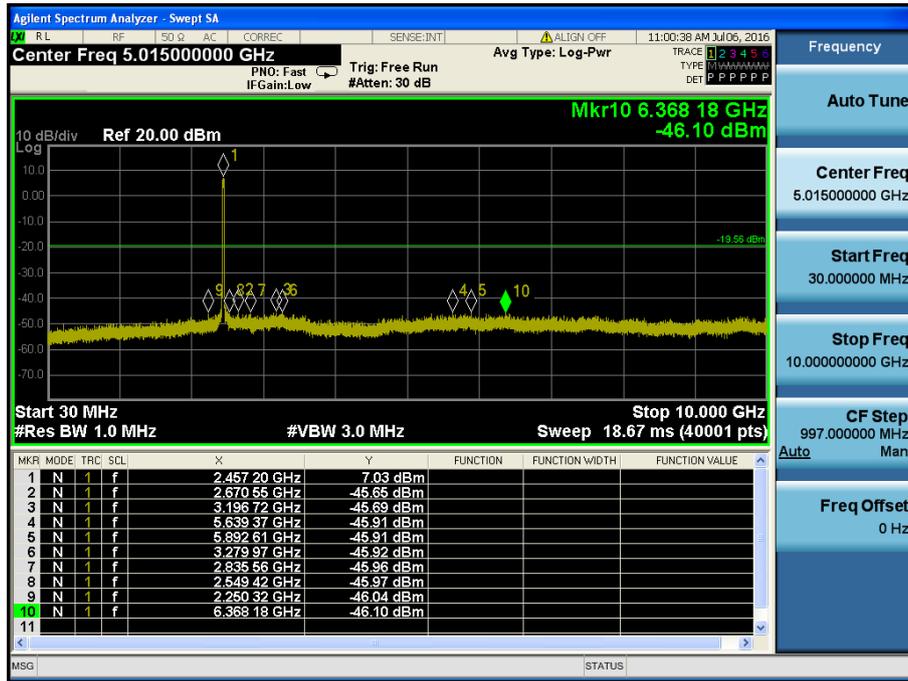
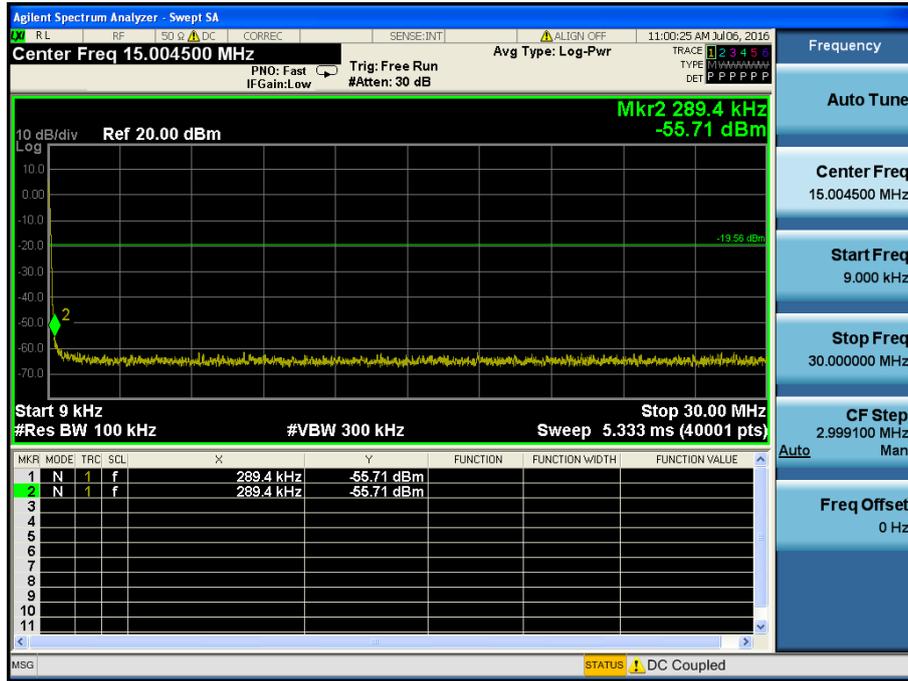
**TM 2 & ANT 1 & Highest**  
**Reference**



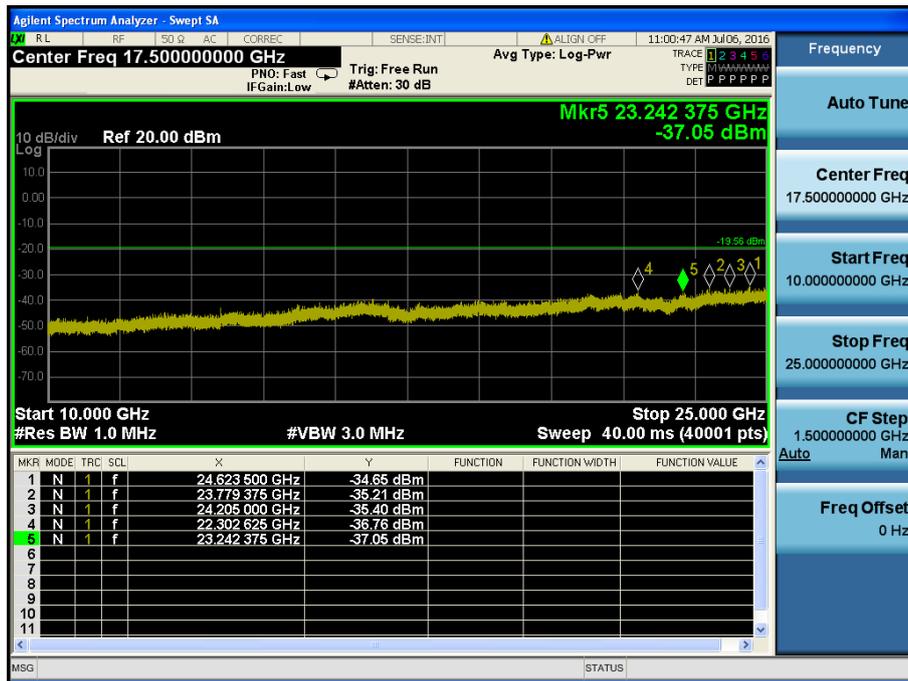
**High Band-edge**



### Conducted Spurious Emissions



### Conducted Spurious Emissions

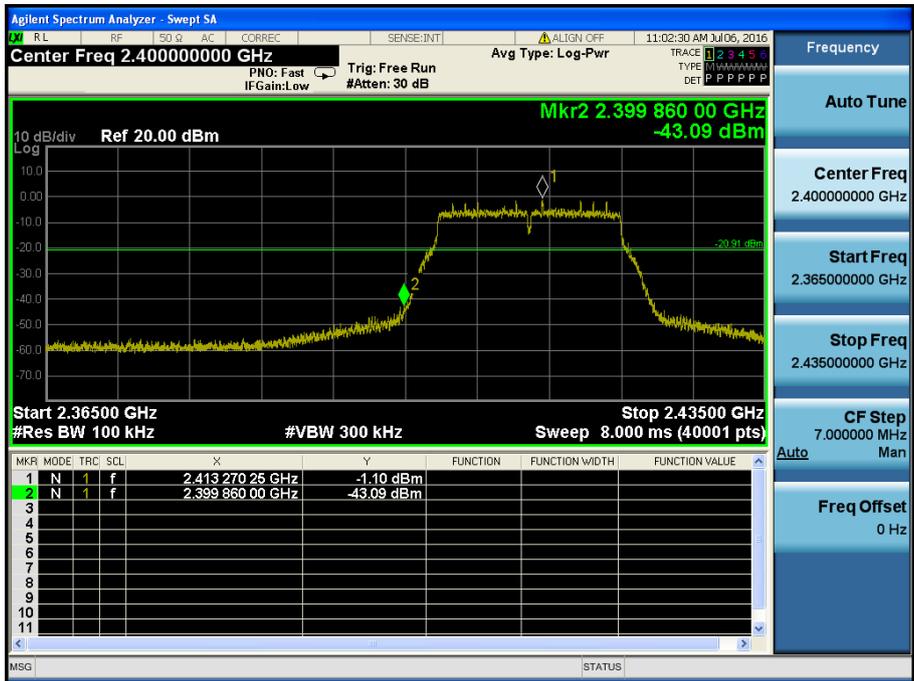


**TM 3 & ANT 1 & Lowest**

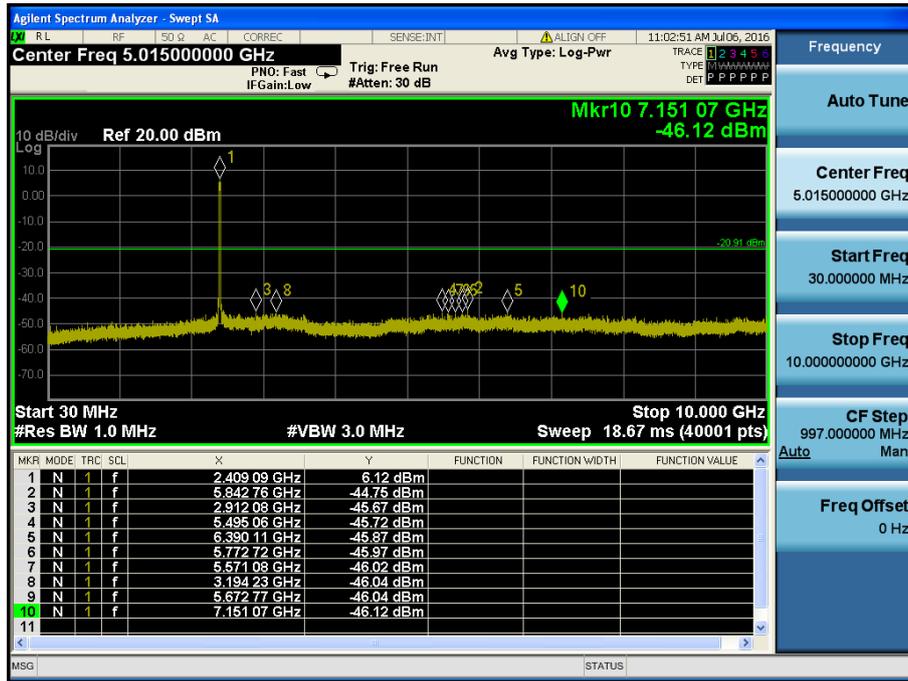
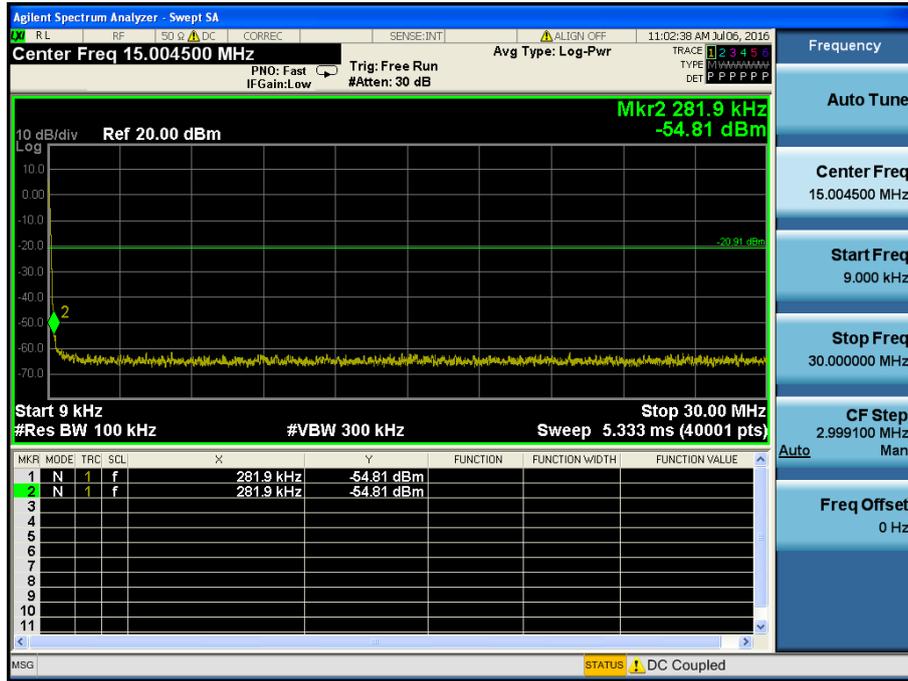
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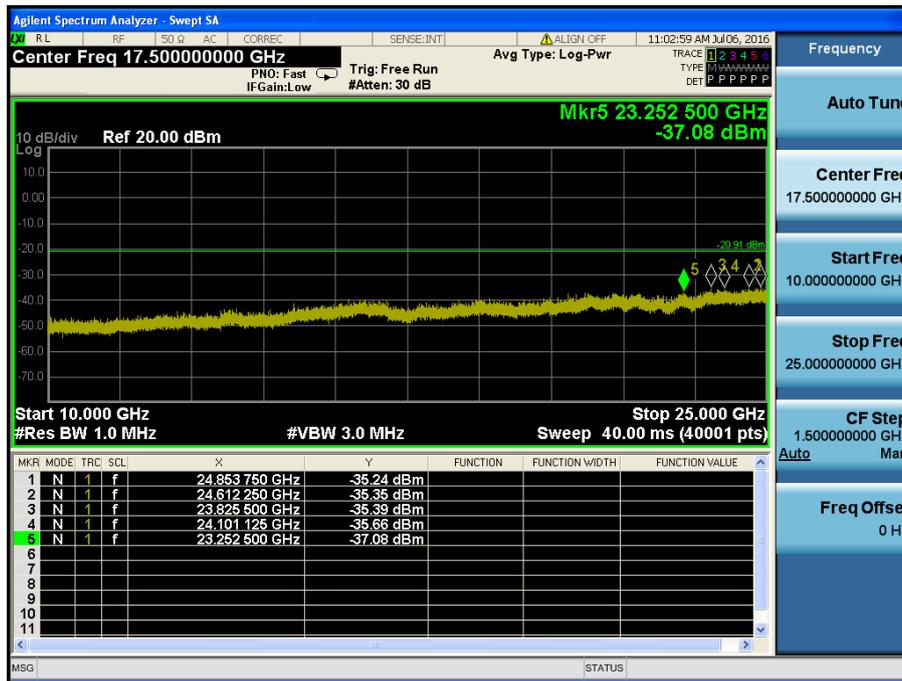
**Low Band-edge**



### Conducted Spurious Emissions

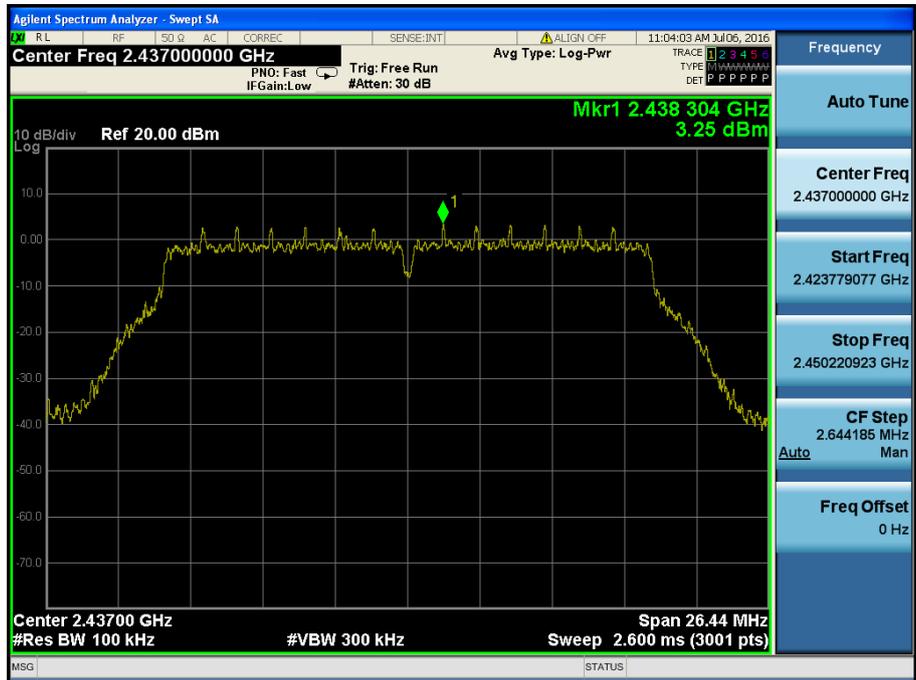


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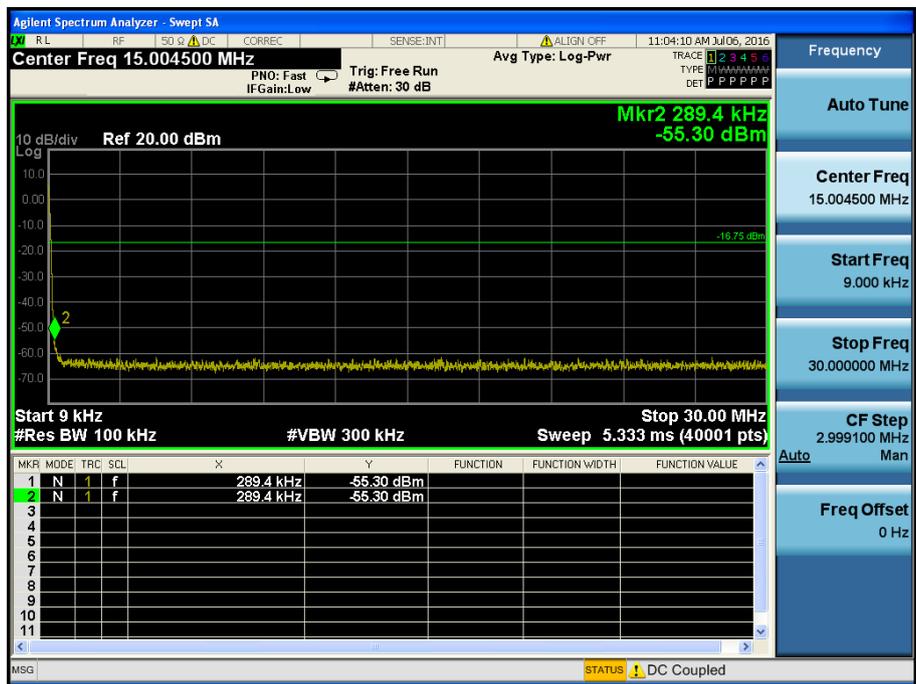


**TM 3 & ANT 1 & Middle**

**Reference**



**Conducted Spurious Emissions**



### Conducted Spurious Emissions

