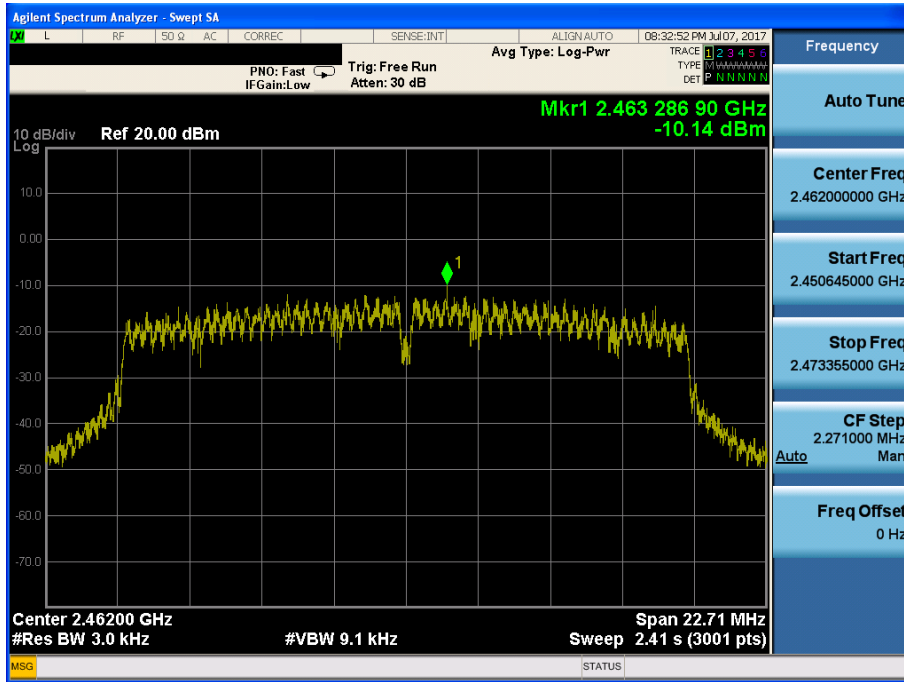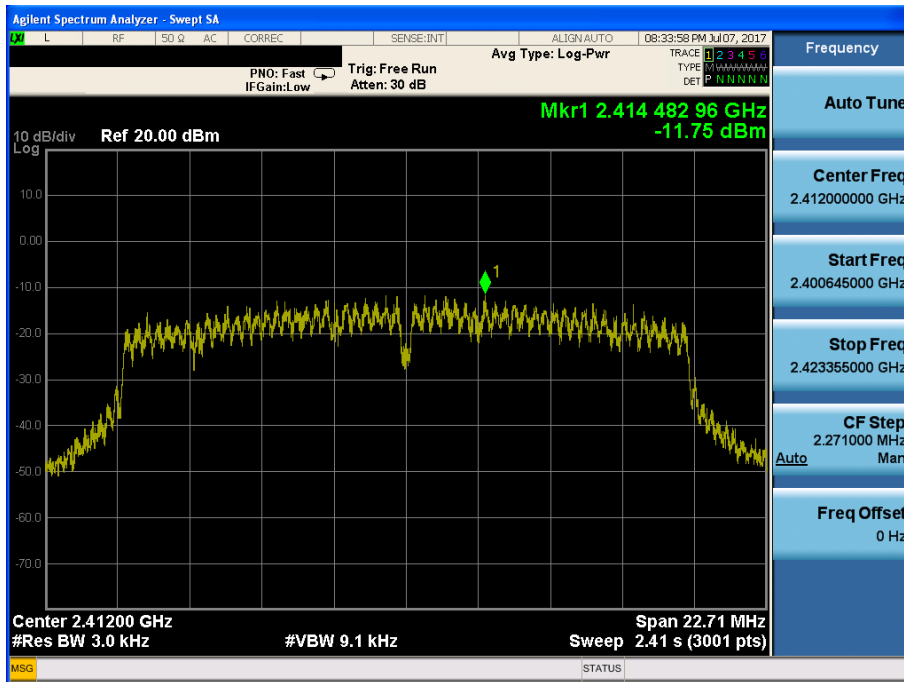**Maximum PPSD**

TM 9 & ANT 1 & Highest
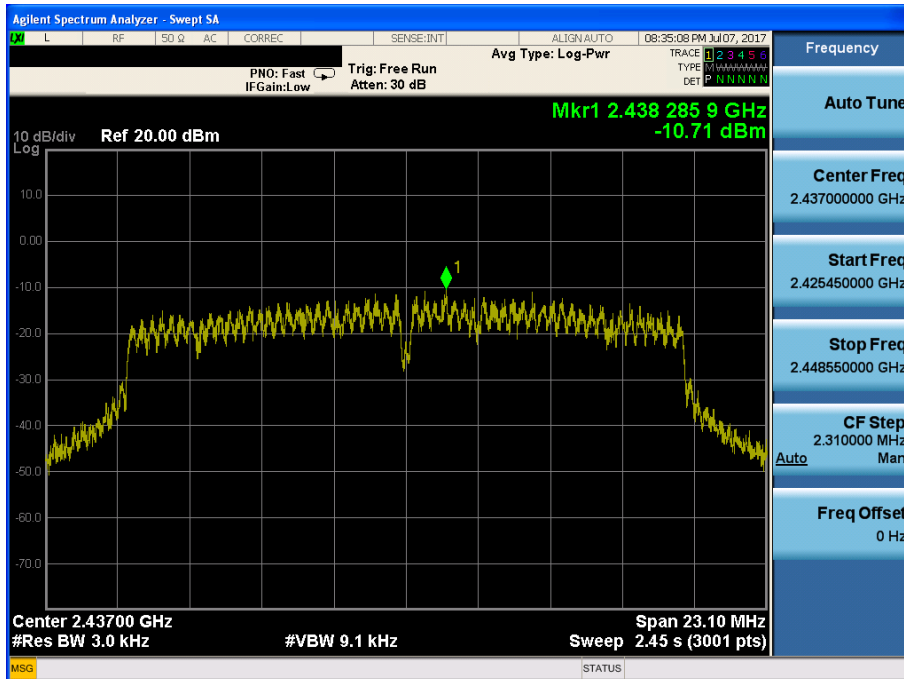
Maximum PPSD

TM 10 & ANT 1 & Lowest
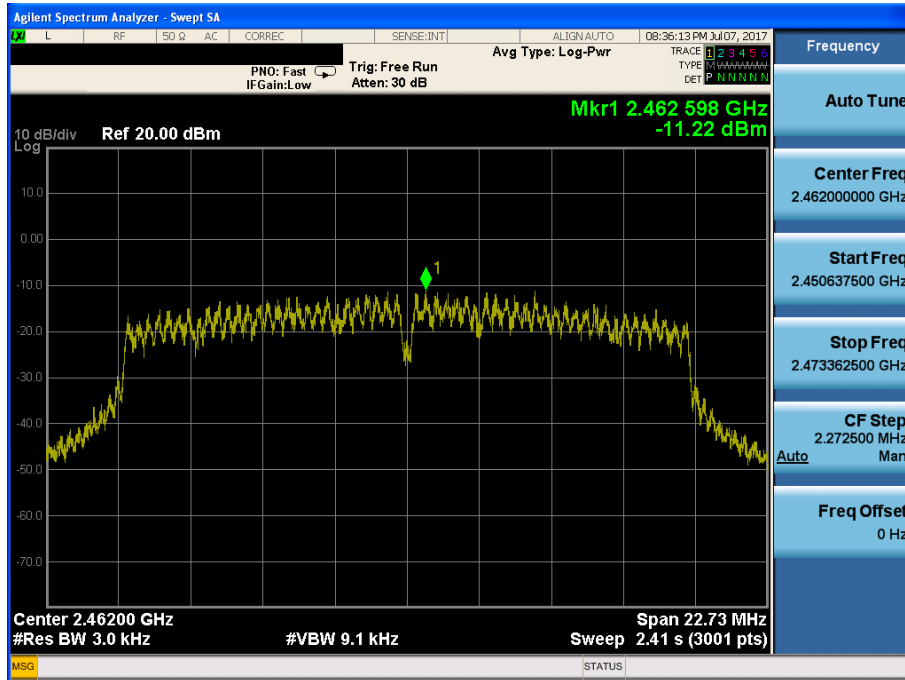

Maximum PPSD

TM 10 & ANT 1 & Middle

Dt&C

Maximum PPSD

TM 10   &   ANT 1   &   Highest

Maximum PPSD

TM 5 & ANT 2 & Lowest

Maximum PPSD

TM 5 & ANT 2 & Middle

Maximum PPSD   TM 5   &   ANT 2   & Highest

Dt&C

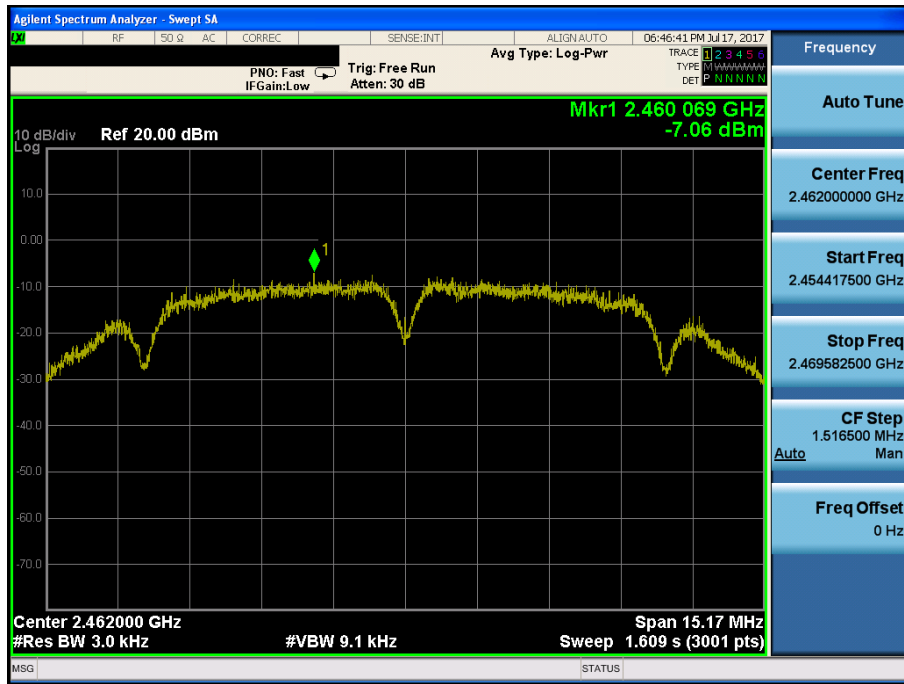## Maximum PPSD

TM 6 & ANT 2 & Lowest

Maximum PPSD

TM 6 & ANT 2 & Middle

Maximum PPSD

TM 6 & ANT 2 & Highest

Maximum PPSD

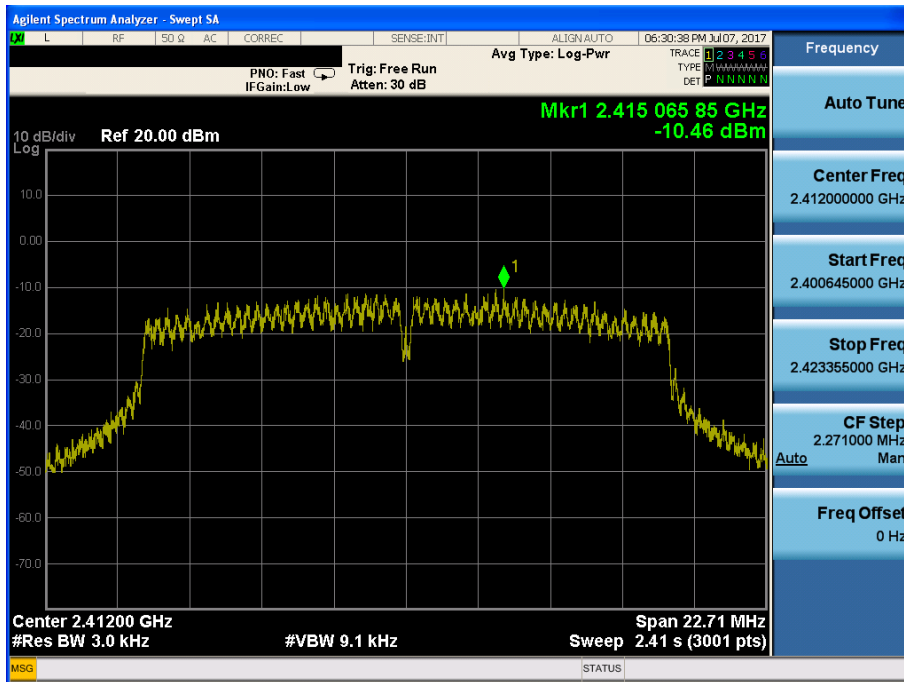TM 7 & ANT 2 & Lowest

Maximum PPSD

TM 7 & ANT 2 & Middle

Maximum PPSD

TM 7 & ANT 2 & Highest

Maximum PPSD

TM 8 & ANT 2 & Lowest

Maximum PPSD

TM 8 & ANT 2 & Middle

Maximum PPSD

TM 8 & ANT 2 & Highest
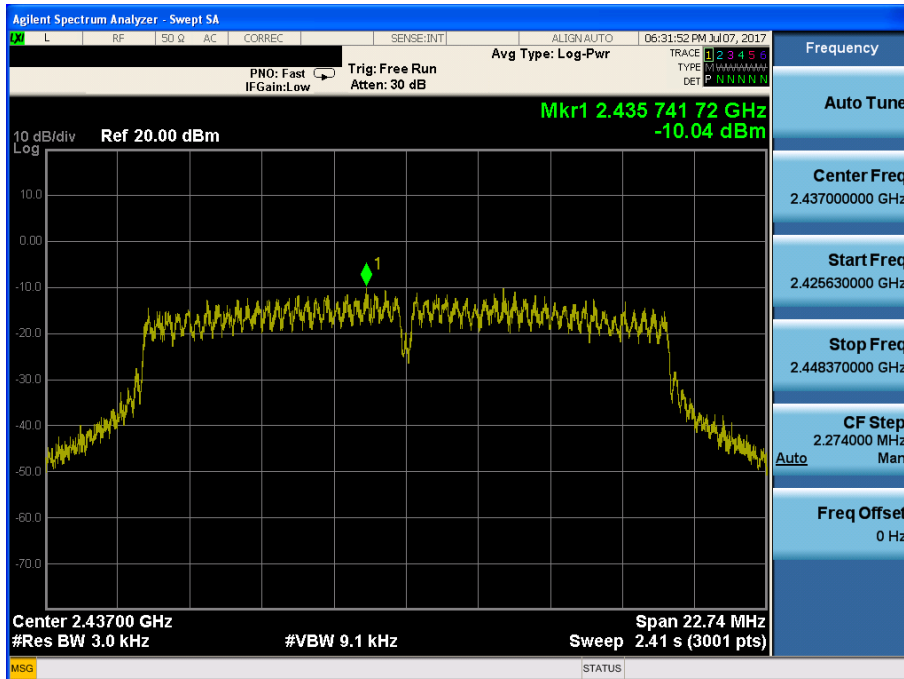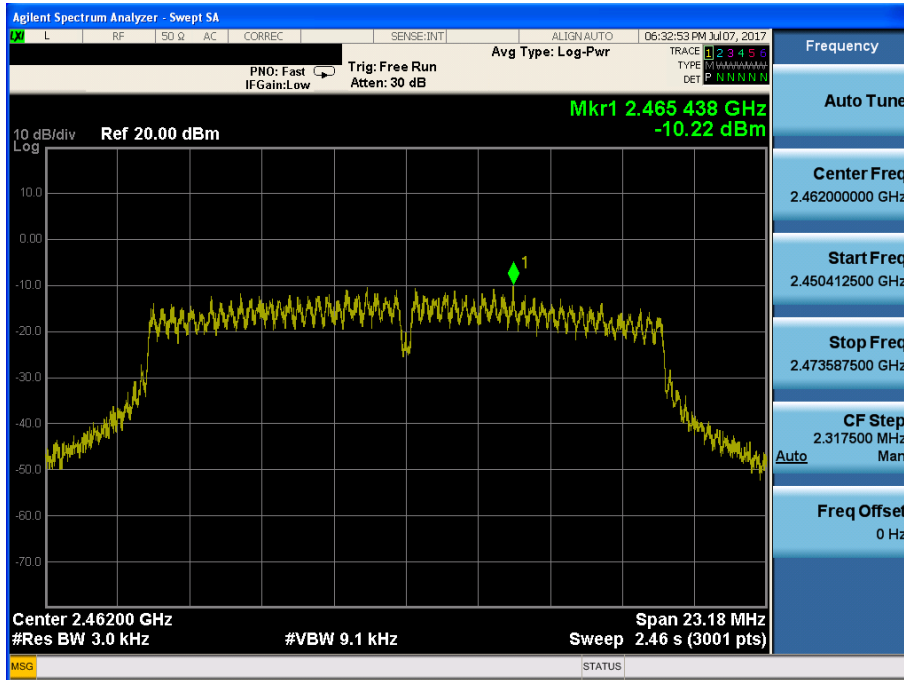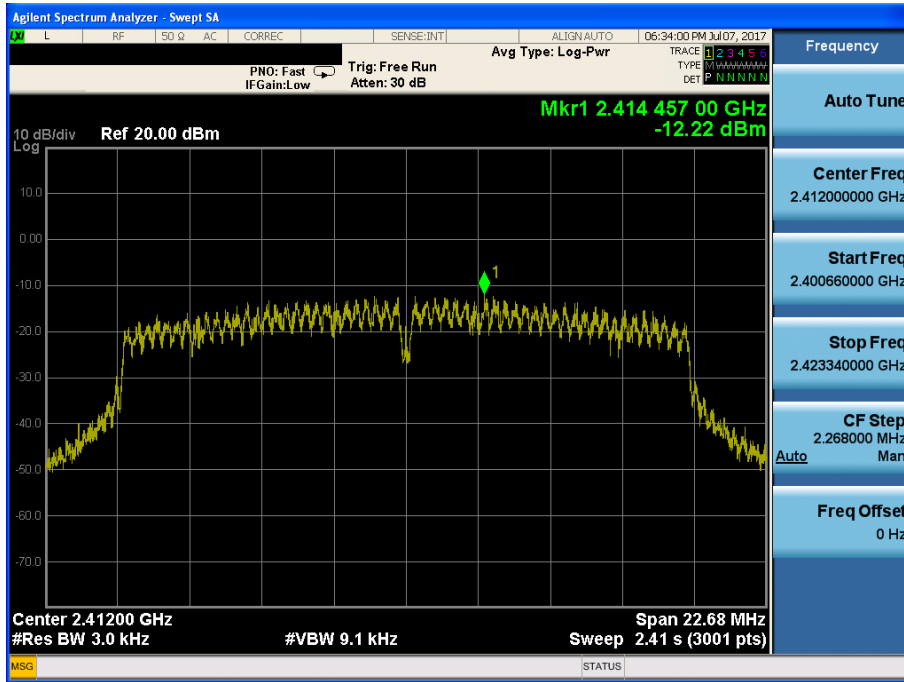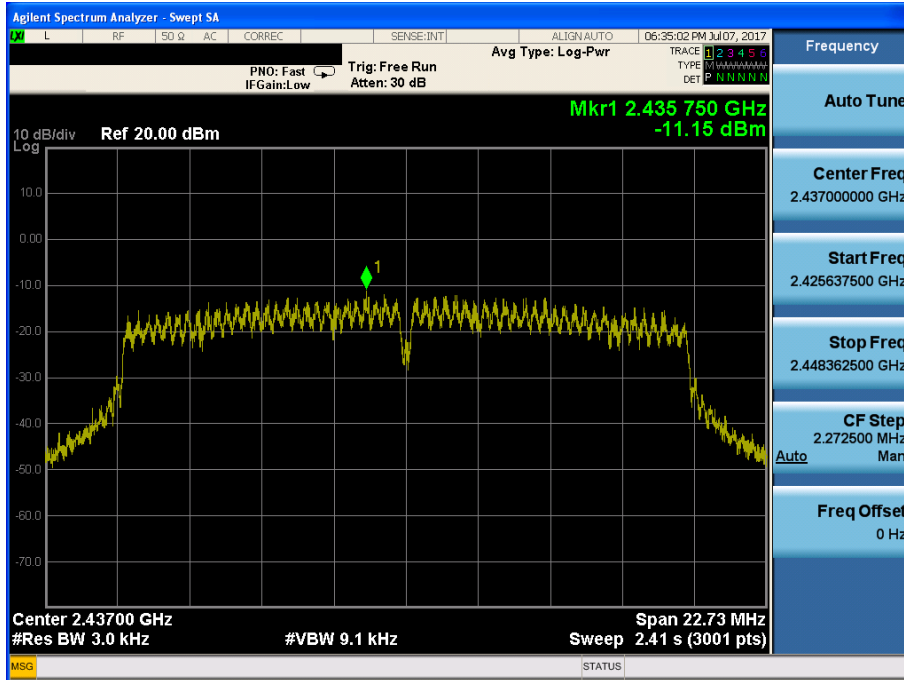
Maximum PPSD

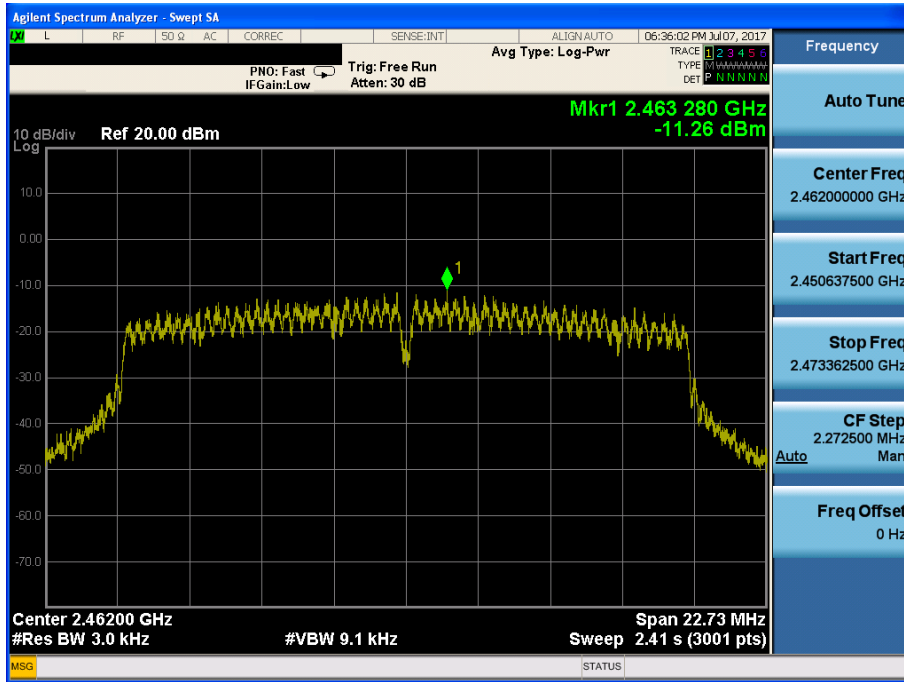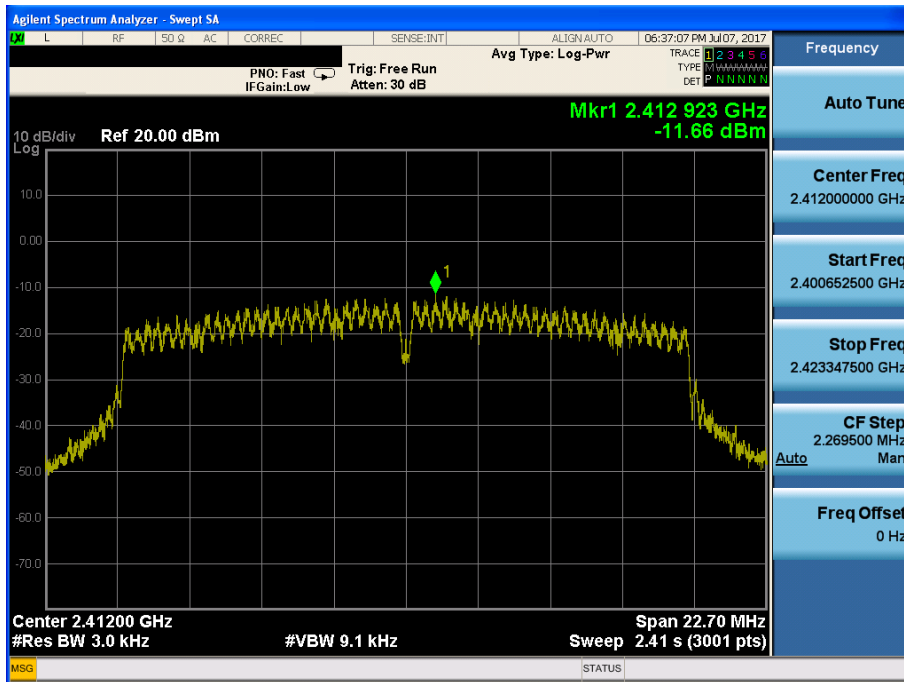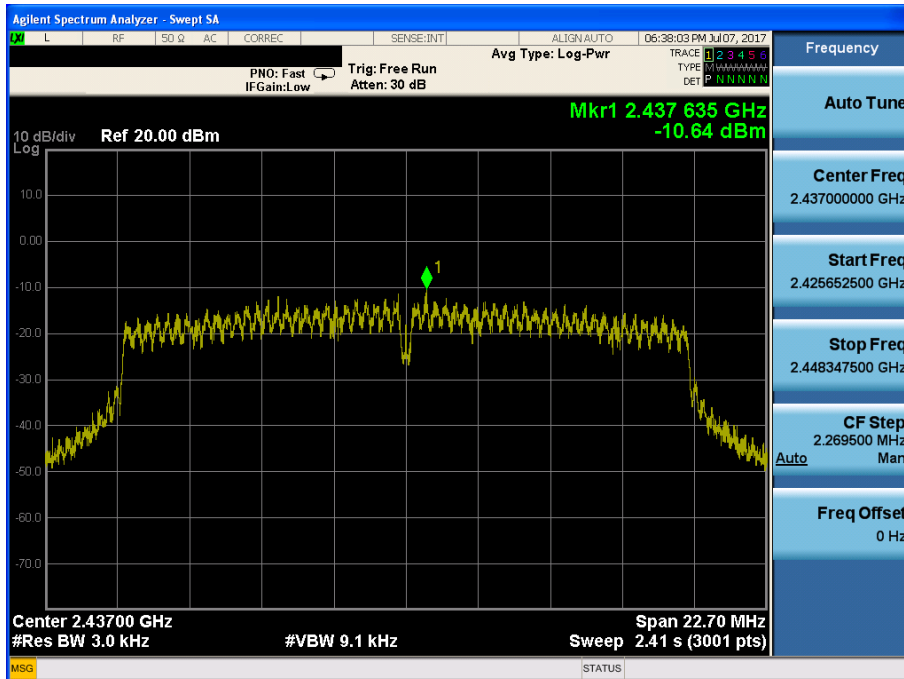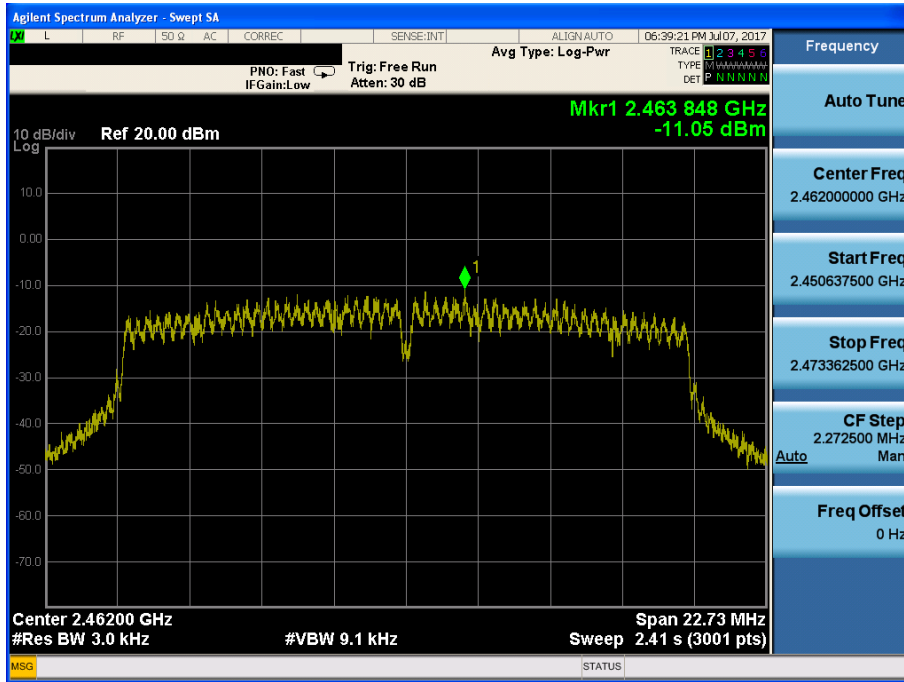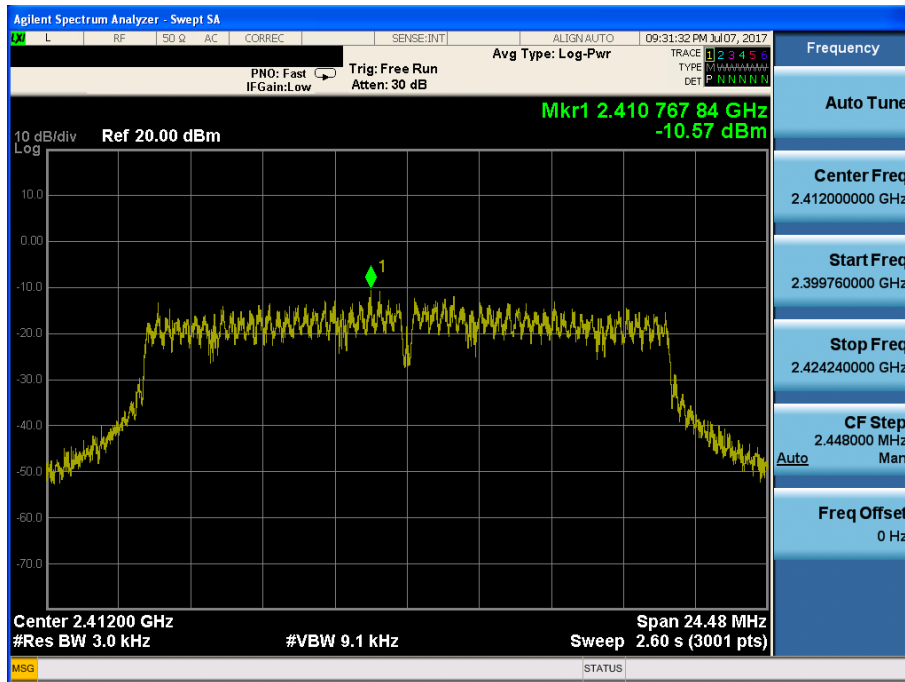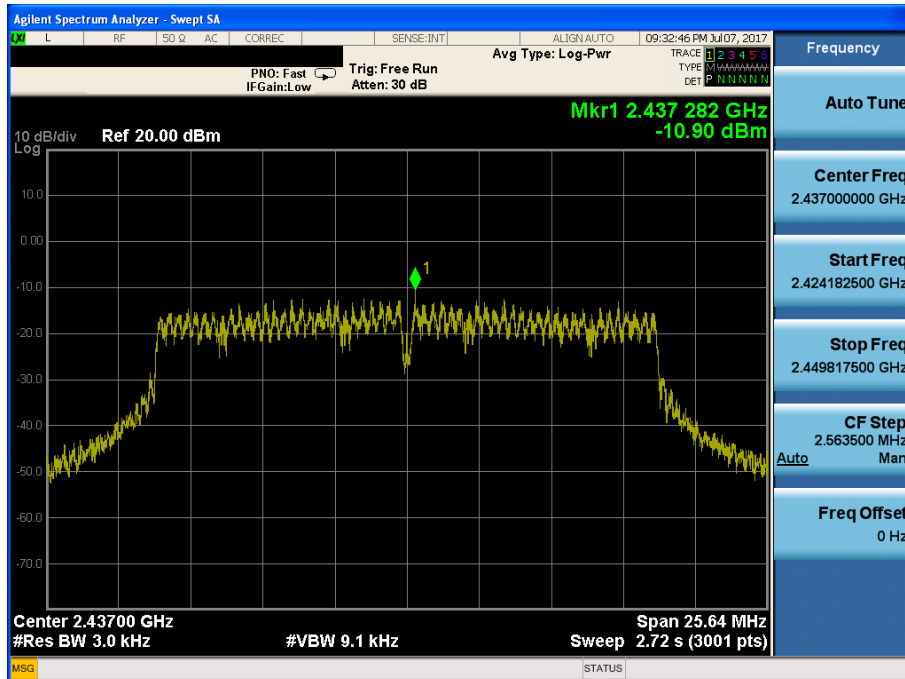TM 9 & ANT 2 & Lowest
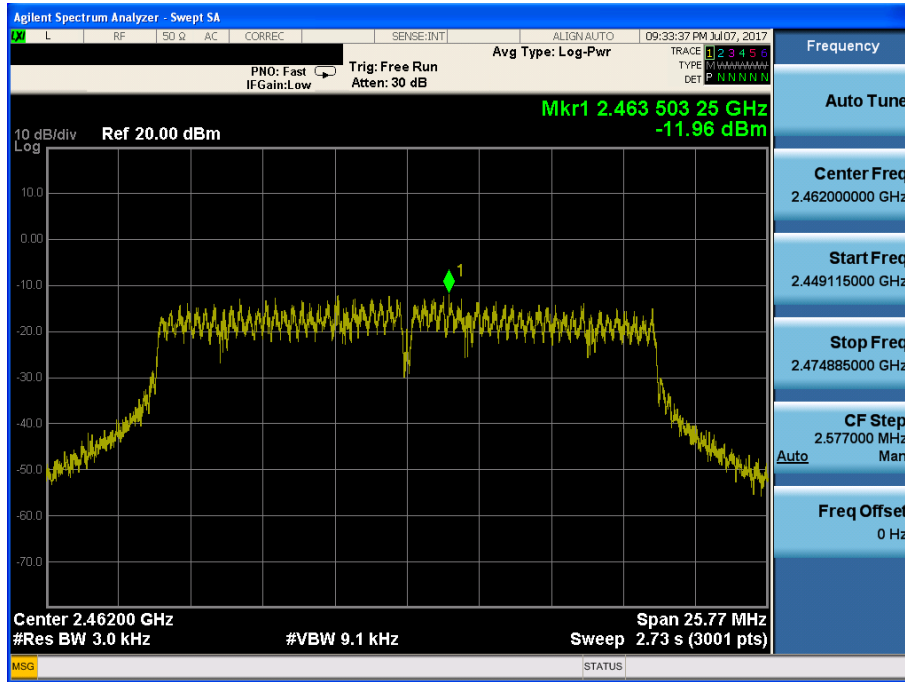

Maximum PPSD

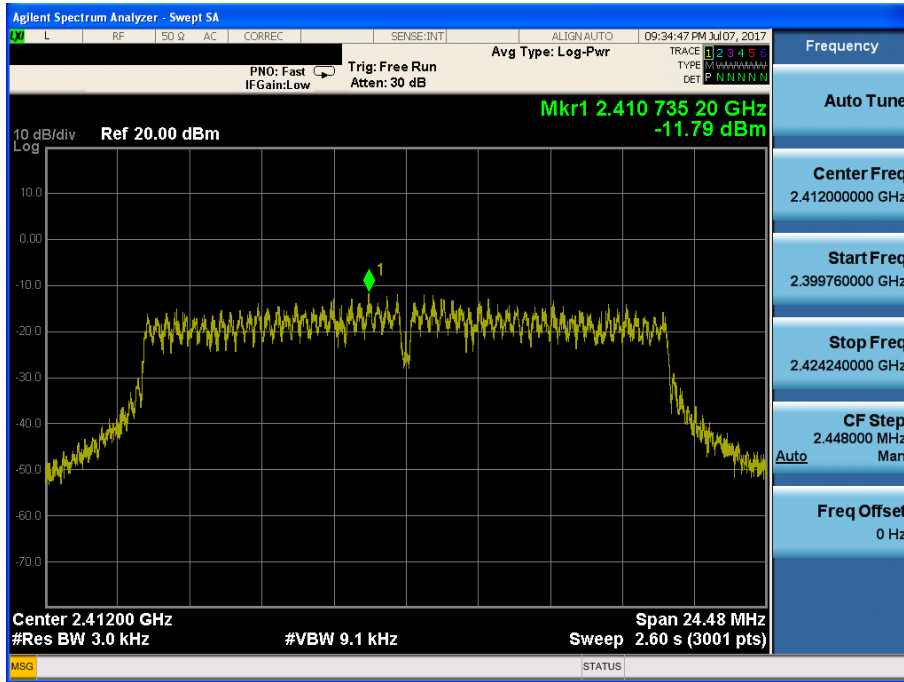TM 9 & ANT 2 & Middle

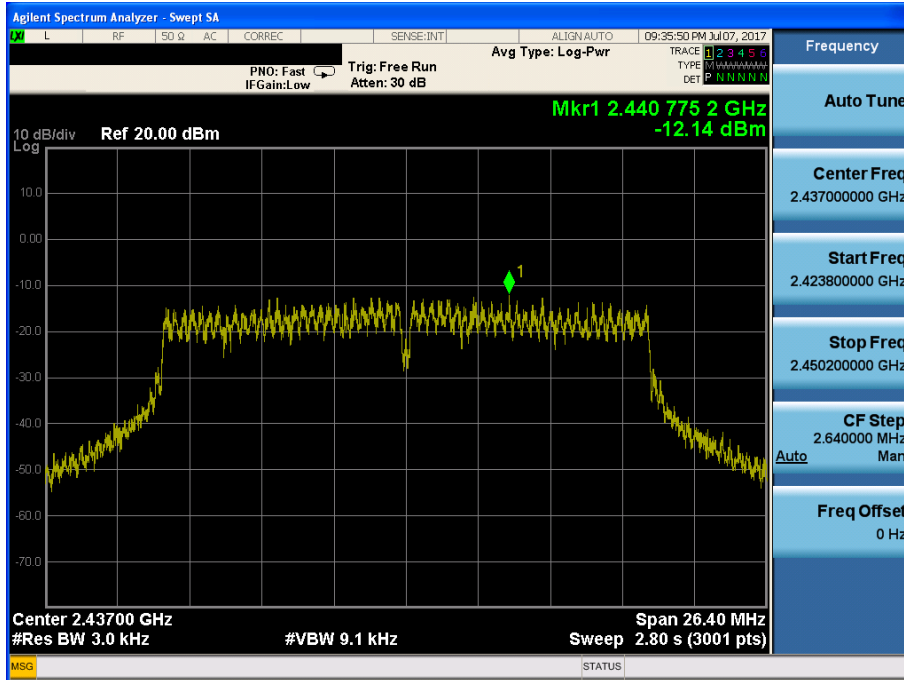**Maximum PPSD**   TM 9   &   ANT 2   &   Highest

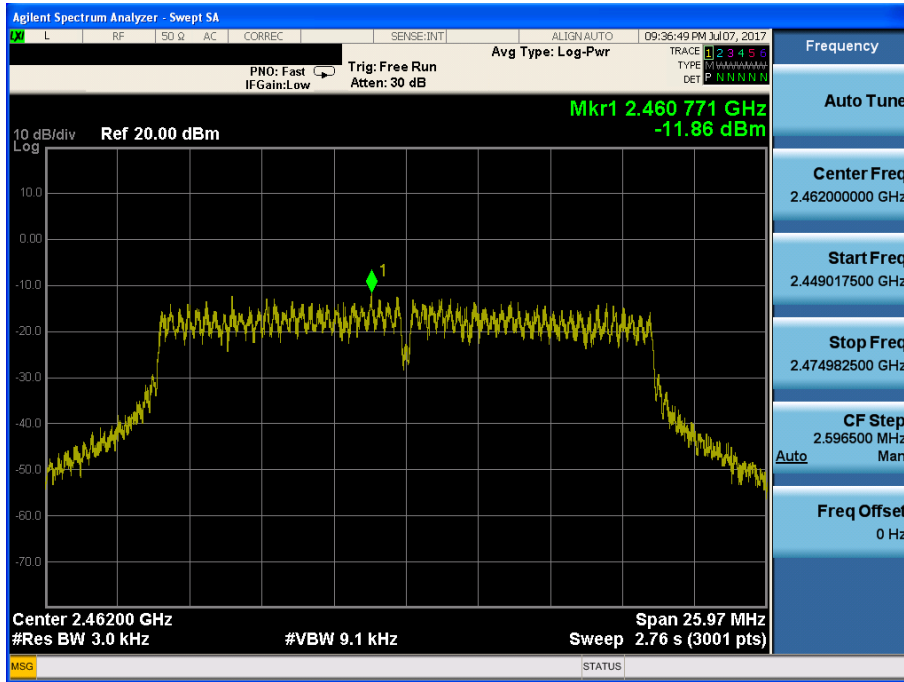**Maximum PPSD**

TM 10 & ANT 2 & Lowest

Maximum PPSD

TM 10 & ANT 2 & Middle

Maximum PPSD

TM 10 & 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 of KDB558074 D01v04
1. Set instrument center frequency to DTS channel center frequency.
2. Set the span to ≥ 1.5 times the DTS bandwidth.
3. Set the 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 PSD level.

- Measurement Procedure 2 - Unwanted Emissions of KDB558074 D01v04
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 ≥ **3 x RBW. (Actual 3 MHz, See below note)**
4. Detector = **Peak**.
5. Ensure that the number of measurement points ≥ 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
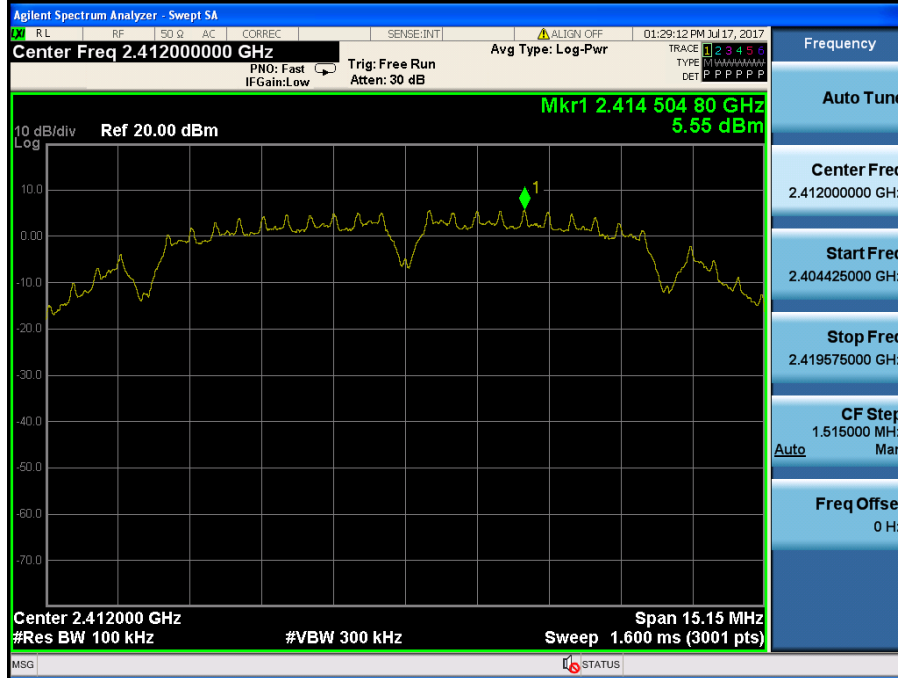
   LIMIT LINE = 20 dB below of the reference level of above measurement procedure Step 2. (RBW = 100 kHz, VBW = 300 kHz)

   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.
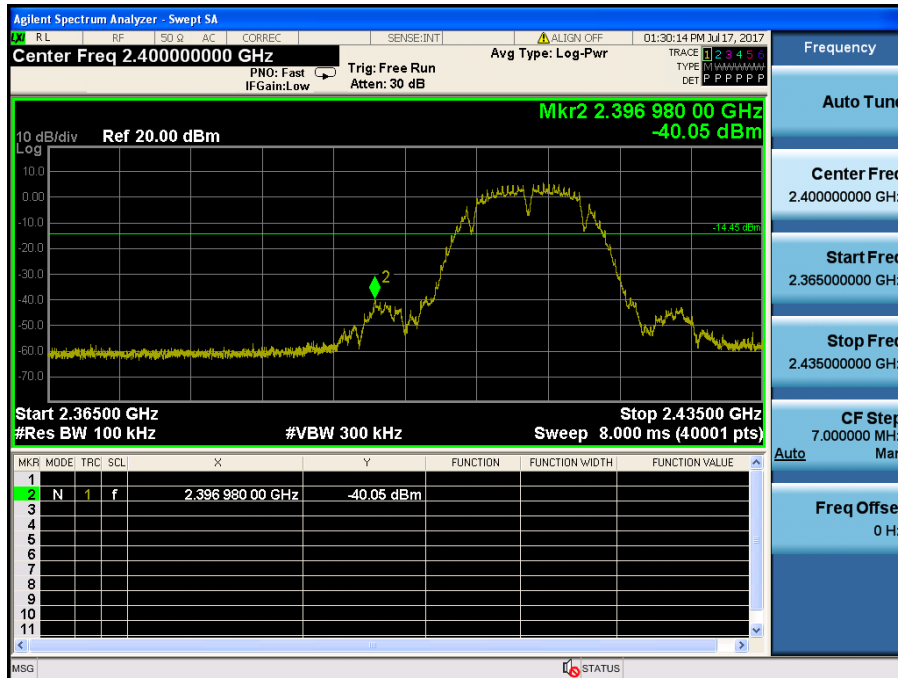
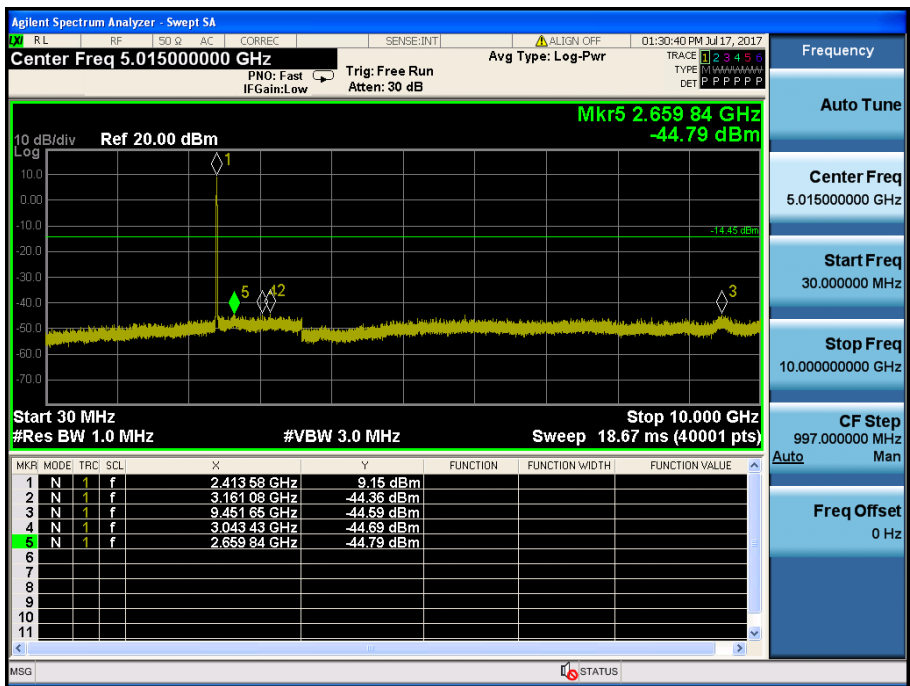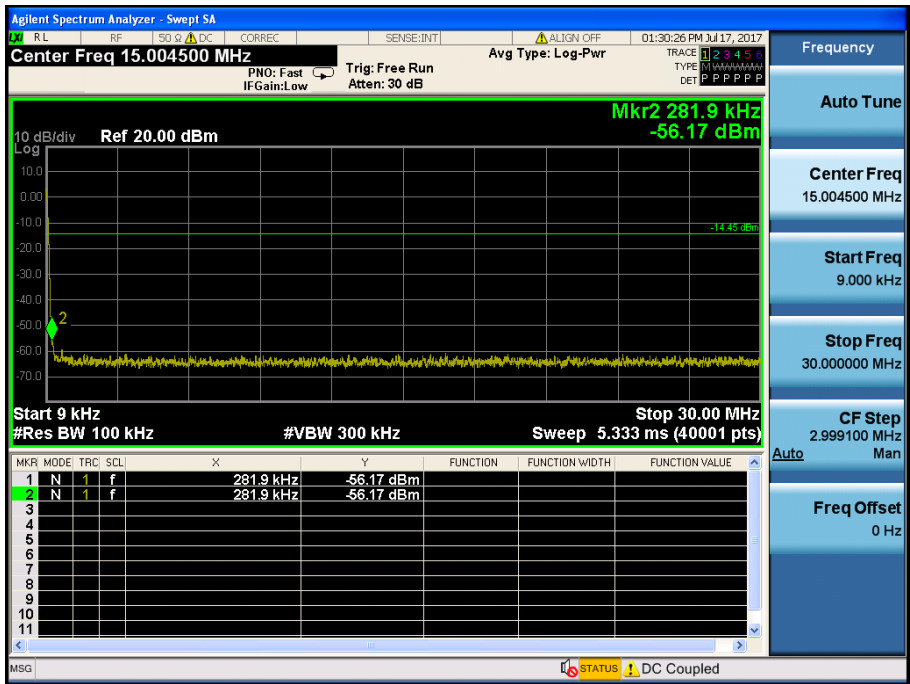◉ **RESULT PLOTS**

TM 5　&　ANT 1　&　Lowest
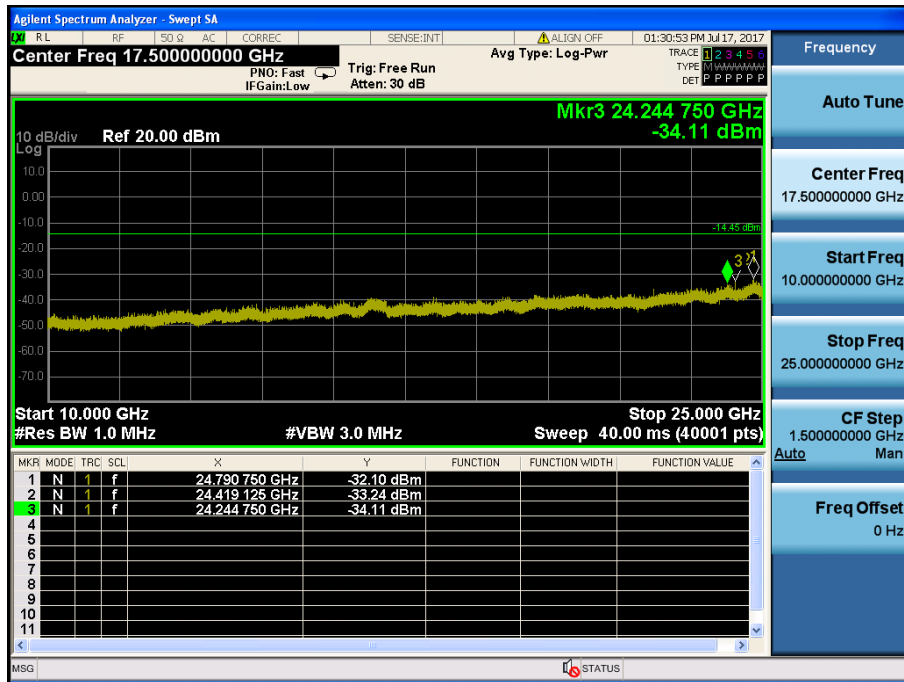
Reference

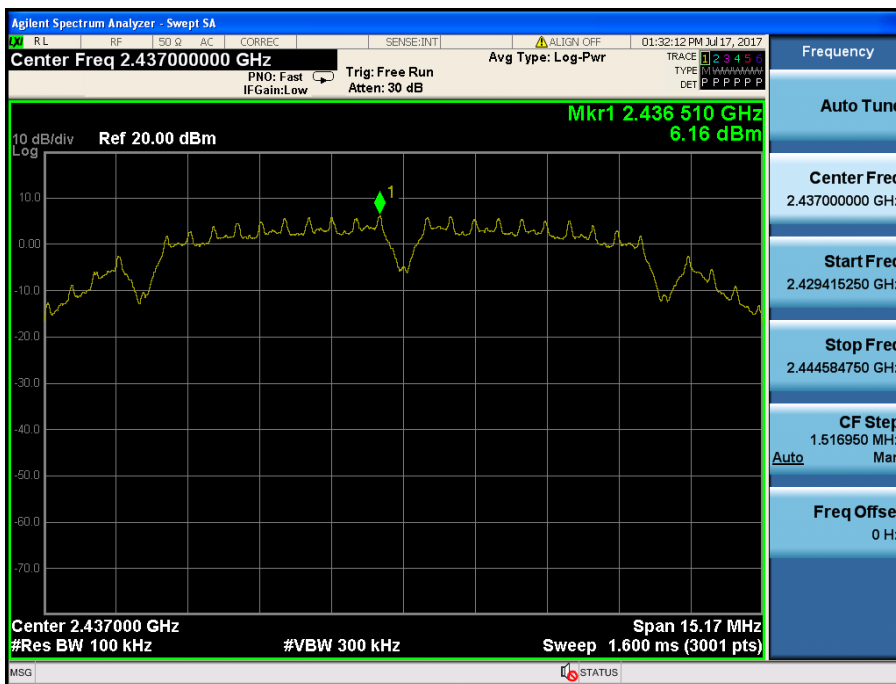## Low Band-edge

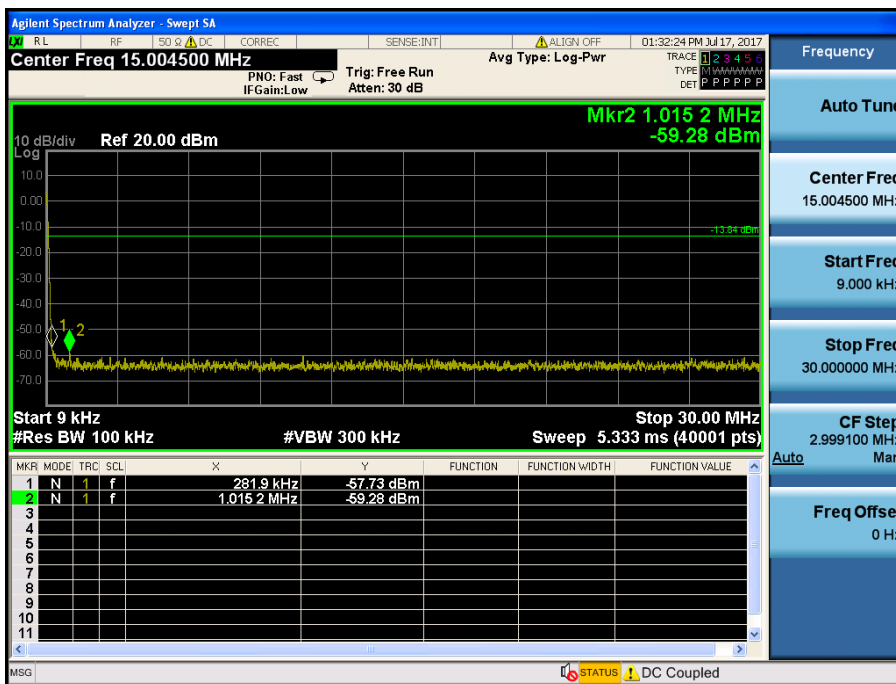## Conducted Spurious Emissions

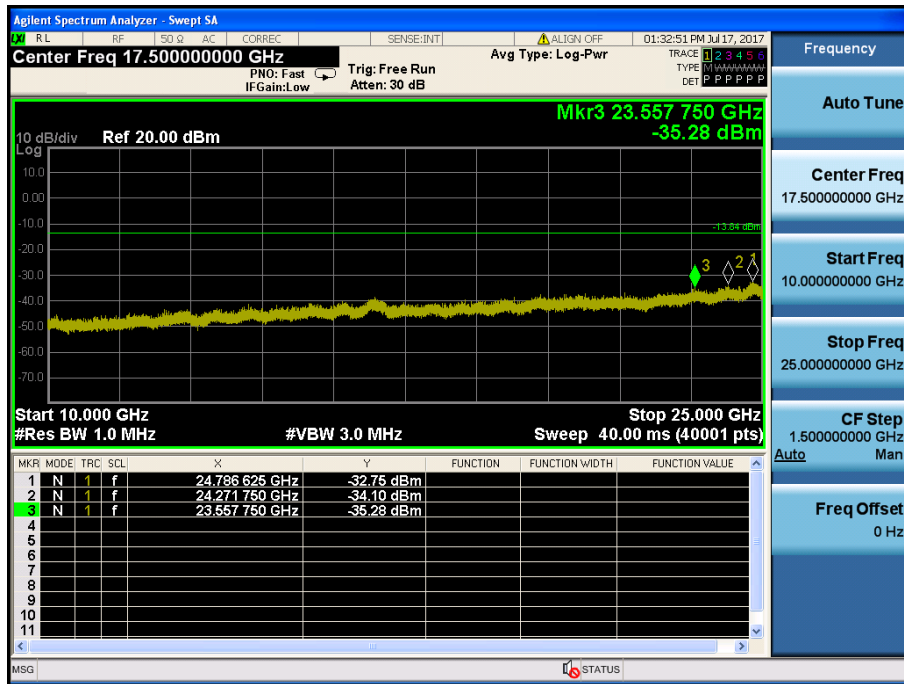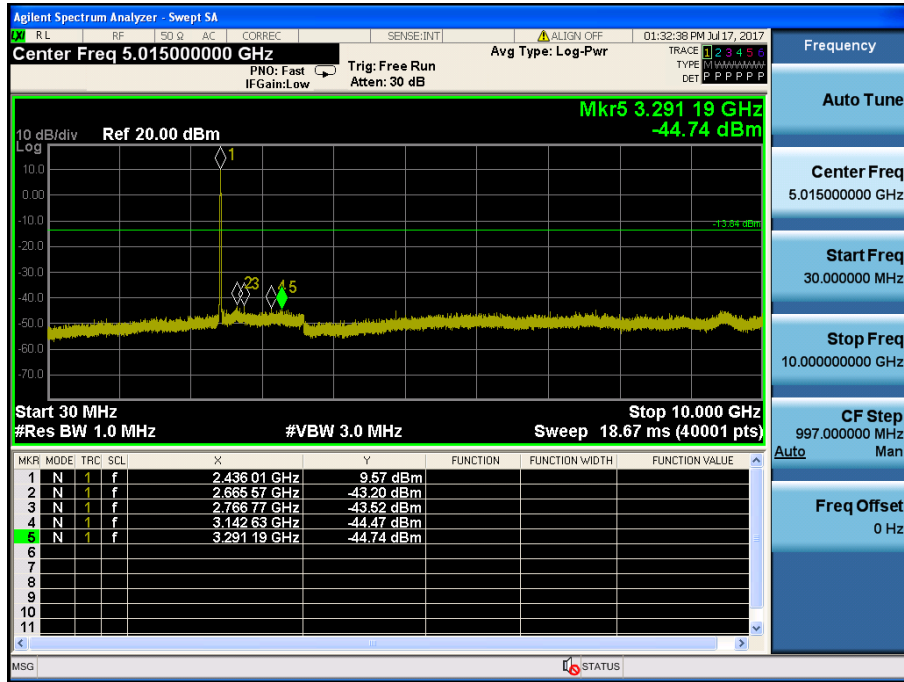## Conducted Spurious Emissions

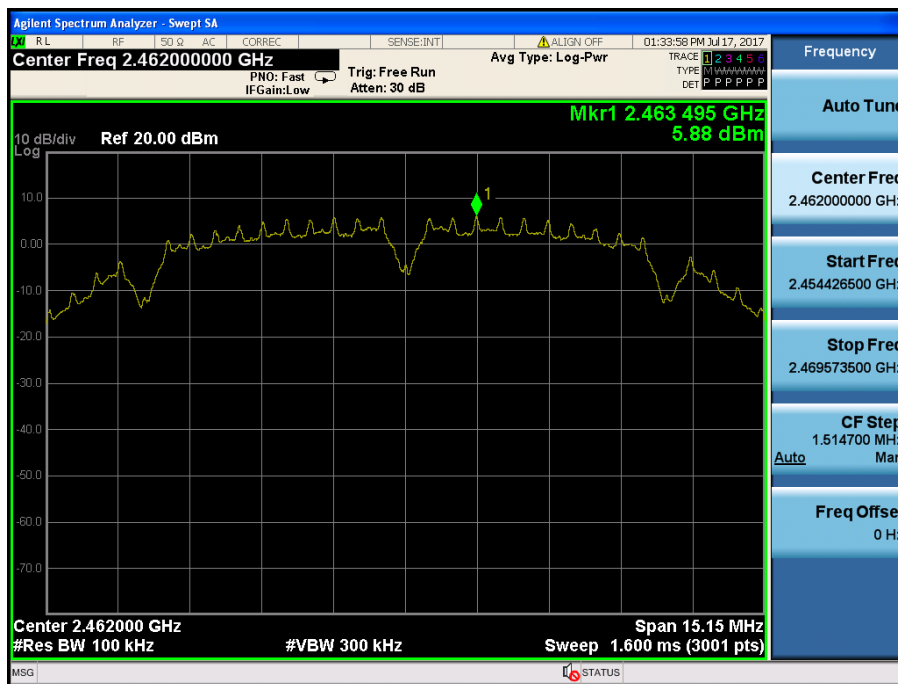## TM 5　&　ANT 1　&　Middle

Reference

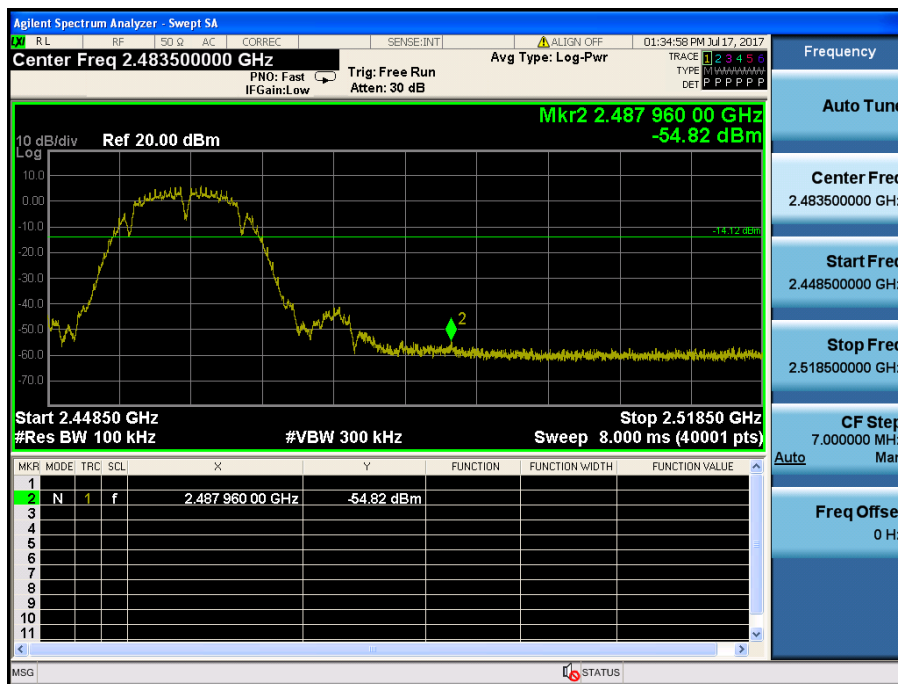### Conducted Spurious Emissions

Conducted Spurious Emissions

TM 5 ＆ ANT 1 ＆ Highest

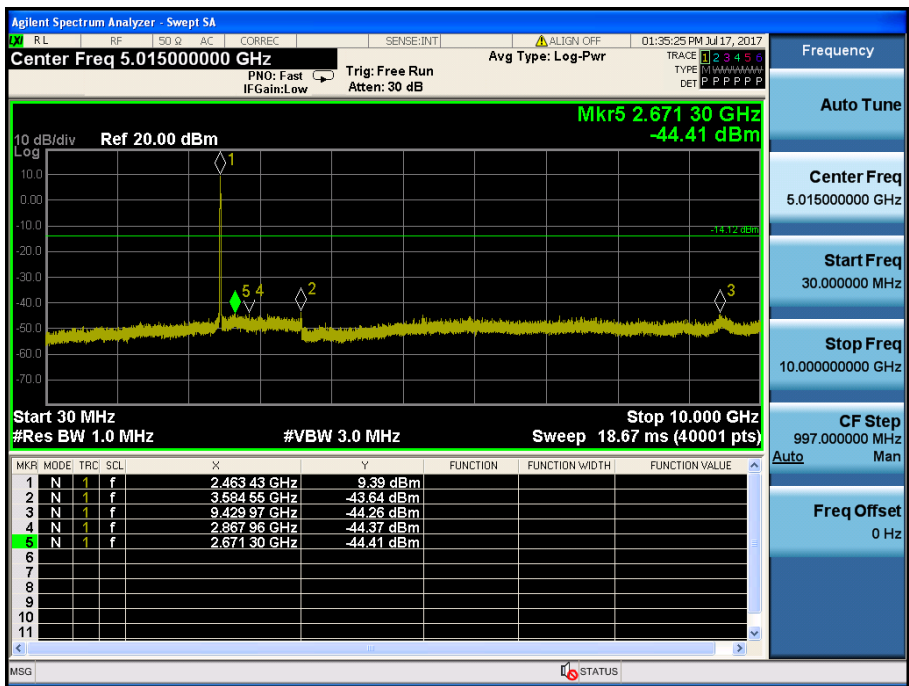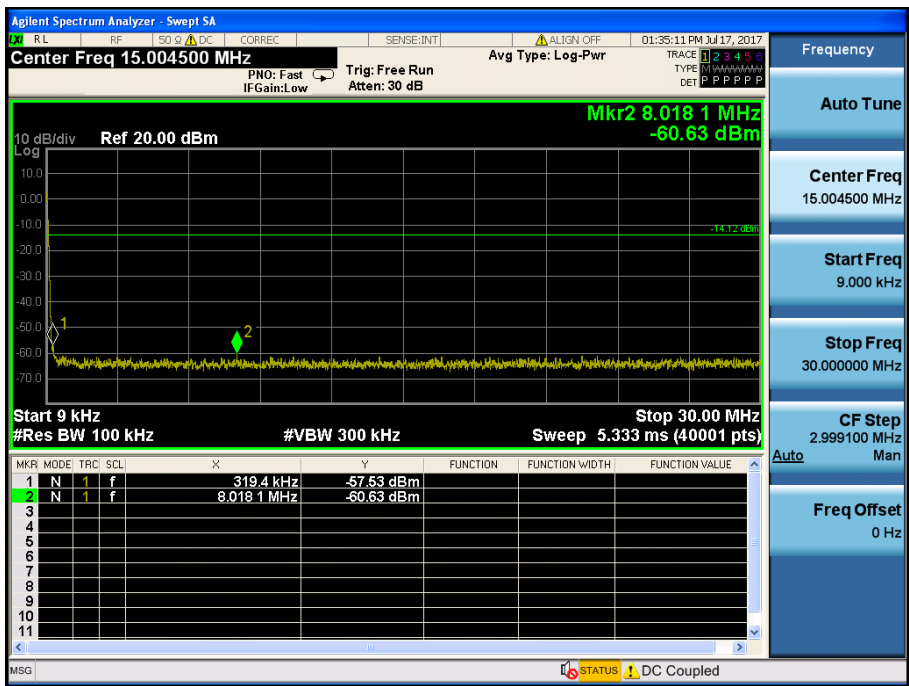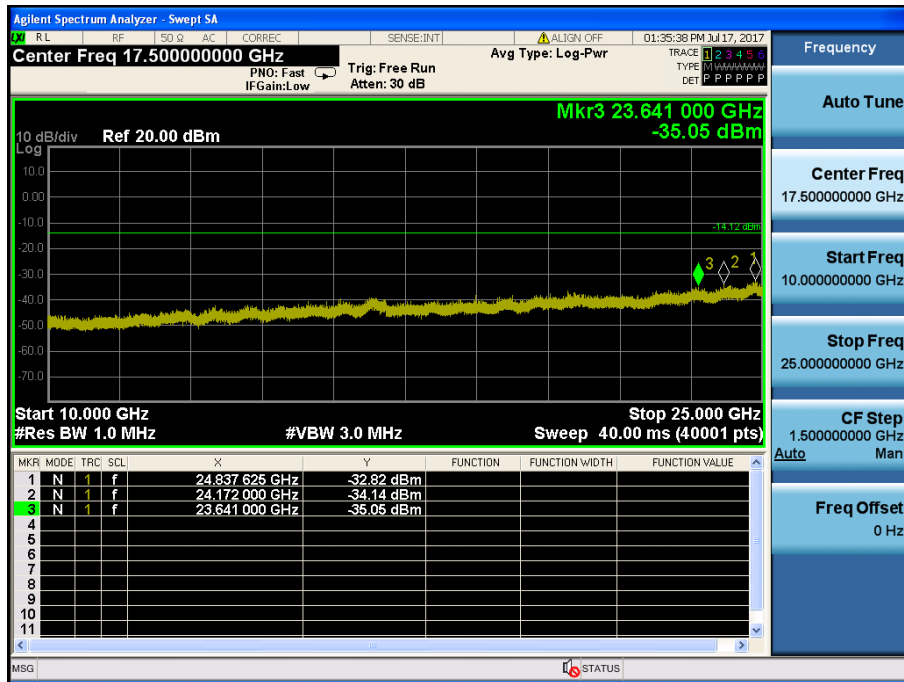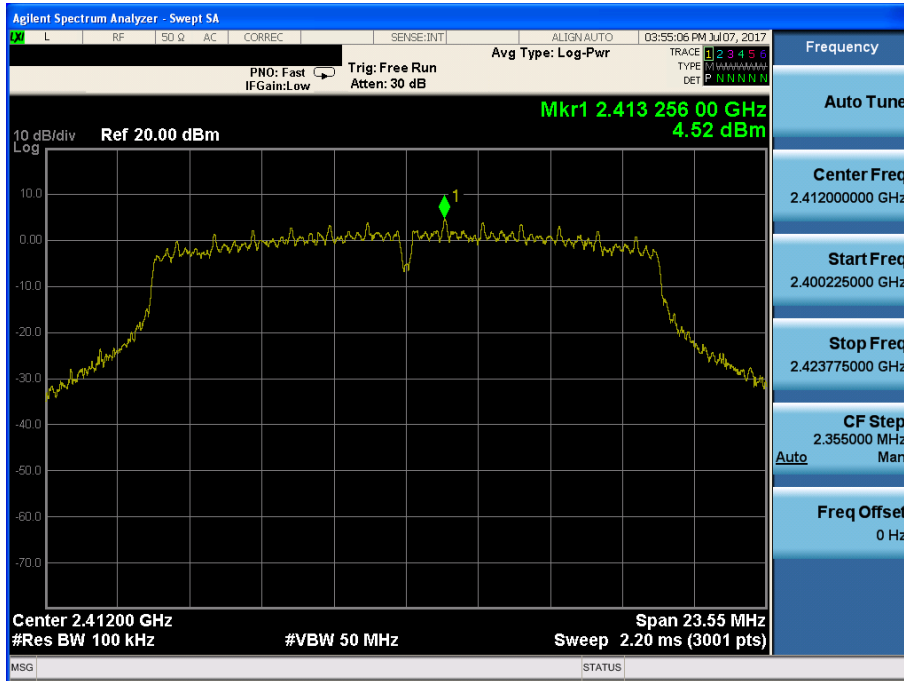### Reference

High Band-edge

Conducted Spurious Emissions
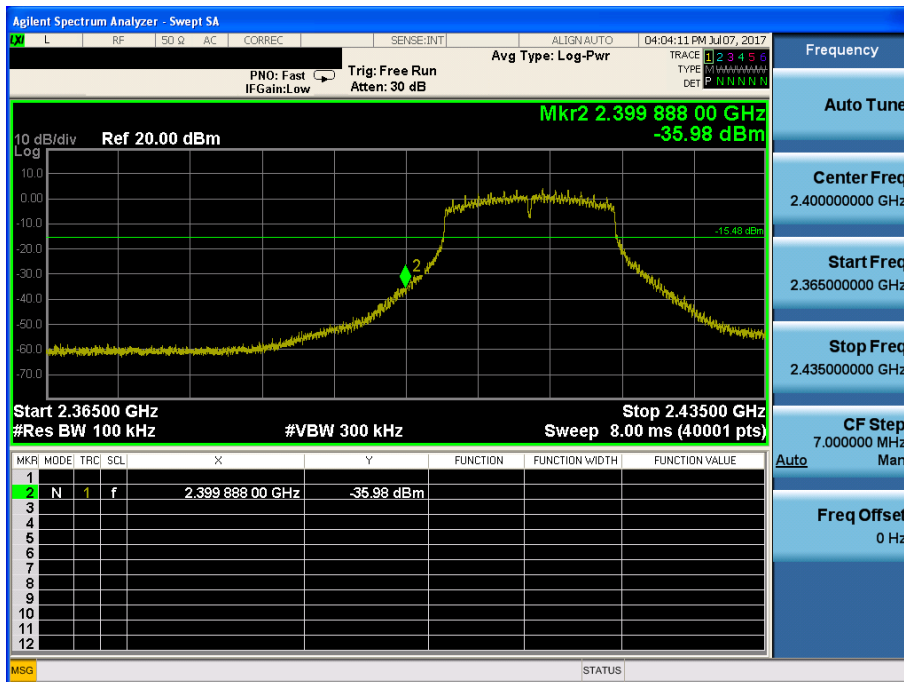
Conducted Spurious Emissions

TM 6 & ANT 1 & Lowest

Reference

Low Band-edge

Conducted Spurious Emissions

Conducted Spurious Emissions

TM 6 & ANT 1 & Middle

Reference

Conducted Spurious Emissions

Conducted Spurious Emissions

TM 6 & ANT 1 & Highest

Reference

High Band-edge

Conducted Spurious Emissions

Conducted Spurious Emissions
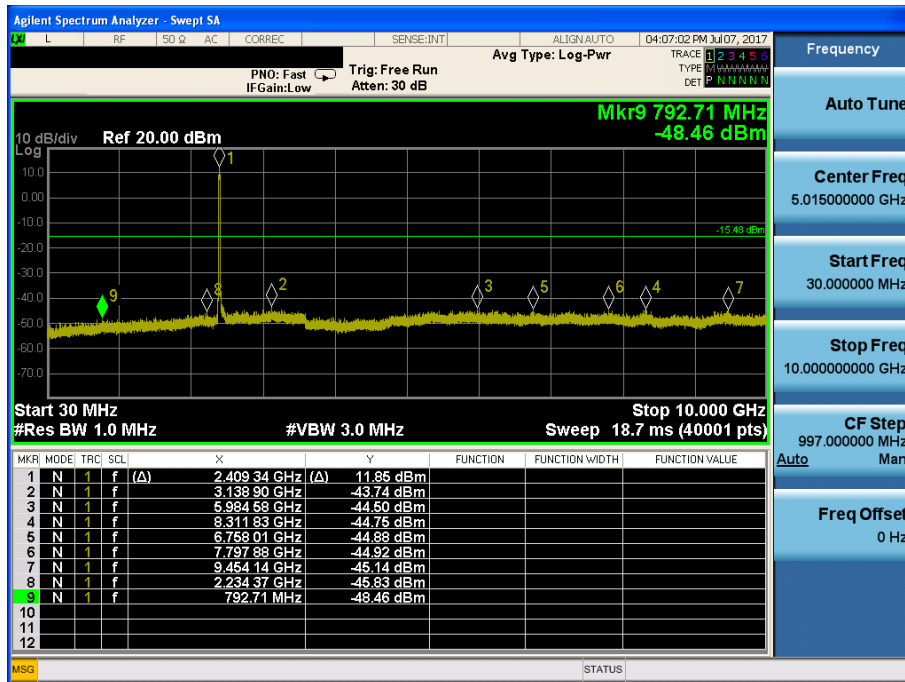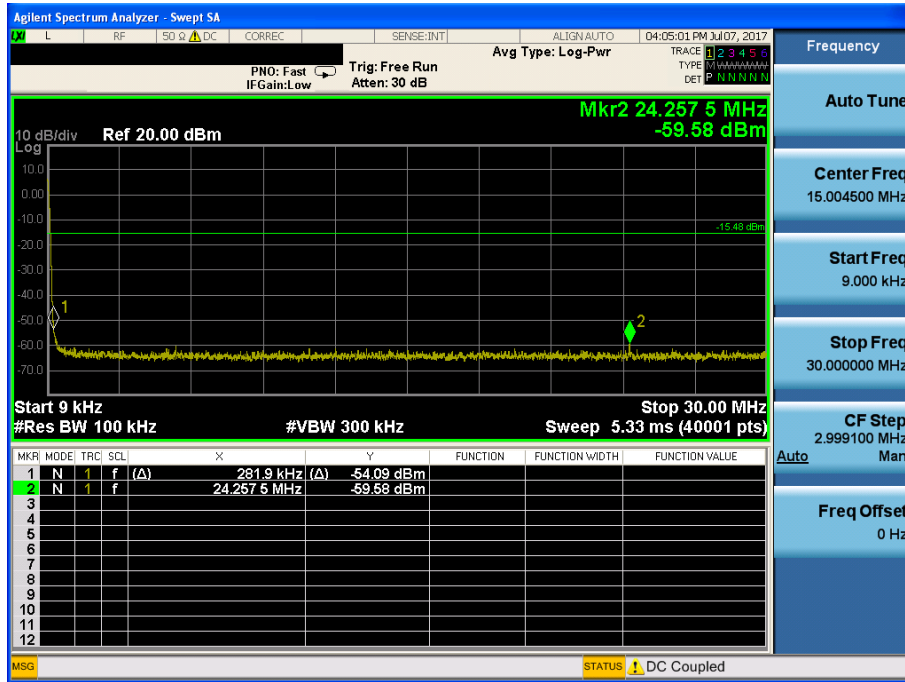
TM 7 & ANT 1 & Lowest

Reference
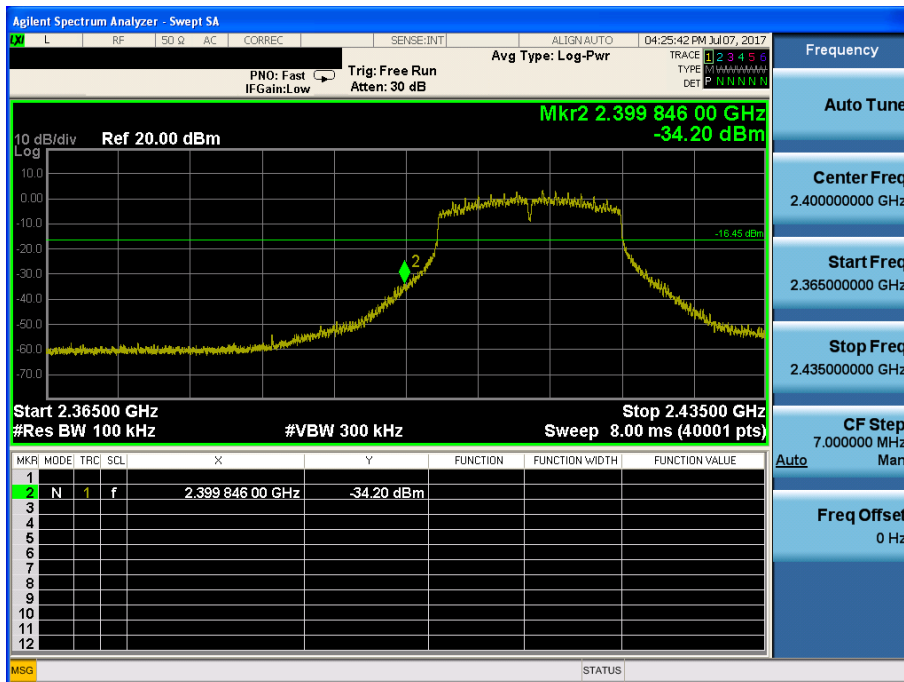
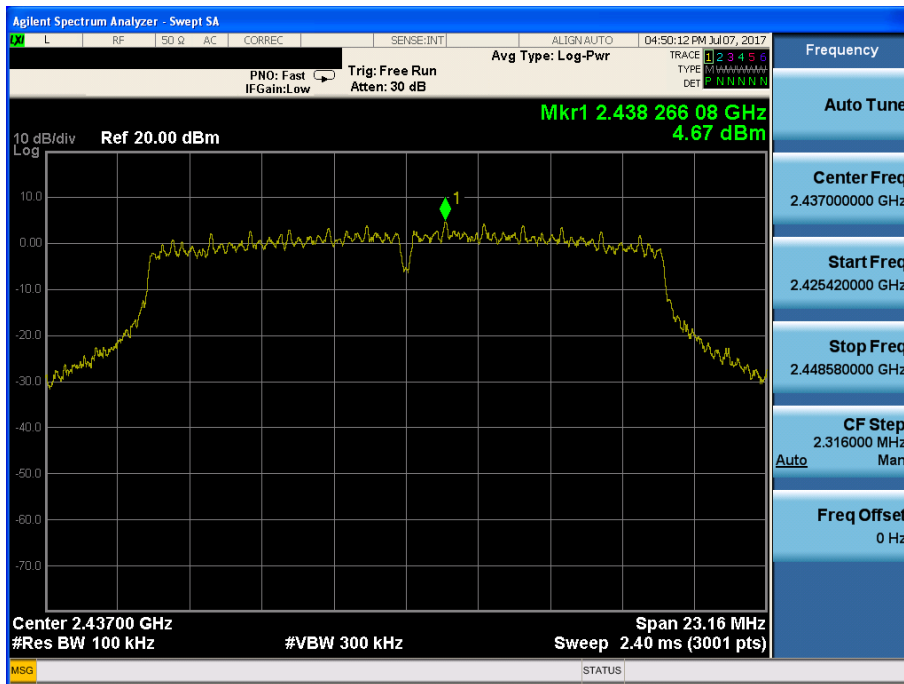### Low Band-edge

Conducted Spurious Emissions
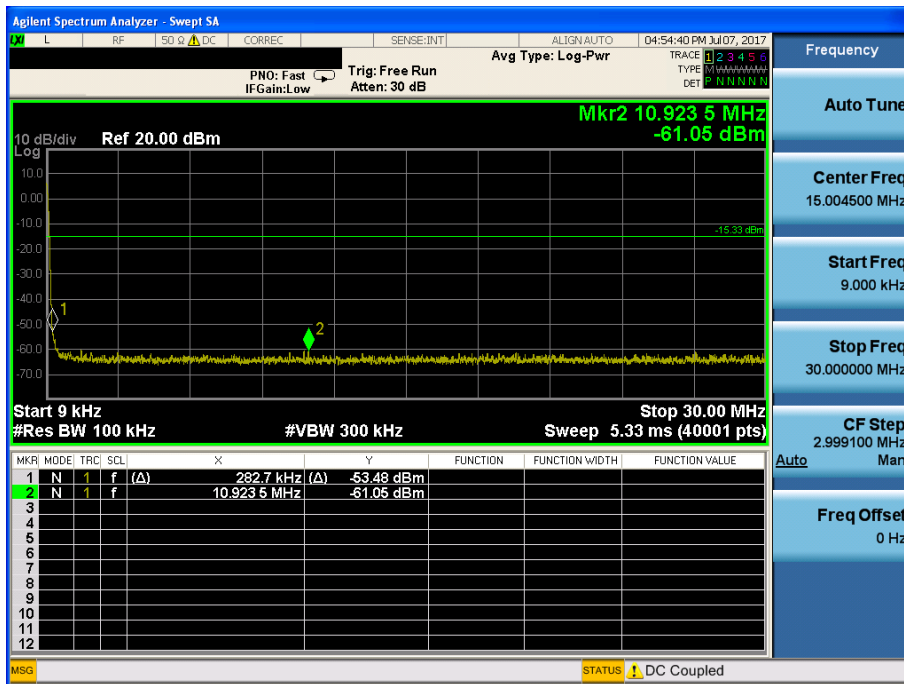
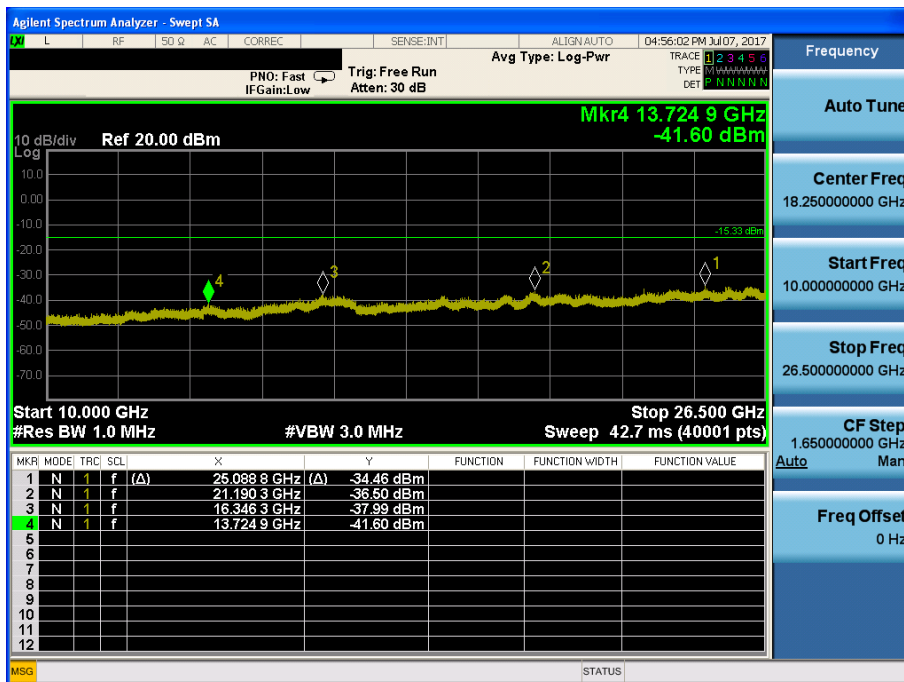## Conducted Spurious Emissions
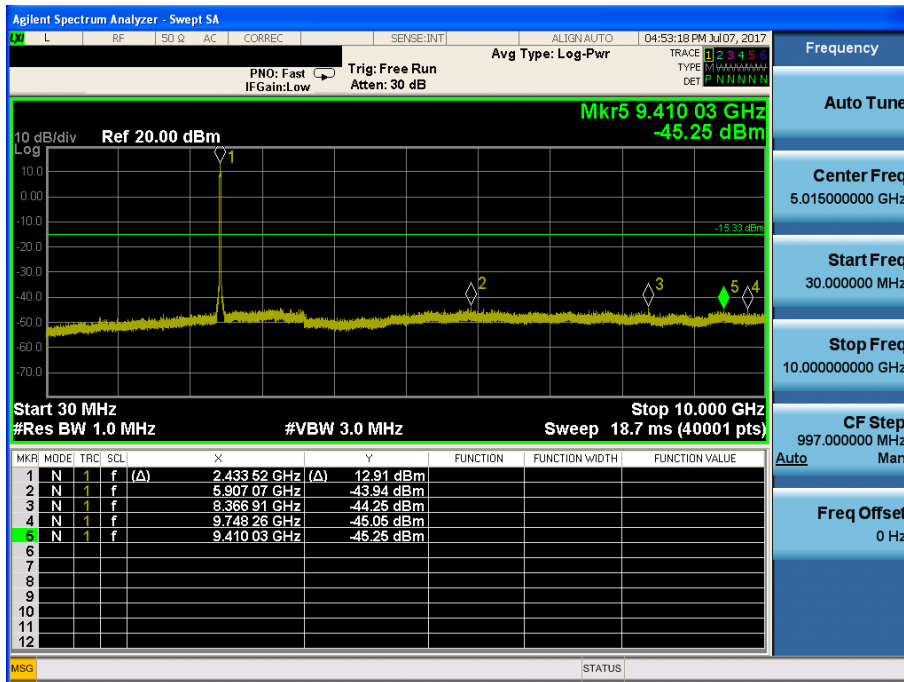
TM 7 & ANT 1 & Middle

Reference

Conducted Spurious Emissions

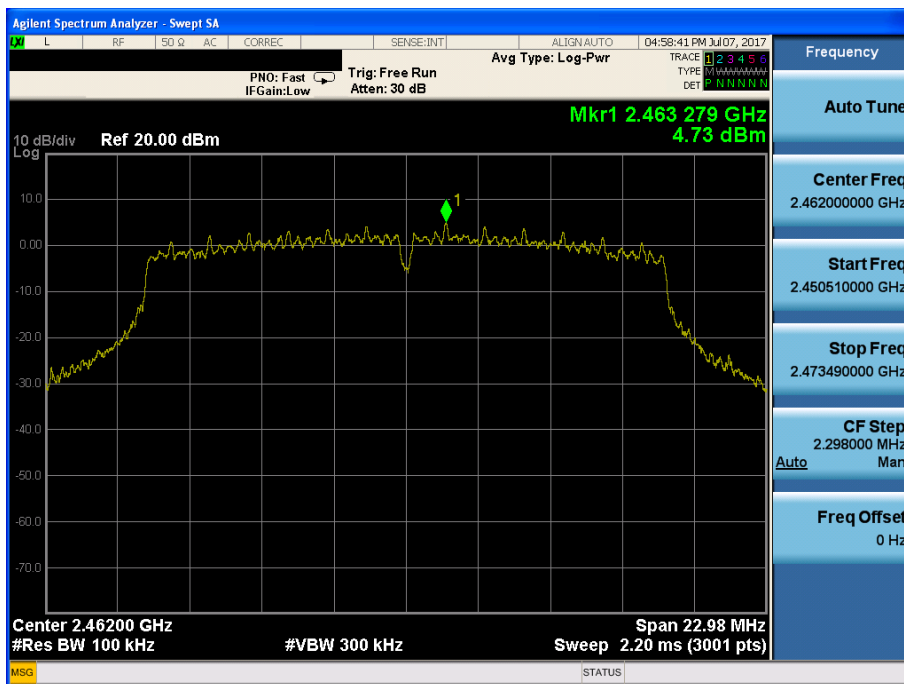# Conducted Spurious Emissions

TM 7　&　ANT 1　&　Highest

Reference

High Band-edge

Conducted Spurious Emissions

Conducted Spurious Emissions

TM 8 & ANT 1 & Lowest

Reference
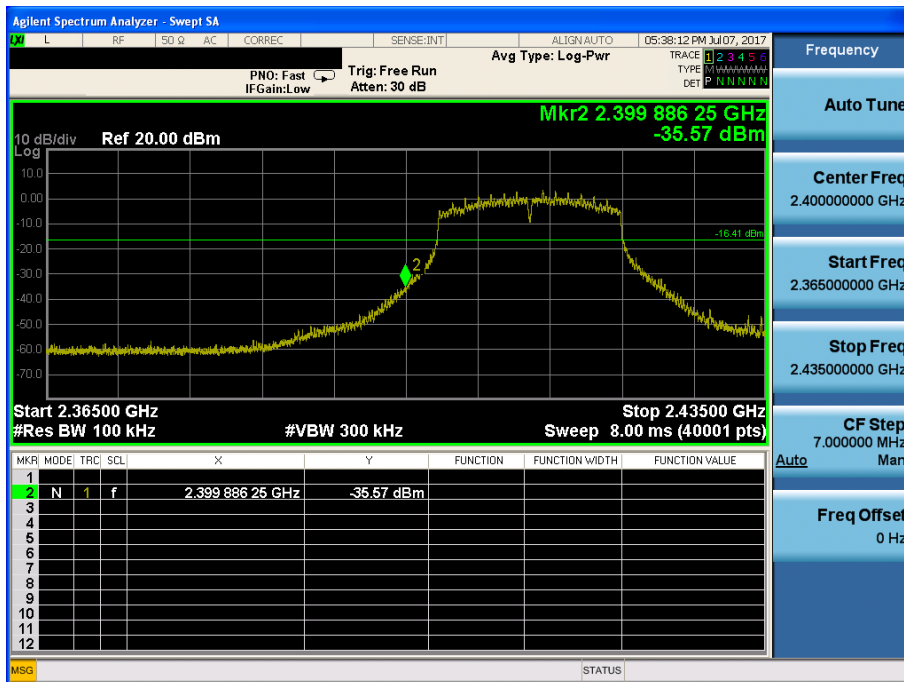
Low Band-edge

Conducted Spurious Emissions

Conducted Spurious Emissions

TM 8 & ANT 1 & Middle

Reference

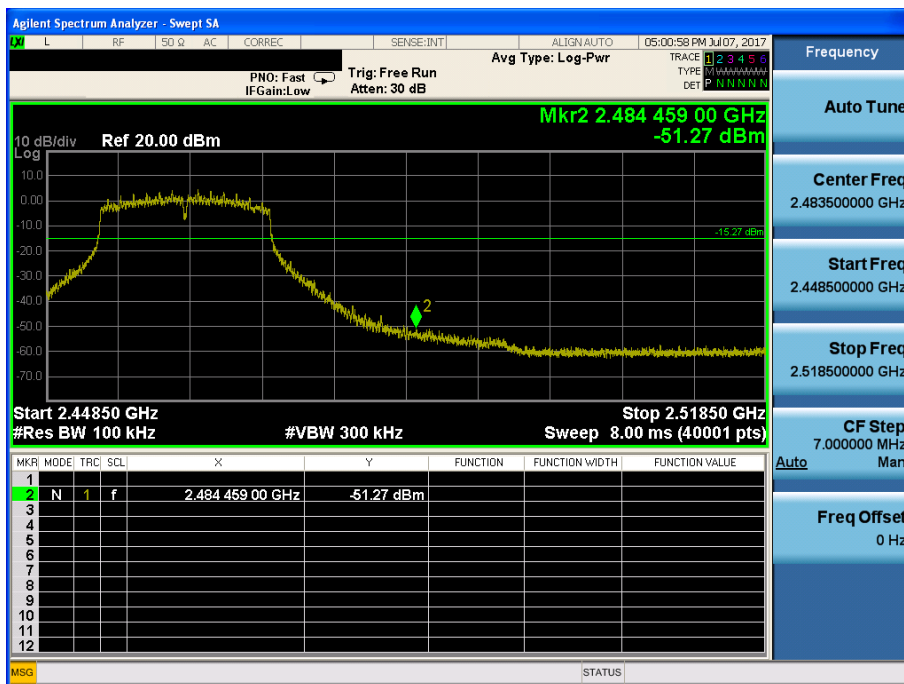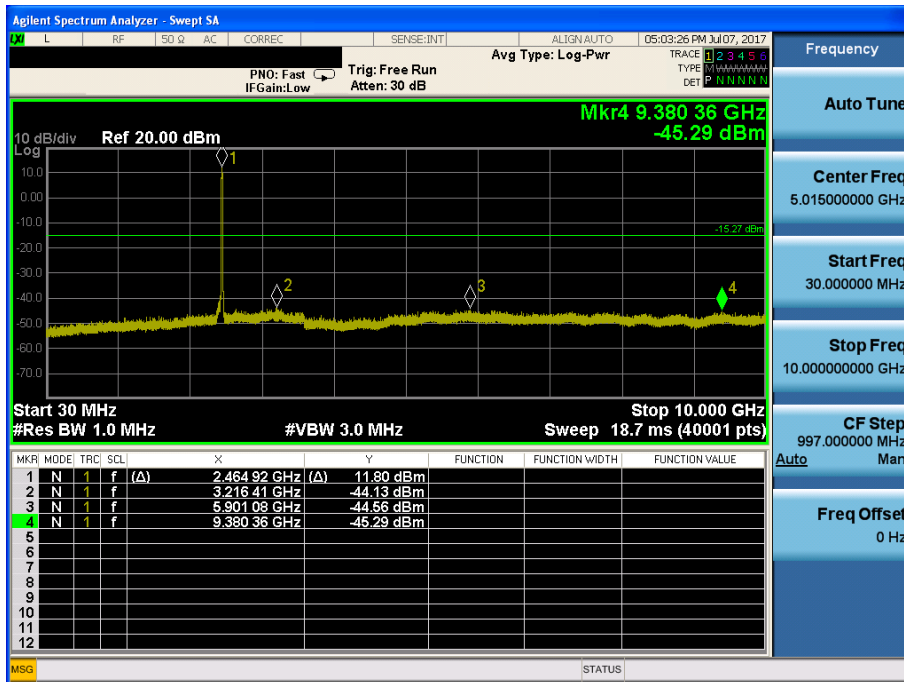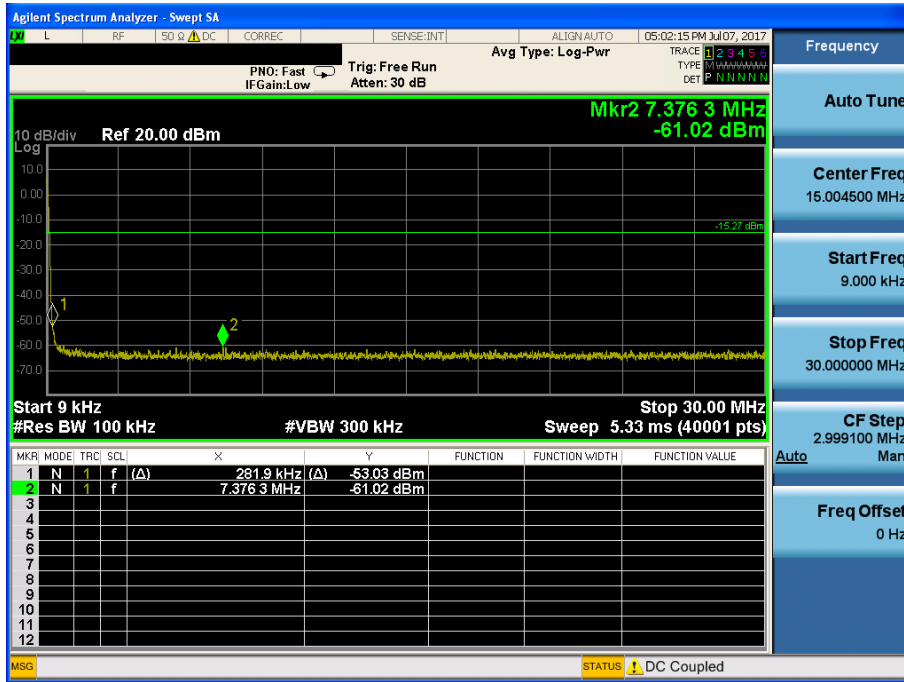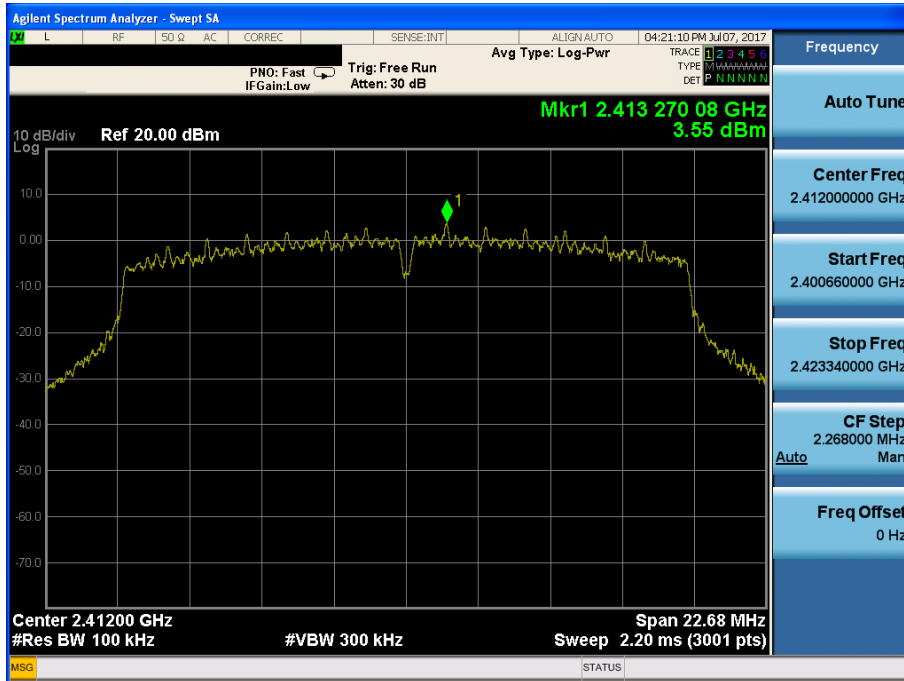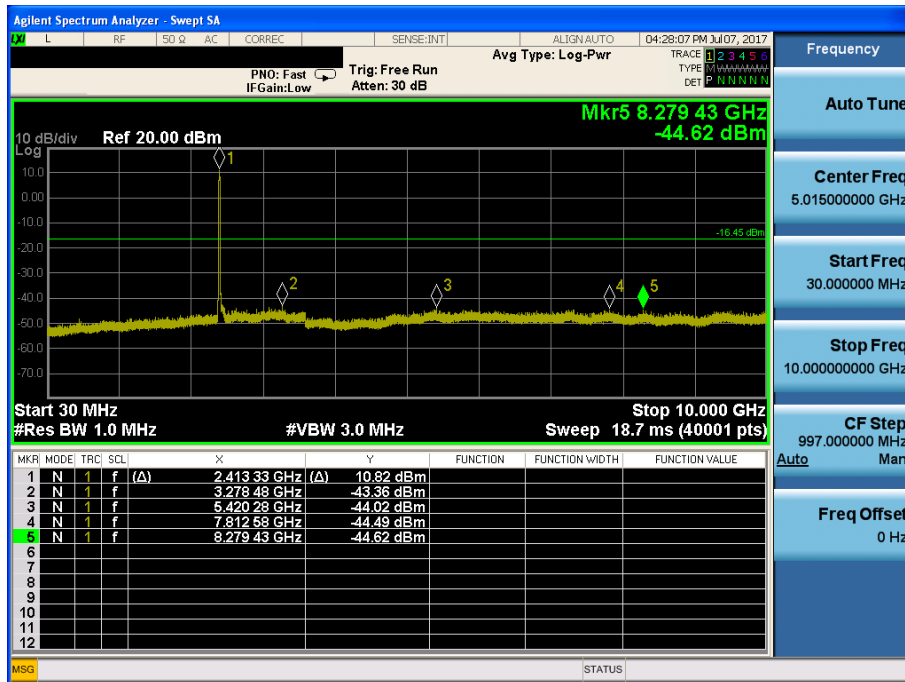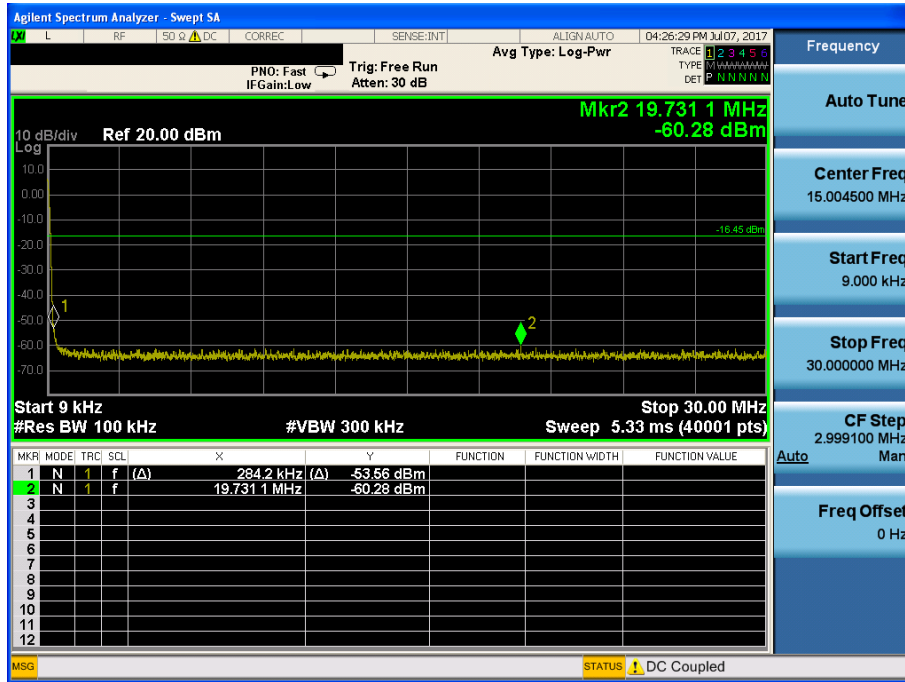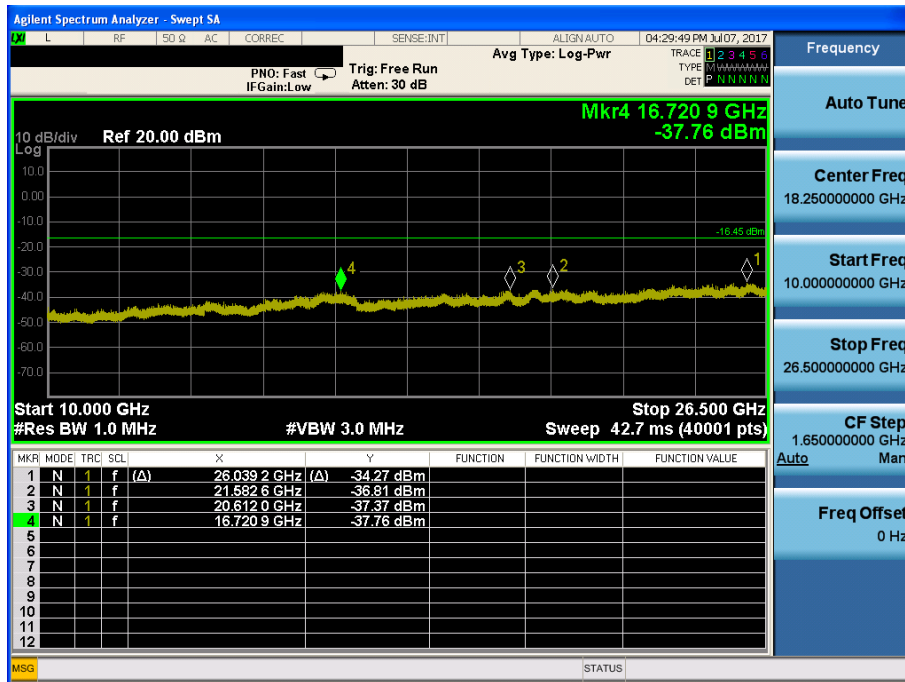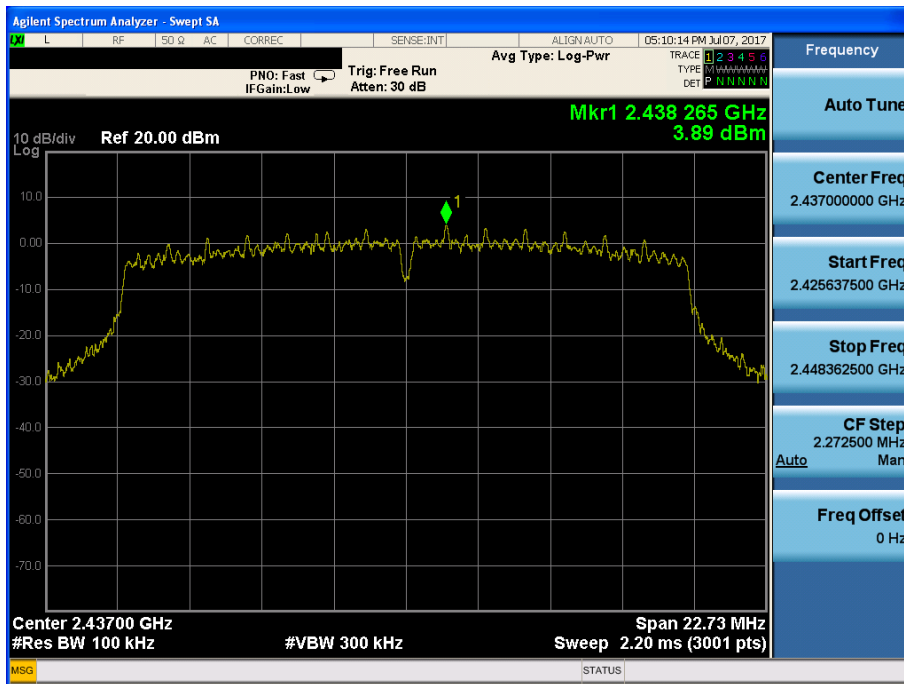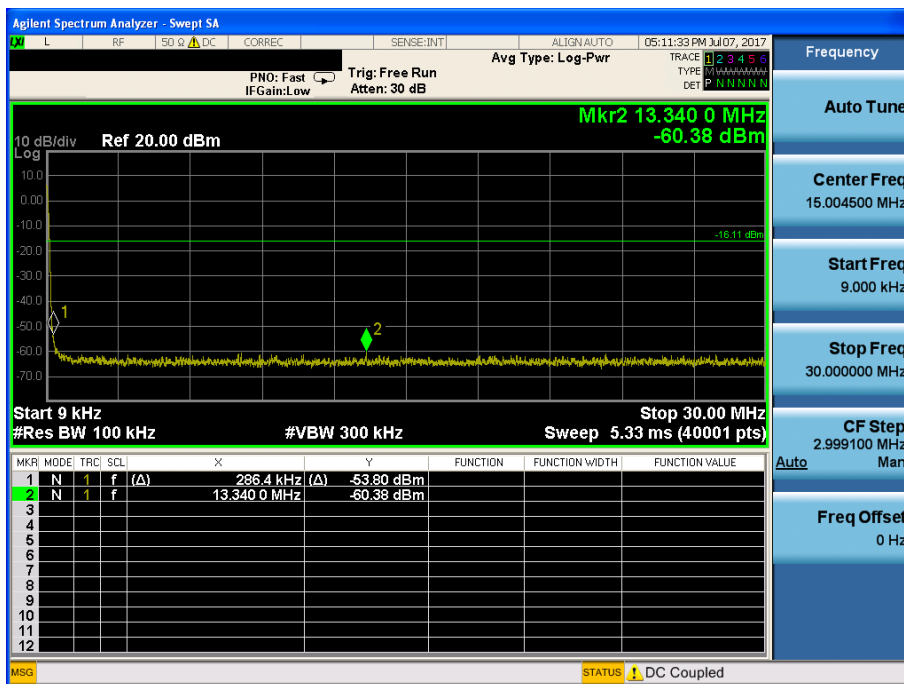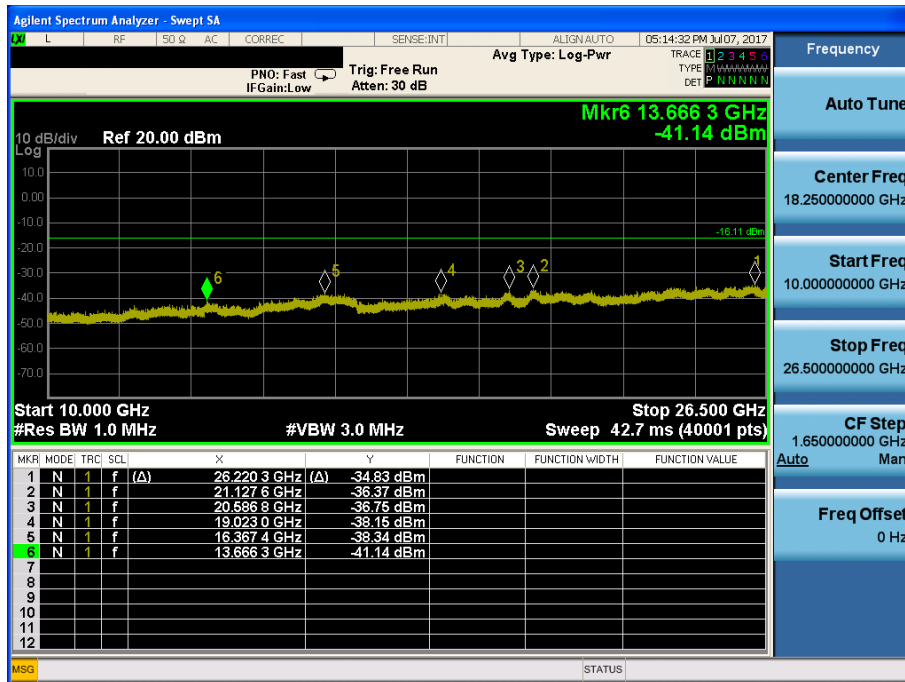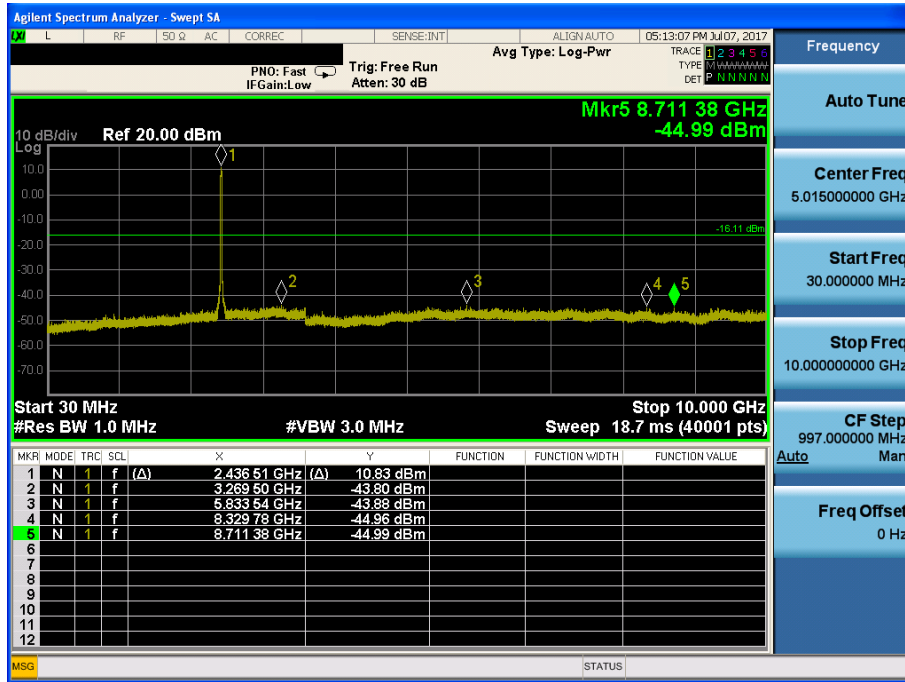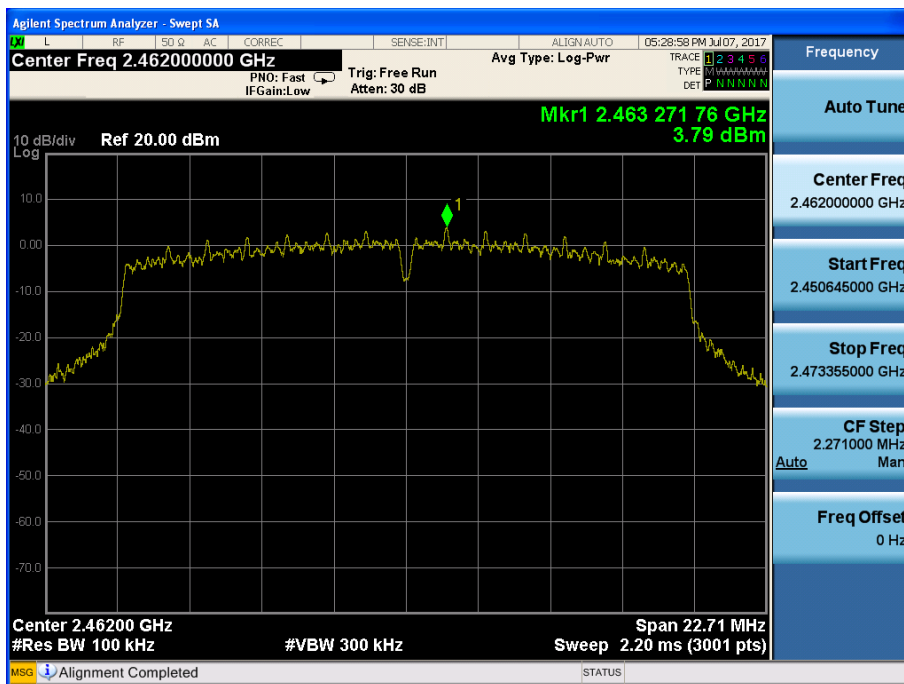### Conducted Spurious Emissions

Conducted Spurious Emissions

Agilent Spectrum Analyzer - Swept SA

L	RF	50 Ω	AC	CORREC		SENSE:INT		ALIGN AUTO	05:46:37 PM Jul 07, 2017

Avg Type: Log-Pwr
PNO: Fast   Trig: Free Run
IFGain:Low   Atten: 30 dB
TRACE 1 2 3 4 5 6
TYPE W W W W W W
DET P N N N N N

Mkr7 3.794 42 GHz
-46.75 dBm

10 dB/div   Ref 20.00 dBm

Start 30 MHz   Stop 10.000 GHz
#Res BW 1.0 MHz   #VBW 3.0 MHz   Sweep 18.7 ms (40001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	(Δ) 2.439 00 GHz	(Δ) 10.73 dBm			
2	N	1	f	3.297 92 GHz	-44.01 dBm			
3	N	1	f	7.215 63 GHz	-44.68 dBm			
4	N	1	f	5.626 16 GHz	-44.71 dBm			
5	N	1	f	7.841 25 GHz	-45.03 dBm			
6	N	1	f	8.789 89 GHz	-45.52 dBm			
7	N	1	f	3.794 42 GHz	-46.75 dBm			
8								
9								
10								
11								
12								

Frequency — Auto Tune — Center Freq 5.015000000 GHz — Start Freq 30.000000 MHz — Stop Freq 10.000000000 GHz — CF Step 997.000000 MHz Auto / Man — Freq Offset 0 Hz

MSG   STATUS

Agilent Spectrum Analyzer - Swept SA

L	RF	50 Ω	AC	CORREC		SENSE:INT		ALIGN AUTO	05:48:02 PM Jul 07, 2017

Avg Type: Log-Pwr
PNO: Fast   Trig: Free Run
IFGain:Low   Atten: 30 dB
TRACE 1 2 3 4 5 6
TYPE W W W W W W
DET P N N N N N

Mkr5 13.922 1 GHz
-40.79 dBm

10 dB/div   Ref 20.00 dBm

Start 10.000 GHz   Stop 26.500 GHz
#Res BW 1.0 MHz   #VBW 3.0 MHz   Sweep 42.7 ms (40001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	(Δ) 26.017 4 GHz	(Δ) -34.16 dBm			
2	N	1	f	21.110 3 GHz	-36.70 dBm			
3	N	1	f	20.615 3 GHz	-37.22 dBm			
4	N	1	f	16.436 7 GHz	-37.56 dBm			
5	N	1	f	13.922 1 GHz	-40.79 dBm			
6								
7								
8								
9								
10								
11								
12								

Frequency — Auto Tune — Center Freq 18.250000000 GHz — Start Freq 10.000000000 GHz — Stop Freq 26.500000000 GHz — CF Step 1.650000000 GHz Auto / Man — Freq Offset 0 Hz
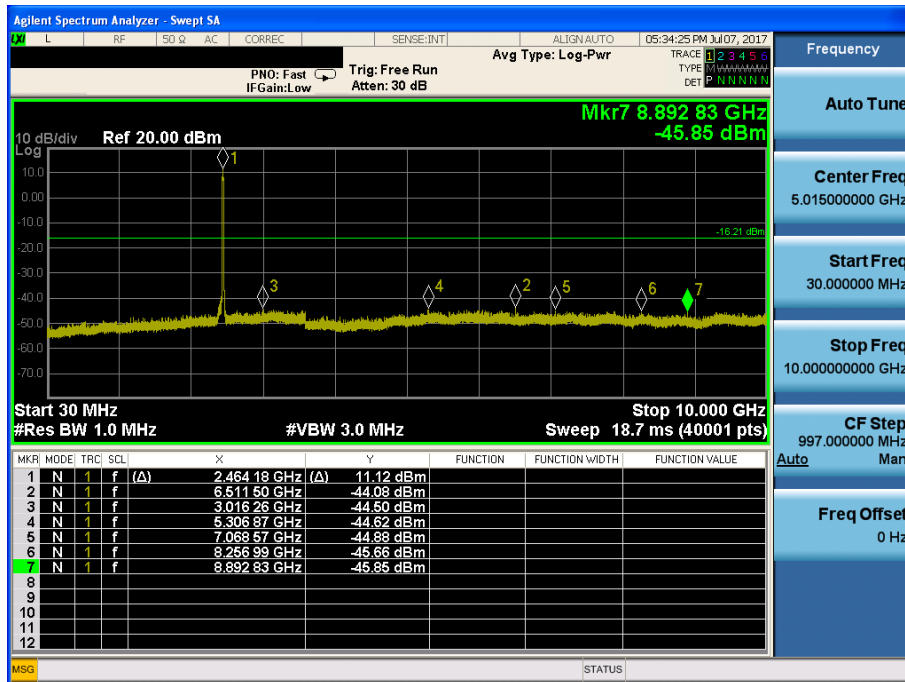
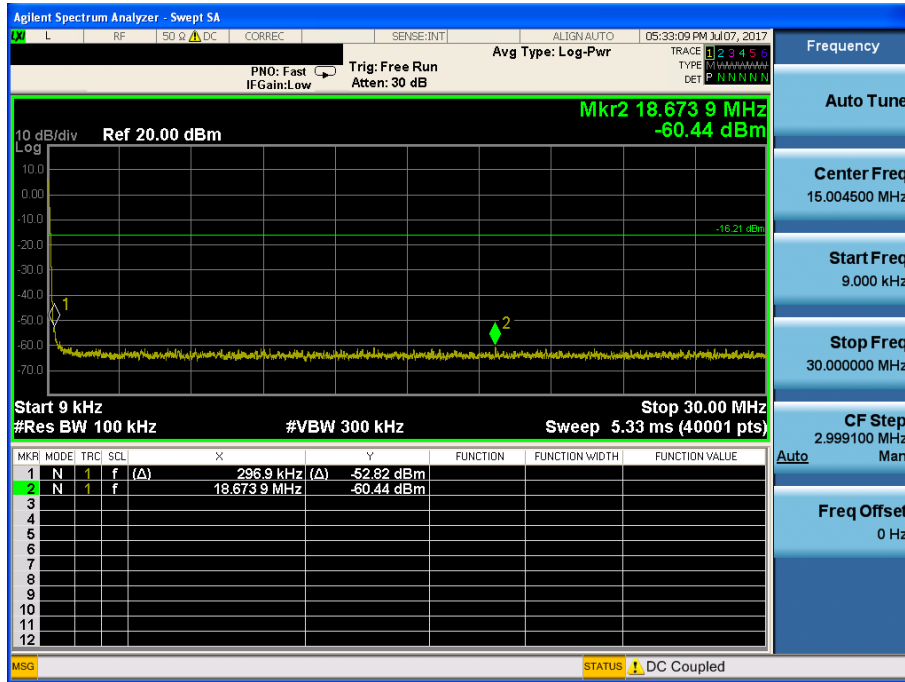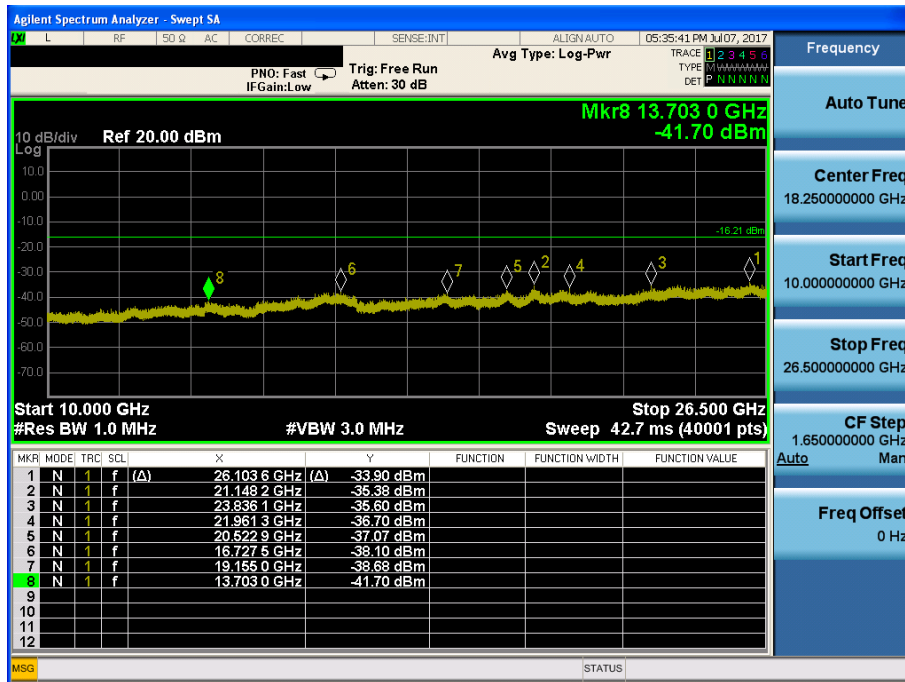MSG   STATUS

TM 8 & ANT 1 & Highest
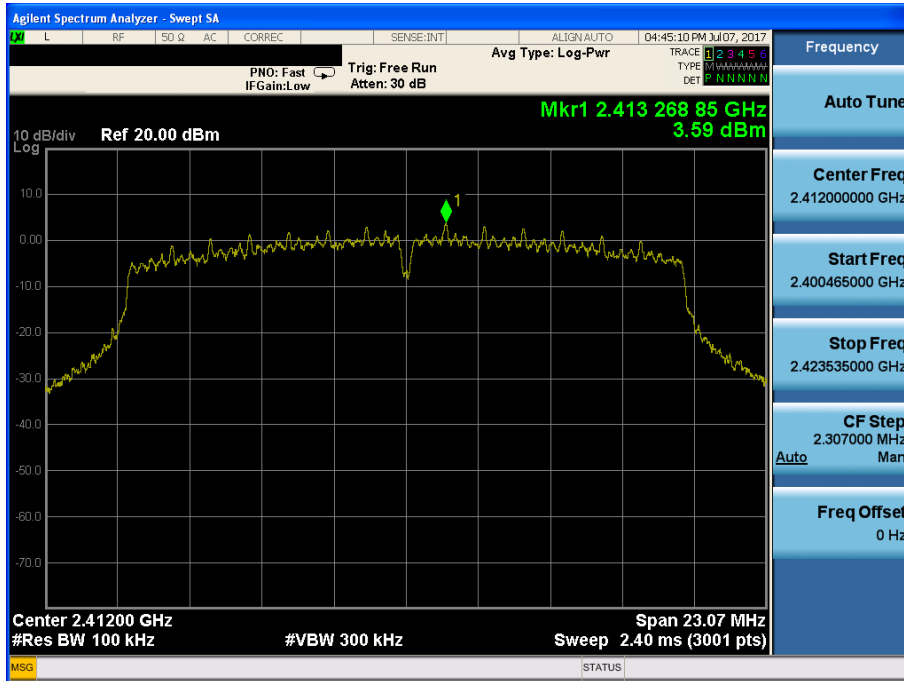
Reference

High Band-edge

Conducted Spurious Emissions
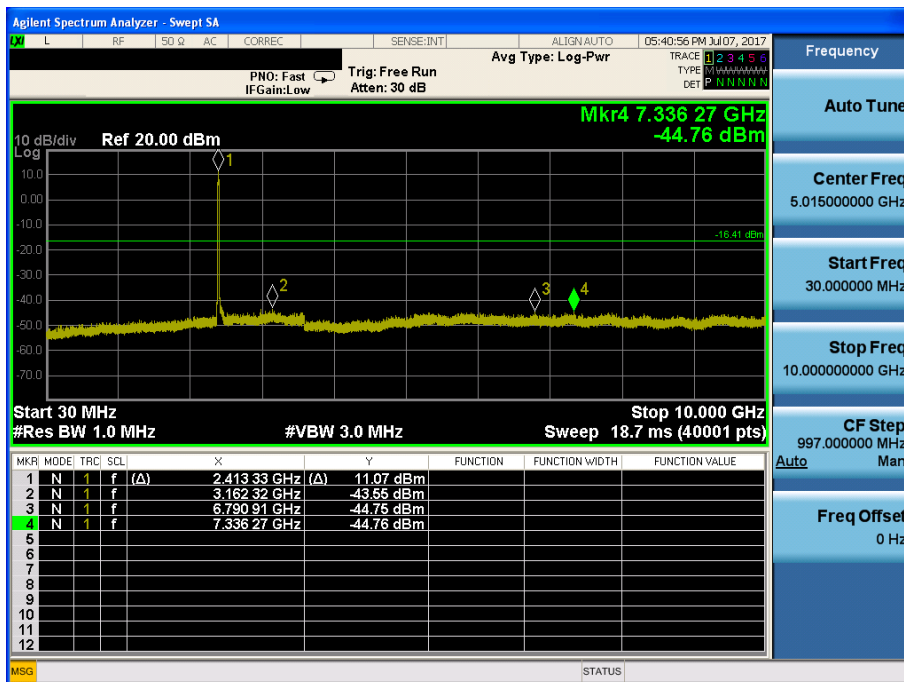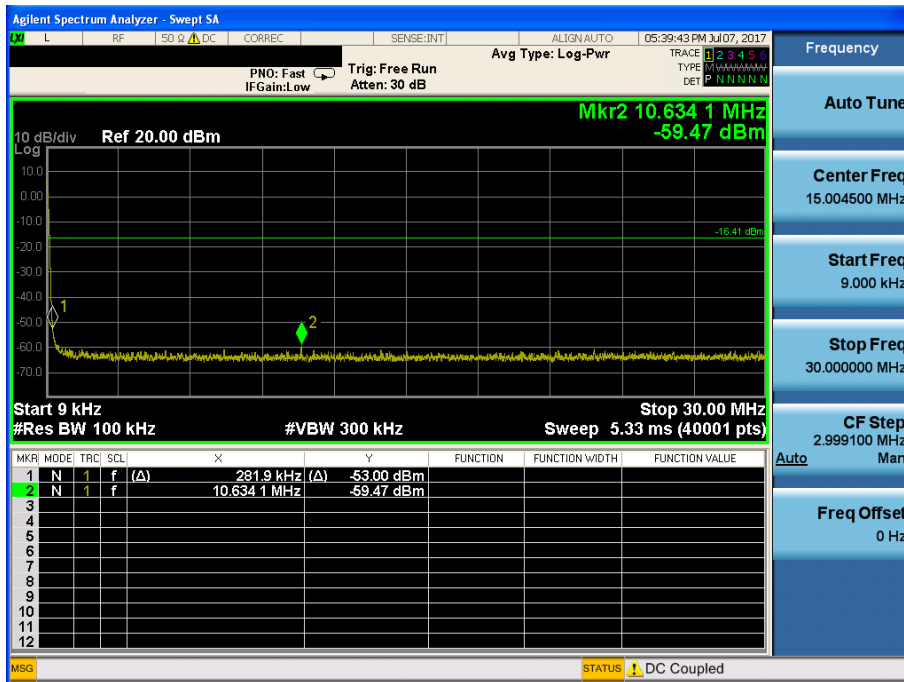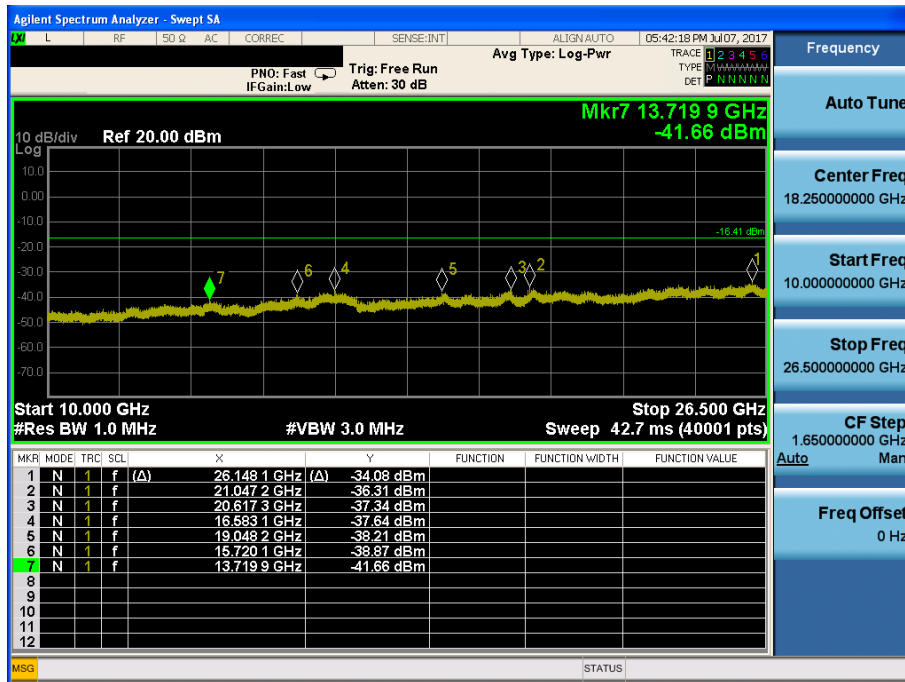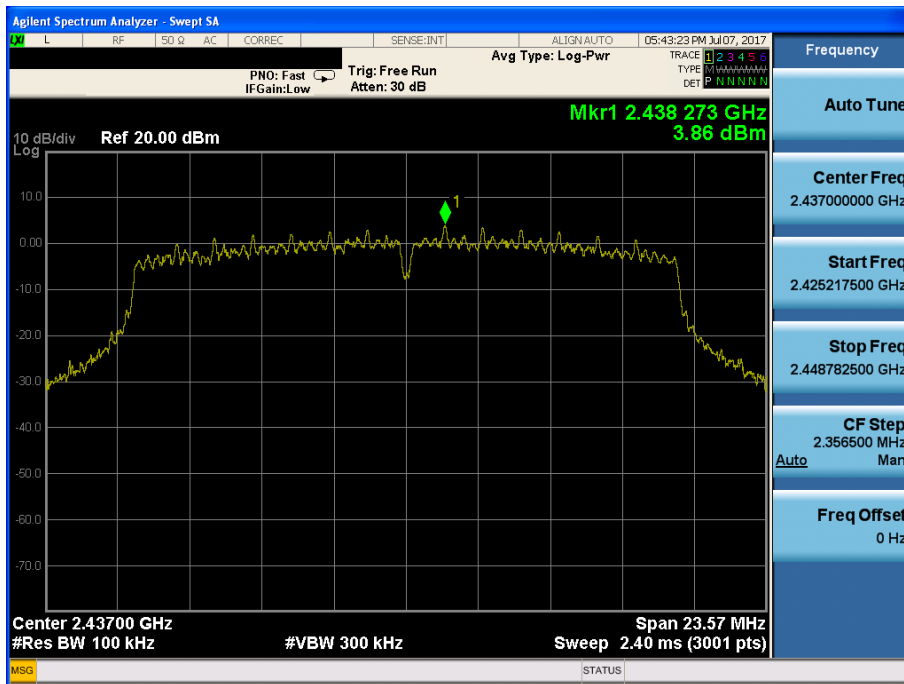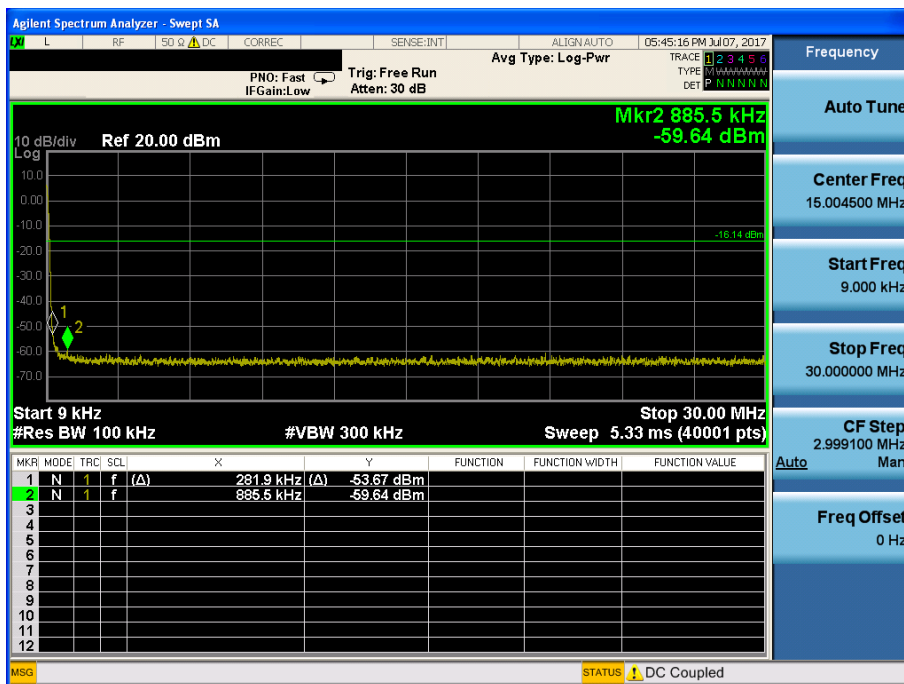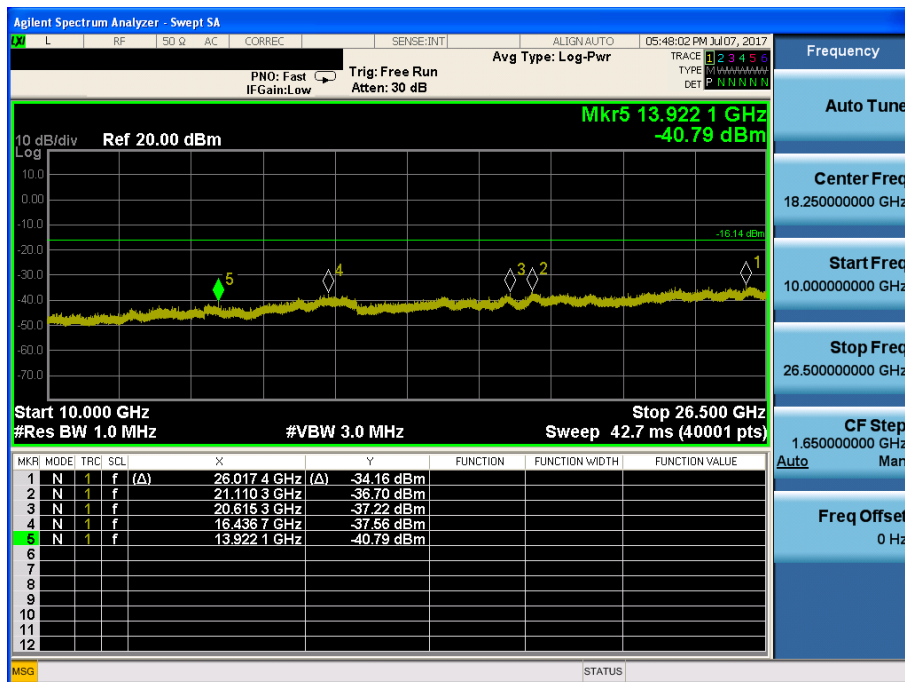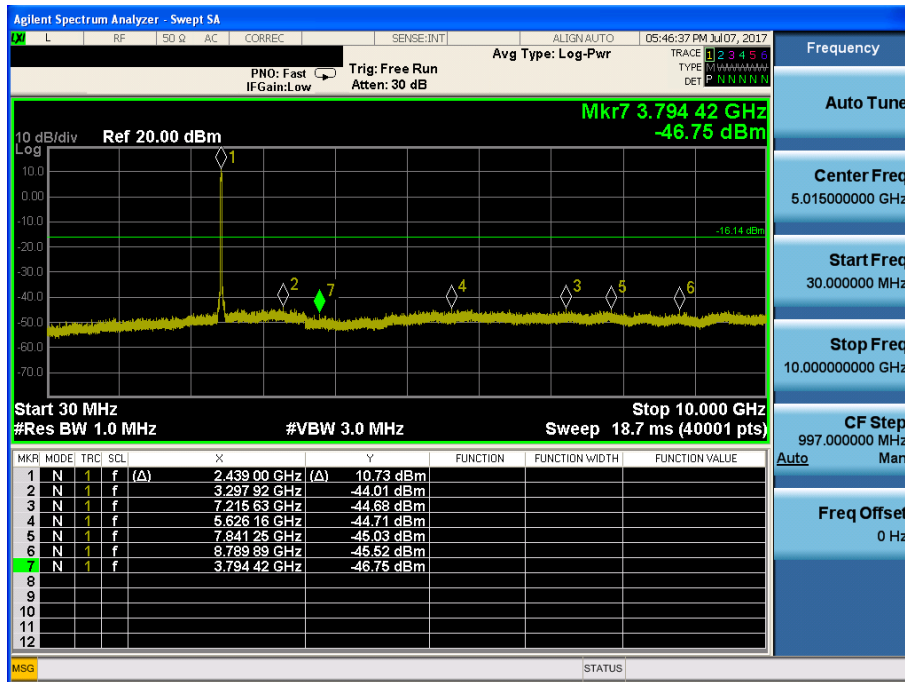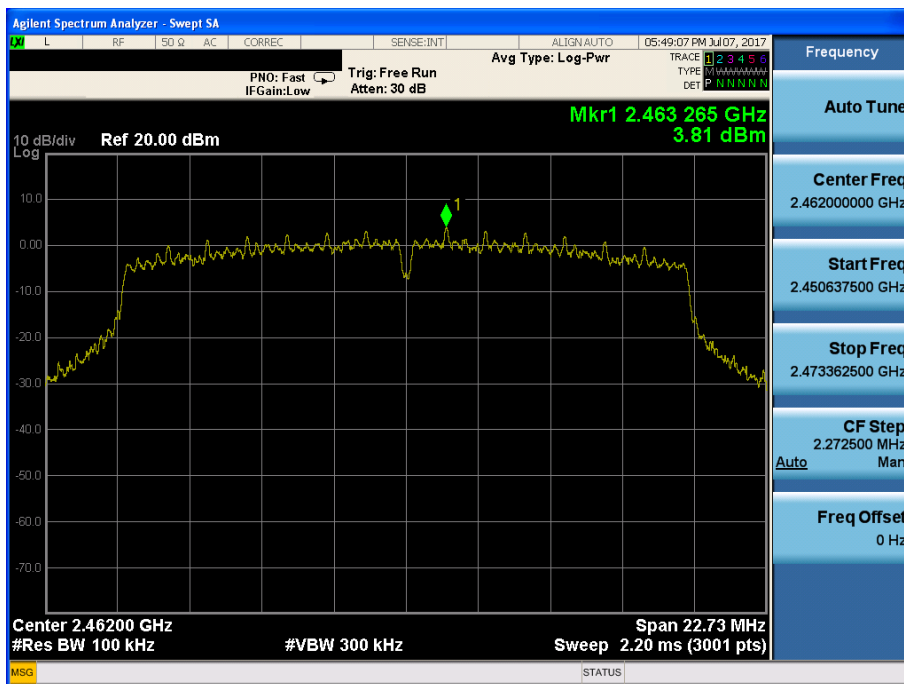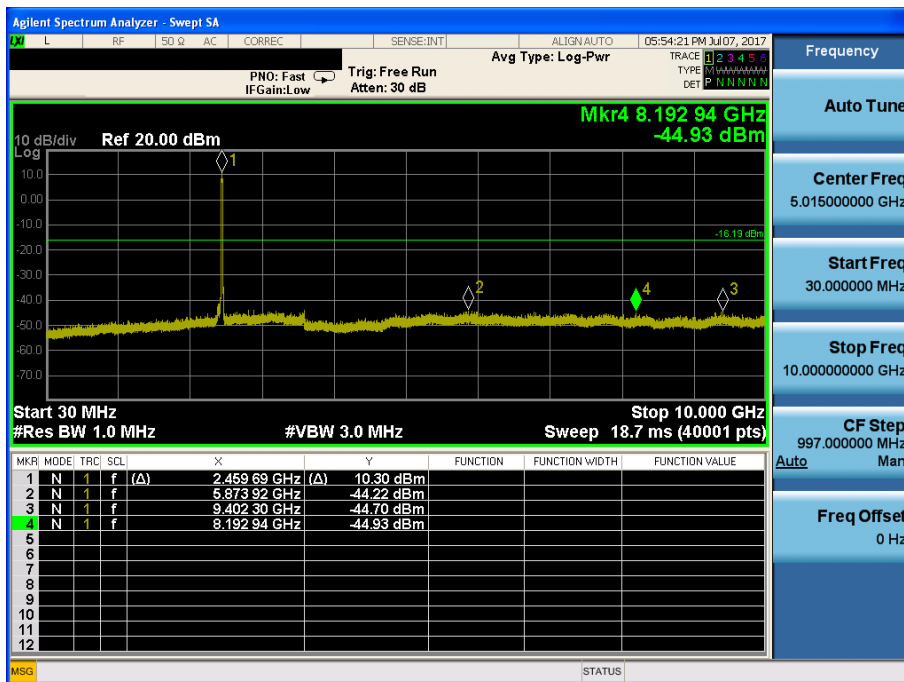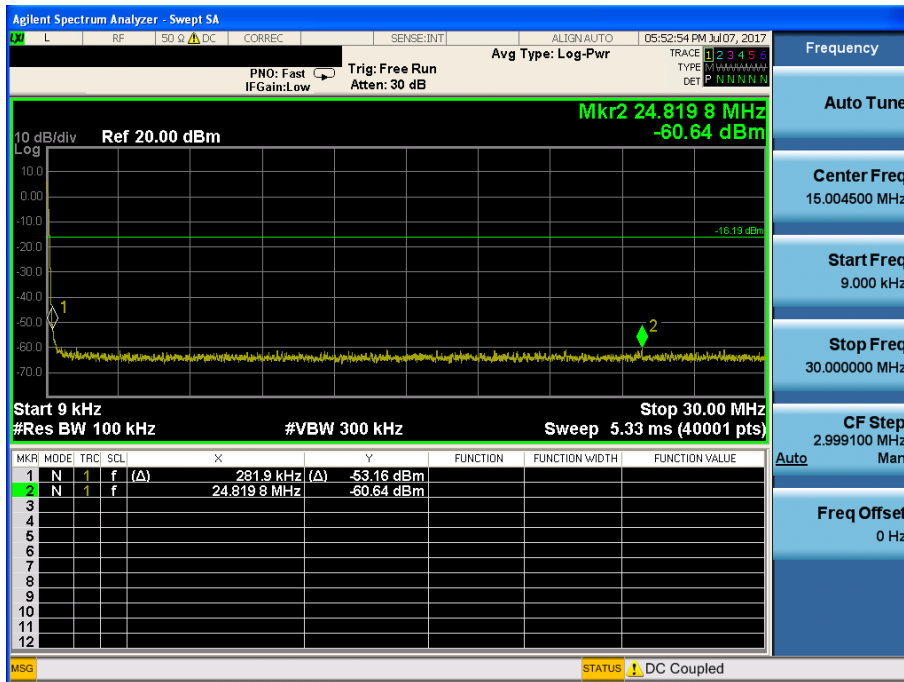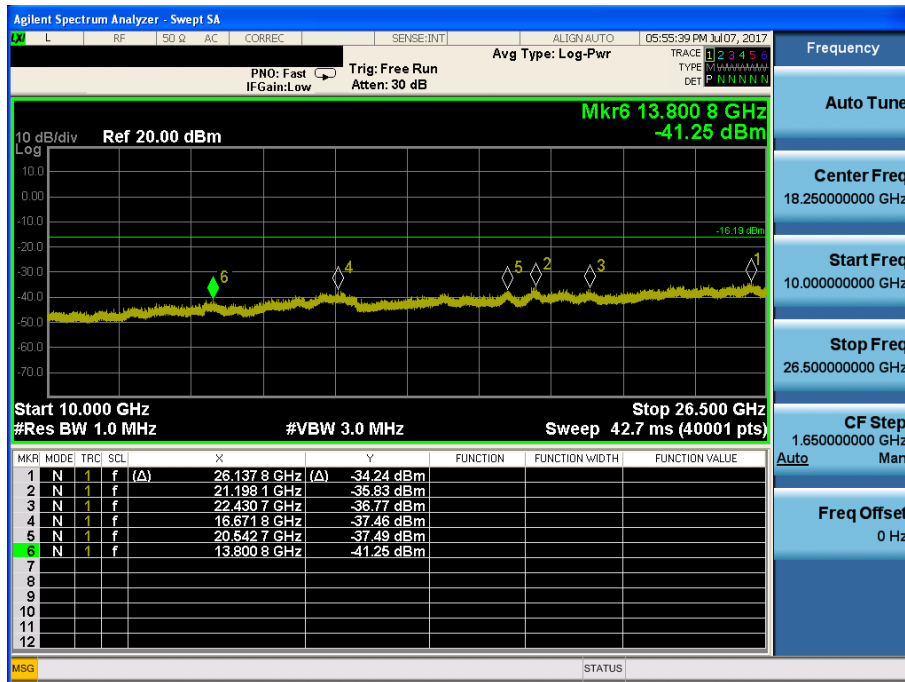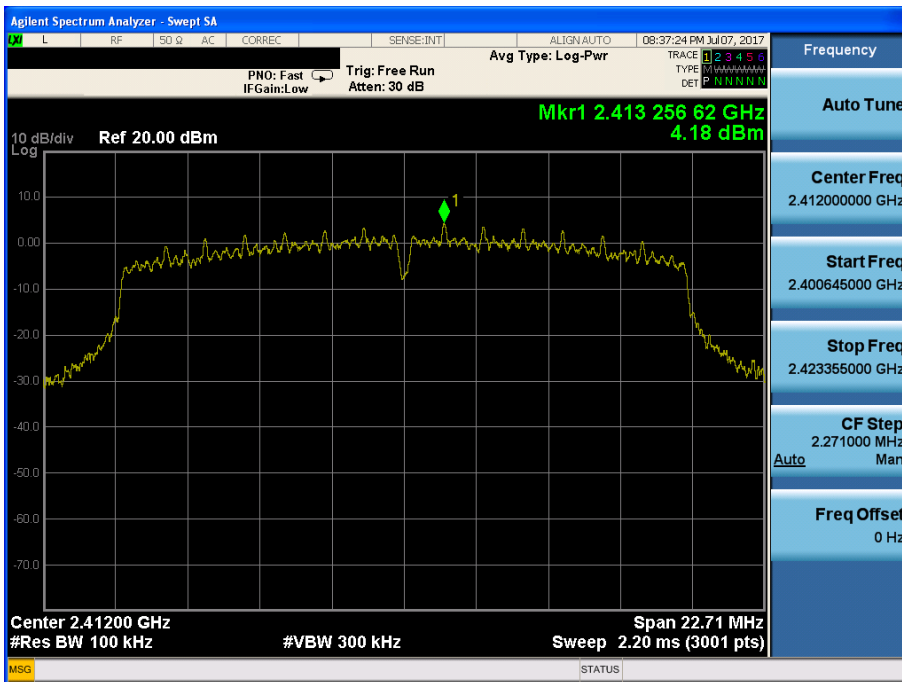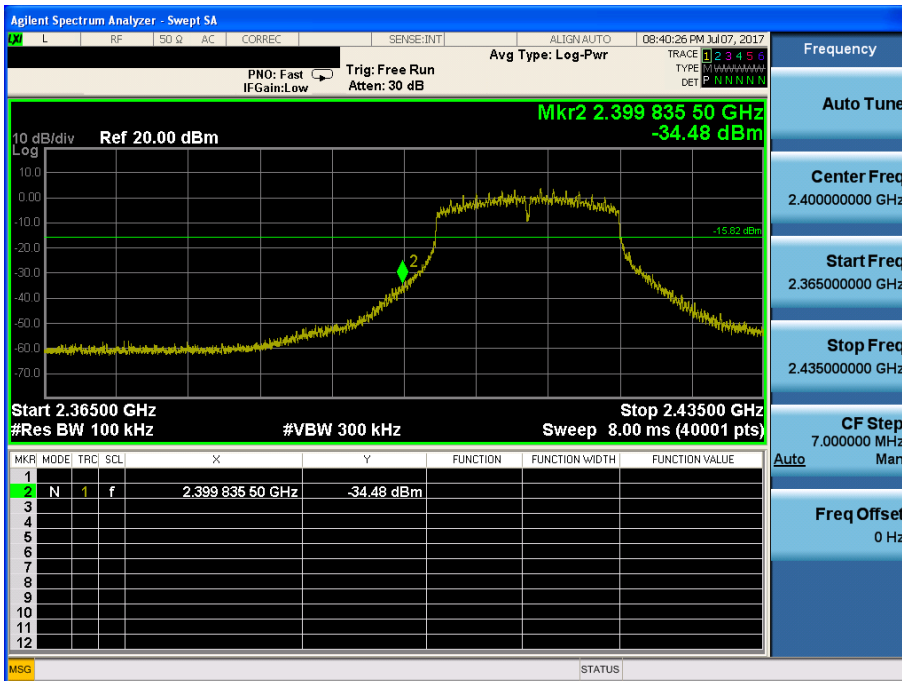
Conducted Spurious Emissions

TM 9 & ANT 1 & Lowest

Reference

Low Band-edge

Conducted Spurious Emissions