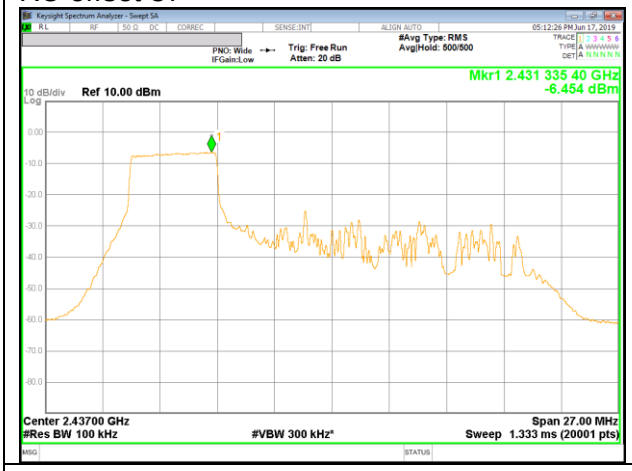
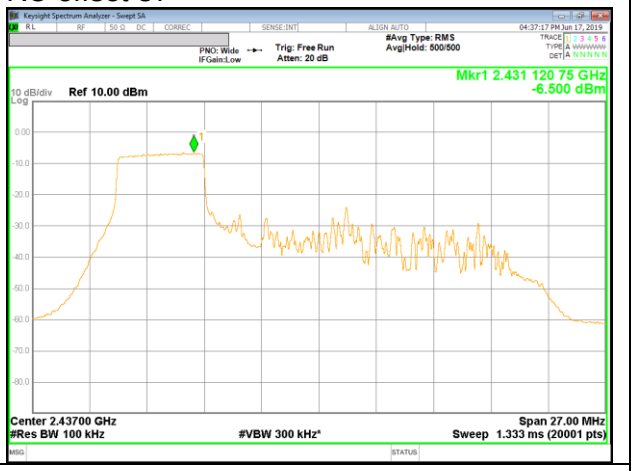
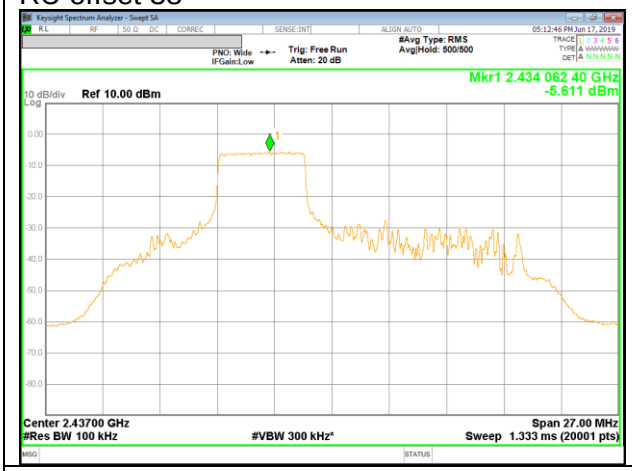
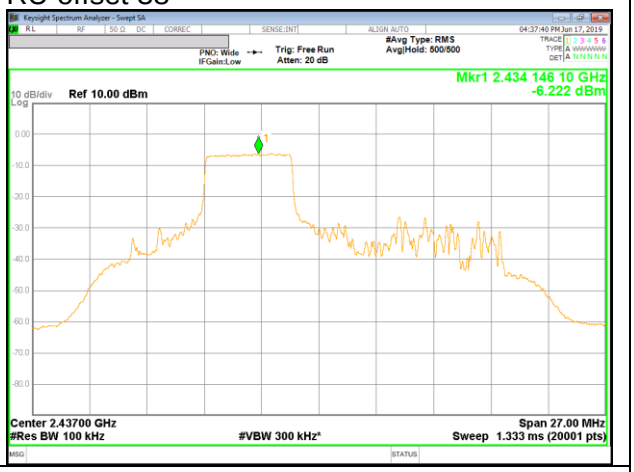
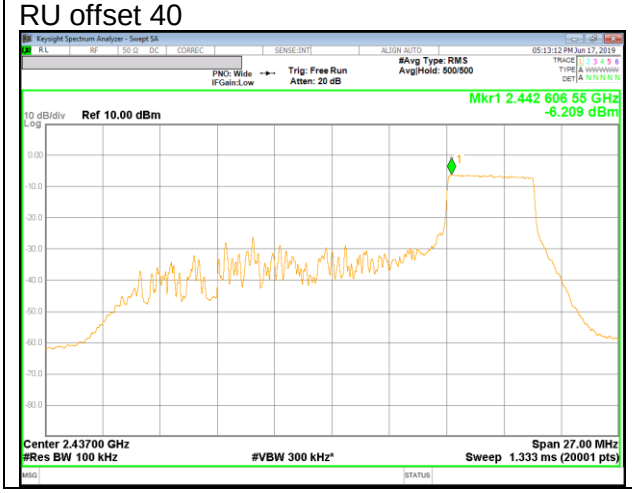
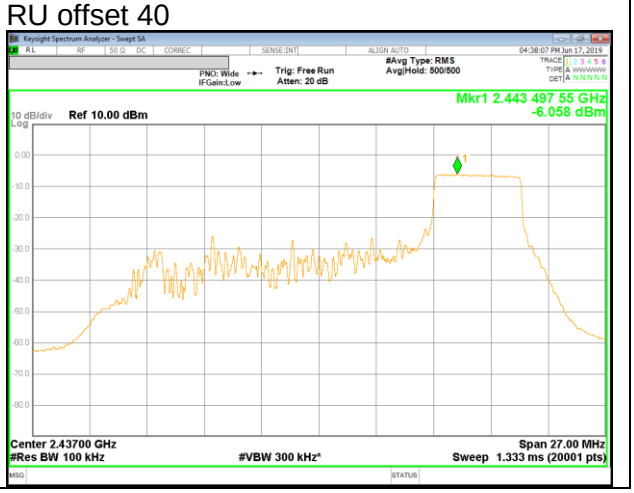
MID CHANNEL_52T	
ANT1	**ANT2**
RU offset 37 	RU offset 37 
RU offset 38 	RU offset 38 
RU offset 40 	RU offset 40 

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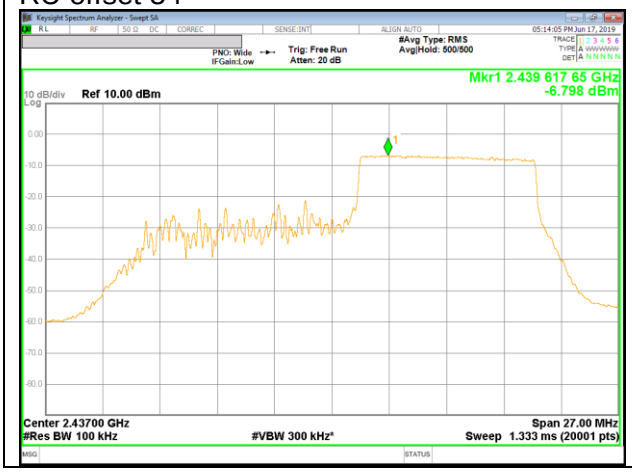
MID CHANNEL_106T

ANT1

RU offset 53

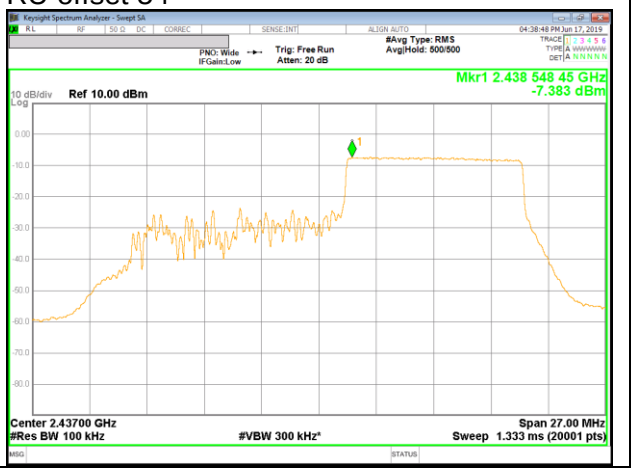
RU offset 54



ANT2

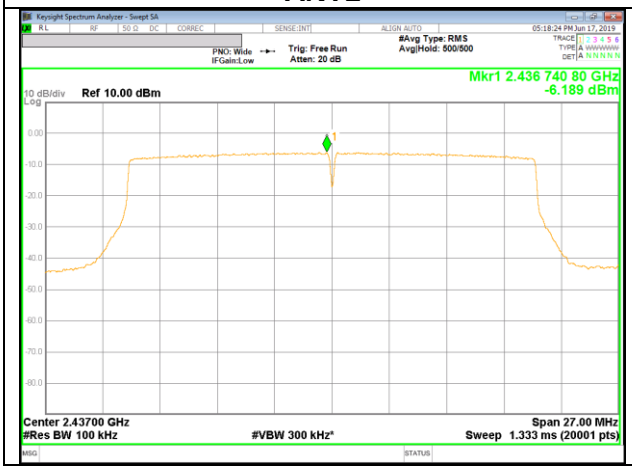
RU offset 53

RU offset 54



MID CHANNEL_SU

ANT1



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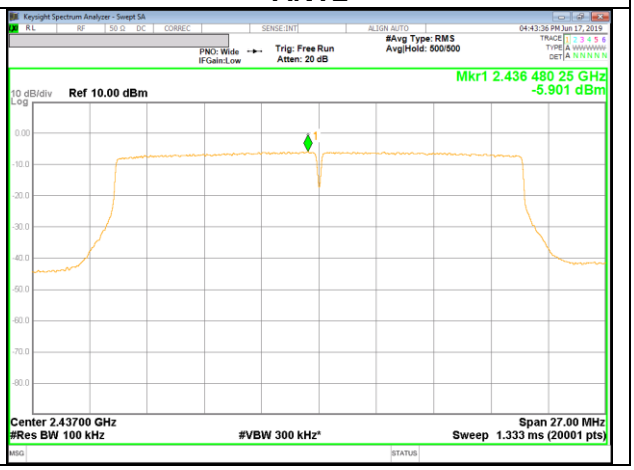

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HIGH CHANNEL_26T	
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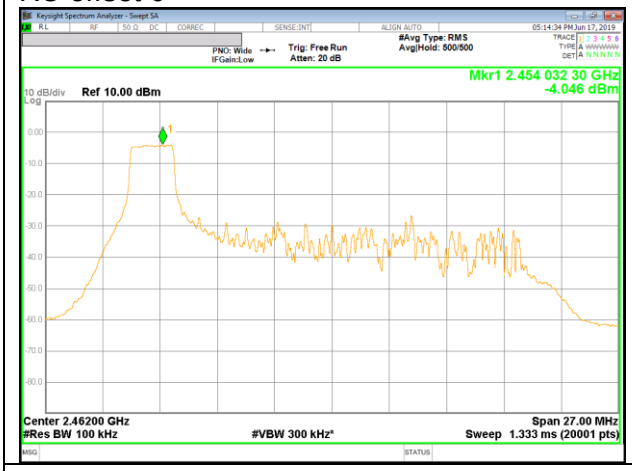
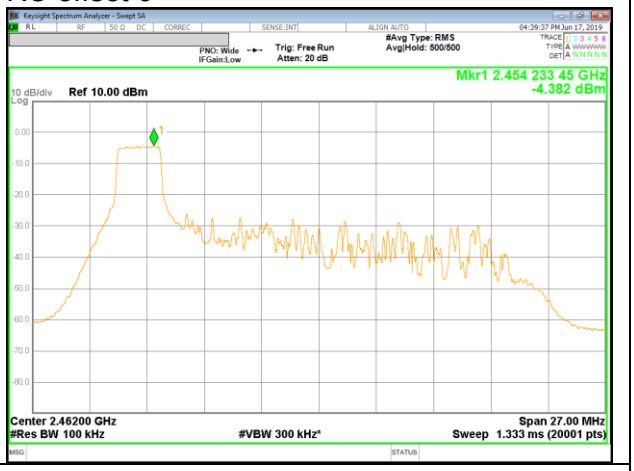
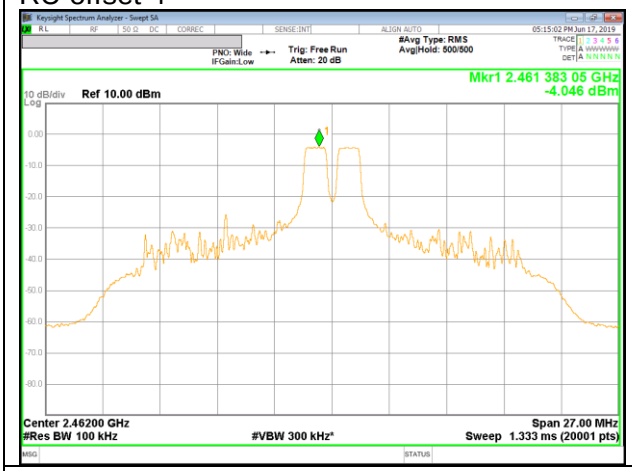
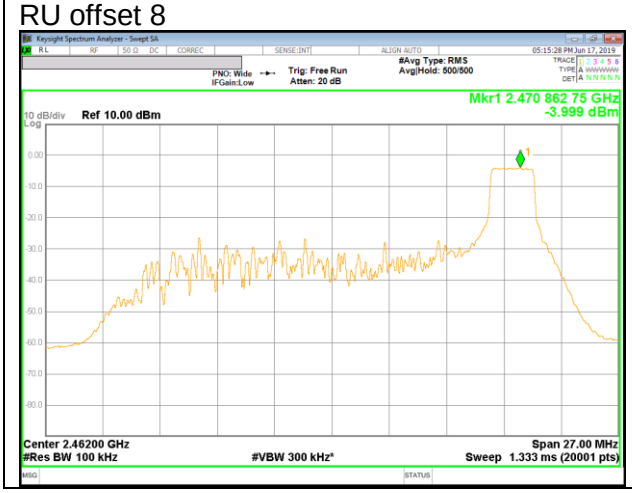
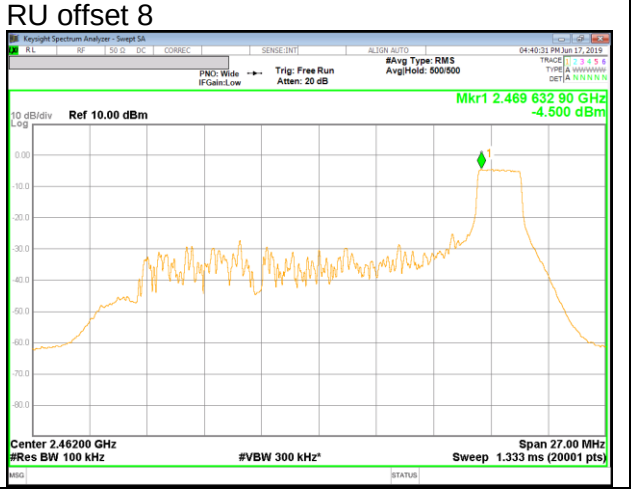
	
RU offset 4	RU offset 4
	
RU offset 8	RU offset 8
	

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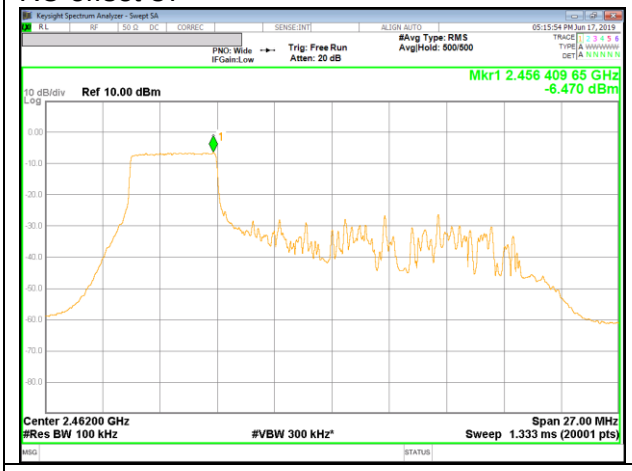
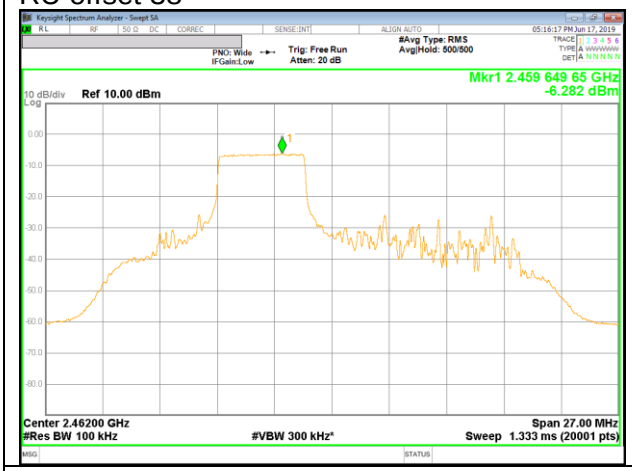
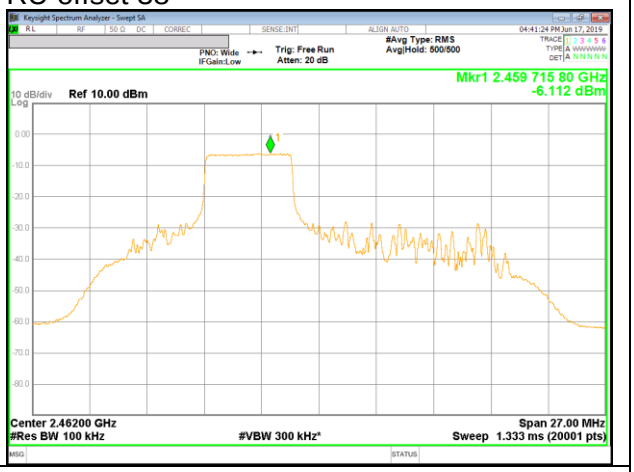
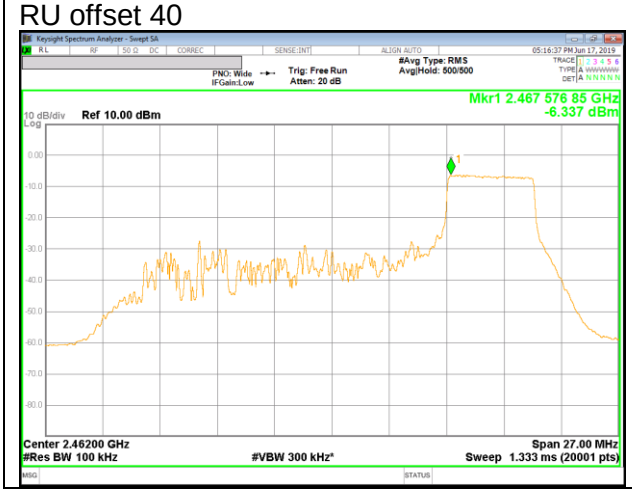
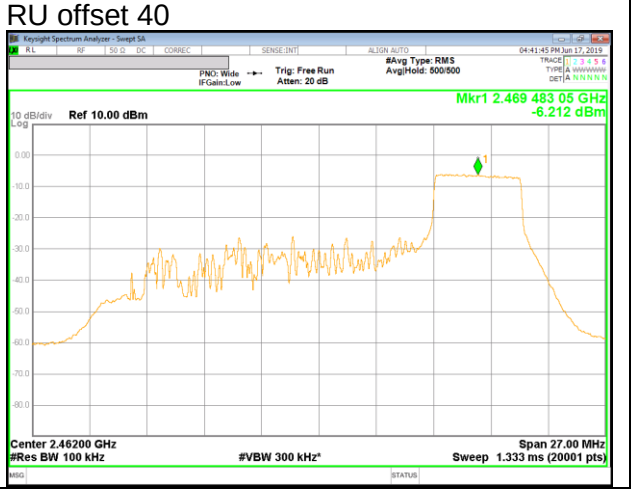
HIGH CHANNEL_52T	
ANT1	**ANT2**
RU offset 37	RU offset 37
	
RU offset 38	RU offset 38
	
RU offset 40	RU offset 40
	

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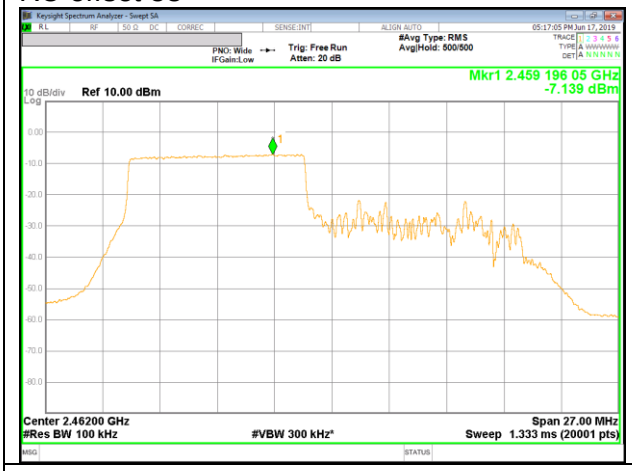
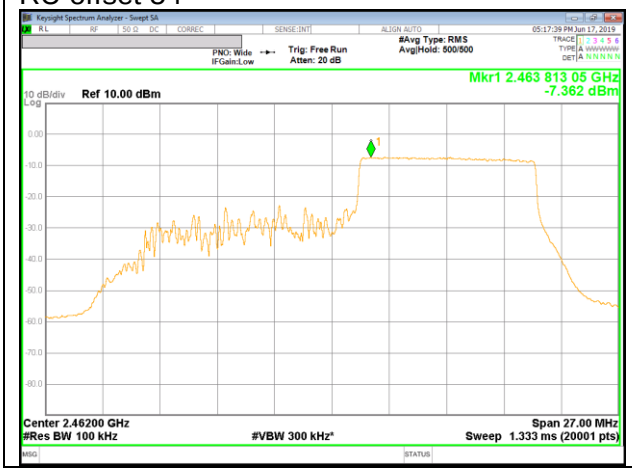
HIGH CHANNEL_106T

ANT1

RU offset 53

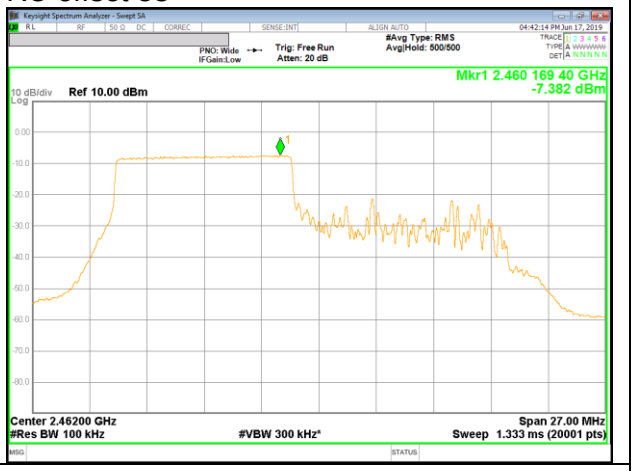


RU offset 54



ANT2

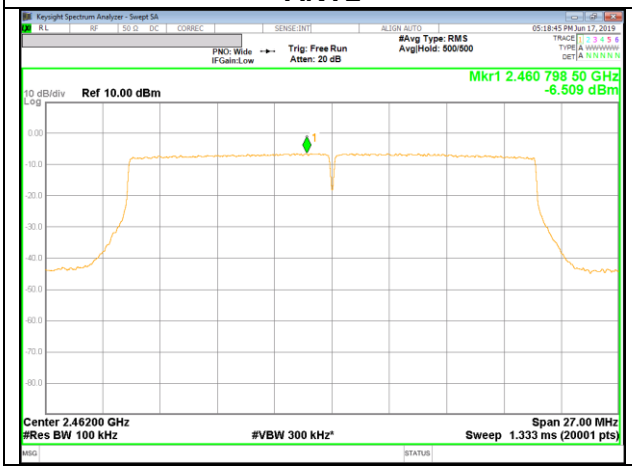
RU offset 53



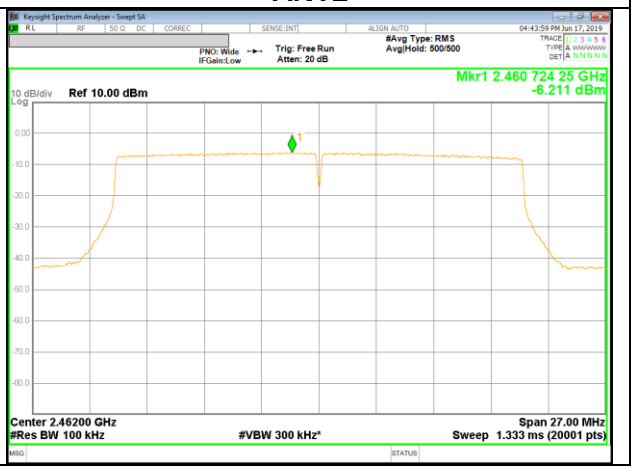
RU offset 54

HIGH CHANNEL_SU

ANT1



ANT2



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10.4. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

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

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer with RBW = 100 kHz, VBW = 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, bandedge (where measurements to the general radiated limits will not be made) and out-of-band emissions.

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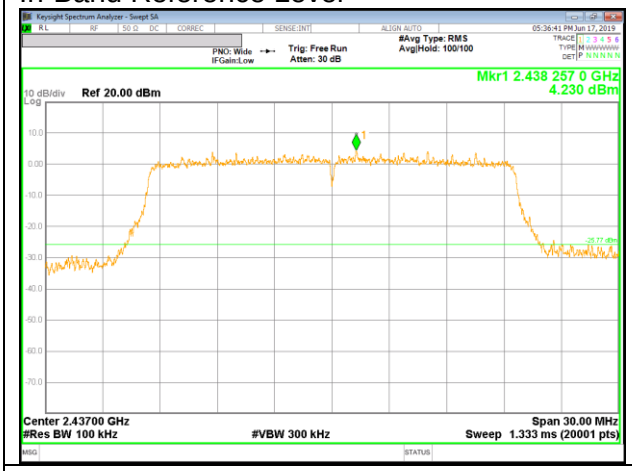
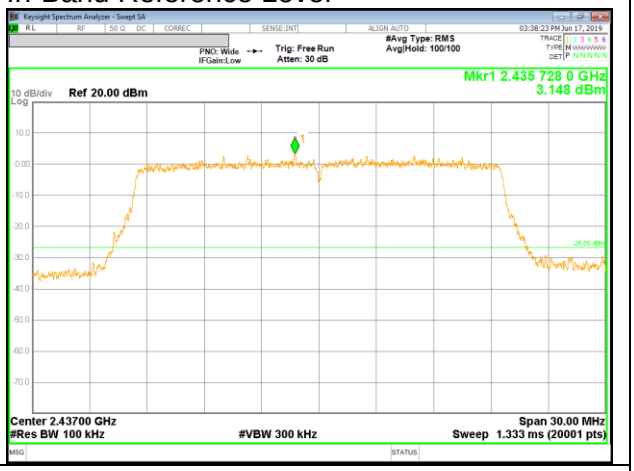
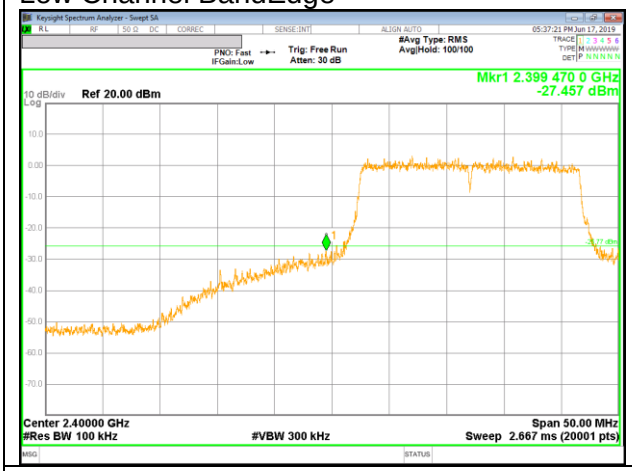
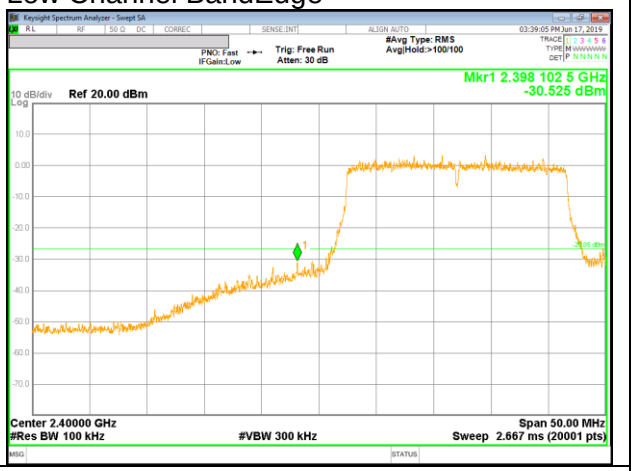
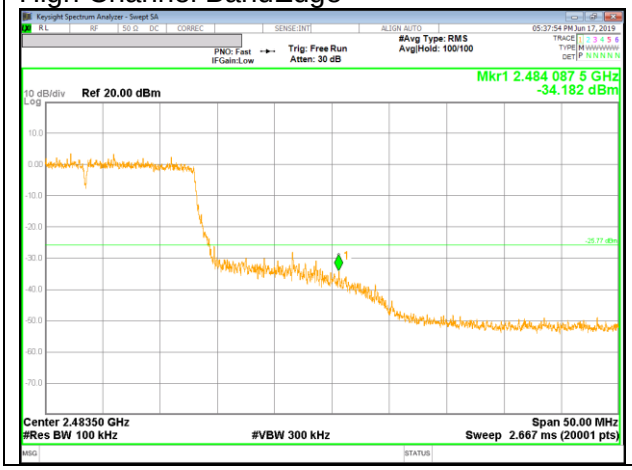
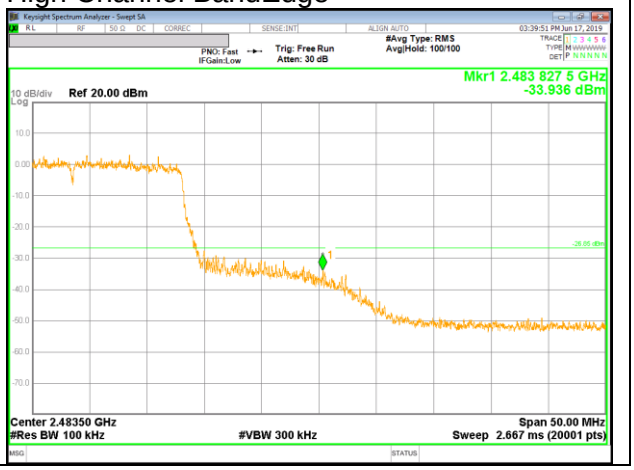
RESULTS

10.4.1. 802.11ax HE20 MODE IN THE 2.4 GHz BAND

SU	
SISO ANT1	**SISO ANT2**
In-Band Reference Level  	In-Band Reference Level 
Low Channel BandEdge  	Low Channel BandEdge 
High Channel BandEdge  	High Channel BandEdge 

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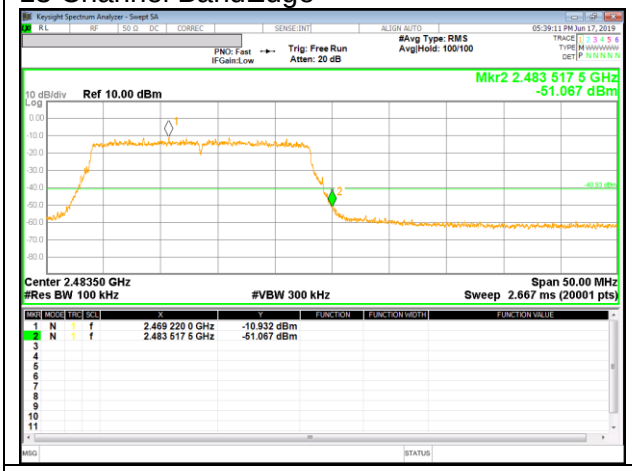
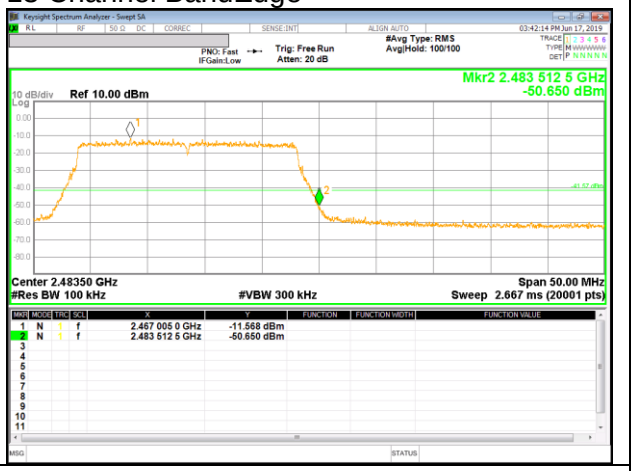
SU	
SISO ANT1	**SISO ANT2**
12 Channel BandEdge 	12 Channel BandEdge
13 Channel BandEdge  	13 Channel BandEdge 

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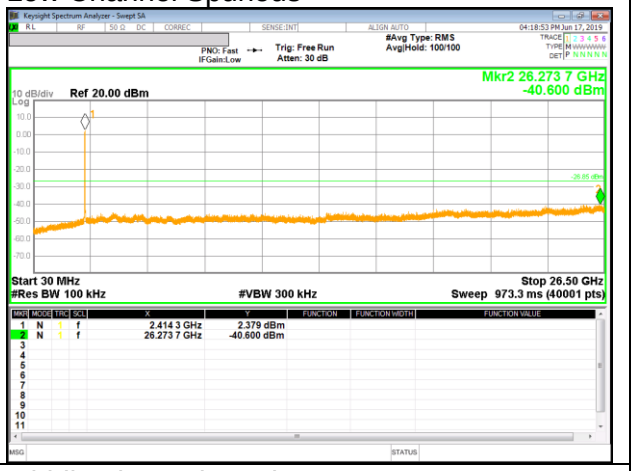
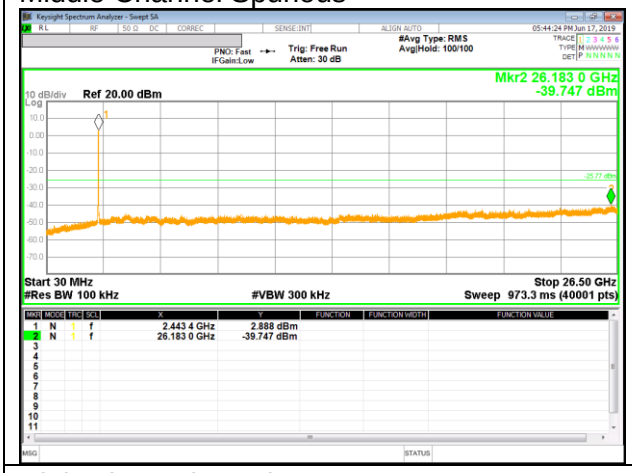
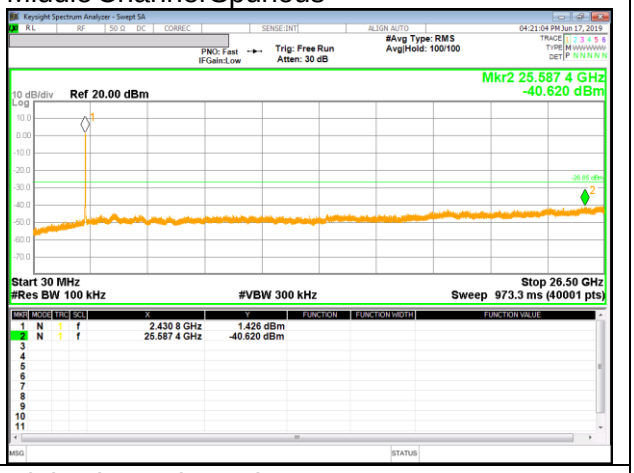
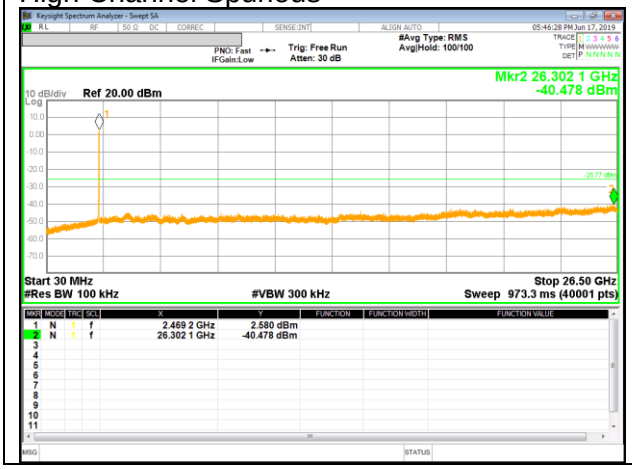
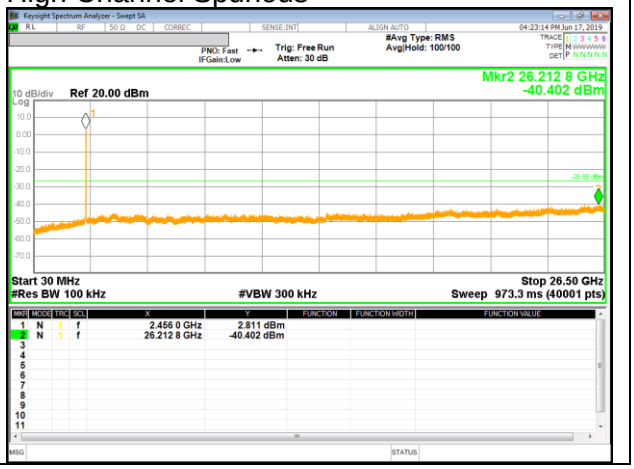
SU	
SISO ANT1	**SISO ANT2**
Low Channel Spurious 	Low Channel Spurious 
Middle Channel Spurious  	Middle Channel Spurious 
High Channel Spurious  	High Channel Spurious 

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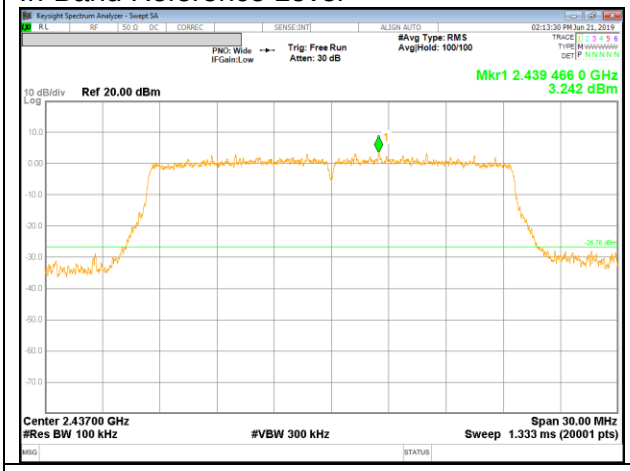
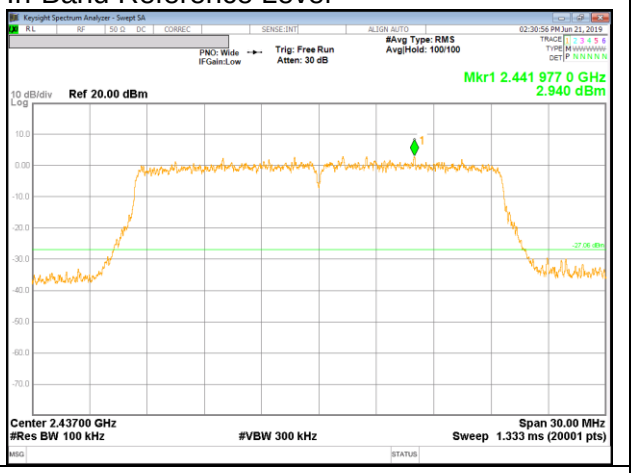
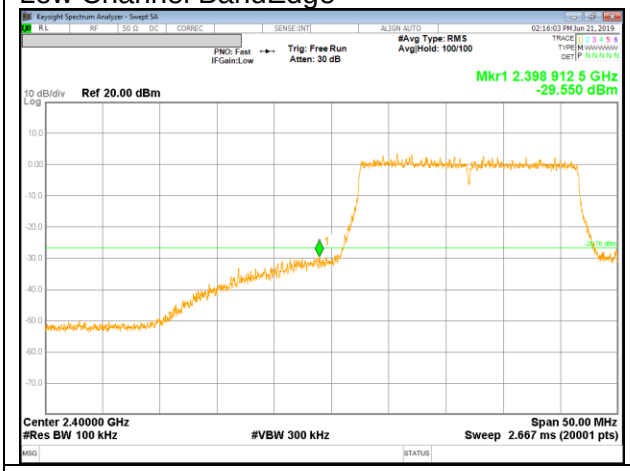
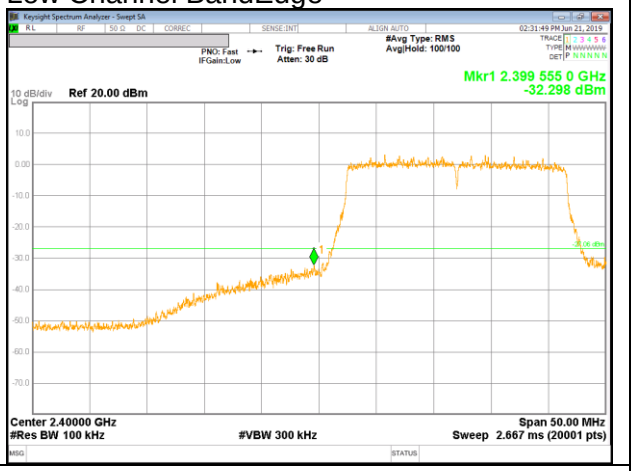
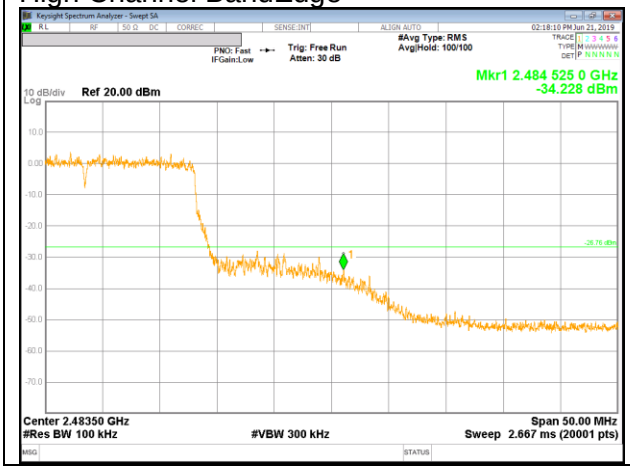
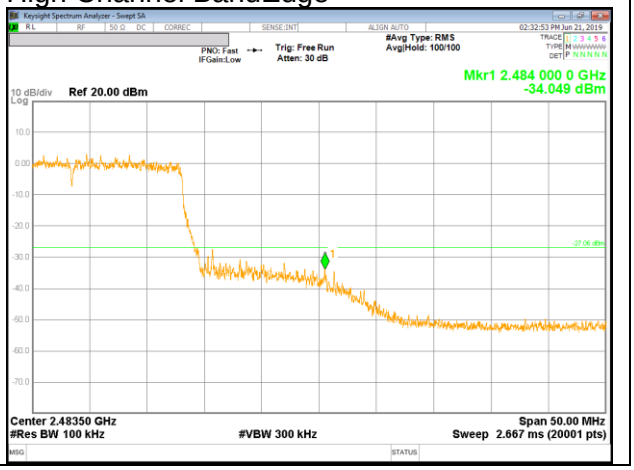
242T / Low: 61, Mid(Ref): 61, High: 61	
SISO ANT1	**SISO ANT2**
In-Band Reference Level	In-Band Reference Level
	
Low Channel BandEdge	Low Channel BandEdge
	
High Channel BandEdge	High Channel BandEdge
	

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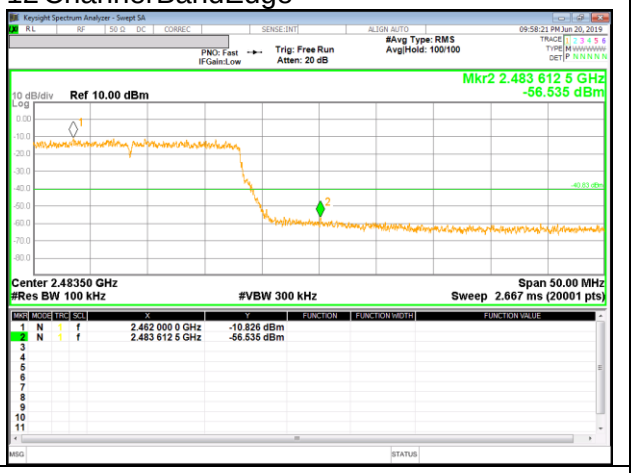
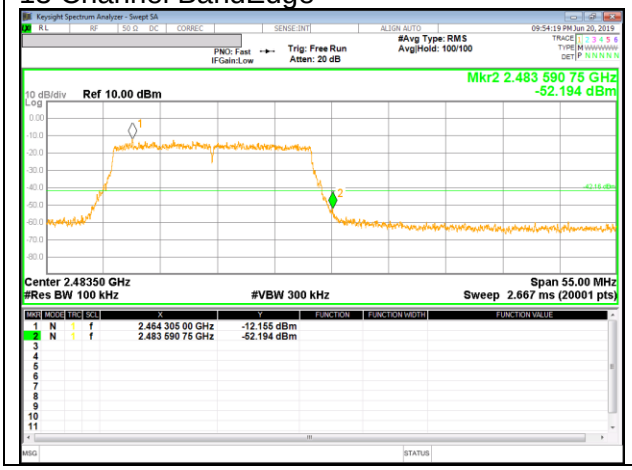
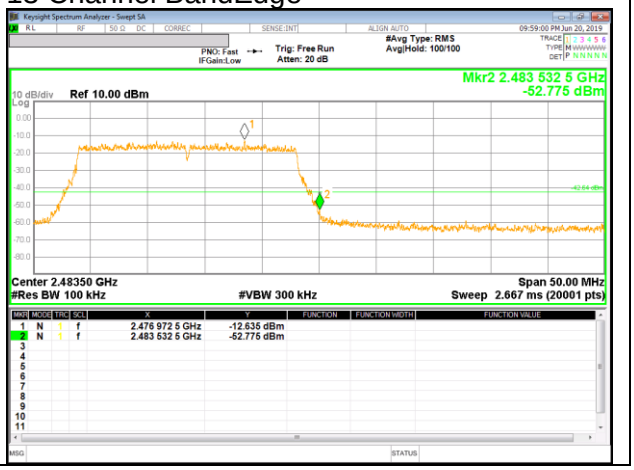
242T / 61	
SISO ANT1	**SISO ANT2**
12 Channel BandEdge 	12 Channel BandEdge 
13 Channel BandEdge  	13 Channel BandEdge 

NOTE : Conducted band edge test results of SU mode is worse than Full RU(262T) mode. Also output power level of SU mode is higher than Full RU(242T) mode. So radiated band edge test results of Full RU(262T) mode were covered by SU mode results.

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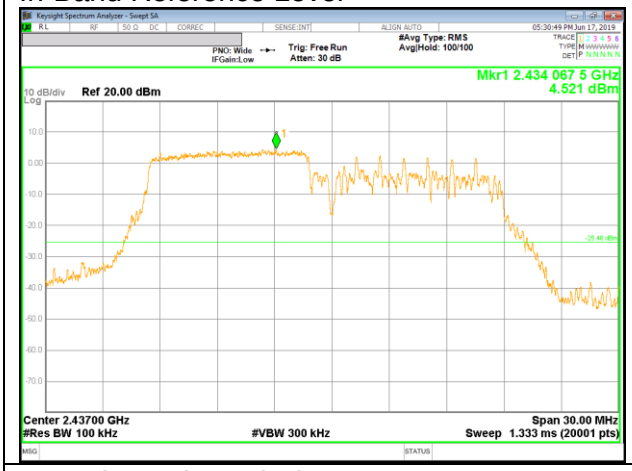
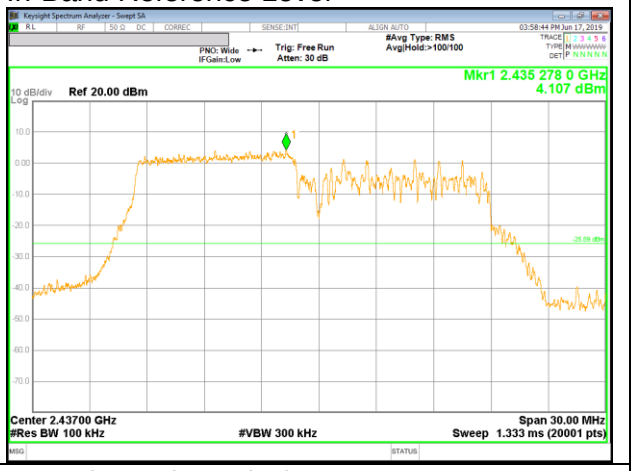
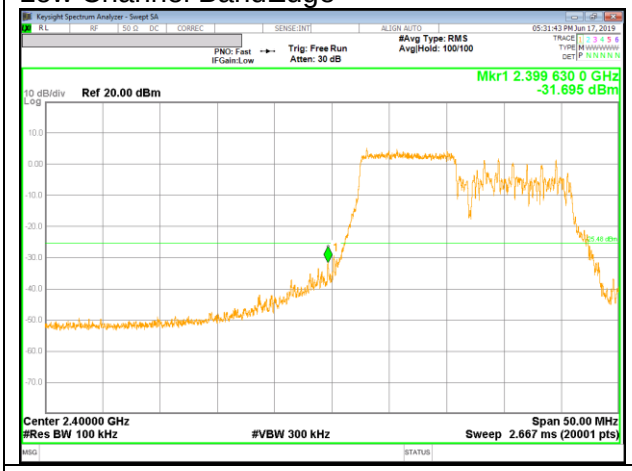
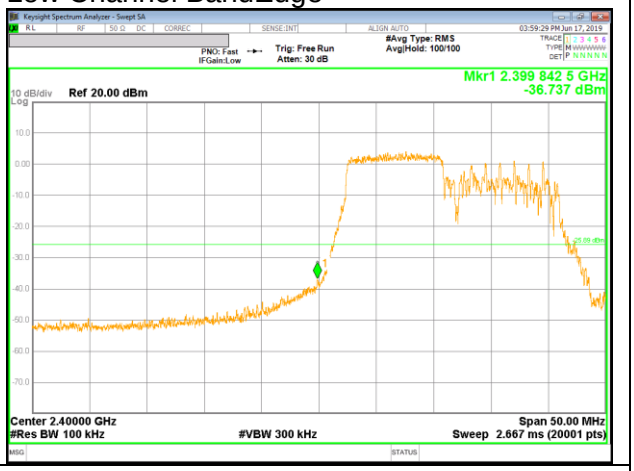
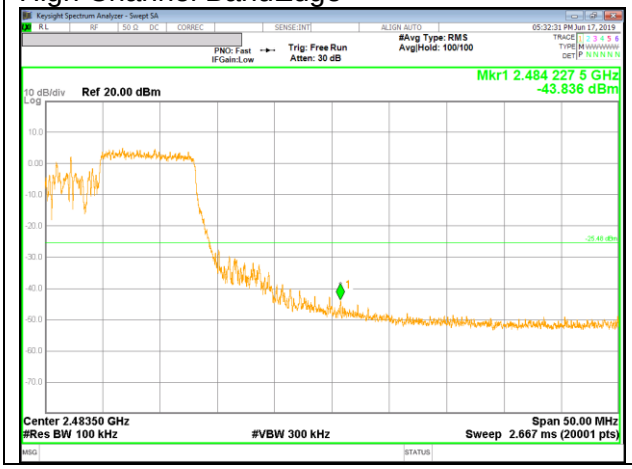
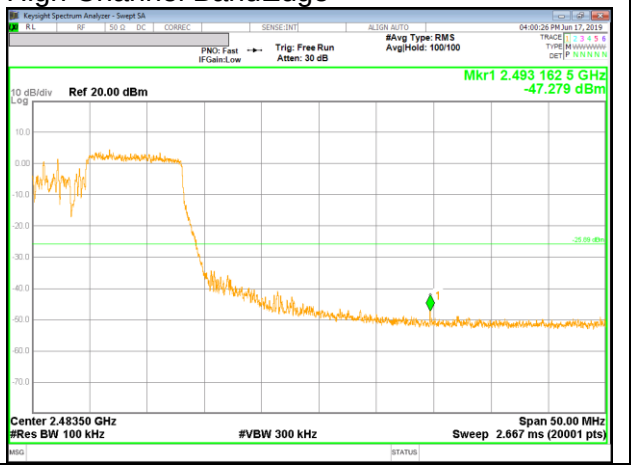
106T / Low: 53, Mid(Ref): 53, High: 54	
SISO ANT1	**SISO ANT2**
In-Band Reference Level	In-Band Reference Level
	
Low Channel BandEdge	Low Channel BandEdge
	
High Channel BandEdge	High Channel BandEdge
	

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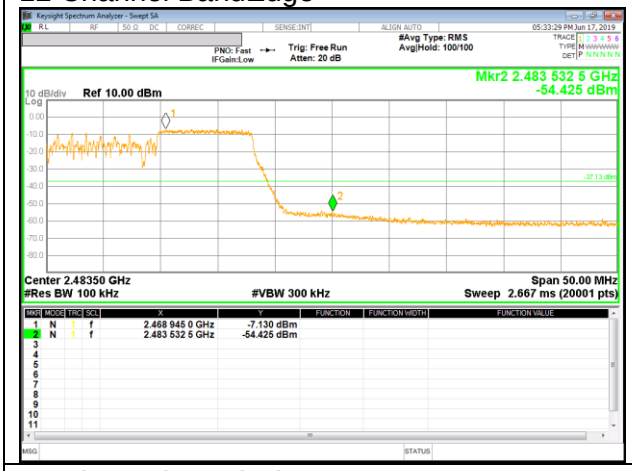
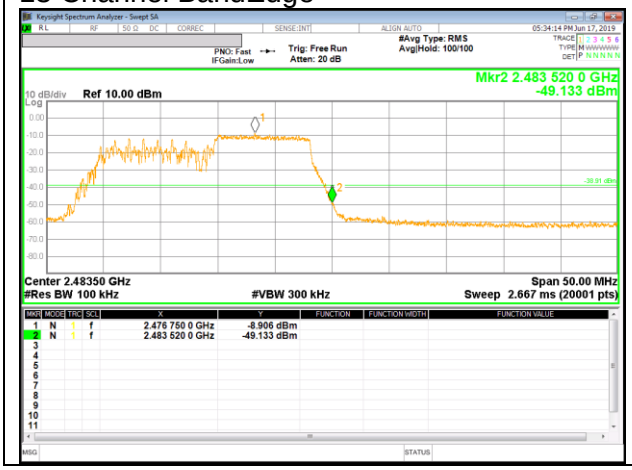
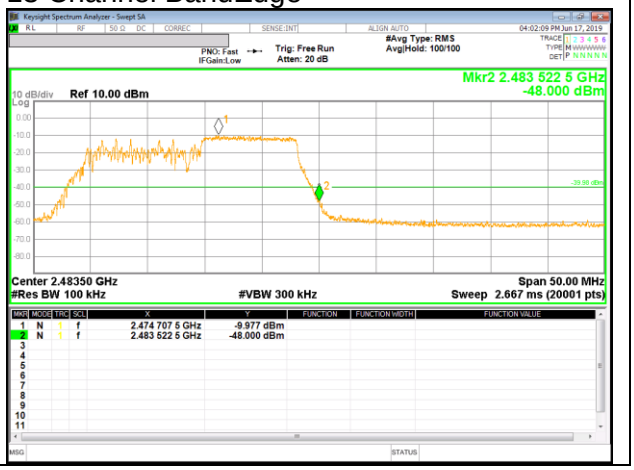
106T / 54	
SISO ANT1	**SISO ANT2**
12 Channel BandEdge  	12 Channel BandEdge
13 Channel BandEdge  	13 Channel BandEdge 

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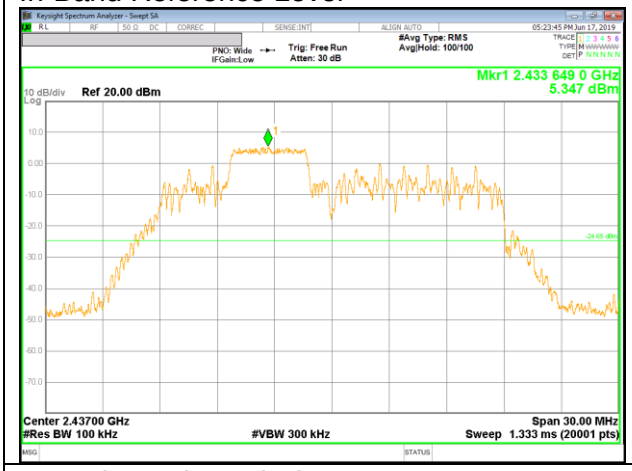
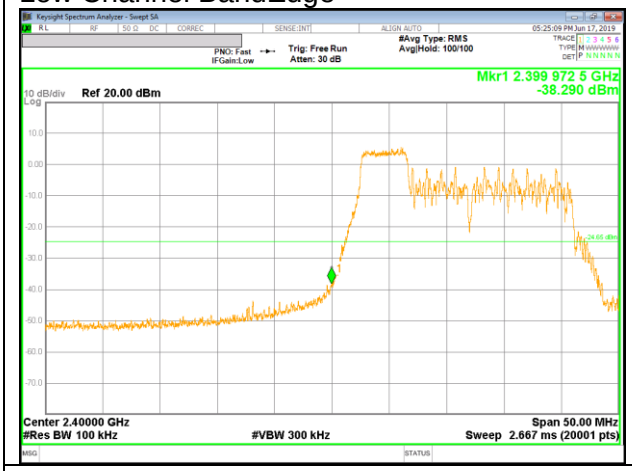
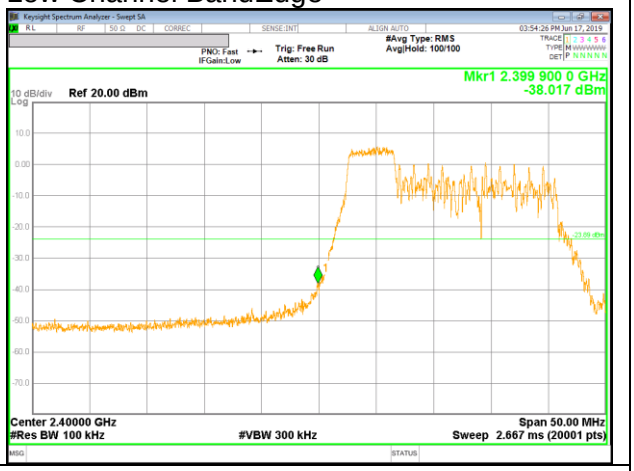
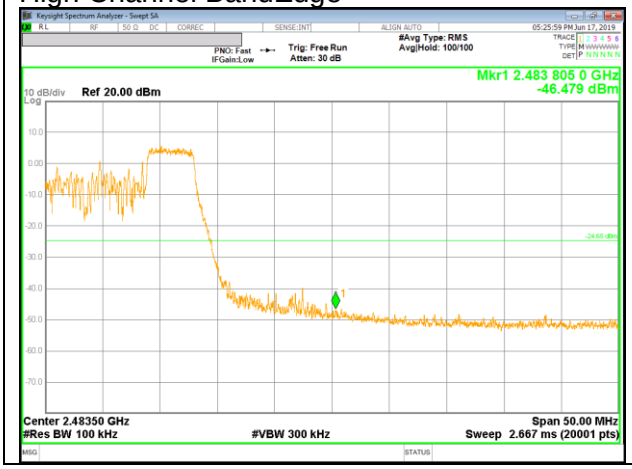
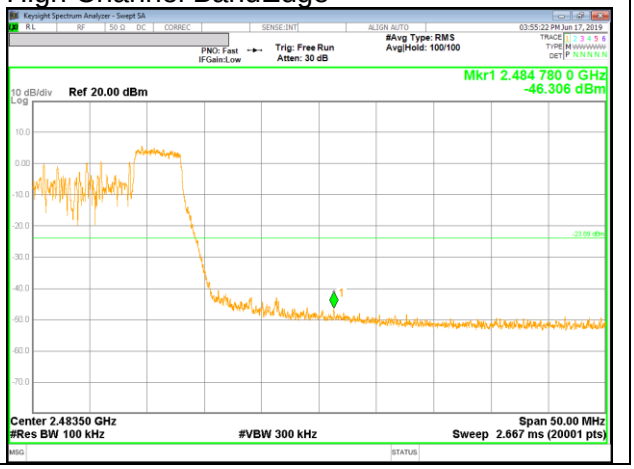
52T / Low: 37, Mid(Ref): 38, High: 40	
SISO ANT1	**SISO ANT2**
In-Band Reference Level	In-Band Reference Level
	
Low Channel BandEdge	Low Channel BandEdge
	
High Channel BandEdge	High Channel BandEdge
	

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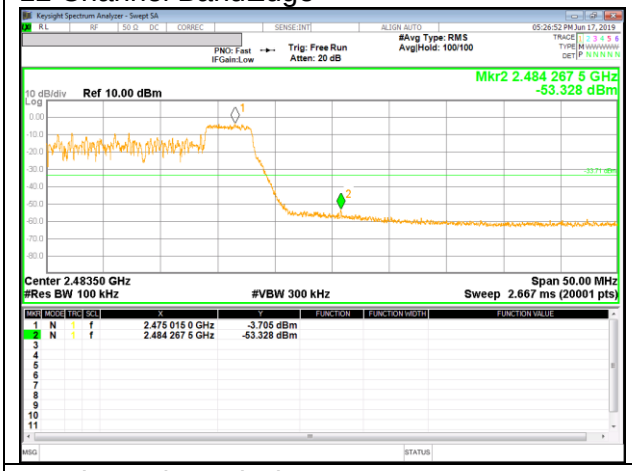
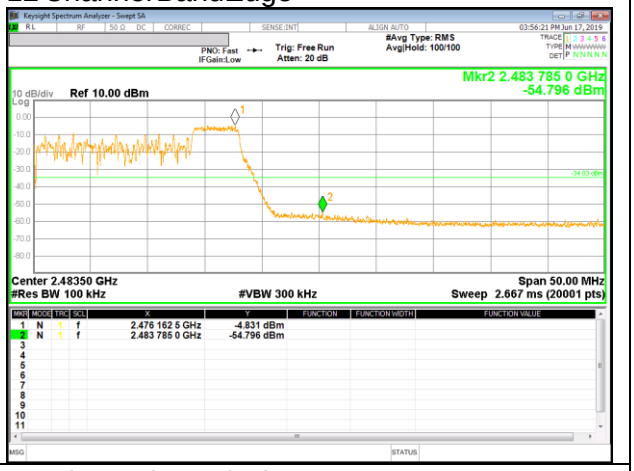
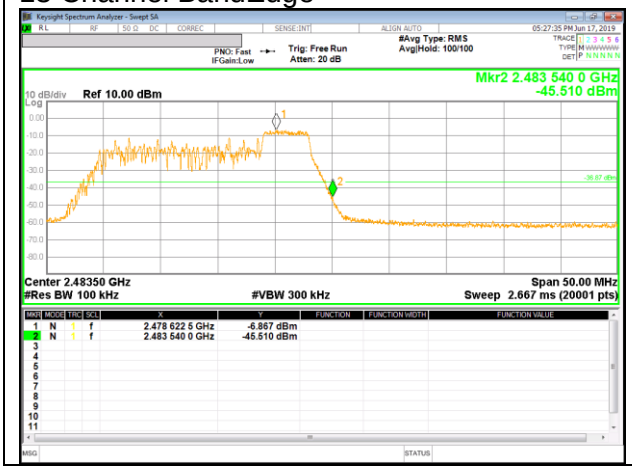
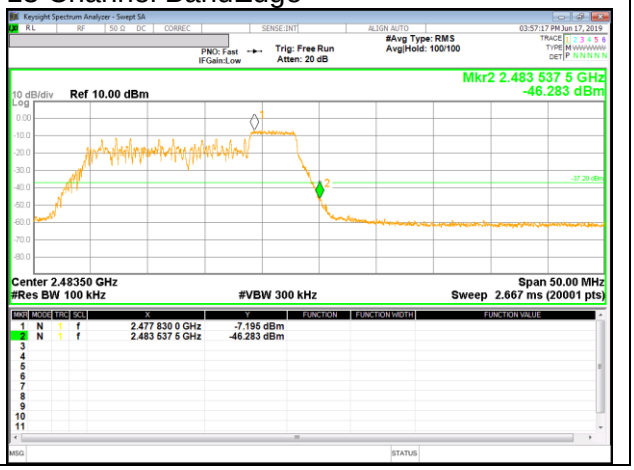
52T / 40	
SISO ANT1	**SISO ANT2**
12 Channel BandEdge	12 Channel BandEdge
	
13 Channel BandEdge	13 Channel BandEdge
	

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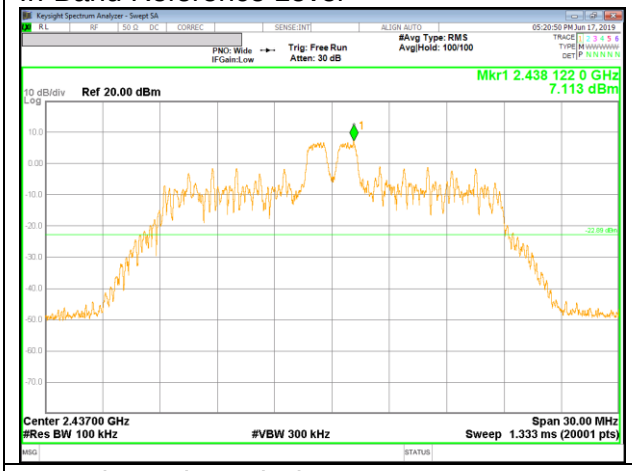
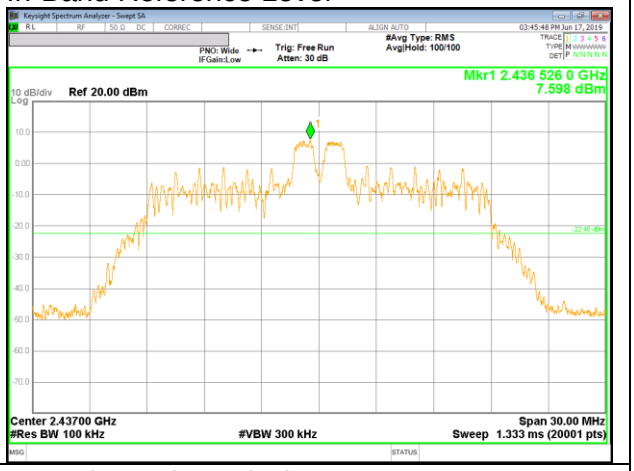
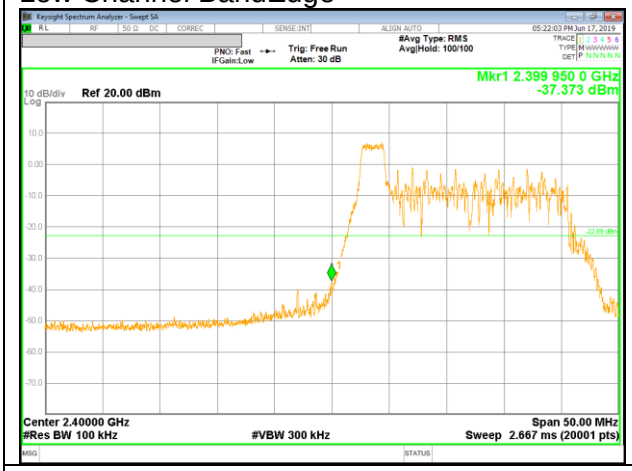
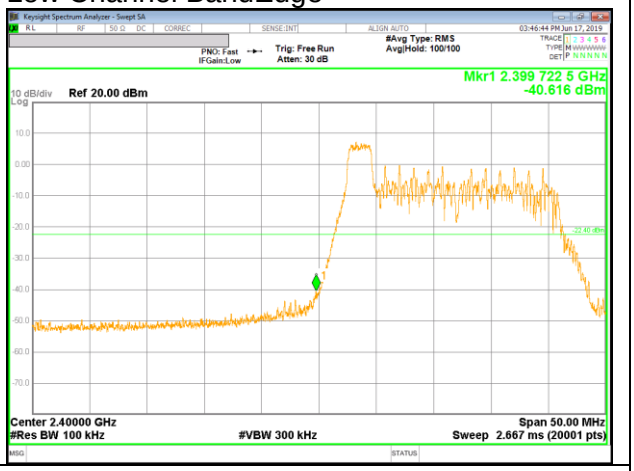
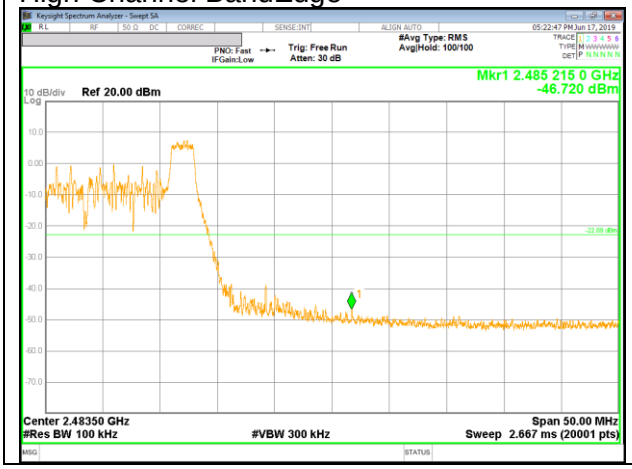
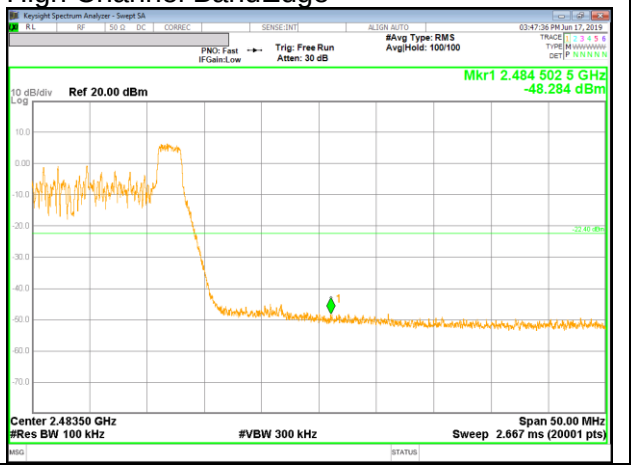
26T / Low: 0, Mid(Ref): 4, High: 8	
SISO ANT1	**SISO ANT2**
In-Band Reference Level	In-Band Reference Level
	
Low Channel BandEdge	Low Channel BandEdge
	
High Channel BandEdge	High Channel BandEdge
	

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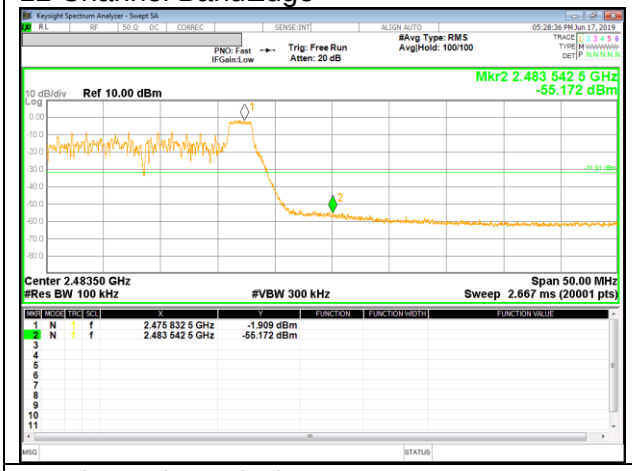
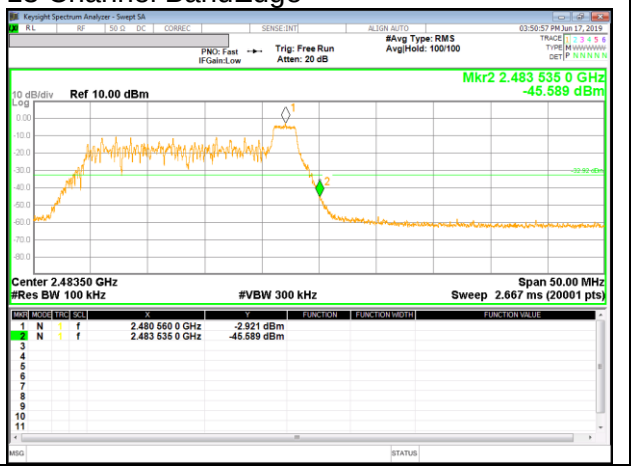
26T / 8	
SISO ANT1	**SISO ANT2**
12 Channel BandEdge	12 Channel BandEdge
	
13 Channel BandEdge	13 Channel BandEdge
	

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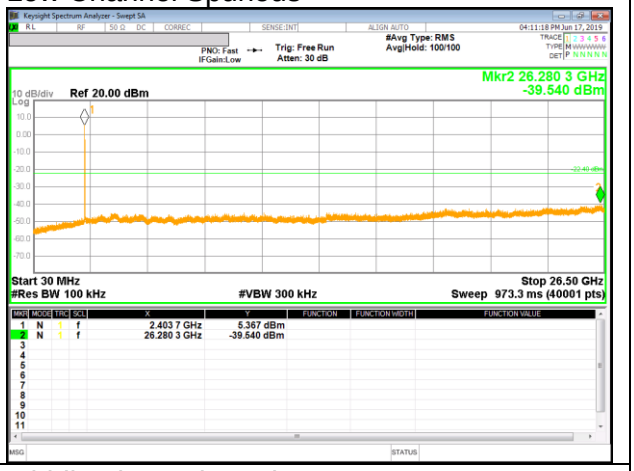
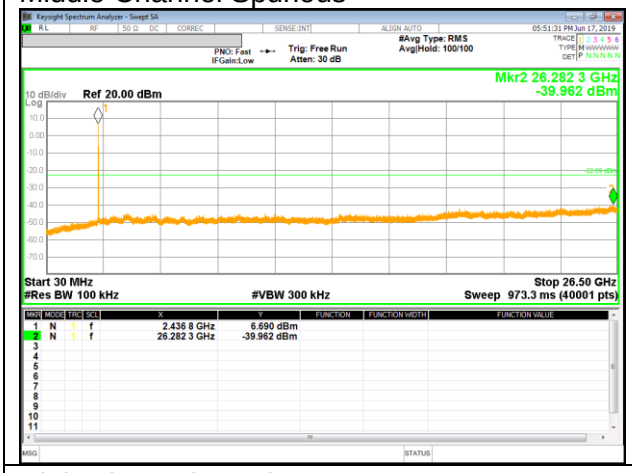
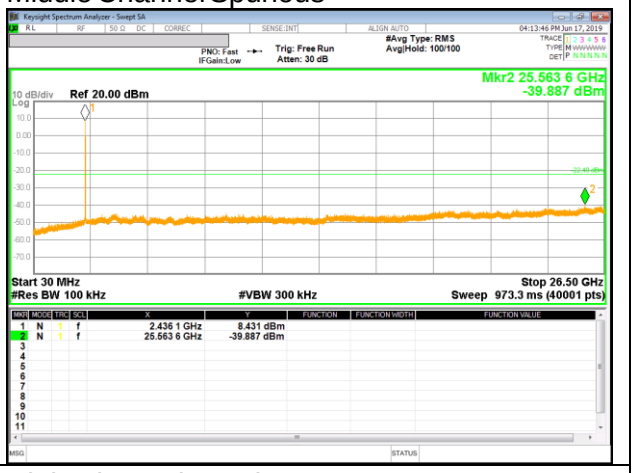
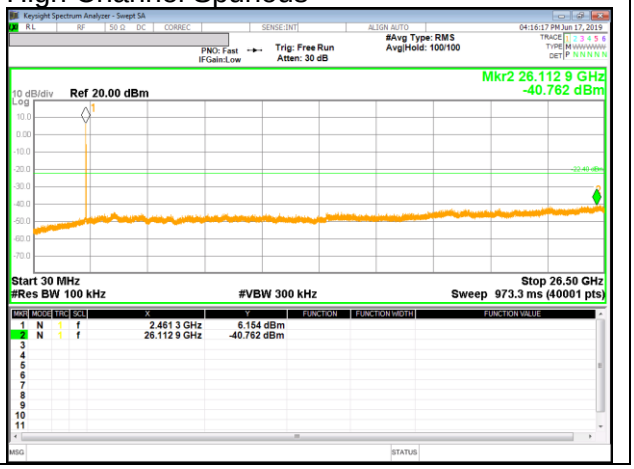
26T / Low: 0, Mid: 4 High: 4	
SISO ANT1	**SISO ANT2**
Low Channel Spurious 	Low Channel Spurious 
Middle Channel Spurious  	Middle Channel Spurious 
High Channel Spurious 	High Channel Spurious 

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11. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209

Limits for radiated disturbance of an intentional radiator		
Frequency range (MHz)	Limits (µV/m)	Measurement Distance (m)
0.009 – 0.490	2400 / F (kHz)	300
0.490 – 1.705	24000 / F (kHz)	30
1.705 – 30.0	30	30
30 – 88	100**	3
88 - 216	150**	3
216 – 960	200**	3
Above 960	500	3

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

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TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1GHz and 150 cm for above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor for average measurements. (Restriced bandedge, Final detection of spurious harmonic emissions)

Pre-scans to detect harmonic and spurious emissions, the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 KHz for peak measurements.

The spectrum from 1 GHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.
(From 30MHz to 1GHz, test was performed with the EUT set to transmit at the channel with highest output power)

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

Note : Emission was pre-scanned from 9KHz to 30MHz; No emissions were detected which was at least 20dB below the specification limit (consider distance correction factor).
Per FCC part 15.31(o), test results were not reported.

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site.
Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the one of tests made in an open field based on KDB 414788.

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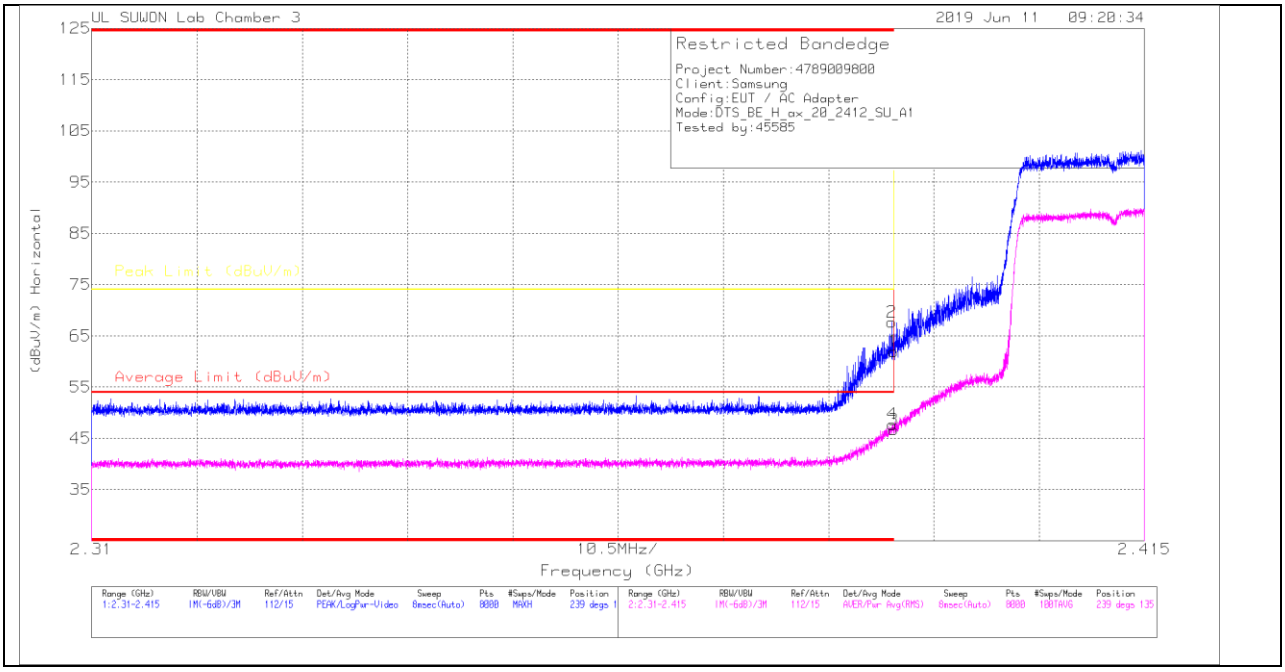
11.1. TRANSMITTER ABOVE 1 GHz_SISO

11.1.1. TX ABOVE 1 GHz 802.11ax HE20 MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

SU mode (ANT_1)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00205959	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	53.67	Pk	31.7	-23.4	0	61.97	-	-	74	-12.03	239	135	H
2	* 2.39	59.36	Pk	31.7	-23.4	0	67.66	-	-	74	-6.34	239	135	H
3	* 2.39	38.39	RMS	31.7	-23.4	0	46.69	54	-7.31	-	-	239	135	H
4	* 2.39	39.44	RMS	31.7	-23.4	0	47.74	54	-6.26	-	-	239	135	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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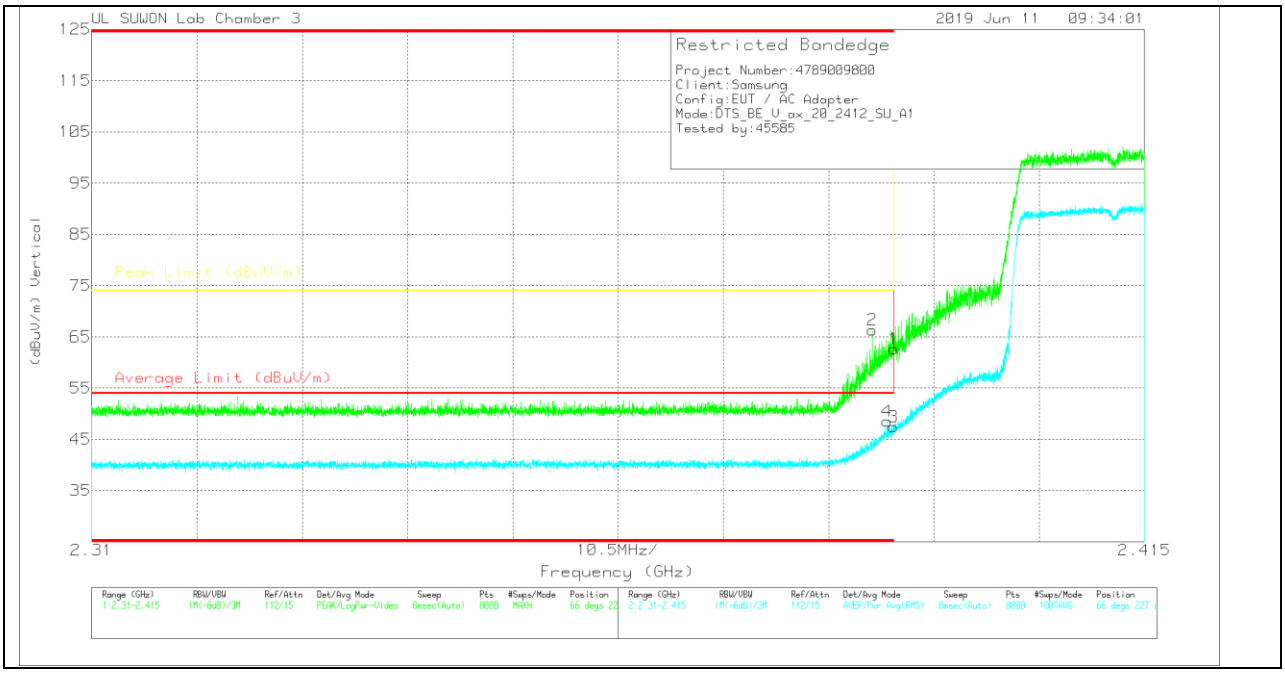
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00205959	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	54.34	Pk	31.7	-23.4	0	62.64	-	-	74	-11.36	66	227	V
2	* 2.388	58.04	Pk	31.7	-23.4	0	66.34	-	-	74	-7.66	66	227	V
3	* 2.39	39.1	RMS	31.7	-23.4	0	47.4	54	-6.6	-	-	66	227	V
4	* 2.389	40.2	RMS	31.7	-23.4	0	48.5	54	-5.5	-	-	66	227	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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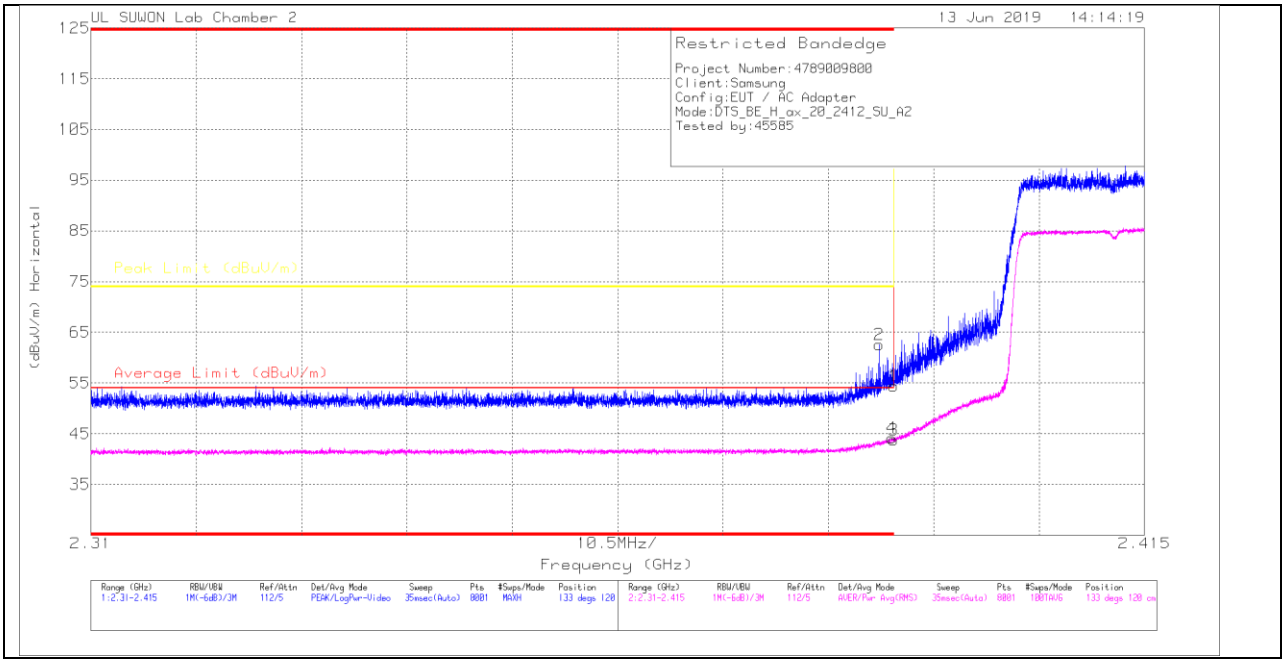
SU mode (ANT_2)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	43.63	Pk	31.6	-20.8	0	54.43	-	-	74	-19.57	133	120	H
2	* 2.389	51.72	Pk	31.6	-20.8	0	62.52	-	-	74	-11.48	133	120	H
3	* 2.39	33.01	RMS	31.6	-20.8	0	43.81	54	-10.19	-	-	133	120	H
4	* 2.39	33.32	RMS	31.6	-20.8	0	44.12	54	-9.88	-	-	133	120	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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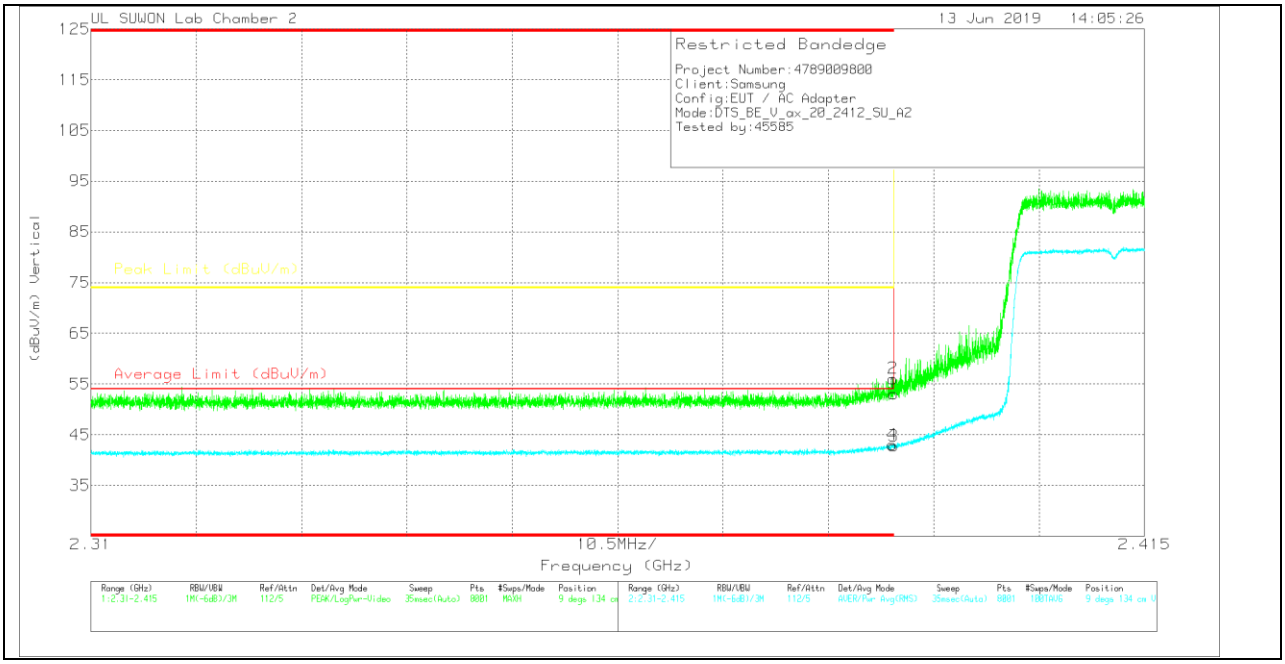
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	42.31	Pk	31.6	-20.8	0	53.11	-	-	74	-20.89	9	134	V
2	* 2.39	45.28	Pk	31.6	-20.8	0	56.08	-	-	74	-17.92	9	134	V
3	* 2.39	31.99	RMS	31.6	-20.8	0	42.79	54	-11.21	-	-	9	134	V
4	* 2.39	32.28	RMS	31.6	-20.8	0	43.08	54	-10.92	-	-	9	134	V

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