

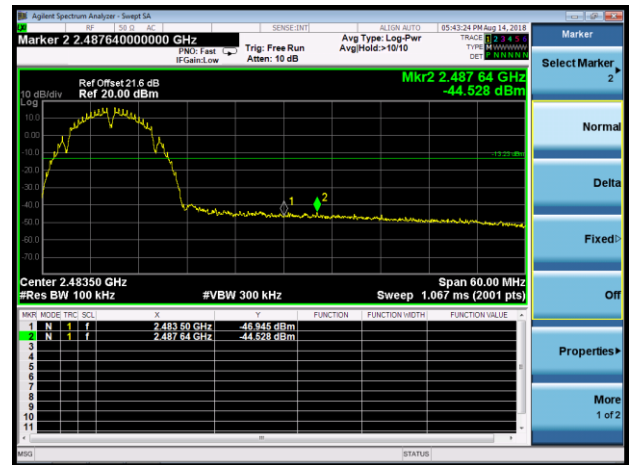
802.11b Out-of-Band Emissions - Ant 3 / Ant 0 + 1 + 2 + 3

Channel 11 (2462MHz)

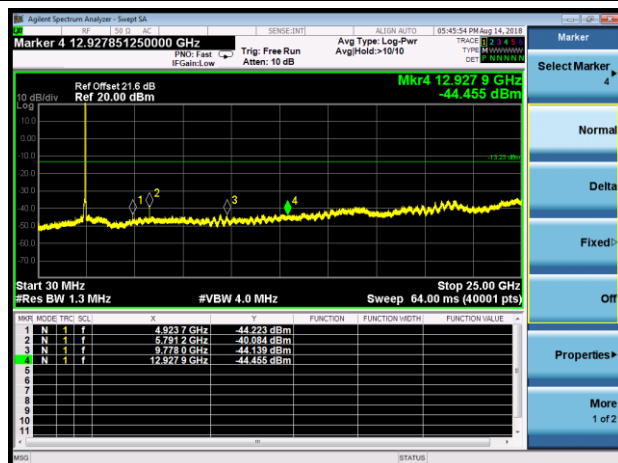
100kHz PSD reference Level



High Band Edge



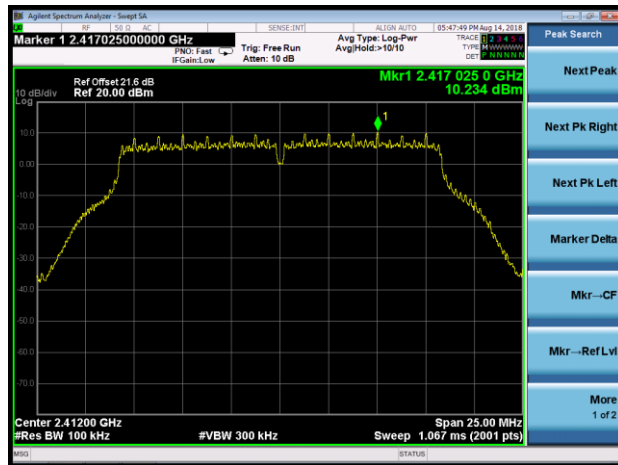
Spurious Emission



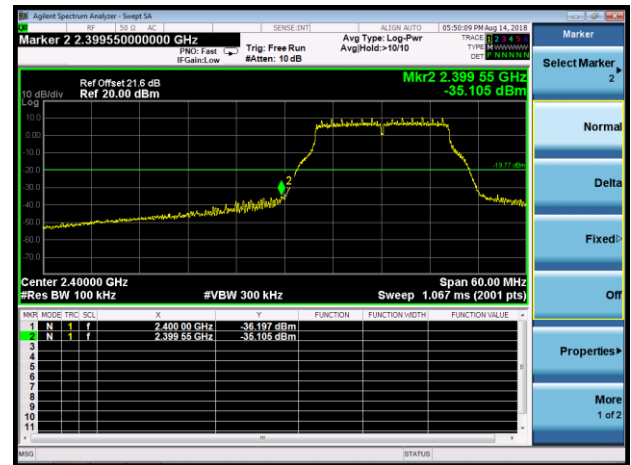
802.11g Out-of-Band Emissions - Ant 3 / Ant 0 + 1 + 2 + 3

Channel 01 (2412MHz)

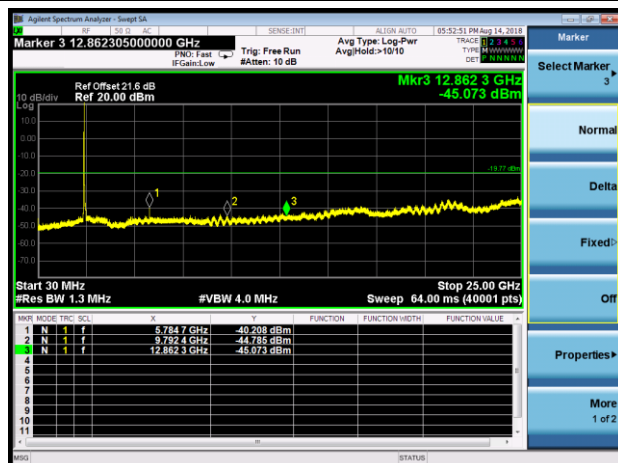
100kHz PSD reference Level



Low Band Edge

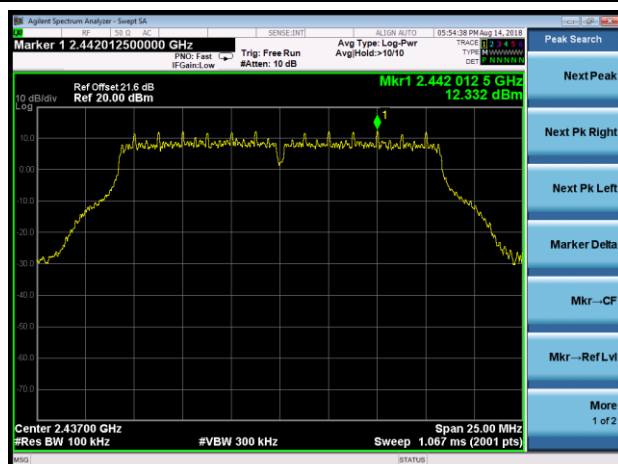


Spurious Emission

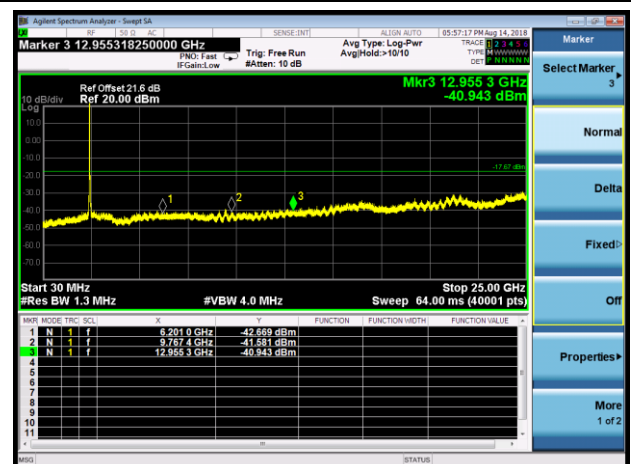


Channel 06 (2437MHz)

100kHz PSD reference Level



Spurious Emission



802.11g Out-of-Band Emissions - Ant 3 / Ant 0 + 1 + 2 + 3

Channel 11 (2462MHz)

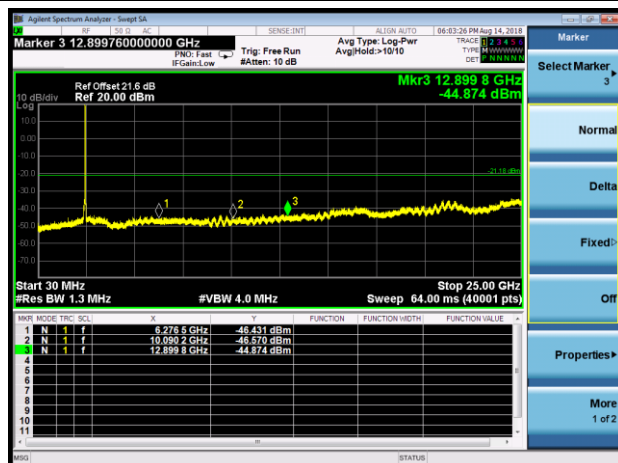
100kHz PSD reference Level



High Band Edge



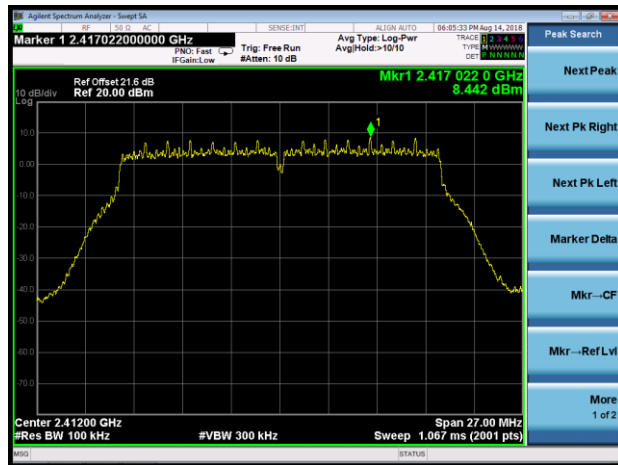
Spurious Emission



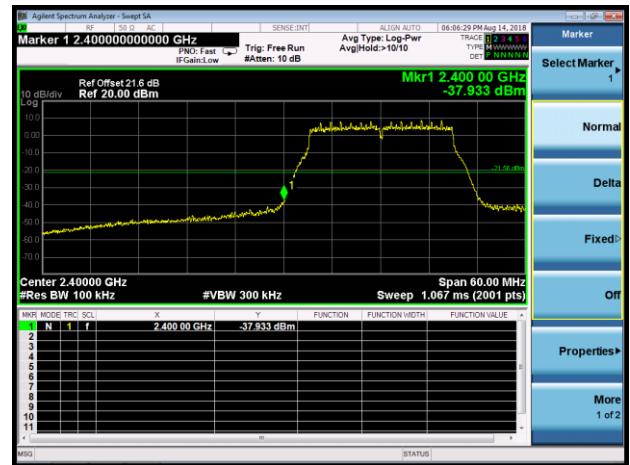
802.11n-HT20 Out-of-Band Emissions - Ant 3 / Ant 0 + 1 + 2 + 3

Channel 01 (2412MHz)

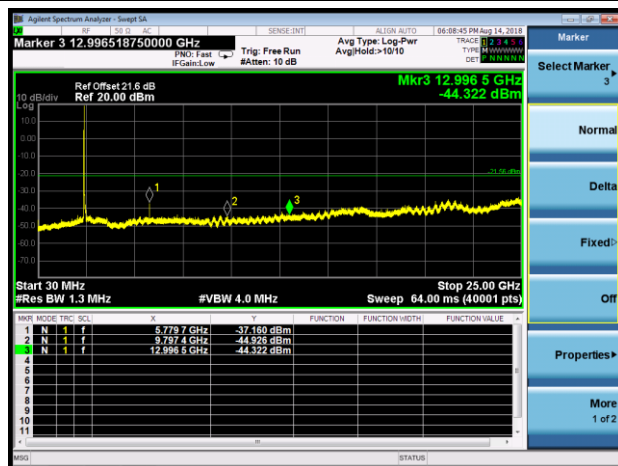
100kHz PSD reference Level



Low Band Edge

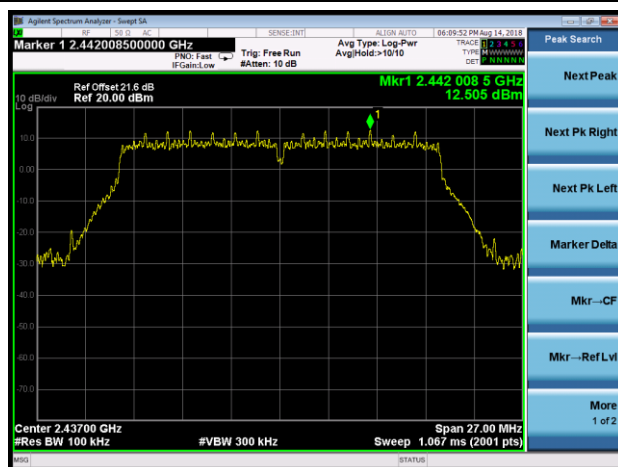


Spurious Emission

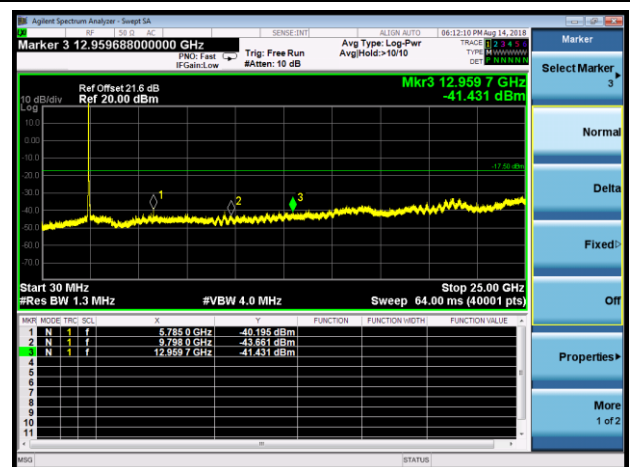


Channel 06 (2437MHz)

100kHz PSD reference Level



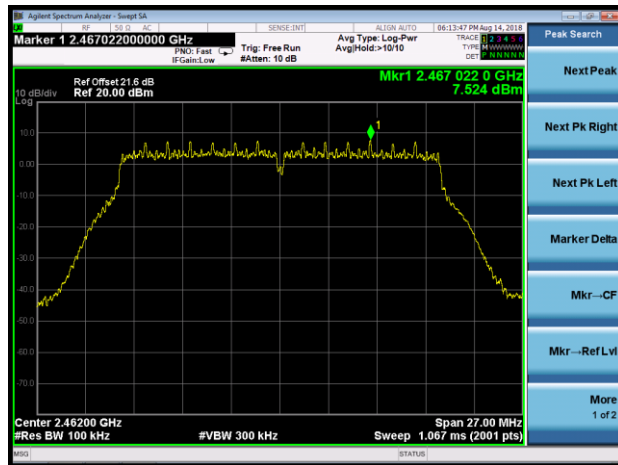
Spurious Emission



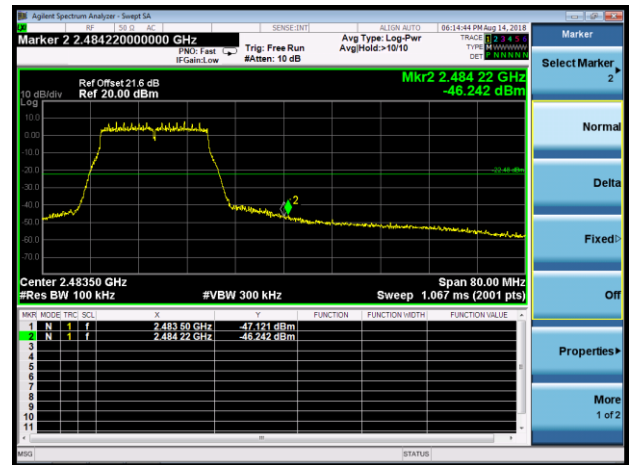
802.11n-HT20 Out-of-Band Emissions - Ant 3 / Ant 0 + 1 + 2 + 3

Channel 11 (2462MHz)

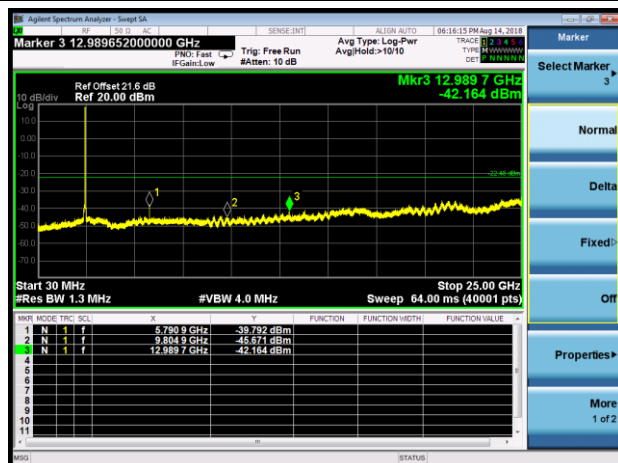
100kHz PSD reference Level



High Band Edge



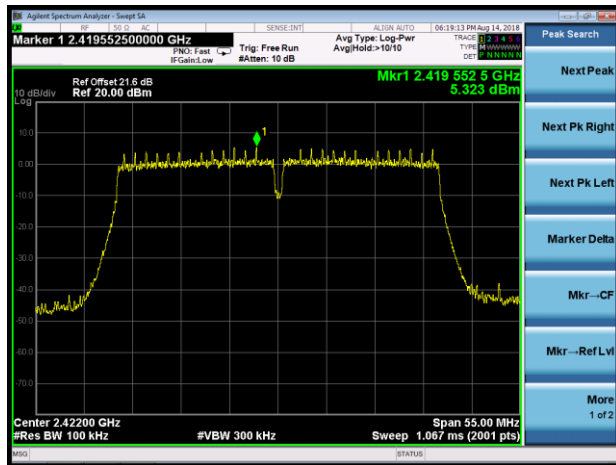
Spurious Emission



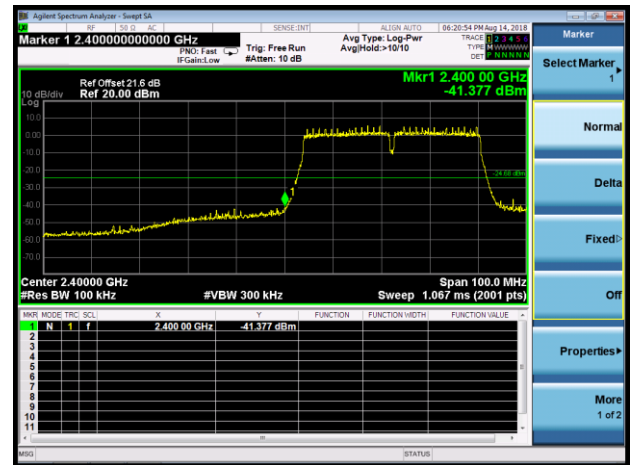
802.11n-HT40 Out-of-Band Emissions - Ant 3 / Ant 0 + 1 + 2 + 3

Channel 03 (2422MHz)

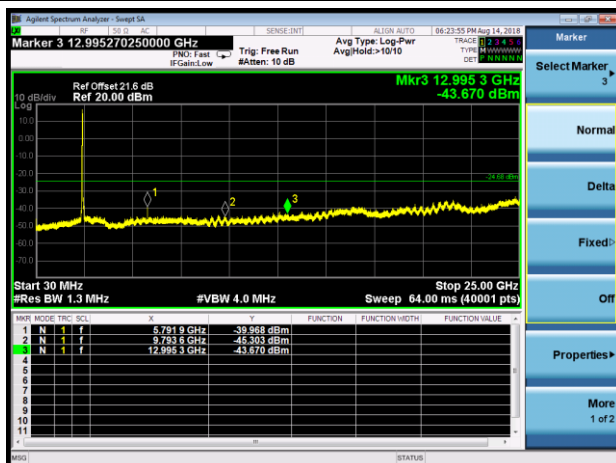
100kHz PSD reference Level



Low Band Edge

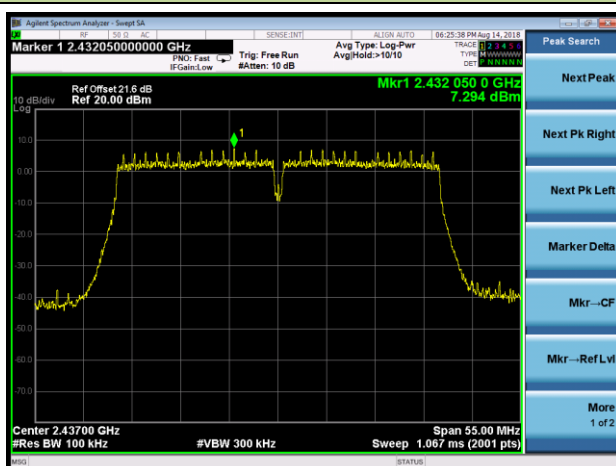


Spurious Emission

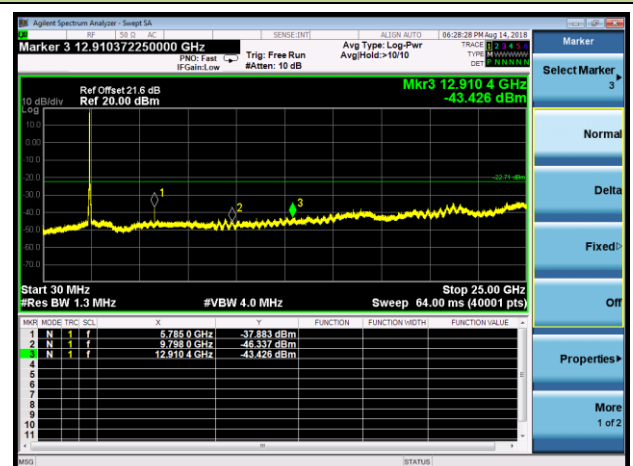


Channel 06 (2437MHz)

100kHz PSD reference Level



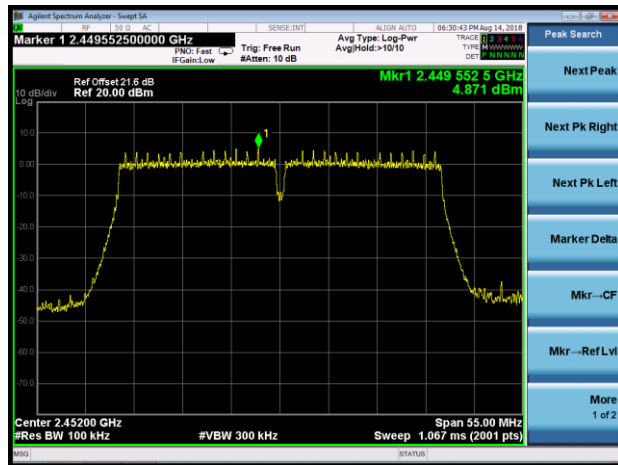
Spurious Emission



802.11n-HT40 Out-of-Band Emissions - Ant 3 / Ant 0 + 1 + 2 + 3

Channel 09 (2452MHz)

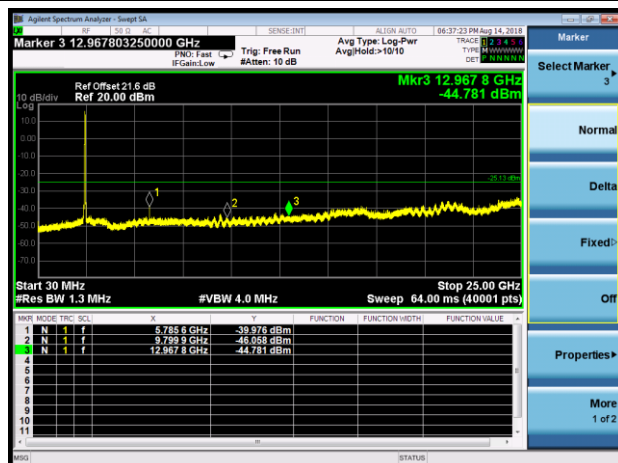
100kHz PSD reference Level



High Band Edge



Spurious Emission



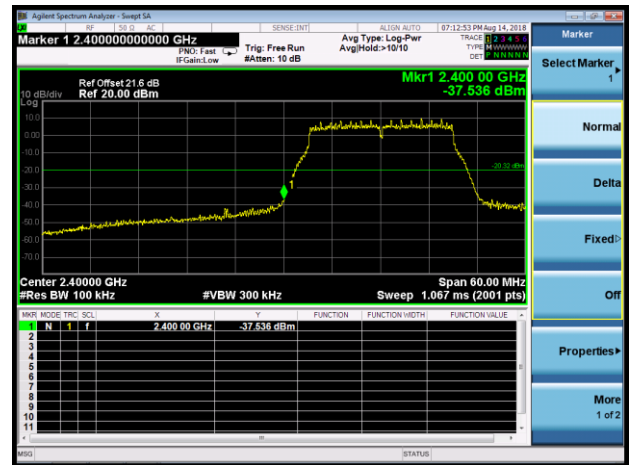
802.11ac-VHT20 Out-of-Band Emissions - Ant 3 / Ant 0 + 1 + 2 + 3

Channel 01 (2412MHz)

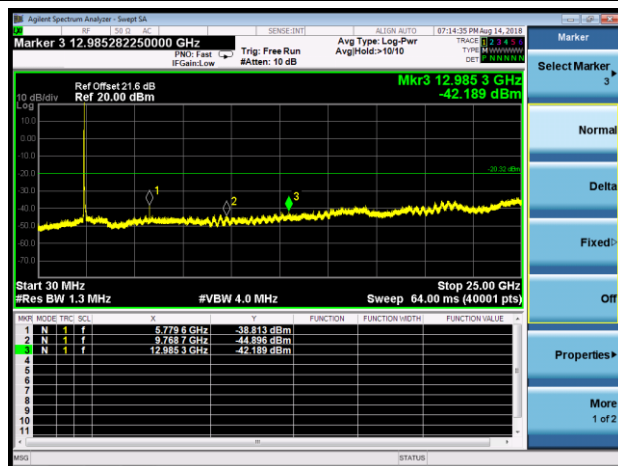
100kHz PSD reference Level



Low Band Edge

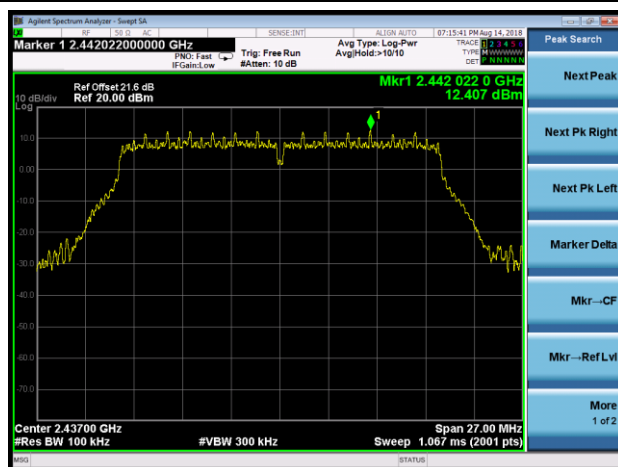


Spurious Emission

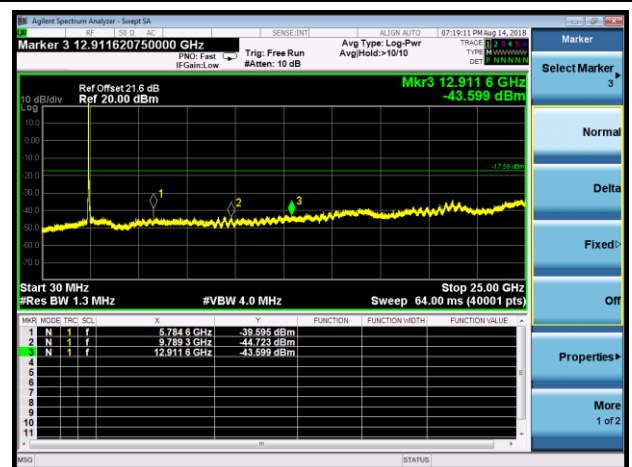


Channel 06 (2437MHz)

100kHz PSD reference Level



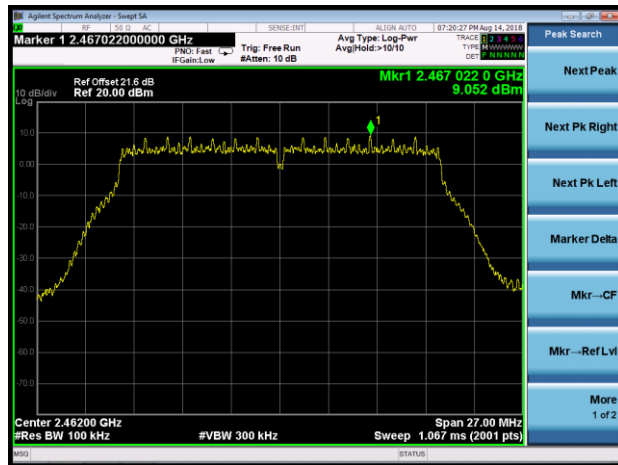
Spurious Emission



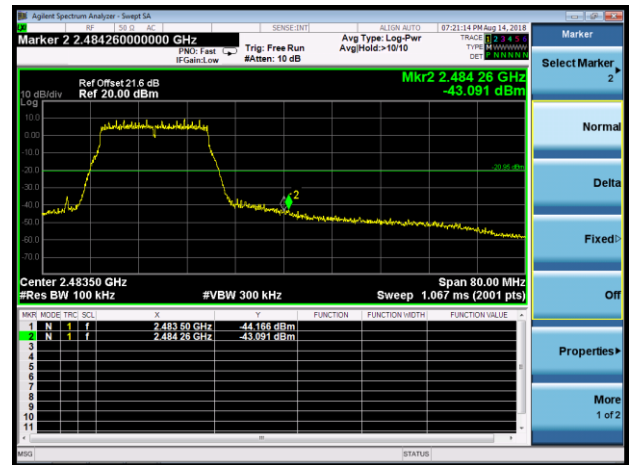
802.11ac-VHT20 Out-of-Band Emissions - Ant 3 / Ant 0 + 1 + 2 + 3

Channel 11 (2462MHz)

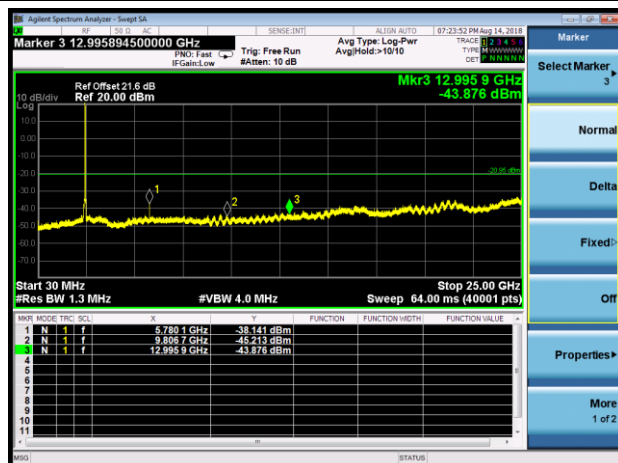
100kHz PSD reference Level



High Band Edge



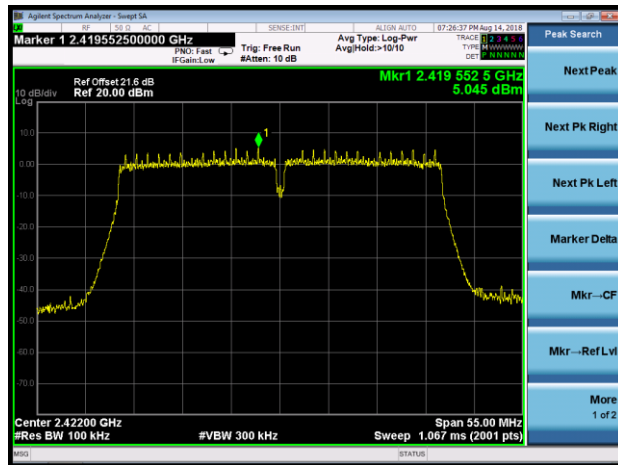
Spurious Emission



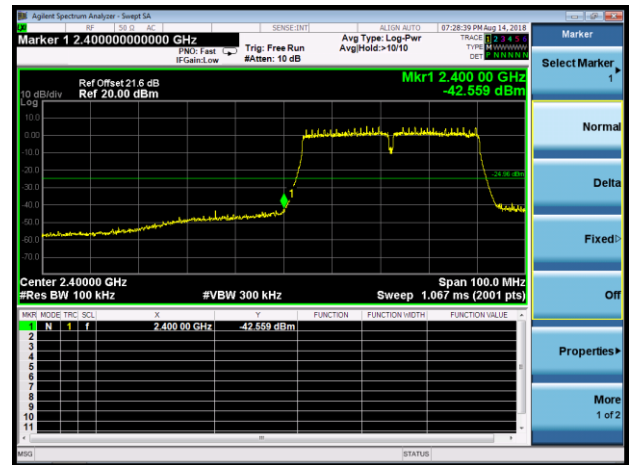
802.11ac-VHT40 Out-of-Band Emissions - Ant 3 / Ant 0 + 1 + 2 + 3

Channel 03 (2422MHz)

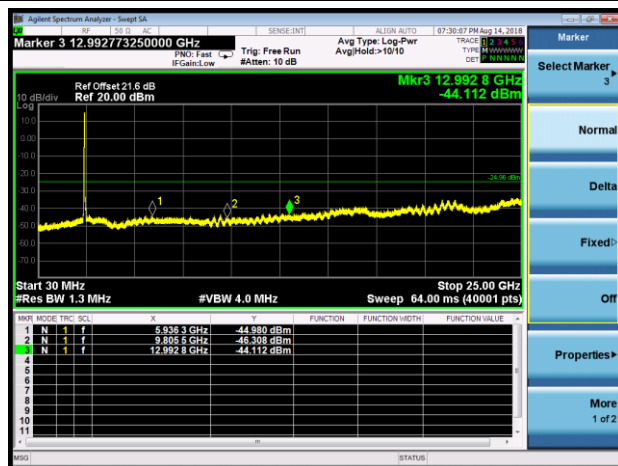
100kHz PSD reference Level



Low Band Edge

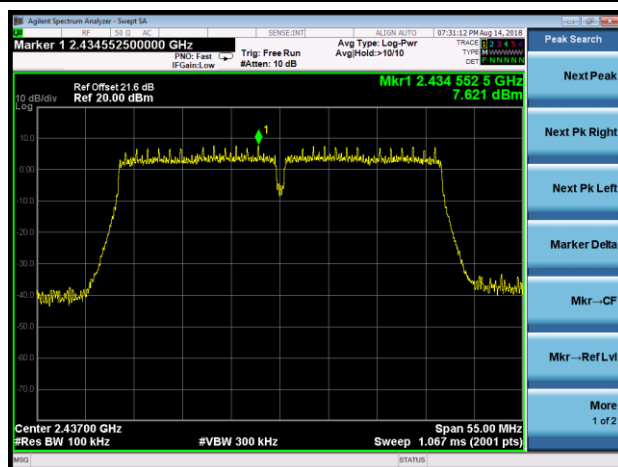


Spurious Emission

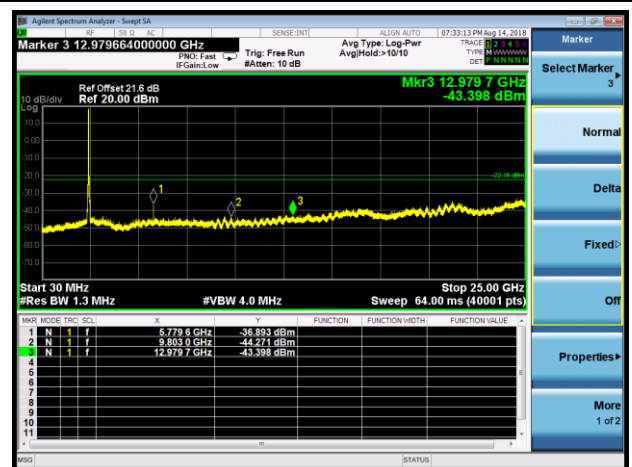


Channel 06 (2437MHz)

100kHz PSD reference Level



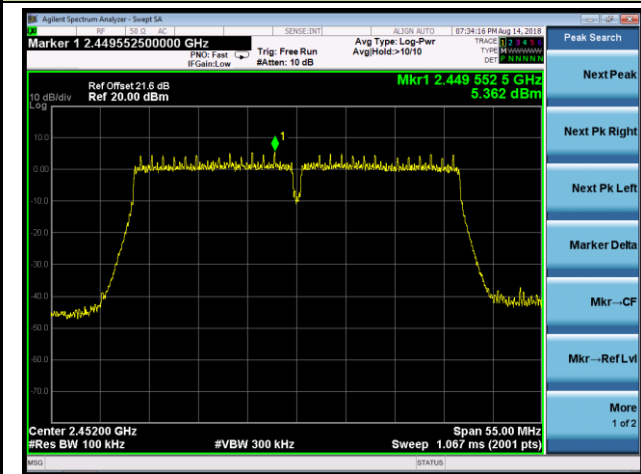
Spurious Emission



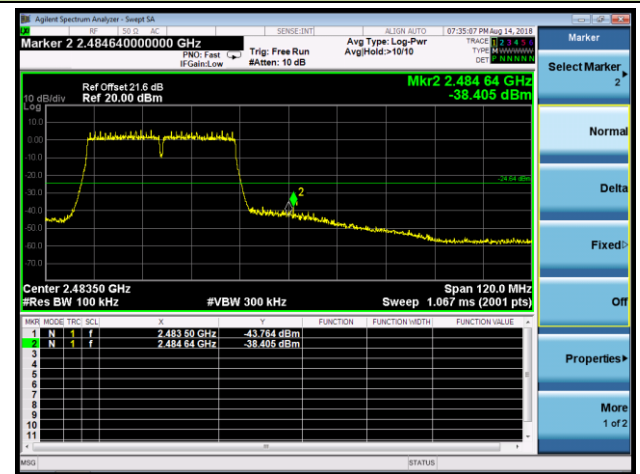
802.11ac-VHT40 Out-of-Band Emissions - Ant 3 / Ant 0 + 1 + 2 + 3

Channel 09 (2452MHz)

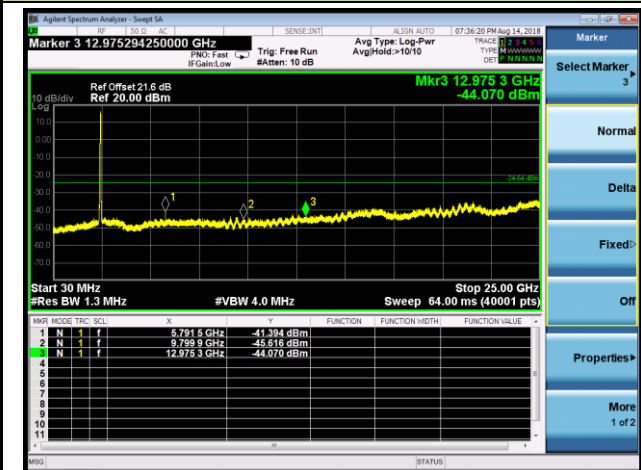
100kHz PSD reference Level



High Band Edge



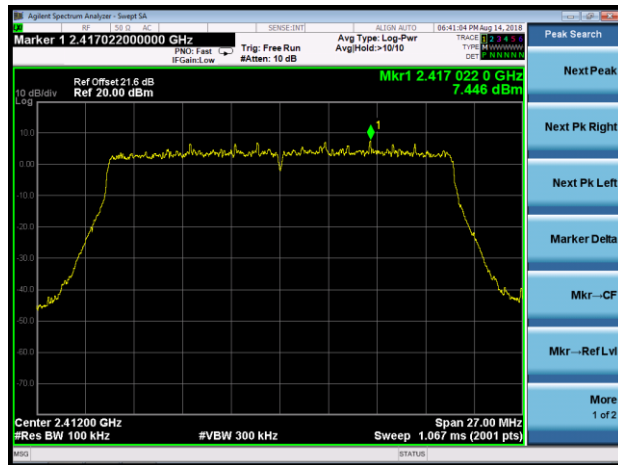
Spurious Emission



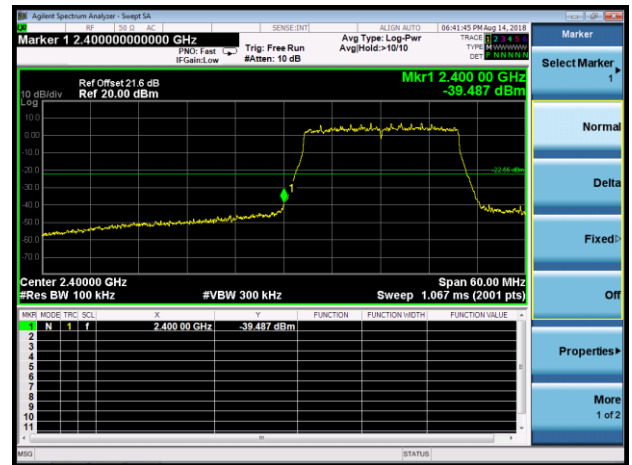
802.11ax-HE20 Out-of-Band Emissions - Ant 3 / Ant 0 + 1 + 2 + 3

Channel 01 (2412MHz)

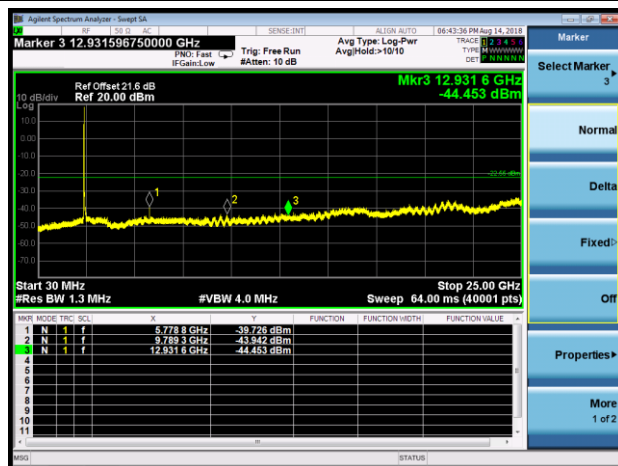
100kHz PSD reference Level



Low Band Edge

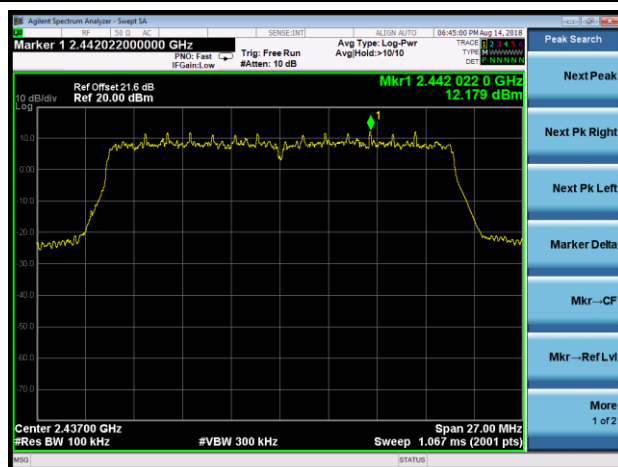


Spurious Emission

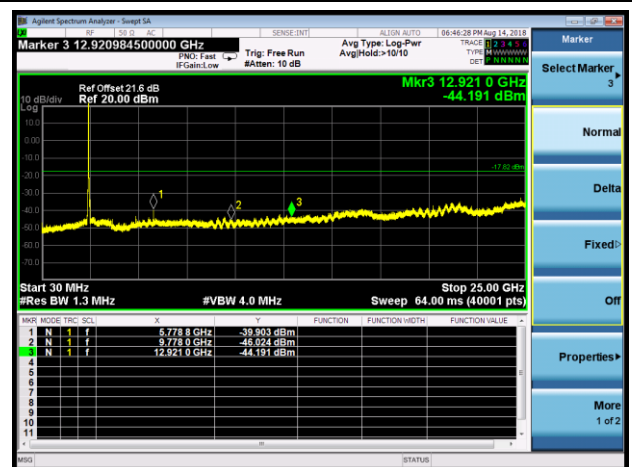


Channel 06 (2437MHz)

100kHz PSD reference Level



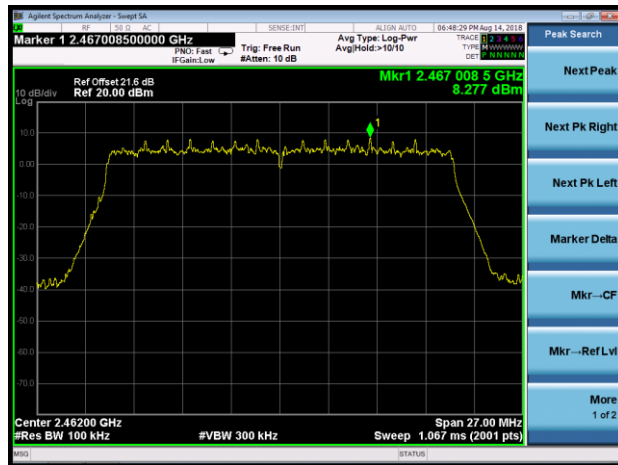
Spurious Emission



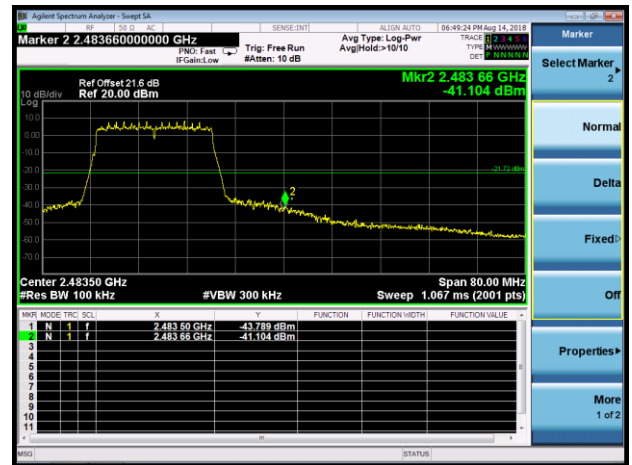
802.11ax-HE20 Out-of-Band Emissions - Ant 3 / Ant 0 + 1 + 2 + 3

Channel 11 (2462MHz)

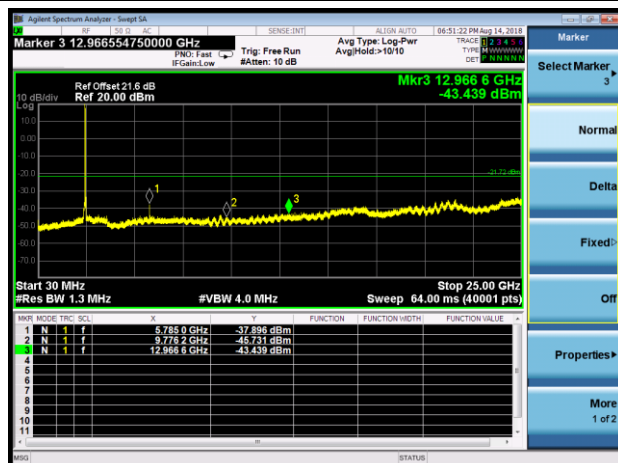
100kHz PSD reference Level



High Band Edge



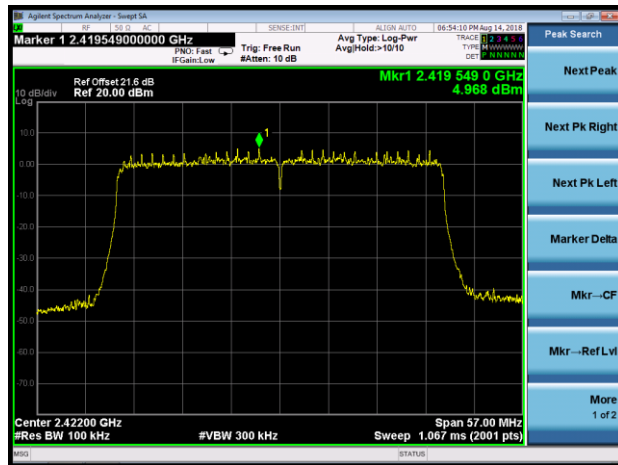
Spurious Emission



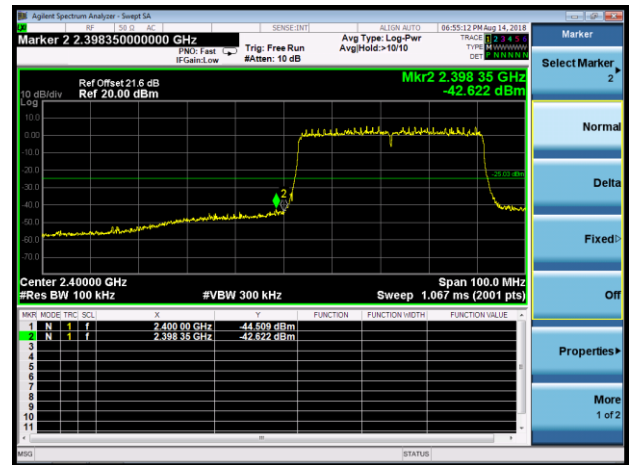
802.11ax-HE40 Out-of-Band Emissions - Ant 3 / Ant 0 + 1 + 2 + 3

Channel 03 (2422MHz)

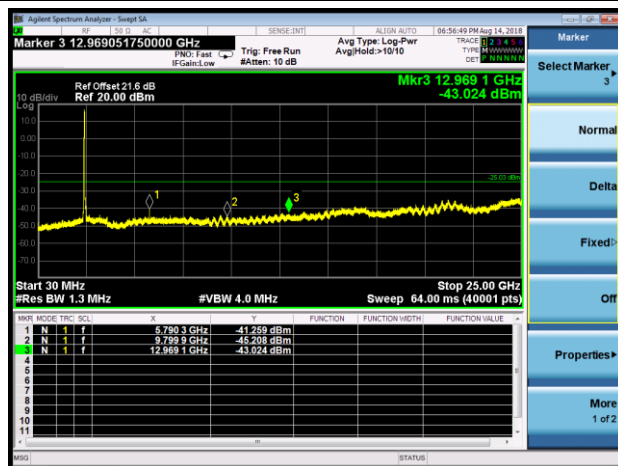
100kHz PSD reference Level



Low Band Edge

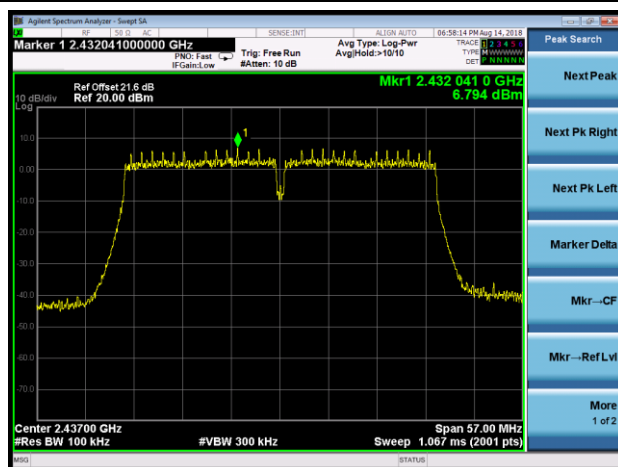


Spurious Emission

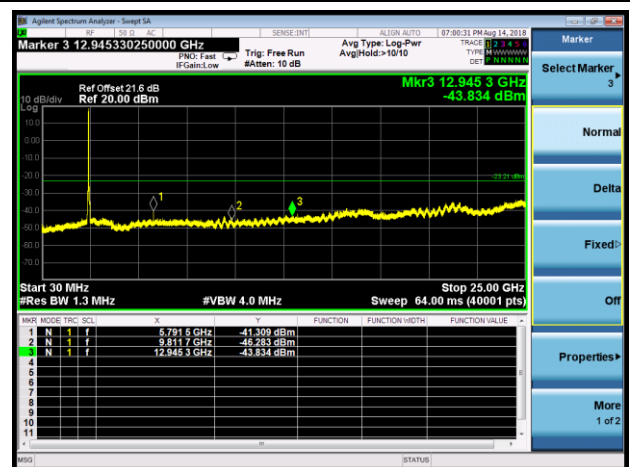


Channel 06 (2437MHz)

100kHz PSD reference Level



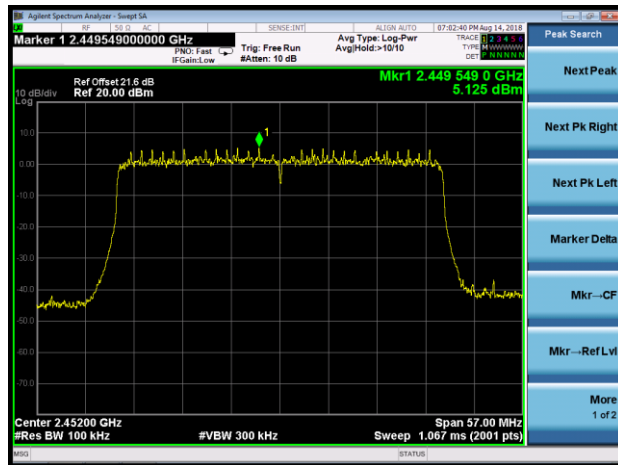
Spurious Emission



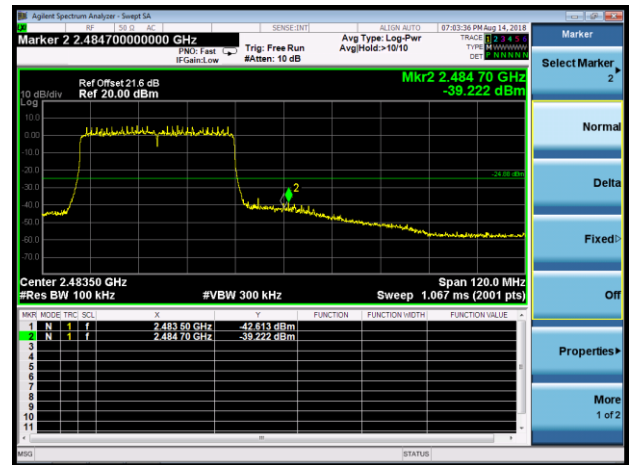
802.11ax-HE40 Out-of-Band Emissions - Ant 3 / Ant 0 + 1 + 2 + 3

Channel 09 (2452MHz)

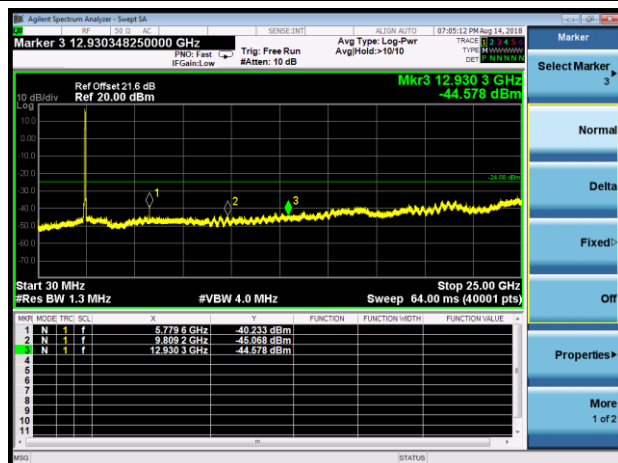
100kHz PSD reference Level



High Band Edge



Spurious Emission



7.6. Radiated Spurious Emission Measurement

7.6.1. Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [uV/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

7.6.2. Test Procedure Used

ANSI C63.10 Section 6.3 (General Requirements)

ANSI C63.10 Section 6.4 (Standard test method below 30MHz)

ANSI C63.10 Section 6.5 (Standard test method above 30MHz to 1GHz)

ANSI C63.10 Section 6.6 (Standard test method above 1GHz)

7.6.3. Test Setting

Quasi-Peak Measurements below 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. Span was set greater than 1MHz
3. RBW = as specified in Table 1
4. Detector = CISPR quasi-peak or average
5. Sweep time = auto couple
6. Trace was allowed to stabilize

Table 1 - RBW as a function of frequency

Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000 MHz	1 MHz

Peak Measurements above 1GHz

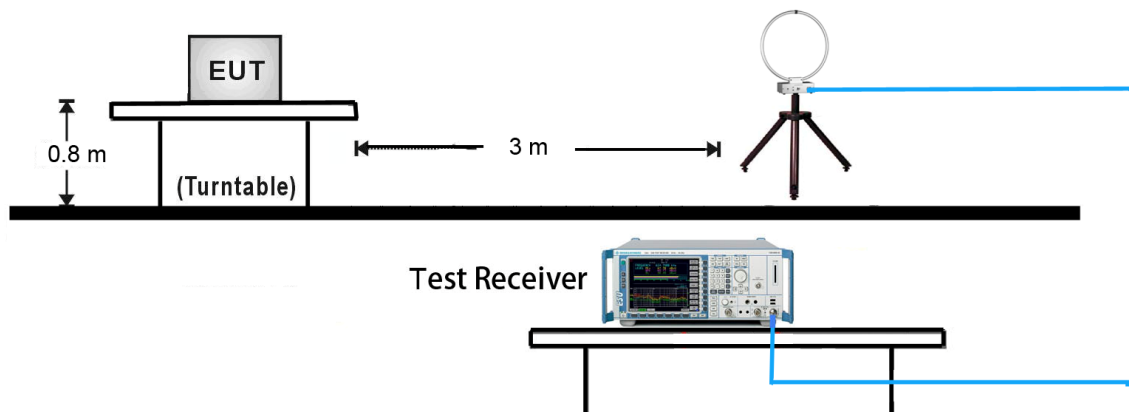
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Average Measurements above 1GHz (Method VB)

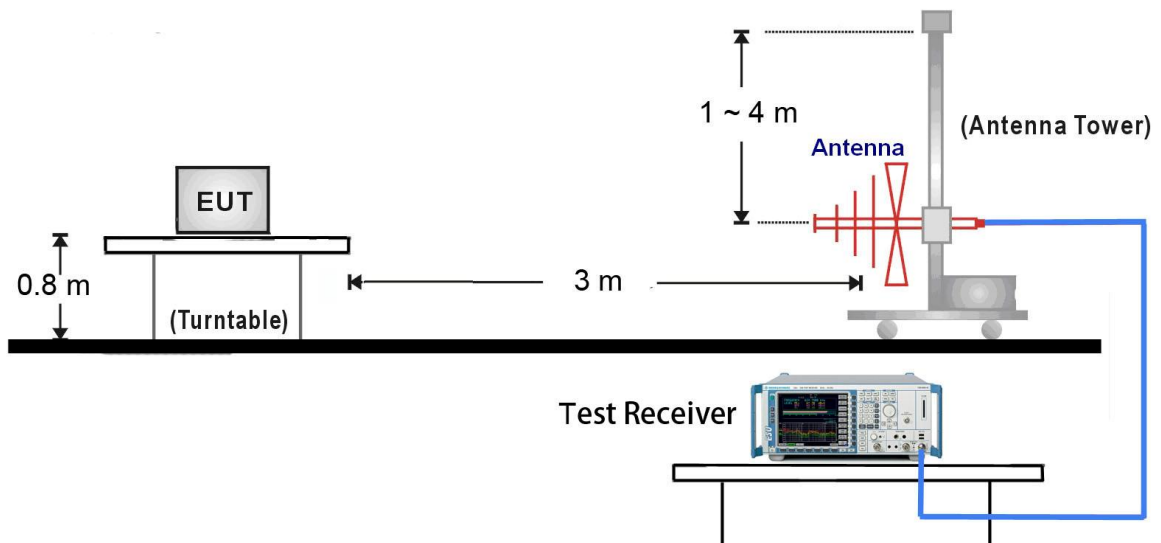
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; If the EUT is configured to transmit with duty cycle $\geq 98\%$, set VBW = 10 Hz.
If the EUT duty cycle is $< 98\%$, set $VBW \geq 1/T$. T is the minimum transmission duration.
4. Detector = Peak
5. Sweep time = auto
6. Trace mode = max hold
7. Trace was allowed to stabilize

7.6.4. Test Setup

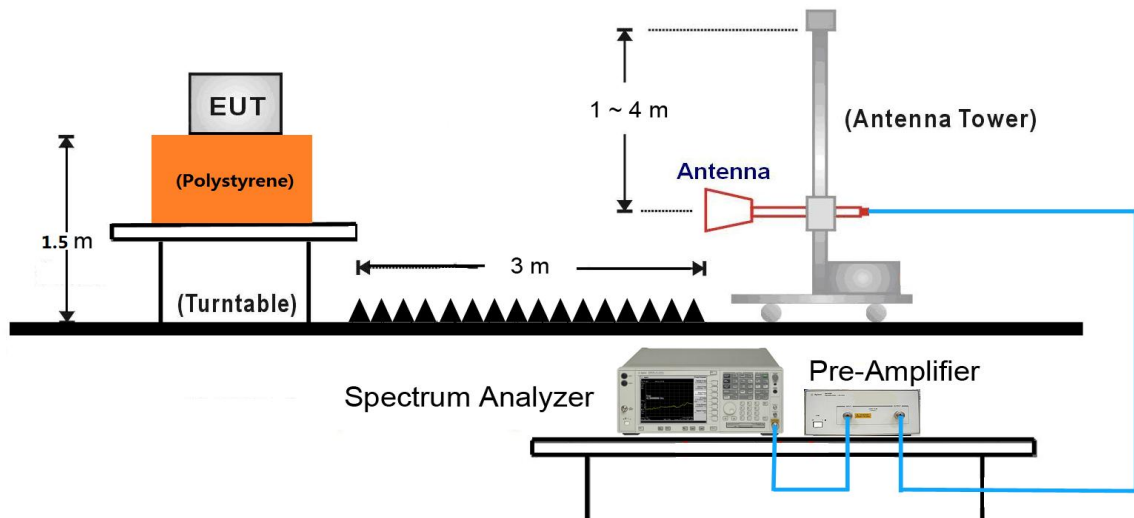
9kHz ~ 30MHz Test Setup:



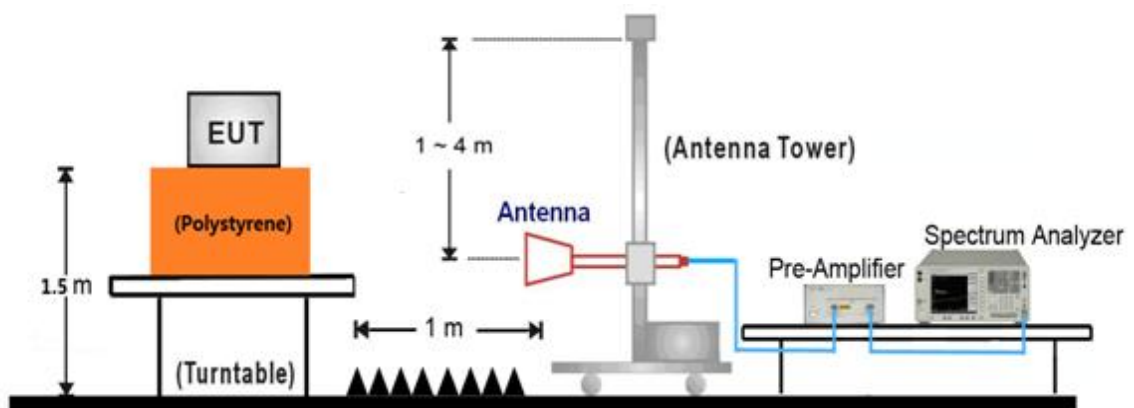
30MHz ~ 1GHz Test Setup:



1GHz ~ 18GHz Test Setup:



18GHz ~ 25GHz Test Setup:



7.6.5. Test Result

Product	AX6000 MU-MIMO Wi-Fi Router	Temperature	26°C
Test Engineer	Dandy Li	Relative Humidity	56%
Test Site	AC2	Test Date	2018/08/12
Test Mode:	802.11b - Ant 0 + 1 + 2 + 3 (CDD Mode)	Test Channel:	01
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	4825.0	44.4	5.6	50.0	74.0	-24.0	Peak	Horizontal
	7502.5	33.8	14.2	48.0	74.0	-26.0	Peak	Horizontal
*	8820.0	33.7	14.9	48.6	89.4	-40.8	Peak	Horizontal
*	10171.5	32.3	17.9	50.2	89.4	-39.2	Peak	Horizontal
	4824.0	51.4	5.6	57.0	74.0	-17.0	Peak	Vertical
	4824.0	47.9	5.6	53.5	54.0	-0.5	Average	Vertical
	7434.5	33.2	14.3	47.5	74.0	-26.5	Peak	Vertical
*	9636.0	31.7	16.2	47.9	89.4	-41.5	Peak	Vertical
*	10180.0	32.4	17.9	50.3	89.4	-39.1	Peak	Vertical

Note 1: “*” is not in restricted band, its limit is 30dBc of the fundamental emission level (119.4dBμV/m) or 15.209 which is higher.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	AX6000 MU-MIMO Wi-Fi Router	Temperature	26°C
Test Engineer	Dandy Li	Relative Humidity	56%
Test Site	AC2	Test Date	2018/08/12
Test Mode:	802.11b - Ant 0 + 1 + 2 + 3 (CDD Mode)	Test Channel:	06
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	4876.0	49.8	5.6	55.4	74.0	-18.6	Peak	Horizontal
	4876.0	47.9	5.6	53.5	54.0	-0.5	Average	Horizontal
	8165.5	32.4	14.4	46.8	74.0	-27.2	Peak	Horizontal
*	8803.0	32.6	14.9	47.5	90.6	-43.1	Peak	Horizontal
*	9670.0	31.4	16.5	47.9	90.6	-42.7	Peak	Horizontal
	4876.0	46.7	5.6	52.3	74.0	-21.7	Peak	Vertical
	8386.5	33.9	13.8	47.7	74.0	-26.3	Peak	Vertical
*	9678.5	32.0	16.4	48.4	90.6	-42.2	Peak	Vertical
*	10307.5	33.1	18.4	51.5	90.6	-39.1	Peak	Vertical

Note 1: “*” is not in restricted band, its limit is 30dBc of the fundamental emission level (120.6dBμV/m) or 15.209 which is higher.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	AX6000 MU-MIMO Wi-Fi Router	Temperature	26°C
Test Engineer	Dandy Li	Relative Humidity	56%
Test Site	AC2	Test Date	2018/08/12
Test Mode:	802.11b - Ant 0 + 1 + 2 + 3 (CDD Mode)	Test Channel:	11
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	4924.0	52.4	5.6	58.0	74.0	-16.0	Peak	Horizontal
	4924.0	47.9	5.7	53.6	54.0	-0.4	Average	Horizontal
	8310.0	33.4	13.8	47.2	74.0	-26.8	Peak	Horizontal
*	8769.0	33.0	14.8	47.8	92.1	-44.3	Peak	Horizontal
*	9746.5	33.1	16.8	49.9	92.1	-42.2	Peak	Horizontal
	4924.0	52.2	5.6	57.8	74.0	-16.2	Peak	Vertical
	4924.0	47.9	5.7	53.6	54.0	-0.4	Average	Vertical
	8310.0	33.3	13.8	47.1	74.0	-26.9	Peak	Vertical
*	8735.0	33.1	14.6	47.7	92.1	-44.4	Peak	Vertical
*	9653.0	33.0	16.4	49.4	92.1	-42.7	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 30dBc of the fundamental emission level (122.1dBμV/m) or 15.209 which is higher.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)