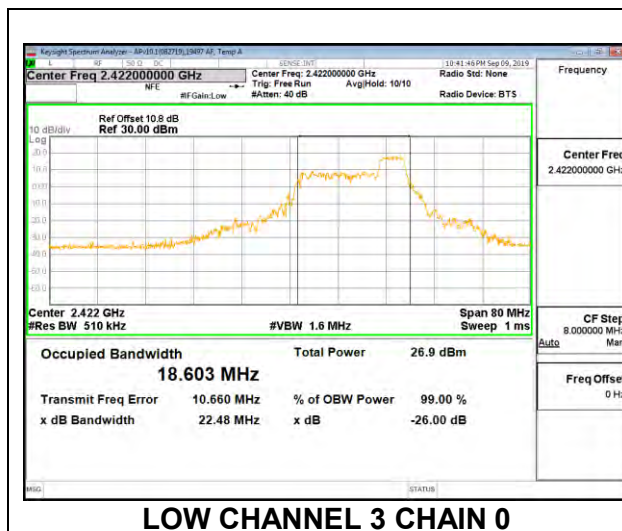


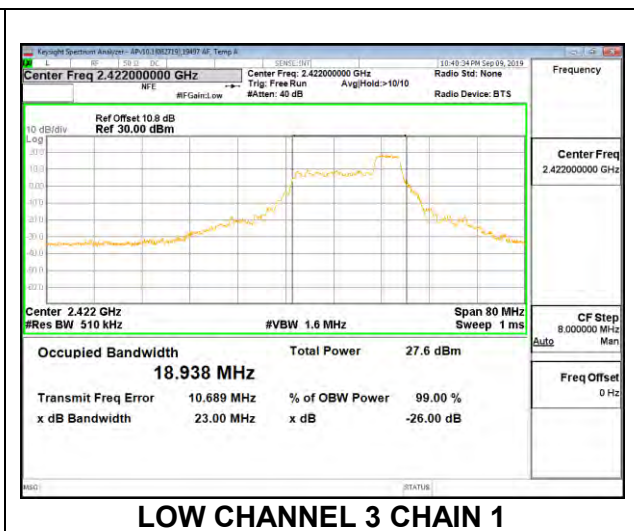
**2TX Antenna 1 + Antenna 2 OFDMA MODE – 52-Tones, RU Index 44**

Channel	Frequency (MHz)	99% Bandwidth Chain 0 (MHz)	99% Bandwidth Chain 1 (MHz)
Low 3	2422	18.603	18.938
Low 4	2427	18.599	18.649
Mid 6	2437	18.570	18.550
High 8	2447	18.151	18.176
High 9	2452	18.578	18.758
High 10	2457	18.575	18.475
High 11	2462	18.141	18.343

**LOW CHANNEL 3**

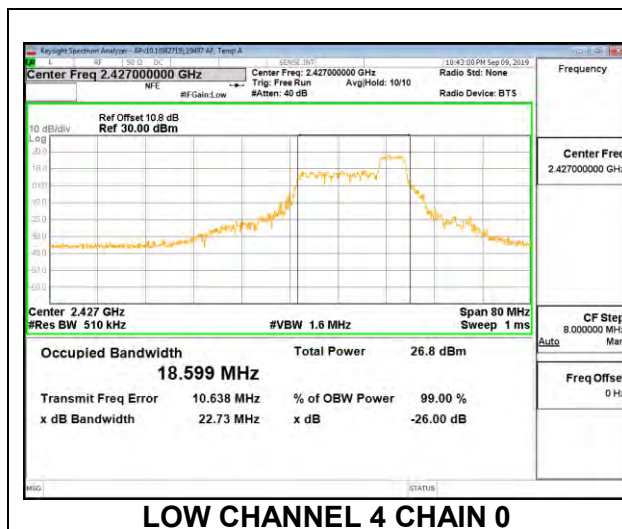


**LOW CHANNEL 3 CHAIN 0**

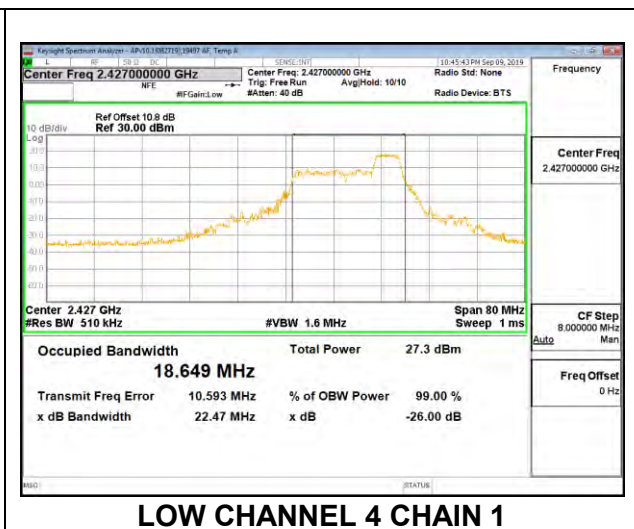


**LOW CHANNEL 3 CHAIN 1**

**LOW CHANNEL 4**

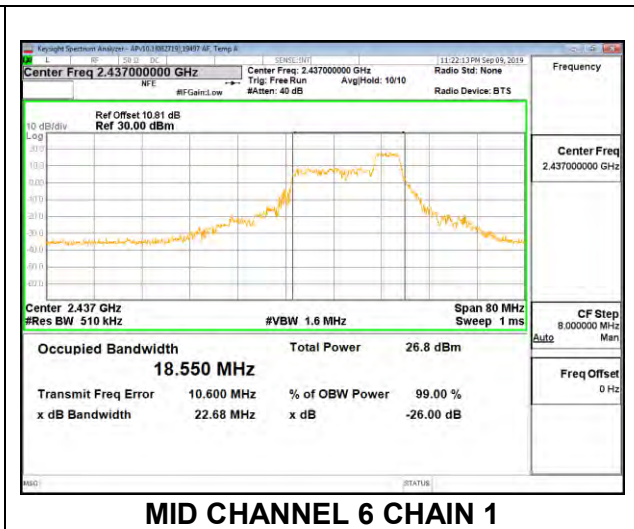
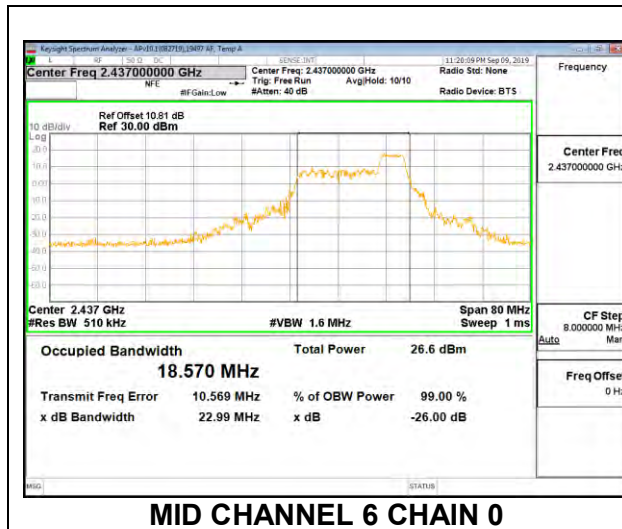


**LOW CHANNEL 4 CHAIN 0**

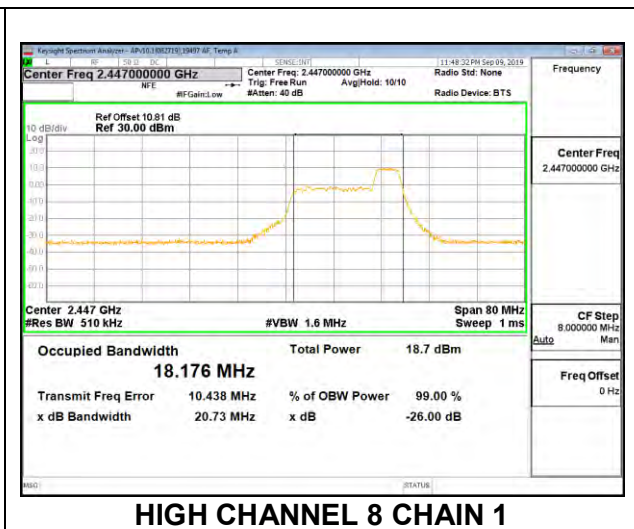
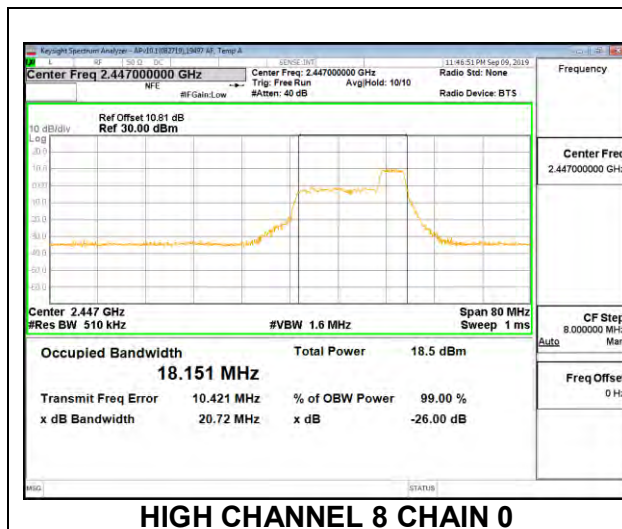


**LOW CHANNEL 4 CHAIN 1**

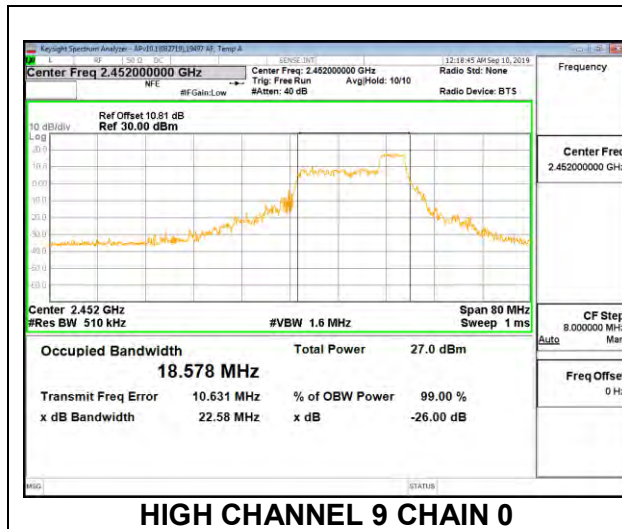
## MID CHANNEL 6



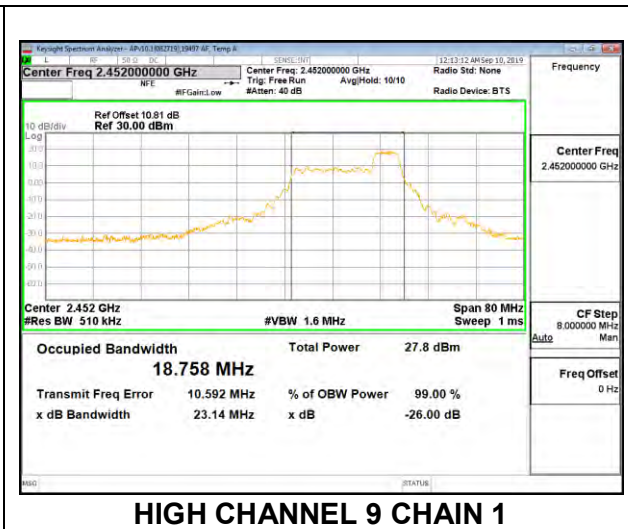
## HIGH CHANNEL 8



## HIGH CHANNEL 9

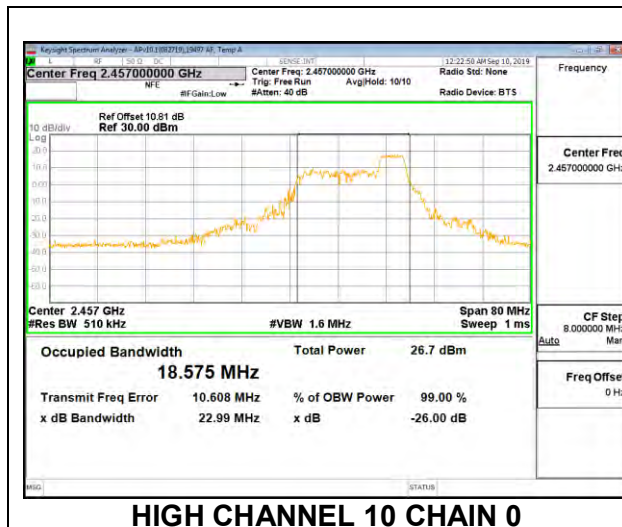


HIGH CHANNEL 9 CHAIN 0

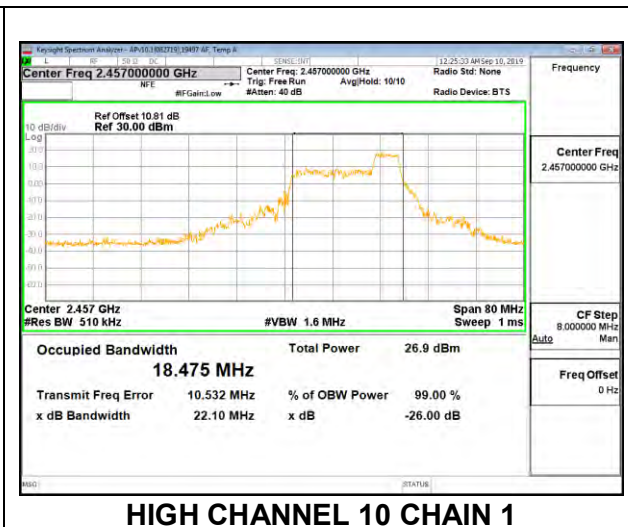


HIGH CHANNEL 9 CHAIN 1

## HIGH CHANNEL 10



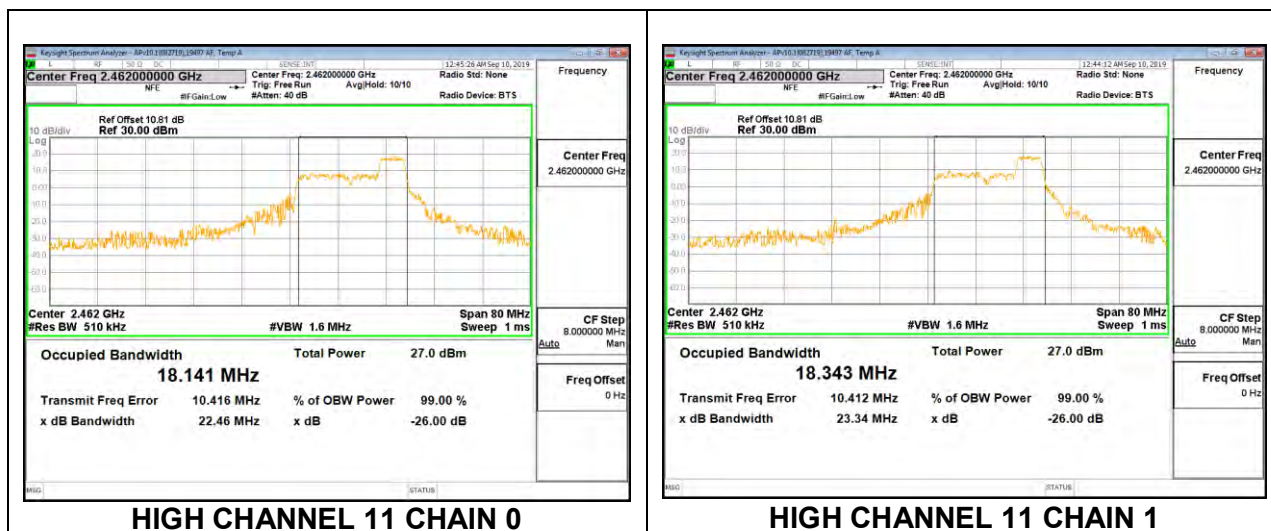
HIGH CHANNEL 10 CHAIN 0



HIGH CHANNEL 10 CHAIN 1



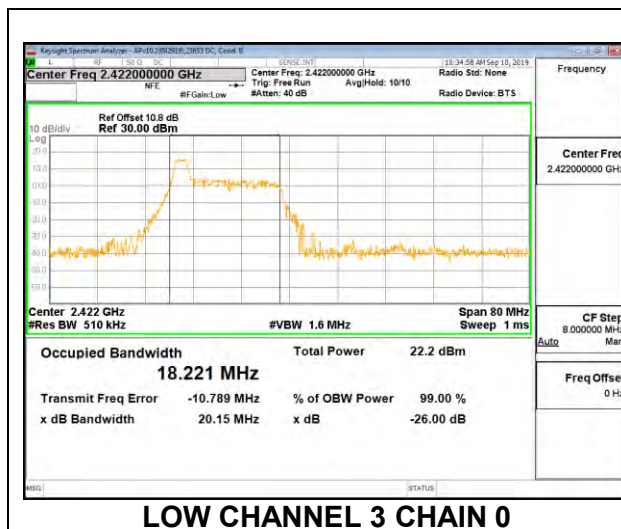
## HIGH CHANNEL 11



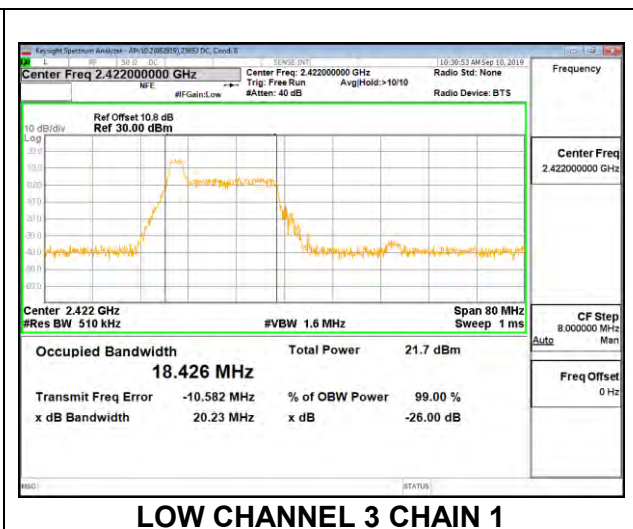
**2TX Antenna 1 + Antenna 2 OFDMA MODE – 26-Tones, RU Index 0**

Channel	Frequency (MHz)	99% Bandwidth Chain 0 (MHz)	99% Bandwidth Chain 1 (MHz)
Low 3	2422	18.221	18.426
Low 4	2427	18.401	18.403
Mid 6	2437	18.454	18.458
High 8	2447	18.449	18.379
High 9	2452	18.177	18.196
High 10	2457	18.364	18.295
High 11	2462	17.970	18.029

**LOW CHANNEL 3**

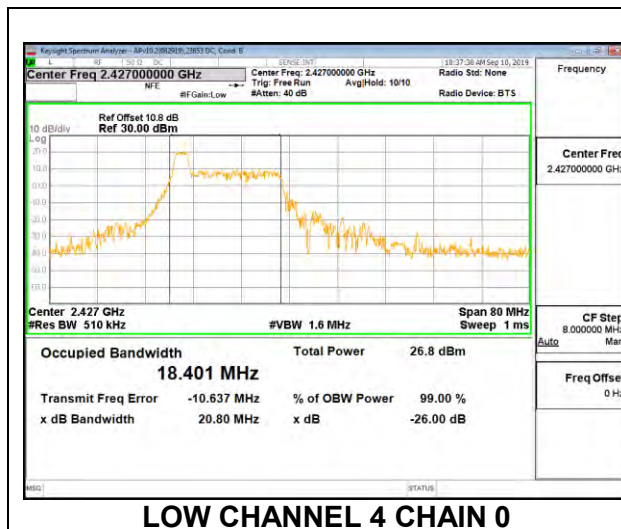


**LOW CHANNEL 3 CHAIN 0**

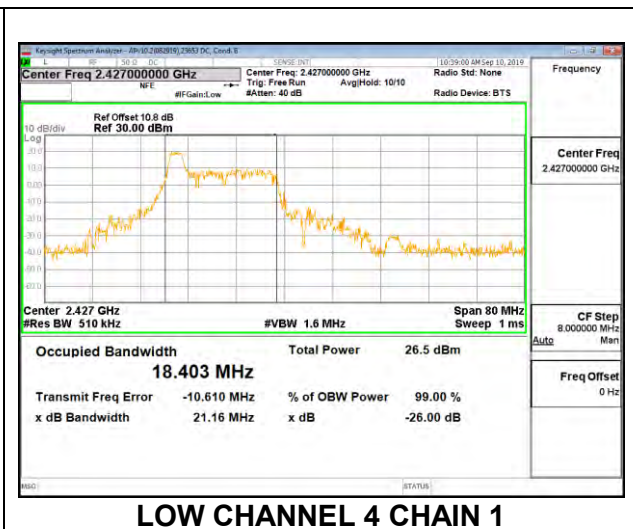


**LOW CHANNEL 3 CHAIN 1**

**LOW CHANNEL 4**

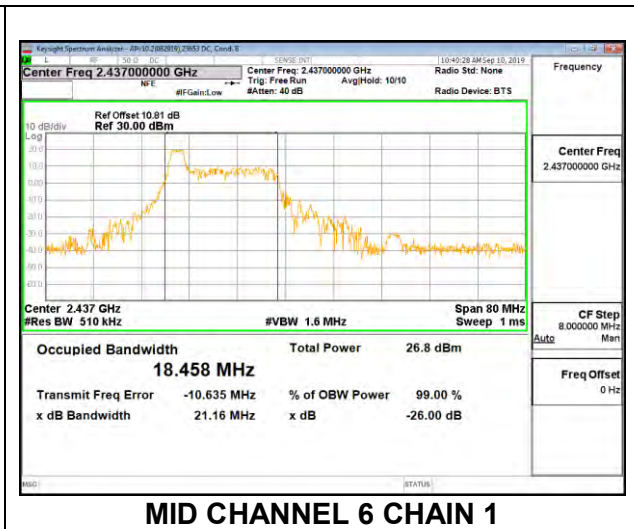
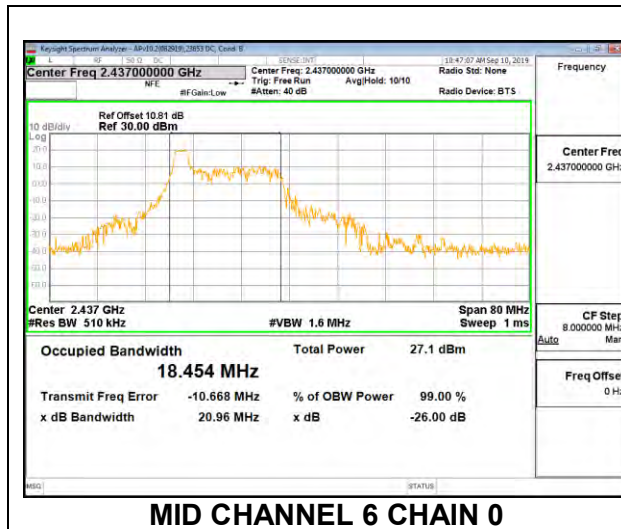


**LOW CHANNEL 4 CHAIN 0**

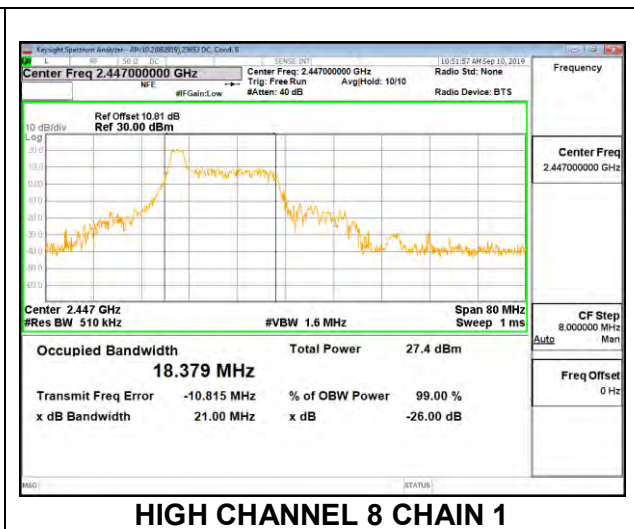
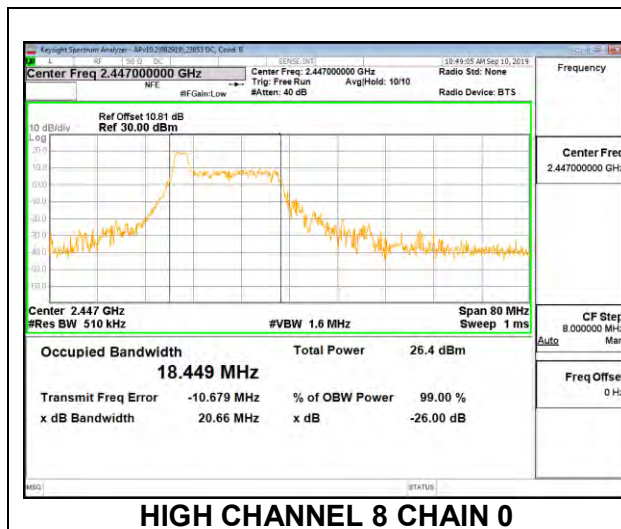


**LOW CHANNEL 4 CHAIN 1**

## MID CHANNEL 6

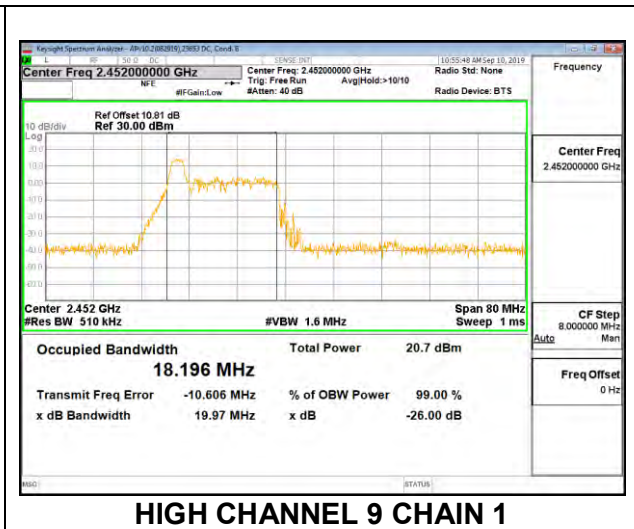
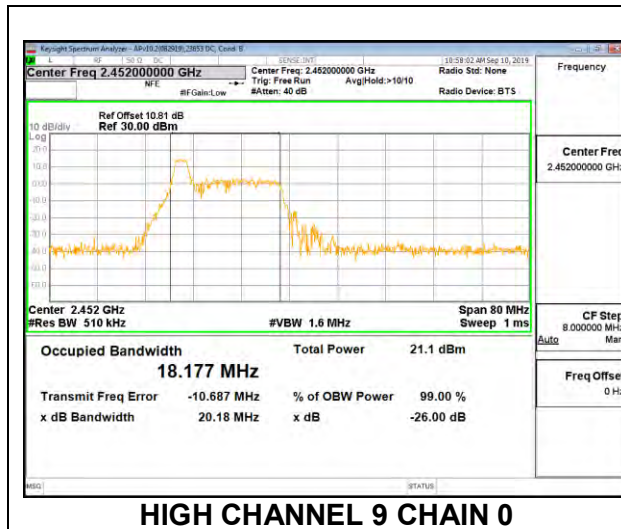


## HIGH CHANNEL 8

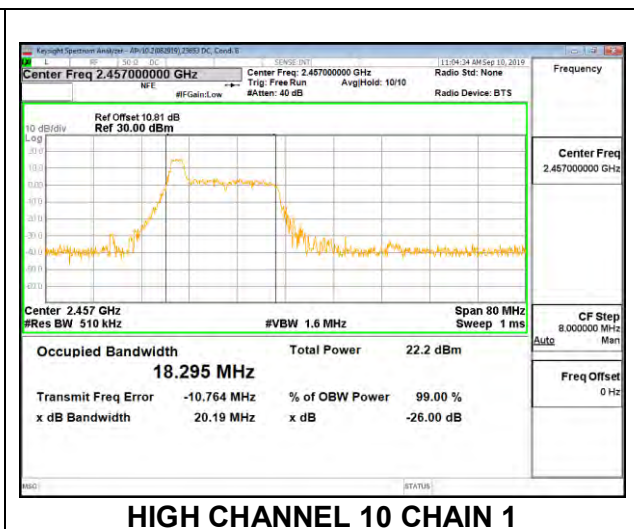
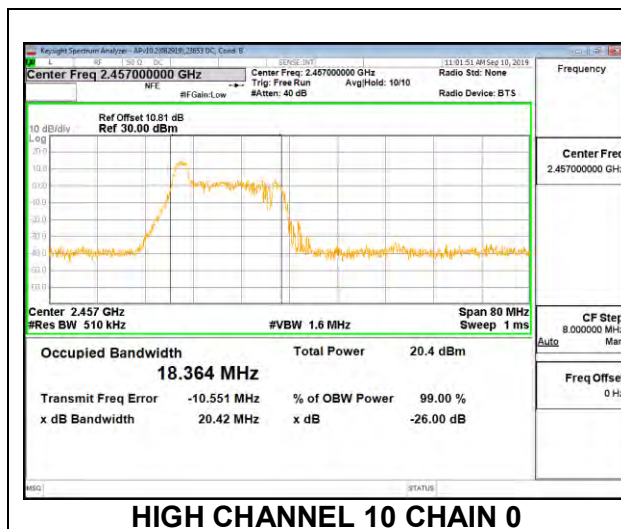




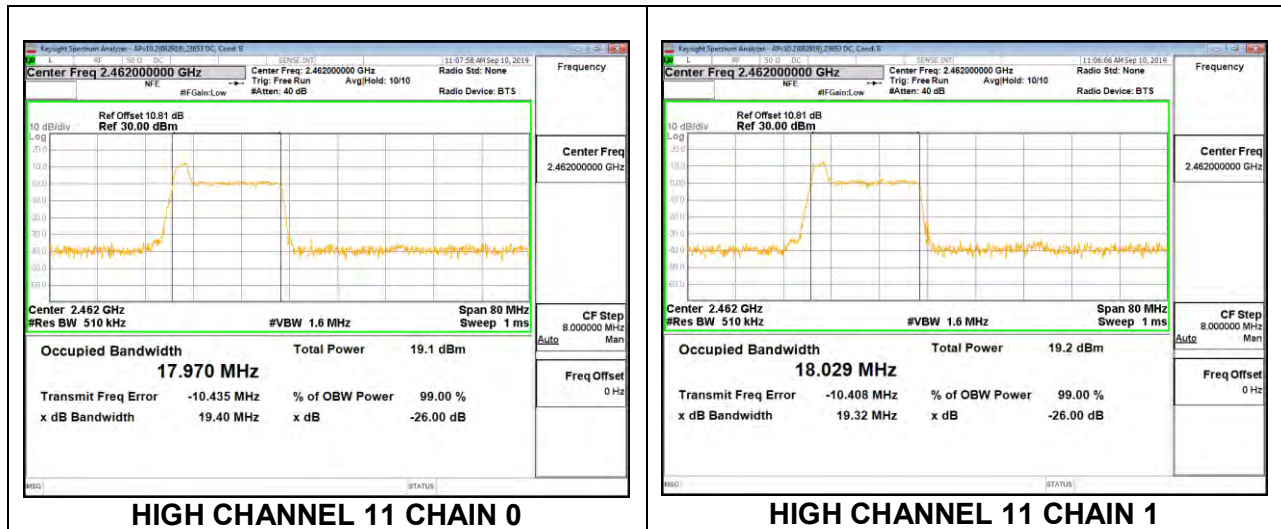
## HIGH CHANNEL 9



## HIGH CHANNEL 10



## HIGH CHANNEL 11

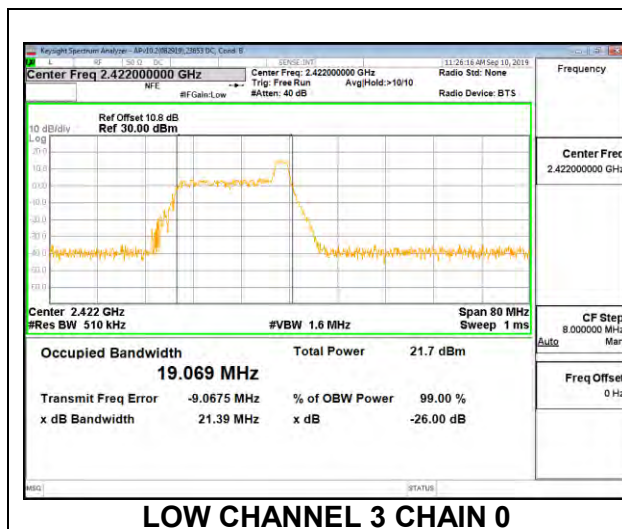




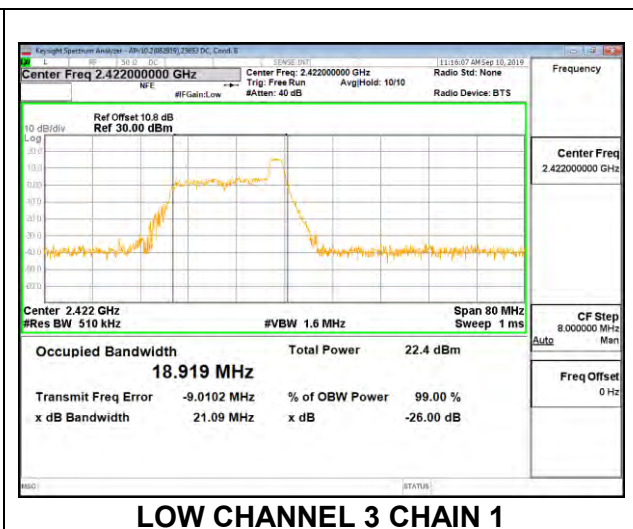
**2TX Antenna 1 + Antenna 2 OFDMA MODE – 26-Tones, RU Index 8**

Channel	Frequency (MHz)	99% Bandwidth Chain 0 (MHz)	99% Bandwidth Chain 1 (MHz)
Low 3	2422	19.069	18.919
Low 4	2427	19.143	19.244
Mid 6	2437	19.333	19.265
High 8	2447	19.191	19.438
High 9	2452	19.185	19.040
High 10	2457	19.240	19.130
High 11	2462	18.628	18.586

**LOW CHANNEL 3**

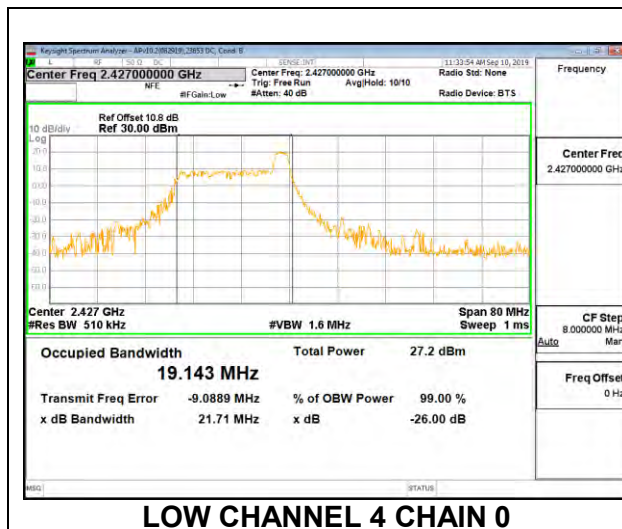


**LOW CHANNEL 3 CHAIN 0**

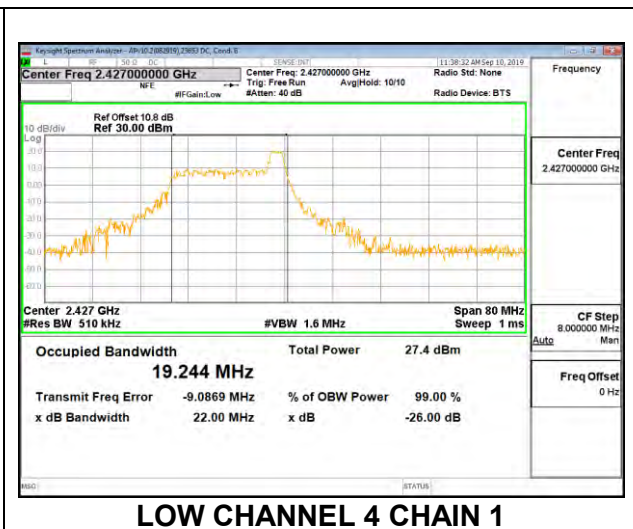


**LOW CHANNEL 3 CHAIN 1**

**LOW CHANNEL 4**

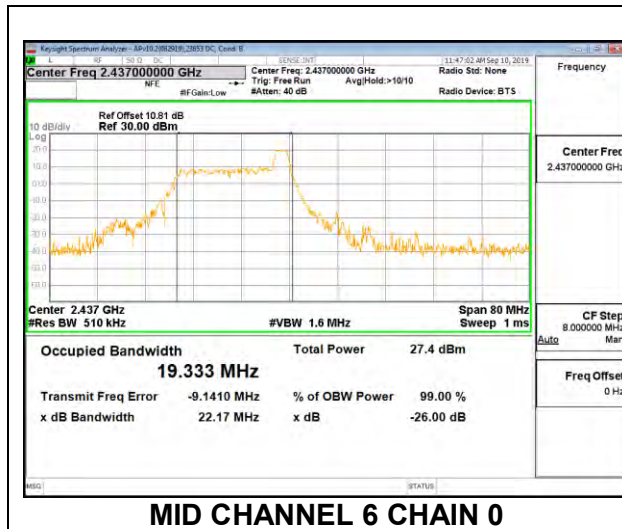


**LOW CHANNEL 4 CHAIN 0**

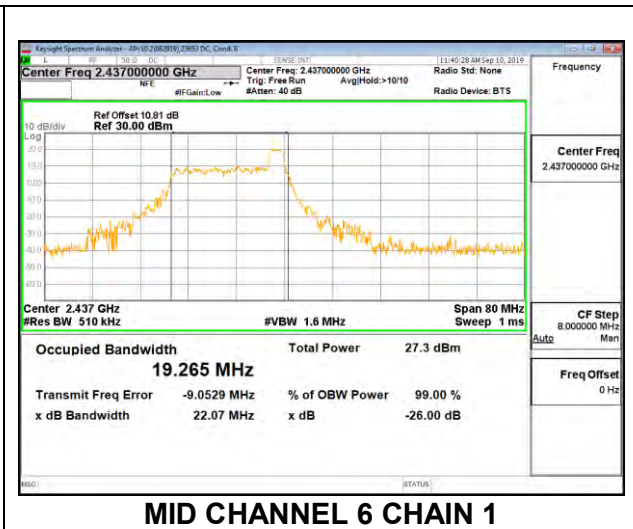


**LOW CHANNEL 4 CHAIN 1**

## MID CHANNEL 6

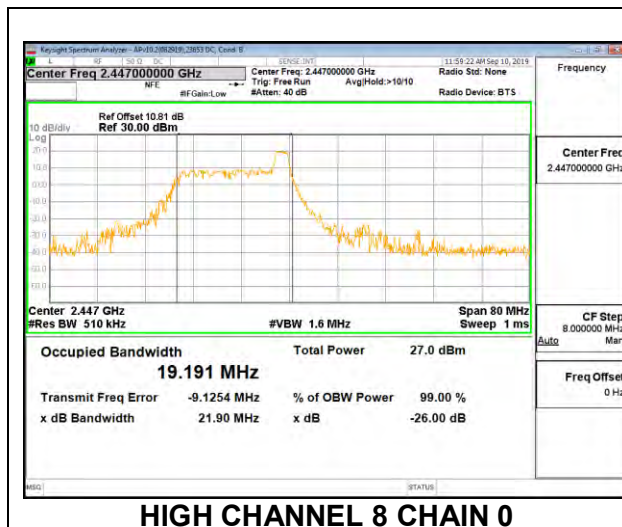


MID CHANNEL 6 CHAIN 0

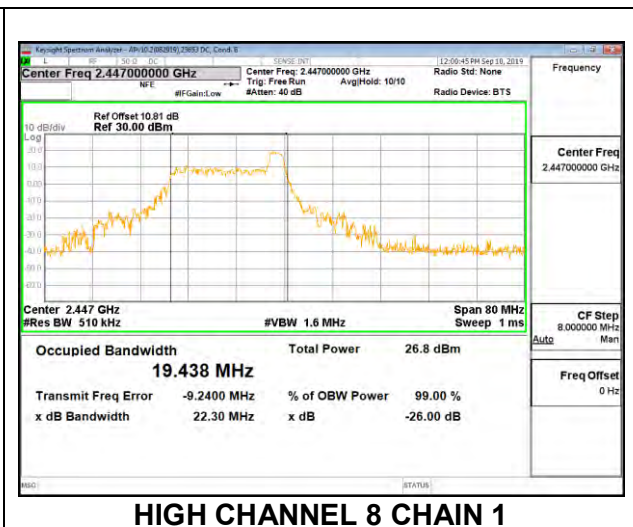


MID CHANNEL 6 CHAIN 1

## HIGH CHANNEL 8

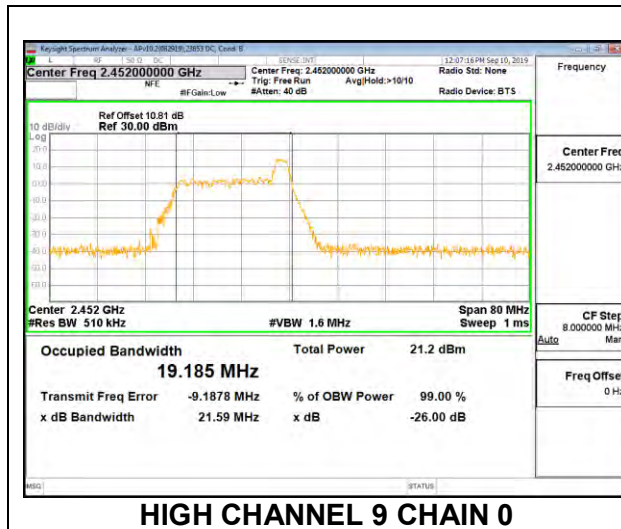


HIGH CHANNEL 8 CHAIN 0

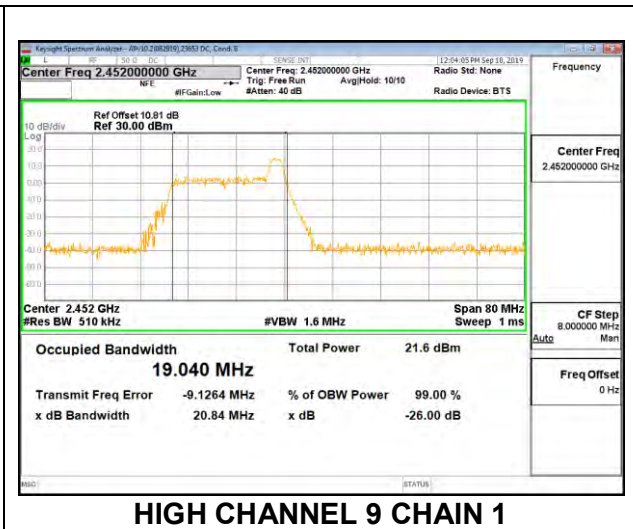


HIGH CHANNEL 8 CHAIN 1

## HIGH CHANNEL 9

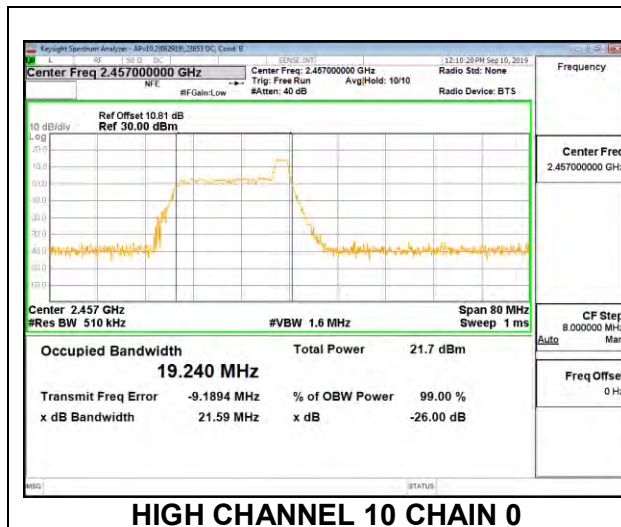


HIGH CHANNEL 9 CHAIN 0

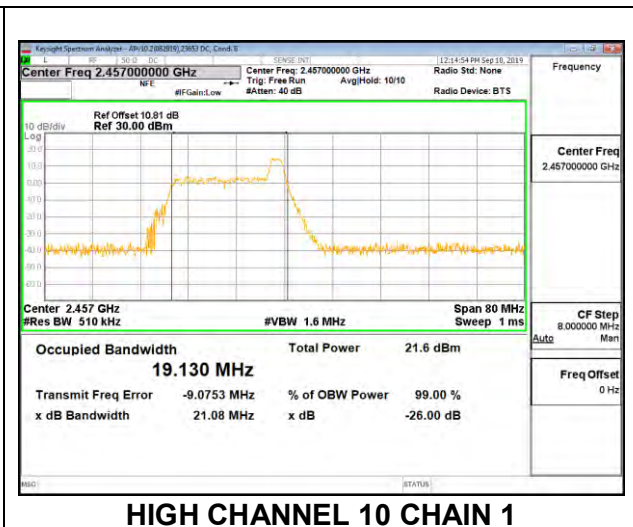


HIGH CHANNEL 9 CHAIN 1

## HIGH CHANNEL 10



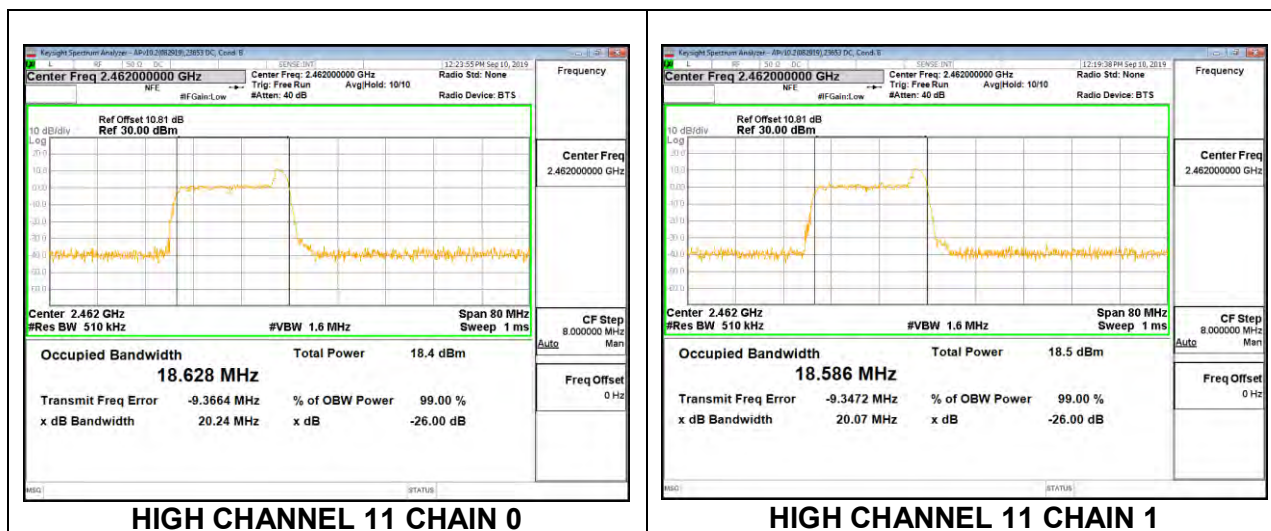
HIGH CHANNEL 10 CHAIN 0



HIGH CHANNEL 10 CHAIN 1



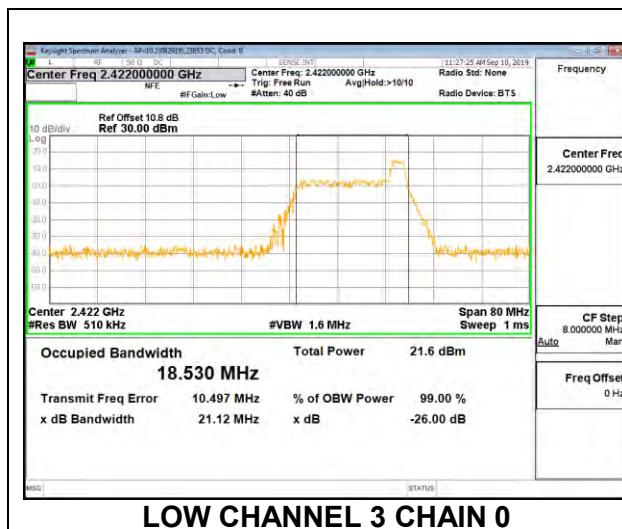
## HIGH CHANNEL 11



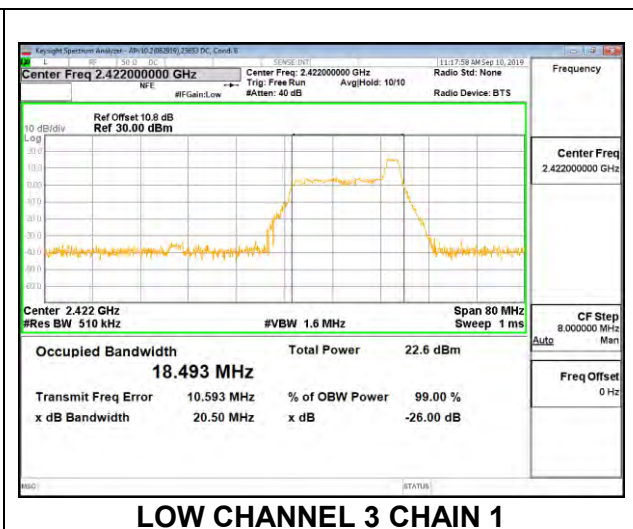
**2TX Antenna 1 + Antenna 2 OFDMA MODE – 26-Tones, RU Index 17**

Channel	Frequency (MHz)	99% Bandwidth Chain 0 (MHz)	99% Bandwidth Chain 1 (MHz)
Low 3	2422	18.530	18.493
Low 4	2427	18.787	18.774
Mid 6	2437	18.843	18.617
High 8	2447	18.654	18.606
High 9	2452	18.560	18.527
High 10	2457	18.567	18.473
High 11	2462	17.989	17.869

**LOW CHANNEL 3**

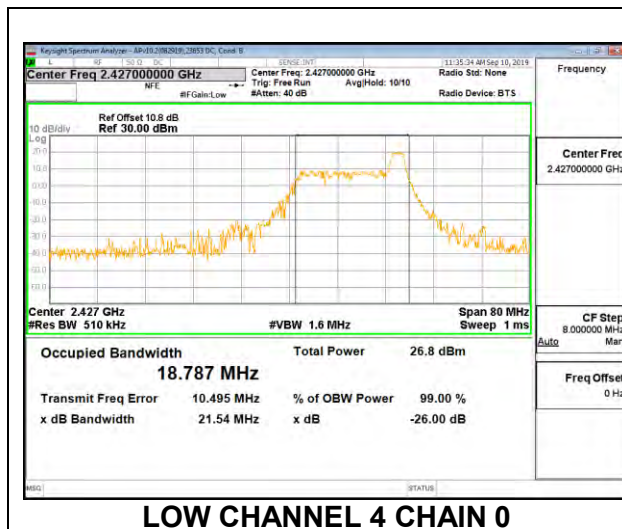


**LOW CHANNEL 3 CHAIN 0**

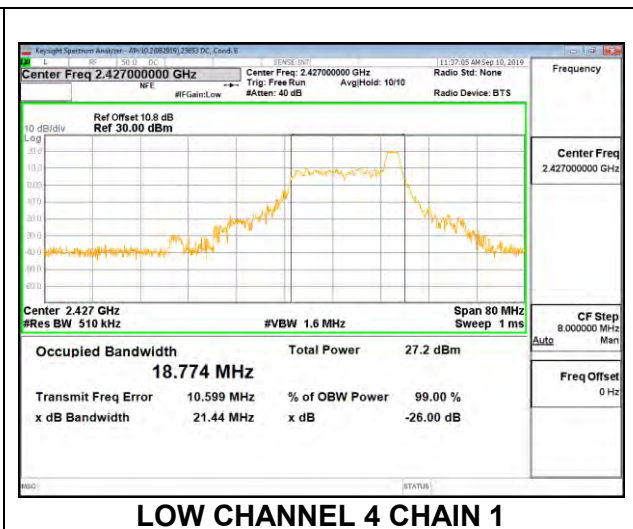


**LOW CHANNEL 3 CHAIN 1**

**LOW CHANNEL 4**

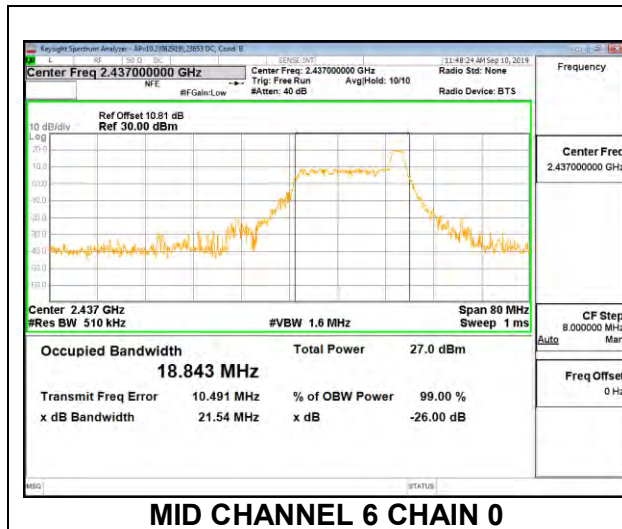


**LOW CHANNEL 4 CHAIN 0**

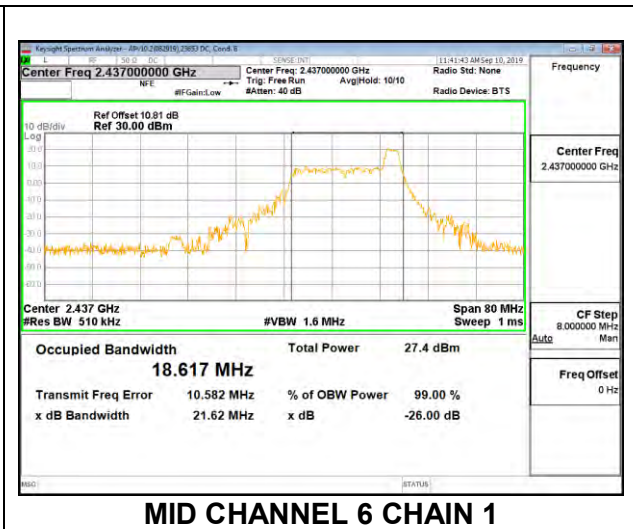


**LOW CHANNEL 4 CHAIN 1**

## MID CHANNEL 6

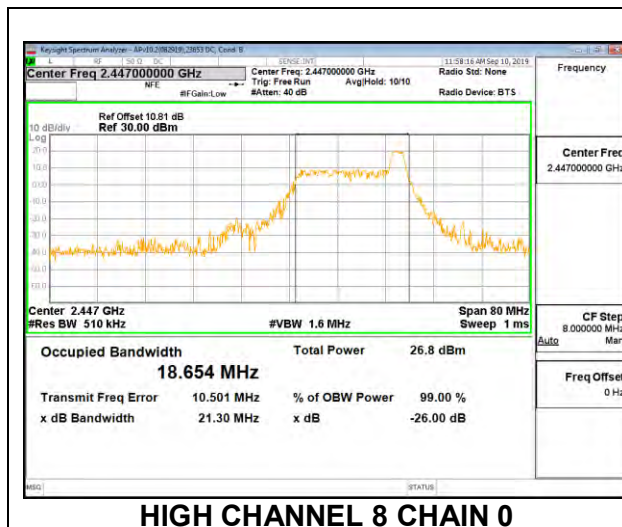


MID CHANNEL 6 CHAIN 0

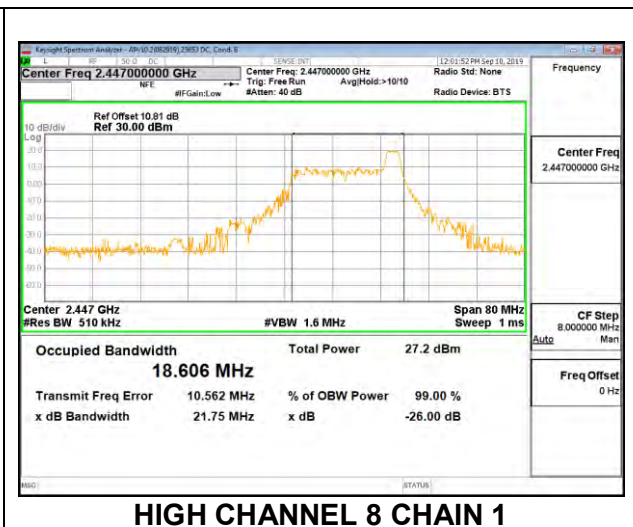


MID CHANNEL 6 CHAIN 1

## HIGH CHANNEL 8



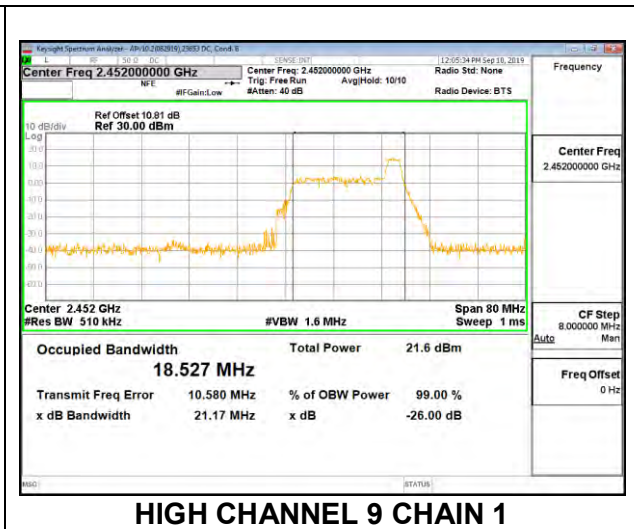
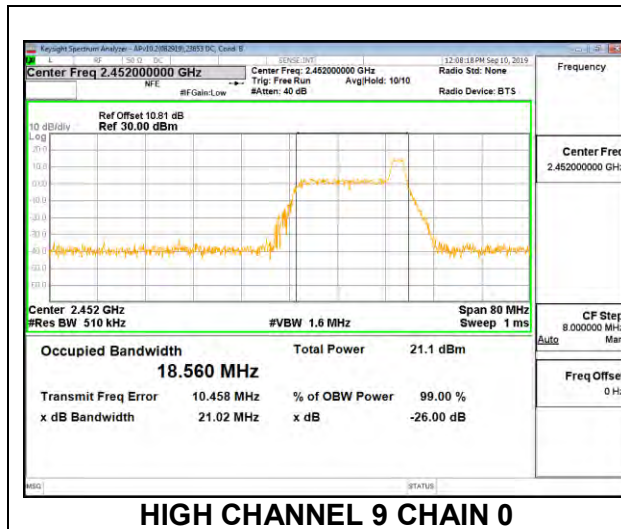
HIGH CHANNEL 8 CHAIN 0



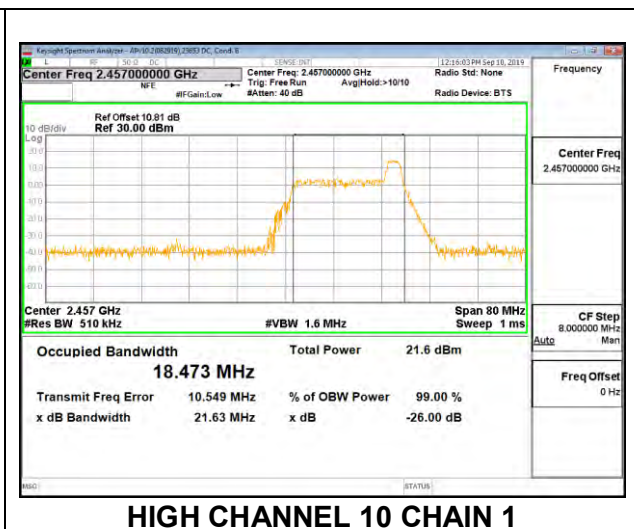
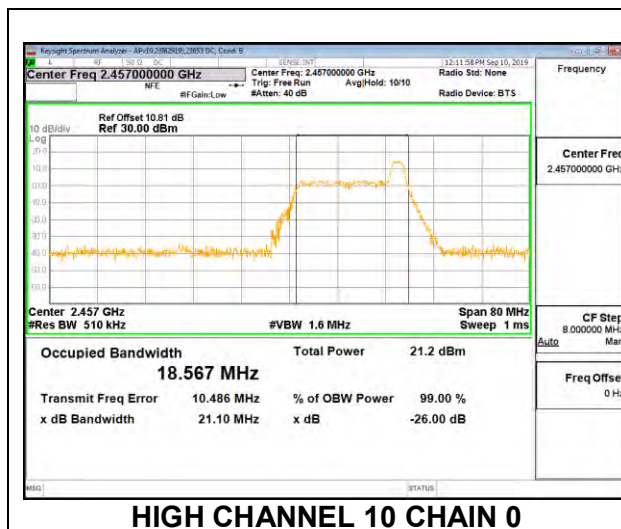
HIGH CHANNEL 8 CHAIN 1



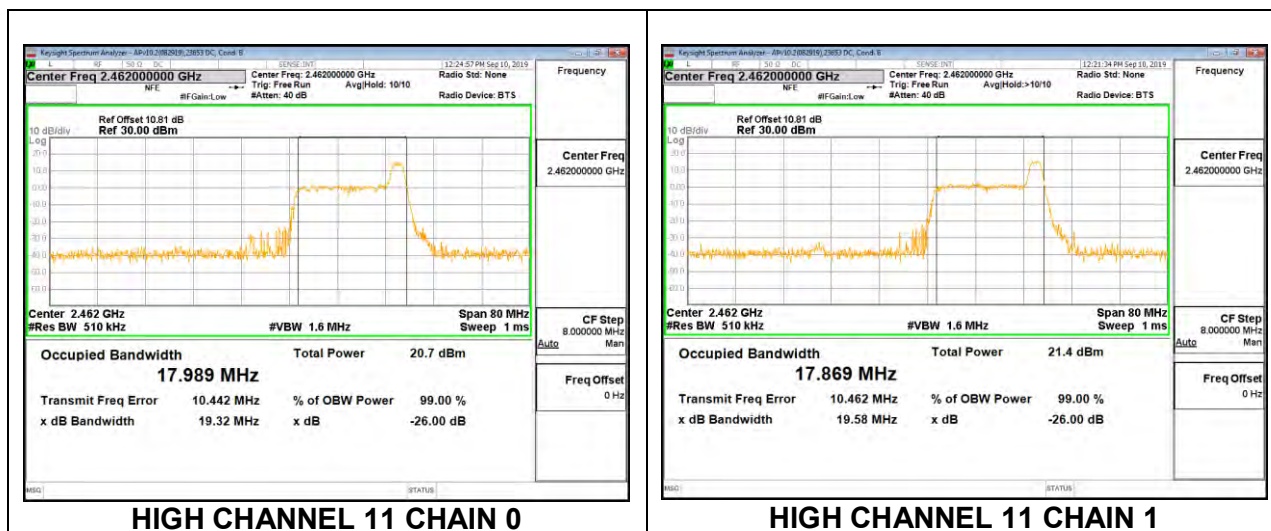
## HIGH CHANNEL 9



## HIGH CHANNEL 10



## HIGH CHANNEL 11



### **8.3. 6 dB BANDWIDTH**

#### **LIMITS**

FCC §15.247 (a) (2)

RSS-247 5.2 (a)

The minimum 6 dB bandwidth shall be at least 500 kHz.

#### **RESULTS**

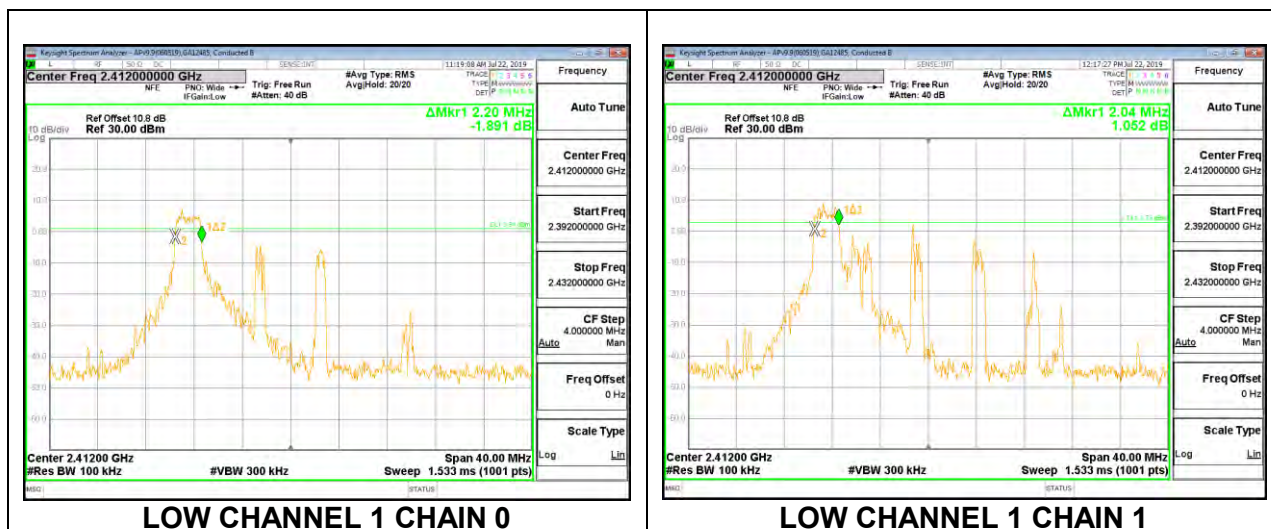


### 8.3.1. 802.11ax HE20 MODE

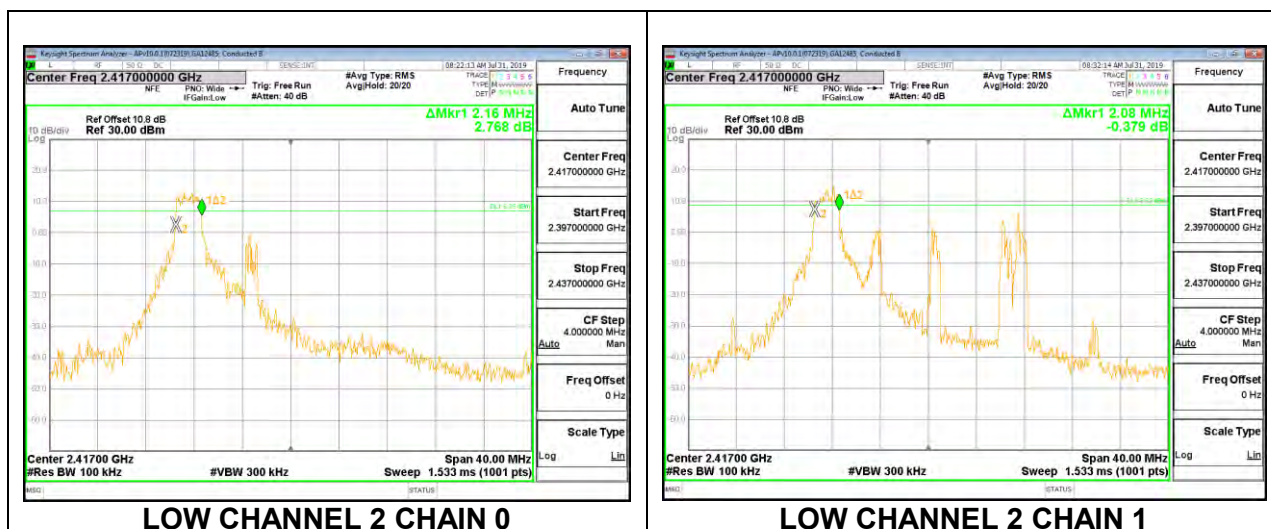
#### 2TX Antenna 1 + Antenna 2 OFDMA MODE: 26-Tones, RU index 0

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low 1	2412	2.20	2.04	0.5
Low 2	2417	2.16	2.08	0.5
Mid 6	2437	2.12	2.16	0.5
High 10	2457	2.08	2.20	0.5
High 11	2462	2.08	2.12	0.5
High 12	2467	2.12	2.20	0.5
High 13	2472	2.04	2.08	0.5

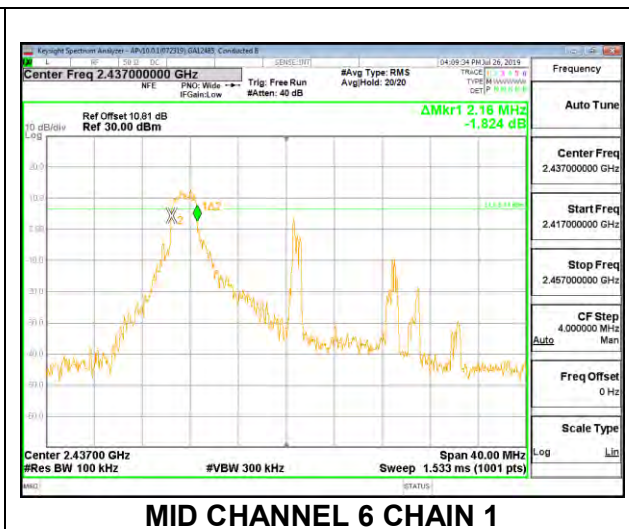
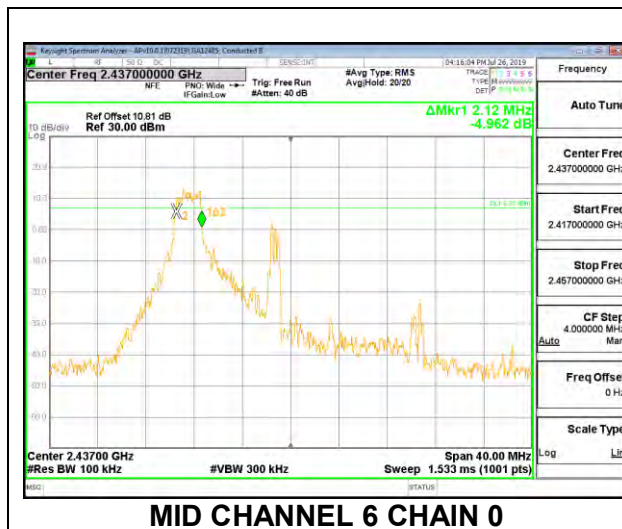
## LOW CHANNEL 1



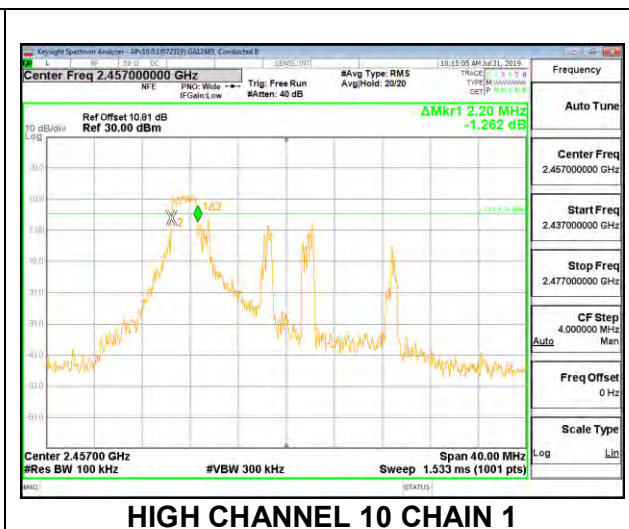
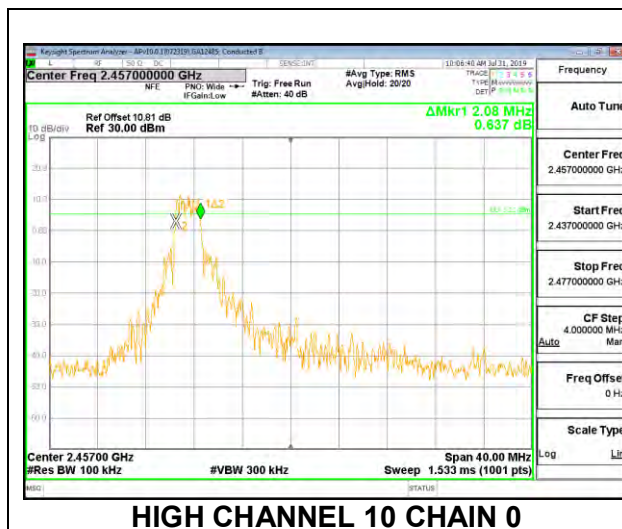
## LOW CHANNEL 2



## MID CHANNEL 6

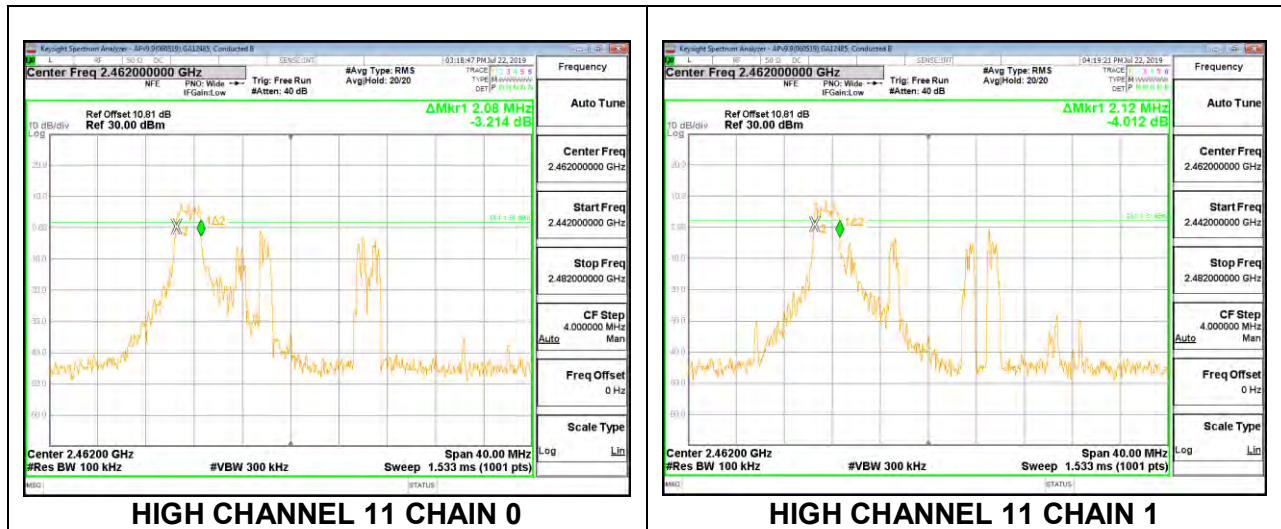


## HIGH CHANNEL 10

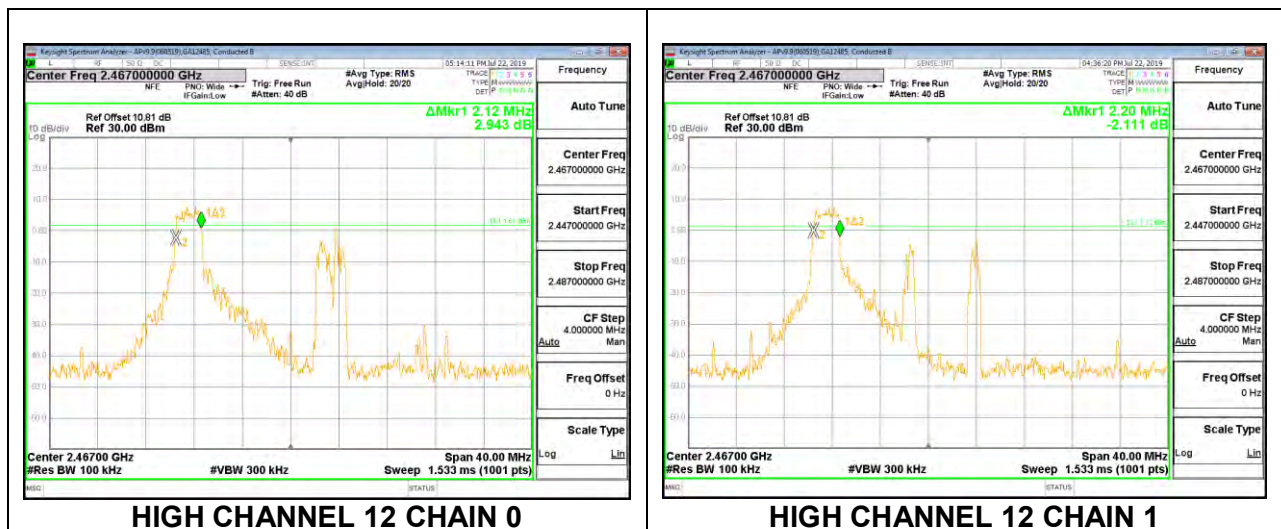




## HIGH CHANNEL 11



## HIGH CHANNEL 12



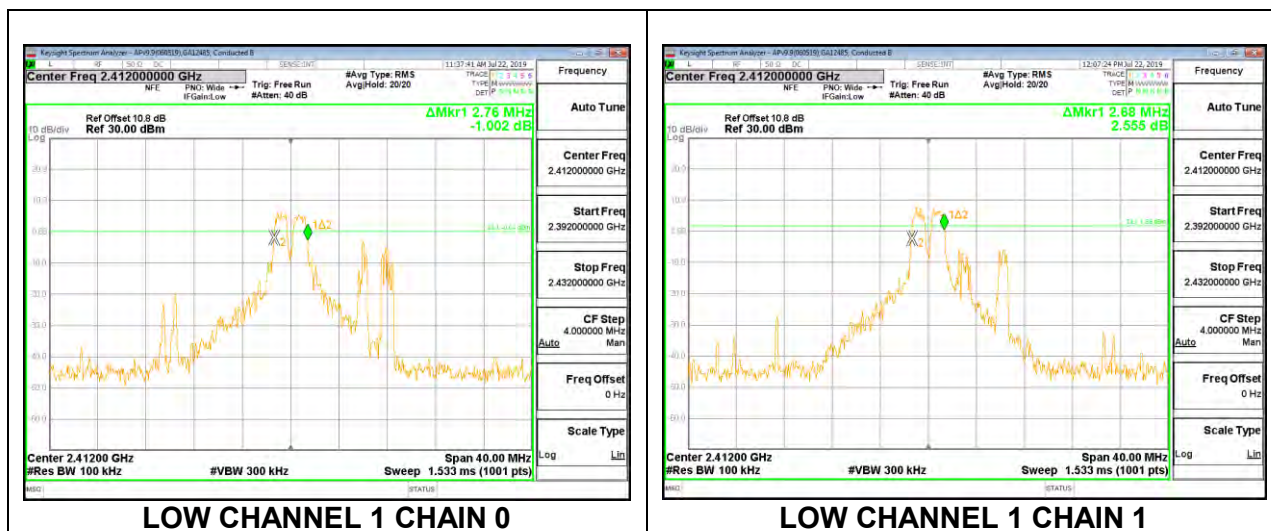
## HIGH CHANNEL 13



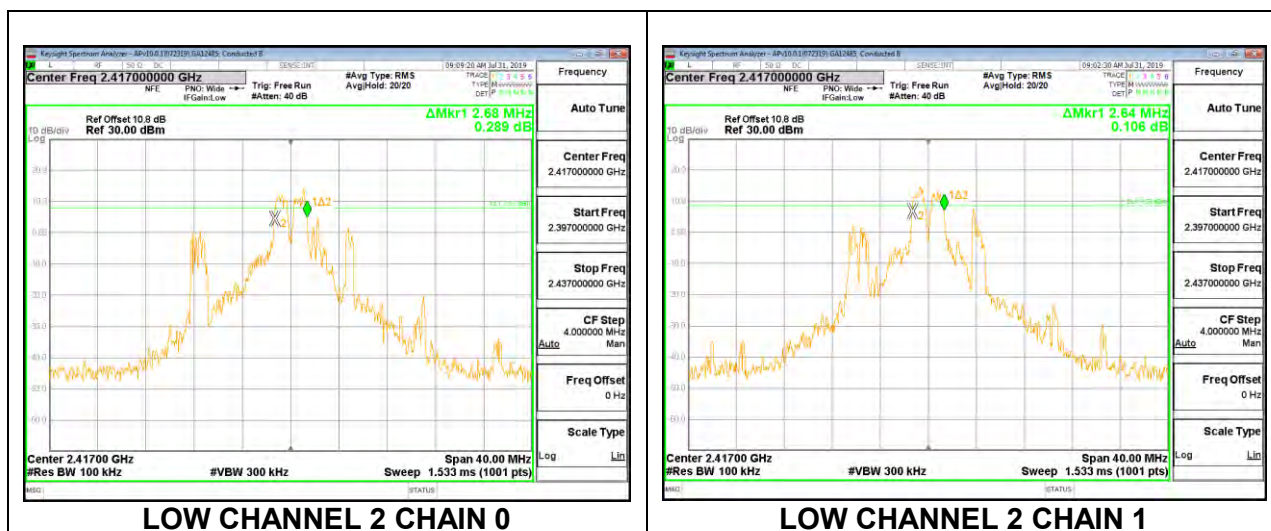
**2TX Antenna 1 + Antenna 2 OFDMA MODE: 26-Tones, RU index 4**

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low 1	2412	2.76	2.68	0.5
Low 2	2417	2.68	2.64	0.5
Mid 6	2437	2.68	2.68	0.5
High 10	2457	2.64	2.64	0.5
High 11	2462	2.68	2.68	0.5
High 12	2467	2.64	2.72	0.5
High 13	2472	2.72	2.60	0.5

## LOW CHANNEL 1

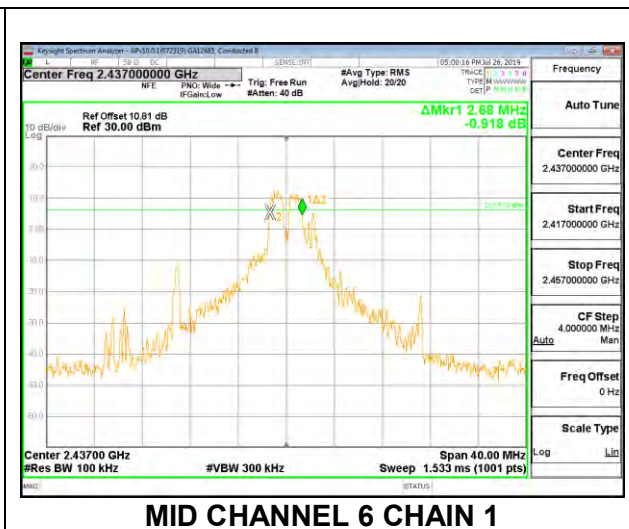
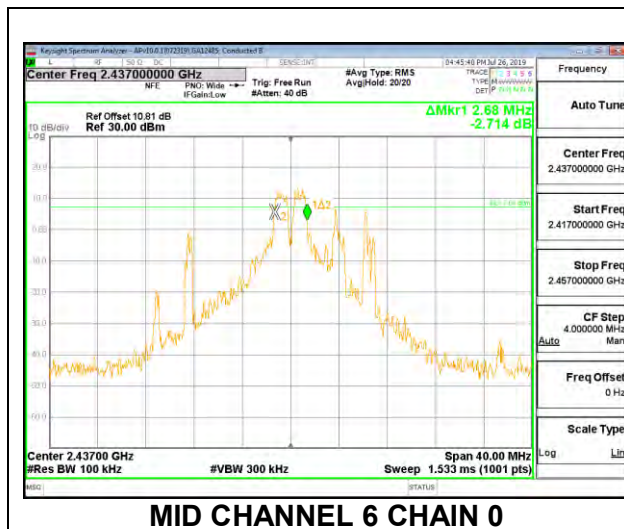


## LOW CHANNEL 2

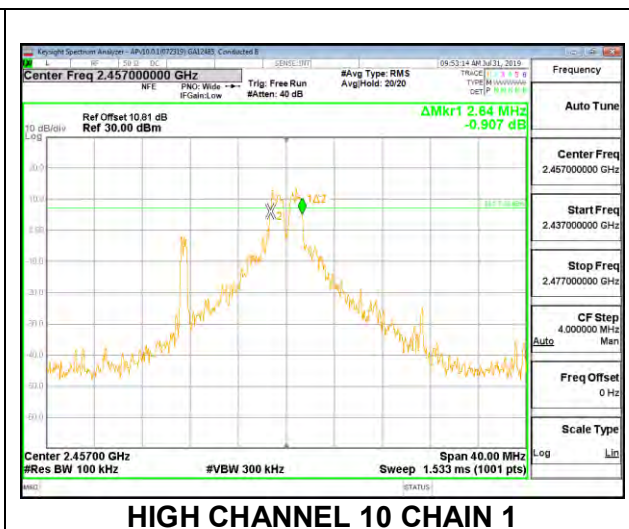
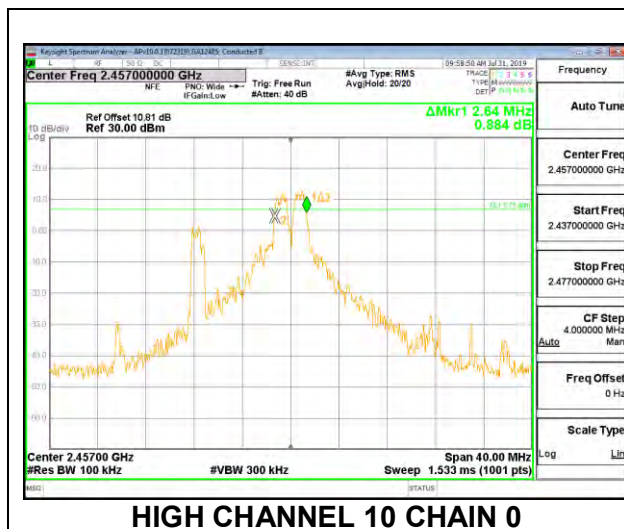




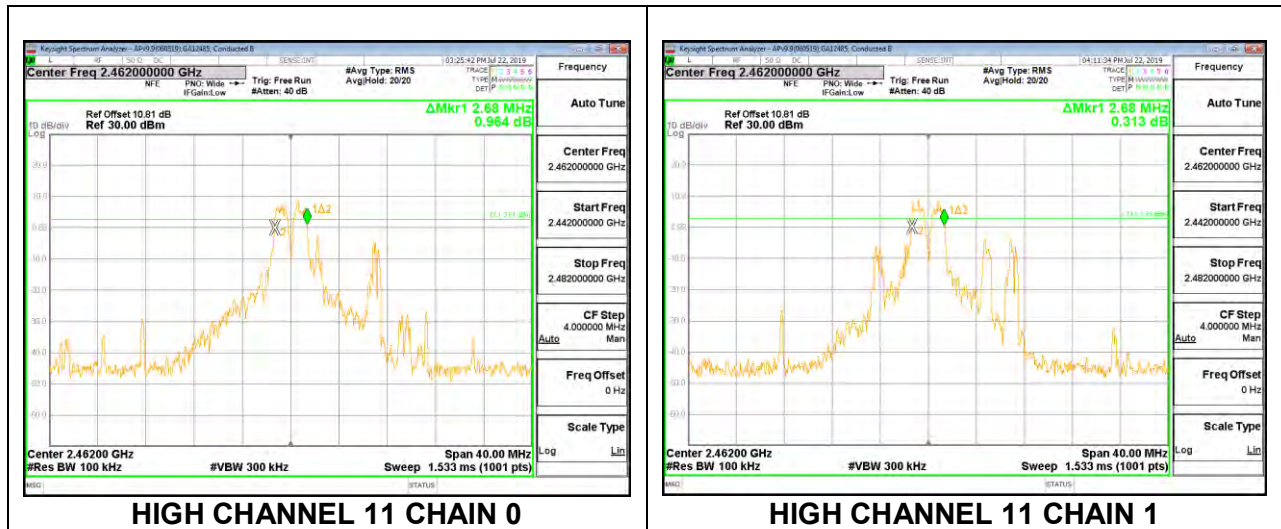
## MID CHANNEL 6



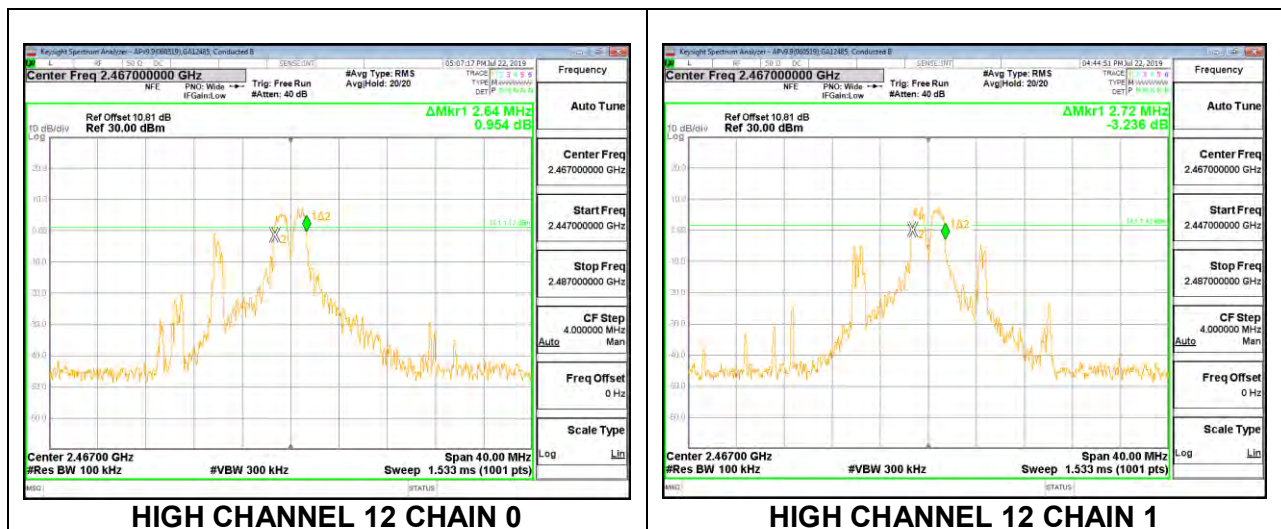
## HIGH CHANNEL 10



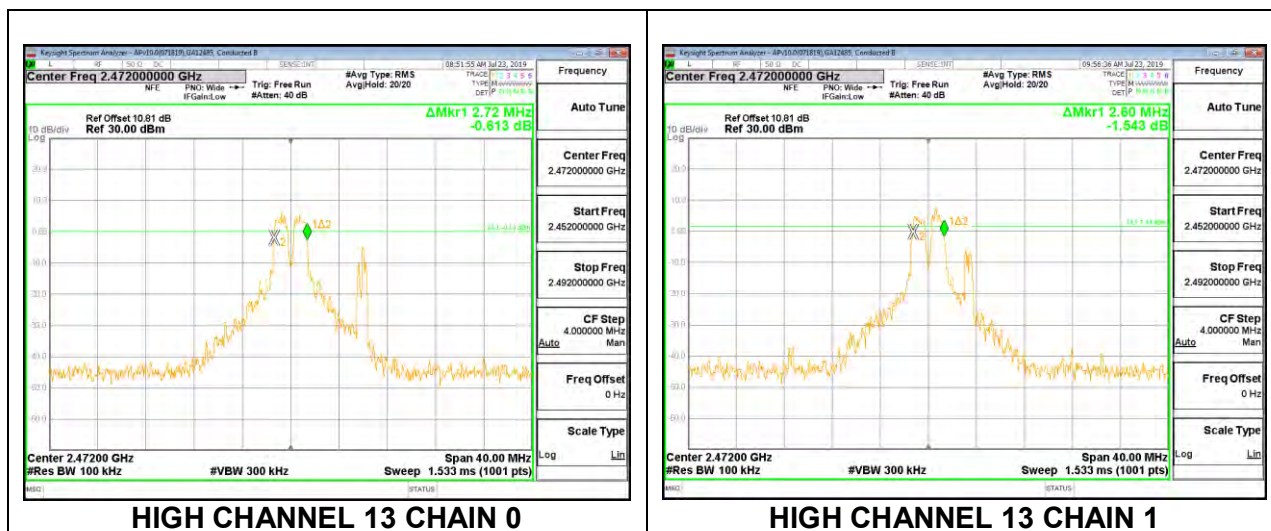
## HIGH CHANNEL 11



## HIGH CHANNEL 12



## HIGH CHANNEL 13

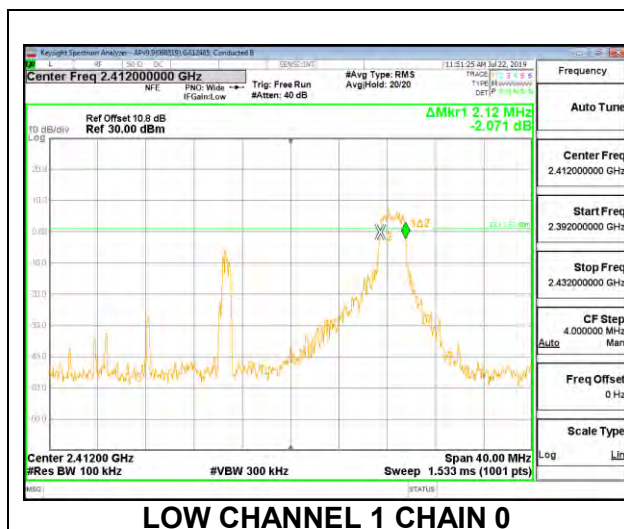


**2TX Antenna 1 + Antenna 2 OFDMA MODE: 26-Tones, RU index 8**

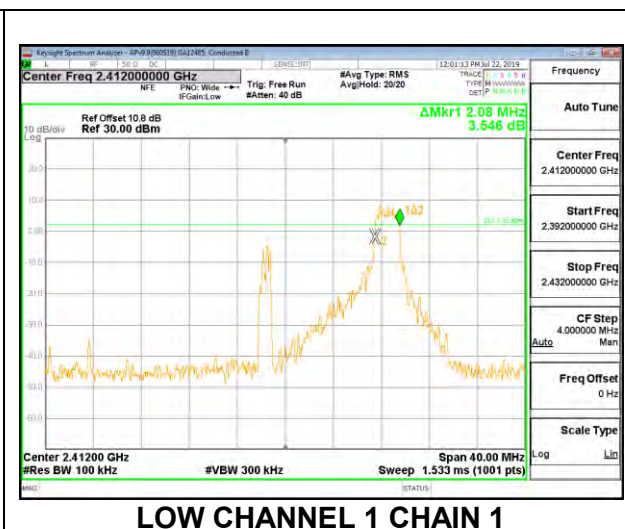
Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low 1	2412	2.12	2.08	0.5
Low 2	2417	2.20	2.12	0.5
Mid 6	2437	2.16	2.12	0.5
High 10	2457	2.12	2.16	0.5
High 11	2462	2.08	2.08	0.5
High 12	2467	1.96	2.04	0.5
High 13	2472	2.04	2.12	0.5



## LOW CHANNEL 1

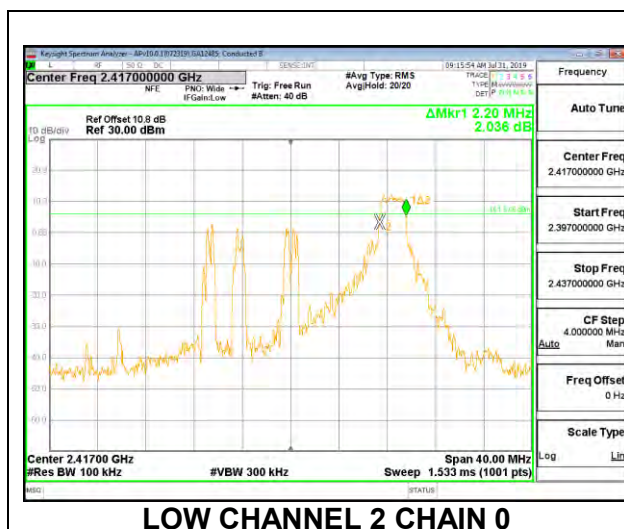


LOW CHANNEL 1 CHAIN 0

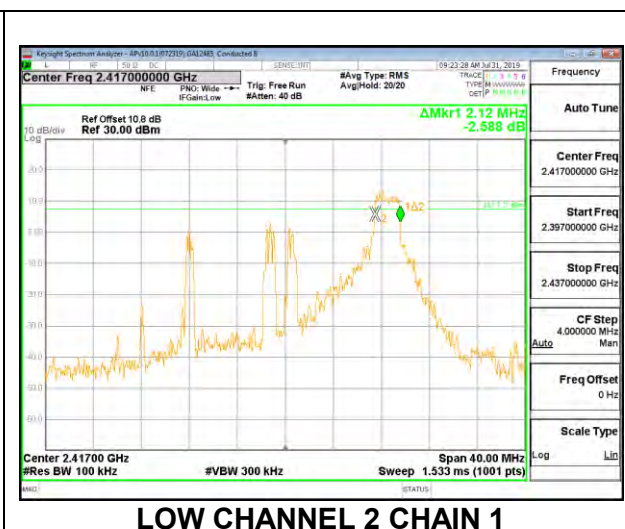


LOW CHANNEL 1 CHAIN 1

## LOW CHANNEL 2

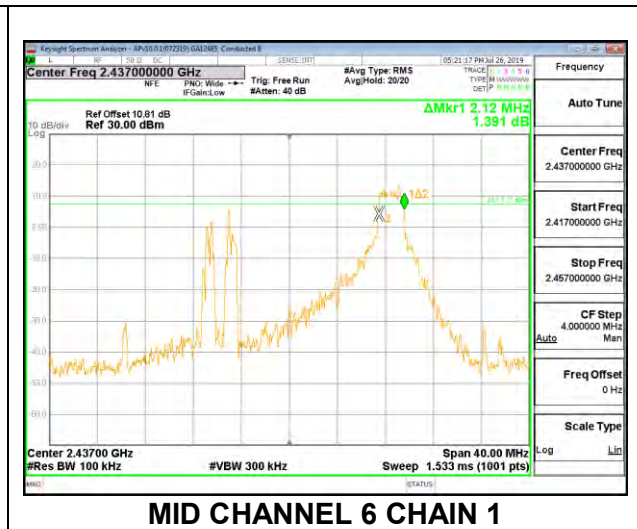
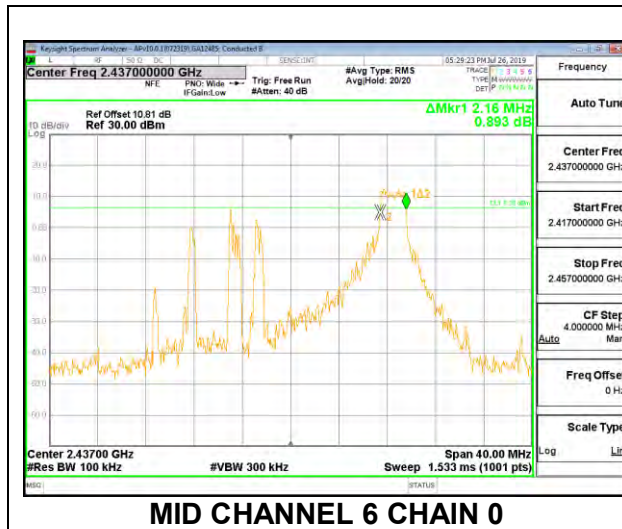


LOW CHANNEL 2 CHAIN 0

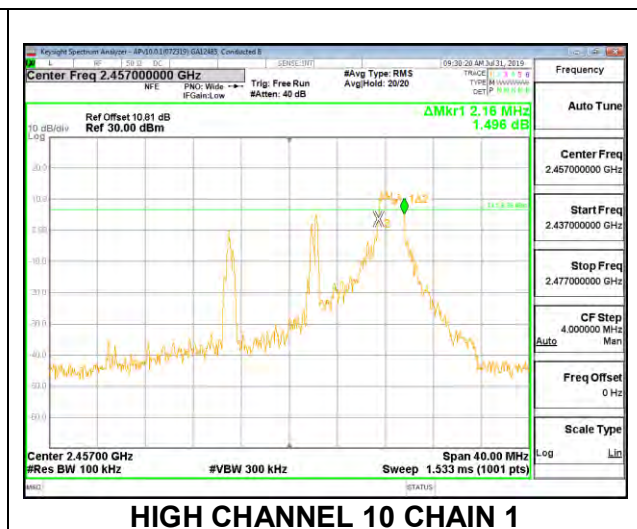
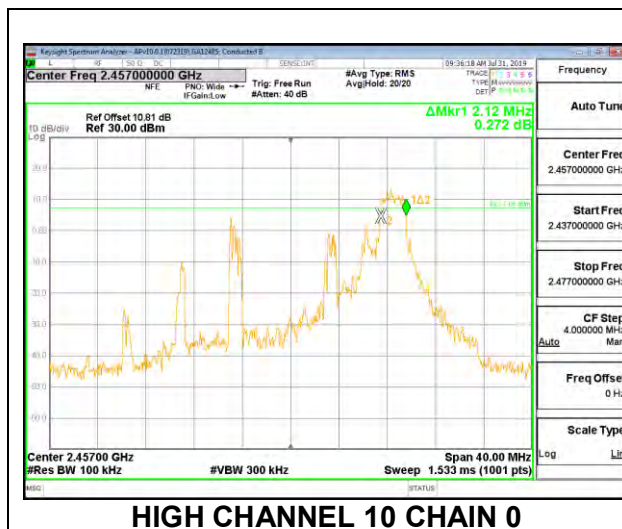


LOW CHANNEL 2 CHAIN 1

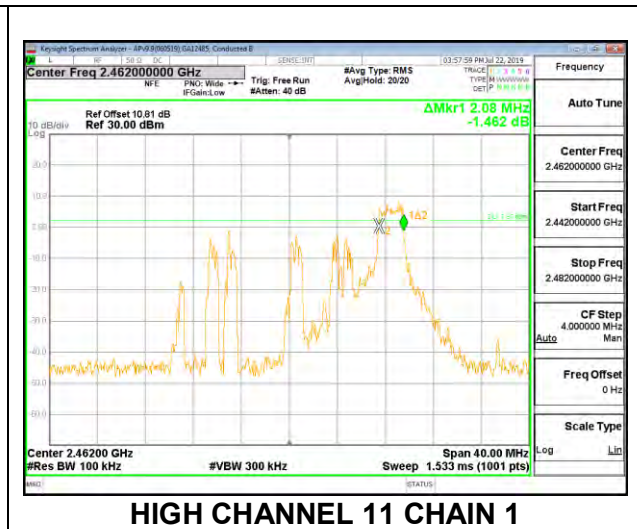
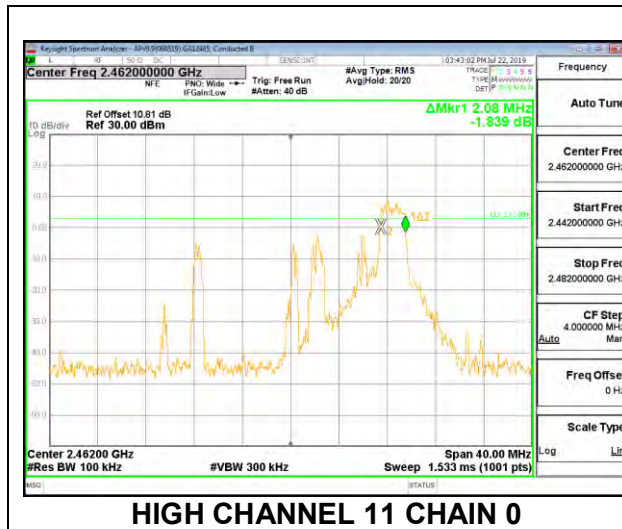
## MID CHANNEL 6



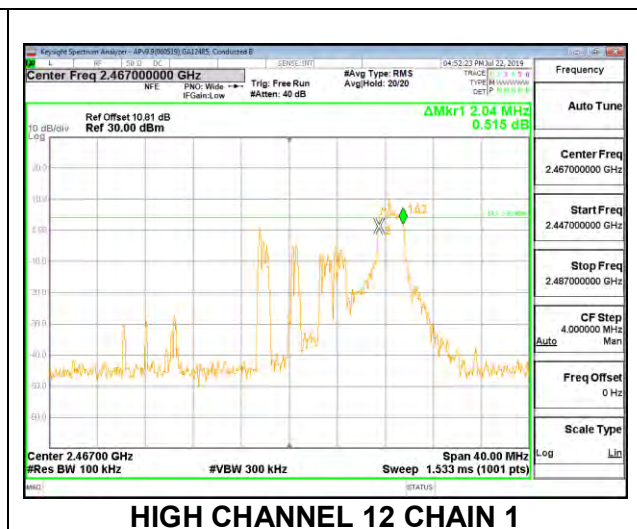
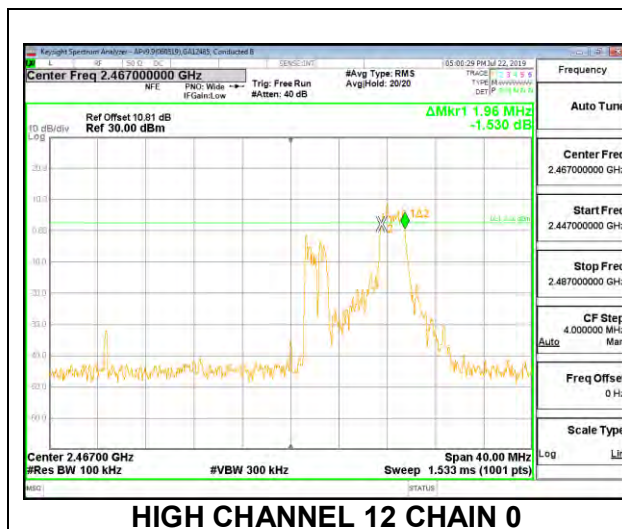
## HIGH CHANNEL 10



## HIGH CHANNEL 11

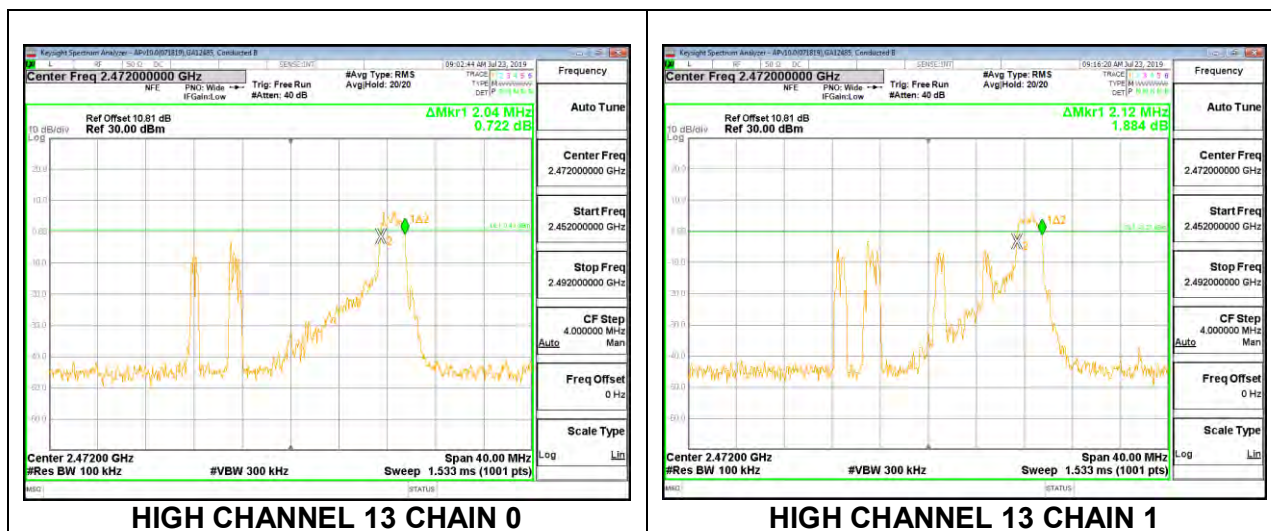


## HIGH CHANNEL 12





## HIGH CHANNEL 13



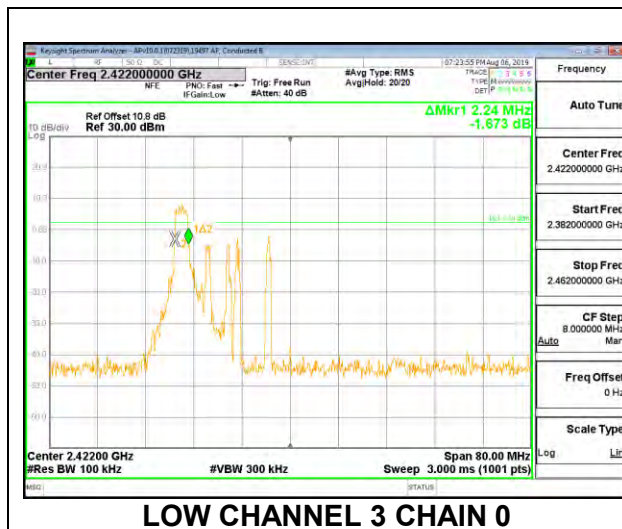


### 8.3.2. 802.11ax HE40 MODE

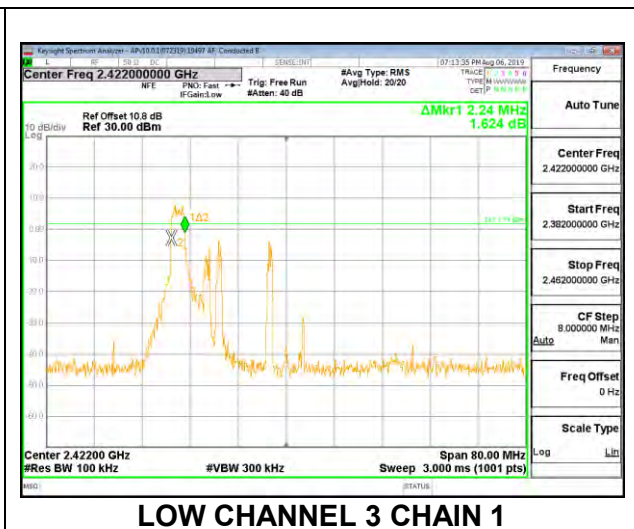
#### **2TX Antenna 1 + Antenna 2 OFDMA MODE: 26-Tones, RU index 0**

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low 3	2422	2.24	2.24	0.5
Low 4	2427	2.24	2.24	0.5
Mid 6	2437	2.24	2.24	0.5
High 8	2447	2.24	2.96	0.5
High 9	2452	2.24	2.24	0.5
High 10	2457	2.24	2.24	0.5
High 11	2462	2.16	2.24	0.5

## LOW CHANNEL 3

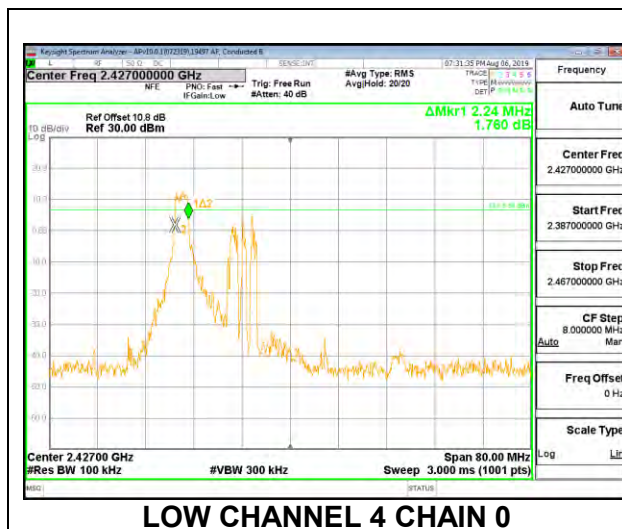


LOW CHANNEL 3 CHAIN 0

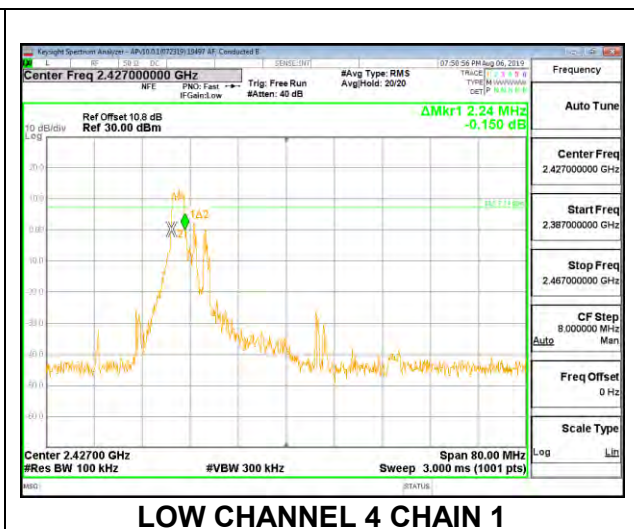


LOW CHANNEL 3 CHAIN 1

## LOW CHANNEL 4

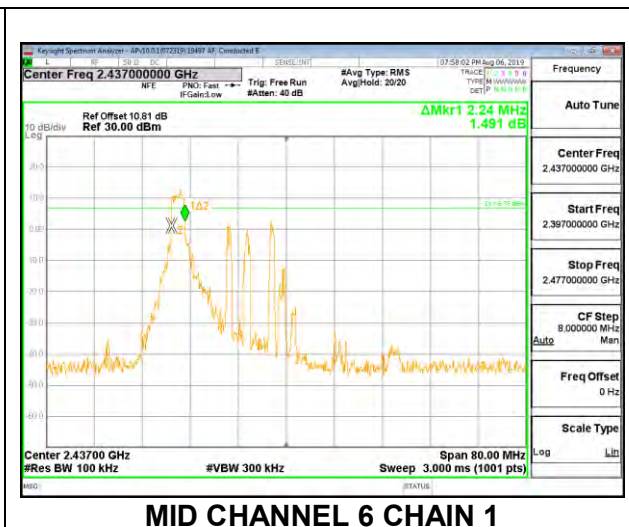
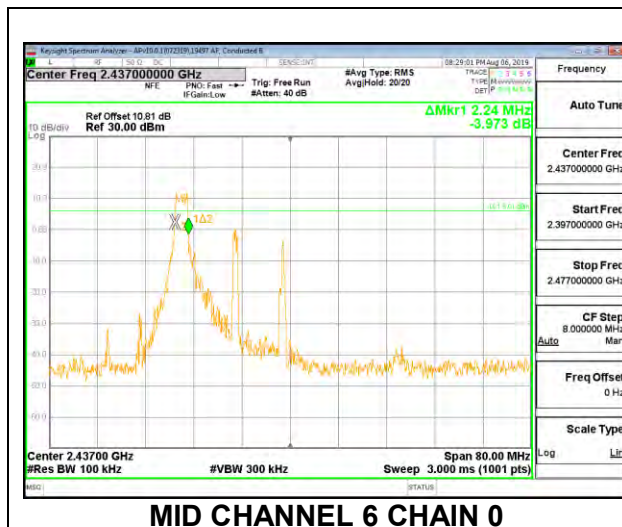


LOW CHANNEL 4 CHAIN 0

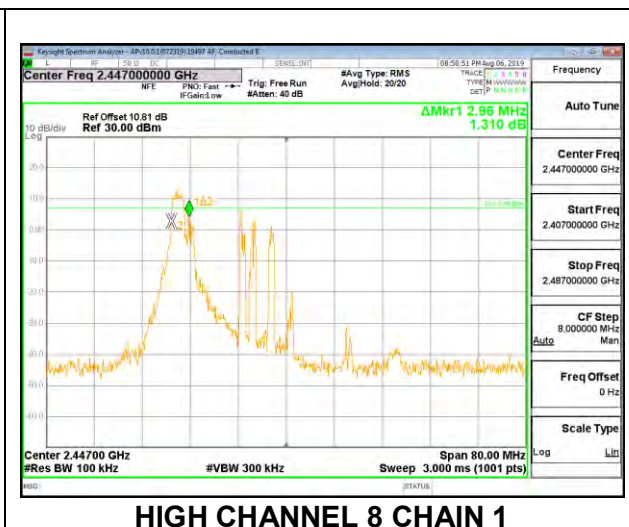
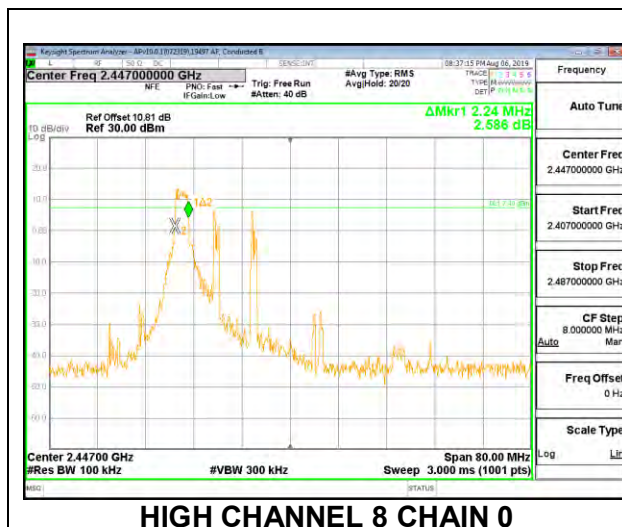


LOW CHANNEL 4 CHAIN 1

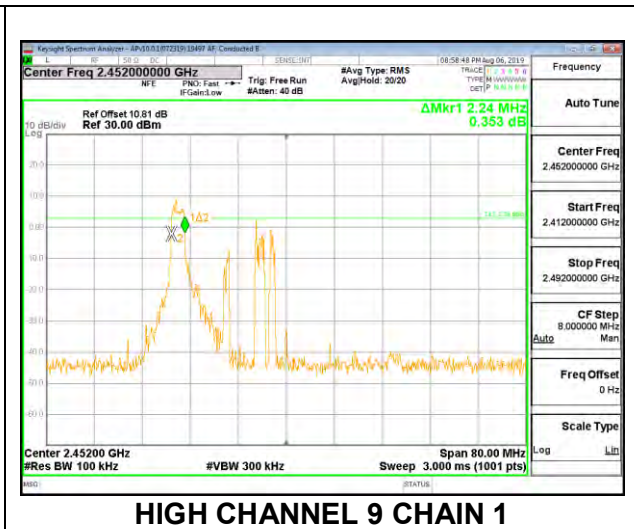
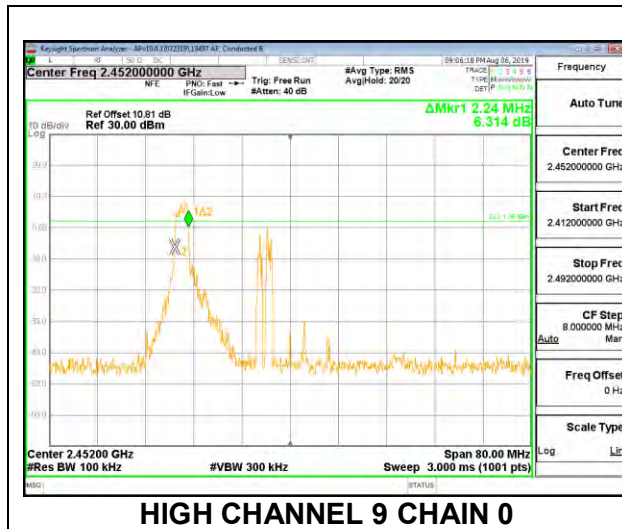
## MID CHANNEL 6



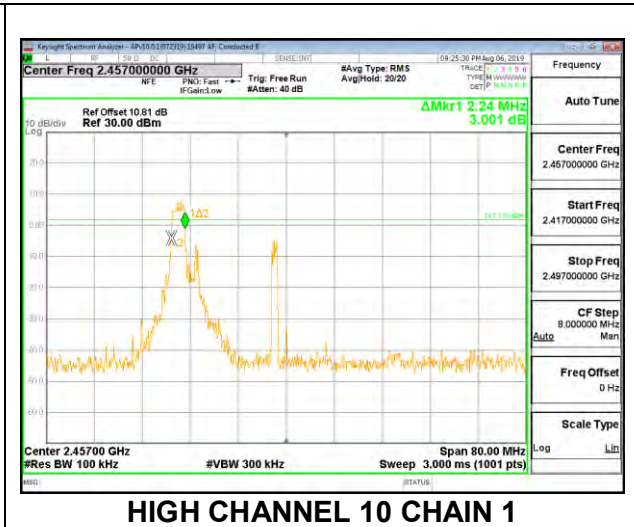
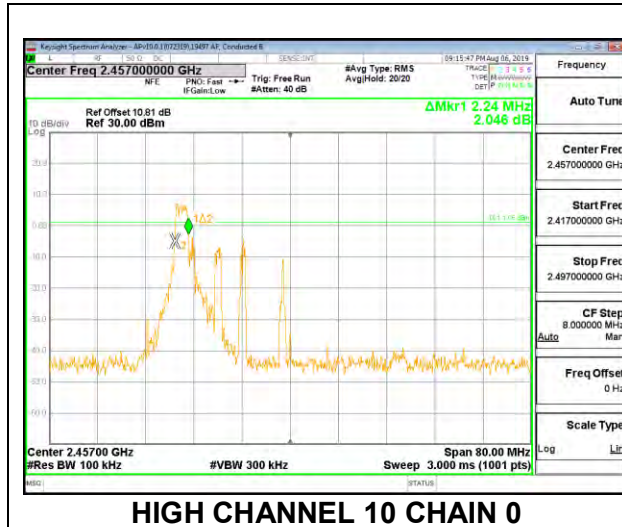
## HIGH CHANNEL 8



## HIGH CHANNEL 9

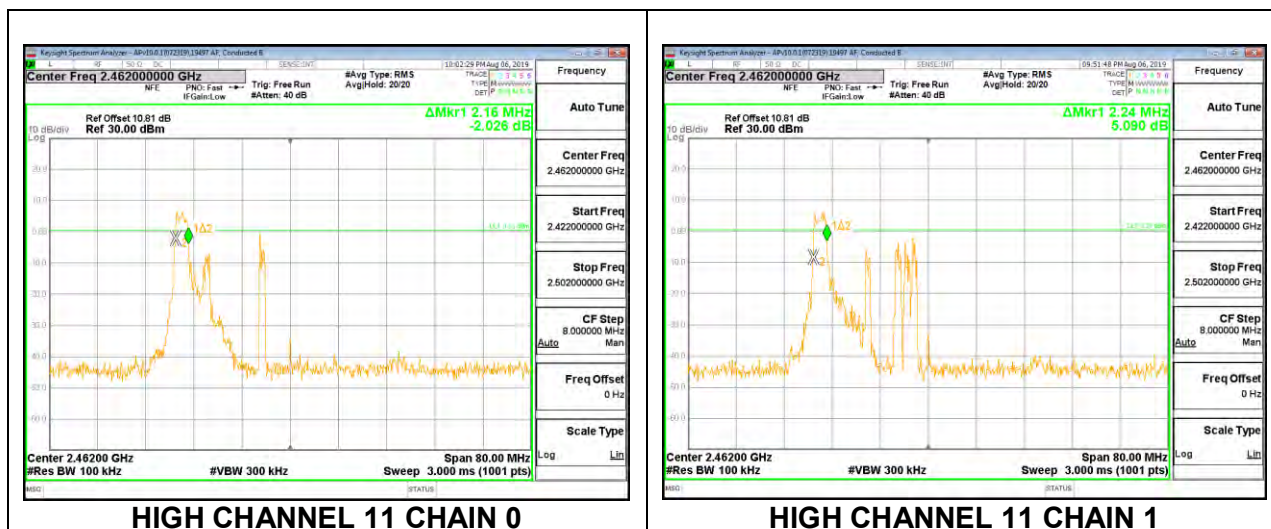


## HIGH CHANNEL 10





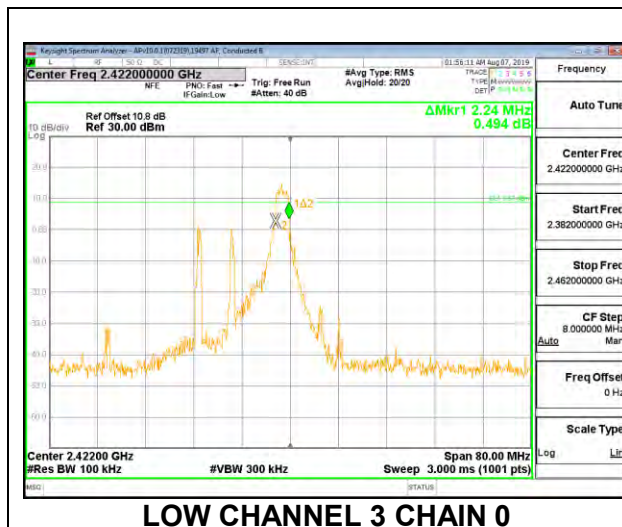
## HIGH CHANNEL 11



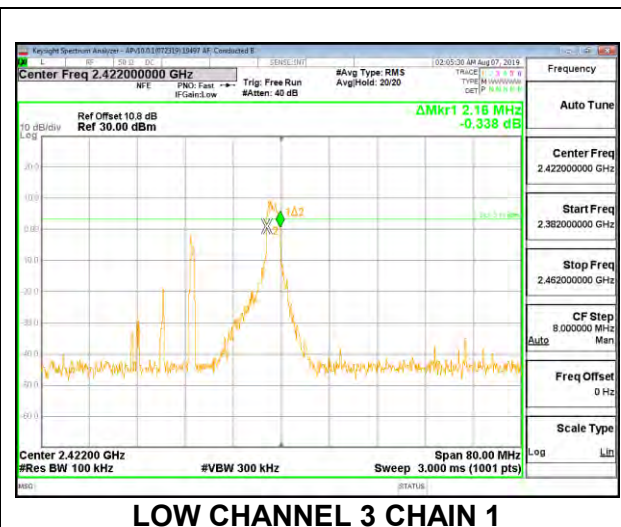
**2TX Antenna 1 + Antenna 2 OFDMA MODE: 26-Tones, RU index 8**

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low 3	2422	2.24	2.16	0.5
Low 4	2427	2.24	2.24	0.5
Mid 6	2437	2.48	2.24	0.5
High 8	2447	2.32	2.32	0.5
High 9	2452	2.16	2.24	0.5
High 10	2457	2.24	2.24	0.5
High 11	2462	2.24	2.16	0.5

## LOW CHANNEL 3

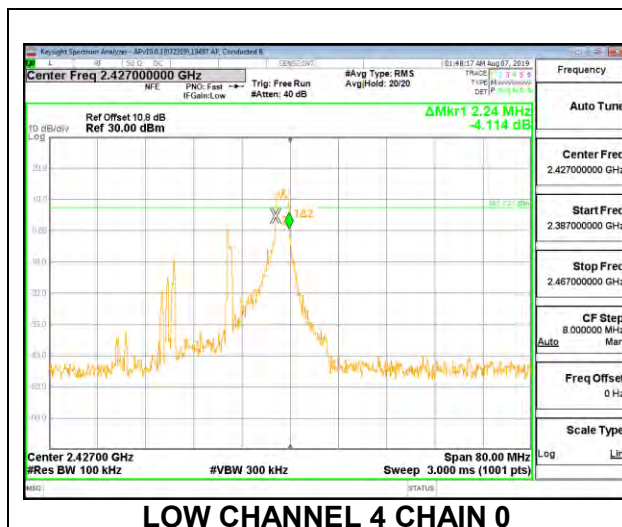


LOW CHANNEL 3 CHAIN 0

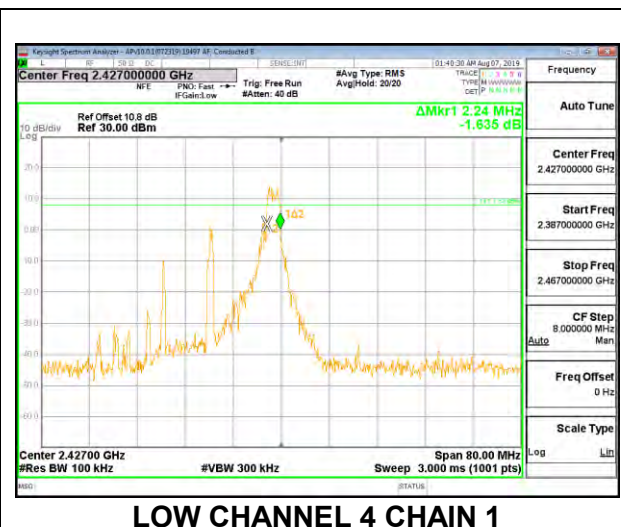


LOW CHANNEL 3 CHAIN 1

## LOW CHANNEL 4

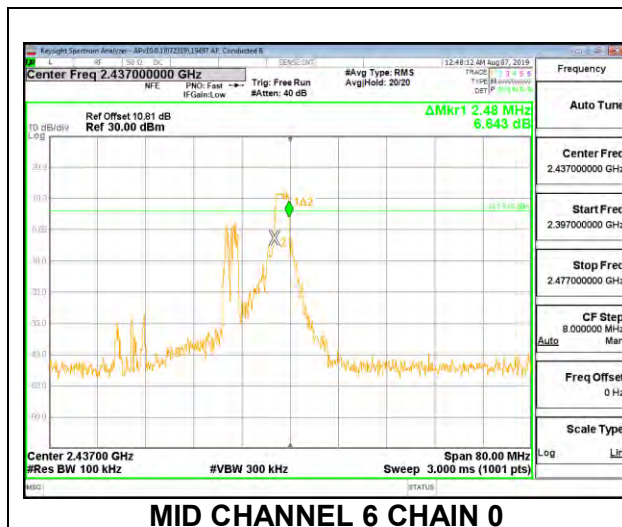


LOW CHANNEL 4 CHAIN 0

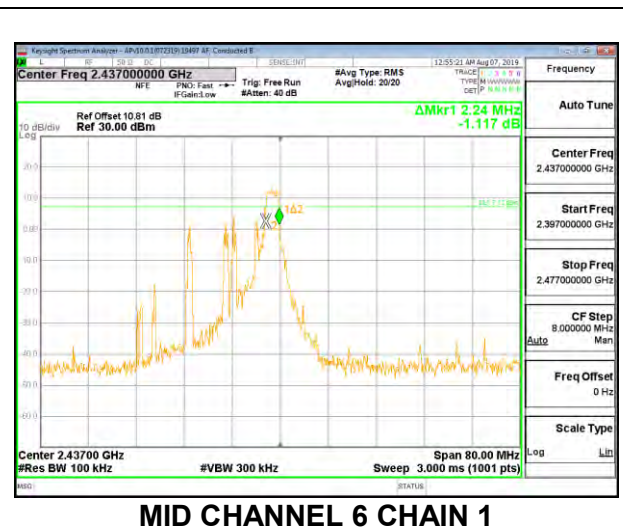


LOW CHANNEL 4 CHAIN 1

## MID CHANNEL 6

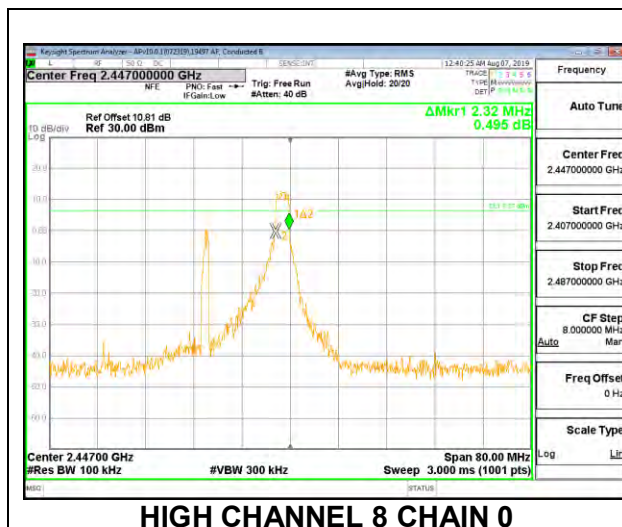


MID CHANNEL 6 CHAIN 0

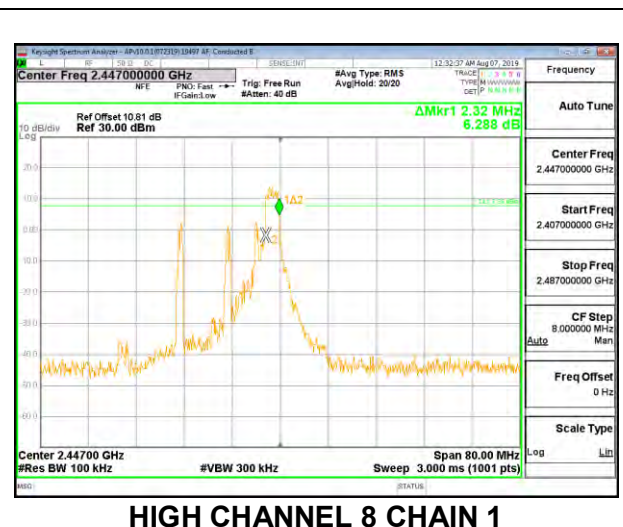


MID CHANNEL 6 CHAIN 1

## HIGH CHANNEL 8



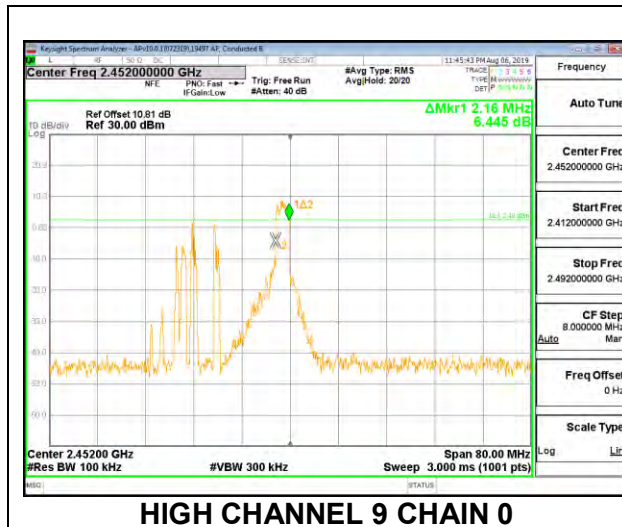
HIGH CHANNEL 8 CHAIN 0



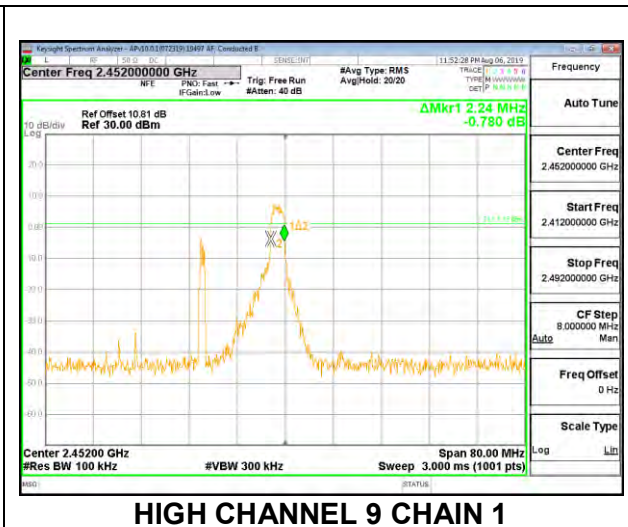
HIGH CHANNEL 8 CHAIN 1



## HIGH CHANNEL 9

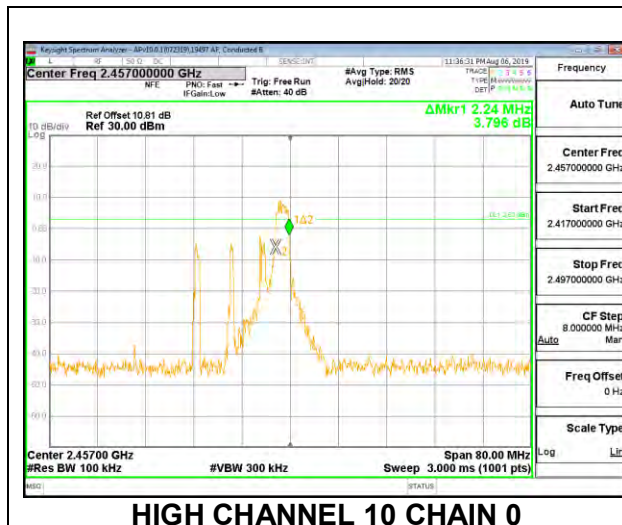


HIGH CHANNEL 9 CHAIN 0

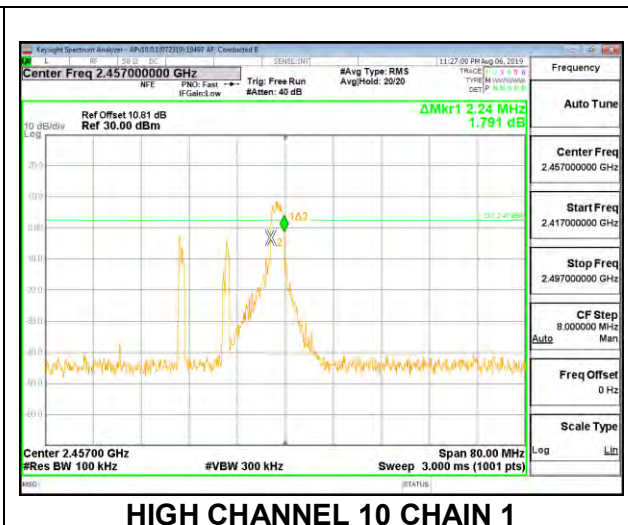


HIGH CHANNEL 9 CHAIN 1

## HIGH CHANNEL 10

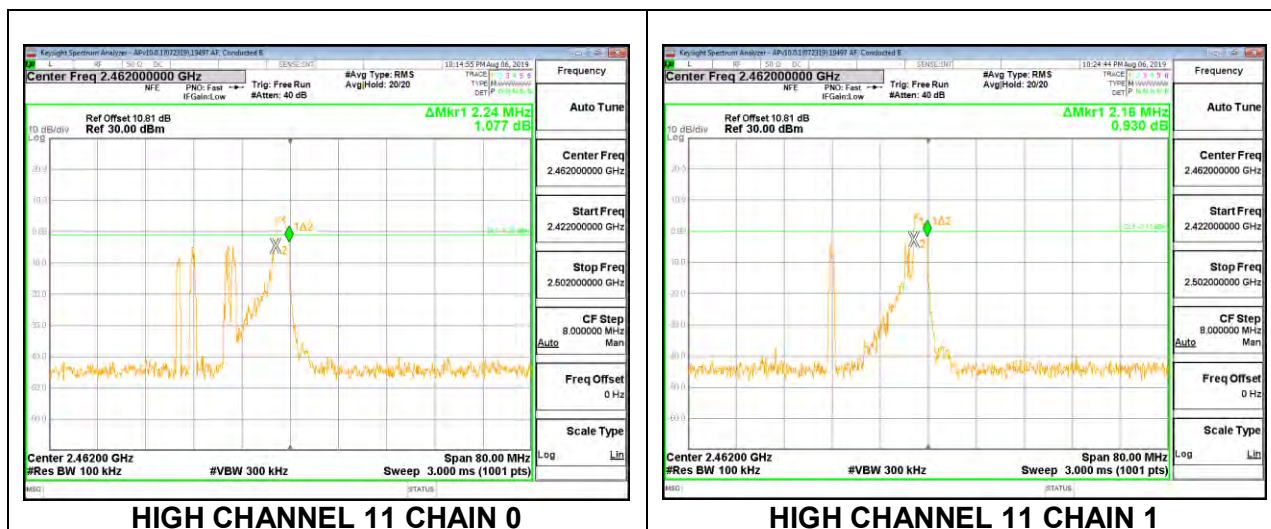


HIGH CHANNEL 10 CHAIN 0



HIGH CHANNEL 10 CHAIN 1

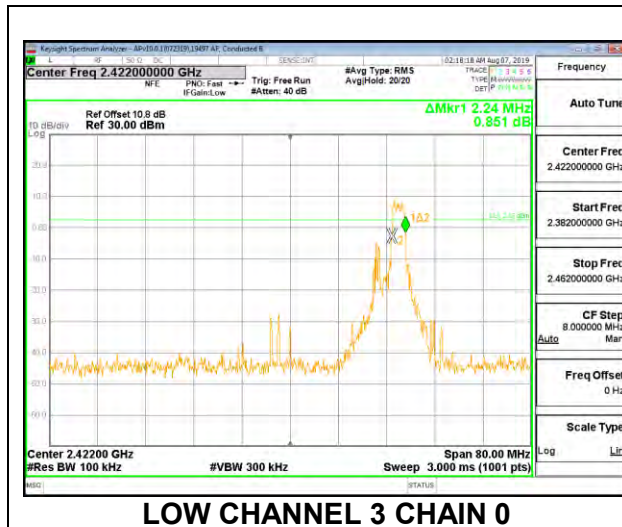
## HIGH CHANNEL 11



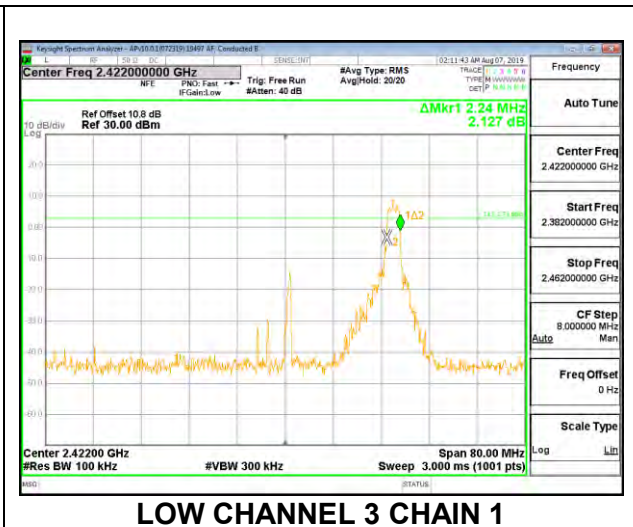
**2TX Antenna 1 + Antenna 2 OFDMA MODE: 26-Tones, RU index 17**

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low 3	2422	2.24	2.24	0.5
Low 4	2427	2.24	2.24	0.5
Mid 6	2437	2.24	2.24	0.5
High 8	2447	2.24	2.24	0.5
High 9	2452	2.24	2.24	0.5
High 10	2457	2.24	2.24	0.5
High 11	2462	2.24	2.24	0.5

## LOW CHANNEL 3

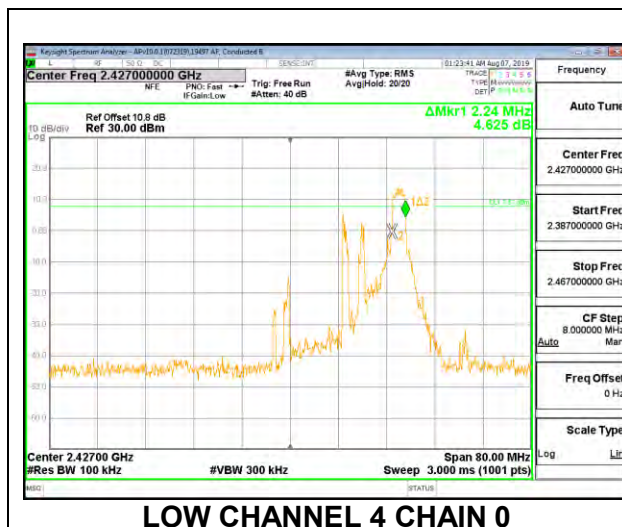


LOW CHANNEL 3 CHAIN 0

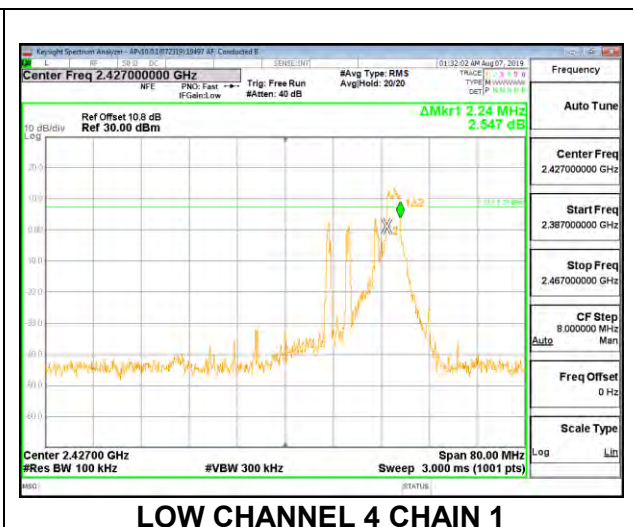


LOW CHANNEL 3 CHAIN 1

## LOW CHANNEL 4



LOW CHANNEL 4 CHAIN 0



LOW CHANNEL 4 CHAIN 1



**MID CHANNEL 6 CHAIN 0**

Parameter	Value
Center Freq	2.437000000 GHz
Start Freq	2.397000000 GHz
Stop Freq	2.477000000 GHz
CF Step	8.000000 MHz
Freq Offset	0 Hz
Scale Type	Log

**MID CHANNEL 6 CHAIN 1**

Parameter	Value
Center Freq	2.437000000 GHz
Start Freq	2.397000000 GHz
Stop Freq	2.477000000 GHz
CF Step	8.000000 MHz
Freq Offset	0 Hz
Scale Type	Log

**High Channel 8 Chain 0**

Center Freq 2.447000000 GHz  
 #Avg Type: RM5  
 AvgHold: 20/20  
 Ref Offset 10.81 dB  
 Ref 30.00 dBm  
 ΔMkr1 2.24 MHz  
 1.959 dB

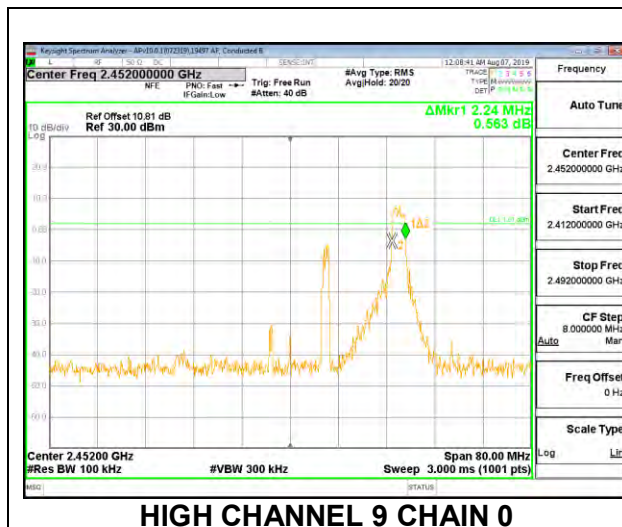
Center Freq 2.447000000 GHz  
 Start Freq 2.407000000 GHz  
 Stop Freq 2.487000000 GHz  
 CF Step 8.000000 MHz  
 Man  
 Freq Offset 0 Hz  
 Scale Type Log  
 Center 2.44700 GHz  
 #Res BW 100 kHz  
 #VBW 300 kHz  
 Sweep 3.000 ms (1001 pts)

**High Channel 8 Chain 1**

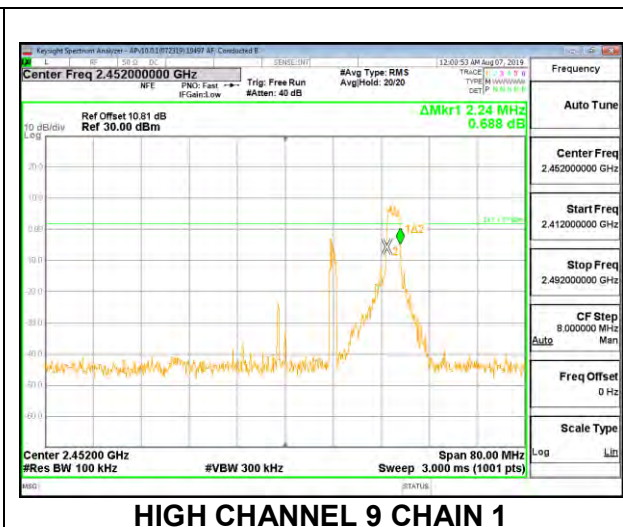
Center Freq 2.447000000 GHz  
 #Avg Type: RM5  
 AvgHold: 20/20  
 Ref Offset 10.81 dB  
 Ref 30.00 dBm  
 ΔMkr1 2.24 MHz  
 1.196 dB

Center Freq 2.447000000 GHz  
 Start Freq 2.407000000 GHz  
 Stop Freq 2.487000000 GHz  
 CF Step 8.000000 MHz  
 Man  
 Freq Offset 0 Hz  
 Scale Type Log  
 Center 2.44700 GHz  
 #Res BW 100 kHz  
 #VBW 300 kHz  
 Sweep 3.000 ms (1001 pts)

## HIGH CHANNEL 9

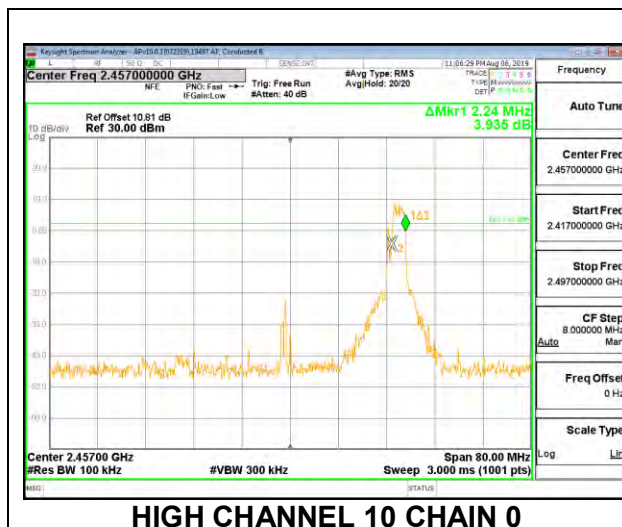


HIGH CHANNEL 9 CHAIN 0

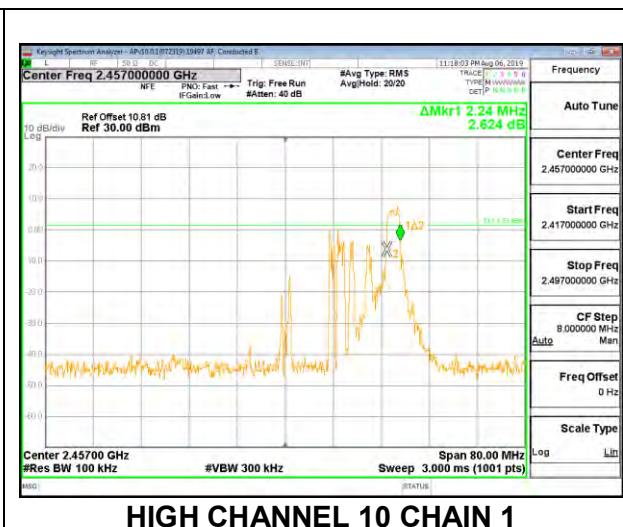


HIGH CHANNEL 9 CHAIN 1

## HIGH CHANNEL 10

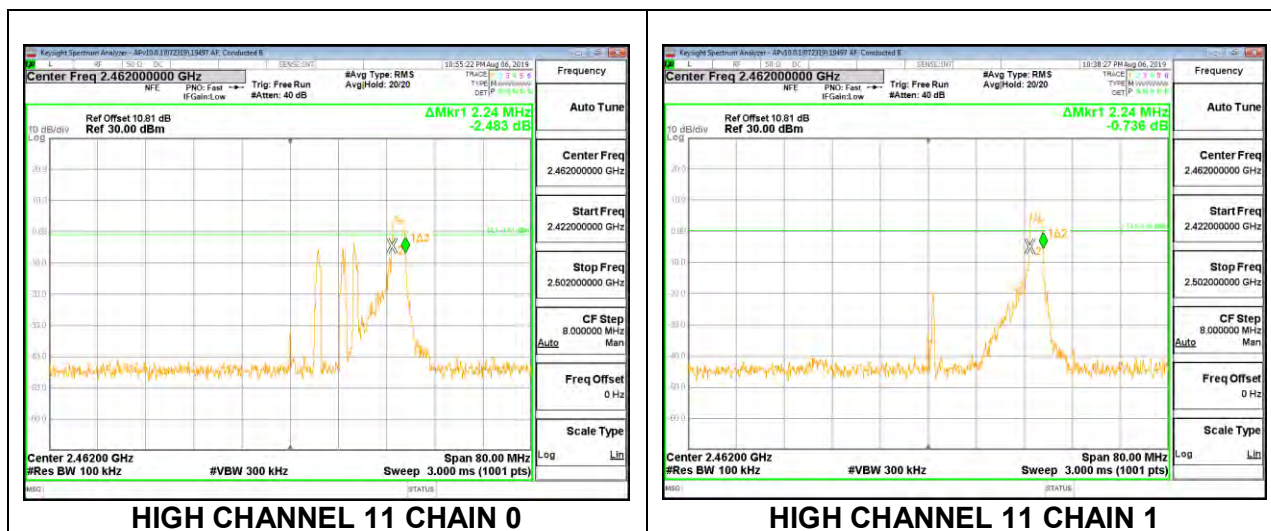


HIGH CHANNEL 10 CHAIN 0



HIGH CHANNEL 10 CHAIN 1

## HIGH CHANNEL 11



## 8.4. OUTPUT POWER

### LIMITS

FCC §15.247 (b) (3)

RSS-247 5.4 (d)

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### TEST PROCEDURE

The transmitter output is connected to a power meter. The cable assembly insertion loss was entered as an offset in the power meter to allow for a peak reading of power.

### DIRECTIONAL ANTENNA GAIN

2 TX:

Tx chains are uncorrelated for power and PSD in SDM MIMO mode, and correlated for PSD in CDD MIMO mode. The directional gains are as follows:

Band (GHz)	Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)	Correlated Chains Directional Gain (dBi)
2.4	-2.20	1.60	0.10	2.92



## **RESULTS**

### **8.4.1. 802.11ax HE20 MODE 2TX**

#### **2TX Antenna 1 + Antenna 2 MODE SU**

##### **Limits**

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	0.10	30.00	36	30.00
Low 2	2417	0.10	30.00	36	30.00
Mid 6	2437	0.10	30.00	36	30.00
High 10	2457	0.10	30.00	36	30.00
High 11	2462	0.10	30.00	36	30.00
High 12	2467	0.10	30.00	36	30.00
High 13	2472	0.10	30.00	36	30.00

##### **Results**

Channel	Frequency (MHz)	Chain 0 Measured Power (dBm)	Chain 1 Measured Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	19.57	20.00	22.80	30.00	-7.20
Low 2	2417	22.58	22.89	25.75	30.00	-4.25
Mid 6	2437	23.08	23.14	26.12	30.00	-3.88
High 10	2457	22.05	23.12	25.63	30.00	-4.37
High 11	2462	19.13	19.67	22.42	30.00	-7.58
High 12	2467	17.79	17.95	20.88	30.00	-9.12
High 13	2472	17.48	17.65	20.58	30.00	-9.42

**2TX Antenna 1 + Antenna 2 MODE 242 Tones RU 61**

**Limits**

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	0.10	30.00	36	30.00
Low 2	2417	0.10	30.00	36	30.00
Mid 6	2437	0.10	30.00	36	30.00
High 10	2457	0.10	30.00	36	30.00
High 11	2462	0.10	30.00	36	30.00
High 12	2467	0.10	30.00	36	30.00
High 13	2472	0.10	30.00	36	30.00

**Results**

Channel	Frequency (MHz)	Chain 0 Measured Power (dBm)	Chain 1 Measured Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	21.60	21.83	24.73	30.00	-5.27
Low 2	2417	23.10	23.38	26.25	30.00	-3.75
Mid 6	2437	23.18	23.27	26.24	30.00	-3.76
High 10	2457	22.12	22.08	25.11	30.00	-4.89
High 11	2462	21.84	22.12	24.99	30.00	-5.01
High 12	2467	21.69	21.89	24.80	30.00	-5.20
High 13	2472	20.77	20.18	23.50	30.00	-6.50