

# Annex C

## WLAN 802.11b/g/n/ax Test Result

Model No.: APEX0675

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### 1. Duty Cycle Measurement Test Result

|           |                         |               |           |
|-----------|-------------------------|---------------|-----------|
| Test Site | WZ-SR5                  | Test Engineer | Lynn Yang |
| Test Date | 2023-08-08 ~ 2023-08-20 |               |           |

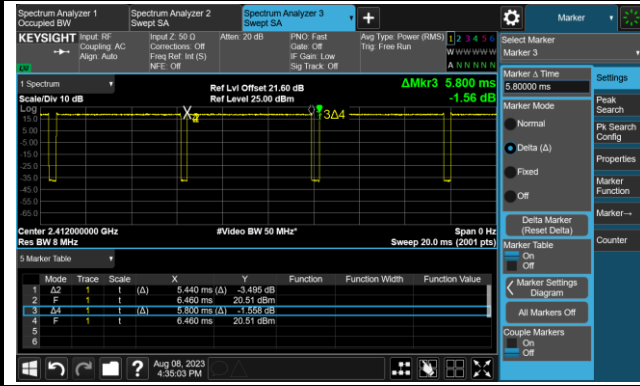
| Test Mode     | Duty Cycle |
|---------------|------------|
| 802.11b       | 64.30%     |
| 802.11g       | 93.55%     |
| 802.11n-HT20  | 93.77%     |
| 802.11n-HT40  | 94.76%     |
| 802.11ax-HE20 | 93.79%     |
| 802.11ax-HE40 | 94.78%     |

### Duty Cycle (T = Transmission Duration)

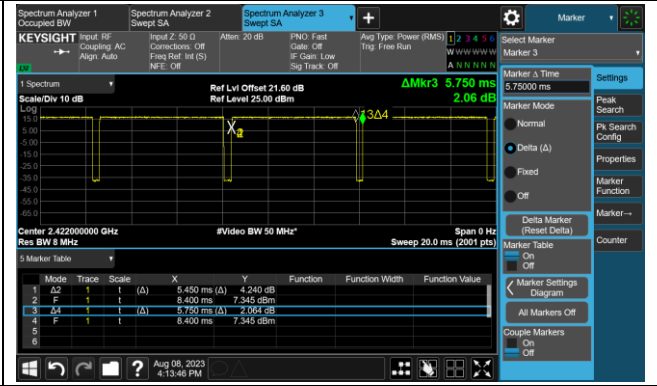
| 802.11b (T = 1.376ms)      | 802.11g (T = 1.972ms)      |
|----------------------------|----------------------------|
|                            |                            |
| 802.11n-HT20 (T = 5.420ms) | 802.11n-HT40 (T = 5.420ms) |
|                            |                            |

### Duty Cycle (T = Transmission Duration)

#### 802.11ax-HE20 (T = 5.440ms)



#### 802.11ax-HE40 (T = 5.450ms)



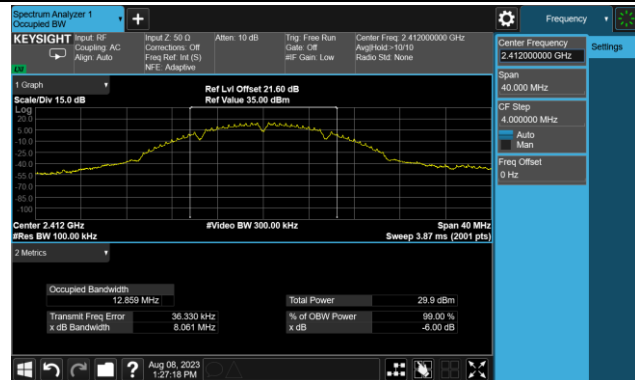
## 2. 6dB Bandwidth Measurement Test Result

|           |            |               |           |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5     | Test Engineer | Lynn Yang |
| Test Date | 2023-08-08 |               |           |

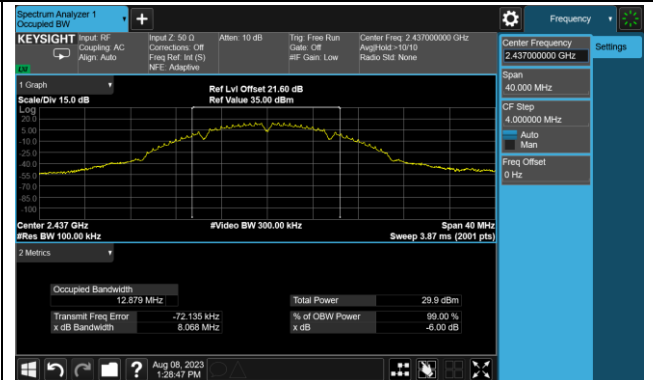
| Test Mode | Data Rate / MCS | Channel No. | Frequency (MHz) | 6dB Bandwidth (MHz) | Limit (MHz) |
|-----------|-----------------|-------------|-----------------|---------------------|-------------|
| 11b       | 1Mbps           | 01          | 2412            | 8.061               | ≥ 0.5       |
| 11b       | 1Mbps           | 06          | 2437            | 8.068               | ≥ 0.5       |
| 11b       | 1Mbps           | 11          | 2462            | 8.064               | ≥ 0.5       |
| 11g       | 6Mbps           | 01          | 2412            | 15.740              | ≥ 0.5       |
| 11g       | 6Mbps           | 06          | 2437            | 15.930              | ≥ 0.5       |
| 11g       | 6Mbps           | 11          | 2462            | 15.160              | ≥ 0.5       |
| 11n-HT20  | MCS0            | 01          | 2412            | 16.320              | ≥ 0.5       |
| 11n-HT20  | MCS0            | 06          | 2437            | 16.780              | ≥ 0.5       |
| 11n-HT20  | MCS0            | 11          | 2462            | 15.480              | ≥ 0.5       |
| 11n-HT40  | MCS0            | 03          | 2422            | 35.370              | ≥ 0.5       |
| 11n-HT40  | MCS0            | 06          | 2437            | 35.370              | ≥ 0.5       |
| 11n-HT40  | MCS0            | 09          | 2452            | 36.300              | ≥ 0.5       |
| 11ax-HE20 | MCS0            | 01          | 2412            | 18.160              | ≥ 0.5       |
| 11ax-HE20 | MCS0            | 06          | 2437            | 18.450              | ≥ 0.5       |
| 11ax-HE20 | MCS0            | 11          | 2462            | 17.740              | ≥ 0.5       |
| 11ax-HE40 | MCS0            | 03          | 2422            | 37.760              | ≥ 0.5       |
| 11ax-HE40 | MCS0            | 06          | 2437            | 37.600              | ≥ 0.5       |
| 11ax-HE40 | MCS0            | 09          | 2452            | 37.850              | ≥ 0.5       |

802.11b 6dB Bandwidth

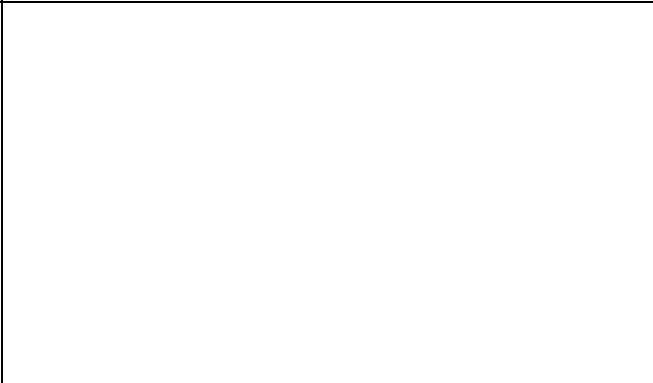
Channel 01 (2412MHz)



Channel 06 (2437MHz)

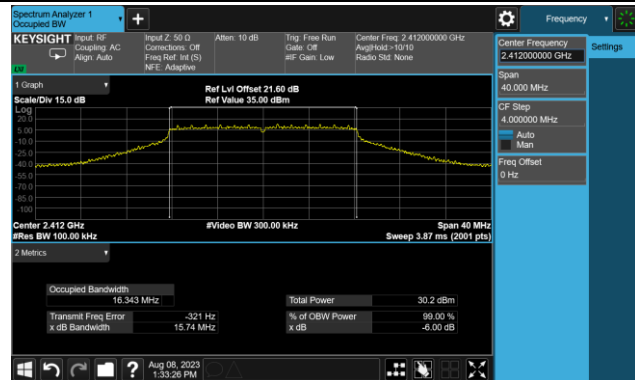


Channel 11 (2462MHz)

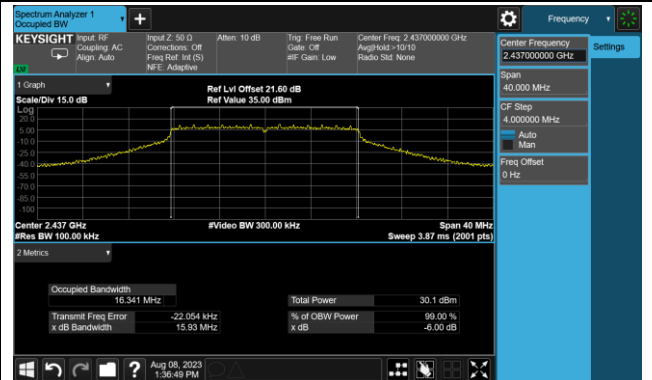


802.11g 6dB Bandwidth

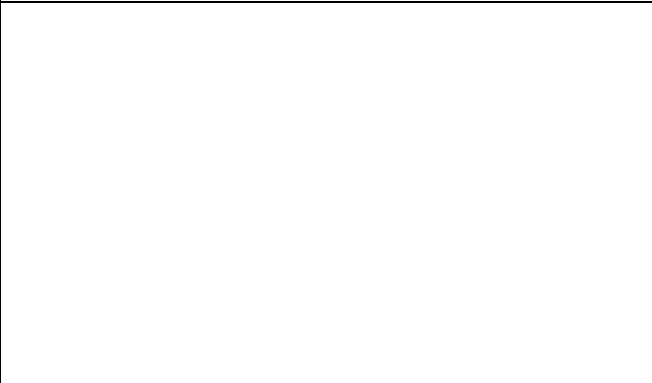
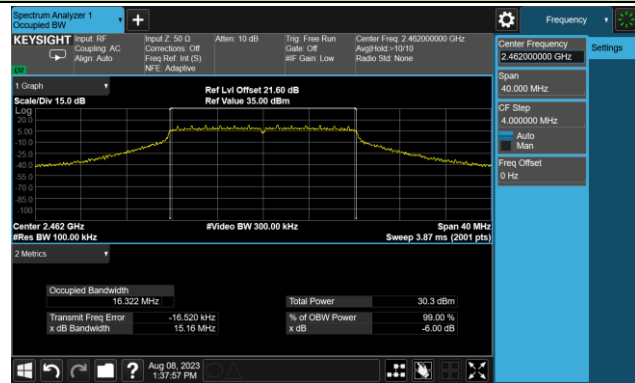
Channel 01 (2412MHz)



Channel 06 (2437MHz)

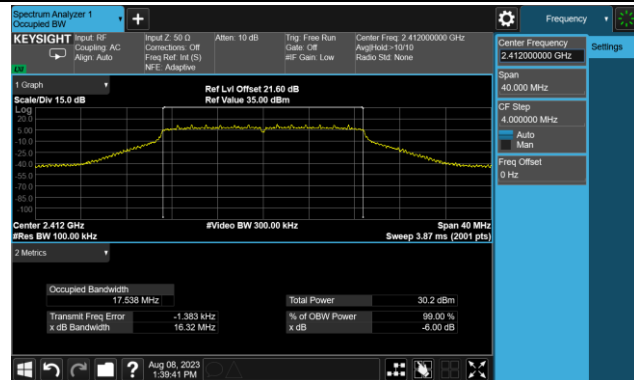


Channel 11 (2462MHz)

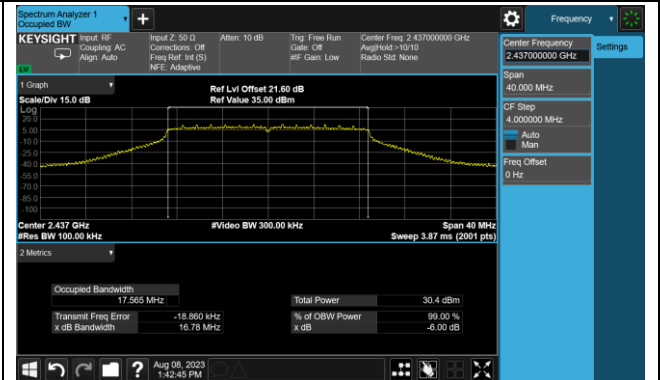


## 802.11n-HT20 6dB Bandwidth

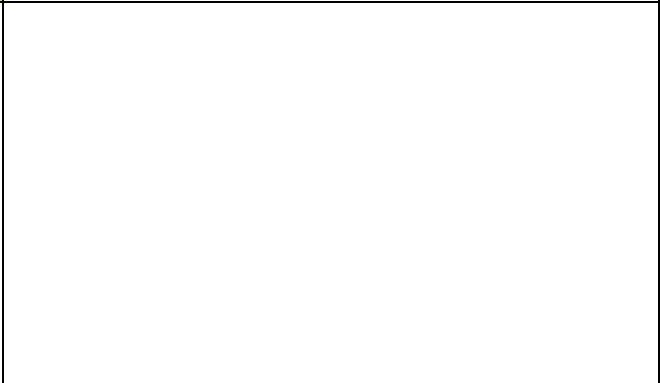
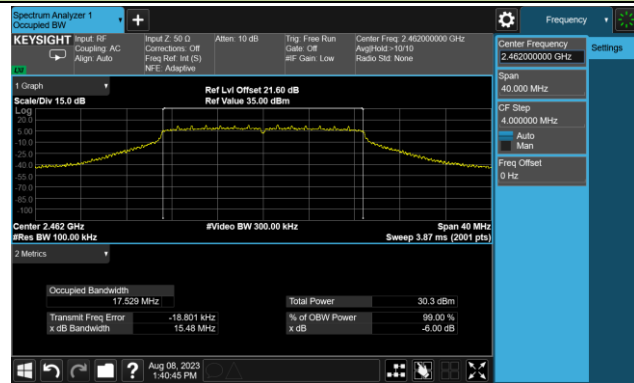
### Channel 01 (2412MHz)



### Channel 06 (2437MHz)

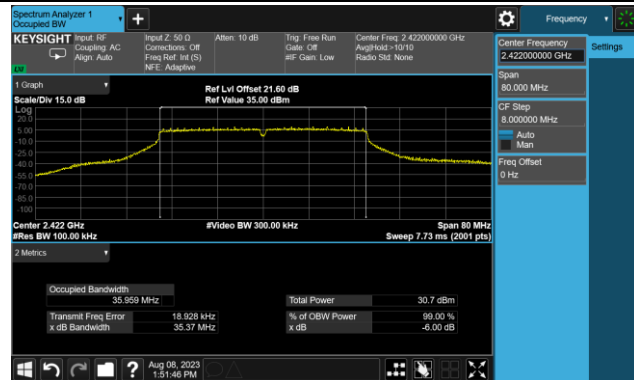


### Channel 11 (2462MHz)

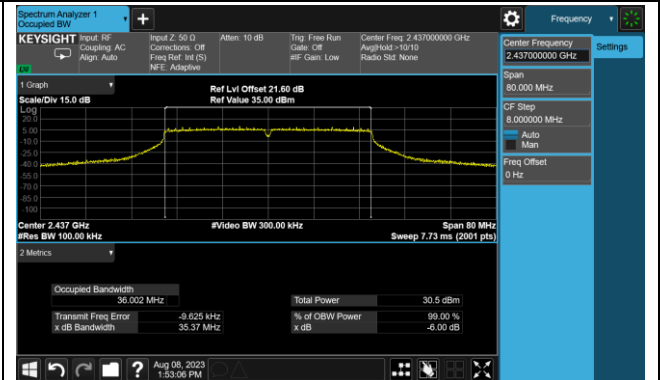


## 802.11n-HT40 6dB Bandwidth

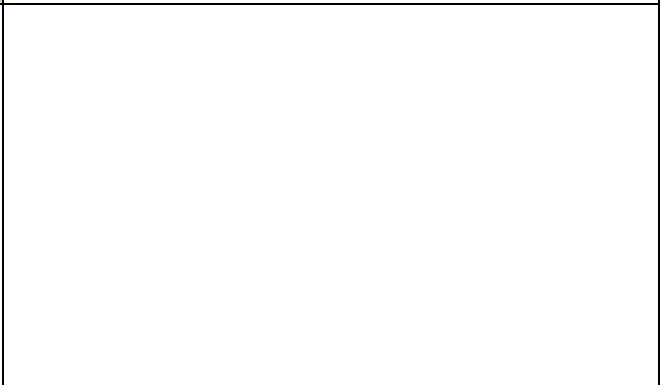
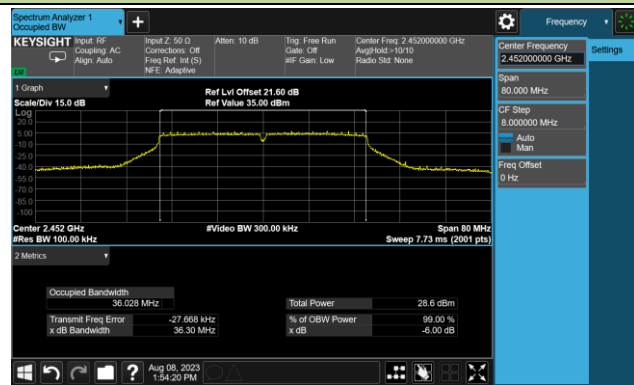
### Channel 03 (2422MHz)



### Channel 06 (2437MHz)



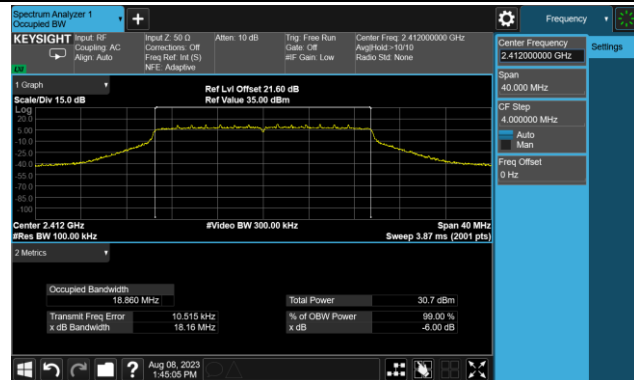
### Channel 09 (2452MHz)



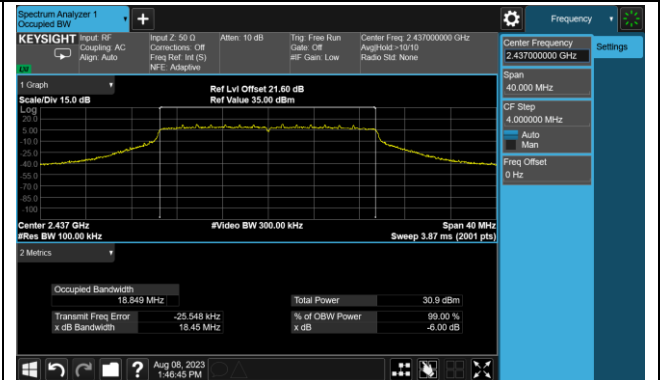


## 802.11ax-HE20 6dB Bandwidth

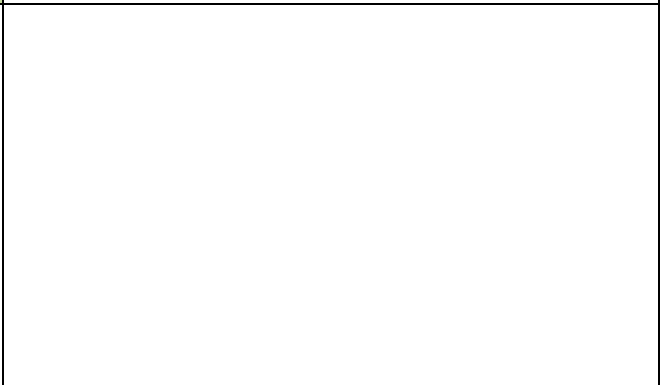
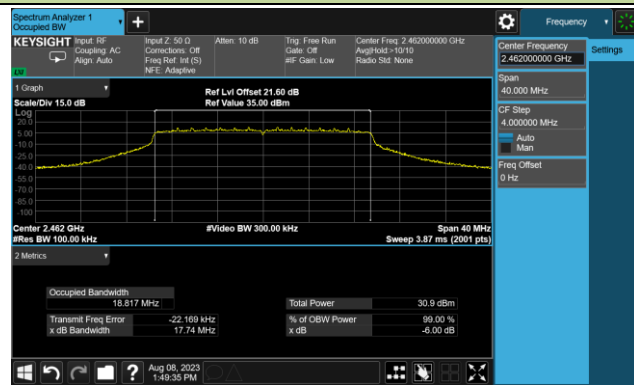
### Channel 01 (2412MHz)



### Channel 06 (2437MHz)

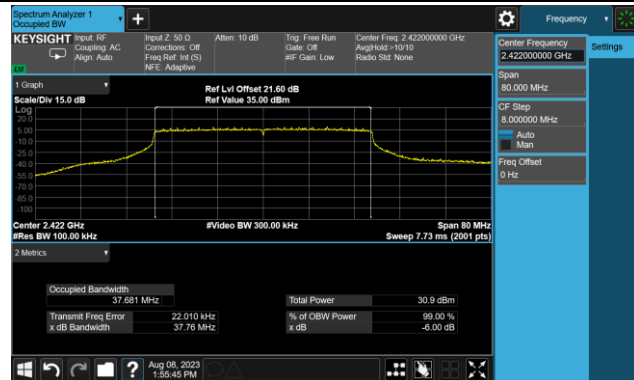


### Channel 11 (2462MHz)

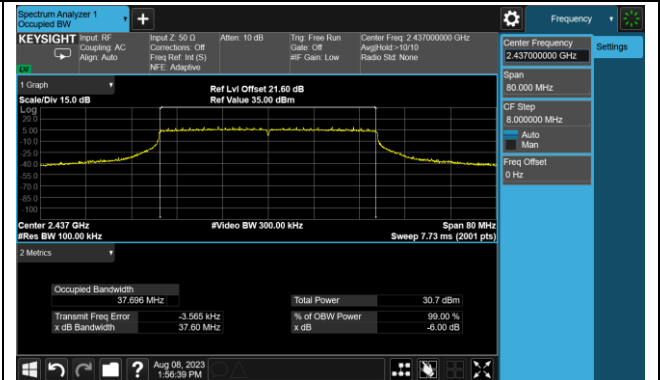


## 802.11ax-HE40 6dB Bandwidth

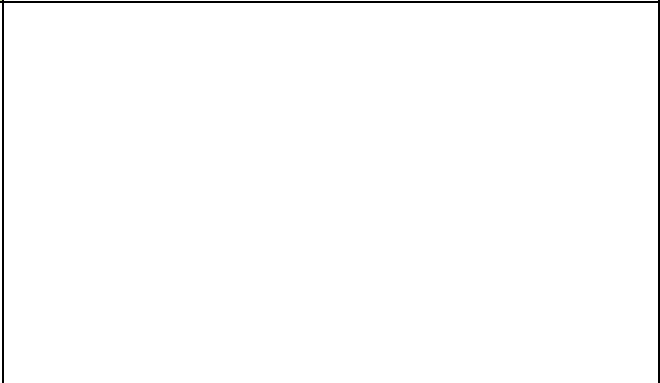
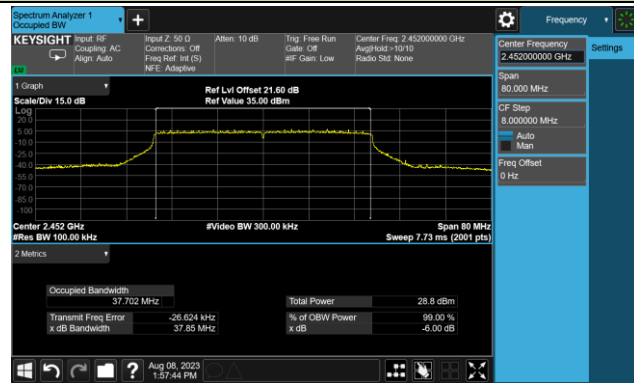
### Channel 03 (2422MHz)



### Channel 06 (2437MHz)



### Channel 09 (2452MHz)



### 3. Output Power Measurement Test Result

|           |            |                      |           |
|-----------|------------|----------------------|-----------|
| Test Site | WZ-SR5     | Test Engineer        | Lynn Yang |
| Test Date | 2023-08-08 | Filter Configuration | Filter 1# |

| Test Mode | Data Rate / MCS | Channel No. | Freq. (MHz) | Average Power (dBm) |       | Total Power (dBm) | Limit (dBm) |
|-----------|-----------------|-------------|-------------|---------------------|-------|-------------------|-------------|
|           |                 |             |             | Ant 0               | Ant 1 |                   |             |
| 11b       | 1Mbps           | 01          | 2412        | 22.67               | 22.75 | 25.72             | ≤ 30.00     |
| 11b       | 1Mbps           | 06          | 2437        | 22.66               | 22.22 | 25.46             | ≤ 30.00     |
| 11b       | 1Mbps           | 11          | 2462        | 22.63               | 22.70 | 25.68             | ≤ 30.00     |
| 11g       | 6Mbps           | 01          | 2412        | 22.38               | 22.36 | 25.38             | ≤ 30.00     |
| 11g       | 6Mbps           | 06          | 2437        | 22.24               | 22.32 | 25.29             | ≤ 30.00     |
| 11g       | 6Mbps           | 11          | 2462        | 22.31               | 22.66 | 25.50             | ≤ 30.00     |
| 11n-HT20  | MCS0            | 01          | 2412        | 22.76               | 22.30 | 25.55             | ≤ 30.00     |
| 11n-HT20  | MCS0            | 06          | 2437        | 22.77               | 22.88 | 25.84             | ≤ 30.00     |
| 11n-HT20  | MCS0            | 11          | 2462        | 22.68               | 22.57 | 25.64             | ≤ 30.00     |
| 11n-HT40  | MCS0            | 03          | 2422        | 22.57               | 22.75 | 25.67             | ≤ 30.00     |
| 11n-HT40  | MCS0            | 06          | 2437        | 22.12               | 22.72 | 25.44             | ≤ 30.00     |
| 11n-HT40  | MCS0            | 09          | 2452        | 20.39               | 20.47 | 23.44             | ≤ 30.00     |
| 11ax-HE20 | MCS0            | 01          | 2412        | 22.35               | 22.38 | 25.38             | ≤ 30.00     |
| 11ax-HE20 | MCS0            | 06          | 2437        | 22.44               | 22.22 | 25.34             | ≤ 30.00     |
| 11ax-HE20 | MCS0            | 11          | 2462        | 22.53               | 22.32 | 25.44             | ≤ 30.00     |
| 11ax-HE40 | MCS0            | 03          | 2422        | 22.17               | 22.21 | 25.20             | ≤ 30.00     |
| 11ax-HE40 | MCS0            | 06          | 2437        | 22.12               | 22.28 | 25.21             | ≤ 30.00     |
| 11ax-HE40 | MCS0            | 09          | 2452        | 20.12               | 20.10 | 23.12             | ≤ 30.00     |

Note: Total Power (dBm) =  $10 \cdot \log \{10^{(\text{Ant 0 Average Power} / 10)} + 10^{(\text{Ant 1 Average Power} / 10)}\}$  (dBm).



|           |            |                      |           |
|-----------|------------|----------------------|-----------|
| Test Site | WZ-SR5     | Test Engineer        | Lynn Yang |
| Test Date | 2023-08-08 | Filter Configuration | Filter 2# |

| Test Mode | Data Rate / MCS | Channel No. | Freq. (MHz) | Average Power (dBm) |       | Total Power (dBm) | Limit (dBm) |
|-----------|-----------------|-------------|-------------|---------------------|-------|-------------------|-------------|
|           |                 |             |             | Ant 0               | Ant 1 |                   |             |
| 11b       | 1Mbps           | 01          | 2412        | 22.12               | 22.23 | 25.19             | ≤ 30.00     |
| 11b       | 1Mbps           | 06          | 2437        | 21.78               | 21.94 | 24.87             | ≤ 30.00     |
| 11g       | 6Mbps           | 01          | 2412        | 21.66               | 21.74 | 24.71             | ≤ 30.00     |
| 11g       | 6Mbps           | 06          | 2437        | 21.83               | 21.91 | 24.88             | ≤ 30.00     |
| 11n-HT20  | MCS0            | 01          | 2412        | 21.57               | 21.55 | 24.57             | ≤ 30.00     |
| 11n-HT20  | MCS0            | 06          | 2437        | 21.78               | 21.79 | 24.80             | ≤ 30.00     |
| 11n-HT40  | MCS0            | 03          | 2422        | 21.87               | 21.86 | 24.88             | ≤ 30.00     |
| 11ax-HE20 | MCS0            | 01          | 2412        | 21.41               | 21.82 | 24.63             | ≤ 30.00     |
| 11ax-HE20 | MCS0            | 06          | 2437        | 21.62               | 21.85 | 24.75             | ≤ 30.00     |
| 11ax-HE40 | MCS0            | 03          | 2422        | 21.23               | 21.84 | 24.56             | ≤ 30.00     |

Note: Total Power (dBm) =  $10 \cdot \log \{10^{(\text{Ant 0 Average Power} / 10)} + 10^{(\text{Ant 1 Average Power} / 10)}\}$  (dBm).



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|           |            |                      |           |
|-----------|------------|----------------------|-----------|
| Test Site | WZ-SR5     | Test Engineer        | Lynn Yang |
| Test Date | 2023-08-08 | Filter Configuration | Filter 3# |

| Test Mode | Data Rate / MCS | Channel No. | Freq. (MHz) | Average Power (dBm) |       | Total Power (dBm) | Limit (dBm) |
|-----------|-----------------|-------------|-------------|---------------------|-------|-------------------|-------------|
|           |                 |             |             | Ant 0               | Ant 1 |                   |             |
| 11b       | 1Mbps           | 11          | 2462        | 21.95               | 22.07 | 25.02             | ≤ 30.00     |
| 11g       | 6Mbps           | 11          | 2462        | 22.21               | 22.29 | 25.26             | ≤ 30.00     |
| 11n-HT20  | MCS0            | 11          | 2462        | 21.43               | 22.09 | 24.78             | ≤ 30.00     |
| 11ax-HE20 | MCS0            | 11          | 2462        | 21.97               | 21.67 | 24.83             | ≤ 30.00     |

Note: Total Power (dBm) =  $10 \cdot \log \{10^{(\text{Ant 0 Average Power} / 10)} + 10^{(\text{Ant 1 Average Power} / 10)}\}$  (dBm).

#### 4. Power Spectral Density Measurement Test Result

|           |            |               |           |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5     | Test Engineer | Lynn Yang |
| Test Date | 2023-08-08 |               |           |

| Test Mode | Data Rate/<br>MCS | Channel<br>No. | Freq.<br>(MHz) | PSD<br>(dBm/ 10kHz) |         | Duty<br>Cycle<br>(%) | 10*log<br>(1/x) | Total PSD<br>(dBm/10kHz) | Limit<br>(dBm/3kHz) |
|-----------|-------------------|----------------|----------------|---------------------|---------|----------------------|-----------------|--------------------------|---------------------|
|           |                   |                |                | Ant 0               | Ant 1   |                      |                 |                          |                     |
| 11b       | 1Mbps             | 01             | 2412           | -4.037              | -3.860  | 64.30                | 1.92            | 0.981                    | ≤ 8.00              |
| 11b       | 1Mbps             | 06             | 2437           | -3.847              | -3.914  | 64.30                | 1.92            | 1.048                    | ≤ 8.00              |
| 11b       | 1Mbps             | 11             | 2462           | -3.714              | -3.254  | 64.30                | 1.92            | 1.450                    | ≤ 8.00              |
| 11g       | 6Mbps             | 01             | 2412           | -6.323              | -6.460  | 93.55                | 0.29            | -3.091                   | ≤ 8.00              |
| 11g       | 6Mbps             | 06             | 2437           | -6.469              | -5.834  | 93.55                | 0.29            | -2.840                   | ≤ 8.00              |
| 11g       | 6Mbps             | 11             | 2462           | -6.054              | -5.945  | 93.55                | 0.29            | -2.699                   | ≤ 8.00              |
| 11n-HT20  | MCS0              | 01             | 2412           | -6.891              | -7.088  | 93.77                | 0.28            | -3.699                   | ≤ 8.00              |
| 11n-HT20  | MCS0              | 06             | 2437           | -6.974              | -6.828  | 93.77                | 0.28            | -3.611                   | ≤ 8.00              |
| 11n-HT20  | MCS0              | 11             | 2462           | -6.766              | -6.830  | 93.77                | 0.28            | -3.508                   | ≤ 8.00              |
| 11n-HT40  | MCS0              | 03             | 2422           | -9.518              | -9.109  | 94.76                | 0.23            | -6.065                   | ≤ 8.00              |
| 11n-HT40  | MCS0              | 06             | 2437           | -9.556              | -9.502  | 94.76                | 0.23            | -6.285                   | ≤ 8.00              |
| 11n-HT40  | MCS0              | 09             | 2452           | -11.624             | -11.612 | 94.76                | 0.23            | -8.374                   | ≤ 8.00              |
| 11ax-HE20 | MCS0              | 01             | 2412           | -8.862              | -8.579  | 93.79                | 0.28            | -5.429                   | ≤ 8.00              |
| 11ax-HE20 | MCS0              | 06             | 2437           | -8.591              | -8.624  | 93.79                | 0.28            | -5.319                   | ≤ 8.00              |
| 11ax-HE20 | MCS0              | 11             | 2462           | -8.102              | -8.276  | 93.79                | 0.28            | -4.899                   | ≤ 8.00              |
| 11ax-HE40 | MCS0              | 03             | 2422           | -11.312             | -11.093 | 94.78                | 0.23            | -7.958                   | ≤ 8.00              |
| 11ax-HE40 | MCS0              | 06             | 2437           | -11.153             | -11.047 | 94.78                | 0.23            | -7.857                   | ≤ 8.00              |
| 11ax-HE40 | MCS0              | 09             | 2452           | -13.035             | -13.396 | 94.78                | 0.23            | -9.969                   | ≤ 8.00              |

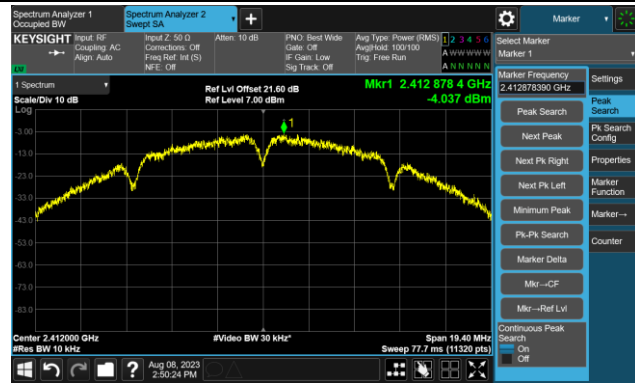
Note 1:

When EUT duty cycle ≥ 98%, Total PSD (dBm / 10kHz) =  $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$  (dBm / 10kHz).

When EUT duty cycle < 98%, Total PSD (dBm / 10kHz) =  $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$  (dBm / 10kHz) +  $10 \cdot \log (1/\text{Duty Cycle})$ .

### 802.11b - AVGPSD - Ant 0

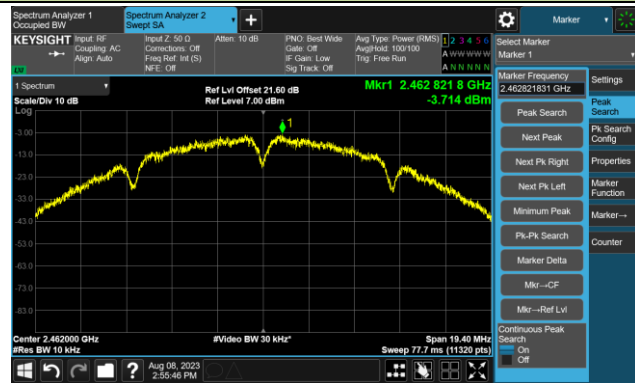
#### Channel 01 (2412MHz)



#### Channel 06 (2437MHz)

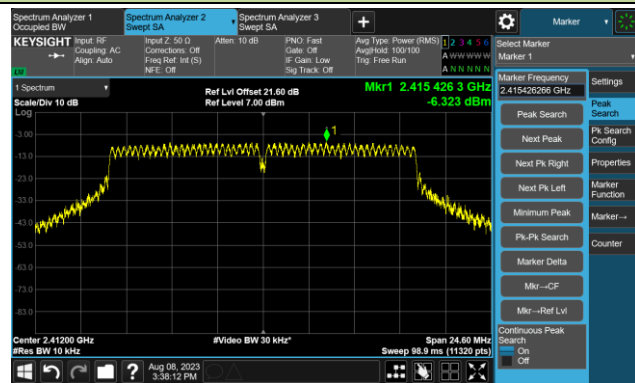


#### Channel 11 (2462MHz)

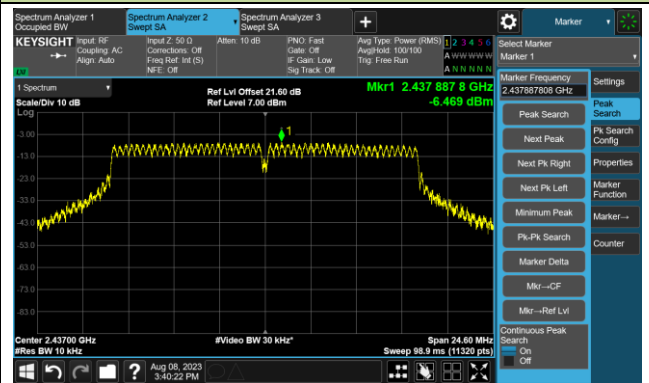


### 802.11g - AVGPSD - Ant 0

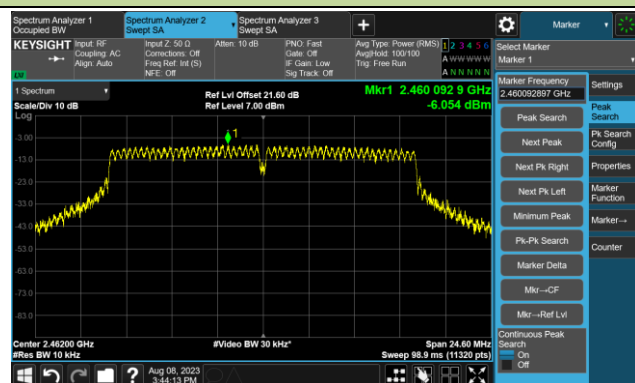
#### Channel 01 (2412MHz)



#### Channel 06 (2437MHz)

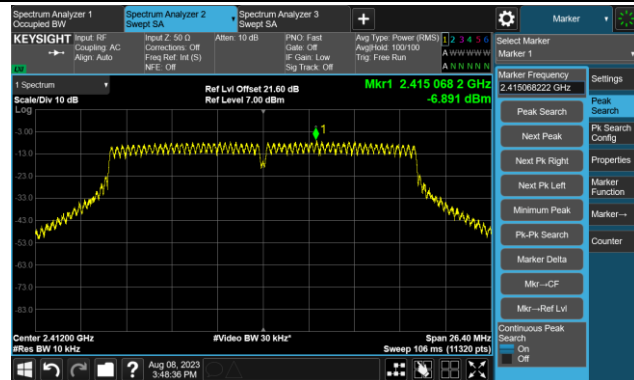


#### Channel 11 (2462MHz)

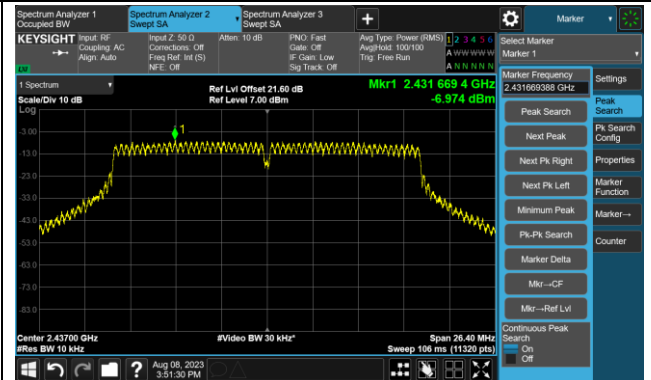


### 802.11n-HT20 - AVGPSD - Ant 0

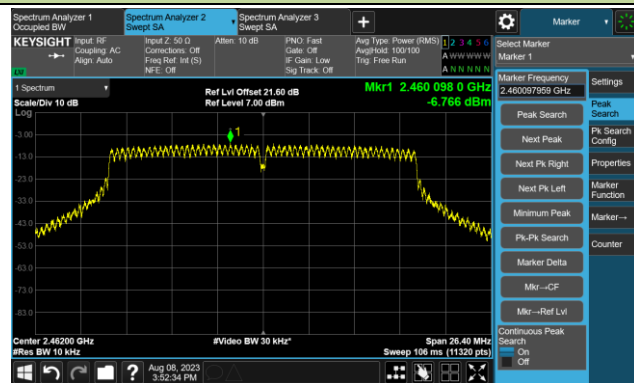
#### Channel 01 (2412MHz)



#### Channel 06 (2437MHz)

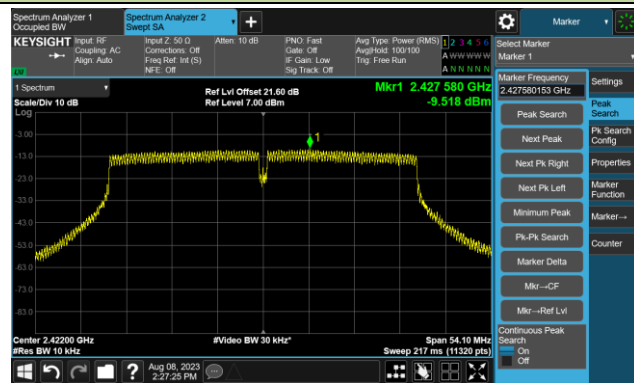


#### Channel 11 (2462MHz)

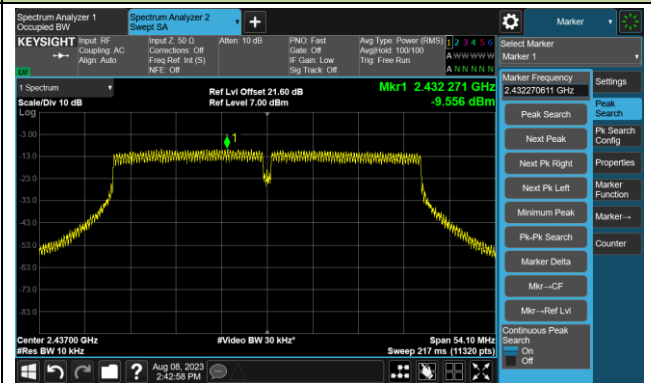


### 802.11n-HT40 - AVGPSD - Ant 0

#### Channel 03 (2422MHz)



#### Channel 06 (2437MHz)



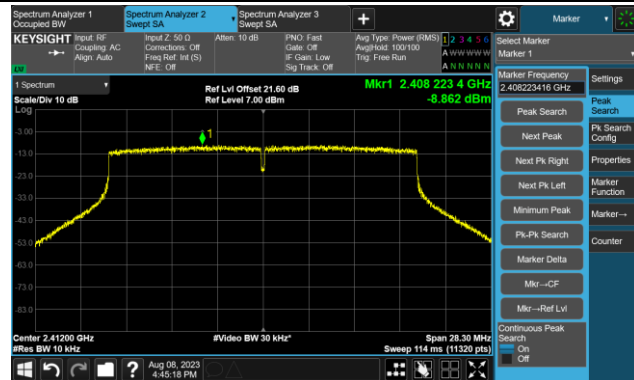
#### Channel 09 (2452MHz)





### 802.11ax-HE20 - AVGPSD - Ant 0

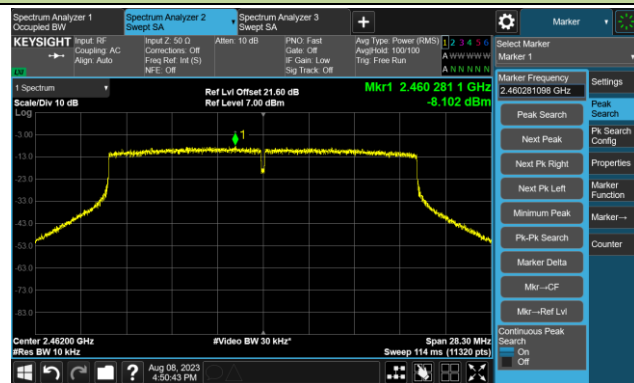
#### Channel 01 (2412MHz)



#### Channel 06 (2437MHz)

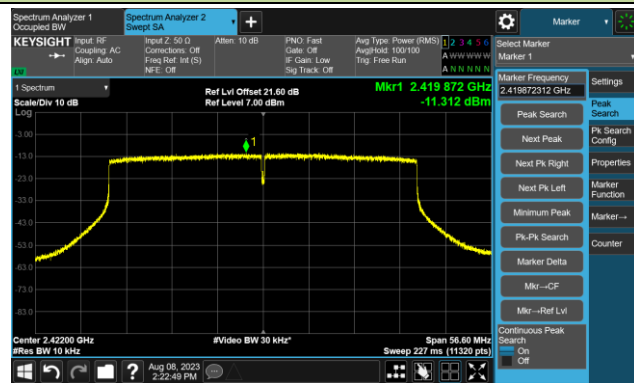


#### Channel 11 (2462MHz)

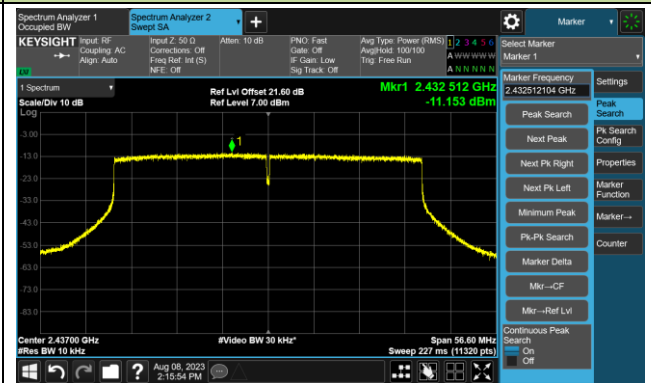


### 802.11ax-HE40 - AVGPSD - Ant 0

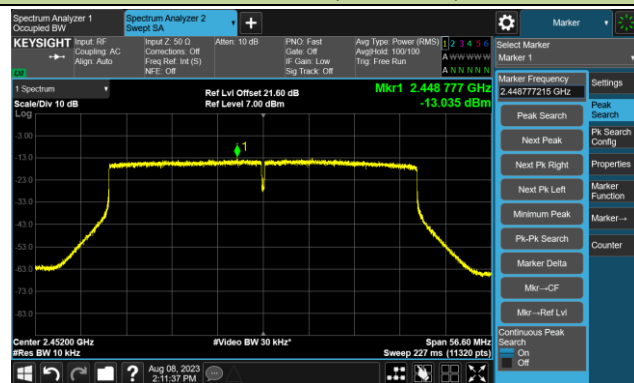
#### Channel 03 (2422MHz)



#### Channel 06 (2437MHz)

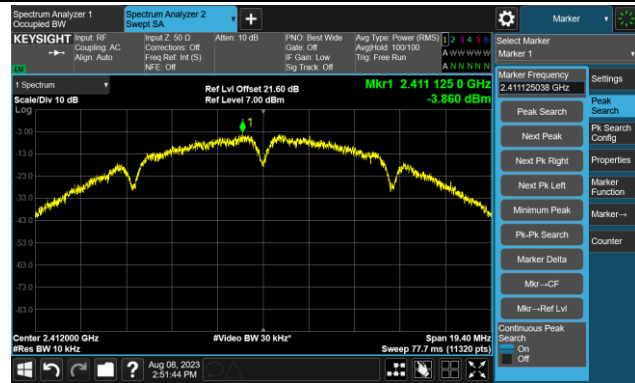


#### Channel 09 (2452MHz)



### 802.11b - AVGPSD - Ant 1

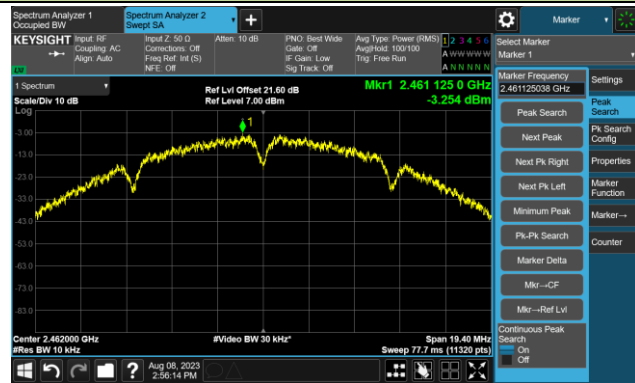
#### Channel 01 (2412MHz)



#### Channel 06 (2437MHz)

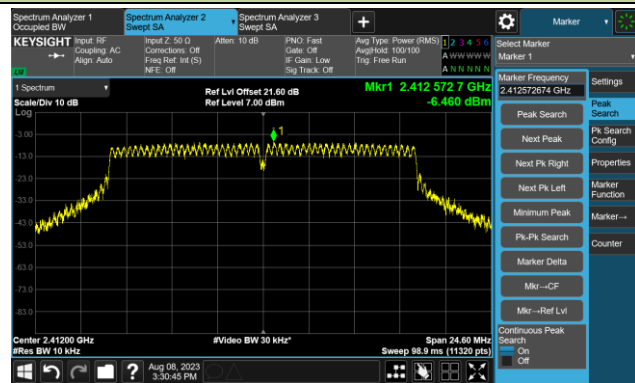


#### Channel 11 (2462MHz)

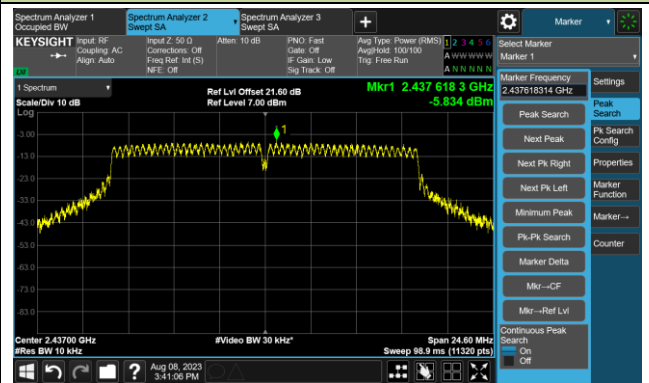


### 802.11g - AVGPSD - Ant 1

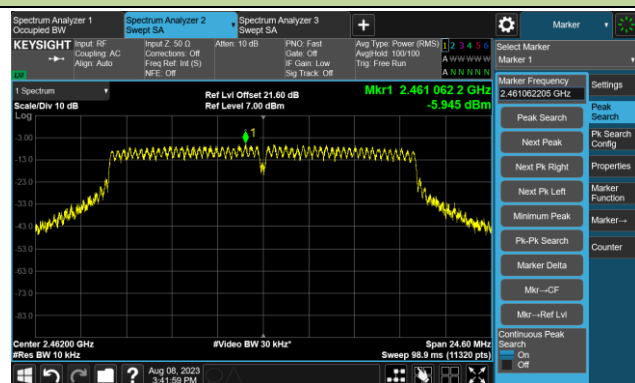
#### Channel 01 (2412MHz)



#### Channel 06 (2437MHz)

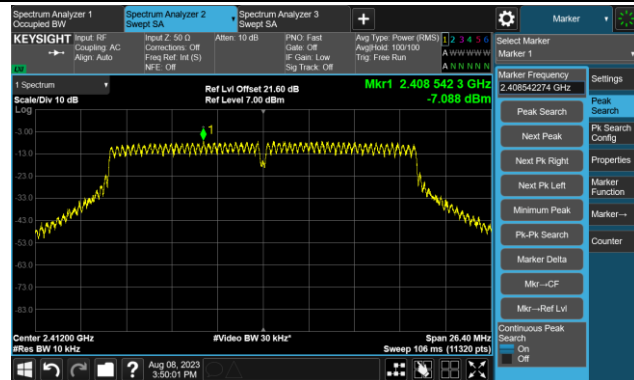


#### Channel 11 (2462MHz)

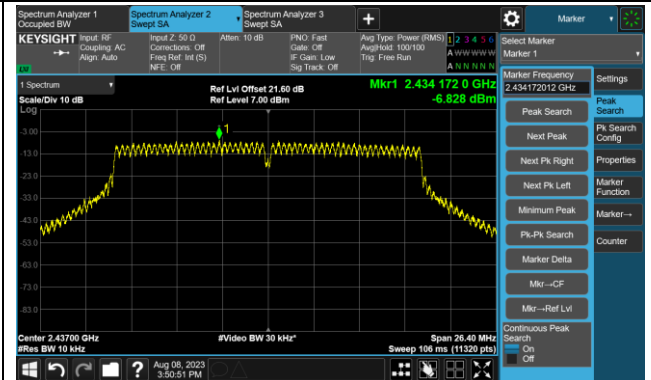


### 802.11n-HT20 - AVGPSD - Ant 1

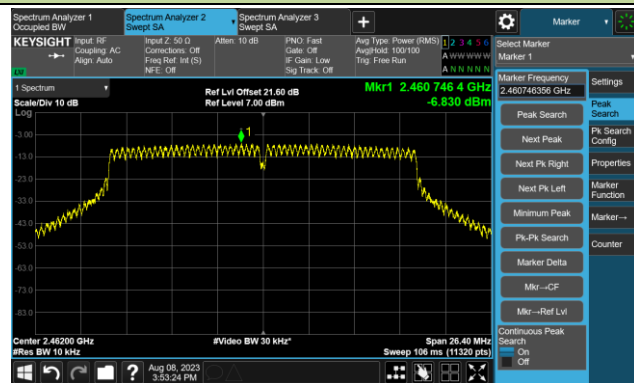
#### Channel 01 (2412MHz)



#### Channel 06 (2437MHz)

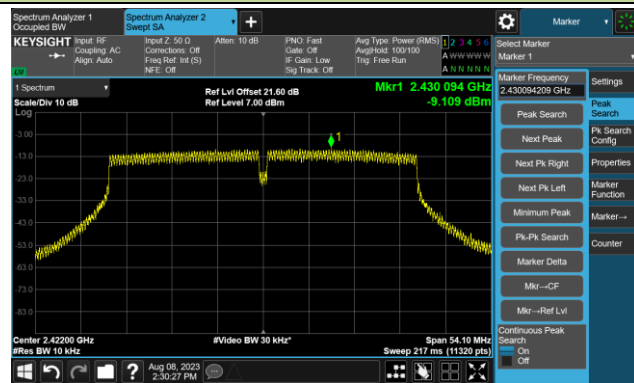


#### Channel 11 (2462MHz)

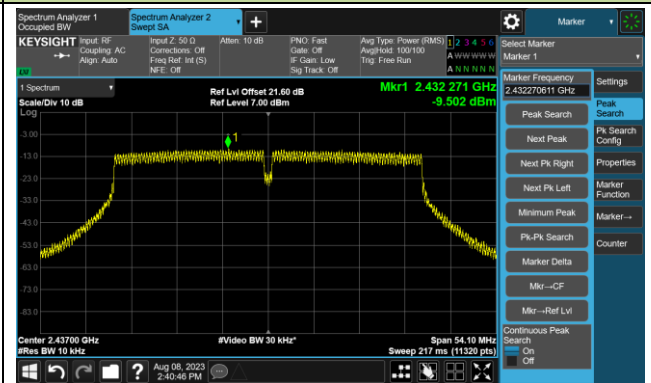


### 802.11n-HT40 - AVGPSD - Ant 1

#### Channel 03 (2422MHz)



#### Channel 06 (2437MHz)

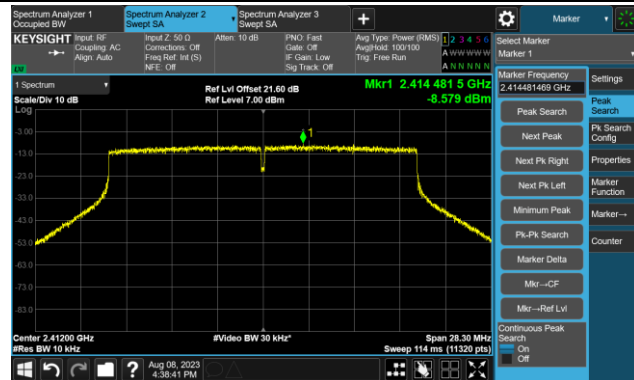


#### Channel 09 (2452MHz)

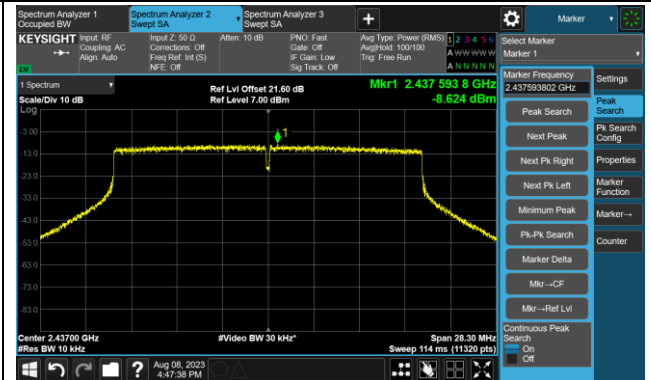


### 802.11ax-HE20 - AVGPSD - Ant 1

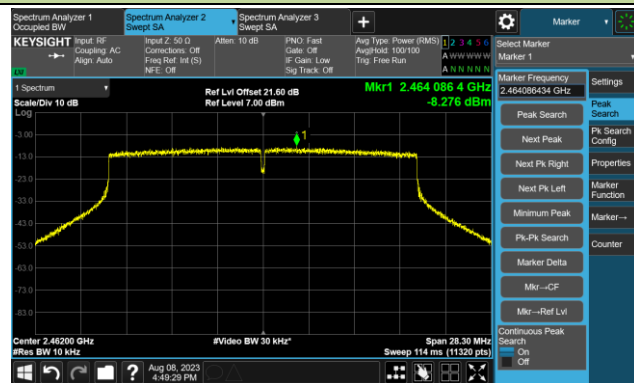
#### Channel 01 (2412MHz)



#### Channel 06 (2437MHz)

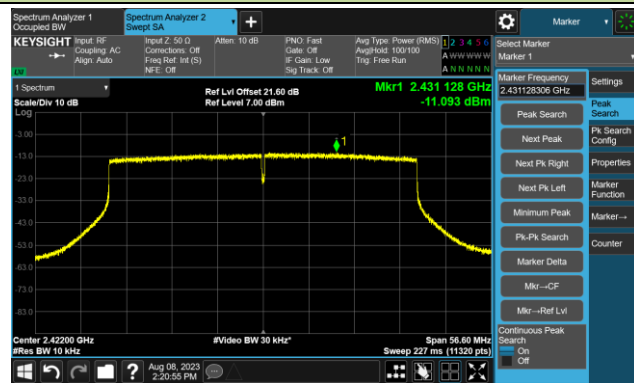


#### Channel 11 (2462MHz)

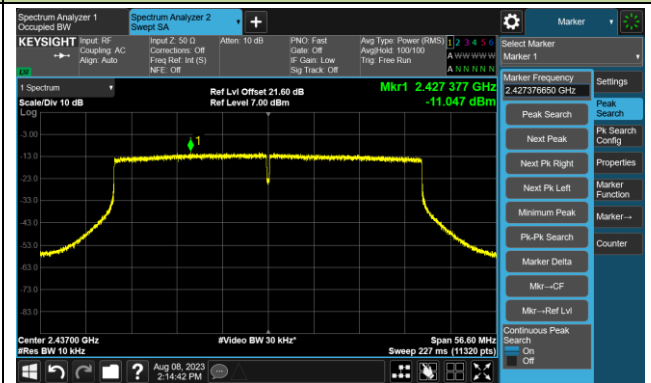


### 802.11ax-HE40 - AVGPSD - Ant 1

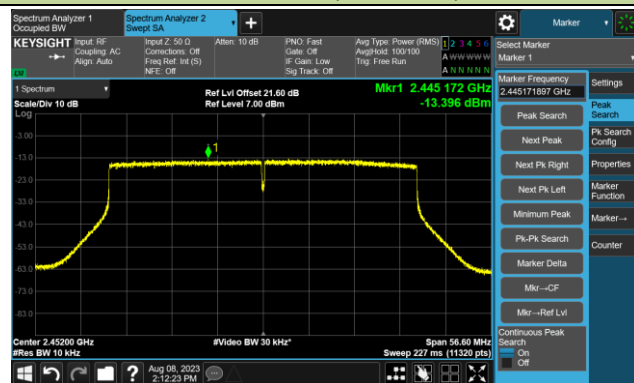
#### Channel 03 (2422MHz)



#### Channel 06 (2437MHz)



#### Channel 09 (2452MHz)



### 5. Conducted Band Edge and Out-of-Band Emissions Test Result

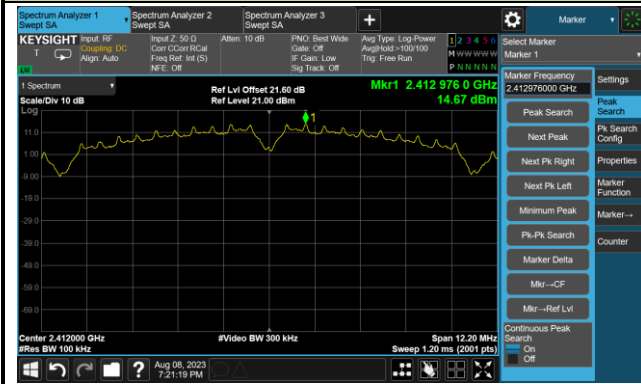
|           |                         |                      |           |
|-----------|-------------------------|----------------------|-----------|
| Test Site | WZ-SR5                  | Test Engineer        | Lynn Yang |
| Test Date | 2023-08-08 ~ 2023-08-10 | Filter Configuration | Filter 1# |

| Test Mode | Data Rate / MCS | Channel No. | Frequency (MHz) | Limit |
|-----------|-----------------|-------------|-----------------|-------|
| 11b       | 1Mbps           | 01          | 2412            | 30dBc |
| 11b       | 1Mbps           | 06          | 2437            | 30dBc |
| 11b       | 1Mbps           | 11          | 2462            | 30dBc |
| 11g       | 6Mbps           | 01          | 2412            | 30dBc |
| 11g       | 6Mbps           | 06          | 2437            | 30dBc |
| 11g       | 6Mbps           | 11          | 2462            | 30dBc |
| 11n-HT20  | MCS0            | 01          | 2412            | 30dBc |
| 11n-HT20  | MCS0            | 06          | 2437            | 30dBc |
| 11n-HT20  | MCS0            | 11          | 2462            | 30dBc |
| 11n-HT40  | MCS0            | 03          | 2422            | 30dBc |
| 11n-HT40  | MCS0            | 06          | 2437            | 30dBc |
| 11n-HT40  | MCS0            | 09          | 2452            | 30dBc |
| 11ax-HE20 | MCS0            | 01          | 2412            | 30dBc |
| 11ax-HE20 | MCS0            | 06          | 2437            | 30dBc |
| 11ax-HE20 | MCS0            | 11          | 2462            | 30dBc |
| 11ax-HE40 | MCS0            | 03          | 2422            | 30dBc |
| 11ax-HE40 | MCS0            | 06          | 2437            | 30dBc |
| 11ax-HE40 | MCS0            | 09          | 2452            | 30dBc |

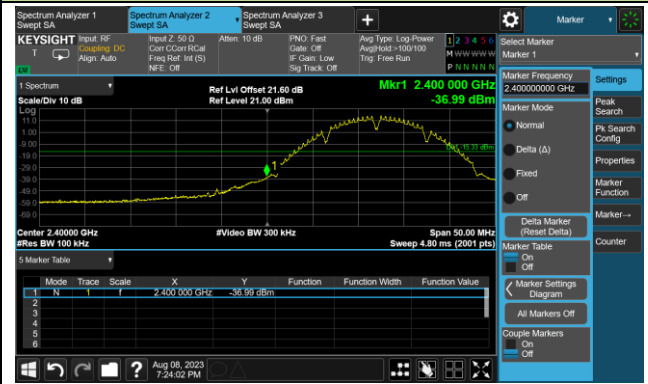
## 802.11b Out-of-Band Emissions – Ant 0

### Channel 01 (2412MHz)

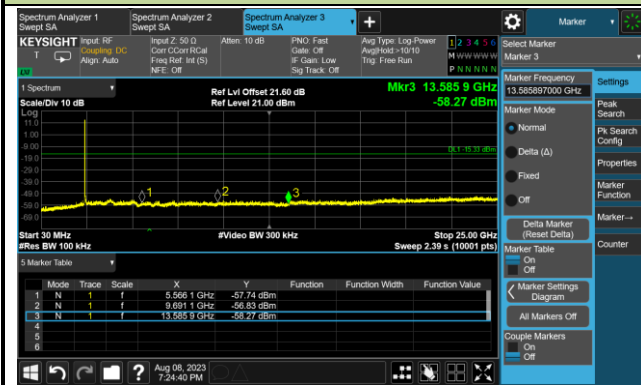
#### 100kHz PSD Reference Level



#### Low Band Edge

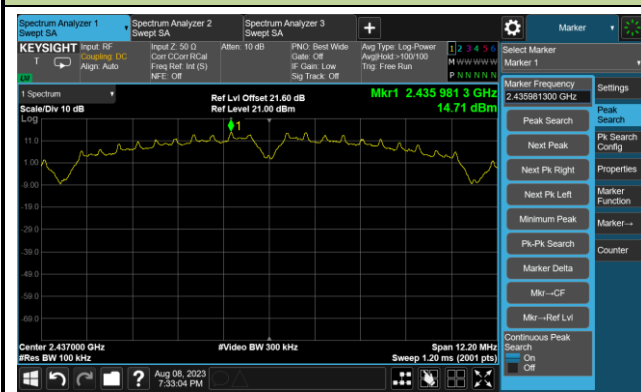


#### Spurious Emission

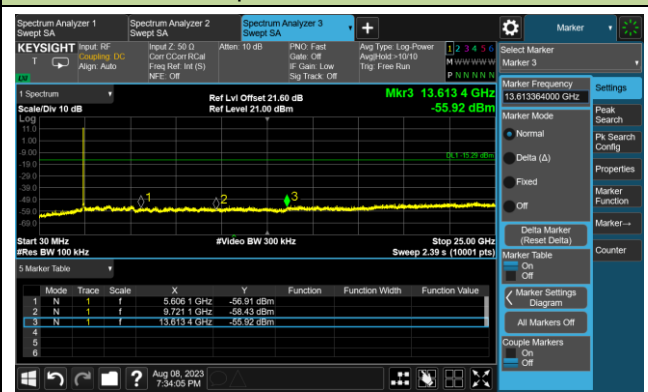


### Channel 06 (2437MHz)

#### 100kHz PSD Reference Level



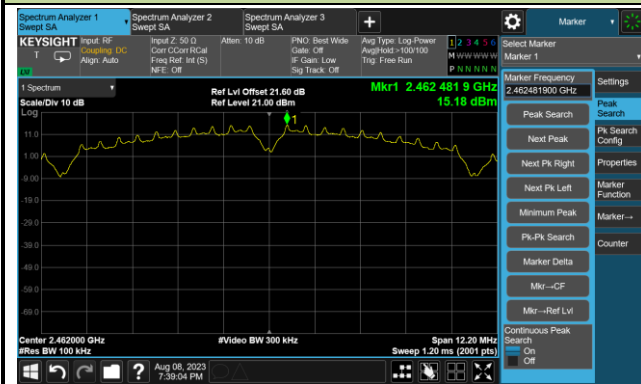
#### Spurious Emission



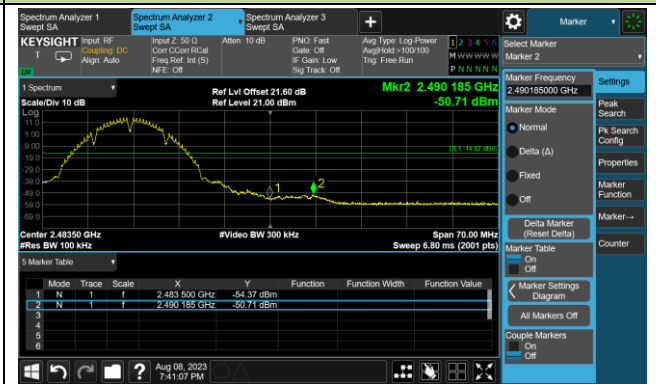
## 802.11b Out-of-Band Emissions – Ant 0

### Channel 11 (2462MHz)

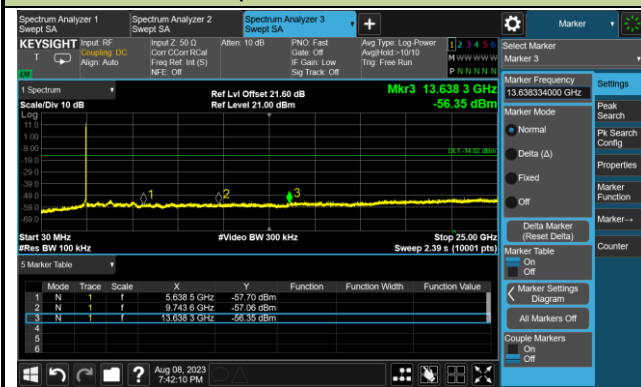
#### 100kHz PSD Reference Level



#### High Band Edge



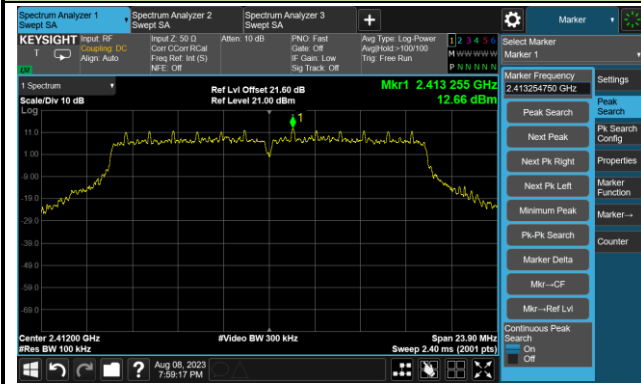
#### Spurious Emission



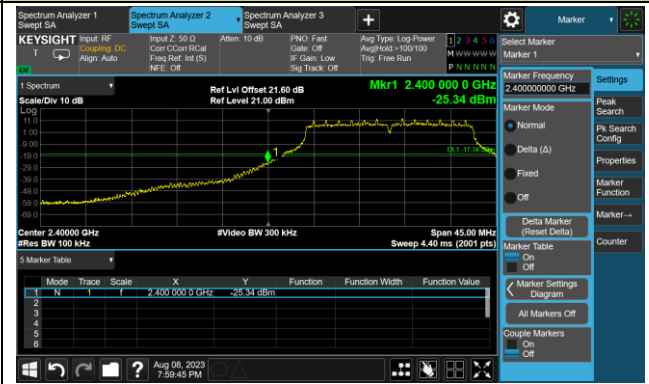
## 802.11g Out-of-Band Emissions – Ant 0

### Channel 01 (2412MHz)

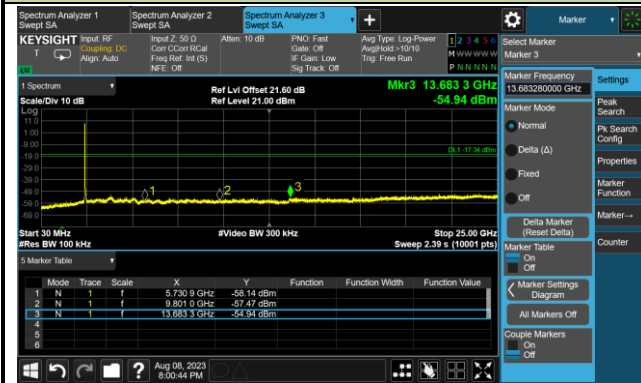
#### 100kHz PSD Reference Level



#### Low Band Edge

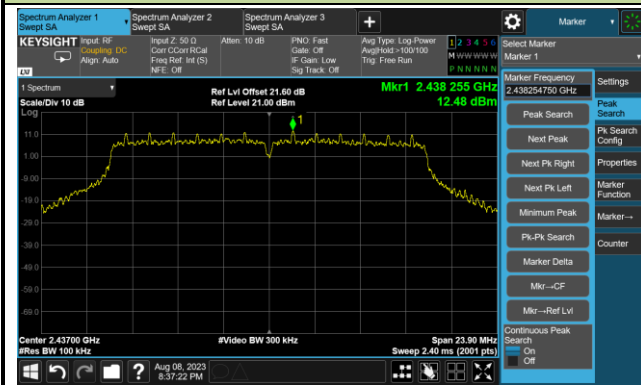


#### Spurious Emission



### Channel 06 (2437MHz)

#### 100kHz PSD Reference Level



#### Spurious Emission

