



## 4.5 Conducted Band Edge and Spurious Emission Measurement

### 4.5.1 Test Specification

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Requirement:</b> | FCC Part15 C Section 15.247 (d)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Test Method:</b>      | KDB558074 D01 15.247 Meas Guidance v05r02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Limit:</b>            | In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Test Setup:</b>       |  <p style="text-align: center;">Spectrum Analyzer                      EUT</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Test Mode:</b>        | Transmitting mode with modulation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Test Procedure:</b>   | <ol style="list-style-type: none"><li>1. The testing follows FCC KDB Publication No. 558074 D01 15.247 Meas Guidance v05r02.</li><li>2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.</li><li>3. Set to the maximum power setting and enable the EUT transmit continuously.</li><li>4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).</li><li>5. Measure and record the results in the test report.</li><li>6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.</li></ol> |
| <b>Test Result:</b>      | PASS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |



#### 4.5.2 Test Instruments

| RF Test Room              |              |                            |               |                  |                 |
|---------------------------|--------------|----------------------------|---------------|------------------|-----------------|
| Equipment                 | Manufacturer | Model                      | Serial Number | Calibration Date | Calibration Due |
| Spectrum analyzer         | Agilent      | N9020A                     | HKE-025       | Feb. 20, 2024    | Feb. 19, 2025   |
| RF cable                  | Times        | 1-40G                      | HKE-034       | Feb. 20, 2024    | Feb. 19, 2025   |
| RF automatic control unit | Tonscend     | JS0806-2                   | HKE-060       | Feb. 20, 2024    | Feb. 19, 2025   |
| RF Test Software          | Tonscend     | JS1120-3<br>Version 3.3.23 | HKE-083       | N/A              | N/A             |

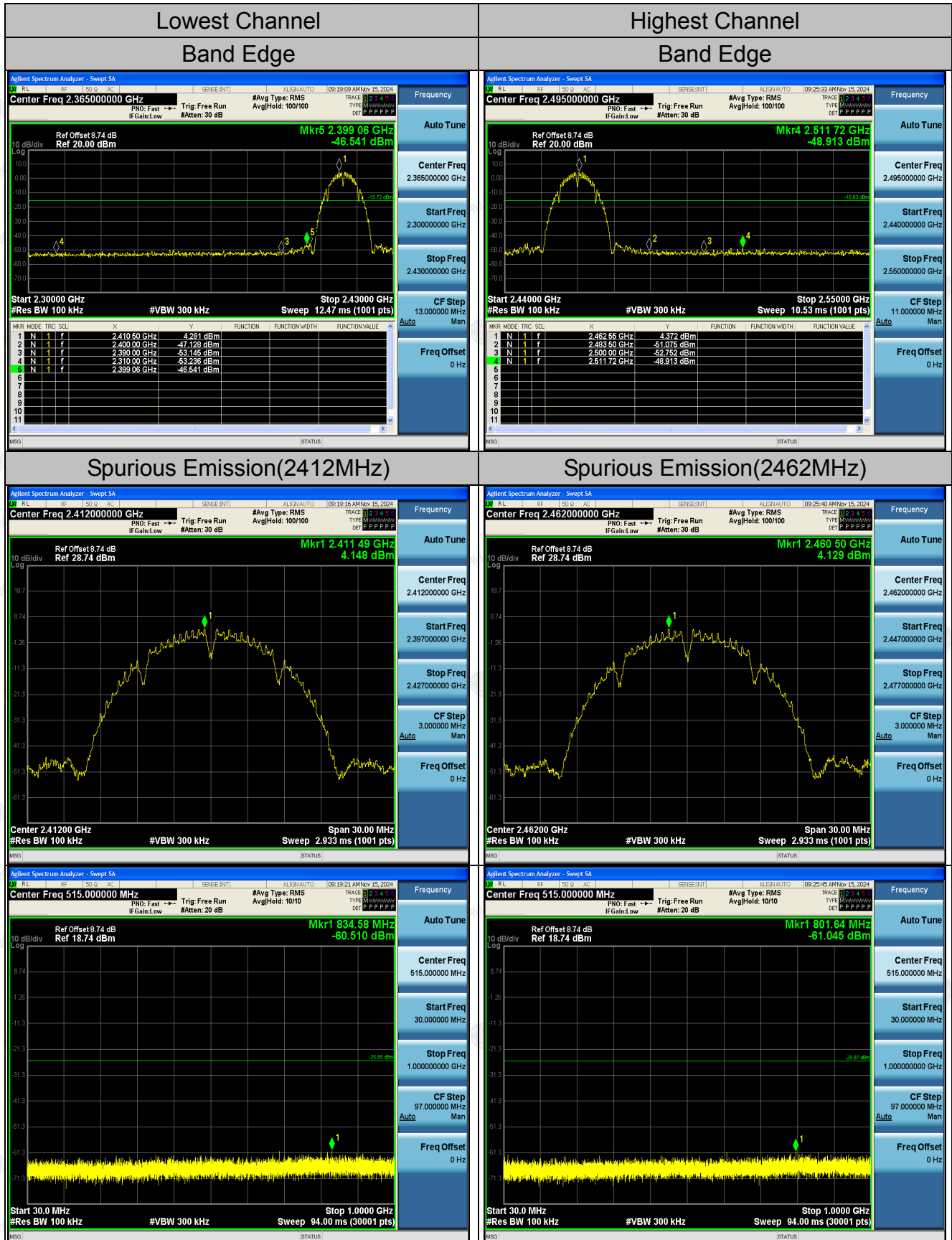
**Note:** The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).



### 4.5.3 Test Data

#### Chain 1

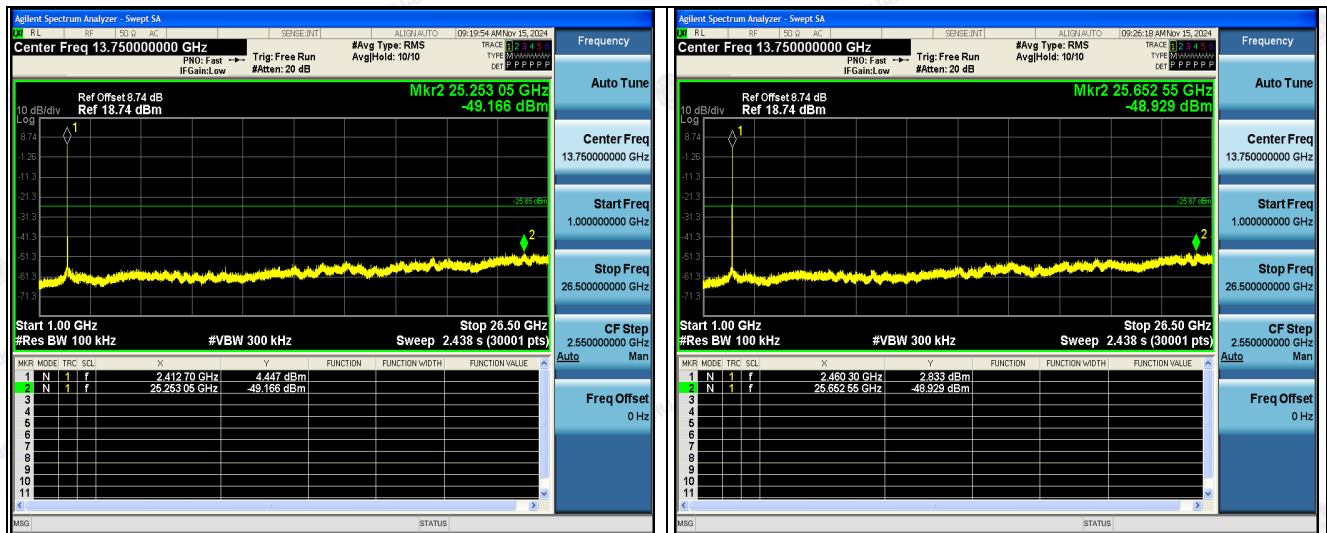
#### 802.11b Modulation



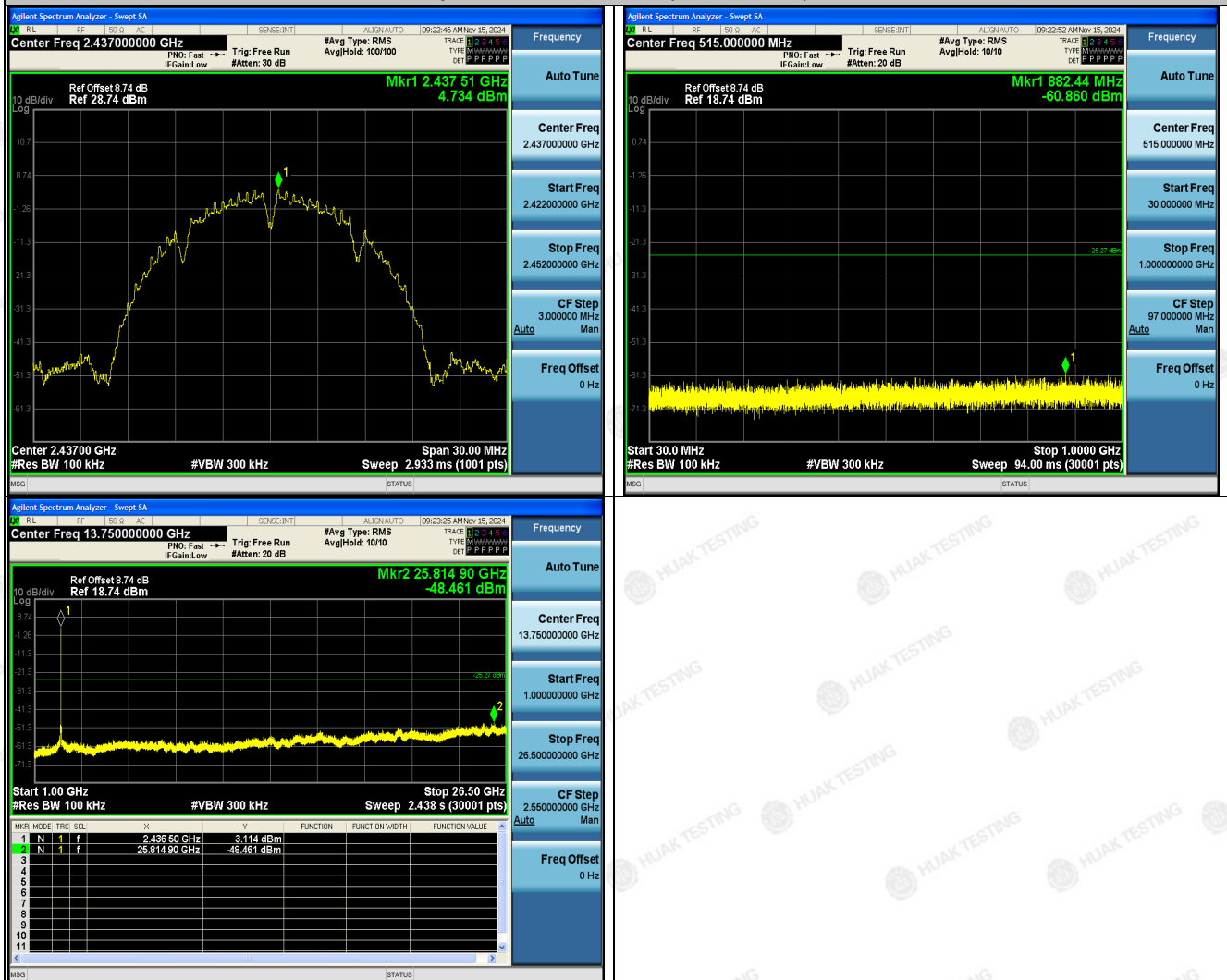
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## Spurious Emission(2437MHz)





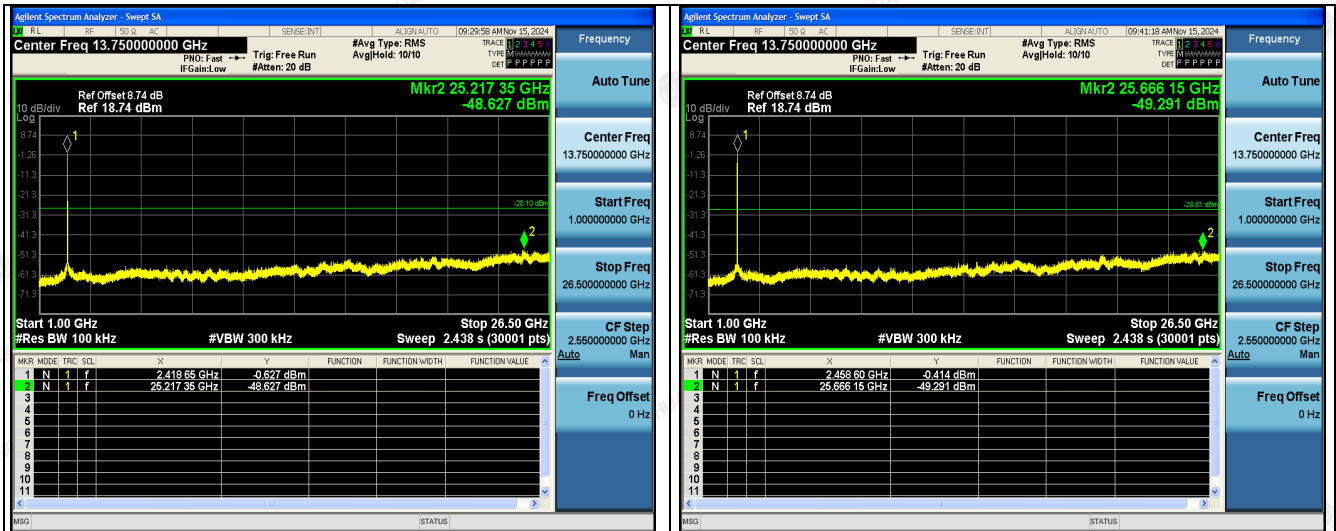
## 802.11g Modulation



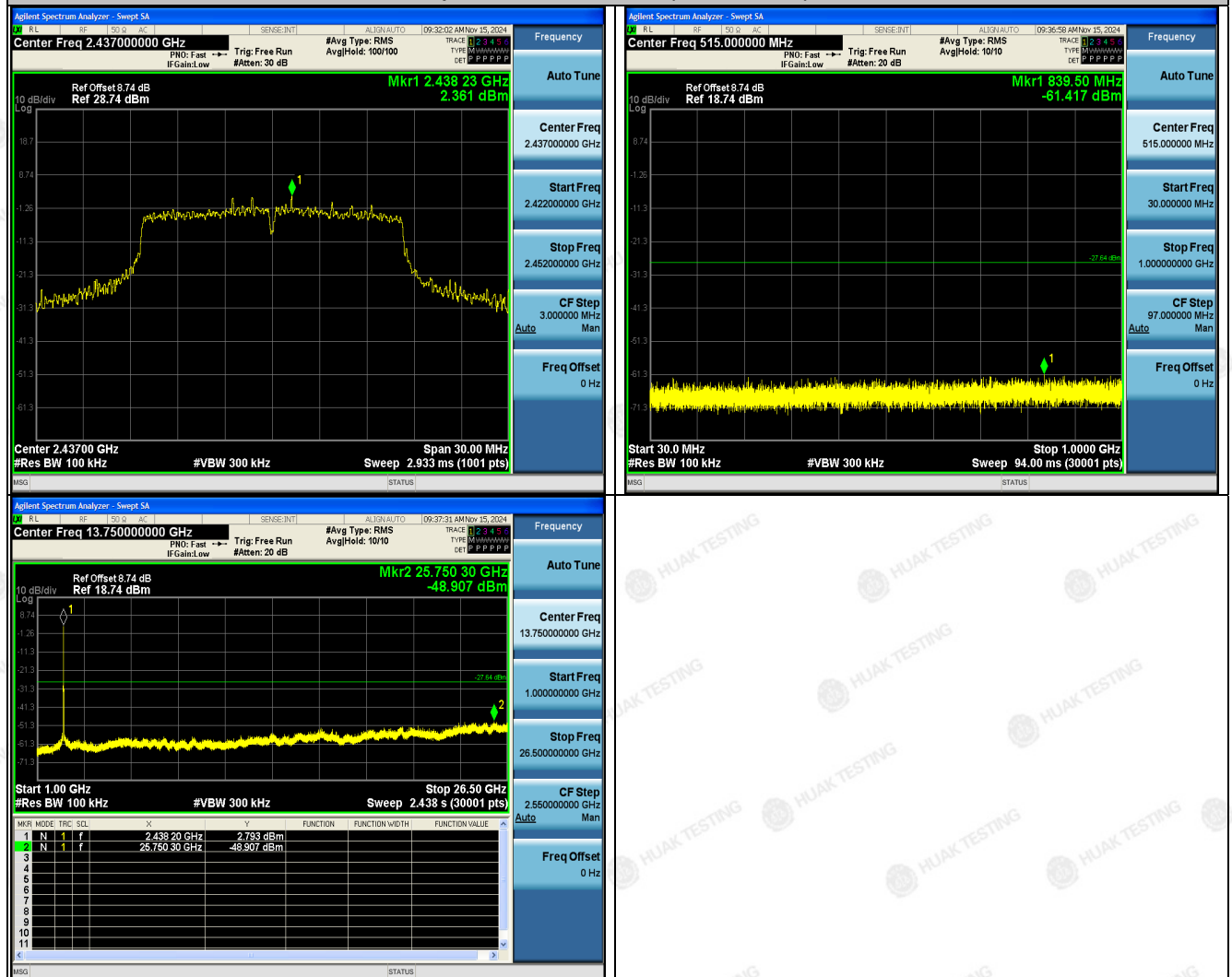
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## Spurious Emission(2437MHz)





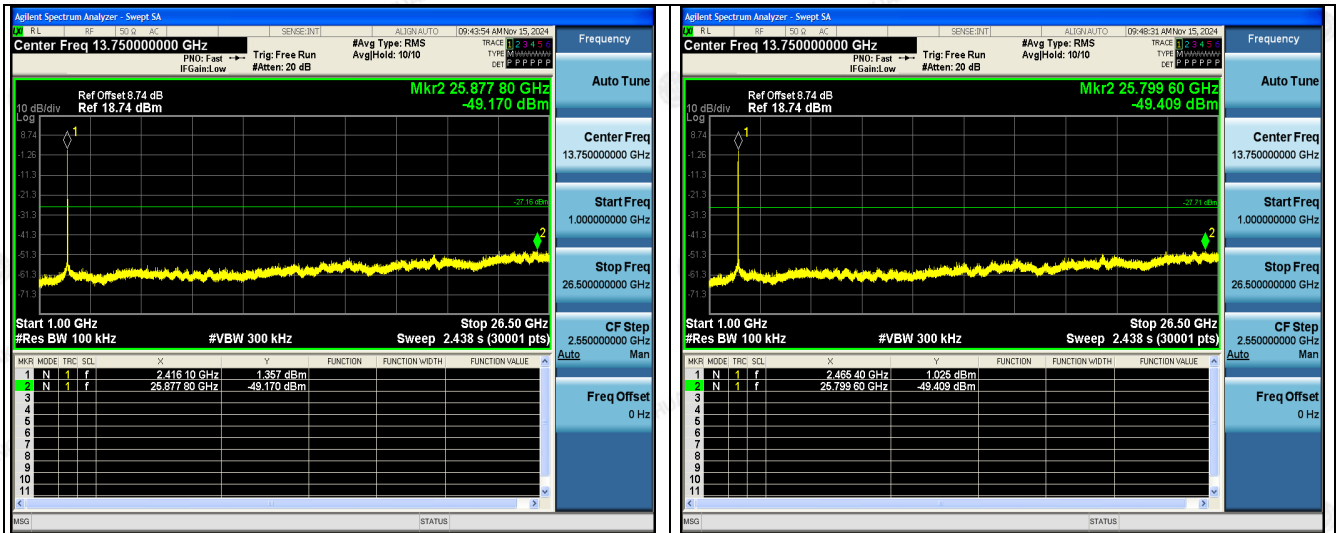
## 802.11n (HT20) Modulation



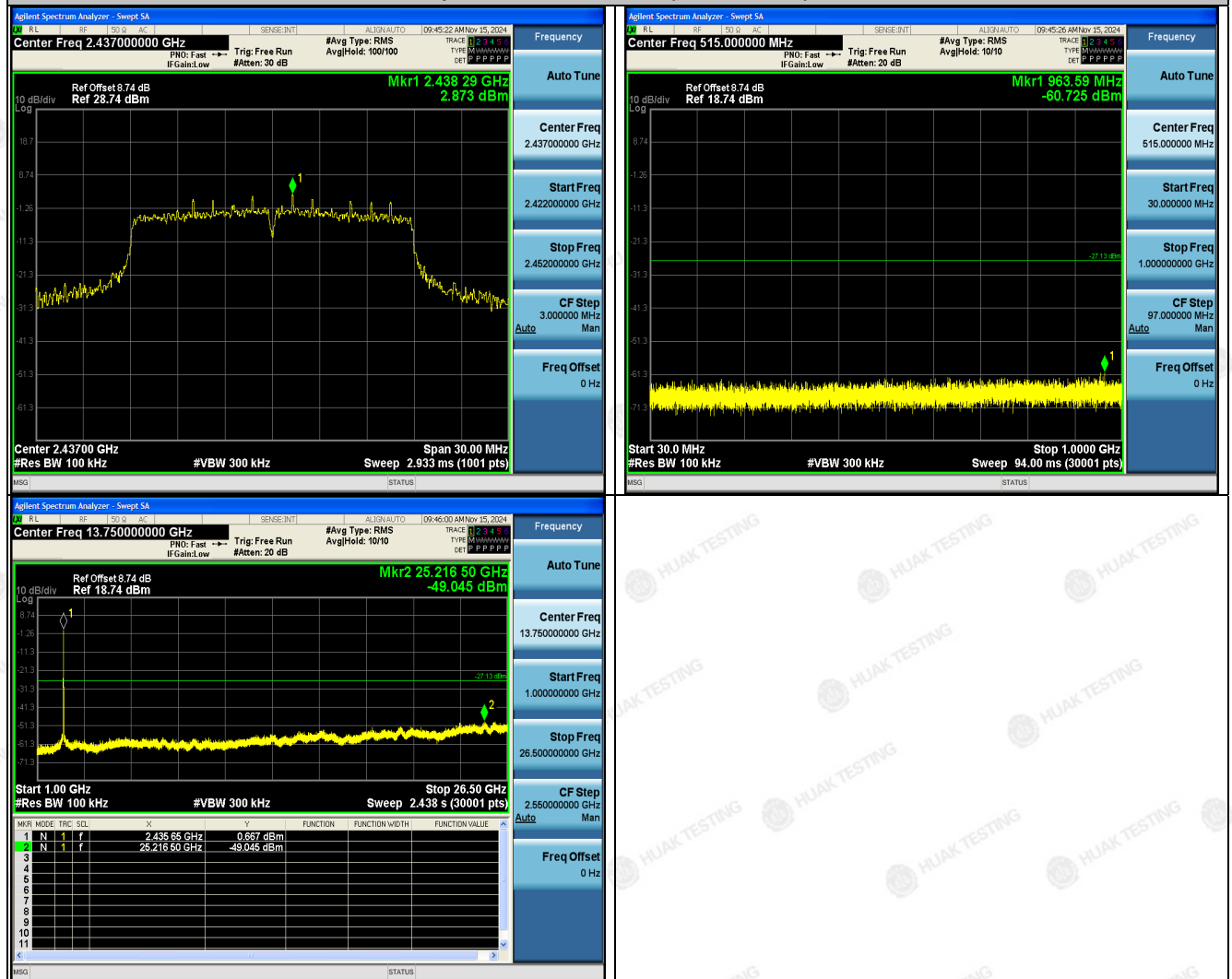
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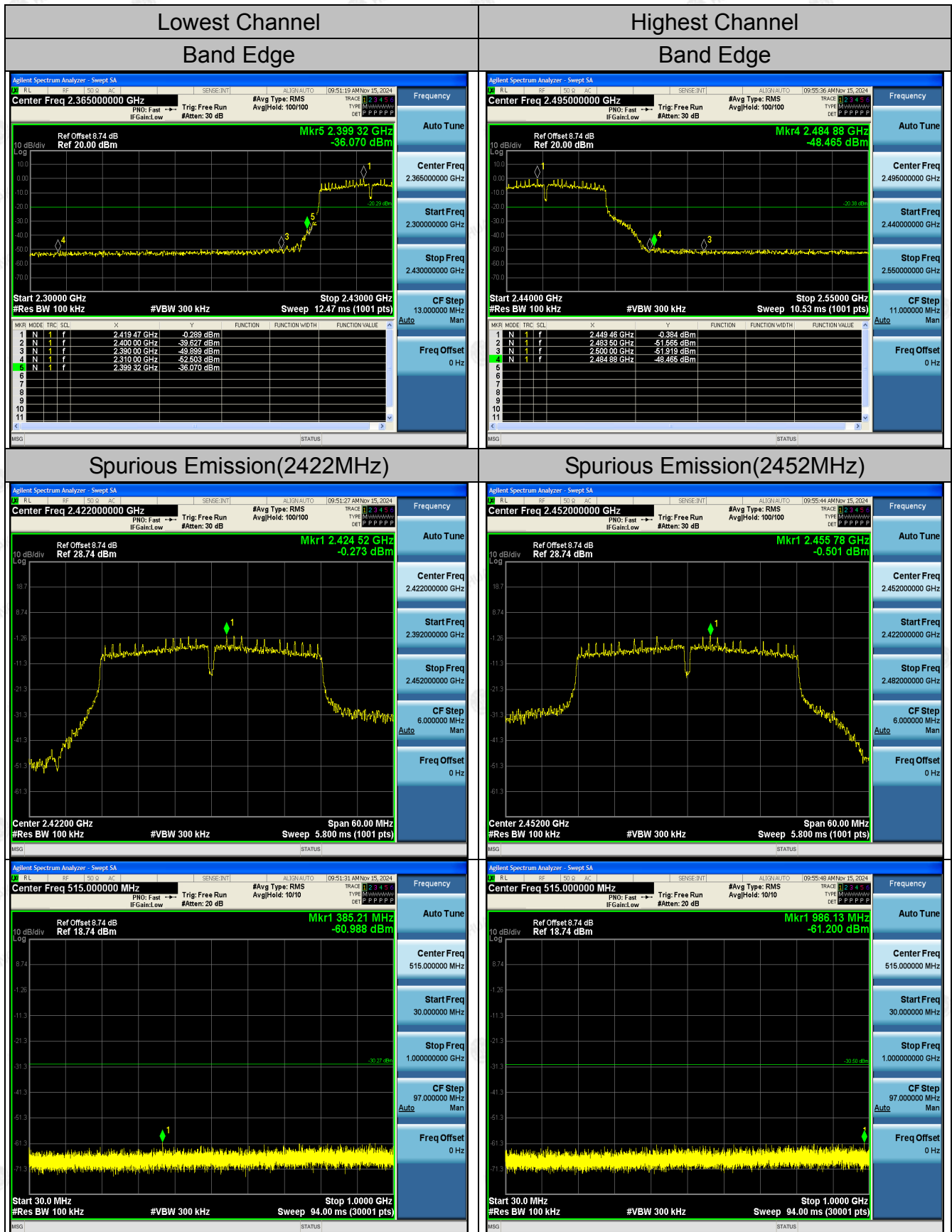


## Spurious Emission(2437MHz)





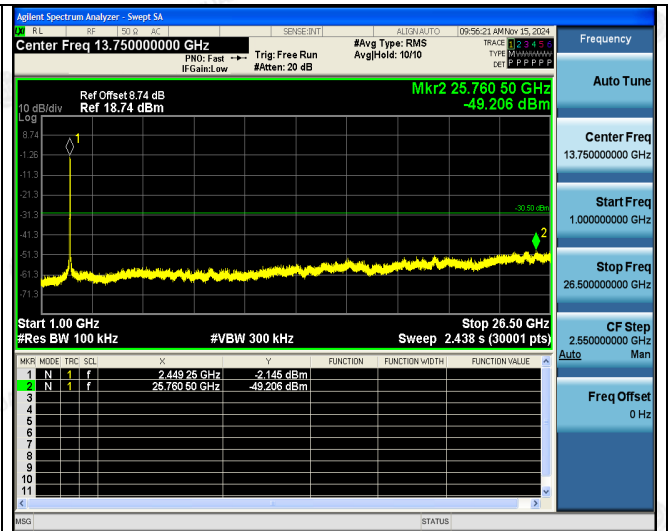
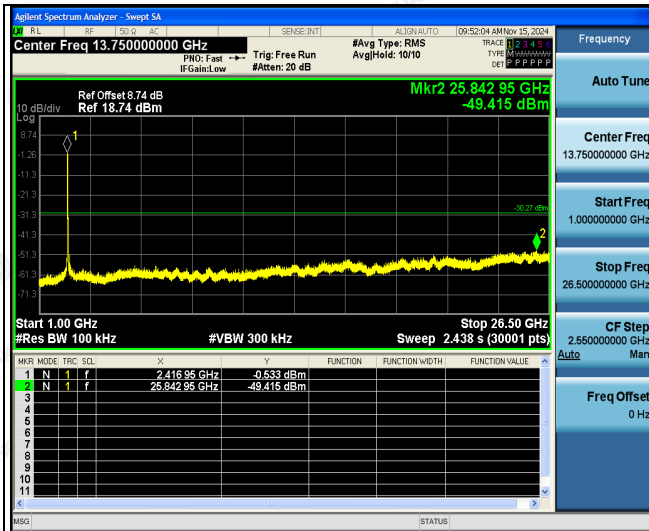
## 802.11n (HT40) Modulation



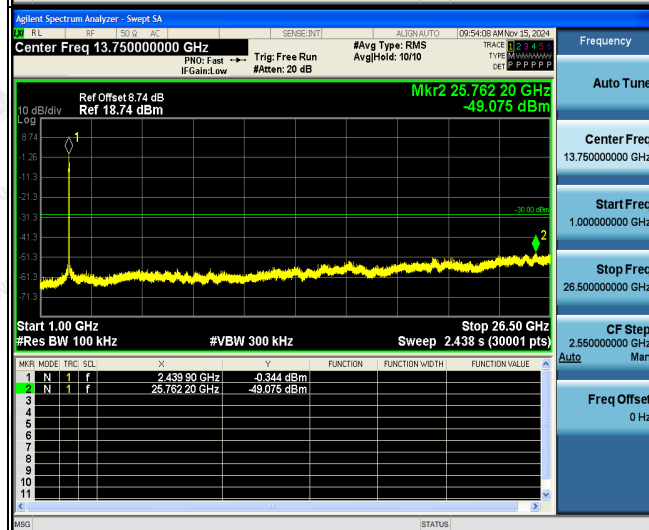
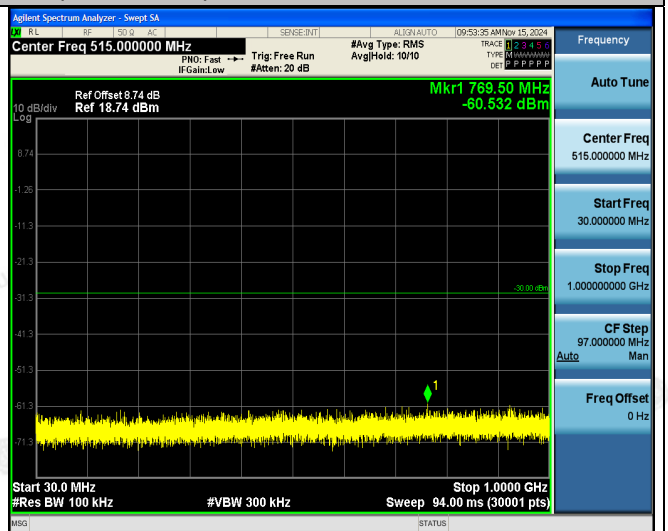
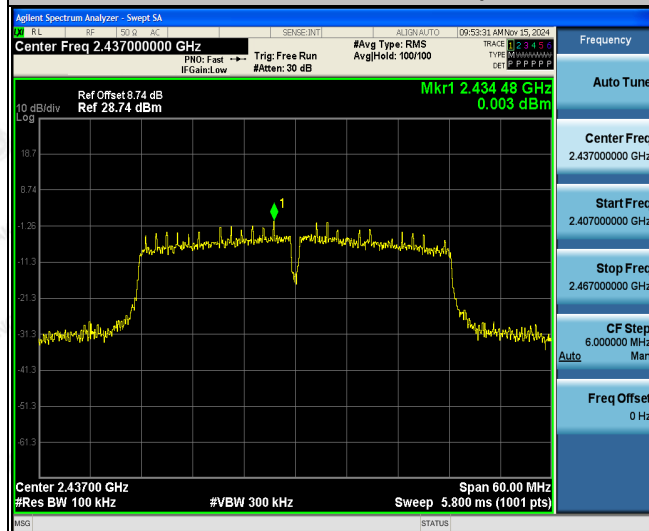
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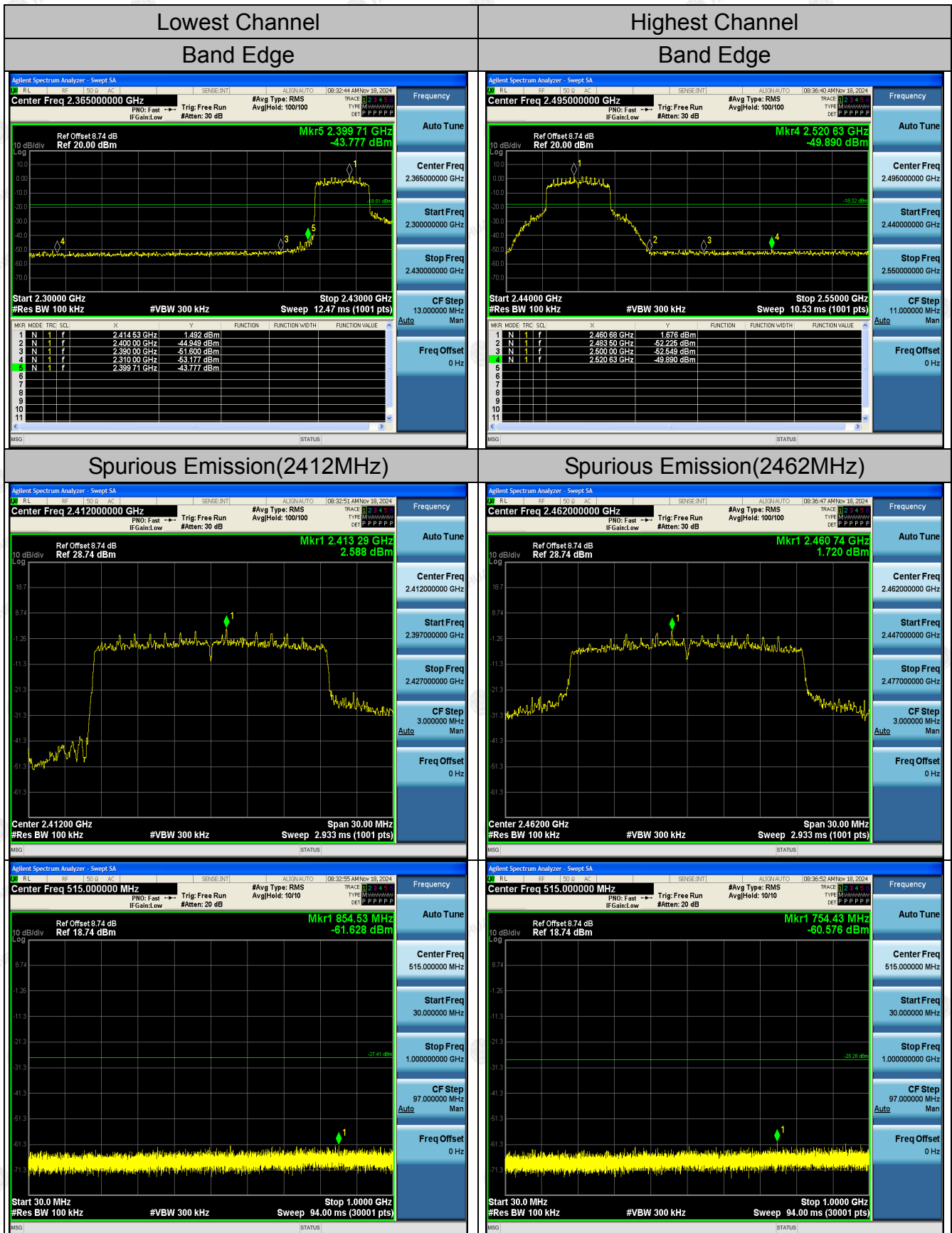


## Spurious Emission(2437MHz)





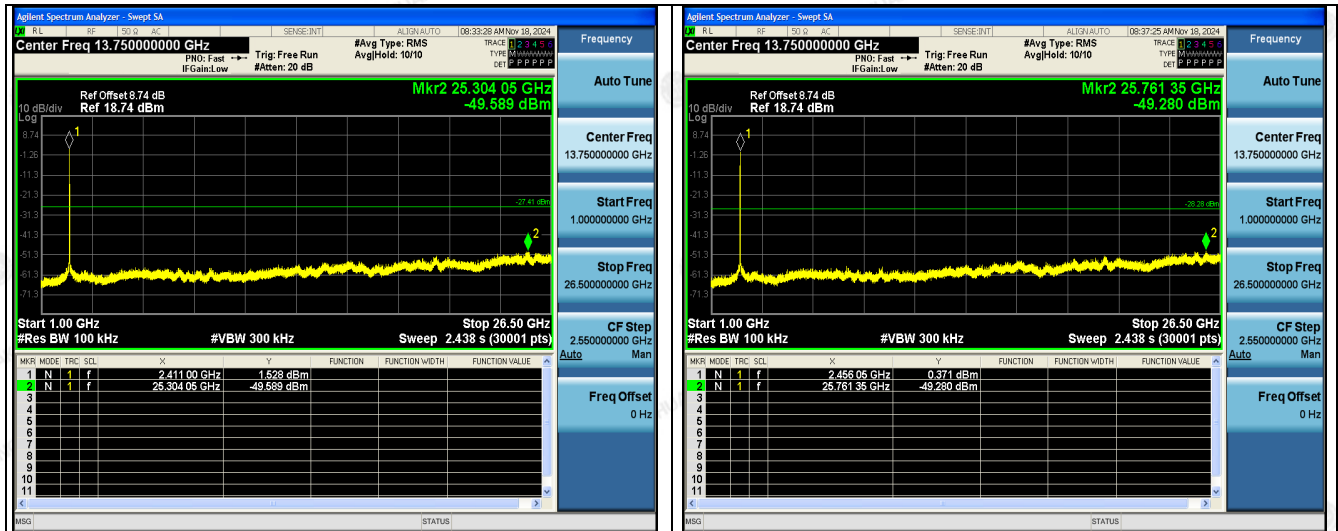
## 802.11ax (HT20) Modulation



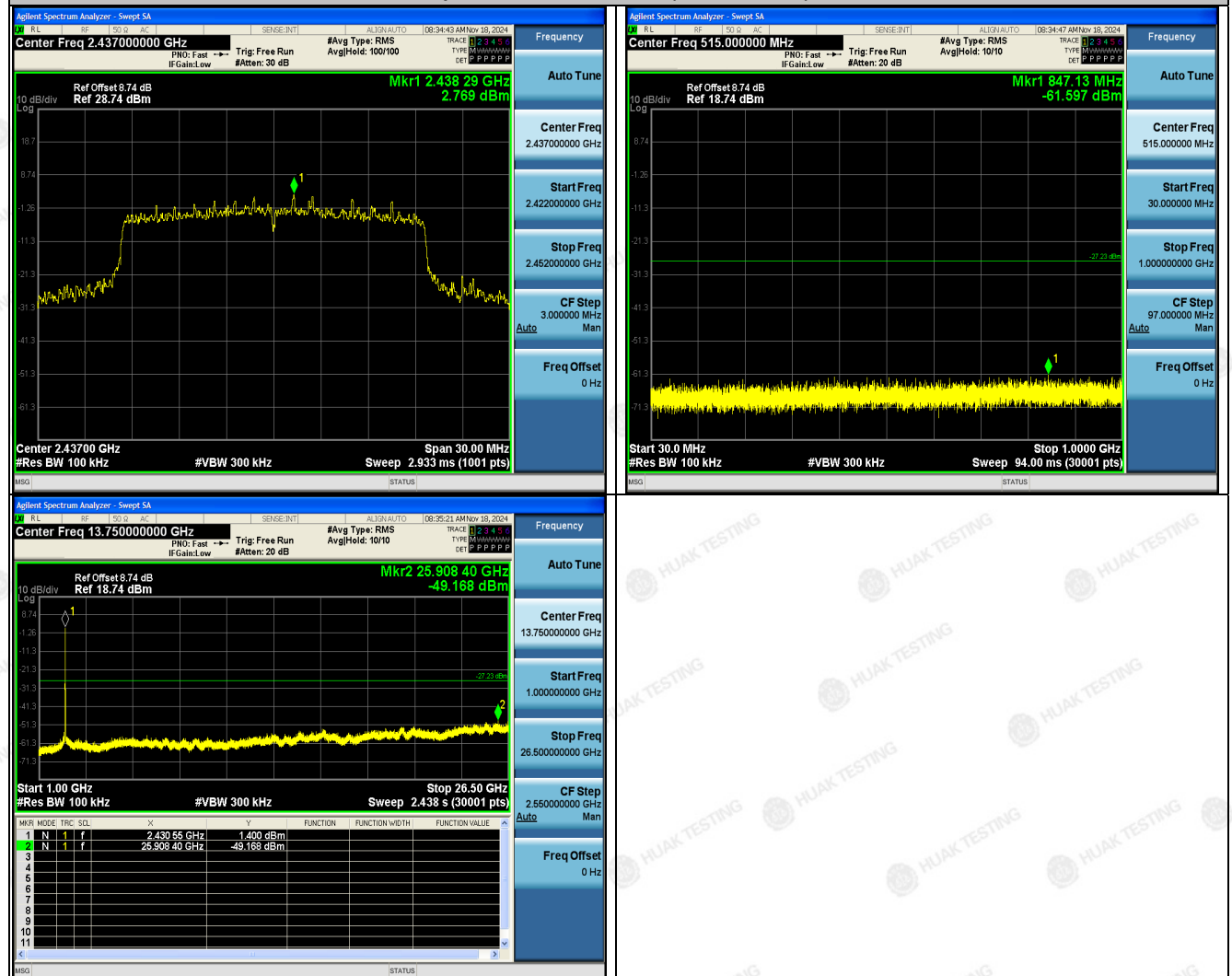
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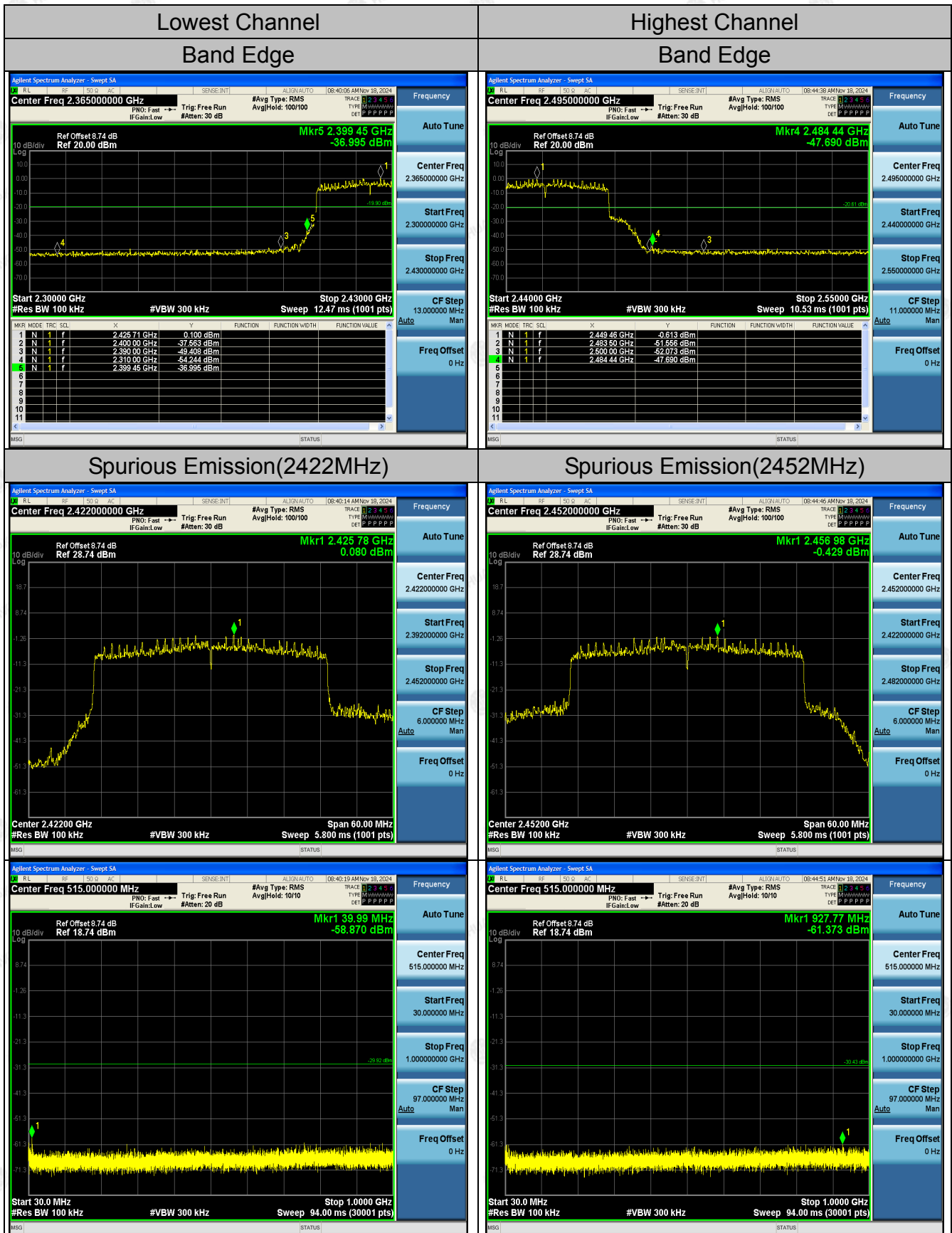


## Spurious Emission(2437MHz)





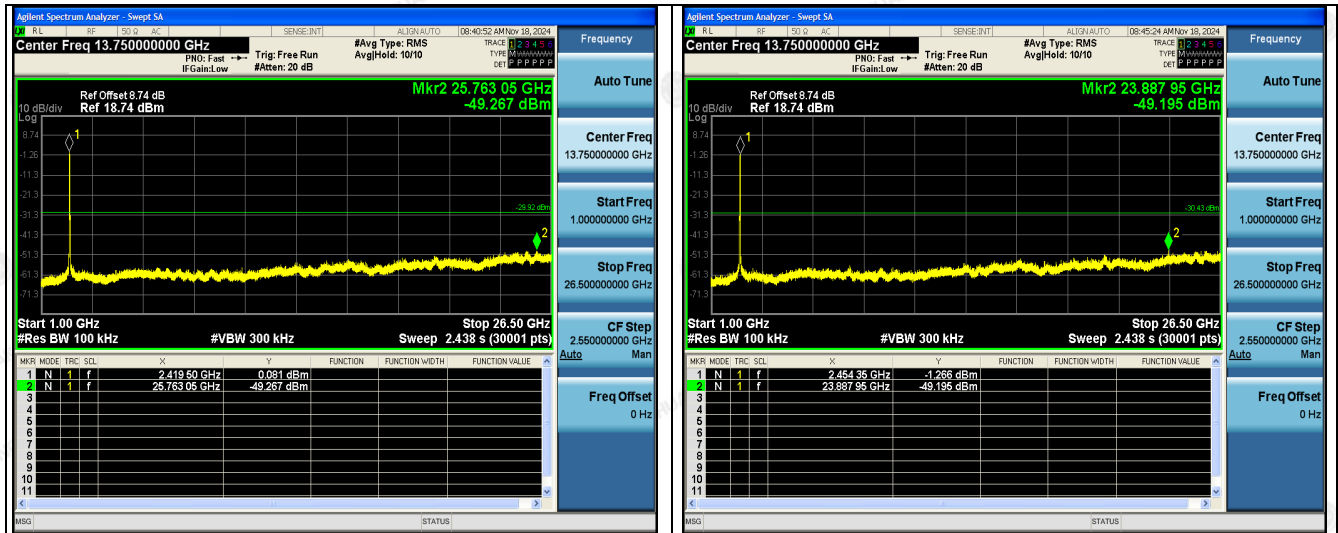
## 802.11ax (HT40) Modulation



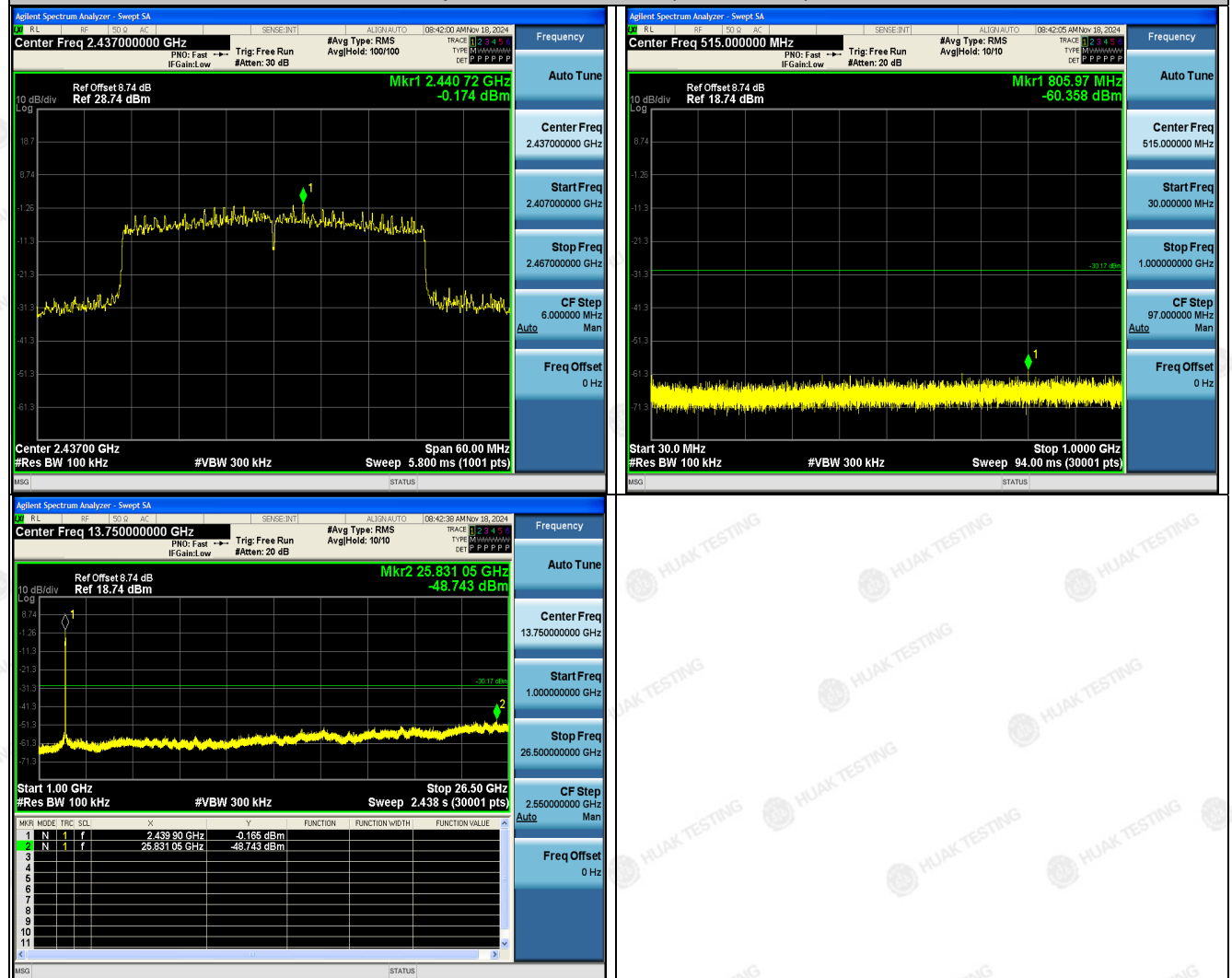
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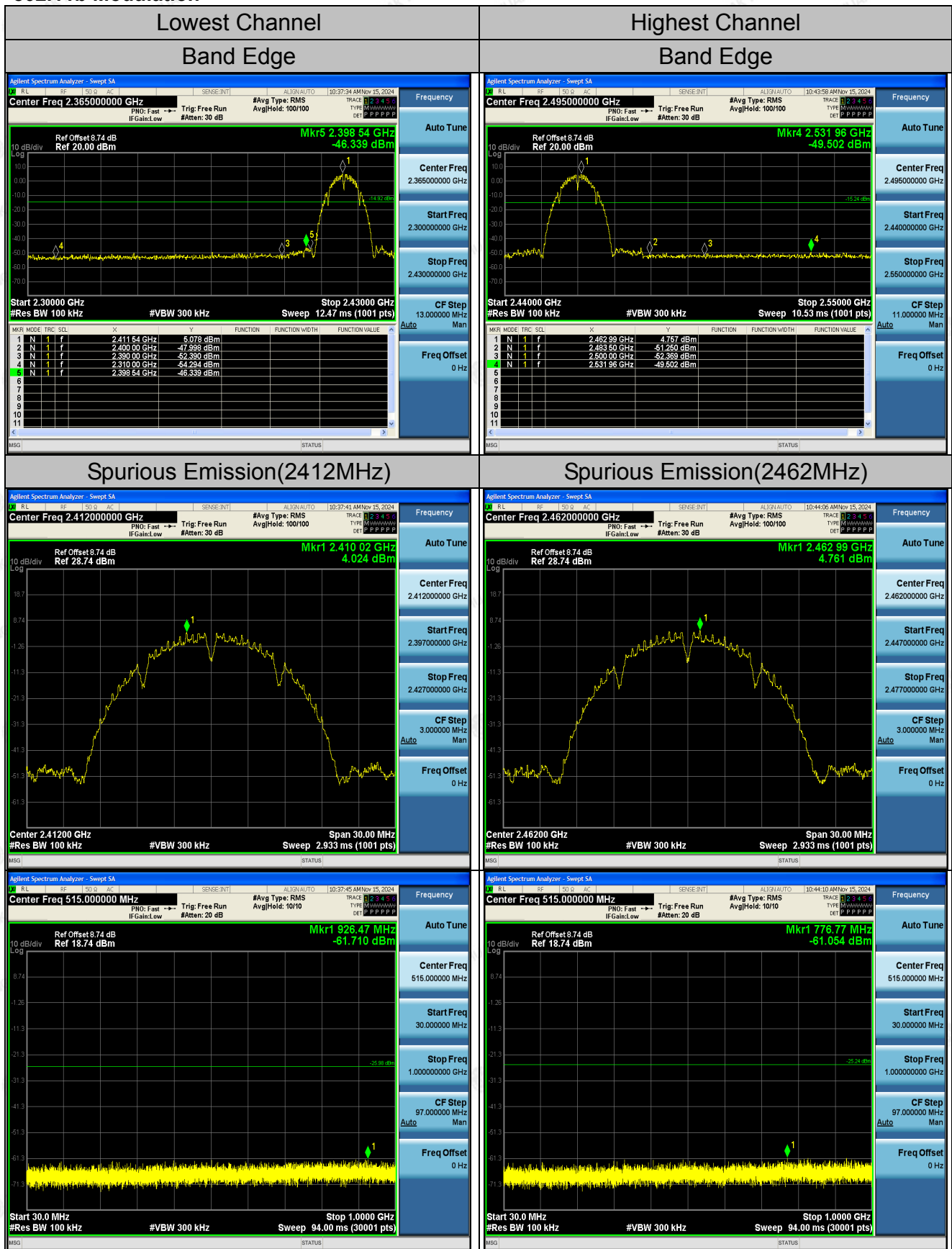
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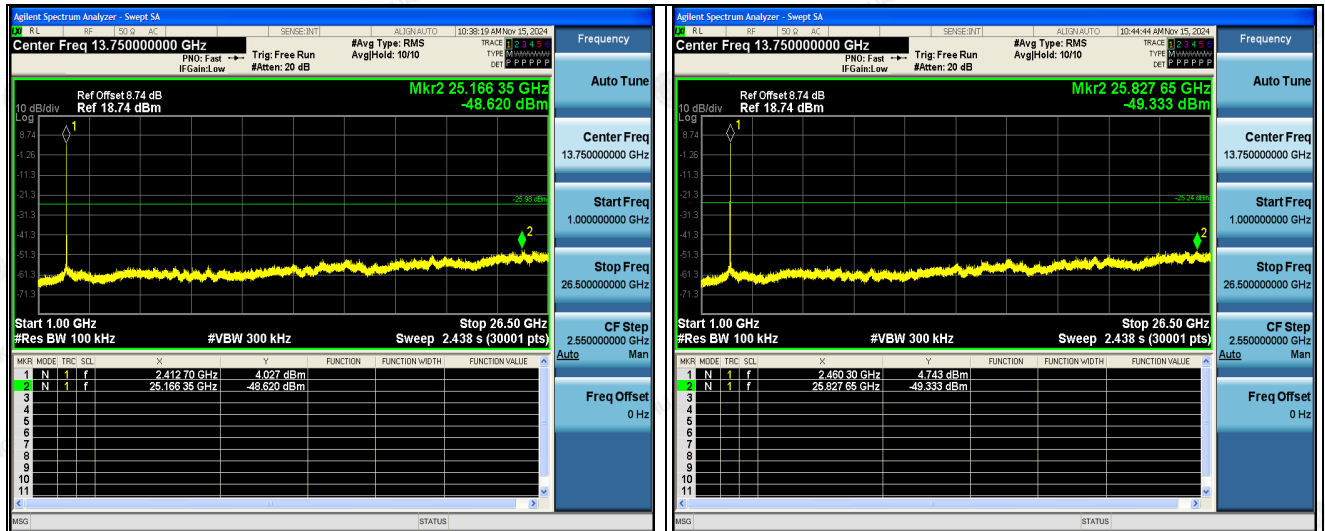


**Chain 2**  
**802.11b Modulation**

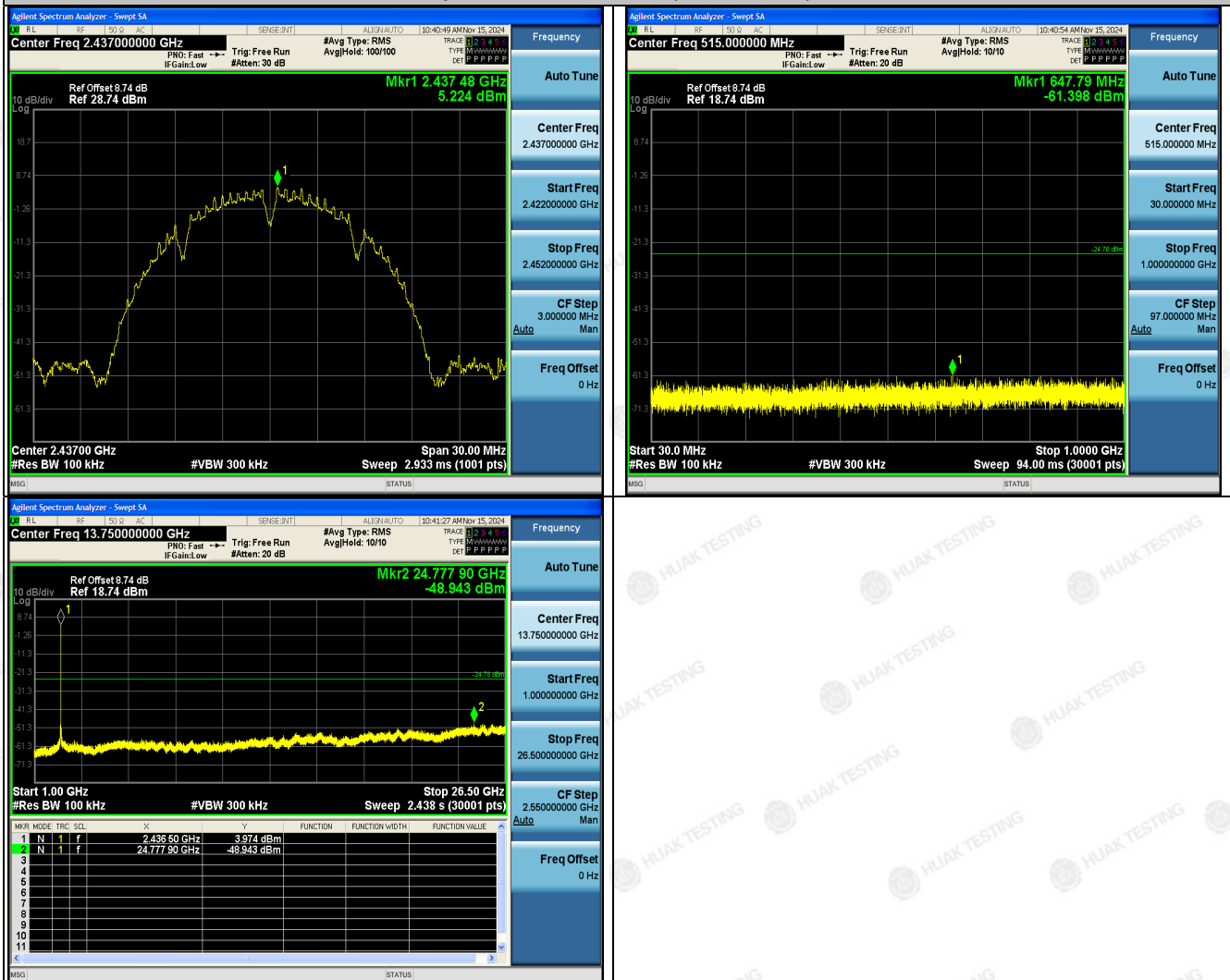
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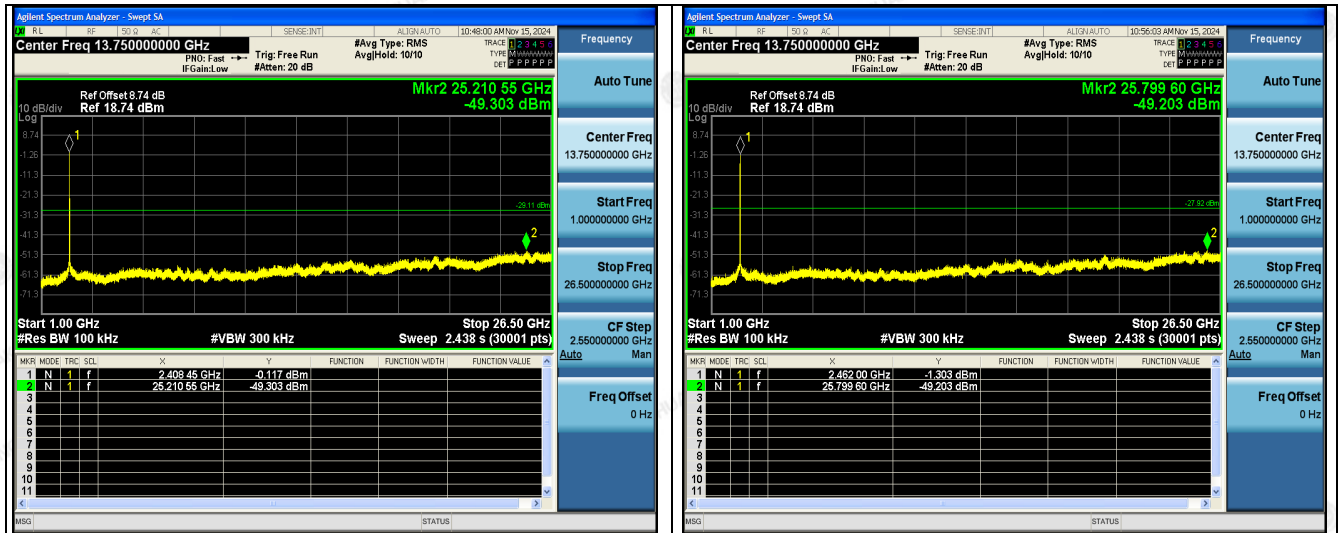
## 802.11g Modulation



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