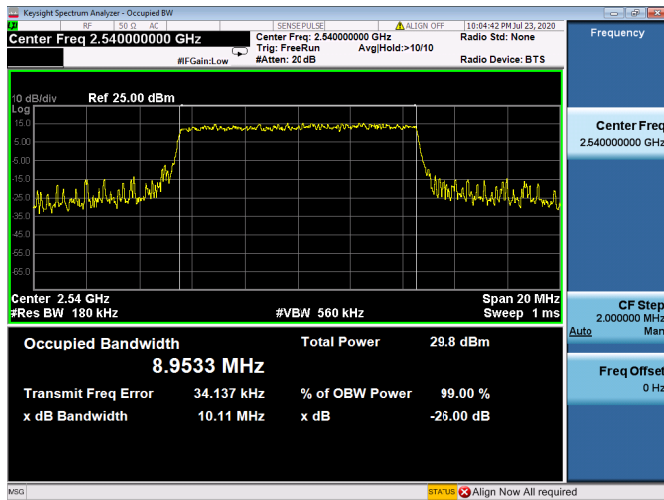
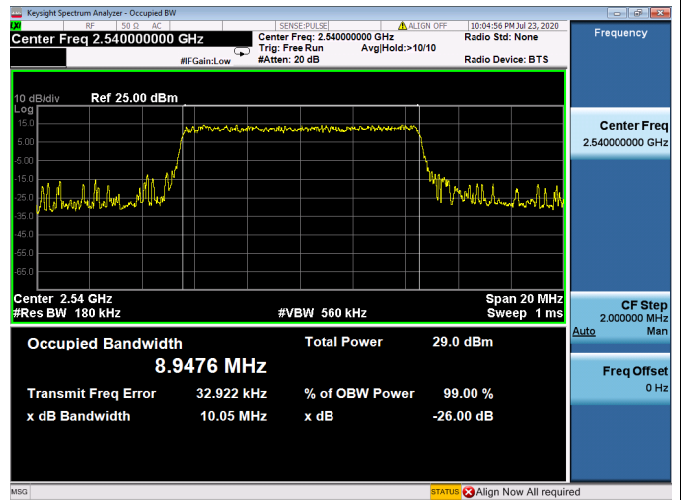




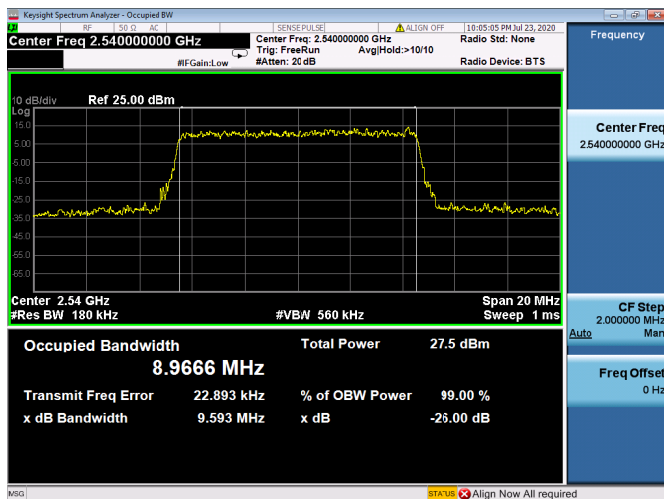
## 10MHz/QPSK / LCH



## 10MHz/16QAM / LCH



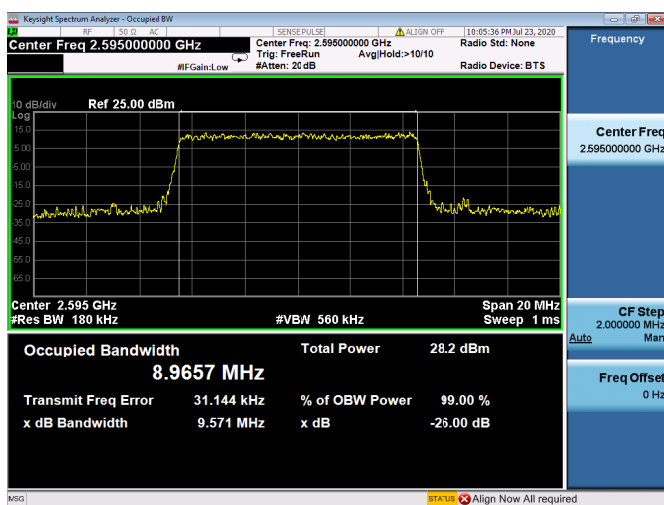
## 10MHz/ 64QAM / LCH



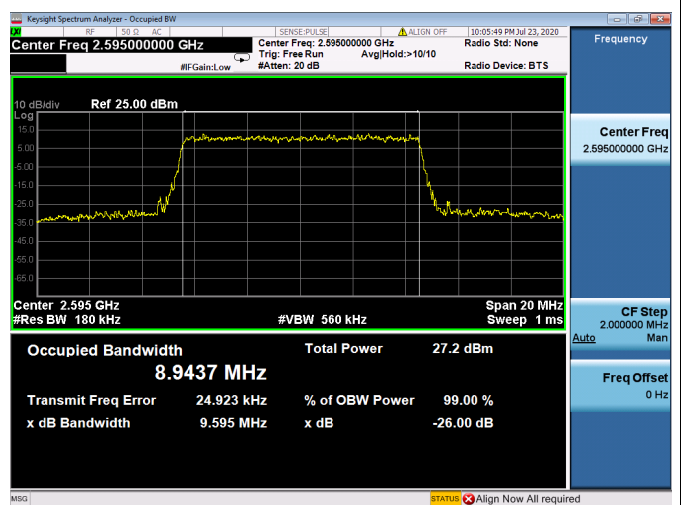
## 10MHz/QPSK / MCH

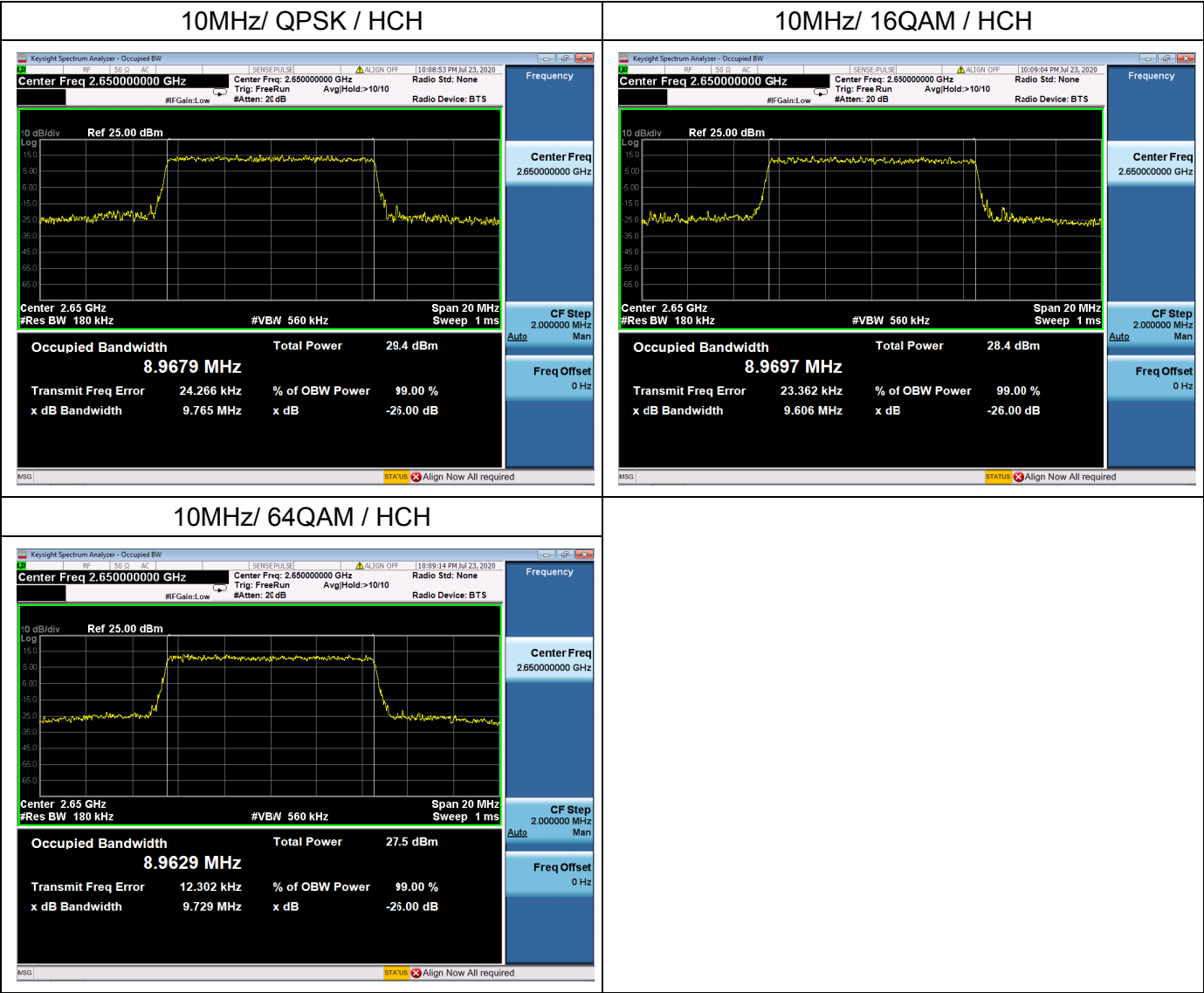


## 10MHz/ 16QAM / MCH



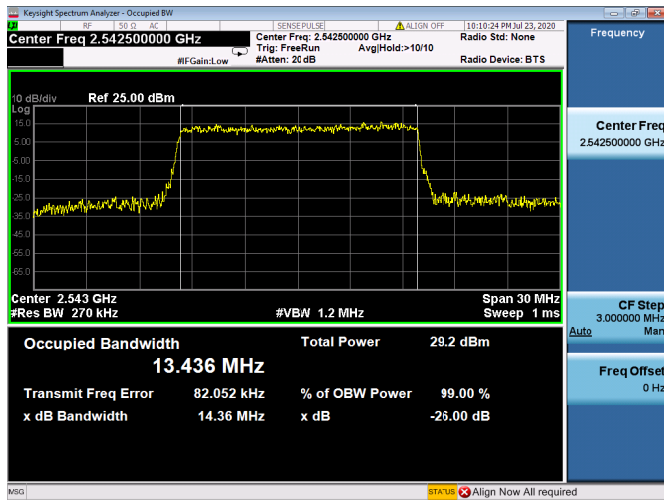
## 10MHz/ 64QAM / MCH



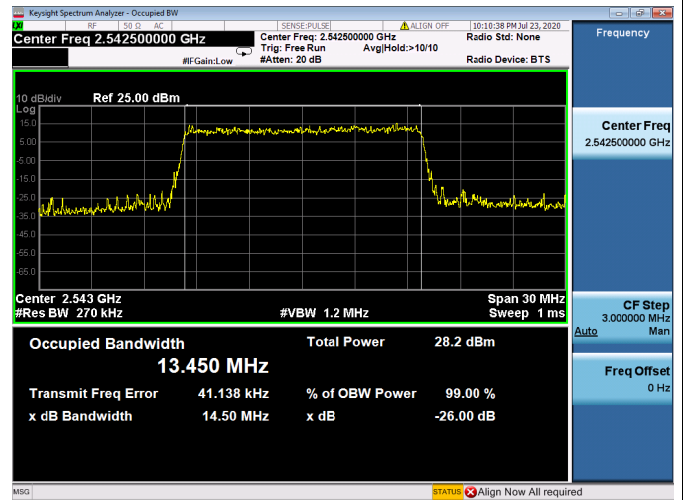




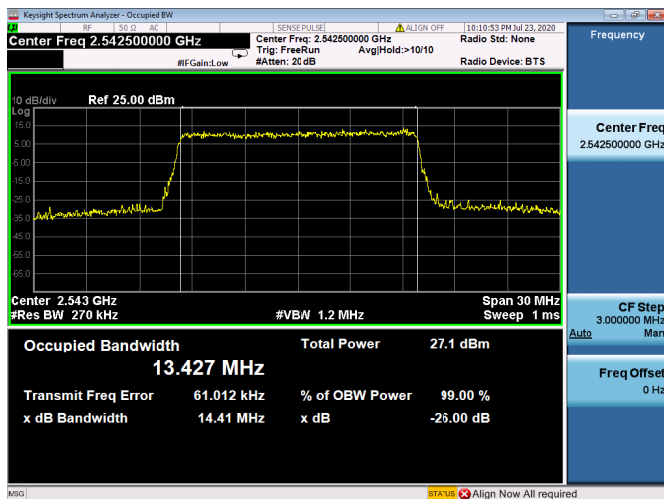
## 15MHz/QPSK / LCH



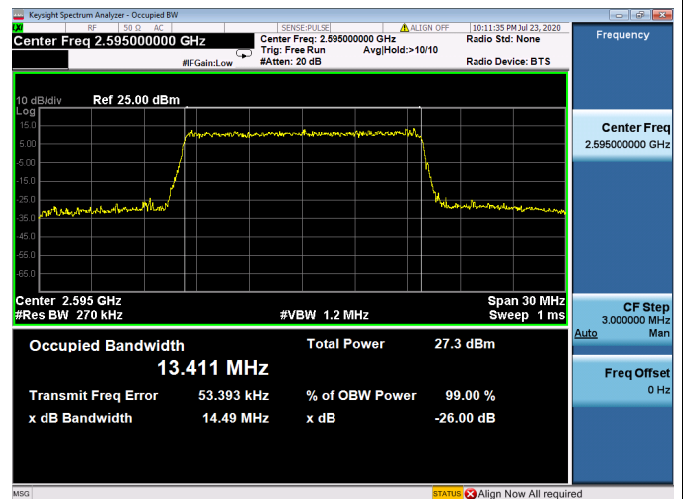
## 15MHz/16QAM / LCH



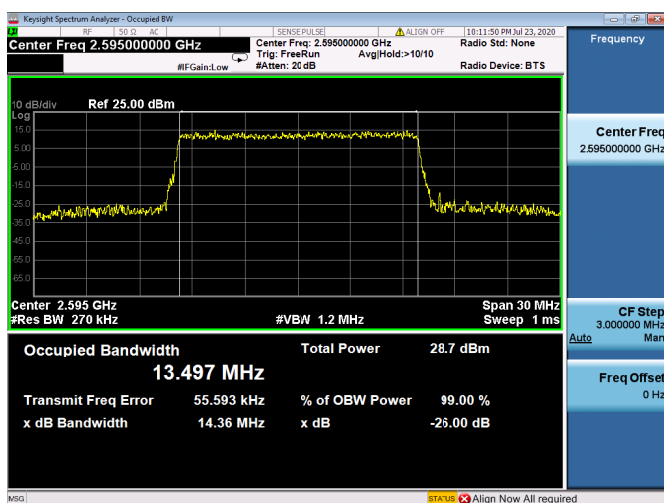
## 15MHz/ 64QAM / LCH



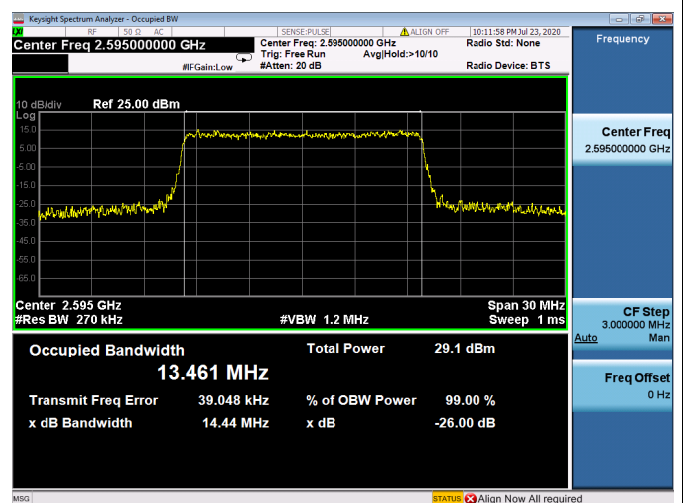
## 15MHz/QPSK / MCH



## 15MHz/ 16QAM / MCH

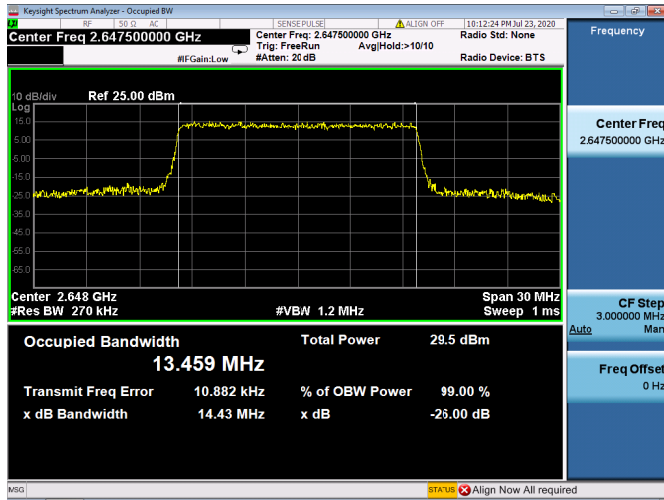


## 15MHz/ 64QAM / MCH

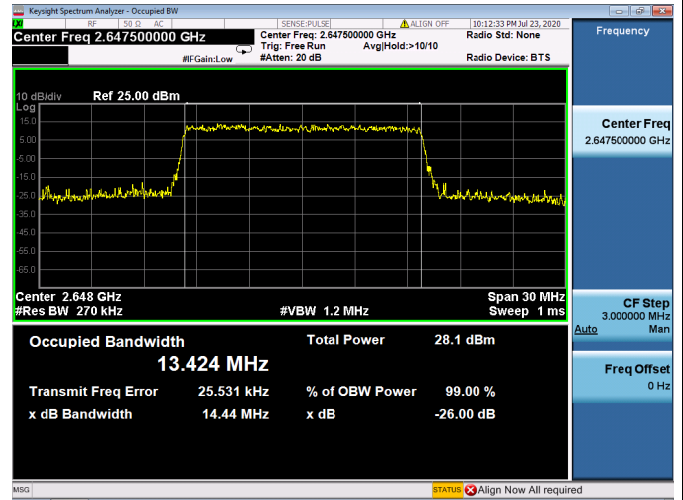




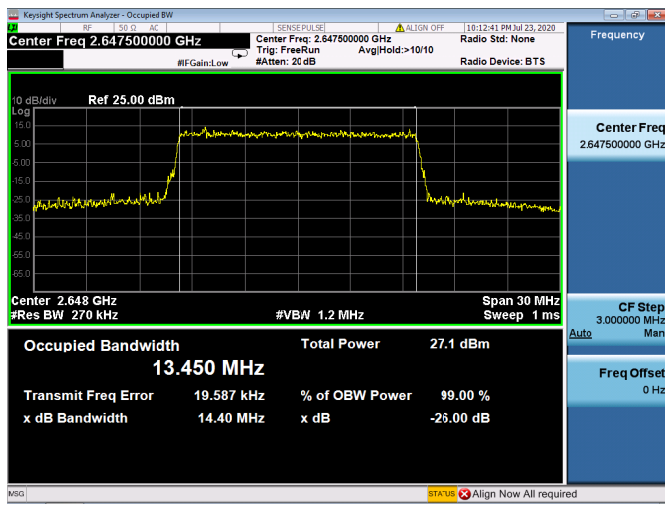
## 15MHz/ QPSK / HCH



## 15MHz/ 16QAM / HCH

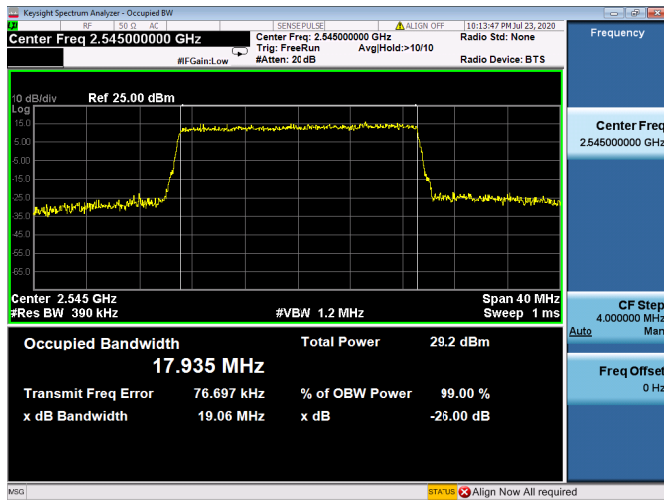


## 15MHz/ 64QAM / HCH

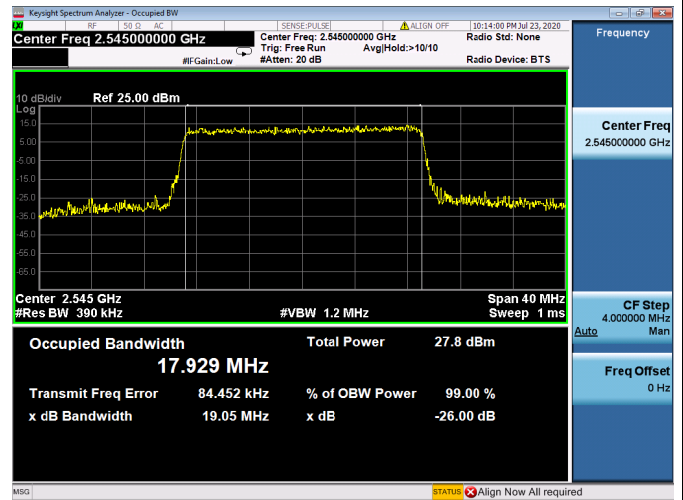




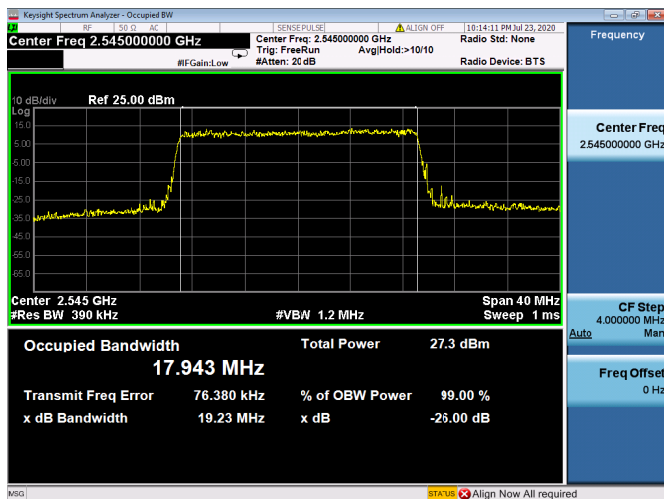
## 20MHz/QPSK / LCH



## 20MHz/16QAM / LCH



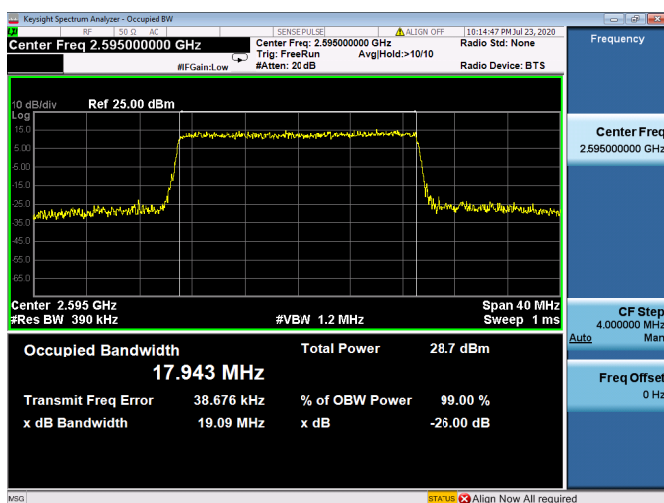
## 20MHz/ 64QAM / LCH



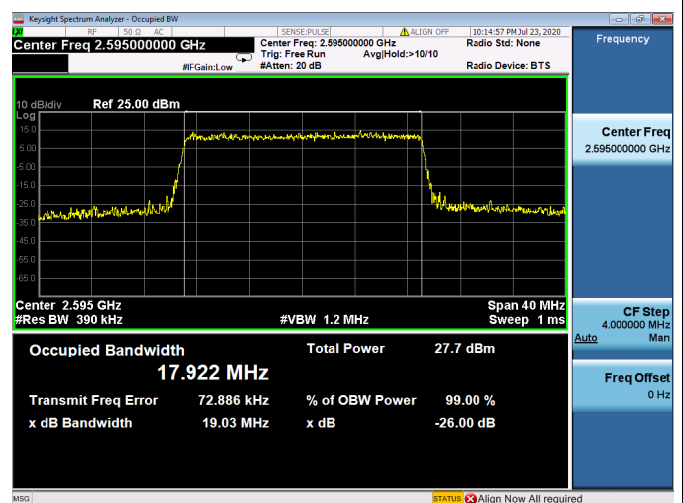
## 20MHz/QPSK / MCH



## 20MHz/ 16QAM / MCH

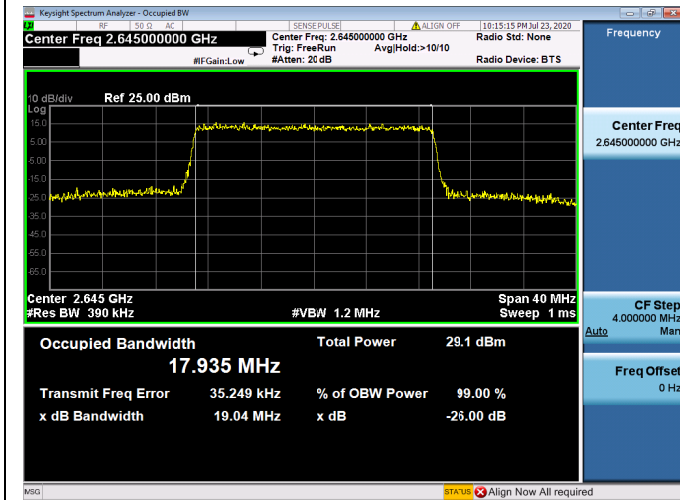


## 20MHz/ 64QAM / MCH

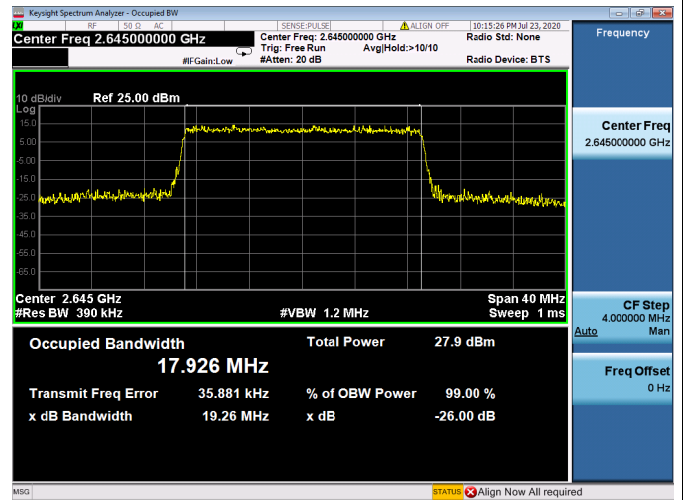




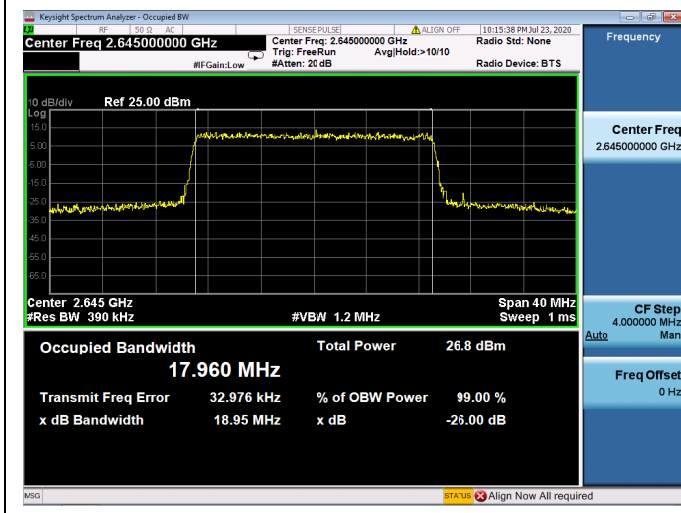
## 20MHz/ QPSK / HCH



## 20MHz/ 16QAM / HCH



## 20MHz/ 64QAM / HCH



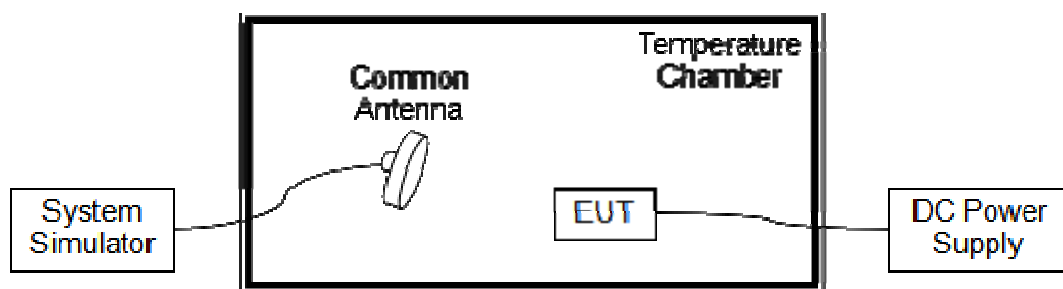
## 2.3. Frequency Stability

### 2.3.1. Requirement

According to FCC section 2.1055 & 27.54, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

- (a) The temperature is varied from -10°C to +45°C at intervals of not more than 10°C.
- (b) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

### 2.3.2. Test Description



The EUT which is powered by the DC Power Supply directly, is located in the Temperature Chamber. The EUT is commanded by the System Simulator (SS) to operate at the maximum output power. A call is established between the EUT and the SS via a Common Antenna.

### 2.3.3. Test procedure

KDB 971168 D01v03 Section 9.0 and ANSI/TIA-603-E-2016.

### 2.3.4. Test Result

The nominal, highest and lowest extreme voltages are separately 3.85VDC, 4.40VDC and 3.00VDC, which are specified by the applicant; the normal temperature here used is 20°C.



| LTE Band 5, QPSK, Channel 20525, Frequency 836.5MHz<br>Limit=±2.5ppm |             |           |                |                 |        |
|----------------------------------------------------------------------|-------------|-----------|----------------|-----------------|--------|
| Voltage (%)                                                          | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Deviation (ppm) | Result |
| 100                                                                  | 3.85        | +20(Ref)  | 35             | 0.042           | PASS   |
| 100                                                                  |             | -10       | 37             | 0.049           |        |
| 100                                                                  |             | 0         | -31            | -0.038          |        |
| 100                                                                  |             | +10       | -53            | -0.064          |        |
| 100                                                                  |             | +20       | -42            | -0.050          |        |
| 100                                                                  |             | +30       | -37            | -0.044          |        |
| 100                                                                  |             | +40       | -52            | -0.062          |        |
| 100                                                                  |             | +45       | 84             | 0.100           |        |
| 115                                                                  | 4.40        | +20       | 44             | 0.052           |        |
| 85                                                                   | 3.00        | +20       | 79             | 0.094           |        |

| LTE Band 38, QPSK, Channel 38000, Frequency 2595MHz<br>Limit=±1ppm |             |           |                |                 |        |
|--------------------------------------------------------------------|-------------|-----------|----------------|-----------------|--------|
| Voltage (%)                                                        | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Deviation (ppm) | Result |
| 100                                                                | 3.85        | +20(Ref)  | -45            | -0.054          | PASS   |
| 100                                                                |             | -10       | 39             | 0.050           |        |
| 100                                                                |             | 0         | 16             | 0.019           |        |
| 100                                                                |             | +10       | 35             | 0.042           |        |
| 100                                                                |             | +20       | -32            | -0.038          |        |
| 100                                                                |             | +30       | -53            | -0.064          |        |
| 100                                                                |             | +40       | -42            | -0.050          |        |
| 100                                                                |             | +45       | -37            | -0.044          |        |
| 115                                                                | 4.40        | +20       | -52            | -0.062          |        |
| 85                                                                 | 3.00        | +20       | 84             | 0.100           |        |



| LTE Band 40, QPSK, Channel 38750, Frequency 2310MHz |             |                     |               |                 |        |
|-----------------------------------------------------|-------------|---------------------|---------------|-----------------|--------|
| Limit $\pm 1$ ppm                                   |             |                     |               |                 |        |
| Voltage(%)                                          | Power (VDC) | Temp( $^{\circ}$ C) | Fre. Dev.(Hz) | Deviation (ppm) | Result |
| 100                                                 | 3.85        | +20(Ref)            | 35            | 0.016           | PASS   |
| 100                                                 |             | -10                 | 39            | 0.050           |        |
| 100                                                 |             | 0                   | 63            | 0.028           |        |
| 100                                                 |             | +10                 | 52            | 0.023           |        |
| 100                                                 |             | +20                 | -54           | -0.023          |        |
| 100                                                 |             | +30                 | -63           | -0.027          |        |
| 100                                                 |             | +40                 | -44           | -0.018          |        |
| 100                                                 |             | +45                 | 38            | 0.017           |        |
| 115                                                 | 4.40        | +20                 | 83            | 0.036           |        |
| 85                                                  | 3.00        | +20                 | 52            | 0.023           |        |

| LTE Band 41, QPSK, Channel 40640, Frequency 2595MHz |             |                     |               |                 |        |
|-----------------------------------------------------|-------------|---------------------|---------------|-----------------|--------|
| Limit $\pm 1$ ppm                                   |             |                     |               |                 |        |
| Voltage(%)                                          | Power (VDC) | Temp( $^{\circ}$ C) | Fre. Dev.(Hz) | Deviation (ppm) | Result |
| 100                                                 | 3.85        | +20(Ref)            | 26            | 0.012           | PASS   |
| 100                                                 |             | -10                 | 39            | 0.050           |        |
| 100                                                 |             | 0                   | 37            | 0.016           |        |
| 100                                                 |             | +10                 | 48            | 0.021           |        |
| 100                                                 |             | +20                 | -61           | -0.026          |        |
| 100                                                 |             | +30                 | -71           | -0.030          |        |
| 100                                                 |             | +40                 | -52           | -0.022          |        |
| 100                                                 |             | +45                 | 49            | 0.023           |        |
| 115                                                 | 4.40        | +20                 | 67            | 0.034           |        |
| 85                                                  | 3.00        | +20                 | 37            | 0.016           |        |

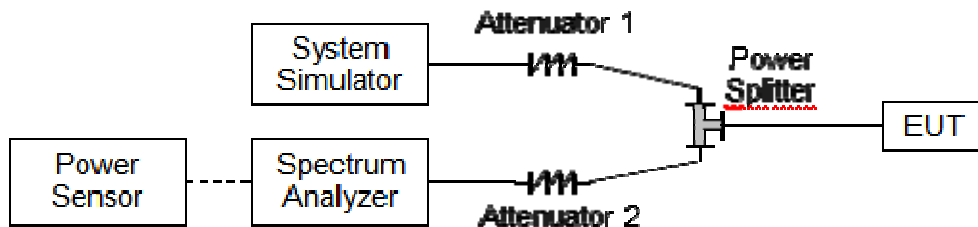
## 2.4. Peak to Average Radio

### 2.4.1. Requirement

According to FCC section 24.232(d), the peak to average ratio (PAR) of the transmission may not exceed 13dB.

### 2.4.2. Test Description

#### A. Test Set:



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

### 2.4.3. Test procedure

KDB 971168 D01v03 Section 5.7 and ANSI/TIA-603-E-2016.

### 2.4.4. Test Result

Record the maximum PAPR level associated with a probability of 0.1%.



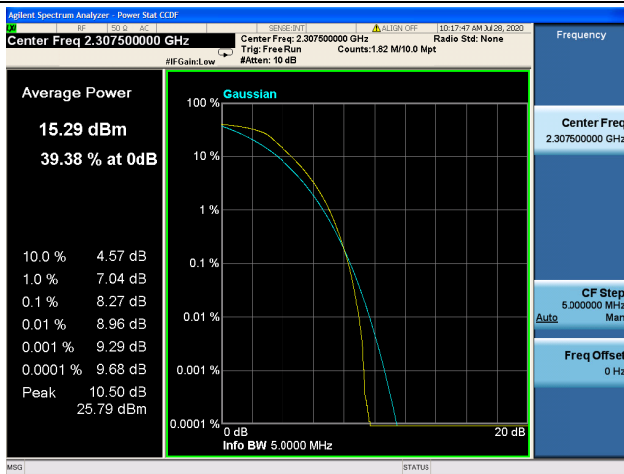
| LTE Band 40(2305MHz-2315MHz) |               |            |         |           |         |
|------------------------------|---------------|------------|---------|-----------|---------|
| BW(MHz)                      | Channel Level | Modulation | PAR(dB) | Limit(dB) | Verdict |
| 5                            | Low           | QPSK       | 8.27    | <=13      | PASS    |
| 5                            | Low           | 16QAM      | 8.77    | <=13      | PASS    |
| 5                            | Low           | 64QAM      | 7.40    | <=13      | PASS    |
| 5                            | Mid           | QPSK       | 9.29    | <=13      | PASS    |
| 5                            | Mid           | 16QAM      | 9.00    | <=13      | PASS    |
| 5                            | Mid           | 64QAM      | 9.15    | <=13      | PASS    |
| 5                            | High          | QPSK       | 8.87    | <=13      | PASS    |
| 5                            | High          | 16QAM      | 8.88    | <=13      | PASS    |
| 5                            | High          | 64QAM      | 9.01    | <=13      | PASS    |
| 10                           | Mid           | QPSK       | 8.37    | <=13      | PASS    |
| 10                           | Mid           | 16QAM      | 8.43    | <=13      | PASS    |
| 10                           | Mid           | 64QAM      | 8.38    | <=13      | PASS    |

| LTE Band 40(2350Hz-2360MHz) |               |            |         |           |         |
|-----------------------------|---------------|------------|---------|-----------|---------|
| BW(MHz)                     | Channel Level | Modulation | PAR(dB) | Limit(dB) | Verdict |
| 5                           | Low           | QPSK       | 9.02    | <=13      | PASS    |
| 5                           | Low           | 16QAM      | 9.01    | <=13      | PASS    |
| 5                           | Low           | 64QAM      | 8.85    | <=13      | PASS    |
| 5                           | Mid           | QPSK       | 8.87    | <=13      | PASS    |
| 5                           | Mid           | 16QAM      | 9.65    | <=13      | PASS    |
| 5                           | Mid           | 64QAM      | 8.95    | <=13      | PASS    |
| 5                           | High          | QPSK       | 9.06    | <=13      | PASS    |
| 5                           | High          | 16QAM      | 9.22    | <=13      | PASS    |
| 5                           | High          | 64QAM      | 9.31    | <=13      | PASS    |
| 10                          | Mid           | QPSK       | 8.13    | <=13      | PASS    |
| 10                          | Mid           | 16QAM      | 8.39    | <=13      | PASS    |
| 10                          | Mid           | 64QAM      | 8.68    | <=13      | PASS    |

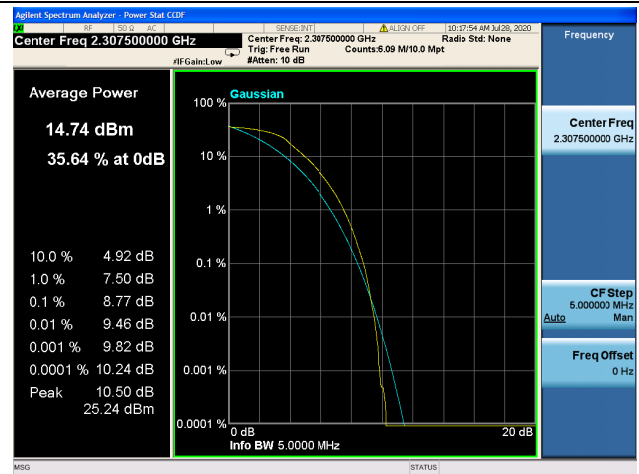


## LTE Band 40 (2305 — 2315MHz)

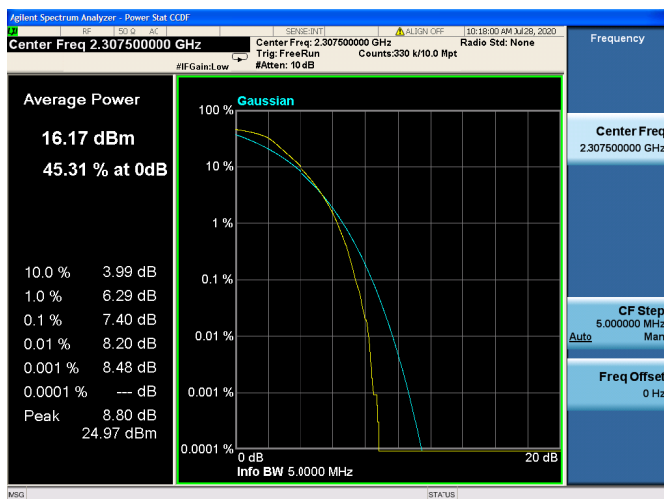
## 5MHz/QPSK / LCH



## 5MHz/16QAM / LCH



## 5MHz/ 64QAM / LCH



## 5MHz/QPSK / MCH



## 5MHz/ 16QAM / MCH

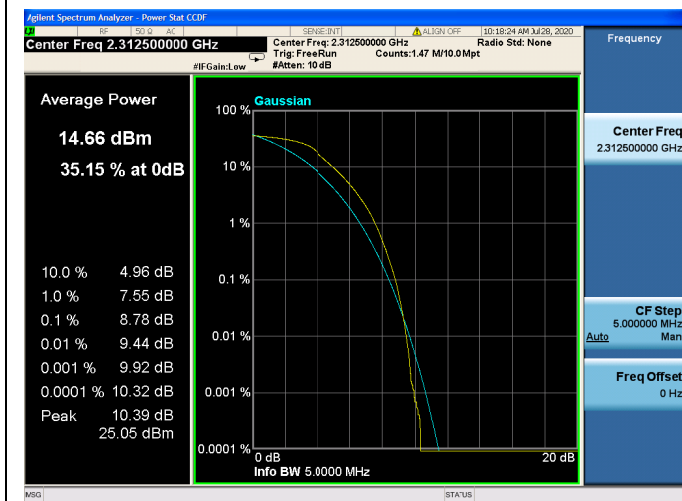


## 5MHz/ 64QAM / MCH





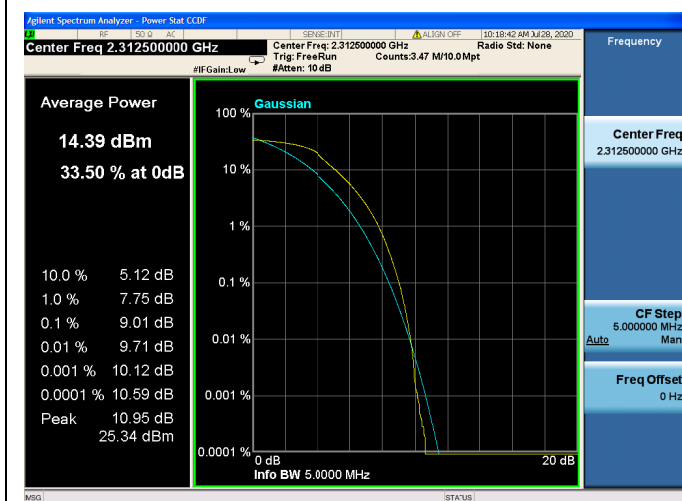
## 5MHz/ QPSK / HCH



## 5MHz/ 16QAM / HCH

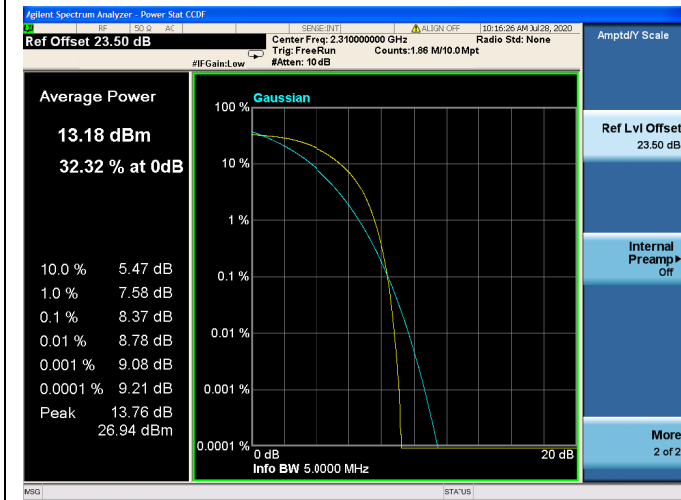


## 5MHz/ 64QAM / HCH

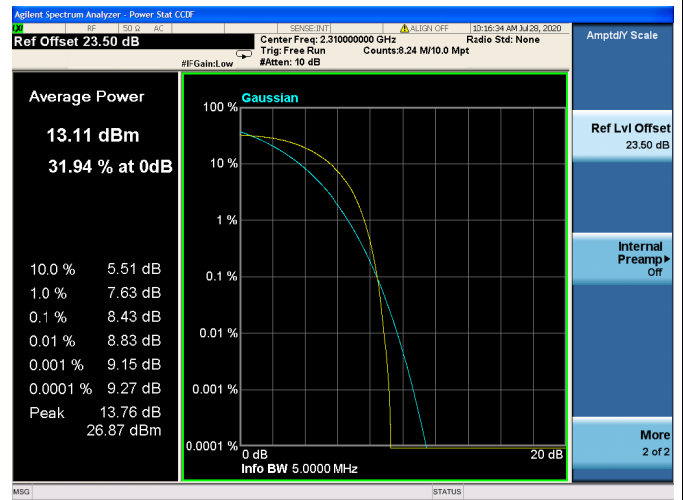




## 10MHz/QPSK / MCH



## 10MHz/ 16QAM / MCH



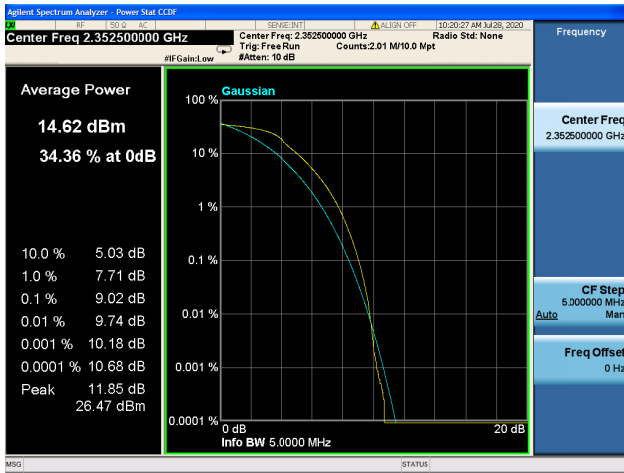
## 10MHz/ 64QAM / MCH



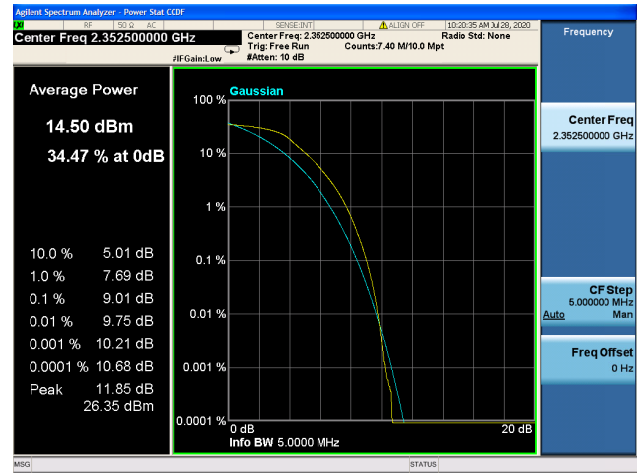


## LTE Band 40 (2350 — 2360MHz)

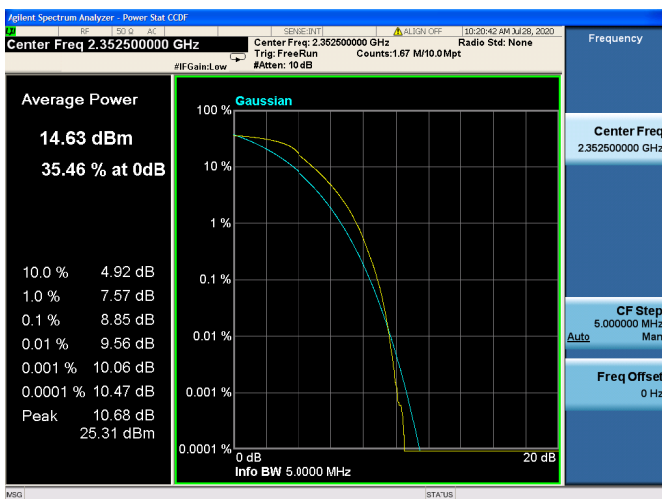
## 5MHz/QPSK / LCH



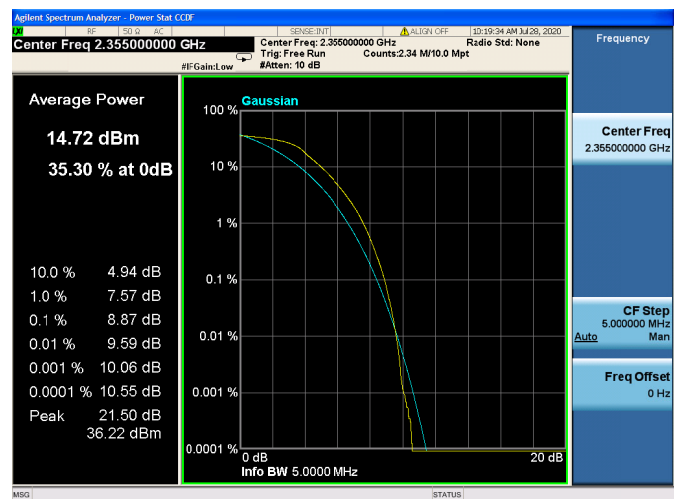
## 5MHz/16QAM / LCH



## 5MHz/ 64QAM / LCH



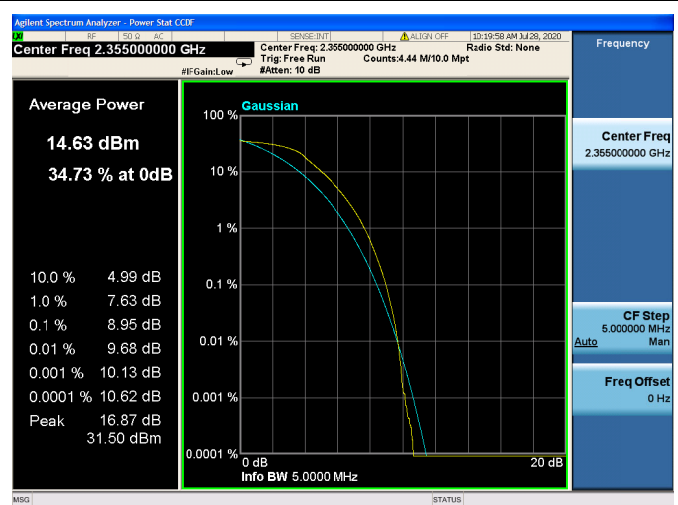
## 5MHz/QPSK / MCH



## 5MHz/ 16QAM / MCH

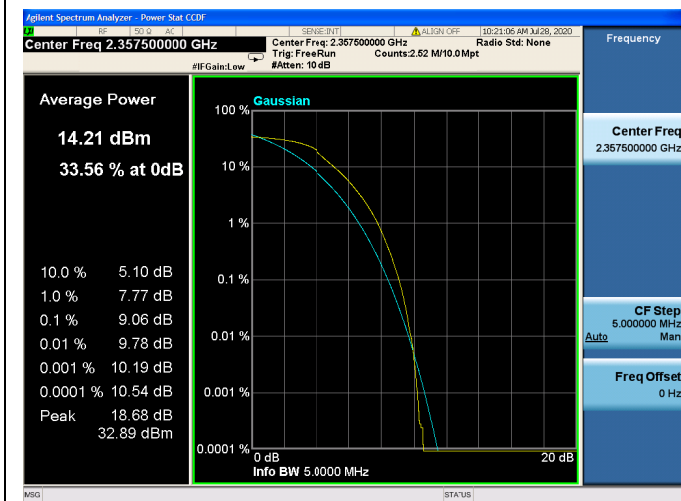


## 5MHz/ 64QAM / MCH





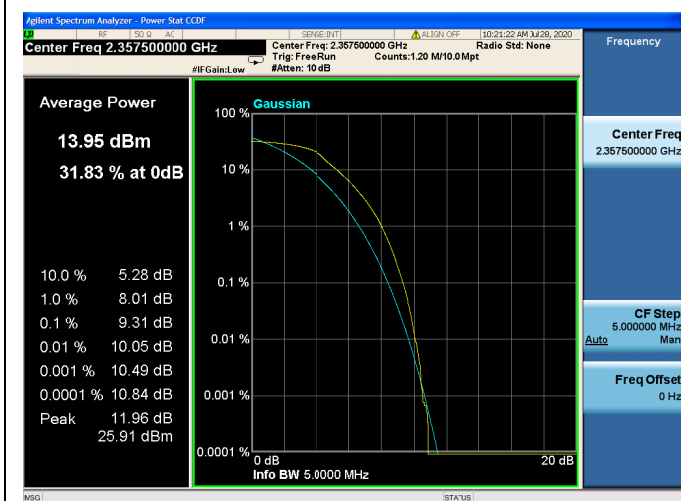
## 5MHz/ QPSK / HCH



## 5MHz/ 16QAM / HCH

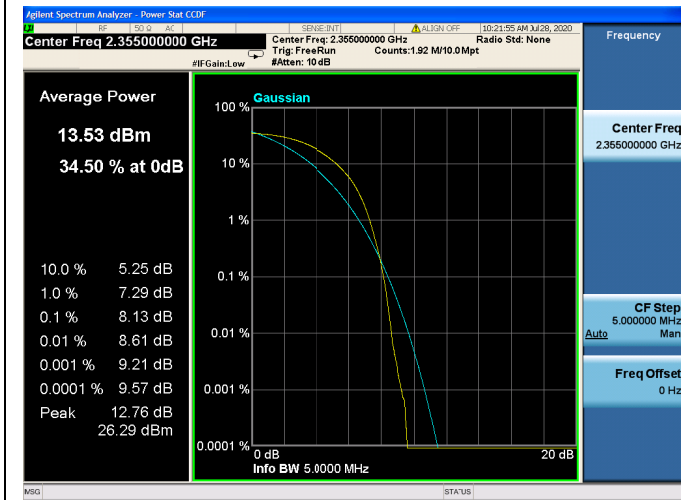


## 5MHz/ 64QAM / HCH

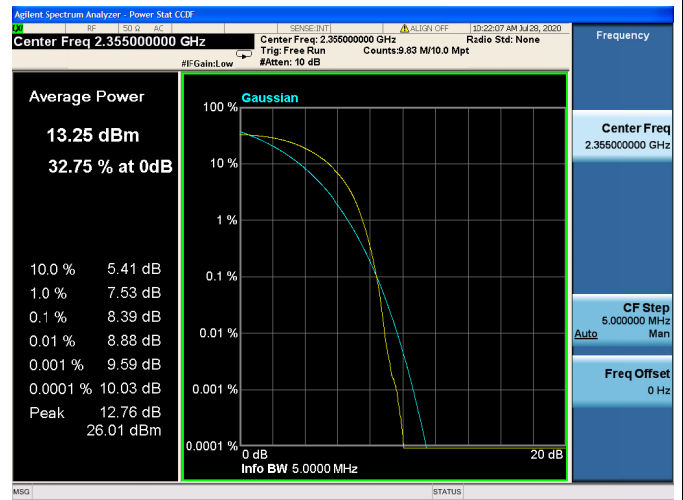




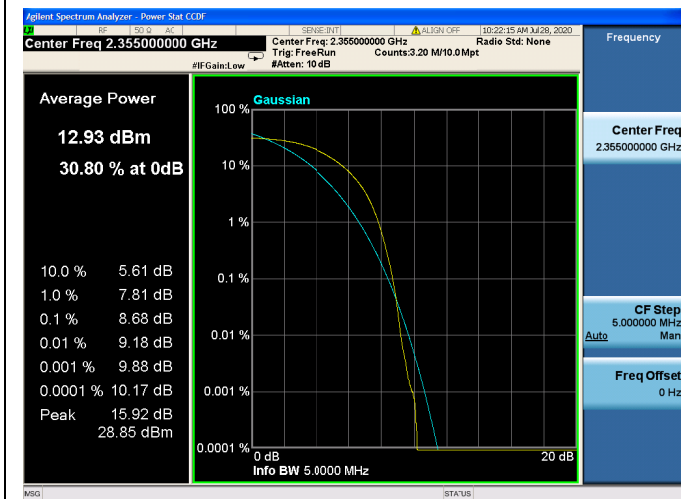
## 10MHz/QPSK / MCH



## 10MHz/ 16QAM / MCH



## 10MHz/ 64QAM / MCH



## 2.5. Conducted Spurious Emissions

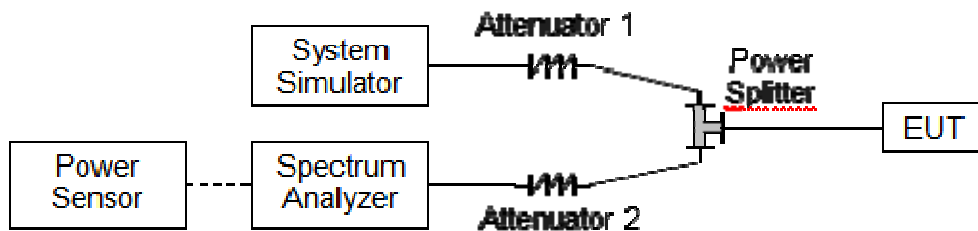
### 2.5.1. Requirement

According to FCC section 2.1051, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB. This calculated to be -13dBm.

Additional requirement for LTE Band 41:

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $55 + 10 \log(P)$  dB. This calculated to be -25dBm.

### 2.5.2. Test Description



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

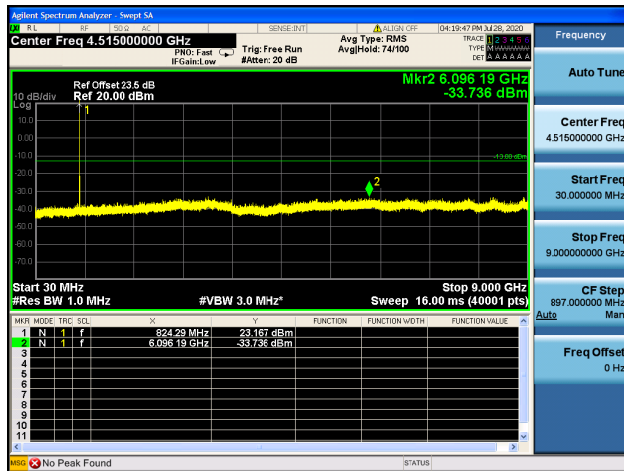
### 2.5.3. Test procedure

KDB 971168 D01v03 Section 6.0 and ANSI/TIA-603-E-2016.

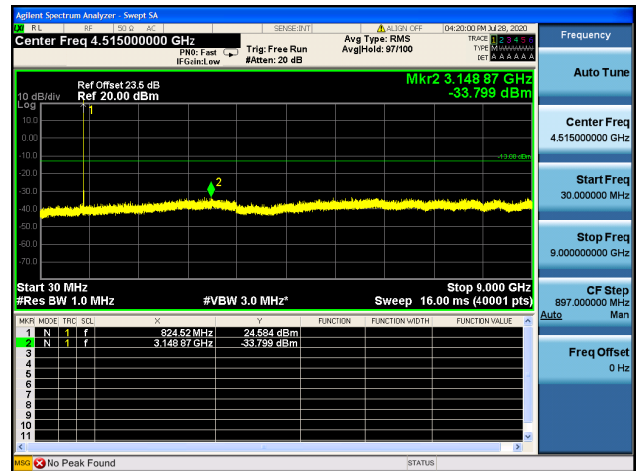
### 2.5.4. Test Result



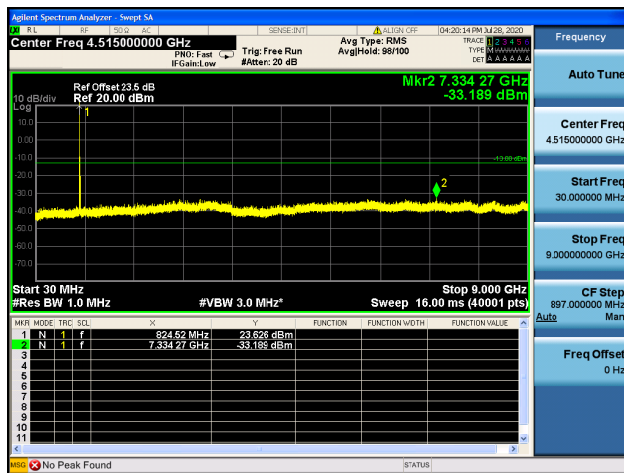
## Band5 / 1.4MHz / Low CH / QPSK



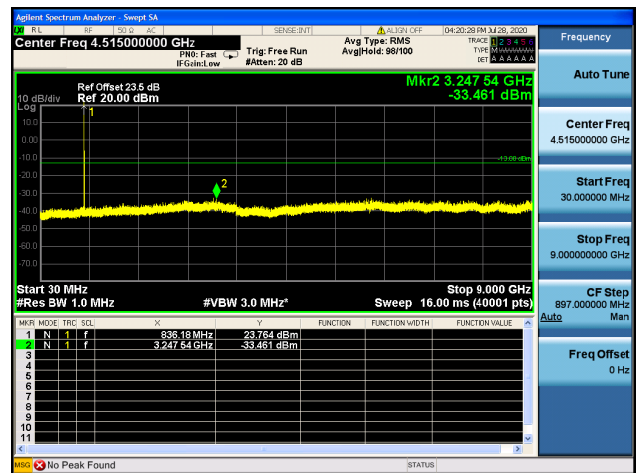
## Band5 / 1.4MHz / Low CH / 16QAM



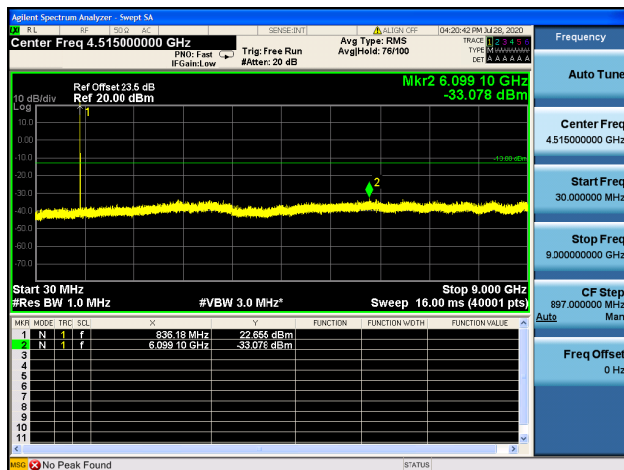
## Band5 / 1.4MHz / Low CH / 64QAM



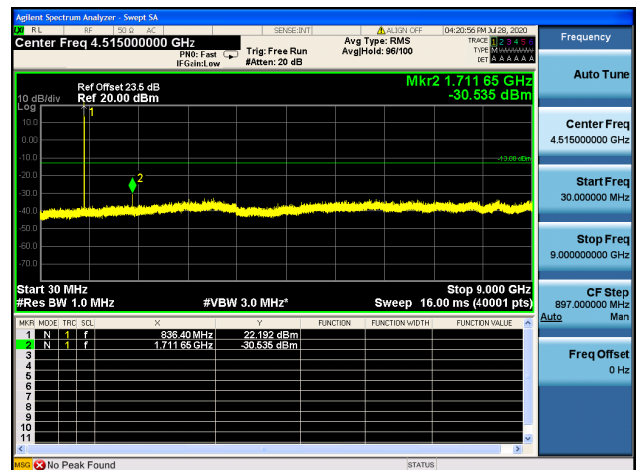
## Band5 / 1.4MHz / Mid CH / QPSK



## Band5 / 1.4MHz / Mid CH / 16QAM

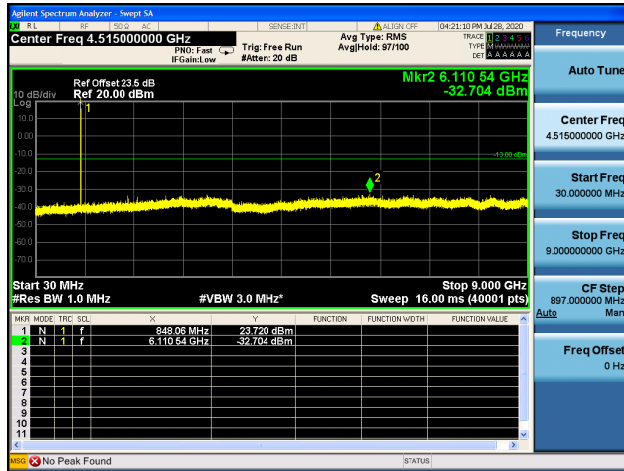


## Band5 / 1.4MHz / Mid CH / 64QAM

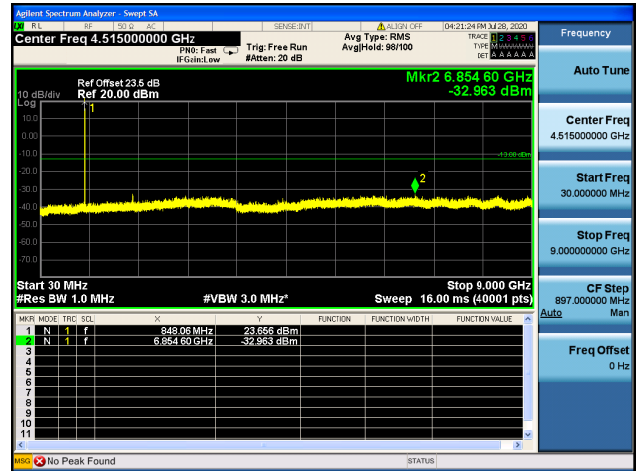




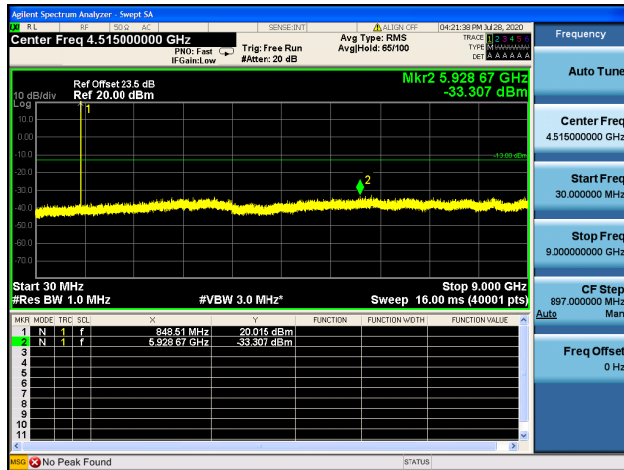
## Band5 / 1.4MHz / High CH / QPSK



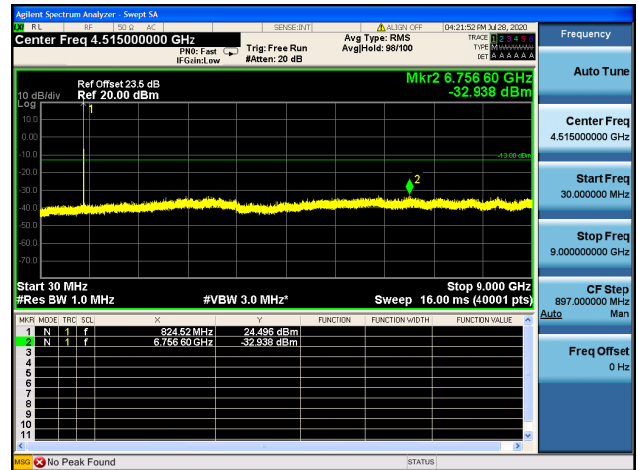
## Band5 / 1.4MHz / High CH / 16QAM



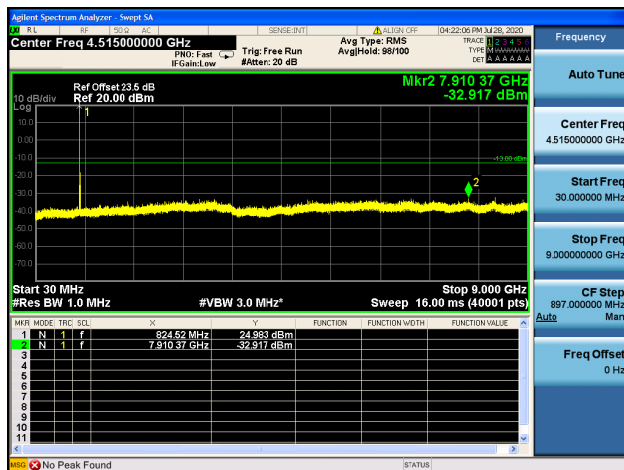
## Band5 / 1.4MHz / High CH / 64QAM



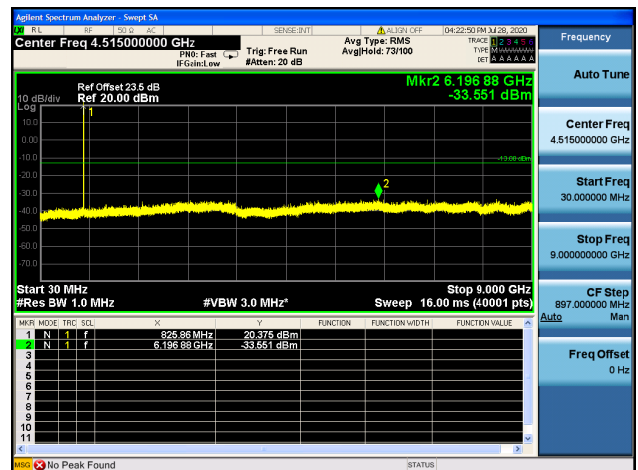
## Band5 / 3MHz / Low CH / QPSK



## Band5 / 3MHz / Low CH / 16QAM

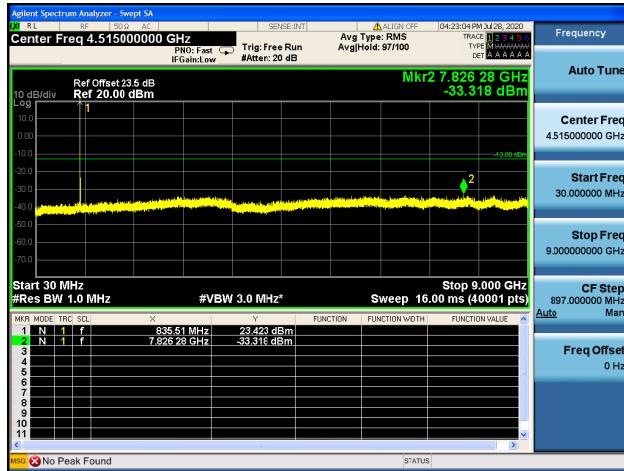


## Band5 / 3MHz / Low CH / 64QAM

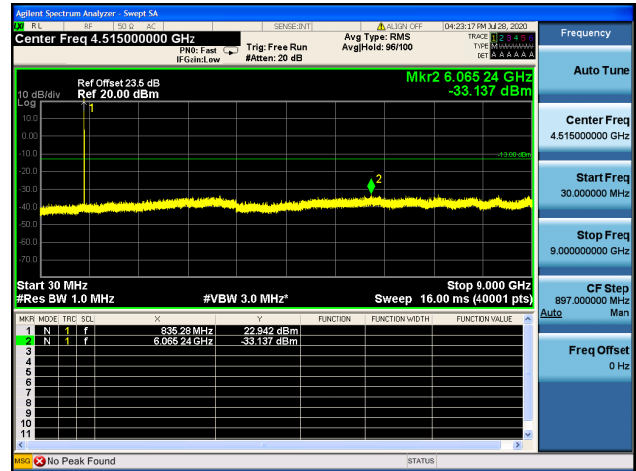




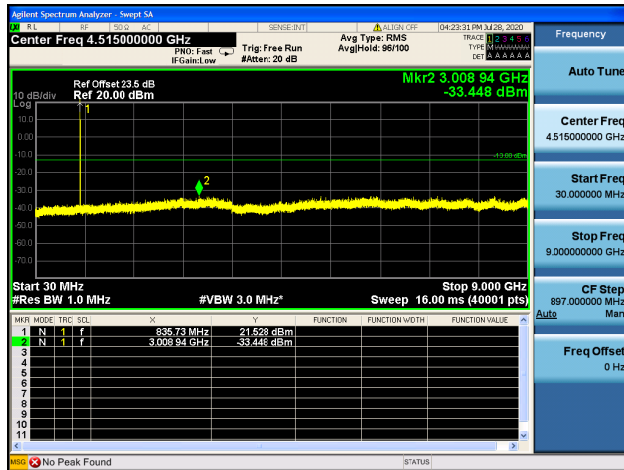
## Band5 / 3MHz / Mid CH / QPSK



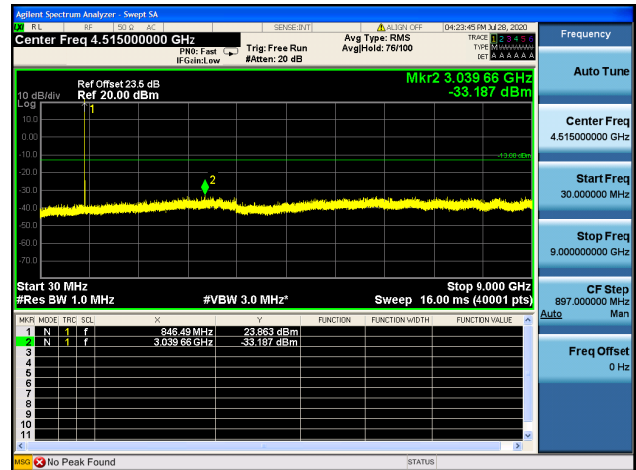
## Band5 / 3MHz / Mid CH / 16QAM



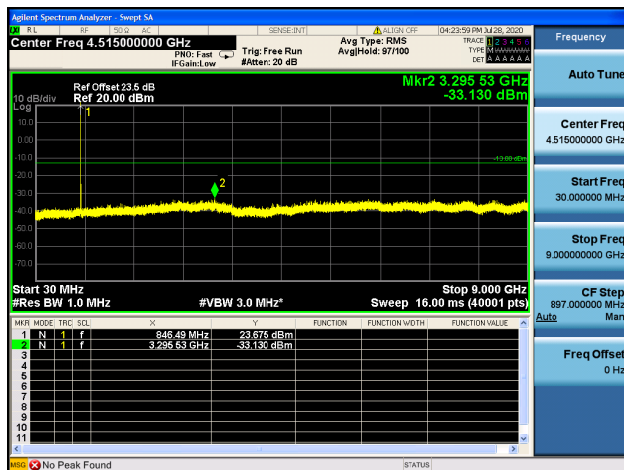
## Band5 / 3MHz / Mid CH / 64QAM



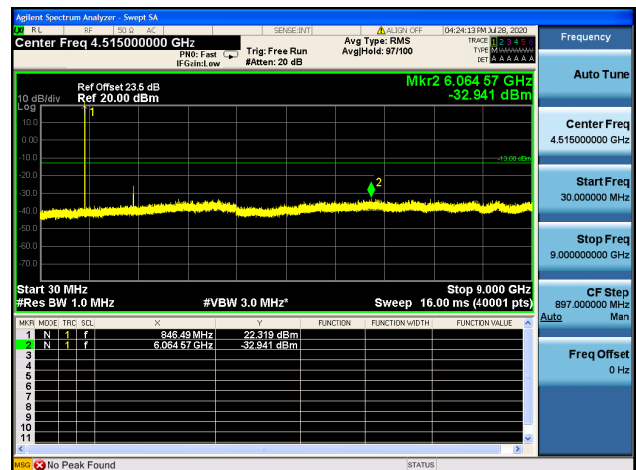
## Band5 / 3MHz / High CH / QPSK



## Band5 / 3MHz / High CH / 16QAM

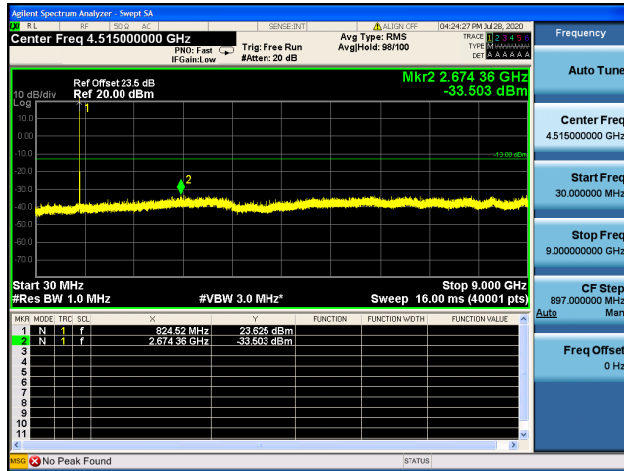


## Band5 / 3MHz / High CH / 64QAM

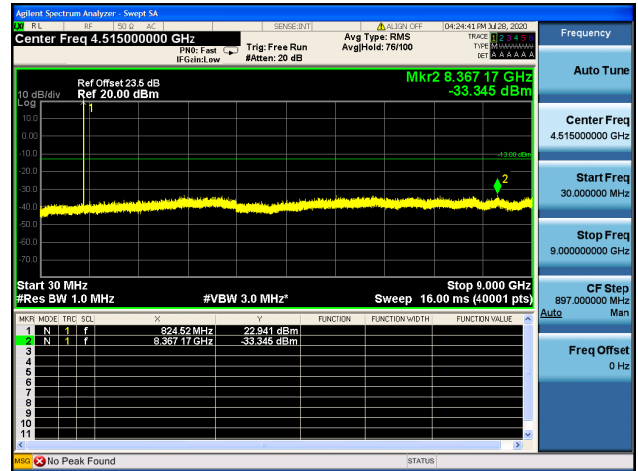




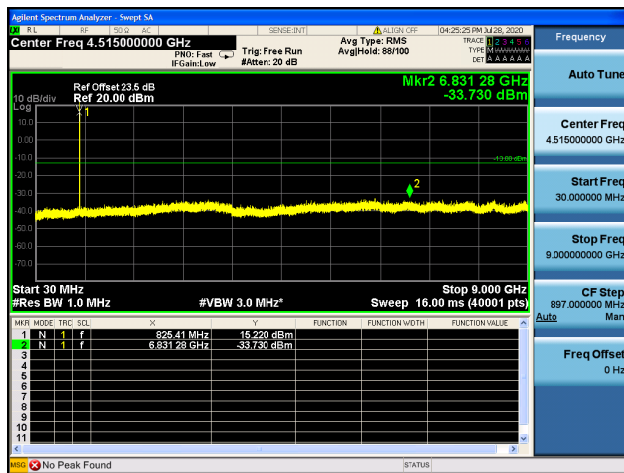
## Band5 / 5MHz / Low CH / QPSK



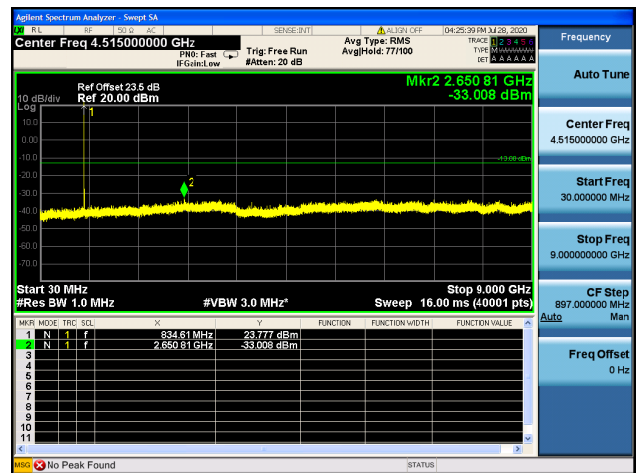
## Band5 / 5MHz / Low CH / 16QAM



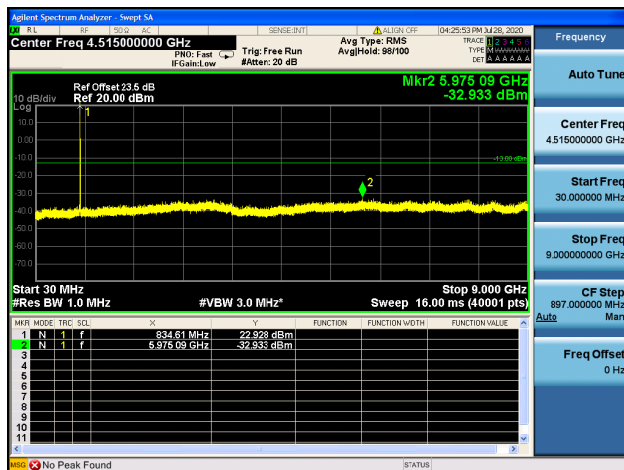
## Band5 / 5MHz / Low CH / 64QAM



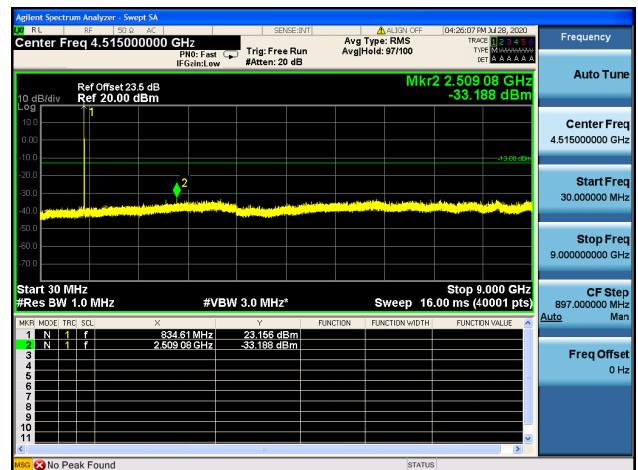
## Band5 / 5MHz / Mid CH / QPSK



## Band5 / 5MHz / Mid CH / 16QAM

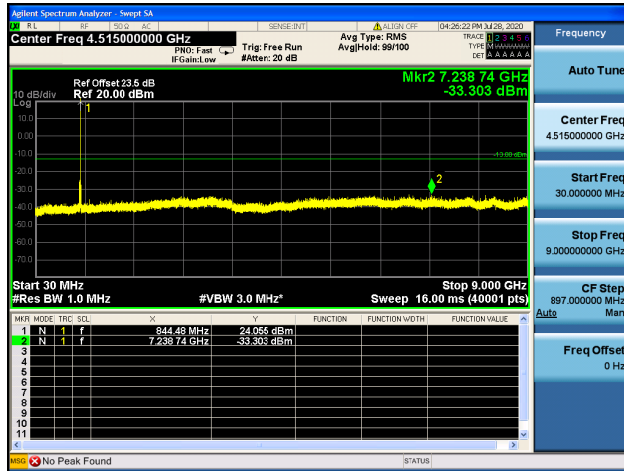


## Band5 / 5MHz / Mid CH / 64QAM

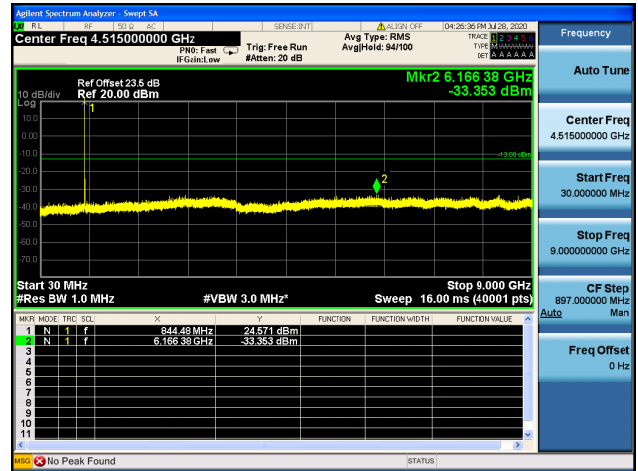




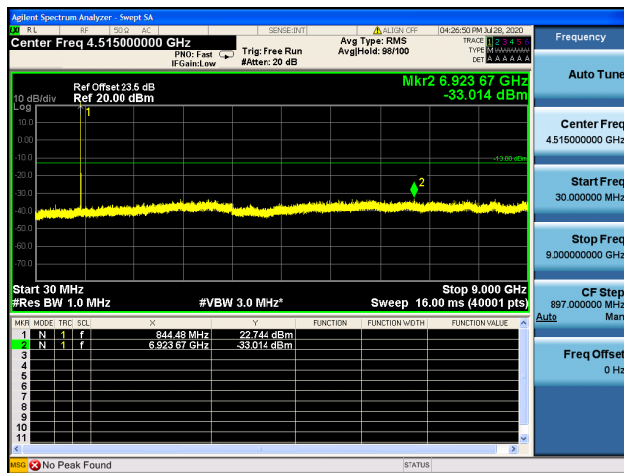
## Band5 / 5MHz / High CH / QPSK



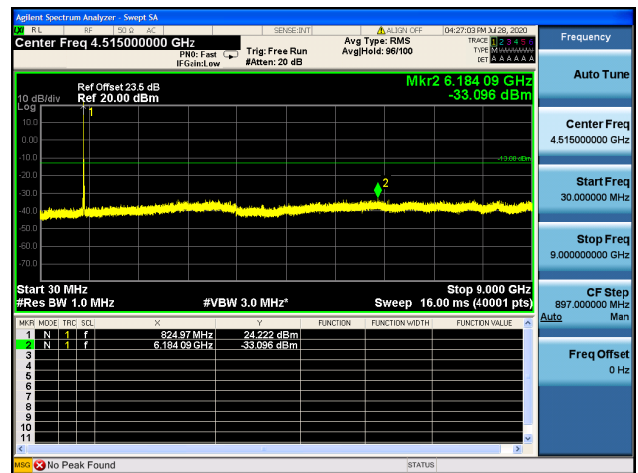
## Band5 / 5MHz / High CH / 16QAM



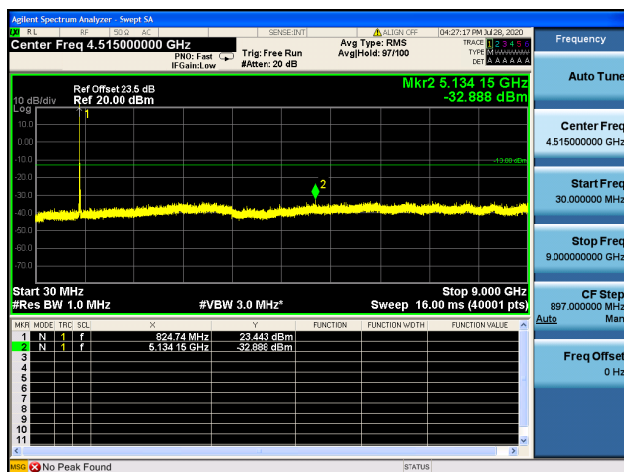
## Band5 / 5MHz / High CH / 64QAM



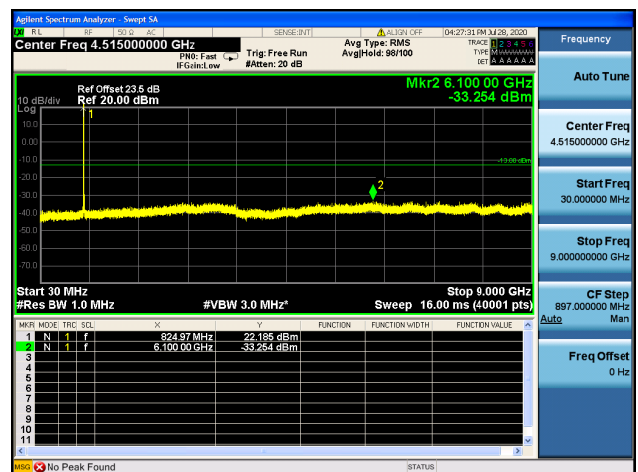
## Band5 / 10MHz / Low CH / QPSK



## Band5 / 10MHz / Low CH / 16QAM

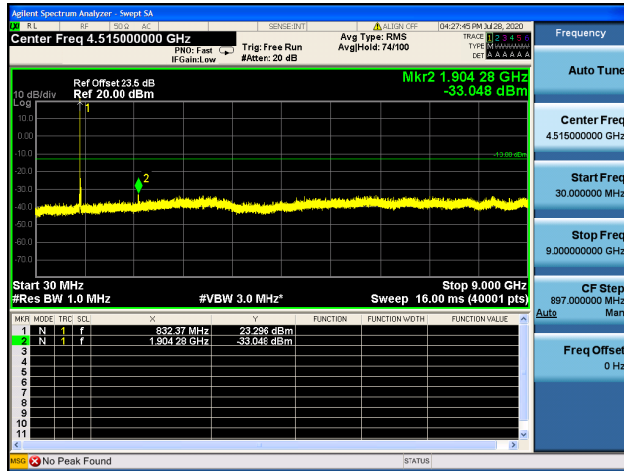


## Band5 / 10MHz / Low CH / 64QAM

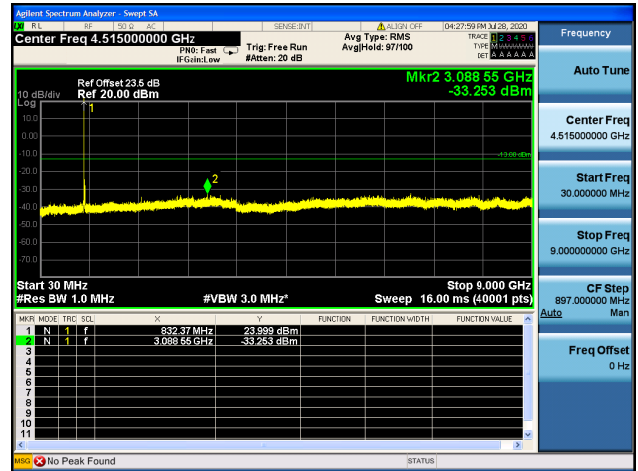




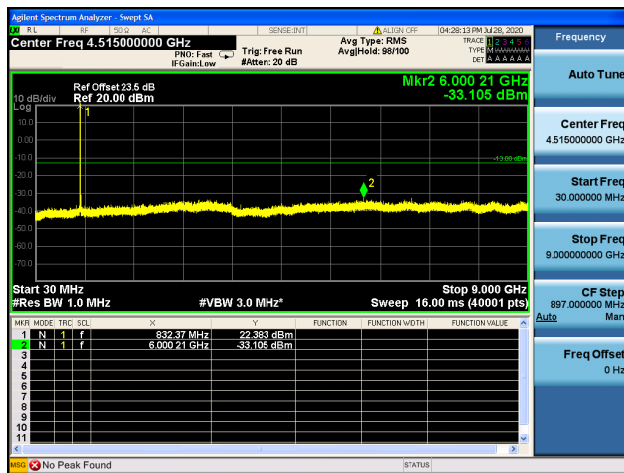
## Band5 / 10MHz / Mid CH / QPSK



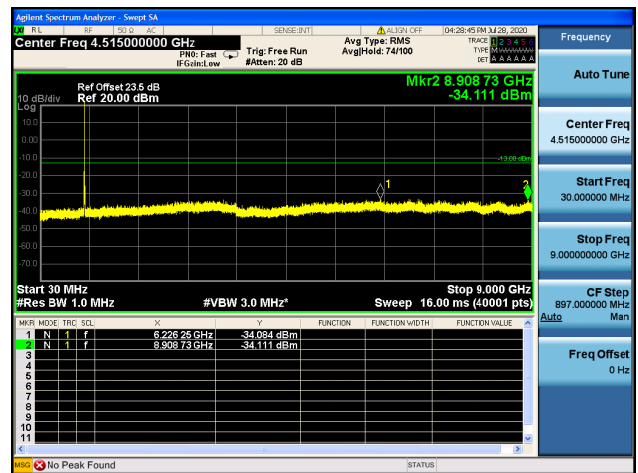
## Band5 / 10MHz / Mid CH / 16QAM



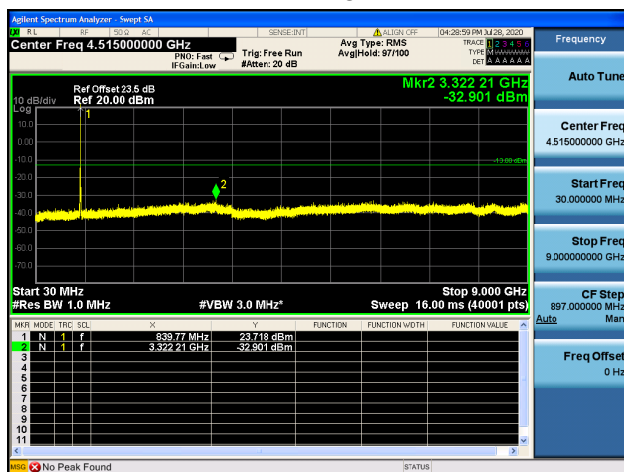
## Band5 / 10MHz / Mid CH / 64QAM



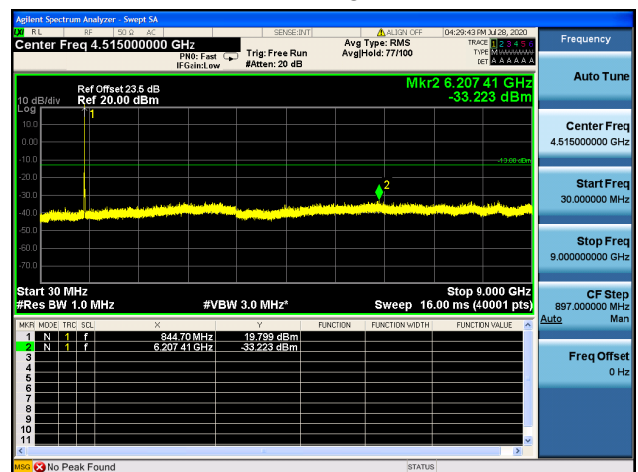
## Band5 / 10MHz / High CH / QPSK



## Band5 / 10MHz / High CH / 16QAM



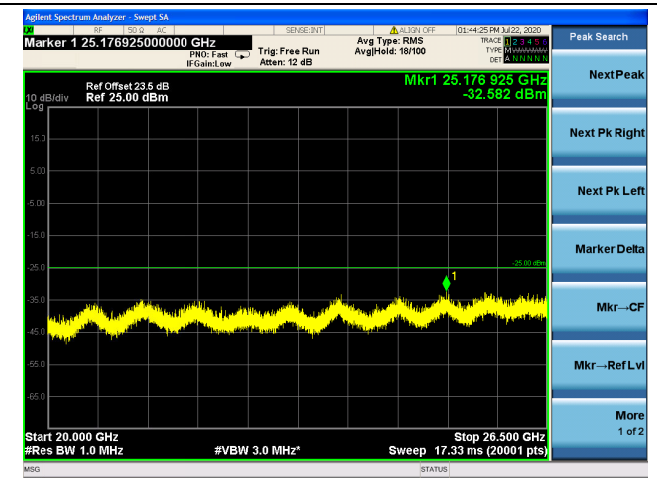
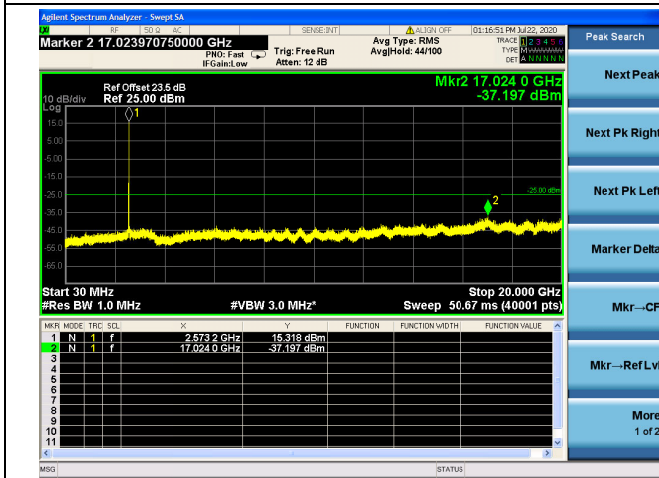
## Band5 / 10MHz / High CH / 64QAM



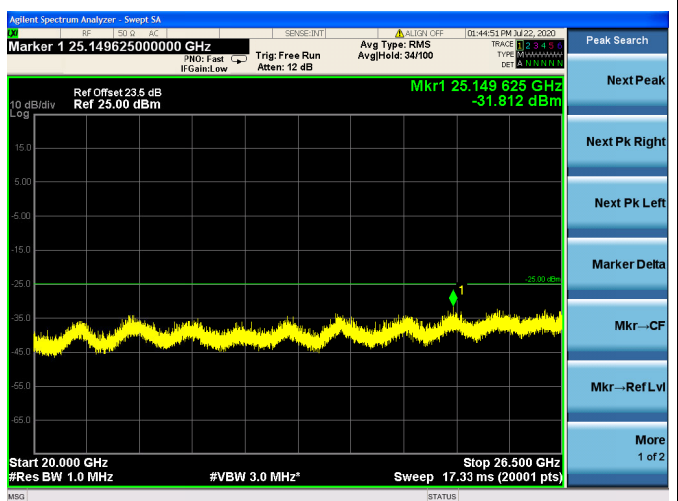
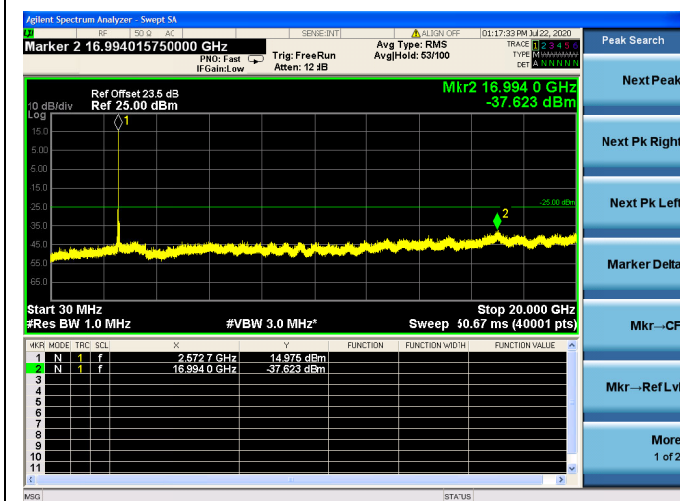


## LTE Band 38 CSE

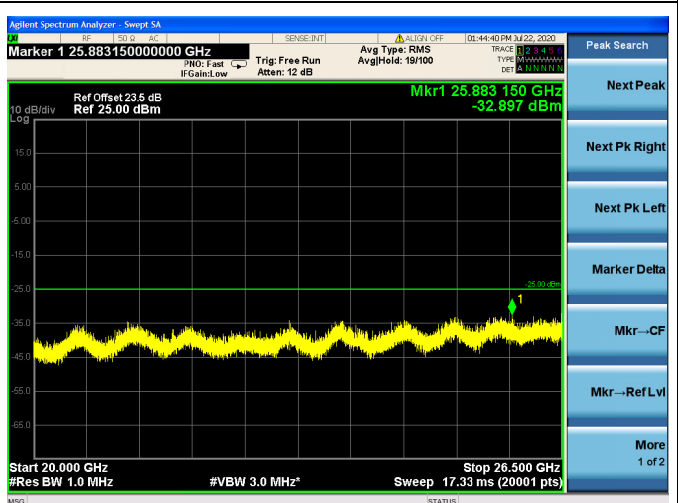
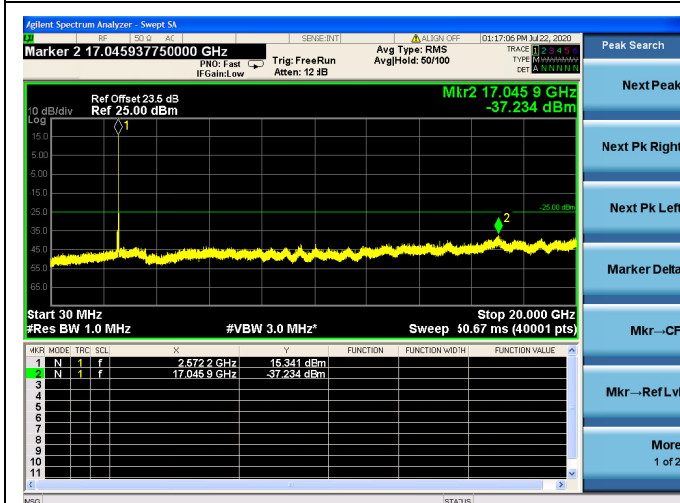
## 5MHz/QPSK/Low CH



## 5MHz/16QAM/Low CH

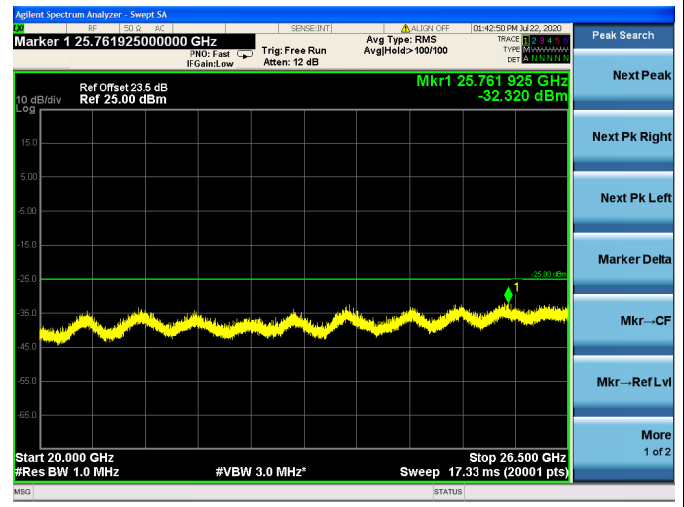
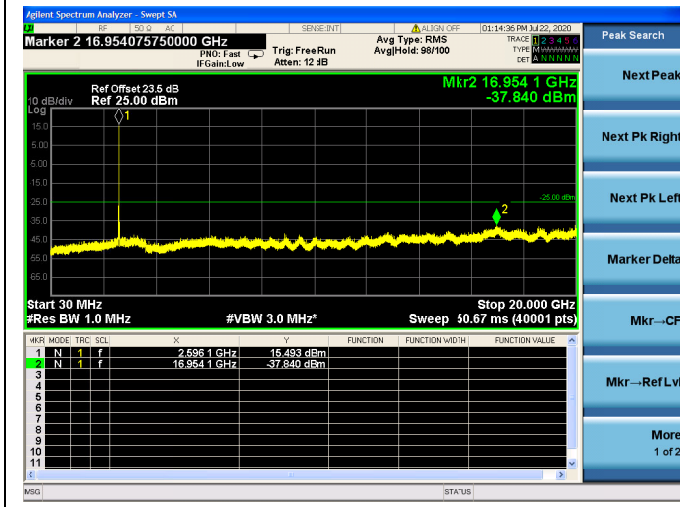


## 5MHz/64QAM/Low CH

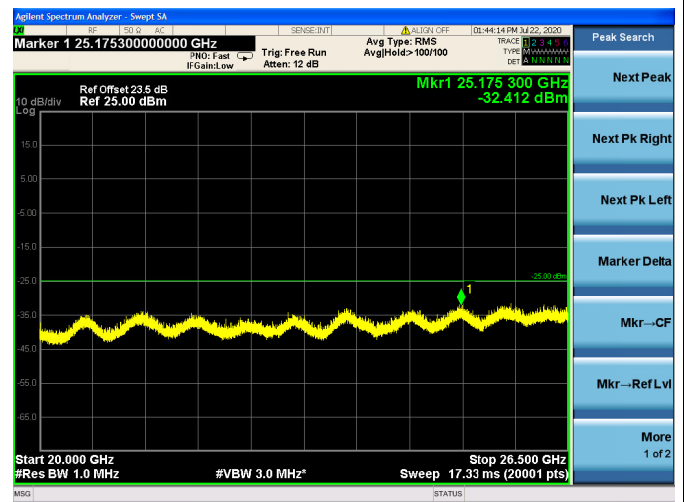
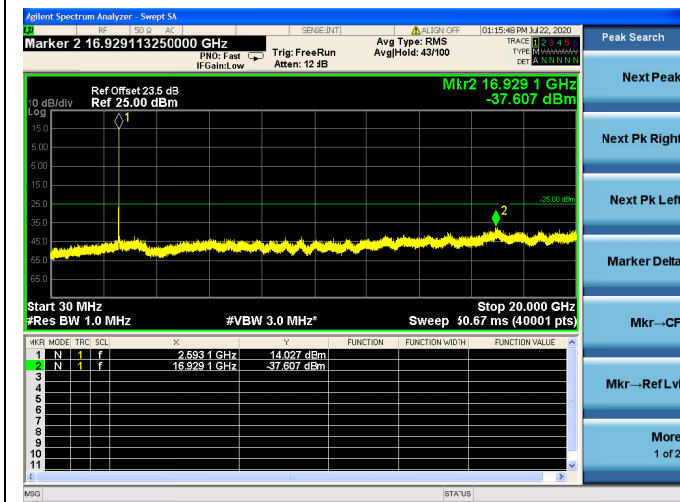




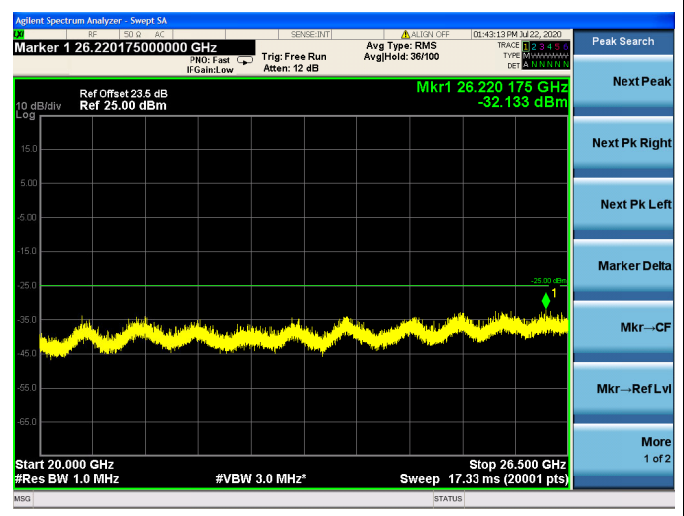
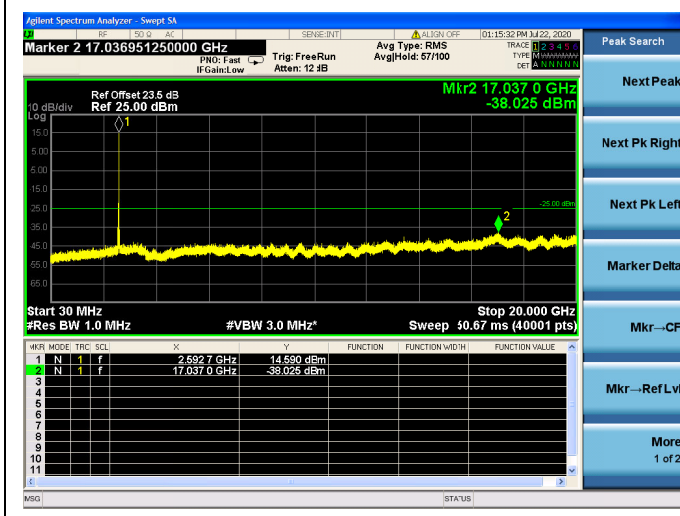
## 5MHz/QPSK/Mid CH



## 5MHz/16QAM/Mid CH

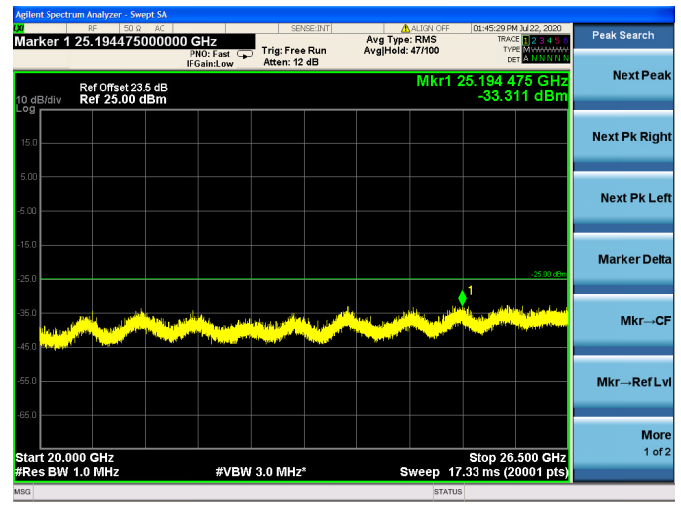
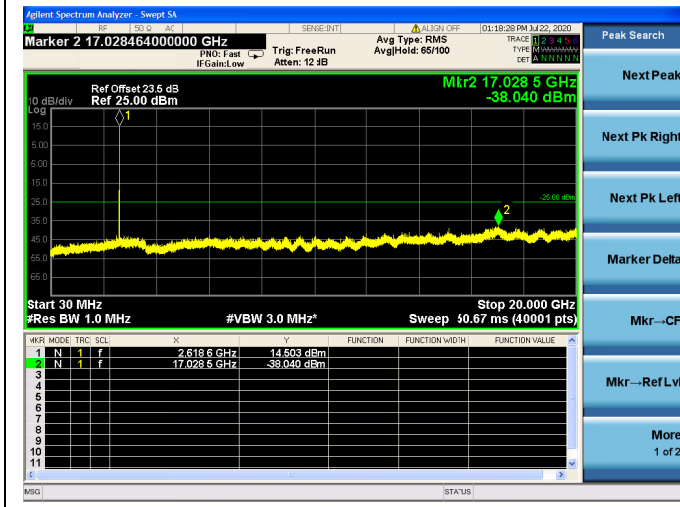


## 5MHz/64QAM/Mid CH

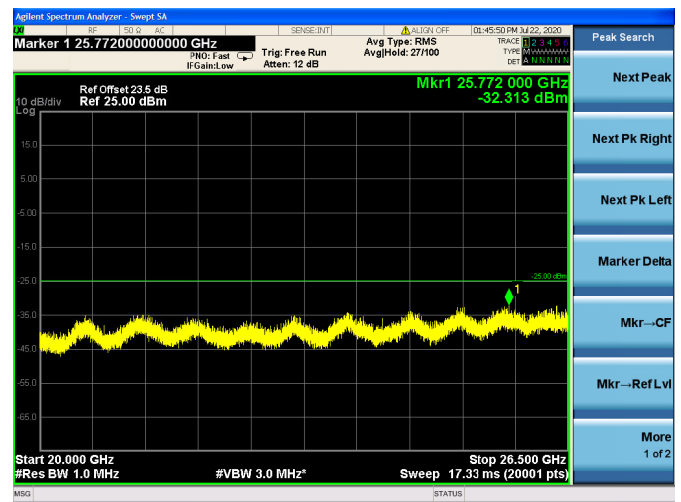
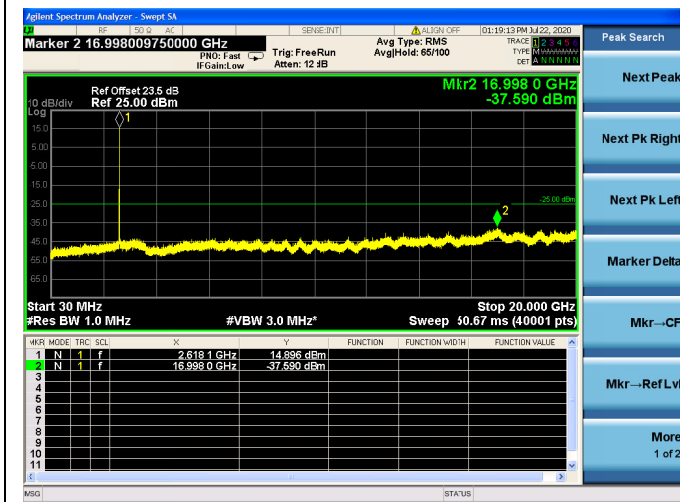




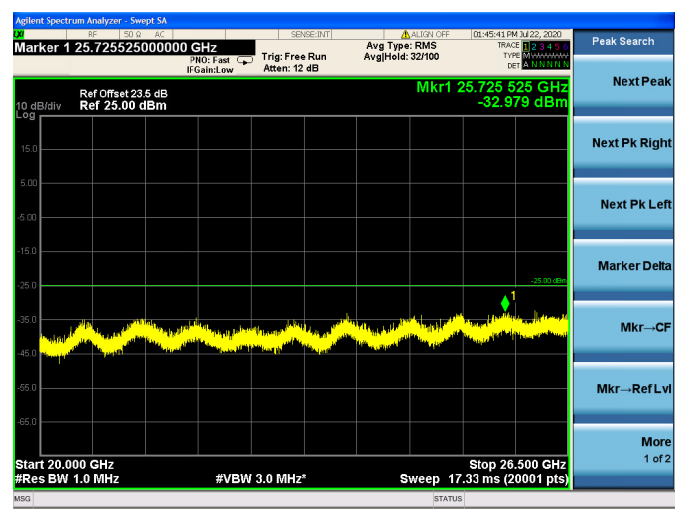
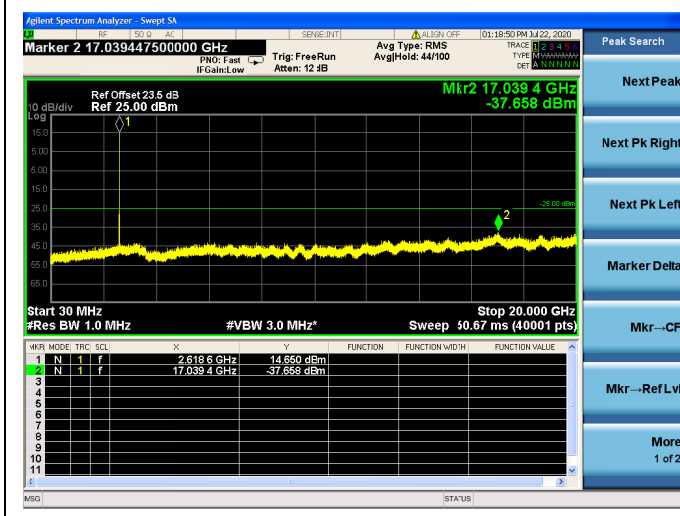
## 5MHz/QPSK/High CH



## 5MHz/16QAM/High CH

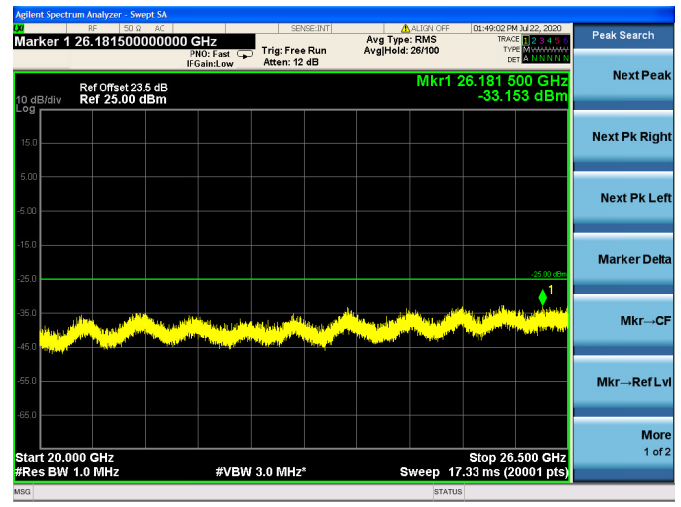
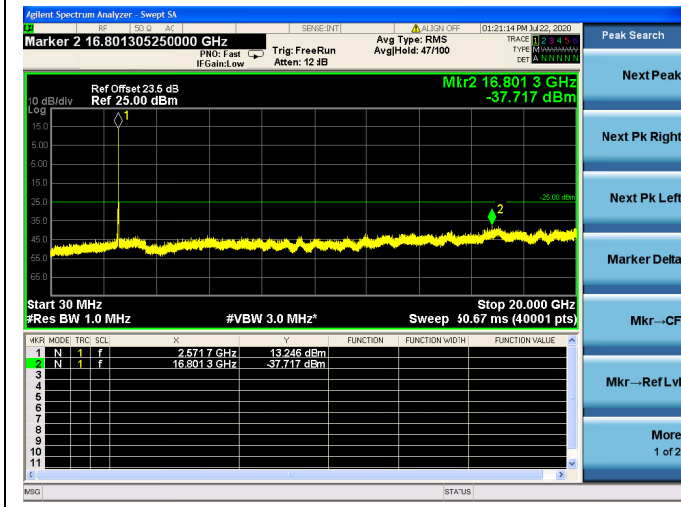


## 5MHz/64QAM/High CH

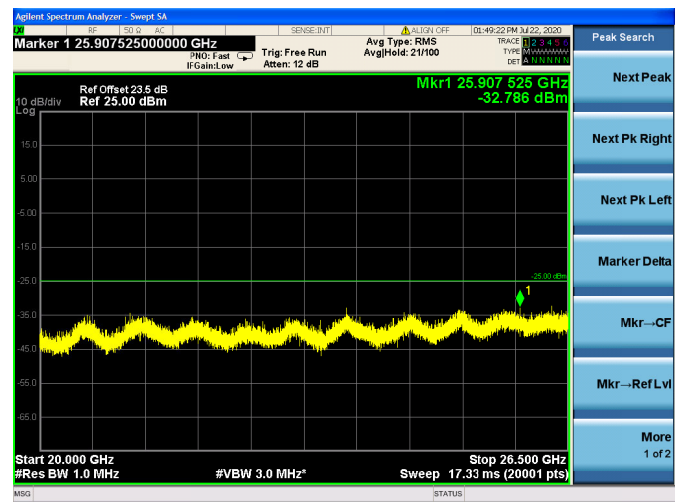
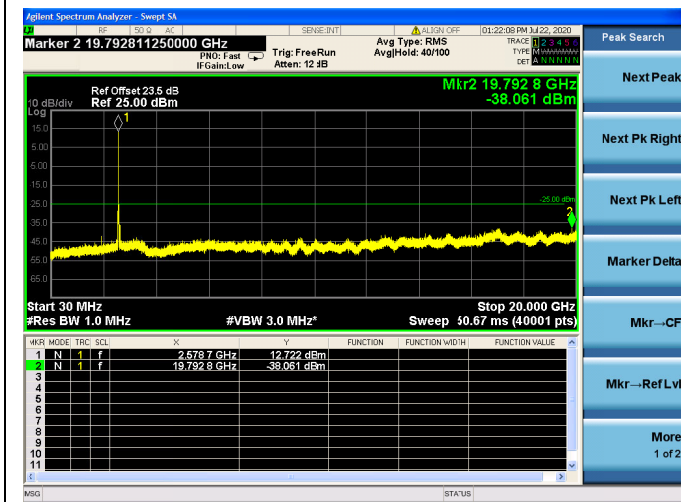




## 10MHz/QPSK/Low CH



## 10MHz/16QAM/Low CH



## 10MHz/64QAM/Low CH

