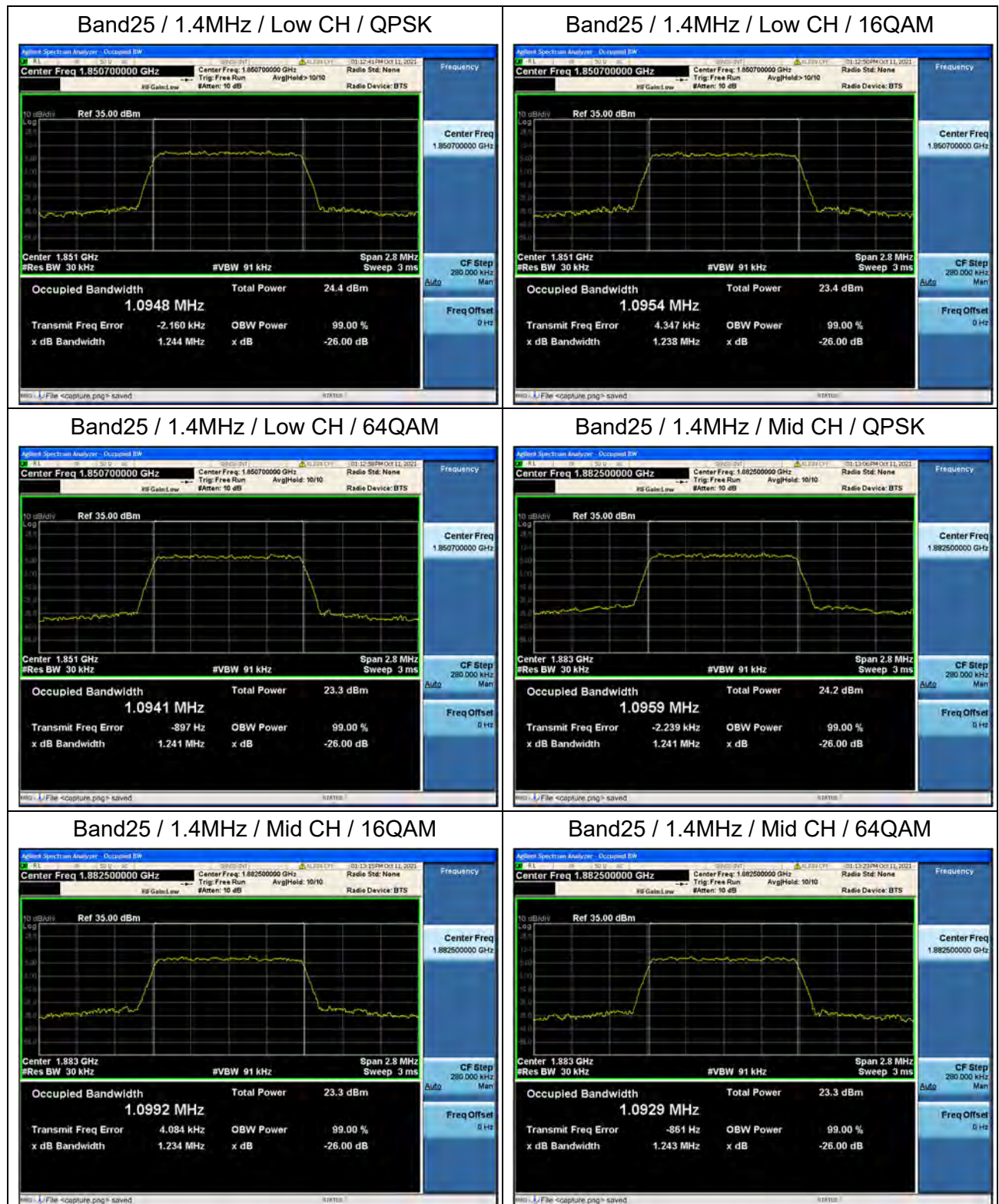
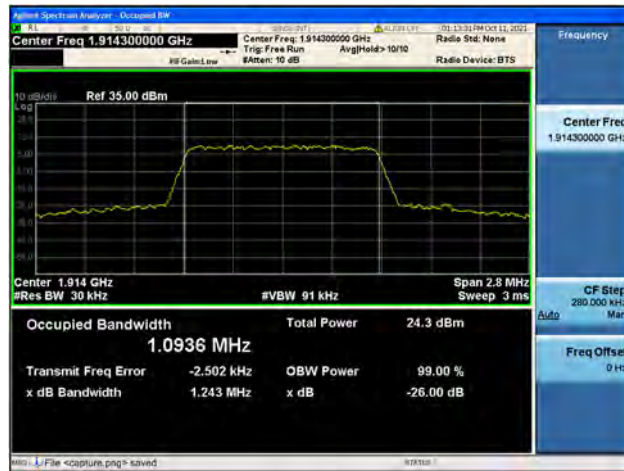






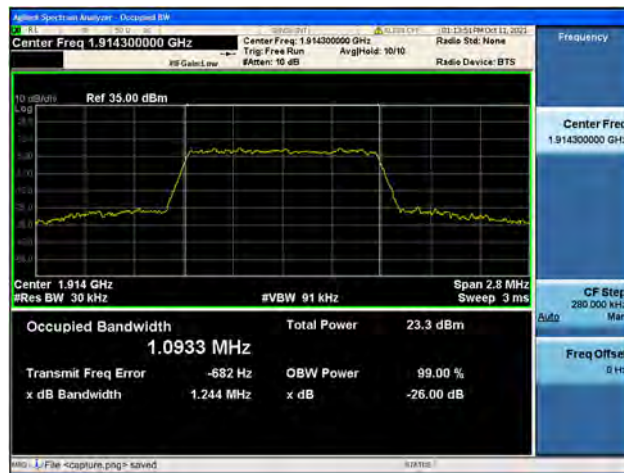
Band25 / 1.4MHz / High CH / QPSK



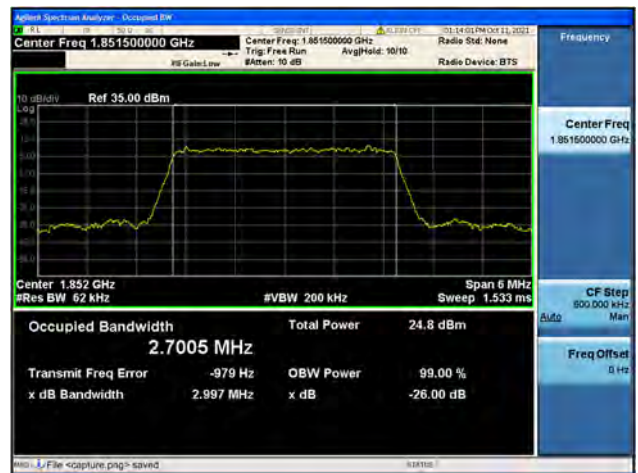
Band25 / 1.4MHz / High CH / 16QAM



Band25 / 1.4MHz / High CH / 64QAM



Band25 / 3MHz / Low CH / QPSK

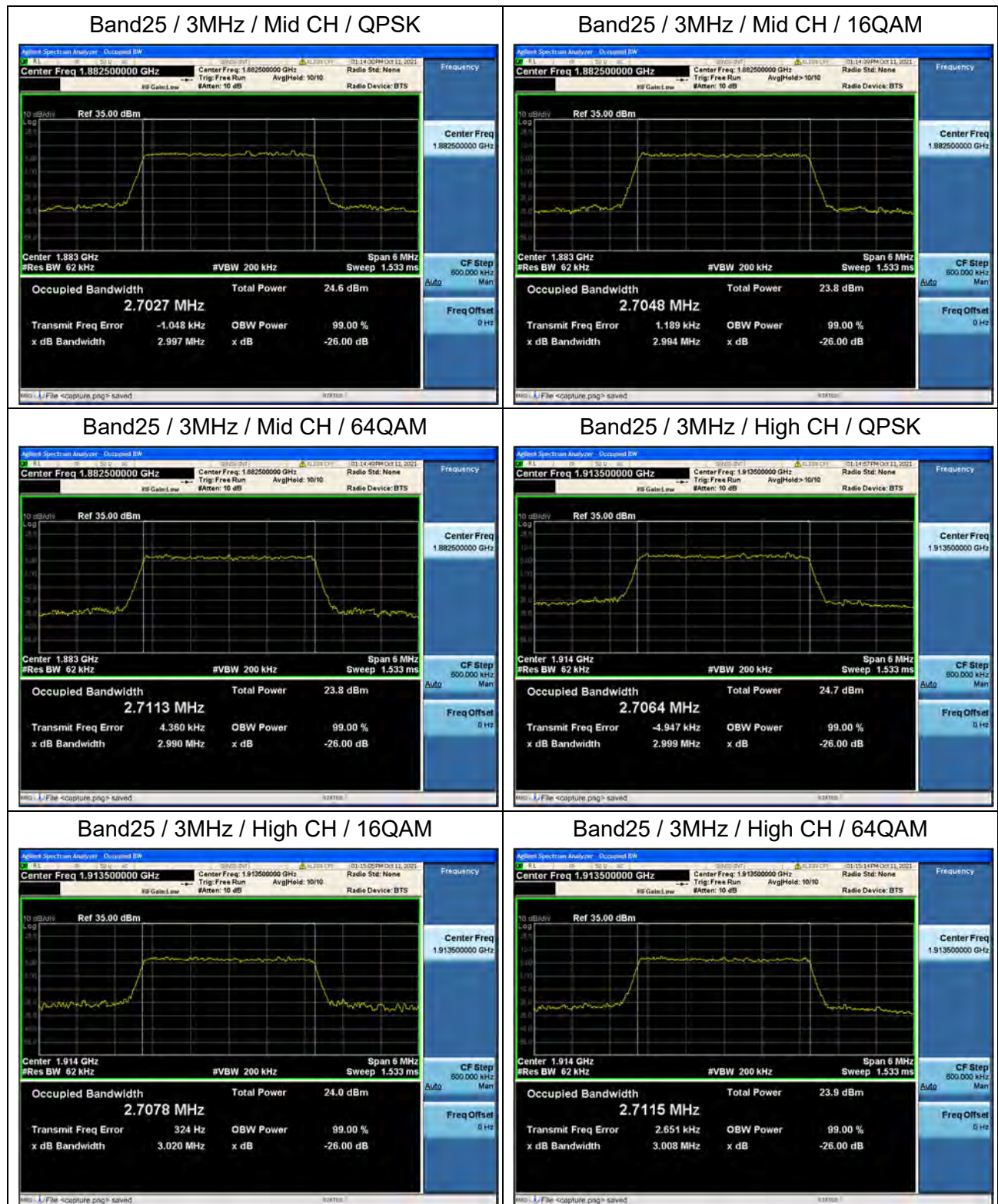


Band25 / 3MHz / Low CH / 16QAM



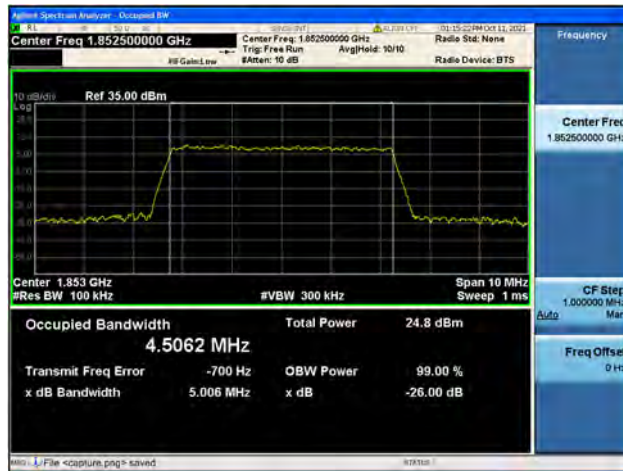
Band25 / 3MHz / Low CH / 64QAM



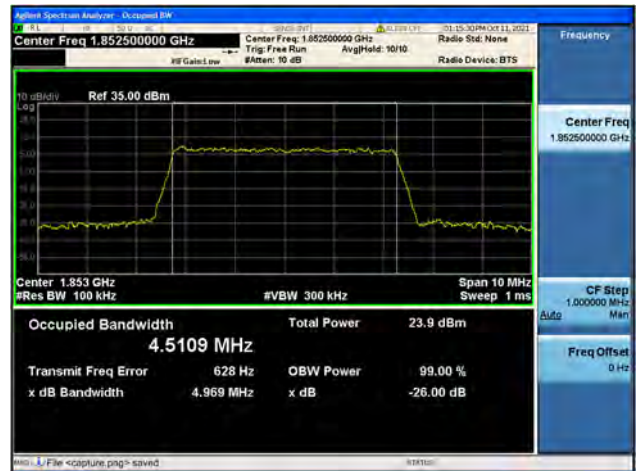




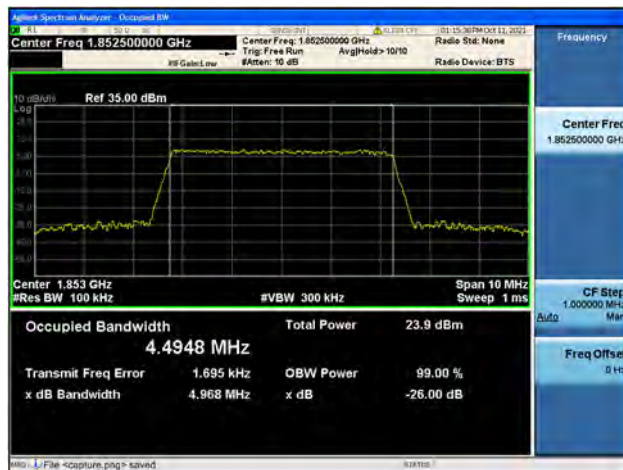
Band25 / 5MHz / Low CH / QPSK



Band25 / 5MHz / Low CH / 16QAM



Band25 / 5MHz / Low CH / 64QAM



Band25 / 5MHz / Mid CH / QPSK



Band25 / 5MHz / Mid CH / 16QAM

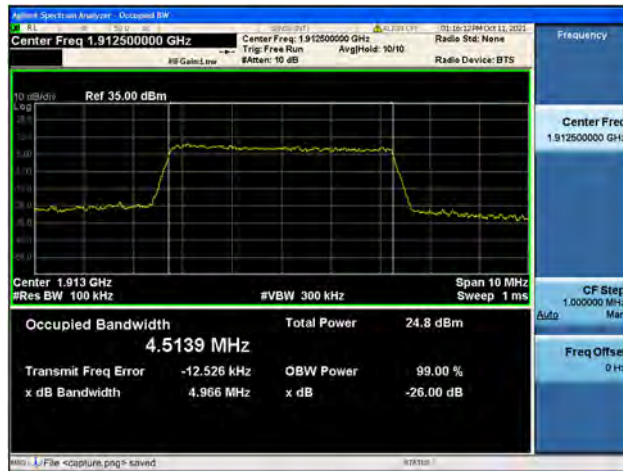


Band25 / 5MHz / Mid CH / 64QAM

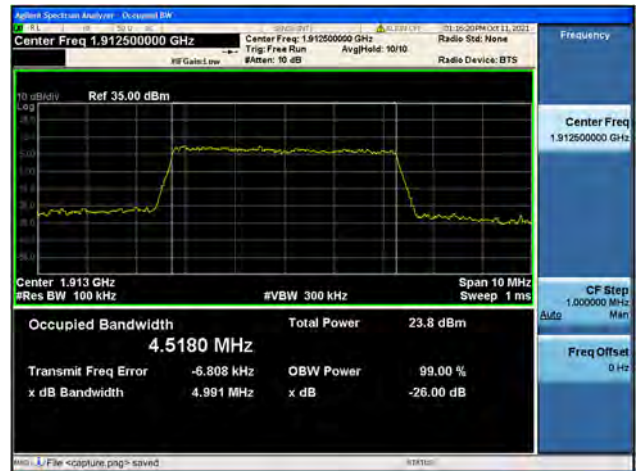




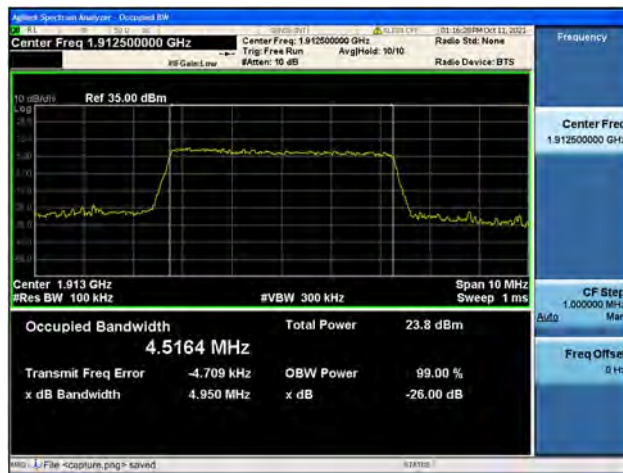
Band25 / 5MHz / High CH / QPSK



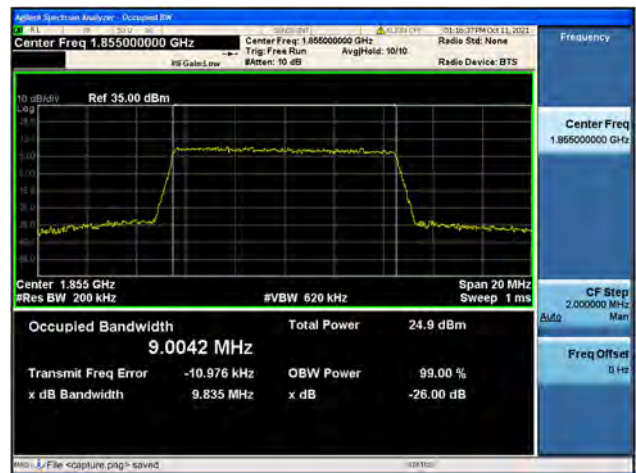
Band25 / 5MHz / High CH / 16QAM



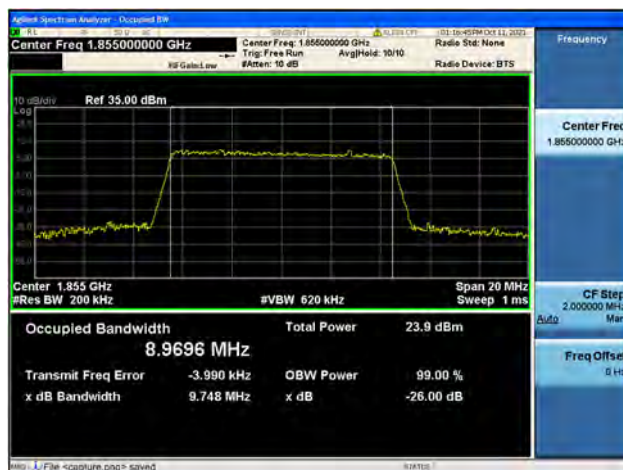
Band25 / 5MHz / High CH / 64QAM



Band25 / 10MHz / Low CH / QPSK



Band25 / 10MHz / Low CH / 16QAM

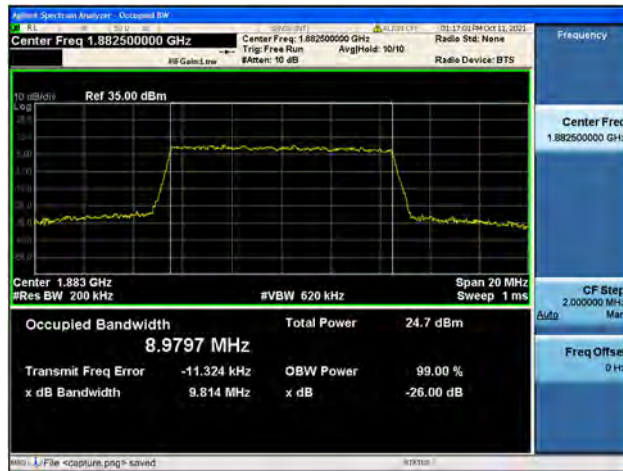


Band25 / 10MHz / Low CH / 64QAM

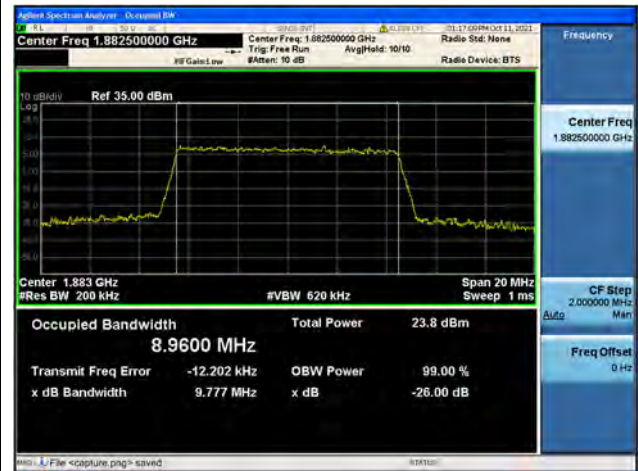




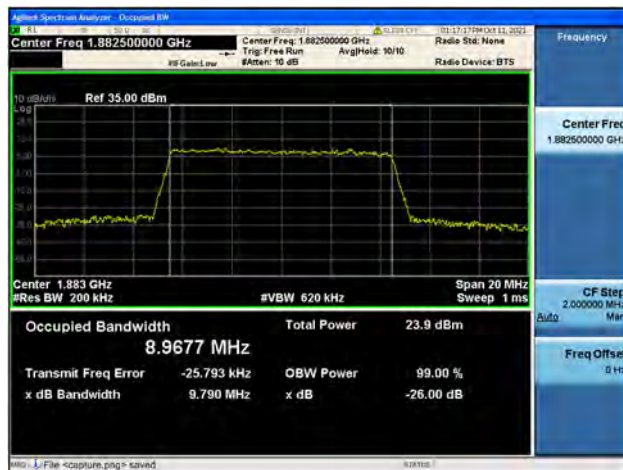
Band25 / 10MHz / Mid CH / QPSK



Band25 / 10MHz / Mid CH / 16QAM



Band25 / 10MHz / Mid CH / 64QAM



Band25 / 10MHz / High CH / QPSK



Band25 / 10MHz / High CH / 16QAM

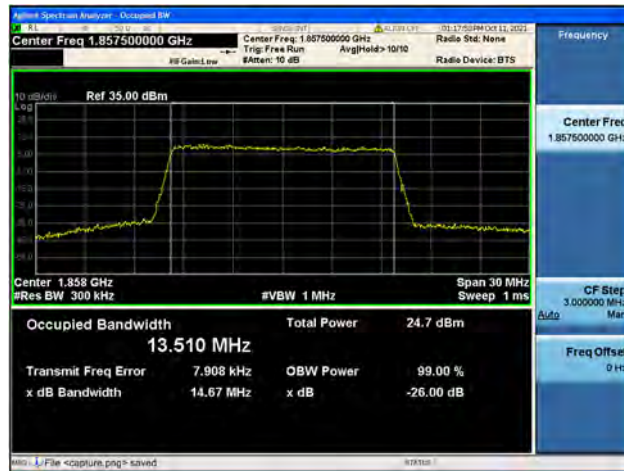


Band25 / 10MHz / High CH / 64QAM

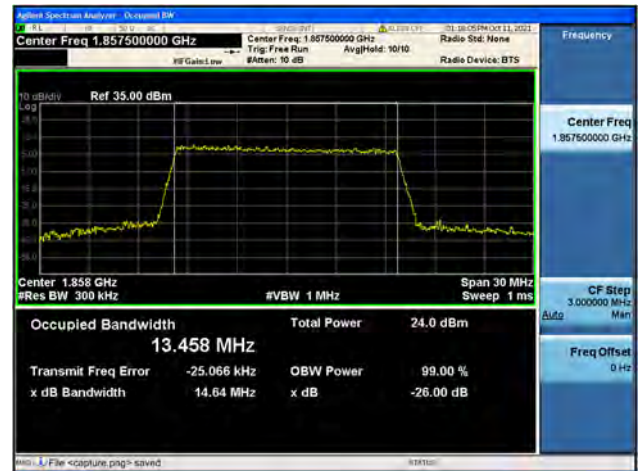




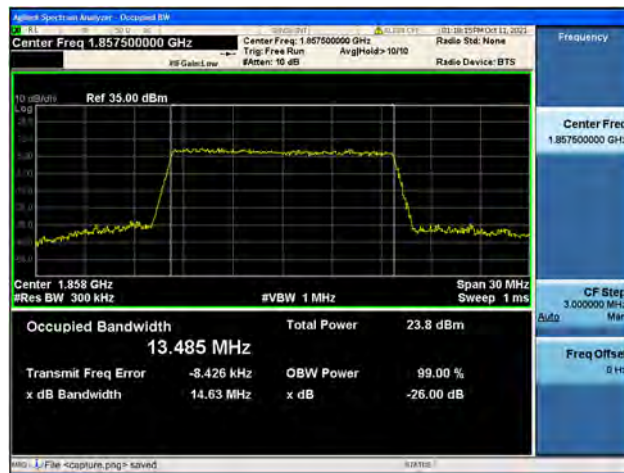
Band25 / 15MHz / Low CH / QPSK



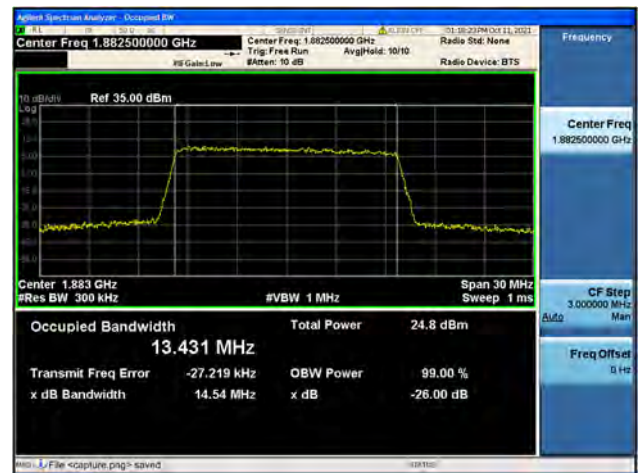
Band25 / 15MHz / Low CH / 16QAM



Band25 / 15MHz / Low CH / 64QAM



Band25 / 15MHz / Mid CH / QPSK



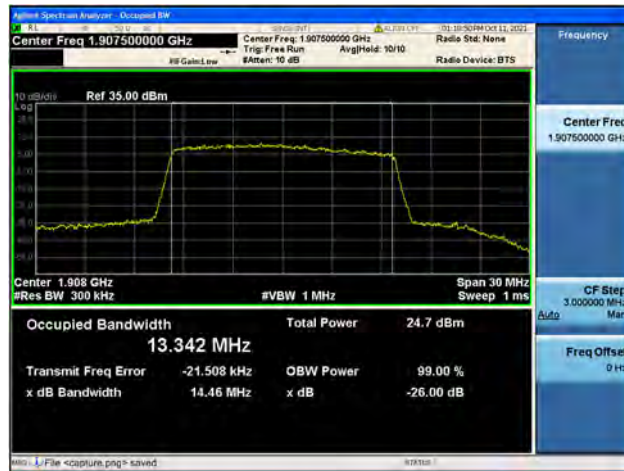
Band25 / 15MHz / Mid CH / 16QAM



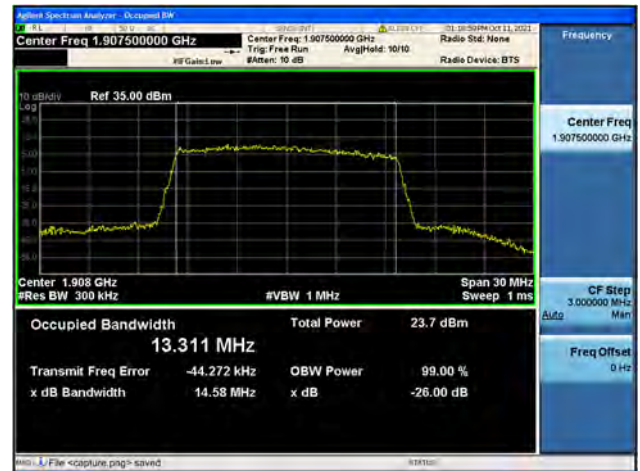
Band25 / 15MHz / Mid CH / 64QAM



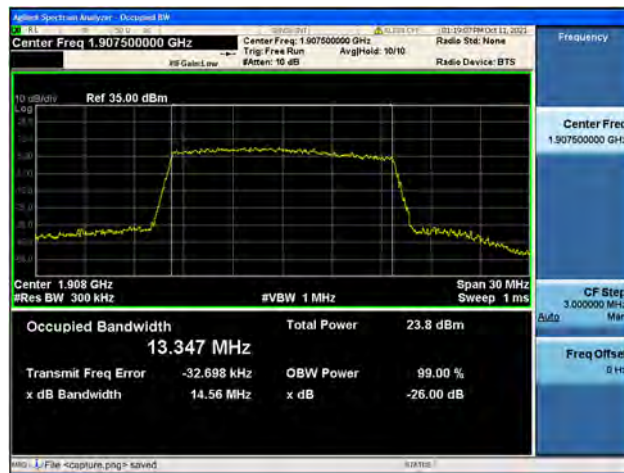
Band25 / 15MHz / High CH / QPSK



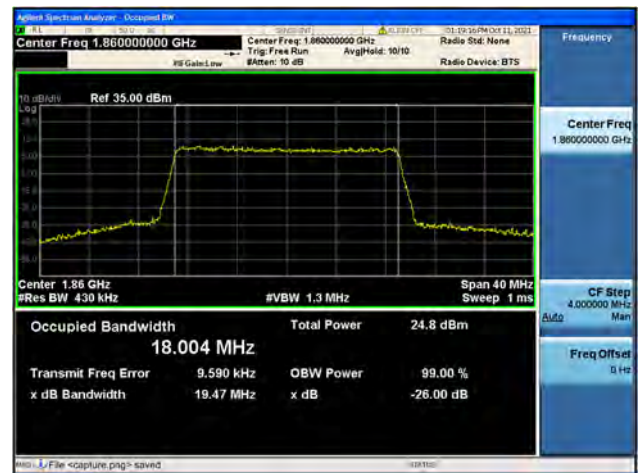
Band25 / 15MHz / High CH / 16QAM



Band25 / 15MHz / High CH / 64QAM



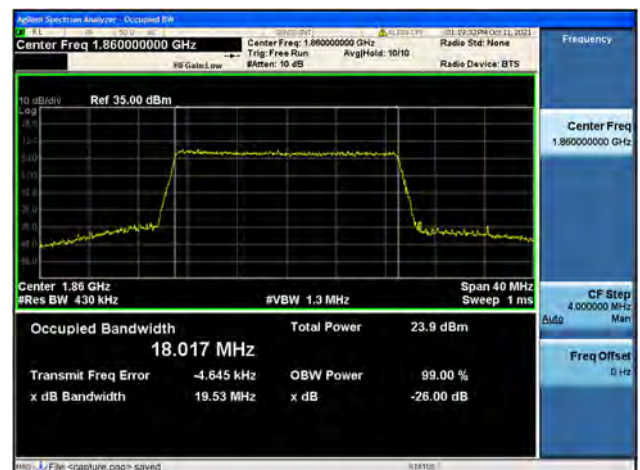
Band25 / 20MHz / Low CH / QPSK



Band25 / 20MHz / Low CH / 16QAM

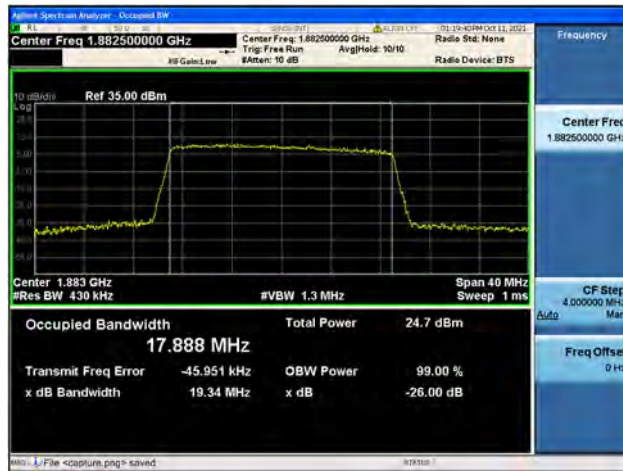


Band25 / 20MHz / Low CH / 64QAM

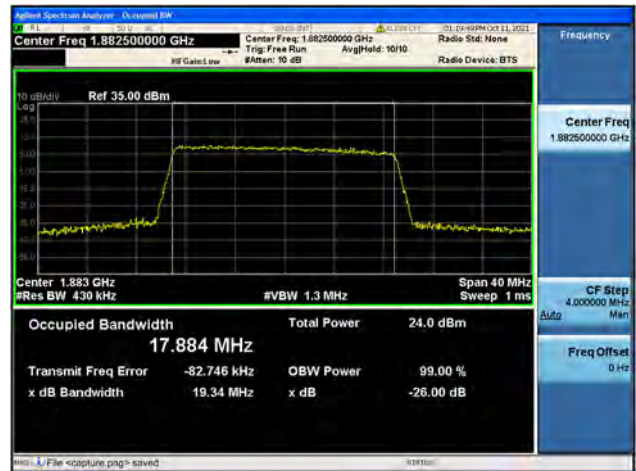




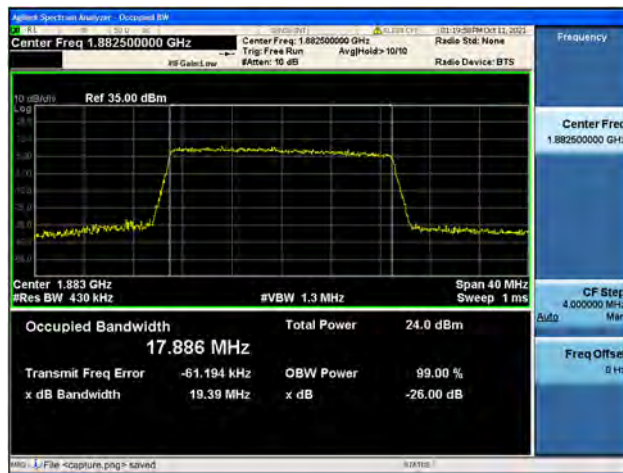
Band25 / 20MHz / Mid CH / QPSK



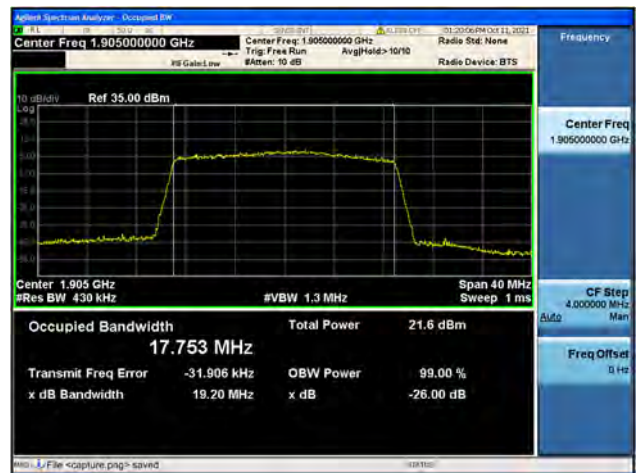
Band25 / 20MHz / Mid CH / 16QAM



Band25 / 20MHz / Mid CH / 64QAM



Band25 / 20MHz / High CH / QPSK



Band25 / 20MHz / High CH / 16QAM



Band25 / 20MHz / High CH / 64QAM





Band26 / 1.4MHz / Low CH / QPSK



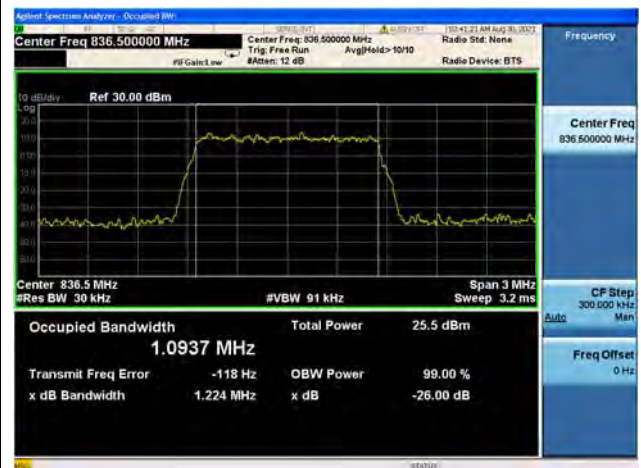
Band26 / 1.4MHz / Low CH / 16QAM



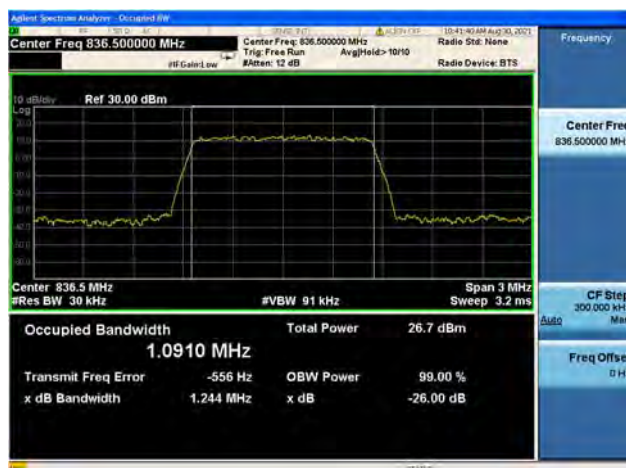
Band26 / 1.4MHz / Low CH / 64QAM



Band26 / 1.4MHz / Mid CH / QPSK



Band26 / 1.4MHz / Mid CH / 16QAM



Band26 / 1.4MHz / Mid CH / 64QAM

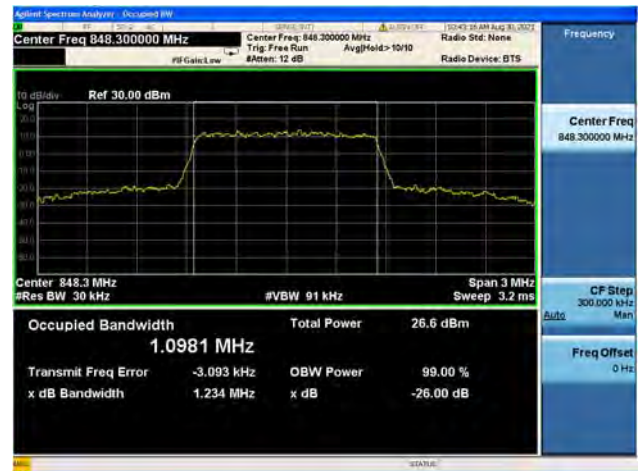




Band26 / 1.4MHz / High CH / QPSK



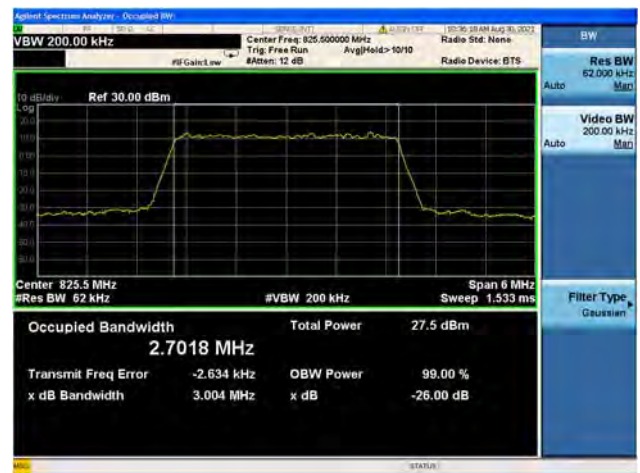
Band26 / 1.4MHz / High CH / 16QAM



Band26 / 1.4MHz / High CH / 64QAM



Band26 / 3MHz / Low CH / QPSK



Band26 / 3MHz / Low CH / 16QAM



Band26 / 3MHz / Low CH / 64QAM

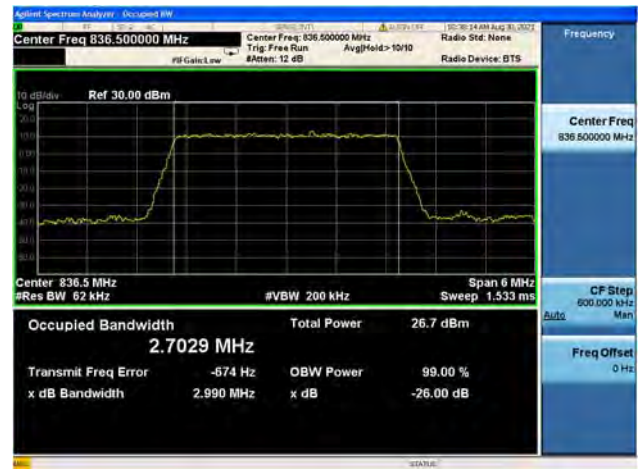




Band26 / 3MHz / Mid CH / QPSK



Band26 / 3MHz / Mid CH / 16QAM



Band26 / 3MHz / Mid CH / 64QAM



Band26 / 3MHz / High CH / QPSK



Band26 / 3MHz / High CH / 16QAM



Band26 / 3MHz / High CH / 64QAM





Band26 / 5MHz / Low CH / QPSK



Band26 / 5MHz / Low CH / 16QAM



Band26 / 5MHz / Low CH / 64QAM



Band26 / 5MHz / Mid CH / QPSK



Band26 / 5MHz / Mid CH / 16QAM



Band26 / 5MHz / Mid CH / 64QAM





Band26 / 5MHz / High CH / QPSK



Band26 / 5MHz / High CH / 16QAM



Band26 / 5MHz / High CH / 64QAM



Band26 / 10MHz / Low CH / QPSK



Band26 / 10MHz / Low CH / 16QAM



Band26 / 10MHz / Low CH / 64QAM





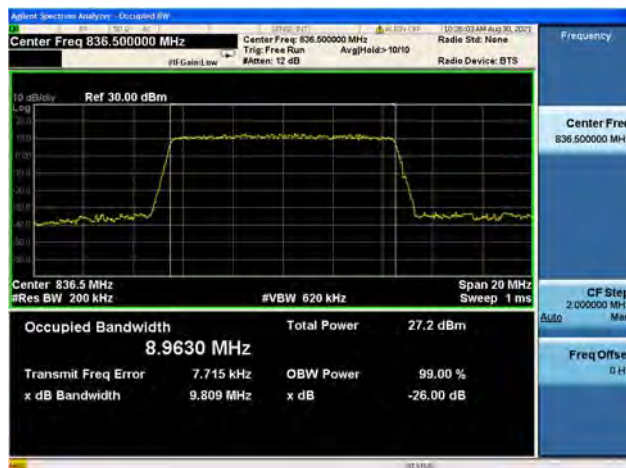
Band26 / 10MHz / Mid CH / QPSK



Band26 / 10MHz / Mid CH / 16QAM



Band26 / 10MHz / Mid CH / 64QAM



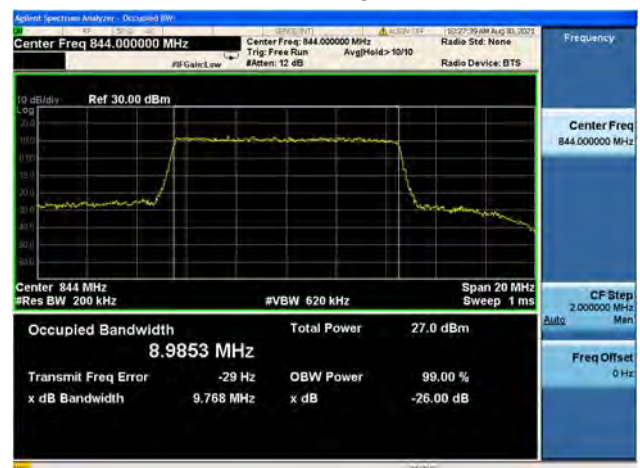
Band26 / 10MHz / High CH / QPSK



Band26 / 10MHz / High CH / 16QAM



Band26 / 10MHz / High CH / 64QAM





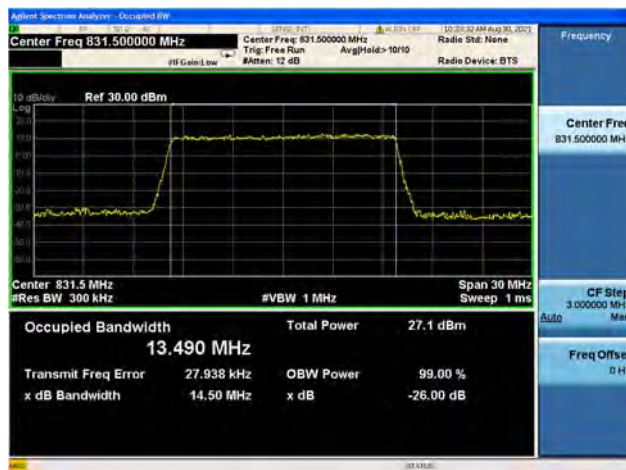
Band26 / 15MHz / Low CH / QPSK



Band26 / 15MHz / Low CH / 16QAM



Band26 / 15MHz / Low CH / 64QAM



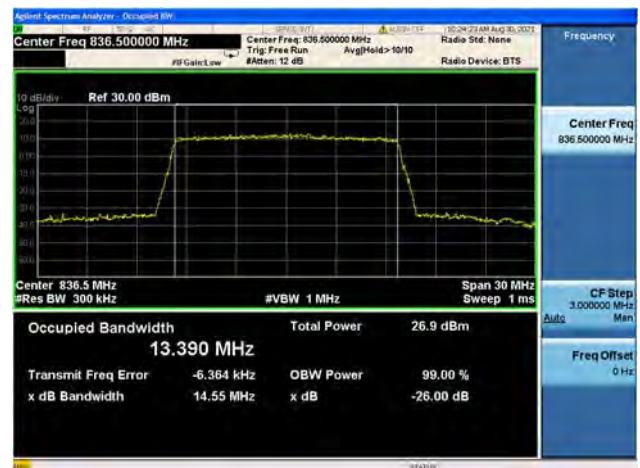
Band26 / 15MHz / Mid CH / QPSK



Band26 / 15MHz / Mid CH / 16QAM



Band26 / 15MHz / Mid CH / 64QAM





## Band26 / 15MHz / High CH / QPSK



## Band26 / 15MHz / High CH / 16QAM

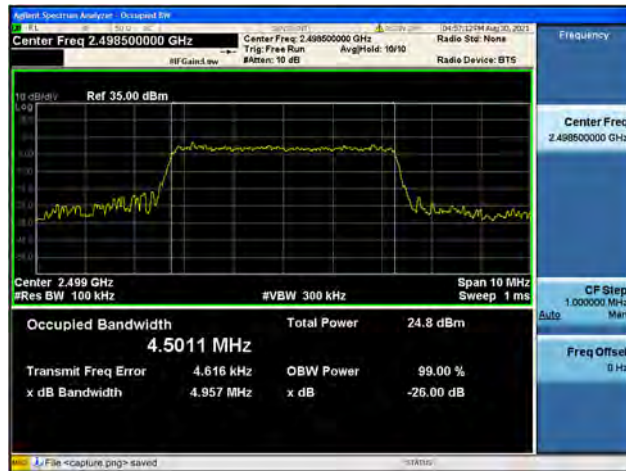


## Band26 / 15MHz / High CH / 64QAM





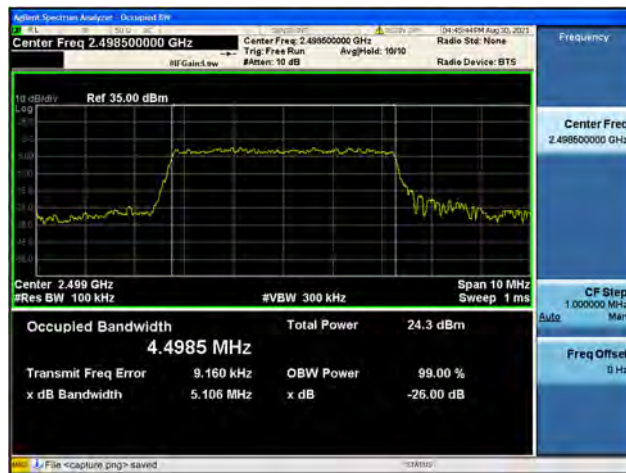
Band41 / 5MHz / Low CH / QPSK



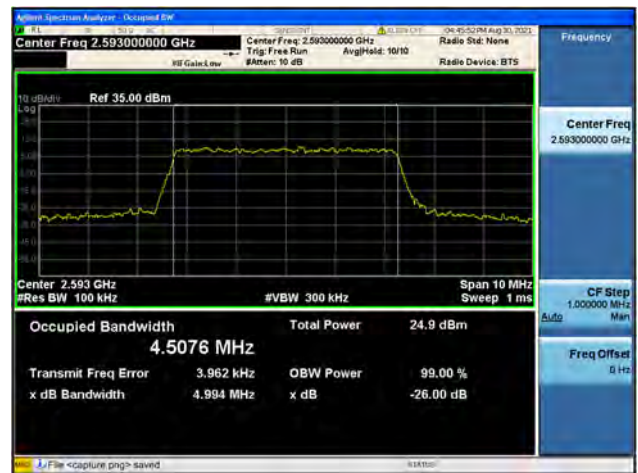
Band41 / 5MHz / Low CH / 16QAM



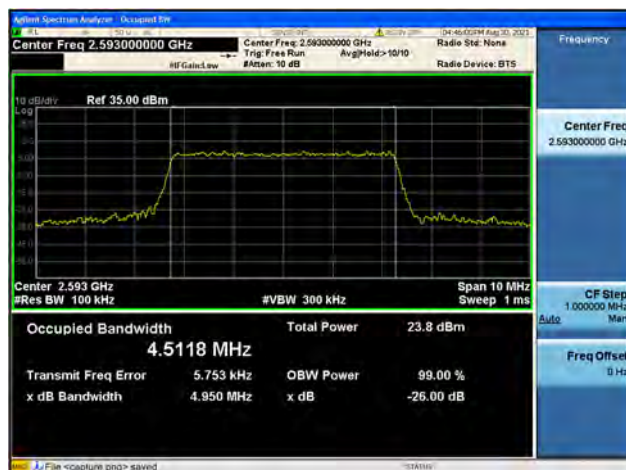
Band41 / 5MHz / Low CH / 64QAM



Band41 / 5MHz / Mid CH / QPSK



Band41 / 5MHz / Mid CH / 16QAM



Band41 / 5MHz / Mid CH / 64QAM

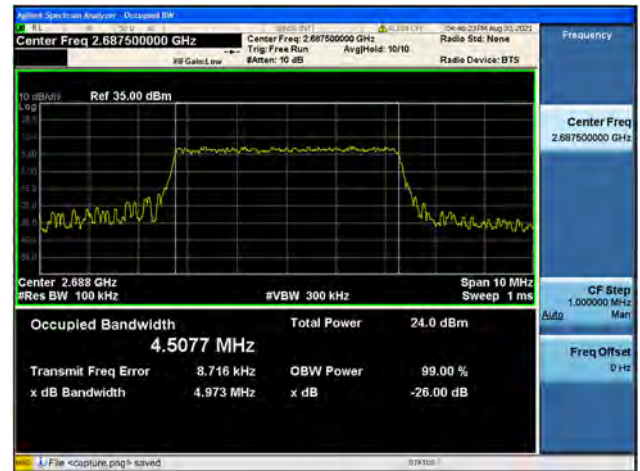




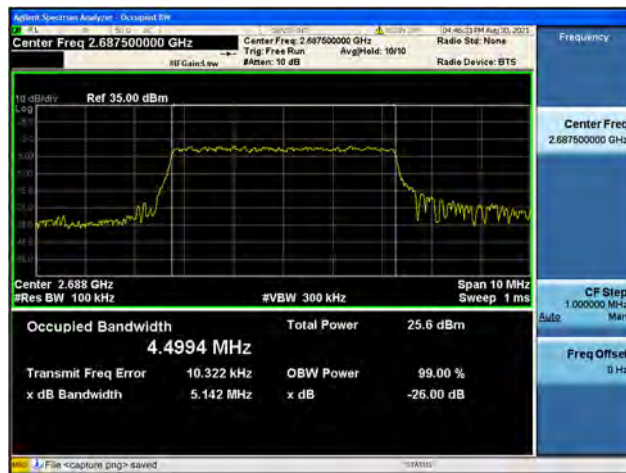
Band41 / 5MHz / High CH / QPSK



Band41 / 5MHz / High CH / 16QAM



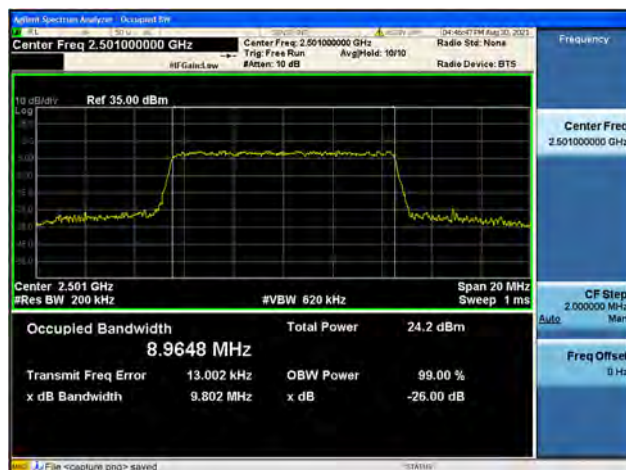
Band41 / 5MHz / High CH / 64QAM



Band41 / 10MHz / Low CH / QPSK



Band41 / 10MHz / Low CH / 16QAM

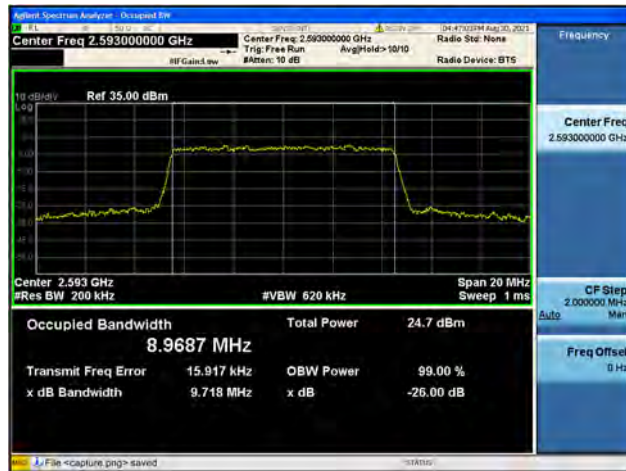


Band41 / 10MHz / Low CH / 64QAM





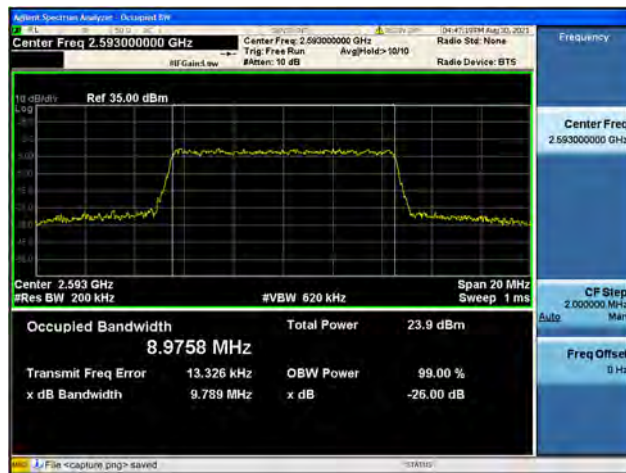
Band41 / 10MHz / Mid CH / QPSK



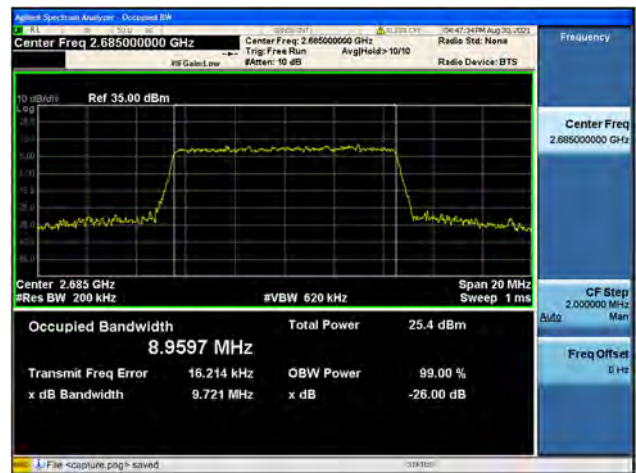
Band41 / 10MHz / Mid CH / 16QAM



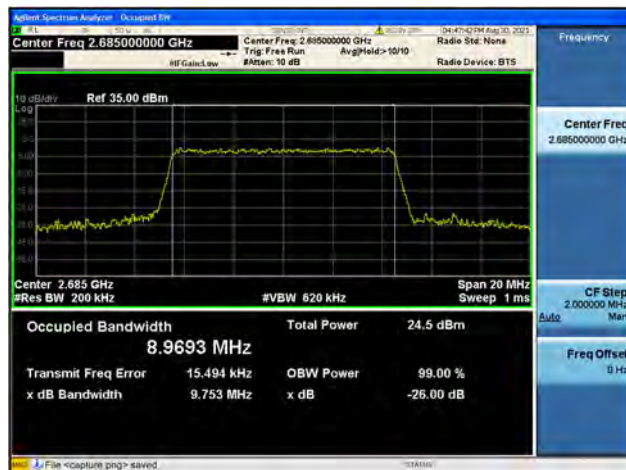
Band41 / 10MHz / Mid CH / 64QAM



Band41 / 10MHz / High CH / QPSK



Band41 / 10MHz / High CH / 16QAM

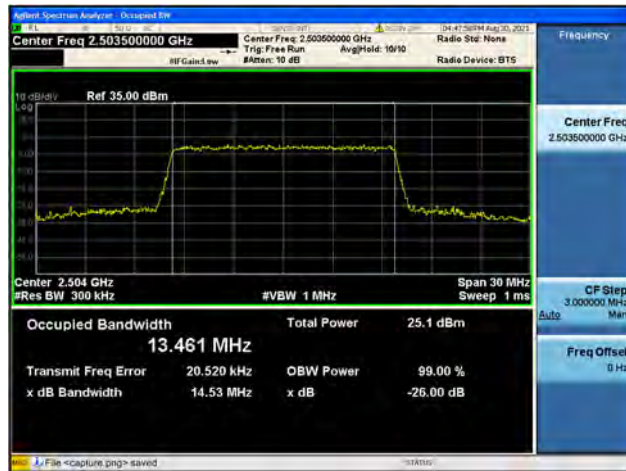


Band41 / 10MHz / High CH / 64QAM

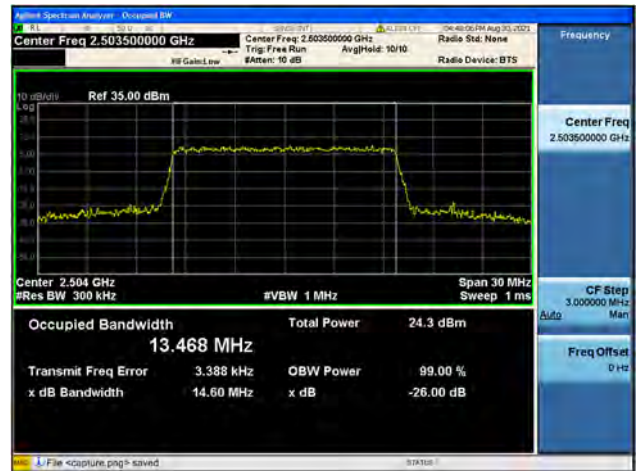




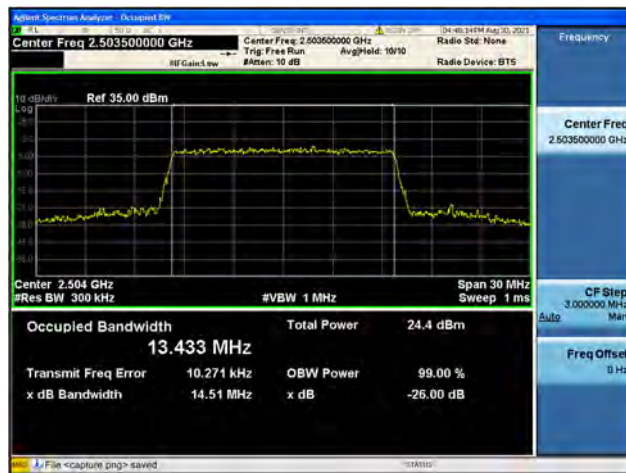
Band41 / 15MHz / Low CH / QPSK



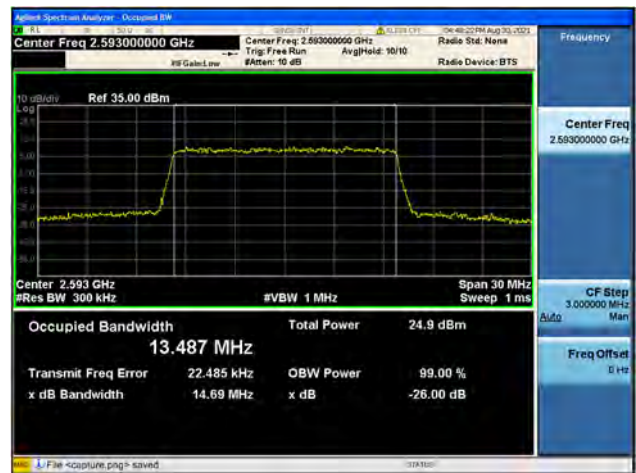
Band41 / 15MHz / Low CH / 16QAM



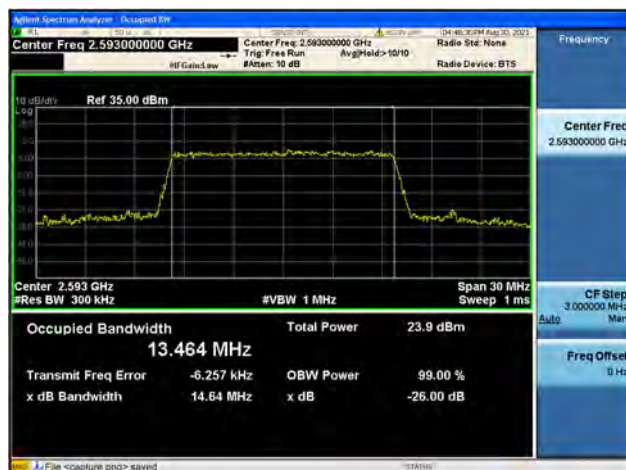
Band41 / 15MHz / Low CH / 64QAM



Band41 / 15MHz / Mid CH / QPSK



Band41 / 15MHz / Mid CH / 16QAM

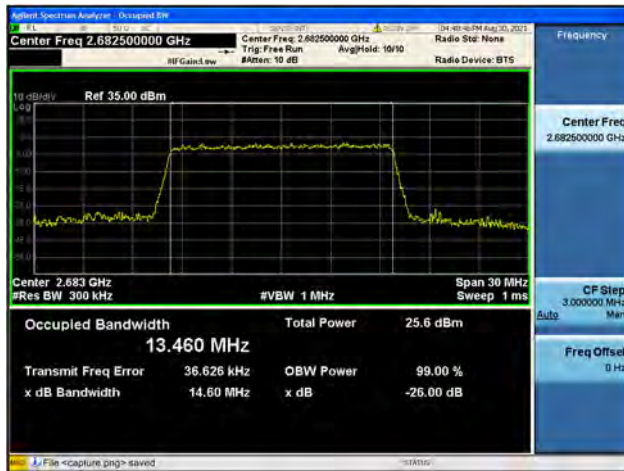


Band41 / 15MHz / Mid CH / 64QAM

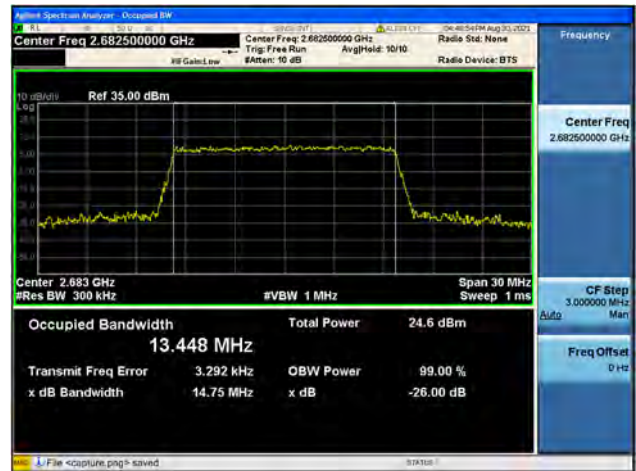




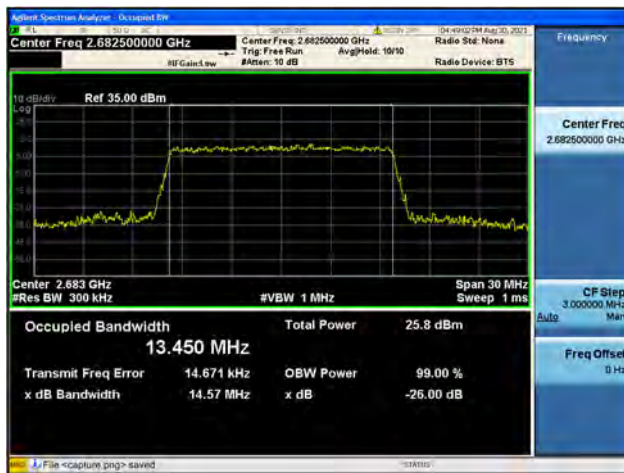
Band41 / 15MHz / High CH / QPSK



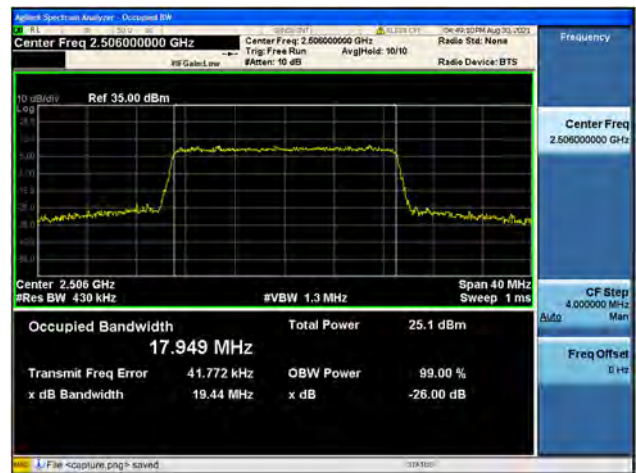
Band41 / 15MHz / High CH / 16QAM



Band41 / 15MHz / High CH / 64QAM



Band41 / 20MHz / Low CH / QPSK



Band41 / 20MHz / Low CH / 16QAM

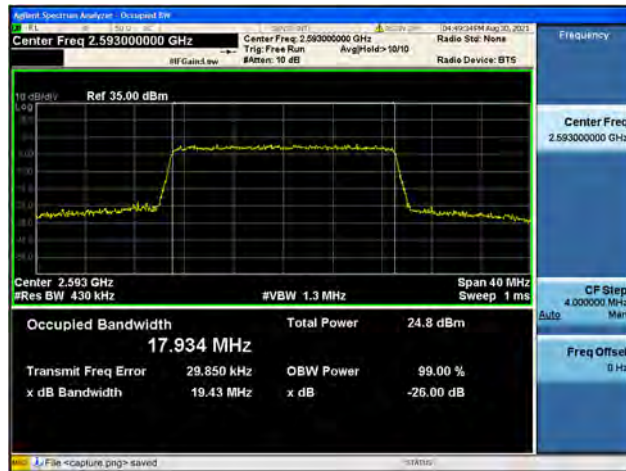


Band41 / 20MHz / Low CH / 64QAM

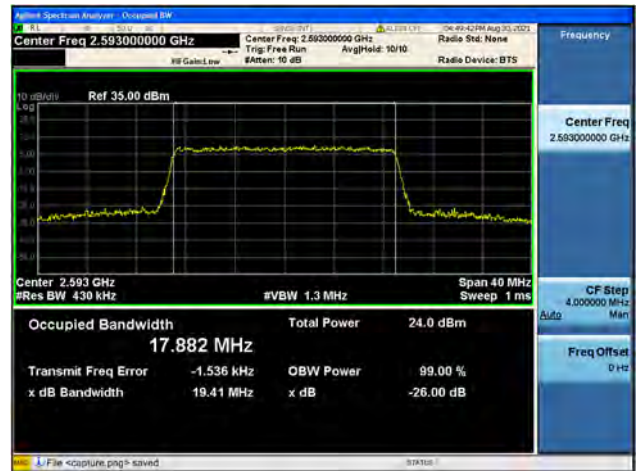




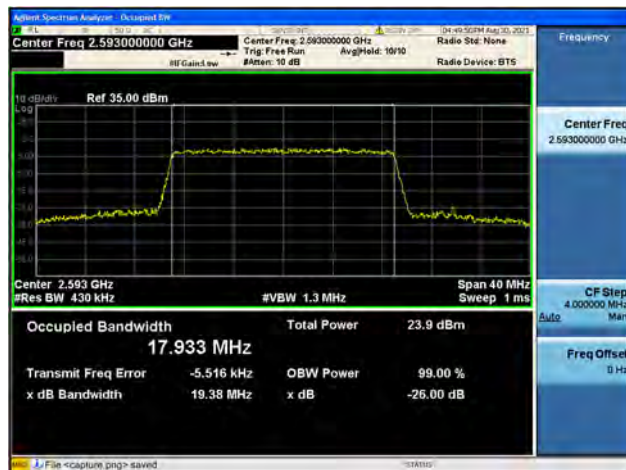
Band41 / 20MHz / Mid CH / QPSK



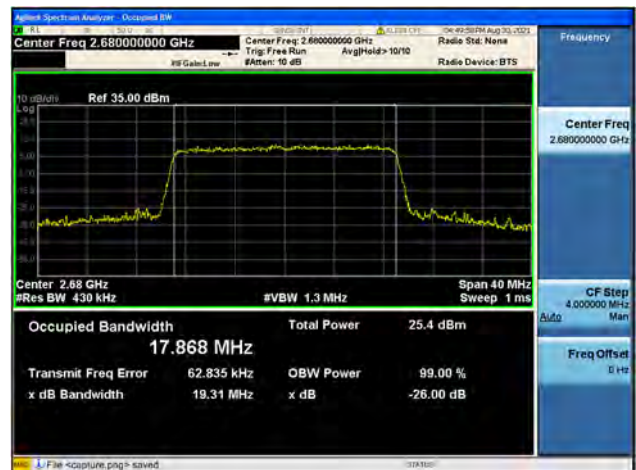
Band41 / 20MHz / Mid CH / 16QAM



Band41 / 20MHz / Mid CH / 64QAM



Band41 / 20MHz / High CH / QPSK



Band41 / 20MHz / High CH / 16QAM

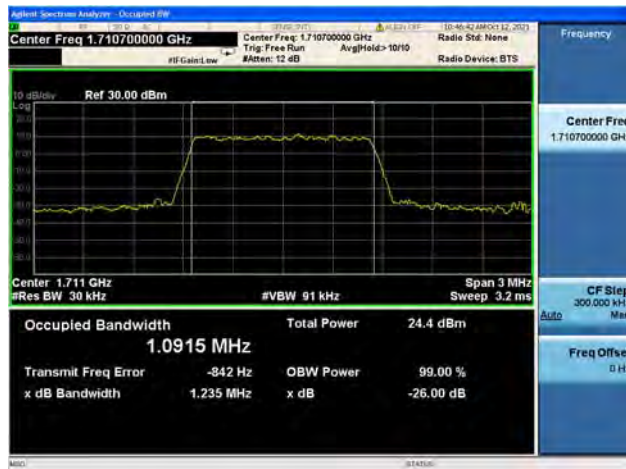


Band41 / 20MHz / High CH / 64QAM





Band66 / 1.4MHz / Low CH / QPSK



Band66 / 1.4MHz / Low CH / 16QAM



Band66 / 1.4MHz / Low CH / 64QAM



Band66 / 1.4MHz / Mid CH / QPSK



Band66 / 1.4MHz / Mid CH / 16QAM

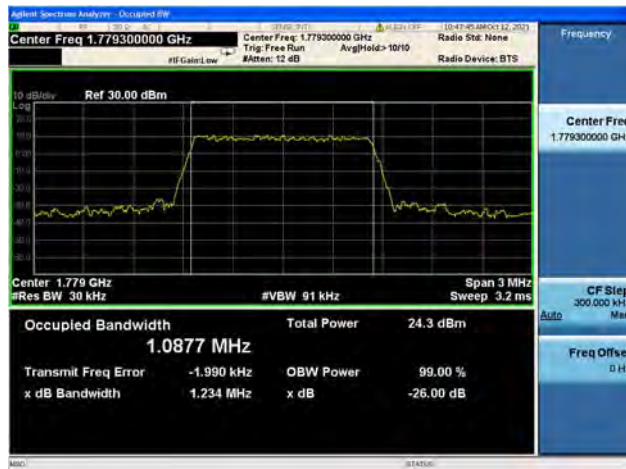


Band66 / 1.4MHz / Mid CH / 64QAM





Band66 / 1.4MHz / High CH / QPSK



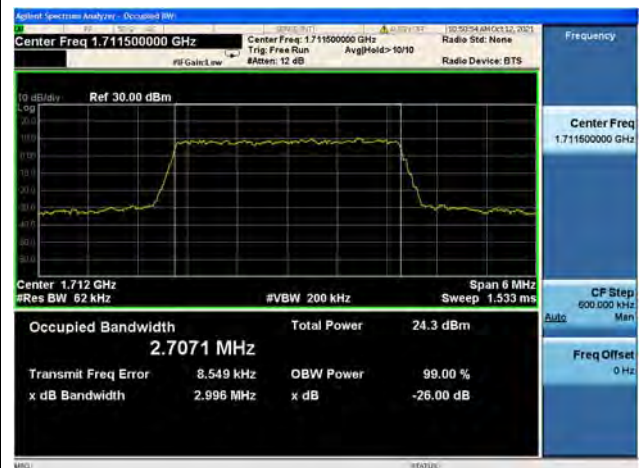
Band66 / 1.4MHz / High CH / 16QAM



Band66 / 1.4MHz / High CH / 64QAM



Band66 / 3MHz / Low CH / QPSK



Band66 / 3MHz / Low CH / 16QAM



Band66 / 3MHz / Low CH / 64QAM

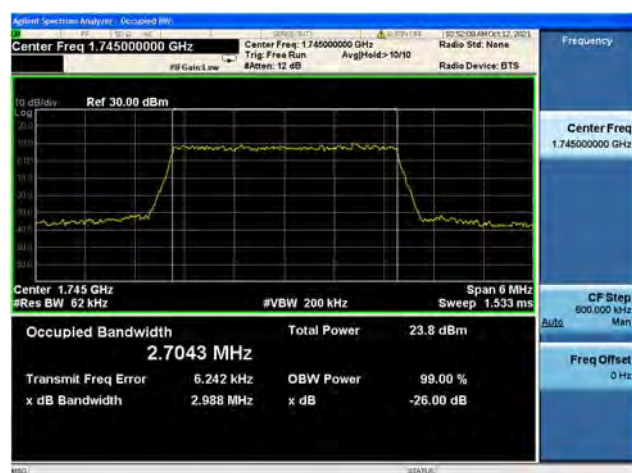




Band66 / 3MHz / Mid CH / QPSK



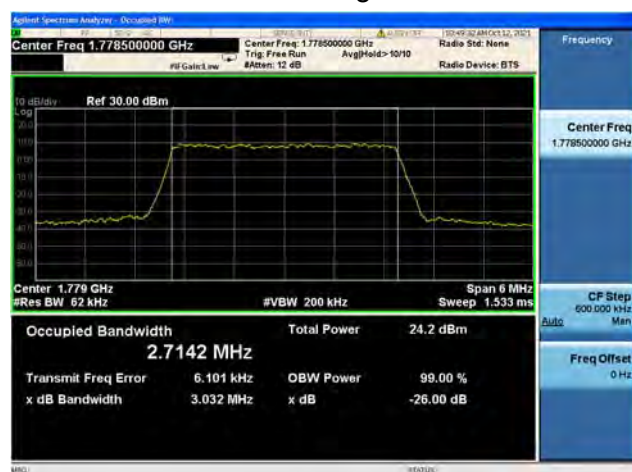
Band66 / 3MHz / Mid CH / 16QAM



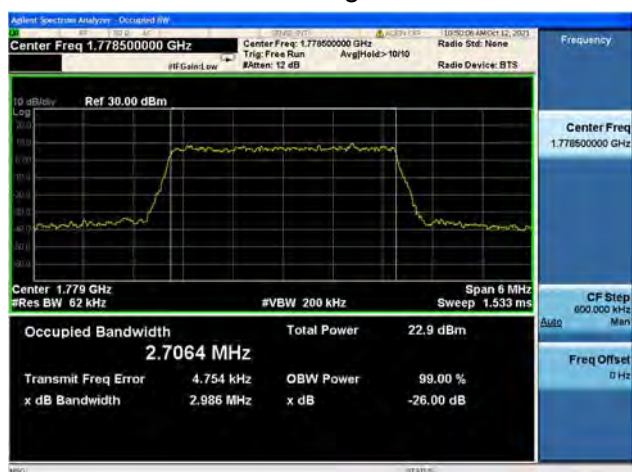
Band66 / 3MHz / Mid CH / 64QAM



Band66 / 3MHz / High CH / QPSK



Band66 / 3MHz / High CH / 16QAM



Band66 / 3MHz / High CH / 64QAM





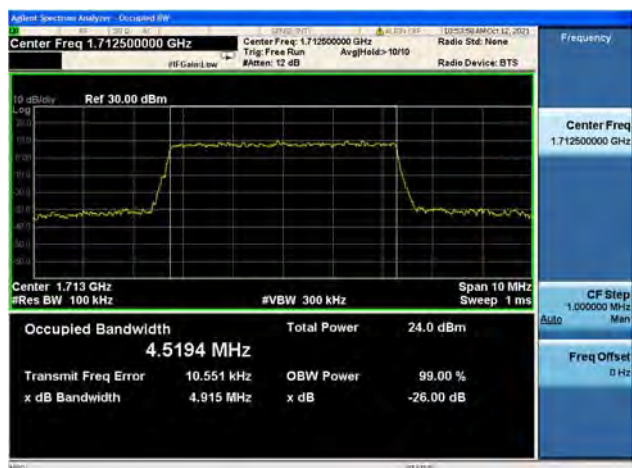
Band66 / 5MHz / Low CH / QPSK



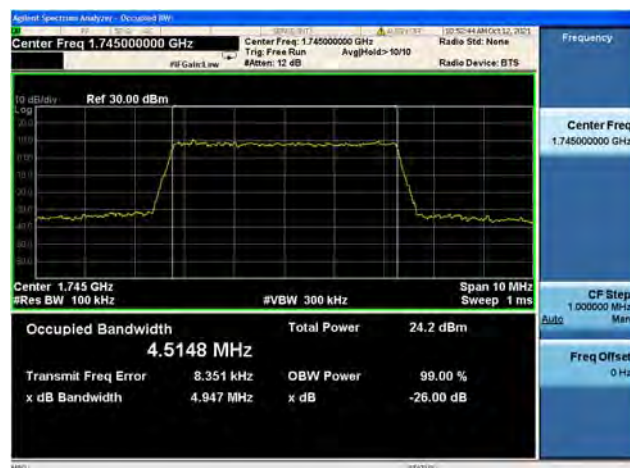
Band66 / 5MHz / Low CH / 16QAM



Band66 / 5MHz / Low CH / 64QAM



Band66 / 5MHz / Mid CH / QPSK



Band66 / 5MHz / Mid CH / 16QAM

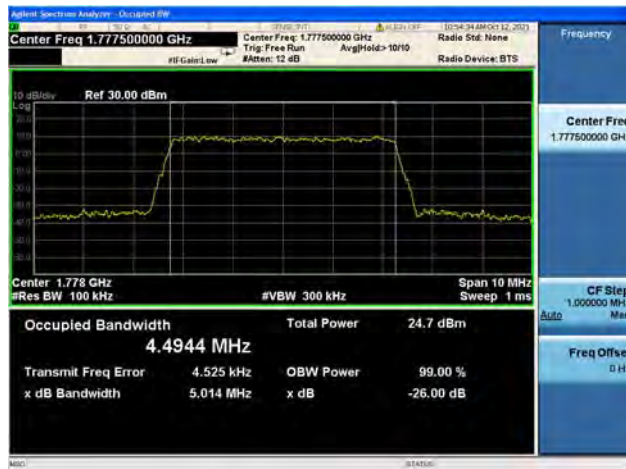


Band66 / 5MHz / Mid CH / 64QAM





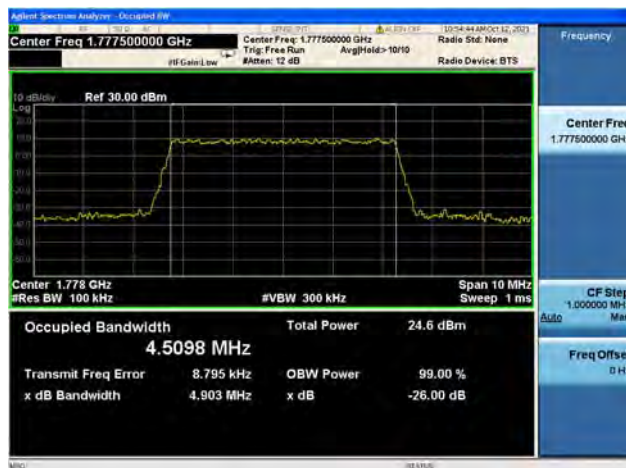
Band66 / 5MHz / High CH / QPSK



Band66 / 5MHz / High CH / 16QAM



Band66 / 5MHz / High CH / 64QAM



Band66 / 10MHz / Low CH / QPSK



Band66 / 10MHz / Low CH / 16QAM



Band66 / 10MHz / Low CH / 64QAM





Band66 / 10MHz / Mid CH / QPSK



Band66 / 10MHz / Mid CH / 16QAM



Band66 / 10MHz / Mid CH / 64QAM



Band66 / 10MHz / High CH / QPSK



Band66 / 10MHz / High CH / 16QAM

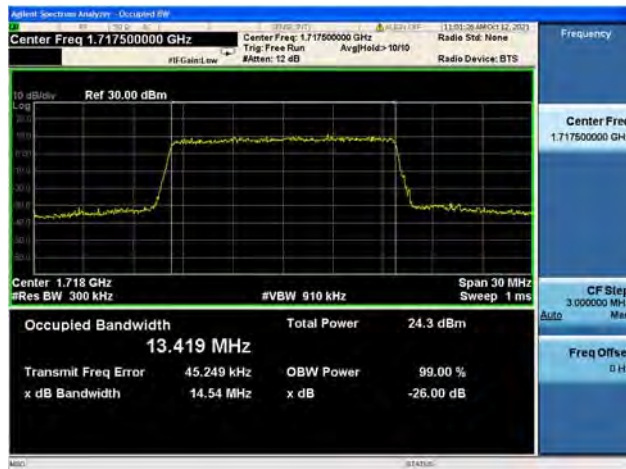


Band66 / 10MHz / High CH / 64QAM





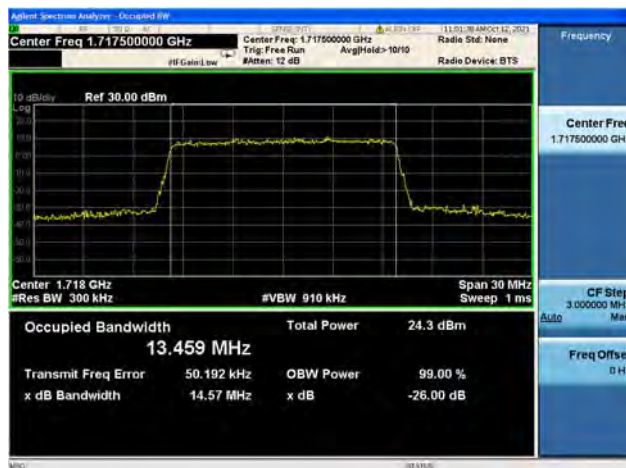
Band66 / 15MHz / Low CH / QPSK



Band66 / 15MHz / Low CH / 16QAM



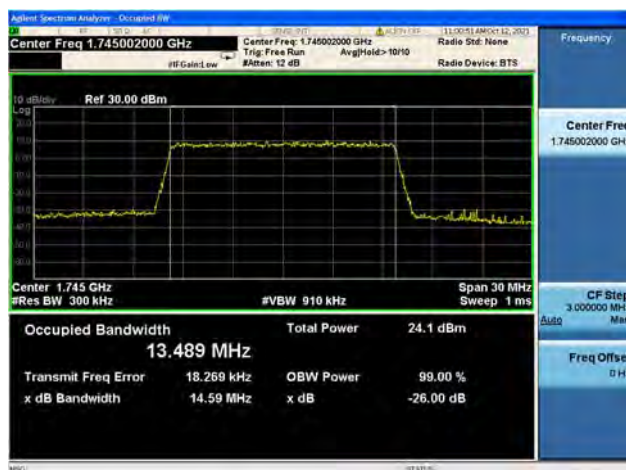
Band66 / 15MHz / Low CH / 64QAM



Band66 / 15MHz / Mid CH / QPSK



Band66 / 15MHz / Mid CH / 16QAM

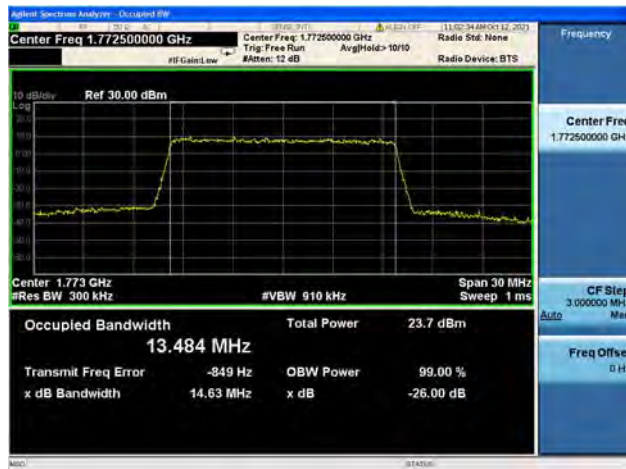


Band66 / 15MHz / Mid CH / 64QAM





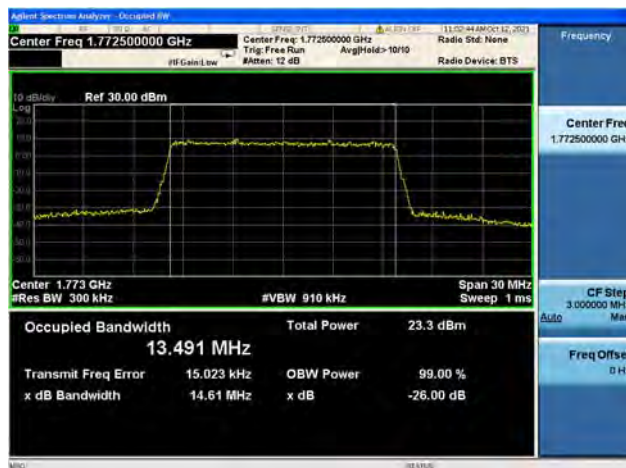
Band66 / 15MHz / High CH / QPSK



Band66 / 15MHz / High CH / 16QAM



Band66 / 15MHz / High CH / 64QAM



Band66 / 20MHz / Low CH / QPSK



Band66 / 20MHz / Low CH / 16QAM



Band66 / 20MHz / Low CH / 64QAM





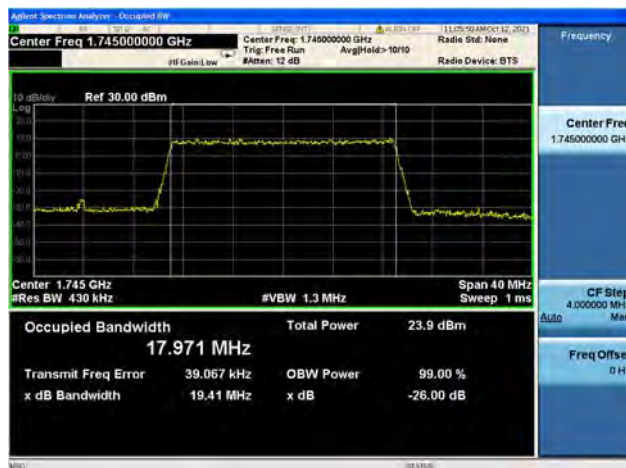
Band66 / 20MHz / Mid CH / QPSK



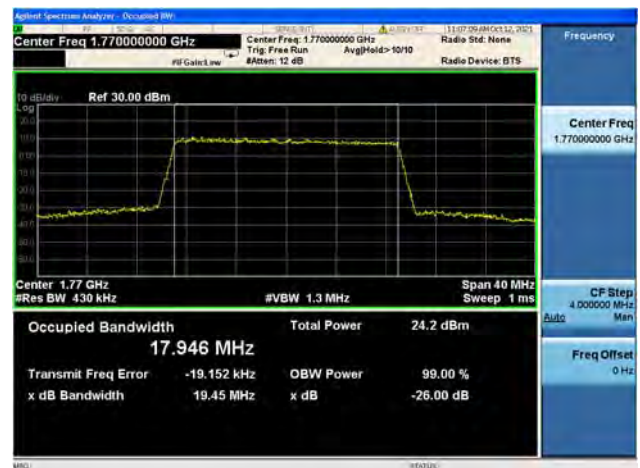
Band66 / 20MHz / Mid CH / 16QAM



Band66 / 20MHz / Mid CH / 64QAM



Band66 / 20MHz / High CH / QPSK



Band66 / 20MHz / High CH / 16QAM



Band66 / 20MHz / High CH / 64QAM





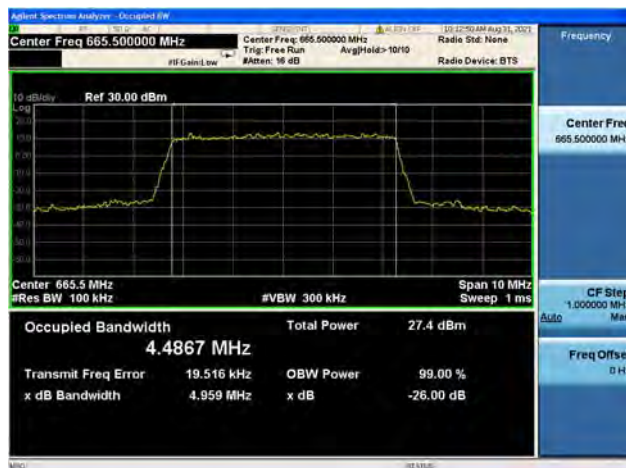
Band71 / 5MHz / Low CH / QPSK



Band71 / 5MHz / Low CH / 16QAM



Band71 / 5MHz / Low CH / 64QAM



Band71 / 5MHz / Mid CH / QPSK



Band71 / 5MHz / Mid CH / 16QAM



Band71 / 5MHz / Mid CH / 64QAM





Band71 / 5MHz / High CH / QPSK



Band71 / 5MHz / High CH / 16QAM



Band71 / 5MHz / High CH / 64QAM



Band71 / 10MHz / Low CH / QPSK



Band71 / 10MHz / Low CH / 16QAM



Band71 / 10MHz / Low CH / 64QAM





Band71 / 10MHz / Mid CH / QPSK



Band71 / 10MHz / Mid CH / 16QAM



Band71 / 10MHz / Mid CH / 64QAM



Band71 / 10MHz / High CH / QPSK



Band71 / 10MHz / High CH / 16QAM



Band71 / 10MHz / High CH / 64QAM





Band71 / 15MHz / Low CH / QPSK



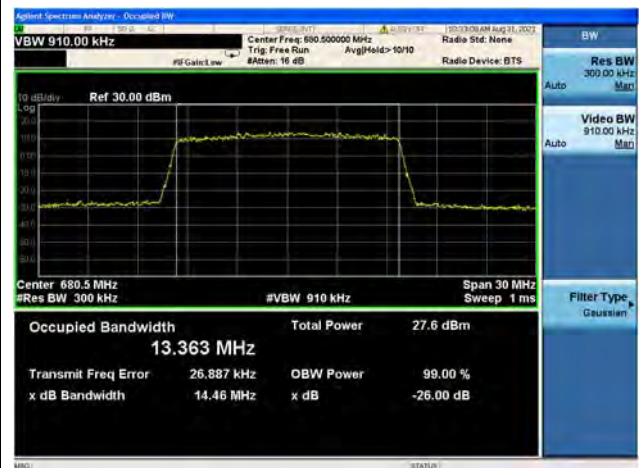
Band71 / 15MHz / Low CH / 16QAM



Band71 / 15MHz / Low CH / 64QAM



Band71 / 15MHz / Mid CH / QPSK



Band71 / 15MHz / Mid CH / 16QAM



Band71 / 15MHz / Mid CH / 64QAM





Band71 / 15MHz / High CH / QPSK



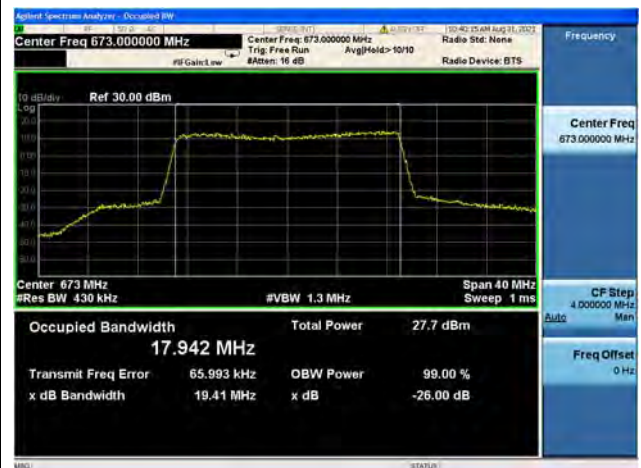
Band71 / 15MHz / High CH / 16QAM



Band71 / 15MHz / High CH / 64QAM



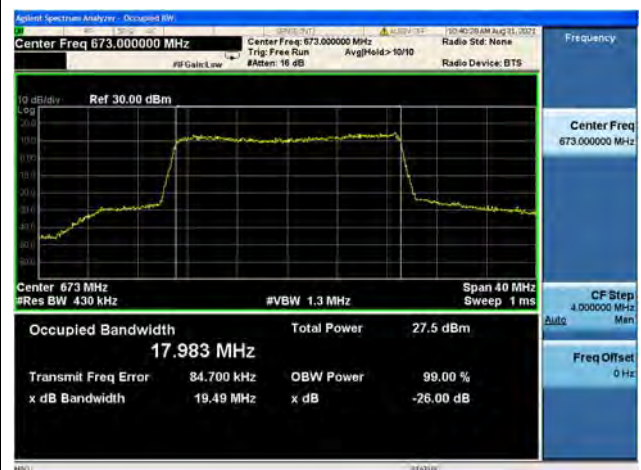
Band71 / 20MHz / Low CH / QPSK



Band71 / 20MHz / Low CH / 16QAM



Band71 / 20MHz / Low CH / 64QAM





Band71 / 20MHz / Mid CH / QPSK



Band71 / 20MHz / Mid CH / 16QAM



Band71 / 20MHz / Mid CH / 64QAM



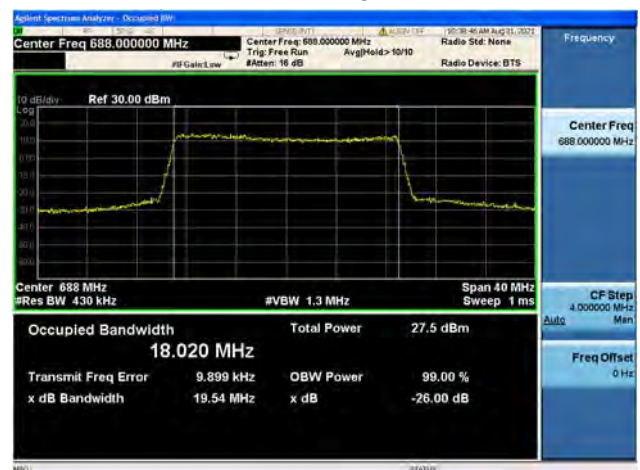
Band71 / 20MHz / High CH / QPSK



Band77 / 20MHz / High CH / 16QAM



Band71 / 20MHz / High CH / 64QAM



## 2.3. Frequency Stability

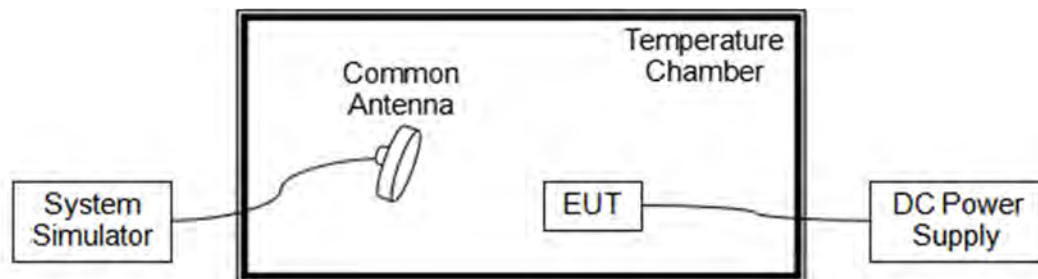
### 2.3.1. Requirement

According to FCC section 2.1055, 24.235, 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  $-30^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$  at intervals of not more than  $10^{\circ}\text{C}$ .
- (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.

**Note:** The operating temperature of EUT is from  $-20^{\circ}\text{C}$  to  $75^{\circ}\text{C}$ , which are specified by the applicant.

### 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 3.80V, 4.35V and 3.00V, which are specified by the applicant; the normal temperature here used is 20°C.

| LTE Band 2, QPSK, Channel 18900, Frequency 1880.0MHz |             |          |               |                 |        |
|------------------------------------------------------|-------------|----------|---------------|-----------------|--------|
| Limit =Within Authorized Band                        |             |          |               |                 |        |
| Voltage (%)                                          | Power (VDC) | Temp(°C) | Fre. Dev.(Hz) | Deviation (ppm) | Result |
| 100                                                  | 3.80        | +20(Ref) | 40            | 0.021           | PASS   |
| 100                                                  |             | -20      | -29           | -0.015          |        |
| 100                                                  |             | -10      | -36           | -0.019          |        |
| 100                                                  |             | 0        | -35           | -0.019          |        |
| 100                                                  |             | +10      | 14            | 0.007           |        |
| 100                                                  |             | +20      | -41           | -0.022          |        |
| 100                                                  |             | +30      | -38           | -0.020          |        |
| 100                                                  |             | +40      | 48            | 0.026           |        |
| 100                                                  |             | +50      | 33            | 0.018           |        |
| 100                                                  |             | +60      | -51           | -0.027          |        |
| 115                                                  | 4.35        | +20      | 45            | 0.024           | PASS   |
| 85                                                   | 3.00        | +20      | 40            | 0.021           |        |

| LTE Band 4, QPSK, Channel 20175, Frequency 1732.5MHz |             |          |               |                 |        |
|------------------------------------------------------|-------------|----------|---------------|-----------------|--------|
| Limit =Within Authorized Band                        |             |          |               |                 |        |
| Voltage (%)                                          | Power (VDC) | Temp(°C) | Fre. Dev.(Hz) | Deviation (ppm) | Result |
| 100                                                  | 3.80        | +20(Ref) | 29            | 0.017           | PASS   |
| 100                                                  |             | -20      | -30           | -0.017          |        |
| 100                                                  |             | -10      | 47            | 0.027           |        |
| 100                                                  |             | 0        | -36           | -0.021          |        |
| 100                                                  |             | +10      | -30           | -0.017          |        |
| 100                                                  |             | +20      | 42            | 0.024           |        |
| 100                                                  |             | +30      | -58           | -0.033          |        |
| 100                                                  |             | +40      | -34           | -0.020          |        |
| 100                                                  |             | +50      | 56            | 0.032           |        |
| 100                                                  |             | +60      | 21            | 0.012           |        |
| 115                                                  | 4.35        | +20      | 19            | 0.011           | PASS   |
| 85                                                   | 3.00        | +20      | -57           | -0.033          |        |



| 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                                                                  | 3.80        | +20(Ref) | 57            | 0.068           | PASS   |
| 100                                                                  |             | -20      | 53            | 0.063           |        |
| 100                                                                  |             | -10      | -51           | -0.061          |        |
| 100                                                                  |             | 0        | 55            | 0.066           |        |
| 100                                                                  |             | +10      | 16            | 0.019           |        |
| 100                                                                  |             | +20      | 52            | 0.062           |        |
| 100                                                                  |             | +30      | -44           | -0.053          |        |
| 100                                                                  |             | +40      | -55           | -0.066          |        |
| 100                                                                  |             | +50      | -27           | -0.032          |        |
| 100                                                                  |             | +60      | -18           | -0.022          |        |
| 115                                                                  | 4.35        | +20      | 35            | 0.042           |        |
| 85                                                                   | 3.00        | +20      | 27            | 0.032           |        |

| LTE Band 7, QPSK, Channel 21100, Frequency 2535.0MHz<br>Limit=±2.5ppm |             |          |               |                 |        |
|-----------------------------------------------------------------------|-------------|----------|---------------|-----------------|--------|
| Voltage (%)                                                           | Power (VDC) | Temp(°C) | Fre. Dev.(Hz) | Deviation (ppm) | Result |
| 100                                                                   | 3.80        | +20(Ref) | -58           | -0.023          | PASS   |
| 100                                                                   |             | -20      | -17           | -0.007          |        |
| 100                                                                   |             | -10      | -40           | -0.016          |        |
| 100                                                                   |             | 0        | -38           | -0.015          |        |
| 100                                                                   |             | +10      | -56           | -0.022          |        |
| 100                                                                   |             | +20      | 19            | 0.007           |        |
| 100                                                                   |             | +30      | 47            | 0.019           |        |
| 100                                                                   |             | +40      | -24           | -0.009          |        |
| 100                                                                   |             | +50      | -40           | -0.016          |        |
| 100                                                                   |             | +60      | 17            | 0.007           |        |
| 115                                                                   | 4.35        | +20      | 14            | 0.006           |        |
| 85                                                                    | 3.00        | +20      | 57            | 0.022           |        |



| LTE Band 12, QPSK, Channel 23095, Frequency 707.5MHz<br>Limit =Within Authorized Band |             |          |               |                 |        |
|---------------------------------------------------------------------------------------|-------------|----------|---------------|-----------------|--------|
| Voltage (%)                                                                           | Power (VDC) | Temp(°C) | Fre. Dev.(Hz) | Deviation (ppm) | Result |
| 100                                                                                   | 3.80        | +20(Ref) | 27            | 0.038           | PASS   |
| 100                                                                                   |             | -20      | -40           | -0.057          |        |
| 100                                                                                   |             | -10      | 37            | 0.052           |        |
| 100                                                                                   |             | 0        | 46            | 0.065           |        |
| 100                                                                                   |             | +10      | 19            | 0.027           |        |
| 100                                                                                   |             | +20      | -48           | -0.068          |        |
| 100                                                                                   |             | +30      | -15           | -0.021          |        |
| 100                                                                                   |             | +40      | -35           | -0.049          |        |
| 100                                                                                   |             | +50      | 53            | 0.075           |        |
| 100                                                                                   |             | +60      | -29           | -0.041          |        |
| 115                                                                                   | 4.35        | +20      | 45            | 0.064           |        |
| 85                                                                                    | 3.00        | +20      | -46           | -0.065          |        |

| LTE Band 13, QPSK, Channel 23230, Frequency 782MHz<br>Limit=±2.5ppm |             |          |               |                 |        |
|---------------------------------------------------------------------|-------------|----------|---------------|-----------------|--------|
| Voltage (%)                                                         | Power (VDC) | Temp(°C) | Fre. Dev.(Hz) | Deviation (ppm) | Result |
| 100                                                                 | 3.80        | +20(Ref) | -18           | -0.023          | PASS   |
| 100                                                                 |             | -20      | -36           | -0.046          |        |
| 100                                                                 |             | -10      | -29           | -0.037          |        |
| 100                                                                 |             | 0        | -42           | -0.054          |        |
| 100                                                                 |             | +10      | 41            | 0.052           |        |
| 100                                                                 |             | +20      | 28            | 0.036           |        |
| 100                                                                 |             | +30      | 15            | 0.019           |        |
| 100                                                                 |             | +40      | 33            | 0.042           |        |
| 100                                                                 |             | +50      | 19            | 0.024           |        |
| 100                                                                 |             | +60      | 44            | 0.056           |        |
| 115                                                                 | 4.35        | +20      | 42            | 0.054           |        |
| 85                                                                  | 3.00        | +20      | 27            | 0.035           |        |



| LTE Band 17, QPSK, Channel 23790, Frequency 710.0MHz |             |           |                |                 |        |
|------------------------------------------------------|-------------|-----------|----------------|-----------------|--------|
| Limit=±2.5ppm                                        |             |           |                |                 |        |
| Voltage (%)                                          | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Deviation (ppm) | Result |
| 100                                                  | 3.80        | +20(Ref)  | 24             | 0.034           | PASS   |
| 100                                                  |             | -20       | -22            | -0.031          |        |
| 100                                                  |             | -10       | 42             | 0.059           |        |
| 100                                                  |             | 0         | -25            | -0.035          |        |
| 100                                                  |             | +10       | 17             | 0.024           |        |
| 100                                                  |             | +20       | 50             | 0.070           |        |
| 100                                                  |             | +30       | 22             | 0.031           |        |
| 100                                                  |             | +40       | 46             | 0.065           |        |
| 100                                                  |             | +50       | 44             | 0.062           |        |
| 100                                                  |             | +60       | 30             | 0.042           |        |
| 115                                                  | 4.35        | +20       | 45             | 0.063           |        |
| 85                                                   | 3.00        | +20       | 33             | 0.046           |        |

| LTE Band 25, QPSK, Channel 26365, Frequency 1882.5MHz |             |          |               |                 |        |
|-------------------------------------------------------|-------------|----------|---------------|-----------------|--------|
| Limit =Within Authorized Band                         |             |          |               |                 |        |
| Voltage (%)                                           | Power (VDC) | Temp(°C) | Fre. Dev.(Hz) | Deviation (ppm) | Result |
| 100                                                   | 3.80        | +20(Ref) | 34            | 0.018           | PASS   |
| 100                                                   |             | -20      | -25           | -0.013          |        |
| 100                                                   |             | -10      | 13            | 0.007           |        |
| 100                                                   |             | 0        | 52            | 0.028           |        |
| 100                                                   |             | +10      | -17           | -0.009          |        |
| 100                                                   |             | +20      | 40            | 0.021           |        |
| 100                                                   |             | +30      | 47            | 0.025           |        |
| 100                                                   |             | +40      | -15           | -0.008          |        |
| 100                                                   |             | +50      | -17           | -0.009          |        |
| 100                                                   |             | +60      | 35            | 0.019           |        |
| 115                                                   | 4.35        | +20      | 21            | 0.011           |        |
| 85                                                    | 3.00        | +20      | -39           | -0.021          |        |



| LTE Band 26, QPSK, Channel 26915, Frequency 836.5MHz<br>Limit=±2.5ppm |             |          |               |                 |        |
|-----------------------------------------------------------------------|-------------|----------|---------------|-----------------|--------|
| Voltage (%)                                                           | Power (VDC) | Temp(°C) | Fre. Dev.(Hz) | Deviation (ppm) | Result |
| 100                                                                   | 3.80        | +20(Ref) | 21            | 0.025           | PASS   |
| 100                                                                   |             | -20      | 31            | 0.037           |        |
| 100                                                                   |             | -10      | -33           | -0.039          |        |
| 100                                                                   |             | 0        | 53            | 0.063           |        |
| 100                                                                   |             | +10      | 31            | 0.037           |        |
| 100                                                                   |             | +20      | -29           | -0.035          |        |
| 100                                                                   |             | +30      | 53            | 0.063           |        |
| 100                                                                   |             | +40      | -13           | -0.016          |        |
| 100                                                                   |             | +50      | 25            | 0.030           |        |
| 100                                                                   |             | +60      | 16            | 0.019           |        |
| 115                                                                   | 4.35        | +20      | -36           | -0.043          |        |
| 85                                                                    | 3.00        | +20      | 14            | 0.017           |        |

| LTE Band 41, QPSK, Channel 40620, Frequency 2605.0MHz<br>Limit=±2.5ppm |             |          |               |                 |        |
|------------------------------------------------------------------------|-------------|----------|---------------|-----------------|--------|
| Voltage (%)                                                            | Power (VDC) | Temp(°C) | Fre. Dev.(Hz) | Deviation (ppm) | Result |
| 100                                                                    | 3.80        | +20(Ref) | 48            | 0.019           | PASS   |
| 100                                                                    |             | -20      | 47            | 0.018           |        |
| 100                                                                    |             | -10      | 21            | 0.008           |        |
| 100                                                                    |             | 0        | -29           | -0.011          |        |
| 100                                                                    |             | +10      | 13            | 0.005           |        |
| 100                                                                    |             | +20      | -52           | -0.020          |        |
| 100                                                                    |             | +30      | -53           | -0.020          |        |
| 100                                                                    |             | +40      | -34           | -0.013          |        |
| 100                                                                    |             | +50      | -17           | -0.007          |        |
| 100                                                                    |             | +60      | -47           | -0.018          |        |
| 115                                                                    | 4.35        | +20      | -58           | -0.022          |        |
| 85                                                                     | 3.00        | +20      | 28            | 0.011           |        |



| LTE Band 66, QPSK, Channel 132322, Frequency 1745MHz |             |          |               |                 |        |
|------------------------------------------------------|-------------|----------|---------------|-----------------|--------|
| Limit =Within Authorized Band                        |             |          |               |                 |        |
| Voltage (%)                                          | Power (VDC) | Temp(°C) | Fre. Dev.(Hz) | Deviation (ppm) | Result |
| 100                                                  | 3.80        | +20(Ref) | -48           | -0.028          | PASS   |
| 100                                                  |             | -20      | 56            | 0.032           |        |
| 100                                                  |             | -10      | 38            | 0.022           |        |
| 100                                                  |             | 0        | 20            | 0.011           |        |
| 100                                                  |             | +10      | 25            | 0.014           |        |
| 100                                                  |             | +20      | -55           | -0.032          |        |
| 100                                                  |             | +30      | 55            | 0.032           |        |
| 100                                                  |             | +40      | -17           | -0.010          |        |
| 100                                                  |             | +50      | -39           | -0.022          |        |
| 100                                                  |             | +60      | 20            | 0.011           |        |
| 115                                                  | 4.35        | +20      | 48            | 0.028           |        |
| 85                                                   | 3.00        | +20      | 17            | 0.010           |        |

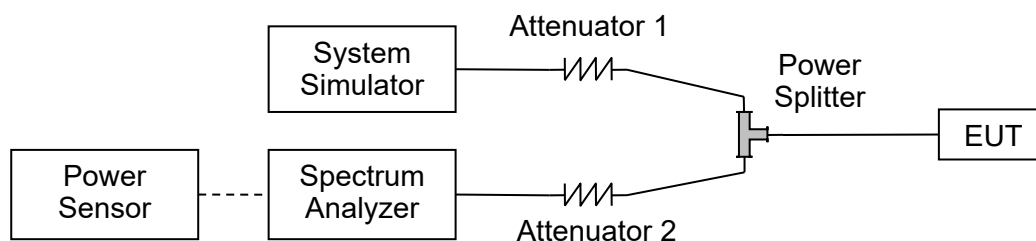
| LTE Band 71, QPSK, Channel 133322, Frequency 683.0MHz |             |          |               |                 |        |
|-------------------------------------------------------|-------------|----------|---------------|-----------------|--------|
| Limit=±2.5ppm                                         |             |          |               |                 |        |
| Voltage (%)                                           | Power (VDC) | Temp(°C) | Fre. Dev.(Hz) | Deviation (ppm) | Result |
| 100                                                   | 3.80        | +20(Ref) | 55            | 0.081           | PASS   |
| 100                                                   |             | -20      | 49            | 0.072           |        |
| 100                                                   |             | -10      | -40           | -0.059          |        |
| 100                                                   |             | 0        | 38            | 0.056           |        |
| 100                                                   |             | +10      | 36            | 0.053           |        |
| 100                                                   |             | +20      | 28            | 0.041           |        |
| 100                                                   |             | +30      | 22            | 0.032           |        |
| 100                                                   |             | +40      | -54           | -0.079          |        |
| 100                                                   |             | +50      | -56           | -0.082          |        |
| 100                                                   |             | +60      | 49            | 0.072           |        |
| 115                                                   | 4.35        | +20      | 40            | 0.059           |        |
| 85                                                    | 3.00        | +20      | -39           | -0.057          |        |

## 2.4. Peak to Average Radio

### 2.4.1. Requirement

According to FCC section 24.232(d), 27.50(d) and 27.50(j)(4), the peak to average ratio (PAR) of the transmission may not exceed 13dB.

### 2.4.2. 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.

### 2.4.3. 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 2 |               |            |               |           |         |
|------------|---------------|------------|---------------|-----------|---------|
| BW(MHz)    | Channel Level | Modulation | PAR Radio(dB) | Limit(dB) | Verdict |
| 1.4        | Low           | QPSK       | 5.43          | <=13      | PASS    |
|            | Low           | 16QAM      | 6.27          | <=13      | PASS    |
|            | Low           | 64QAM      | 6.31          | <=13      | PASS    |
|            | Mid           | QPSK       | 5.39          | <=13      | PASS    |
|            | Mid           | 16QAM      | 6.19          | <=13      | PASS    |
|            | Mid           | 64QAM      | 6.17          | <=13      | PASS    |
|            | High          | QPSK       | 5.29          | <=13      | PASS    |
|            | High          | 16QAM      | 6.08          | <=13      | PASS    |
|            | High          | 64QAM      | 6.08          | <=13      | PASS    |
| 3          | Low           | QPSK       | 5.51          | <=13      | PASS    |
|            | Low           | 16QAM      | 6.31          | <=13      | PASS    |
|            | Low           | 64QAM      | 6.23          | <=13      | PASS    |
|            | Mid           | QPSK       | 5.38          | <=13      | PASS    |
|            | Mid           | 16QAM      | 6.22          | <=13      | PASS    |
|            | Mid           | 64QAM      | 6.16          | <=13      | PASS    |
|            | High          | QPSK       | 5.41          | <=13      | PASS    |
|            | High          | 16QAM      | 6.24          | <=13      | PASS    |
|            | High          | 64QAM      | 6.14          | <=13      | PASS    |
| 5          | Low           | QPSK       | 5.51          | <=13      | PASS    |
|            | Low           | 16QAM      | 6.25          | <=13      | PASS    |
|            | Low           | 64QAM      | 6.22          | <=13      | PASS    |
|            | Mid           | QPSK       | 5.46          | <=13      | PASS    |
|            | Mid           | 16QAM      | 6.2           | <=13      | PASS    |
|            | Mid           | 64QAM      | 6.16          | <=13      | PASS    |
|            | High          | QPSK       | 5.43          | <=13      | PASS    |
|            | High          | 16QAM      | 6.19          | <=13      | PASS    |
|            | High          | 64QAM      | 6.16          | <=13      | PASS    |
| 10         | Low           | QPSK       | 5.54          | <=13      | PASS    |
|            | Low           | 16QAM      | 6.26          | <=13      | PASS    |
|            | Low           | 64QAM      | 6.29          | <=13      | PASS    |
|            | Mid           | QPSK       | 5.41          | <=13      | PASS    |
|            | Mid           | 16QAM      | 6.19          | <=13      | PASS    |
|            | Mid           | 64QAM      | 6.18          | <=13      | PASS    |
|            | High          | QPSK       | 5.22          | <=13      | PASS    |
|            | High          | 16QAM      | 6.07          | <=13      | PASS    |
|            | High          | 64QAM      | 6.05          | <=13      | PASS    |



|    |      |       |      |           |      |
|----|------|-------|------|-----------|------|
| 15 | Low  | QPSK  | 5.52 | $\leq 13$ | PASS |
|    | Low  | 16QAM | 6.25 | $\leq 13$ | PASS |
|    | Low  | 64QAM | 6.24 | $\leq 13$ | PASS |
|    | Mid  | QPSK  | 5.3  | $\leq 13$ | PASS |
|    | Mid  | 16QAM | 6.09 | $\leq 13$ | PASS |
|    | Mid  | 64QAM | 6.1  | $\leq 13$ | PASS |
|    | High | QPSK  | 5.24 | $\leq 13$ | PASS |
|    | High | 16QAM | 6.05 | $\leq 13$ | PASS |
|    | High | 64QAM | 6.03 | $\leq 13$ | PASS |
| 20 | Low  | QPSK  | 5.59 | $\leq 13$ | PASS |
|    | Low  | 16QAM | 6.34 | $\leq 13$ | PASS |
|    | Low  | 64QAM | 6.33 | $\leq 13$ | PASS |
|    | Mid  | QPSK  | 5.23 | $\leq 13$ | PASS |
|    | Mid  | 16QAM | 6.1  | $\leq 13$ | PASS |
|    | Mid  | 64QAM | 6.08 | $\leq 13$ | PASS |
|    | High | QPSK  | 5.7  | $\leq 13$ | PASS |
|    | High | 16QAM | 6.5  | $\leq 13$ | PASS |
|    | High | 64QAM | 6.48 | $\leq 13$ | PASS |



| LTE Band 4 |               |            |               |           |         |
|------------|---------------|------------|---------------|-----------|---------|
| BW(MHz)    | Channel Level | Modulation | PAR Radio(dB) | Limit(dB) | Verdict |
| 1.4        | Low           | QPSK       | 5.31          | <=13      | PASS    |
|            | Low           | 16QAM      | 6.07          | <=13      | PASS    |
|            | Low           | 64QAM      | 6.04          | <=13      | PASS    |
|            | Mid           | QPSK       | 5.83          | <=13      | PASS    |
|            | Mid           | 16QAM      | 6.59          | <=13      | PASS    |
|            | Mid           | 64QAM      | 6.52          | <=13      | PASS    |
|            | High          | QPSK       | 5.28          | <=13      | PASS    |
|            | High          | 16QAM      | 6.09          | <=13      | PASS    |
|            | High          | 64QAM      | 6.12          | <=13      | PASS    |
| 3          | Low           | QPSK       | 5.28          | <=13      | PASS    |
|            | Low           | 16QAM      | 6.09          | <=13      | PASS    |
|            | Low           | 64QAM      | 5.98          | <=13      | PASS    |
|            | Mid           | QPSK       | 5.76          | <=13      | PASS    |
|            | Mid           | 16QAM      | 6.61          | <=13      | PASS    |
|            | Mid           | 64QAM      | 6.45          | <=13      | PASS    |
|            | High          | QPSK       | 5.3           | <=13      | PASS    |
|            | High          | 16QAM      | 6.19          | <=13      | PASS    |
|            | High          | 64QAM      | 6.11          | <=13      | PASS    |
| 5          | Low           | QPSK       | 5.35          | <=13      | PASS    |
|            | Low           | 16QAM      | 6.11          | <=13      | PASS    |
|            | Low           | 64QAM      | 6.04          | <=13      | PASS    |
|            | Mid           | QPSK       | 5.76          | <=13      | PASS    |
|            | Mid           | 16QAM      | 6.48          | <=13      | PASS    |
|            | Mid           | 64QAM      | 6.41          | <=13      | PASS    |
|            | High          | QPSK       | 5.46          | <=13      | PASS    |
|            | High          | 16QAM      | 6.21          | <=13      | PASS    |
|            | High          | 64QAM      | 6.19          | <=13      | PASS    |
| 10         | Low           | QPSK       | 5.3           | <=13      | PASS    |
|            | Low           | 16QAM      | 6.06          | <=13      | PASS    |
|            | Low           | 64QAM      | 6.09          | <=13      | PASS    |
|            | Mid           | QPSK       | 5.71          | <=13      | PASS    |
|            | Mid           | 16QAM      | 6.44          | <=13      | PASS    |
|            | Mid           | 64QAM      | 6.42          | <=13      | PASS    |
|            | High          | QPSK       | 5.53          | <=13      | PASS    |
|            | High          | 16QAM      | 6.25          | <=13      | PASS    |
|            | High          | 64QAM      | 6.25          | <=13      | PASS    |



|    |      |       |      |           |      |
|----|------|-------|------|-----------|------|
| 15 | Low  | QPSK  | 5.38 | $\leq 13$ | PASS |
|    | Low  | 16QAM | 6.01 | $\leq 13$ | PASS |
|    | Low  | 64QAM | 6.0  | $\leq 13$ | PASS |
|    | Mid  | QPSK  | 5.59 | $\leq 13$ | PASS |
|    | Mid  | 16QAM | 6.37 | $\leq 13$ | PASS |
|    | Mid  | 64QAM | 6.35 | $\leq 13$ | PASS |
|    | High | QPSK  | 5.41 | $\leq 13$ | PASS |
|    | High | 16QAM | 6.22 | $\leq 13$ | PASS |
|    | High | 64QAM | 6.16 | $\leq 13$ | PASS |
| 20 | Low  | QPSK  | 5.21 | $\leq 13$ | PASS |
|    | Low  | 16QAM | 6.12 | $\leq 13$ | PASS |
|    | Low  | 64QAM | 6.12 | $\leq 13$ | PASS |
|    | Mid  | QPSK  | 5.57 | $\leq 13$ | PASS |
|    | Mid  | 16QAM | 6.42 | $\leq 13$ | PASS |
|    | Mid  | 64QAM | 6.35 | $\leq 13$ | PASS |
|    | High | QPSK  | 5.52 | $\leq 13$ | PASS |
|    | High | 16QAM | 6.3  | $\leq 13$ | PASS |
|    | High | 64QAM | 6.29 | $\leq 13$ | PASS |



| LTE Band 66 |               |            |               |           |         |
|-------------|---------------|------------|---------------|-----------|---------|
| BW(MHz)     | Channel Level | Modulation | PAR Radio(dB) | Limit(dB) | Verdict |
| 1.4         | Low           | QPSK       | 5.31          | <=13      | PASS    |
|             | Low           | 16QAM      | 6.26          | <=13      | PASS    |
|             | Low           | 64QAM      | 6.10          | <=13      | PASS    |
|             | Mid           | QPSK       | 5.57          | <=13      | PASS    |
|             | Mid           | 16QAM      | 6.44          | <=13      | PASS    |
|             | Mid           | 64QAM      | 6.43          | <=13      | PASS    |
|             | High          | QPSK       | 5.69          | <=13      | PASS    |
|             | High          | 16QAM      | 6.46          | <=13      | PASS    |
|             | High          | 64QAM      | 6.53          | <=13      | PASS    |
| 3           | Low           | QPSK       | 5.28          | <=13      | PASS    |
|             | Low           | 16QAM      | 6.12          | <=13      | PASS    |
|             | Low           | 64QAM      | 6.04          | <=13      | PASS    |
|             | Mid           | QPSK       | 5.61          | <=13      | PASS    |
|             | Mid           | 16QAM      | 6.48          | <=13      | PASS    |
|             | Mid           | 64QAM      | 6.46          | <=13      | PASS    |
|             | High          | QPSK       | 5.67          | <=13      | PASS    |
|             | High          | 16QAM      | 6.50          | <=13      | PASS    |
|             | High          | 64QAM      | 6.40          | <=13      | PASS    |
| 5           | Low           | QPSK       | 5.50          | <=13      | PASS    |
|             | Low           | 16QAM      | 6.19          | <=13      | PASS    |
|             | Low           | 64QAM      | 6.07          | <=13      | PASS    |
|             | Mid           | QPSK       | 5.63          | <=13      | PASS    |
|             | Mid           | 16QAM      | 6.39          | <=13      | PASS    |
|             | Mid           | 64QAM      | 6.35          | <=13      | PASS    |
|             | High          | QPSK       | 5.73          | <=13      | PASS    |
|             | High          | 16QAM      | 6.45          | <=13      | PASS    |
|             | High          | 64QAM      | 6.44          | <=13      | PASS    |
| 10          | Low           | QPSK       | 5.33          | <=13      | PASS    |
|             | Low           | 16QAM      | 6.10          | <=13      | PASS    |
|             | Low           | 64QAM      | 6.11          | <=13      | PASS    |
|             | Mid           | QPSK       | 5.64          | <=13      | PASS    |
|             | Mid           | 16QAM      | 6.34          | <=13      | PASS    |
|             | Mid           | 64QAM      | 6.36          | <=13      | PASS    |
|             | High          | QPSK       | 5.76          | <=13      | PASS    |
|             | High          | 16QAM      | 6.49          | <=13      | PASS    |
|             | High          | 64QAM      | 6.47          | <=13      | PASS    |



|    |      |       |      |           |      |
|----|------|-------|------|-----------|------|
| 15 | Low  | QPSK  | 5.30 | $\leq 13$ | PASS |
|    | Low  | 16QAM | 6.15 | $\leq 13$ | PASS |
|    | Low  | 64QAM | 6.08 | $\leq 13$ | PASS |
|    | Mid  | QPSK  | 5.57 | $\leq 13$ | PASS |
|    | Mid  | 16QAM | 5.71 | $\leq 13$ | PASS |
|    | Mid  | 64QAM | 6.32 | $\leq 13$ | PASS |
|    | High | QPSK  | 5.83 | $\leq 13$ | PASS |
|    | High | 16QAM | 6.46 | $\leq 13$ | PASS |
|    | High | 64QAM | 6.42 | $\leq 13$ | PASS |
| 20 | Low  | QPSK  | 5.27 | $\leq 13$ | PASS |
|    | Low  | 16QAM | 6.19 | $\leq 13$ | PASS |
|    | Low  | 64QAM | 6.16 | $\leq 13$ | PASS |
|    | Mid  | QPSK  | 5.55 | $\leq 13$ | PASS |
|    | Mid  | 16QAM | 6.37 | $\leq 13$ | PASS |
|    | Mid  | 64QAM | 6.34 | $\leq 13$ | PASS |
|    | High | QPSK  | 5.62 | $\leq 13$ | PASS |
|    | High | 16QAM | 6.43 | $\leq 13$ | PASS |
|    | High | 64QAM | 6.41 | $\leq 13$ | PASS |

Band2 / 1.4MHz / Low CH / QPSK



Band2 / 1.4MHz / Low CH / 16QAM



Band2 / 1.4MHz / Low CH / 64QAM



Band2 / 1.4MHz / Mid CH / QPSK



Band2 / 1.4MHz / Mid CH / 16QAM



Band2 / 1.4MHz / Mid CH / 64QAM

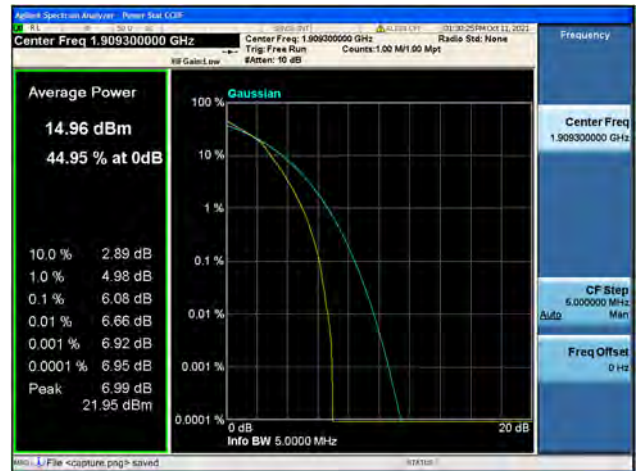




Band2 / 1.4MHz / High CH / QPSK



Band2 / 1.4MHz / High CH / 16QAM



Band2 / 1.4MHz / High CH / 64QAM



Band2 / 3MHz / Low CH / QPSK



Band2 / 3MHz / Low CH / 16QAM



Band2 / 3MHz / Low CH / 64QAM





Band2 / 3MHz / Mid CH / QPSK



Band2 / 3MHz / Mid CH / 16QAM



Band2 / 3MHz / Mid CH / 64QAM



Band2 / 3MHz / High CH / QPSK



Band2 / 3MHz / High CH / 16QAM



Band2 / 3MHz / High CH / 64QAM





Band2 / 5MHz / Low CH / QPSK



Band2 / 5MHz / Low CH / 16QAM



Band2 / 5MHz / Low CH / 64QAM



Band2 / 5MHz / Mid CH / QPSK



Band2 / 5MHz / Mid CH / 16QAM



Band2 / 5MHz / Mid CH / 64QAM





Band2 / 5MHz / High CH / QPSK



Band2 / 5MHz / High CH / 16QAM



Band2 / 5MHz / High CH / 64QAM



Band2 / 10MHz / Low CH / QPSK



Band2 / 10MHz / Low CH / 16QAM



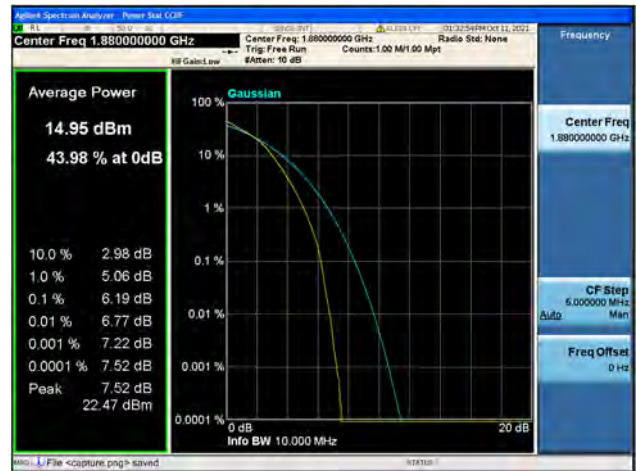
Band2 / 10MHz / Low CH / 64QAM



Band2 / 10MHz / Mid CH / QPSK



Band2 / 10MHz / Mid CH / 16QAM



Band2 / 10MHz / Mid CH / 64QAM



Band2 / 10MHz / High CH / QPSK



Band2 / 10MHz / High CH / 16QAM



Band2 / 10MHz / High CH / 64QAM





Band2 / 15MHz / Low CH / QPSK



Band2 / 15MHz / Low CH / 16QAM



Band2 / 15MHz / Low CH / 64QAM



Band2 / 15MHz / Mid CH / QPSK



Band2 / 15MHz / Mid CH / 16QAM



Band2 / 15MHz / Mid CH / 64QAM





Band2 / 15MHz / High CH / QPSK



Band2 / 15MHz / High CH / 16QAM



Band2 / 15MHz / High CH / 64QAM



Band2 / 20MHz / Low CH / QPSK



Band2 / 20MHz / Low CH / 16QAM



Band2 / 20MHz / Low CH / 64QAM





Band2 / 20MHz / Mid CH / QPSK



Band2 / 20MHz / Mid CH / 16QAM



Band2 / 20MHz / Mid CH / 64QAM



Band2 / 20MHz / High CH / QPSK



Band2 / 20MHz / High CH / 16QAM



Band2 / 20MHz / High CH / 64QAM





Band4 / 1.4MHz / Low CH / QPSK



Band4 / 1.4MHz / Low CH / 16QAM



Band4 / 1.4MHz / Low CH / 64QAM



Band4 / 1.4MHz / Mid CH / QPSK



Band4 / 1.4MHz / Mid CH / 16QAM



Band4 / 1.4MHz / Mid CH / 64QAM



Band4 / 1.4MHz / High CH / QPSK



Band4 / 1.4MHz / High CH / 16QAM



Band4 / 1.4MHz / High CH / 64QAM



Band4 / 3MHz / Low CH / QPSK



Band4 / 3MHz / Low CH / 16QAM



Band4 / 3MHz / Low CH / 64QAM

